IBM CICS Configuration Manager for z/OS

User's Guide

Version 2 Release 1

GC34-7048-03

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GC34-7048-03

Note!
Before using this information and the product it supports, read the information in "Notices" on page 505.

This edition applies to Version 2 Release 1 of IBM CICS Configuration Manager for z/OS (product number 5697-P09) and to all subsequent releases and modifications until otherwise indicated in new editions.

This edition replaces GC34-7048-02. Significant changes in this edition are summarized under "What's new" on page xi and are indicated by a vertical bar in the left margin.

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About this book

This book describes:

- CICS® Configuration Manager concepts
- How to install and customize CICS Configuration Manager, after you have followed the steps in the *CICS Configuration Manager: Program Directory*
- How to secure access to CICS Configuration Manager functions
- How to use the ISPF dialog interface to perform common tasks
- Reference information for the batch command interface
- Reference information for the XML SOAP application programming interface (API) that the ISPF dialog and batch command interfaces use to communicate with the CICS Configuration Manager server

Before using CICS Configuration Manager for the first time, read Chapter 1, "Introduction," on page 3.

Who should read this book

This book is primarily for readers who maintain CICS resource definitions, such as:

- CICS application developers and CICS administrators who edit resource definitions
- Change administrators who need to migrate (copy or move) those resource definitions between CICS environments

Other readers might be interested in specific topics:

- Managers who need an overview of CICS Configuration Manager should read "Why resource definitions need managing" on page 4 and "Benefits" on page 6.
- Security administrators should read Chapter 3, "Security," on page 105.
- System administrators who need to understand how CICS Configuration Manager integrates with existing system components should read "Components" on page 10 and "Supported system topologies" on page 61.
- Only the person who installs CICS Configuration Manager needs to read Chapter 2, "Installation and customization," on page 67.
- Developers who want to create a custom client interface for CICS Configuration Manager should read Chapter 22, "Using the SOAP API," on page 323.

For details on the different types of CICS Configuration Manager user, see "Workflow and types of user" on page 59.

What you should already know

This book assumes that you know:

- What CICS resource definitions and CICS system definition (CSD) files are
- Whether or not your system uses CICSPlex® SM; if it does, you should understand basic CICSPlex SM concepts such as data repositories and contexts

Terminology used in this sbook

This book refers to IBM® CICS Configuration Manager for z/OS® as "CICS Configuration Manager".

Where this book refers to "resource definitions" with no further qualification, it is referring to *CICS* resource definitions that may be stored either in a CSD file or a CICSPlex SM data repository, and also to CICSPlex SM-specific resource definitions that are stored only in a CICSPlex SM data repository (for example, ResDescs).

Where this book refers to a "context" with no further qualification, it is referring to a CICSPlex SM context in a CICSPlex SM data repository. For example, "context-based resource definition" refers to a resource definition stored in a CICSPlex SM data repository.

The instruction "Enter *text*" means "Type *text*, and then press the Enter key". The instruction "Type *text*" means "Type *text*, but do not press the Enter key".

Much of the terminology in this book is CICS terminology. See the glossary of the *CICS Transaction Server for z/OS Information Center*:

http://publib.boulder.ibm.com/infocenter/cicsts/v4r2/topic/com.ibm.cics.ts.doc/prod/glossary.html

How to read syntax diagrams

The following rules apply to the syntax diagrams used in this book:

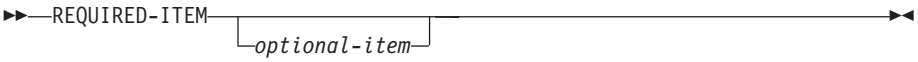
Arrow symbols
Read the syntax diagrams from left to right, from top to bottom, following the path of the line.

Conventions

- Variables appear in italics (for example, *column-name*). They represent user-defined parameters or suboptions.
- When entering commands, separate parameters and keywords by at least one blank if there is no intervening punctuation.
- Enter punctuation marks (slashes, commas, periods, parentheses, quotation marks, equal signs) and numbers exactly as given.
- Footnotes are shown by a number in parentheses, for example, (1).
- A ␣ symbol indicates one blank position.

Required items
Required items appear on the horizontal line (the main path).

Optional items
Optional items appear below the main path.



Multiple required or optional items

If you can choose from two or more items, they appear vertically in a stack. If you *must* choose one of the items, one item of the stack appears on the main path.

If choosing one of the items is optional, the entire stack appears below the main path.

Repeatable items

An arrow returning to the left above the main line indicates that an item can be repeated.

If the repeat arrow contains a comma, you must separate repeated items with a comma.

A repeat arrow above a stack indicates that you can specify more than one of the choices in the stack.

Default items

IBM-supplied defaults appear above the main path, and the remaining choices are shown below the main path. In the parameter list following the syntax diagram, the default choices are **underlined**.

Service updates and support information

To find service updates and support information, including software FixPaks, PTFs, Frequently Asked Question (FAQs), technical notes, troubleshooting information, and downloads, refer to the following Web page:

http://www.ibm.com/cics/cm/

Where to find information

The CICS Library Web page provides current product documentation and IBM Redbooks® that you can view, print, and download. To locate publications with the most up-to-date information, refer to the following Web page:

http://www.ibm.com/cics/library/

Accessibility

Accessibility features help a user who has a physical disability, such as restricted mobility or limited vision, to use software products successfully. The major accessibility features in CICS Configuration Manager enable users to:

- Use assistive technologies such as screen readers and screen magnifier software. Consult the assistive technology documentation for specific information when using it to access z/OS interfaces.
- Customize display attributes such as color, contrast, and font size.
- Operate specific or equivalent features using only the keyboard. Refer to the *z/OS: ISPF User's Guide Volume I* for information about accessing ISPF interfaces. This guide describes how to use ISPF, including the use of keyboard shortcuts or function keys (PF keys), includes the default settings for the PF keys, and explains how to modify their functions.

You can perform most tasks required to set up and run CICS Configuration Manager using a 3270 emulator logged on to TSO.

IBM Personal Communications for Windows provides 3270 emulation with accessibility features for people with disabilities. You can use this product to provide the accessibility features you need.

People with limited vision who use screen reader software might find the following require particular attention:

Pop-up windows
CICS Configuration Manager uses the ISPF function that produces pop-up windows for some tasks. The pop-up and its frame are just text that overlays the underlying information on the displayed panel. The frame of such a pop-up is not usually recognized as such by screen reader software, so you may need to gain some familiarity with reading such panels before the information becomes meaningful. ISPF pop-up windows can be displayed on a full screen by using the **RESIZE** command.

What's new

Significant changes are marked by a vertical bar in the left margin.

June 2011: support for CICS TS V4.2

Describes updates introduced by the PTF for APAR PM32874:

Support for CICS Transaction Server V4.2
CICS Configuration Manager supports the new resource definition attributes introduced by CICS Transaction Server V4.2.

Under CICS TS V4.2, CICS Configuration Manager uses the CICS SPI to update CSD-based resource definitions
Previously, to update resource definitions stored in CSD files, the CICS Configuration Manager server used the CICS-supplied DFHEDAP program, regardless of the release of CICS Transaction Server under which the CICS Configuration Manager server was running.

Now, starting from CICS Transaction Server V4.2, the CICS Configuration Manager server uses CICS system programming interface (SPI) commands to update CSD-based resource definitions. (These particular SPI commands were first introduced in CICS Transaction Server V4.1.)

If the CICS Configuration Manager server is running under CICS Transaction Server V4.1, or earlier, the CICS Configuration Manager server uses DFHEDAP, as before.

File resource definitions: the SOAP API now obscures the file password attribute in some situations
Previously, when a CICS Configuration Manager client requested details of a file resource definition, the SOAP API response from the CICS Configuration Manager server contained the actual value of the file password attribute. When sending a request to the server to update other attributes of a file resource definition, the CICS Configuration Manager ISPF client included the actual value of the file password, even though its value had not changed.

To improve security, the server now returns file password attribute values as a string of 8 characters, consisting of the 8 hexadecimal digits of a 4-byte checksum of the file password, with the first digit replaced by an asterisk (for example, `*F01E93C`). If the file password has not changed, the ISPF client now sends the value as a string of 8 asterisks (`********`). If the file password specified by a client begins with an asterisk, the server ignores it, and does not attempt to update that attribute in the resource definition.

As before, the CICS Configuration Manager ISPF client displays the file password on-screen as a string of 8 asterisks.

Previous changes

The following topics describe what was new and changed in previous editions.

June 2010: APAR updates to V2.1

Describes the new function introduced by the PTF for APAR PM14239:

Recover a set of historical versions of resource definitions
Previously, you could recover historical versions one at a time, or back out a change package that you had migrated. The new Recover command enables you to recover a set of historical versions that match your criteria. For example, you can select changes within a specified time period by a particular user, and then undo or redo those changes in a single step. The Recover command is available via the CICS Configuration Manager SOAP API and also in the ISPF dialog, as the **REC** line action on list panels under primary menu option **4.3 CICS changes**.

Also contains corrections and improvements to the following topics:

"Optional: Configure the agent for CSD-based CICS regions" on page 92
Improved instructions, including previously omitted information on the deployment analysis agent program, CCVSNCCR.

"Define CICS Configuration Manager system options" on page 77
Corrections to the instructions for changing system options after installation.

November 2009: APAR updates to V2.1

Describes new functions introduced by the PTF for APAR PK95899:

Option to delete migrated resource definitions at source
For each migration path in a migration scheme, you can now specify a "delete at source?" option. If you specify "yes", migration via these paths effectively *moves* rather than *copies* resource definitions: after copying resource definitions to a target CICS configuration, CICS Configuration Manager deletes them from the source CICS configuration. The default value for this option is "no" (do not delete at source).

CHECK deployment analysis report now available via the ISPF dialog
You can now check the consistency of resource definitions in a CSD file by entering the new line action **CHK** next to a list or a group in the ISPF dialog. You can also check the consistency of a mix of lists and groups using the new menu option **4.9 Check Analysis**.

Export and import of commands
You can now migrate commands (Add, Remove, Delete) to a CICS Configuration Manager export file, and then import them on another system. This enables you to propagate commands in change packages to separately managed CICS Configuration Manager systems at remote sites.

Modification to change package approval
To indicate that change packages using a particular migration scheme do not require approval, you must now explicitly add an empty entry for that migration scheme to the approval profiles nominated by those change packages.

To illustrate this modification, suppose the following situation. You request a change package migration; the system option and the migration scheme option for approval checking are both active, and the change package nominates an approval profile, but the approval profile does not contain an entry for the migration scheme.

Previously in this situation, CICS Configuration Manager allowed the migration.

Now, CICS Configuration Manager does not allow the migration. Now the approval profile must contain an entry for the migration scheme. The entry

can specify from zero to five approver roles. If the entry specifies no approver roles, CICS Configuration Manager allows the migration with no approvals, as before.

NEWCOPY batch command now supports phase-in
You can now specify PHASEIN=NO (the default) or PHASEIN=YES on the NEWCOPY batch command.

ISPF dialog pop-up window for remote system connections shows more information
Previously, when selecting remote system connections (for example, when installing resource definitions), the CICS Configuration Manager ISPF dialog displayed a pop-up window offering a list of remote system connection names. This list now offers more information about each connection, such as the VTAM APPLID of the remote CICS system and the connection status.

Special tracing for CCVA transaction when reporting a problem
The instructions for reporting a problem to IBM now include steps to generate a special trace of the CCVA transaction.

July 2009: V2.1

Describes new features introduced in CICS Configuration Manager V2.1:

Support for CICS Transaction Server V4.1
CICS Configuration Manager V2.1 includes support for new features introduced in CICS Transaction Server V4.1, including:

- Definition signature for resource definitions (attributes that contain details about when, how, and by whom a resource definition was defined or changed)
- New types of resource definition:
  - Application bundle (BUNDLE)
  - Atom service (ATOMSERVICE)
  - WebSphere® MQ Connection (MQCONN)
  - Java™ Virtual Machine server (JVMSERVER)

For more information on these new features, see the CICS Transaction Server documentation.

Working with full-function BAS objects
You can now use CICS Configuration Manager to create and maintain full-function BAS objects:

- Resource assignment (RASGNDEF)
- Resource assignments in resource description (RASINDSC)
- System link (SYSLINK)

Deployment analysis reports
Deployment analysis reports enable you to list or compare resource definitions in active CICS regions, CSD files, and CICSPlex SM data repositories, in various combinations. The reports help you to answer questions about your CICS environment, and avoid potentially costly surprises caused by unexpected differences. For example, the “cold start compare” deployment analysis report compares a set of “runtime” resource definitions (collected from an active CICS region) with a set of “candidate” resource definitions (stored in a CSD file, CICSPlex SM data repository, or combination of the two). This report helps you to answer the question: what will be the effect of cold-starting a CICS region?

Migration of commands

Previously, you could use change packages to migrate only resource definitions between CICS configurations. You can now also use change packages to perform the following commands after the migration of resource definitions:

Add Adds a resource definition to a resource group (RESGROUP) in a context-based target CICS configuration.

Remove

Removes a resource definition from a resource group in a context-based target CICS configuration.

Delete Deletes a resource definition from either a CSD-based or a context-based target CICS configuration.

CICS Explorer®

(Also available to users of CICS Configuration Manager V1.2.) CICS Explorer with the CICS Configuration Manager plug-in offers an Eclipse-based graphical user interface to many of the functions available in the CICS Configuration Manager TSO/ISPF user interface.

Change package external reference expanded to 32 characters

For improved compatibility with third-party change management systems, the external reference for a change package is now 32 characters.

ISPF dialog interface: XML trace to data set

As an alternative to displaying an on-screen XML trace of the SOAP API requests and responses that the CICS Configuration Manager ISPF dialog client exchanges with the CICS Configuration Manager server, the **Settings** action bar choice now allows you to save the XML trace to a data set.

Server setup: PLTPI entry no longer required

Previous releases of CICS Configuration Manager required you to add the server initialization program CCVIINIT to the post-initialization program list table (PLTPI), otherwise the server would not initialize correctly. You are no longer required to add CCVIINIT to the PLTPI. You can now start the CICS Configuration Manager server by either:

- Adding CCVIINIT to the PLTPI, as before

  or

- Calling CCVIINIT, or invoking the transaction CCVI, at any time after the server CICS region has started

Tip: After installing CICS Configuration Manager, if you use the sample installation JCL member CCVXSYSO again later to update CICS Configuration Manager system options (such as port numbers) , you can invoke transaction CCVI to re-initialize the CICS Configuration Manager server so that it uses the updated system options.

Server setup: CSDLSRNO SIT parameter

Previous releases of CICS Configuration Manager required you to specify the CICS system initialization (SIT) parameter CSDLSRNO=NONE. If the server is running under CICS TS V3.2 or earlier, you can now specify any value allowed by CSDLSRNO. From CICS TS V4.1, you can specify any value allowed by CSDLSRNO, with the following exception: if you specify the SIT parameter TRANISO=YES, then you cannot specify CSDLSRNO=NONE.

Processing change packages in batch: new EXTREF parameter

The following batch commands now allow you to refer to a change

package by either its ID or its external reference: READY, UNREADY, APPROVE, DISAPPROVE, MIGRATE, BACKOUT, INSTALL, and NEWCOPY.

SOAP API: new process parameter on List command to return all attributes
As an alternative to specifying a List command request containing restriction criteria for each attribute of a resource definition, you can now specify the process parameter `<AllAttributes>YES</AllAttributes>` to return all attributes.

SOAP API: enhancements to support packaged commands
The Add command, Remove command, and ReadyLst object have been enhanced to support change packages that contain commands.

November 2007: APAR update to V1.2

Describes new functions, introduced by the PTF for APAR PK48565, for reporting changes to resource definitions and cleaning up resource definitions (such as unnecessary duplicates):

Audit changes to resource definitions
The new batch CICS Resource Definition Changes Report shows changes to resource definitions that CICS Configuration Manager records in its journal.

View history of change package processing
The History processing option under ISPF dialog primary menu option **3 Packages** now provides additional details. For example, selecting a Migrate command on the History panel displays the command details, with the option of displaying a list panel of the resource definitions that the command updated. History details are also available for other change package processing commands.

Show only duplicate, unique, different, or missing resource definitions
The new Show action bar choice and primary command allow you to filter a list panel of resource definitions to show only duplicates, based either on their combination of name and resource type, or on a checksum calculated from their attribute values. Similarly, you can filter a list panel to show only unique resource definitions.

List panels under option **4.1 Multiple Configs** offer two additional choices:
Show different checksums
Shows resource definitions that have the same name and resource type but different checksum values.
Show missing names
Shows resource definitions whose combination of name and resource type exist in some but not all of the selected CICS configurations.

Analyze resource definitions to assist clean-up
New options under primary menu option **4 Reports** analyze relationships between resource definitions to help you clean up resource definitions; for example, identifying unused or redundant resource definitions. These new options report:
- Matching names (duplicate resource definitions)
- Matching checksums (different resource definitions that define the same resource)
- Orphan groups (groups that are not installed at CICS startup)
- Orphan CICSPlex SM resource definitions (that do not belong to any ResGroups)

- Shared CICSPlex SM resource definitions (that belong to multiple ResGroups)

Compare resource definitions based on significant attribute values

Option **4.6 Matching checksums** introduces the new CRITICAL checksum type, calculated from all attributes except those that are not critical to the operation of the resource, such as the description. This enables you to quickly compare resource definitions based on critical, or "significant", attribute values.

June 2007: support for CICS TS V3.2

This edition:

- Reflects support introduced by the PTF for APAR PK39975, for the new CICS Transaction Server for z/OS V3.2 resource types IPCONN and LIBRARY.

  For a complete list of resource types supported by CICS Configuration Manager, see Table 23 on page 337.
- Describes alternative methods for making the CICS Configuration Manager authorized program that generates PassTickets (CCVSCRPT) available to the CICS Configuration Manager ISPF dialog. For details, see "Authorize the PassTicket program libraries" on page 87.

March 2007: V1.2, third edition

Describes new functions introduced by the PTF for APAR PK32577:

List or package resource definitions in a change package without specifying a migration scheme

Prior to this PTF, to view a list of the resource definitions in a change package, or package (add or remove) resource definitions in a change package, you had to specify a migration scheme for the change package. Now you can perform these actions with or without specifying a migration scheme.

This is particularly useful when:

- You have used a change package in an export file to import resource definitions to a target CICS configuration, and now you want to view a list of the imported resource definitions. Prior to this PTF, you had to create a migration scheme whose name matched the target CICS configuration, and then specify that migration scheme when listing the contents of the imported change package.
- You want to add resource definitions to a change package without considering which migration scheme will be used with that change package. (For example, the users who package resource definitions might have no need to know which migration schemes will be used to migrate those resource definitions.)
- You want to see all resource definitions associated with the change package, regardless of migration scheme.

Add CSD list objects to change packages

You can now add lists (sets of groups, as defined in CSD files) to change packages. You can then migrate the lists from one CICS configuration to another. This enables you to manage changes to lists across CICS systems. Some restrictions apply to packaging lists that do not apply to other resource types: you cannot migrate a list to a CICS configuration that refers to a context. Also, note that packaging a list only adds the list object (a set of group names) to the change package, not the groups in the list.

Support for a mixture of RLS and non-RLS CSD files

Prior to this PTF, CICS Configuration Manager supported situations where either all CSD files used record-level sharing (RLS), or none used RLS, but not a mixture of both. Now, for each CICS configuration that refers to a CSD file, you can specify whether or not the CSD file uses RLS; CICS Configuration Manager accesses the CSD file accordingly.

Security checking for resource definitions

In addition to the security checking for API commands, security has been extended to protect individual resource definitions based on key details including group, type, and name. You can instruct CICS Configuration Manager to perform these checks in addition to, or instead of, the existing security checks for API commands.

Additional sample user exits

Additional sample user exits, with complete source code, demonstrate how to use CICS Configuration Manager server exit points to:

- Transfer export files via FTP (file transfer protocol)
- Send e-mail to change package approvers
- Enforce site standards for resource definition attributes

Show lists that contain a specific group

In the CICS Configuration Manager ISPF dialog interface, to show the lists/ResDescs to which a group/ResGroup belongs, you can enter the new line action **REL** ("related") next to a group/ResGroup.

Show groups that do not belong to a specific list, or to any CSD lists

In the CICS Configuration Manager ISPF dialog interface, to show the groups/ResGroups that do not belong to a list/ResDesc, you can enter the new line action **UNR** ("unrelated") next to a list/ResDesc.

Possible uses for this line action include identifying groups that do not belong to any of the lists specified by the system initialization (SIT) parameter GRPLIST, and so could be redundant.

When comparing two groups, select several resource definitions

In the CICS Configuration Manager ISPF dialog interface, when comparing two groups side-by-side, you can now enter the line action **S** (or **X**) next to several resource definitions, from either group, to display them together in a list panel. To select all resource definitions in the left-hand group, you can enter the new primary command **SL *** (or **S1 ***). To select all resource definitions in the right-hand group, enter **SR *** (or **S2 ***). To select all resource definitions in both groups, enter **S ***

Update all of your existing CICS configuration definitions in a single batch job

In addition to defining new CICS configurations, the DATATAKEUP batch command now allows you to update existing CICS configurations. This offers a timesaving alternative to the interactive ISPF dialog panels for updating CICS configurations.

Limit the number of resource definitions displayed

To avoid long response times, you can use CICS Configuration Manager ISPF dialog option **0 Settings** to set an upper limit on the number of resource definitions displayed by list panels.

July 2006: V1.2, second edition

Minor updates to correct and clarify the description of the journal housekeeping batch program.

June 2006: V1.2, first edition

Describes the new features introduced in this release:

Export and import resource definitions between sites
Export selected resource definitions to a file, transfer the file to a separately managed site (that may or may not have CICS Configuration Manager), and then import the resource definitions into the CICS systems at that site. Or import a file of resource definitions from separately managed sites (that may or may not have CICS Configuration Manager).

If both the exporting and importing site have CICS Configuration Manager, then, in addition to exporting and importing ad hoc selections of resource definitions, you can export and import change packages. This enables you to manage the migration of resource definition updates across multiple sites.

Define all of your CICS configurations in a single batch job
The DATATAKEUP batch command offers a timesaving alternative to the interactive ISPF dialog panels for defining CICS configurations. Rather than using the panels to define CICS configurations one at a time, you can use this command to define all of your CICS configurations in a single batch job.

Write user exit programs to extend and customize CICS Configuration Manager
Attach your own programs at exit points provided by the server.

Alter some attributes of resource definitions without affecting others
The Alter command is available via the CICS Configuration Manager API and also in the ISPF dialog, as the **ALT** line action. This is similar to the CICS **CEDA ALTER** command.

Rename or move resource definitions
Rename resource definitions, optionally moving the renamed resource definitions to another group. The Rename command is available via the CICS Configuration Manager API and also in the ISPF dialog, as the **REN** line action.

Filter the list of change packages
Filter the list of change packages to match criteria such as change package name, last command processed, last migration scheme used, last return code, last processing date, and last user ID to process the change package. You can also use the special filter values “APPROVE?” or “MIGRATE?” to list only those change packages that require approval or migration.

Use a domain name to connect to the CICS Configuration Manager server
Connect to the CICS Configuration Manager server using either a dotted-decimal IP address or a domain name.

Define search criteria to further restrict resource definition lists
In addition to restricting list panels of resource definitions with name, type, and group filters, you can further restrict these list panels to resource definitions that match specific combinations of attribute values.

Define custom checksums for comparing resource definitions
Select which attributes to use when calculating checksums for resource definitions.

Compare resource definition groups/ResGroups and lists/ResDescs
Compare a list panel of groups/ResGroups or lists/ResDescs using a checksum column, or compare two of these objects side-by-side.

Save resource definition lists to a data set
When viewing a panel that displays a selection list of resource definitions, enter **SAVE** on the command line to save the list to a data set.

Unload and reload journal records
Run the journal housekeeping batch program periodically to unload old records in the CICS Configuration Manager journal. You can also use this program to load records back into the journal.

Expand a list or ResDesc to show its resource definitions
Enter XR next to a list/ResDesc to show the resource definitions that belong to all of its groups/ResGroups.

API commands use object lists for improved performance
Several API commands have been enhanced to process a list of objects with a single command. This improves performance by reducing API traffic between client and server.

September 2005: APAR updates to V1.1

Describes updates for the following authorized program analysis reports (APARs):

PK09306
PK07610
PK06987
PK06983
PK05168
PK04062

Here is a summary of the updates:

Install command enhancements

You can now:

- Install resource definitions from a CSD file into an active CICS region. (Previously, you could install resource definitions only if they were stored in a CICSPlex SM data repository.)

  To support this enhancement, you need to:

  – Introduce new CICS Configuration Manager remote agent programs into CSD-based CICS regions, allowing the CICS Configuration Manager server to remotely invoke CICS CEDA INSTALL commands on those regions.
  – Define multiregion operation (MRO) or intersystem communication (ISC) connections between the CICS Configuration Manager server CICS region and the CSD-based CICS regions.
  – In CICS Configuration Manager, add the names of these connections to the properties of the CICS configuration records.
- Install individual resource definitions by entering an **I** line action next to them in the ISPF dialog. (Previously to install resource definitions, you had to first add them to a change package, and then install the change package.)

Discard command
Removes installed resource definitions from an active CICS region. The Discard command is available via the CICS Configuration Manager API and also in the ISPF dialog, as the **DSC** line action.

Newcopy command
Makes an active CICS region use a new version of a program. The

Newcopy command is available via the CICS Configuration Manager API and batch interface, and also in the ISPF dialog, as the **N** line action.

Part 1. Getting started

These topics describe concepts that you need to understand, and tasks that you need to perform, before you start using CICS Configuration Manager.

Chapter 1. Introduction

CICS Configuration Manager provides a single point of control for editing, reporting, and migrating CICS resource definitions across an enterprise.

The main components of CICS Configuration Manager are the *server*, which is a CICS application that can read from and write to CICS system definition (CSD) files and CICSPlex SM contexts, and the supplied *clients*: an interactive ISPF dialog interface and a batch command interface. The clients communicate with the server by exchanging SOAP messages over an HTTP network. For a more detailed description of these and other components of CICS Configuration Manager, see "Components" on page 10.

As an alternative to using the supplied clients, you can use CICS Explorer with the CICS Configuration Manager plug-in, or you can develop your own clients. CICS Explorer with the CICS Configuration Manager plug-in provides an Eclipse-based graphical user interface to many of the CICS Configuration Manager functions available in the supplied ISPF user interface. CICS Explorer also provides an integrated interface to various CICS functions and other CICS tools. For more information about CICS Explorer and the CICS Configuration Manager plug-in, see www.ibm.com/cics/explorer/.

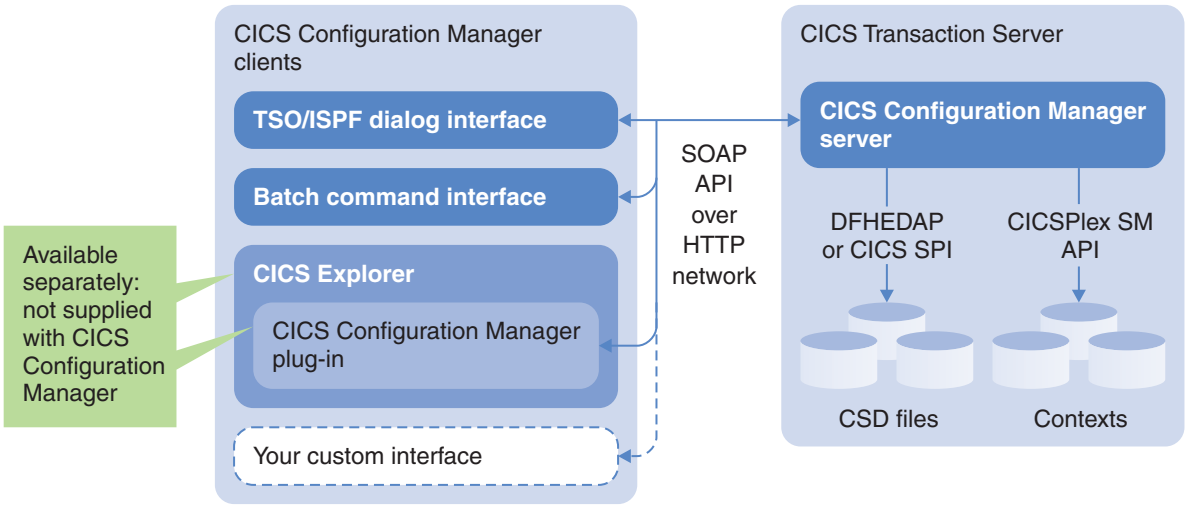


Figure 1. Overview of CICS Configuration Manager main components

You can use CICS Configuration Manager to perform the following tasks:

- Edit resource definitions in a CSD file or a context
- Compare resource definitions, groups, ResGroups, lists, and ResDescs
- List sets of runtime resource definitions from active CICS regions, or sets of candidate resource definitions stored in CSD files or contexts, or compare these sets in any combination; for example, to help understand the effect of cold-starting a CICS region, you can compare a set of runtime resource definitions with a set of candidate resource definitions
- Report resource definitions that match your search criteria, across one or more CSD files or contexts
- Migrate resource definitions from one CSD file or context to another

- Migrate commands that operate on resource definitions (for example, to delete obsolete resource definitions)
- Systematically migrate resource definitions and commands through multiple CICS environments
- Optionally: require approval from authorized users before allowing a migration
- Back out migrations
- Audit changes to resource definitions
- Recover historical versions of resource definitions
- Perform actions on active CICS regions:
  - Install resource definitions
  - Discard resource definitions
  - "Newcopy" or "phase in" (make new versions of programs available)
- Export and import resource definitions and commands between separately managed remote sites

Why resource definitions need managing

Every CICS region refers to a set of resource definitions. Typically, organizations maintain each of their CICS regions in at least three separate environments: development, test, and production. Changes to resource definitions are migrated from development to test, and then from test to production. As shown in Figure 2, even if each environment contains only one CICS region, this means three sets of resource definitions, and two migrations to move each change into production.

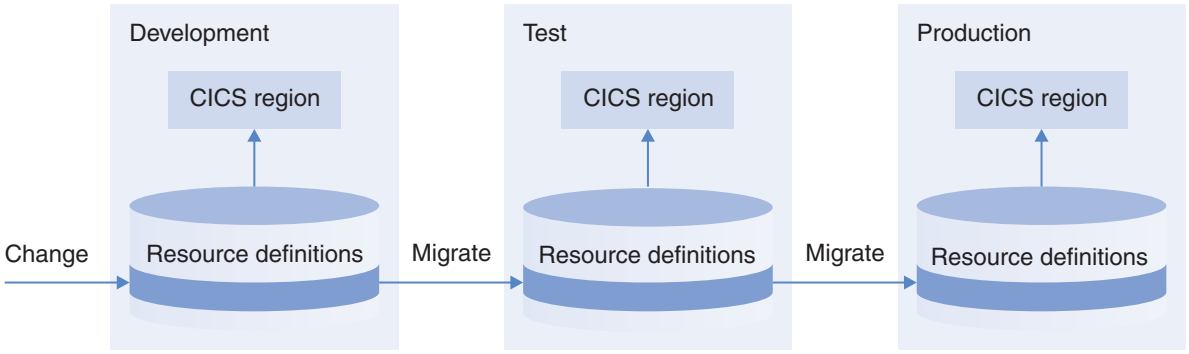


Figure 2. Migrating resource definitions between development, test, and production CICS environments

Real-life systems are typically much more complex, but even a simple system such as this raises issues. For example, if your developers enhance a CICS transaction, requiring a new resource definition for an additional file:

- How do you migrate the new resource definition from development to production?
- Do you simply copy the complete set of resource definitions from one environment to another?
- What if the resource definitions in each environment are intentionally different? For example, what if the high-level qualifiers for the file are different in each environment (`DEV.`, `TEST.`, and `PROD.`): do you edit the resource definitions for each environment separately?
- How do you ensure that you migrate only the changes that are ready for migration?

- What if some environments are controlled by CICSPlex SM, but not others? Do you need to use different tools to update these environments?
- How do you back out a change?
- How do you keep a systematic record of changes, for reporting and auditing?
- How do you avoid overwriting unexpected changes in the environment you are migrating to?
- How do you compare resource definitions?
- Who approves the migration?

These issues grow as your CICS system topology becomes more complex. Your organization might have several development, test, and production environments, with different numbers of CICS regions in each environment, and a variety of migration paths.

You might have resource definitions that are shared by regions in one environment, but not in another. So you might need to migrate resource definitions not just from one CSD file to another, but also from one CSD file to many. For example:

- Your development environment might combine the typical CICS responsibilities of application owning, file owning, and terminal owning into a single region, with resource definitions stored in a single CSD file.
- Your test environment might assign these responsibilities to separate regions (AOR, FOR, TOR) sharing a single CSD file.
- Your production environment might have separate CSD files for each AOR, FOR, and TOR.

As shown in Figure 3, when migrating from a shared CSD file to unshared CSD files, you need to ensure that you migrate the resource definitions to the appropriate locations.

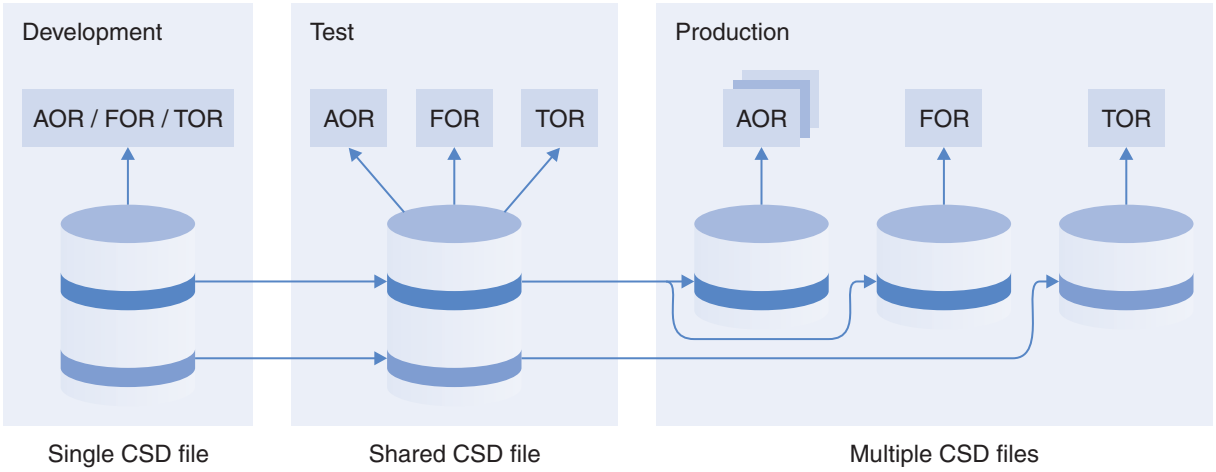


Figure 3. Migrating resource definitions from shared to unshared CSD files

Environments with many CICS regions often use CICSPlex SM, which stores resource definitions in data repositories rather than CSD files. So you might need to migrate resource definitions between CSD files and contexts in CICSPlex SM data repositories:

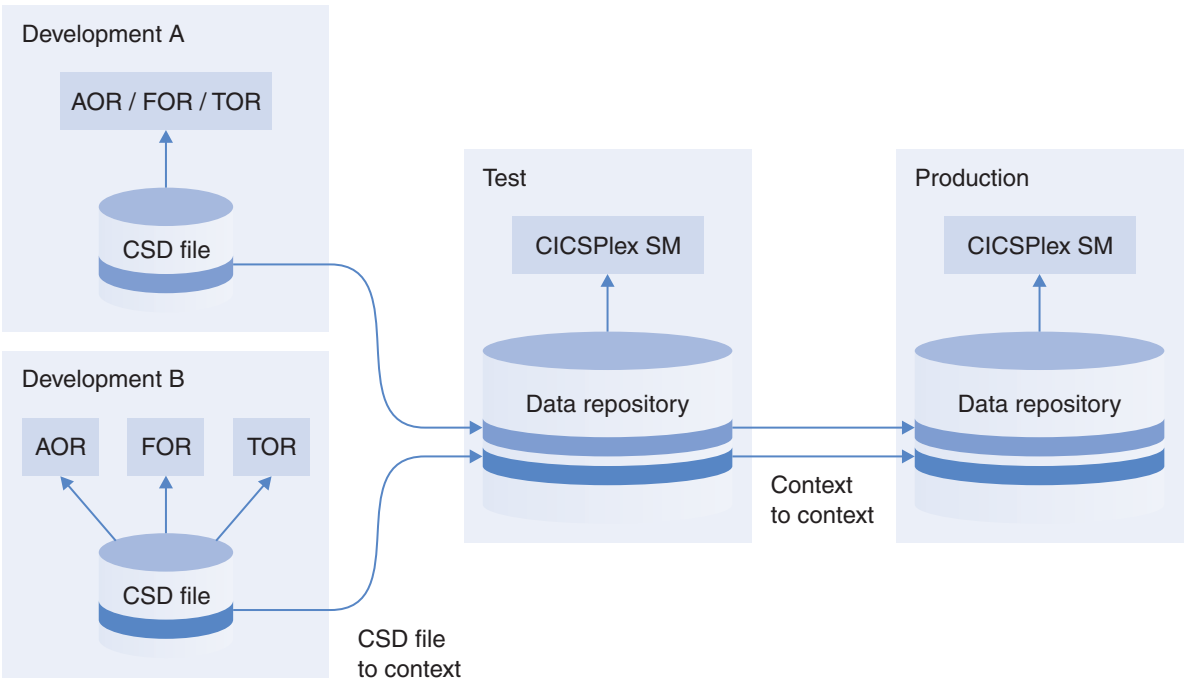


Figure 4. Migrating resource definitions from CSD files to CICSPlex SM data repository contexts

CICS Configuration Manager addresses all of these issues.

Benefits

CICS Configuration Manager offers the following benefits:

A single point of control for resource definitions across your enterprise
From a single TSO/ISPF session, you can change resource definitions in any CSD file or CICSPlex SM context that is accessible to CICS Configuration Manager.

A common interface to CSD files and CICSPlex SM contexts
In CICS Configuration Manager, you define a *CICS configuration* for each CSD file or CICSPlex SM context that you want to manage. Thereafter, you refer only to the CICS configuration; CICS Configuration Manager transparently handles the differences between CSD files and CICSPlex SM contexts.

Enhanced editing of resource definitions, using a TSO/ISPF interface
The resource definition editor provided by CICS Configuration Manager has many advantages over the resource definition online (RDO) CEDA transaction provided by CICS. For example:

- Edit resource definitions while the CICS regions that use those definitions are active or inactive.
- Edit RDO definitions in CSD files or BAS definitions in CICSPlex SM data repositories.
- Get extensive field-sensitive help for all resource definition attributes.
- View, compare, and recover historical versions of resource definitions.
- Filter resource definitions using a combination of criteria: list, group, type, and name; attribute values; and similarities between resource definitions (for example, to identify duplicates).

- Explore the logical hierarchy of a CICS configuration. For example, you can expand a CICS configuration to show its lists (or ResDescs, for CICSPlex SM); expand a list to show its groups (or ResGroups); expand a group to show its resource definitions; and expand a resource definition to show its attributes.

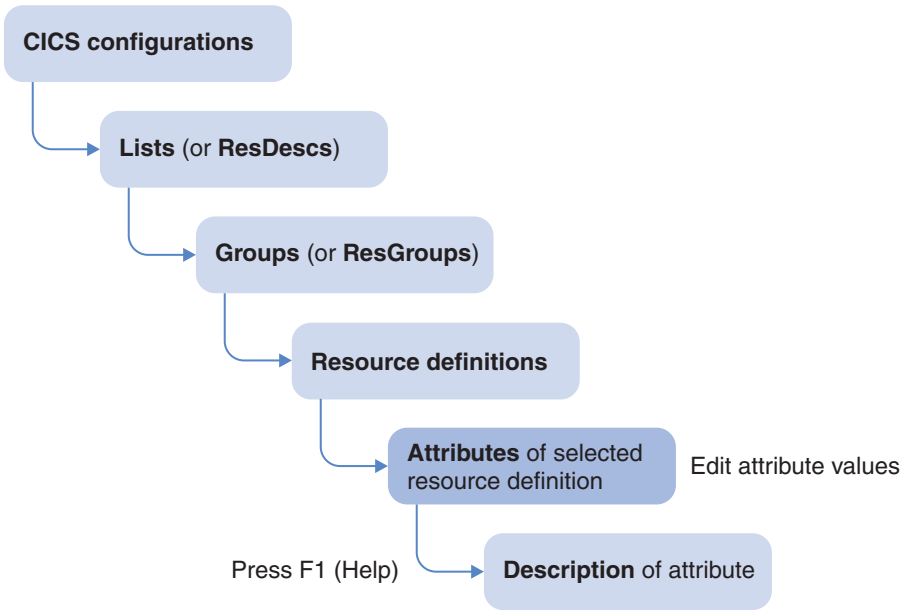


Figure 5. Expanding a CICS configuration hierarchy

Copy a set of resource definitions across multiple CICS configurations with a single command

In CICS Configuration Manager, you can define one or more pairs of source and target ("from" and "to") CICS configurations as a *migration scheme*, and you can group resource definitions into a *change package*. With a single command, you can migrate a change package according to a migration scheme, copying or moving a set of resource definitions across multiple CICS configurations, regardless of whether the CICS configurations refer to CSD files or contexts. You can also back out (undo) a migration with a single command.

Transform resource definitions during migration

For each pair of source and target CICS configurations in a migration scheme, you can select a set of *transformation rules*. These rules can adjust a resource definition during migration to match its target environment.

For example, if a resource definition in your development environment specifies a file as `SYSDEV.VSAM.FILEA`, but the same file in the test environment is named `SYSTEST.VSAM.FILEA`, then you can define a rule to transform file names that match the mask `*DEV.*` to `*TEST.*`.

You can also use transformation rules to search and replace within a single CICS configuration, by using a migration scheme with the same source and target CICS configuration.

You can specify criteria that limit the resource definitions to which a transformation rule applies. You can also specify processing options for a rule, to allow or disallow further rules to be applied, or to exclude certain resource definitions from migration.

Detect unexpected changes to resource definitions

Before migrating a change package, you must mark it as "ready", indicating that you want no further edits to its resource definitions prior to migration.

If you attempt to migrate or install a change package that is marked as "ready", but the resource definitions in the source CICS configurations have subsequently changed, or the migration scheme has changed, then CICS Configuration Manager does not allow the migration. This protects you from migrating unexpected changes.

Optionally: require approval before migrating

You can associate an *approval profile* with each change package, reflecting its sensitivity or potential impact (such as minor, major, or emergency). An approval profile specifies up to five *approver roles* for each migration scheme, identifying the types of user (such as developer, tester, or manager) who must approve a change package before it can be migrated. In addition to being marked as ready, each change package must be approved by all of the applicable approver roles before it can be migrated.

Report resource definitions that match specified criteria

Select from a set of predefined criteria, such as "transactions using program *name*" (where all you have to specify is the program name), or define your own combination of criteria.

Compare resource definitions

Compare resource definitions from one or more CICS configurations, filtered by name, type, and group. For each resource definition, the comparison shows a checksum of predetermined attribute values. Identical checksums indicate identical attribute values; different checksums indicate that some attribute values are different.

If you notice that two resource definitions have different checksums, then you can select the resource definitions, and compare their attribute values side-by-side, with differences highlighted.

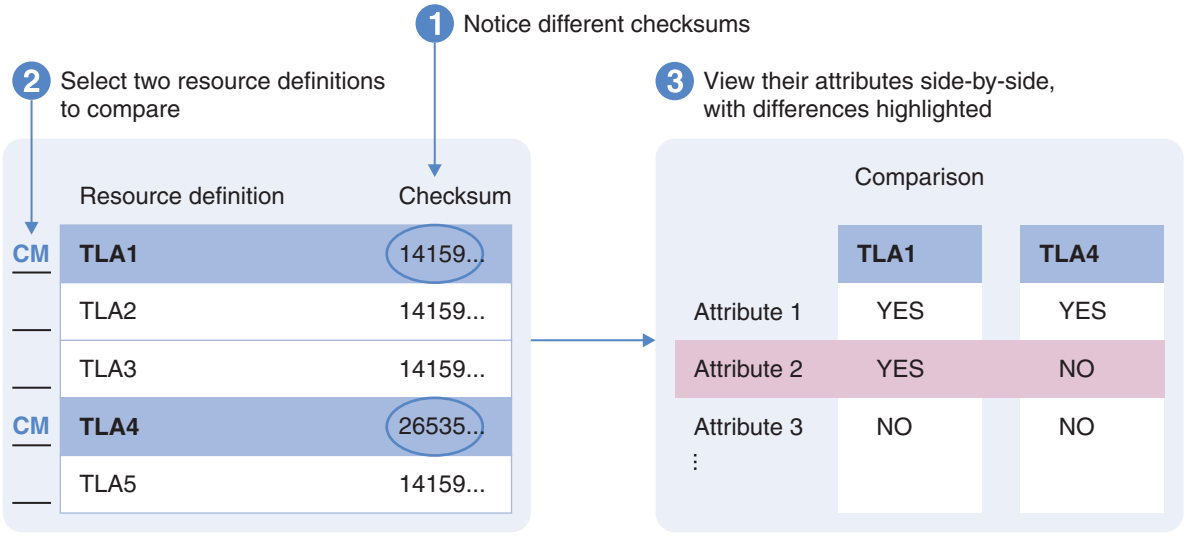


Figure 6. Compare resource definitions side-by-side

Undo or redo changes to resource definitions

Whenever you use CICS Configuration Manager to change (create, update, or delete) a resource definition, CICS Configuration Manager records the

change in its journal. For each change, CICS Configuration Manager records the state of the resource definition before the change (*before image*) and the state after the change (*after image*). These before/after images are known collectively as historical versions. You can view, compare, and recover historical versions. You can recover historical versions individually, or you can specify criteria to identify a set of changes, and then either reinstate the before images (to undo the changes) or the after images (to redo the changes).

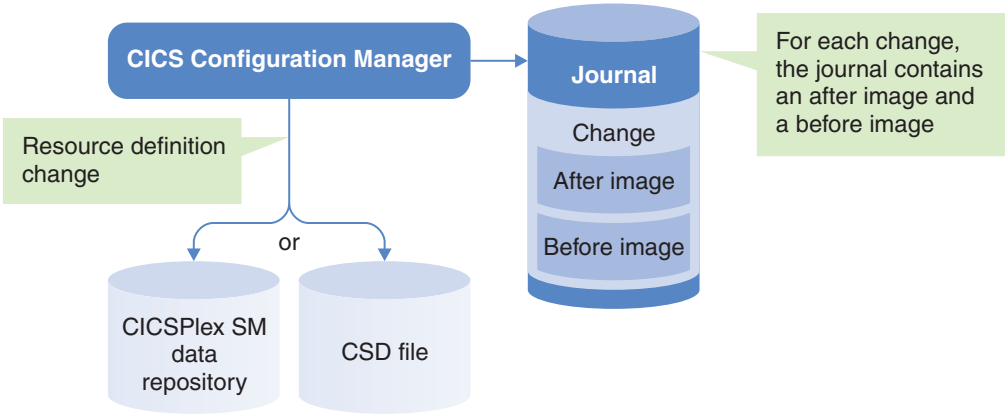


Figure 7. CICS Configuration Manager records resource definition changes in a journal

Report changes to resource definitions: what, when, who, how, and why

The CICS Resource Definition Changes Report shows changes to resource definitions that CICS Configuration Manager records in its journal. You can use this report to help audit changes: what resource definitions were changed, including attribute details; when the change occurred; who made the change; and how they made the change, such as by editing the resource definition, or by copying a resource definition, or by migrating a change package. If you use change packages to migrate resource definitions, this report can also help answer why changes were made, based on the change package description ("Payroll updates for tax act") and the migration scheme used ("development to test").

Help answer questions such as: what will be the effect of a cold start?

CICS Configuration Manager batch deployment analysis reports enable you to list or compare sets of installed resource definitions collected from an active CICS region, and sets of resource definitions that CICS would install when cold starting a CICS region. These reports help answer questions such as:

- What changes will the next cold start introduce?
- Will adding a new group or list to the installation group sequence create problems at CICS start time?
- Are my cloned CICS regions the same?
- Are these resource definitions consistent with one another?

For the last question above, CICS Configuration Manager performs a superset of the checks performed by the CICS CEDA CHECK command. In addition to producing a batch report of these checks, you can perform these checks via the CICS Configuration Manager ISPF dialog, and then interactively explore and solve any issues with the resource definitions.

You can define sets of resource definitions by specifying a group sequence that is similar to the CICS system initialization parameter GRPLIST, but with more flexibility: you can define a combination of lists and individual groups, and you can combine these with resource definitions from a CICSPlex SM data repository. This enables you to easily and quickly simulate different scenarios, such as the effect of changes to the group sequence at CICS start time, without making those changes to running CICS systems.

Integrate CICS Configuration Manager with your own applications
Batch and SOAP interfaces allow you to use the features of CICS Configuration Manager in your own applications.

Components

CICS Configuration Manager consists of a client, a server, an agent, a repository, and a journal:

Client A user interface that allows you to send commands to, and receive responses from, the CICS Configuration Manager server. The client and server communicate by exchanging SOAP messages via TCP/IP sockets.

CICS Configuration Manager is supplied with two clients: an ISPF dialog and a batch command interface. As an alternative to using the supplied clients, you can use CICS Explorer with the CICS Configuration Manager plug-in, or you can develop your own custom clients.

CICS Explorer and the CICS Configuration Manager plug-in are available separately: they are not supplied with CICS Configuration Manager. CICS Explorer with the CICS Configuration Manager plug-in provides an Eclipse-based graphical user interface to many of the CICS Configuration Manager functions available in the supplied ISPF user interface. CICS Explorer also provides an integrated interface to various CICS functions and other CICS tools. For more information about CICS Explorer and the CICS Configuration Manager plug-in, see www.ibm.com/cics/explorer/.

For information about developing your own custom clients, see Chapter 22, “Using the SOAP API,” on page 323.

Server A set of CICS programs that performs the actions requested by a client.

Repository
A VSAM key-sequenced data set (KSDS) that stores current CICS Configuration Manager data:
- System options
- CICS configurations
- Migration schemes
- Approval profiles
- Transformation rules
- Change packages and related records

Journal
A VSAM key-sequenced data set (KSDS) that records historical CICS Configuration Manager data:
- Summaries of processing events, such as updates to resource definitions
- “Before” and “after” copies of CICS resource definitions that have been updated by CICS Configuration Manager

Agent A CICS Configuration Manager transaction that can perform the following actions on active CSD-based CICS regions:

- Installation-type actions, such as install, discard, and newcopy of resource definitions
- Collection of runtime resource definitions for deployment analysis reporting

When a CICS Configuration Manager client requests one of these actions, the server uses a CICS distributed program link (DPL) to invoke the agent in that region. The agent then performs the action, such as the installation-type actions CICS CEDA INSTALL, CICS EXEC DISCARD, or CICS EXEC SET PROGRAM (specifying either NEWCOPY or PHASEIN).

This agent is required only if you want to perform actions on active CICS regions whose resource definitions are stored in a CSD file. You need to configure the agent within these CICS regions. This agent is not used for CICS regions that are managed by CICSPlex SM; for those regions, CICS Configuration Manager uses the CICSPlex SM API to perform these actions.

The following figure shows the components of CICS Configuration Manager and how they fit into your existing system environment:

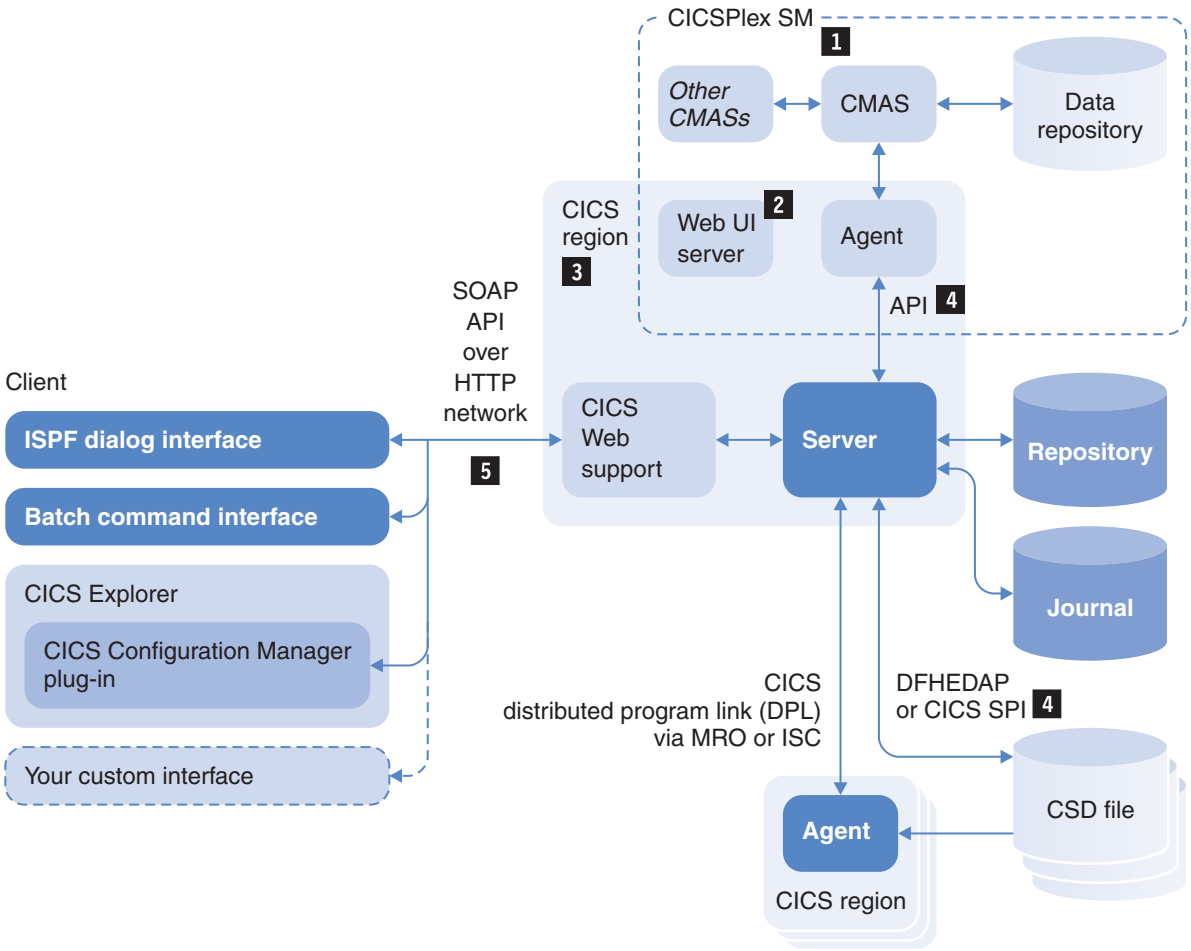


Figure 8. CICS Configuration Manager components

1 CICS Configuration Manager does not require CICSPlex SM. If your system uses CICSPlex SM, then you can use CICS Configuration Manager to manage resource definitions stored in CICSPlex SM data repositories.

The CICSPlex SM agent and the CICS Configuration Manager agent are different software.

2 The CICSPlex SM Web UI server plays no role in CICS Configuration Manager. It appears in this figure because, if your system uses CICSPlex SM, you may choose to install the CICS Configuration Manager server in the same CICS region as the Web UI server. Both the Web UI server and the CICS Configuration Manager server require CICS Web support; if you already have the Web UI server installed, you may choose to use the existing CICS Web support in that region for the CICS Configuration Manager server.

3 The release level of CICS Transaction Server that runs the CICS Configuration Manager server must be the *same as or later than* the release levels of CICS Transaction Server that manage the CSD files or the CICSPlex SM data repositories you want to use with CICS Configuration Manager. If your system uses CICSPlex SM, then the release level of CICS Transaction Server that runs the CICS Configuration Manager server must be the *same as* the release level of CICS Transaction Server that runs the local CMAS. For an illustration of these requirements, see Figure 40 on page 62.

For example, if you want to use CICS Configuration Manager to edit resource definitions in a CSD file that is used by CICS Transaction Server for z/OS, V2.3, then the CICS Configuration Manager server must be running under CICS Transaction Server for z/OS, V2.3, or later.

4 The CICS Configuration Manager server only uses existing, proven methods to update resource definitions:

- To update resource definitions stored in CSD files, the CICS Configuration Manager server uses one of the following methods, depending on the release of CICS Transaction Server for z/OS that the CICS Configuration Manager server is running under:
  - CICS Transaction Server for z/OS, V4.1, or earlier: the CICS Configuration Manager server uses the CICS-supplied DFHEDAP program. This is the same program used by CICS RDO transactions such as CEDA.
  - From CICS Transaction Server for z/OS, V4.2: the CICS Configuration Manager server uses CICS system programming interface (SPI) commands.

  The CICS Configuration Manager server dynamically allocates the DFHCSD ddname to refer to the CSD file that it needs to access. The server can access CSD files using VSAM record-level sharing (RLS) mode or non-RLS mode.
- To update resource definitions stored in CICSPlex SM data repositories, the CICS Configuration Manager server uses the CICSPlex SM API.

5 CICS Configuration Manager provides its own built-in SOAP support. However, if you run the server under CICS Transaction Server for z/OS, V2.2 or V2.3, with the SOAP for CICS feature, then CICS Configuration Manager uses that instead. For more information about the CICS Configuration Manager SOAP interface, see Chapter 22, “Using the SOAP API,” on page 323.

Prerequisites

CICS Configuration Manager requires a system running these products:

- z/OS, V1.2, or later
- One of the following editions of CICS Transaction Server:
  - CICS Transaction Server for z/OS, V4.1 or V4.2
  - CICS Transaction Server for z/OS, V3.1 or V3.2
  - CICS Transaction Server for z/OS, V2.2 or V2.3
  - CICS Transaction Server for OS/390®, V1.3

Concepts

Before using CICS Configuration Manager, you need to understand its basic concepts. The list below is a condensed introduction. For more detailed information, see the topics on each concept.

If you do not plan to use change packages to migrate resource definitions between CICS environments, the only new concept you need to understand is the *CICS configuration*:

- To insulate you from the differences between CSD files and CICSPlex SM contexts, CICS Configuration Manager introduces CICS configurations. A CICS configuration is a name that you use to refer to the location of resource definitions, instead of the data set name of a CSD file or the name of a context. When using CICS Configuration Manager, instead of referring directly to CSD files or contexts, you refer to CICS configurations, and CICS Configuration Manager handles the underlying differences. Before you can use CICS Configuration Manager to work with resource definitions, you need to define a CICS configuration for each of the CSD files or contexts in which those resource definitions are stored.

If you plan to use change packages, you also need to understand the following concepts:

- Typically, organizations migrate resource definitions between environments according to well-defined paths: for example, from development to the test environment, and then from test to production. In CICS Configuration Manager, you define these *migration paths* in *migration schemes*. Each migration path identifies a pair of *source* and *target* CICS configurations. A migration scheme can define several migration paths.
- To migrate a change package, you select the appropriate migration scheme, depending on the environments that you want to migrate between. For example, to migrate a change package from development to the test environment, you select a migration scheme whose migration paths refer to your development CICS configurations as the source and your test CICS configurations as the target. To migrate a change package from test to production, you select a migration scheme that refers to test as the source and production as the target.
- A *change package* identifies a set of resource definitions that you want to migrate, a set of commands that you want to migrate, or both. Adding a resource definition or a command to a change package is known as *packaging*.
- A change package can refer to resource definitions in several CICS configurations. Migrating a change package migrates only those resource definitions that are in the source CICS configurations of the selected migration scheme. Any other resource definitions in the change package are ignored.
- You can also package the following commands:

Add Adds a resource definition to a resource group (RESGROUP) in a context-based target CICS configuration.

Remove
Removes a resource definition from a resource group in a context-based target CICS configuration.

Delete Deletes a resource definition from either a CSD-based or a context-based target CICS configuration.

- Before migrating a change package, you must mark it as *ready*. This prevents you from migrating unexpected changes (such as edits to resource definitions that occurred after you marked the package as ready).
- After migrating a change package, CICS Configuration Manager automatically adds to the change package any migrated resource definitions and commands. This behavior is known as *propagation*. Propagation allows you to reuse a change package with different migration schemes, progressively migrating resource definitions and commands from one environment to the next: for example, from development to test, and then from test to production.
- You can undo ("back out") change package migrations.
- Change packages can require approval by up to five *approver roles* defined in an optional *approval profile*.
- Migration schemes can refer to *transformation rules* that can alter resource definition attributes and commands during migration, or block migration of certain resource definitions and commands.
- You can use a change package to perform install, discard, or newcopy actions on active CICS regions.
- Instead of referring to a CSD file or a context, a CICS configuration can refer to an *export file*. You can copy or migrate resource definitions to an export file, transfer the export file to a separately managed system at a remote site, and then import the resource definitions into a CSD file or a context on that importing system. If you migrated (rather than copied) the resource definitions to the export file, then the export file preserves the change package details, enabling you to "register" (re-create) the change package on the importing system, and continue migrating it onwards through the environments on the importing system. You can also migrate commands to an export file.

CICS configurations

When you use CICS Configuration Manager to work with resource definitions, rather than referring explicitly to the CSD file or the CICSPlex SM context that contains the resource definitions, you refer to the name of a *CICS configuration*. A CICS configuration is a record in the CICS Configuration Manager repository that refers to a CSD file, a context, or an export file. Using CICS configurations:

- Insulates you from the differences between CSD files and contexts. This allows you to work with resource definitions without needing to know how or where they are stored.
- Enables you to change the data set name of a CSD file, or the location of a context, without interrupting workflow in CICS Configuration Manager. For example, if you upgrade to a new version of CICS, and this involves changing the data set names of your CSD files, then all you need to do in CICS Configuration Manager is update the CICS configuration to refer to the new data set names.
- Enables you to define security rules for accessing resource definitions based on a CICS configuration name, offering a level of abstraction from the underlying CSD file or context. If you change the data set name of a CSD file, or the

location of a context, you do not need to update the rules. For details, see “Restricting access to API commands and resource definitions” on page 107.

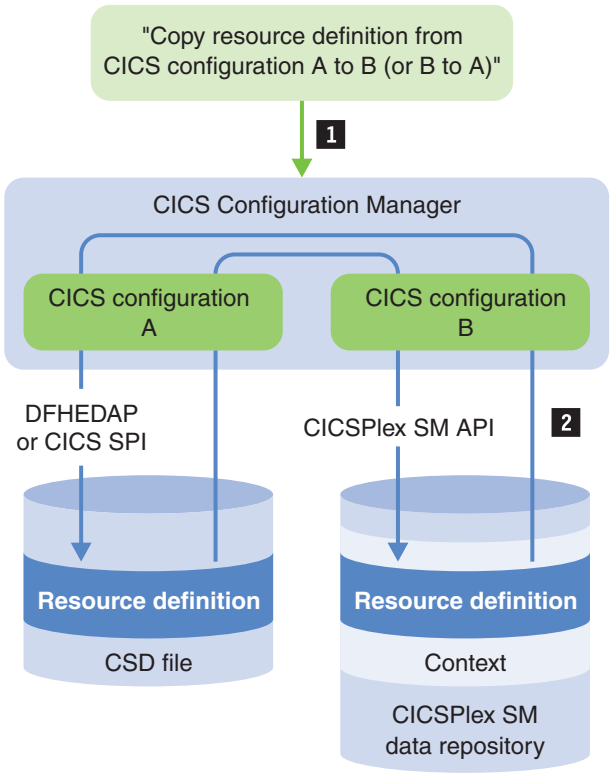


Figure 9. CICS configurations: a common interface to CSD files and CICSPlex SM data repositories

1 You instruct CICS Configuration Manager to copy a resource definition between any combination of two CICS configurations. For example:
- Two CSD files
- A CSD file and a context
- Two contexts in different data repositories
- Two contexts in the same data repository

2 CICS Configuration Manager handles underlying differences between CICS configurations, using proven updating methods:
- To update resource definitions stored in CSD files, CICS Configuration Manager uses one of the following methods, depending on the release of CICS Transaction Server for z/OS that the CICS Configuration Manager server is running under:
  - CICS Transaction Server for z/OS V4.1, or earlier: CICS Configuration Manager uses the CICS-supplied DFHEDAP program
  - From CICS Transaction Server for z/OS V4.2: CICS Configuration Manager uses CICS system programming interface (SPI) commands
- To update resource definitions stored in CICSPlex SM data repositories, CICS Configuration Manager uses the CICSPlex SM application programming interface (API).

CICS configurations as offline staging areas

The CSD file or context that a CICS configuration refers to does not need to be associated with an active CICS system. It may be merely a staging area for resource definition requests from application developers. These requests may be migrated, after approval, to active test CICS systems. In this way, CICS administrators can control the definition of resources across all CICS systems.

Migration schemes

A migration scheme defines one or more migration paths. Each migration path refers to a pair of CICS configurations: a source CICS configuration and a target CICS configuration. The source CICS configuration identifies where you want to migrate from; the target CICS configuration identifies where you want to migrate to.

When you issue the command to migrate a change package, you specify the migration scheme that you want to use. CICS Configuration Manager copies resource definitions according to the migration paths in the migration scheme.

For example, Figure 10 shows a change package containing two resource definitions from different CICS configurations, DEVA and DEVAB, and a migration scheme containing three migration paths.

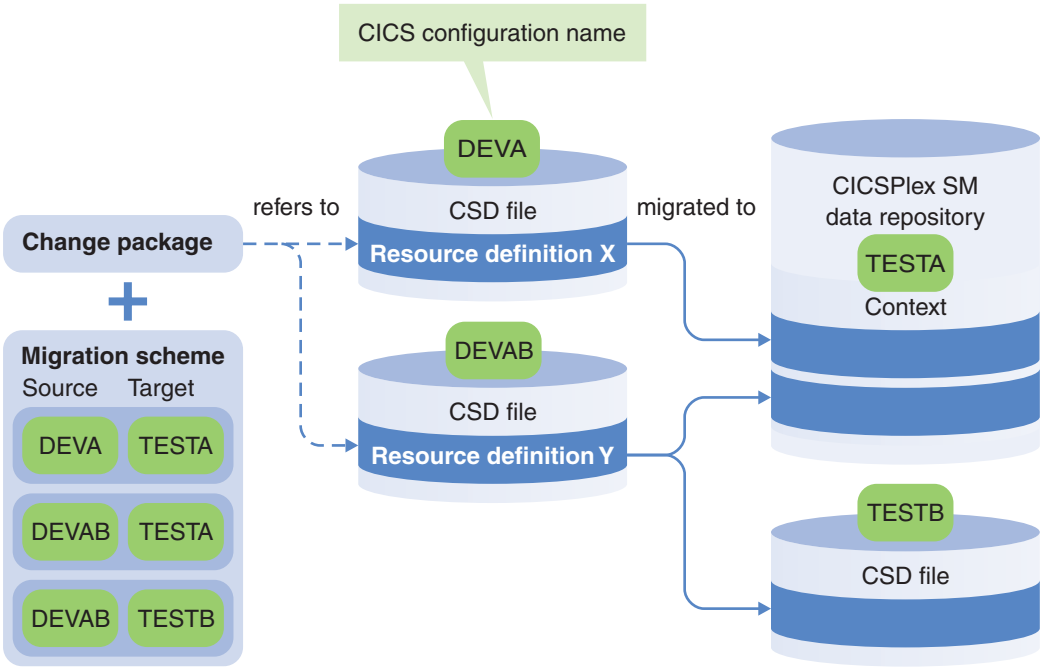


Figure 10. Example: migrating a change package

In this example, CICS Configuration Manager copies:

1. Resource definition X from DEVA to TESTA
2. Resource definition Y from DEVAB to TESTA
3. Resource definition Y from DEVAB to TESTB

For each migration path, you can specify a "delete at source?" option. If you specify "yes", migration effectively *moves* rather than *copies* resource definitions: after copying resource definitions to the target CICS configuration, CICS Configuration Manager deletes them from the source CICS configuration. The default value is "no" (do not delete at source). If the source CICS configuration refers to an export file, you must specify "no".

Deleting at source suits migration scenarios such as the following:

- You have a CSD file that you use only as a work file for creating and editing resource definitions, not as the DFHCSD file for any active CICS systems. After promoting (migrating) resource definitions from this work file to other target CSD files or contexts, you want the resource definitions to be deleted from the work file. The work file is a staging area: it only contains resource definitions that have not yet been promoted.
- You are implementing a CICSPlex SM BAS alternative to using CSD files, and you want to move resource definitions from CSD files to a CICSPlex SM data repository.

Change packages

A change package can identify a set of resource definitions that you want to process together, or it can contain a set of commands that you want to process together, or both. You can process a change package to:

- *Migrate* resource definitions, and the following commands, between CICS configurations:
  Add Adds a resource definition to a resource group (RESGROUP) in a context-based target CICS configuration.
  Remove
  Removes a resource definition from a resource group in a context-based target CICS configuration.
  Delete Deletes a resource definition from either a CSD-based or a context-based target CICS configuration.
- *Install* resource definitions in an active CICS region (the region must either be managed by CICSPlex SM or be running the CICS Configuration Manager agent)
- *Back out* (undo) changes after migrating

For example, suppose that you are a CICS application developer, and you are enhancing an existing CICS application. The enhancements involve altering existing resource definitions and adding new resource definitions. You have made these changes in your development environment, and now you want to migrate them to your test environment. By adding the altered or new resource definitions to a change package, you can migrate, install, and, if required, back out these changes together. If the enhancements make some existing resource definitions redundant, you can include commands in the change package to delete those resource definitions from the test environment when you migrate the change package from development to test. Backing out the change package "undoes" the delete commands, reinstating the deleted resource definitions to the test environment.

A change package does not *contain* resource definitions; rather, it contains *selection keys* that refer to resource definitions stored in a CSD file or a CICSPlex SM context. A selection key identifies a resource definition by its name, group, type, and CICS configuration.

CICS Configuration Manager does not keep its own copy of current resource definitions; these remain in the CSD file or the CICSPlex SM context. However, when you migrate a change package, CICS Configuration Manager writes in its journal "before" and "after" images of the resource definitions from the affected CICS configurations. This enables CICS Configuration Manager to back out migrations.

Migration of resource definitions

To migrate a set of resource definitions between CICS configurations, follow these steps:

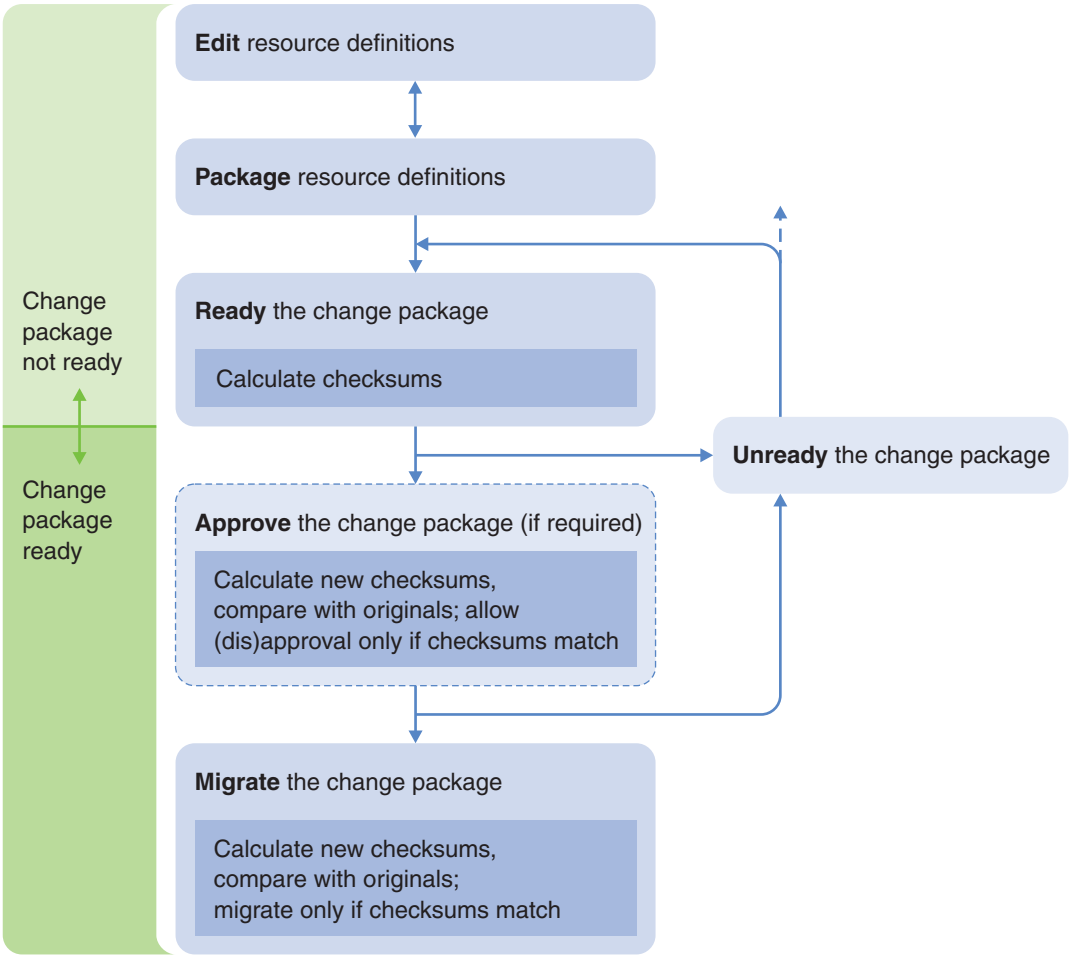


Figure 11. Overview of change package migration

Edit Typically, before migrating resource definitions from one environment to another, you edit the resource definitions in the first environment. For example, before migrating resource definitions from a development system to a test system, you typically edit the resource definitions in the development system. Before proceeding, you confirm that the development system works after the edit.

Package
You "package" resource definitions by adding them to a change package. This allows you to migrate a set of resource definitions together.

In addition to packaging resource definitions that refer to individual resources, such as programs and files, you can also package lists (sets of

groups, as defined in CSD files). You can then migrate the lists from one CICS configuration to another. This enables you to manage changes to lists across CICS systems. Some restrictions apply to packaging lists that do not apply to other resource types: you cannot migrate a list to a CICS configuration that refers to a context. Also, note that packaging a list only adds the list object (a set of group names) to the change package, not the groups in the list.

Ready When you are satisfied with the resource definitions and wish to migrate them to another CICS environment, you mark the change package as "ready" for a particular migration scheme. This indicates that you want no further edits to the change package prior to migration.

Approve

Only change packages that are "ready" can be approved.

If a change package requires approval, then it must be "fully approved" before it can be migrated: all of the applicable approver roles must have approved the change package.

Approval is not a "for/against" voting system: approver roles either approve a change package, or withhold approval. An approver role can only disapprove a change package that they have previously approved: disapproving the change package *removes the approval*.

Unready

Suppose that a change package has been marked as ready, but you want to postpone its approval or migration. To do this, you mark the change package as "unready", preventing it from being approved or migrated. Later, when you want to approve or migrate the change package, you mark it as ready again. If any approver roles had approved the change package before it was marked as unready, then, when you mark the change package as ready again, these approvals are removed, even if none of the resource definitions in the change package have changed since it was first marked as ready.

Migrate

When you issue the command to migrate the change package, CICS Configuration Manager:

1. Confirms that the change package is still ready (has not changed since you marked it as ready, and has not been marked as unready).
2. If approval is required: confirms that the change package is fully approved.
3. Reads the candidate resource definitions from the source CICS configurations, and transforms them according to the rules specified by the migration scheme.
4. Writes the transformed candidates to the target CICS configurations, and writes before and after images of these migrated resource definitions to the journal (so that you can back out the migration later).
5. Adds the migrated resource definitions to the change package. This allows you to reuse the change package with different migration schemes to progressively migrate resource definitions between environments.

   For example, suppose you package a set of resource definitions in your development environment, and then you migrate the change package using a "development-to-test" migrate scheme. CICS Configuration Manager automatically adds to the change package the migrated

resource definitions in the test environment. You can then migrate the same change package onwards to production using a "test-to-production" migrate scheme.

Roll out versus back out

If a migration fails for any of the resource definitions in a change package, then CICS Configuration Manager stops the migration, and undoes changes to resource definitions that have already been migrated. Similarly, if the CICS region running the CICS Configuration Manager server abends during a migration, then, when you restart the CICS region, the CICS Configuration Manager undoes changes performed by the partial migration. This automated process is known as a *roll out*, and ensures that the resource definitions in a change package are migrated together: either all or none are migrated.

If a change package migration succeeds, you can issue a command to *back out* (undo) the migration.

Rolling out or backing out a change package spans multiple CICS units of work and sync points, and will be performed and continued across a CICS COLD start.

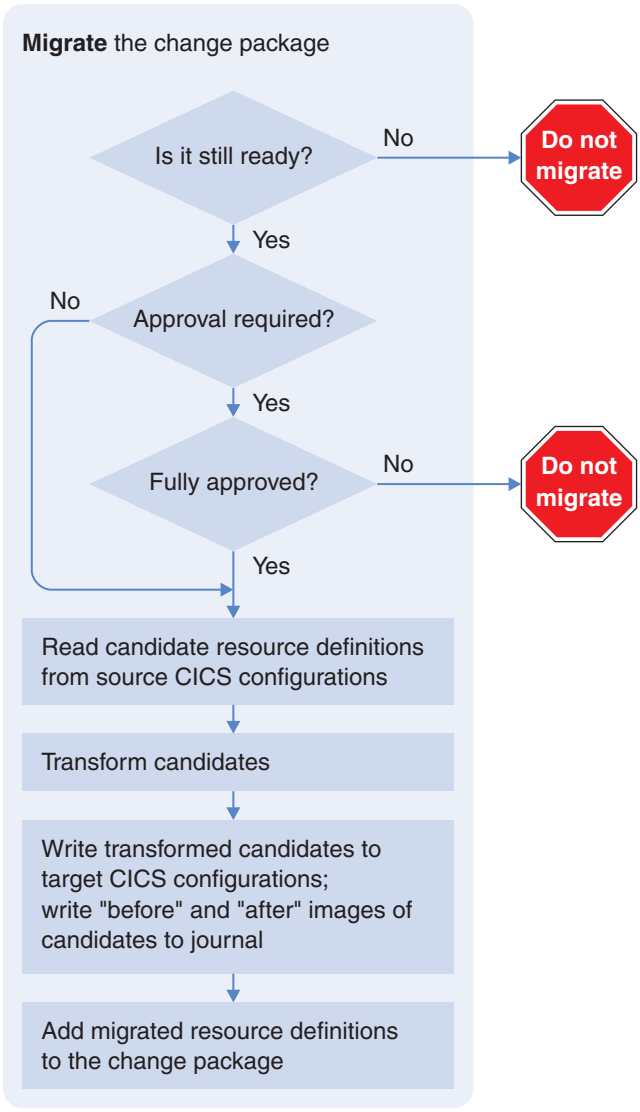


Figure 12. Migrate command processing

Ready processing and candidates

A change package can refer to resource definitions from many CICS configurations. When you mark a change package as “ready”, you select a migration scheme that identifies a set of source and target CICS configurations. Only the resource definitions from the source CICS configurations are *candidates* for migration. If a change package does not refer to any resource definitions from the source CICS configurations, then there are no candidates; there is nothing to migrate, and you cannot mark the change package as ready.

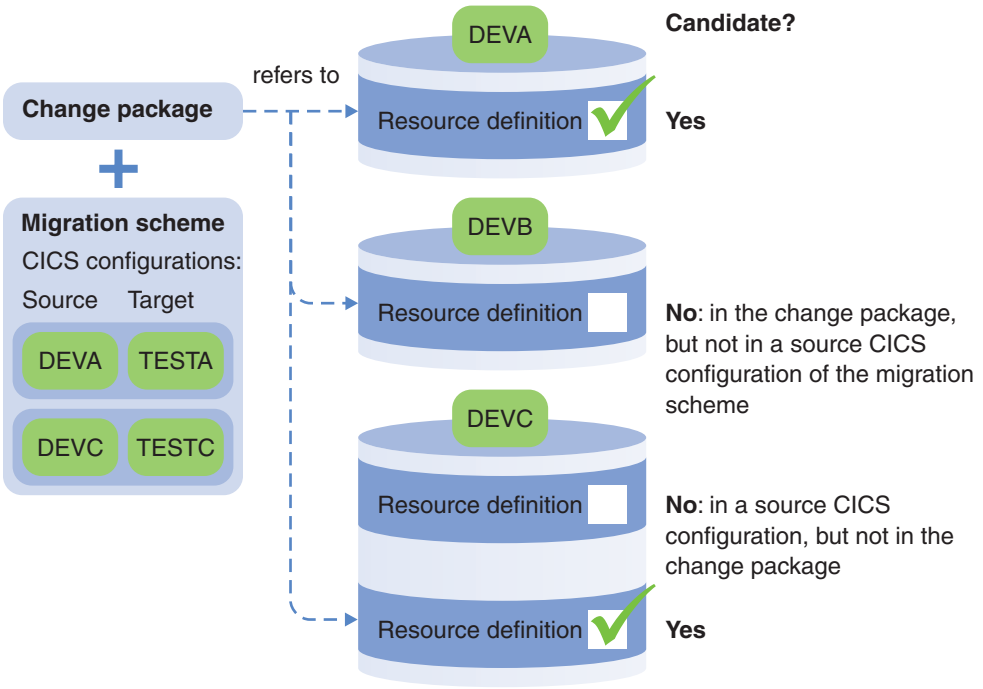


Figure 13. Which resource definitions are candidates for migration?

When you mark a change package as ready, CICS Configuration Manager calculates and stores checksums of the candidates. Later, when you migrate the change package, CICS Configuration Manager calculates new checksums and compares them with the stored values. If any of the checksums is different, it means that the candidates have been edited, and CICS Configuration Manager does not allow the migration. This protects you from migrating unexpected changes.

Specifically, if any of the following has changed, then CICS Configuration Manager does not allow the migration:

- List of candidates
- Attribute values of the candidates
- Names of source and target CICS configurations used by the migration scheme
- Names of transformation rule sets used by the migration scheme

Updates to the following do not affect change package readiness:

- The data set name of a CSD file or the name of a CICSPlex SM context that is associated with a CICS configuration
- Resource definitions in the change package that are not candidates for the selected migration scheme
- Transformation rules
- Transformation variables and their values

How candidate checksums are calculated

CICS Configuration Manager calculates candidate checksums from a *normalized* resource definition record format, not the record format stored in the CSD file or the CICSPlex SM data repository. This normalized format is independent of:

- Whether the resource definition is stored in a CSD file or a CICSPlex SM data repository.
- The CICS release.
- Whether attribute values have been left blank, or explicitly specified as their default values.
- Whether attributes values have been specified that are literally different but effectively identical (for example, the values Y and YES are literally different but for some attributes may be effectively identical).
- The time stamp of the resource definition.

By comparing resource definitions in a normalized format, and referring to CICS configuration names rather than the underlying CSD file or context, CICS Configuration Manager allows you to upgrade to a new CICS release, change the names of CSD files and contexts, or even move resource definitions between CSD files and CICSPlex SM data repositories, all without affecting change package readiness.

Change package approval

If both of the following conditions are met, then CICS Configuration Manager checks the approval status of change packages before migrating them:

- Approval checking is active for CICS Configuration Manager (ISPF dialog option **1.1 System Options**).
- Approval checking is active for the migration scheme (option **1.3 Migration Schemes**).

To check the approval status of a change package, CICS Configuration Manager requires the following:

- The change package must nominate an approval profile.
- The approval profile must contain an entry for the migration scheme.

  The entry for the migration scheme can specify from zero to five approver roles. Specifying no approver roles means that change packages using this migration scheme do not require approval. If you do specify approver roles, then any change packages that use the migration scheme must be fully approved before migration: all of the approver roles for the migration scheme must have approved the change package.

Tip: To migrate insignificant change packages without approval, create an approval profile that contains entries for migration schemes, but no approver roles. For example, for documentation-only change packages, create an approval profile called DOCONLY: insert entries for migration schemes, but do not define any approver roles.

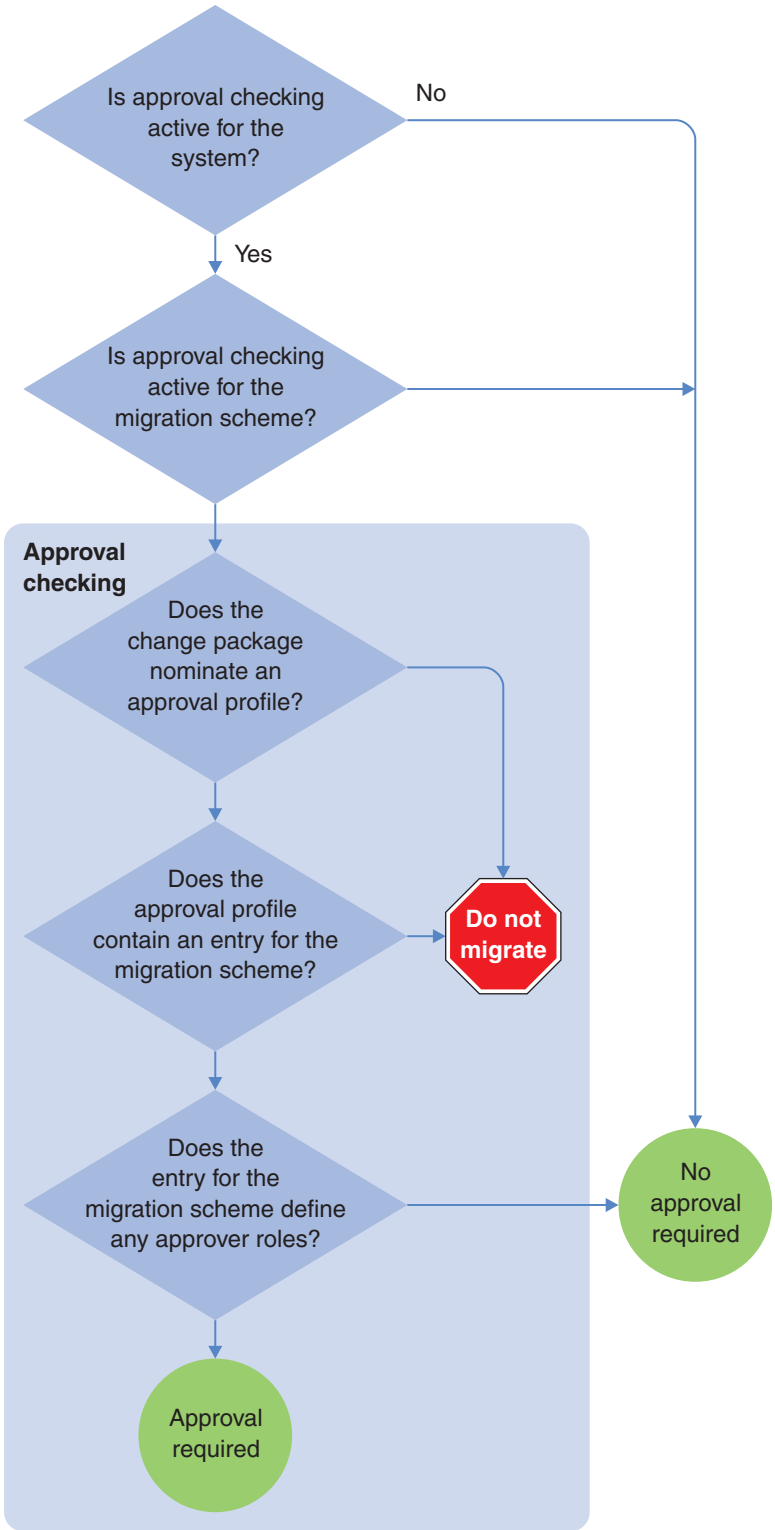


Figure 14. Does a change package require approval?

If approval checking for a migration scheme is inactive:

- You can still assign approval profiles to change packages that use the migration scheme.

- CICS Configuration Manager rejects requests to approve or disapprove change packages with that migration scheme.
- If you activate approval checking later, any approval status that existed prior to deactivating approval checking remains.

Migration through multiple environments

When you use a change package to migrate resource definitions from a source CICS configuration to a target CICS configuration, CICS Configuration Manager automatically adds to the change package the newly migrated resource definitions in the target CICS configuration. This behavior is known as *propagation*. Propagation enables you to add resource definitions to a change package once only, and then progressively migrate that change package onwards through multiple environments without updating the change package for each migration.

The following figures illustrate propagation in a simplistic scenario: you create or update a resource definition in a development environment (represented here by a CICS configuration named DEVT); you use a change package to migrate the resource definition from development to a test environment (TEST); and then you use the same change package to migrate the resource definition from test to a production environment (PROD).

First, you create or update a resource definition in a development environment. Then you create a change package, add the resource definition to the change package, mark the change package as being ready for use with the "development to test" migration scheme, and then use that migration scheme to migrate the change package:

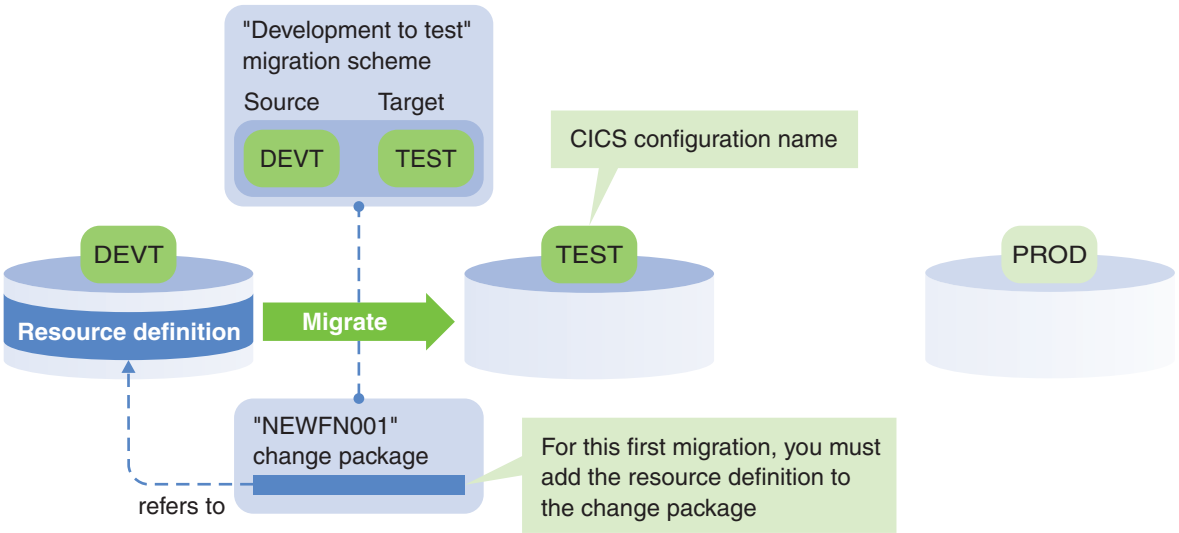


Figure 15. First migration, from development to test: you add the resource definition to the change package

After migration from development to test, the change package refers to the resource definition in development and also to the migrated resource definition in test:

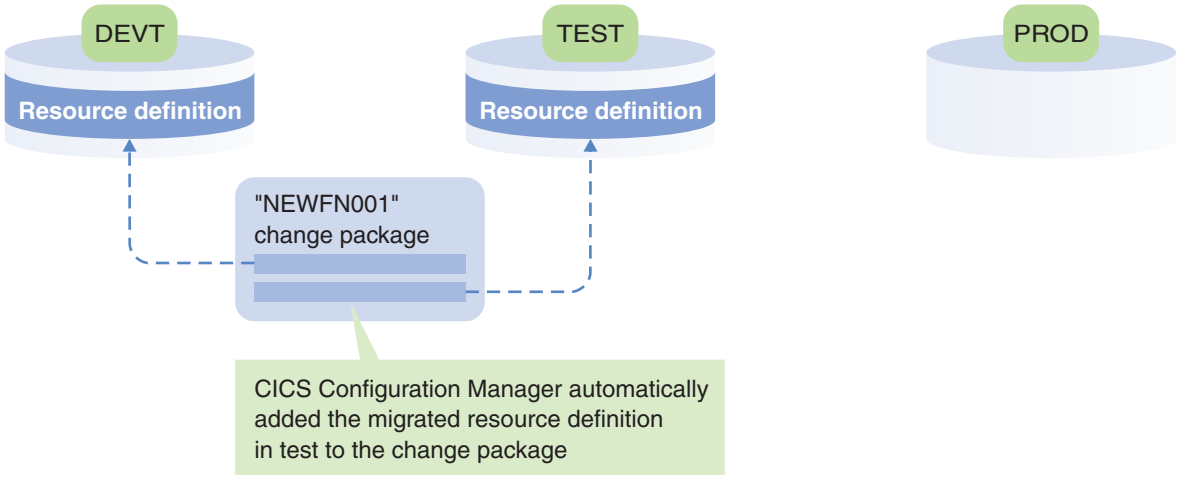


Figure 16. After migration from development to test

Note that, if the “development to test” migration scheme uses transformation rules, then the resource definition in development and the resource definition in test might be different.

Next, you mark the change package as being ready for use with the “test to production” migration scheme, and then you use that migration scheme to migrate the change package. This migrates the resource definition from test to production:

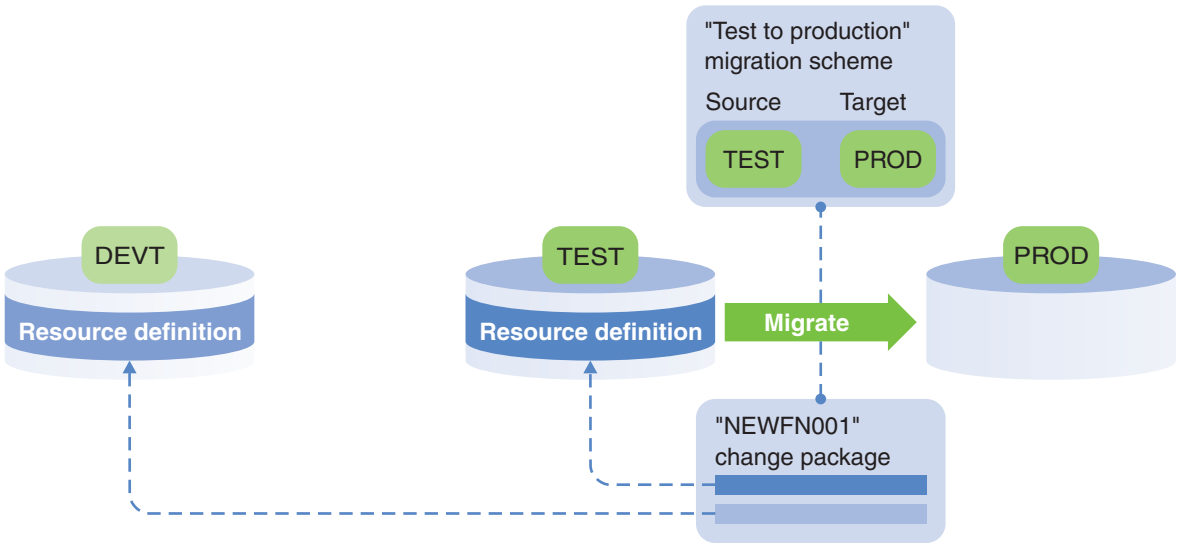


Figure 17. Second migration, from test to production: no need to update the change package

The resource definition in development is not a candidate for migration with the “test to production” migration scheme, and so it plays no part in this migration.

After migration from test to production, the change package refers to resource definitions in all three environments:

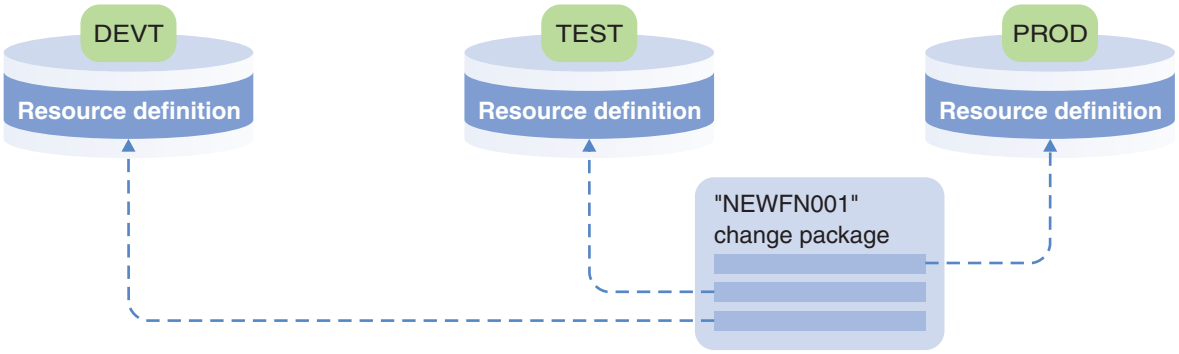


Figure 18. After migration from test to production

Later, if you edit the same resource definition in development, you can reuse the same change package to migrate the resource definition again from development to test, and then test to production.

Migration of commands

Migration of commands extends the concepts involved in migration of resource definitions.

In addition to packaging resource definitions, you can package the following commands:

Add Adds a resource definition to a resource group (RESGROUP) in a context-based target CICS configuration.

Remove
Removes a resource definition from a resource group in a context-based target CICS configuration.

Delete Deletes a resource definition from either a CSD-based or a context-based target CICS configuration.

A change package can contain resource definitions, commands, or both.

Each command identifies:

- The name, type, and group of the resource definition (no wildcards allowed) to which the command applies. Add commands also refer to the "target" resource group to which you want to add the resource definition.
- The name of a CICS configuration. As described below, CICS Configuration Manager uses this to select candidate commands for migration.

When migrating resource definitions, CICS Configuration Manager selects candidate resource definitions based on the specified migration scheme, transforms them (if the migration scheme refers to any transformation rules), and then applies the (possibly transformed) candidates to the target CICS configurations. CICS Configuration Manager uses the same approach for migrating commands: it selects candidate commands based on the specified migration scheme, transforms them, and then applies them to the target CICS configurations.

There is one significant difference in the way that CICS Configuration Manager selects candidate resource definitions and candidate commands:

- A resource definition in a change package is a candidate for migration if its CICS configuration matches a *source* CICS configuration of the migration scheme.

- A command in a change package is a candidate for migration if its CICS configuration matches *either a source or a target* CICS configuration of the migration scheme. Note that only commands matching a source CICS configuration can be transformed, as described in "Transformation of commands."

CICS Configuration Manager applies candidate commands to the target CICS configurations of a migration scheme, never to the source CICS configurations. For example, suppose you package a Delete command and associate it with a CICS configuration in your development environment. Migrating the change package from development to the test environment deletes the specified resource definition from the test environment; it does not delete it from the development environment.

When you mark a change package that contains commands as "ready", CICS Configuration Manager calculates and stores checksums of the commands. Later, when you migrate the change package, CICS Configuration Manager checks whether the list of commands has changed: if it has, CICS Configuration Manager does not allow the migration.

Transformation of commands

If the CICS configuration associated with a command matches the source CICS configuration of a migration path, then before applying the command to the target CICS configuration, CICS Configuration Manager transforms the command according to any rules specified by the migration path. CICS Configuration Manager does not transform a command if its associated CICS configuration matches only the target CICS configuration.

For commands, CICS Configuration Manager ignores any transformation rules that refer to resource definition details that are not specified in the command. Specifically:

- If the "check field" qualification criteria of a transformation rule specifies a field name other than NAME, GROUP, or RESGROUP (a synonym for GROUP), then CICS Configuration Manager ignores the rule. For example, if a transformation rule specifies qualification criteria for a particular PROGRAM attribute value, CICS Configuration Manager ignores that rule for commands.
- CICS Configuration Manager ignores transformation rules that transform values of fields other than NAME, GROUP, or RESGROUP (a synonym for GROUP).

For Add commands, CICS Configuration Manager applies transformation rules to both the name of the resource group to which a resource definition already belongs, and the name of the target resource group (to which you want to add the resource definition).

You can, for example, define a transformation rule with qualification criteria that refer to resource definition group, type, and name, and that transforms group names. Suppose the names of resource groups in your test environment have the prefix TEST and the names of resource groups in the production environment have the prefix PROD. You have a change package that contains an Add command to add a resource definition in group TESTA to group TESTB. You can define a transformation rule that changes group names of TEST* to PROD*. When you migrate the change package from test to production, CICS Configuration Manager transforms the Add command so that it refers to groups PRODA and PRODB.

Command processing rules

The following rules apply to migrating a change package that contains commands:

- CICS Configuration Manager processes commands after migrating any resource definitions in the change package.
- CICS Configuration Manager processes commands in the following order: Add, Remove, Delete.
- If a command cannot be performed because the target CICS configuration does not support the command, migration continues.

  Context-based target CICS configurations support Add, Remove, and Delete commands.

  CSD-based target CICS configurations support Delete commands, but not Add or Remove commands.
- Target CICS configurations that refer to export files are a special case. When migrating commands to an export file, CICS Configuration Manager does not attempt to perform the command on the export file. Rather, CICS Configuration Manager stores a copy of the command in the export file. For example, migrating a Delete command to an export file does not delete the specified resource definition from the export file; it stores a copy of the Delete command in the export file. You can migrate any command to an export file. For more information on exporting commands, see "Export and import of commands" on page 51.
- If a command cannot be performed because the target CICS configuration is already in the desired state, migration continues. For example, if a Delete command cannot be performed because the resource definition does not exist in the target CICS configuration, migration continues.
- If the target CICS configuration supports the command and the target CICS configuration is not in the desired state, but the command fails, then CICS Configuration Manager rolls out the entire change package migration.

  Commands can fail for various reasons. For example:

  – The Add command finds that: the intended container resource group already contains a different version of the resource definition; the intended container resource group does not exist; or the resource definition does not exist.
  – The Remove command finds that the removal will create an orphan object.
  – The Delete command finds that the resource definition is shared, and that a Remove command is required.
- If the change package migration succeeds, then CICS Configuration Manager automatically propagates any commands that matched source CICS configurations. Here, "propagate" means that CICS Configuration Manager adds to the change package a copy of the command that it applied, and associates this command with the corresponding target CICS configuration. This allows you to reuse the change package with different migration schemes, progressively migrating commands from one environment to the next, without having to package equivalent commands for each environment.

  Note:
  – CICS Configuration Manager propagates the transformed version of the commands; that is, the commands after applying any transformation rules specified by the migration scheme.
  – CICS Configuration Manager propagates not just the commands that it performed, but commands that it would have performed if the target CICS configuration had not already been in the desired state, or if the target CICS configuration had supported the command.
  – CICS Configuration Manager does not propagate commands that were stopped by transformation rules.

– Commands associated with the target CICS configurations in the migration scheme do not need to be propagated, as they are already associated with the appropriate CICS configuration.

Example

The following figure shows the migration of a Delete command to CICS configurations that refer to CSD files or contexts:

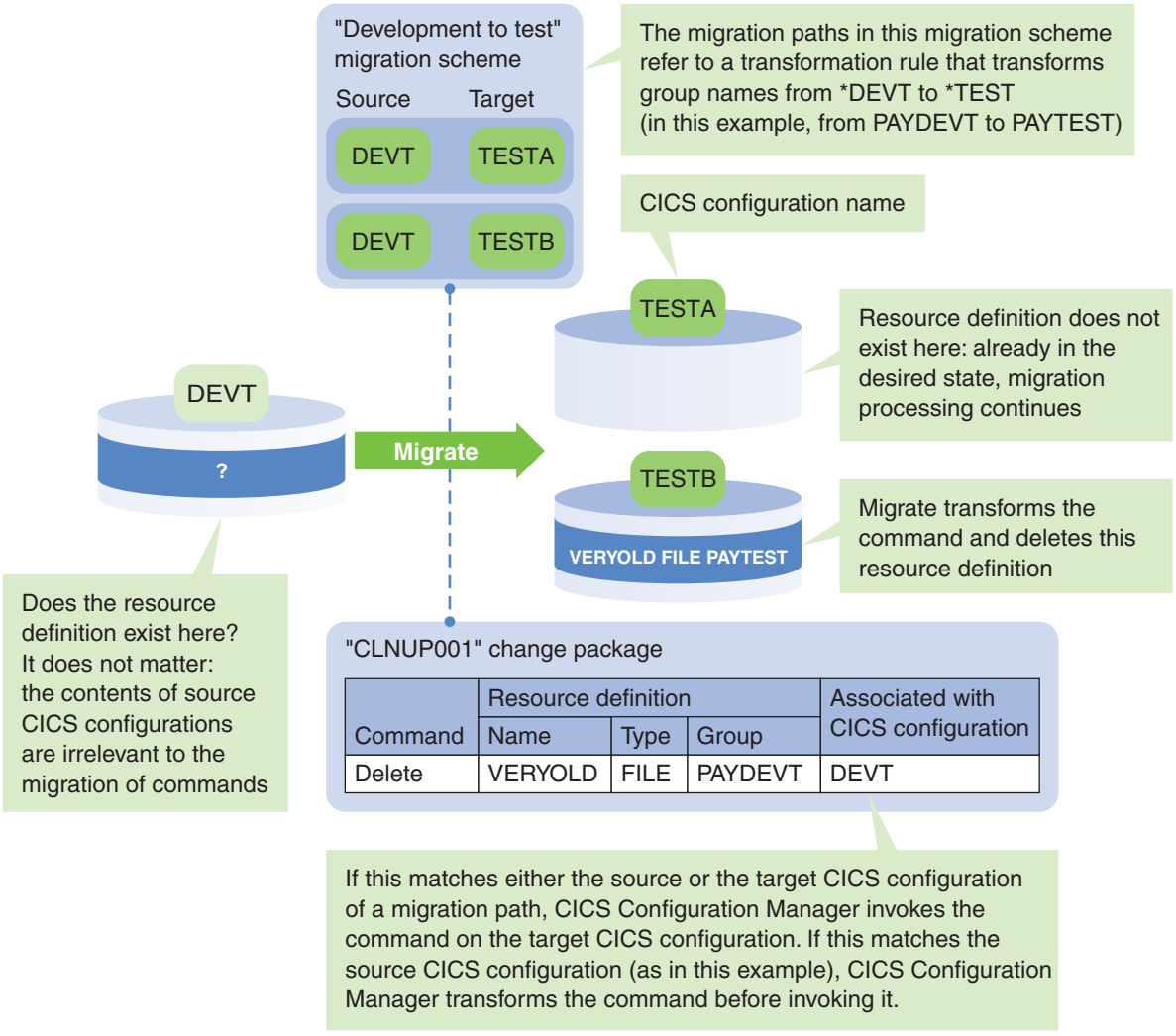


Figure 19. Migrating a Delete command

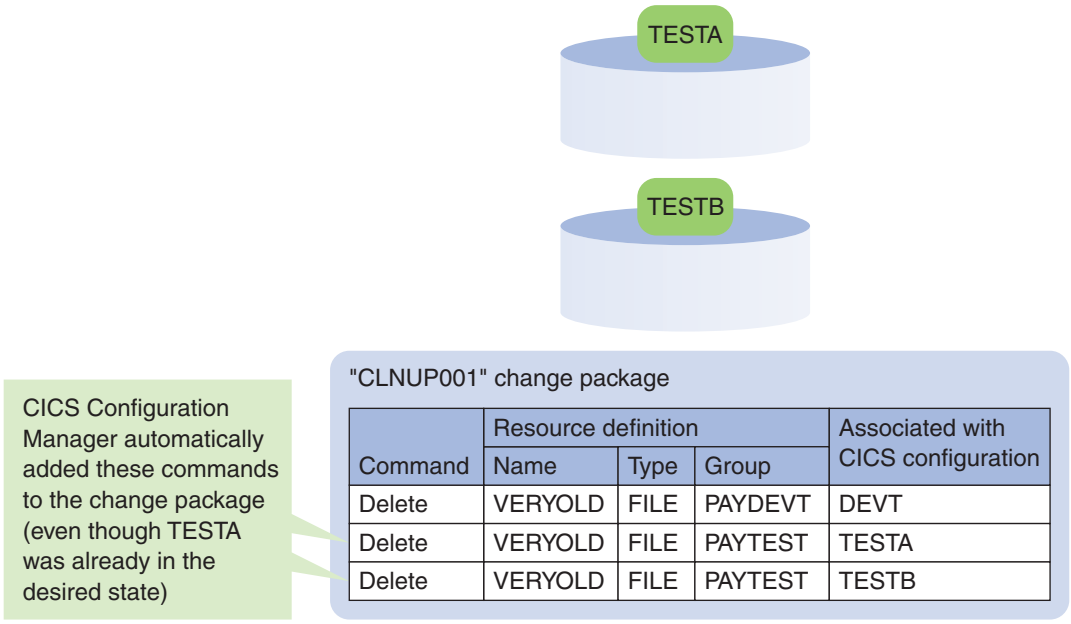
The change package specifies that the Delete command is associated with CICS configuration DEVT. This matches the source CICS configuration of both migration paths in the “development to test” migration scheme.

If, as in this example, a command is associated with the source CICS configuration of a migration path, CICS Configuration Manager transforms the command before invoking it. In this example, the migration paths refer to a transformation rule set containing a rule that transforms group names from *DEVT to *TEST. So the command that CICS Configuration Manager invokes on the target CICS configurations TESTA and TESTB refers to the transformed group name PAYTEST, not the group name PAYDEVT of the original command.

If the specified resource definition had existed in both of the target CICS configurations, CICS Configuration Manager would have deleted them from both (TESTA and TESTB). However, the resource definition existed only in TESTB.

When packaging the command before migration, we could have associated the Delete command with the test environment instead of development. In that case, we would have needed to package two similar Delete commands: one applying to TESTA, and another applying to TESTB. Also, because the commands would have been associated with the target CICS configurations, they would not have been transformed before being invoked. So the commands would have had to refer to the group name PAYTEST.

After migration, CICS Configuration Manager automatically adds to the change package a Delete command associated with TESTA and a Delete command associated with TESTB (notice that these are the transformed commands, referring to the group PAYTEST):



Command	Resource definition			Associated with CICS configuration
	Name	Type	Group	
Delete	VERYOLD	FILE	PAYDEVT	DEVT
Delete	VERYOLD	FILE	PAYTEST	TESTA
Delete	VERYOLD	FILE	PAYTEST	TESTB

Figure 20. After migrating a Delete command

This automatic propagation of the command enables you to reuse the change package with other migration schemes, such as migration schemes that refer to TESTA and TESTB as source CICS configurations, so that you can progressively migrate the deletion to other target CICS configurations without having to package new commands.

Approval profiles

For each migration scheme, an approval profile specifies from zero to five approver roles, defining the types of user who must approve a change package before it can be migrated. A change package is fully approved when all of the applicable approver roles have approved it.

For example, the following table shows an approval profile called NORMAL.

Table 1. Example approval profile

Approval profile: NORMAL

Table 1. Example approval profile (continued)

Migration scheme	Approver role				
	1	2	3	4	5
WRK2DEV					
DEV2TEST	APPDEV	PROJMAN			
TST2PROD	TESTER	PROJMAN	CICSADMN	OPSMAN	

Suppose you want to migrate a change package from your work environment to development using the WRK2DEV migration scheme, and then from development to test using the DEV2TEST migration scheme, and then from test to production using the TST2PROD migration scheme. If you assign the NORMAL approval profile to this change package, then:

- Migrating from work to development requires no approvals
- Migrating from development to test requires the approval of a developer and a project manager
- Migrating from test to production requires the approval of a tester, a project manager, a CICS administrator, and an operations manager

Approver roles

When a CICS Configuration Manager user issues the command to approve or disapprove a change package, they specify the approver role that they are representing (for example, "I am approving this change package as a *project manager*"). If the CICS Configuration Manager system option for security checking is active, the user must be authorized to represent that approver role for the migration scheme and the approval profile selected by the change package.

For details on how CICS Configuration Manager uses approver roles, see "Checking authority to approve or disapprove change packages" on page 113.

Transformation rules

Each migration path in a migration scheme can refer to a set of transformation rules. During migration, CICS Configuration Manager uses these rules to transform candidate resource definitions and any packaged commands that apply to the source CICS configuration of a migration path. Each transformation rule contains three parts:

Qualification criteria

Limit the resource definitions to which the rule applies, based on a combination of:

- Migration scheme name
- Source and target CICS configuration names
- Resource definition group, type, and name
- Whether a specific field in the resource definition has a specific value (this is not necessarily the field that you want to transform)

A transformation rule can apply either to all resource types or to one resource type. A rule that applies to all resource types can refer only to these common fields: GROUP, CHANGETIME, DESCRIPTION, NAME, and USERDATA*n*. To transform other fields, you must define a separate rule for each resource type.

Field name and from/to masks
Identifies the field to transform, and the mask strings that define the transformation. For example, a "from" mask of `SYSDEV.*` and a "to" mask of `SYSTEST.*` transforms a field value of `SYSDEV.VSAM.FILEA` to `SYSTEST.VSAM.FILEA`. For details of the masks you can specify, see "Defining masks for transformation rules" on page 166.

For lists, you can use the special "field name" of GROUP to transform the names of groups. For example, you can use a "from" mask of `*D` and a "to" mask of `*T` to transform a group name in a list from `PAYROLLD` to `PAYROLLT`.

Processing option
Specifies what to do when a field matches the qualification criteria, the field name, and the "from" mask:

Transform and continue
Transform the field according to the "to" mask, and allow further transformation by subsequent rules in the set.

Transform and lock field
Transform the field according to the "to" mask, but do not transform the field any further.

Transform and lock record
Transform the field according to the "to" mask, but do not transform the resource definition any further.

Stop migration
Do not migrate this resource definition. Do not process any more transformation rules for this resource definition.

CICS Configuration Manager processes transformation rules in the order that the rules appear in the transformation rule set. While each rule can perform only the simple change defined by its "from" and "to" masks, their effect is cumulative. A migrated resource definition might be the result of many transformation rules. The input to the first rule is the candidate as it appears in the source CICS configuration. The input to the second rule is the (possibly transformed) output of the first rule. The input to the third rule is the output of the second rule, and so on, until the last rule in the set is processed, or a rule stops the resource definition from being migrated, or locks a field, or locks the entire record.

Transformation processing is a system option: by default, it is inactive, and transformation rules are ignored. To use transformation rules, you need to activate this system option.

Transformation variables

In each CICS configuration and migration scheme, you can define *transformation variables*. You can refer to these variables in the "from" and "to" masks of transformation rules. When CICS Configuration Manager processes the transformation rules, it substitutes the variable references with their values.

Migration schemes can define two values for each variable: a "source" value and a "target" value. CICS configurations can define only a single value for each variable.

The "from" mask of a transformation rule uses the source value in the migration scheme, or the value defined in the source CICS configuration. The "to" mask uses

the target value in the migration scheme, or the value defined in the target CICS configuration. If a CICS configuration and a migration scheme define the same variable, the rule uses the value in the CICS configuration.

For example, suppose that your development environment uses version 1.2.0 of a product, but your test environment uses the older version 1.1.0. The data sets for the two versions are stored under different high-level qualifiers, TLA120 and TLA110. When you migrate FILE resource definitions for this product from development to test, you need to adjust their DSNAME attributes to refer to the correct location. To achieve this, you can define a transformation rule with identical "from" and "to" masks, like this:

&HLQ..*

and use a migration scheme that defines HLQ with a source value of TLA110 and a target value of TLA120.

Now suppose that instead of just one test environment, you have two: TESTA and TESTB. TESTB uses the new product version 2.2.0: its data sets are stored under the high-level qualifier TLA220. To handle this, you do not need to change the migration scheme or the transformation rule: you simply define the HLQ variable in the TESTB CICS configuration, and give it the value TLA220. This example is illustrated in the following figure.

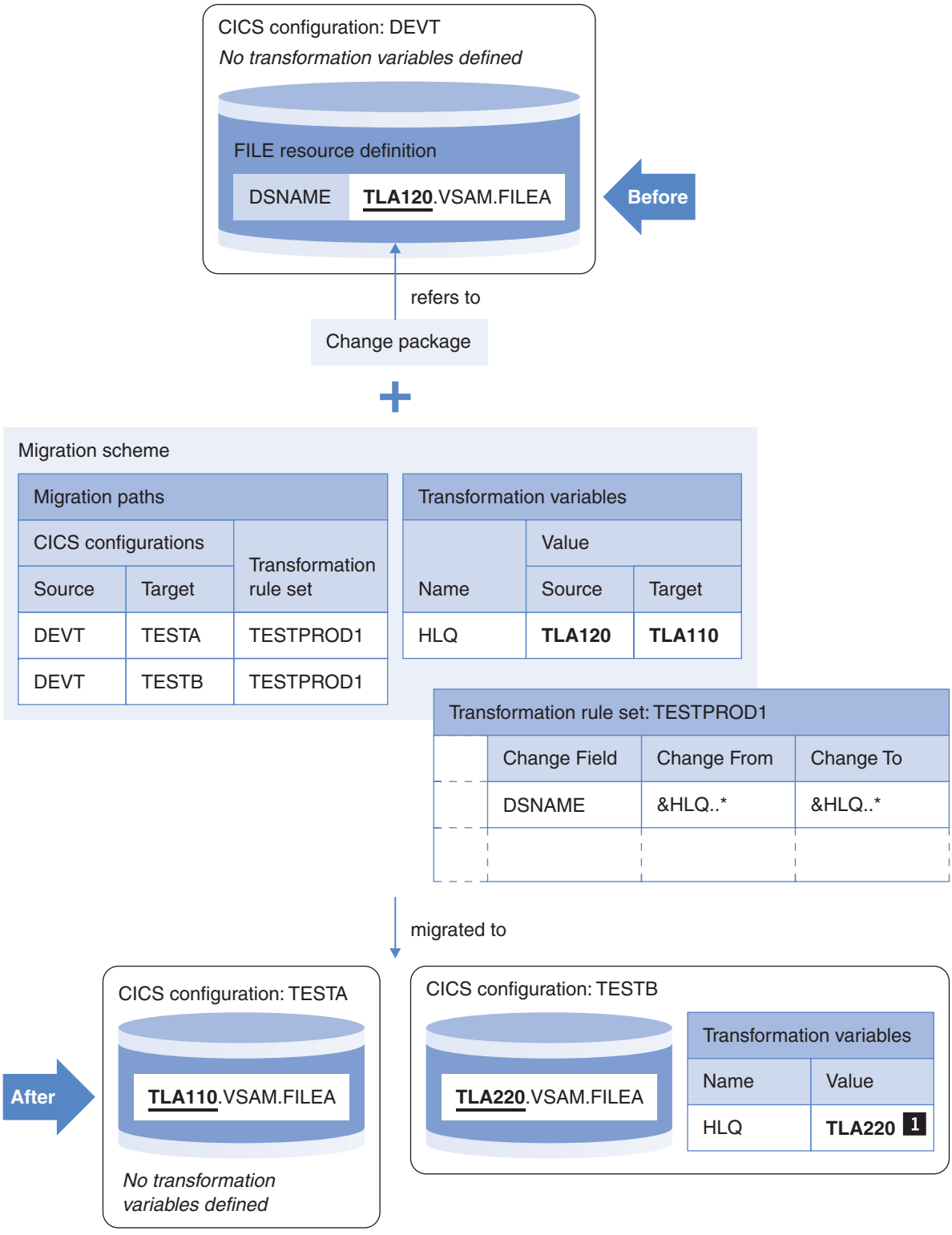


Figure 21. Example: using transformation variables

1 Values defined in the source and target CICS configurations override values defined in the migration scheme.

Actions on active CICS regions

In addition to using CICS Configuration Manager to work with resource definitions stored in CSD files or CICSPlex SM contexts, you can also work with "in-memory" resource definitions in active CICS regions, by performing discard, install, newcopy, or phase-in actions:

Discard

Discards resource definitions from an active CSD-based CICS region.

You can instruct CICS Configuration Manager to "quiesce" the resource before discarding. This sets the resource to a status that allows its definition to be discarded (for example: disabled, closed, or out of service). The particular status depends on the resource type.

You cannot use CICS Configuration Manager to discard resource definitions that are:

- Managed by CICSPlex SM.
- Dynamically defined. For example:
  - Model terminal definitions for autoinstall (AUTINSTMODEL definitions)
  - Terminal definitions dynamically defined from session definitions.
  - Autoinstalled program definitions

  You can only use CICS Configuration Manager to discard the resource definitions that exist in the CSD file used by the CICS region.

Install Installs resource definitions from a CSD file or a CICSPlex SM data repository into an active CICS region.

For CSD-based resource definitions, you can optionally instruct CICS Configuration Manager to do either (or both) of the following before installing:

- Quiesce the resource by setting it to a status that allows its definition to be installed or discarded. If you do not specify this quiesce option, and the resource status prevents the install, then the install action for that resource definition will fail.
- Discard the resource. This is done after the "quiesce". If you specify the discard option, but not the quiesce option, and the resource status prevents the discard, then the "pre-install" discard action will fail, and the install will not be attempted.

For context-based resource definitions, you can optionally force the installation. For details, see the CICSPlex SM documentation.

Newcopy

Makes a new version of a program available to an active CICS region.

However, if the existing program is currently in use, then the newcopy action is not performed.

Phase-in

Similar to newcopy: makes a new version of a program available to an active CICS region.

Any copies of the program in use remain until they are no longer in use, but all requests that occur after the refresh use the new copy.

CICS Configuration Manager presents "phase-in" as an option of its newcopy action; to perform a phase-in, you perform a newcopy action "with the phase-in option selected".

You can already perform these actions within CICS without using CICS Configuration Manager. However, CICS Configuration Manager offers additional flexibility:

- Where possible, you can perform these actions in the same way regardless of whether the CICS regions are CSD-based or managed by CICSPlex SM.
- You can performs actions across multiple CICS regions, with multiple resource definitions, in a single step.

To perform these actions on CICS regions managed by CICSPlex SM, the CICS Configuration Manager server uses a CICSPlex SM API command. For CSD-based CICS regions, the server calls the CICS Configuration Manager agent, which requires some extra setup. Table 2 describes the actions supported by CICS Configuration Manager and the underlying method that CICS Configuration Manager uses to perform them.

Table 2. Actions that CICS Configuration Manager can perform on active CICS regions

	How the CICS Configuration Manager server performs the action			
	For CSD-based CICS regions		**For CICS regions managed by CICSPlex SM**	
Action	**Use agent to invoke...**	**More information**	**Call CICSPlex SM API command...**	**More information**
Install	CEDA INSTALL	*CICS Transaction Server for z/OS: CICS Supplied Transactions*	PERFORM OBJECT... ACTION(*action*)	*CICS Transaction Server for z/OS: CICSPlex SM Application Programming Reference*
Discard (see note below)	CICS EXEC DISCARD	*CICS Transaction Server for z/OS: CICS System Programming Reference*		
Newcopy	CICS EXEC SET PROGRAM ... NEWCOPY			
Phase-in	CICS EXEC SET PROGRAM ... PHASEIN			

Note: Discard is not supported for CICS regions whose resource definitions are managed by CICSPlex SM.

Actions on CSD-based CICS regions require the CICS Configuration Manager agent

Before you can perform actions on CICS regions whose resource definitions are stored in CSD files, you need to:

1. Install the CICS Configuration Manager agent in those regions.
2. Define a CICS inter-system communications (ISC) link or a CICS multiregion operations (MRO) link between each of those regions (the "remote regions") and the region that is running the CICS Configuration Manager server (the "local region)".
3. Edit the CICS configurations for the remote region CSD files, and add the names of these links as *remote system connections*.

For details on these steps, see "Optional: Configure the agent for CSD-based CICS regions" on page 92.

When you instruct CICS Configuration Manager to perform an action on a CSD-based resource definition, the server uses the remote system connections to call its agent in the target CICS regions. You can instruct the server to use all or

only some of the remote system connections.

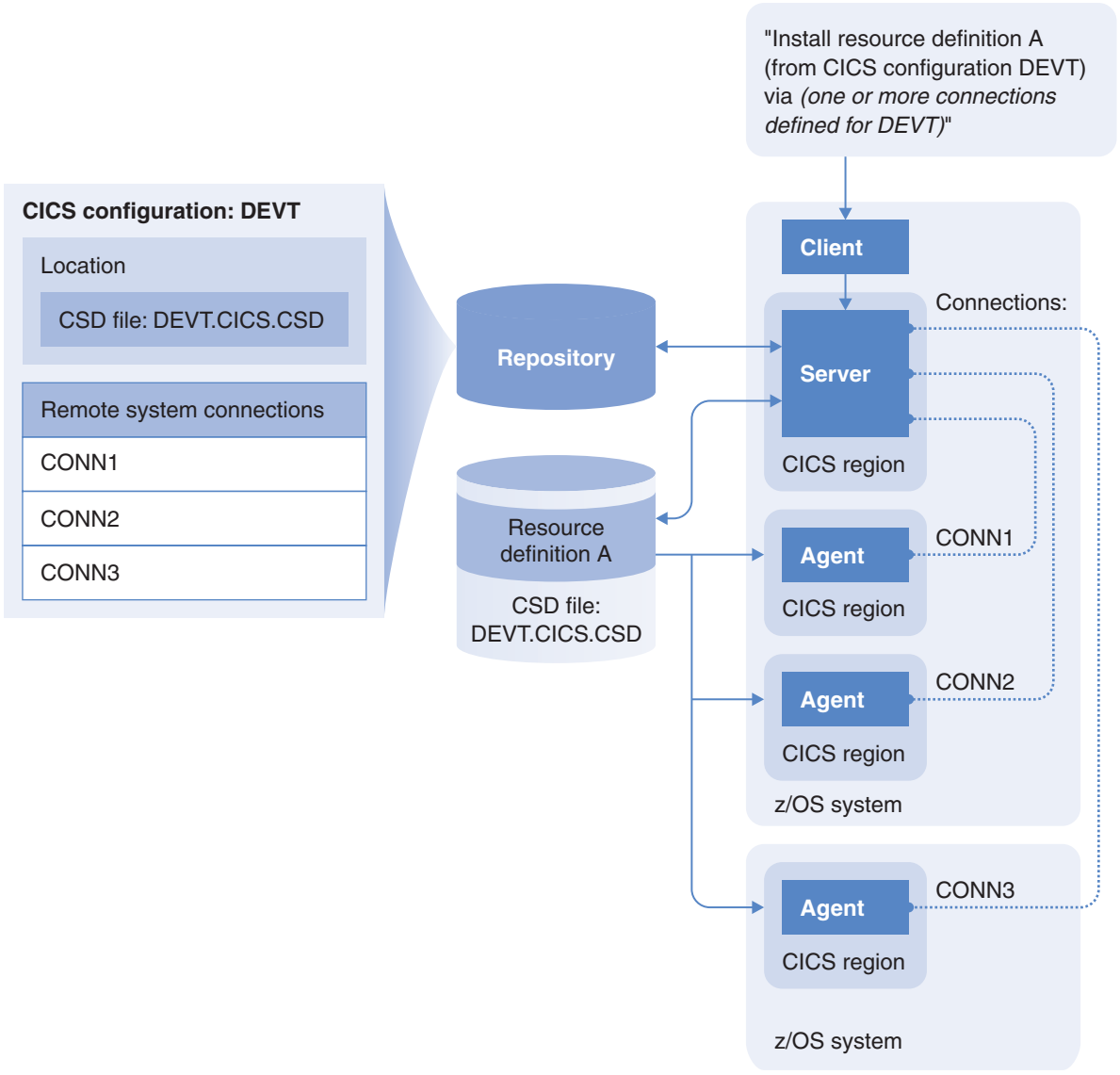


Figure 22. Using remote system connections and the CICS Configuration Manager agent to perform actions on active CSD-based CICS regions

Using change packages for actions and migrations

You can perform install, newcopy, and phase-in actions on active CICS regions with either an ad-hoc selection of resource definitions or a change package. (You cannot perform discard actions with a change package; the discard action is limited to ad-hoc selections of resource definitions from CSD-based CICS regions.) You can perform these actions using the same change packages that you use for migrations. Table 3 lists the differences between using change packages to perform actions and migrations:

Table 3. Using change packages for actions versus migrations

Action	Migration
Affects the in-memory resource definitions used by active CICS regions.	Affects the resource definitions stored in CSD files or CICSPlex SM data repositories.

Table 3. Using change packages for actions versus migrations (continued)

Action	Migration
For CSD-based resource definitions, uses the remote system connections defined in the target CICS configurations.	Does not use remote system connections.
Does not require the change package to be ready.	Requires the change package to be ready.
Does not require the change package to be approved.	May require the change package to be approved.
Uses the resource definitions in the **target** CICS configurations of the specified migration scheme.	Migrates the resource definitions from the **source** CICS configurations of the specified migration scheme.
Affects all CSD-based target CICS configurations in the migration scheme. Affects only the first context-based target CICS configuration in the migration scheme. Ignores any subsequent context-based target CICS configurations in the migration scheme.	Affects all CSD-based and context-based target CICS configurations.
Does not use transformation rule sets.	Can use transformation rule sets to modify resource definitions during migration.
Cannot be undone.	Can be undone (backed out).
Attempts the action on each of the resource definitions in the change package individually, regardless of whether the action succeeds or fails.	Migrates all or none of the resource definitions in the change package. (Stops at the first failure, and then automatically rolls out any resource definitions that have already been migrated.)

There is also a difference between performing an action on a CSD-based CICS region using a change package and using an ad-hoc selection of resource definitions:

- With an ad-hoc selection, you can choose to use all or only some of the remote system connections.
- With a change package, you do not have this choice: the action uses all of the remote system connections defined in the target CICS configurations of the migration scheme.

You can use a change package as a convenient way of displaying a list of resource definitions for an "ad hoc" action. This is different to performing the action with the change package, because it does not involve a migration scheme. For details, see "Processing a change package" on page 209.

Example: migrating and then installing a change package

Suppose that you want to migrate a set of resource definitions from your development CICS environment (which is CSD-based) to your test CICS environment (where some CICS regions are CSD-based and others are managed by CICSPlex SM), and then install the migrated resource definitions into the active test CICS regions:

1. Package the resource definitions in development into a change package.

   Figure 23 on page 40 shows an example change package, referring to a set of resource definitions in the CSD-based CICS configuration named DEVT.

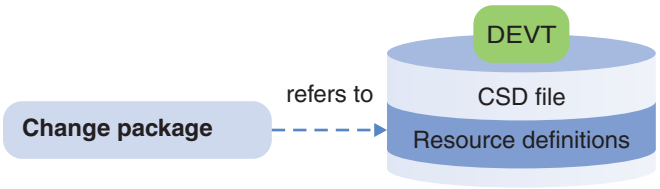


Figure 23. Example: installing a change package after migrating (part 1 of 2: the change package before migration)

2. Ready the change package.
3. Migrate the change package using a migration scheme that identifies the development CICS configurations as the source, and the test CICS configurations as the target.
4. Install the change package using the same migration scheme.

Installing before migrating

Before migrating the updated resource definitions in development to your test environment, you want to install them in your active development CICS regions. You do not need a change package to install the resource definitions; you can install each resource definition individually. However, if you add each of the updated resource definitions to a change package, then, when you have finished editing them all, you can install them together by viewing the list of resource definitions in the change package, and performing an "ad hoc" install action on the entire list. This is different to installing the change package, because it does not involve a migration scheme. For details, see "Processing a change package" on page 209.

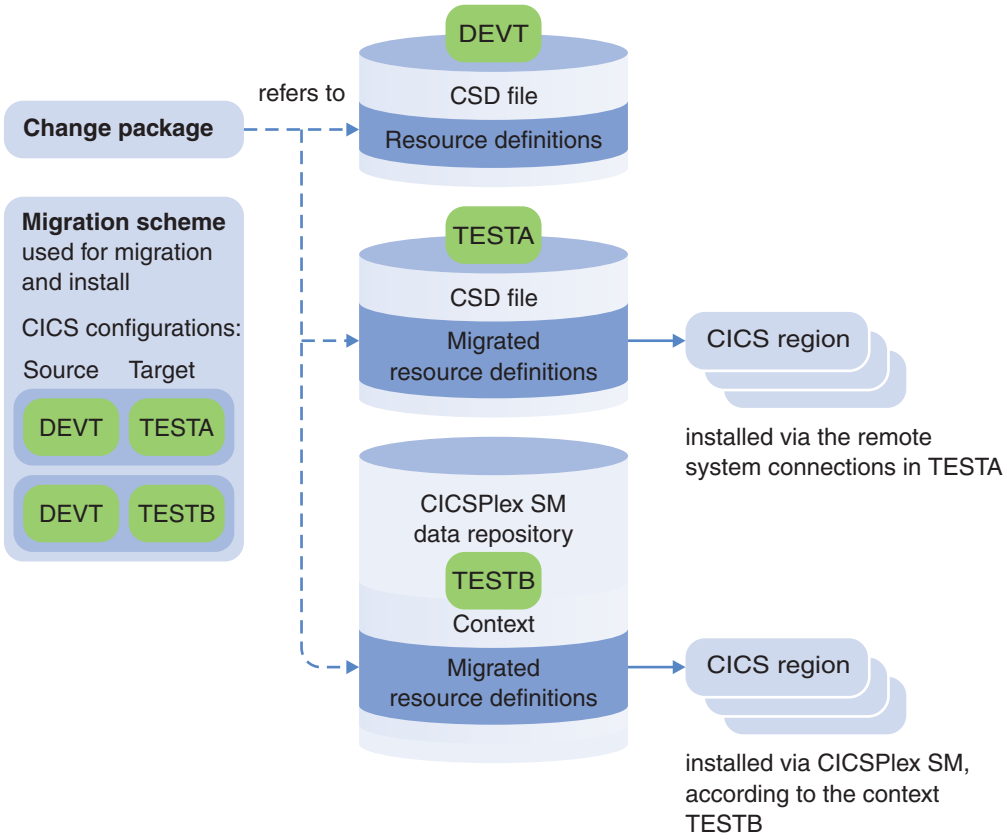


Figure 24. Example: installing a change package after migrating (part 2 of 2: the change package after migration)

This reuse of the change package for migration and then install is possible because the migration step automatically adds the migrated resource definitions (in the target CICS configurations) to the change package. The install action searches the change package for resource definitions that belong to the target CICS configurations of the migration scheme, and finds the resource definitions that have been added by the migration step.

Figure 24 illustrates the previous example, and highlights the benefits of reusing change packages to perform actions after migration, especially when the migration involves multiple target CICS configurations. In a single step, you can perform an action across multiple CICS regions with the resource definitions that have just been migrated, regardless of whether the regions use CSD files or are managed by CICSPlex SM.

Summary of actions and their processing options

Table 4 on page 42 describes the processing options that you can specify for each action, depending on:

- The location of the selected resource definitions
- Whether you are performing the action with a change package or an ad hoc selection of resource definitions

Table 4. Actions and their processing options

Location of resource definitions	Install			Newcopy		Discard
		Ad hoc				
	Change package	Single resource definition	Group	Change package	Ad hoc	(Ad hoc only)
CSD file	Quiesce Discard	Quiesce Discard Connections 3	Connections 3	Phase-in	Phase-in Connections 3	Quiesce Connections 3
Context	Force Target scope *Various* 1		Force Target scope *Various* 1 Type 2 Assignment 2	Phase-in Target scope		Not applicable
Both	Quiesce Discard Force Target scope *Various* 1	Not applicable		Phase-in Target scope	Not applicable	

Notes:

1 When installing context-based file, program, transient data queue, or transaction resource definitions, you can specify various processing options: related scope, usage, and (except for files) mode. When installing context-based connection resource definitions, you can specify a resource assignment. For details on all of these options, see the CICSPlex SM documentation.

2 When installing a RESGROUP, you can limit the selected resource definitions in the group to a particular resource type. You can also specify an existing resource assignment to apply to the related session resource definition.

3 Connections to CICS remote systems. The connection names are specified in the CICS configurations.

Export and import of resource definitions

You can use CICS Configuration Manager to export resource definitions from a CSD file or a context to an *export file*. You can then transfer the export file to a separately managed system at a remote site (say, via the Internet), and *import* (copy) the resource definitions into a CSD file or a context on that system.

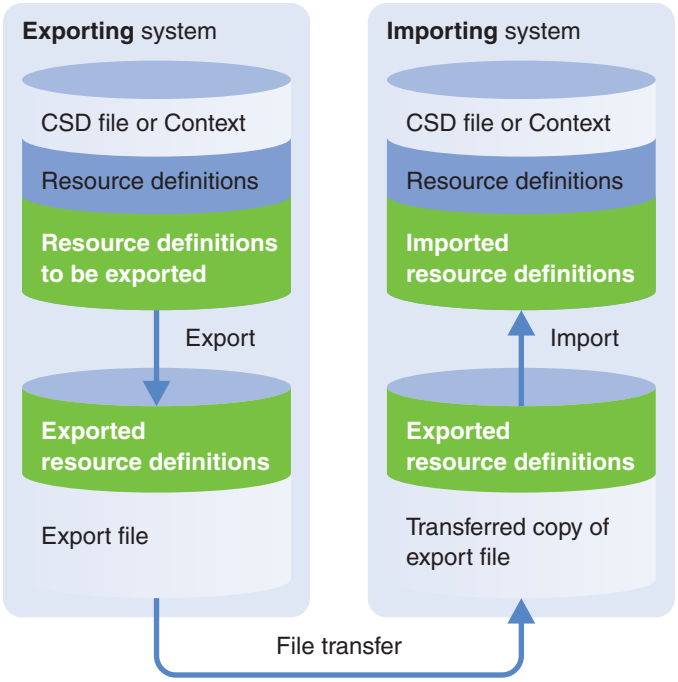


Figure 25. Using export files to transfer resource definitions between sites

For example, suppose that you are a New York-based CICS administrator working for an enterprise that has data centers around the world. The data centers run CICS applications that are developed at your site. When distributing application updates to the data centers, in addition to distributing the application code, you need to distribute new and updated resource definitions. Using CICS Configuration Manager, you write the resource definitions to an export file, transfer the export file to the other data centers, and they import the resource definitions.

Is it an export file or import file?

You can use the terms "export file" and "import file" to refer to the same file depending on how it is being used. At the site where the file is created, the file is typically referred to as an export file. At the site where the contents of the file are imported, the file is typically referred to as an import file. For the sake of consistency, and to make it easier to search for related information, this documentation uses the term "export file" throughout.

Do you need to use export files?

If a single CICS Configuration Manager installation can access all of the CSD files or CICSPlex SM data repositories involved, then you can simply copy or migrate the resource definitions between CICS configurations, with no need for an export file. For details on whether you need more than one installation, see "How many installations do I need?" on page 65.

Export and import without CICS Configuration Manager

Before learning how to export and import resource definitions with CICS Configuration Manager, it is worthwhile reviewing how to do this with the existing techniques provided by CICS Transaction Server for z/OS, because CICS Configuration Manager builds on these techniques:

- To export resource definitions from a CSD file, you use the CICS system definition utility program DFHCSDUP. This creates a "DFHCSDUP export file".
- To export resource definitions from a CICSPlex SM data repository, either you use the CICSPlex SM batched repository update facility BATCHREP, or you use DFHCSDUP with the CICSPlex SM exit program EYU9BCSD. Both methods produce a file that we will call a "BATCHREP export file" (regardless of how we created the file, we will use BATCHREP to import it). This BATCHREP export file consists of CICSPlex SM CREATE commands for the extracted resource definitions.
- After transferring the export file to another system, you import the resource definitions in the file using either DFHCSDUP (for a DFHCSDUP export file) or BATCHREP (for a BATCHREP export file).

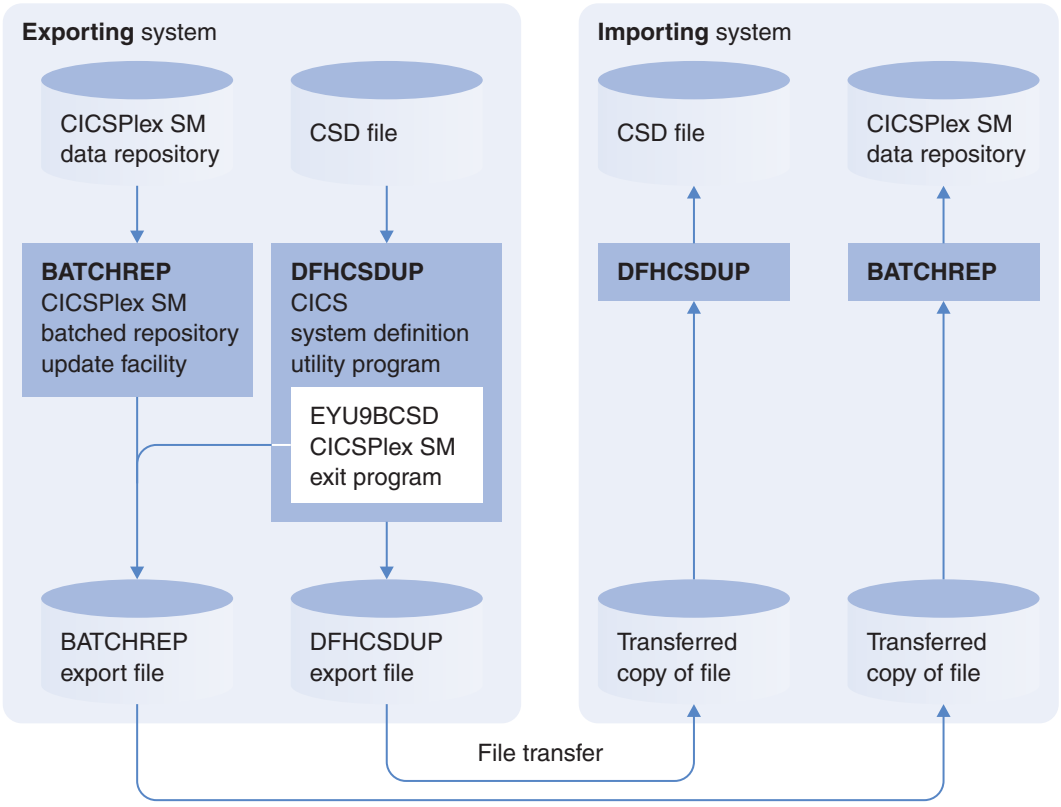


Figure 26. Exporting and importing resource definitions without CICS Configuration Manager

Export and import with CICS Configuration Manager

CICS Configuration Manager treats export files as CICS configurations. With some restrictions, CICS Configuration Manager allows you to work with resource definitions in export files in exactly the same way that you work with resource definitions in CSD files or contexts. This enables you, for example, to copy or migrate resource definitions to an export file in exactly the same way that you copy or migrate to a CSD-based CICS configuration.

You can use CICS Configuration Manager to write export files in three formats:

DFHCSDUP export file (write only)
To import resource definitions from this file to a CSD file, you use the DFHCSDUP utility supplied with CICS Transaction Server for z/OS. You

can write the JCL yourself to call the DFHCSDUP utility, or you can use the CICS Configuration Manager ISPF dialog interface to generate the JCL for you.

BATCHREP export file (write only)
To import resource definitions from this file to a context, you use the BATCHREP utility supplied with CICS Transaction Server for z/OS. CICS Configuration Manager does not provide an interface to this utility: to import a BATCHREP export file, you must use the CICSPlex SM BATCHREP command interface supplied with CICS Transaction Server for z/OS.

CICS Configuration Manager export file (read and write)
To import resource definitions in this file to either a CSD file or a context, you use CICS Configuration Manager.

All of the export file formats are QSAM files: for file allocation details, see "Defining CICS configurations that refer to export files" on page 165.

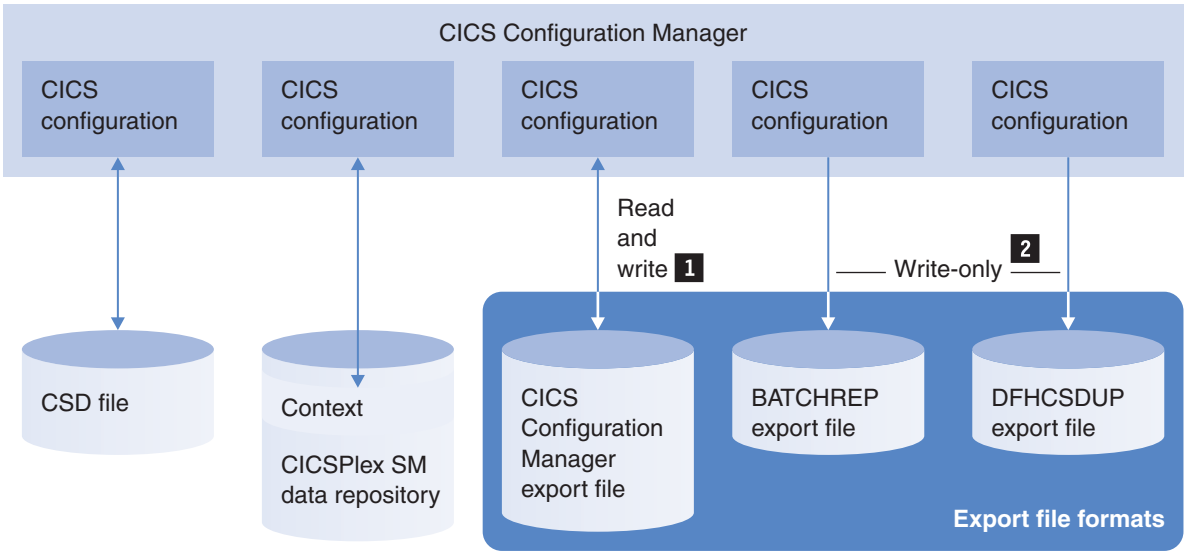


Figure 27. CICS Configuration Manager treats export files as CICS configurations

1 If a CICS configuration refers to a CICS Configuration Manager export file, then you can use CICS Configuration Manager to browse and explore its contents in exactly the same way as if the CICS configuration referred to a CSD file or a context. However, writing to such a CICS configuration either appends to the file or overwrites its entire contents; you cannot "update in place". You specify this append or overwrite option when you define the CICS configuration.

For example, if you choose the append option, and then you migrate change packages to that CICS configuration, the export file grows as you migrate each change package. However, if you choose the overwrite option, then each migrated change package overwrites the previous contents of the export file; similarly, if you edit a resource definition, and then enter the **SAVEAS** command, that single edited resource definition replaces the entire existing contents of the export file.

2 CICS configurations that refer to DFHCSDUP or BATCHREP export files are write-only. You can copy, migrate, or create and save resource

definitions to these CICS configurations, but you cannot use CICS Configuration Manager to read their contents.

Use these export files to transfer resource definitions to systems that do not have CICS Configuration Manager. To import the resource definitions in these files, use the DFHCSDUP utility or the BATCHREP utility supplied with CICS Transaction Server for z/OS.

CICS Configuration Manager does not read these export file formats because, although the DFHCSDUP and BATCHREP export files created by CICS Configuration Manager are straightforward, the DFHCSDUP and BATCHREP utilities can read files that contain a variety of syntax. To provide full support for reading such files, CICS Configuration Manager would need to duplicate the complex parsing already provided by these utilities. Instead, CICS Configuration Manager provides its own readable export file format.

Export from a system without to a system with CICS Configuration Manager

This is similar to exporting and importing without CICS Configuration Manager: you use the existing techniques provided by CICS Transaction Server for z/OS, as described in "Export and import without CICS Configuration Manager" on page 43. The only difference is that, if you choose, you can use CICS Configuration Manager to define a CICS configuration for a DFHCSDUP export file, and then use CICS Configuration Manager to generate JCL to call the DFHCSDUP utility. Otherwise, if you choose not to use CICS Configuration Manager to perform the import, then you can use your own JCL to call DFHCSDUP. (CICS Configuration Manager does not provide an interface to the BATCHREP command.)

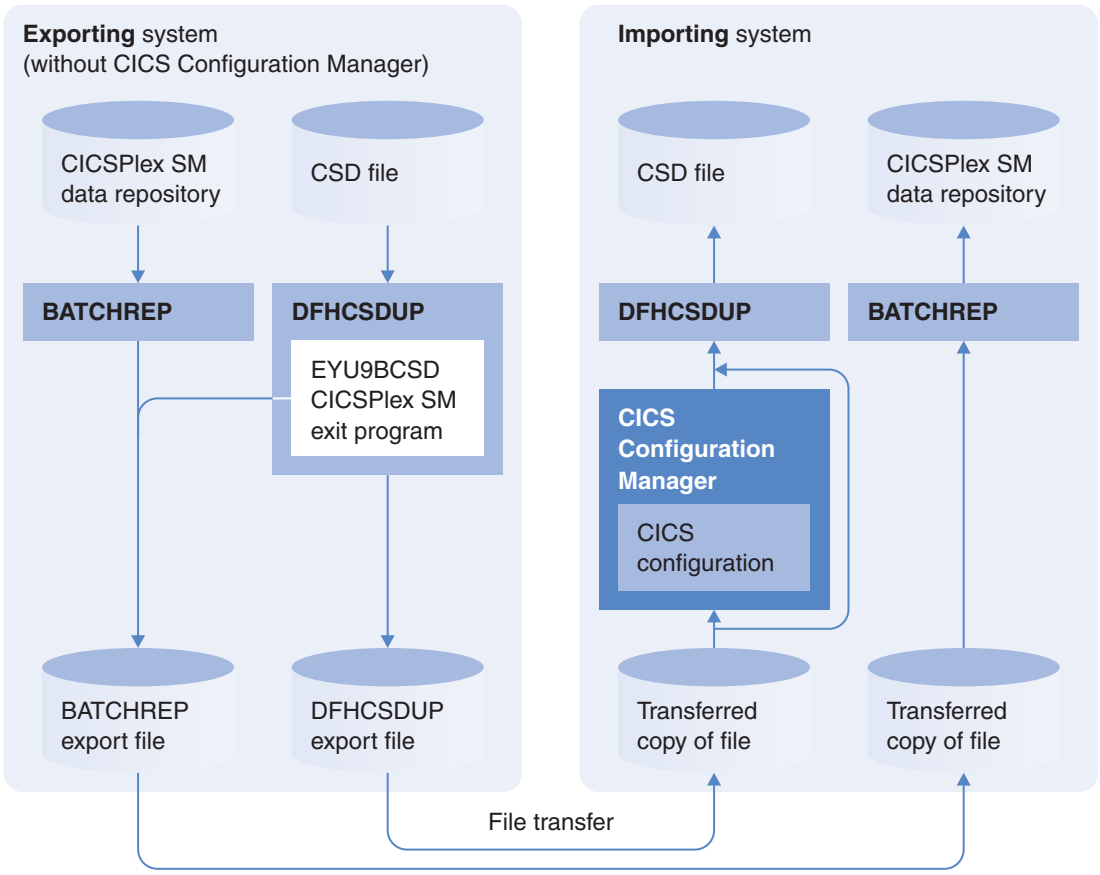


Figure 28. Exporting from a system without CICS Configuration Manager to a system with CICS Configuration Manager

Export from a system with to a system without CICS Configuration Manager

To export resource definitions from a system with CICS Configuration Manager to a system without CICS Configuration Manager:

1. On the exporting system (with CICS Configuration Manager):
   a. Define a CICS configuration that refers to an export file, specifying the format of the export file as either DFHCSDUP (if the importing system uses CSD files) or BATCHREP (if the importing system uses CICSPlex SM data repositories).
   b. Use CICS Configuration Manager to copy or migrate the resource definitions to that CICS configuration.
   c. Transfer the export file to the importing system.
2. On the importing system (without CICS Configuration Manager):
   a. Use DFHCSDUP or BATCHREP to import the resource definitions from the export file.

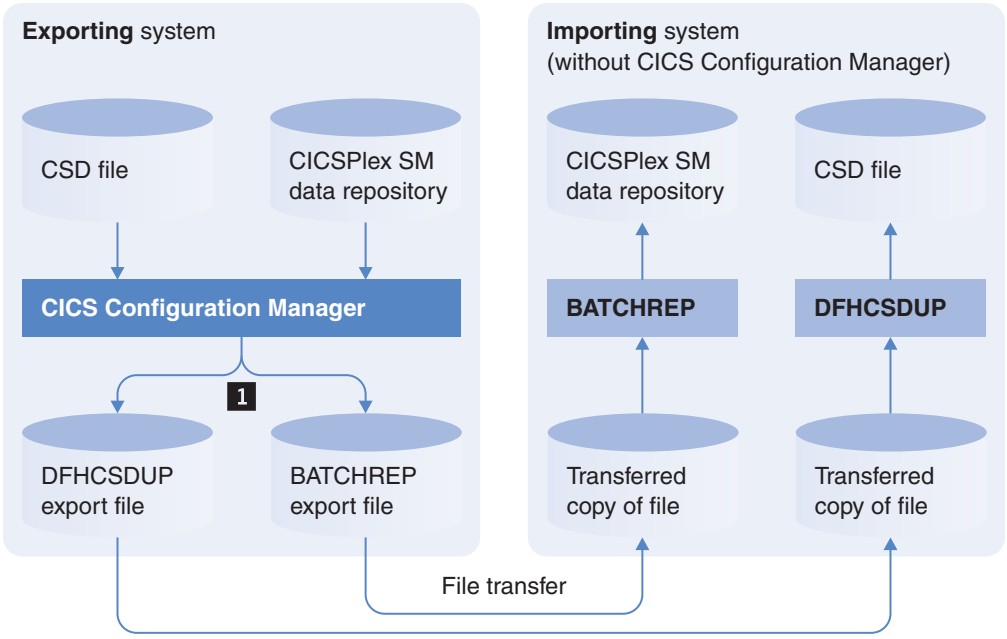


Figure 29. Exporting from a system with CICS Configuration Manager to a system without CICS Configuration Manager

1 Without CICS Configuration Manager, you cannot extract resource definitions from a CICSPlex SM data repository into a DFHCSDUP export file. With CICS Configuration Manager, you can extract resource definitions from any combination of CSD files and CICSPlex SM data repositories into either DFHCSDUP export files or BATCHREP export files.

Export from one CICS Configuration Manager system to another

You can use any export file format to export from one CICS Configuration Manager system to another, but using the CICS Configuration Manager format offers the most flexibility:

Browse exported resource definitions
You can use CICS Configuration Manager to browse the resource definitions in a CICS configuration that refers to a CICS Configuration Manager export file in exactly the same way you browse a CICS configuration that refers to a CSD file or a context. You cannot browse CICS configurations that refer to DFHCSDUP or BATCHREP export files.

Export change package details along with resource definitions
If you migrate a change package to a CICS configuration that refers to a CICS Configuration Manager export file, then the export file contains not just the migrated resource definitions, but also details of the change package. When importing the export file on another system, you can either ignore these change package details, or use them to *register* the change package on the importing system. If you choose to register the change package, then, in addition to copying the resource definitions from the export file to another CICS configuration, the import:

1. Defines the change package on the importing system (if a change package of that name does not already exist).
2. Adds to the change package the migrated resource definitions that have now been imported (copied to another CICS configuration on the importing system).

You can then use this change package to migrate the resource definitions to other CICS configurations on the importing system. Registering change packages enables you to seamlessly manage resource definition changes across separate installations of CICS Configuration Manager. For details, see "Registering change packages when importing" on page 53.

Copy resource definitions from an export file using a variety of methods

You can use the following methods to copy resource definitions from a CICS configuration that refers to a CICS Configuration Manager export file to another CICS configuration:

- These methods are exactly the same as for CICS configurations that refer to CSD files or contexts.

  Copy Browse a list panel of the resource definitions, select one or more to copy, and then specify the target CICS configuration (where you want to copy the resource definitions to).

  Save as
  Similar to copying: select a resource definition to view its attributes, and then save it to the target CICS configuration.

  Package
  Browse a list panel of the resource definitions, select one or more to add to a change package, and then migrate the change package to one or more target CICS configurations.

- The **Import** command applies only to CICS configurations that refer to CICS Configuration Manager export files. To import, you select the CICS configuration that refers to the CICS Configuration Manager export file, select the target CICS configuration where you want to import the resource definitions to, and then you specify which resource definitions you want to import:
  - All resource definitions in the export file
  - Resource definitions that were migrated to the export file by particular change packages
  - Resource definitions in the export file that match your criteria for name, type, and group

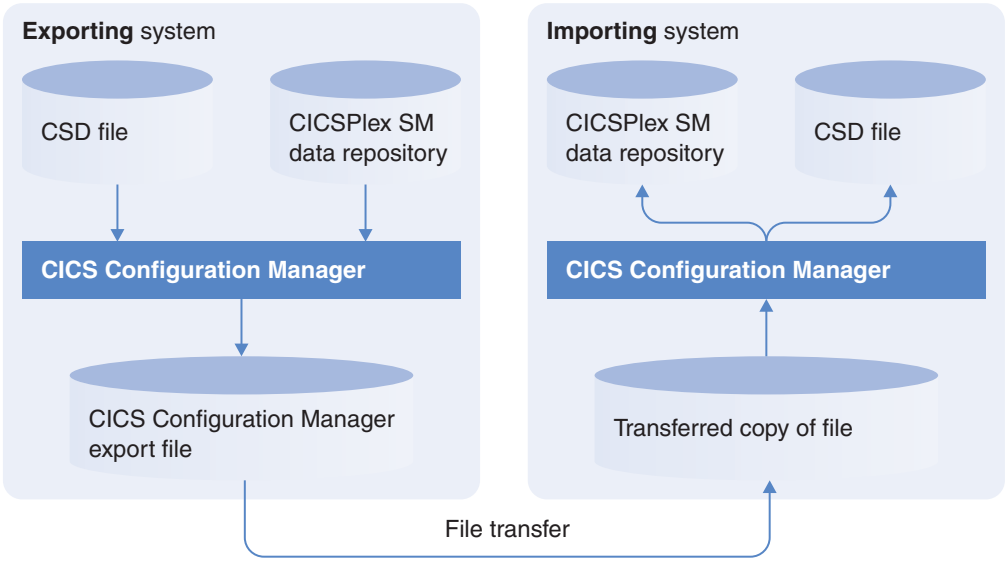


Figure 30. Exporting from one CICS Configuration Manager system to another

Importing resource definitions from a CICS Configuration Manager export file is equivalent to a "copy with replace": it replaces any existing resource definitions that have the same name, type, and group.

When importing resource definitions from a CICS Configuration Manager export file, you can optionally choose to purge resource definitions from the export file after importing them. This is one way to confirm that you have imported all the resource definitions in an export file: when the export file no longer contains any resource definitions, it means that you have imported all the resource definitions from that file.

Example export scenario

The following figure shows an example scenario for using a CICS Configuration Manager export file. In this example, the exporting system is a central application development site for a global enterprise. The importing system is one of several data centers around the world that run the applications developed at the central site. The development site has three isolated environments: development, test, and production, each with a corresponding CICS configuration. The developers at this site update or create resource definitions in the development environment, and then use a change package to migrate them to test, and then to production. The migration to production also migrates to the "Export" CICS configuration, which refers to a CICS Configuration Manager export file. The developers transfer this export file to the data centers. Each data center has an "Import" CICS configuration that refers to the transferred copy of the export file. From here, the CICS administrators at each data center perform an import, with change package registration, to a "Staging" CICS configuration. This copies the resource definitions to the "Staging" CICS configuration, and defines a change package containing the imported resource definitions. After confirming that the imported resource definitions work in the staging environment, the CICS administrators use the change package to migrate the imported resource definitions to the local production environment.

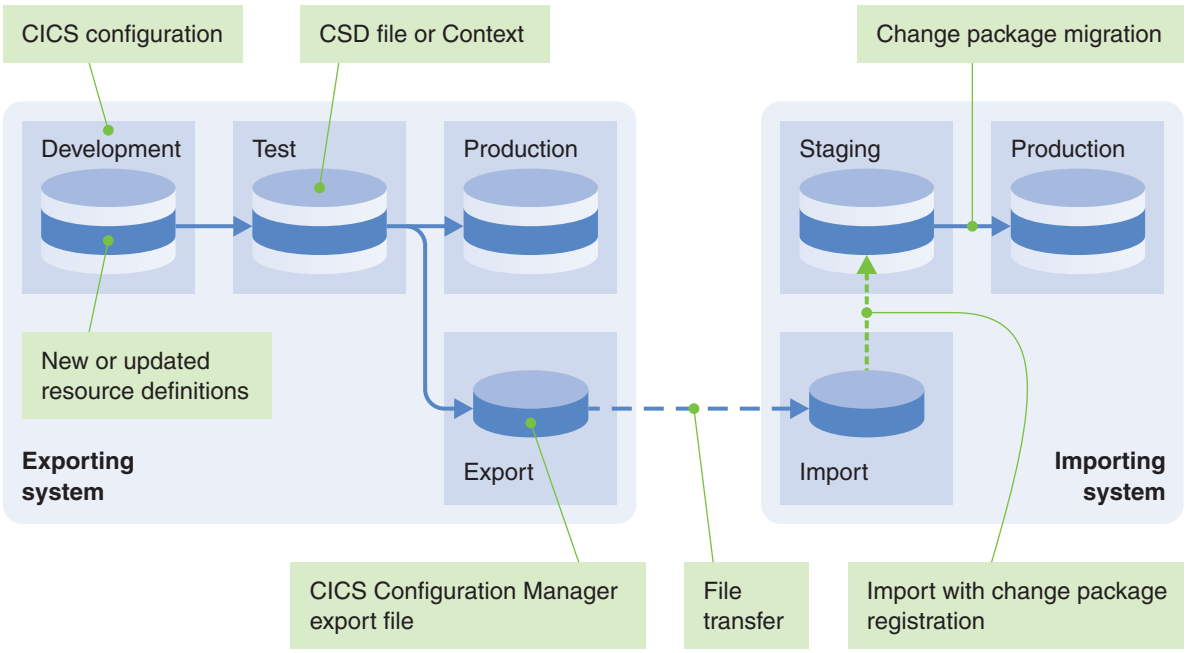


Figure 31. Example export scenario: importing with change package registration

Export and import of commands

Export and import of commands extends the concepts involved in export and import of resource definitions and migration of commands.

In addition to exporting and importing resource definitions between sites, you can export and import the following commands from one CICS Configuration Manager system to another:

Add Adds a resource definition to a resource group (RESGROUP) in a context-based target CICS configuration.

Remove
Removes a resource definition from a resource group in a context-based target CICS configuration.

Delete Deletes a resource definition from either a CSD-based or a context-based target CICS configuration.

"Exporting a command" means storing a copy of the command in a CICS Configuration Manager format export file on the exporting system. You do this by migrating the command to the export file. Then, using whatever method you prefer, you transfer the export file to the importing system.

"Importing a command" means adding the command that is stored in the export file to a change package on the importing system and applying the command to a CICS configuration on the importing system. You do this using the Import command.

Here is the procedure for exporting and then importing commands:

1. On the exporting CICS Configuration Manager system:
   a. Define a CICS configuration that refers to a CICS Configuration Manager export file. (This is the only type of export file that supports CICS Configuration Manager commands.)
   b. Define a change package, and then add the commands to the change package. Associate the commands with either:
      - The CICS configuration that you have just defined (that refers to the export file).
      - A CICS configuration that is the source in a migration path where the export file CICS configuration is the target. Choose this option if you want the migration to transform the command before storing it in the export file.
   c. Migrate the change package to the export file. That is, migrate the change package using a migration scheme that nominates the export file CICS configuration as a target CICS configuration.

   This stores copies of the commands in the export file.
2. Transfer the export file to the importing system, using whatever file transfer method you prefer (for example, FTP).
3. On the importing CICS Configuration Manager system:
   a. Define a CICS configuration that refers to the export file.
   b. Run the Import command with the export file CICS configuration as the source, the CSD-based or context-based CICS configuration to which you want to apply the commands as the target, and with the option selected to register change packages.

Note: If you do not select the option to register change packages, the import ignores commands in the export file, and only imports resource definitions.

The import applies the commands to the target CICS configuration (along with any selected resource definitions), and also adds the commands (and selected resource definitions) to a change package of the same name in the CICS Configuration Manager repository of the importing system.

Example

The following figure shows the migration of a Delete command to an export file:

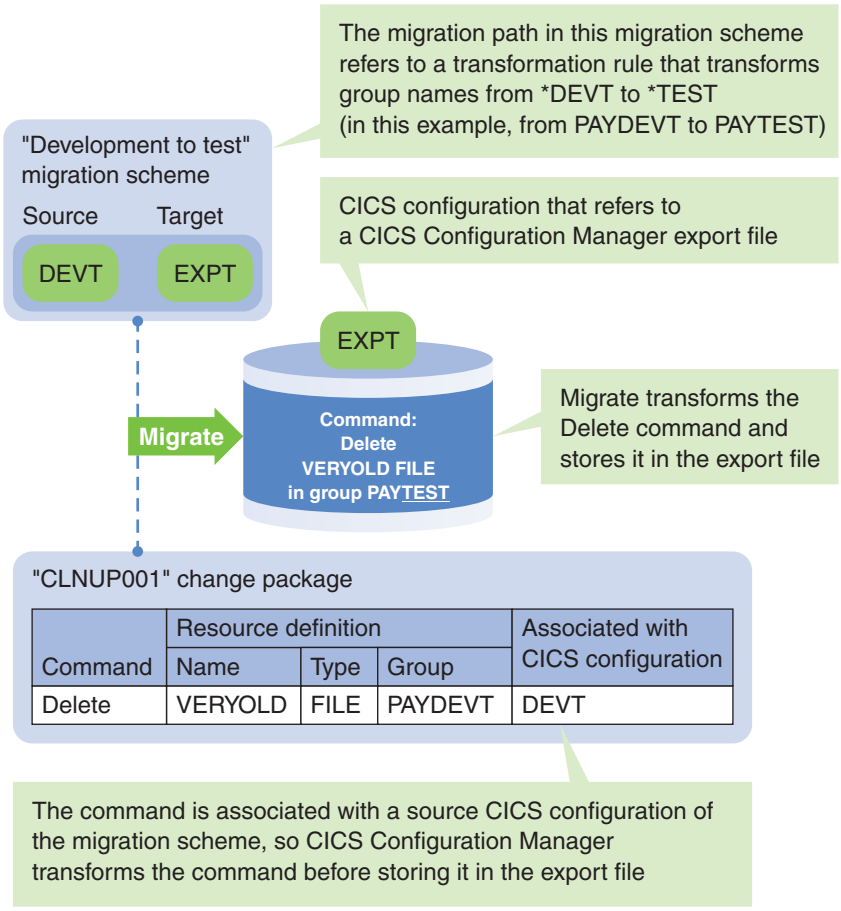


Figure 32. Migrating a Delete command to an export file

The change package specifies that the Delete command is associated with CICS configuration DEVT. This matches the source CICS configuration of the migration path in the migration scheme, so CICS Configuration Manager transforms the command before storing it in the export file. In this example, the migration path refers to a transformation rule set that transforms group names from *DEVT to *TEST. So the command that CICS Configuration Manager stores in the export file refers to the transformed group name PAYTEST, not the group name PAYDEVT of the original command.

The following figure shows the import of the Delete command to a separately managed system, after you have transferred the export file from the exporting

system:

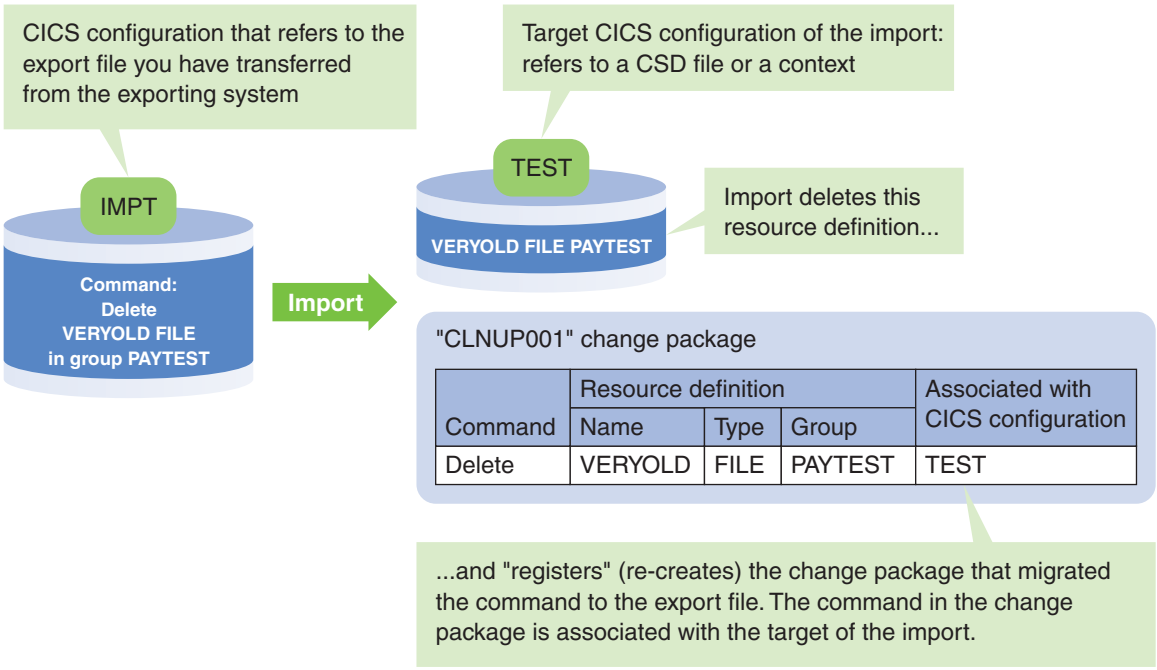


Figure 33. Importing a Delete command

Importing the command has two effects:

- It *performs* the command on the CICS configuration that you specified as the target of the import. In this example, the command deletes the FILE resource named VERYOLD from the group PAYTEST in CICS configuration TEST.
- It *adds* the command to a change package on the importing system, and associates the command with the target CICS configuration of the import (in this example, TEST).

Registering change packages when importing

If you choose to register change packages when importing a CICS Configuration Manager export file, the following considerations apply:

- If a change package of the same name already exists in the importing CICS Configuration Manager repository, then the import adds the resource definitions and commands from the export file to the existing change package. The import updates the existing change package with the following change package details from the export file:
  Change package description
  External reference
  Approval profile
- If you used filters to select the resource definitions and commands to import, the import only adds those selected resource definitions and commands to the registered change packages. This means that the registered change packages might contain only a subset of the resource definitions and commands that were migrated to the export file.
- The registered change packages refer to the *imported* resource definitions in the target CICS configuration of the import, not the resource definitions in the export file. For example, in Figure 31 on page 50, the registered change package on the importing system refers to resource definitions in the “Staging” CICS

configuration, not the “Import” CICS configuration. Similarly, imported commands added to registered change packages are associated with the target CICS configuration of the import.

- To use the registered change packages to migrate the imported resource definitions and commands to another CICS configuration, you must use a migration scheme that specifies the target CICS configuration of the import as a source CICS configuration. For example, in Figure 31 on page 50, you would use a migration scheme that specifies “Staging” as a source CICS configuration.
- The registration appears in the change package history as an Import command. Although the Import command does not use a migration scheme, the name of the target CICS configuration of the import appears under the migration scheme column. This is for documentation only. Registering a change package does not create a migration scheme of this, or any other, name.
- To import commands, you must select the option to register change packages. If you do not select this option, the import ignores commands in the export file.
- When importing commands, CICS Configuration Manager applies the commands to the target CICS configuration of the import, and also adds the commands to the registered change packages. If the target CICS configuration of the import does not support a command (for example, CSD-based CICS configurations do not support Add or Remove commands), then CICS Configuration Manager still adds the command to the registered change package.
- If you select the option to register change packages, and the import of a command or a resource definition that was *migrated* to the export file fails, then CICS Configuration Manager rolls out the import of all commands and resource definitions that were migrated to the export file.

  If you do not select this option, and an import fails, then the import stops, but no roll out occurs.

  Regardless of whether or not you select the option to register change packages, roll out does not occur for resource definitions that were *copied* to the export file without using a change package.
- You can back out the Import command for a registered change package, in the same way that you can back out a Migrate command.

Summary of concepts

When you use CICS Configuration Manager to manipulate resource definitions in a CSD file, a CICSPlex SM context, or an export file, rather than referring directly to the data set name of the CSD file, the name of the context, or the data set name of the export file, you refer to the name of a CICS configuration. A CICS configuration contains:

- The type of location that the CICS configuration refers to: a context, a CSD file, or an export file.
- The location of the CICS configuration, depending on its type: the name of the context, the data set name of the CSD file, or the data set name of the export file.
- Optionally, for CICS configurations that refer to CSD files: the names of the remote system connections to the CICS regions that use this CSD file. The CICS Configuration Manager server uses these remote system connections to communicate with the CICS Configuration Manager agent installed in the CICS regions, enabling you to perform actions such as install, discard, and newcopy.
- For CICS configurations that refer to export files: various export file processing options.

- Optionally, transformation variables.

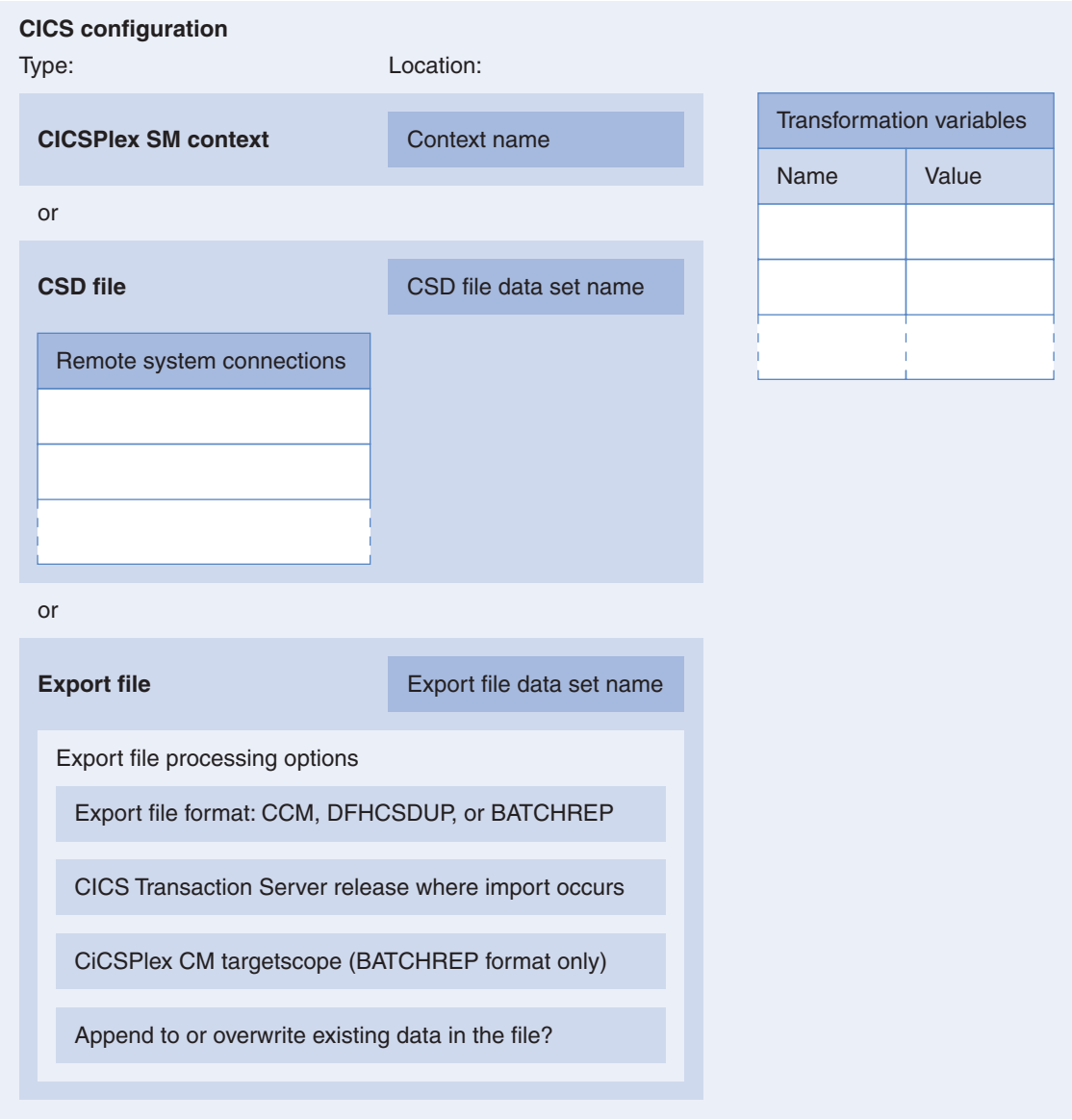


Figure 34. Contents of a CICS configuration

A change package contains keys that identify resource definitions. A change package may also contain the name of an approval profile.

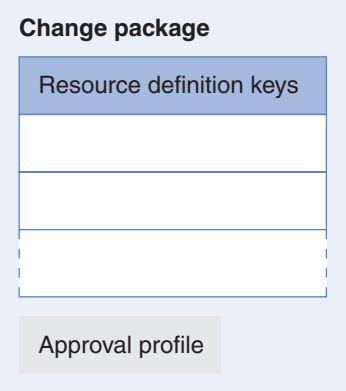


Figure 35. Contents of a change package

When you issue a command to process a change package (for example, to migrate it), you select the migration scheme that you want to use. A migration scheme contains:

- One or more migration paths (pairs of source and target CICS configuration names).
- For each migration path:
  - Optionally, the name of a transformation rule set.
  - A "delete at source?" option. If you specify "yes", migration effectively *moves* rather than *copies* resource definitions: after copying resource definitions to the target CICS configuration, CICS Configuration Manager deletes them from the source CICS configuration. The default value is "no" (do not delete at source). If the source CICS configuration refers to an export file, you must specify "no".
- Optionally, transformation variables for use in the transformation rules.

A migration scheme also specifies whether or not to perform approval processing for a change package.

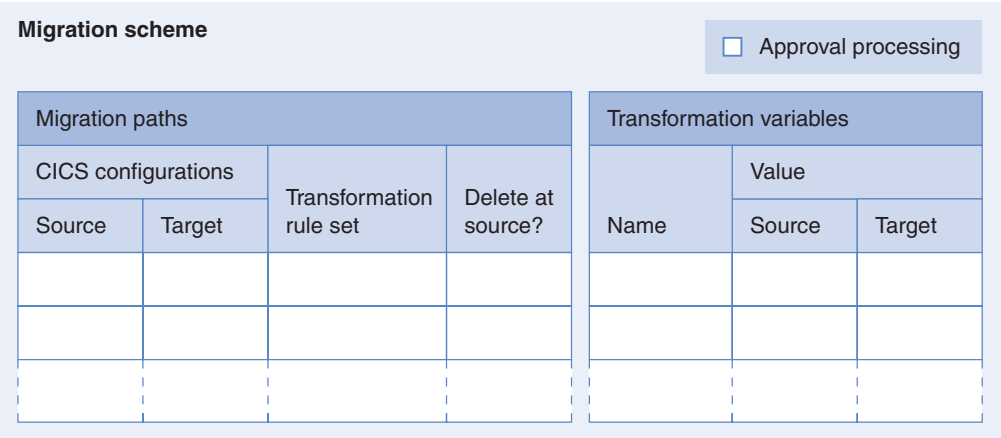


Figure 36. Contents of a migration scheme

An approval profile defines up to five approver roles for each migration scheme.

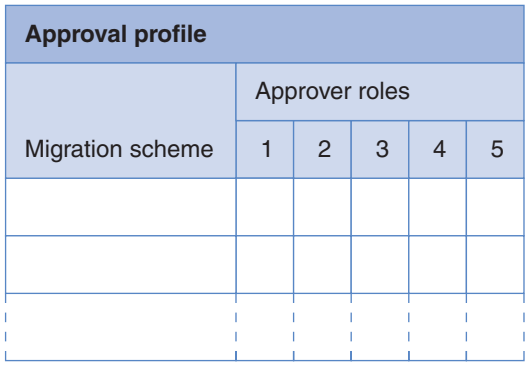


Figure 37. Contents of an approval profile

The following figure shows how these concepts fit together.

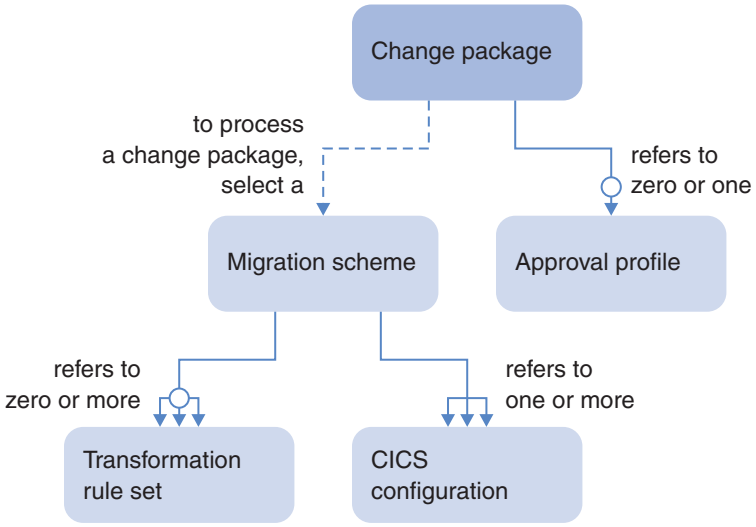


Figure 38. Relationships between key CICS Configuration Manager concepts

System options

System options affect the overall behavior of CICS Configuration Manager, and hence affect every user. Each system option is either active or inactive; **by default, all system options are inactive**. Table 5 on page 58 describes the system options and their effects.

Compare these system options, whose values are the same for all users, with the ISPF dialog user options, which can be different for each user. For details, see Chapter 7, “Setting user options,” on page 159.

Table 5. System options and their effects

System option (CCVXSYSO parameter) [1]	**Effect**	
	Inactive (default)	**Active**
Approval checking for change packages (PackageApprovals)	No change packages require approval before migration. CICS Configuration Manager does not check whether change packages have been fully approved before migrating them.	Change packages *may* require approval. For details, see "Change package approval" on page 23.
Automatic change package numbering (PackageAutoNumber)	Users can specify their own alphanumeric change package identifiers.	New change packages are automatically assigned the next available 8-digit identifier (00000001, 00000002, etc.). Users cannot specify their own change package identifiers.
Security checking for server API commands [2] (SecurityActive)	The CICS Configuration Manager server does not check whether users are authorized to perform server API commands. This includes API commands for approving or disapproving change packages. If security checking is inactive, then any user can represent any approval role to approve or disapprove any change package. When you attempt to activate security checking for server API commands, the CICS Configuration Manager server checks whether you have the authority to update the system options. The server performs this check even if security checking is currently inactive.	Each time the CICS Configuration Manager server receives an API command from a client (such as the ISPF dialog interface), the server checks whether the user is authorized to perform that API command.
Security checking for resource definition keys [2] (ObjectSecurityActive)	The CICS Configuration Manager server does not check whether users are authorized to manipulate resource definitions based on the resource definition key values (group, type, and name).	For some API commands, each time the command attempts to manipulate a resource definition, the server checks whether the user who requested the command is authorized to manipulate a resource definition with those key values.
Transformation processing for resource migrations (TransformRulesActive)	Transformation rule sets are ignored. When migrating a change package, CICS Configuration Manager copies candidate resource definitions directly from the source to the target CICS configurations.	When migrating a change package, CICS Configuration Manager uses the transformation rule sets identified by the migration scheme to transform candidate resource definitions.
Exit point processing in the CICS Configuration Manager server (ExitPoints)	User exit programs are ignored.	CICS Configuration Manager invokes user exit programs that are marked as active. For details, see "Invoking user exit programs" on page 315.

[1] When installing CICS Configuration Manager, you specify the initial values for system options by editing and submitting the JCL member CCVXSYSO in the sample library SCCVSAMP. CCVXSYSO uses the parameter names shown in parentheses to represent the system options.

[2] If you activate this option, then you also need to specify:

- The SAF resource class that the server uses for these security checks.
- The prefix that the server uses in the security keys.

For details, see "Restricting access to API commands and resource definitions" on page 107.

Workflow and types of user

To incorporate CICS Configuration Manager into your workflow, it is useful to consider the different types of CICS Configuration Manager user. The users and the workflow described here represent only one possible scenario. Some types of user may not apply to your organization, and your organization may have types of user not listed here. Keep in mind that one person may perform the roles of several types of user.

CICS Configuration Manager administrator

It is recommended that you nominate one person as the CICS Configuration Manager administrator. Only this person should be authorized to create or update CICS configurations, migration schemes, approval profiles, and transformation rules. (These are the definitions under ISPF dialog option **1 Administer**.) This will help to ensure consistent naming of these definitions.

Typically, the CICS Configuration Manager administrator is an experienced CICS administrator.

Security administrator

The security administrator might not actually use CICS Configuration Manager, but is responsible for updating the security database (for example, RACF®) to meet CICS Configuration Manager security requirements. For details, see Chapter 3, "Security," on page 105.

Defining approval profiles may involve both the CICS Configuration Manager administrator and the security administrator. The CICS Configuration Manager administrator defines the approver roles in the approver profiles; the security administrator must update the security database to recognize these approver roles.

Application developers

Application developers may need to create resource definitions for new applications, or edit resource definitions to match changes to existing applications. Application developers may also need to package resource definitions (add them to change packages) to assist their migration to other environments.

Edit once, migrate many times:

Although you can use CICS Configuration Manager to edit resource definitions directly in any CICS environment, one benefit of CICS Configuration Manager is that you can edit resource definitions in one environment only, and then use change packages to migrate those edits to other environments. For example, you might choose to edit resource definitions only in your development environment, and then use change packages to migrate those edits to your test environment, and then to production. This allows you to separate the responsibility for editing resource definitions from migrating those edits between environments.

CICS administrators

CICS administrators may need to edit resource definitions to reflect changes in CICS systems, such as changes in the topology of CICS regions, or upgrades to new versions of CICS.

Project managers

Project managers need to coordinate how changes to resource definitions are introduced into the "life cycle" of CICS environments. To do this, project managers can create change packages in CICS Configuration Manager, then direct application developers and CICS administrators to add new or changed resource definitions to the appropriate change package. When all edits to the resource definitions in a change package are complete, the project manager marks the change package as ready. The ready change package can be approved or disapproved, if required.

Approvers

Approvers can approve or disapprove change packages. Approvers should be the "stakeholders" in a change package. For example, this could include:

- Developers who are responsible for approving a change before it is migrated from their development environment to the test environment.
- Testers (members of a "quality assurance" team) who are responsible for approving a change before it is migrated from their test environment to the production environment.
- Users who could be affected by a change package being migrated to their production environment.

Change administrators

Change administrators need to control and audit changes to the system environment. After a change package has been approved, the change administrator can migrate it to the target CICS environment (for example, from development to test, or from test to production). If the migrated changes cause problems in the target CICS environment, the change administrator can undo the changes by backing out the change package.

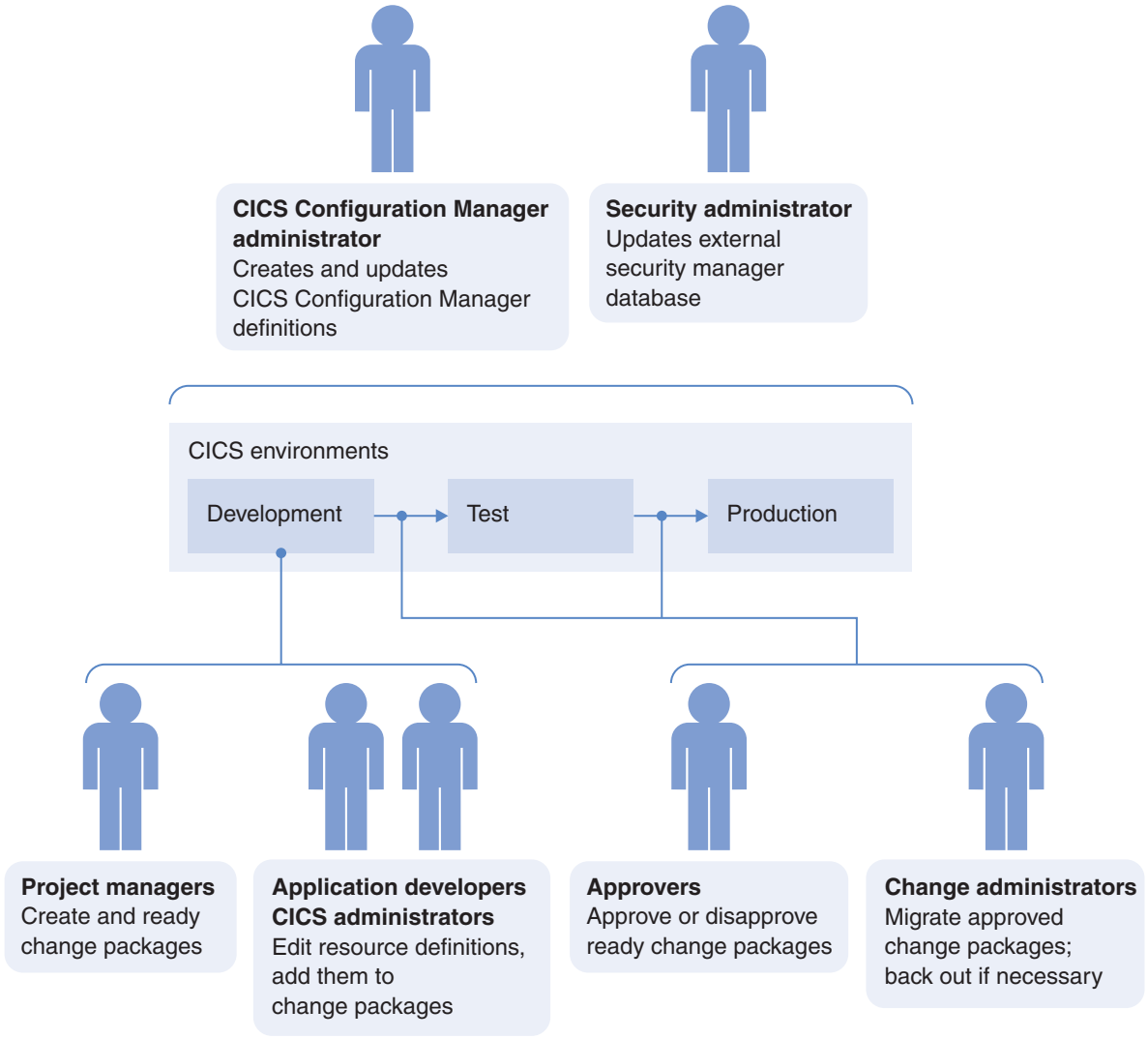


Figure 39. Workflow and types of user: a possible scenario

Supported system topologies

CICS Configuration Manager supports many kinds of system topologies; the few restrictions are described here. In these descriptions, the term "system" refers to an MVS™ image.

CICS versions

The release level of CICS Transaction Server that runs the CICS Configuration Manager server must be the *same as or later than* the release levels of CICS Transaction Server that manage the CSD files or the CICSPlex SM data repositories you want to use with CICS Configuration Manager. If your system uses CICSPlex SM, then the release level of CICS Transaction Server that runs the CICS Configuration Manager server must be the *same as* the release level of CICS Transaction Server that runs the local CMAS.

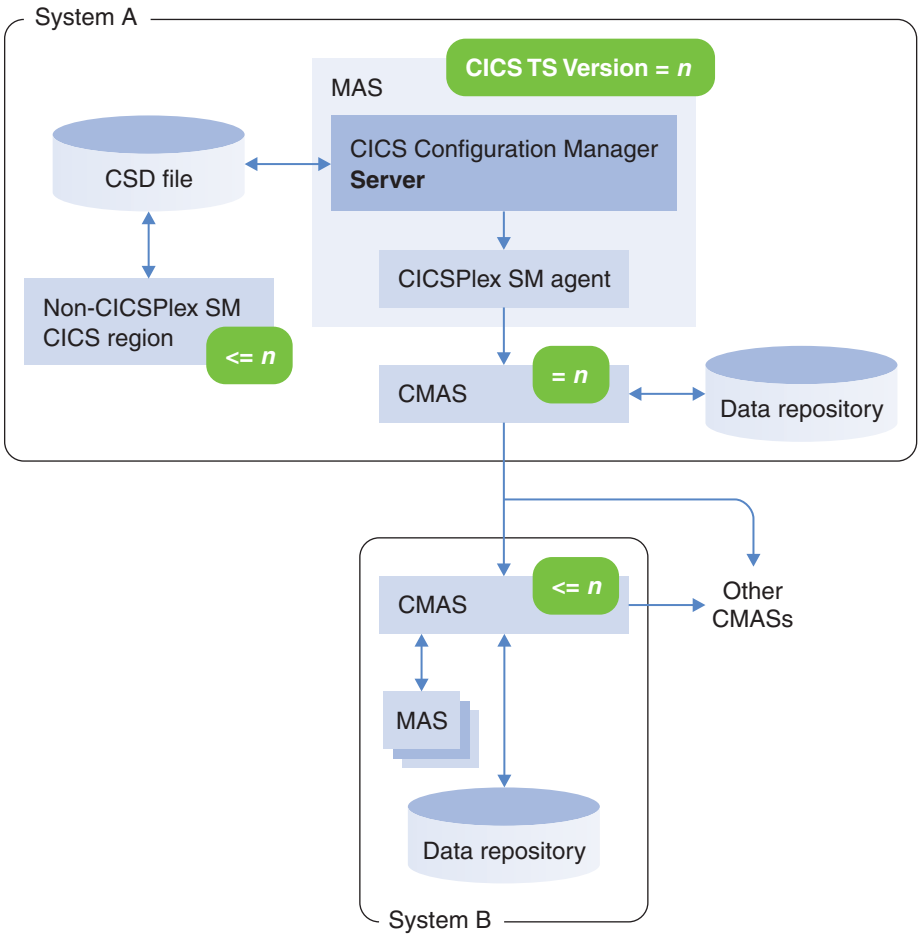


Figure 40. Release levels of CICS Transaction Server for z/OS

Location of CSD files

To manage resource definitions in a CSD file, the CICS Configuration Manager server must be able to access the CSD file. The CSD file must be on the same system as the server, or on shared DASD accessible to the server.

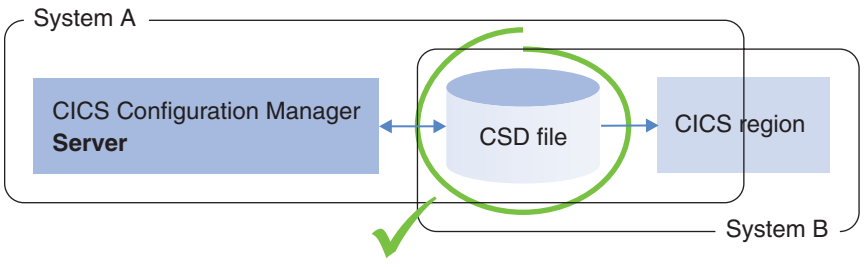


Figure 41. CSD files must be on the same system as the CICS Configuration Manager server, or on shared DASD

If you want to use CICS Configuration Manager to manage resource definitions that are stored in a CSD file on a remote system, you must install CICS Configuration Manager on the remote system, and log on to that system to manage those resource definitions. For example, suppose that your organization has two

data centers: one in New York, and one in Shanghai. Rather than using a single CICS Configuration Manager installation to manage the CICS regions for both centers, your organization has decided to install CICS Configuration Manager at both data centers. If you are a CICS administrator in Shanghai, and you need to manage the CICS resource definitions at the data center in New York, you need to remotely log on to the New York system, and use its CICS Configuration Manager.

Alternatively, you can store the resource definitions in a CICSPlex SM data repository, rather than a CSD file.

Location of maintenance point CMAS

To manage resource definitions in a CICSPlex SM context, the CICS Configuration Manager server must be able to access that context. The server must run in a *local MAS* whose CMAS either:

- Is the maintenance point CMAS for that context.

  or

- Participates in the management of that context. Physically, access to the maintenance point CMAS for that context may be direct or indirect.

For example, Figure 42 on page 64 shows a topology where the CMAS for the CICS Configuration Manager server is the maintenance point for only one CICSPlex SM context, DEVT. Note that the data repository for this CMAS contains only the resource definitions for the DEVT context. The resource definitions for the other contexts are stored in other data repositories; the CMAS for the CICS Configuration Manager server routes updates to the appropriate maintenance point CMAS.

For best performance, the connections between CMASs should be via direct CMAS-to-CMAS links (as shown here). However, the connections can also be indirect, via a chain of CMAS-to-CMAS links.

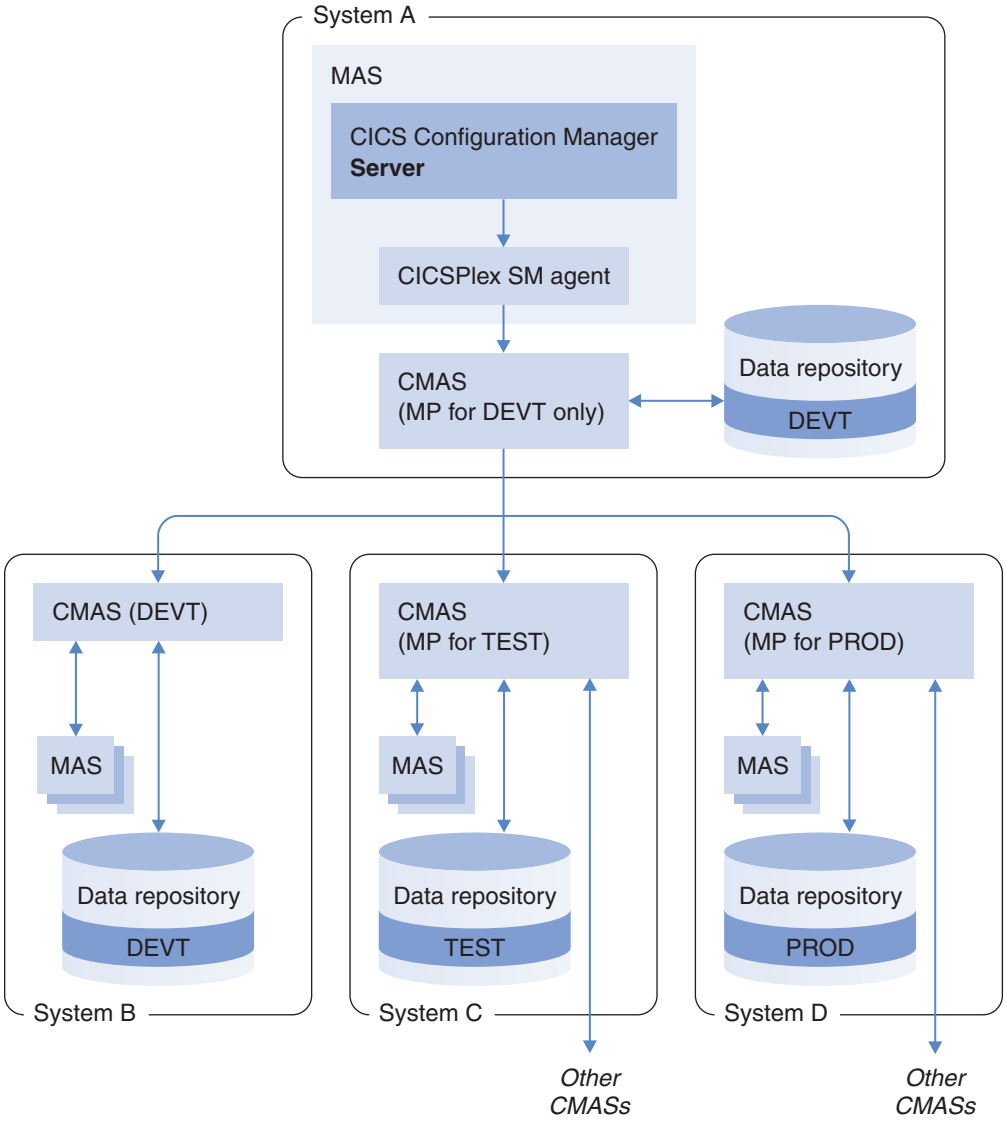


Figure 42. The CMAS for the CICS Configuration Manager server must be linked, directly or indirectly, to all of the contexts that you want to manage

For information on defining CMAS-to-CMAS links, see the CICSPlex SM documentation.

Location of client and server

The CICS Configuration Manager client (the ISPF dialog or the batch command interface) and CICS Configuration Manager server can be on different systems, but they must use the same external security manager database, such as a RACF database. This is because the client may generate a PassTicket, and then send it to the CICS Web Interface that is used by the server.

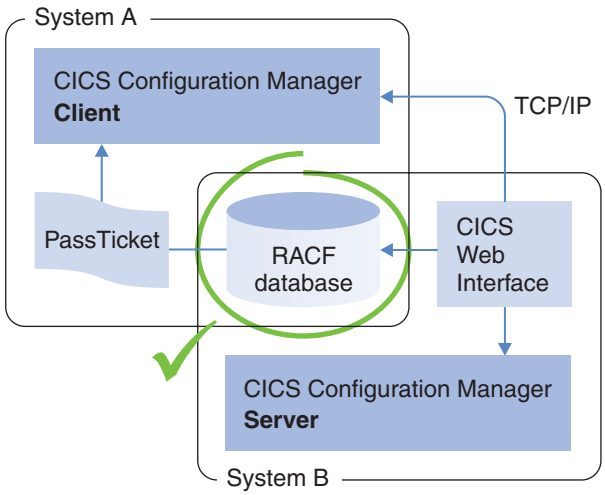


Figure 43. CICS Configuration Manager client and server must use the same security database

If the security database used to generate the PassTicket and the security database used to authenticate the PassTicket are different, then the authentication may fail, and the CICS Web Interface will deny the client access.

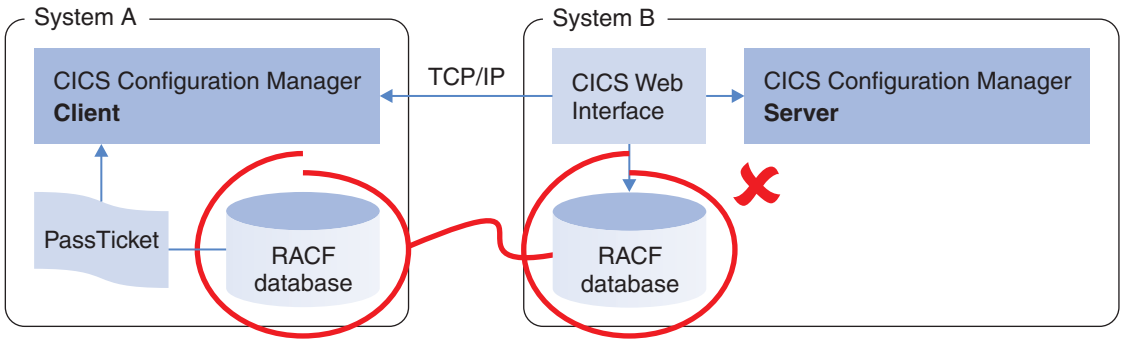


Figure 44. Not allowed: CICS Configuration Manager client and server using different security databases

For more information about PassTickets, see *z/OS: SecureWay Security Server RACF Security Administrator's Guide*.

How many installations do I need?

If the resource definitions that you want to manage are stored in CSD files, and the CSD files are on a single system, or on shared DASD that is accessible to that system, then you need to install CICS Configuration Manager on that one system only. If your CSD files are spread across systems on DASD that is not shared, then you need to install CICS Configuration Manager on each system.

If you use CICSPlex SM, and all of your CMASs are linked, then you need only a single CICS Configuration Manager installation.

If you want to migrate resource definitions from one CICS configuration to another, then those CICS configurations must be managed by the same CICS Configuration Manager installation. **You cannot migrate resource definitions between installations of CICS Configuration Manager**.

Chapter 2. Installation and customization

To install and customize CICS Configuration Manager V2.1, or upgrade from V1.2:

1. Follow the installation instructions in the *CICS Configuration Manager: Program Directory*. These create the CICS Configuration Manager product libraries.
2. **If you are installing CICS Configuration Manager for the first time**, perform the steps described in "Installing for the first time" on page 71.

   If you are upgrading from CICS Configuration Manager V1.2, then you only need to perform a subset of the steps required for a first-time install: see "Upgrading from V1.2" on page 68.

Product libraries

To install CICS Configuration Manager, the first step is to create the product libraries, as described in the *CICS Configuration Manager: Program Directory*.

CICS Configuration Manager consists of the following product libraries:

- Load module libraries:
  SCCVA*lang* **1**
  National language support (NLS) load module library. Used by the CICS Configuration Manager server and batch client.
  SCCVAUTH **1**
  Authorized program load module library. Contains the batch client program, the journal housekeeping batch program, and the program that the ISPF client calls to generate PassTickets.
  SCCVLINK
  Application load module library for the CICS Configuration Manager server and its ISPF client. (The CICS Configuration Manager server uses only two product libraries: this library and SCCVA*lang*.)
- Libraries used only by the CICS Configuration Manager ISPF dialog client:
  SCCVEXEC
  ISPF REXX EXEC library
  SCCVM*lang*
  ISPF message library
  SCCVP*lang*
  ISPF panel library
  SCCVS*lang*
  ISPF skeleton JCL library (the ISPF dialog uses the members in this library to submit batch jobs)
  SCCVT*lang*
  ISPF table library
- Sample libraries:
  SCCVSAMP
  Includes skeleton JCL for installation jobs, XML schema for the SOAP API, sample user exit programs, and layout definitions for user exit parameters
  SCCVSAM2
  Contains sample members whose records are wider that 80 bytes, such as input data sets for DATATAKEUP (the batch command for defining CICS configurations).

where *lang* is one of the following 3-character national language codes:
ENU U.S. English
JPN Japanese

The following figure illustrates which product libraries are used by each CICS Configuration Manager component.

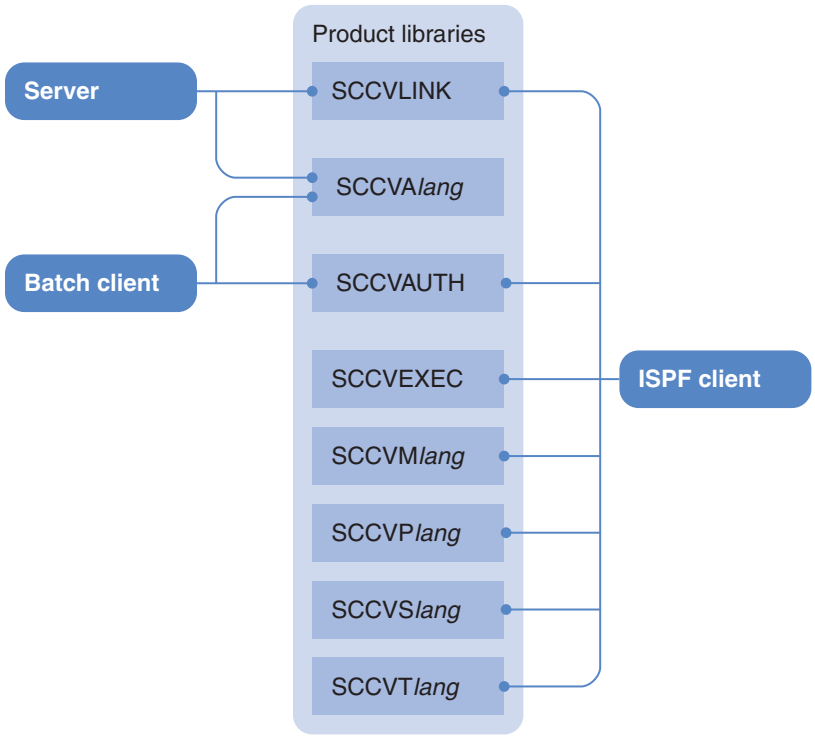


Figure 45. Product libraries used by each CICS Configuration Manager component

CICS Configuration Manager programs must be located in libraries specified via a STEPLIB or JOBLIB DD card; alternatively, they may be placed in a link-listed data set. Where there is a requirement to connect to a CICS Configuration Manager server via an authenticated port, there is an additional requirement that certain modules must reside in an APF-authorized library.

1 **APF-authorized libraries:** If you want the supplied CICS Configuration Manager ISPF or batch client to connect to the CICS Configuration Manager server via an authenticated Internet Protocol (IP) port, then you will need to APF-authorize the libraries SCCVA*lang* and SCCVAUTH, or add their members to an existing APF-authorized library. To connect to the server via an authenticated port, the CICS Configuration Manager clients create and send a PassTicket to the server. To create the PassTicket, the clients call an authorized program that must reside in an APF-authorized library. This requirement is described in more detail during the associated customization step, “Optional: Enable PassTicket processing” on page 86.

If you use only an unauthenticated port, then no CICS Configuration Manager libraries need to be APF-authorized.

Upgrading from V1.2

The following steps describe how to upgrade from CICS Configuration Manager V1.2 to V2.1.

Print and fill in the table presented in "Information you will need for installation" on page 72, then print this topic and follow the instructions carefully. After performing each step, write a checkmark next to the step number to mark it as complete.

You can continue to use your existing CICS Configuration Manager V1.2 repository and journal with V2.1. However, the CICS Configuration Manager server, clients, and agents must be at the same version: you must follow the steps below to upgrade them together. For example, you cannot use the ISPF dialog interface supplied with V1.2 to connect to a V2.1 server.

1. Apply the following fixes to CICS Configuration Manager V1.2:

   PTF for APAR PK65882
   This PTF increases the record length of the CICS Configuration Manager V1.2 journal. You must apply this PTF before using your existing V1.2 journal with V2.1.

   "Toleration" PTF for APAR PK86097
   CICS Configuration Manager V2.1 introduces new record types to the CICS Configuration Manager repository, and some modifications to existing repository records. Without this PTF, CICS Configuration Manager V1.2 is not aware of these changes. Applying the PTF enables you to revert to CICS Configuration Manager V1.2 after you have used the repository with V2.1.

   While it is strongly recommended that you install this PTF to V1.2 now, before using V2.1, this PTF is required only if you revert to CICS Configuration Manager V1.2 using a CICS Configuration Manager repository or journal that has been updated by V2.1. In that case, you *must* apply the PTF to V1.2 before reverting to V1.2.
2. Stop the CICS region that runs the CICS Configuration Manager server, if it is not already stopped.
3. Edit the startup job for the CICS region that runs the CICS Configuration Manager server, and change the CICS library concatenation DFHRPL to refer to the V2.1 product library high-level qualifier:

   ```
   //DFHRPL   ...
            DD DSN=ccvhlq.SCCVLINK,DISP=SHR
            DD DSN=ccvhlq.SCCVAlang,DISP=SHR
   ```
4. Edit and submit the JCL in the following members of the V2.1 sample library SCCVSAMP:
   CCVXBTS
   CCVXWORK

   These delete and re-define work files for the CICS Configuration Manager server.
5. Edit and submit the JCL in the following member of the V2.1 sample library SCCVSAMP:
   CCVXJNL

   This deletes an obsolete control file (not, as the JNL suffix might suggest, the journal) that was used internally by the CICS Configuration Manager V1.2 server.
6. Edit the V2.1 sample member **CCVXCSDD**.

   This member contains the resource definitions for group CCV210 required by the CICS Configuration Manager V2.1 server.

Edit the DSNAME attributes for the following file resource definitions in CCVXCSDD to refer to the data set names of your existing CICS Configuration Manager V1.2 repository and journal:
- CCVDDD (repository file)
- CCVJNL, CCVPT1, CCVPT2 (journal files)

Tip: To find out the existing data set names, look at the corresponding file resource definitions in the existing group CCV120 in the CICS Configuration Manager server CSD file, or the version of the CCVXCSDD member that you edited when installing V1.2.

7. Edit and submit the V2.1 sample member **CCVXDUP**. In addition to editing the <*label*> placeholders, "uncomment" (remove the asterisk from) the REM commands near the bottom of the member. Expect return code 4 from this job.

   This job creates the group CCV210 in the CICS Configuration Manager server CSD file, adds that group to the startup list, and removes the V1.1 and V1.2 groups (CCV110 and CCV120) from the startup list.

   Replace the <SVRLIST> placeholder in CCVXDUP with one of the lists specified by the group list used at CICS startup.
8. Optional: if you prefer not to have the CICS Configuration Manager server initialization program CCVIINIT in the PLTPI, then remove it.

   Previous releases of CICS Configuration Manager required you to add CCVIINIT to the PLTPI. This is no longer a requirement in V2.1. You can choose to keep CCVIINIT in the PLTPI or remove it, according to your own preference.

   If you remove CCVIINIT from the PLTPI, then you must invoke this program manually after the CICS region starts.
9. If necessary, update the value of the SIT parameter CSDLSRNO.

   Previous releases of CICS Configuration Manager required you to specify CSDLSRNO=NONE.

   In CICS Configuration Manager V2.1, the values of CSDLSRNO that you can specify depend on the release of CICS Transaction Server that runs the CICS Configuration Manager server region:
   - V3.2, or earlier: you can specify any value allowed by CSDLSRNO
   - From V4.1: you can specify any value allowed by CSDLSRNO, with the following exception: if you specify the SIT parameter TRANISO=YES, then you cannot specify CSDLSRNO=NONE
10. Start the CICS Configuration Manager server:
    a. Perform a **cold** start or an **initial** start of the CICS region that runs the CICS Configuration Manager server.
    b. If you removed CCVIINIT from the PLTPI, then invoke CCVIINIT now to start the CICS Configuration Manager server.

       Tip: You can run program CCVIINIT by invoking the transaction CCVI on the CICS command line.
11. If you previously APF-authorized the CICS Configuration Manager V1.2 product libraries SCCVAUTH and SCCV*lang*, then APF-authorize the equivalent V2.1 libraries. Place the V2.1 libraries in the APF-authorized list.

    If you copied the V1.2 members from SCCVAUTH and SCCV*lang* to your own APF-authorized libraries:
    a. Backup the V1.2 CCV* members (so that you can restore them if you decide later to revert to V1.2)

b. Copy the V2.1 CCV* members from SCCVAUTH and SCCV*lang* to your own APF-authorized libraries

Note:

- The V2.1 CCVSCRPT member of the SCCVAUTH library is the program that creates PassTickets for the CICS Configuration Manager ISPF client. The V2.1 CCVSCRPT member is compatible with both the V1.2 and V2.1 ISPF clients. However, do not use the V1.2 CCVSCRPT member with the V2.1 client.
- The CCVBMAIN (batch client interface program) and CCVBHKP (batch housekeeping program) members of the SCCVAUTH library are version-specific: the version of the program must match the version of the CICS Configuration Manager server that the program connects to. You cannot, for example, use the V2.1 programs to connect to a V1.2 server.

12. Update the command that you use to invoke the CICS Configuration Manager ISPF dialog interface program CCVOREXX: replace the high-level qualifier of the CICS Configuration Manager V1.2 product library with the V2.1 high-level qualifier.
13. Update any JCL that you have created to call the CICS Configuration Manager batch client interface program CCVBMAIN or the batch housekeeping program CCVBHKP: replace the high-level qualifier of the CICS Configuration Manager V1.2 product library with the V2.1 high-level qualifier.
14. If your installation uses the CICS Configuration Manager agent, then in each of the remote regions running the CICS Configuration Manager agent:
    a. Replace the agent program CCVSREMP supplied with V1.2 with the updated program supplied with V2.1.

       This step is necessary because the layout of the parameters that the CICS Configuration Manager V2.1 server passes to the agent program has changed; you cannot use a CICS Configuration Manager V2.1 server to communicate with a V1.2 agent.
    b. Either:
       - Use the CEMT transaction supplied with CICS Transaction Server for z/OS to perform a newcopy of the agent program CCVSREMP:

         ```
         CEMT SET PROGRAM(CCVSREMP) NEWCOPY
         ```

         or
       - Restart the region

       You cannot use CICS Configuration Manager to perform this particular newcopy, because, as described above, you cannot use a CICS Configuration Manager V2.1 server to communicate with a region running the V1.2 agent.
15. If you plan to use the new-for-V2.1 deployment analysis reporting feature to collect runtime resource definitions from active CSD-based CICS regions, then you need to install a new agent program, CCVSNCCR, alongside the existing agent program CCVSREMP. For details, see “Optional: Configure the agent for CSD-based CICS regions” on page 92“Optional: Configure the agent for CSD-based CICS regions” on page 92.

Installing for the first time

The following topics describe the detailed step-by-step instructions for installing CICS Configuration Manager for the first time:

1. “Information you will need for installation” on page 72

2. "Configure a CICS region for the CICS Configuration Manager server" on page 75
3. "Define an OMVS segment for TSO users" on page 85
4. "Optional: Enable PassTicket processing" on page 86 (this is only required if you want the supplied CICS Configuration Manager ISPF dialog or batch client interface to connect to the CICS Configuration Manager server via an authenticated IP port)
5. "Start the ISPF dialog interface" on page 89
6. "Configure the ISPF interface to create batch jobs" on page 91
7. "Define CICS Configuration Manager administrative records" on page 92
8. "Optional: Configure the agent for CSD-based CICS regions" on page 92

Print these topics and follow the instructions carefully. After performing each step, write a checkmark next to the step to mark it as complete.

Before following the instructions, read "Components" on page 10 to familiarize yourself with how CICS Configuration Manager fits into your existing system environment.

The following requirements for the CICS region that runs the CICS Configuration Manager server are also described in the instructions. They are repeated here because, while they may differ from your normal site practices for configuring CICS regions, **these requirements are crucial to a successful installation:**

- You must specify the CSD file via the SIT parameter CSDDSN, *not* via the ddname DFHCSD in the CICS region startup JCL.

  The CICS Configuration Manager server dynamically modifies the DFHCSD data set name each time it needs to access a CSD file. Specifying the ddname in JCL prevents the server from dynamically allocating the ddname, and causes the CICS Configuration Manager server to report an error.
- You must add the resource group CCV210 to a startup list specified in the SIT parameter GRPLIST; you must not rely on autoinstall for resource definitions in this group. This group contains the resource definitions required by the CICS Configuration Manager server. The step-by-step instructions describe how to create this group from the resource definitions in member CCVXCSDD of the sample library SCCVSAMP.

Information you will need for installation

Before performing the installation steps, you might find it useful to gather all of the information that you will need. Print the following table, and then write the values for your installation in the "Item" column.

Table 6. Information you will need to customize your installation of CICS Configuration Manager

Category	Item	Placeholder in sample installation member	Required for upgrading from V1.2?
CICS Configuration Manager product	High-level qualifier (HLQ) of the product libraries: (SMP/E-controlled.)	<CCVHLQ> 1	✓

Table 6. Information you will need to customize your installation of CICS Configuration Manager (continued)

Category	Item	Placeholder in sample installation member	Required for upgrading from V1.2?
CICS Configuration Manager server connection details	IP address:		
	Unauthenticated port (number and "name"): Default name: "CCVNONE"		
	Authenticated port: Default name: "CCVBASIC"		
	Authenticated and SSL-encrypted port: Default name: "CCVSSL"		
CICS region running the CICS Configuration Manager server	CICS region name:		
	CICS region default user ID:		
	HLQ of the CICS Transaction Server for z/OS product libraries:	<CICSHLQ> 1	✓
	HLQ of the CSD file:	<CSDHLQ> 1	✓

Table 6. Information you will need to customize your installation of CICS Configuration Manager (continued)

Category	Item	Placeholder in sample installation member	Required for upgrading from V1.2?
	List specified in the SIT parameter GRPLIST: (In the customization steps, you add the CICS Configuration Manager group CCV210 to this list.)	<SVRLIST>	✓
	Optional: suffix of the PLTPI containing the entry for the initialization program CCVIINIT: (Only if you want to start the CICS Configuration Manager server via the PLTPI.)		
CICS Configuration Manager server application	CICS application ID:	<SVRAPPL>	✓
	SMS management class for temporary work files:	<MGTC>	✓
	SMS storage class for temporary work files:	<STGC>	✓
	HLQ for repository, journal, and temporary work files: (Not SMP/E-controlled.)	<DATAHLQ> **1**	✓
	CICSPlex maintenance point (MP) name (required only if your system uses CICSPlex SM):		
Security	System authorization facility (SAF) resource class for security checking: Default: FACILITY		

Table 6. Information you will need to customize your installation of CICS Configuration Manager (continued)

Category	Item	Placeholder in sample installation member	Required for upgrading from V1.2?
	Prefix that CICS Configuration Manager adds to SAF resource keys: Default: CCM		
	Password-key for PassTickets: (Only required if you define authenticated ports for the CICS Configuration Manager server.)		

1 For an example of how the installation steps use these HLQs, see member CCVXDUP of the sample library SCCVSAMP.

Configure a CICS region for the CICS Configuration Manager server

The CICS Configuration Manager server is a set of CICS programs. To run the server, you need to configure a CICS region.

Choose or create a CICS region

1. Create a new CICS region or choose an existing CICS region for the CICS Configuration Manager server.

   The release level of CICS Transaction Server that runs the CICS Configuration Manager server must be the *same as or later than* the release levels of CICS Transaction Server that manage the CSD files or the CICSPlex SM data repositories you want to use with CICS Configuration Manager. If your system uses CICSPlex SM, then the release level of CICS Transaction Server that runs the CICS Configuration Manager server must be the *same as* the release level of CICS Transaction Server that runs the local CMAS. For an illustration of these requirements, see Figure 40 on page 62.

   The steps that follow do not describe how to create and configure a CICS region; it is assumed that you already know how to do this.

Recommendations:

Create a dedicated CICS region for the CICS Configuration Manager server.

If you choose not to use a dedicated CICS region, then use a CICS region that does **not** run any user applications. This allows you to isolate the resource definitions and system initialization parameters required by CICS Configuration Manager from your user applications, avoiding potential conflicts.

If your system uses CICSPlex SM, then you may wish to consider using the CICS region that runs the CICSPlex SM Web UI server. The Web UI server and the CICS Configuration Manager server both require CICS Web support; you can use the existing CICS Web support in that region for the CICS Configuration Manager server. For an illustration of this concept, see Figure 8 on page 11.

2. If your system uses CICSPlex SM: identify the CICS region to the CMAS.
3. Configure CICS Web support in the CICS region, if it is not already configured.
4. Ensure that your CICS maintenance is up to date. CICS Configuration Manager uses CICS features such as BTS that may not be commonly used at your site.

   In particular, ensure that the CEE group in the CICS region is current and complete. The CICS Configuration Manager server is a Language Environment application that uses the Assembler, PL/I, COBOL, and C languages. CICS defines the Language Environment via group CEE, a sample of which is provided in the CEE.SCEESAMP data set. It is essential that the CEE group is both current and complete in the CICS Configuration Manager server region. (CEE is the default name for this group. Your site may use a different name.)
5. Start the CICS region, if it is not already started.

   This confirms that the CICS region starts successfully before configuring it for CICS Configuration Manager.
6. Use the CLER transaction, that is supplied by Language Environment, to review the Language Environment runtime options:
   - Ensure that the ALL31 option is set ON.
   - Ensure that the STACK and HEAP options both specify the ANYWHERE suboption.

   For more information about specifying Language Environment runtime options, see the Language Environment documentation.
7. Stop the CICS region.

Allocate and initialize data sets

In addition to the product libraries created by the steps in the *CICS Configuration Manager Program Directory*, CICS Configuration Manager requires other storage data sets. You need to allocate these data sets by editing and submitting JCL supplied in members of the sample library SCCVSAMP. To edit these members, replace the <*label*> placeholders, described in the comment header of each member, with appropriate values for your system.

Unless specified otherwise, expect return code 0 from these jobs.

1. Edit and submit:

   CCVXDDD
   Allocates the CICS Configuration Manager repository data set.
2. Edit and submit:

CCVXWORK
Allocates various CICS Configuration Manager work files.

You should only run this job either:

- When first installing the product

  or

- After the CICS region running the CICS Configuration Manager server has successfully shut down

For details, see "Housekeeping: which files should I back up?" on page 103.

3. Edit and submit:

CCVXBTS
Allocates SOAP business transaction services repository.

Define CICS Configuration Manager system options

When the CICS Configuration Manager server starts, it looks in the repository for a system options record. Among other data, this record specifies:

- The IP addresses and port numbers on which the server listens for clients
- If you are using CICSPlex SM, the context name of the local CMAS

Before starting the server, you need to initialize the repository by creating this system options record and supplying initial values for the system options:

1. Edit and submit the JCL in the following member of the sample library SCCVSAMP:

CCVXSYSO
Defines system options.

The system options are represented in the member by the following parameters:

PackageApprovals
PackageAutoNumber
TransformRulesActive
SecurityActive
ObjectSecurityActive
ExitPoints
You can specify the value of these system options as either Y (active) or N (inactive). If you omit one of these system options from the JCL, the default is N. For a description of these system options, see Table 5 on page 58.

SAFClass
ObjectSAFClass
The system authorization facility (SAF) resource class that you want to use for each type of CICS Configuration Manager security checking: for server API commands (SAFClass) and for resource definition keys (ObjectSAFClass). The default class for both types is FACILITY. For details, see "Restricting access to API commands and resource definitions" on page 107.

The values of SAFClass and SAFPrefix (below) are only used when CICS Configuration Manager security checking for server API commands (system option SecurityActive=Y) and CICS region security checking (SIT parameter SEC=YES) are both active.

The values of ObjectSAFClass and ObjectSAFPrefix (below) are only used when CICS Configuration Manager security checking for resource

definition keys (system option ObjectSecurityActive=Y) and CICS region security checking (SIT parameter SEC=YES) are both active.

SAFPrefix
ObjectSAFPrefix
The prefix that CICS Configuration Manager adds to the SAF resource keys (known as "security keys") for each type of security checking: for server API commands (SAFPrefix) and for resource definition keys (ObjectSAFPrefix). The default prefix for both types is CCM. For details on the format of these security keys, see "Security keys for API commands" on page 109 and "Security keys for resource definitions" on page 111.

CICSPlexMPname
(Required only if your system uses CICSPlex SM.)

The 1- to 8-character name of the local CMAS that manages the MAS in which the CICS Configuration Manager server runs. Typically, this CMAS would be a maintenance point (MP), but this is not a requirement. (For details on MP locations, see "Location of maintenance point CMAS" on page 63.)

This name must match the CICSPlex SM system parameter NAME of the local CMAS (specified in the extrapartition transient data queue COPR, ddname EYUPARM).

Furthermore, the CICSPlex SM system parameter CMASSYSID of the MAS must match the SYSID of the local CMAS.

The following figure illustrates these values and their relationships:

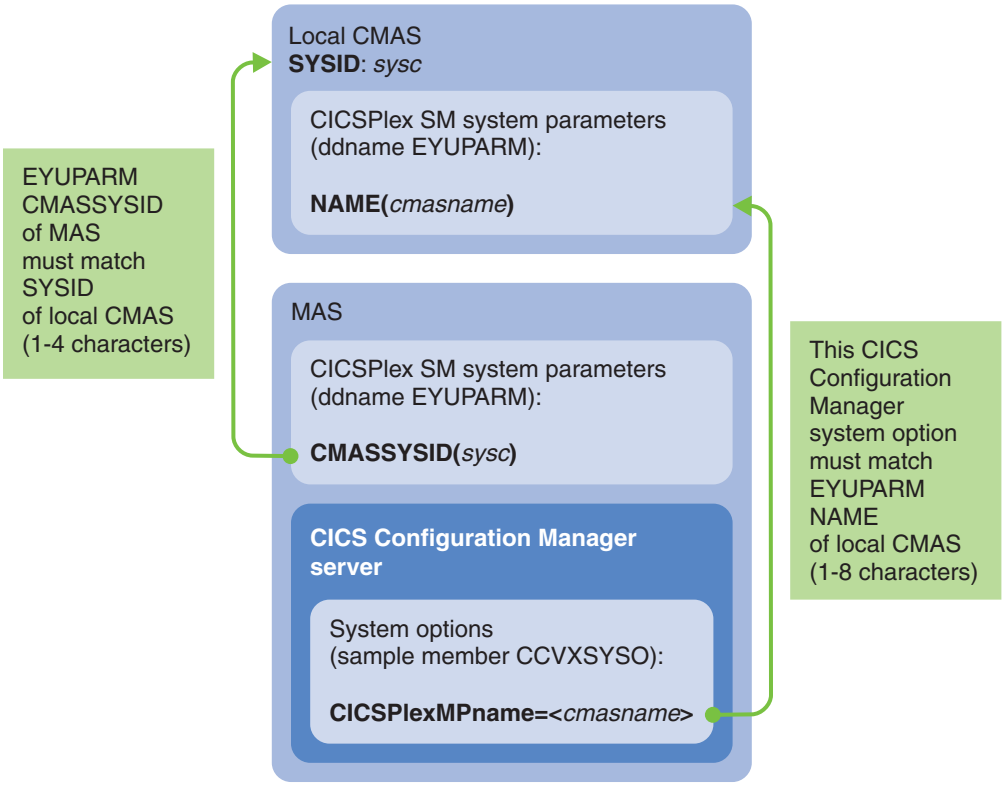


Figure 46. CICS Configuration Manager system option CICSPlexMPname must match EYUPARM NAME of local CMAS

The CICS Configuration Manager server uses this CMAS name to send requests to the CICSPlex SM API.

If these values are inconsistent, then, when CICS Configuration Manager attempts to send a CICSPlex API request to the CMAS, CICSPlex SM responds with an exception: return code 1028 (INVALIDPARM), reason code 1282 (CONTEXT).

UnauthenticatedPortNumber
UnauthenticatedPortName
AuthenticatedPortNumber
AuthenticatedPortName
SSLPortNumber
SSLPortName

The CICS Configuration Manager server can listen for clients on three types of TCP/IP port:

- Unauthenticated and unencrypted
- Authenticated and unencrypted
- Authenticated and encrypted using the secure sockets layer (SSL)

You can define up to three ports, one of each type, but you must specify at least one port. You determine which ports the CICS Configuration Manager server listens to by specifying the port numbers in this JCL. Typically, you select which type of port you want to use, and define a single port number for that type. However, you might have reasons for using more than one type of port. For details on the level of security offered by each port, see "Authenticating the client user" on page 105.

If you decide not to specify a particular port type, then delete the associated parameters from the JCL.

You cannot share port numbers between port types. Ask your network administrator for spare port numbers that you can allocate to CICS Configuration Manager.

The port "names" are the names of the TCPIPSERVICE resource definitions that the CICS Configuration Manager server dynamically defines for each port when the server initializes. (You do not need to define these resource definitions statically in the CSD file.) The default names for the unauthenticated, authenticated, and SSL ports are CCVNONE, CCVBASIC, and CCVSSL, respectively. If you specify a port number without a name, then the port is defined with the default name. However, if you specify a port name without a number, then the name is ignored, and the port is not defined.

ServerIPAddress

The IP address of the host system, as defined in its TCP/IP profile. You must specify this address as one of the following:

- An IP address in dotted decimal form (*nnn.nnn.nnn.nnn* where *nnn* is 0–255)
- The literal string INADDR_ANY (for details, see the description of the IPADDRESS attribute of the TCPIPSERVICE resource definition in *CICS Transaction Server for z/OS: CICS Resource Definition Guide*)

Proxy servers not supported: You might not be able to connect to a CICS Configuration Manager server via a proxy server.

Changing system options after installation

To change the system options for the CICS Configuration Manager server IP address, ports, or CICSPlex SM MP name after installing CICS Configuration Manager:

1. Create a copy of the sample JCL member CCVXSYSO
2. Edit the copy so that it no longer affects the journal, as follows:
   a. Edit the JCL so that it no longer deletes and then re-creates the journal: either remove the DELETE and CREATE steps, or add `RESTART=PRIME1` to the job card (to skip those steps).
   b. In step PRIME1, change the line that begins `//JNL DD` to `//JNL DD DUMMY`
   c. Remove step PRIME2
3. Issue the following CICS command to close the CICS Configuration Manager repository file, so that it is available to the batch process in the next step:

   ```
   CEMT SET FILE(CCVDDD) CLO
   ```
4. Submit the edited copy of the JCL.

   Running this job overwrites all CICS Configuration Manager system options, not just the system options for the parameters that you specify in the job. **If you re-run this job, specify all parameters again, not just the ones you want to change.** Before re-running the job, use CICS Configuration Manager ISPF dialog option **1.1 System Options** to view current system option values.
5. Re-initialize the CICS Configuration Manager server (so that it uses the latest system options in the repository by running the CICS Configuration Manager server initialization program CCVINIT. For details, see "Start the CICS Configuration Manager server" on page 85

   Tip: You can run program CCVIINIT by invoking the transaction CCVI on the command line of a CICS terminal.

To change all other system options, you can use the CICS Configuration Manager ISPF dialog option **1.1 System Options**.

Define CICS resources

The CICS Configuration Manager server requires a set of CICS resource definitions. The following steps add these resource definitions to a group named CCV210 in the CSD file used by the CICS region that you have chosen for the CICS Configuration Manager server.

1. Edit the resource definitions in the following member of the sample library SCCVSAMP:

   CCVXCSDD
   Contains resource definitions for the CICS Configuration Manager server, in a group named CCV210.

   - Replace the `<DATAHLQ>.<SVRAPPL>` placeholders with the high-level qualifiers of the data sets that you want the CICS Configuration Manager server to use.
   - Optionally, if you have specific site standards for managing LSR pools, change the LSRPOOLID attribute of file definitions to refer to the local shared resource (LSR) pools of your choice.

     The file definitions in this sample member specify either LSRPOOLID(1) or LSRPOOLID(8). However, the sample member explicitly defines only LSRPOOL8; it does not explicitly define LSRPOOL1.

If you decide to change the file definitions that specify LSRPOOLID(1), then either specify the number of an LSR pool that is not explicitly defined, or specify the number of an explicitly defined LSR pool that has at least the buffer sizes, MAXKEYLENGTH attribute value, and STRING attribute value of the LSRPOOLID8 definition in this sample member.

If you decide to change the file definitions that specify LSRPOOLID(8), then specify the number of an explicitly defined LSR pool that has at least the buffer sizes, MAXKEYLENGTH attribute value, and STRING attribute value of the LSRPOOLID8 definition in this sample member.

- If you have increased the value of the priority attribute of the CICS-supplied CWBA transaction from its default value of 1, then change the priority attributes of the CCV-prefixed transaction resource definitions (CCVA, CCVB, etc.) so that they are equal to or greater than the priority of CWBA. For example, if the priority of CWBA is 3, the priority of the CCV* transactions must not be 1 or 2; they must be 3 or greater.

  If the priority of the CCV* transactions is less than CWBA, the following symptoms can occur:

  – CICS Configuration Manager clients experience an indefinite wait for a response from the CICS Configuration Manager server.
  – The CICS task for the CICS Configuration Manager server region exhibits high CPU usage.
- The transient data queue named CCVX is used only for deployment analysis. The CICS Configuration Manager server uses this transient data queue to read the filter file specified by the FILTERDATASET parameter of the DEPLOY command. Futhermore, this static definition is effectively for documentation only: if you specify FILTERDATASET, the DEPLOY command dynamically defines CCVX, replacing any existing definition.

2. Edit and submit the JCL in the following member of the sample library SCCVSAMP:

   CCVXDUP
   Defines resource definitions for the CICS Configuration Manager server from the CCVXCSDD member (that you have just edited) in the appropriate CSD file. Also adds the group CCV210 containing these resource definitions to the startup list that you nominate.

   Expect return code 4, because this job defines resource definitions whose names begin with the letter C (typically used by CICS).

Edit the CICS startup job

1. Edit the CICS region startup job as follows:

   //DFHRPL
   Add the CICS Configuration Manager application and national language support load libraries to the CICS library concatenation DFHRPL:

   ```
   //DFHRPL   ...
            DD DSN=ccvhlq.SCCVAlang,DISP=SHR
            DD DSN=ccvhlq.SCCVLINK,DISP=SHR
   ```

   //CCVLOG
   ddname for the CICS Configuration Manager log file transient data queue:

   ```
   //CCVLOG   DD SYSOUT=*
   ```

Optional: Update the PLTPI

To start the CICS Configuration Manager server, you need to invoke the program CCVIINIT. You can do this either by adding this program to the post-initialization program list table (PLTPI) for the CICS region, or by invoking the program yourself after the CICS region has started.

To add CCVIINIT to the PLTPI:

1. Edit the PLTPI source, and add the following entry after the existing entry for the program DFHDELIM:

   ```
   DFHPLT TYPE=ENTRY,PROGRAM=CCVIINIT
   ```

   If a PLTPI does not exist, create one.
2. Assemble and link-edit the updated PLTPI.

Edit CICS system initialization parameters

1. Specify the following CICS system initialization (SIT) parameters:

   CPSMCONN=LMAS
   Only required if your system uses CICSPlex SM. Specifies that you want CICS to initialize the region as a CICSPlex SM locally managed application system (LMAS) connected to the maintenance point CMAS.

   If you are installing CICS Configuration Manager into an existing CICSPlex SM WUI region, then do not alter the existing specification of CPSMCONN=WUI.

   CSDACC=READWRITE
   Required.

   CSDDISP
   Required. You must specify this parameter and the related CSDDSN parameter (below). Whether you specify CSDDISP=OLD or CSDDISP=SHR depends on your site-specific requirements.

   CSDDSN=*name*
   You must specify the CSD file via the SIT parameter CSDDSN, *not* via the ddname DFHCSD in the CICS region startup JCL.

   The CICS Configuration Manager server dynamically modifies the DFHCSD data set name each time it needs to access a CSD file. Specifying the ddname in JCL prevents the server from dynamically allocating the ddname, and causes the CICS Configuration Manager server to report an error.

   CSDLSRNO=*value*
   The values of CSDLSRNO that you can specify depends on the release of CICS Transaction Server that runs the CICS Configuration Manager server region:

   - V3.2, or earlier: you can specify any value allowed by CSDLSRNO
   - From V4.1: you can specify any value allowed by CSDLSRNO, with the following exception: if you specify the SIT parameter TRANISO=YES, then you cannot specify CSDLSRNO=NONE

   CSDRLS=YES or NO
   No restriction on this value. This value has no effect on whether CICS Configuration Manager uses VSAM record-level sharing (RLS) mode to access other CSD files.

After completing installation, if you define a CICS configuration that refers to this CSD file (so that you can use CICS Configuration Manager to manage its resource definitions), then, as for any CICS configuration that refers to a CSD file, you must specify an appropriate RLS access option. For details, see "Defining CICS configurations that refer to CSD files" on page 164.

See also the related RLS parameter.

ENCRYPTION=STRONG (recommended)

When saving to a CSD file resource definitions that contain cipher codes (such as URIMAP and TCPIPSERVICE), CICS restricts the set of cipher-code hex pairs to the set of values consistent with the CICS region's ENCRYPTION parameter value:

- The CICS Configuration Manager server **must** use an ENCRYPTION value that is equal to or higher than the highest level of any encryption required by the CICS-CSD or CICSPlex SM systems that the server manages.
- It is recommended that the CICS Configuration Manager server specifies ENCRYPTION=STRONG, so that it can save any of the permissible (valid) cipher values for URIMAP or TCPIPSERVICE.

GRPLIST=*lists*

One of the lists specified by this parameter must be the list to which you added the group CCV210, in "Define CICS resources" on page 80.

ICVR The CICS Configuration Manager server uses CICS file control mass delete (delete with generic key) to purge data from its work files. When processing very large data requests, this delete operation might exceed the CICS region's ICVR (default runaway task time) limit, resulting in a task abend for the CWBA CICS Web support transaction. These errors might appear as an ASP9 abend in the MSGUSR output data set of the CICS region. If these conditions occur, increase the CICS region's ICVR value.

KEYRING=*keyring*

Only required if you want the CICS Configuration Manager server and its client to communicate via a port that uses the secure sockets layer (SSL).

PLTPI=*xx*

If you updated the PLTPI: ensure that this parameter refers to the suffix of the PLTPI that you updated or created earlier for the program CCVIINIT, in "Optional: Update the PLTPI" on page 82.

RLS=YES or NO

If you specified CSDRLS=YES, or you want CICS Configuration Manager to access CSD files using RLS, then specify RLS=YES.

Even if you specified CSDRLS=NO for this CICS region, if you want CICS Configuration Manager to access the CSD files for other CICS regions using RLS, then specify RLS=YES.

RRMS=YES

Required by the CICS Configuration Manager journal housekeeping batch program.

To run the journal housekeeping batch program, in addition to specifying this parameter, you also need to ensure that the Resource Recovery Services (RRS) are running on the MVS system that hosts this

CICS region. For more information on the journal housekeeping batch program, see Chapter 17, “Unloading and loading journal records,” on page 257.

SEC=YES or NO
If you want to authenticate CICS Configuration Manager users, and be able to restrict user access to API commands and resource definitions, then SEC=YES is required. For details, see “Authenticating the client user” on page 105 and “Restricting access to API commands and resource definitions” on page 107.

SSL-related parameters
If you want the CICS Configuration Manager server to listen for clients on an SSL port, then you must specify various SSL-related parameters.

CICS Configuration Manager has the following specific requirements for SSL-related parameters, depending on the release of CICS Transaction Server that runs the CICS Configuration Manager server region:

- V2.3, or earlier: specify SSLTCBS=2 or greater. (SSLTCBS is obsolete in later releases.)
- V3.1, or later: either do not specify MAXSSLTCBS (to use the default value of 8), or specify MAXSSLTCBS=8 or greater.

For more information on SSL-related parameters, see the CICS documentation.

TCPIP=YES
Activates CICS TCP/IP services. These services are required for CICS Web support, which the CICS Configuration Manager server uses to communicate with clients.

2. (Optional.) If you want to use the CICS Configuration Manager agent to perform actions on active CSD-based CICS regions, then specify the following CICS system initialization parameters:
   VTAM=YES
   IRCSTRT=YES
   ISC=YES

   These parameters are required for the MRO or ISC links that allow the CICS Configuration Manager server to communicate with agents. Other steps for configuring for the agent are described later, in “Optional: Configure the agent for CSD-based CICS regions” on page 92.

Modify security to accommodate the server (if necessary)

If your site uses system authorization facility (SAF) classes to protect access to CICS resources or CICS commands:

1. Modify your external security manager (ESM) definitions to allow the CICS Configuration Manager server to use the resources and commands that it requires. For details, see Chapter 19, “CICS resources and commands used by the CICS Configuration Manager server,” on page 307.
2. If a named counter server is available and SAF-protected, then modify your ESM definitions to allow the CICS Configuration Manager server to use it.

   The CICS Configuration Manager server uses a named counter server, if one is available. If one is not available, CICS Configuration Manager generates a pseudo-counter value.

Start the CICS Configuration Manager server

1. If you are starting the CICS Configuration Manager server for the first time, perform a **cold** start or an **initial** start of the CICS region.
2. If you have not added the CICS Configuration Manager server initialization program CCVIINIT to the PLTPI, then run CCVIINIT now to start the server.

   Tip: You can run program CCVIINIT by invoking the transaction CCVI on the command line of a CICS terminal.
3. Look in CCVLOG (ddname defined in the CICS region startup job) for this message:

```
CCV5373I All CICS Configuration Manager initialization phases are now complete
```

This message confirms that the CICS Configuration Manager server has successfully started. Do not proceed until you have started the CICS region and seen this message.

If you do not see this message:

- Review the messages in the JES message log and in CCVLOG. The expected sequence of CCVLOG messages is described in Chapter 20, "CICS Configuration Manager server initialization messages," on page 311.
- Review the customization steps starting at "Choose or create a CICS region" on page 75.

Define an OMVS segment for TSO users

To communicate with the CICS Configuration Manager server, the CICS Configuration Manager clients use TCP/IP socket functions that are provided by z/OS UNIX System Services (via Language Environment®). The TSO user IDs that invoke the CICS Configuration Manager clients must have permission to execute the underlying z/OS UNIX BPX* programs that implement these functions. To control permissions for these programs, z/OS uses OMVS segments in RACF.

1. Define an OMVS segment in RACF for the TSO user IDs that invoke CICS Configuration Manager clients.
2. Allow the TSO user IDs to execute BPX* programs.

If the user has insufficient access, then Language Environment issues the following run-time message (for the batch client, this message appears in the CEEMSG data set):

```
CEE5101C During initialization, the callable service BPX1MSS failed.
         The system return code was 0000000156 , the reason code was 0B0C00FC .
         The application will be terminated.
```

and the client application abends.

For more information about the OMVS segment, see *z/OS: SecureWay Security Server RACF Security Administrator's Guide* and *z/OS: UNIX System Services Planning*.

Optional: Enable PassTicket processing

You only need to enable PassTicket processing if you want the supplied CICS Configuration Manager ISPF or batch client to connect to the CICS Configuration Manager server via an **authenticated** Internet Protocol (IP) port (with or without SSL encryption).

Connecting via an authenticated port is strongly recommended. Without authentication, the CICS Configuration Manager server transactions run under the authority of the CICS default user. In these cases, CICS Configuration Manager server security controls (by API command or resource definition key) become meaningless, and any changes (and resultant histories) cannot be tracked to the originating user. To ensure that only authenticated ports are used for CICS Configuration Manager server functions, deny the CICS default user access to the CICS Configuration Manager transaction CCVA.

If you are evaluating CICS Configuration Manager in an isolated test environment, or you are installing CICS Configuration Manager in a secure, firewalled network, then you may choose to use an unauthenticated IP port. In that case, skip to "Start the ISPF dialog interface" on page 89.

Each time the supplied CICS Configuration Manager ISPF or batch client sends a command request to the server via an authenticated port, they include a PassTicket to authenticate the user making the request. CICS uses the external security manager (ESM) at your installation to validate the PassTicket. If the PassTicket is valid, then CICS performs a sign-on and passes the command request through the CICS Configuration Manager server. (For general information on PassTickets, see *CICS Transaction Server for z/OS: CICS RACF Security Guide*.)

To allow this authentication to occur, you need to enable CICS to validate incoming PassTickets, and you need to APF-authorize the libraries containing the client programs that create PassTickets.

Enable CICS to validate incoming PassTickets

The procedure for enabling CICS to validate incoming PassTickets depends on which ESM your environment uses. The procedure presented here is for RACF. Other ESMs (such as *e*Trust CA-ACF2 and *e*Trust CA-Top Secret) have similar facilities for PassTickets. For details, see the documentation for those products.

To enable CICS to validate incoming PassTickets using RACF:

1. Activate the RACF general resource class PTKTDATA:

   ```
   SETROPTS CLASSACT(PTKTDATA)
   SETROPTS RACLIST(PTKTDATA)
   ```

   The resource class PTKTDATA holds the encryption key used to create and validate PassTickets.

2. Define a profile for CICS Configuration Manager:

   ```
   TSO RDEFINE PTKTDATA applid SSIGNON(KEYMASKED(password-key))
                       APPLDATA('NO REPLAY PROTECTION')
   ```

   where:

   applid Application ID of the CICS region that will run the CICS Configuration Manager server. For example, CCVROCKS.

password-key
16-character secured signon application key. For example, 0123456789abcdef.

Note: After you define or change the profile, you need to refresh the class:

```
SETROPTS RACLIST(PTKTDATA) REFRESH
```

No replay protection?

Specifying "no replay protection" can improve CICS Configuration Manager performance, because it allows the CICS Configuration Manager client to reuse the same PassTicket for successive API calls.

If replay protection is on (the default), RACF does not allow PassTickets to be reused, so the client must create a new PassTicket for each API call. The algorithm for generating PassTickets uses the current time to the nearest second. To ensure a unique PassTicket, the client may need to wait for one second between API calls. Specifying "no replay protection" solves this performance issue.

With or without replay protection, PassTickets expire after approximately 10 minutes.

Authorize the PassTicket program libraries

The programs that the CICS Configuration Manager batch and ISPF clients use to create PassTickets are authorized programs; they must reside in an APF-authorized library. In addition, the program that creates PassTickets for the ISPF client must be authorized within TSO/E.

For the batch client, the authorized program that creates PassTickets is the main batch client interface program CCVBMAIN. For the ISPF client, the authorized program is CCVSCRPT. Both programs are supplied in the CICS Configuration Manager authorized program load module library SCCVAUTH.

To enable PassTicket processing for the batch client:

1. Make CCVBMAIN accessible to batch jobs as an authorized program. Either:
   - Add SCCVAUTH to the APF-authorized list and the batch job stepped library concatenation (STEPLIB). Ensure that all libraries in the STEPLIB are also APF-authorized.

     CCVBMAIN uses load modules in the SCCVA*lang* library. If you APF-authorize SCCVAUTH and add it to the STEPLIB, and you also add SCCVA*lang* to the STEPLIB, then you must APF-authorize SCCVA*lang*. All of the libraries in the STEPLIB must be authorized, otherwise CCVBMAIN will not run as an authorized program: it will not be able to create a PassTicket, and it will not be able to successfully connect to the CICS Configuration Manager server via an authenticated port.
   - Copy CCVBMAIN to the LPA (link pack area). Clear and reload the LPA.
   - Add SCCVAUTH to the APF-authorized list and the linklist concatenation (LNKLST). For details, see *z/OS: MVS Initialization and Tuning Reference*.
   - Copy CCVBMAIN to a library that is already in the APF-authorized list and the linklist.

   For an example of JCL that invokes the batch client, see Figure 90 on page 223.

To enable PassTicket processing for the ISPF client:

1. Authorize the CCVSCRPT program within TSO/E. Add the program name to:
   - The AUTHPGM list of programs that are authorized when invoked via the CALL command

     and
   - The AUTHTSF list of programs that are authorized when invoked through the TSO/E service facility

   For example, edit the SYS1.PARMLIB member IKJTSO*xx*, and add CCVSCRPT to the following two lists:

   ```
   AUTHPGM NAMES(
   ⋮
   CCVSCRPT
   ⋮
   )

   AUTHTSF NAMES(
   ⋮
   CCVSCRPT
   ⋮
   )
   ```

   SYS1.PARMLIB is a standard library name. However, your system might use a different naming convention: ask your system administrator.

   For more details on authorizing a program to TSO/E, see *z/OS: TSO/E Customization*.
2. Make CCVSCRPT accessible to ISPF users as an authorized program. Either:
   - Add SCCVAUTH to the APF-authorized list and the STEPLIB of the users' TSO logon procedures. Ensure that all libraries in the STEPLIB are also APF-authorized. (This approach is not often used because of the difficulty in ensuring that all libraries in the STEPLIB are APF-authorized.)
   - Copy CCVSCRPT to the LPA. Clear and reload the LPA.
   - Add SCCVAUTH to the APF-authorized list and the linklist.
   - Copy CCVSCRPT to a library that is already in the APF-authorized list and the linklist.
   - In the users' logon procedures, use the TSOLIB ACTIVATE command to add SCCVAUTH to the search order. This avoids having to APF-authorize all libraries in the STEPLIB. For an example of this technique, see the REXX procedure CCVX0005 supplied in the sample library SCCVSAMP.

Note:

1. If you add SCCVAUTH to the linklist, or you add CCVBMAIN and CCVSCRPT to the LPA, then omit SCCVAUTH from the STEPLIB of batch jobs and TSO logon procedures.
2. The CICS Configuration Manager ISPF client invokes the CCVSCRPT program using MVS services, not ISPF services. Therefore, adding SCCVAUTH to the ISPLLIB concatenation would serve no purpose.

If you are also using CICS Configuration Manager V1.2

If you have both CICS Configuration Manager V2.1 and V1.2, then remove the V1.2 SCCVAUTH library from the APF-authorized list, to ensure that you use the CCVSCRPT program in the Version 1.2 SCCVAUTH library. The V2.1 CCVSCRPT program is backwardly compatible with V1.2 of CICS Configuration Manager. However, the V1.2 CCVSCRPT program has not been tested with V2.1.

Ignore expected messages in the CICS log

When clients connect to the CICS Configuration Manager server via an authenticated port, the following message might appear occasionally in the JESYSMSG data set of the CICS job for the region that runs the server:

```
IRR013I  VERIFICATION FAILED. INVALID PASSWORD GIVEN.
```

and the corresponding message in the MSGUSR data set:

```
DFHXS1201 ... The password supplied in the verification request
          for userid user_id was invalid.
```

These messages are expected. Their frequency depends on a combination of whether you specify replay protection for PassTickets, and the value of the CICS system initialization parameter USRDELAY.

Start the ISPF dialog interface

To start the CICS Configuration Manager ISPF dialog interface, go to the ISPF command shell panel (ISPF primary menu option 6), and enter:

```
EX 'ccvhlq.SCCVEXEC(CCVOREXX)' 'ccvhlq lang'
```

where *lang* is one of the following 3-character national language codes:
ENU U.S. English
JPN Japanese

and *ccvhlq* is the high-level qualifier for the CICS Configuration Manager product libraries.

For example:

```
EX 'CCV.SCCVEXEC(CCVOREXX)' 'CCV ENU'
```

Tip: For a navigation map of the ISPF dialog panels, see Chapter 5, “Overview of the ISPF dialog,” on page 151.

When a user starts the CICS Configuration Manager ISPF dialog for the first time, the dialog prompts the user for the connection details of the CICS Configuration Manager server: its IP address and port number, and whether or not the secure sockets layer (SSL) is enabled on that port. These details are then stored in the user's ISPF profile. The user can change these details later, either on the CICS Configuration Manager ISPF dialog primary menu, or using option **0 Settings**.

You can either allow the CICS Configuration Manager libraries to be set up dynamically each time you start the CICS Configuration Manager dialog (as done

in the example command above), or you can add the libraries statically to the relevant ISPF library concatenations. Then you can optionally add CICS Configuration Manager to an ISPF menu.

Dynamic setup is the simplest and quickest approach.

Note: The CICS Configuration Manager ISPF dialog REXX procedure CCVOREXX does not dynamically allocate the authorized program load module library SCCVAUTH that contains the CCVSCRPT program for creating PassTickets. If you connect the ISPF client to the CICS Configuration Manager server via an authenticated port, then you must make the CCVSCRPT program accessible to the ISPF client. For details, see "Authorize the PassTicket program libraries" on page 87.

Dynamic setup

To enable the CICS Configuration Manager libraries to be set up dynamically each time you start the CICS Configuration Manager dialog:

1. On the ISPF command shell panel (ISPF primary menu option 6), enter:

   ```
   EX 'ccvhlq.SCCVEXEC(CCVOREXX)' 'ccvhlq lang'
   ```

2. To add CICS Configuration Manager to an ISPF menu, set &ZSEL to:

   ```
   CMD(EX ''ccvhlq.SCCVEXEC(CCVOREXX)'' ''ccvhlq lang'') NOCHECK
   ```

   NOCHECK allows users to enter concatenated commands via the direct option (trail). Also specify on the calling panel:

   ```
   &ZTRAIL=.TRAIL
   ```

Note: Dynamic setup requires that you keep the supplied names for the CICS Configuration Manager product libraries, listed under Chapter 2, "Installation and customization," on page 67.

Static setup

To install the CICS Configuration Manager libraries statically within your ISPF library setup:

1. Include the library *ccvhlq*.SCCVEXEC in your SYSEXEC or SYSPROC concatenation. This library contains the required EXECs. It is allocated with fixed-block (FB) 80-byte record format during installation.

   Recommendation: Include this library in the SYSEXEC concatenation. However, if you want to include it in SYSPROC, it must have a record length of 80 bytes.

   Ensure that all libraries contained in your concatenations are either in the same format (F, FB, V, VB) and have the same block size, or are in order of decreasing block sizes. For example, if the existing libraries in your concatenations are VB, then you must convert the library *ccvhlq*.SCCVEXEC to VB. Otherwise, you may experience problems using the CICS Configuration Manager panels.

2. Add the remaining CICS Configuration Manager libraries to your ISPF library setup:

   To this concatenation...
   Add these libraries...

   ISPPLIB
   Panel library *ccvhlq*.SCCVP*lang*

ISPSLIB
Skeleton library *ccvhlq*.SCCVS*lang*

ISPLLIB
Application load module library *ccvhlq*.SCCVLINK

ISPTLIB
Table library *ccvhlq*.SCCVT*lang*

ISPMLIB
Message library *ccvhlq*.SCCVM*lang*

3. On the TSO command processor panel, enter:
   ```
   %CCVOREXX 'NODYNAM lang'
   ```
4. To add CICS Configuration Manager to an ISPF menu, set &ZSEL to:
   ```
   CMD(%CCVOREXX ''NODYNAM lang'') NOCHECK
   ```

Overriding the default application ID

To override the default CICS Configuration Manager ISPF application ID, use the PASSAPPL parameter in the ISPF menu &ZSEL setting:

```
CMD(EX ''ccvhlq.SCCVEXEC(CCVOREXX)'' ''ccvhlq lang PASSAPPL'') NOCHECK NEWAPPL(CCVP)
```

CICS Configuration Manager will then use **CCVP** as the application, rather than the default of **CCVO**.

Overriding the data set low-level qualifiers

The default CICS Configuration Manager data set low-level qualifiers are listed under Chapter 2, “Installation and customization,” on page 67. You can override these by specifying the desired qualifiers as the last parameter in the ISPF menu &ZSEL setting. All six qualifiers must be specified in the correct order, enclosed in brackets and separated by commas. For example:

```
CMD(EX ''ccvhlq.SCCVEXEC(CCVOREXX)'' ''ccvhlq lang (EXEC,LNK,MSG,PNL,TBL,SKL)'')
```

CICS Configuration Manager will then use the following libraries:

'*ccvhlq*.**EXEC**'
REXX EXEC library

'*ccvhlq*.**LNK**'
Application load module library

'*ccvhlq*.**MSG**'
ISPF message library

'*ccvhlq*.**PNL**'
ISPF panel library

'*ccvhlq*.**TBL**'
ISPF table library

'*ccvhlq*.**SKL**'
ISPF skeleton JCL library

Configure the ISPF interface to create batch jobs

You can run CICS Configuration Manager from the ISPF interface entirely in interactive mode. However, when you process a change package (for example, to migrate resource definitions), your terminal will not respond until that process is complete. This may take some time, depending on the complexity of the process and the number of resource definitions involved. Alternatively, you can instruct the ISPF interface to create a batch job to process change packages. You can submit the batch job, and then continue using the ISPF interface uninterrupted.

Before using the ISPF interface to create batch jobs, you need to define the job statement information and stepped library concatenation that you want to use:

1. Start the CICS Configuration Manager ISPF dialog.
2. Select primary menu option **0 Settings**.
3. Enter job statement information for CICS Configuration Manager batch jobs.
4. On separate STEPLIB lines, enter the fully-qualified data set names (without enclosing quotes) of the library that contains the national language support load modules, and the library that contains the batch client interface program CCVBMAIN:

   ccvhlq.SCCVA*lang*
   ccvhlq.SCCVAUTH

   If you connect to the CICS Configuration Manager server via an authenticated port, then both of these libraries must be APF-authorized. For details, see "Optional: Enable PassTicket processing" on page 86.

You can perform some CICS Configuration Manager commands entirely in batch, without using the ISPF dialog, by writing and submitting your own job control language (JCL). For details, see Chapter 13, "Overview of the batch interface," on page 223.

Define CICS Configuration Manager administrative records

Before you can begin using CICS Configuration Manager to work with CICS resource definitions, you need to define a CICS configuration for each of the CSD files or contexts in which those resource definitions are stored. You can define CICS configurations in two ways:

- Interactively, one at a time, using CICS Configuration Manager ISPF dialog option **1.2 CICS Configurations**

  or

- In batch, using the DATATAKEUP command of the CICS Configuration Manager batch interface. For details, see "DATATAKEUP" on page 254.

Before defining CICS configurations that refer to CSD files, read "Defining CICS configurations that refer to CSD files" on page 164.

After defining CICS configurations, you can edit resource definitions and view reports. To get started, see "Exploring CICS configurations" on page 169.

To work with change packages, you need to use the CICS Configuration Manager ISPF dialog option **1 Administer** to define:

Migration schemes
Approval profiles (optional)
Transformation rules (optional)

For more information on using the ISPF dialog to define these records, see Chapter 8, "Administering system options and definitions," on page 163.

Optional: Configure the agent for CSD-based CICS regions

The CICS Configuration Manager agent is required only if you want to use CICS Configuration Manager to perform the following actions on active CSD-based CICS regions:

- Installation-type actions, such as install, discard, and newcopy of resource definitions

- Collection of runtime resource definitions for deployment analysis reporting

This agent is not required for performing actions on CICS regions managed by CICSPlex SM.

When describing how to configure the agent, we use the following terms:

Local region
Refers to the CICS region running the CICS Configuration Manager server.

Remote regions
Refers to the CSD-based CICS regions on which you want to perform actions.

Before following the step-by-step procedure, please read the summary so that you understand what the procedure involves (such as restarting CICS regions).

What you should already know: CICS intercommunication

The configuration procedure assumes that you understand CICS intercommunication. Specifically, you should know how to create multiregion operation (MRO) or intersystem communication (ISC) links between CICS regions. If you do not know how to do this, before proceeding, refer to the *CICS Transaction Server for z/OS: CICS Intercommunication Guide*.

Summary of steps to configure the agent

You need to configure the agent in each remote region. Here is a summary of the configuration steps for each remote region:

1. Create an MRO link or an ISC link between the remote region and the local region.

   To create this link, you must define two resources in the local region, and two corresponding resources in the remote region, of the following types:
   - **Connection**
   - **Session**

   In the procedure following this overview, we will use CICS Configuration Manager to define these resources. Before we can do that, we need to define CICS configurations for the CSD files used by these regions; this is also described in the procedure.

   When defining the CICS configuration for the CSD file used by the remote region, we specify a remote system connection name. This is the name of the connection resource definition, in the CSD file used by the local region, that refers to the remote region.

2. Define the CICS Configuration Manager resources in the remote CICS region. These resources are described in member CCVXCSDR of the sample library SCCVSAMP. Review and install these resources into each remote CICS region managed by CICS Configuration Manager. These resources include:

   Transaction CCVR
   The mirror transaction that the CICS Configuration Manager server invokes to start the agent programs in the remote region.

Programs CCV*xxxxx*
The agent programs that CICS Configuration Manager uses to collect data or execute commands.

TDqueue CCVM
A transient data queue used for collecting data.

3. Ensure that the library concatenation DFHRPL of the remote CICS region contains the CICS Configuration Manager agent programs (CCV*xxxxx*), using one of the following methods:
   - Edit the startup job, and add to DFHRPL the CICS Configuration Manager application load library SCCVLINK containing the agent programs
   - CICS Transaction Server for z/OS Version 3.2, or later: define and install a library resource that refers to the CICS Configuration Manager application load library
   - Copy the agent programs to a library that is already listed in DFHRPL
4. If you updated DFHRPL by editing the startup job, then restart the remote CICS region.
5. Install the newly defined resources.

Figure 47 on page 95 illustrates the items that you need to configure.

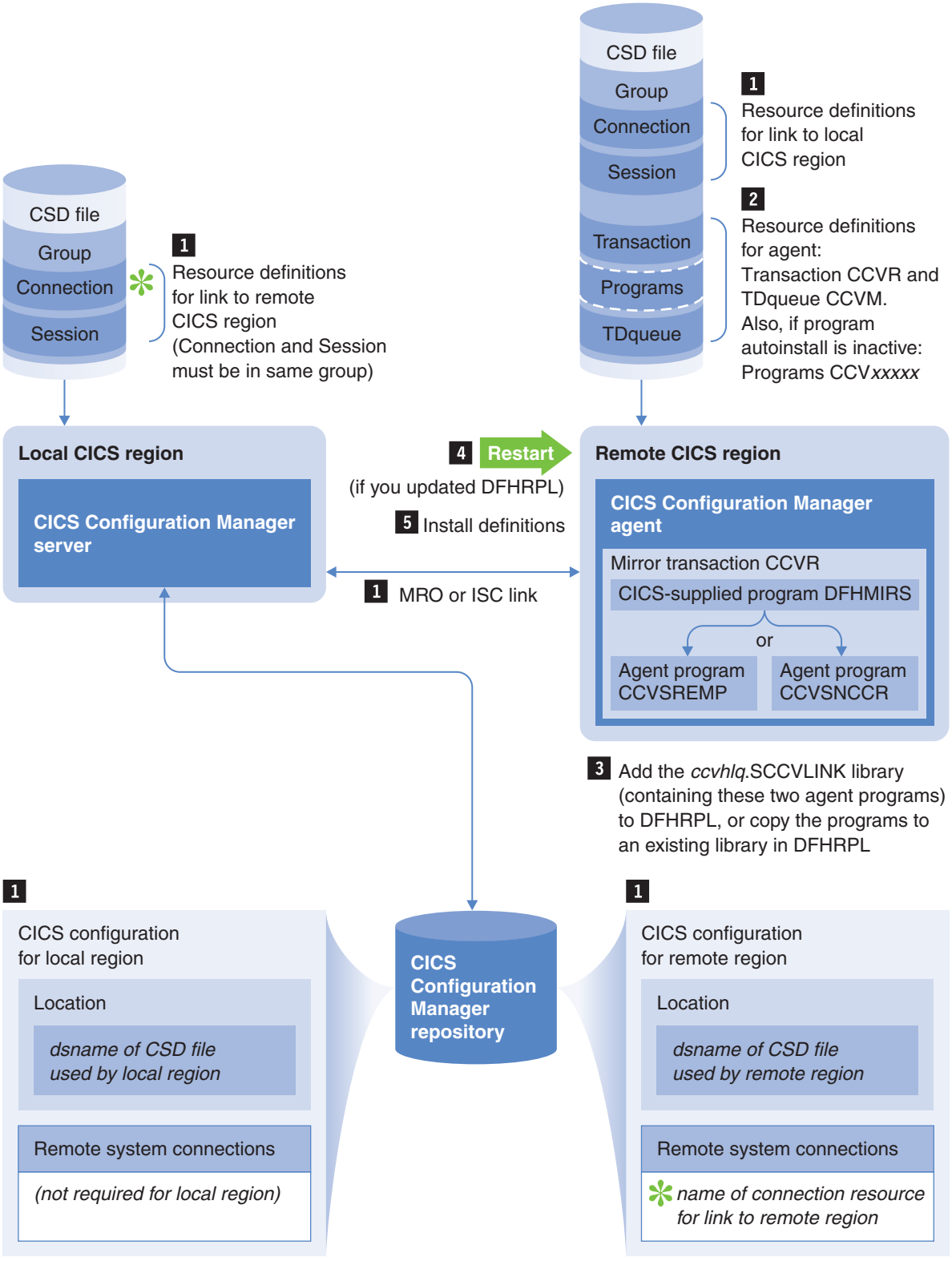


Figure 47. Configuring the agent for CSD-based CICS regions

Step-by-step procedure for configuring the agent

The procedure for configuring the agent is divided into three stages:

- **Stage 1** defines a CICS configuration for the local region. You only need to do this once.
- **Stage 2** configures the agent for each remote region. You need to do this for each remote region.
- **Stage 3** tests the agent by performing newcopy and phase-in actions. You need to do this for each remote region.

The procedure involves creating several resource definitions, resource groups, and CICS configurations. While the procedure suggests names for these items (shown in Figure 48 on page 97), you are free to use your own naming conventions.

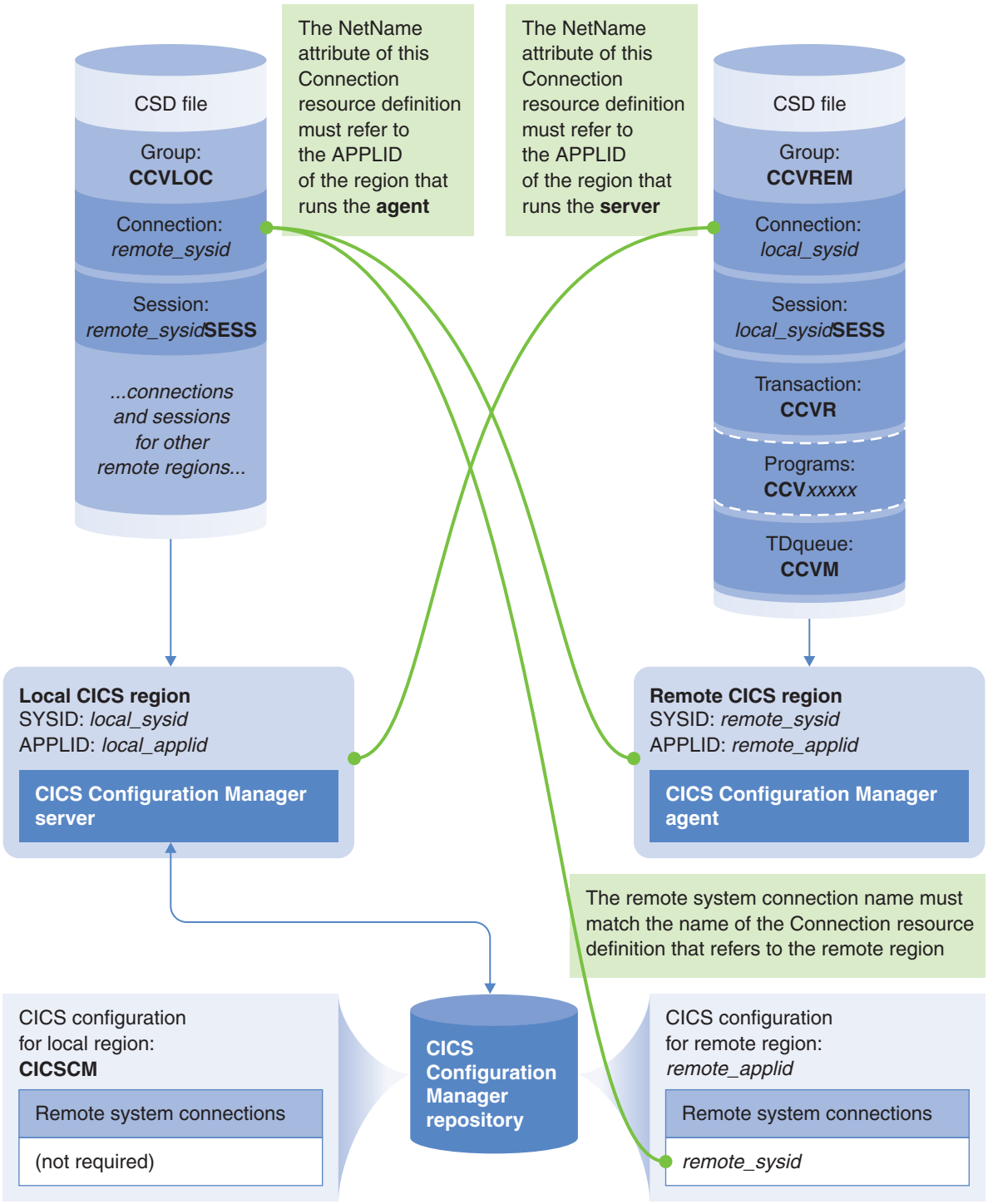


Figure 48. Configuring the agent for CSD-based CICS regions: suggested names for resource groups, resource definitions, and CICS configurations

Stage 1. Define a CICS configuration for the local region

Do these steps once only:

1. Start the CICS Configuration Manager ISPF dialog. For details, see "Start the ISPF dialog interface" on page 89.

2. Select primary menu option **1 Administer**.
3. On the **Administration** menu, select option **2 CICS Configurations**.

   The list of existing CICS configurations appears. If you have just installed CICS Configuration Manager, this list will be empty.
4. On the command line, enter **DEF**

   A pop-up window appears, prompting for the name of the new CICS configuration and, optionally, the name of an existing CICS configuration to use as a model.
5. Enter a name for the new CICS configuration.

   Suggestion: CICSCM

   Do not use the name CCVSVR: this name is reserved for use by CICS Configuration Manager.

   Leave the model name blank (we do not want to base this CICS configuration on an existing one).
6. On the edit panel for the new CICS configuration, enter:
   - A description.

     Suggestion: CCV server
   - The fully-qualified data set name of the CSD file used by the local region (without enclosing quotes).
7. On the command line, enter **SAVE**
8. Press the Exit key (F3) to return to the list of CICS configurations.

   Tip: If you want the Exit key (F3) to automatically save changes, so that you do not have to explicitly enter **SAVE** before exiting, then open the Settings pull-down menu and set save confirmation off.

Stage 2. Configure the agent for each remote region

Do these steps for each remote region:

1. Using the CICS Configuration Manager ISPF dialog, edit the CSD file used by the local region, and define connection and session resources for the link to the remote region:
   a. Press the Exit key (F3) until you return to the CICS Configuration Manager primary menu.
   b. Select primary menu option **2 CICS Resources**.
   c. Enter **S** next to the CICS configuration for the local region (suggested name: CICSCM).

      A list panel appears with filter fields and column headings, but no list items. Instead, directly under the column headings is a “bottom of data” indicator. This empty list is normal: the panel does not display any list items until you press Enter. This allows you to adjust the filter before displaying the list, avoiding delays caused by listing more resource definitions than required.
   d. In the Filter fields above the Name and Type headings, type an asterisk (*).
   e. In the Filter field above the Group heading, type the name of a resource group for the connection and session that you are about to define.

      Suggestion: CCVLOC

      Do not define resources in the existing group named CCV210. This group is strictly for use by CICS Configuration Manager: product updates may delete and replace resource definitions in this group.

f. On the command line, enter **DEF**

   A pop-up window appears, requesting details of the resource you want to define.

g. Specify CONNECTION as the CICS resource type, and then specify a name for this resource (up to four characters).

   Suggestion: Use the SYSID of the remote region as the name of the connection resource.

h. Press Enter.

i. Press Tab to move the cursor to the access method field.

j. Press the Prompt key (F4) to display a pop-up list of choices.

k. Enter **S** next to the access method that you want to use.

   The previously blank fields for other attributes now appear with default values for the selected access method.

l. Fill in appropriate values for the remaining attributes.

m. Save the connection, and then exit the edit panel.

   You return to the list of resource definitions, showing the new connection resource definition.

n. On the command line, enter **DEF**

   Define a session resource to match the connection resource that you have just defined. Define the session resource in the same group as the connection.

   Suggestion: Name the session resource after the connection, with the suffix SESS. For example, if you named the connection resource REGA, name the session resource REGASESS.

2. Install the connection and session resources into the local region:

   a. Press the Exit key (F3) to return to the list of CICS configurations. (Primary menu option **2 CICS Resources**.)

   b. Enter **G** next to the CICS configuration for the local region.

      A list of groups appears.

   c. Enter **I** next to the resource group that contains the connection and session resources (sugggested name: CCVLOC).

      A pop-up window appears, asking you to select the remote system connections to which you want to install the group.

      Rather than performing an install on a remote region, we want to perform an install on the *local* region (the CICS region running the CICS Configuration Manager server). This is a special case, because it does not need a remote system connection: we want the CICS Configuration Manager server to perform an install action on its own region.

      CICS Configuration Manager recognizes that the selected CICS configuration matches the CSD file used by its local region, and displays a "Local" connection. This is not a remote system connection defined in the CICS configuration. The pop-up window displays "Local" to allow you to install to the local region in the same way that you would select a remote system connection.

   d. Type **/** next to "Local", and then press Enter.

      The pop-up window closes. If the install was successful, the Prompt column displays "*Installed" next to the resource group. Otherwise, enter **?** next to

the resource group to display the reason for the failure (for a description of the reason codes, see "Reason codes" on page 443).

3. Define a CICS configuration for the CSD file used by the remote region. (For a reminder of how to do this, see stage 1.)

   Suggestion: Name this CICS configuration after the application ID of the remote region.

   While you are defining this CICS configuration, enter a remote system connection name. **The remote system connection name must match the name of the connection resource definition** for the link to the remote region (defined in step 1 on page 98). For an illustration of this concept, see Figure 48 on page 97.

4. Edit the CSD file for the remote region, and define connection and session resources for the link to the local region. Follow the procedure that you used earlier to edit the CSD file for the local region (step 1 on page 98).

   Suggestion: Define the connection and session resources in a resource group named CCVREM.

5. Edit the CSD file for the remote region again, and define the following resources for the CICS Configuration Manager agent. The details of these resources are described in member CCVXCSDR of the sample library SCCVSAMP.

   Transaction CCVR
   As for any new transaction, you might need to configure your external security manager to allow this transaction to run in the remote region. This depends on the ATTACHSEC attribute value of the connection resource for the link from the local region to the remote region:

   IDENTIFY
   The agent transaction runs under the authority of the user ID of the *CICS Configuration Manager user* that requested the action. To perform actions on a remote region, the CICS Configuration Manager user must be authorized to run the CCVR transaction in the remote region.

   LOCAL
   The agent transaction runs under the authority of the *CICS region user ID* of the CICS region running the CICS Configuration Manager server.

   The CCVR transaction invokes the CICS-supplied program DFHMIRS (in the IBM protected group DFHISC). This program must be installed in the remote region (along with the other prerequisites for CICS intercommunication).

   Programs CCV*xxxxx*
   These program resource definitions are required only if program autoinstall is inactive in the remote region.

   TDqueue CCVM
   Transient data queue used by the agent.

   You can choose to define these resources by either:

   - Submitting your own JCL to invoke the CICS-supplied program DFHCSDUP, with the definitions supplied in member CCVXCSDR of the CICS Configuration Manager sample library SCCVSAMP.

- Using CICS Configuration Manager to copy each definition from the CSD file used by the local region, as follows:
  a. Press the Exit key (F3) to return to the list of CICS configurations. (Primary menu option **2 CICS Resources**.)
  b. Enter **S** next to the CICS configuration for the local region (suggested name: CICSCM).
  c. Type CCV210 in the Filter field above the Group column heading, and then press Enter.

     The resource definitions in the group CCV210 appear in the list. This group contains the resource definitions that you need to copy to the remote regions.
  d. Locate the resource definition required by the remote CICS region.

     Tip: On the command line, enter **L CCVR** to locate the CCVR transaction resource definition. (Transaction names are case sensitive: you must enter CCVR in uppercase.)
  e. Enter **C** (for "copy") next to the resource definition.

     A pop-up window appears, requesting details of the copy target.
  f. Select the CICS configuration for the remote region, and the resource group where you want to copy the program resource definition.

     Suggestion: Copy the resource definition to the group that already contains the connection and session resource definitions (suggested name: CCVREM).
  g. Press Enter to perform the copy.

6. Add the CICS Configuration Manager agent programs (CCV*xxxxx*) to a library in the DFHRPL library concatenation, using one of the following methods:
   - Edit the CICS startup job for the remote region, and add to DFHRPL the CICS Configuration Manager application load library SCCVLINK that contains the agent programs:

     ```
     //DFHRPL   ...
                DD DSN=ccvhlq.SCCVLINK,DISP=SHR
     ```

     Then restart the remote CICS region.
   - CICS Transaction Server for z/OS Version 3.2, or later: define and install a library resource that refers to the CICS Configuration Manager application load library.
   - Copy the agent programs to a library that is already listed in DFHRPL.
7. Install the resources that you have just defined.

   In the previous step, if you performed a cold start after updating DFHRPL, and the resources belong to resource groups that are in the startup list, then the resources will already be installed, and you can skip this step.

   Specifically, you will need to install:
   - The resource group that contains the connection and session for the link to the local region

     and, if they are in a different group,
   - The CICS Configuration Manager agent resources, including transaction CCVR, TDqueue CCVM, and (if you defined them) the agent programs (CCV*xxxxx*).

   To do these installs, use the CEDA transaction supplied with CICS. For example, sign on to the remote region, and then enter:

   ```
   CEDA INSTALL GROUP(CCVREM)
   ```

This is the last time that you will need to use CEDA INSTALL on that remote region. After configuring the CICS Configuration Manager agent, you can use CICS Configuration Manager to install resources.

Stage 3. Test the agent

To test the agent, we perform two actions on the CICS Configuration Manager agent program CCVSREMP:

1. Newcopy the agent program: we expect this to fail, because the agent program should be running.
2. Phase-in the agent program: this should succeed.

Do these steps for each remote region:

1. In the CICS Configuration Manager ISPF dialog, select primary menu option **2 CICS Resources**.
2. Enter **S** next to the CICS configuration for the remote region.
3. Type the filter:

   CCVSREMP PROGRAM *

   and then press Enter.

   The resource definition for the agent program appears in the list.
4. Enter **N** (for "newcopy") next to the resource definition.

   A pop-up window appears for the newcopy options.

   For this first action, do not select the PHASEIN option.
5. Enter **/** next to the remote system connection for the remote region.

   The pop-up window closes.

   The Prompt column should display "*Errors" next to the resource definition. This is expected.

   However, if the top right corner of the panel displays the message "Command failed", it means that the agent has not been configured correctly. Use the following checklist to identify and correct the problem:

Agent configuration checklist

- Are the connection and session resources correctly defined in the CSD files for the local and remote regions?

  To check the status of a connection, sign on to the local or remote region and enter:

  ```
  CEMT I CONN
  ```
- Is the agent program resource correctly defined in the CSD file for the remote region?
- Are these resource definitions (described above) installed in the regions?
- Does the remote region DFHRPL concatenation include the library that contains the agent program?
- Does the remote system connection name specified in the CICS configuration for the remote region match the name of the connection resource in the CSD file used by the local region?

6. Enter **?** next to the resource definition to display the reason for the failure.

   An "exception messages" pop-up window appears, showing messages from the agent. The expected return code from the agent is 8; the expected last four digits of the reason code are 0047 ("object is in use"). For descriptions of all CICS Configuration Manager reason codes, see "Reason codes" on page 443.
7. Enter **N** next to the resource definition.

8. Select the PHASEIN option.
9. Enter / next to the remote system connection.

   This time, the Prompt column should display "*Newcopied" next to the resource definition.

This completes the configuration procedure for the agent in this remote region. Repeat stages 2 and 3 for other remote regions.

Housekeeping: which files should I back up?

To list the VSAM files used by the CICS Configuration Manager server, sign on to the CICS region that is running the server, and invoke the following CEMT transaction:

```
CEMT INQUIRE FILE(CCV*)
```

Most of these are work files, and contain temporary data only. These files do not need to be backed up, but they must exist. Take care when using storage management products that may change space allocations: the space used by these files varies over time depending on workload.

If the CICS region fails, do not redefine the work files

The CCVMIGC work file contains information about change package migrations currently in progress. If the CICS region running the CICS Configuration Manager server fails while migrations are in progress, then, when you restart the region, the CICS Configuration Manager server uses the information in CCVMIGC to rollout any partially migrated change packages. You should only delete the CICS Configuration Manager work files if the region previously shut down successfully. If you delete the work files after the region failed, any migrations that were in progress will not be rolled out.

Only two files contain permanent data that you should back up:

CCVDDD
: The CICS Configuration Manager repository.

CCVJNL
: The CICS Configuration Manager journal.

  Related files:

  - CCVPT1 and CCVPT2 are the paths to the alternate indexes for the journal
  - CCVAI1 and CCVAI2 are the alternate indexes

Back up these files using your site-specific procedures. While they are being backed up, ensure that they are closed to CICS. For example, before backing up, invoke:

```
CEMT SET FILE(file) CLO DIS
```

To reduce the size of the CICS Configuration Manager journal, see Chapter 17, "Unloading and loading journal records," on page 257.

Chapter 3. Security

CICS Configuration Manager introduces these security issues:

- Authorizing the CICS region user ID (of the region running the CICS Configuration Manager server) to access all of the CSD files in your environment.
- Authenticating the user when a CICS Configuration Manager client communicates with the server.
- Restricting user access to API commands and resource definitions.

CICS Configuration Manager uses MVS system authorization facility (SAF) callable services for security checking. This allows you to use a SAF-enabled external security manager (ESM), such as RACF, *e*Trust CA-ACF2, or *e*Trust CA-Top Secret, to administer CICS Configuration Manager security. The examples presented here are for RACF. For details on using other ESMs, see the documentation for those products.

Authorizing the server CICS region user ID to access all CSD files

To access CSD files, CICS Configuration Manager relies on the authority of the CICS region user ID for the CICS region running the CICS Configuration Manager server. This CICS region user ID must be authorized to access all of the CSD files that you want to manage. This is different to an environment without CICS Configuration Manager, where each CICS region user ID might have access only to their own CSD files.

CICS Configuration Manager provides a single point of control for managing resource definitions across multiple CICS regions. This means that only the CICS region user ID for the CICS Configuration Manager server needs update access to CSD files. Other CICS region user IDs need read access only.

CICS Configuration Manager keeps a journal (an "audit trail") of changes to your CICS resource definitions. If you only use CICS Configuration Manager to change resource definitions, this journal will be comprehensive, allowing you to browse and restore any historical version of a resource definition. However, if you allow users to edit resource definitions outside of CICS Configuration Manager, the journal will not contain those changes. For this reason, you may wish to consider restricting update access to your CSD files to only the CICS region user ID for the CICS Configuration Manager server. One way to do this is to specify the system initialization parameter CSDACC=READONLY in each CICS region except the region running the CICS Configuration Manager server. (This parameter takes effect only after a CICS cold start.)

Authenticating the client user

The CICS Configuration Manager server can listen for clients on up to three TCP/IP ports, each with a different level of security:

Unauthenticated and unencrypted
: No client user ID or password required. Data is not encrypted.

Authenticated and unencrypted
: Client user ID and password required. Data is not encrypted

Authenticated and encrypted using SSL
Client user ID and password required. Data is encrypted using the secure sockets layer (SSL).

If the CICS region running the CICS Configuration Manager server is using full external security (system initialization parameter SEC=YES), then:

- If a client connects via an unauthenticated port, the server uses the authority of the CICS default user ID (system initialization parameter DFLTUSER) to perform actions on behalf of the client.

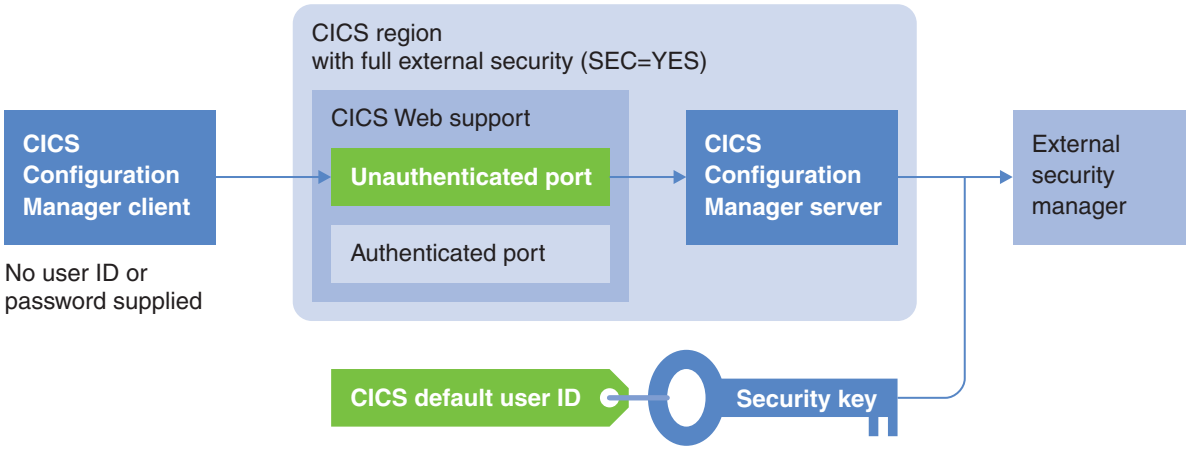


Figure 49. Connecting via an unauthenticated port: access is authorized by the CICS default user ID (if SEC=YES)

CICSPlex SM: If the CICS Configuration Manager API command involves calling the CICSPlex SM API (for example, to update a resource definition in a context), then this CICSPlex SM API call also relies on the authority of the CICS default user ID. However, if the server CICS region specifies SEC=NO, then this CICSPlex SM API call relies on the authority of the *CICS region user ID*.

- If a client connects via an authenticated port (with or without SSL), the server uses the authority of the client user ID.

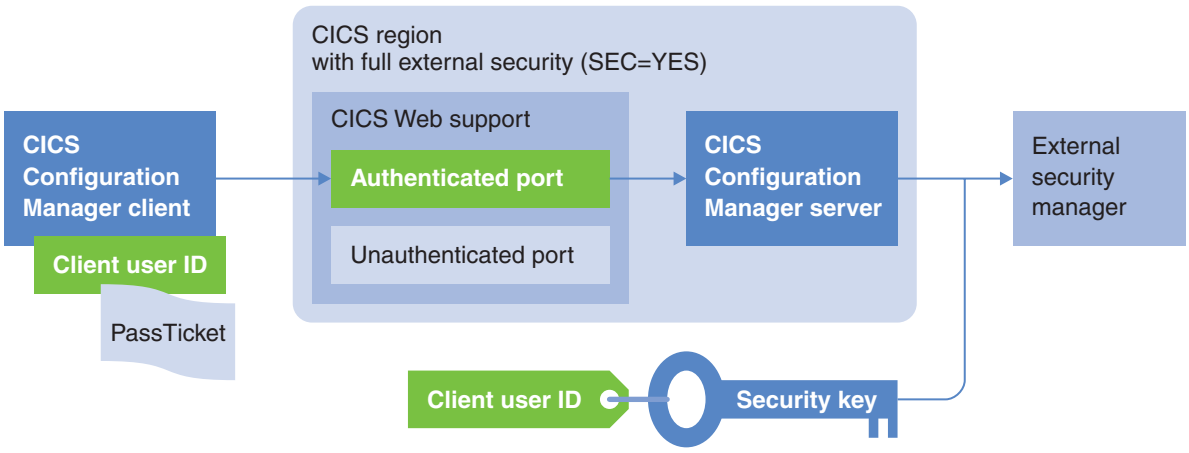


Figure 50. Connecting via an authenticated port: access is authorized by the client user ID

CICSPlex SM: If the CICS Configuration Manager API command involves calling the CICSPlex SM API (for example, to update a resource definition in a context), then this CICSPlex SM API call also relies on the authority of the client user ID.

Instead of a password, the clients supplied with CICS Configuration Manager use a PassTicket to authenticate the client user. For more information about PassTickets, see *z/OS: SecureWay Security Server RACF Security Administrator's Guide*.

The appropriate user ID must have the authority to use the CICS resources and commands that the server requires to perform the action requested by the client. For details, see Chapter 19, "CICS resources and commands used by the CICS Configuration Manager server," on page 307.

Restricting access to API commands and resource definitions

To restrict what users can do with CICS Configuration Manager, you can activate either or both of these security checks:

API commands
Is the user authorized to perform this type of CICS Configuration Manager API command?

For example, ISPF dialog option **2 CICS Resources** displays a list of CICS configurations. To get this list, the ISPF dialog sends to the CICS Configuration Manager server a List API command, requesting a list of CICS configurations. You can restrict which users can perform this command.

For details on each API command, see Chapter 22, "Using the SOAP API," on page 323.

Resource definitions
Is the user authorized to manipulate this resource definition, based on its key values (group, type, and name)?

This security check applies only to the following API commands: Add, Alter, Copy, Create, Delete, Import, Inquire, Remove, Rename, and Update.

Note that this security check does not apply to Migrate (change package migrations). To manage security for change package migrations, you use:

- API command security checking for the Migrate command (this refers to the name of the migration scheme being used)

  and

- Optionally, approval profiles

If security checking for API commands is active, then each time the CICS Configuration Manager server receives a request to perform an API command, the server uses the API command name and parameter values to create a system authorization facility (SAF) resource key. We will refer to this as a "security key". The server calls the external security manager (ESM) to determine whether the user has (at least) READ access authority for this security key. If the user does not have this authority, then the CICS Configuration Manager server rejects the API command request.

The CICS Configuration Manager server performs security checking for resource definitions only after the API command request has passed the security check for API commands, or if security checking for API commands is inactive. To perform

security checking for resource definitions, the CICS Configuration Manager server creates security keys based on resource definition key values (group, name, and type).

For API commands that act on more than one resource definition, the server performs security checking for each resource definition individually, before acting on that resource definition. Furthermore, for each resource definition, an API command might involve multiple operations, each requiring a security check. For example, for each resource definition, a Copy API command involves two operations, requiring two corresponding security checks:

- An inquire operation for the source resource definition (the resource definition to be copied). This requires a security check to confirm that the user has READ access authority for this resource definition.
- A create or an update operation for the target resource definition. This requires a security check to confirm that the user has ALTER access authority for this resource definition.

If the security check fails for a resource definition, then processing continues on to the next resource definition.

Activating security checking for API commands and resource definitions

To activate CICS Configuration Manager security checking:

1. In your external security manager, such as RACF:
   a. Choose an existing resource class, such as FACILITY, or create a new class for CICS Configuration Manager security checking. You can use separate classes for the two types of security check (API commands and resource definitions), or use the same class for both.

      When choosing or creating a class, consider the following:

      Security key length
      The supplied CICS Configuration Manager ISPF dialog and batch client interfaces require a maximum security key length of only 39 characters, allowing you to choose a supplied resource class, such as FACILITY, that supports this key length.

      The client interfaces have this maximum security key length because, in their API command requests, they exclusively use CICS configuration names (up to 8 characters) to refer to the location of resource definitions, never CSD file names (up to 44 characters). The format of security keys for API commands (see below) includes the location parameter that is specified by the API command request; using CICS configuration names keeps the security key length within 39 characters.

      However, if you develop a custom client interface, then its API commands may refer to CSD file names. In this case, you need to choose or create a class that supports keys of up to 75 characters. You can also configure an optional security exit that is invoked before and after each SAF call. See the skeleton exit supplied in the CCVX0001 member of the sample library, SCCVSAMP.

      Special characters
      The class that you use for resource definition key security checks must allow special characters. This is because the security key that the CICS Configuration Manager server creates for this security

check includes the resource definition name; for some resources, such as transactions, the name can include special characters. For example, if you define a new class using the RACF command RDEFINE, then specify the following parameter:

```
CDTINFO(FIRST(ALPHA,NATIONAL,NUMERIC,SPECIAL),
        OTHER(ALPHA,NATIONAL,NUMERIC,SPECIAL)
        ...)
```

The supplied resource class FACILITY allows special characters.

b. Define general resource profiles for this class, to match the format of the security keys created by the CICS Configuration Manager server. For details, see:
   - "Security keys for API commands"
   - "Security keys for resource definitions" on page 111

   For API command security checking, consider temporarily defining a general resource profile such as this:

   ```
   CICSCM.**
   ```

   (where `CICSCM` is the prefix that you have chosen for the security keys)

   with a universal access authority (UACC) of READ. This enables you to activate security checking in CICS Configuration Manager and then continue to work as before, while you define more specific general resource profiles. When you have finished defining specific profiles, delete this generic profile.

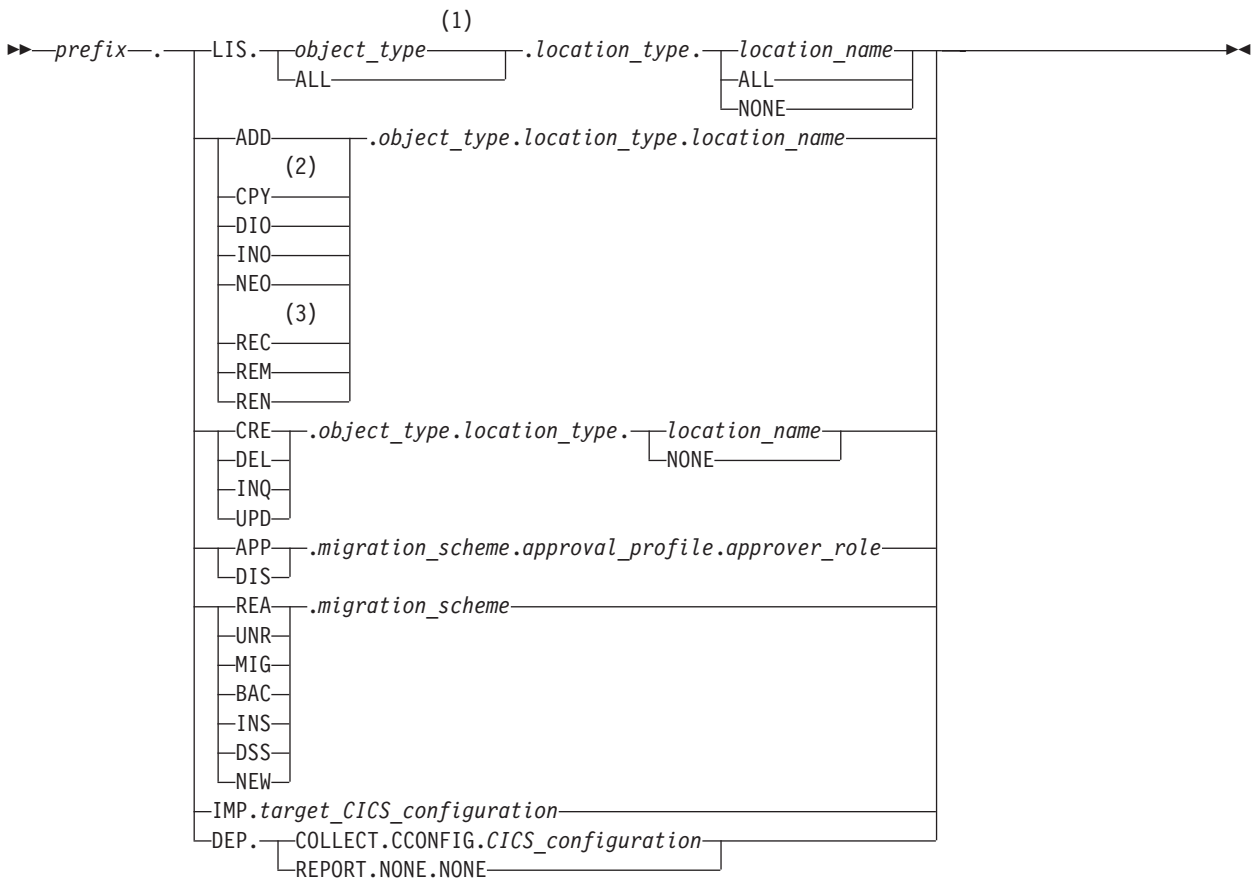
   For more examples of the general resource profiles that you might want to define, see "Example security scenario" on page 114.

c. Authorize the appropriate users for these profiles.

2. Ensure that the system initialization parameter SEC of the CICS region running the CICS Configuration Manager server is active (SEC=YES). The CICS Configuration Manager server will perform security checking only if this SIT parameter is active.
3. In CICS Configuration Manager:
   a. Select primary menu option **1.1 System Options**.
   b. Activate either or both security checks: to do this, you will need to enter the name of the resource class and the security key prefix that you have chosen for the security check.

Security keys for API commands

Here is the format of the security key that the CICS Configuration Manager server creates to check a user's authority to perform an API command:



Notes:

1 In security keys, the KEYASSOCIATION object type is abbreviated to KEYASSOC.

2 For the Copy command, *location_type* and *location_name* refer to the target location (where the object is being copied to).

3 For the Recover command, *location_type* is **CCONFIG** and *location_name* is the name of the CICS configuration where the change occurred (stored in the BAImage journal record).

Figure 51. Security key that CICS Configuration Manager creates to check whether a user is authorized to perform an API command

For descriptions of the fields in this key, see "API parameters" on page 331.

To limit the security key length, API command names are abbreviated to three letters:

ADD Add
ALT Alter
APP Approve
BAC Backout
CPY Copy
CRE Create
DEL Delete
DEP Deploy
DIO Discard (an ad hoc selection of resource definitions)
DIS Disapprove

IMP Import
INO Install (an ad hoc selection of resource definitions)
INS Install (the resource definitions in a change package)
LIS List
MIG Migrate
NEO Newcopy (an ad hoc selection of resource definitions)
NEW Newcopy (the resource definitions in a change package)
REA Ready
REC Recover
REN Rename
UNR Unready
UPD Update

The server calls the external security manager (such as RACF) to check whether this key matches a general resource profile for which the user has READ access authority. If it does, the server performs the command.

Restricting access to the ISPF dialog:

To start the CICS Configuration Manager ISPF dialog, users must be able to perform a List command for the SvrInfo repository object; for details, see "SvrInfo (server information)" on page 351. You can use this requirement to restrict access to the ISPF dialog.

Security keys for resource definitions

Here is the format of the security keys that the CICS Configuration Manager server creates to check a user's authority to manipulate resource definitions:

Table 7. Security keys that CICS Configuration Manager creates to check whether a user is authorized to manipulate resource definitions

Might create ResGroup?	API command	Security key format [2]	Access authority
✓ [1]	Copy	For the source resource definition: [3] ▸▸—*prefix.source_CICS_config.source_group.type.name*—▸◂	READ
		For the target resource definition: ▸▸—*prefix.target_CICS_config.target_group.type.target_name*—▸◂	ALTER
	Rename [4]	For the source resource definition: ▸▸—*prefix.target_CICS_config.source_group.type.source_name*—▸◂	
		For the target resource definition: ▸▸—*prefix.target_CICS_config.target_group.type.target_name*—▸◂	
	Create	▸▸—*prefix.target_CICS_config.group.type.name*—▸◂	
	Import [5]		
	Add Delete Recover Remove		
	Inquire		READ
	Alter Update		UPDATE

1 If the target resource definition key specifies a ResGroup that does not exist, then the API command the attempts to create the ResGroup. This involves an additional security key, as if a Create API command had been requested for the ResGroup. Note that this additional security checking does not involve API command security checking for a Create API command; just resource definition security checking for the ResGroup that needs to be created (as per the entry for Create in this table).

2 If the resource type is a group/ResGroup, then specify a "-" (hyphen) character as the *group* parameter.

3 If the source CICS configuration refers to an export file, then no security check is performed for the source resource definition.

4 You can think of a Rename API command as consisting of two operations: delete the source resource definition, and then create the target resource definition. Both operations require ALTER access authority.

A Rename API command for a group/ResGroup involves resource definition security checks (requiring ALTER access authority) for all of the following:
- Each source resource definition (in the original group/ResGroup)
- Each target resource definition (in the renamed group/ResGroup)
- When renaming a ResGroup (not a group): the target ResGroup

5 The CICS configuration parameter for Import refers to the target CICS configuration where the resource definition is to be imported (copied) to, not the source CICS configuration (that refers to the export file) where the resource definition is to be imported from.

For each resource definition, the Copy and Rename API commands create two security keys, and make two calls to the external security manager: one for the source resource definition, and another for the target resource definition.

For the Rename API command, the parameter for the CICS configuration is labelled "target" in both security keys because you can only rename a resource definition within the same CICS configuration.

The resource definition name is the last qualifier in the security key to simplify group resource profile definitions: some resource types may contain a period (.) as part of the resource name.

For descriptions of the fields in these keys, see "API parameters" on page 331.

Checking authority to approve or disapprove change packages

To approve or disapprove a change package, a CICS Configuration Manager user issues an Approve or Disapprove command. The method for restricting whether a user can perform these commands is exactly the same as for any other CICS Configuration Manager API commands: the CICS Configuration Manager server sends a security key to the external security manager (such as RACF). However, the key for an Approve or Disapprove command deserves special mention, because it includes an approver role and an approval profile:

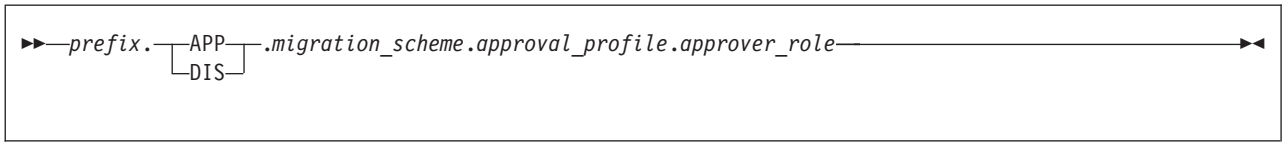


Figure 52. SAF general resource key: checking whether a user is authorized to approve or disapprove a change package

For descriptions of the fields in this key, see "API parameters" on page 331.

When a CICS Configuration Manager user issues the command to approve or disapprove a change package, they specify the approver role that they are representing (for example, "I am approving this change package as a *project manager*"). If the CICS Configuration Manager system option for security checking is active, the user must be authorized to represent that approver role for the migration scheme and the approval profile selected by the change package.

This enables you to define very specific rules for which change packages a user can approve or disapprove.

An approver role is *not* a user ID or a RACF user group. It is simply a part of the key that the CICS Configuration Manager server sends to the external security manager. You define approver roles in approval profiles, described in "Approval profiles" on page 31.

CICS Configuration Manager does not restrict the number of approver roles. However, for each approver role, you (or your security administrator) must define

in the security database a general resource profile that matches the resulting "approve" and "disapprove" keys, and authorize the appropriate users for that profile. For details on defining general resource profiles, see *z/OS: SecureWay Security Server RACF Security Administrator's Guide*.

Example security scenario

Table 8 presents a scenario for restricting access to API commands based on the types of user described in "Workflow and types of user" on page 59. In this table, "✓" indicates that a user is allowed to perform the command. The table represents only one possible scenario: these types of user and restrictions may not exactly match your working environment. This scenario is presented as an example only; a starting point for developing your own security rules.

Table 8. Example: restricting access to API commands according to type of user

API command (resource key field)	Type of user (RACF group name)						
	CICS Configuration Manager administrator	**Security administrator**	**Change administrator**	**Project manager**	**Application developer**	**CICS administrator**	**Approver**
List (LIS)				✓			
Inquire (INQ)							
Create (CRE)	✓ (repository location only)	✓ (repository location only; approval profile objects only)			✓ (some CICS configurations only; change package-related repository objects only)		
Update (UPD)							
Delete (DEL)							
Copy (CPY)							
Add (ADD)					✓ (some CICS configurations only)		
Remove (REM)							
Ready (RDY)				✓	✓ (some migration schemes only)		
Unready (UNR)							
Migrate (MIG)			✓		✓ (some migration schemes only)		
Backout (BAC)							
Install (INO, INS)						✓	
Discard (DIO)							
Newcopy (NEO, NEW)							
Approve (APP)							✓
Disapprove (DIS)							

Here is a summary of the permissions for each type of user, with general resource profiles that specify these permissions (these profiles assume that you have chosen "CICSCM" as the security key prefix):

All users

List or inquire on any object in any location:

```
CICSCM.LIS.*.*.*
CICSCM.INQ.*.*.*
```

CICS Configuration Manager administrator

Create, update, or delete any type of repository object:

```
CICSCM.CRE.*.REPOSITORY.NONE
CICSCM.UPD.*.REPOSITORY.NONE
CICSCM.DEL.*.REPOSITORY.NONE
```

Security administrator

Create, update, or delete approval profiles:

```
CICSCM.CRE.APROFILE.REPOSITORY.NONE
CICSCM.UPD.APROFILE.REPOSITORY.NONE
CICSCM.DEL.APROFILE.REPOSITORY.NONE
```

Change administrator

Migrate or back out change packages:

```
CICSCM.MIG.*
CICSCM.BAC.*
```

In this scenario, the change administrator is likely to be the person who "owns" the overall process of migrating all kinds of changes (not just CICS resource definitions) from development environments through to production. Change administrators might be the only users authorized to migrate change packages to a production environment. The CICS administrators for a production environment might be the only users authorized to install change packages into those production environments (after migration).

Project manager

Ready or unready change packages:

```
CICSCM.REA.*
CICSCM.UNR.*
```

You might want to restrict project managers so that they can only ready or unready change packages for particular migration schemes. In this scenario, however, we are allowing project managers to ready or unready any change package.

Application developer

You might want to restrict application developers so that they can affect only the development environments in which they work. This means defining general resource profiles that specify particular CICS configurations and migration schemes.

- Create, update, delete, or copy any object (such as resource definitions) in a CICS configuration:

  ```
  CICSCM.CRE.*.CCONFIG.CICS_configuration
  ⋮
  CICSCM.UPD.*.CCONFIG.CICS_configuration
  ⋮
  CICSCM.DEL.*.CCONFIG.CICS_configuration
  ⋮
  CICSCM.CPY.*.CCONFIG.CICS_configuration
  ⋮
  ```

- Add or remove resource definitions in ResGroups, or ResGroups in ResDescs:

```
CICSCM.ADD.*.CCONFIG.CICS_configuration
⋮
CICSCM.REM.*.CCONFIG.CICS_configuration
⋮
```

- Create, update, or delete change packages (and their related repository objects):

```
CICSCM.*.CHGPKG.REPOSTRY.NONE
CICSCM.*.KEYASSOC.REPOSTRY.NONE
CICSCM.*.PSCHEME.REPOSTRY.NONE
CICSCM.*.READYLST.REPOSTRY.NONE
```

- Ready or unready change packages:

```
CICSCM.REA.migration_scheme
⋮
CICSCM.UNR.migration_scheme
⋮
```

- Migrate or back out change packages:

```
CICSCM.MIG.migration_scheme
⋮
CICSCM.BAC.migration_scheme
⋮
```

CICS administrator

Similar to application developers, you might want to restrict CICS administrators so that they can affect only the CICS regions for which they are responsible.

In this scenario, CICS administrators have all of the permissions of application developers (as listed above), with the following additional permissions:

- Perform actions on active CICS regions:

```
CICSCM.INO.*.*.location_name
⋮
CICSCM.INS.migration_scheme
⋮
CICSCM.DIO.*.location_name
⋮
CICSCM.NEO.*.location_name
⋮
CICSCM.NEW.migration_scheme
⋮
```

Approver

Approve or disapprove change packages:

```
CICSCM.APP.migration_scheme.approver_profile.approver_role
CICSCM.DIS.migration_scheme.approver_profile.approver_role
```

How you define these permissions in your external security manager is up to you. Here is one general approach:

1. Define one or more groups for each type of CICS Configuration Manager user.

   For example, for the CICS Configuration Manager administrator you might define one group named CICSADMN. For CICS administrators, you might define a group for each of your CICS environments: a CICSADMD group for development CICS administrators, and a CICSADMT group for test CICS administrators.
2. Define general resource profiles that specify the permissions for each group.
3. Add the groups to the access list of the general resource profiles.
4. Add users to each group.

Note: Users need only READ authority to the general resource profiles for CICS Configuration Manager security keys.

Rather than defining separate groups for approvers, you might want to add general resource profiles for approval and disapproval to existing groups.

For example, suppose that you have defined groups for the CICS administrators for each environment, and that you want CICS administrators to be able to approve or disapprove change packages that affect their environments. Test CICS administrators (belonging to the CICSADMT group) should be able to approve or disapprove change packages that affect the test CICS regions. If your migration schemes that target test environments all have 8-character names that end in "TEST", then you could define the following general resource profiles for the CICSADMT group:

```
CICSCM.APP.%%%%TEST.*.CICSADMN
CICSCM.DIS.%%%%TEST.*.CICSADMN
```

where CICSADMN is one of the approver roles in the approval profiles for those migration schemes. The * indicates any approval profile.

These general resource profiles would permit any member of the CICSADMT group to represent the CICSADMN approver role for any change package whose migration scheme has an 8-character name that ends in "TEST".

For a detailed, step-by-step example of how to define group resource profiles for approvers, see "Session 3. Approving change packages" on page 142.

Chapter 4. Guided tour

This guided tour is for first-time users of CICS Configuration Manager. It leads you step-by-step through some of the main features of the ISPF dialog.

Before taking this tour, read "Concepts" on page 13.

Administrator-only steps

Some of the steps in this tour are intended only for the CICS Configuration Manager administrator, and are marked like this:

CICS Configuration Manager administrator only

Steps to be performed only by the CICS Configuration Manager administrator.

End of CICS Configuration Manager administrator only

These "administrator-only" steps define records in the CICS Configuration Manager repository that other users can refer to, but only the CICS Configuration Manager administrator should be allowed to define.

The first user at your organization to take this tour should be the CICS Configuration Manager administrator, who should perform all of the steps in the tour. Subsequent users can skip the "administrator-only" steps, because the CICS Configuration Manager administrator will already have defined the records described in those steps.

Other steps are marked "*Security* administrator only". These steps can be performed only by a user with the authority to define security rules in your external security manager (such as RACF).

Tour summary

The tour consists of three sessions: each session is designed to be completed in a single sitting in under 20 minutes. Each successive session assumes that you have completed the previous session. Here is a summary of the tour:

- **Session 1. Editing resource definitions**

  CICS Configuration Manager administrator only

  – Create three copies of a small CSD file on your system, and define a CICS configuration for each copy.

    For the purposes of this tour, we will pretend that these CSD files contain the resource definitions for separate CICS environments: development, test, and production.

  End of CICS Configuration Manager administrator only

  – Edit resource definitions in the development CICS configuration.
  – View a report of the differences between the edited resource definitions in development, and the unedited versions in test and production.

- **Session 2. Creating and migrating change packages**

  CICS Configuration Manager administrator only

  – Define two migration schemes: one for migrating change packages from development to test, and another for test to production.

  End of CICS Configuration Manager administrator only

  – Create a change package containing new and edited resource definitions from the development environment.
  – Migrate the change package from development to test, and then from test to production.
  – Back out the change package from production.
- **Session 3. Approving change packages**

  Security administrator only

  – In your external security manager (this tour assumes that you are using RACF, but you could use another SAF-enabled external security manager):
    - Define general resource profiles that match the security keys sent by CICS Configuration Manager when a user attempts to approve or disapprove the migration of a change package.
    - Define a group profile for each approver role; add the group profile to the access lists of the appropriate general resource profiles.
    - Add at least one user to each of the group profiles.

  End of Security administrator only

  CICS Configuration Manager administrator only

  – Activate the CICS Configuration Manager system options for security checking and approval checking.

  End of CICS Configuration Manager administrator only

  CICS Configuration Manager administrator only

  – Activate approval processing for the migration scheme.

  End of CICS Configuration Manager administrator only

  CICS Configuration Manager administrator only

  – Define an approval profile that requires migrations from development to test to be approved by three users: a project manager, a member of the quality assurance team, and an application developer.

  End of CICS Configuration Manager administrator only

  – Update the change package to refer to the approval profile.
  – Get users to approve the change package.
  – Migrate the approved change package.

Session 1. Editing resource definitions

Before you can begin using CICS Configuration Manager to edit resource definitions, you need to define CICS configurations that refer to the CSD files or CICSPlex SM contexts that contain those resource definitions.

Copy a CSD file and define CICS configurations for the tour

CICS Configuration Manager administrator only

1. Create three copies of a small CSD file on your system. (Define the data sets, and then use the DFHCSDUP utility INITIALIZE and COPY commands to copy the resource definitions from the original CSD file to the new copies.) We will use the resource definitions in these CSD files as sample data for the tour.

   Although the data set names that you use are not significant for this tour, consider naming the three copies:

   hlq.CCV210.TOUR.DEVT.DFHCSD
   hlq.CCV210.TOUR.TEST.DFHCSD
   hlq.CCV210.TOUR.PROD.DFHCSD

   Ensure that the CICS region user ID (for the CICS region running the CICS Configuration Manager server) can access the three new CSD files.

   We are going to define a CICS configuration for each of these three CSD files. We will name these CICS configurations TOURDEVT, TOURTEST, and TOURPROD.

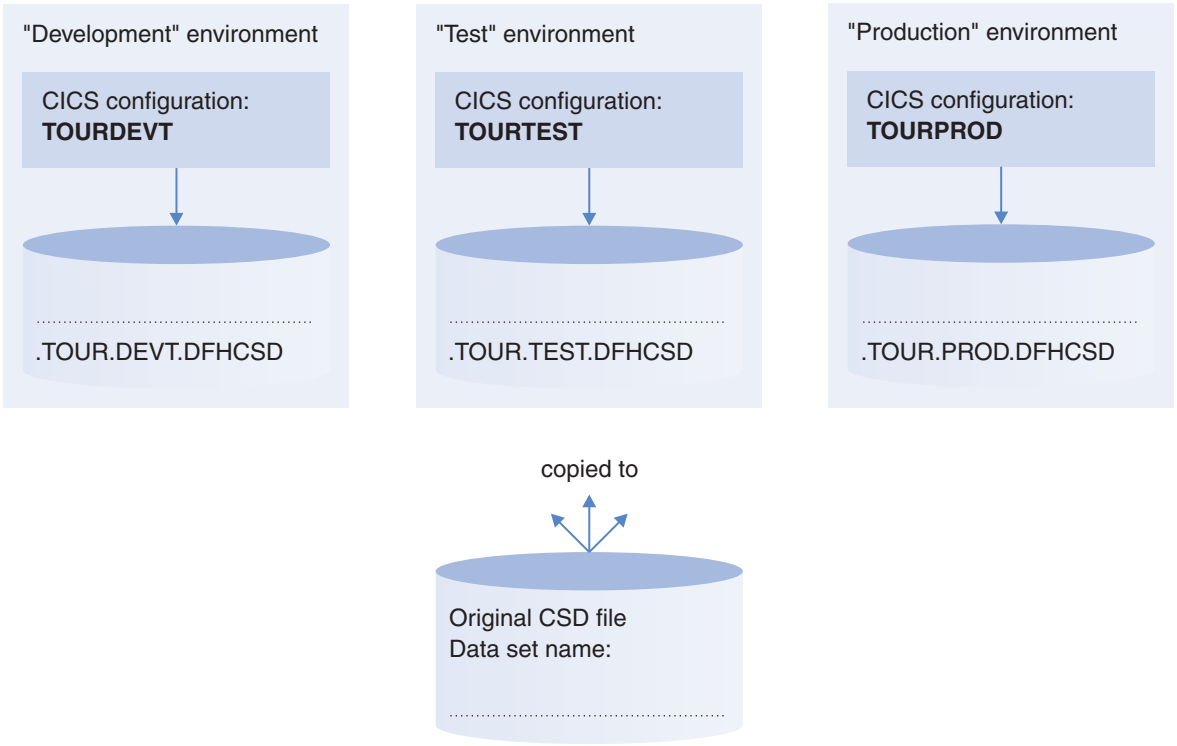


Figure 53. Guided tour: CICS configurations and CSD files

If you prefer, you can create three CICSPlex SM contexts instead. You could even use a mix of CSD files and contexts. For example, use a context for TOURDEVT, and CSD files for TOURTEST and TOURPROD. It will make no difference to the rest of the tour.

2. Start the CICS Configuration Manager ISPF dialog.

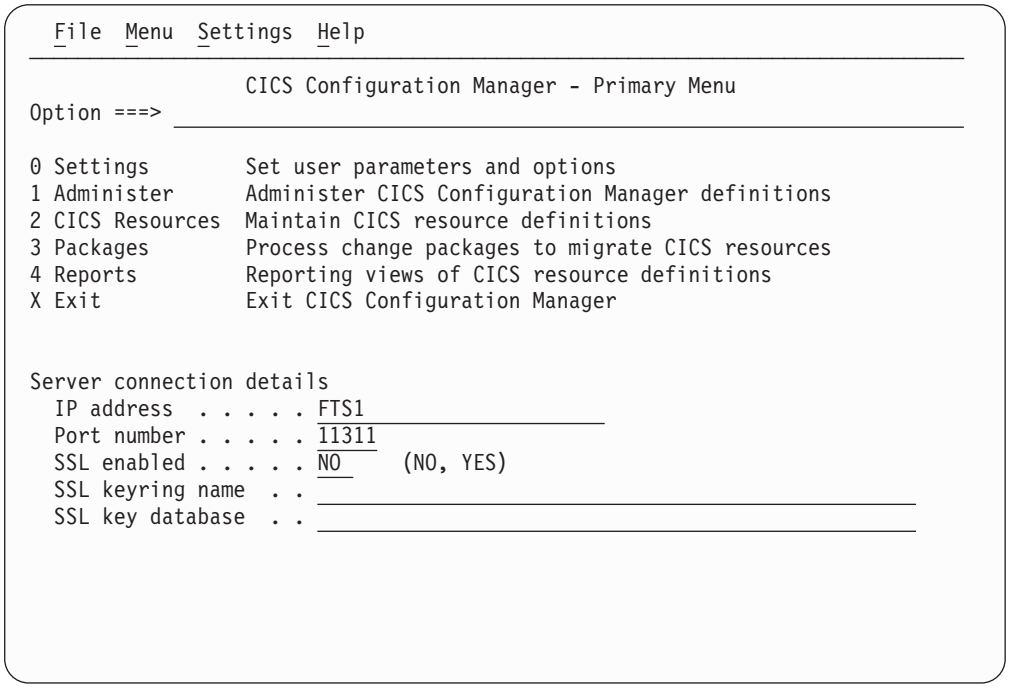


Figure 54. Guided tour: CICS Configuration Manager primary menu

3. On the CICS Configuration Manager primary menu, select option **1 Administer**.
4. On the **Administration** menu, select option **2 CICS Configurations**.

   The list of existing CICS configurations appears.
5. On the command line of the **CICS Configurations** list panel, enter **DEF**

   A pop-up window appears, prompting for the name of the new CICS configuration and, optionally, the name of an existing CICS configuration to use as a model.
6. Enter TOURDEVT as the name of the new CICS configuration. Leave the model name blank.
7. On the edit panel for the new CICS configuration, enter:
   - A description (for example, “Guided tour Development environment”)
   - The fully-qualified data set name of one of the CSD files (without enclosing quotes).
   - Record-level sharing (RLS) access option for the CSD file.

```
  File  Menu  Settings  Help
 ____________________________________________________________________________
Edit                         CICS Configuration                Row 1 to 1 of 1
Command ===> ____________________________________________ Scroll ===> CSR

Name  . . . . : TOURDEVT
Description . . Guided Tour Development Environment

Specify the type of file or repository
2  1. CICSPlex SM Context . . ________
   2. CSD File  . . . . . . . CCVCICS.TOUR.DEVT.DFHCSD
   3. Export-import file  . . ________________________________________

Choose a view for related options
2  1. Transform variables
   2. CSD file options
   3. Export-Import file options

Define CSD file options and connections for CICS remote systems
   RLS access  . . . . . DYNAMIC  +  DYNAMIC, NOTRLS or RLS

   / Connection +
     ____
******************************* Bottom of data ********************************
```

Figure 55. Guided tour: Defining a CICS configuration

8. On the command line, enter **SAVE**
9. Press the Exit key (F3) to return to the list of CICS configurations.

   Tip: If you want the Exit key (F3) to automatically save changes, so that you do not have to explicitly enter **SAVE** before exiting, then open the Settings pull-down menu and set save confirmation off.
10. Define TOURTEST and TOURPROD CICS configurations for the other two CSD files.

    Tip: To define a new CICS configuration while editing another CICS configuration, enter **SAVEAS** on the command line.

End of CICS Configuration Manager administrator only

Display a list of resource definitions in TOURDEVT

1. On the primary menu, select option **2 CICS Resources**.

   The list of CICS configurations appears.
2. Press the PrevPage key (F10) or the NextPage key (F11) to scroll hidden columns into view.

   Notice that you can choose to view either the CICS configuration descriptions, or the names of their underlying CSD files or CICSPlex SM contexts.

   Like any other list panel in CICS Configuration Manager, to see the actions that you can perform on an item in the list, you enter **/** next to an item.
3. Enter **/** next to one of the CICS configurations in the list.

   A pop-up window appears showing the list of actions that you can perform on the selected CICS configuration.

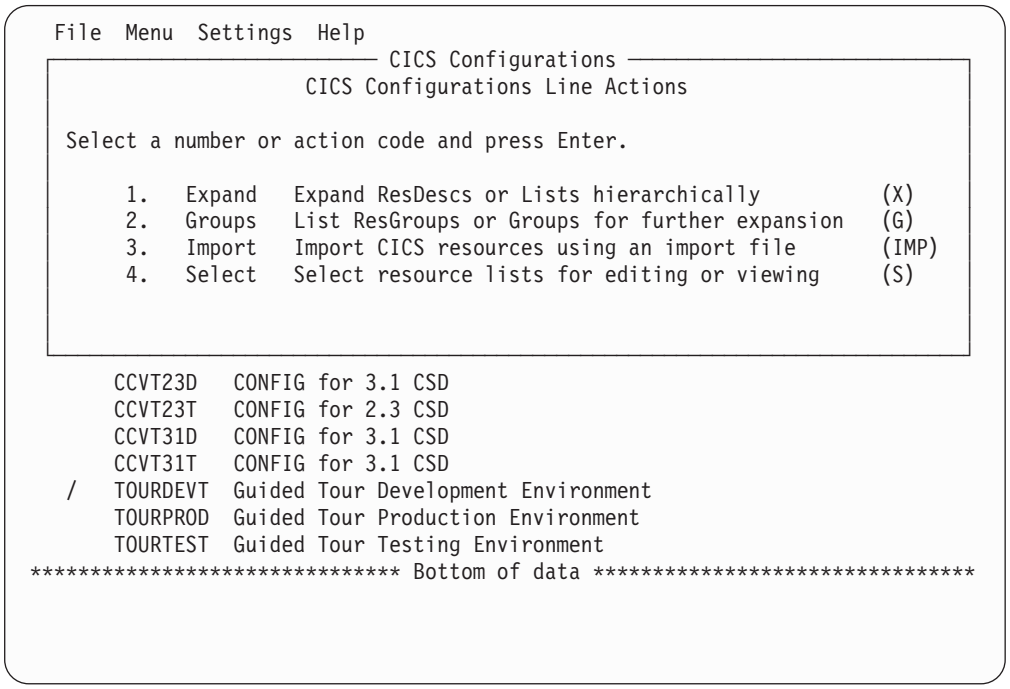


Figure 56. Guided tour: Enter / next to an item on a list panel to see the available line actions

4. Press the Cancel key (F12) to close the pop-up window.
5. Enter **S** next to the TOURDEVT CICS configuration.

   Tip: To scroll the list to this CICS configuration, enter **L TOURDEVT** on the command line. To hide CICS configurations that are not related to this tour, enter TOUR* in the filter field above the Name column.

   A list panel appears with filter fields and column headings, but no list items. Instead, directly under the column headings is a “bottom of data” indicator. This empty list is normal: the panel does not display any list items until you press Enter. This allows you to adjust the filter before displaying the list, avoiding delays caused by listing more resource definitions than required.
6. Type filter masks for the resource definition name, type, and group. For details on specifying a filter, move the cursor to a filter field and then press the Help key (F1).

   Specify a filter that displays resource definitions of a type that are familiar to you. For example, if you are familiar with transaction resource definitions, then select TRANSACTION as the type, and specify an asterisk (*) for the name and the group.
7. Press Enter.

   The list displays the resource definitions that match the filter.

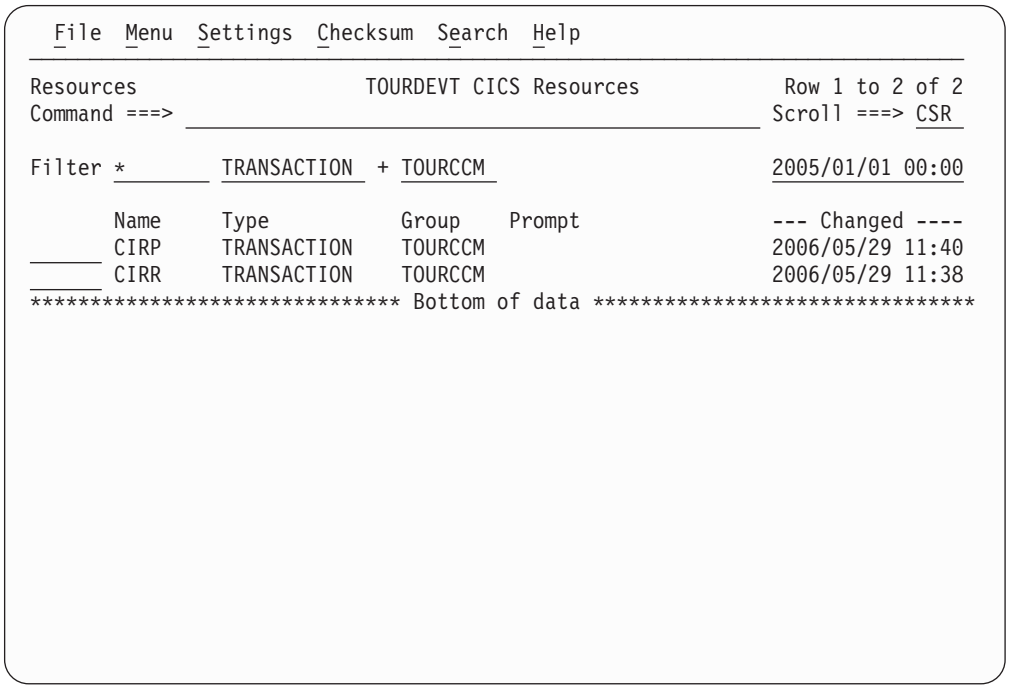


Figure 57. Guided tour: Filtering a list panel of resource definitions

The list column headings are "point-and-shoot" fields: to sort the list by a column, select the column heading.

Tip: To scroll to a particular resource definition, enter **L** *name* on the command line, where *name* is the name of the resource definition, or just its leading characters.

Edit and view resource definition attributes in TOURDEVT

1. Enter **S** next to one of the resource definitions in the list.

   An edit panel appears, showing the attributes of the selected resource definition.

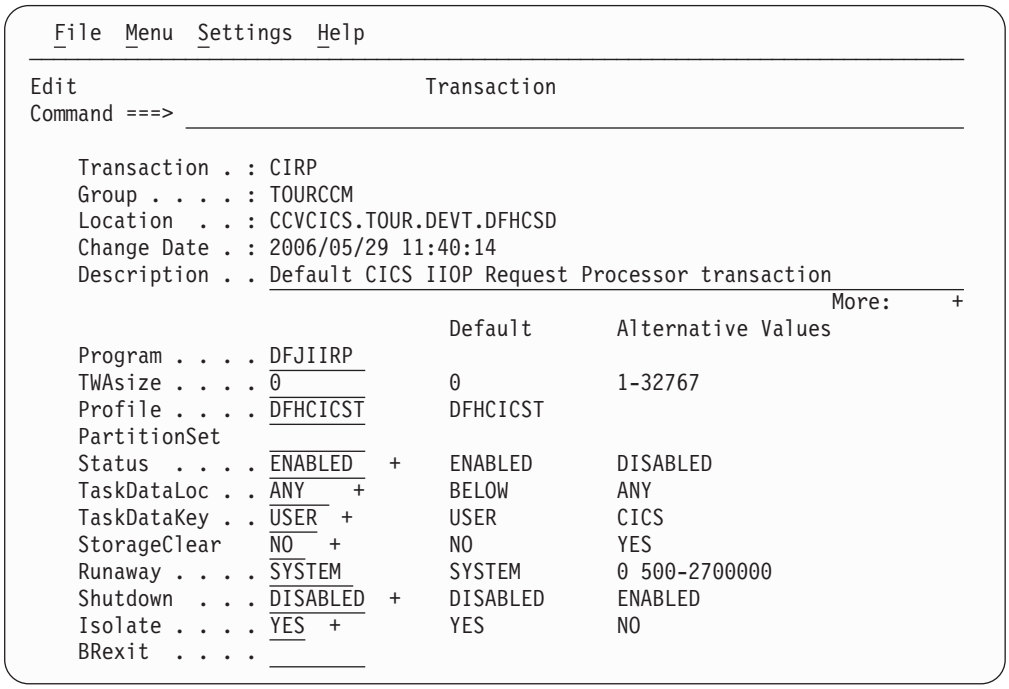


Figure 58. Guided tour: Viewing or editing the attributes of a resource definition

If you are familiar with the CEDA transaction supplied with CICS, then you will notice that the layout of this panel is similar. However, this CICS Configuration Manager panel contains several improvements.

2. Press the PrevPage key (F10) or the NextPage key (F11) to choose the information displayed next to each attribute:
   - Default and alternative values

     or
   - A one-line description

     or
   - Nothing (for a "cleaner-looking" panel)
3. Move the cursor to an attribute field that is marked with a prompt sign (+), and then press the Prompt key (F4).

   A pop-up list of valid attribute values appears. Press the Cancel key (F12) to close the list.
4. With the cursor in an attribute field, press the Help key (F1).

   A description of the attribute and its values appears in a pop-up window.

```
                        PartitionSet - Help
                                                                More:     +
PARTITIONSET( partitionset KEEP OWN )

This attribute specifies the name of the partition set that is to be
the default application partition set. The name can be up to eight
characters in length.

Acceptable characters for PARTITIONSET are: A-Z 0-9 $ @ #

If you do not specify a partition set name or either of the reserved
names, CICS destroys existing partitions before the first BMS output
to the terminal from the transaction.

  KEEP          The transaction uses the application partition set for
                this terminal, whatever it may be. This option is
                normally used for successor transactions in a chain of
                pseudoconversational transactions.

  OWN           The transaction performs its own partition management.

  partitionset  CICS destroys existing partitions and loads the named
                partition set before the first BMS output to the
                terminal from the transaction. (Existing partitions
```

Figure 59. Guided tour: Detailed online help for resource definition attributes and their values

5. Press the Zoom key (F6) to toggle the size of the pop-up window.
6. Press the Cancel key (F12) to close the pop-up window.
7. Scroll to the top of the attribute list.
8. On the command line, enter **L** *attribute_name*

   where *attribute_name* is the name of a resource definition attribute, or the leading characters of an attribute name, such as Wait or Task.

   The panel scrolls to the first attribute that matches the name you specified.
9. Press the Repeat Locate key (F5) to locate any subsequent matches.
10. Move the cursor to the command line, press Enter, and then press the Help key (F1).

    A pop-up help window appears, describing the panel, its fields, and the commands that you can perform. (If you did not press Enter before pressing the Help key (F1), a pop-up window appears describing the previous Repeat Locate action.)

```
                    Transaction Edit/View - Help
                                                                More:     +
The Transaction panel allows you to edit or view a CICS Transaction
resource definition. The mode (EDIT or VIEW) is displayed in the top
left-most corner of the panel. EDIT allows you to change and save
Transaction attribute values, whereas VIEW imposes confirmation
prompts to save any changes.

For general information regarding CICS Transaction resource
definitions, tab to the following topics and press HELP:

  > Transaction resource definitions

The panel displays a list of attributes, grouped into categories. You
may scroll up and down (default is F7 and F8 respectively) to view
more attributes. A prompt sign (+) following an input field indicates
that a pop-up list of field values may be obtained via the PROMPT key
(default is F4). A zoom sign (>) following an input field indicates
that an alternative input/display panel for the field may be obtained
via the ZOOM key (default is F6).

Descriptions or sample values appear on the right of the attribute
value field. You may toggle between descriptions, sample values or
no-display using the PREV and NEXT commands (default is F10 and F11
```

Figure 60. Guided tour: Detailed online help for each panel

11. Press the Forwards key (F8) to scroll down to the list of attributes in the help window.
12. Move the cursor to an attribute name in the help window, and then press the Help key (F1).

    The pop-up help window for the attribute appears.
13. Press the Cancel key (F12) twice to close the pop-up help windows, and return to the edit panel.
14. Move the cursor to an attribute field that is marked with a prompt sign (+), and then enter an invalid value in that field. (For example, if the valid values for an attribute are YES or NO, enter X in that field.)

    Notice the “Invalid value” message: the panel protects you from entering invalid attribute values.
15. Press the Help key (F1) to see an expanded message describing the valid values for this attribute.
16. Change the attribute to a valid value.
17. Edit some other attribute values.
18. On the command line, enter **SAVE** to save these edits.

Save a TOURDEVT resource definition under a new name

You have just edited a resource definition and then saved it. Now we are going to make further edits to the resource definition, and then save it under a new name:

1. Edit some more attribute values.
2. On the command line, enter **SAVEAS**

   A pop-up window appears, prompting for details.

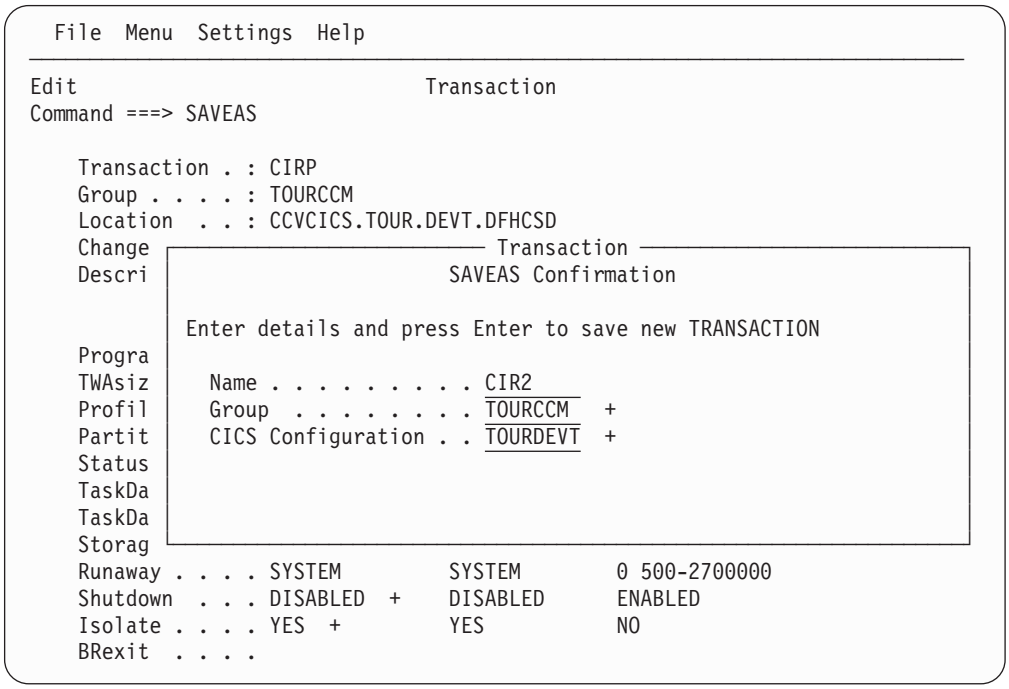


Figure 61. Guided tour: Creating a new resource definition by saving an existing resource definition under a new name

3. Save this resource definition under a new name, but in the same group, and in the same CICS configuration, TOURDEVT.

   After saving the new resource definition, you return to the edit panel for the original resource definition, *not* the new resource definition.
4. Press the Cancel key (F12) to ignore any edits to this resource definition since the last save, and return to the list of resource definitions.

   You have just edited a resource definition, and then created a new resource definition based on that existing resource definition, with a few additional edits. Let us compare the attributes of these two resource definitions side-by-side.

Compare two TOURDEVT resource definitions side-by-side

On the list of TOURDEVT resource definitions:

1. Sort the list by the Changed column, so that the two most recently edited resource definitions appear at the top. To sort the list, either:
   - Enter **SORT CHANGED** on the command line

     or
   - Move the cursor to the Changed column heading and then press Enter.
2. Type **CM** next to the original resource definition, but do not press Enter yet.
3. Type **CM** next to the newly created resource definition, and then press Enter.

   The two resource definitions appear side by side, with differences highlighted.

```
  File  Menu  Settings  Hilite  Help
 ____________________________________________________________________________
Compare                          Transaction
Command ===> ______________________________________________________________

==> Transaction . : CIR2                          CIRP
    Group . . . . : TOURCCM                       TOURCCM
    Location  . . : CCVCICS.TOUR.DEVT.DFHCSD      CCVCICS.TOUR.DEVT.DFHCSD
==> Change Date . : 2006/05/29 13:51:51           2006/05/29 11:40:14
    Description . : Default CICS IIOP Request  >  Default CICS IIOP Request  >
                                                                   More:     +
==> Program . . . : CCVIIRP                       DFJIIRP
    TWAsize . . . : 0                             0
==> Profile . . . : CCVCICST                      DFHCICST
    PartitionSet  :
    Status  . . . : ENABLED                       ENABLED
    TaskDataLoc . : ANY                           ANY
    TaskDataKey . : USER                          USER
    StorageClear  : NO                            NO
    Runaway . . . : SYSTEM                        SYSTEM
    Shutdown  . . : DISABLED                      DISABLED
    Isolate . . . : YES                           YES
    BRexit  . . . :
```

Figure 62. Guided tour: Comparing two resource definitions side-by-side

Zoom fields (marked by >)

A greater than sign (>) next to a field indicates that the field contains more data than can be displayed on the current panel. This often occurs on description fields in a side-by-side comparison. To view the entire contents of the field, move the cursor to the field (not the > sign) and then press the Zoom key (F6).

Notice the Hilite action bar choice. This specifies how the panel highlights differences.

4. Select the Hilite action bar choice, and then select Reverse video.

   The differences are now highlighted in reverse video.

5. Press the Exit key (F3) to return to the list of resource definitions.

   In addition to comparing two resource definitions, you can compare historical versions of the same resource definition.

6. Enter **H** next to the resource definition that you edited (the original resource definition, not the newly created resource definition).

   The panel lists the historical versions of the resource definition and its current version (indicated by the most recent change date). Only the current version is stored in the CICS configuration: the historical versions are stored in the CICS Configuration Manager journal.

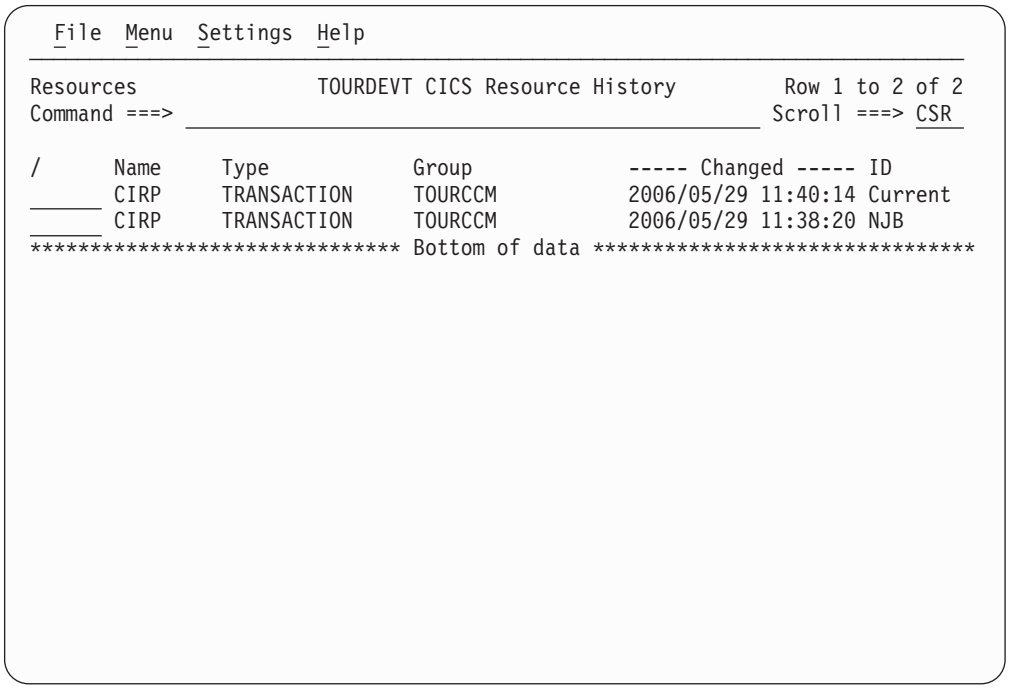


Figure 63. Guided tour: Displaying a list of historical versions of a resource definition

7. Type **CM** next to the current and previous versions, and then press Enter.

   The side-by-side comparison highlights the changes that you made when you edited this resource definition.
8. Press the Exit key (F3) to return to the list of historical versions of the selected resource definition.

Undo edits to TOURDEVT by restoring historical versions

To undo an edit to a resource definition, or even restore a resource definition to a much older version of itself, you select an historical version of the resource definition, and then save it. This copies the historical version of the resource definition, stored in the CICS Configuration Manager journal, to the current CICS configuration.

On the list of historical versions:

1. Enter **S** next to the previous version of the resource definition (that is, the version with the second most recent change date).

   The edit panel for this historical version appears.
2. On the command line, enter **SAVE**
3. Press the Exit key (F3) to return to the list of historical versions.
4. Press the Exit key (F3) again to return to the list of (current) resource definitions.
5. Enter **S** next to the resource definition.

   The edit panel for the resource definition appears: notice that your earlier edits have been undone.
6. Press the Exit key (F3) to return to the list of resource definitions.

Define new resource definitions in TOURDEVT

You have already used one method to define a new resource definition, by entering **SAVEAS** while editing an existing resource definition. Another method is to use the **DEF** (or **DEFINE**) command on the list of resource definitions.

1. On the list of resource definitions, enter **DEF** next to a resource definition.

   A **DEFINE Confirmation** pop-up window appears, showing the details of the resource definition you are about to define. The existing resource definition is used as a "model": the new resource definition will be created with the same attribute values.

   To define a resource definition starting with blank attribute values, either enter **DEF** on the command line, or delete the name of the model resource definition from the pop-up window.

   Tip: Before pressing Enter on the **DEFINE Confirmation** pop-up window, check that the CICS configuration specified is the one that you intended. By default, this window displays the name of the CICS configuration where you previously defined a resource definition. This is not necessarily the CICS configuration whose resource definitions appear on the panel where you entered the **DEF** command.
2. Edit some of the attributes of the new resource definition (for example, its description). When you have finished, enter **SAVE** on the command line, and then press the Exit key (F3) to return to the list of resource definitions.

Copy TOURDEVT resource definitions to other CICS configurations

You can copy resource definitions from one CICS configuration to another directly:

1. On the list of resource definitions, enter **C** next to one or more resource definitions.

   A pop-up window appears, prompting for the destination group and CICS configuration. Do not press Enter; we do not actually want to perform a copy at this time.

```
                  Copy Confirmation

Enter details and press Enter to copy resources.

Copy target details
  Group  . . . . . . . . . TOURCCM   +
  CICS Configuration . . . CCVT31D   +

Processing options
  Replace definitions  . . YES  (No, Yes)
```

Figure 64. Guided tour: Options for copying a resource definition

2. Press the Cancel key (F12), to return to the list of resource definitions without copying.

Use this direct, "ad hoc" method of copying resource definitions with care. You may wish to restrict this ability to only a few users. In a typical, ordered workflow, rather than copying resource definitions using this method, you will add resource definitions to a change package, and then migrate that change package according

to a migration scheme. Change packages offer both more flexibility and more control. For example, you can back out a change package migration with a single command.

Explore the hierarchy of the TOURDEVT CICS configuration

Instead of selecting a CICS configuration and then going directly to a list of its resource definitions, you can progressively expand the hierarchy of the CICS configuration, starting with its lists (or ResDescs, if the CICS configuration refers to a context), to the groups (or ResGroups) in the selected list, and then finally to the resource definitions in the selected group.

1. On the list of resource definitions, press the Exit key (F3) to return to the list of CICS configurations.
2. Enter **X** next to the TOURDEVT CICS configuration.

   Similar to the list of resource definitions, this panel does not display any items until you press Enter. This gives you the chance to set a filter before the list is displayed.
3. Press Enter to display the lists/ResDescs in the CICS configuration.

```
 File  Menu  Settings  Checksum  Help
──────────────────────────────────────────────────────────────────────────────
Lists                        TOURDEVT CICS Resources          Row 1 to 7 of 7
Command ===> ____________________________________________ Scroll ===> CSR

Filter C*_____                                            *_______________

/      List     Prompt                                    --- Changed ----
_____  CCMDEVT                                           2006/05/29 12:13
_____  CCMLIST                                           2006/05/29 14:06
_____  CCMTOUR                                           2006/05/29 12:12
_____  CCM110                                            2005/12/30 10:45
_____  CCM120                                            2005/12/30 10:45
_____  CCVT23D                                           2005/12/30 10:44
_____  CCVT31D                                           2006/05/29 12:14
****************************** Bottom of data ********************************
```

Figure 65. Guided tour: Expanding a CICS configuration hierarchy to show lists/ResDescs

4. Enter **X** next to a list/ResDesc.
5. Press Enter to display the groups/ResGroups in the selected list/ResDesc.

```
  File  Menu  Settings  Checksum  Help
──────────────────────────────────────────────────────────────────────────────
Groups                      TOURDEVT CICS Resources          Row 1 to 8 of 8
Command ===> ____________________________________________ Scroll ===> CSR

Filter *_______                                          *_______________

/      Group    List     Prompt                          --- Changed ----
______ CCVLINKS CCMTOUR                                  2006/05/29 14:10
______ CCVTEST  CCMTOUR                                  2006/05/29 14:10
______ CCV110   CCMTOUR                                  2006/05/29 14:10
______ CCV120   CCMTOUR                                  2006/05/29 14:10
______ CEE      CCMTOUR                                  2006/05/29 14:10
______ DFHIIOP  CCMTOUR                                  2006/05/29 14:10
______ EYU230GW CCMTOUR                                  2006/05/29 14:10
______ EYU230G1 CCMTOUR                                  2006/05/29 14:10
****************************** Bottom of data ********************************
```

Figure 66. Guided tour: Expanding a CICS configuration hierarchy to show groups/ResGroups

6. Enter **X** next to a groups/ResGroups.
7. Press Enter to display the resource definitions in the selected group/ResGroup.

   If the CICS configuration refers to a CICSPlex SM context, then you can enter **X** next to a resource definition to see which ResGroups the resource definition belongs to.

For more details on the options for exploring the hierarchy of a CICS configuration, see "Exploring CICS configurations" on page 169.

Compare resource definitions across TOURDEVT, TOURTEST, and TOURPROD

Primary menu option **4.1 Multiple Configs** lets you work with resource definitions from *multiple* CICS configurations in the same way that the option we have been using so far, option **2 CICS Resources**, lets you work with resource definitions from a single CICS configuration. The panels under option **4.1 Multiple Configs** are similar to the panels under option **2 CICS Resources**, except that you select multiple CICS configurations instead of just one, and the subsequent list panels contain a Config column, identifying the CICS configurations to which items belong.

You can use this option to compare resource definitions in different CICS configurations.

1. Select primary menu option **4.1 Multiple Configs**.

   The list of CICS configurations appears.
2. Type an **S** next to TOURDEVT, TOURTEST, and TOURPROD, and then press Enter.
3. Specify a filter that limits the list to one of the resource definitions that you previously edited in TOURDEVT, and then press Enter to display the list.

   The list shows the resource definition in the three CICS configurations.

In addition to comparing two resource definitions side-by-side, you can display a checksum column on list panels. The checksums are 8-digit hexadecimal numbers calculated from the attribute values of the resource definitions. These provide an easy way to compare resource definitions in the list. If two resource definitions of the same resource type have the same checksum, then either all of their attribute values are identical, or a subset or their attribute values are identical, depending on the type of checksum: FULL (all attributes), PARTIAL (a subset of attributes predefined by CICS Configuration Manager), or LIST (a subset of attributes specified by you).

4. On the command line, enter **CHECKSUM FULL**

   Tip: You can also use the Checksum action bar choice to display or hide this column.

   The checksum column appears. Notice that the checksums for the resource definitions in TOURTEST and TOURPROD are the same, but the resource definition in TOURDEVT is different, because you have edited its attributes.

```
  File  Menu  Settings  Checksum  Search  Help
_____________________________________________________________________________
Resources              Multiple Configuration Resources        Row 1 to 9 of 9
Command ===> ____________________________________________________ Scroll ===> CSR

Filter *_______ TRANSACTION  + TOURCCM
                                                                Checksum
       Name     Type           Group    Prompt                  Full   Config
______ CIRP     TRANSACTION    TOURCCM                         570C69E5 TOURDEVT
______ CIRP     TRANSACTION    TOURCCM                         570C69E5 TOURPROD
______ CIRP     TRANSACTION    TOURCCM                         570C69E5 TOURTEST
______ CIRR     TRANSACTION    TOURCCM                         D5A8B594 TOURDEVT
______ CIRR     TRANSACTION    TOURCCM                         D5A8B594 TOURPROD
______ CIRR     TRANSACTION    TOURCCM                         D5A8B594 TOURTEST
______ CIR2     TRANSACTION    TOURCCM                         570C1D97 TOURDEVT
______ CIR2     TRANSACTION    TOURCCM                         D59022B3 TOURPROD
______ CIR2     TRANSACTION    TOURCCM                         D59022B3 TOURTEST
******************************* Bottom of data ********************************
```

Figure 67. Guided tour: Comparing resource definitions using the checksum column

5. Type **CM** next to the resource definition in TOURDEVT and the resource definition in TOURTEST, and then press Enter.

   The resource definitions appear side-by-side, with differences highlighted.

Session 2. Creating and migrating change packages

This session assumes that the TOURDEVT, TOURTEST, and TOURPROD CICS configurations have been defined, and that you have edited or created resource definitions in the TOURDEVT CICS configuration. In this session, we will use a change package to migrate resource definitions from TOURDEVT to TOURTEST, and then from TOURTEST to TOURPROD.

Define TOURDT and TOURTP migration schemes

CICS Configuration Manager administrator only

Before you can use change packages to migrate resource definitions between CICS configurations, you need to define migration schemes. These determine the source and target CICS configurations, and other details of a migration.

We are going to create two migration schemes:

TOURDT
: To migrate from the TOURDEVT CICS configuration to the TOURTEST CICS configuration. ("Development" to "Test".)

TOURTP
: To migrate from TOURTEST to TOURPROD.

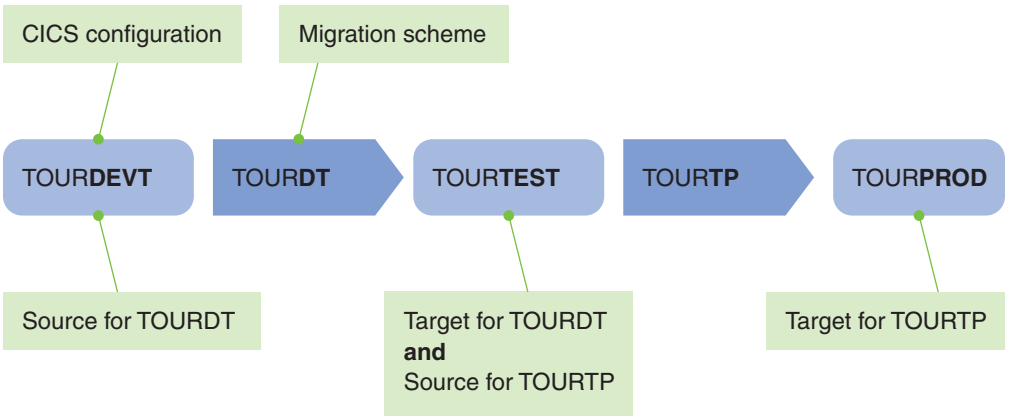


Figure 68. Guided tour: migration schemes, and their source and target CICS configurations

1. On the primary menu, select option **1.3 Migration Schemes**.
2. On the command line of the **Migration Schemes** list panel, enter **DEF**
3. Enter TOURDT as the name of the new migration scheme.
4. On the edit panel for the new migration scheme, enter:
   - A description (for example, "Guided tour Development to Test")
   - A single migration path, with a source CICS configuration of TOURDEVT and a target CICS configuration of TOURTEST.

   This is as simple as a migration scheme gets: one source CICS configuration, one target CICS configuration. We will leave approval processing and transformation rules for later.

```
  File  Menu  Settings  Help
 ____________________________________________________________________________
Edit                          Migration Scheme                 Row 1 to 1 of 1
Command ===> ____________________________________________________ Scroll ===> CSR

Name  . . . . : TOURDT
Description . . Guided tour development to test

Approval Processing
_   Activate

Choose a view for related options
1  1. Migration paths
   2. Transform variables

Define the migration path source and target CICS Configurations

                                          Delete at
/ Source +  Target +  Transform Rule +   Source
_ TOURDEVT  TOURTEST  ________             NO
******************************* Bottom of data ********************************
```

Figure 69. Guided tour: Defining a migration scheme

5. Press the Exit key (F3) to save the migration scheme and return to the list of migration schemes.
6. Define a TOURTP migration scheme with a source CICS configuration of TOURTEST and a target CICS configuration of TOURPROD.

End of CICS Configuration Manager administrator only

Define a change package for the tour

1. On the primary menu, select option **3 Packages**.

   The list of existing change packages appears.
2. On the command line, enter **DEF**

   If the system option for automatic change package numbering is active, then the edit panel for the new change package appears (a number will be automatically assigned to the change package when you save it).

   Otherwise, a pop-up window appears, prompting for the name of the new change package. Enter a name for the new change package. For example, TOUR*userid*, where *userid* is your user ID or initials.
3. On the edit panel for the new change package, enter a description (for example, "*userid* guided tour").

   Leave the approval profile and external reference blank.
4. On the command line, enter **SAVE**

   This step is important: you need to save the change package before you can package (add) resource definitions to it (or do anything with it, for that matter).

Add TOURDEVT resource definitions to the change package

On the edit panel for the change package:

1. In the migration scheme field, select TOURDT.

   We deliberately saved the change package before specifying a migration scheme to make a point: the migration scheme name is not saved with the change

package. You need to select a migration scheme only when you process a change package. You can process the same change package with different migration schemes.

2. Select the **Package** command, and then press Enter.

   This displays a list of resource definitions, similar to the lists you have already seen under option **2 CICS Resources**. The difference here is the additional filter field for the CICS configuration, which limits the list to the source CICS configurations of the migration scheme. In this case, the migration scheme is TOURDT, and TOURDEVT is the only source CICS configuration.

3. Set the filter to include the resource definitions in TOURDEVT that you have edited or created, and then sort the list by the Changed column, so that the edited and new resource definitions appear at the top of the list.

4. Enter **P** (for "Package") next to these resource definitions, to add them to the change package.

```
 File  Menu  Settings  Help
──────────────────────────────────────────────────────────────────────────────
Package                     Change Package TOURPKG            Row 1 to 3 of 3
Command ===> ____________________________________________________ Scroll ===> CSR

Filter * TRANSACTION + TOURCCM            TOURDEVT *

/      Name     Type            Group    Prompt      Config   --- Changed ----
P      CIRP     TRANSACTION     TOURCCM             TOURDEVT 2006/05/29 11:40
P      CIRR     TRANSACTION     TOURCCM             TOURDEVT 2006/05/29 11:38
P      CIR2     TRANSACTION     TOURCCM             TOURDEVT 2006/05/29 13:51
****************************** Bottom of data ********************************
```

Figure 70. Guided tour: Packaging (adding resource definitions to a change package)

   Notice that, after you press Enter, the Prompt column shows "*Packaged" next to these resource definitions.

5. Press the Exit key (F3) to return to the edit panel for the change package.

List the resource definitions in the tour change package

Let us review the resource definitions that we have added to the change package.

On the edit panel for the change package:

1. Select the **List** command.

   The list of resource definitions in the change package for this migration scheme appears. Notice the Status column: these resource definitions have not yet been marked as ready for migration.

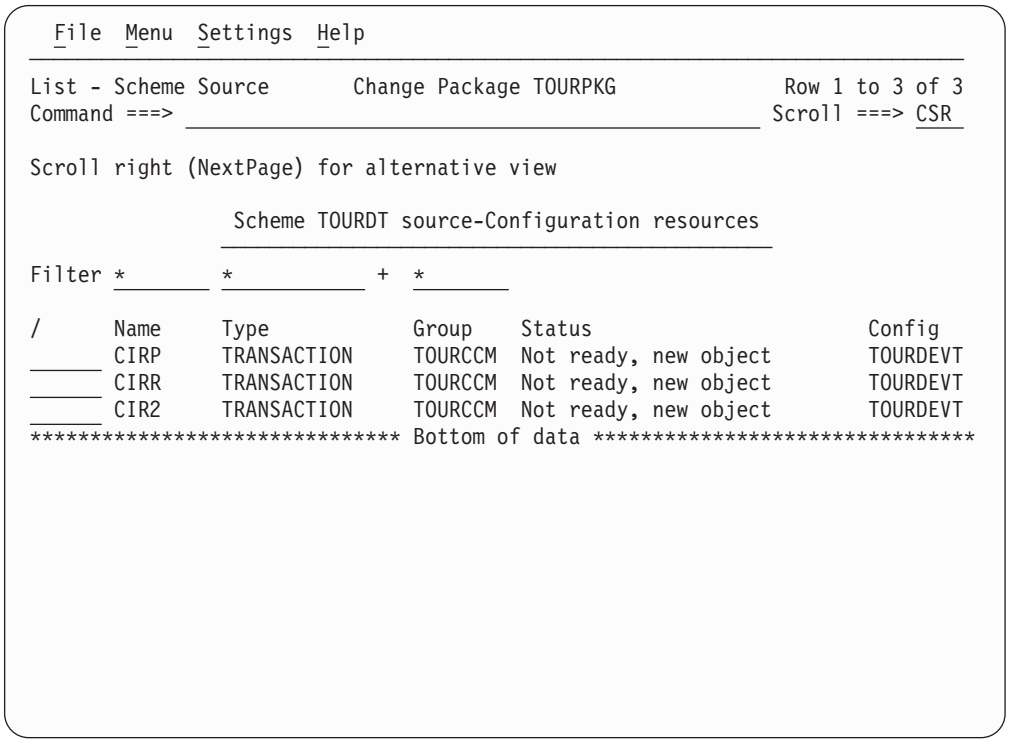


Figure 71. Guided tour: Listing the resource definitions in a change package

If you want to remove a resource definition from the change package, enter **R** (for "Remove") next to it.

If you want to edit a resource definition in the change package, enter **S** next to it, as on other list panels.

2. Press the Exit key (F3) to return to the edit panel for the change package.

We have finished adding resource definitions to the change package, and finished editing those resource definitions. We can now mark the resource definition as ready for migration.

Mark the tour change package as ready

On the edit panel for the change package:

1. Select the **Ready** command.

   Notice that the panel remembers the migration scheme you specified earlier.

   The ready processing panel appears.
2. Select the **Ready** processing option.
3. Select foreground execution.
4. Press Enter.

   The panel shows the message "Command successful", and the scheme status shows "Ready, no approvals required".

```
  File  Menu  Settings  Help
 ____________________________________________________________________________
Ready                      Change Package TOURPKG          Command successful
Command ===> ______________________________________________________________

Name  . . . . . : TOURPKG
Description . . : Guided Tour Change Package
Scheme name . . : TOURDT
Scheme status . : Ready, no approvals required

Choose a processing option and press Enter
1  1. Ready     Ready the change package
   2. UnReady   Remove ready status from the change package
   3. List      List the ready-candidate CICS resources

Execution mode           Enter "/" to select option
1  1. Foreground          _  Edit JCL before user submit
   2. Batch
```

Figure 72. Guided tour: Marking a change package as ready

We can now migrate the change package.

5. Press the Exit key (F3) to return to the edit panel for the change package.

Migrate the change package from TOURDEVT to TOURTEST

On the edit panel for the change package:

1. Select the **Migrate** command.

   The migrate processing panel appears.
2. Select the **Migrate** processing option.
3. Select foreground execution.
4. Press Enter.

   The panel shows the message “Command successful”.

We have now migrated the resource definitions in the change package from the TOURDEVT CICS configuration to the TOURTEST CICS configuration.

If you are thinking “all these steps, just to migrate a few resource definitions from one location to another?”, it is worth noting that this was a deliberately simplistic example: the change package contained resource definitions from only one CICS configuration; the migration scheme contained only one pair of source and target CICS configuration. With a similar number of steps, we could have migrated a change package containing resource definitions from multiple source CICS configurations to multiple target CICS configurations. The benefits of using CICS Configuration Manager increase with the size, number, and complexity of your CICS environments.

Compare TOURDEVT and TOURTEST resource definitions to check migration

The migrate command responded “Command successful”, but how do you really know that the resource definitions were successfully migrated? One way is to

compare the resource definitions in the source and target CICS configurations, and check that they are now the same. You can also compare the current version of a resource definition in the target CICS configuration with its previous version (stored in the CICS Configuration Manager journal), to see exactly what effect the migration had on that resource definition.

1. Select primary menu option **4.1 Multiple Configs**.

   The list of CICS configurations appears.
2. Type an **S** next to TOURDEVT and TOURTEST, and then press Enter.
3. Set a filter to match the migrated resource definitions, and then press Enter.

   Notice that the resource definitions you edited or created in TOURDEVT, and then added to the change package, have identical checksums to the similarly-named resource definitions in TOURTEST. These resource definitions *are* identical, because you have just used a change package to migrate them from TOURDEVT to TOURTEST.

   To further check the migration, you can use techniques demonstrated earlier in the tour. For example:

   - Enter **CM** next to a resource definition in TOURDEVT and a resource definition in TOURTEST to compare them side-by-side.
   - Enter **H** next to a resource definition in TOURTEST, and then use **CM** to compare the current and previous versions, to see the effect of the migration.

Migrate the same change package from TOURTEST to TOURPROD

After migrating the change package from TOURDEVT to TOURTEST, CICS Configuration Manager automatically added to the change package the migrated resource definitions in TOURTEST.

You can reuse the same change package with the TOURTP migration scheme to migrate these resource definitions from TOURTEST to TOURPROD.

First, let us confirm that the change package contains these TOURTEST resource definitions, by listing the resource definitions in the change package, this time using the TOURTP migration scheme.

On the edit panel for the change package:

1. Select the TOUR**TP** migration scheme.
2. Select the **List** command.

   The list shows the resource definitions in TOURTEST that we migrated from TOURDEVT.
3. Press the Exit key (F3) to return to the edit panel for the change package.
4. Ready the change package, migrate it, and then confirm that the resource definitions were successfully migrated to TOURPROD.

Back out the change package from TOURPROD

Let us pretend that migrating this change package from TOURTEST to TOURPROD caused some undesirable behavior in your production CICS environment, so you want to back out the migration.

On the edit panel for the change package:

1. Ensure that the TOURTP migration scheme is still selected.
2. Select the **Backout** command.

A list of the previous migrations for this change package, using the TOURTP migration scheme, appears. (If you have followed the steps in this tour exactly, there will be only one item in this list.)

```
 File  Menu  Settings  Help
_________________________________________________________________________
Backout                   Change Package TOURPKG             Row 1 to 1 of 1
Command ===> ____________________________________________ Scroll ===> CSR

Select a migration for backout and press Enter

       Date    Time  Scheme      Command     RC  ID       Event ID
  . 2006/05/30 11:04 TOURTP      MIGRATE     04  CICSUSER BEE0FAE28FA72A20
******************************* Bottom of data ********************************
```

Figure 73. Guided tour: Backing out a change package migration

3. Select the most recent migration.

   The backout processing panel appears.
4. Back out the change package migration.
5. Confirm that the backout was successful by comparing the historical versions of the resource definitions in TOURPROD.

Session 3. Approving change packages

In this session, we will use the TOURDT migration scheme to migrate a change package from development to test, as already done in session 2. However, this time we will activate approval checking and processing, so that the change package must be approved before migration. Specifically, we will update the change package to refer to an approval profile called NORMAL. This approval profile will name three approval roles for the TOURDT migration scheme:

PROJMAN
: Project manager

QATEAM
: Quality assurance team member

APPDEV
: Application developer

Before the change package can be migrated from development to test, it must be approved by three users: one for each approver role. We will use RACF to authorize selected users to represent these approver roles for this migration scheme.

Figure 74 illustrates the configuration required to enforce this approval.

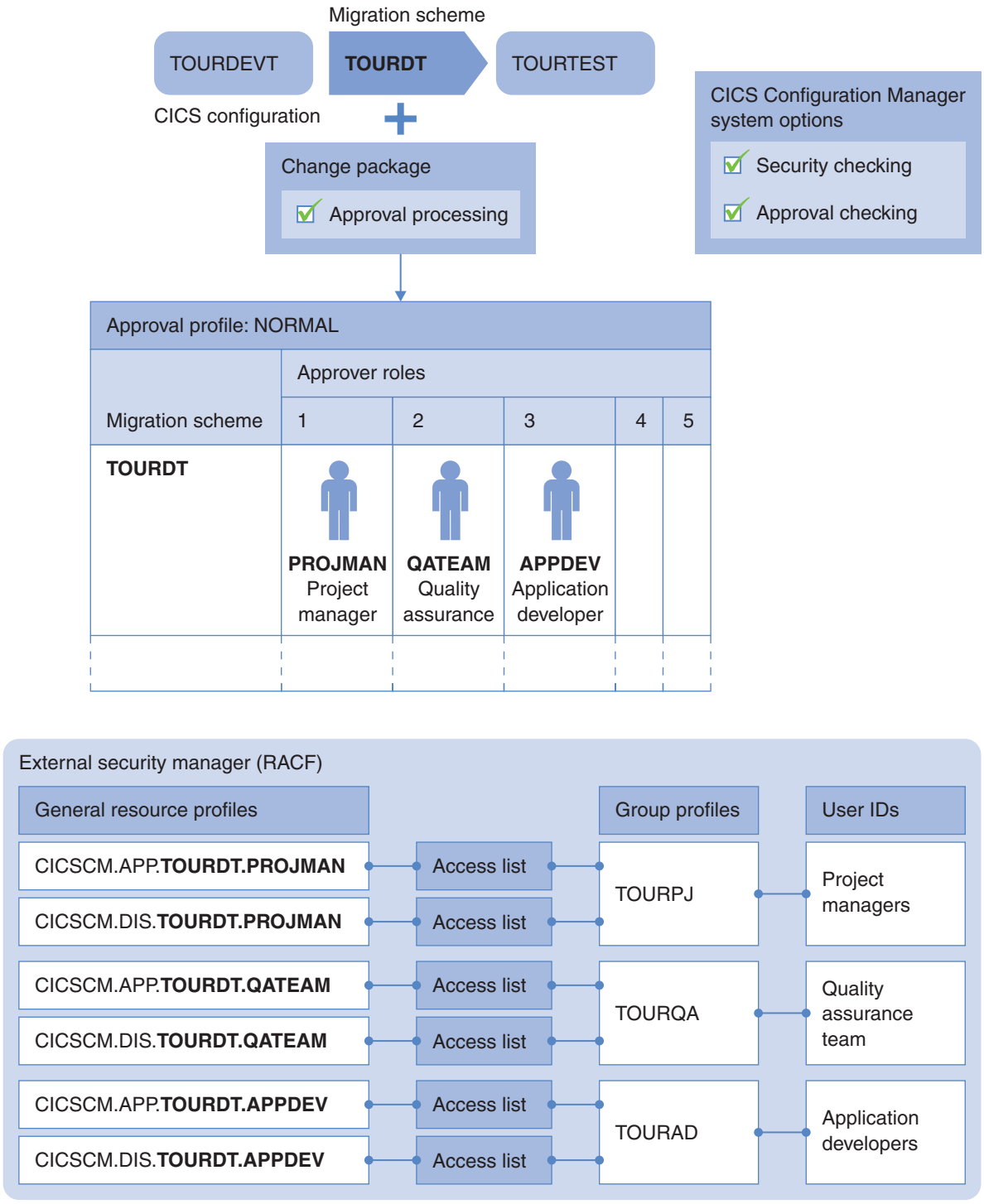


Figure 74. Guided tour: Normal migration from development to test requires approval by three approver roles

Define security rules in RACF

Security administrator only

The following steps assume that you have not yet defined any security rules for CICS Configuration Manager, and that the CICS Configuration Manager system option for security checking is inactive. (Security checking is inactive by default. To check whether it is active or inactive, go to CICS Configuration Manager primary menu option **1.1 System Options**.)

If you are already using CICS Configuration Manager with security checking, then ignore any of the steps below that you have already performed.

These steps specify CICS Configuration Manager general resource profiles with a prefix of "CICSCM". Feel free to specify a different prefix.

In RACF:

1. Define a general resource profile to allow all users access to all CICS Configuration Manager API commands:

   ```
   CICSCM.**
   ```

   Give this profile a universal access authority (UACC) of READ.

   This profile is for temporary use, until you define a more specific set of security rules for restricting access to API commands. For now, this profile allows you to activate security checking in CICS Configuration Manager, and then continue to perform API commands as if security checking were still inactive, except those API commands for which there are more specific profiles. We are about to define some specific profiles for Approve and Disapprove API commands.
2. Define the following six general resource profiles:

   ```
   CICSCM.APP.TOURDT.PROJMAN
   CICSCM.DIS.TOURDT.PROJMAN

   CICSCM.APP.TOURDT.QATEAM
   CICSCM.DIS.TOURDT.QATEAM

   CICSCM.APP.TOURDT.APPDEV
   CICSCM.DIS.TOURDT.APPDEV
   ```

   Give these profiles a UACC of NONE.
3. Define three group profiles: TOUR**PJ**, TOUR**QA**, and TOUR**AD**.
4. Add the group profiles to the access lists of the appropriate general resource profiles, as shown in Figure 74 on page 143.
5. Add one or more users to each group profile.

   In the steps that follow, you will test these new security rules. There are several ways to do this. To perform the testing yourself, consider temporarily adding your own user ID to each of the three group profiles, so that you can represent all three approver roles without logging on under different user IDs.

End of Security administrator only

Activate system options for security checking and approval checking

CICS Configuration Manager administrator only

1. On the primary menu, select option **1.1 System Options**.

2. Select the following system options:
   - Approval checking
   - Security checking (this option affects all API commands, not just Approve and Disapprove)
3. Set the SAF resource class to FACILITY
4. Set the security key prefix to CICSCM

End of CICS Configuration Manager administrator only

Define an approval profile

1. Go to primary menu option **1.4 Approval Profiles**.

   The list of approval profiles appears.
2. On the command line, enter **DEF**

   A pop-up window appears, prompting for the name of the new approval profile.
3. Enter NORMAL as the name of the new approval profile.

   The pop-up closes, and the edit panel for the new approval profile appears.
4. Enter a description. For example, “Normal migrations”.
5. Enter three approver roles for the TOURDT migration scheme:

```
   Migration   Approver   Approver   Approver   Approver   Approver
 / Scheme +    1          2          3          4          5
 _ TOURDT      PROJMAN    QATEAM     APPDEV     ________   ________
```

Activate approval processing for the migration scheme

CICS Configuration Manager administrator only

1. Go to primary menu option **1.3 Migration Schemes**.
2. Select the TOURDT migration scheme.
3. Activate approval processing.

End of CICS Configuration Manager administrator only

Select the approval profile for the change package

1. Go to primary menu option **3 Packages**.
2. Select the change package that you have used previously in the tour.
3. Set the approval profile to NORMAL
4. On the command line, enter **SAVE**

   Unlike a migration scheme, which you must specify each time you process a change package, the name of the approval profile is saved with the change package.

Approve the change package

On the edit panel for the change package:

1. Select the TOURDT migration scheme.
2. Ready the change package. (If it is still ready from earlier in the tour, then attempting to mark it as ready will have no effect.)

Notice that the ready panel for the change package reports the “scheme status” as “..., no approvals applied”. The “scheme status” is the status of the change package *for this migration scheme*.

Before applying approvals, let us attempt to migrate the change package without approval.

3. Try to migrate the change package: this should fail with the message “package not approved”.
4. Select the **Approve** command.

   The approve processing panel appears.
5. Select the **Approve** processing option with the approver role APPDEV.
6. Select foreground execution.
7. Press Enter.

   The panel shows the message “Command successful”, and the scheme status shows “Ready, partly approved”:

```
  File  Menu  Settings  Help
 ____________________________________________________________________________
Approve                    Change Package TOURPKG          Command successful
Command ===> ______________________________________________________________

Name  . . . . . : TOURPKG
Description . . : Guided Tour Change Package
Scheme name . . : TOURDT
Scheme status . : Ready, partly approved

Choose a processing option and press Enter
1  1. Approve     Approve the change package for role  . . . . APPDEV   +
   2. Disapprove  Disapprove the change package for role . . . ________  +
   3. List        List the approve-candidate CICS resources

Execution mode           Enter "/" to select option
1  1. Foreground          _  Edit JCL before user submit
   2. Batch

Summary of approvers
  Approver role:   PROJMAN     QATEAM      APPDEV
  Approved by:     <required>  <required>  CICSUSER
```

Figure 75. Guided tour: Approving a change package

Notice that the summary at the bottom of the panel shows your user ID under APPDEV.

What happens if a candidate is edited?

Suppose that someone now edited one of the candidate resource definitions in the change package. Subsequent attempts to approve this change package would fail, because CICS Configuration Manager detects that the candidate has changed. You need to either:

- Undo the edit to the candidate, if you did not want it to be migrated. After undoing the edit, any existing approvals are preserved, and you can continue adding approvals, as before.

  or

- Ready the change package again, if you wanted the edit to be migrated. This removes any existing approvals for the change package.

8. Repeat the approval for the other two approver roles, QATEAM and PROJMAN.

   After approval by all three approver roles, the scheme status shows “Ready, fully approved”.

   You can now migrate the change package.

Part 2. ISPF dialog interface

These topics describe the CICS Configuration Manager ISPF dialog interface, and how to use the interface to perform common tasks.

Chapter 5. Overview of the ISPF dialog

Here is a map of the ISPF dialog:

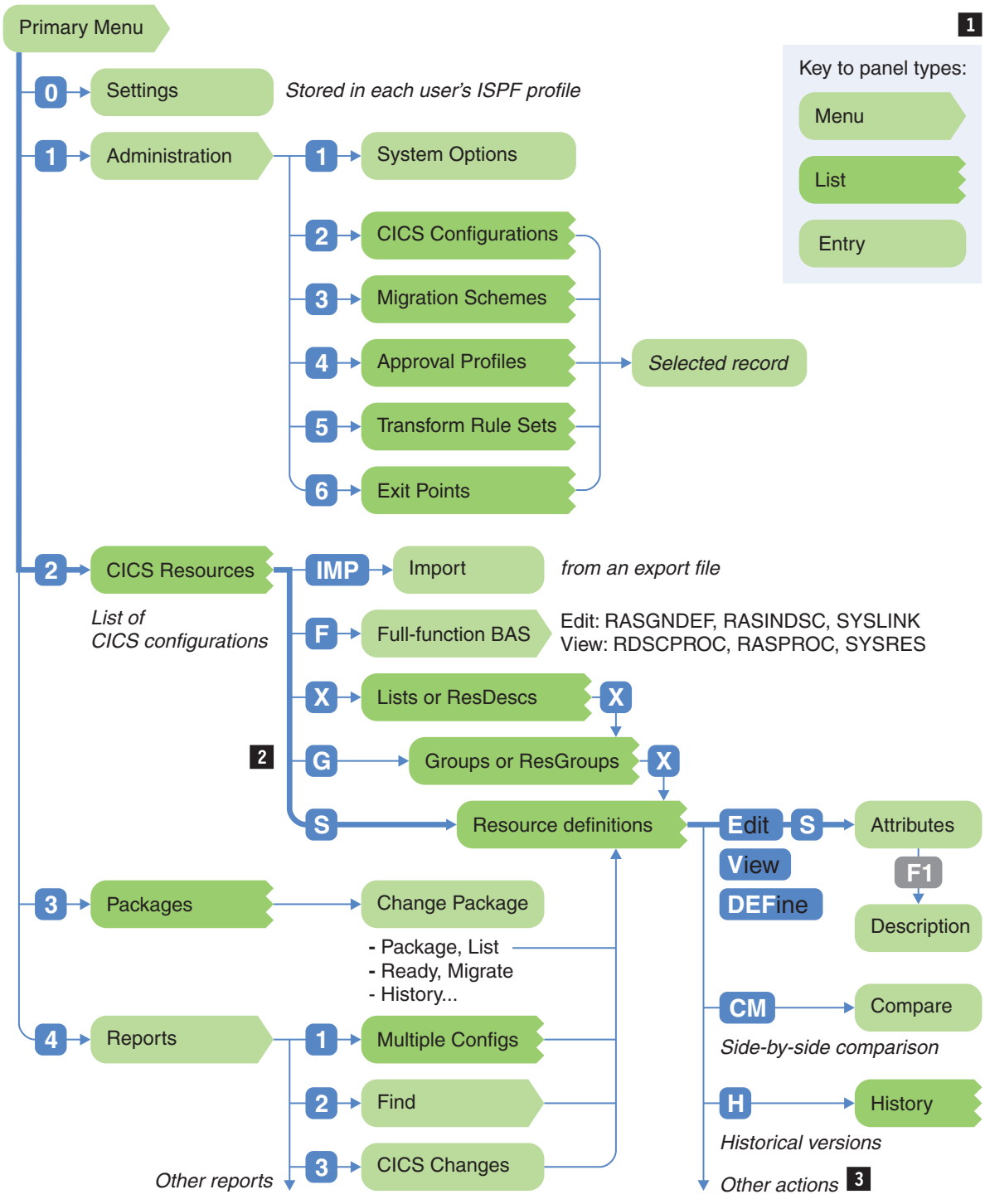


Figure 76. ISPF dialog panel hierarchy

1 Menu panels display several options, from which you can select one. List

panels display several items, with each item on a separate line: you can enter a line action against one or more items. The available line actions depend on the type of item. All other panels are known as entry panels: these typically display the details of a single item.

2 The thick line indicates a direct path to one of the most common tasks, editing the attributes of a resource definition: select primary menu option **2 CICS Resources**, enter **S** next to a CICS configuration, and then enter **E** next to the resource definition you want to edit.

For a more detailed map of the panels for displaying the hierarchy of a CICS configuration, see "Exploring CICS configurations" on page 169.

3 This map shows the complete general structure of the ISPF dialog, including all menu panels. However, it shows only some of the actions that you can perform on items in list panels. For example, these are the actions that you can perform on a resource definition:

ALT Alter attributes for multiple resource definitions
CM Compare two resource definitions side-by-side
C Copy the resource definition
DEF Define a new resource definition using this one as a model
D Delete the resource definition
DSC Discard the resource definition from active CICS regions
E or S Edit the attributes of the resource definition
H List the historical versions of the resource definition
I Install the resource definition in active CICS regions
N Newcopy programs in active CICS regions
P Package the resource definition in a change package
REN Rename the resource definition to a new name or a new group
V View the attributes of the resource definition
? Query prompt field results (display more information about a short message displayed in the Prompt column)

To display a pop-up menu of the available actions on a list panel, enter **/** (a forward slash) next to one of the items.

Different ways to display a list panel of resource definitions

Notice that the map shows several paths to a list panel of resource definitions: via a CICS configuration, via a change package, or via a report. Each path offers a different way to specify which resource definitions appear in the list. Whichever path you follow, the appearance of the list panel and the actions that you can perform on the resource definitions in the list are the same, with only minor exceptions: not all actions are available from all list panels.

The CICS Configuration Manager primary option menu presents these options:

0 Settings
Customize the ISPF dialog for each user, and store the settings in each user's ISPF profile:

- Whether to show a prompt for confirmation of save and cancel commands
- Whether to automatically translate to uppercase some mixed-cased resource definition attributes
- Default job control information and stepped library for CICS Configuration Manager batch jobs

- CICS Configuration Manager server connection details such as IP address and port number

These options are specific to each user, and are stored in each user's ISPF profile.

1 Administer
Set system options that affect all users, and maintain the records for working with resource definitions:
- CICS configurations
- Migration schemes
- Approval profiles
- Transformation rules

2 CICS Resources
Work with resource definitions. Edit, compare, or package current resource definitions; view, compare, or restore historical versions.

3 Packages
Work with change packages.

4 Reports
Display sets of resource definitions that match a variety of selection criteria, including historical versions of resource definitions.

Navigating

To navigate the ISPF dialog, you perform a combination of these actions:
- Select menu options
- Enter line actions (one- to three-letter commands) next to items on a list panel
- Enter primary commands on the command line
- Press function keys

Menu shortcuts: To bypass intermediate menus, you can enter on the command line a sequence of menu option numbers separated by periods. To refer to a primary menu option from any panel, prefix the option number with an equal sign (=). For example, entering **=4.1** on the command line of any panel is equivalent to returning to the primary option menu, selecting option 4, and then selecting option 1 from the subsequent menu.

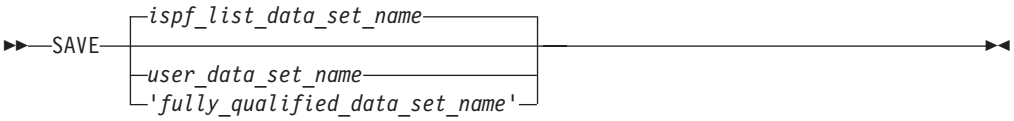
At any point, you can find out what actions are available to you:
- To display a pop-up menu of available line actions, enter **/** (a forward slash) next to an item on a list panel.
- To get help on the available commands, open the Help menu, and then select Command Help.
- To get help on the available function keys, open the Help menu, and then select Keys Help.

Saving the contents of a list panel

On many of the list panels shown in Figure 76 on page 151, you can enter **SAVE** on the command line to save the list to a data set. The saved data set contains the list panel title, column headings, and all of the rows in the list (not just those in the current scroll area of the panel). This is useful if you want to use the list as a report or as input to other programs. For example, you could use the z/OS

compare utility SuperC to compare two versions of a list that you saved at different times, or you could transfer the saved list to a PC, and then open it in a spreadsheet application.

Here is the format of the SAVE command:



If you enter **SAVE** without specifying a data set name, then the list is saved to your ISPF list data set.

If you specify a data set name enclosed in single quotes, then the list is saved to that fully qualified data set name.

If you omit the enclosing single quotes, then CICS Configuration Manager prepends your TSO PREFIX value (typically, your user ID) as the high-level qualifier of the data set name.

In any case, the data set is overwritten if it already exists, or created if it does not exist.

ISPF dialog features

The ISPF dialog contains these features for enhanced usability.

Prompt fields

Some entry fields have a Prompt action that allows you to fill in the field by selecting a value from a pop-up list of valid values.

Prompt fields are indicated by a plus sign (+) at the end of the field. To display the pop-up list, move the cursor to the field and press the Prompt key (F4).

Prompt fields are “automatically completed” if you enter enough characters to make the value unique. For example, a field with allowed values YES, NO, NEVER, is automatically completed if you enter Y, NO, NE.

Action bar

An action bar is available at the top of most panels to provide quick access to commonly used functions. To select an option in the action bar, position the cursor on the option, and then press Enter. A pull-down menu of choices is displayed. To choose one, either position the cursor on it or type the number of your choice, then press Enter.

The standard action bar options in CICS Configuration Manager are:

File Allows actions such as define, save, save as, cancel, or exit. Not all actions are available on all panels.

Menu Offers a shortcut to each of the primary menu options, so that you can select them from any panel without returning to the primary menu.

Settings
Allows you to set some user options without having to go to primary menu option **0 Settings**.

Help Displays product help information, described in "Online help."

Function keys

Function keys are used extensively throughout the CICS Configuration Manager dialog. Until you are familiar with CICS Configuration Manager, it is recommended that you display the function key labels.

To display function key labels, enter the ISPF command **PFSHOW ON**. To hide the labels, enter **PFSHOW OFF**.

These are the function keys available in CICS Configuration Manager:

Help (F1)
Displays help information for panels and keywords.

Split (F2)
Splits the ISPF screen at the cursor position.

Exit (F3)
Exits the current panel and saves the changes.

Prompt (F4)
Displays a selection list of available choices for an entry field. A plus sign (+) next to a field or column heading indicates that prompt is available.

Repeat Locate (F5)
Repeats the previous **LOCATE** command.

Resize (F6)
Removes or restores the window border.

Backwards (F7)
Scrolls the list of data backwards.

Forwards (F8)
Scrolls the list of data forwards.

Swap (F9)
Swaps between screens when in ISPF split-screen mode.

Actions or PrevPage (F10)
Moves the cursor to the action bar, except on panels that can display more than one set of column headings or more than one report. On these panels, pressing F10 displays the previous set of column headings or the previous report.

NextPage (F11)
Unused, except on panels that can display more than one set of column headings or more than one report. On these panels, pressing F11 displays the next set of column headings or the next report.

Cancel (F12)
Cancels the panel without saving changes.

Online help

CICS Configuration Manager help is context-sensitive: the information displayed is appropriate to the position of the cursor when you request help.

F1 function key

Function key F1 is the default key to request help.

Extended help is available from the command line of every panel. Move the cursor to the command line and press **F1** or enter the **HELP** command.

Field help is available on every input field. Move the cursor to the field and press **F1**.

Reference phrases are used to indicate that more information is available on a topic. By default, they are white and highlighted. You can use the ISPF command **SETTINGS** to change the attributes of reference phrases to ensure that they are easily distinguished from the surrounding text. When a help window is displayed, press the Tab key to position the cursor on a reference phrase then press **F1**. A pop-up window displays additional information on the topic.

Action bar help

Help in the action bar provides the following types of information to help you use CICS Configuration Manager:

Extended Help
: The help information for the currently displayed panel. This describes what the panels does, and the fields that appear on the panel.

Command Help
: The commands available on this panel.

Keys Help
: The function keys available on this panel. The list shows the default function key assignments, but you can reassign them using the ISPF **KEYS** and **KEYLIST** commands.

Tutorial Index
: Provides:
  - An introduction to CICS Configuration Manager concepts
  - A single entry point to the Extended Help for all of the ISPF dialog panels
  - A quick reference to CICS resource definition types, with detailed descriptions of each attribute

About CICS Configuration Manager
: Information about this release of CICS Configuration Manager.

Trademarks
: List of trademarks used in the ISPF dialog.

Resource definition attribute help

On the resource definition attribute edit panel, CICS Configuration Manager provides context-sensitive help for the attribute values. The help is comprehensive so that you should not need to refer to other reference books.

Chapter 6. Recommended ISPF settings

You can use ISPF standard facilities to customize the dialog. These recommendations help you use CICS Configuration Manager efficiently.

Screen size and scrolling

Set the screen size of your terminal session to at least 32 lines (rows). CICS Configuration Manager panels are optimized for 32 lines, but accommodate 24 lines by scrolling with the Backwards key (F7) and the Forwards key (F8). In many situations, larger screen sizes are useful: for example, when editing resource definitions that have many attributes, it can be useful to see as many attributes as possible without scrolling.

Point-and-shoot fields

Point-and-shoot fields perform an action when you select them. For example, when you select a column heading in a list of CICS resource definitions, CICS Configuration Manager sorts the list by that column.

Tabbing to point-and-shoot fields

To make it easier to select point-and-shoot fields, you can include them in the tabbing order when you press the Tab key to skip between fields:

1. Enter the ISPF **SETTINGS** command to display the ISPF Settings panel.
2. Select **Tab to point-and-shoot fields**.

Highlighting point-and-shoot fields

We recommend that you set the color of point-and-shoot fields to distinguish them from other fields:

1. Enter the ISPF **CUAATTR** command
2. Scroll to the “Point-and-Shoot” panel element, and then enter a color name (for example, YELLOW, as shown in the following figure).

   To make these fields even more distinct, you could also set their highlight attribute to REVERSE (reverse video).

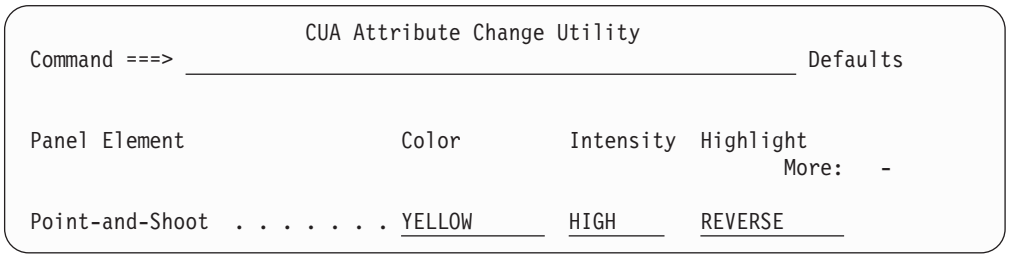


Figure 77. Recommended CUA attribute settings (ISPF CUAATTR command)

Displaying long messages in pop-ups

CICS Configuration Manager issues both long and short messages. ISPF displays short messages at the top right of a panel, next to the panel title. ISPF usually displays long messages in a pop-up window. However, if a long message is less than the screen width, then, by default, ISPF displays it just below or above the command line.

If you always want long messages in a pop-up window:

1. Enter the ISPF **SETTINGS** command to display the ISPF Settings panel.
2. Select **Long message in pop-up**.

To move a pop-up window to another location on the panel:

1. Move the cursor to the top or bottom border of the pop-up window, and then press Enter.
2. Move the cursor to the desired location of the pop-window, and then press Enter.

Chapter 7. Setting user options

Primary menu option **0 Settings** customizes the CICS Configuration Manager ISPF dialog for each user. These settings are stored in each user's ISPF profile:

Display limit

Specifies the maximum number of resource definitions to be retrieved for display on a list panel per CICS configuration, per request. Use this setting to control:

- Response times. Retrieving large numbers of resource definitions can take a long time.
- TSO region size required to process requests for large volumes of data.

If the number of resource definitions matching the request filter and search criteria exceeds this limit, then the list panel displays a message but no results. (Resource definitions are retrieved in group order, whereas the default sort order for these list panels is by resource definition name. Displaying partial results in the sort order specified by the list panel could hide gaps in the data, and give the user the false impression that the results are complete.)

Options

Customize the behavior of the ISPF dialog. You can also set these options from the Settings action bar choice.

Save confirmation

Determines whether the ISPF dialog prompts you to save your changes when you attempt to exit a panel with unsaved changes. For example, you make changes to a panel, and then you press the Exit key (F3).

On Display a prompt, and do not exit.

To save your changes and then exit:

1. Type **SAVE** on the command line and then press Enter.
2. Press the Exit key (F3).

Off Save and exit without prompting.

Cancel confirmation

Determines whether the ISPF dialog prompts you to cancel your changes when you attempt to exit a panel with unsaved changes.

On Display a prompt, and do not exit.

To exit the panel without saving your changes, type **CANCEL** on the command line and then press Enter.

Off Discard changes and exit without prompting.

Uppercase translation

Determines whether the ISPF dialog automatically translates some mixed-case resource definition attributes to uppercase. For a list of the limited set of attributes to which this option applies, see “Uppercase translation of resource definition attributes” on page 160.

Uppercase translation occurs only when you edit the attribute data. If the attribute is unchanged, the data retains its original case even if uppercase translation is set on.

On Automatically uppercase some attributes when they are changed.
Off Do not automatically uppercase attributes.

CICS Configuration Manager server
Defines the connection between the ISPF dialog and the CICS Configuration Manager server.

IP address and Port number
The IP address and port number that the ISPF dialog uses to connect to the CICS Configuration Manager server.

SSL (secure sockets layer)
If the port number uses SSL, then set SSL to "enabled".

If you enable SSL, then you must specify either a keyring name or a key database, depending on the release of CICS Transaction Server used by the CICS Configuration Manager server:

- For CICS Transaction Server V2.1 or later, specify a keyring name
- For CICS Transaction Server V1.3, specify a key database

When you use the ISPF dialog to submit a batch job, the ISPF dialog generates JCL that calls the CICS Configuration Manager batch interface. This JCL includes the job statement information and batch job stepped libraries that you specify here. For more information on the batch interface, see Chapter 13, "Overview of the batch interface," on page 223.

Job statement information
The ISPF dialog precedes the JCL that it generates with up to four lines of JCL that you specify here. The first line should contain a JOB statement. If you leave any of the other lines entirely blank, they are omitted from the job JCL. No validation is performed for any of these JCL statements.

Batch job stepped library
On separate STEPLIB lines, enter the fully-qualified data set names (without enclosing quotes) of the library that contains the national language support load modules, and the library that contains the batch command program CCVBMAIN:

```
ccvhlq.SCCVAlang
ccvhlq.SCCVAUTH
```

where *lang* is one of the following 3-character national language codes:
ENU U.S. English
JPN Japanese

If you connect to the CICS Configuration Manager server via an authenticated port, then both of these libraries must be APF-authorized. For details, see "Optional: Enable PassTicket processing" on page 86.

If omitted, batch jobs submitted by CICS Configuration Manager will not include a STEPLIB ddname.

Uppercase translation of resource definition attributes

The uppercase translation option of the CICS Configuration Manager ISPF dialog mimics the CEOT UCTRAN option in CICS Transaction Server V2.3.

The following tables refer to CSD resource types as displayed by the ISPF dialog. For a list of the equivalent CICSPlex SM resource types, see "Resource definition objects" on page 337.

When uppercase translation is set on, the ISPF dialog translates the following attributes to uppercase:

Table 9. Mixed-case attributes translated to uppercase

Resource type	Attribute	Description
All types	NAME	The name assigned to the resource
	USERDATA1–3	CICSPlex SM BAS user data fields
DB2ENTRY	TRANSID	Transaction ID
DB2TRAN	ENTRY	Name of associated DB2® entry
	TRANSID	Transaction ID for the DB2 entry
DOCTEMPLATE	TDQUEUE	Transient data queue name
	TEMPLATENAME	Document template name
	TSQUEUE	Temporary storage queue name
CORBASERVER	CLIENTCERT	TCP/IP service for client certificated protocol
	SSLUNAUTH	TCP/IP service for secure sockets layer (SSL) AUTHENTICATE=NO protocol
	UNAUTH	TCP/IP service for unauthenticated protocol
DJAR	CORBASERVER	CorbaServer name
ENQMODEL	ENQNAME	Profile definition name
PARTNER	TPNAME	Remote transaction program name (characters)
PROFILE	FACILITYLIKE	Name of existing terminal resource definition to use a template for the bridge facility
PROGRAM	TRANSID	Mirror transaction name for remote attach
REQUESTMODEL	OMGINTERFACE	Object management group (OMG) interface name
	OMGMODULE	OMG module name
	OMGOPERATION	OMG operation name
	TRANSID	CICS transaction ID
SESSIONS	NETNAMEQ	Name IMS™ system uses to identify session
	SESSNAME	Session name
TCPIPSERVICE	DNSGROUP	Domain name service (DNS) group
	TRANSID	CICS transaction ID
	TSQPREFIX	TS queue prefix
TDQUEUE	INDIRECTNAME	Indirect queue name
	TRANSID	Transaction started at trigger level
TERMINAL	REMOTENAME	Terminal name in the remote system
	TRANSACTION	Fixed transaction ID

Table 9. Mixed-case attributes translated to uppercase (continued)

Resource type	Attribute	Description
TRANSACTION	ALIAS	Alias name for transaction
	PROFILE	Transaction profile
	REMOTENAME	Remote transaction name
	TPNAME	APPC partner transaction name
	TRPROF	Transaction routing profile
TSMODEL	PREFIX	TS queue prefix
	REMOTEPREFIX	Remote TS queue prefix

The ISPF dialog does not translate the following mixed-case attributes to uppercase, even if uppercase translation is set on:

Table 10. Mixed-case attributes not translated to uppercase

Resource type	Attribute	Description
All types	Description	Descriptive text
CORBASERVER	CERTIFICATE	Secure sockets layer (SSL) client certificate
	DJARDIR	CICS-deployed JAR file pickup directory
	HOST	TCP/IP host address
	JNDIPREFIX	Java naming directory (JNDI) prefix
	SHELF	Hierarchical file system (HFS) shelf directory
DJAR	HFSFILE	Hierarchical file system (HFS) path
PROGRAM	JVMCLASS	Java virtual machine (JVM) class
REQUESTMODEL	BEANNAME	Enterprise bean
	CORBASERVER	CorbaServer
	INTERFACE	Enterprise bean
	MODULE	Module name
	OPERATION	Operation name
TCPIPSERVICE	CERTIFICATE	Certificate

Chapter 8. Administering system options and definitions

Primary menu option **1 Administer** allows you to define:

- System options that affect the overall behavior of CICS Configuration Manager:
  - Approval checking for change packages
  - Automatic change package numbering
  - Security checking for server API commands (including defining the SAF resource class used for security checking)
  - Transformation processing during migration
  - Exit point processing

  For a description of each system option, see Table 5 on page 58.
- The following types of record in the CICS Configuration Manager repository:
  - CICS configurations
  - Migration schemes
  - Approval profiles
  - Transformation rule sets
  - Exit points

  For a description of exit points, see Chapter 21, "Extending and customizing the CICS Configuration Manager server," on page 313. For a description of the other record types, see "Concepts" on page 13.

For administrators only:

Option **1 Administer** is not intended for general users of CICS Configuration Manager. It is intended for use only by a CICS Configuration Manager administrator, to define records and system options when CICS Configuration Manager is first installed, and then to maintain as your CICS systems or migration requirements change.

Defining CICS Configuration Manager repository records

To define one of the following records in the CICS Configuration Manager repository:

- CICS configuration
- Migration scheme
- Approval profile
- Transformation rule set

1. Go to primary menu option **1 Administer**.
2. Select the type of record that you want to define.

   The list of existing records appears, under these column headings:

   Name Record name.

   Prompt
   Last action performed on the record.

   Changed
   Date and time of the last change to the record.

   ID ID of the user who performed the last change.

   Description
   Description of the record.

   To scroll hidden columns into view, press the NextPage key (F11) or the PrevPage key (F10).

3. There are several ways to define a record:
   - To start with a blank record, enter **DEF** (or **DEFINE**) on the command line. A pop-up window appears. Enter a name for the new record, and do not specify a model.
   - To use an existing record as a model for the new record:
     – If you know which existing record you want to use, then enter **DEF** next to that record. A pop-up window appears, with the name of the existing record as the model. Enter a name for the new record.

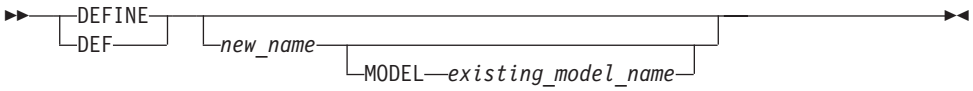
       or

     – Enter **V** next to an existing record to view its details. To use this record as a model, enter the command:

       SAVEAS *name*

       You remain at the existing record. To edit the new record, press the Cancel key (F12) to return to the list, and then enter **E** next to the new record.

   Here is the full syntax of the DEFINE primary command:



Record names must be 1–8 characters (A–Z, 0–9, @, $, #, -, and _). Names must be unique within a record type. For example, a CICS configuration can have the same name as a migration scheme, but two CICS configurations cannot have the same name.

Use a consistent naming convention:

It is recommended that you use a consistent naming convention for each type of repository record. For example, here are two possible naming conventions for migration schemes:

- Combine the source and target CICS configurations in abbreviated form. For example, if the migration scheme is for migrating from development to test, name it DEVTTEST.
- Name the migration scheme after the primary target CICS configuration. For example if the migration scheme is for migrating from test to production, name it PROD.

To edit an existing record, enter **E** next to the record in the list.

To delete a record, enter **D** next to the record in the list.

Defining CICS configurations that refer to CSD files

CSD files specified by CICS configurations must have a disposition of “shared” and cross-region share options of 2 or higher.

Before creating a CICS configuration that refers to a CSD file:

- If the CICS regions that use this CSD file specify the CSD file in system initialization parameters, ensure that the CSDDISP parameter specifies SHR.
- If the CICS regions that use this CSD file specify the CSD file in the startup job stream, ensure that the DFHCSD DD statement specifies DISP=SHR.

- Ensure that the CSD file cross-region SHAREOPTIONS attribute (the first of the two SHAREOPTIONS values) has a value of 2 or higher. If it does not, alter the value using, for example, an IDCAMS ALTER command.

A CICS configuration that refers to a CSD file must specify one of the following record-level sharing (RLS) access options, to determine whether or not the CICS Configuration Manager server uses RLS mode to access the CSD file:

DYNAMIC
Attempt to access the CSD file in RLS mode. If the attempt fails (the CSD file does not support RLS mode), then access the CSD file in non-RLS mode (as per the NOTRLS option, below). This DYNAMIC option is recommended, as it offers the most flexibility for accessing CSD files.

NOTRLS
Access the CSD file in non-RLS mode.

RLS Attempt to access the CSD file using RLS services. If the attempt fails (the CSD file does not support RLS mode), then log the failure in the CCVLOG JES output for the server CICS region. Access to the CSD file fails.

If two or more CICS configurations refer to the same CSD file, then, when you change the RLS access option in any one of them, the server automatically applies the change to all of them. This ensures that no conflict in RLS access options can occur for a specific CSD file, avoiding CSD file access problems.

Defining CICS configurations that refer to export files

When you define a CICS configuration that refers to an export file, you specify the data set name of the export file. If this data set does not exist, then CICS Configuration Manager allocates it when you first attempt to write to it (for example, when you migrate a change package, and the CICS configuration is one of the targets of the migration scheme).

CICS Configuration Manager allocates export files as QSAM data sets with these details:

RECFM	FB
LRECL	80 for DFHCSDUP or BATCHREP export files. 1500 for CICS Configuration Manager export files. **Note:** If you allocate the export file yourself, you must specify one of these logical record lengths (whichever is appropriate for the type of export file).
BLKSZ	3200 for DFHCSDUP or BATCHREP export files. 6000 for CICS Configuration Manager export files.
SPACE	CYLS
PRIMARY	5
SECONDARY	10
UNIT	SYSDA
RELEASE	NO

Defining masks for transformation rules

A mask string for a transformation rule can contain:

Literal characters
Matches the characters exactly as typed, except that, for fields that require uppercase values, lowercase characters are converted to uppercase.

You cannot specify an asterisk (*), a plus sign (+), or an ampersand (&) as a literal character.

Asterisks (*)
An asterisk is a multiple-character wildcard: it matches zero, one or more characters. You can specify up to two asterisks in a mask. You can specify a single asterisk at the start, middle, or end of the mask. If you specify two asterisks, they must be at the start and end of the mask.

Plus signs (+)
A plus sign is a single-character wildcard: it matches any single character. You can specify any number of plus signs in a mask.

Transformation variables
Matches the value of the transformation variables defined in the CICS configurations or the migration scheme.

To refer to a transformation variable in a mask, you precede the variable name with an ampersand, and follow the name with a period. For example, if the variable name is HLQ, then you refer to it like this:

&HLQ.

You can omit the trailing period if the variable name is followed immediately by an asterisk (*) or a plus sign (+), or if the variable name ends the mask.

CICS Configuration Manager does not resolve nested variable names in the variable value. Any ampersands (&), asterisks, or plus signs in the variable value are treated as literals.

If a mask refers to an undefined variable, CICS Configuration Manager does not migrate the change package and reports an exception.

<BLANK> or <blank>
Specifies a null value. For example, you can use <BLANK> as a "to" mask value to change a field value to a null. If you specify <BLANK> or <blank> for an encoded field (one that has a fixed list of values), then the default value for that field is assumed.

You can achieve the same effect with a transformation variable. For example, define a variable named NULL in the migration scheme, but do not provide a source value or a target value. Then specify &NULL. as the "to" mask.

If the field being transformed is an encoded field, you must provide a specific value for the "to" mask (no wildcards allowed).

You can mix literals, variables, asterisks, and plus signs in the same mask.

Table 11. Example transformation rule masks

Mask		Example field values		
From	**To**	**Original**	**Transformed**	**Effect**
ABC	XYZ	ABC	XYZ	Replace ABC with XYZ
		ABCD	*Unchanged* (field does not match the "from" mask)	
ABC	<BLANK>	ABC	*Null*	Replaces ABC with a null value.
&LEVEL	&LEVEL	1	2	Replace the source value of the variable LEVEL, 1, with its target value, 2 (the source value is defined in the source CICS configuration or the "source" column of the migration scheme; the target value is defined in the target CICS configuration or the "target" column of the migration scheme)
		3	*Unchanged* (field does not match the source value of the variable LEVEL)	
ABC*	*	ABCDEF	DEF	Remove ABC prefix
	X*	ABCD	XD	Replace ABC prefix
	XYZ*	ABCDEF	XYZDEF	
*DEF	*	DEFGH	*Unchanged* (field does not end in DEF)	
		DEF	Blank	
		ABCDEF	ABC	Remove DEF suffix
	*X	DEF	X	Replace DEF suffix
		ABCDEF	ABCX	
	*XYZ123	DEF	XYZ123	
		ABCDEF	ABCXYZ123	
ABC	**	123ABCDEF	123DEF	Remove first occurrence of "ABC"
		ABC	Blank	
		1AB3	*Unchanged*	
	*XYZ	123ABCDEF	123XYZ	Replace from first occurrence of "ABC" onwards
	XYZ	123ABCDEF	XYZ	Replace first occurrence of "ABC" with "XYZ", and delete any characters before and after
		ABCDEF	XYZ	
		123ABC	XYZ	
		ABC	XYZ	
		A	*Unchanged*	
	*XYZ456	123ABCDEF	123XYZ456	Replace from first occurrence of "ABC" to end of field with "XYZ456"
AB*EF	XYZ*JKL	ABCDEF	XYZCDEF	Replace "AB" prefix with "XYZ", and replace "EF" suffix with "JKL"
		ABEF	XYZJKL	
		ABCDE	*Unchanged*	
	*JKL	ABCDEF	CDJKL	Remove "AB" prefix, and replace "EF" suffix with "JKL"
	XYZ*	ABCDEF	XYZCD	Replace "AB" prefix with "XYZ", and remove "EF" suffix

Table 11. Example transformation rule masks (continued)

Mask		**Example field values**		
From	**To**	**Original**	**Transformed**	**Effect**
AB+DE	+	ABCXDE	*Unchanged* (there must be one, and only one, character between AB and DE)	
		ABDE		

Chapter 9. Working with resource definitions

To “work with” (create, edit, copy, rename, delete, compare etc.) resource definitions from a single CICS configuration, and expand items in its hierarchy one at a time, select primary menu option **2 CICS Resources**. To work with resource definitions from one or more CICS configurations, and expand multiple items to view combined results, select primary menu option **4.1 Multiple Configs**.

In either case, a list of CICS configurations appears. To toggle between displaying CICS configuration descriptions and locations (context name, CSD file, or export file data set name), press the NextPage key (F11). If there is no CICS configuration defined for the location that you want to work with, then you will need to define one before you can work with its resource definitions. For details, see Chapter 8, “Administering system options and definitions,” on page 163.

Option **2 CICS Resources** and option **4.1 Multiple Configs** offer similar actions and panels, with only minor differences. For example, where list panels under option **4.1 Multiple Configs** show a column indicating the CICS configuration to which each item belongs, list panels under option **2 CICS Resources** show other information, such as the last change date for each item.

Exploring CICS configurations

The following figure shows the menu options and subsequent line actions that you can use to explore a CICS configuration hierarchy.

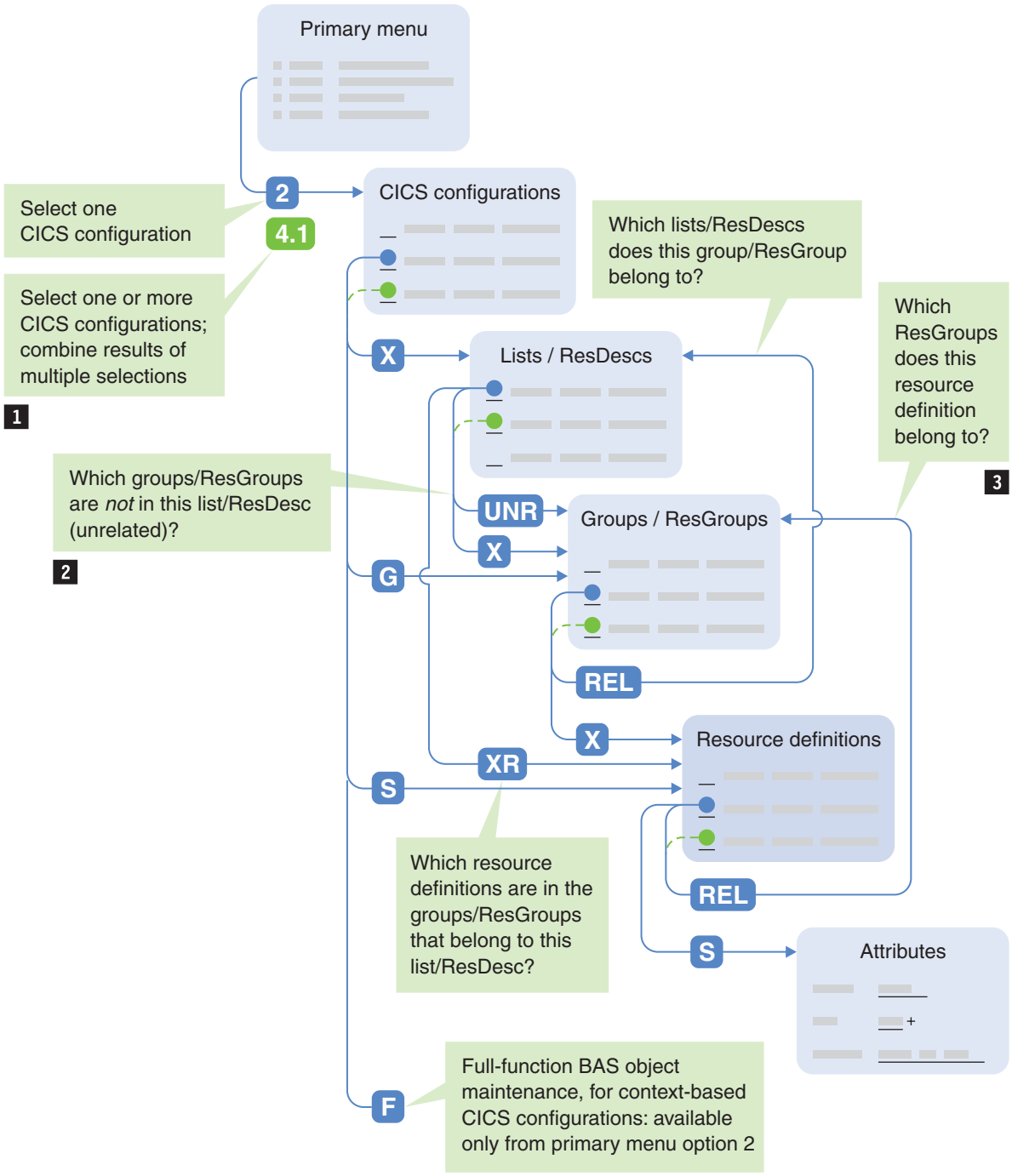


Figure 78. How to explore a CICS configuration hierarchy (or go directly to a list of resource definitions)

1 The dashed lines in this figure indicate the panels under option **4.1 Multiple Configs** where you can enter the *same line action* next to multiple items and then view the combined results. For example:

- To view a list panel of resource definitions from multiple CICS configurations, enter line action **S** next to two or more CICS configurations
- To expand multiple lists/ResDescs or groups/ResGroups at the same time, and view a list panels of their combined contents, enter **X** next to two or more items.

You can also enter line actions next to multiple items under option **2 CICS Resources**. However, instead of combining the results on a single panel, this option stacks the results of each line action on separate panels. To move to the next stacked panel of results, press the Exit key (F3).

2 The line action **UNR** ("unrelated") shows group/ResGroups that are *not* in the selected lists/ResDescs.

You can use this to help identify groups that could be redundant, because they do not belong to any of the lists specified by the CICS system initialization (SIT) parameter GRPLIST:

1. On the primary menu, select option **4.1 Multiple Configs**.
2. Type **X** next to the CICS configuration that you are interested in, and then press Enter.
3. Type **UNR** next to each of the lists specified by GRPLIST, and then press Enter.

You can only enter **UNR** next to lists/ResDescs from the same CICS configuration.

3 Context-based CICS configurations only: to see all of the ResGroups to which a resource definition belongs, enter **REL** next to a resource definition.

To expand an item and show the next level of hierarchy, enter **X** next to the item. Expanding a CICS configuration shows its lists (or ResDescs, for context-based CICS configurations); expanding a list shows its groups (or ResGroups); expanding a group shows its resource definitions. To step back one level, press the Exit key (F3).

To show all groups/ResGroups in a CICS configuration, including "orphans" that do not belong to any list/ResDesc, enter **G** next to a CICS configuration.

To show all lists/ResDescs to which a group/ResGroup belongs, enter **REL** next to the group/ResGroup. If you use option **4.1 Multiple Configs**, then you can enter **REL** next to multiple groups/ResGroups (they must all belong to the same CICS configuration) to display a combined list panel of all the lists/ResDescs to which those groups/ResGroups belong.

To show all resource definitions in a list/ResDesc (that is, all of the resource definitions in the groups/ResGroups that belong to the list/ResDesc), enter **XR** next to a list/ResDesc. For lists (not ResDescs), the resulting list panel of resource definitions includes an Order column, indicating the order in which the resource definition groups are specified in the list.

Why is the list panel empty?

At each level of the hierarchy, a list panel appears with filter fields and column headings, but no list items. Instead, directly under the column headings is a "bottom of data" indicator. This empty list is normal: the panels do not display any list items until you press Enter. This allows you to adjust the filter before displaying the list, avoiding delays caused by listing more items than you need.

To go directly to the resource definitions in a CICS configuration, bypassing the hierarchical views:

1. On the primary menu, select option **2 CICS Resources**.

The list of CICS configurations appears.

2. Enter **S** next to the CICS configuration that you want to work with.
3. Specify filter values for the resource definition name, type, and group.

   To list all resource definitions, specify an asterisk (*) in each of the filter fields. For details, see "Filtering a list panel" on page 173.
4. Press Enter.

   The list panel displays the resource definitions that match the filter. For example:

```
  File  Settings  Help

Resources                   CCVPLEXA CICS Resources    Row 661 to 682 of 2,462
Command ===> ____________________________________________ Scroll ===> PAGE

Filter *_______ TRANSACTION  +  *_______                 2005/01/01 00:00

/      Name     Type            ResGroup Prompt           --- Changed ----
______ Q064     TRANSACTION     QAAUPD01                  2005/02/15 06:48
______ Q065     TRANSACTION     QAACRE01                  2005/04/13 14:06
______ Q065     TRANSACTION     QAAINQR1                  2005/03/11 15:01
______ Q065     TRANSACTION     QAAINQ01                  2005/01/11 22:46
______ Q065     TRANSACTION     QAAUPDR1                  2005/03/11 15:23
______ Q065     TRANSACTION     QAAUPD01                  2005/02/15 06:48
______ Q066     TRANSACTION     QAACRE01                  2005/04/13 14:06
______ Q066     TRANSACTION     QAAINQR1                  2005/03/11 15:01
______ Q066     TRANSACTION     QAAINQ01                  2005/01/11 22:46
______ Q066     TRANSACTION     QAAUPDR1                  2005/03/11 15:23
______ Q066     TRANSACTION     QAAUPD01                  2005/03/31 14:32
______ Q067     TRANSACTION     QAACRE01                  2005/04/13 14:06
______ Q067     TRANSACTION     QAAINQR1                  2005/03/11 15:01
______ Q067     TRANSACTION     QAAINQ01                  2005/01/11 22:46
______ Q067     TRANSACTION     QAAUPDR1                  2005/03/11 15:23
______ Q067     TRANSACTION     QAAUPD01                  2005/03/31 14:32
______ Q068     TRANSACTION     QAAINQR1                  2005/03/11 15:01
______ Q068     TRANSACTION     QAAINQ01                  2005/01/11 22:46
______ Q068     TRANSACTION     QAAUPDR1                  2005/03/11 15:23
______ Q068     TRANSACTION     QAAUPD01                  2005/03/31 14:32
______ Q069     TRANSACTION     QAAINQR1                  2005/03/11 15:01
______ Q069     TRANSACTION     QAAINQ01                  2005/01/11 22:46
 F1=Help      F3=Exit      F4=Prompt    F5=Rlocate   F6=Zoom      F7=Backward
 F8=Forward  F12=Cancel
```

Figure 79. ISPF panel: list of resource definitions

Tips:

a. The list column headings are "point-and-shoot" fields: to sort the list by a column, select the column heading.

b. Optionally, you can also enter a filter value above the Changed column, to limit the list panel to resource definitions that have been changed on or after a particular date. You can enter the filter value either in the same format as the values in the Changed column (*yyyy/mm/dd hh:mm*) or you can enter special filter values such as TODAY-1 (to show resource definitions that have been changed yesterday or today). For more details on specifying filter values for the changed date, see the online help: move the cursor to the filter field above the Changed column, and then press the Help key (F1).

The Type column displays CSD resource types:

CSD files and CICSPlex SM data repositories use different names for equivalent resource definition types. For example, a PROGRAM resource definition in a CSD file is known as a PROGDEF in a CICSPlex SM data repository.

In the ISPF dialog, the Type column on a list panel of resource definitions reflects the names used by CSD files, regardless of whether the resource definitions are stored in a CSD file or a CICSPlex SM data repository.

Filtering a list panel

The following filters limit the items displayed on a list panel:

Path to the list panel
The sequence of menu options and line actions you use to navigate to a list panel determines which items the list panel can display. For example, selecting primary menu option **2 CICS Resources**, and then entering line action **S** next to a CICS configuration, limits the subsequent list panel to displaying resource definitions from that CICS configuration. Other filters, described below, can further limit the items displayed. For a map of the different paths you can take to a list panel of resource definitions, see Figure 78 on page 170.

Filter fields to restrict column values
Available on most list panels. The filter fields above the column headings on a list panel allow you to specify values or patterns that the column values must match.

Search criteria to restrict attribute values
Only available on some list panels. The Search action bar choice allows you to specify criteria that the attributes of resource definitions on a list panel must meet.

Show duplicate, unique, "different", or "missing" resource definitions
Only available on some list panels. The Show action bar choice limits the resource definitions displayed on a list panel based on comparisons between resource definitions. You can limit a list panel to show only duplicate or unique resource definitions, based either on their name and resource type, or a checksum calculated from their attribute values. The list panel applies the Show filter after applying the filter fields and search criteria.

List panels under option **4.1 Multiple Configs** offer two additional choices:
Show different checksums
Shows resource definitions that have the same name and resource type but different checksum values.
Show missing names
Shows resource definitions whose combination of name and resource type exist in some but not all of the selected CICS configurations.

You can use the Show filter to identify resource definitions that need "cleaning up". For example, you can identify resource definitions that have multiple copies where you only need one; or resource definitions that have the same name and type, and should perhaps be identical, but have different attribute values.

Display limit on the maximum number of items on a list panel

Primary menu option **0 Settings** allows you to set an upper limit on the number of resource definitions displayed on a list panel. If the number of resource definitions matching the filters exceeds this limit, then the list panel displays a message and does not show any items.

Filtering by column values

Many list panels contain filter fields above column headings, allowing you to specify values or patterns that the column values must match. These panels do not display any items until you press Enter. This allows you to adjust the filter, avoiding delays that may occur when retrieving many items.

The allowed filter values depend on the column and, in some instances, the particular list panel. For example, for resource definition names, you can typically specify an asterisk (*) as a wildcard to match zero or more characters, and a plus sign (+) as a wildcard to match any single character. You can specify any number of these wildcards in the filter value in any combination, and in any position. However, when listing resource definitions from the journal, using option **4.3 CICS changes**, the only wildcard allowed for the resource definition name is a single asterisk as the last (or only) character. For more details on allowed filter values, move the cursor to a filter field, and then press the Help key (F1).

Tip: To limit a list panel to items changed in the last 30 days, enter TODAY-30 in the Date filter field.

List, group, ResDesc, and ResGroup names are uppercase only. If you enter lowercase characters in a filter field for these values, the field converts the characters to uppercase.

Many resource definition names support mixed case, but are often specified in uppercase only. To save you from having to remember to type names in uppercase, the filter matches resource definition names exactly as you type them, and also in uppercase. For example, the resource definition name filter abc* matches:

abcd
abcD
ABCd
ABCD

but does not match:

Abcd
aBcD

The advantage of this is that you can match a resource definition named ABCD by typing abcd, without having to remember to type ABCD in uppercase. The disadvantage is that, if you really only wanted abcd, this filter also matches ABCD.

The resource type filter must specify either an asterisk to match all types or the name of a single type. You cannot use an asterisk as a suffix to match a subset of resource types. You only need to enter the first few characters of a resource type, enough to uniquely identify it. When you press Enter, CICS Configuration Manager completes the type; for example, TRANS becomes TRANSACTION. To select the resource type from a list, move the cursor to this filter field and then press the Prompt key (F4).

Filtering by resource definition similarities (Show)

To filter a list panel of resource definitions based on whether the resource definitions share the same name and resource type, or some other combination of attribute values, as other resource definitions, use the Show action bar choice (only available on some list panels):

Show OFF
Switches off the Show filter.

Show DUPLICATE NAMES
Shows resource definitions that have the same name and resource type as one or more other resource definitions. This excludes resource definitions that have a unique combination of name and resource type.

Show DUPLICATE CHECKSUMS
Shows resource definitions that have the same checksum value as one or more other resource definitions. This excludes resource definitions that have a unique combination of checksum value and resource type.

Show UNIQUE NAMES
Shows resource definitions that have a unique combination of name and resource type. This excludes resource definitions that have the same name and resource type as one or more other resource definitions.

Show UNIQUE CHECKSUMS
Shows resource definitions that have a unique checksum value. This excludes resource definitions that have the same checksum value as one or more other resource definitions of the same resource type.

Show DIFFERENT CHECKSUMS (option 4.1 Multiple Configs only)
Shows sets of resource definitions that have the same name and resource type, but where one or more resource definitions in the set has a different checksum value to the others in the set. Excludes sets of resource definitions of the same name and resource type, where all resource definitions in the set have identical checksum values. Use this option to find resource definitions, across CICS configurations, that have different checksum values.

Tips:

1. To keep the report simple, enter a specific value for the Type filter field, limiting the display to a single resource type.
2. If you decide not to enter a specific value in the Type filter field, then enter the command SORT TYPE NAME to sort the list panel. This will group together, within each resource type, resource definitions that share the same name.

   If you enter a specific Type filter field value, sort by the Name column.
3. The type of checksum in use determines how the checksum values are calculated. For details, see "Comparing a list panel of objects with a checksum column" on page 179.

Show MISSING NAMES (option 4.1 Multiple Configs only)
Shows sets of resource definitions that have the same name and resource type, but where one or more of the selected CICS configurations does not contain a resource definition of that name and resource type. Use this option to identify missing resource definitions across CICS configurations that should contain the same set of resource definitions.

Show filtering occurs after applying all other filters, such as the CICS configuration you selected on your way to the list panel, and any filter field values or search criteria that you have set on the list panel. For example, Show DUPLICATE NAMES only shows resource definitions where two or more have the same combination of name and resource type *within the set defined by the other filters*. Consider the following situation:

1. Suppose that you are viewing a list panel of resource definitions that shows a transaction named TRNA in three groups: PAYROLL1, PAYROLL2, and ACCOUNTS.
2. You enter PAY* in the Group filter field. This filters out resource definitions in the ACCOUNT group.
3. You select Show DUPLICATE NAMES.

   The list panel shows TRNA in the groups PAYROLL1 and PAYROLL2, but not in ACCOUNTS.
4. You enter ACC* in the Group filter field.

   The list panel excludes TRNA entirely, because there are no duplicates within the set defined by the filters.

The Show action bar choices match the options of the corresponding **SHOW** primary command. Entering **SHOW DUPLICATE NAMES** on the command line is equivalent to selecting that action bar choice.

Filtering by attribute values (Search)

You can limit a list panel of resource definitions to displaying only those resource definitions whose attribute values meet your *search criteria*. Search criteria consist of one or more conditions of the form:

attribute_name comparison_operator test_value

where *comparison_operator* can be one of the following, depending on the attribute:

EQ or =
: Equal to

GE or >=
: Greater than or equal to

GT or >
: Greater than

LE or <=
: Less than or equal to

LT or <
: Less than

Encoded attributes with a fixed list of predetermined values may only use the operators EQ or NE. If the attribute value is text, then you can use the masking characters * (to mask zero or more characters) and + (to mask a single character) in the test value. If the test value includes masking characters, then only the operators EQ or NE may be used.

For example, the following condition limits the list panel of resource definitions to resource definitions changed after April 2005:

```
CHANGETIME GT 2005/04
```

Search criteria can contain up to three sets of four conditions each. Within each set, conditions are grouped by Boolean AND operators. Sets are grouped by Boolean OR operators. You can select or deselect each set, so you can use them separately

or in combination.

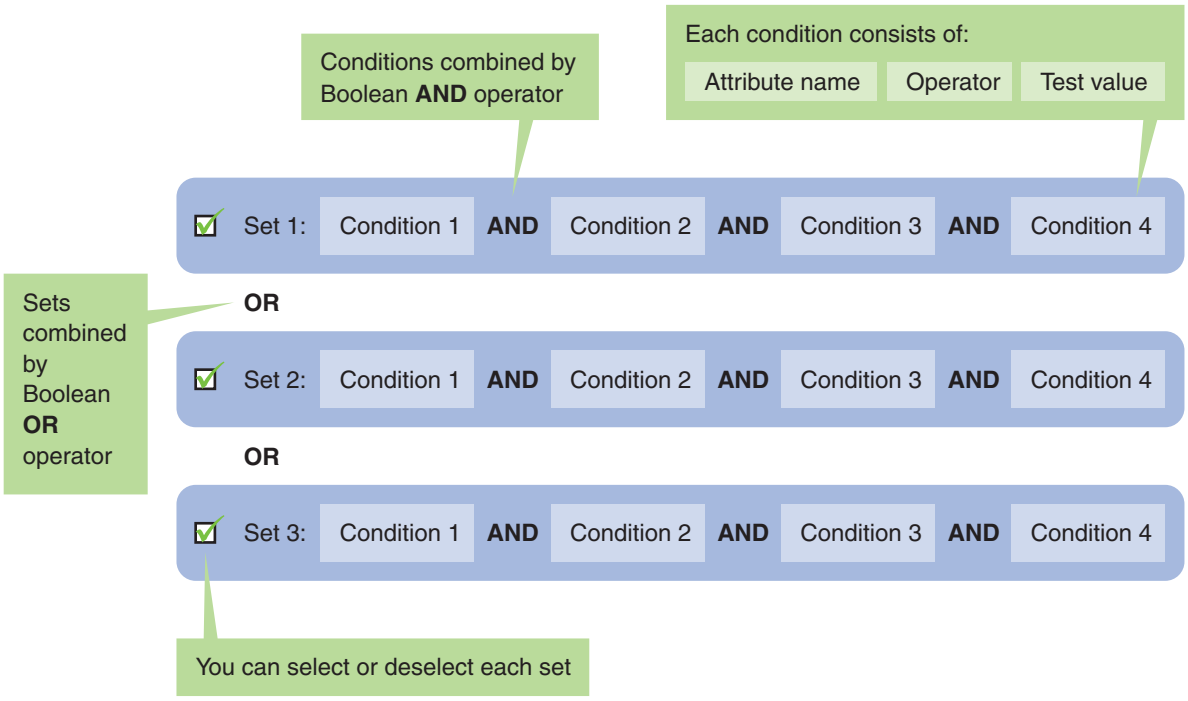


Figure 80. Search criteria for resource definition attribute values: up to three sets of four conditions

Each resource type has separate search criteria. CICS Configuration Manager stores search criteria in your ISPF user profile: each CICS Configuration Manager user has their own search criteria.

To define search criteria for a resource type:

1. Display the list panel of resource definitions:
   a. On the primary menu, select option **2 CICS Resources**.
      The list of CICS configurations appears.
   b. Enter **S** next to a CICS configuration.
      The list panel of resource definitions appears, prompting you to specify a filter.
2. Select a resource type.
3. On the command line, enter **SEARCH**.
   The search criteria panel for the selected resource type appears.
4. Select **New search**.
5. Specify one or more search conditions.
6. Enter **/** next to one or more of the search criteria sets.
7. Press the Exit key (F3).
   The list panel of resource definitions reappears, with the message:
   `n rows excluded by the Search Criteria.`

To search within the current results, enter the **SEARCH** command again, and then select the search method **Search within results**.

Note: Any change to the resource filters always results in a new search, in order to honor the new filter values.

Locating an item on a list panel

To scroll to a particular item (such as a resource definition) on a list panel, enter the following on the command line:

L *name*

where *name* is the name of the item, or the first few characters of the name.

To scroll to the first item, enter **TOP**.

Selecting all items on a list panel

Typically, when working with a list panel of items, you enter a line action next to one item or a few items.

However, under some circumstances, you may want to perform the same line action on every item on the list panel. To do this, instead of entering the line action next to each item, enter the line action on the command line, followed by a space and then an asterisk. For example, **REN ***.

This does not perform any immediate action on the items. It inserts the line action next to each item on the list panel, saving you some typing. You can choose to delete the line action from some of the items, and then press Enter to perform the action on the remaining selected items.

These commands insert line actions next to *every* item in the list, not just on the currently displayed page: if you scroll to the previous or next pages in the list, you will see that line actions have been inserted next to those items, too.

To remove the line actions from all resource definitions in the list, enter **RESET** on the command line.

This method is only available for some line actions, and is deliberately not available for destructive line actions such as **DEL**.

Sorting a list panel

You can sort a list panel by any of its columns. To sort a list panel, either:

- Select a column heading (move the cursor to the column heading, and then press Enter). The column headings are point-and-shoot fields; for details, see "Point-and-shoot fields" on page 157.

  or

- On the command line, enter SORT followed by one or more column names:

  SORT *column_name1 column_name2* **...**

  Entering SORT without a column name sorts by the first column on the list panel.

Columns are sorted in ascending order, except for date-based columns, which are sorted in descending order.

For example, if a list panel has a column with the heading "Changed", enter SORT CHANGED to sort its items in reverse chronological order (most recently changed item first).

Refreshing a list panel

Suppose that you are viewing a list panel of resource definitions, and you know that a change has occurred that affects the contents of the panel. Perhaps another user has deleted one of the resource definitions, or a change package migration has created resource definitions that should appear on the panel.

To refresh the panel display, either:

- Enter **REFRESH** on the command line

  or

- Change the filter fields, and then press Enter

Comparing objects in a CICS configuration

You can compare the following types of object in a CICS configuration:

Lists or ResDescs
Groups or ResGroups
Resource definitions

You can compare objects in two ways:

Sort a list panel by the checksum column

On a list panel that shows the objects you want to compare, display the optional checksum column, and then sort the list panel by the checksum column, so that objects with the same checksum appear consecutively. For example, if two resource definitions of the same resource type have the same checksum, then either all of their attribute values are identical, or a subset of their attribute values are identical, depending on the type of checksum. For details on the types of checksum available, see "Comparing a list panel of objects with a checksum column." You can then select two objects and compare their details side-by-side, as described below.

Compare the details of two objects side-by-side

On a list panel showing the two objects that you want to compare, type **CM** next to each object, and then press Enter. The objects appear side-by-side, with differences highlighted. For details on these comparisons, see "Comparing two objects side-by-side" on page 181.

Comparing a list panel of objects with a checksum column

On the list panel for each level of hierarchy in a CICS configuration (Lists/ResDescs, Groups/ResGroups, and resource definitions), you can choose to display a checksum column. The checksums are 8-digit hexadecimal numbers calculated from the details of each list item. These provide an easy way to compare items: if you sort the list by this column, then items with identical checksums appear consecutively. Each list panel offers one or more type of checksum, depending on the hierarchical level. Each type of checksum is calculated from a different set of item details. Items with identical checksums have identical values for that set of details:

Table 12. Types of checksum for comparing items at each level of hierarchy in a CICS configuration

CICS configuration hierarchy level	Checksum		
	Type	**Identical checksum values indicate identical...**	**...based on a comparison of...**
Lists or ResDescs	GROUPS	Groups or ResGroups	Group or ResGroup names, and the order in which they are specified. In a CSD-based CICS configuration, two lists may contain the same groups, but if the groups are specified in a different order in each list, then the lists will have different checksums. In a context-based CICS configuration, the ResGroups in a ResDesc are processed in alphanumeric order of ResGroup name.
Groups or ResGroups	FULL	Resource definitions	All attributes.
	LIST		Your choice of attributes for each resource type.
	NAME		Resource definition names and types.
	PARTIAL		A fixed subset of attributes defined by CICS Configuration Manager for each resource type. **1**
Resource definitions	FULL	Attribute values	All attributes.
	LIST		Your choice of attributes for each resource type.
	PARTIAL		A fixed subset of attributes defined by CICS Configuration Manager for each resource type. **1**
	CRITICAL (only available under option **4.6 Matching checksums**)		All attributes except for the following, which are not critical to the operation of the resource: • NAME (omitted for all resource types except MAPSET, PARTITIONSET, and PROGRAM, where the NAME attribute identifies a member name, and is not just a mnemonic) • DESCRIPTION • CHANGETIME (last modification) For context-based resource definitions, the checksum also omits the following CICSPlex SM-only attributes: • CREATETIME • DEFVER (definition version number) • USERDATA, USERDATA1, USERDATA2, and USERDATA3

1 To view the attributes included in a PARTIAL checksum, select Checksum LIST from the Checksum action bar choice. This displays a panel of attributes for the resource type that is currently shown in the filter field on the list panel of objects. If the resource type filter field contains an asterisk, then a pop-up window appears before the panel of attributes, prompting you to select a resource type. On the panel of attributes, a Checksum PARTIAL column value of “On” identifies attributes included in the PARTIAL checksum.

To compare a list panel of objects with a checksum column:

1. Display the checksum column. To do this, either:
   - Select a checksum type from the Checksum action bar choice.or
   - On the command line, enter:
     CHECKSUM *checksum_type*

where *checksum_type* is one of the types in the table above.

2. **If you selected the LIST checksum type:** a panel appears where you can choose the attributes used to calculate checksums for the resource type that is currently shown in the filter field on the list panel of objects. If the resource type filter field contains an asterisk, then a pop-up window appears before that panel of attributes, prompting you to select a resource type.

   CICS Configuration Manager saves the LIST checksum settings for each resource type in your ISPF profile.
3. Sort the list panel by the checksum column. To do this, either select the column heading, or enter **SORT CHECKSUM** on the command line.

   Objects with identical checksums appear together.

   To compare the details of two objects side-by-side, type **CM** next to each object, and then press Enter. For more information on these comparisons, see "Comparing two objects side-by-side."

An "all-zeroes" checksum value 00000000 indicates that either:

- No attributes were used in the checksum calculationor
- All attributes used in the checksum had blank or default values

To hide the checksum column, either:

- Select the Checksum action bar choice, and then select Checksums OFF.or
- On the command line, enter:

  CHECKSUM OFF

LIST checksums with resource type filter * (show all types):

You cannot use LIST checksums to identify resource definitions with a common subset of attribute values across resource types. This is because CICS Configuration Manager generates different LIST checksums for each resource type, even when the LIST checksums include the same attributes. So, even if you define LIST checksums for several resource types that include only a common subset of attributes, and then you set the resource type filter to *, only the resource definitions of the same type with those attribute values will appear together.

Comparing two objects side-by-side

You can compare, side-by-side, any two of these objects:

- Lists or ResDescs
- Groups or ResGroups
- Resource definitions of the same resource type

You can compare two lists, two ResDescs, two groups, two ResGroups, a list and a ResDesc, or a group and a ResGroup. You can compare two PROGDEF resource definitions side-by-side, but you cannot compare a PROGDEF side-by-side with, say, a MAPDEF.

To compare two objects side-by-side:

1. Display a list panel that contains both objects.

   For example, to compare objects in the same CICS configurations, use primary menu option **2 CICS Resources**. To compare objects in different CICS configurations, use primary menu option **4.1 Multiple Configs**.
2. Type **CM** next to each object, and then press Enter.

3. The details of the two objects appear side-by-side.

The side-by-side comparison of two resource definitions is straightforward: the comparison shows the attributes of each resource definition with differences highlighted.

Tip: To set the highlighting method for these differences, use the Hilite menu.

> **Zoom fields (marked by >)**
>
> A greater than sign (>) next to a field indicates that the field contains more data than can be displayed on the current panel. This often occurs on description fields in a side-by-side comparison. To view the entire contents of the field, move the cursor to the field (not the > sign) and then press the Zoom key (F6).

The side-by-side comparisons of lists/ResDescs and groups/ResGroups are more complex.

Comparing two lists/ResDescs

The side-by-side comparison of two lists or ResDescs consists of several "reports", each offering a different type of comparison.

Table 13. Side-by-side comparison reports of two lists/ResDescs

Comparison report	Report shows...	Use this report to identify...	Checksum required?
Processing order	All groups/ResGroups in processing order	Groups/ResGroups that appear in one of the lists/ResDescs, but are missing from the other; groups that appear in both lists, but are in a different position in the processing order. Processing order is significant only for lists, not ResDescs. For ResDescs, ResGroups are always listed in alphabetic order.	
Name differences	Groups/ResGroups with different names, but same checksums	Groups/ResGroups that contain similar or identical resource definitions, depending on the type of checksum that you have selected.	✓
Checksum differences	Groups/ResGroups with different checksums, but same names	Groups/ResGroups that have the same name, but contain different resource definitions. This report is relevant only when comparing lists/ResDescs from different CICS configurations. In a single CICS configuration, groups/ResGroups with the same name will always have the same checksum, because they are the *same group/ResGroup*.	✓
Checksum values	All groups/ResGroups in alphabetic order, with checksums	Any type of difference.	✓
All details	All groups/ResGroups in processing order, with checksums		✓

All but one of the reports requires you to activate checksums, either by entering **CHECKSUM** *type* on the command line, or by selecting a checksum type from the Checksum action bar choice.

The checksum type determines which resource definition attributes are used to calculate the checksums on which the comparison reports are based. The checksum types available for side-by-side comparisons of lists/ResDescs are:

FULL All attributes.

LIST Your choice of attributes for each resource type.

You need to have defined the LIST checksums previously: when displaying a list panel of resource definitions, you specify a resource type in the filter field, and then enter **CHECKSUM LIST**. A panel appears where you can select which attributes of that resource type you want to include in LIST checksums. This panel also shows which attributes are included in the predefined PARTIAL checksums.

NAME
Resource definition name and type only.

PARTIAL
A selection of attributes predefined by CICS Configuration Manager.

The different checksum types enable you to customize the level of comparison of the two lists/ResDescs.

To step through the reports, press the NextPage key (F11).

The reports that require checksums contain the following "anomaly" flag columns:

N Indicates groups/ResGroups that have the same checksums, but different names. The name differences report shows only these groups/ResGroups.

O Indicates groups/ResGroups that appear in a different order in the two lists/ResDescs, or appear in one but are missing from the other.

C Indicates groups/ResGroups that have the same names, but different checksums. This only happens when comparing lists/ResDescs from different CICS configurations. The checksum difference report shows only these groups/ResGroups.

The N and C anomaly flags are mutually exclusive: groups/ResGroups that appear on the name differences report do not appear on the checksum differences report.

Comparing two groups/ResGroups

The side-by-side comparison of two groups or ResGroups consists of several "reports", each offering a different type of comparison.

Table 14. Side-by-side comparison reports of two groups/ResGroups

Comparison report	Report shows...	Use this report to identify...	Checksum required?
All resources	All resource definitions.	Resource definitions that appear in one of the groups/ResGroups, but are missing from the other. If you have activated checksums, then you can also use this report to identify resource definitions that appear in both groups/ResGroups, but have different checksums.	
Missing resources	Resource definitions that appear in one of the groups/ResGroups, but are missing from the other.		✓
Checksum differences	Resource definitions that have the same name and type, but have different checksums.		✓

All but one of the reports requires you to activate checksums, either by entering:
`CHECKSUM type`

on the command line, or by selecting a checksum type from the Checksum action bar choice.

The checksum type determines which resource definition attributes are used to calculate the checksums on which the comparison reports are based. The different checksum types enable you to customize the level of comparison of the two groups/ResGroups. The checksum types available for side-by-side comparisons of groups/ResGroups are:

FULL All attributes.

LIST Your choice of attributes for each resource type. You must define LIST checksums before comparing the groups/ResGroups:
1. Display a list panel of resource definitions.
2. Specify a resource type in the filter field above the Type column.
3. Enter **CHECKSUM LIST** on the command line.

   A panel appears where you can select which attributes of that resource type you want to include in the LIST checksum. This panel also shows which attributes are included in the predefined PARTIAL checksum for that resource type.

PARTIAL
A selection of attributes predefined by CICS Configuration Manager.

To step through the reports, press the NextPage key (F11).

The reports contain columns for the following "anomaly" flags:

M Indicates resource definitions that appear in one group/ResGroup, but are missing from the other.

C Indicates resource definitions that have the same name and type, but different checksums.

You can sort the resource definitions in the reports by name (the default order) or by type. To change the sort order, enter **SORT NAME** or **SORT TYPE** on the command line, or move the cursor to the Name or Type column heading and then press Enter.

To display a list panel of resource definitions from one or both groups, offering many more line actions for each resource definition than these side-by-side comparison panels, type **S** next to one or more resource definitions, and then press Enter. Instead of typing the line action **S** next to each resource definition individually, you can enter the following on the command line:

- To select all resource definitions in the left-hand group, enter **SL *** (or **S1 ***)
- To select all resource definitions in the right-hand group, enter **SR *** (or **S2 ***)
- To select all resource definitions in both groups, enter **S ***

Copying resource definitions

You can copy resource definitions from a single CICS configuration to another group (or ResGroup, for CICSPlex SM) in the same or another CICS configuration.

To copy resource definitions:

1. Display the resource definitions on a list panel.
2. Type **C** next to each of the resource definitions, and then press Enter. The resource definitions must all belong to the same CICS configuration.

   A pop-up window appears, prompting for the destination.

Renaming resource definitions

When renaming a resource definition, you can optionally also move the resource definition to another group in the same CICS configuration (or, for context-based CICS configurations, to another ResGroup).

To move all resource definitions in a group, or only those resource definitions in the group that match a particular combination of name and type, see "Renaming a group or a ResGroup (moving resource definitions)" on page 188.

In the following procedures, if a resource definition with the same name and type already exists in the destination group, then the rename fails.

To rename a resource definition without moving it to another group:

1. Display the resource definition on a list panel.
2. Type **REN** next to the resource definition.
3. In the Prompt column, type the new name.
4. Press Enter.

To rename a resource definition and move it to another group:

1. Display the resource definition on a list panel.
2. Type **REN** next to the resource definition.

   Leave the Prompt column blank.
3. Press Enter.

   A pop-up window appears, prompting for the new name and, optionally, the destination group.

   Tip: To move a resource definition to another group without renaming it, leave the resource definition name unchanged, but select another group.

To rename a block of resource definitions without moving them:

1. Display the resource definitions on a list panel. If possible, filter the list so that it displays only the resource definitions that you want to rename.
2. On the command line, type **REN *** and then press Enter. This inserts **REN** next to each item in the list.
3. Copy the existing names from the Name column to the Prompt column.

   If you are using a Windows-based terminal emulator:

   Here is a quick way to copy the existing resource definition names to the Prompt column:

   a. Select the column of existing names (drag your mouse pointer over the names)
   b. Copy the selected names to the Clipboard (press Ctrl+C)
   c. Move the cursor to the Prompt column
   d. Paste the names into the Prompt column (press Ctrl+V)

   If the list occupies more than one screen, scroll down and repeat the procedure above. (The rename is performed only when you press Enter, not when you scroll.)
4. Press Enter.

Renaming CSD-based resource definitions

CICS Configuration Manager renames CSD-based resource definitions by creating or updating a resource definition for the target name, type, and group, and deleting the source resource definition. Resource definitions with the same name and type in other groups are unaffected by the rename. Deleting the resource definition may result in fully emptying a group, thereby eliminating the group. Any CSD list definitions that refer to this group remain unchanged; they will still refer to the (non-existent) group.

Renaming context-based resource definitions

How CICS Configuration Manager renames a context-based resource definition depends upon whether the resource definition name changes, or if only the ResGroup name changes. In either case, the rename affects only the source and target ResGroups. Other ResGroups are unaffected by the rename, and may still refer to the source resource definition that was renamed. These are the processing rules for renaming context-based resource definitions:

- If the resource definition name changes, then a resource definition is created or updated for the target resource name and type. This is then associated with the target ResGroup. If the target ResGroup does not already exist, it is created.

  The source resource definition is removed from the source ResGroup. If the resource definition belongs only to this ResGroup, then the resource definition is deleted, thereby eliminating orphaned resource definitions. The source ResGroup is never deleted, even if the removal of the resource definition results in an empty ResGroup.

  If the source resource belongs to other ResGroups, then the resource definition is not deleted. This ensures that those other ResGroups are unaffected by the rename.
- If the resource definition name does not change and only the target ResGroup changes, then the resource definition itself is not created, deleted, or changed. It is associated with the target ResGroup, and the association with the source

ResGroup is removed. The source ResGroup is never deleted, even if the removal of the resource definition results in an empty ResGroup.

If the source resource definition belongs to other ResGroups, these ResGroups are unaffected by the rename.

Organizing lists and groups or ResDescs and ResGroups

Lists and groups in CSD files are broadly similar in concept to ResDescs and ResGroups in CICSPlex SM contexts: they offer two levels of hierarchy for organizing resource definitions. However, their implementations are quite different:

- In a CSD file, lists are independent from resource definitions. Each list refers to one or more groups. But groups do not exist independently from resource definitions. Instead, each resource definition in a CSD file refers to the name of a group; a group "exists" only because a resource definition refers to its name. A group can belong to more than one list, but a resource definition cannot belong to more than one group.
- In a context, ResDescs and ResGroups exist as independent objects. The relationship between a ResGroup and a ResDesc is defined by a separate object. Similarly, the relationship between a resource definition and a ResGroup is defined by a separate object. ResGroups can belong to more than one ResDesc, and resource definitions can belong to more than one ResGroup.

To create a list, group, ResDesc, or ResGroup:

1. Expand the CICS configuration to show the existing objects of that type. For details, see "Exploring CICS configurations" on page 169.
2. Enter **DEF** on the command line to start with a blank object, or enter **DEF** next to an existing object to use it as a model.

Associating ResGroups with ResDescs

You can add a ResGroup to a ResDesc either by starting with the ResDesc, or by starting with the ResGroup.

To add a ResGroup to a ResDesc, starting with the ResDesc:

1. Expand the CICS configuration to show the existing ResGroups in the ResDesc. For details, see "Exploring CICS configurations" on page 169.
2. On the command line, enter **ADD**.

   A pop-up window appears.
3. Specify the ResGroup that you want to add (it must already exist) and then press Enter.

To add a ResGroup to a ResDesc, starting with the ResGroup:

1. Expand the CICS configuration to show ResGroups (either all ResGroups in the CICS configuration, or the ResGroups that belong to a particular ResDesc).
2. Enter **A** next to the ResGroup that you want to add to a ResDesc..

   A pop-up window appears.
3. Specify the ResDesc (it must already exist) and then press Enter.

To remove a ResGroup from a ResDesc:

1. Expand the CICS configuration to show the ResGroups in the ResDesc.
2. Enter **R** next to the ResGroup that you want to remove from this ResDesc.

Associating groups with lists

To add or remove groups in a list, or change the order of groups in a list:

1. Expand the CICS configuration to show its lists. For details, see "Exploring CICS configurations" on page 169.
2. Enter **E** next to the list that you want to modify.
3. Use line actions to modify the list.

   For example, to move a group after (below) another group, enter **M** next to the group that you want to move, and then enter **A** next to the other group.

Associating resource definitions with ResGroups

To add a context-based resource definition to a ResGroup:

1. Expand the CICS configuration to show its resource definitions. For details, see "Exploring CICS configurations" on page 169.
2. Enter **A** next to the resource definition.

   A pop-up window appears.
3. Select the ResGroup.

To remove a resource definition from a ResGroup, enter **R** (Remove) next to the resource definition in that ResGroup. CICS Configuration Manager protects you from creating orphan resource definitions: if you attempt to remove a version of a resource definition that belongs to only one ResGroup, CICS Configuration Manager displays an error message, and does not remove the resource definition.

Renaming a group or a ResGroup (moving resource definitions)

In CICS Configuration Manager, renaming a group or a ResGroup is equivalent to *moving* resource definitions from one group or ResGroup to another, within the same CICS configuration. You can choose to move all of the resource definitions in a group or ResGroup, or select resource definitions based on their type and name.

If the destination group or ResGroup already exists, then the resource definitions being moved are added to the resource definitions at that destination. If the destination already contains a resource definition of the same name and type as one being moved, then you can choose whether to overwrite that resource definition or not perform the move.

There is a difference between renaming a group in a CSD-based CICS configuration and renaming a ResGroup in a context-based CICS configuration. If you rename a group, and there are no resource definitions left in the group afterwards, then the original group ceases to exist, because there are no resource definitions that refer to it. However, when you rename a ResGroup in a context-based CICS configuration, the original ResGroup still exists, even if it is empty: CICS Configuration Manager does not delete it.

Renaming a group or a ResGroup does not affect any lists or ResDescs that refer to it. For example, if you rename a group, any lists that refer to the group will still refer to the original group name. If you want to update the list to refer to the new group name, you must edit the list as described in "Associating groups with lists."

For CSD-based CICS configurations, this CICS Configuration Manager rename action combines the functionality of the CICS CEDA MOVE and RENAME commands.

To rename a group or a ResGroup:

1. Expand the CICS configuration to show a list panel of groups or ResGroups that includes the one that you want to rename. For details, see "Exploring CICS configurations" on page 169.
2. Type **REN** next to the group or ResGroup that you want to rename.
3. To move all of the resource definitions (except for any that would overwrite resource definitions at the destination), enter the name of the destination group or ResGroup in the Prompt column, and then press Enter.

   To select which resource definitions are moved, and choose whether or not to overwrite resource definitions at the destination, leave the Prompt column blank, and then press Enter. A pop-up window appears, enabling you to specify these options.

Copying a list/ResDesc

Copying a list/ResDesc creates a new list/ResDesc (in the same CICS configuration) that contains the same groups/ResGroups.

To copy a list/ResDesc:

1. Select primary menu option **2 CICS Resources**.
2. Enter **X** next to the CICS configuration that contains the list/ResDesc you want to copy.
3. Enter **V** next to the list/ResDesc.

   The details of the list/ResDesc appears, showing the names of its groups/ResGroups.
4. Enter SAVEAS on the command line.
5. Enter the name of the new list/ResDesc.

Checking the consistency of lists and groups

You can use the CICS Configuration Manager ISPF dialog to check the consistency of the following sets of resource definitions:

- A single list or a single group in a CSD file, by entering the line action **CHK** next to that group or list.
- A mix of lists and groups in a single CSD file, by selecting primary menu option **4.9 Check Analysis**.

These checks generate the following messages:

Duplicate candidates
: Report resource definitions that are defined multiple times, and assess the eligibility of each duplicate for installation. A resource definition can be ineligible due to a combination of referential integrity errors (described below) and sequence order (only the first or the last duplicate is eligible, depending on the resource type).

Referential integrity (RI)
: Report resource definitions whose installation will be affected by interdependency or conflict conditions with other resource definitions. There are two condition severities:

  Errors Cause CICS to issue an error message at CICS start time. The resource definition will not be installed.

Warnings
: Cause CICS to issue a warning message at CICS start time. The resource definition might be installed, but the condition might render the resource unusable.

These checks are a superset of the consistency checks performed by the CICS CEDA CHECK command.

You can also perform these checks in a batch report, by requesting a deployment analysis check report. In addition to checking resource definitions in CSD files, the batch report also enables you to check resource definitions in CICSPlex SM data repositories. For details, see Chapter 18, "Deployment analysis of resource definitions," on page 267.

To check the consistency of a single list or group in a CSD file:

1. Expand the corresponding CICS configuration to show its lists or groups. For details, see "Exploring CICS configurations" on page 169.
2. Enter **CHK** next to the list or group that you want to check.
3. Choose the type of check messages that you want to view.

To check the consistency of a mix of lists and groups in a CSD file:

1. Select primary menu option **4.9 Check Analysis**.
   This displays a selection list panel of CICS configurations.
2. Select the CICS configuration for the CSD file.
3. Specify the sequence of lists and groups that you want to check.
   To add items to the sequence:
   a. Move the cursor to the Name column, and then press the Prompt key (F4).
      This displays a pop-up window of lists and groups in the selected CICS configuration.
   b. Enter **S** next to one or more groups and lists.

      Tip: Entering **S** next to a list adds the entire list to the sequence as a single item. To add each group in the list as a separate item, enter **SX** next to the list. This enables you to re-order or remove individual groups in the sequence, rather than using the groups exactly as defined in the list.
   c. Press the Exit key (F3).

   For more information on arranging the sequence of lists and groups, see the online help.
4. When you have finished specifying the sequence of lists and groups, enter **RUN** on the command line.
5. Choose the type of check messages that you want to view.

For information on viewing the check messages, see the online help.

Tip: To omit a check message and all similar messages from the display, enter **OXX** next to the message. For example, to omit all messages for undefined/uninstalled LSRPOOL ID 1, enter **OXX** next to one of these messages.

Creating a resource definition

There are several ways to create a resource definition:

- To start with blank attribute values, enter **DEF** (or **DEFINE**) on the command line of a list panel of resource definitions. A **DEFINE Confirmation** pop-up window appears. Specify the resource type and other details, but do not specify a model. When you press Enter, the edit panel for the new resource definition appears.

  Tip: Before pressing Enter on the **DEFINE Confirmation** pop-up window, check that the CICS configuration specified is the one that you intended. By default, this window displays the name of the CICS configuration where you previously defined a resource definition. This is not necessarily the CICS configuration whose resource definitions appear on the panel where you entered the **DEF** command.
- To use an existing resource definition as a model for the new resource definition:
  - If you know which resource definition you want to use, then enter **DEF** next to it. A pop-up window appears, with the name of the existing resource definition as the model. Specify the resource type and other details for the new resource definition. When you press Enter, the edit panel for the new resource definition appears.

    or
  - Enter **V** next to an existing resource definition to view its attributes. To create a resource definition with these attribute values, enter **SAVEAS** on the command line. A pop-up window appears prompting for details of the new resource definition. Specify the details, and then press Enter.

    The pop-up window closes, leaving you at the existing resource definition. To edit the new resource definition:

    1. Press the Cancel key (F12) to return to the list.
    2. Either:
       a. Update the filter to include the new resource definition, and then press Enter

          or
       b. If the filter already matches the new resource definition, enter **REFRESH** on the command line
    3. Enter **E** next to the new resource definition.

Editing resource definition attributes

To edit resource definition attributes, you can either:

- **Edit** the attributes of a single resource definition. This displays all of the attribute values for that resource definition.

  or
- **Alter** the attributes of one or more resource definitions of the same resource type. This displays empty fields for all the attributes of that resource type: only the attributes for which you enter values are affected. This enables you to set the attribute values of many resource definitions with a single action, without affecting all of their attributes.

  The term “alter” is used to distinguish this action from the “edit” action above, and because this action is similar to the CICS **CEDA ALTER** command.

To edit the attributes of a single resource definition:

1. Display the resource definition on a list panel.
2. Enter **E** next to the resource definition.

An edit panel appears, showing the attributes of the resource definition.

To alter the attributes of one or more resource definitions of the same resource type:

1. Display the resource definitions on a list panel.
2. Either:
   - Enter **ALT** (for "alter") next to each resource definition.

     or, if you want to alter all of the resource definitions in the list,
   - Enter **ALT *** on the command line (this inserts **ALT** next to every item in the list), and then press Enter.

   An alter panel appears, showing fields for the resource definition attributes, but no values. This panel alters only the attributes for which you enter values; no other attributes are affected.
3. Enter values for the attributes that you want to alter.

   To set an attribute to a blank or null value, enter: `<blank>`, `<BLANK>`, or the null character (set by the NullChar action bar choice; the default is a slash, /.)

The following tips apply to both the edit and the alter panels.

To choose the information displayed next to each attribute, press the PrevPage key (F10) or the NextPage key (F11). The choices are:

- Default and alternative values

  or
- A one-line description

  or
- Nothing (for a "cleaner-looking" panel)

To locate a particular attribute by name, enter:

L *attribute_name*

(or **LOCATE**) on the command line, where *attribute_name* is the (case-insensitive) name of an attribute, or part of a name, such as Program or Userdata. The panel scrolls to the first attribute that matches the name. To locate subsequent matches, press the Repeat Locate key (F5).

If you enter an invalid value for an attribute, the panel displays a brief message. When this happens, press the Help key (F1) to get a list of allowed values.

To discard any edits to the current resource definition since the last save, and return to the list of resource definitions, press the Cancel key (F12).

To get a detailed description of an attribute and its allowed values, move the cursor to the attribute field, and then press the the Help key (F1).

Discard, install, or newcopy of a resource definition in an active CICS region

To perform an action on an active CICS region:

1. Display the resource definition that you want to use on a list panel.
2. Enter the appropriate line action next to the resource definition: **DSC** (Discard), **I** (Install), or **N** (Newcopy or phase-in).

A pop-up window appears, prompting your for further details about the action.

Actions on CSD-based CICS regions:

If you entered a line action next to a CSD-based resource definition, the pop-up window prompts you to select one or more remote system connections: these identify the CSD-based CICS regions on which you want to perform the action. The pop-up window presents a selection list of the remote system connections that are defined in the CICS configuration of the resource definition.

If the pop-up window does not list any remote system connections, you cannot perform the action. Before performing actions on active CSD-based CICS regions, you, or your CICS Configuration Manager administrator, must perform the procedure described in "Optional: Configure the agent for CSD-based CICS regions" on page 92. This procedure includes specifying remote system connection names in CICS configurations.

3. Specifying the action details, and then press Enter.

If a discard, install, or newcopy action succeeds, the Prompt column displays "*Discarded", "*Installed", or "*Newcopied" next to the resource definition.

To get information about why an action failed, enter the line action **?** (question mark) next to the resource definition. A pop-up window appears describing the reason for the failure. For a description of any return, reason, or error codes displayed, press the Help key (F1) and scroll down to the links for each type of code.

Exporting resource definitions to another site

To send copies of resource definitions from your system to remote sites that might or might not have CICS Configuration Manager:

1. Use CICS Configuration Manager to write the resource definitions to a CICS configuration that refers to an export file.

   To define a CICS configuration that refers to an export file:

   a. Select primary menu option **1.2 CICS Configurations**.

   b. On the command line, enter **DEF**.

      For details, see "Defining CICS configurations that refer to export files" on page 165.

   There are several ways to write resource definitions to a CICS configuration (these apply to any CICS configuration, not just those that refer to export files):

   - Edit or view a resource definition, and then enter SAVEAS on the command line, and specify the CICS configuration that refers to the export file.
   - Display a list panel of resource definitions, and then enter **C** (Copy) next to the resource definitions that you want to write to the export file, and specify the CICS configuration that refers to the export file.
   - Package resource definitions into a change package, and then migrate the change package to the CICS configuration that refers to the export file.

2. Use your preferred method to transfer the export file to the remote site.

   The method that you use to transfer export files to remote sites depends on your network environment: CICS Configuration Manager does not transfer the export file for you. Here is an example scenario for transferring an export file to a remote site using a combination of file transfer protocol (FTP) and e-mail:

a. Transfer the export file from your z/OS host to your PC as a binary file.
b. Zip the file on your PC.
c. Attach the zipped file to an e-mail message.
d. Send the e-mail to the remote site.

Now suppose that you are the person at the remote site who receives this e-mail:

a. Detach the zipped file from the e-mail.
b. Unzip the export file.
c. Transfer the export file to your z/OS host as a binary file with a fixed-blocked (FB) record format and a logical record length of either 80 bytes (for a BATCHREP or DFHCSDUP export file) or 1500 bytes (for a CICS Configuration Manager export file).

   For example, if you are using a standard FTP command-line utility, enter the following FTP commands after logging on:

```
binary
quote site recfm=fb lrecl=1500
put file_path data_set_name
```

For details on importing the resource definitions at the remote site, see "Importing resource definitions from an export file."

Importing resource definitions from an export file

"Importing resource definitions" means copying resource definitions from an export file to a CSD file or a context. How you do this depends on the format of the export file:

BATCHREP export files
You cannot use CICS Configuration Manager to import a BATCHREP export file. To import resource definitions from a BATCHREP export file, you must invoke the CICSPlex SM BATCHREP command from the CICSPlex SM user interface.

DFHCSDUP export files
To import resource definitions from a DFHCSDUP export file, you can either use CICS Configuration Manager to generate a batch job that calls the DFHCSDUP utility (as described in the procedure below), or use your own batch jobs to call this utility.

CICS Configuration Manager export files
There are several ways to copy resource definitions from a CICS Configuration Manager export file:

- Display a list panel of the resource definitions in the export file, enter **C** (Copy) next to one or more resource definitions, and then specify a target CICS configuration.
- Display a list panel of the resource definitions in the export file (as above), enter **P** (Package) next to one or more resource definitions, select the change package that you want to add the resource definitions to, and then migrate that change package to one or more target CICS configurations.
- Follow the import procedure described below.

To import resource definitions from a DFHCSDUP export file or a CICS Configuration Manager export file:

1. Define a CICS configuration that refers to the export file (if you have not already done this):
   a. Select primary menu option **1.2 CICS Configurations**.
   b. On the command line, enter **DEF**.

      For details, see "Defining CICS configurations that refer to export files" on page 165.
2. Select primary menu option **2 CICS Resources**.

   This displays a list of CICS configurations.
3. Enter **IMP** next to either the source CICS configuration (that refers to the export file) or the target CICS configuration (where you want to copy the resource definitions to).
4. Select the other (source or target) CICS configuration.
5. Specify the import options.

   For DFHCSDUP export files, you specify the batch job stepped library for the DFHCSDUP utility, and then either press Enter to submit the DFHCSDUP batch job, or edit the JCL, and then enter **SUB** on the edit panel to submit the job.

   For CICS Configuration Manager export files, you can choose one of several options for selecting which resource definitions to import:

```
  File  Menu  Settings  Help
 ____________________________________________________________________________
Import                      IMPORT CICS Resources
Command ===> ______________________________________________________________

Choose a processing option and press Enter to continue

Import source and target CICS Configurations
  Source . . : IMPORT      (KSM.EXPORT.DNF)
  Target . . : CCVPLEXD    (CCVPLEXD)

Choose a processing option
_  1. Display packages
   2. Display resources
   3. Import entire file
   4. Import packages . . . ________  + (Masking supported)
   5. Import using filters

        Filter name . . . . *_______
               type . . . . *___________  +
               group  . . . *_______

 F1=Help      F3=Exit      F4=Prompt    F5=Rlocate   F6=Zoom      F7=Backward
 F8=Forward  F12=Cancel
```

Figure 81. ISPF panel: import processing options for a CICS Configuration Manager export file

Display packages

Displays a list of the change package migrations to the export file, if any. If you have migrated a change package to the export file more than once, this list shows each migration as a separate item.

If resource definitions were *migrated* to the export file, rather than copied or saved to the export file without using a change package, then the export file contains information about which change package the resource definitions belonged to.

To select all of the resource definitions in a change package migration, enter **IMP** next to the change package migration.

To display a list of the resource definitions in a change package, enter **S** next to the change package. To find out what actions you can perform on the items in the list, enter **/** next to an item.

Display resources
Displays a list panel of the resource definitions in the export file. This is similar to the panel displayed if you select the CICS configuration for the export file via primary menu option **2 CICS Resources**, except that this panel also includes a column showing which change packages (if any) were used to migrate the resource definitions to the export file.

Import entire file
Selects all of the resource definitions and commands in the export file.

Import packages
Selects the resource definitions and commands in the export file that were migrated to the export file by the change packages that you specify. This option selects all migrations of the specified change packages; to select a particular occurrence of a migration for a change package, use the **Display packages** option instead.

Import using filters
Selects resource definitions and commands in the export file that match the name, type, and group values that you specify.

6. CICS Configuration Manager export files only: after you select which resource definitions and commands to import, a pop-up window appears with the following options for specifying how to process the selected resource definitions and commands:

Register change packages on import
If the file contains change package details, then selecting this option "registers" (creates or updates) the change packages that contain the resource definitions and commands that you have selected to import.

To import commands, you must select the option to register change packages. If you do not select this option, the import ignores commands in the export file.

For more information on registering change packages, see "Registering change packages when importing" on page 53.

Purge imported records from import file
Deletes resource definitions and commands from the export file after importing them.

Is it an export file or import file?

You can use the terms "export file" and "import file" to refer to the same file depending on how it is being used. At the site where the file is created, the file is typically referred to as an export file. At the site where the contents of the file are imported, the file is typically referred to as an import file. For the sake of consistency, and to make it easier to search for related information, this documentation uses the term "export file" throughout.

Working with full-function BAS objects

To work with full-function BAS objects:

1. Select primary menu option **2 CICS Resources**.
2. Enter line action **F** next to the context-based CICS configuration that contains the full-function BAS objects you want to work with.

   This displays a panel with similar options to the CICSPlex SM Web User Interface (WUI) **Fully functional Business Application Services (BAS) administration views**. For information on these options, see the CICSPlex SM documentation.

   Two options presented by the CICSPlex SM WUI are not represented here, and are available elsewhere in CICS Configuration Manager:

   CICS resource definitions in resource group
   See "Associating resource definitions with ResGroups" on page 188.

   Resource groups in resource description
   See "Associating ResGroups with ResDescs" on page 187.
3. Select the option for the type of object that you want to work with.

   The first three options are presented only for similarity with the CICSPlex SM WUI. You can select these options more directly by entering a different line action next to the CICS configuration in the previous step:

   - To maintain resource definitions, enter line action **S**
   - To maintain resource groups, enter line action **G**
   - To maintain resource descriptions, enter line action **X**

Chapter 10. Working with historical versions of resource definitions

Whenever you use CICS Configuration Manager to change (create, update, or delete) a resource definition, CICS Configuration Manager records the change in its journal. For each change, CICS Configuration Manager records the state of the resource definition before the change (*before image*) and the state after the change (*after image*). These before/after images are known collectively as historical versions. You can view, compare, and recover historical versions.

You can use the following two types of list panel to work with historical versions:

Changes that match your criteria
This list panel displays changes; each change corresponds to a before/after image pair in the journal.

To display this list panel, select primary menu option **4.3 CICS changes**. This option allows you to specify the criteria of the changes that you want to work with, such as the change date.

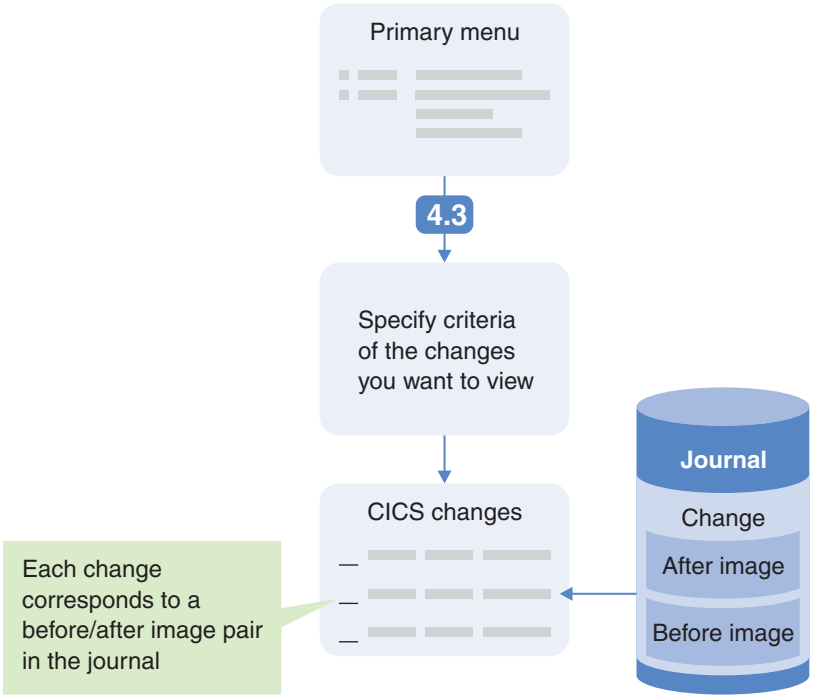


Figure 82. Viewing a list panel of changes that match your crtieria

Tip:

- To view the before or after image of a change, enter **V** next to the change. This displays the change after image, with one exception: for deletions, the before image is displayed.
- To compare the before and after images of a change side-by-side, enter **S** next to the change.

History of a specific resource definition
This list panel displays all historical versions of a specific resource

definition and, if it exists, the current version (indicated by the most recent change date). Each historical version on this list panel represents a before image or an after image from the journal, collated from all of the changes recorded for that resource definition, omitting duplicates (where the before image of a change matches the after image of the previous change).

To display this list panel, enter **H** next to an item on one of the following list panels:

- A list panel of resource definitions, shown under various primary menu options, such as **2 CICS Resources** and **4.1 Multiple Configs**

  (The **H** line action is only available on some list panels of resource definitions.)
- A list panel of changes, shown under primary menu option **4.3 CICS changes**

Identifying changes performed outside of CICS Configuration Manager

The journal contains historical versions of resource definitions only for changes made using CICS Configuration Manager. If you use another method to edit a resource definition, such as the CEDA transaction supplied with CICS, then the journal will not contain the version prior to that edit. For details, see "Resource definition changes reported by CICS Configuration Manager" on page 238.

If you have exclusively used CICS Configuration Manager to change resource definitions, and you have not unloaded records from the journal, then the before image of a change to a resource definition will match the after image of the previous change to that resource definition. If this before image and this after image do not match, it means that the before image represents a change performed outside of CICS Configuration Manager.

On the list panel displayed by line action **H**, the ID column for such historical versions contains the value "Unknown".

Comparing historical versions

To compare two items on a list panel of historical versions of a resource definition (displayed by line action **H**), type **CM** next to each item, and then press Enter. You can compare the current version with any historical version, or compare any two historical versions.

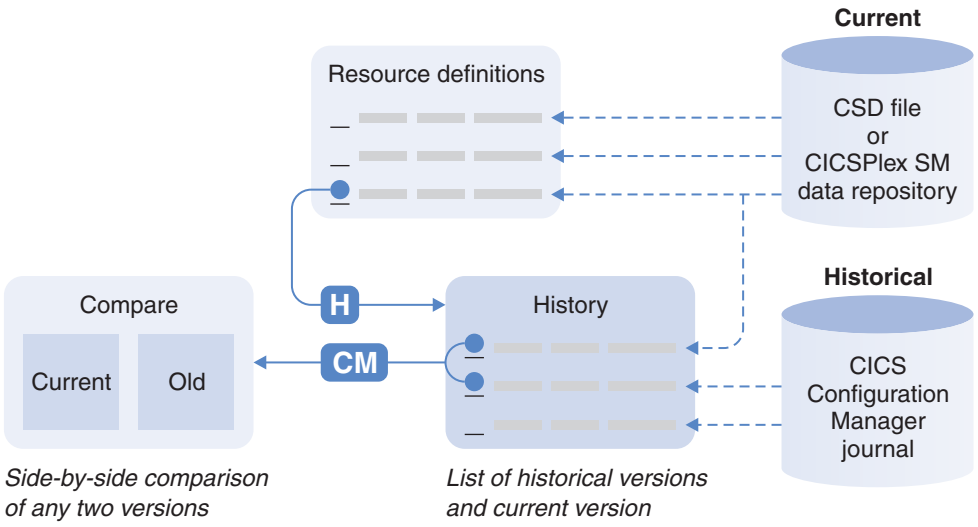


Figure 83. Comparing historical versions of a resource definition

To compare the before and after images of a change (under primary menu option **4.3 CICS changes**), enter **S** next to the change. The after image appears on the left, the before image on the right.

For more information on these side-by-side comparisons, see "Comparing two objects side-by-side" on page 181.

Recovering historical versions

"Recovering" a historical version of a resource definition means reinstating a resource definition in a CSD file or a context to a state that existed at some earlier point in time, before or after a change recorded in the CICS Configuration Manager journal.

You can recover historical versions of resource definitions using the following methods:

"Edit", and then save or save as
Enter **E** next to a change (displayed under primary menu option **4.3 CICS changes**) or a historical version (displayed by line action **H**), and then save the displayed image.

For details on this method, see "Recovering a historical version of a specific resource definition" on page 202.

Enter REC next to one or more changes
The **REC** line action enables you to recover the before or after images of a set of changes that match your criteria. For example, you can use **REC** to undo (or redo) all of the changes by a particular user in a particular period of time.

The **REC** line action is only available under primary menu option **4.3 CICS changes**. For details on using **REC**, see "Recovering historical versions of multiple resource definitions" on page 204.

Back out a change package migration
For details on this method, see "Processing a change package" on page 209.

Recovering a historical version of a specific resource definition

To recover a historical version of a specific resource definition:

1. Enter **H** next to an item on one of the following list panels:
   - A list panel of resource definitions, shown under various primary menu options, such as **2 CICS Resources** and **4.1 Multiple Configs**

     (The **H** line action is only available on some list panels of resource definitions.)
   - A list panel of changes, shown under primary menu option **4.3 CICS changes**

   The **H** line action displays a list panel of all historical versions of the resource definition.
2. Enter **E** next to the historical version that you want to recover.

   An edit panel appears, showing the attributes of the historical version.
3. On the command line of the edit panel, enter **SAVE**: this recovers the historical version by overwriting the current resource definition, if it still exists.

   If the resource definition that you want to recover no longer exists in the CSD file or context (it has been renamed or deleted), then the panel displays the message "SAVEAS command required" after you enter **SAVE**, because there is no current version to overwrite. Enter **SAVEAS** and then specify the location where you want to save the resource definition.
4. Press the Exit key (F3) to return to the list of historical versions.

   Notice that, if you saved the resource definition to its original location, there is now one more item in the list of historical versions, reflecting the version that you have just overwritten.

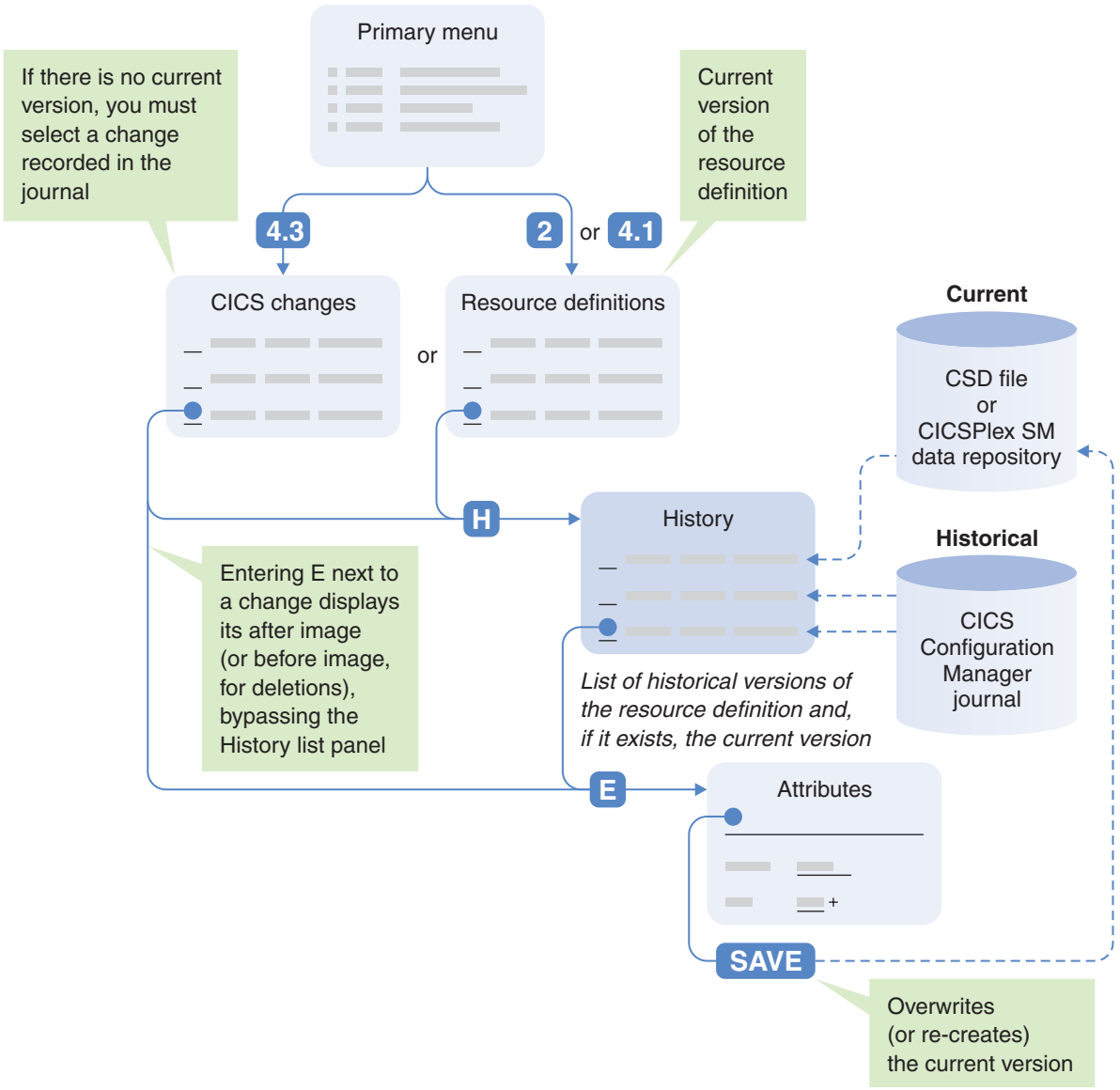


Figure 84. Recovering a historical version of a specific resource definition

Tips:

1. You can edit the attribute values of the historical version prior to saving, and the current version will contain these edits. Keep in mind that you are not editing the actual historical version stored in the journal: that remains unchanged. The ISPF dialog does not allow you to edit journal records. Instead, you are editing an on-screen copy of the historical version, that you use to overwrite the current version.
2. To recover the historical version under a different name, enter **SAVEAS** instead of **SAVE**.
3. On a list panel of changes, you can bypass the **H** line action, and enter **E** next to the change. This displays an edit panel for the after image, with one exception: if the change is a deletion, entering **E** displays the before image (the resource definition before it was deleted).

Recovering historical versions of multiple resource definitions

You can specify criteria that identifies a set of resource definition changes, such as changes within a specified time period by a particular user, and then either undo or redo those changes in a single step. Here, "undo" means to recover the before images of a set of changes, and "redo" means to recover the after images.

To recover the before or after images of a set of changes:

1. Select primary menu option **4.3 CICS changes**.
2. Specify the criteria of the changes that you want to undo or redo.
3. Type **REC** next to each of the changes that you want to select for recovery, and then press Enter.

   Tip: To select all of the changes that match the criteria you specified, enter **REC *** on the command line, and then press Enter again.

   Restriction:
   - All of the changes that you select must be for the same CICS configuration. You cannot mix changes for multiple CICS configurations in a single recovery action.
   - You cannot recover changes to CICSPlex SM relationships, such as Add and Remove (that is, changes to *xxx*INGRP resource definition types). However, you can recover changes to the resource definition types List, ResGroup, and ResDesc.
4. Specify whether you want to recover the before images of (undo) or the after images of (redo) the selected changes.

Note: Recovering the after image of a deletion, or the before image of a creation, deletes the current resource definition, if it exists.

Selecting multiple changes for the same resource definition

If the changes that you select with the **REC** line action include multiple changes for the same resource definition (same name, type, group, and CICS configuration), then:

- Choosing to recover *after images* recovers the after image of the *most recent* of the selected changes for that resource definition.
- Choosing to recover *before images* recovers the before image for the *oldest* of the selected changes for that resource definition.

The following figure illustrates this concept (most recent after image; oldest before image):

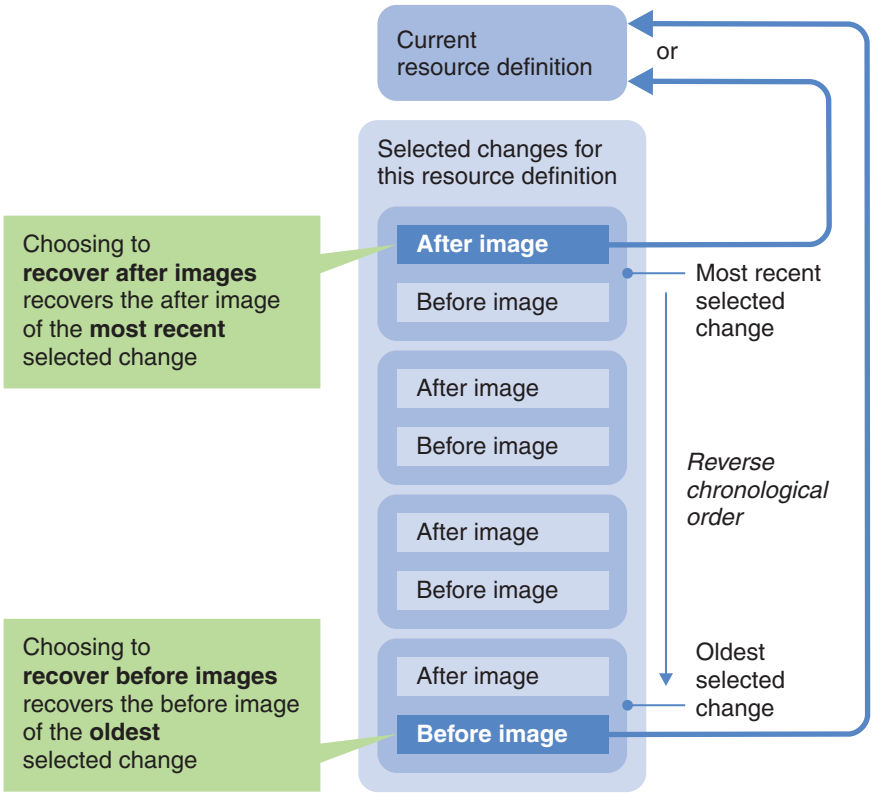


Figure 85. Recovering a historical version from a set that includes multiple changes for the same resource definition

This behavior means that, when you use **REC** to select a set of changes (rather than just a single change), you can think intuitively about recovering to a state before or after that set, without having to consider whether the set includes multiple changes for the same resource definition.

Recovering before images with rollback

If you choose to recover before images, then you can also choose the **rollback** option.

The rollback option protects you from unintentionally overwriting changes that are outside of the set you have selected. Specifically, the rollback option ensures that the selected changes for a resource definition form an unbroken chain that begins at the current resource definition and ends at the before image of the oldest selected change. The chain is unbroken if the following two conditions are true:

- The current resource definition must match the after image of the most recent of the selected changes.

  If no current resource definition exists (it has been deleted), then the after image of the most recent of the selected changes must be empty (reflecting the deletion).
- The before image of the most recent of the selected changes must match the after image of the second most recent; the before image of the second most recent must match the after image of the third most recent; and so on, until the oldest of the selected changes, whose after image must match the before image of the second oldest.

To match, two items must have the same attribute values *and* the same change date.

The following figure illustrates the concept of a rollback chain:

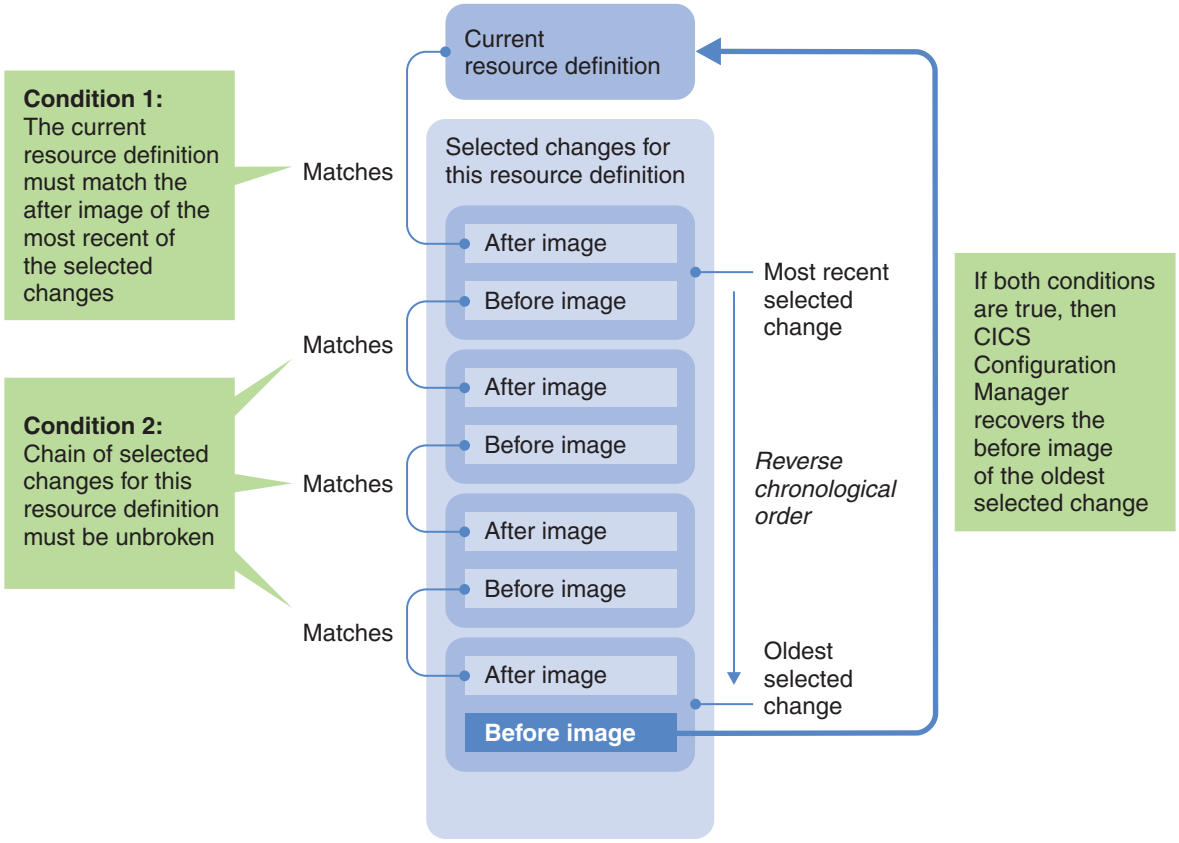


Figure 86. Recovering before images with the rollback option

For example, suppose you want to undo changes within a specified time period by a particular user. To avoid overwriting more recent changes, or changes by other users, use the rollback option to recover the before images.

If a resource definition was not recovered due to a break in the rollback chain, then the Prompt column for each of the selected changes for that resource definition shows "*Errors". For details of the error, enter **?** next to the change.

Tip: To identify the break in the chain, enter **H** next to one of the changes that shows "*Errors". This displays a list panel of all historical versions of that resource definition, including any historical versions outside of the set of changes that you selected for recovery.

The rollback option applies to each resource definition individually: a break in the rollback chain of one resource definition has no effect on the recovery of other resource definitions in the set of selected changes.

Chapter 11. Working with change packages

To work with change packages, select primary menu option **3 Packages**. This displays a list of existing change packages, which you can filter to limit the change packages displayed.

Creating a change package

To create a change package:

1. On the primary menu, select option **3 Packages**.

   The list of existing change packages appears.
2. On the command line, enter **DEF**

   If automatic change package numbering is active, then the edit panel for the new change package appears (a number will be automatically assigned to the change package when you save it).

   Otherwise, a pop-up window appears, prompting for the name of the new change package. Enter a name.
3. On the edit panel for the new change package, enter a description.
4. Optionally, select an approval profile and specify an external reference.

   The following step is important: you need to save the change package before you can add resource definitions to it (or do anything with it, for that matter).
5. On the command line, enter **SAVE**.

Adding resource definitions to a change package

To add a resource definition to the change package (also known as "packaging" a resource definition), display a list panel that contains the resource definition, and then enter line action **P** (Package) next to that resource definition.

Tip: If you want to add several resource definitions to the same change package, select primary menu option **3 Packages**, enter line action **S** next to the change package, and then choose the **Package** processing command. This displays a list panel of resource definitions. The advantage of using this list panel is that line action **P** adds the resource definition to the selected change package immediately; on other list panels, you must select the change package each time in a pop-up window.

Packaging a CSD list object

You can add a CSD list object to a change package, with the following restrictions:

- You can only migrate a CSD list object to a CICS configuration that refers a CSD file, a CICS Configuration Manager export file, or a DFHCSDUP export file. You cannot migrate a CSD list object to a CICS configuration that refers to a context or a BATCHREP export file.
- Packaging a list only adds the list object (a set of group names) to the change package, not the groups in the list (or their resource definitions).

To package a CSD list object, either:

- Select primary menu option **3 Packages**, enter **S** next to the change package, choose the **Package** processing command, specify LIST in the Type filter field and the CICS configuration that contains the list in the Config filter field, press Enter to refresh the panel, and then enter **P** next to the list you want to package.

  or
- Select primary menu option **2 CICS Resources**, enter **X** next to the CICS configuration that contains the list, press Enter to display the lists in that CICS configuration, and then enter **P** next to the list you want to package.

For the types of resource definitions that you can package, see Table 23 on page 337.

Removing resource definitions from a change package

To remove a resource definition from a change package:

1. On the primary menu, select option **3 Packages**.

   The list of change packages appears.
2. Enter line action **S** (Select) next to the change package.
3. Choose the **List** processing command.

   The list of resource definitions in the change package appears.
4. Enter line action **R** (Remove) next to the resource definition.

Deleting versus removing a resource definition

The line action **R** removes a resource definition from the change package; it does not affect the resource definition stored in the CICS configuration.

The line action **D** deletes a resource definition from the CICS configuration.

Removing a resource definition from a change package is known as “unpackaging” the resource definition.

Adding commands to a change package

To add a command to a change package (also known as “packaging” a command):

1. On the primary menu, select option **3 Packages**.

   The list of change packages appears.
2. Enter line action **S** (Select) next to the change package.
3. Choose the **Package** processing command.

4. Enter one of the following line actions next to one or more resource definitions:

   CA Package an Add command for this resource definition

   CD Package a Delete command for this resource definition

   CR Package a Remove command for this resource definition

   A pop-up window appears, prompting for the CICS configuration that you want to associate with this command. Note that the CICS configuration to which the resource definition belongs, displayed on the line of the list panel where you entered the line action, is not relevant to the command.

   For an Add command, the pop-up window also prompts for the resource group to which you want to add this resource definition. You can specify a resource group that does not yet exist; however, if the resource group does not exist in a target CICS configuration when you migrate the change package that contains the Add command, the change package migration will fail.
5. Specify the requested details, and then press Enter.

   A list panel appears showing the details of the commands that you are about to package. You can edit the details of the commands, or enter various line actions: **I** to insert a new command, **R** (Repeat) to insert a new command based on an existing command, or **D** to delete a command.
6. When you are satisfied with the details of the commands, press the Exit key (F3) to package them.

   Otherwise, press the Cancel key (F12) to cancel without packaging.

Deleting commands from a change package

To delete a command from a change package:

1. On the primary menu, select option **3 Packages**.

   The list of change packages appears.
2. Enter line action **S** (Select) next to the change package.
3. Choose the **Commands** processing command.

   The list of commands in the change package appears.
4. Enter line action **D** (Delete) next to the command.

Processing a change package

To process a change package, select primary menu option **3 Packages**, enter **S** next to the change package that you want to process, and then choose a processing command:

Package
: Displays a list panel of resource definitions so that you can add them to the change package using line action **P** (Package), or add commands for the resource definitions to the change package.

  Line action **P** (Package) is also available on many other list panels, such as those under **2 CICS Resources**; the advantage of using this list panel under option **3 Packages** is that line action **P** adds the resource definition to the selected change package immediately; on other panels, you have to select the change package each time in a pop-up window.

List Displays a list panel of resource definitions in the change package.

  To remove a resource definition from the change package, enter line action **R** (Remove) next to the resource definition.

If you specify a migration scheme with this processing command, then on the resulting list panel you can press the NextPage key (F11) to toggle between two views:

- Resource definitions in the *source* CICS configurations of the migration scheme.
- Resource definitions in the *target* CICS configurations of the migration scheme.

If you do not specify a migration scheme, then on the resulting list panel you can specify a filter value for the CICS configuration. If you do not specify a filter value, the list panel shows all resource definitions in the change package, regardless of the CICS configuration.

Commands
Displays a list panel of commands in the change package.

To delete a command from the change package, enter line action **D** (Delete) next to the command.

If you do not specify a migration scheme, then on the resulting list panel you can specify a filter value for the CICS configuration. If you do not specify a filter value, the list panel shows all commands in the change package, regardless of the CICS configuration.

Ready Readies or unreadies the change package for the selected migration scheme.

Approve
Approves or disapproves the change package for the selected migration scheme.

Migrate
Migrates the resource definitions in the change package using the selected migration scheme.

Install Installs the resource definitions in the change package using the selected migration scheme.

Newcopy
Newcopies any map, partitionset, or program resource definitions in the change package using the selected migration scheme.

Backout
Backs out an earlier migration (no need to select a migration scheme).

History
Displays the processing history of the change package (no need to select a migration scheme).

For a description of each process, and the order in which you should perform them, see "Migration of resource definitions" on page 18.

Note:

1. The Package and List processing commands display a list panel of resource definitions similar to those shown by primary menu option **2 CICS Resources**. For information on using these panels, see Chapter 9, "Working with resource definitions," on page 169.
2. If an install or a newcopy action fails for any of the resource definitions in a change package, a pop-up window appears describing the reason for each

failure. For a description of the return, reason, and error codes displayed, press the Help key (F1) and scroll down to the links for each type of code.

Deleting a change package

You do not normally delete change packages; they are kept for historical purposes. However, if a change package is created unnecessarily, then you may want to delete it.

When you delete a change package, CICS Configuration Manager erases the change package and its associated records from the repository, and adds a record of the deletion to the journal. No records are deleted from the journal.

If all of the following conditions are true, then automatic change package numbering is decremented by one:

- The deleted change package is the most recent change package created using automatic change package numbering (for details, see Table 5 on page 58)
- Automatic change package numbering is currently selected
- No resource definitions have been added to the change package
- The change package has not been migrated or installed

This allows you to immediately delete a new change package that was created in error, without leaving any evidence of the change package.

Filtering the list of change packages

To display the list of existing change packages, select primary menu option **3 Packages**.

By default, the list shows name and description columns, with a filter field for the name. To limit the list to change packages whose names match a particular pattern, enter a value in the filter field. For details on specifying the filter, move the cursor to the filter field, and then press the Help key (F1).

To show other columns, press the NextPage key (F11). These columns describe the last command used to process the change package:

Command
: The name of the last command used to process the change package, such as READY or MIGRATE. CREATE indicates that the change package has not been processed since being created.

Scheme
: The migration scheme used with the last command to process the change package.

RC
: The return code from the last command.

Date and Time
: The date and time that the last command finished processing.

  Tip: To limit a list panel to items changed in the last 30 days, enter TODAY-30 in the Date filter field.

ID
: The ID of the user who submitted the last command.

You can specify a filter for each column.

The command filter allows special values to answer these questions:

Which change packages require approval?

To limit the list to change packages that are ready, and that require approval for a particular migration scheme:

1. Enter the name of the migration scheme in the filter field above the Scheme column.
2. Enter **APPROVE?** in the filter field above the Command column.

Which change packages require migration?

To limit the list to change packages that require migration using a particular migration scheme:

1. Enter the name of the migration scheme in the filter field above the Scheme column.
2. Enter **MIGRATE?** in the filter field above the Command column.

Change packages that "require migration" are those that are ready and approved (if necessary), and either have not yet been migrated or have been backed out from a previous migration.

The date and time filter allows special values such as TODAY, which limits the list to change packages that have been processed today.

For details on other filter values, see the online help for each filter field.

Viewing the history of change package processing

To review the history of processing a change package:

1. On the primary menu, select option **3 Packages**.
2. Enter line action **S** (Select) next to the change package.
3. Choose the **History** processing command.

   A list panel of the change package history appears.
4. Select a change package event to view its details.

   For commands such as Backout, Import, Install, Migrate, and Newcopy, you can get further details of the resource definitions processed:
5. Select the "**Display resource updated by...**" option, and then press Enter.

   A list panel of the resource definitions updated by the command appears.

   You can use line actions to examine individual resource definitions:
   - For Install and Newcopy commands: select resource definitions to view their version history.
   - For Migrate, Import, and Backout commands:
     - To view a side-by-side comparison of the attribute values of a resource definition before and after the command, enter **S** next to the resource definition. "After" values appear on the left side.

       Tip: To quickly review the changes to all resource definitions updated by the change package:
       a. On the command line, enter **S** * (S, a space, and then an asterisk).

          This inserts line action **S** next to every resource definition on the list panel, including those currently scrolled out of view.
       b. Press Enter.

          The side-by-side comparison for the first resource definition appears.
       c. Press the Exit key (F3) to move on to the next resource definition.

– To view the version history of a resource definition, enter **H** next to the resource definition.

You can also produce a batch report of this information. For details, see Chapter 15, “Auditing changes to resource definitions,” on page 237.

Comparing source and target resource definitions after migration

After CICS Configuration Manager migrates a change package, it adds to the change package the resource definitions that the migration created or updated in the target CICS configurations. So, after migration, a change package contains both the original resource definitions in the source CICS configurations and the migrated resource definitions in the target CICS configurations. You can list the contents of the change package, and compare the resource definitions in the source and target CICS configurations:

1. Select primary menu option **3 Packages**.
2. Enter line action **S** next to the change package.
3. Blank out the migration scheme.
4. Choose the **List** processing command.

   A list panel of the resource definitions in the change package appears.
5. Type **CM** next to a resource definition in a source CICS configuration.
6. Type **CM** next to the migrated version of that resource definition in a target CICS configuration.
7. Press Enter to compare the two resource definitions.

Unlike the **History** processing command, which displays comparisons of resource definitions in target CICS configurations as they were just before and just after a migration, this **List** processing command displays current resource definitions. Resource definitions in the source and target CICS configurations might have changed since the migration.

Exporting and importing change packages

To export a change package for use at a remote site, migrate the change package to a CICS configuration that refers to a CICS Configuration Manager export file. For more information, see “Exporting resource definitions to another site” on page 193.

To import a change package, follow the import procedure described in “Importing resource definitions from an export file” on page 194 and select the option to register change packages.

Chapter 12. Reporting

Primary menu option **4 Reports** offers several options for displaying a list panel of resource definitions. These "reporting" list panels are similar to those under option **2 CICS Resources** described in Chapter 9, "Working with resource definitions," on page 169. The difference is that option **4 Reports** offers methods for selecting resource definitions that are aimed at specific reporting tasks.

Tip: To save the contents of a list panel of resource definitions to a data set, enter **SAVE** on the command line. For details, see "Saving the contents of a list panel" on page 153.

Exploring across multiple CICS configurations

Option **4.1 Multiple Configs** lets you explore multiple CICS configurations at the same time, with actions and panels similar to primary menu option **2 CICS Resources**.

While option **2 CICS Resources** only lets you work with resource definitions from a single CICS configuration, and expand items in its hierarchy one at a time, option **4.1 Multiple Configs** lets you work with resource definitions from one or more CICS configurations, and expand multiple items to view combined results. This enables you to easily compare the contents of CICS configurations.

For example, to display all of the lists/ResDescs in three CICS configurations:

1. Select primary menu option **4.1 Multiple Configs**.
   This displays a selection list panel of CICS configurations.
2. Type **X** next to three of the CICS configurations, and then press Enter.
   The subsequent panel displays lists/ResDescs from all of the selected CICS configurations.

For more details on this option, see Chapter 9, "Working with resource definitions," on page 169.

Finding resource definitions with predefined search criteria

Option **4.2 Find** displays a list panel of resource definitions from a single CICS configuration that match one of the following predefined search criteria:

- Automatic install models using a specified terminal type
- Connections for a specified remote system
- Files using a specified local shared resources (LSR) pool
- Files for a specified remote system
- Sessions using a specified connection
- Terminals using a specified terminal type
- Terminals for a specified remote system
- Transactions using a specified program (see the example in Figure 87 on page 216)
- Transactions using a specified profile
- Transactions for a specified remote system

For the search criteria, you can enter either a specific value, or a pattern to match multiple values. A pattern can contain an asterisk (*) as a wildcard to match zero

or more characters, and a plus sign (+) as a wildcard to match any single character. Figure 87 shows an example of the report for transactions using a specified program: in this case, any program whose name matches the pattern DFH*.

```
  File  Menu  Settings  Help
 ──────────────────────────────────────────────────────────────────────────────
 Search Report              CCVT22M CICS Resources         Row 19 to 40 of 363
 Command ===> ____________________________________________ Scroll ===> CSR

 Filter *_______               *_______

 /      Name     Type           Group    Prompt          Program
 ______ AADD     TRANSACTION    DFH$AFLA                 DFH$AALL
 ______ AADD     TRANSACTION    DFHMROFA                 DFH$AALL
 ______ ABRW     TRANSACTION    DFH$AFLA                 DFH$ABRW
 ______ ABRW     TRANSACTION    DFHMROFA                 DFH$ABRW
 ______ AC2A     TRANSACTION    DFH$CTXT                 DFH0VSAS
 ______ AC2C     TRANSACTION    DFH$CTXT                 DFH0VHLP
 ______ AC2D     TRANSACTION    DFH$CTXT                 DFH0VAB
 ______ AC2E     TRANSACTION    DFH$CTXT                 DFH0VHP
 ______ AC2F     TRANSACTION    DFH$CTXT                 DFH0VABT
 ______ AC20     TRANSACTION    DFH$CTXT                 DFH0VT1
 ______ AC21     TRANSACTION    DFH$CTXT                 DFH0VOL
 ______ AC22     TRANSACTION    DFH$CTXT                 DFH0VOPN
 ______ AC23     TRANSACTION    DFH$CTXT                 DFH0VLST
  F1=Help      F3=Exit      F4=Prompt    F5=Rlocate   F6=Zoom      F7=Backward
  F8=Forward  F10=PrevPage F11=NextPage F12=Cancel
```

*Figure 87. ISPF panel: report of transactions that use programs whose names match the pattern DFH**

The actions that you can perform on this list panel are similar to those on the list panel of resource definitions under primary menu option **2 CICS Resources**. For details, see Chapter 9, "Working with resource definitions," on page 169.

Listing historical versions of resource definitions

Option **4.3 CICS changes** displays a list panel of historical versions of resource definitions that match your search criteria. These historical versions are stored in the CICS Configuration Manager journal. Your search criteria can include a combination of:

- Change date and time
- CICS configuration name, context name, and CSD file
- CICS Configuration Manager API command
- Change package
- Migration scheme
- User ID

Figure 88 on page 217 shows the panel where you specify search criteria.

```
  File  Menu  Settings  Help
 ──────────────────────────────────────────────────────────────────────────────
 CCVPRCJS                    CICS Changes Selection
 Command ===> ____________________________________________________________

 Specify report search criteria and press Enter to process

 Time criteria
   From date/time  . . . __________ _____  Format YYYY/MM/DD HH:MM
   To date/time  . . . . __________ _____  Format YYYY/MM/DD HH:MM

 CICS system criteria
   CICS Configuration    ________  +
   Context . . . . . . . ________  +
   CSD file  . . . . . . ________________________________________  +

 General criteria
   API command . . . . . ________  +
   Change Package  . . . ________  +
   Scheme  . . . . . . . ________  +
   User ID . . . . . . . ________

  F1=Help      F3=Exit      F4=Prompt    F5=Rlocate   F6=Zoom      F7=Backward
  F8=Forward  F10=Actions  F12=Cancel
```

Figure 88. ISPF panel: CICS changes selection

Figure 89 shows an example report using the API command CREATE as the search criteria.

```
  File  Menu  Settings  Help
 ──────────────────────────────────────────────────────────────────────────────
 CICS changes                    CICS Resources             Row 46 to 67 of 80
 Command ===> ____________________________________________ Scroll ===> CSR

 Filter *_______ *___________ +  *_______

 /      Name     Type            Group    Command     --- Changed ---- ID
 ______ PAB1     TRANSACTION     PAYROLL  CREATE      2007/02/09 13:32 RJA2
 ______ PAB1     TRANSACTION     PAYROLL  CREATE      2007/02/09 13:30 RJA2
 ______ PAXX     TRANSACTION     PAYROLL  CREATE      2007/02/09 13:10 RJA2
 ______ PAYFILE1 FILE            PAYROLL  CREATE      2007/04/17 13:17 PXP1
 ______ PAYFILE1 FILE            PAYROLL  CREATE      2007/02/09 08:11 RJA2
 ______ PAYFILE1 FILE            PAYROLL  CREATE      2007/02/09 08:09 RJA2
 ______ PAYFILE2 FILE            PAYROLL  CREATE      2007/02/09 08:10 RJA2
 ______ PAYFILE3 FILE            PAYROLL  CREATE      2007/02/09 08:12 RJA2
 ______ PAYFILE7 FILE            PAYROLL  CREATE      2007/04/17 13:18 PXP1
 ______ PAYINQ12 PROGRAM         PAYROLL  CREATE      2007/04/17 13:16 PXP1
 ______ PAYUPD01 PROGRAM         PAYROLL  CREATE      2007/04/17 13:15 PXP1
 ______ PAYUPD02 PROGRAM         PAYROLL  CREATE      2007/04/17 13:15 PXP1
 ______ PAY4     TRANSACTION     RJAPAY   CREATE      2007/02/09 07:53 RJA2
  F1=Help      F3=Exit      F4=Prompt    F5=Rlocate   F6=Zoom      F7=Backward
  F8=Forward  F10=PrevPage F11=NextPage F12=Cancel
```

Figure 89. ISPF panel: CICS changes report using the API command CREATE as the search criteria

For examples of the actions that you can perform on this list panel, see Chapter 10, "Working with historical versions of resource definitions," on page 199.

The journal contains historical versions of resource definitions only for changes made using CICS Configuration Manager. If you use another method to edit a

resource definition, such as the CEDA transaction supplied with CICS, then the journal will not contain the version prior to that edit. For details, see "Resource definition changes reported by CICS Configuration Manager" on page 238.

You can also produce batch reports of changes to resource definitions. For details, see Chapter 15, "Auditing changes to resource definitions," on page 237.

Analyzing relationships between resource definitions

The following reporting options display list panels based on relationships between resource definitions in a single CICS configuration. These help you to "clean up" a CICS configuration: for example, to identify resource definitions that are unused, multiply defined, or redefined with conflicting attributes. Aged or unwanted resource definitions may be candidates for deletion, whereas others may need corrections to avoid attribute conflicts.

You can use these options individually and in any order. However, if you would like a consistent workflow for cleaning up each of your CICS configurations, consider stepping through the options in the order presented here:

4.4 Orphan Groups

For a CICS configuration that refers to a CSD file, this option reports groups that are not related to any list.

For a CICS configuration that refers to a CICSPlex SM context, this option reports ResGroups that are not related to any ResDesc.

If a group is not related to any list, it means that the group is not included in the group lists, specified by the CICS system initialization parameter GRPLIST, that CICS installs at cold start. Similarly, if a ResGroup is not related to any ResDesc, it means that it cannot be automatically installed. Unless such a group or ResGroup is dynamically installed, it could be old and defunct, and a candidate for deletion.

This report is similar to the list panel displayed by entering the line action **UNR** (Unrelated) next to a list or ResDesc, which shows the groups or ResGroups that are not related to the selected list or ResDesc. The difference is that this **Orphan Groups** report displays groups or ResGroups that are unrelated to *any* list or ResDesc in the selected CICS configuration.

4.5 Matching names

Reports resource definitions that have the same name and resource type as one or more other resource definitions in the selected CICS configuration, regardless of their attribute values.

For a CICS configuration that refers to a CSD file, this means that two or more groups contain resource definitions of the same name and resource type.

For a CICS configuration that refers to a CICSPlex SM context, this means that multiple versions of a resource definition exist. However, this report does not include "orphan" versions of resource definitions (that do not belong to any ResGroup). To report orphan resource definitions, use option **4.8 Orphan resources**.

This report allows you to focus on resource definitions that are defined more than once, possibly with identical or conflicting attributes. To further aid analysis, use checksums or the compare (CM) line action. Resource definitions with identical attribute values may be considered duplicates

and perhaps candidates for deletion. Where attributes differ, analysis may reveal that some resource definitions are aged and in conflict with others.

To avoid cluttering the report with default resource definitions that you cannot change, this report may exclude resource definitions in IBM-protected groups (for example, CICS-supplied groups with prefixes DFH or EYU):

- If all resource definitions of the same name and resource type are in IBM-protected groups, this report excludes the resource definitions.
- If one or more resource definitions of the same name and resource type is not in an IBM-protected group, then the report includes all of those resource definitions, including the resource definitions in IBM-protected groups.

Tip: To identify resource definitions that have the same name and resource type *and also* have the same attribute values, and so could be considered duplicates and perhaps candidates for deletion, use the Checksum action bar choice to display the Checksum column. For details, see "Comparing a list panel of objects with a checksum column" on page 179.

4.6 Matching checksums

Reports resource definitions that have the same checksum value as one or more other resource definitions in the selected CICS configuration. This report allows you to focus on multiple resource definitions with the same set of CICS-usable attributes. Some of these resources may be viewed as redundant and eligible for deletion.

CICS Configuration Manager calculates the checksum value from the attributes of each resource definition, depending on the type of checksum you select from the Checksum action bar choice:

CRITICAL
: Calculates a checksum from all attributes excluding those that are not critical to the operation of the resource. This is the default checksum type for the report.

LIST
: Calculates a checksum from your choice of attributes for each resource type.

For more information on these and other types of checksum, see "Comparing a list panel of objects with a checksum column" on page 179.

You can use this report to identify resource definitions that have different names or belong to different groups but refer to the same resource (for example, the same file). Some of these may be candidates for deletion.

To avoid cluttering the report with default resource definitions that you cannot change, this report may exclude resource definitions in IBM-protected groups:

- If all resource definitions with the same checksum value are in IBM-protected groups, this report excludes the resource definitions.
- If one or more resource definitions with the same checksum value is not in an IBM-protected group, then the report includes all of those resource definitions, including the resource definitions in IBM-protected groups.

Matching... reports versus Show DUPLICATE...

Many list panels of resource definitions, such as those under option **2 CICS Resources**, offer the action bar choices Show DUPLICATE NAMES and Show DUPLICATE CHECKSUMS. These are similar in purpose to reporting options **4.5 Matching names** and **4.6 Matching checksums**, respectively: they limit the display to resource definitions that have the same name and resource type, or checksum value, as one or more other resource definitions. However, there are differences:

- The Show action bar choices apply an *additional* filter to a list panel of resource definitions. Selecting Show OFF switches off this filter, displaying any resource definitions that the filter excluded. By contrast, the reporting options have no such additional filter: they only ever show resource definitions with matching names or checksums.
- For context-based resource definitions, the reporting options display a list panel that shows the definition version.
- The reporting options may exclude resource definitions in IBM-protected groups.
- Reporting options **4.5 Matching names** and **4.6 Matching checksums** only report resource definitions from a single CICS configuration. However, you can use the Show options on list panels under reporting option **4.1 Multiple Configs** to compare resource definitions across multiple CICS configurations.

The following options apply only to resource definitions in CICSPlex SM contexts:

4.7 Shared resources (context-based resource definitions only)
Reports resources definitions in the selected CICSPlex SM context where the same version of a resource definition belongs to multiple ResGroups.

You should review these resource definitions, decide whether they are associated with the correct ResGroups, and perhaps remove them from inappropriate ResGroups.

To remove a resource definition from a ResGroup, enter **R** (Remove) next to the resource definition in that ResGroup. CICS Configuration Manager protects you from creating orphan resource definitions: if you attempt to remove a version of a resource definition that belongs to only one ResGroup, CICS Configuration Manager displays an error message, and does not remove the resource definition.

4.8 Orphan resources (context-based resource definitions only)
Reports resource definitions in the selected CICSPlex SM context that are not related to any ResGroups. This report allows you to identify and delete unused resource definitions.

Tip: To see if there are any versions of an orphan resource definition that are not orphans, enter line action REL next to an orphan. This displays a list panel of all versions of the resource definition, whether or not they are orphans.

The following option applies only to resource definitions in a CSD file:

4.9 Check Analysis (CSD-based resource definitions only)
Checks the consistency of resource definitions in a sequence of lists and groups that you select from a single CSD-based CICS configuration. For details, see "Checking the consistency of lists and groups" on page 189.

Part 3. Batch interface

These topics describe the CICS Configuration Manager batch interface.

Chapter 13. Overview of the batch interface

The CICS Configuration Manager batch interface consists of two programs:

Batch command program: CCVBMAIN
Submits commands to perform the following tasks:
- Define CICS configurations. Sometimes referred to as "data take up", this is one of the tasks that you need to perform before using CICS Configuration Manager.
- Process existing change packages: ready, approve, migrate, and so on.
- Report changes to resource definitions.

Batch housekeeping program: CCVBHKP
Unloads selected CICS Configuration Manager journal records to a QSAM data set, optionally deletes the records from the journal, and then later, if required, loads them back into the journal.

JCL to invoke the batch command program

You can invoke the CICS Configuration Manager batch programs from JCL as executable job step programs or you can invoke them as callable programs. The following example JCL uses the batch command program to migrate a change package, and then produce a detailed report of the changes to resource definitions caused by the migration.

The JCL to perform other tasks is similar, with some additional job steps or ddnames. For details, see "JCL to define CICS configurations" on page 253 and "JCL to unload or load journal records" on page 257.

```
//CCVJOB   JOB your job statement information
//STEP     EXEC PGM=CCVBMAIN
//STEPLIB  DD DISP=SHR,DSN=ccvhlq.SCCVAlang
//         DD DISP=SHR,DSN=ccvhlq.SCCVAUTH
//CCVPRINT DD SYSOUT=*
//CCVREPRT DD SYSOUT=*
//CCVPARMS DD *
CONNECT IPADDRESS=ip_address,PORT=ip_port_number
* Migrate change package ID 555 using migration scheme TEST
MIGRATE PACKAGE=555,SCHEME=TEST
* Report changes to resource definitions by the migration
REPORT      TYPE=JOURNAL,
            VIEW=PACKAGE,
            LEVEL=ATTRIBUTE
CRITERIASET COND=(CPID EQ 555),
            COND=(SCHEME EQ TEST),
            COND=(DATE EQ TODAY)
⋮
more batch commands
/*
```

Figure 90. Example JCL: approving a change package

The following ddnames apply to both CICS Configuration Manager batch programs:

STEPLIB

The batch programs are supplied in the authorized program load module library SCCVAUTH, and use messages defined in the national language support load module library SCCVA*lang*, where *lang* is ENU (U.S. English) or JPN (Japanese).

If you connect to the CICS Configuration Manager server via an authenticated port, then both of these libraries must be APF-authorized. For details, see "Optional: Enable PassTicket processing" on page 86.

CCVREPRT

This ddname is required only if you use the REPORT batch command; it defines a sequential data set for the report output. This data set must have the following DCB attributes:

LRECL=133
RECFM=FBA

This data set can be any one of the following types:

- Partitioned data set (PDS) member
- Sequential data set
- GDG data set
- SYSOUT=*
- DUMMY or NULLFILE

CCVREPRT is the default ddname for report output. To output a report to a different ddname, use the DDNAME parameter of the REPORT batch command. This is especially useful if you produce several reports in a single batch job, and you want to output the reports to separate ddnames.

CCVPRINT

Defines a sequential data set for message output. The data set can be written to a system output device, a tape, or a DASD volume. This data set has the following DCB attributes:

LRECL at least 132 bytes
RECFM=FBA

For details of the message output, see "Batch output" on page 226.

CCVPARMS

Defines a sequential data set containing the batch commands that you want to perform. The data set may be defined as job control in-stream data (as shown in the example above), a tape file, or a DASD file. This data set has the following DCB attributes:

LRECL=80
RECFM=FB

An asterisk (*) in column 1 marks a comment line. Blank lines may appear anywhere within the input data stream and are ignored. Command keywords must appear in columns 1–72. For more details, see "White space in batch commands" on page 225.

The first batch command must be CONNECT, specifying the connection details of the CICS Configuration Manager server. CONNECT is relevant only to the batch interface: there is no equivalent API command. Follow CONNECT with one or more other batch commands, such as MIGRATE, depending on the batch program you are using.

White space in batch commands

The syntax diagrams for the batch commands do not accurately depict white space (line breaks and blank characters). Here are the rules:

- Separate the command name, such as APPROVE, from its parameters (*keyword=value* etc.) with one or more blanks.
- Separate parameters with commas. Do not insert blanks between or within parameters that are on the same input line.
- The comma-separated list of parameters can continue over multiple input lines. Begin a new line only after a comma. Do not split individual parameters over lines.
- When specifying a comparison operator for the COND parameter of the CRITERIASET command (for reporting, and for unloading or loading journal records), the following rules apply:
  - If you use a 2-letter code, such as EQ, then you must insert one or more blanks before and after the operator
  - If you use a sign, such as =, then do not insert blanks before or after the sign

For example, this is correct:

```
APPROVE CPID=555,SCHEME=TEST,
        ROLE=MANAGER
```

Note that the parameters `CPID=555` and `SCHEME=TEST` are separated only by a comma, with no blanks in between.

This is also correct:

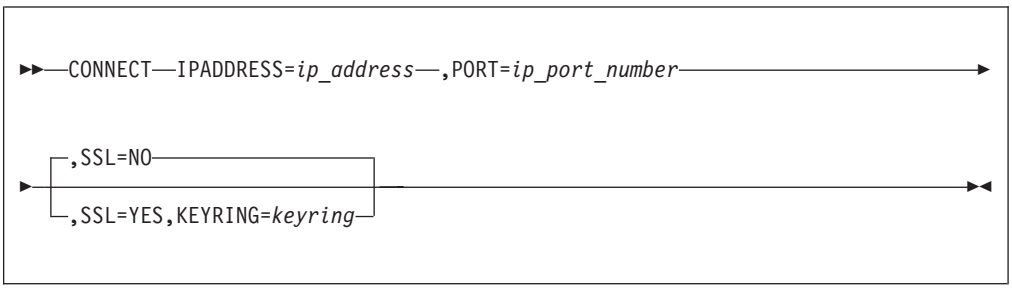
```
UNLOAD      DELETE=YES,KEEPINSTANCES=2
CRITERIASET COND=(API_COMMAND EQ MIGRATE),
            COND=(CONFIGURATION=PROD*)
```

CONNECT

Purpose

Connects the batch program to the CICS Configuration Manager server. CONNECT must be the first batch command specified. Follow CONNECT with one or more other batch commands, according to the particular batch program that you are using.

Format



Batch output

The following figure shows an example of the output that the batch programs send to the CCVPRINT data set. This example shows the output from a successful, error-free job. If the batch programs encounter errors, CCVPRINT includes messages to help you identify and fix the problems.

```
yyyy-mm-dd hh:mm          CICS Configuration Manager Vv.r ...
                                    Batch Utility

CONNECT    IPADDRESS=ip_address,... 1

CCV9149I Connected to server ip_address.
CCV9151I CCV Release 0210. CICS Release vvrm.

DEPLOY     PHASE=COLLECT, 2
               REPORTSET=1,
               TYPE=CANDIDATES,
               CONFIGURATION=$HOME,
               LOCALSYSID=41D3,
               GRPLIST=QALCOLD,
           PHASE=REPORT,
               TYPE=CANDIDATES,
               FILTERDATASET=CCVCICS.DA.FILTER

CCV9150I Disconnected from server ip_address.

CCV9146I The batch utility CCVBMAIN ended successfully. 3
```

Figure 91. Batch output sent to CCVPRINT

1 After the header, the output contains the CONNECT command from the input JCL. If the connection succeeds, this is followed by a CCV9149I message reporting the IP address of the server, and a CCV9151I message reporting the product releases of CICS Configuration Manager and CICS Transaction Server for z/OS.

2 After the connection messages, the output lists the CCVPARMS input stream.

3 The CCV9146I message marks the end of a successful job.

Tracing XML sent and received by the batch command program

To capture a trace of the XML sent and received by the batch command program CCVBMAIN, define the ddname CCVBXML in your JCL.

This data set has one of the following combinations of DCB attributes:
LRECL=132 and RECFM=F or FB
LRECL=133 and RECFM=FBA

```
//CCVBXML  DD  DSN=MYID.CCV.XMLTRACE,
//             UNIT=SYSDA,SPACE=(TRK,(150,150),RLSE),
//             LRECL=132,RECFM=FB,
//             DISP=(MOD,CATLG,CATLG)
```

Figure 92. Example JCL: ddname to trace XML sent and received by program CCVBMAIN

For example, you might find it useful to extract from this data set the response XML for a batch command, and use an XSLT stylesheet to transform the XML into some other format.

For details on the format of the XML sent and received by the batch command program, see Chapter 22, "Using the SOAP API," on page 323.

Chapter 14. Processing change packages in batch

You can use the batch command program to process existing change packages; for example, to ready, approve, or migrate change packages that you have already created using the ISPF dialog. Each of the batch commands for processing change packages calls an API command of the same name:

READY
Indicates that the resource definitions in a change package are ready for migration.

UNREADY
Indicates that the resource definitions in a change package are no longer ready for migration.

APPROVE
Adds to a change package the approval of a particular approver role.

DISAPPROVE
Removes from a change package the approval of a particular approver role.

MIGRATE
Copies the resource definitions in a change package from source to target CICS configurations, and invokes commands in the change package on target CICS configurations, according to the specified migration scheme.

BACKOUT
Backs out a previous change package migration.

INSTALL
Dynamically makes resource definitions available to an active CICS region.

NEWCOPY
Reloads in-memory copies of resource definitions associated with a CICS program definition.

IMPORT
Imports resource definitions from an export file received from another CICS Configuration Manager system. Optionally, if the export file contains change package details, also registers change packages in the importing CICS Configuration Manager repository.

These batch commands represent only a subset of the API commands. For a complete list of API commands, see Chapter 22, “Using the SOAP API,” on page 323.

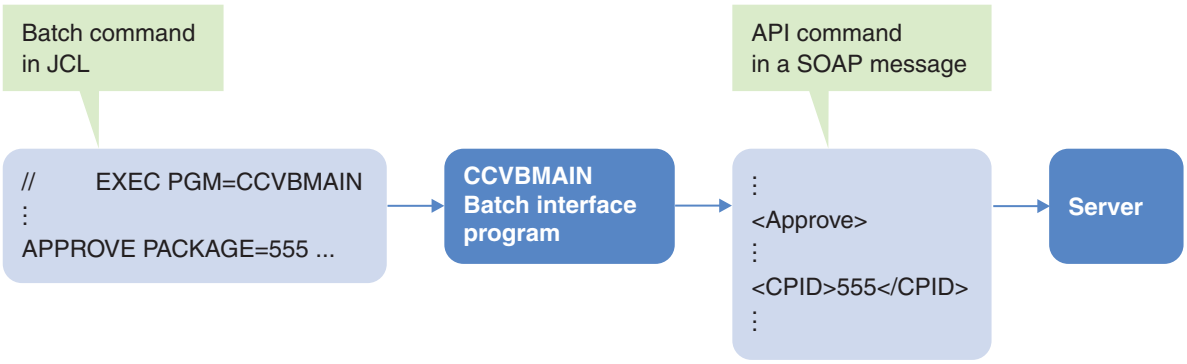


Figure 93. The batch command program translates batch commands into API commands of the same name

These batch commands provide a simple batch interface for integrating CICS Configuration Manager with change control products such as IBM Software Configuration and Library Manager (SCLM).

The reference topics for each batch command contain only brief descriptions of the commands and their formats. For more detailed information, see the descriptions of the equivalent API commands in Chapter 22, "Using the SOAP API," on page 323. For descriptions of the command parameters, see "API parameters" on page 331.

For sample JCL to use these batch commands, see "JCL to invoke the batch command program" on page 223.

Using the ISPF dialog to generate JCL

Rather than writing JCL yourself, you can use the ISPF dialog to generate JCL for processing change packages:

1. Select primary menu option **0 Settings**, and specify the job statement information and stepped library data sets that you want in the generated JCL. For details, see Chapter 7, "Setting user options," on page 159.
2. Select primary menu option **3 Packages**.
3. Select a change package.
4. Choose a processing option (such as Ready, Migrate, or Backout).
5. Select batch execution mode, and the option to edit JCL before submitting.

   The ISPF dialog generates the JCL to process the change package, and displays the JCL in an ISPF Edit session.
6. Copy the JCL to your own library for later use.
7. Press the Cancel key (F12) to exit.

   (The job is submitted only if you enter **SUB** on the ISPF Edit command line.)

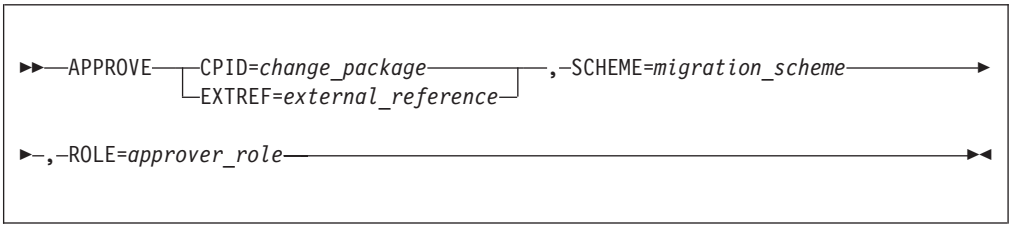
Alternatively, browse the skeleton JCL members supplied in SCCVSENU(CCVJPKG*). The ISPF dialog uses these members as templates for generating JCL.

APPROVE

Purpose

Adds to a change package the approval of a particular approver role.

Format

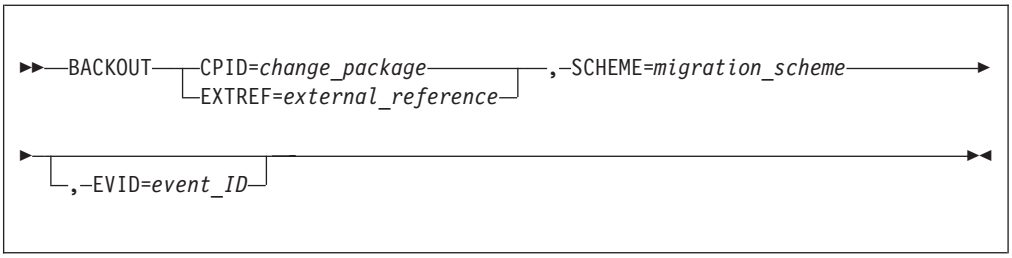


BACKOUT

Purpose

Backs out a previous change package migration.

Format

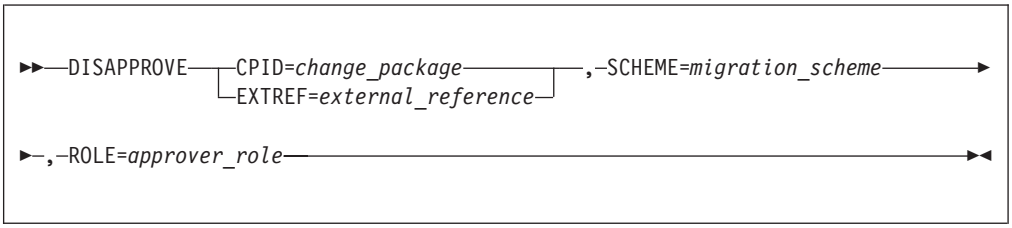


DISAPPROVE

Purpose

Removes from a change package the approval of a particular approver role.

Format

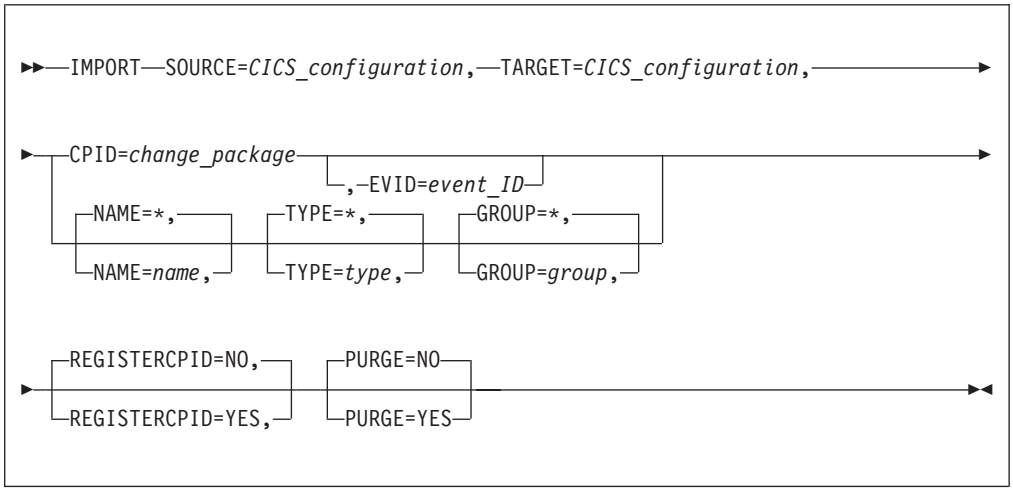


IMPORT

Purpose

Imports resource definitions from an export file received from another CICS Configuration Manager system. Optionally, if the export file contains change package details, also registers change packages in the importing CICS Configuration Manager repository.

Format



SOURCE must specify a CICS configuration that refers to a CICS Configuration Manager export file. The CICS configuration specified by TARGET may refer to a CSD file, a context, or any export file format. TARGET must not refer to the same CICS configuration as SOURCE; you cannot import resource definitions back to the same export file.

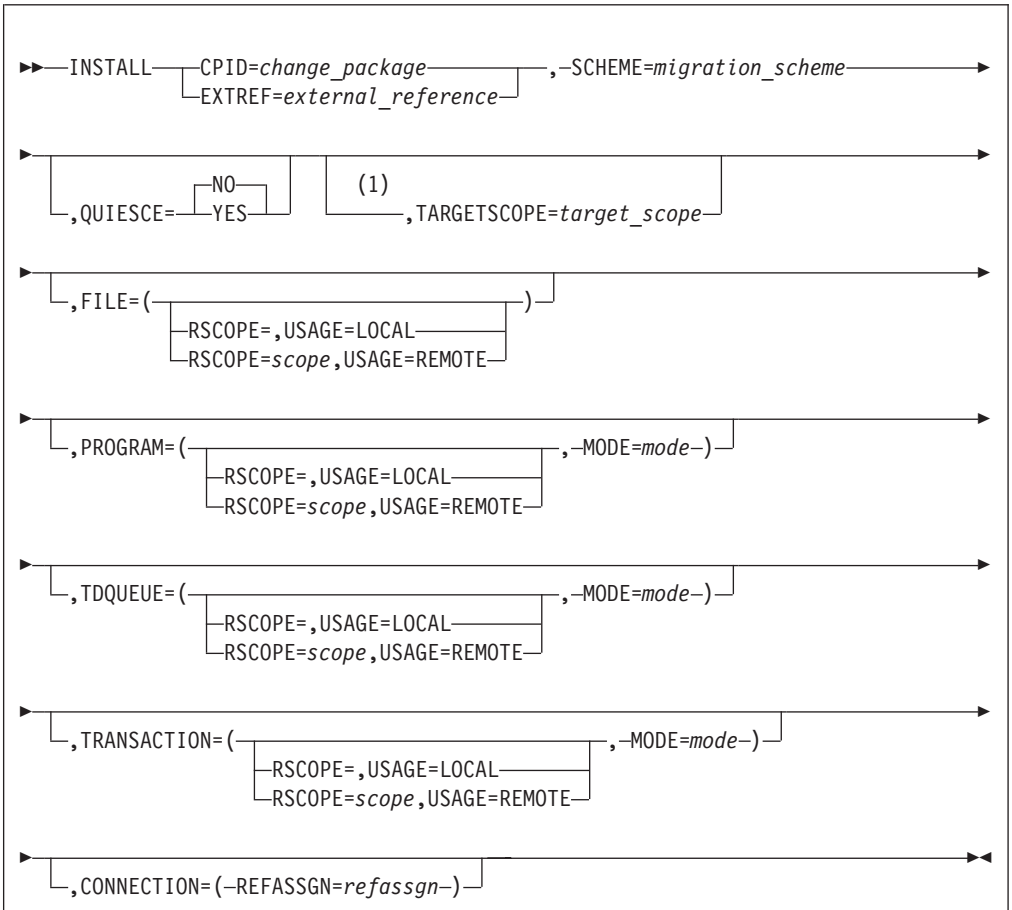
You cannot specify CPID with NAME, TYPE, or GROUP. If you specify any of NAME, TYPE, or GROUP, then any of these that you omit default to an * (asterisk) generic value.

INSTALL

Purpose

Dynamically makes resource definitions available to an active CICS region.

Format



Notes:

1 If the change package contains candidates for migration to context-based target CICS configurations, *target_scope* is required.

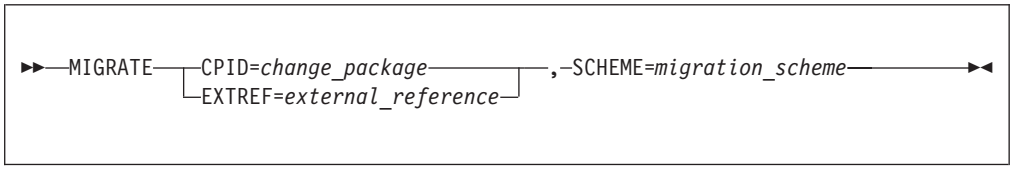
For details on the PROGRAM, TDQUEUE, TRANSACTION, CONNECTION, and scope-related parameters, see the CICSPlex SM documentation.

MIGRATE

Purpose

Copies the resource definitions in a change package from source to target CICS configurations, and invokes commands in the change package on target CICS configurations, according to the specified migration scheme.

Format

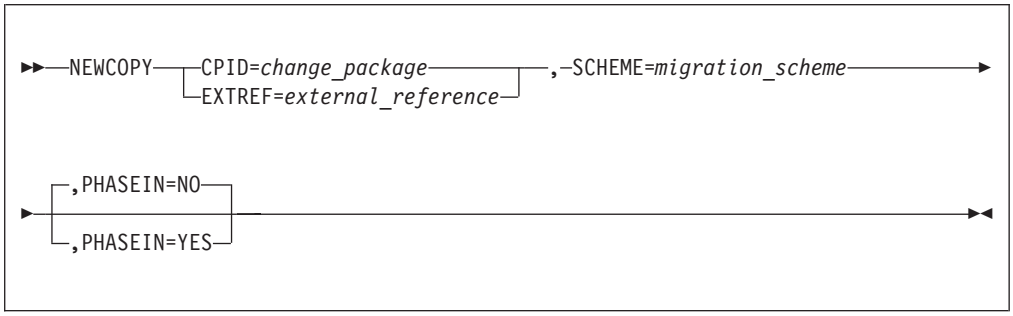


NEWCOPY

Purpose

Reloads in-memory copies of resource definitions associated with a CICS program definition.

Format

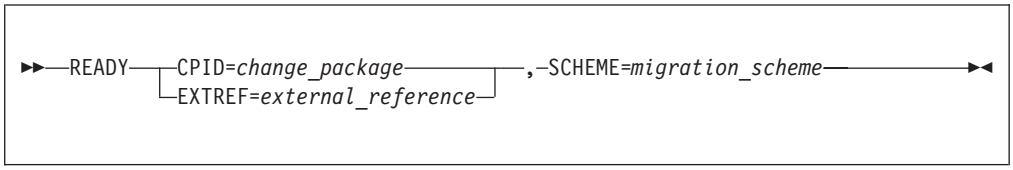


READY

Purpose

Indicates that the resource definitions in a change package are ready for migration.

Format

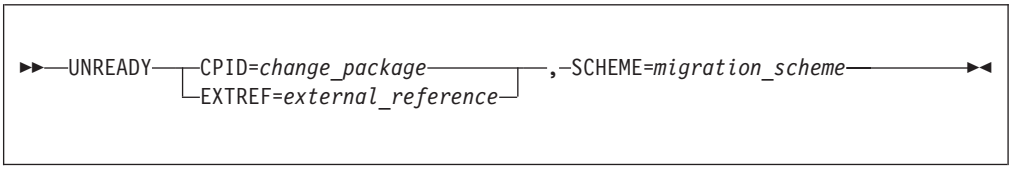


UNREADY

Purpose

Indicates that the resource definitions in a change package are no longer ready for migration.

Format


UNREADY
CPID=change_package
EXTREF=external_reference
,SCHEME=migration_scheme

Chapter 15. Auditing changes to resource definitions

To help you audit changes to resource definitions, you can use the CICS Configuration Manager batch command program to produce a **CICS Resource Definition Changes Report**. This report shows the changes to resource definitions that CICS Configuration Manager records in its journal. When requesting the report, you can specify criteria for the changes you are interested in, such as: when the change occurred, who performed the change, and details of the changed resource definitions. You can request two views of the report, *package* or *resource*:

Package view
Shows changes to resource definitions caused by migrating, importing, or backing out a change package.

The package view contains a *summary report* of the migrate, import, and backout events that meet your criteria, followed by a *detail report* for each change package shown in the summary report.

You can request the package view in three levels of detail: *activity*, *resource*, or *attribute*. The level of detail determines the contents of the detail reports:

Activity level
Shows *all* ready, unready, approve, disapprove, migrate, import, and backout events, regardless of the criteria you specified, where the change package used the same migration scheme as an event for the change package in the summary report.

Resource level
Expands each migrate, import, and backout event from the summary report to show changed resource definitions.

Attribute level
Expands each changed resource definition to show before and after values of changed attributes.

Resource view
Shows changes to resource definitions by any method, including editing, copying, and deleting using the CICS Configuration Manager ISPF dialog and migrating, importing, or backing out a change package.

You can request the resource view in two levels of detail, *resource* or *attribute*:

Resource level
Lists changed resource definitions that meet your criteria.

Attribute level
Expands each changed resource definition to show before and after values of changed attributes.

Tip: By default, the resource view includes changes caused by change packages. However, you can specify criteria (CPID EQ <BLANK>) to exclude such changes, so that the resource view shows all changes *except* those caused by change packages. This enables you to use the package view for changes caused by change packages, and the resource view for all other changes. So, for example, you might want to produce both a weekly

package view and a weekly resource view; that is, both specifying the criteria DATE GE TODAY-7, with the resource view also specifying the criteria CPID EQ <BLANK>.

Auditing changes using the ISPF dialog:

In addition to producing batch reports of changes to resource definitions, you can also use the CICS Configuration Manager ISPF dialog to browse this information interactively:

- To browse changes caused by a specific change package, use option **3 Packages**: select a change package, and then choose **History**.
- To browse all changes to resource definitions, use option **4.3 CICS changes**.

Resource definition changes reported by CICS Configuration Manager

CICS Configuration Manager reports changes that it made to resource definitions in CSD files or contexts and that are recorded in its current journal.

The journal does not contain the following changes:

- Changes made outside CICS Configuration Manager. For example:
  - Changes made using the CEDA transaction supplied with CICS.
  - Changes made using the DFHCSDUP or BATCHREP utility to import resource definitions from DFHCSDUP or BATCHREP export files.

    Note: CICS Configuration Manager writes to these export file formats but does not read them. To import from a DFHCSDUP export file, you use the DFHCSDUP utility; to import from a BATCHREP export file, you use the BATCHREP utility. The CICS Configuration Manager journal contains no record of these activities. If you want to report changes caused by importing an export file, use the CICS Configuration Manager export file format. For details on the different export file formats supported by CICS Configuration Manager, see "Export and import with CICS Configuration Manager" on page 44.
- Changes whose journal records have been unloaded from the current CICS Configuration Manager journal. For details, see Chapter 17, "Unloading and loading journal records," on page 257.
- Changes to resource definitions in export files.

  For example, if you use the CICS Configuration Manager ISPF dialog to copy a resource definition to an export file, the resource view of the report will not show that event. Copying a resource definition to an export file is not considered a change to a resource definition. Similarly, if you migrate a change package to an export file, neither the resource view nor the package view of the report will show changes to resource definitions in the export file.

  If all of the target CICS configurations for a change package migration refer to export files, then the package view does not show the migrate event at all, not even in the summary report. If some target CICS configurations for a migration refer to export files, and others refer to CSD files or contexts, then the package view shows the migrate event, but its resource level only shows changes to resource definitions in CSD files or contexts.

JCL to produce a batch report

The following JCL produces a package view of the CICS Resource Definition Changes Report, showing changes to resource definitions caused by the specified change package (CPID) between two dates:

```
//CCVJOB   JOB your job statement information
//STEP     EXEC PGM=CCVBMAIN
//STEPLIB  DD DISP=SHR,DSN=ccvhlq.SCCVAlang
//         DD DISP=SHR,DSN=ccvhlq.SCCVAUTH
//CCVPRINT DD SYSOUT=*
//CCVREPRT DD SYSOUT=*
//CCVPARMS DD *
CONNECT IPADDRESS=ip_address,PORT=ip_port_number

REPORT      TYPE=CICSDEFCHANGES,
            VIEW=PACKAGE,
            LEVEL=ATTRIBUTE

CRITERIASET COND=(DATE>=2007/10/01),
            COND=(DATE<=2007/11/30),
            COND=(CPID EQ 00000724)
/*
```

Figure 94. Example JCL: producing a package view of the CICS Resource Definition Changes Report

The following JCL produces a resource view of the CICS Resource Definition Changes Report, showing changes between two dates to file or transaction resource definitions in groups with the prefix PAY:

```
//CCVJOB   JOB your job statement information
//STEP     EXEC PGM=CCVBMAIN
//STEPLIB  DD DISP=SHR,DSN=ccvhlq.SCCVAlang
//         DD DISP=SHR,DSN=ccvhlq.SCCVAUTH
//CCVPRINT DD SYSOUT=*
//CCVREPRT DD SYSOUT=*
//CCVPARMS DD *
CONNECT IPADDRESS=ip_address,PORT=ip_port_number

REPORT      TYPE=CICSDEFCHANGES,
            VIEW=RESOURCE,
            LEVEL=RESOURCE,
            SORT=(CONFIGURATION,DATE,NAME,TYPE,GROUP)

CRITERIASET COND=(GROUP=PAY*),
            COND=(DATE>=2007/10/08),
            COND=(DATE<=2007/11/30),
            COND=(TYPE EQ FILE)

CRITERIASET COND=(GROUP=PAY*),
            COND=(DATE>=2007/10/08),
            COND=(DATE<=2007/11/30),
            COND=(TYPE EQ TRANSACTION)
/*
```

Figure 95. Example JCL: producing a resource view of the CICS Resource Definition Changes Report

For detailed descriptions of the statements in this JCL, see "JCL to invoke the batch command program" on page 223.

There are two batch commands for reporting:
- REPORT specifies the type of report and its options, such as the view and the level of detail
- CRITERIASET specifies selection criteria for the report requested by the preceding REPORT batch command

You can request multiple reports in a single job step. Each REPORT can optionally be followed by one or more CRITERIASET.

A job step can contain a mix of batch commands for reporting and batch commands for processing change packages. For an example of this, see "JCL to invoke the batch command program" on page 223.

Package view: layout and example report

The package view of the CICS Resource Definition Changes Report consists of three parts:

Report options
Lists the CONNECT, REPORT, and any CRITERIASET batch commands that generated this report. This includes any default parameter values not explicitly specified in the input control cards.

Summary report
Lists migrate, backout, and import events that match the criteria specified by CRITERIASET; or all such events in the journal, if no CRITERIASET is specified. The events in the summary report determine the contents of the activity reports, described below.

Detail reports (one for each change package in the summary report)
Show all ready, unready, approve, disapprove, migrate, import, and backout events, regardless of the criteria you specified, for each combination of change package and migration scheme shown in the summary report.

The activity reports show the entire recorded history for each combination of change package and migration scheme shown in the summary report: the migrate, import, and backout events from the summary report; other migrate, import, and backout events that do not match your criteria (and so do not appear in the summary report); and events that do not change resource definitions, such as ready, unready, approve, and disapprove. The activity reports do *not* show install, newcopy, or discard events.

If you request the resource level of detail, the activity reports expand the events from the summary report (that is, the events that match your criteria) to show changed resource definitions. If you request the attribute level of detail, the activity reports expand changed resource definitions to show changed attributes.

The following figure shows the layout of the package view and its three levels of detail.

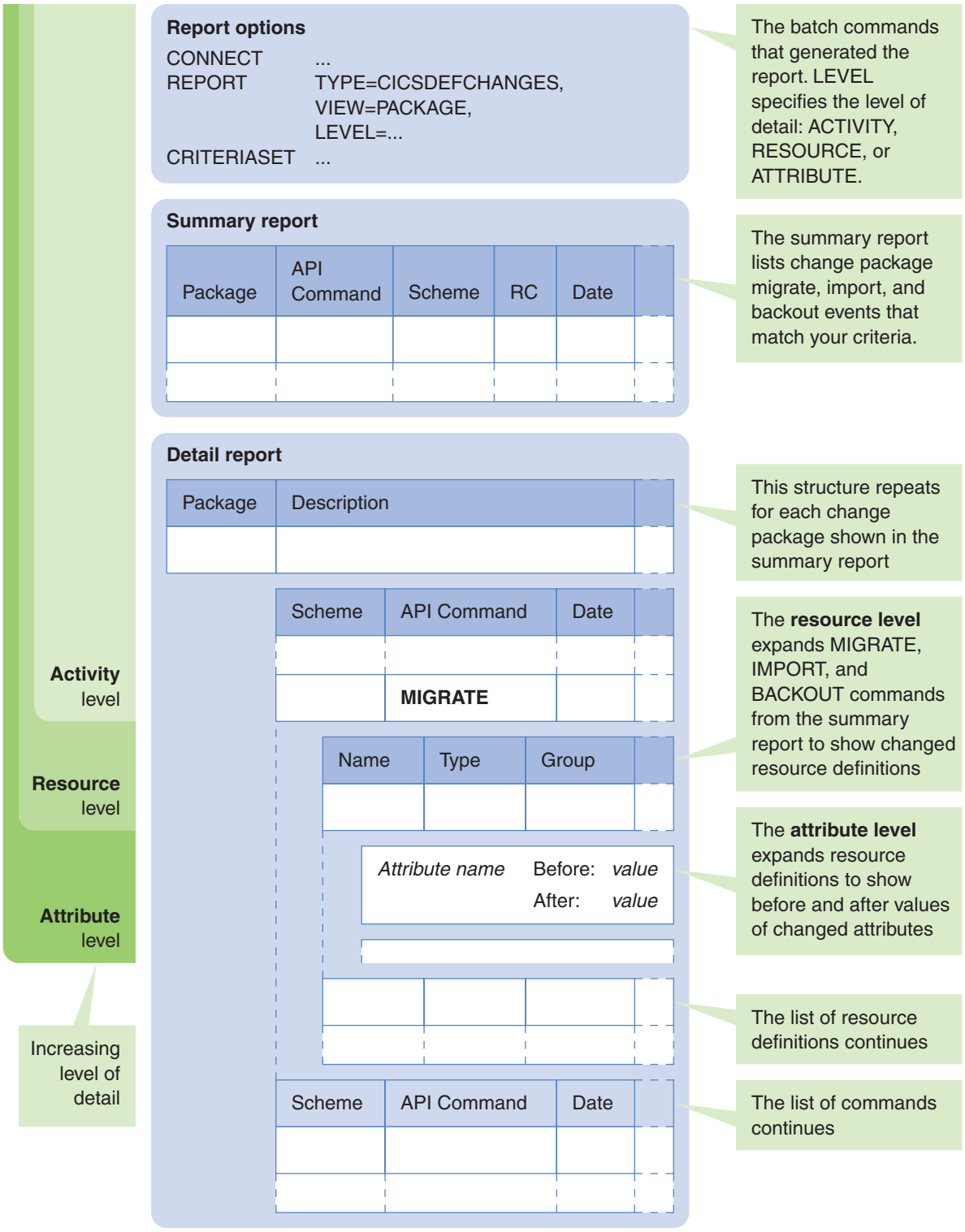


Figure 96. CICS Resource Definition Changes Report: layout of the package view

The following figure shows an example package view.

```
                CICS Resource Definition Changes Report
                           Report Options

CONNECT IPADDRESS=LOCALHOST PORT=10325 SSL=NO
REPORT  TYPE=CICSDEFCHANGES,
        VIEW=PACKAGE,
        LEVEL=ATTRIBUTE
```

```
CRITERIASET COND=(DATE>=2007/10/01),
           COND=(DATE<=2007/11/30),
           COND=(CPID EQ 00000724)

                  CICS Resource Definition Changes Report
                        Package View, Summary Level

         API
Package  Command   Scheme   RC Date             User     Description
-------- --------- -------- -- ---------------- -------- ------------------------------------------------------------
00000724 MIGRATE   DEVTTEST 00 2007/11/01 15:53 JHICKS   PAYROLL first system implementation
00000724 MIGRATE   TESTPROD 00 2007/11/09 22:12 HKEEP    PAYROLL first system implementation

                   CICS Resource Definition Changes Report
                        Package View, Attribute Level
                                                          Approval External
Package  Description                                       Profile  Reference
-------- ------------------------------------------------ -------- --------
00000724 PAYROLL first system implementation              PAYPROF

         Scheme   API Command Date               User     RC Rsn  Notes
         -------- ----------- ------------------- -------- -- ---- ------------------------------------------------------------
      ==> DEVTTEST READY       2007/10/31 12:14:39 BSMITH   00 0000
          DEVTTEST APPROVE     2007/11/01 11:27:22 JREIBY   00 0000 As MANAGER  -  fully approved
          DEVTTEST MIGRATE     2007/11/01 15:53:10 JHICKS   00 0000

             Name     Type         Group    Config   Date                Func   CSD File or Context Name
             -------- ------------ -------- -------- ------------------- ------ ---------------------------------------------
             PAYFILE1 FILE         PAYROLL  TESTCSD  2007/11/01 15:53:03 Create CICS.TEST.DFHCSD

                           DESCRIPTION  After :  Payroll Work File
                           DSNAME       After :  PAYROLL.TEST.PAYFILE1
                           PASSWORD     After :
                           RLSACCESS    After :  NO
                           LSRPOOLID    After :  1
                           READINTEG    After :  UNCOMMITTED
                           DSNSHARING   After :  ALLREQS
                           STRINGS      After :  10
                           NSRGROUP     After :
-  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  - 33 Line(s) not Displayed

             PAYFILE2 FILE         PAYROLL  TESTCSD  2007/11/01 15:53:03 Create CICS.TEST.DFHCSD

                           DESCRIPTION  After :  Payroll Work File
                           DSNAME       After :  PAYROLL.TEST.PAYFILE2
-  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  - 41 Line(s) not Displayed
             PAYFILE3 FILE         PAYROLL  TESTCSD  2007/11/01 15:53:03 Create CICS.TEST.DFHCSD
-  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  - 44 Line(s) not Displayed
             PAYFILE4 FILE         PAYROLL  TESTCSD  2007/11/01 15:53:04 Create CICS.TEST.DFHCSD
-  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  - 44 Line(s) not Displayed
             PAY1     TRANSACTION  PAYROLL  TESTCSD  2007/11/01 15:53:05 Create CICS.TEST.DFHCSD
-  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  - 46 Line(s) not Displayed
             PAY2     TRANSACTION  PAYROLL  TESTCSD  2007/11/01 15:53:06 Create CICS.TEST.DFHCSD
-  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  - 38 Line(s) not Displayed
                           WAITTIMEDD   After :  00
                           WAITTIMEHH   After :  00
                           WAITTIMEMM   After :  10
                           RESSEC       After :  NO
                           CMDSEC       After :  NO
                           USERDATA1    After :
                           USERDATA2    After :
                           USERDATA3    After :


         Scheme   API Command Date               User     RC Rsn  Notes
         -------- ----------- ------------------- -------- -- ---- ------------------------------------------------------------
      ==> TESTPROD READY       2007/11/06 13:21:07 JHICKS   00 0000
          TESTPROD APPROVE     2007/11/07 17:03:28 JREIBY   00 0000 As MANAGER  -  partly approved
          TESTPROD APPROVE     2007/11/08 11:31:42 RWATSON  00 0000 As CCADMIN  -  fully approved
          TESTPROD MIGRATE     2007/11/09 22:12:47 HKEEP    00 0000

-  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -   276 Line(s) not Displayed
 ***End of Report***
```

Figure 97. CICS Resource Definition Changes Report: example of the package view

The summary report is sorted by change package ID and event date, and contains the following columns:

Package
Change package ID.

API Command
API command name.

RC Return code of the API command. (The detail report for each change package contains the reason code, in the **Rsn** column.)

Date Date and time of the API command.

User ID of the user who invoked the API command.

Description
Change package description.

The detail report for each change package is sorted by migration scheme and event date. The marker ==> indicates the first event for each migration scheme.

The **Notes** column in the detail reports shows the approver role specified by an Approve or a Disapprove command, and the resulting approval status of the change package for this migration scheme: “no approvals”, “partly approved”, or “fully approved”.

At the resource level:

- The **Func** column indicates the function that the API command performed on the resource definition: Cre(ate), Upd(ate), or Del(ete). For example, a Backout command deletes resource definitions that were created by the corresponding Migrate command, and updates resource definitions that were updated by the Migrate.
- The **Type** column in the resource level uses the resource type naming convention for CSD files, regardless of where the resource definition is stored. For example, for a program resource definition, this column shows PROGRAM, not PROGDEF, even for a resource definition stored in a CICSPlex SM data repository. For a cross-reference between resource type naming conventions, see Table 23 on page 337.

If the API command created the resource definition, the attribute level shows the attributes of the newly created resource definition as “after” values, but no “before” values. Conversely, if the API command deleted the resource definition, the attribute level shows the attributes of the resource definition before it was deleted as “before” values, but no “after” values.

Resource view: layout and example report

The resource view of the CICS Resource Definition Changes Report consists of two parts:

Report options
Lists the CONNECT, REPORT, and any CRITERIASET batch commands that generated this report. This includes any default parameter values not explicitly specified in the input control cards.

List of changed resource definitions
Lists changed resource definitions that match the criteria specified by CRITERIASET.

If you request the attribute level of detail, the list expands the changed resource definitions to show changed attributes.

The following figure shows the layout of the resource view of the CICS Resource Definition Changes Report.

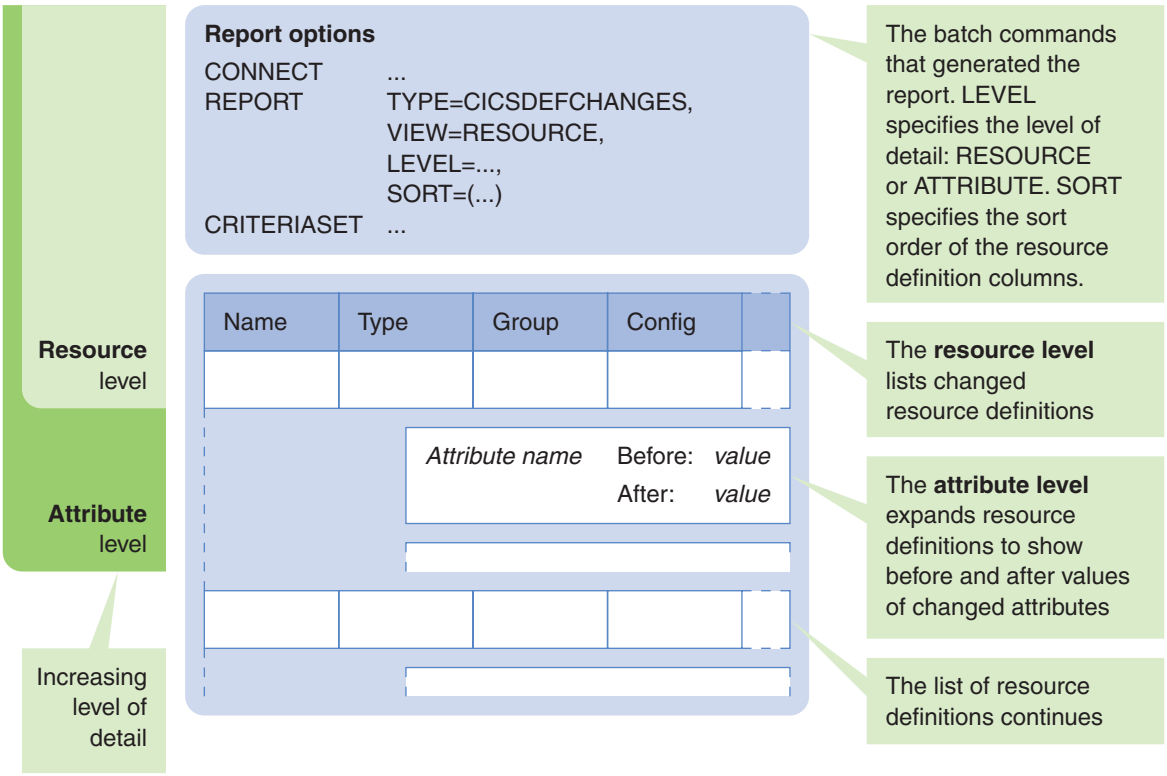


Figure 98. CICS Resource Definition Changes Report: layout of the resource view

The following figure shows an example resource view.

```
                    CICS Resource Definition Changes Report
                                Report Options

CONNECT IPADDRESS=LOCALHOST PORT=10325 SSL=NO
REPORT  TYPE=CICSDEFCHANGES,
        VIEW=RESOURCE,
        LEVEL=RESOURCE,
        SORT=(CONFIGURATION,DATE,NAME,TYPE,GROUP)

CRITERIASET COND=(GROUP=PAY*),
            COND=(DATE>=2007/10/08),
            COND=(DATE<=2007/11/30),
            COND=(TYPE EQ FILE)

CRITERIASET COND=(GROUP=PAY*),
            COND=(DATE>=2007/10/08),
            COND=(DATE<=2007/11/30),
            COND=(TYPE EQ TRANSACTION)

                    CICS Resource Definition Changes Report
                         Resource View, Resource Level
                 Sorted by CONFIGURATION,DATE,NAME,TYPE,GROUP

                                                                  API
Name     Type         Group    Config   Date             User     Command Func Package  CSD File or Context Name
-------- ------------ -------- -------- ---------------- -------- ------- ---- -------- ----------------------------------------
PAY1     TRANSACTION  PAYROLL  DEVTCSD  2007/10/15 09:32 BSMITH   CREATE  Cre           CICS.DEVT.DFHCSD
PAY2     TRANSACTION  PAYROLL  DEVTCSD  2007/10/15 09:33 BSMITH   CREATE  Cre           CICS.DEVT.DFHCSD
PAYFILE1 FILE         PAYROLL  DEVTCSD  2007/10/15 10:14 BSMITH   CREATE  Cre           CICS.DEVT.DFHCSD
PAYFILE2 FILE         PAYROLL  DEVTCSD  2007/10/15 10:14 BSMITH   CREATE  Cre           CICS.DEVT.DFHCSD
PAYFILE3 FILE         PAYROLL  DEVTCSD  2007/10/15 10:14 BSMITH   CREATE  Cre           CICS.DEVT.DFHCSD
PAYFILE4 FILE         PAYROLL  DEVTCSD  2007/10/17 14:23 BSMITH   CREATE  Cre           CICS.DEVT.DFHCSD
PAYFILE1 FILE         PAYROLL  PRODCSD  2007/11/09 22:12 HKEEP    MIGRATE Cre  00000724 CICS.PROD.DFHCSD
PAYFILE2 FILE         PAYROLL  PRODCSD  2007/11/09 22:12 HKEEP    MIGRATE Cre  00000724 CICS.PROD.DFHCSD
PAYFILE3 FILE         PAYROLL  PRODCSD  2007/11/09 22:12 HKEEP    MIGRATE Cre  00000724 CICS.PROD.DFHCSD
PAYFILE4 FILE         PAYROLL  PRODCSD  2007/11/09 22:12 HKEEP    MIGRATE Cre  00000724 CICS.PROD.DFHCSD
PAY1     TRANSACTION  PAYROLL  PRODCSD  2007/11/09 22:12 HKEEP    MIGRATE Cre  00000724 CICS.PROD.DFHCSD
PAY2     TRANSACTION  PAYROLL  PRODCSD  2007/11/09 22:12 HKEEP    MIGRATE Cre  00000724 CICS.PROD.DFHCSD
PAYFILE1 FILE         PAYROLL  TESTCSD  2007/11/01 15:53 JHICKS   MIGRATE Cre  00000724 CICS.TEST.DFHCSD
```

```
PAYFILE2 FILE         PAYROLL  TESTCSD  2007/11/01 15:53 JHICKS   MIGRATE Cre  00000724 CICS.TEST.DFHCSD
PAYFILE3 FILE         PAYROLL  TESTCSD  2007/11/01 15:53 JHICKS   MIGRATE Cre  00000724 CICS.TEST.DFHCSD
PAYFILE4 FILE         PAYROLL  TESTCSD  2007/11/01 15:53 JHICKS   MIGRATE Cre  00000724 CICS.TEST.DFHCSD
PAY1     TRANSACTION  PAYROLL  TESTCSD  2007/11/01 15:53 JHICKS   MIGRATE Cre  00000724 CICS.TEST.DFHCSD
PAY2     TRANSACTION  PAYROLL  TESTCSD  2007/11/01 15:53 JHICKS   MIGRATE Cre  00000724 CICS.TEST.DFHCSD

***End of Report***
```

Figure 99. CICS Resource Definition Changes Report: example of the resource view

The resource view contains the following columns:

Name Resource definition name.

Type Resource definition type. This column uses the resource type naming convention for CSD files, regardless of where the resource definition is stored. For example, for a program resource definition, this column shows PROGRAM, not PROGDEF, even for a resource definition stored in a CICSPlex SM data repository. For a cross-reference between resource type naming conventions, see Table 23 on page 337.

Group Group or ResGroup to which the resource definition belongs.

Config
CICS configuration where the resource definition is stored.

Date Date and time of the change to the resource definition, in the format:

yyyy/mm/dd hh:mm

User ID of the user who invoked the API command.

API Command
Name of the API command that caused the change.

Func The function that the API command performed on the resource definition: Cre(ate), Upd(ate), or Del(ete).

Package
For API commands that process change packages (such as Migrate): the change package that the resource definition belonged to. For other API commands, Otherwise, this column is blank.

CSD File or Context Name
Data set name of the CSD file or name of the CICSPlex SM context where the resource definition is stored, as per the CICS configuration shown in the Config column.

REPORT

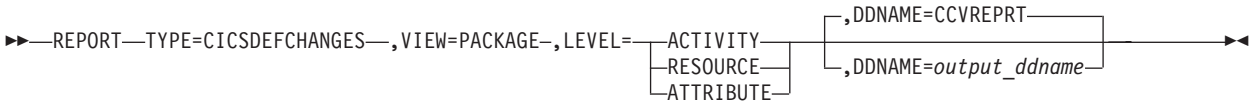
Purpose

Requests a batch report. For a description of the reports that you can request, see Chapter 15, “Auditing changes to resource definitions,” on page 237.

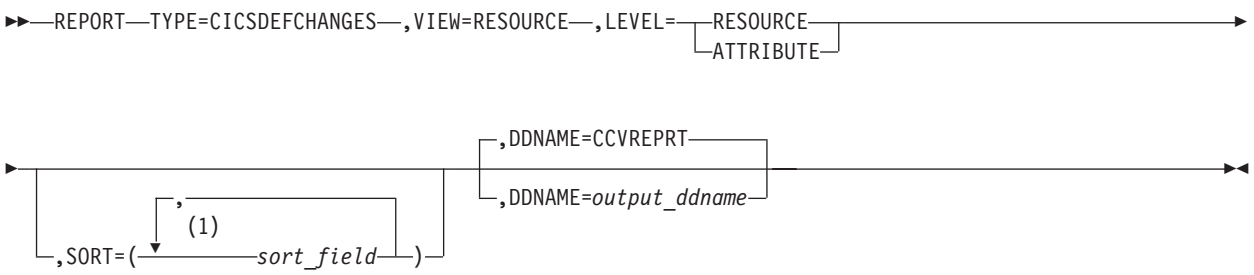
You can optionally follow REPORT with one or more CRITERIASET parameters to select which journal records to report on. If you do not specify any CRITERIASET parameters, the report uses all available journal records.

Format

CICS Resource Definition Changes Report : package view



CICS Resource Definition Changes Report : resource view



Notes:

1 You can specify up to five sort fields to determine the sort order of resource definitions in the resource view.

TYPE
Must specify the value CICSDEFCHANGES.

VIEW
The report view that you want:

PACKAGE
Shows changes to resource definitions caused by migrating, importing, or backing out a change package.

RESOURCE
Shows changes to resource definitions by any method, including editing, copying, or deleting using the CICS Configuration Manager ISPF dialog and migrating, importing, or backing out a change package.

Tip: To exclude changes caused by change packages from the resource view, specify a CRITERIASET with the following condition:

COND=(CPID EQ <BLANK>)

LEVEL
Level of detail in the report, depending on the view:

Package view of the CICS Resource Definition Changes Report
Allowed LEVEL values:

ACTIVITY
For each change package, lists the commands invoked using a specific migration scheme.
RESOURCE
As above, expanded to list the resource definitions changed by each Migrate, Backout, or Import command that met the CRITERIASET conditions for the report.
ATTRIBUTE
As above, expanded to show before and after values of changed attributes.

Resource view of the CICS Resource Definition Changes Report
Allowed LEVEL values:
RESOURCE
Lists changed resource definitions.
ATTRIBUTE
As above, expanded to show before and after values of changed attributes.

DDNAME
Identifies the ddname to which the REPORT batch command writes the report. If you omit this parameter, the REPORT batch command writes the report to the ddname CCVREPRT. For the DCB attributes and other details of this output data set, see "JCL to invoke the batch command program" on page 223.

This parameter is especially useful if you produce several reports in a single batch job, and you want to output the reports to separate ddnames, rather than appending them all to the default CCVREPRT.

SORT
Applies only to the resource view of the CICS Resource Definition Changes Report. Specifies the sort order of the columns in the list of resource definitions. You can specify up to five of the following sort fields to determine the sort order of resource definitions in the resource view:
CONFIGURATION
CICS configuration
DATE Journal event time
NAME
Resource definition name
TYPE Resource type
USER Journal event user ID
GROUP
Resource definition group or ResGroup

If you omit SORT, the default sort order is the first five fields shown above.

CRITERIASET (for reporting)

Purpose

Defines criteria for the journal records to be included in the report requested by the preceding REPORT batch command.

You can specify multiple CRITERIASET commands, each defining one or more conditions. Conditions within a CRITERIASET are implicitly combined by a logical AND operator. Multiple CRITERIASET commands are implicitly combined by a logical OR operator.

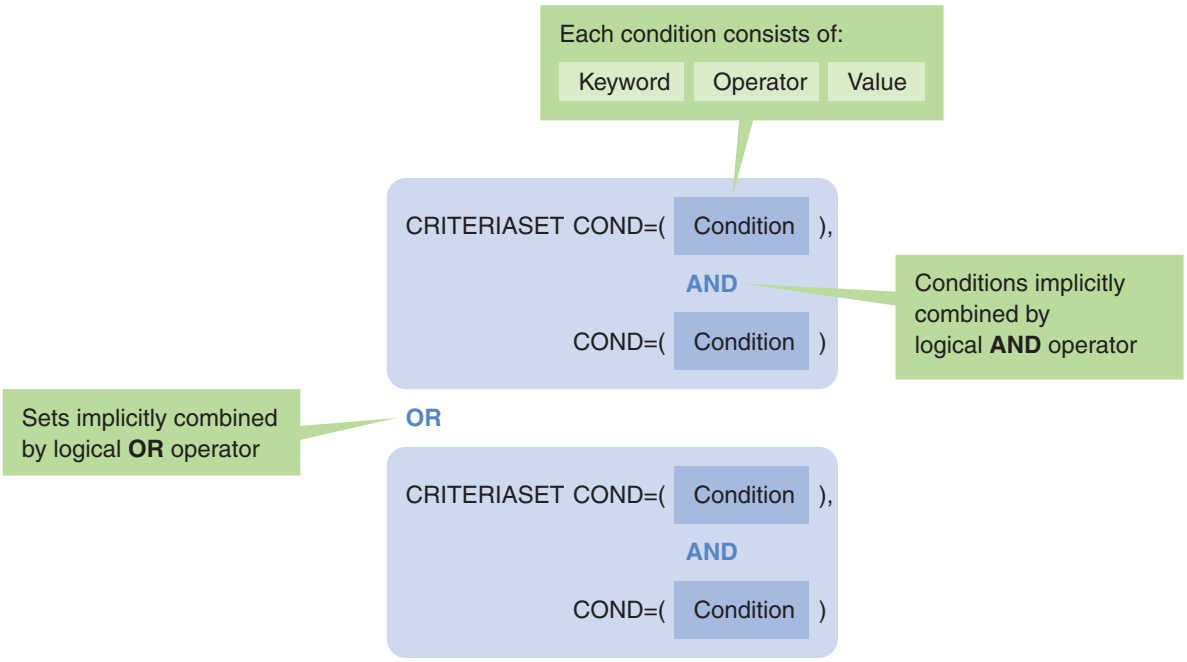
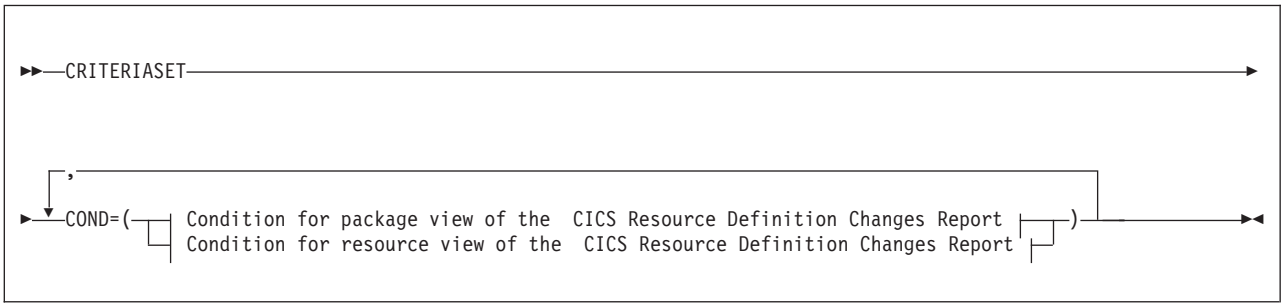
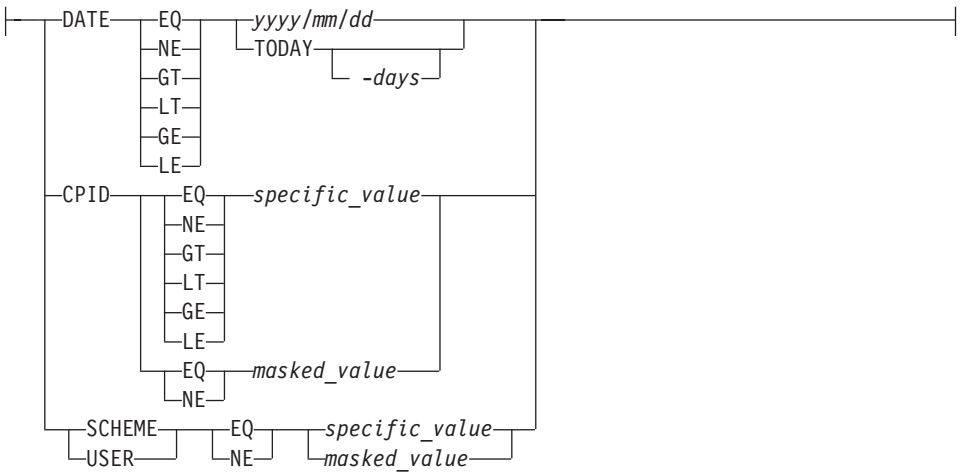


Figure 100. Defining selection criteria for journal records to be included in batch reports

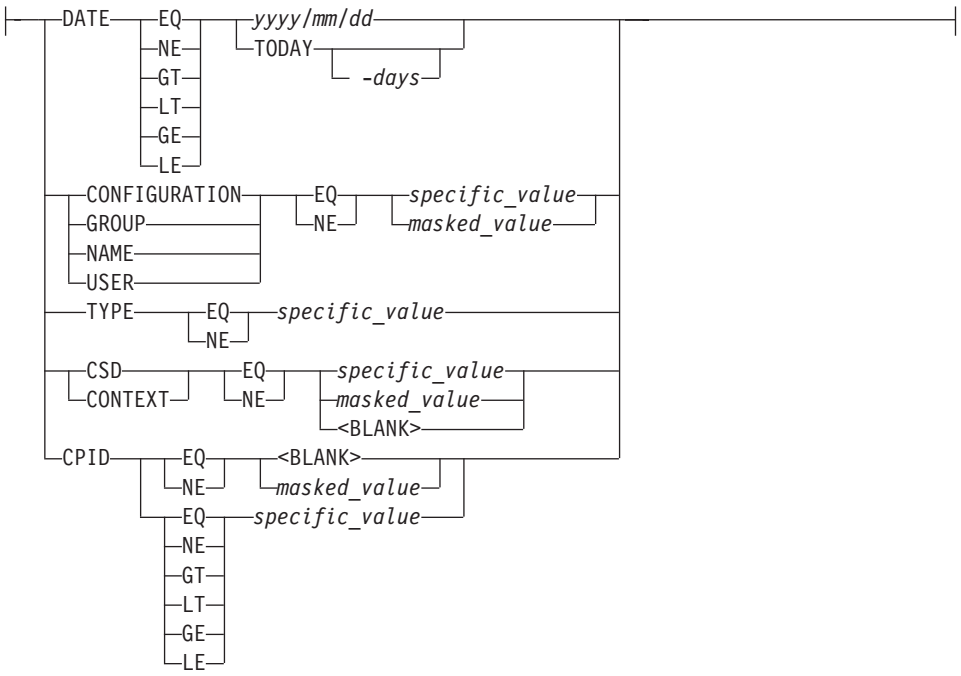
Format



Condition for package view of the CICS Resource Definition Changes Report:



Condition for resource view of the CICS Resource Definition Changes Report:



A *masked_value* can use a plus sign (+) to represent a single character and an asterisk (*) to represent zero or more characters, in any combination.

The special value <BLANK> denotes a blank or null value. If you use <BLANK> in a condition, use the two letter code EQ or NE with spaces before and after; do not use sign operators with BLANK.

You must specify at least one COND parameter in each CRITERIASET. Each COND parameter must appear on a separate input line, except for the first, which may appear on the same line as CRITERIASET. To specify comparison operators, you can use 2-letter codes or signs:

EQ or =
: Equal to

GE or >=
: Greater than or equal to

GT or >
: Greater than

LE or <=
: Less than or equal to

LT or <
: Less than

NE or ¬= or <>
: Not equal to

If you use a 2-letter code, such as EQ, then you must insert one or more blanks before and after the code. If you use a sign, such as =, then do not insert blanks before or after the sign. All parameter values are case-insensitive and are converted to uppercase prior to processing.

For the NAME attribute, the specified parameter value matches all resource definitions of similar names regardless of case sensitivity. Resource definitions of lowercase, uppercase, or mixed case names may match the parameter value.

You can use the same attribute, such as DATE, in more than one COND parameter. For example, the following combination of COND parameters selects journal events that occurred in January 2007:

```
CRITERIASET COND=(DATE GE 2007/01/01),
            COND=(DATE LE 2007/01/31)
```

The following attributes apply to COND parameters in both package and resource view reports:

DATE Specifies the date that the journal record was created. You can specify this date as either:

- A four-digit year, two-digit month, and two-digit day, separated by either forward slashes (/) or hyphens (-). For example, 2005/04/29 represents 29 April 2005.
- The keyword TODAY optionally followed by a hyphen (-) and a number of days, 0–9999. For example, DATE GE TODAY-1 selects journal records created today (the day that you run the batch program) and yesterday. For a weekly report, specify DATE GE TODAY-7. TODAY and TODAY-0 are equivalent: they select journal records created today.

CPID Change package that caused the change to the resource definition.

In a resource view report, you can use the special value <BLANK> to denote a blank or null value. For example, the condition CPID EQ <BLANK> excludes changes caused by change packages, while CPID NE <BLANK> excludes changes *not* caused by change packages.

USER ID of the user who started the API command.

The following attribute applies only to COND parameters in package view reports:

SCHEME
Migration scheme used by the change package.

The following attributes apply only to COND parameters in resource view reports:

CONFIGURATION, CONTEXT, or CSD
Location of the changed resource definitions. The CSD value is the fully qualified data set name of a CSD file without enclosing quotation marks. The CONFIGURATION value is the name of a CICS configuration, and the CONTEXT value is the name of a CICSPlex SM context.

For CONTEXT and CSD, you can use the special value <BLANK> to denote a blank or null value. For example, the condition CONTEXT EQ <BLANK> excludes from the report any changes to resource definitions in contexts. CSD EQ <BLANK> is equivalent to CONTEXT NE <BLANK>, and CSD NE <BLANK> is equivalent to CONTEXT EQ <BLANK>.

GROUP
Group that the resource definitions belong to (or ResGroup, for context-based resource definitions).

NAME
Name of the resource definitions.

TYPE Resource type of the resource definitions. You can specify the resource type using either the CSD naming convention or the CICSPlex SM naming convention. For example, you can specify either TRANSACTION or TRANDEF. For a list of resource types, see Table 23 on page 337.

Chapter 16. Defining CICS configurations in batch

The DATATAKEUP batch command offers a timesaving alternative to the interactive ISPF dialog panels for defining CICS configurations. Rather than using the panels to define CICS configurations one at a time, you can use this command to define or update all of your CICS configurations in a single batch job.

JCL to define CICS configurations

Here is example JCL for defining or updating CICS configurations. A version of this JCL is supplied in the member CCVX0002 of the sample library SCCVSAMP:

```
//SORT     EXEC PGM=SORT
//SYSOUT   DD  SYSOUT=*
//SORTIN   DD  DISP=SHR,DSN=input_dsn  1
//SORTOUT  DD  DSN=&&SORTOUT,
//             DISP=(MOD,PASS),
//             UNIT=SYSDA,
//             SPACE=(CYL,(1,1)),
//             DCB=(LRECL=255,BLKSIZE=2550)
//SORTWK01 DD  UNIT=SYSDA,SPACE=(CYL,(10,10))
//SYSIN    DD  *
SORT FIELDS=(1,1,CH,A,5,8,CH,A,3,1,CH,A)  2
/*
//         EXEC PGM=CCVBMAIN
//STEPLIB  DD DISP=SHR,DSN=ccvhlq.SCCVAENU  3
//         DD DISP=SHR,DSN=ccvhlq.SCCVAUTH
//CCVPRINT DD SYSOUT=*
//CCONFIG1 DD DISP=SHR,DSN=&&SORTOUT  4
//CCVPARMS DD *
CONNECT IPADDRESS=ip_address,PORT=ip_port_number,SSL=YES,KEYRING=keyring
DATATAKEUP TYPE=CCONFIG,DDNAME=CCONFIG1,REPLACE=YES
/*
```

Figure 101. Example JCL: using the DATATAKEUP batch command to define CICS configurations

1 This *input_dsn* refers to an unsorted input data set for the DATATAKEUP command.

The following members of the sample library SCCVSAM2 are example input data sets with detailed comments and instructions. Use one of these as a starting point for creating your own input data set:

CCVX0020
Use this to define or update CICS configurations for either CSD files or CICSPlex SM contexts, with or without transformation variables and remote system connections.

CCVX0019
An abridged, simplified copy of the example above. Use this to define or update CICS configurations for CSD files without transformation variables or remote system connections.

2 This sort step ensures that the records are in the order required by the DATATAKEUP batch command:
1. Comments (records with an asterisk in the first column)

2. CICS configuration name (columns 5 to 8)
3. Input record type (column 3):
   C Defines a CICS configuration
   L Defines a remote system connection for a CSD-based CICS configuration
   R Defines the record-level sharing (RLS) access option for a CSD-based CICS configuration
   V Defines a transformation variable (only relevant if you use migration schemes with transformation rules to migrate change packages)

3 The STEPLIB concatenation must contain the CICS Configuration Manager national language support (NLS) load module library and authorized program load module library. All libraries in the STEPLIB concatenation must be APF-authorized.

4 This ddname identifies the correctly sorted input data set for the DATATAKEUP command. This ddname must match the DDNAME parameter of the DATATAKEUP command. In this example, the ddname CCONFIG1 refers to &&SORTOUT, which is the sorted version of the input data set originally specified by the ddname SORTIN.

DATATAKEUP

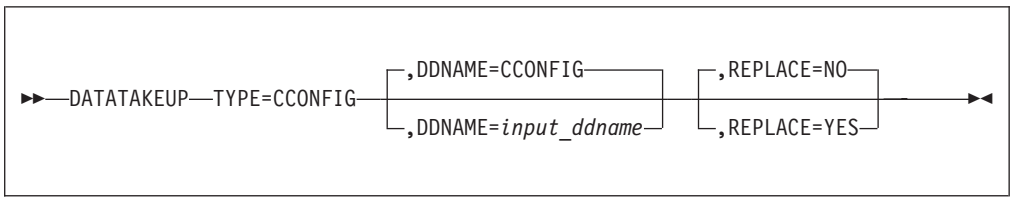
Purpose

Defines or updates CICS configurations that refer to CSD files or contexts. Use this batch command as a timesaving alternative to the interactive ISPF dialog option **1.2 CICS Configurations**. Rather than using the dialog to work with CICS configurations one at a time, you can use this command to define or update all of your CICS configurations in a single batch job.

To define or update CICS configurations that refer to export files, use the ISPF dialog interface.

Before defining or updating CICS configurations that refer to CSD files, read "Defining CICS configurations that refer to CSD files" on page 164.

Format



TYPE
The type of data to take up: must be CCONFIG (CICS configurations), the only type of data take-up currently supported.

DDNAME
The ddname of the input data set for the DATATAKEUP command.

The input data set contains text arranged in columns, specifying the attributes of the CICS configurations that you want to define or update.

The records in this input data set must be sorted in a particular order. Unless your input data set is already sorted in the required order, you need to sort it before calling DATATAKEUP. Rather than referring to the data set name of the original, unsorted input data set, the DDNAME parameter could refer to the output of a sort step. For details, see "JCL to define CICS configurations" on page 253.

REPLACE
Specifies what to do if the DATATAKEUP input data set specifies the name of a CICS configuration that already exists in the CICS Configuration Manager repository.

YES
Update the CICS configuration:

- Overwrite individual attributes, such as the description and the RLS access option (CSDRLS).
- Add repeating elements, such as transformation variables and remote system connections. (You cannot use DATATAKEUP to remove existing repeating elements. To remove repeating elements from a CICS configuration, use the ISPF dialog interface.)

NO Leave the CICS configuration untouched; ignore the records for this CICS configuration in the input data set.

Chapter 17. Unloading and loading journal records

The CICS Configuration Manager journal is a VSAM key-sequenced data set (KSDS) that contains a record of CICS Configuration Manager commands that have been performed, including all changes that CICS Configuration Manager has made to resource definitions. To limit the size of this data set, you may wish to periodically unload its records to another data set.

To unload journal records to a QSAM data set, optionally delete them from the journal, and then later, if required, load them back into the journal, use the batch housekeeping program CCVBHKP. This program allows you to select which records to unload or load according to the following criteria:

- Journal record creation date and time
- API command that caused the journal record to be created
- Location of the changed resource definition (CICS configuration name, context name, or CSD file name)

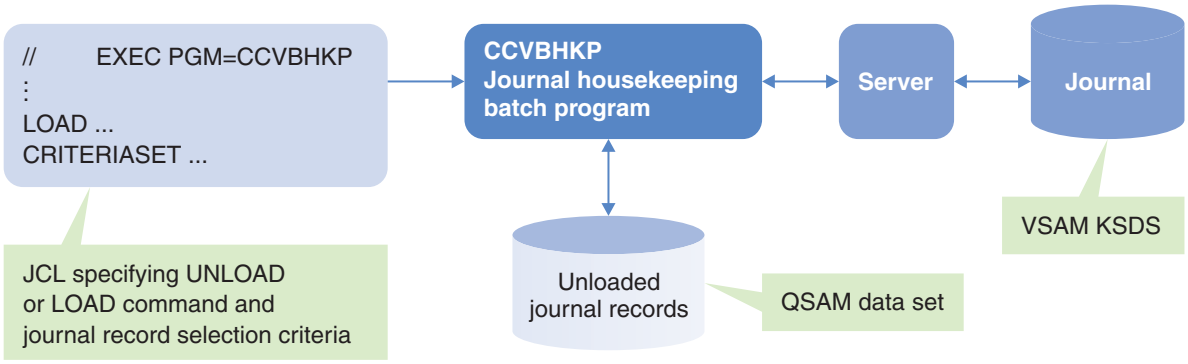


Figure 102. The batch housekeeping program unloads records from or loads records to the journal

JCL to unload or load journal records

The following example JCL performs two tasks:

1. Unloads (copies) to the CCVUNLD data set all journal records that are older than 31 days.
2. Deletes the unloaded records from the journal, except where deleting a record would leave less than two instances of a resource definition (identified by name, group, and type) in the journal. In such cases, the record remains in the journal, and also appears in the CCVUNLD data set.

```
//CCVXHKPU JOB your job statement information
//STEP     EXEC PGM=CCVBHKP
//STEPLIB  DD DISP=SHR,DSN=ccvhlq.SCCVAlang
//         DD DISP=SHR,DSN=ccvhlq.SCCVAUTH
//         DD DISP=SHR,DSN=cicshlq.SDFHEXCI
//CCVLOAD  DD DSN=datahlq.JOURNAL.DATA
//CCVPRINT DD SYSOUT=*
//CCVWORK  DD DSN=&WORK,
//            DISP=(NEW,DELETE,DELETE),SPACE=(CYL,(10,1)),UNIT=SYSDA,
//            DCB=(RECFM=VB,BLKSIZE=0,LRECL=8230,DSORG=PS)
//CCVUNLD  DD DSN=datahlq.JOURNAL.DATA,
//            DISP=(NEW,CATLG,DELETE),SPACE=(CYL,(10,1)),UNIT=SYSDA,
//            DCB=(RECFM=VB,BLKSIZE=0,LRECL=8230,DSORG=PS)
//CCVPARMS DD *
CONNECT IPADDRESS=ip_address,PORT=ip_port_number
UNLOAD      KEEPINSTANCES=2
CRITERIASET COND=(CREATETIME LT TODAY-31)
/*
```

Figure 103. Example JCL: unloading records from the journal

Similar JCL is supplied in the sample library SCCVSAMP member CCVXHKPU.

The following example JCL loads previously unloaded journal records that were created as a result of Migrate or Copy commands, where the resource definition affected by the command belongs to a CICS configuration whose name starts with the letters PROD.

```
//CCVXHKPL JOB your job statement information
//STEP     EXEC PGM=CCVBHKP
//STEPLIB  DD DISP=SHR,DSN=ccvhlq.SCCVAlang
//         DD DISP=SHR,DSN=ccvhlq.SCCVAUTH
//         DD DISP=SHR,DSN=cicshlq.SDFHEXCI
//CCVPRINT DD SYSOUT=*
//CCVLOAD  DD DSN=datahlq.JOURNAL.DATA
//CCVPARMS DD *
CONNECT IPADDRESS=ip_address,PORT=ip_port_number
LOAD
CRITERIASET COND=(API_COMMAND=MIGRATE),
            COND=(CONFIGURATION=PROD*)
CRITERIASET COND=(API_COMMAND=COPY),
            COND=(CONFIGURATION=PROD*)
/*
```

Figure 104. Example JCL: reloading records into the journal

Similar JCL is supplied in the sample library SCCVSAMP member CCVXHKPL.

The job control statements that are specific to the batch housekeeping program are:

CCVWORK
: Defines a temporary work file. This data set must have the following DCB attributes:
  LRECL=8230
  RECFM=VB
  BLKSIZE=0
  DSORG=PS

CCVUNLD or CCVLOAD

Defines the sequential data set where the journal records are to be unloaded to (CCVUNLD) or loaded from (CCVLOAD), depending on whether CCVPARMS contains an UNLOAD or a LOAD command. The CCVUNLD data set must have the following DCB attributes:

LRECL=8230
RECFM=VB
BLKSIZE=0
DSORG=PS

Follow the CONNECT command with an UNLOAD or a LOAD command, and then, optionally, one or more CRITERIASET parameters. You must supply the CONNECT command, the UNLOAD or LOAD command, and each CRITERIASET condition on separate input lines in the JCL. Each CRITERIASET can contain one or more conditions specifying the journal records that you want to load or unload. You can specify the same types of condition for either LOAD or UNLOAD.

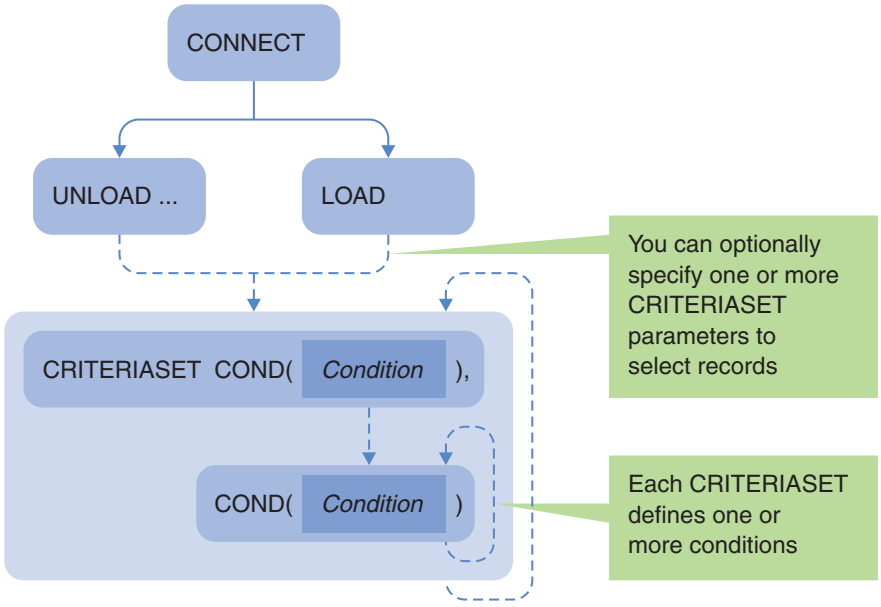


Figure 105. Batch housekeeping program: sequence of commands

When unloading, you can choose to specify the number of instances of a resource definition you want to keep in the journal, regardless of the conditions specified by CRITERIASET. You can also choose to unload journal records without deleting them from the journal.

System requirements for the batch housekeeping program

The batch housekeeping program has the following system requirements:

- The CICS region running the CICS Configuration Manager server must specify the CICS system initialization parameter RRMS=YES. This is described in the CICS Configuration Manager installation procedure in “Edit CICS system initialization parameters” on page 82; if that procedure has been followed, you should have nothing further to do to meet this requirement.
- The user ID under which the journal housekeeping batch job is performed must have the authority to invoke the transaction CCVR in the CICS region that is

running the CICS Configuration Manager server. For details, see *CICS Transaction Server for z/OS: CICS External Interfaces Guide*.

- The CICS region running the CICS Configuration Manager server must support connections via the external CICS interface (EXCI), as described below.

The journal housekeeping batch program initially connects to the CICS Configuration Manager server via Internet Protocol (IP), and then subsequently uses an EXCI connection to communicate with the server.

To allow the journal housekeeping batch program to communicate with the CICS Configuration Manager server via EXCI, the CICS region running the server must have a connection resource for the EXCI protocol, and a matching session resource.

If the CICS region does not have these resources, then you need to define them. The following figures show example EXCI connection and session resource definitions.

```
Connection Identifiers           Description
  NetName . . . . ________       Network name
  INDsys  . . . . ____           Intermediate system name

Remote Attributes
  RemoteSystem    ____           Net name of the Terminal Owing Region (TOR)
  RemoteName  . . ____           Connection name in remote system
  RemoteSYSNET    ________       Remote connection name

Connection Properties
  AccessMethod    IRC       +    Access method used by the connection
  Protocol  . . . EXCI       +   Protocol used by the network link
  ConnType  . . . GENERIC    +   Nature of EXCI connection
  SingleSESS  . . NO   +         APPC terminal on single-session APPC link
  DataStream  . . USER      +    Data stream type
  RecordFormat    U   +          Record format of the SNA chain
  QueueLimit  . . NO             Queue limit for requests awaiting sessions
  MaxQTime  . . . NO             Maximum queue time

Operational Properties
  AutoConnect . . NO   +         Autoconnect sessions for VTAM
  Inservice . . . YES  +         Connection status

Security
  SecurityName    ________       Security name for remote system
  AttachSEC . . . IDENTIFY   +   Level of attach-time security
  BindSecurity    NO   +         Bind time security
  UseDFLTuser . . NO   +         Use default user ID

Recovery
  PSrecovery  . . N_A        +   Persistent session recovery
  XLNaction . . . KEEP   +       Exchange lognames (XLN) action
```

Figure 106. Example connection resource definition for journal housekeeping batch program

```
Session Identifiers              Description
  Connection  . . BJNL           Connection definition name 1
  SessName  . . . ____           Session name
  NetNameQ  . . . ________       Name IMS system uses to identify session
  ModeName  . . . ________       VTAM LOGMODE entry for APPC connections

Session Properties
  Protocol  . . . EXCI       +   Intercommunication link protocol
  MaxInGRP  . . . 0              Maximum number of sessions in the group
  Maxctwin  . . . 0              Maximum contention winner sessions
  ReceivePfx  . . r3             Receive prefix
  ReceiveCount    10             Receive count
  ReceiveSize . . 4096           Receive buffer size
   SendPfx . . . . __             Send prefix
  SendCount . . . __             Send count
  SendSize  . . . 4096           Send buffer size
  SessPriority    0              Session priority

Preset Security
  Userid  . . . . ________       User signon ID

Operational Properties
  AutoConnect . . NO   +         Autoconnect option
  BuildChain  . . YES  +         Chain assembly required
  UserAreaLen . . 0              User area size
  IOareaLen . . . 4096           Minimum terminal in/out area size
  IOareaLen2  . . 4096           Alternate terminal in/out area size
  RelReq  . . . . NO   +         Honor release requests
  DiscReq . . . . NO   +         Honor disconnect requests
  NEPclass  . . . 0              Node Error Program transaction class

Recovery
  RecovOption . . SYSDEFAULT  +  Recovery option
```

Figure 107. Example session resource definition for journal housekeeping batch program

1 The Connection attribute of the session resource must match the name of the connection resource.

Reclaiming space after unloading journal records

The journal housekeeping batch program may delete journal records, but it does not reduce the space used by the journal data set. To reclaim the space used by the deleted records, you need to reorganize the journal data set after running the housekeeping program. For example:

1. Stop the CICS region that runs the CICS Configuration Manager server.
2. Use the IDCAMS REPRO command to reorganize the journal KSDS. Example JCL for this is provided in the sample library SCCVSAMP member CCVX0003.
3. Start the CICS region.

Possible MVS logger error messages

When you run the journal housekeeping batch program, you may occasionally see the following error message in the JES log for the CICS region that runs the CICS Configuration Manager server:

```
DFHLG0777 A temporary error condition occurred during MVS logger operation
IXGWRITE for log stream xxxxxxxx.DFHLOG.
MVS logger codes: X'00000008', X'00000865'.
```

This error occurs when the MVS logger is temporarily unable to keep up with the logging data from the load or unload job. Although CICS automatically delays the unload or load process until the MVS logger catches up, and then resumes the process, you should investigate normal tuning procedures to avoid this situation.

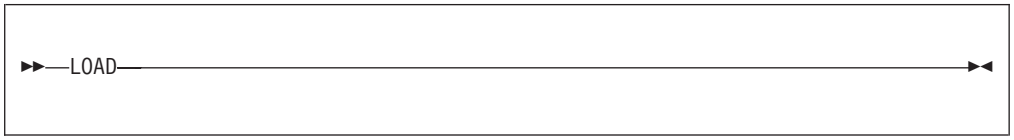
LOAD

Purpose

Loads journal records from the sequential data set defined by the ddname CCVLOAD back into the CICS Configuration Manager journal. LOAD does not delete records from the sequential data set.

You can optionally follow LOAD with one or more CRITERIASET commands to select which journal records to load. If you do not specify any CRITERIASET commands, LOAD selects all journal records.

Format



UNLOAD

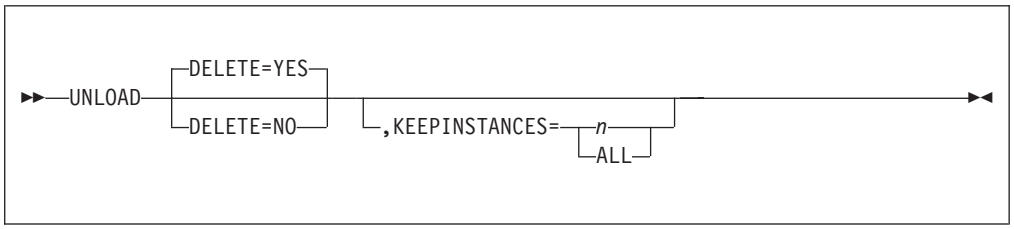
Purpose

Unloads journal records to the sequential data set defined by ddname CCVUNLD.

You can optionally follow UNLOAD with one or more CRITERIASET commands to select which journal records to unload. If you do not specify any CRITERIASET commands, UNLOAD selects all journal records.

To unload all journal records to CCVUNLD, and delete them from the journal, specify UNLOAD with no parameters, and no CRITERIASET.

Format



DELETE
Specifies whether to delete records from the journal after unloading them. The default is YES.

If you specify NO, then KEEPINSTANCES is ignored.

To delete records from the journal without unloading them to a file, use UNLOAD with DELETE=YES, and specify the ddname CCVUNLD with DSNAME=NULLFILE.

KEEPINSTANCES
Specifies the number of instances of before/after image records of each

resource definition to keep in the journal, regardless of whether the records are selected for unloading. You can specify a number, 1–9999, or ALL, to keep all before/after image records.

KEEPINSTANCES applies only to journal records that contain before/after images of resource definitions, such as records created as the result of an Update command. Journal records for operational commands that do not affect resource definitions, such as Install and Newcopy, do not contain before/images, and are not affected by KEEPINSTANCES.

To unload journal records for operational commands without deleting any before/after image records, specify KEEPINSTANCES=ALL.

CRITERIASET (for unloading or loading journal records)

Purpose

Defines optional selection criteria for the journal records to be unloaded or loaded by the preceding UNLOAD or LOAD batch command.

If you omit CRITERIASET, all journal records are selected.

You can specify multiple CRITERIASET commands, each defining one or more conditions. Conditions within a CRITERIASET are implicitly combined by a logical AND operator. Multiple CRITERIASET commands are implicitly combined by a logical OR operator.

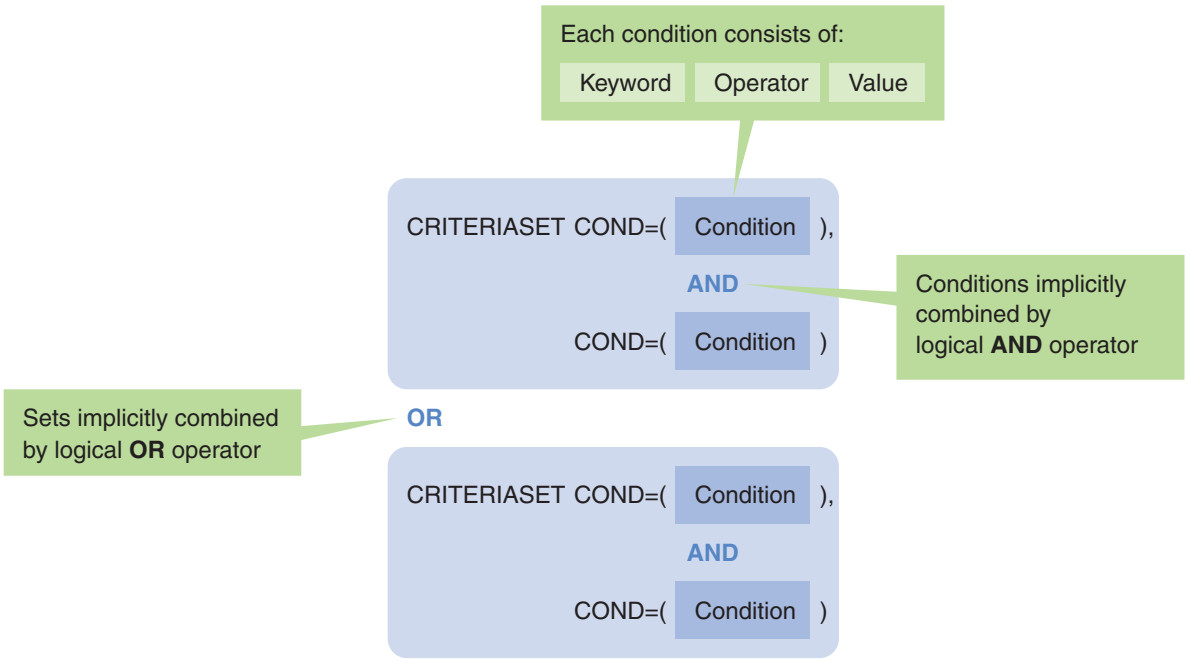
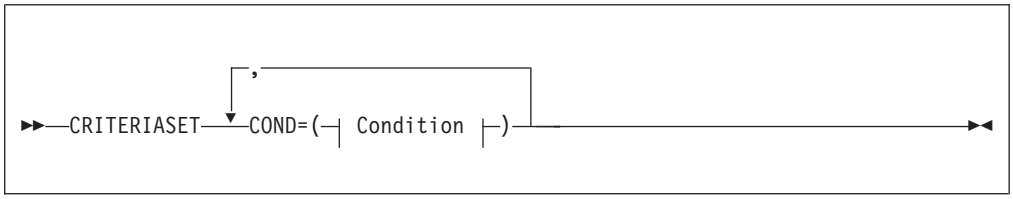
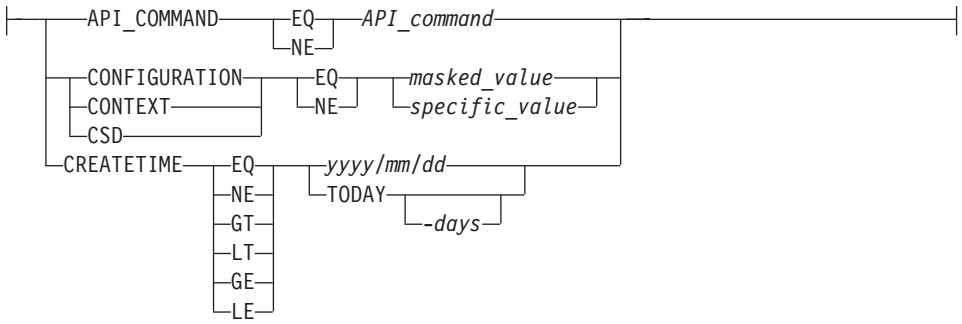


Figure 108. Defining optional selection criteria for unloading or loading journal records

Format



Condition:



You must specify at least one COND parameter in each CRITERIASET. Each COND parameter must appear on a separate input line, except for the first, which may appear on the same line as CRITERIASET. To specify comparison operators, you can use 2-letter codes or signs:

EQ or =
: Equal to

GE or >=
: Greater than or equal to

GT or >
: Greater than

LE or <=
: Less than or equal to

LT or <
: Less than

NE or ¬= or <>
: Not equal to

If you use a 2-letter code, such as EQ, then you must insert one or more blanks before and after the code. If you use a sign, such as =, then do not insert blanks before or after the sign. All parameter values are case-insensitive and are converted to uppercase prior to processing.

API_COMMAND
: Specifies an API command name, such as CREATE or MIGRATE, with no masking allowed. For a list of command names, see “Summary of API commands” on page 324.

CONFIGURATION, CONTEXT, or CSD
: The CSD value is the fully qualified data set name of a CSD file without

enclosing quotes. The CONFIGURATION value is the name of a CICS configuration, and the CONTEXT value is the name of a CICSPlex SM context.

You can use either a specific value or a masked value. The masked value can be either:

- A value with a single trailing asterisk (*), to match all values with those leading characters

  or

- A value with one or more plus signs (+) to match values with any character in those positions

  You cannot use a combination of * and + masking characters in the same value.

CREATETIME

Specifies the date that the journal record was created in the journal. This value is not affected by unloading or loading. You can specify this date as either:

- A 4-digit year, 2-digit month, and 2-digit day, separated by either forward slashes (/) or hyphens (-). For example, 2005/04/29 represents 29 April 2005.

  or

- The keyword TODAY optionally followed by a hyphen (minus sign) and a number of days, 0–9999. For example, CREATETIME GE TODAY-1 selects journal records created today (the day that you run the journal housekeeping program) and yesterday. TODAY and TODAY-0 are equivalent: they select journal records created today.

Chapter 18. Deployment analysis of resource definitions

Deployment analysis is the analysis of resource definitions that CICS *has* installed in an active CICS region, resource definitions that CICS *would* install when cold starting a CICS region, and the differences between these sets of resource definitions.

CICS Configuration Manager batch deployment analysis reports enable you to list or compare the following sets of resource definitions:

Runtime resource definitions
A set of installed resource definitions collected from an active CICS region.

Candidate resource definitions
A set of resource definitions that CICS would install when cold starting a CICS region, based on stored definitions collected from:

- A CSD file, restricted by a group sequence. This group sequence is similar to the CICS system initialization parameter GRPLIST, but allows more flexibility: it can contain a combination of lists and individual groups.
- A CICSPlex SM data repository, restricted by context and scope.
- A combination of the above two sources.

You can produce deployment analysis reports to:
- List a set of runtime or candidate resource definitions
- Compare two sets in any combination:
  - Two sets of runtime resource definitions
  - Two sets of candidate resource definitions
  - A set of runtime resource definitions with a set of candidate resource definitions

The following figure shows the different types of deployment analysis report, and the sets of resource definitions that they list or compare:

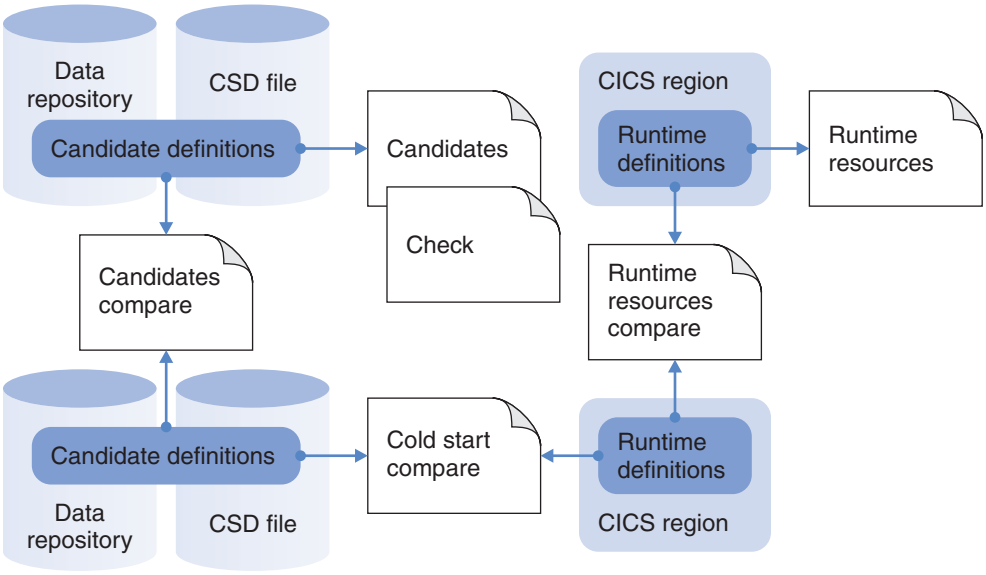


Figure 109. Deployment analysis reports: the resource definitions that each type of report lists or compares

Listing or comparing these sets of resource definitions helps you to answer questions about your CICS environment, and avoid potentially costly surprises caused by unexpected differences.

For example, the deployment analysis report that compares a set of runtime resource definitions with a set of candidate resource definitions is known as a *cold start compare* report, because it helps answer the question: what will be the effect of cold-starting a CICS region? Specifically, what is the difference between the set of resource definitions currently installed in an active CICS region, and the resource definitions that a CICS cold start would install from a CSD file (or CICSPlex SM data repository, or combination of the two)? Knowing the answer to this question helps you to systematically introduce desired changes into your mission-critical CICS applications. Not knowing the answer risks introducing unexpected changes that can cause downtime.

The following figure illustrates the concept of a cold start compare report. You cold-started a CICS region some time ago. Since then, the candidate resource definitions and runtime resource definitions might have been updated, introducing differences. What changes will the next cold start introduce?

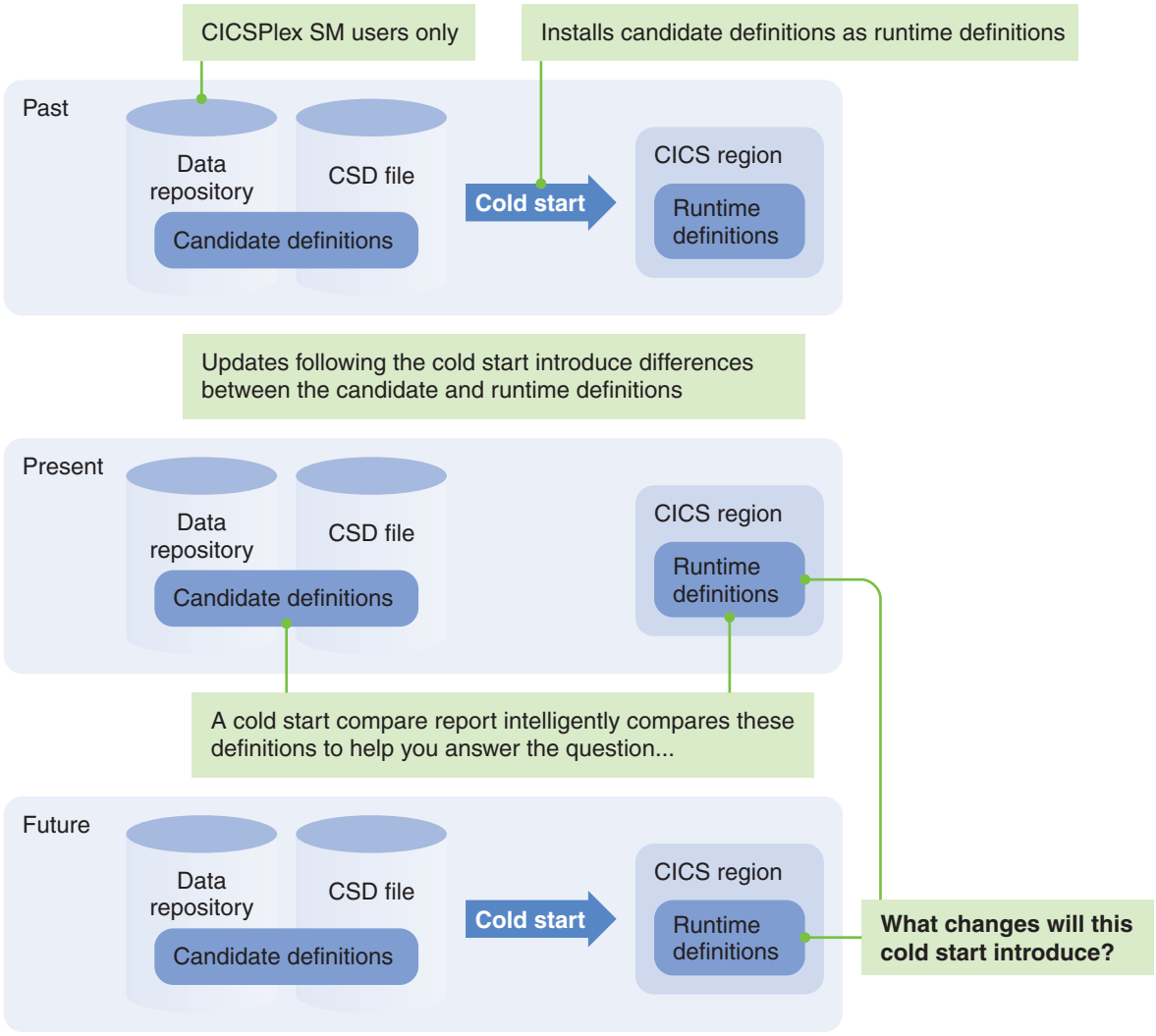


Figure 110. Deployment analysis reports: what will be the effect of cold-starting a CICS region?

Why collect candidates from a CSD file and a CICSPlex SM data repository?

When you cold-start a CICSPlex SM-managed region, the region must, at a minimum, install from a CSD file the CICS-supplied resource definitions (for example, the list DFHLIST) that enable the region to run the CICSPlex SM agent. The region might also install some application-specific resource definitions from the CSD file (for example, depending on the CICS system initialization parameter GRPLIST). Then the CICSPlex SM agent installs additional resource definitions from the CICSPlex SM data repository.

If you want to compare the set of resource definitions in an active CICSPlex SM-managed region with the set of candidate resource definitions that would be installed after a cold start, then you need to collect candidates from both the CSD file and the CICSPlex SM data repository.

If your site installs only the CICS-supplied resource definitions from CSD files, with all application-specific resource definitions coming from a CICSPlex SM data repository, then you might choose to collect candidates from the data repository only, and ignore the candidates in the CSD files. When comparing the candidates with a set of runtime resource definitions, you can specify a filter to suppress report items for the missing candidate CICS-supplied (DFH*) resource definitions.

The following table describes the different types of deployment analysis report:

Table 15. Deployment analysis report types

Report type	What it does	Questions it helps answer
Cold start compare	Compares a set of runtime resource definitions (installed in an active CICS region) with a set of candidate resource definitions (stored in a CSD file, a CICSPlex SM data repository, or a combination of the two).	What will be the effect of a cold start? This report helps you understand the difference that a cold start would make to the resource definitions installed in an active CICS region if you were to cold-start that region using a particular set of candidate resource definitions. This report identifies anomalies where candidate resource definitions are new, missing, or differ from the runtime resource definitions. This report also identifies duplicate candidates, and candidates that rely on definitions that do not exist, or would not yet have been installed. For example, suppose you have just created resource definitions that you have organized into a list in a CSD file. What would be the difference between cold-starting a CICS region from the lists used previously, and cold-starting the region with new lists?

Table 15. Deployment analysis report types (continued)

Report type	What it does	Questions it helps answer
Candidates compare	Compares two sets of candidate resource definitions (stored in a CSD file, a CICSPlex SM data repository, or a combination of the two).	Are the candidates for two CICSPlex SM scopes, two CSD lists, or a scope and a list the same? Will moving a group to a different position in a list create problems? This report helps you understand how the resource definitions that CICS would install in a cold-started region would differ depending on the set of stored resource definitions used. For example: • Suppose you are migrating to a new CICS release, and you have upgraded your CSD files, or copied resource definitions from your old CSD files to new CSD files. What would be the difference between cold-starting a CICS region from the old CSD files, and cold-starting from the new CSD files? • Suppose you have migrated your application resource definitions from CSD files to a CICSPlex SM data repository. Will cold-starting a CICS region using the resource definitions stored in the data repository produce the same result (same set of resource definitions installed in the region) as cold-starting from the old CSD files?
Runtime resources compare	Compares two sets of runtime resource definitions (installed in two active CICS regions).	Are my cloned CICS regions the same? This report helps you understand why two CICS regions, which you believe should have identical installed resource definitions, are exhibiting different behavior. For example, have CEMT SET or INSTALL commands introduced differences into your “cloned” regions?
Runtime resources	Lists a set of runtime resource definitions (installed in an active CICS region).	What resource definitions are currently installed in this CICS region? You can use this report to perform your own before/after analysis. For example, you can produce one report before cold-starting a region, produce another after the cold start, and then run the comparison utility of your choice to analyze the differences between the two reports.
Candidates	Lists a set of candidate resource definitions (stored in a CSD file, a CICSPlex SM data repository, or a combination of the two).	Which resource definitions would CICS would install in a cold-started region (based on the resource definitions stored in the specified CSD file, context, or combination of the two)? In addition to listing candidate resource definitions, this report helps identify referential integrity (“consistency”) issues between resource definitions, and issues caused by duplicate resource definitions.

Table 15. Deployment analysis report types (continued)

Report type	What it does	Questions it helps answer
Check	Lists referential integrity issues in a set of candidate resource definitions (stored in a CSD file, a CICSPlex SM data repository, or a combination of the two).	Are these candidate resource definitions (stored in the specified CSD file, context, or combination of the two) consistent with one another? This report performs a superset of the consistency checks performed by the CICS CEDA CHECK command. While CEDA CHECK is limited to performing consistency checks on a CSD file, you can produce this CICS Configuration Manager deployment analysis check report for resource definitions that are stored in a CSD file, a CICSPlex SM data repository, or a combination of the two. The check report is identical to the candidates report (described above), except that the check report contains checking results only, omitting the list of candidate resource definitions. You can also perform these checks via the ISPF dialog. For details, see "Checking the consistency of lists and groups" on page 189

The following figure shows how CICS Configuration Manager collects resource definitions for a deployment analysis report:

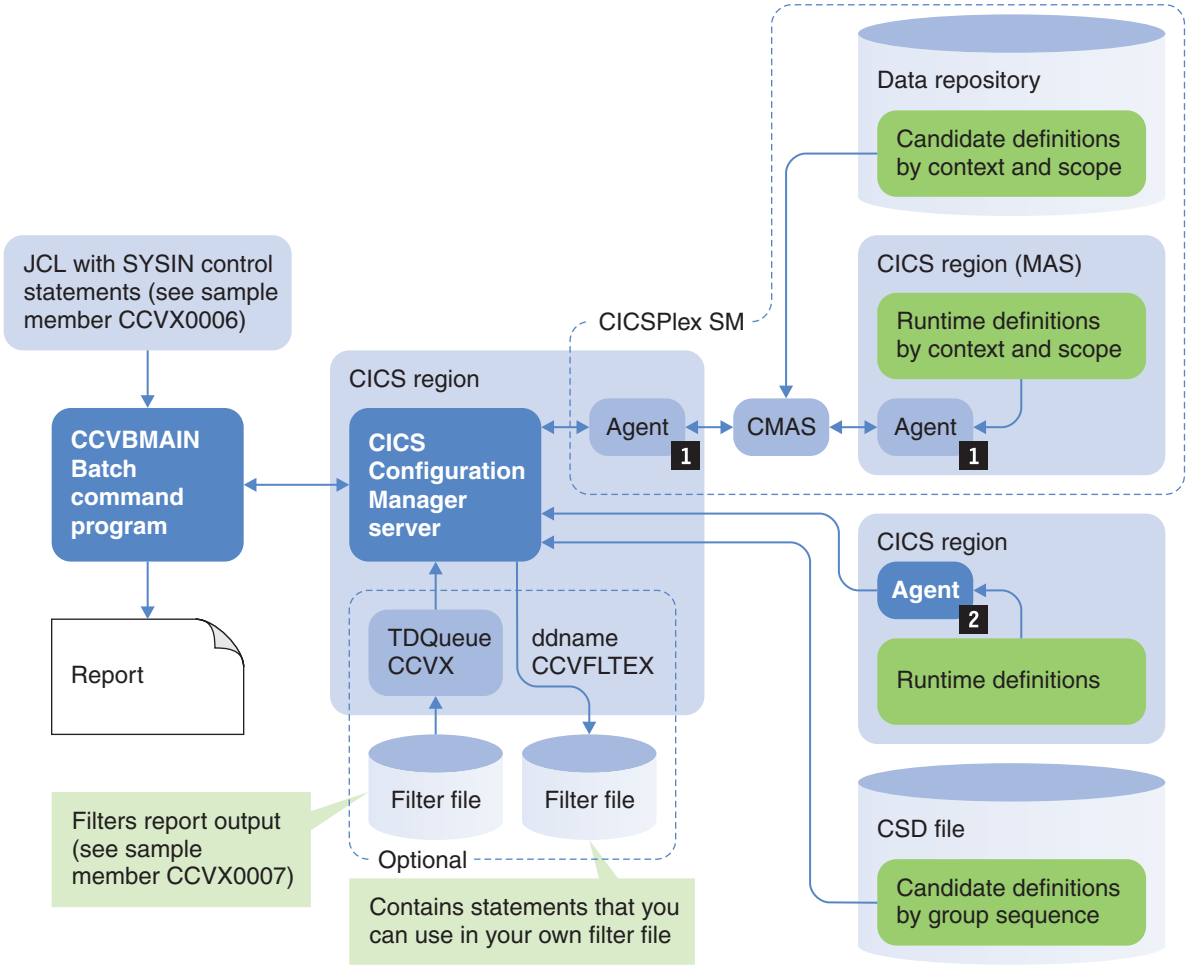


Figure 111. Overview of deployment analysis reporting

To collect runtime resource definitions you must have installed in the region either:

1. The CICSPlex SM agent
2. The CICS Configuration Manager agent (for details, see "Optional: Configure the agent for CSD-based CICS regions" on page 92)

You can use a filter file to suppress specific conditions or resource definitions from deployment analysis reports. For details on creating a filter file, see "Filtering resource definitions from deployment analysis reports" on page 275.

To read the filter file, the CICS Configuration Manager server uses a transient data queue named CCVX. The server dynamically defines CCVX (replacing any existing definition) using the data set name of the filter file specified by the FILTERDATASET parameter of the DEPLOY command in the SYSIN control statements for the job.

If you specify the optional ddname CCVFLTEX in your report JCL, the job output includes a filter file that contains a filter statement for each item in the generated report. To suppress an item from future reports, copy and paste the corresponding filter statement from this file to your own filter file.

You can compare sets of resource definitions across any CICS releases supported by CICS Configuration Manager.

Collecting and checking candidate resource definitions

When collecting candidates, CICS Configuration Manager uses the same rules as CICS when selecting which resource definitions to install after a cold start:

- When collecting from a CSD file: the rules of precedence regarding the order of lists, including generically named lists, that CICS selects via the system initialization parameter (SIT) GRPLIST, and the order of groups in those lists.

  CICS Configuration Manager allows you to specify lists in similar manner to the GRPLIST SIT parameter. However, CICS Configuration Manager provides more flexibility than the GRPLIST SIT parameter, enabling you to easily simulate and test changes in group sequence. You can specify more than four lists in the group sequence, and you can add individual groups to the sequence, simulating the effect of those groups being in the startup lists without actually having to edit the lists. For details, see the GROUP and GRPLIST parameters of the DEPLOY command.
- The rules of precedence regarding duplicate resource definition names.
- CICSPlex SM only: the effect of RASGNDEF (resource assignment) resource definitions on a cold start (selection of resource definitions; local and remote resource definitions; modification of resource definition attributes).
- When collecting from a combination of CSD file and CICSPlex SM data repository, CICS Configuration Manager follows the same order that CICS follows at cold start: CSD file first, then CICSPlex SM data repository.

CICS Configuration Manager performs various checks to verify whether candidates will actually be installed, and includes the results of these checks in the deployment analysis report. These checks include:

Duplicate checks
: When collecting a set of candidate resource definitions from a CSD file, or a combination of CSD file and CICSPlex SM data repository, the deployment analysis reports notify you of any duplicate resource definitions in the set, including which duplicate, if any, CICS would install, and why the others would be not installed.

Referential integrity checks
: In some cases, CICS installs a resource definition only if another required resource definition has already been installed. For example, before installing DB2 entries you must install a DB2 connection. The deployment analysis reports include error messages to notify you of cases where a resource definition would not be installed because it requires a resource definition that is not yet installed.

  In other cases, CICS installs a resource definition even if it requires a resource definition that has not yet been installed. For example, CICS will install a transaction even if the program to which it refers has not yet been installed (the program might be autoinstalled on-demand). The deployment analysis reports include warning messages to notify you of cases where a resource definition would be installed even though it requires a resource definition that is not yet installed.

When collecting candidate resource definitions from a CSD file, you must specify the system ID (SYSID) of the CICS region where, for the purposes of deployment analysis reporting, the candidate resource definitions would be installed. This enables the report to handle any candidate resource definitions that specify remote system (REMOTESYSTEM) attribute values:

- If the REMOTESYSTEM attribute value matches the SYSID that you specify for the report, the report interprets the resource definition as a local resource definition.
- Otherwise, the report interprets the resource definition as a remote resource definition.

Whether the report interprets a resource definition as local or remote is especially significant for comparison reports, which notify you when a resource definition has been installed locally in one set of resource definitions, but as a remote resource definition in the other set.

Filtering resource definitions from deployment analysis reports

To suppress unwanted items from a deployment analysis report, use the FILTERDATASET parameter of the DEPLOY command to refer to a filter file. A filter file is a sequential data set with a fixed-blocked (FB) record format and a logical record length of 80 bytes. A filter file contains plain text in a tabular layout: each line is a filter statement that specifies criteria for report items you want to suppress. For details, see the filter file supplied in member CCVX0007 of the sample library SCCVSAMP.

If you specify the optional ddname CCVFLTEX in your report JCL, the job output includes a filter file that contains a filter statement for each item in the generated report. To suppress an item from future reports, copy and paste the corresponding filter statement from this file to your own filter file.

Filter statements in the CCVFLTEX filter file identify a specific, individual report item. Rather than copying these into your own filter file, you might want to review them, and specify generic filter statements (with patterns) instead.

For runtime resource definitions, filter statements in the CCVFLTEX filter file specify the APPLID value of the CICS region from which the resource definition was collected. If you want these filter statements to apply in other situations, change this APPLID value to the generic pattern * (asterisk).

Tip:

- To suppress all report items for CICS-supplied resource definitions for Language Environment, specify a filter statement with CEE in the Group column. For example:

```
* Rpt Applid   Code Text      Name     Type         Group    Comments
* --- -------- ---- --------- -------- ------------ -------- ------------------
  DEP *        **** All       *        *            CEE      LE
```

- If you use autoinstalled program definitions, then you might wish to suppress the corresponding “missing” and “referential integrity” report items for program definitions:

```
* Rpt Applid   Code Text      Name     Type         Group    Comments
* --- -------- ---- --------- -------- ------------ -------- ------------------
  DEP *        02** AI PROG   *        PROGRAM      *        Autoinstalled PROG
  DEP *        0950 AI PROG   *        PROGRAM      *        Autoinstalled PROG
```

- Similarly, to suppress unwanted report items for autoinstalled terminal definitions:

```
* Rpt Applid   Code Text      Name     Type         Group    Comments
* --- -------- ---- --------- -------- ------------ -------- ------------------
  DEP *        02** AI PROG   *        TERMINAL     *        Autoinstalled TERM
  DEP *        0955 AI PROG   *        TERMINAL     *        Autoinstalled TERM
```

(In this 0955 filter statement, and in the similar 0950 filter statement for programs, above, specifying the TERMINAL or PROGRAM resource type is not strictly necessary, because the code is specific to that resource type.)

Before requesting a deployment analysis report

Before submitting a job to request a deployment analysis report, you must perform the following tasks:

- Define a CICS configuration for each CSD file and CICSPlex SM context involved in the report. For details on defining CICS configurations, see "Defining CICS Configuration Manager repository records" on page 163.
- If the report involves collecting runtime resource definitions:
  - Ensure that the associated CICS regions are active.
  - Ensure that either the CICS Configuration Manager agent or the CICSPlex SM agent is installed in that region. For details on installing the CICS Configuration Manager agent, see "Optional: Configure the agent for CSD-based CICS regions" on page 92.

JCL to generate a deployment analysis report

The following JCL produces a cold start compare report, where the candidate resource definitions are stored in a combination of CSD file and CICSPlex SM data repository. A version of this JCL (with additional comments and examples) is supplied in the member CCVX0006 of the sample library SCCVSAMP.

```
//CCVJOB   JOB your job statement information
//STEP     EXEC PGM=CCVBMAIN
//STEPLIB  DD DISP=SHR,DSN=ccvhlq.SCCVAlang  1
//         DD DISP=SHR,DSN=ccvhlq.SCCVAUTH
//CCVPRINT DD SYSOUT=*
//CCVREPRT DD SYSOUT=*
//CCVFLTEX DD SYSOUT=*  2
//CCVPARMS DD *  3
CONNECT IPADDRESS=ip_address,PORT=ip_port_number
DEPLOY  PHASE=COLLECT,
                      REPORTSET=1,
                      TYPE=CANDIDATES,
                      CONFIGURATION=PRODACSD,
                      GRPLIST=DFHLIST,
                      GRPLIST=START*,
                      LOCALSYSID=PRDA,
        PHASE=COLLECT,
                      REPORTSET=1,
                      TYPE=CANDIDATES,
                      CONFIGURATION=PRODAPLX,
                      SCOPE=PRODAPLX,
        PHASE=COLLECT,
                      REPORTSET=2,
                      TYPE=RUNTIME,
                      CONFIGURATION=PRODAPLX,
                      SCOPE=PRODAPLX,
        PHASE=REPORT,
                      TYPE=COLDSTARTCOMPARE,
                      FILTERDATASET=MYID.CCV.DAFILTER  2
/*
```

Figure 112. Example JCL: generating a cold start compare report

1 The STEPLIB concatenation must contain the CICS Configuration Manager national language support (NLS) load module library and authorized program load module library. All libraries in the STEPLIB concatenation must be APF-authorized.

2 If you specify the optional ddname CCVFLTEX in your report JCL, the job output includes a filter file that contains a filter statement for each item in the generated report. To suppress an item from future reports, copy and paste the corresponding filter statement from this file to your own filter file. For details, see "Filtering resource definitions from deployment analysis reports" on page 275.

3 The CCVPARMS input stream must consist of a CONNECT statement followed by a DEPLOY statement. The CONNECT statement identifies the CICS Configuration Manager server that will prepare the report. The DEPLOY statement specifies the details of the report, consisting of one or more collection phases and one report phase. This example contains three collection phases:

1. Collects candidate resource definitions from a CSD file. The CONFIGURATION parameter for this collection phase specifies a CICS configuration that refers to a CSD file. The two GRPLIST parameters specify lists in the CSD file.
2. Collects candidate resource definitions from a CICSPlex SM data repository. The CONFIGURATION parameter for this collection phase specifies a CICS configuration that refers to a context. The SCOPE parameter specifies the target scope.
3. Collects runtime resource definitions from an active CICS region. The CONFIGURATION parameter for this collection phase specifies a CICS configuration that refers to a context (the same CICS configuration as the previous collection phase).

   This CONFIGURATION parameter, together with the presence of the SCOPE parameter, instructs CICS Configuration Manager to collect the runtime resource definitions via the CICSPlex SM agent. If the CONFIGURATION parameter had specified a CICS configuration that referred to a CSD file, and you specified a CONNECTION parameter instead of a SCOPE parameter, then CICS Configuration Manager would collect the runtime resource definitions via the CICS Configuration Manager agent.

The REPORTSET=1 parameters on the first two collection phases instruct CICS Configuration Manager to combine the candidate resource definitions from the CSD file and the CICSPlex SM data repository into a single set.

For details of the syntax of the CONNECT command, see "CONNECT" on page 225.

For details of the syntax of the DEPLOY command, see "DEPLOY" on page 278.

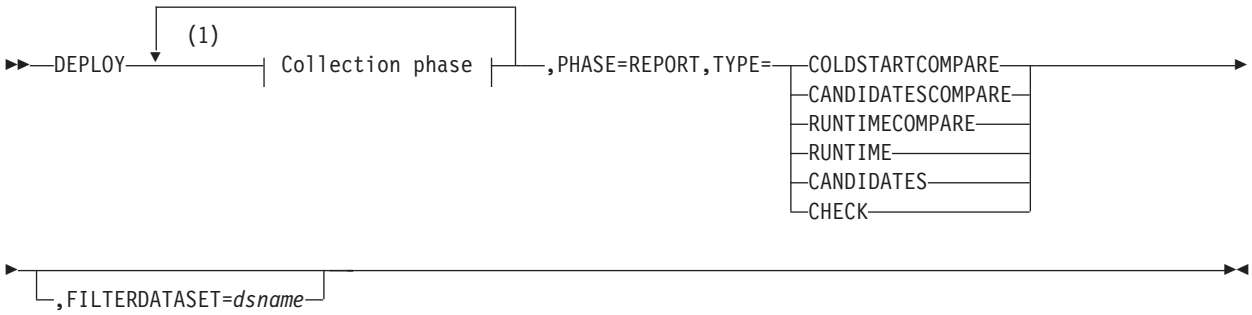
For additional general information on writing JCL for the batch command program, see "JCL to invoke the batch command program" on page 223.

DEPLOY

Purpose

Requests a deployment analysis report. For a description of each type of deployment analysis report, see Table 15 on page 270.

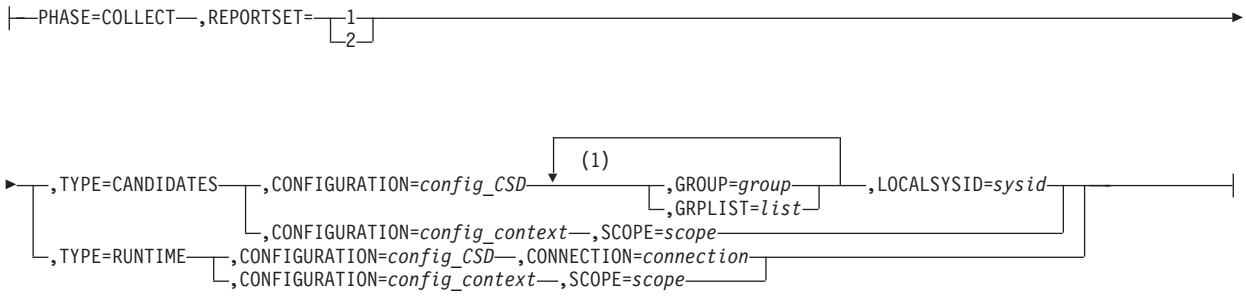
Format



Notes:

1 The number and type of collection phases depends on the report type. For details, see the description of the PHASE parameter.

Collection phase:



Notes:

1 The total number of GROUP and GRPLIST parameters is limited to 1000.

PHASE

A DEPLOY command consists of one or more collection phases, each marked by a PHASE=COLLECT parameter, followed by one reporting phase, marked by a PHASE=REPORT parameter. Each collection phase specifies candidate or runtime resource definitions required for the report. The report phase specifies the type of report that you want to produce.

Deployment analysis reports refer to the input to each collection phase as a *data source*. The reports assign a two-digit ID to each data source: 01, 02, 03, etc. These IDs match the order of the PHASE=COLLECT parameters in the DEPLOY command. For example, the ID of the data source for the first PHASE=COLLECT parameter is 01.

The type of report determines the number and type of collection phases. To understand this relationship, it is useful to think of collection phases in terms of *report sets* (the sets of collected data that the report requires):

- Depending on the report type, the report either lists one report set or compares two report sets.
- Collecting a report set of runtime resource definitions requires one collection phase.
- Collecting a report set of candidate resource definitions requires either one or two collection phases (two, if you want to combine candidates from a CSD file and a context).

The following table shows the number and type of collection phases for each report type.

In the DEPLOY command formats in the following table:

- Square brackets ([]) indicate optional parameters.
- Ellipses (...) indicate required parameters omitted from this listing. For details of the omitted parameters, see the syntax diagram for the DEPLOY command.
- If you specify two collection phases for a report set of candidate resource definitions, then the CONFIGURATION parameter of one of these collection phases must specify a CICS configuration that refers to a CSD file, and the other must specify a CICS configuration that refers to a context.

Table 16. Deployment analysis report types: number and type of collection phases

Report type	Number and type of collection phases	DEPLOY command format
Cold start compare	Two or three collection phases: • One collection phase for the report set of runtime resource definitions. • One or two collection phases for the report set of candidate resource definitions.	DEPLOY PHASE=COLLECT,REPORTSET=1,TYPE=RUNTIME,..., PHASE=COLLECT,REPORTSET=2,TYPE=CANDIDATES,..., [PHASE=COLLECT,REPORTSET=2,TYPE=CANDIDATES,...,] PHASE=REPORT,TYPE=COLDSTARTCOMPARE
Candidates compare	Two to four collection phases: • One or two collection phases for the first report set of candidate resource definitions. • One or two collection phases for the second report set of candidate resource definitions.	DEPLOY PHASE=COLLECT,REPORTSET=1,TYPE=CANDIDATES,..., [PHASE=COLLECT,REPORTSET=1,TYPE=CANDIDATES,...,] PHASE=COLLECT,REPORTSET=2,TYPE=CANDIDATES,..., [PHASE=COLLECT,REPORTSET=2,TYPE=CANDIDATES,...,] PHASE=REPORT,TYPE=CANDIDATESCOMPARE
Runtime resource compare	Two collection phases: one for each report set of runtime resource definitions.	DEPLOY PHASE=COLLECT,REPORTSET=1,TYPE=RUNTIME,..., PHASE=COLLECT,REPORTSET=2,TYPE=RUNTIME,..., PHASE=REPORT,TYPE=RUNTIMECOMPARE
Runtime resources	One collection phase.	DEPLOY PHASE=COLLECT,REPORTSET=1,TYPE=RUNTIME,..., PHASE=REPORT,TYPE=RUNTIME
Candidates	One or two collection phases for the report set of candidate resource definitions.	DEPLOY PHASE=COLLECT,REPORTSET=1,TYPE=CANDIDATES,..., [PHASE=COLLECT,REPORTSET=1,TYPE=CANDIDATES,...,] PHASE=REPORT,TYPE=CANDIDATES

Table 16. Deployment analysis report types: number and type of collection phases (continued)

Report type	Number and type of collection phases	DEPLOY command format

Check	As above, for the candidates report.	`DEPLOY`
		`  PHASE=COLLECT,REPORTSET=1,TYPE=CANDIDATES,...,`
		`[PHASE=COLLECT,REPORTSET=1,TYPE=CANDIDATES,...,]`
		`  PHASE=REPORT,TYPE=CHECK`

REPORTSET
Identifies the report set to which a collection phase belongs.

For example, the following DEPLOY command compares two report sets of candidate resource definitions. One set is for a test environment, the other set is for a production environment. Each set combines resource definitions from a CSD file and a CICSPlex SM data repository. The REPORTSET parameter groups together the appropriate pairs of collection phases. Report set 1 identifies the candidate resource definitions for the test environment, where TESTCSD1 specifies a CICS configuration that refers to a CSD file, and TESTPLX1 refers to a context. Similarly, report set 2 identifies the candidates for the production environment.

```
DEPLOY PHASE=COLLECT,REPORTSET=1,
         TYPE=CANDIDATES,CONFIGURATION=TESTCSD1,GRPLIST=DFHLIST,LOCALSYSID=TST1,
       PHASE=COLLECT,REPORTSET=1,
         TYPE=CANDIDATES,CONFIGURATION=TESTPLX1,SCOPE=TEST1,
       PHASE=COLLECT,REPORTSET=2,
         TYPE=CANDIDATES,CONFIGURATION=PRODCSD1,GRPLIST=DFHLIST,LOCALSYSID=PRD1,
       PHASE=COLLECT,REPORTSET=2,
         TYPE=CANDIDATES,CONFIGURATION=PRODPLX1,SCOPE=PROD1,
       PHASE=REPORT,TYPE=CANDIDATESCOMPARE
```

TYPE (for PHASE=COLLECT)
Specifies whether to collect candidate resource definitions or runtime resource definitions:

CANDIDATES
Collects candidate resource definitions from a CSD file or a context.

RUNTIME
Collects in-memory resource definitions from an active CICS region.

FILTERDATASET
Optional. The fully qualified data set name of a filter file, without enclosing quotes. The filter file specifies criteria for items that you want to suppress from the report. For details, see "Filtering resource definitions from deployment analysis reports" on page 275.

CONFIGURATION
A CICS configuration that refers to a CSD file or a context.

GROUP and GRPLIST
Valid only when collecting candidate resource definitions from a CSD file. The names of the groups (specified by GROUP) and the lists (specified by GRPLIST) containing the candidate resource definitions that you want to collect from a CSD file.

The order of the GROUP and GRPLIST parameters is significant: specify them in the order that you would want the groups and lists to be installed. The total number of GROUP and GRPLIST parameters is limited to 1000.

Similar to the CICS system initialization (SIT) parameter GRPLIST, the DEPLOY command parameters GROUP and GRPLIST specify a *group sequence*. However, the DEPLOY command parameters provide more flexibility than the

SIT parameter, enabling you to easily simulate and test changes in group sequence, such as the addition or removal of groups or lists in the sequence.

The following examples show how to use GROUP and GRPLIST to collect candidate resource definitions for a cold start compare report. In these examples, the runtime resource definitions for the report are from a CICS region that was started using the following GRPLIST SIT parameter:

```
GRPLIST(DFHLIST,LISTA,LISTB,LISTC*)
```

Simple case: same group sequence for candidate and runtime resource definitions

If you simply want to collect candidate resource definitions using the same group sequence as the runtime definitions, then you specify GRPLIST parameters to match the lists that initialized the CICS region. For example, to match the GRPLIST SIT parameter shown above, specify the following GRPLIST parameters in your DEPLOY command:

```
GRPLIST=DFHLIST,
GRPLIST=LISTA,
GRPLIST=LISTB,
GRPLIST=LISTC*
```

(One GRPLIST parameter for each list, following the same sequence as the SIT parameter. In this simple case, the GROUP parameter is unnecessary.)

Adding a group to the group sequence

Instead of having to actually add the group to a list, you can use the GROUP parameter to simulate adding the group. For example, suppose you want to analyze the effect of appending a new group, called NEWGROUP, to LISTA. You can simulate this by inserting a GROUP parameter for NEWGROUP after the GRPLIST parameter for LISTA:

```
GRPLIST=DFHLIST,
GRPLIST=LISTA,
GROUP=NEWGROUP,
GRPLIST=LISTB,
GRPLIST=LISTC*
```

Now suppose that, instead of appending NEWGROUP to LISTA, you want to insert NEWGROUP among the groups in LISTB. (LISTB consists of the groups GROUPB1, GROUPB2, and GROUPB3.) You can simulate this by replacing the GRPLIST parameter for LISTB with GROUP parameters that explicitly specify each group in LISTB, and then inserting NEWGROUP where you want it:

```
GRPLIST=DFHLIST,
GRPLIST=LISTA,
GROUP=GROUPB1,
GROUP=NEWGROUP,
GROUP=GROUPB2,
GROUP=GROUPB3,
GRPLIST=LISTC*
```

Removing a group from the group sequence

Instead of having to actually remove the group from a list, you can use GROUP parameters to simulate removing the group. For example, suppose LISTA consists of the groups GROUPA1, GROUPA2, and GROUPA3. You want to analyze the effect of removing GROUPA2.

Instead of specifying a GRPLIST parameter for LISTA, you specify a GROUP parameter for each of its groups except GROUPA2:

```
GRPLIST=DFHLIST,
GROUP=GROUPA1,
GROUP=GROUPA3,
GRPLIST=LISTB,
GRPLIST=LISTC*
```

Removing a list from a group sequence that specifies a generic group list name

Suppose that the LISTC* pattern specified by your GRPLIST SIT parameter matches the lists LISTC1, LISTC2, and LISTC3. You want to analyze the effect of removing LISTC2 from this sequence. In your DEPLOY command, instead of a GRPLIST=LISTC* parameter, specify a separate GRPLIST parameter for each of the remaining lists:

```
GRPLIST=DFHLIST,
GRPLIST=LISTA,
GRPLIST=LISTB,
GRPLIST=LISTC1,
GRPLIST=LISTC3
```

Notice that, in this example, we have specified more than four GRPLIST parameters, which would not be allowed in a GRPLIST SIT parameter.

The GRPLIST parameter can specify the same values for a name as the GRPLIST SIT parameter: either a real group list name or a generic group list name that incorporates global filename characters (+ and *). For more information on the allowed values for GRPLIST, see the CICS documentation for the GRPLIST SIT parameter.

The GROUP parameter must specify a particular group name: it does not allow generic names.

If the CONFIGURATION parameter specifies a CICS configuration that refers to a CSD file, then you must specify at least one GROUP or GRPLIST parameter. (Unlike the GRPLIST CICS system initialization parameter, these parameters have no default value; the GRPLIST parameter of the DEPLOY command does not default to DFHLIST.)

If the CONFIGURATION parameter specifies a CICS configuration that refers to a context, GRPLIST and GROUP are not allowed.

LOCALSYSID

Valid only when collecting candidate resource definitions from a CSD file.

The SYSID of the CICS region where, for the purposes of this deployment analysis report, the resource definitions would be installed. This enables the report to handle any candidate resource definitions that specify remote system (REMOTESYSTEM) attribute values:

- If the REMOTESYSTEM attribute value matches the SYSID that you specify for the report, the report interprets the resource definition as a local resource definition.
- Otherwise, the report interprets the resource definition as a remote resource definition.

Whether the report interprets a resource definition as local or remote is especially significant for comparison reports, which notify you when a resource definition has been installed locally in one set of resource definitions, but as a remote resource definition in the other set.

SCOPE
Valid only when collecting candidate or runtime resource definitions via CICSPlex SM.

The CICSPlex SM target scope. This must match a CSYSDEF name. CSYSGRP names are not supported.

CONNECTION
Valid only when collecting runtime resource definitions via the CICS Configuration Manager agent.

The name of the connection that the CICS Configuration Manager server uses to connect to the CICS Configuration Manager agent.

The DFHCSD file data set name of the CICS region must match the CSD file data set name referred to by the CICS configuration (specified by the CONFIGURATION parameter).

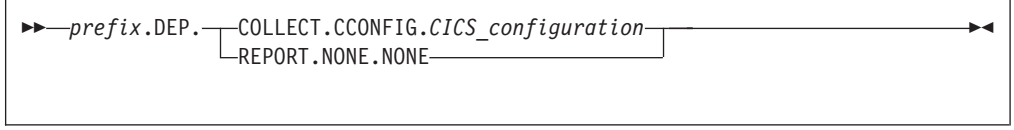
TYPE (for PHASE=REPORT)
The type of deployment analysis report that you want to produce:
- COLDSTARTCOMPARE
- CANDIDATESCOMPARE
- RUNTIMECOMPARE
- RUNTIME
- CANDIDATES
- CHECK

For a description of each type of deployment analysis report, see Table 15 on page 270.

Security key

You can use the following security key format to restrict who can collect data from particular CICS configurations, and who can request deployment analysis reports:

API command (READ access authority):



For information on using security keys, see "Restricting access to API commands and resource definitions" on page 107.

Interpreting the sections of a deployment analysis report

Each deployment analysis report consists of several sections. The following table shows which sections appear in each report type, and the order in which the sections appear. Reports omit empty sections (sections for which there is no data to report).

Table 17. Deployment analysis reports: sections in each report type

Deployment analysis report section	**Appears in this report type?**					
Title	**Cold start compare**	**Candidates compare**	**Runtime compare**	**Runtime**	**Candidates**	**Check**
Report options	✓ Common "header" sections that appear in all reports					
Data sources						
Report summary						
Filtering summary						
Resource definitions				✓	✓	
Matched definitions (with exceptions)	✓	✓	✓			
Missing definitions	✓	✓	✓			
New definitions	✓					
Mismatched definitions	✓	✓	✓			
Duplicate definitions verification	✓	✓			✓	✓
Referential integrity verification Referential integrity verification messages (contains descriptions of the message codes cited in the previous section)	✓	✓			✓	✓

Report options

This is a common header section that appears in all deployment analysis reports.

Purpose

Lists the JCL SYSIN control statements (CONNECT command and DEPLOY command) that requested this report.

Example

```
                      CICS Deployment Analysis Report
                         Cold Start Compare Report
                              Report Options

CONNECT    IPADDRESS=LOCALHOST,PORT=10418,SSL=NO
DEPLOY     PHASE=COLLECT,
               REPORTSET=1,
               TYPE=RUNTIME,
               CONFIGURATION=$HOMECSD,
               CONNECTION=T41X,
DEPLOY     PHASE=COLLECT,
               REPORTSET=2,
               TYPE=CANDIDATES,
               CONFIGURATION=$HOMECSD,
               GRPLIST=DFHLIST,
               GRPLIST=CCVT41CX,
               GRPLIST=CCM210,
               LOCALSYSID=T41X,
           PHASE=REPORT,
               TYPE=COLDSTARTCOMPARE
```

Data sources

This is a common header section that appears in all deployment analysis reports.

Purpose

The input to each collection phase is known as a *data source*. The data sources section describes when, how, and where CICS Configuration Manager collected each data source, according to the PHASE=COLLECT parameters of the DEPLOY command.

Example

The following example shows a data sources section for a cold start compare report. Report set 1 consists of a single data source: runtime resource definitions collected from an active CICS region via the CICS Configuration Manager agent. Report set 2 also consists of a single data source: candidate resource definitions collected from a CSD file. Both data sources were collected by a CICS Configuration Manager Version 2.1 server (indicated by CCMVRM 0210) running under CICS Transaction Server for z/OS (indicated by CTSVRM 0410).

```
                    CICS Deployment Analysis Report
                       Cold Start Compare Report
                             Data Sources

                                                          ---------- Target Region ----------
ID Date       Time   Records CollectionType  ReportSet SMFID  Context   Scope     APPLID    SYSID
01 2009/05/15 15:25     3230 RUNTIME-CCM     1         FTS1   N/A       N/A       CCVT41CX  T41X

                                                         ----------- CCM Server --------------
                                                         Region   APPLID   SYSID CTSVRM CCMVRM
                                                         CCVT41CX CCVT41CX T41X  0410   0210

                                                          ---------- Target Region ----------
ID Date       Time   Records CollectionType  ReportSet SMFID  Context   Scope     APPLID    SYSID
02 2009/05/15 15:25     3157 CANDIDATES-CSD  2         FTS1   N/A       N/A       N/A       T41X

                                                         ----------- CCM Server --------------
                                                         Region   APPLID   SYSID CTSVRM CCMVRM
                                                         CCVT41CX CCVT41CX T41X  0410   0210
```

Contents

The information in this section is arranged under the following column headings:

ID
A unique two-digit number for this data source. Subsequent sections in the report use this ID to identify the data source to which a resource definition belongs. These IDs match the order of the PHASE=COLLECT parameters in the DEPLOY command. For example, the ID of the data source for the first PHASE=COLLECT parameter is 01.

Date and Time
The date (in the format *yyyy*/*mm*/*dd*) and time (in the format *hh*:*mm*) when CICS Configuration Manager completed collecting the resource definitions for this data source.

Records
The number of resource definitions collected, before excluding or filtering resource definitions from the report.

CollectionType
Where and how CICS Configuration Manager collected the resource definitions, indicated by one of the following values:

RUNTIME-CCM
Runtime resource definitions, collected from an active CICS region via the CICS Configuration Manager agent.

RUNTIME-CPSM
Runtime resource definitions, collected from an active CICS region via CICSPlex SM.

CANDIDATES-CSD
Candidate resource definitions, collected from a CSD file.

CANDIDATES-CPSM
Candidate resource definitions, collected from a CICSPlex SM data repository.

ReportSet
The report set (1 or 2) to which the data source belongs. For details, see the description of the PHASE parameter of the "DEPLOY" on page 278 command.

SMFID
The 4-character SMF CPU ID of the z/OS system on which the CICS Configuration Manager server was running when it collected the resource definitions.

Target Region
Details of the region from which the resource definitions were collected. For candidate resource definitions collected from a CSD file, these details show N/A, except for SYSID, which contains the value specified by the LOCALSYSID parameter for this collection phase.

CCM Server
Details of the CICS Configuration Manager server that collected the resource definitions.

Report summary

This is a common header section that appears in all deployment analysis reports.

Purpose

Contains statistics for the entire report. These statistics represent values before filtering. For information on the number of resource definitions suppressed from the report by filtering, see “Filtering summary” on page 290.

Example

```
                      CICS Deployment Analysis Report
                         Cold Start Compare Report
                              Report Summary

ReportSet 1  ReportSet 2
   Count        Count     Code Description
-----------  -----------  ---- ------------------------------------------------------------
      72           72          Total matched definitions with no exceptions
    2961           29          Total mismatched definitions
       0          132          Total definitions excluded from analysis
```

Contents

This section contains the following information:

Total matched definitions with no exceptions
(Relevant only to reports that compare two report sets.) The number of resource definitions in this report set that exactly matched a resource definition in the other report set. Although the report shows a separate value for each report set, these two values will always be identical.

Total mismatched definitions
(Relevant only to reports that compare two report sets.) The number of resource definitions that did not exactly match a resource definition in the other report set. This is the sum of the following two values:

- The number of resource definitions in the mismatched section
- The number of resource definitions in the matched definitions (with exceptions) section

That is, this value lists the number of resource definitions that do not match, even if the only difference is their “enablement state” (as shown in the “Ena” column in later sections: for example, one resource definition is enabled, the other is disabled).

In the previous example listing, notice that the number of mismatched definitions for report set 1 is much higher than for report set 2. In this example, report set 1 represents runtime resource definitions and report set 2 represents candidate resource definitions. It is typical for a set of runtime resource definitions to contain more resource definitions than the set of candidate resource definitions with which they are being compared, for various reasons:

- The candidate resource definitions might have been collected from a subset of the lists that would normally be used at startup.
- The runtime resource definitions include dynamically generated resource definitions that do not exist in the set of candidate resource definitions.

Total inventory report records

(Relevant only to reports that list one report set; not shown in the previous example.) The number of resource definitions collected (the total of the Records values in the Data Sources section), minus the number of resource definitions excluded (as described below).

Total definitions excluded from analysis

(Relevant only to report sets of candidate resource definitions.) The number of candidate resource definitions that CICS Configuration Manager excluded from the report. This value is a count of the following resource definitions, depending on the report type:

The following candidate resource definitions have no direct runtime equivalent, so CICS Configuration Manager excludes them from cold start compare reports:

LSRPOOL, TYPETERM, and SESSION resource definitions

CICS Configuration Manager excludes these types of candidate resource definition from cold start compare reports because there are no directly equivalent types of runtime resource definition. For instance, LSRPOOL resource definitions can exist in a CSD file, but there is no directly equivalent type of runtime resource definition in an active CICS region.

In this case, "excluded" means that the report does not attempt to match these types of candidate resource definition with runtime resource definitions. However, the report continues to use these types of candidate resource definition for referential integrity. For example, if a TERMINAL candidate resource definition refers to a TYPETERM resource definition that would not yet have been installed, the Referential Integrity Verification section of the report lists the TERMINAL candidate resource definition.

Unused duplicates

CICS Configuration Manager excludes unused duplicate candidate resource definitions from all reports because they will never be "deployed" (installed). For example, suppose you request a candidates report for a set of resource definitions that contains three duplicates (resource definitions with the same name and type). The resource definitions section of the report lists only one of the duplicates: the one that CICS would install, according to its rules of precedence. The resource definition section excludes the other two duplicates. However, the duplicate definitions verification section of the report lists all three duplicates, indicating why two of them were excluded. The "Total definitions excluded from analysis" value for this candidates report would be 2. Similarly, suppose you request a cold start compare report using this same set of candidate resource definitions. The two rejected duplicates appear only in the duplicate definitions verification section of the report.

For report sets of runtime resource definitions, this value is always 0 ("exclude" processing does not apply to runtime resource definitions).

Filtering summary

This is a common header section that appears in all deployment analysis reports.

Purpose

Lists the number of resource definitions filtered ("suppressed") from the report sets by the criteria in the filter file.

Example

```
                        CICS Deployment Analysis Report
                           Cold Start Compare Report
                               Filtering Summary

ReportSet 1  ReportSet 2
   Count        Count     Code Description
-----------  -----------  ---- ------------------------------------------------------------
       0            0     00** Matched definitions suppressed by filters
       0            0     01** New definitions suppressed by filters
    2945            0     02** Missing definitions suppressed by filters
       0            0     03** Mismatched definitions suppressed by filters
       0            0     05** Inventory report records suppressed by filters
       0          178          Duplicate definitions found
       0            0     08** Duplicates suppressed by filters
       0          105          RI-check exceptions found
       0            3     09** RI-checks suppressed by filters

    2945                      Total filtered definitions
```

Contents

The lines "Duplicate definitions found" and "RI-check exceptions found" (here, "RI" means "referential integrity") specify values before filtering. This enables you to easily compare the number found before filtering with the following line in the section, showing the number suppressed by filters. Depending on the situation, you might decide that you want to introduce additional filter criteria to suppress more resource definitions, or remove filter criteria to report resource definitions that you are currently suppressing.

The Code column in this section indicates the code pattern that you can specify in the filter file to suppress this class of report condition from the report. For details, see "Filtering resource definitions from deployment analysis reports" on page 275.

Columns in a deployment analysis report

After the common header sections, the remaining sections of a deployment analysis report share a common tabular layout. Each line refers to a resource definition under the following column headings:

```
Report                                    List or                          Loc        Deploy   Collection      RASGNDEF Grp
Item   ID Name     Type         Group     RESDESC  Code Condition          Rem Ena VV Checksum Type            Override Seq
------ -- -------- ------------ --------  -------- ---- ------------------ --- --- -- -------- --------------- -------- ----
     1 01 CONS     AIMODEL      CCVTEST   CCVT41CX 0502 Uninstallable      LOC ENA    ECBA559A CANDIDATES-CSD           0001
     2 01 DEBUG    AIMODEL      CCVTEST   CCVT41CX 0500                    LOC ENA    515493D1 CANDIDATES-CSD           0001
     3 01 BJNL     CONNECTION   CCVEXCI   CCVT41CX 0500                    LOC ENA    198F96E4 CANDIDATES-CSD           0008
```

Within each section, the resource definitions are sorted in order of type, then name. In the duplicates verification section, the resource definitions are also sorted by the "Grp Seq" column.

Report Item
Number that uniquely identifies each item in the report, starting at the first report section after the common header sections. You can use this number to refer to a particular item in the report. A report item consists of one or more resource definitions, depending on the report section. For example:
- In the mismatched definitions section, a report item consists of a pair of resource definitions.
- In the duplicates verification section, a report item consists of two or more resource definitions.

ID 2-digit number that identifies the data source to which this resource definition belongs. For details, see "Data sources" on page 286.

Name Resource definition name.

For model terminal definitions for autoinstall (Type column value of AIMODEL), the Name column shows the value of the AUTOINSNAME attribute, not the terminal definition name. For details, see the description of the Type column (below).

Type Resource definition type. This column shows the type names used by CSD files, even for resource definitions collected from CICSPlex SM data repositories. For example, for file definitions, this column shows FILE, not FILEDEF. For a list of equivalent type names, see Table 23 on page 337.

Terminal definitions that can be used as a model for autoinstall (that is, terminal definitions that specify the AUTOINSMODEL attribute value ONLY or YES) are a special case:

AUTOINSMODEL=ONLY
The Type column shows the value AIMODEL, not TERMINAL. If the terminal definition specifies an autoinstall model definition name (AUTOINSNAME attribute value), then the Name column shows the autoinstall model definition name, not the terminal definition name.

For example, suppose you request a candidates report for a set of candidate resource definitions that includes a terminal definition named TERMA. TERMA specifies AUTOINSMODEL=ONLY and AUTOINSNAME=TERMB. The resource definitions section of the candidates report lists this resource definition under the name TERMB and type AIMODEL. TERMA TERMINAL does not appear in the report.

AUTOINSMODEL=YES
These terminal definitions are reported twice: once as a terminal definition with a Type column value of TERMINAL, then again as an autoinstall model definition with a Type column value of AIMODEL. If the terminal definition specifies an autoinstall model definition name (AUTOINSNAME attribute value), then the AIMODEL resource definition appears with the autoinstall model definition name, not the terminal definition name.

Group For candidate resource definitions, this column contains the name of the resource group in the CSD file or CICSPlex SM data repository to which this resource definition belongs.

For runtime resource definitions, this column contains the name of the resource group in the CSD file or CICSPlex SM data repository from which this resource definition was installed. However, for runtime resource definitions collected from regions running under CICS TS V3.2 or earlier, this information is not available: this column contains the value N/A ("not available").

List or RESDESC
For candidate resource definitions, this column contains the name of the list (in a CSD file) or RESDESC (resource description in a CICSPlex SM data repository) to which this resource definition belongs.

For runtime resource definitions, this column contains the value N/A.

Code 4-digit number that classifies the report condition: that is, why this resource definition appears in this section of the report.

The first two digits identify the "class" of the report condition, corresponding to a particular report section. The last two digits identify the "sub-class" of the report condition, classifying the report condition in more detail: for example, a specific referential integrity issue, such as a TERMINAL that refers to an undefined TYPETERM.

You can use these codes in the filter file to suppress specific report conditions (so that the associated lines no longer appear in the report), or to suppress entire report sections. There is one exception: you can suppress referential integrity warnings, but not errors.

Condition
Either a brief description of the report condition specified by the Code column, or, for referential integrity conditions, a message code with the prefix CCV. For explanations of these referential integrity messages, see the list of messages after the referential integrity verification section.

Loc Rem
Indicates whether the resource definition is local (LOC) or remote (REM).

Ena Indicates the "enablement state" of the resource definition: that is, whether the resource definition is enabled (ENA) or disabled (DIS). File definitions have a third state, unenabled (UNE). If enablement state is not applicable to this resource type, this column contains the value N/A.

The attribute that determines the enablement state of a resource definition depends on the resource type. For example:
- For program resource definitions, the attribute is STATUS: ENA in the "Ena" column represents a STATUS value of ENABLED, DIS represents DISABLED.

- For terminal resource definitions, the attribute INSERVICE: ENA in the "Ena" column represents an INSERVICE value of YES, DIS represents NO.

Resource definitions with mismatching enablement states do not appear in the mismatched definitions section. This is to avoid cluttering the mismatched definitions section with information about enablement states, and make it easier to spot more significant attribute value differences.

VV Context-based resource definitions only: the resource definition version.

Deploy Checksum
To compare resource definitions, CICS Configuration Manager uses their attribute values to calculate a checksum. The deploy checksum excludes attributes that do not occur in runtime resource definitions (such as Description) and attributes that determine the transient (enabled or disabled) state of a resource definition.

Collection Type
Where and how CICS Configuration Manager collected this resource definition, indicated by one of the following values:

RUNTIME-CCM
Runtime resource definitions, collected from an active CICS region via the CICS Configuration Manager agent.

RUNTIME-CPSM
Runtime resource definitions, collected from an active CICS region via CICSPlex SM.

CANDIDATES-CSD
Candidate resource definitions, collected from a CSD file.

CANDIDATES-CPSM
Candidate resource definitions, collected from a CICSPlex SM data repository.

RASGNDEF Override
Context-based candidate resource definitions only: if the attribute values of this resource definition have been changed by a RASGNDEF resource definition, then this column contains the name of the RASGNDEF resource definition. Otherwise, this column is blank. In particular, if a RASGNDEF specifies an override value for an attribute, but the attribute in this resource definition already has that value, then this column is blank.

Grp Seq
("Group sequence".) CSD-based candidate resource definitions only: the position of the group (containing this resource definition) in the group lists, as specified by the GRPLIST parameters of the DEPLOY command.

Resource definitions

This section appears in the following deployment analysis reports:

Cold start compare	Candidates compare	Runtime compare	Runtime	Candidates	Check
			✓	✓	

Purpose

In runtime resources reports, this section lists the collected runtime resource definitions that have not been suppressed by filters.

In candidates reports, this section lists the collected candidate resource definitions that have not been suppressed by filters, excluding any unused duplicates. If the set of candidate resource definitions contains duplicates (resource definitions with the same name and type), this section lists only the one that CICS would install, according to its rules of precedence. For details of the unused duplicates, see "Duplicate definitions verification" on page 301.

Example

```
                    CICS Deployment Analysis Report
                           Candidates Report
                        Resource Definitions

Report                                  List or                       Loc        Deploy   Collection      RASGNDEF Grp
Item   ID Name     Type         Group    RESDESC  Code Condition        Rem Ena VV Checksum Type            Override Seq
------ -- -------- ------------ -------- -------- ---- ---------------- --- --- -- -------- --------------- -------- ----
     1 01 CONS     AIMODEL      CCVTEST  CCVT41CX 0502 Uninstallable    LOC ENA    ECBA559A CANDIDATES-CSD          0001
     2 01 DEBUG    AIMODEL      CCVTEST  CCVT41CX 0500                  LOC ENA    515493D1 CANDIDATES-CSD          0001
     3 01 BJNL     CONNECTION   CCVEXCI  CCVT41CX 0500                  LOC ENA    198F96E4 CANDIDATES-CSD          0008
```

Codes

0500 Normal code for a listed resource definition; not an error. The Condition column is blank for this code.

0502 Uninstallable. This candidate resource definition has a referential integrity error. For details, see the line for this resource definition in "Referential integrity verification" on page 303.

Matched definitions (with exceptions)

This section appears in the following deployment analysis reports:

Cold start compare	Candidates compare	Runtime compare	Runtime	Candidates	Check
✓	✓	✓			

Purpose

Lists resource definitions that match except for:

- Attribute values that determine their "enablement state": for example, one resource definition is enabled, the other is disabled.

  or

- One being uninstallable because of a referential integrity error.

Contents

Resource definitions with mismatching "enablement states" appear in this section in pairs. The "Ena" column indicates the difference: ENA for enabled, DIS for disabled, or (file definitions only) UNE for unenabled. For more information on enablement states and what the "Ena" column value represents, see the detailed description in "Columns in a deployment analysis report" on page 291.

Uninstallable resource definitions can appear by themselves: this section does not show its matching resource definition, unless the matching definition has a different transient state.

Report conditions in this section have the following precedence: uninstallable, source mismatch, state mismatch. For example, if a resource definition is uninstallable and has a different transient state from its matching definition, then this section reports the resource definition as uninstallable.

For resource definitions with more significant attribute value differences, see "Mismatched definitions" on page 300.

Example

```
                    CICS Deployment Analysis Report
                       Cold Start Compare Report
                  Matched Definitions (with exceptions)

Report                                  List or                       Loc        Deploy   Collection      RASGNDEF Grp
Item   ID Name     Type         Group   RESDESC  Code Condition        Rem Ena VV Checksum Type            Override Seq
------ -- -------- ------------ -------- -------- ---- ---------------- --- --- -- -------- --------------- -------- ----
     1 01 CCVBACK  FILE         CCV210   N/A      0001 Runtime state    LOC DIS    D85D5400 RUNTIME-CCM
       02 CCVBACK  FILE         CCV210   CCM210   0001 Defined state    LOC ENA    D85D5400 CANDIDATES-CSD          0067
     2 01 CCVCA    FILE         CCV210   N/A      0007 Runtime state    LOC UNE    BE33F78E RUNTIME-CCM
       02 CCVCA    FILE         CCV210   CCM210   0007 Defined state    LOC ENA    BE33F78E CANDIDATES-CSD          0067
     3 01 CCVDAXF  FILE         CCV210   N/A      0007 Runtime state    LOC UNE    22894711 RUNTIME-CCM
       02 CCVDAXF  FILE         CCV210   CCM210   0007 Defined state    LOC ENA    22894711 CANDIDATES-CSD          0067
```

Codes

0001 State mismatch. Resource definitions match except for attribute values that determine their "enablement state".

For runtime resource definitions with this code, the Condition column contains the description “Runtime state”, indicating that the “Ena” column refers to the state of the resource definition when it was collected from an active CICS region.

For candidate resource definitions with this code, the Condition column contains the description “Defined state”, indicating that the “Ena” column refers to the state of the resource definition when it was collected from a CSD file or CICSPlex SM data repository.

This code applies to all state mismatches except the following, which applies only to files: code 0007 refers to the specific state mismatch where one file resource definition is enabled (ENA) and the other is unenabled (UNE).

0002 Uninstallable. This candidate resource definition has a referential integrity error. For details, see the line for this resource definition in “Referential integrity verification” on page 303.

0006 (Not applicable to resource definitions in CICS TS 3.2, or earlier.) Source mismatch. The source of the resource definitions do not match. The source values that the report compares depends on the report type:

Cold start compare
Compares the resource group name of the candidate resource definition with the contents of the DEFINESOURCE resource signature field of the runtime resource definition.

Runtime compare
Compares the contents of the DEFINESOURCE resource signature fields of each runtime resource definition.

Candidates compare
This code is not applicable to candidates compare reports.

0007 State mismatch: one file resource definition is enabled (ENA) and the other is unenabled (UNE). For other state mismatches, see code 0001.

Missing definitions

This section appears in the following deployment analysis reports:

Cold start compare	Candidates compare	Runtime compare	Runtime	Candidates	Check
✓	✓	✓			

Purpose

In cold start compare reports, this section lists runtime resource definitions that have no matching candidate resource definition. Here, "missing" means "installed in the active CICS region, but not defined in the CSD file or CICSPlex SM data repository". If you cold-started the CICS region, these resource definitions would not be installed. For a list of candidate resource definitions that have no matching runtime resource definition, see "New definitions" on page 299.

Filtering is especially important for this section in cold start compare reports. Unless you define criteria in the filter file to suppress them, dynamically generated resource definitions (such as autoinstalled programs and terminals) appear in this section as "Missing" because they have no matching candidate resource definitions. In some situations, you might be interested in these differences. However, keeping such expected differences in a cold start compare report means that, when you read the report, you need to be aware which resources definitions are reported as missing because they are dynamically generated, and which resource definitions are reported as missing because there is a genuine problem: the resource definition should exist in the CSD file or CICSPlex SM data repository, but does not. Suppressing expected differences makes it easier to spot real problems. For details on filtering, see "Filtering resource definitions from deployment analysis reports" on page 275.

In other compare reports, this section lists resource definitions that appear in one report set but not the other.

Example

In a cold start compare report:

```
                    CICS Deployment Analysis Report
                       Cold Start Compare Report
                          Missing Definitions

Report                                  List or                      Loc        Deploy   Collection      RASGNDEF Grp
Item   ID Name     Type         Group    RESDESC  Code Condition      Rem Ena VV Checksum Type            Override Seq
------ -- -------- ------------ -------- -------- ---- ------------------ --- --- -- -------- --------------- -------- ----
     4 01 CCVR0001 FILE         CCVSRCSD N/A      0200 Missing            LOC UNE    EC77B4BD RUNTIME-CCM
     5 01 CCVR0002 FILE         CCVSRCSD N/A      0200 Missing            LOC UNE    4180ED13 RUNTIME-CCM
     6 01 CCVR0003 FILE         CCVSRCSD N/A      0200 Missing            LOC UNE    F207EBF1 RUNTIME-CCM
     7 01 CCVR0004 FILE         CCVSRCSD N/A      0200 Missing            LOC UNE    575FF4F0 RUNTIME-CCM
     8 01 CCVR0005 FILE         CCVSRCSD N/A      0200 Missing            LOC UNE    6CE4805E RUNTIME-CCM
     9 01 DFHCSD   FILE         SYSTEM   N/A      0200 Missing            LOC UNE    A3CD7FB6 RUNTIME-CCM
    10 01 DFHRPL   LIBRARY      SYSTEM   N/A      0200 Missing            LOC ENA    436B0B15 RUNTIME-CCM
    11 01 EYUCICSD PROFILE      SYSTEM   N/A      0200 Missing            LOC N/A    D1AAC5C4 RUNTIME-CCM
    12 01 DFHAPATT PROGRAM      SYSTEM   N/A      0200 Missing            LOC ENA    E444CAEA RUNTIME-CCM
```

In a candidates compare report:

```
                    CICS Deployment Analysis Report
                       Candidates Compare Report
                          Missing Definitions

Report                                    List or                        Loc        Deploy   Collection      RASGNDEF Grp
Item   ID Name     Type         Group     RESDESC  Code Condition        Rem Ena VV Checksum Type            Override Seq
------ -- -------- ------------ --------- -------- ---- ---------------- --- --- -- -------- --------------- -------- ----
     1 02 CONS     AIMODEL      CCVTEST   CCVT41CX 0202 Uninstallable    LOC ENA    ECBA559A CANDIDATES-CSD           0002
     2 02 DEBUG    AIMODEL      CCVTEST   CCVT41CX 0200 Not in ReportSet1 LOC ENA    515493D1 CANDIDATES-CSD           0002
     3 02 BJNL     CONNECTION   CCVEXCI   CCVT41CX 0200 Not in ReportSet1 LOC ENA    198F96E4 CANDIDATES-CSD           0009
     4 01 CCVENQ   ENQMODEL     CCV210    CCM210   0200 Not in ReportSet2 LOC ENA    1DFFD36F CANDIDATES-CSD           0001
     5 01 CCVBACK  FILE         CCV210    CCM210   0200 Not in ReportSet2 LOC ENA    D85D5400 CANDIDATES-CSD           0001
     6 01 CCVCA    FILE         CCV210    CCM210   0200 Not in ReportSet2 LOC ENA    BE33F78E CANDIDATES-CSD           0001
     7 01 CCVCAR   FILE         CCV210    CCM210   0200 Not in ReportSet2 LOC ENA    62F86ED2 CANDIDATES-CSD           0001
     8 01 CCVCCICS FILE         CCV210    CCM210   0200 Not in ReportSet2 LOC ENA    3B767281 CANDIDATES-CSD           0001
     9 01 CCVCONF  FILE         CCV210    CCM210   0200 Not in ReportSet2 LOC ENA    02151A4F CANDIDATES-CSD           0001
    10 01 CCVCOPY  FILE         CCV210    CCM210   0200 Not in ReportSet2 LOC ENA    6E06D0BD CANDIDATES-CSD           0001
```

Codes

0200 Cold start compare reports: missing (not in the set of candidate resource definitions).

Other compare reports: in report set 1 but not in report set 2, or vice versa.

0202 Uninstallable. This candidate resource definition has a referential integrity error. For details, see the line for this resource definition in “Referential integrity verification” on page 303.

Code 0202 takes precedence over code 0200, so the Condition column contains “Uninstallable” instead of, for candidates compare or runtime compare reports, “Not in ReportSet*n*”. Here, “uninstallable” means “found, but uninstallable, in this report set; missing from the other report set”. To see which data source (and hence, which report set) this uninstallable resource definition belongs to, see the ID column.

New definitions

This section appears in the following deployment analysis reports:

Cold start compare	Candidates compare	Runtime compare	Runtime	Candidates	Check
✓					

Purpose

Lists candidate resource definitions that have no matching runtime resource definition. Here, "new" means "defined in the CSD file or CICSPlex SM data repository, but not installed in the active CICS region". For runtime resource definitions that have no matching candidate resource definition, see "Missing definitions" on page 297.

If a new candidate resource definition cannot be installed because it requires a resource definition that is not yet installed, this section reports the new candidate resource definition as uninstallable.

Example

```
                    CICS Deployment Analysis Report
                       Cold Start Compare Report
                            New Definitions

Report                                  List or                       Loc        Deploy   Collection      RASGNDEF Grp
Item   ID Name     Type         Group    RESDESC  Code Condition       Rem Ena VV Checksum Type            Override Seq
------ -- -------- ------------ -------- -------- ---- ---------------- --- --- -- -------- --------------- -------- ----
    13 02 DANATOM1 ATOMSERVICE  QAGCOLD  QALCOLD  0100 New definition   LOC ENA    A575BD21 CANDIDATES-CSD          0002
    14 02 DANBUND1 BUNDLE       QAGCOLD  QALCOLD  0100 New definition   LOC ENA    5F87274B CANDIDATES-CSD          0002
    15 02 DACF     CONNECTION   QAGCOLD1 QALCOLD  0102 Uninstallable    LOC ENA    BA8F0116 CANDIDATES-CSD          0001
    16 02 DAN0DB25 DB2TRAN      QAGCOLD  QALCOLD  0102 Uninstallable    LOC N/A    8BFFCD0D CANDIDATES-CSD          0002
```

Codes

0100 New definition (not in the set of runtime resource definitions).

0102 Uninstallable. This candidate resource definition has a referential integrity error. For details, see the line for this resource definition in "Referential integrity verification" on page 303.

Mismatched definitions

This section appears in the following deployment analysis reports:

Cold start compare	Candidates compare	Runtime compare	Runtime	Candidates	Check
✔	✔	✔			

Purpose

Lists pairs of resource definitions (one from each report set) that have the same name and type, but different attribute values.

This section does not report differences in attribute values that determine whether the resource definition is enabled or disabled (shown by the “Ena” column). For these differences, see “Matched definitions (with exceptions)” on page 295.

Example

```
                      CICS Deployment Analysis Report
                         Cold Start Compare Report
                          Mismatched Definitions

Report                                  List or                        Loc        Deploy   Collection      RASGNDEF Grp
Item   ID Name     Type         Group    RESDESC  Code Condition        Rem Ena VV Checksum Type            Override Seq
------ -- -------- ------------ -------- -------- ---- ---------------- --- --- -- -------- --------------- -------- ----
   130 01 DFHLRQ   FILE         DFHCBTS  N/A      0300 Checksum Mismatch LOC ENA    108C9019 RUNTIME-CCM
         Attribute:  DISPOSITION      Value:  SHARE
         Attribute:  DSNAME           Value:  CCVCICS.CCVT41CX.DFHLRQ
       02 DFHLRQ   FILE         DFHCBTS  DFHLIST  0300 Checksum Mismatch LOC ENA    E709BDAA CANDIDATES-CSD          0039
         Attribute:  DISPOSITION      Value:  OLD
         Attribute:  DSNAME           Value:  --BLANK--

   131 01 CCVL     TDQUEUE      CCV210   N/A      0300 Checksum Mismatch LOC ENA    576D2E11 RUNTIME-CCM
         Attribute:  DISPOSITION      Value:  MOD
         Attribute:  DSNAME           Value:  STC@CICS.CCVT41CX.STC19362.D0000101.?
       02 CCVL     TDQUEUE      CCV210   CCM210   0300 Checksum Mismatch LOC N/A    D9242A5D CANDIDATES-CSD          0067
         Attribute:  DISPOSITION      Value:  SHR
         Attribute:  DSNAME           Value:  --BLANK--

   132 01 CCVX     TDQUEUE      CCV210   N/A      0300 Checksum Mismatch LOC ENA    2BF66598 RUNTIME-CCM
         Attribute:  BLOCKFORMAT      Value:  NOTAPPLIC
         Attribute:  RECORDFORMAT     Value:  UNDEFINED
         Attribute:  RECORDSIZE       Value:  1
       02 CCVX     TDQUEUE      CCV210   CCM210   0300 Checksum Mismatch LOC N/A    49B0352F CANDIDATES-CSD          0067
         Attribute:  BLOCKFORMAT      Value:  BLOCKED
         Attribute:  RECORDFORMAT     Value:  FIXED
         Attribute:  RECORDSIZE       Value:  80
```

Codes

0300 Checksum mismatch.

Duplicate definitions verification

This section appears in the following deployment analysis reports:

Cold start compare	Candidates compare	Runtime compare	Runtime	Candidates	Check
✓	✓			✓	✓

Purpose

Lists duplicates: candidate resource definitions that are in the same report set, and that have the same name and type. Indicates which duplicate, if any, CICS would install, and why the others would be not installed.

For some resource types, CICS installs the first resource definition in the group sequence order, and rejects any subsequent duplicates. For these resource types, this section reports the rejected duplicates (in the Condition column) as "Ineligible".

For other resource types, CICS installs resource definitions in group sequence order regardless of whether a duplicate has already been installed. CICS overwrites any duplicate that occurs earlier in the group sequence order. the result is that the last duplicate is installed. For these resource types, this section reports the overwritten duplicates as "Superseded".

For details on which duplicate CICS would install, see the CICS documentation on duplicate resource definition names.

For report sets of candidate resource definitions that combine resource definitions from a CSD file and resource definitions from a CICSPlex SM data repository, the report follows the order that CICS follows at cold start: CSD file first, then CICSPlex SM data repository. Effectively, resource definitions from the CICSPlex SM data repository are appended to the end of the group sequence order of the resource definitions from the CSD file. Although the resource definitions from the CICSPlex SM data repository will not contain duplicates among themselves, it is possible that a resource definition from the CICSPlex SM data repository can have one or more duplicates in the CSD file. Whether such a duplicate resource definition from the CICSPlex SM data repository is installed, "Ineligible", or "Superseded" depends on the CICS behavior for that resource type, exactly as for a resource definition from a CSD file, as described above.

Example

```
                      CICS Deployment Analysis Report
                         Cold Start Compare Report
                    Duplicate Definitions Verification

Report                                  List or                       Loc        Deploy   Collection      RASGNDEF Grp
Item   ID Name     Type         Group    RESDESC  Code Condition        Rem Ena VV Checksum Type            Override Seq
------ -- -------- ------------ -------- -------- ---- ---------------- --- --- -- -------- --------------- -------- ----
   138 02 CCVMTRC  MAPSET       CCVTEST  CCVT41CX 0824 Superseded       LOC ENA    9C4FD5A2 CANDIDATES-CSD          0058
       02                       CCV210   CCM210   0825                 LOC ENA    9C4FD5A2 CANDIDATES-CSD          0067
   139 02 DFHDPMS  MAPSET       DFHDP    DFHLIST  0824 Superseded       LOC ENA    E46E9B30 CANDIDATES-CSD          0052
       02                       DFHDP    CCVT41CX 0825                 LOC ENA    E46E9B30 CANDIDATES-CSD          0060
   140 02 DFHCICST PROFILE      DFHSTAND DFHLIST  0824 Superseded       LOC N/A    57E6F7BD CANDIDATES-CSD          0022
       02                       CCVTEST  CCVT41CX 0825                 LOC N/A    57E6F7BD CANDIDATES-CSD          0058
   141 02 DFHDPCP  PROGRAM      DFHDP    DFHLIST  0824 Superseded       LOC ENA    E2EADF45 CANDIDATES-CSD          0052
       02                       DFHDP    CCVT41CX 0825                 LOC ENA    E2EADF45 CANDIDATES-CSD          0060
   142 02 DFHDPIN  PROGRAM      DFHDP    DFHLIST  0824 Superseded       LOC ENA    24538A0D CANDIDATES-CSD          0052
       02                       DFHDP    CCVT41CX 0825                 LOC ENA    24538A0D CANDIDATES-CSD          0060
```

Codes

0821 Discarded. This candidate resource definition is not the last duplicate in the group sequence order. Furthermore, the next (not necessarily the last) duplicate in the group sequence order is uninstallable due to a referential integrity error (see code 0822). An installable duplicate might or might not be found later in the group sequence order.

0822 Uninstallable. This candidate resource definition has a referential integrity error. For details, see the line for this resource definition in "Referential integrity verification" on page 303.

0823 Ineligible for installation, because this candidate resource definition is not the first in the group sequence order.

0824 Superseded. This candidate resource definition is not the last duplicate in the group sequence order.

0825 Selected for installation. The Condition column is blank for this code value.

0826 Replaced. Ineligible for installation, because this candidate resource definition is not the last of this type in the group sequence order.

Referential integrity verification

This section appears in the following deployment analysis reports:

Cold start compare	Candidates compare	Runtime compare	Runtime	Candidates	Check
✓	✓			✓	✓

Purpose

Lists candidate resource definitions that require a resource definition that is not yet installed.

If CICS would not install the candidate resource definition, this section reports an *error* message: the message code in the Condition column ends with the letter E. In previous sections, the Condition column contains the value "Uninstallable" for these resource definitions. You cannot use the filter file to suppress these report items, even if you specify filter criteria that match the codes.

If CICS would install the candidate resource definition anyway, this section reports a *warning* message: the message code in the Condition column ends with the letter W. You *can* use the filter file to suppress these report items. For example, you can use the code pattern 09** in the filter file to suppress all warning messages from this section, but the error messages will still appear.

This section is followed by a messages section that contains descriptions of the cited warning and error message codes. The messages section contains descriptions only for message codes cited in the previous section; it is not necessarily a comprehensive list of the referential integrity checks that the report performs.

Example

The following example shows file definitions that refer to an undefined LSR pool. It is possible that you have deliberately chosen to not define this LSR pool, in which case you might not be interested in reporting this condition. In this case, you can add a criterion to the filter file to suppress report condition 0951.

```
                        CICS Deployment Analysis Report
                           Cold Start Compare Report
                       Referential Integrity Verification

Report                                    List or                        Loc        Deploy   Collection      RASGNDEF Grp
Item   ID Name     Type         Group     RESDESC  Code Condition        Rem Ena VV Checksum Type            Override Seq
------ -- -------- ------------ --------- -------- ---- ---------------- --- --- -- -------- --------------- -------- ----
   166 02 CCVBACK  FILE         CCV210    CCM210   0951 CCV5451W         LOC ENA    D85D5400 CANDIDATES-CSD          0067
         Attribute:  LSRPOOLID        Value:  1
   167 02 CCVCA    FILE         CCV210    CCM210   0951 CCV5451W         LOC ENA    BE33F78E CANDIDATES-CSD          0067
         Attribute:  LSRPOOLID        Value:  1
   168 02 CCVCAR   FILE         CCV210    CCM210   0951 CCV5451W         LOC ENA    62F86ED2 CANDIDATES-CSD          0067
         Attribute:  LSRPOOLID        Value:  1
⋮
   203 02 CRTX     TRANSACTION  DFHISC    DFHLIST  0950 CCV5450W         LOC ENA    3487C859 CANDIDATES-CSD          0012
         Attribute:  PROGRAM          Value:  ########
   204 02 CSPG     TRANSACTION  DFHBMS    DFHLIST  0959 CCV5459W         LOC ENA    46F8A5CE CANDIDATES-CSD          0002
         Attribute:  PARTITIONSET     Value:  KEEP

⋮

                  Referential Integrity Verification Messages

Message    Explanation
---------- -------------------------------------------------------------------------------
CCV5450W   PROGRAM does not exist.
CCV5451W   No LSRPOOL for ID.
CCV5459W   PARTITIONSET does not exist.
```

Codes

09*nn* The last two digits of the codes in this section match the last two digits, *nn*, of the message code CCV54*nns* quoted in the Condition column (where *s* is the message severity: W or E). For a brief description of these codes, see the messages section that follows the referential integrity verification section in the report. For more information on these messages, see "Messages" on page 448.

Part 4. Server

These topics describe aspects of the CICS Configuration Manager server.

Chapter 19. CICS resources and commands used by the CICS Configuration Manager server

The CICS Configuration Manager server uses the CICS resources and CICS commands described below. If your site uses system authorization facility (SAF) classes to protect access to CICS resources or CICS commands, then you need to modify your external security manager (ESM) definitions to grant the required level of access to the appropriate user IDs:

- For clients that connect to the server via an unauthenticated port, you need to grant access to the CICS default user ID of the CICS region that is running the server.
- For clients that connect to the server via an authenticated port, you need to grant access to the client user ID. For the CICS Configuration Manager ISPF client, this is the TSO user ID.

CICS-supplied transactions CWBA and CWXN
: The appropriate user ID (as described above) must have the authority to invoke CWBA. The CICS *region* user ID of the region that is running the CICS Configuration Manager server must have the authority to invoke CWXN.

Statically defined resources
: The group CCV210, in the CSD file for the CICS region running the CICS Configuration Manager server, contains resource definitions required by the CICS Configuration Manager server. These include (but are not restricted to) files, programs, and transactions. For a comprehensive list, either view the resource definitions in the group CCV210 (if you already have CICS Configuration Manager installed), or browse the member CCVXCSDD of the sample library SCCVSAMP.

  These are the security rules for CCV*x* transactions:

  CCVA, CCVC, CCVR, CCVT
  : CICS Configuration Manager "user" transactions. The CICS Configuration Manager server invokes these transactions under the authority of the client user that sent the request:
    - For clients that connect to the server via an unauthenticated port, the CICS default user ID of the CICS region must have the authority to invoke these transactions.
    - For clients that connect to the server via an authenticated port, all users of the CICS Configuration Manager client must have the authority to invoke these transactions.

  CCVI CICS Configuration Manager server initialization transaction. The user, or users, that require the authority to invoke this transaction depends on how you choose to start the CICS Configuration Manager server:
    - If you have added the server initialization program CCVIINIT to the PLTPI, then the user ID that runs PLTPI programs must have the authority to invoke the transaction CCVI. This user ID is either the user ID specified by the PLTPIUSR system initialization parameter or, if you do not specify PLTPIUSR, the CICS region user ID. This user ID needs the authority to invoke transaction CCVI because, although CICS runs all PLTPI

programs under the CICS internal transaction CPLT, the program CCVIINIT invokes transaction CCVI to complete potentially long-running tasks after the CICS region has started. For more information on starting the CICS Configuration Manager server via the PLTPI, see "Optional: Update the PLTPI" on page 82.

- If you have chosen not to start the CICS Configuration Manager server via the PLTPI, then the user ID that starts the CICS Configuration Manager server, either by running the program CCVIINIT or invoking the transaction CCVI, must have the authority to invoke the transaction CCVI.

You can also invoke transaction CCVI from a CICS terminal to re-initialize the CICS Configuration Manager server while the server CICS region is active: for example, to change which ports the server listens to for clients, without restarting the server CICS region. In this case, the user of the CICS terminal (for example, the CICS Configuration Manager administrator) must have the authority to invoke CCVI. For details, see "Define CICS Configuration Manager system options" on page 77.

CCVW
CICS Configuration Manager server background clean-up process. This has the same security requirements as CCVI, except that there is no requirement for CICS Configuration Manager administrators to be able to invoke this transaction.

CCVS CICS Configuration Manager server trace facility. Required only by administrators, if requested by IBM to capture a CICS Configuration Manager trace for problem determination.

CCVB Currently unused.

The supplied group CCV210 includes replacements for the CICS-supplied transactions **CEDA**, **CEDB**, and **CEDC** that call DFHEDAP. The replacement versions allow you to use these transactions without conflicting with the CICS Configuration Manager server for access to the server region's CSD file. However, it is recommended that you no longer use CEDA, CEDB, and CEDC at all; neither the CICS-supplied originals nor these replacements. Instead, use CICS Configuration Manager to maintain your resource definitions.

For details on the level of access required for file resources, see the values of the associated attributes (such as Add, Browse, Delete, Read, and Update) in the file resource definitions.

Dynamically defined resources
The CICS Configuration Manager server dynamically defines the following resource definitions as required:

CCVR*nnnn* files
For each CSD-based CICS configuration defined in the CICS Configuration Manager repository, the CICS Configuration Manager server dynamically defines a file resource that refers to the appropriate CSD file. The CICS Configuration Manager server uses these file resources only to read CSD files. To update CSD files, the CICS Configuration Manager server uses either the CICS-supplied DFHEDAP program or CICS system programming interface (SPI) commands.

EX*nn* and IM*nn* transient data queues
To write to an export file, the CICS Configuration Manager server dynamically defines a TDQueue named EX*nn* (*nn*: 00–99). To read from an export file, it dynamically defines a TDQueue named IM*nn*. EX indicates "export" (write), IM indicates "import" (read).

CCV* temporary storage queues
The CICS Configuration Manager server dynamically defines TSQueues for various processing tasks.

TCP/IP services
During initialization, the CICS Configuration Manager server dynamically defines a TCPIPService for each of the IP ports that you have specified you want the server to listen to. For details, see "Define CICS Configuration Manager system options" on page 77.

Application and system programming commands
The CICS Configuration Manager server uses various CICS application and system programming commands.

The CICS Configuration Manager server does not define resource definitions for user exit programs. You must define these resources yourself, or have CICS autoinstall them for you.

Data set security

The CICS Configuration Manager server region user ID must have update access to the data sets named by the following CICS file resources:

- Statically defined file resources (in the supplied group CCV210):

  CCVDDD
  CICS Configuration Manager repository.

  CCVJNL, CCVPT1, CCVPT2
  CICS Configuration Manager journal and indexes.

- Dynamically defined file resources:

  CCVR*nnnn*
  For each CSD file that you want to use with CICS Configuration Manager.

Also, if you use CICS file resource security checking (CICS system initialization parameter XFCT=YES or *name*, rather than XFCT=NO), then each user of a CICS Configuration Manager client must have update access to these data sets.

Chapter 20. CICS Configuration Manager server initialization messages

This is the expected sequence of CICS Configuration Manager server initialization messages in CCVLOG (ddname defined in the CICS region startup job):

```
CCV5012I CICS Configuration Manager V2R1M0 startup in progress.
⋮
CCV5015I CICS Configuration Manager Phase I initialization completed normally. 1
CCV5016I CICS Configuration Manager V2R1M0 Phase II initialization processing started.
⋮
other CCV initialization messages, including current system option values
⋮
CCV5021I CICS Configuration Manager V2R1M0 Phase II initialization processing ended normally.
CCV5373I All CICS Configuration Manager initialization phases are now complete 2
⋮
subsequent CCV messages
⋮
```

1 The CCV5015I "phase I" initialization message appears in both the JES message log and CCVLOG. Subsequent ("phase II") initialization messages appear only in CCVLOG.

2 The CCV5373I message in CCVLOG indicates that the CICS Configuration Manager server started successfully.

For descriptions of other CICS Configuration Manager server messages, see "Messages" on page 448.

Chapter 21. Extending and customizing the CICS Configuration Manager server

You can extend and customize CICS Configuration Manager server processing by attaching your own CICS programs to the following user exit points:

Resource attribute update

This exit point occurs before CICS Configuration Manager updates the attributes of a resource definition, including creating or deleting a resource definition. This occurs while processing the following API commands: Alter, Copy, Create, Delete, Migrate, Rename, and Update.

You can write user exit programs to perform the following tasks:

- Allow or disallow the API command
- Except for Delete and Rename: allow the API command, while overriding some of the resource attribute values

You can use this exit point to enforce site standards upon resource definition names and attributes. For example, when a user edits and then attempts to save a resource definition, your user exit program can check the resource definition name and attributes, and then disallow the update, or allow the update as requested, or allow the update with some attribute values updated to match site standards.

Change package pre- and post-processing

These exit points occur before and after processing a change package API command: Install, Newcopy, Ready, Approve, Disapprove, Unready, Migrate, Import, and Backout.

You can use these exit points to augment change package workflow. For example:

- Notify users of planned or completed change package activity
- Log information regarding completed activity
- Trigger an event to an external change management system
- Security-check a user's authority to perform the designated function
- Obtain a proceed-or-terminate decision from an external change management product
- Overrule change package processing checks
- Automatically update change package Ready or Approve states

For the change package pre-processing exit point, you can write user exit programs to disallow or allow the API command.

If a change package API command updates resource attributes, then the command triggers the following exits:

1. A change package pre-processing exit
2. One resource attribute update exit per updated resource definition
3. A change package post-processing exit

You can write user exit programs in any language supported by CICS.

For additional information on these exit points, view the online help for the CICS Configuration Manager ISPF dialog interface: go to option **1.6 Exit Points**, and then press the Help key (F1).

The following figure shows the user exit points, their names, and where they occur in a typical change package workflow.

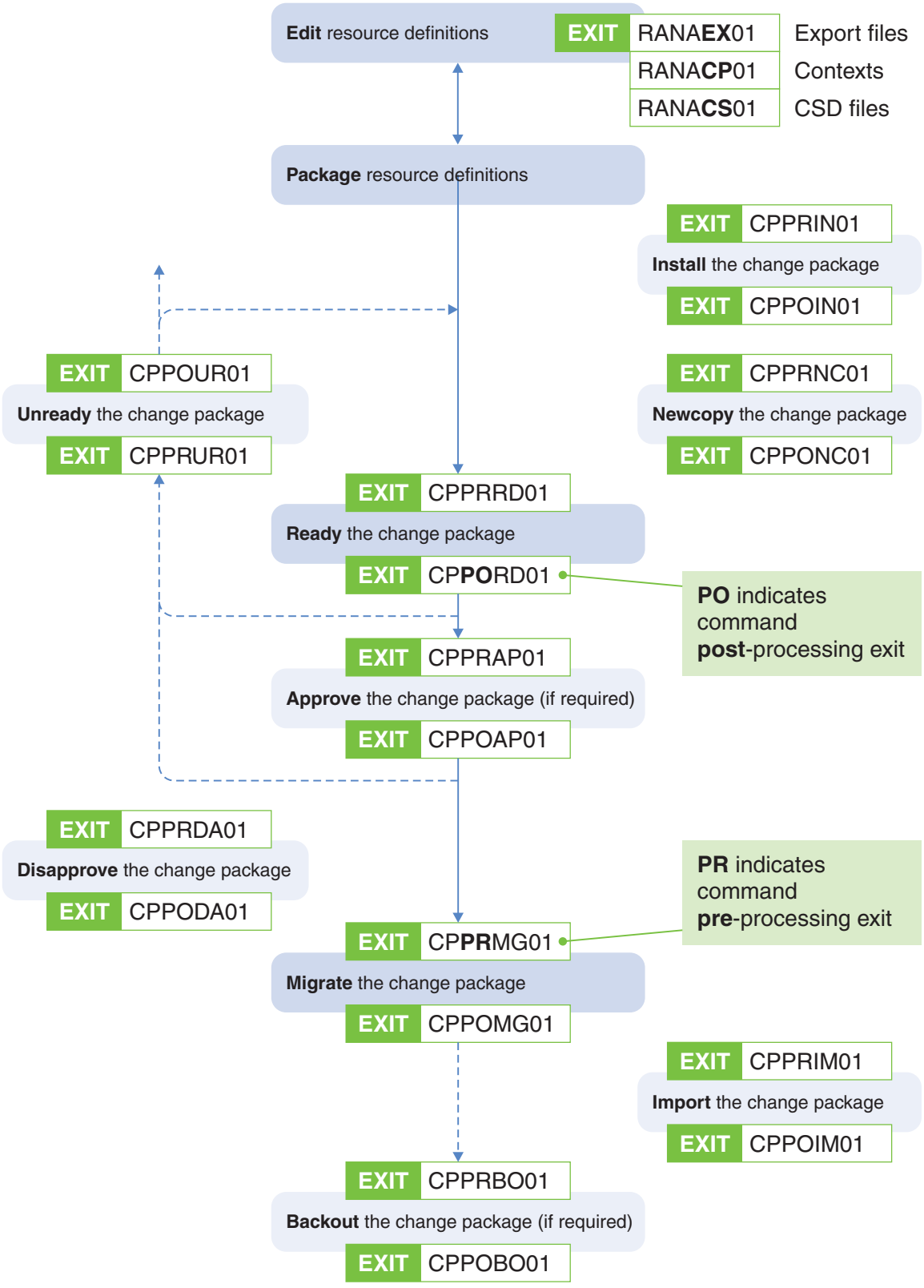


Figure 113. User exit points

Invoking user exit programs

To get CICS Configuration Manager to invoke your exit programs, you need to:

1. Specify the programs to be invoked at the chosen exit points.
2. Activate the chosen exit points.
3. Activate the system option for exit point processing. By default, this system option is inactive, and CICS Configuration Manager ignores all exit programs, regardless of whether their exit points are active or not.

To perform the steps above, use the CICS Configuration Manager ISPF dialog:

1. On the primary menu, select option **1.6 Exit Points**.
2. Specify the name of your exit program next to the appropriate exit point.

   The CICS Configuration Manager server does not define resource definitions for user exit programs. You must define these resources yourself, or have CICS autoinstall them for you.

   Before proceeding, you should confirm that CICS can define and load the exit program:

   - The Program Defined column indicates whether CICS can define the program. For example, you have defined a PROGRAM resource definition for the program, or you have implemented program autoinstall.
   - The Program Loadable column indicates whether CICS can load the program from the DFHRPL load library concatenation.

   To refresh these column values for the program name that you have just specified, you must exit and then re-enter the panel:
3. Press the Exit key (F3) to exit the panel. Then re-enter the panel.
4. Check the Program Defined and Program Loadable columns: both should show Y ("Yes").

   Do not proceed to the next step until both of these columns show Y. For details on making programs available to CICS, see the CICS Transaction Server for z/OS documentation.
5. Enter **/** next to the exit point.

   This activates the exit point. However, CICS Configuration Manager only performs exit point processing if the associated system option is active.
6. Press the Exit key (F3) to exit the panel.
7. Go to primary menu option **1.1 System Options**.
8. Activate exit point processing.

   If the system option for exit point processing is active, then for any active exit points, CICS Configuration Manager invokes the nominated exit program at the appropriate point.

User exit parameters

The CICS Configuration Manager server passes parameters to user exit programs in the communication area (COMMAREA). How a user exit program accesses the communication area depends on the programming language it is written in. For example, a user exit program written in Assembler uses the DFHEICAP (communication area pointer) field to refer to the communication area. For details on accessing the communication area in other programming languages, see the CICS Transaction Server for z/OS documentation.

To access the parameters in the communication area, user exit programs must contain a definition of the layout of the communication area. CICS Configuration Manager supplies programming language-specific layout definitions for each type of exit point:

Table 18. User exit parameters: programming language-specific layout definitions (supplied in SCCVSAMP library members)

	Name of SCCVSAMP library member containing programming language-specific layout definition			
Layout describes	**Assembler DSECT**	**C typedef struct** [1]	**COBOL copybook**	**PL/I DCL structure**
Resource attribute update exit parameters	CCVXRAA	CCVXRA3	CCVXRAC	CCVXRAP
Change package pre-processing exit parameters	CCVXCRA	CCVXCR3	CCVXCRC	CCVXCRP
Change package post-processing exit parameters	CCVXCPA	CCVXCP3	CCVXCPC	CCVXCPP
Package-scheme [2]	CCVXPSA	CCVXPS3	CCVXPSC	CCVXPSP

[1] **C programmers:** Character variables in these structs are **not** null-terminated. If you update the values of these character variables, **do not** add a null terminator.

[2] The change package pre- and post-processing exit parameters include a pointer to a package-scheme structure whose layout is described in these members..

The communication area for each type of exit point begins with an identical set of parameters (a “common header”) followed by parameters specific to the type of exit point. This enables you to write a single user exit program to handle all CICS Configuration Manager user exit points, if you wish. Your user exit program can query the exit point name in the common header, and then choose the appropriate layout definition for the subsequent parameters.

Common parameters

The following table describes the common set of parameters at the start of the communication area for every exit:

Table 19. User exit parameters: common header

Parameter	Description	Can be updated by exit? 1
Exit point name	The exit point name (also shown in Figure 113 on page 314): **RANA***nn***01** Resource attribute update exit point. *nn* identifies the target CICS configuration type: **CP** CICSPlex SM context **CS** CICS system definition file **EX** Export file **CP***ppcc***01** Change package exit point. *pp* identifies the whether the exit point is for pre- or post-processing: **PO** Post-processing **PR** Pre-processing *cc* identifies the API command: **AP** Approve **BO** Backout **DA** Disapprove **IM** Import **IN** Install **MG** Migrate **NC** Newcopy **RD** Ready **UR** Unready	
User ID	The ID of the user who requested the API command.	
API command	The name of the API command.	
Current API reason module ID	The current value set by the API command. Typically, this is 0, except for change package post-processing exits, in which case this is the value after processing the API command.	
Current API return code		
Current API reason code		
User exit return code	Initialized to 0. For allowed values, see "User exit return codes" on page 320.	✔
User exit reason code	Initialized to 0. For allowed values, see "Predefined reason codes" on page 321.	✔
Parameter list version	Version number of this parameter list layout definition. Initialized to "2".	
User exit message text area	2 lines, 150 characters per line. Initialized with blanks.	✔

1 Any user exit program can update any parameter in the communication area. However, the CICS Configuration Manager ignores any updates to parameters except those indicated above.

Resource attribute update parameters

The following table describes the parameters that appear after the common header in the communication area for a resource attribute update exit.

Table 20. User exit parameters: resource attribute update

Parameter	Description	Can be updated by exit?
Function	The primitive CICS-level function about to be performed by this CICS Configuration Manager API command: **CREATE** The API command is about to perform a DEFINE function for a CSD-based resource definition or a CREATE function for a context-based resource definition. **DELETE** The API command is about to perform a DELETE function for a CSD-based resource definition or a REMOVE function for a context-based resource definition. **UPDATE** The API command is about to perform an ALTER for a CSD-based resource definition or an UPDATE for a context-based resource definition. For CICSPlex SM resource definitions, there are two additional functions: **ADD** The API command is about to create an association (*xxx*INGRP) record for a resource to a ResGroup. **REMOVE** The API command is about to remove an association record for a resource to a ResGroup.	
Object type	Resource definition type. See Table 23 on page 337.	
Object name	Resource definition name.	
Object group	Resource definition group (or ResGroup, for a context-based resource definition).	
Description	Resource definition description.	
Target CICS configuration type	The type of CICS configuration where the resource definition is to be created, updated, or deleted. **CSD** CICS system definition file **CONTEXT** CICSPlex SM context **EXPORT** Export file	
Target CICS configuration location	One of the following, depending on the target CICS configuration type: • CSD file data set name • CICSPlex SM context name • Export file data set name	

Table 20. User exit parameters: resource attribute update (continued)

Parameter	Description	Can be updated by exit?
Target resource definition: I/O area and length	The attributes of the resource definition. To access the attributes, your user exit program must contain a definition of the layout of this area. Use the layout definitions supplied with CICSPlex SM in the following libraries: **Library Contains** **AEYUCOB** COBOL copybooks **AEYUMAC** Assembler DSECTs **AEYUC370** C typedef structs **AEYUPL1** PL/I DCL structures The member names in these libraries match the resource definition types. You must compile your user exit program with the libraries supplied with the release level of CICS Transaction Server for z/OS that is running the CICS Configuration Manager server CICS region.	✓ 1

1 The CICS Configuration Manager server ignores any changes to resource attributes by a Delete or Rename API command exit.

Change package pre-processing parameters

The following table describes the parameters that appear after the common header in the communication area for a change package pre-processing exit.

The communication area has the same layout for every change package pre-processing exit. However, while the layout is the same, not all of the parameter values in that layout are initialized for every exit point. The server only initializes the parameter values that are relevant to each exit point. Also, user exit programs can only alter (pass back to the server) selected parameters. The following table describes the parameters, and identifies the exit points for which the parameter values are initialized, and the exit points that can alter these parameter values.

Table 21. User exit parameters: change package pre-processing

	User exit access to parameter: read-only (R), modifiable (M), or not supplied (×)								
Parameter	**Approve**	**Backout**	**Disapprove**	**Import**	**Install**	**Migrate**	**Newcopy**	**Ready**	**Unready**
Change package ID	R	R	R	R	R	R	R	R	R
External reference	R	R	R	R	R	R	R	R	R
Migration scheme	R	R	R	R	R	R	R	R	R
Approval profile	R	×	R	×	×	×	×	×	×
Pointer to package-scheme	R	R	R	R	R	R	R	R	R
Pointer to XML API command request	R	R	R	R	R	R	R	R	R
Check state of Approve command 2	M	×	×	×	×	M	×	×	×
Approval status 1	M	R	M	×	×	R	R	×	×

Table 21. User exit parameters: change package pre-processing (continued)

Parameter	User exit access to parameter: read-only (R), modifiable (M), or not supplied (×)								
	Approve	**Backout**	**Disapprove**	**Import**	**Install**	**Migrate**	**Newcopy**	**Ready**	**Unready**
Approver role	R	×	R	×	×	M	×	×	×
Approver user ID	R	×	R	×	×	M	×	×	×
Check state of Disapprove command **2**	×	×	M	×	×	×	×	×	×
Check state of Import command **2**	×	×	×	R	×	×	×	×	×
Migration status **3**	×	R	×	×	×	R	×	×	×
Check state of Ready command **2**	×	R	×	×	R	×	R	R	R
Ready status **4**	×	R	×	R	R	R	R	R	R

1 Approval status values:
- **A** Fully approved
- **P** Partially approved
- **N** No approvals

2 The command "check state" flags indicate whether the command would normally (without the influence of a return code from the exit program) succeed or fail.

3 Migration status value of the change package:
- **N** Never been migrated using this migration scheme
- **Y** Has previously been successfully migrated using this migration scheme

4 Ready status value of the change package:
- **N** Not ready
- **Y** Ready

Change package post-processing parameters

These are the parameters that appear after the common header in the communication area for a change package post-processing exit:

Change package ID
External reference
Migration scheme
Pointer to package-scheme
Pointer to XML API command request

All of these parameters are read-only. Change package post-processing exit programs cannot affect the CICS Configuration Manager server processing: these exits are intended only to be used to notify users or other applications that a process has occurred.

User exit return codes

Resource attribute update user exit programs can allow the associated API command by setting return code 0, and disallow the API command by setting return code 8. Resource attribute update user exit programs for the following API commands can also allow the command while adjusting resource attributes by setting return code 4: Alter, Copy, Create, Migrate, Rename, and Update. (User exits programs for Delete and Rename cannot adjust resource attributes.)

Similarly, change package pre-processing user exit programs can also allow or disallow the API command, and modify parameters to affect the API command.

Return code
Description

0 Allow the API command (with no updates to resource attributes by the user exit program).

4 Allow the API command with updates, as per the modified parameters in the communications area

8 Disallow the API command

12, 16 Either:

- "Construction" error: the exit program expected a parameter that was not present in the communication area, or contained an unexpected value.

  or

- The exit program experienced an environmental error (for example, security or file access error) during processing.

However, return codes set by change package post-processing user exit programs have no effect on the associated API command, because these programs are invoked only after the API command has successfully completed.

Predefined reason codes

Reason codes in the range 8000–8999 signal error conditions detected by the exit program. Within this range:

8000–80FF
Reserved for reason codes predefined by CICS Configuration Manager for use by exit programs to signal common error conditions.

If the user exit program completes with RC=8 with one of these reason codes, the CICS Configuration Manager ISPF dialog interface will automatically display a user error message reflecting the error condition. This eliminates the need for the user exit program to prepare reason text for many common errors. Unallocated reason codes in the 8000 to 8299 are reserved for future use.

For details of the predefined reason codes, see the CICS Configuration Manager ISPF dialog interface:

1. On the primary menu, press the Help key (F1).
2. Scroll down, and move the cursor to the hyperlinked heading "CICS Configuration Manager Reason codes"
3. Press the Help key (F1).
4. Scroll down to the exit program reason code conditions.

8300–8999
Unreserved reason codes for use by exit programs.

Sample user exit programs

The following user exit program source members are supplied in the sample library SCCVSAMP:

Table 22. Sample user exit program source

Member name	Programming language	For exit point	Description
CCVXRANA	Assembler	Resource attribute update (RANA*nn*01)	
CCVXRANC	COBOL		
CCVXPRA	COBOL		
CCVXCPRA	Assembler	Change package pre-processing (CPPR*cc*01)	
CCVXCPRC	COBOL		
CCVXFTPC	COBOL	Change package migrate post-processing (CPPOMG01: uses FTP to transfer an export file to a remote site	
CCVXSMTC	COBOL	Change package post-processing (CPPO*cc*01: sends an e-mail to report the outcome of an API command on a change package	

For details, see the comments in each sample.

Chapter 22. Using the SOAP API

CICS Configuration Manager clients communicate with the server by exchanging Simple Object Application Protocol (SOAP) 1.1 messages via Hypertext Transfer Protocol (HTTP) sockets. You can use the CICS Configuration Manager SOAP application programming interface (API) to develop your own client for CICS Configuration Manager.

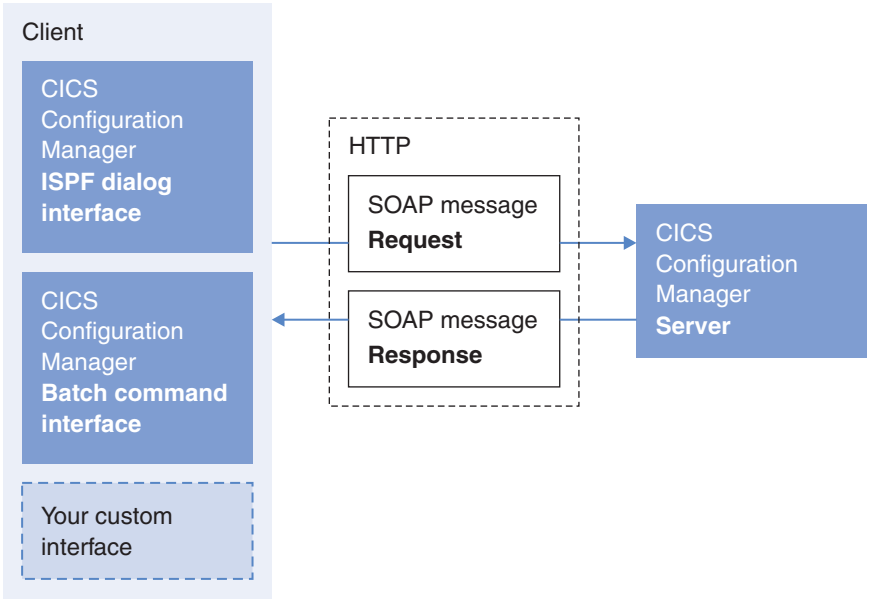


Figure 114. The CICS Configuration Manager server and its clients exchange SOAP messages

A SOAP message is an XML document that contains application-specific elements inside standard "envelope" elements. Here, the "application-specific" elements are the CICS Configuration Manager API. A client sends a SOAP message containing a request to perform an API command; the server returns a SOAP message containing the response.

Figure 115 on page 324 and Figure 116 on page 324 show the general format of these SOAP messages. This API reference describes the body of the messages. For more information about SOAP and its envelope elements, see the specification at http://www.w3.org/TR/soap11/.

Tip: To see the XML of the request and response messages while using the CICS Configuration Manager ISPF dialog interface, open the Settings pull-down menu and set XML print on.

The CICS Configuration Manager server listens for API command requests on the following uniform resource locator (URL):

`http://hostname:port/CICS/CWBA/CCVWSDSH/CCVADISP`

where *hostname* is the name of your z/OS host and *port* is the port number. (If you specify an SSL port number, then specify the protocol as https instead of http.)

```
<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/">
  <SOAP-ENV:Header SOAP-ENV:mustUnderstand="no"/>
  <SOAP-ENV:Body>

    <CCV210>
      <API_command_name>
        Input for this command...
      </API_command_name>
    </CCV210>

    </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```

Figure 115. Request: SOAP message from client to server

```
<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/">
  <SOAP-ENV:Header SOAP-ENV:mustUnderstand="no"/>
  <SOAP-ENV:Body>

    <CCV210>
      <API_command_name>
        <OutputData>
          Output for this command...
        </OutputData>
      </API_command_name>
    </CCV210>

  </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```

Figure 116. Response: SOAP message from server to client

Summary of API commands

Here are the API commands, grouped according to their purpose:

- Manipulating objects and their data:

  Create Creates a resource definition or a CICS Configuration Manager repository object.

  Update
  Modifies a resource definition or a CICS Configuration Manager repository object.

  Copy Copies resource definitions between groups or CICS configurations.

  Delete Deletes resource definitions or CICS Configuration Manager repository objects.

  Alter Alters selected attribute values across one or more resource definitions, without affecting other attribute values.

  Rename
  Renames resource definitions, and optionally moves them to another group.

- Associating objects with other objects:

  Add Adds objects to a container object.

  Remove
  Removes objects from a container object.

- Retrieving object information:

  Inquire
  Returns all the fields for a single resource definition, CICS Configuration Manager repository object, or CICS Configuration Manager journal object.

  List Returns selected fields from one or more resource definitions, CICS Configuration Manager repository objects, or CICS Configuration Manager journal objects.
- Packaging changes to resource definitions:

  Ready Indicates that the resource definitions in a change package are ready for migration.

  Unready
  Indicates that the resource definitions in a change package are no longer ready for migration.

  Approve
  Adds to a change package the approval of a particular approver role.

  Disapprove
  Removes from a change package the approval of a particular approver role.

  Migrate
  Copies the resource definitions in a change package from source to target CICS configurations, and invokes commands in the change package on target CICS configurations, according to the specified migration scheme.

  Backout
  Backs out a previous change package migration.
- Altering in-memory images of resource definitions in active CICS regions:

  Discard
  Discards the in-memory image of resource definitions from active CSD-based CICS regions.

  Install Dynamically makes resource definitions available to an active CICS region.

  Newcopy
  Reloads in-memory copies of resource definitions associated with a CICS program definition.
- Importing resource definitions from an export file:

  Import
  Imports resource definitions from an export file received from another CICS Configuration Manager system. Optionally, if the export file contains change package details, also registers change packages in the importing CICS Configuration Manager repository.
- Recovering historical versions of resource definitions from the journal:

  Recover
  Recovers before or after images of historical resource definitions from the journal.

Case sensitivity in XML element names and content

The CICS Configuration Manager server:

- Accepts XML element names in any combination of lowercase and uppercase characters: `<elementname>`, `<ElementName>`, and `<ELEMENTNAME>` are equivalent.
- Returns all XML element names in uppercase.

For readability, most element names are presented here in mixed case: for example, `<ElementName>`. The supplied XML schema also define most element names in mixed case: for details, see "Using the supplied schema to write API commands" on page 327.

Where the API offers a choice of literal values for element content, like this:

```
<ContainerType> RESDESC | RESGROUP </ContainerType>
```

then you can specify the literal value in any combination of lowercase and uppercase, such as `resdesc` or `ResGroup`.

For variable values, case sensitivity depends on the element. For example, if the XML element describes a resource definition attribute that CICS stores in uppercase, then you can specify the attribute value in the API using any combination of lowercase and uppercase, and the CICS Configuration Manager server will convert it to uppercase:

```
<Program> Qaadfltc </Program>
```

However, if the attribute is mixed case (for example, a description), then the CICS Configuration Manager server preserves the case that you specify in the XML element content.

Characters allowed in XML element content

CICS Configuration Manager API XML elements can contain the following characters:

a–z
A–Z
0–9
~ ! @ # $ * ( ) _ - + = { } [ ] \ : ; , . / ?
(blank)

All other characters are considered "unsafe", and must be specified using one of the following escaped formats:

%*h*

EBCDIC character reference, where *h* is a hexadecimal number representing the EBCDIC character code.

For example, to include a less than sign in the content of an element, specify:

%4C

&#*d***; or &#x***h***;**

Numeric XML character reference, where *d* is a decimal number and *h* is a hexadecimal number representing the character code point in ISO/IEC 10646.

Named XML character references (such as & and <) are not supported.

Including other XML elements

The CICS Configuration Manager server ignores any XML elements in the request that are not required to perform the command. This includes:

- Custom XML elements.

  You can include an element such as this anywhere in the request:

  ```
  <MyCustomElement>custom data</MyCustomElement>
  ```

- CICS Configuration Manager API XML elements that are not required for this particular command.

  For example, if you specify `<JournalCriteria>` in a List command request, but you do not specify "journal" as the location type, then `<JournalCriteria>` is ignored.

However, if you use the supplied XML schema to validate a request that contains such XML elements, then you might receive validation errors. To avoid these errors, adjust the schema to include these elements.

Using the supplied schema to write API commands

The CICS Configuration Manager sample library SCCVSAMP contains a schema for the API. This schema is written in the W3C XML Schema 1.0 language. If you have a "schema-aware" XML editor, then you can use this schema to help you create valid XML for an API command.

The schema is divided into several files:

CCVXX
: Defines the request format of CICS Configuration Manager API commands. This is the "master" schema for API commands: it includes other schemas (described below), and refers to the groups and data types defined in those schemas. Use this schema to create and validate API commands.

CCVXXCCV
: Defines the element structure of CICS Configuration Manager repository and journal object types.

CCVXXDT
: Defines common basic data types used in the API, such as a formatted time stamp.

CCVXXRES
: Defines the element structure of CICS and CICSPlex SM-specific resource definition object types.

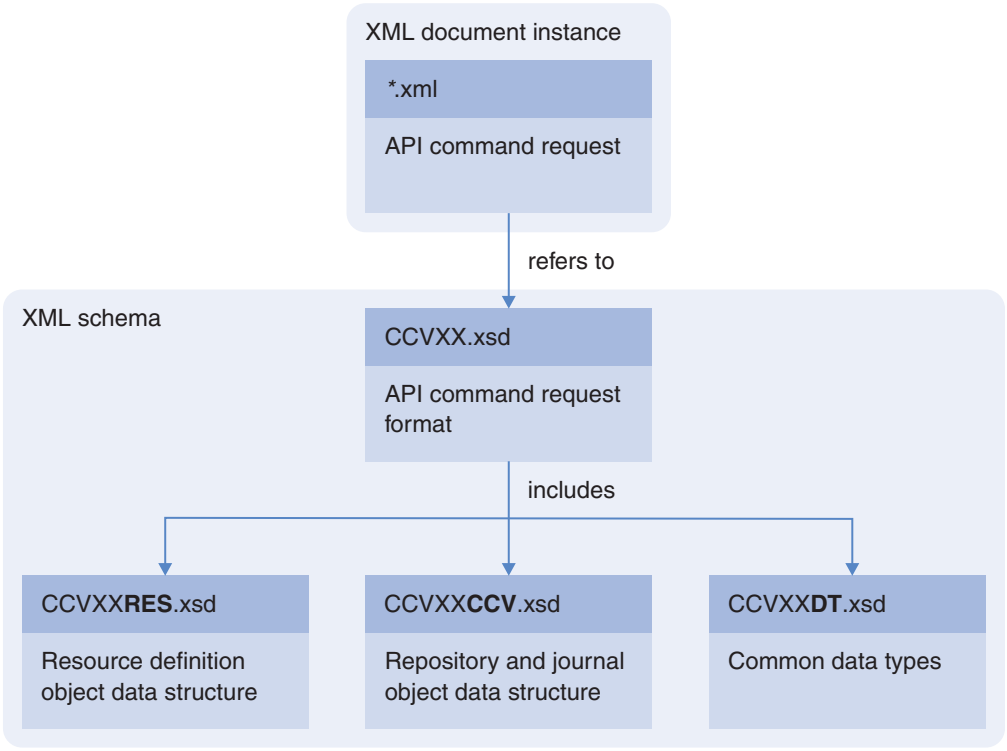


Figure 117. Structure of API schema files

The sample library also contains these related members:

CCVXXT
Template for an API command.

CCVXXTCR
Template for a Create API command.

CCVXXTEN
Template for a SOAP envelope.

CCVXXOBJ
Schema for object data. This is intended for use with XML editors that can generate sample XML documents from schemas. You can use this schema to generate all of the XML elements for a resource definition object, repository object, or journal object.

Open this schema in your XML editor, select the option for generating a sample XML document, and then select the root element (the type of resource definition you want). Depending on the features of your XML editor, this will generate an XML document that contains all of the elements for that object type. This is especially useful for writing Create commands to create resource definitions.

CCVXXCAT
XML catalog for the schema.

CCVXXOUT
Schema for API command responses. Includes the same schemas as CCVXX, the master schema for API command requests. Use this schema to help predict and understand the format of API command responses.

To create the XML for an API command:

1. Transfer the CCVXX* members from the sample library SCCVSAMP to your PC. Keep the member names, and add the following file extensions:
   - Give the CCVXXT* members and the CCVXXCAT member the file extension `.xml` (XML document)
   - Give the remaining CCVXX* members the file extension `.xsd` (XML schema)

   Save all of these files in the same folder on your PC.
2. Open `ccvxxt.xml` in your XML editor.

   This XML document contains a reference to the schema. An XML editor can use the schema to automatically generate elements, and validate that the element contents match required values.

The schema does not define all of the rules required to write an API command. Use the schema together with this API reference.

Tracing XML sent and received by the supplied client interfaces

When developing your own client interface for CICS Configuration Manager, you might find it useful to model your API commands on the API commands sent by the ISPF dialog interface that is supplied with CICS Configuration Manager.

To see the XML of the request and response messages while using the CICS Configuration Manager ISPF dialog interface, open the Settings pull-down menu and set XML trace options.

Similarly, to trace the XML sent and received by the batch client program CCVBMAIN, specify the ddname CCVBXML.

This technique can be a valuable shortcut to writing your own API commands. Rather than writing an API command from scratch, start with an existing API command that does something similar. For example:

1. In the CICS Configuration Manager ISPF dialog interface, open the Settings pull-down menu and set the XML trace options to either display the XML on-screen or save it to a data set.
2. Go to a panel in the CICS Configuration Manager ISPF dialog interface that performs a function similar to the one you are interested in developing.
3. Study the associated API command request (labeled as the “Send buffer”) and response (the “Receive buffer”).
4. Use this API documentation to adjust the API command to match your specific requirements.

Diagnostic data in the API response

If the return code for a API command request is 4 or higher, then the response from the CICS Configuration Manager server includes diagnostic data in addition to the usual return code, reason code, and task number. This diagnostic data reflects the original error code that caused the problem, matching the first error message in the CCVLOG data set in the server CICS region for this task.

```
⋮
<OutputData>
  <ReturnCode> return_code </ReturnCode> 1
  <ReasonCode> reason_code </ReasonCode>
  <TaskNo> CICS_task_number </TaskNo>

  <DiagData>
    <RC> return_code </RC> 1
    <RSN> reason_code </RSN>
    <INFO> nnnnnnnn </INFO> 2
    <INFO2> nnnnnnnnnnnnnnnn </INFO2>
    <RESP> nnnnnnnnnnnnnnnn </RESP> 3
    <RESP2> nnnnnnnn </RESP2>
    <EIBFN> last_CICS_function_requested </EIBFN>
  </DiagData>
⋮
  <ExceptionData> 4
    <ErrorElement>
      <Target>
        <ObjName> resource_name </ObjName>
        <ObjGroup> resource_group </ObjGroup>
        <ObjType> resource_type </ObjType>
        <LocationType> Context | CSD </LocationType>
        <LocationName> location_name </LocationName>
      </Target>
      <Messages> 5
        <MsgLostCount> lost_count </MsglostCount> 6
        <MsgCount> returned_count </MsgCount>
        <MsgElement> message_text </MsgElement>

        More message elements...

      </Messages>
    </ErrorElement>
  </ExceptionData>
⋮
</OutputData>
⋮
```

1 <ReturnCode> and <ReasonCode> report the overall result for the command. <RC> and <RSN> report the first result, contributing to the overall result. For details, see “Return codes” on page 442 and “Reason codes” on page 443.

2 <INFO> and <INFO2> are for IBM use only.

3 <RESP>, <RESP2>, and <EIBFN> contain the EIBRESP, EIBRESP2, and EIBFN fields from the CICS EXEC interface block (EIB). For details, see the *CICS Transaction Server for z/OS: CICS Application Programming Reference*.

4 The following API commands return additional exception data for resource definitions:
- Backout
- Copy
- Create
- Delete
- Discard
- Install
- Migrate
- Newcopy
- Update

For commands that act on a single object, the exception data follows the diagnostic data. For commands that act on multiple objects, each list element in the response contains separate exception data.

5 `<Messages>` contains messages from DFHEDAP or CICS system programming interface (SPI) commands (for resource definitions in a CSD file), CICSPlex SM (for resource definitions in a context), or the CICS Configuration Manager agent (for actions on CSD-based CICS regions).

6 (Only for Discard, Install, and Newcopy commands.) The amount of data for each command is limited to 32KB. If a command involves many resource definitions, then the returned message data may exceed this maximum limit, and some messages *prior to the final message* may be dropped from the returned data, and hence lost. *lost_count* indicates the number of messages lost. The final message is never dropped. For example, if a command generates 210 messages, and ten must be dropped to fit inside the 32KB limit, then messages 200 to 209 will be dropped: the returned data will contain the first 199 messages followed by the final message.

API parameters

The parameters for the API commands are described below in alphabetical order.

approval profile
1–8 character name for an approval profile. Each approval profile name must be unique.

The CICS Configuration Manager ISPF dialog limits the character set to A–Z, 0–9, @, $, #, -, and _. The CICS Configuration Manager server converts lowercase characters to uppercase, but does not limit the character set further. Client applications using the API may impose their own character set restrictions.

approver role
1–8 character name for an approver role. Approver roles are included in the system authorization facility (SAF) resource key that the CICS Configuration Manager server sends to your external security manager (such as RACF). The allowed values are determined by your external security manager. For more information on SAF resource keys, see “Restricting access to API commands and resource definitions” on page 107.

change package ID
1–8 character identifier for a change package. Each change package identifier must be unique.

The CICS Configuration Manager ISPF dialog limits the character set to a–z, A–Z, 0–9, @, $, #, -, and _. Client applications using the API may impose their own character set restrictions.

checksum
8-digit hexadecimal number that represents the contents of an object, such as the attributes of a resource definition. For example, `C3B3A8C1`.

You can use checksums to quickly compare resource definitions of the same type, without comparing their individual attributes. For example, if two TRANDEF resource definitions have the same checksum value, it means that their attribute values are identical.

You can use the List command to return checksums. These checksums may be calculated from all the attributes of a resource definition, or a subset of the attributes, depending on the hashing scope specified by the List command.

CCV release
3 digits identifying the CICS Configuration Manager product version, release, and modification number.

CICS configuration
1–8 character name for a CICS configuration. Each CICS configuration name must be unique.

The CICS Configuration Manager ISPF dialog limits the character set to A–Z, 0–9, @, $, #, -, and _. The CICS Configuration Manager server converts lowercase characters to uppercase, but does not limit the character set further. Client applications using the API may impose their own character set restrictions.

CICS release
3 digits identifying the CICS product version, release, and modification number. For example, 230 identifies version 2, release 3, modification 0.

CICS task number
Number of the CICS task that performed the API command.

context
Name of a context in a CICSPlex SM data repository.

CSD DSN
Fully qualified data set name of a CICS system definition file with no enclosing quotes.

definition version
Version number of a resource definition in a CICSPlex SM context.

description
Up to 80 characters describing a CICS Configuration Manager repository object. Optional.

This is different to the description for a resource definition. The maximum length of the description for a resource definition is determined by CICS or CICSPlex SM.

element count
Number of list elements or repeating group elements to follow. An API command request that uses `<ListElement>` must, *before the first* `<ListElement>`, have a `<ListCount>` that specifies the number of list elements to follow.

event ID
CICS Configuration Manager journal event identifier. 16 hexadecimal digits. You can use this identifier to select the specific migration of a change package that you want to back out or import.

external reference
Optional alternative 1–32 character name for a change package. If you use a change control system, then you can use this parameter to link a CICS Configuration Manager change package to an object in your change control system. CICS Configuration Manager does not refer to this name.

The CICS Configuration Manager ISPF dialog limits the character set to a–z, A–Z, 0–9, @, $, #, -, and _. Client applications using the API may impose their own character set restrictions.

hashing scope
Specified by the <HashingScope> element of a List command request. Determines whether or not the List command returns a checksum for each selected object, and which fields it uses to calculate the checksum returned in <HashingValue>.

integrity token
Checksum that represents the contents of an object, such as the attributes of a resource definition. 8 hexadecimal digits. For example, C3B3A8C1.

When calling the Delete or Update command, to avoid overwriting changes by other users, supply the integrity token from an earlier Inquire or Update command for the same object. If the object has changed since the earlier command, then the Delete or Update command performs no action.

For example, suppose that you want to retrieve and then update the attributes of a resource definition. First, use the Inquire command to retrieve the resource definition. Along with the attributes of the resource definition, the Inquire command returns an integrity token. Later, when you use the Update command to update the attributes, supply this integrity token. The Update command calculates a new checksum for the resource definition, and compares it with the integrity token that you supplied. If the values do not match, then it means that the resource definition has been updated since your Inquire command, and the Update command rejects your update.

journal record type
Record type in the CICS Configuration Manager journal:
BAImage
EventStart
EventData
EventEnd

For details, see "Journal objects" on page 354.

location name
Name of the location containing the data that you want to work with. This must be appropriate to the location type:

location type
location name

CConfig
CICS configuration name. Required.

Context
CICSPlex SM context name. Required.

CSD Fully qualified data set name of a CICS system definition file with no enclosing quotes. Required.

Journal or Repository
Not applicable: do not specify. If you do specify a location name, it is ignored.

location type
Type of the location containing the data that you want to work with. Must be one of the following:

CConfig
CICS configuration

Context
CICSPlex SM context

CSD CICS system definition file

Journal
CICS Configuration Manager journal

Repository
CICS Configuration Manager repository

migration scheme
1–8 character name for a migration scheme. Each migration scheme name must be unique.

The CICS Configuration Manager ISPF dialog limits the character set to A–Z, 0–9, @, $, #, -, and _. The CICS Configuration Manager server converts lowercase characters to uppercase, but does not limit the character set further. Client applications using the API may impose their own character set restrictions.

object instance
Identifies a specific version of an object in the CICS Configuration Manager repository or journal. 8 hexadecimal digits for a repository object, 26 for a journal object. For example, `00000001` for a repository object, `BC2AD2211C69FA000000000114` for a journal object.

The object instance is returned by the List command. You can specify an object instance to the Delete or Inquire command to delete a specific version of a repository object, or retrieve a specific version of a journal object. You need to specify object criteria to identify the object, and then, additionally, specify the object instance to identify a version of that object. The object instance is similar to a version number; on its own, it does not uniquely identify an object.

object name
Name of a resource definition or a CICS Configuration Manager repository object.

object type
One of the object types listed in "API object types" on page 336. Required.

Some commands allow the literal `All` or `*` to indicate all object types. For details, see the individual command descriptions.

remote system connection
Name of a remote system connection defined in a CICS configuration. This must match the name of a connection resource definition in the CICS configuration. The connection resource definition refers to the remote CSD-based CICS region on which you want to perform an action, such as "install". For details, see "Optional: Configure the agent for CSD-based CICS regions" on page 92.

reason code
See "Reason codes" on page 443.

resource group
Name of a group in a CSD file or a RESGROUP in a CICSPlex SM data repository.

resource name
Name of a resource definition.

resource type
One of the resource definition object types supported by CICS Configuration Manager. For details, see "Resource definition objects" on page 337.

Some commands allow you to use the value * (asterisk) or All to specify all resource definition object types. You cannot use masked values to specify a subset of types: you must specify a single type or all types.

restriction field name
Name of the field (that is, the resource definition attribute) whose value you want to restrict in the List command response.

restriction field value
Value of the field (that is, the resource definition attribute) to be used for restriction criteria in the List command.

Values for attributes which are limited to specific values cannot contain a masking character. For other attributes, you may use the following masking characters:

***** Matches zero or more characters

+ Matches any single character

restriction operator
One of the following comparison operators:
EQ Equal to
NE Not equal to
LT Less than
GT Greater than
LE Less than or equal to
GE Greater than or equal to

return code
See "Return codes" on page 442.

SAF class
The SAF resource class that the CICS Configuration Manager server uses for security checks. For details, see "Restricting access to API commands and resource definitions" on page 107.

SAF prefix
The character string that the CICS Configuration Manager server prepends to security keys. For details, see "Restricting access to API commands and resource definitions" on page 107.

sequence
Integer identifying the order in which journal records were created for a particular event.

SMF system identifier
Four-character MVS System Management Facilities (SMF) system identifier. Identifies the MVS system that runs the CICS Configuration Manager server.

time stamp
Date and time, in the format:

```
ccyy/mm/dd hh:mm:ss.th
```

ccyy
Year. Four digits (0001–9999).
mm Month. Two digits (01–12).
dd Day of the month. Two digits (01–31).
hh Hour, in 24-hour clock format. Two digits (00–23).

mm Minutes. Two digits (00–59).
ss Seconds. Two digits (00–59).
th Tenths and hundredths of a second. Two digits (00–99).

For example, the following time stamp represents midday, 20 July 2005:

```
2005/07/20 12:00:00.00
```

trace flag
IBM internal use only.

transformation rule set
1–8 character name for a set of transformation rules. Each set name must be unique.

The CICS Configuration Manager ISPF dialog limits the character set to A–Z, 0–9, @, $, #, -, and _. The CICS Configuration Manager server converts lowercase characters to uppercase, but does not limit the character set further. Client applications using the API may impose their own character set restrictions.

transformation variable name
1–8 character name for a transformation variable. Each variable name must be unique.

The CICS Configuration Manager ISPF dialog limits the character set to A–Z, 0–9, @, $, #, -, and _. The CICS Configuration Manager server converts lowercase characters to uppercase, but does not limit the character set further. Client applications using the API may impose their own character set restrictions.

transformation variable value
Allowed values depend on how the transformation variable is used in the transformation rule.

API object types

You can use the CICS Configuration Manager API to create, read, update, and delete records stored in various data sets:

- Resource definitions stored in CSD files or CICSPlex SM data repositories
- CICS Configuration Manager repository and journal records (journal records are read-only)

Rather than accessing these records directly, CICS Configuration Manager clients use the API to exchange XML with the server, and the server accesses the data sets.

The API represents each record type as an *object type*, specified in the `<ObjType>` element of an API command. The object type determines the elements allowed in `<ObjectData>` to represent the record data, and the elements allowed in `<ObjectCriteria>` to select an object.

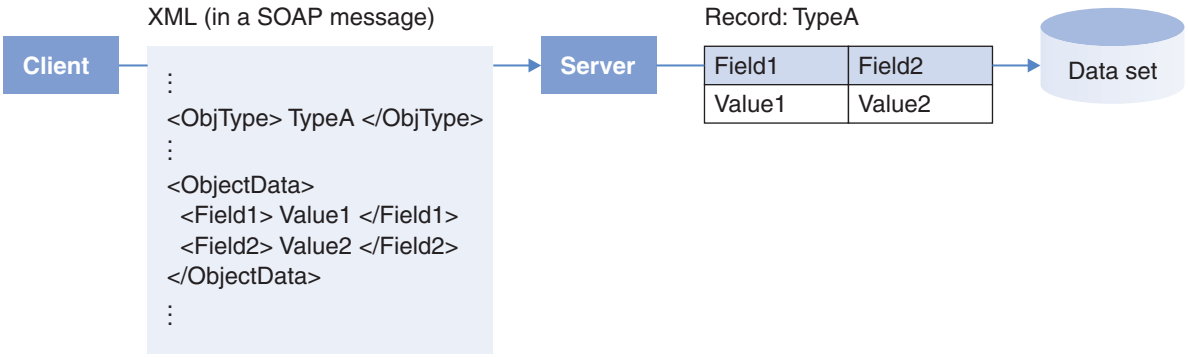


Figure 118. The CICS Configuration Manager API represents record data as XML elements

Resource definition objects

CSD files and CICSPlex SM data repositories use different names for equivalent resource definition types. For example, a PROGRAM resource definition in a CSD file is known as a PROGDEF in a CICSPlex SM data repository.

The CICS Configuration Manager API object types reflect the names used by CICSPlex SM. For example, to refer to a PROGRAM resource definition in a CSD file, you use the API object type PROGDEF. This allows you to work with resource definitions regardless of whether they are stored in CSD files or CICSPlex SM data repositories, using a single set of object types. This contrasts with the ISPF dialog, which presents the names used by CSD files. This is because, currently, most end users are more likely to be familiar with the CSD names than the CICSPlex SM names.

Table 23 lists the resource definition object types supported by CICS Configuration Manager.

Table 23. Supported resource definition object types

Object type	Equivalent CSD-based object type	Can be included in a change package?
ATOMDEF	ATOMSERVICE	✓
BUNDDEF	BUNDLE	✓
CONNDEF	CONNECTION	✓
CSYSDEF	1	
CSYSGRP	1	
DB2CDEF	DB2CONN	✓
DB2EDEF	DB2ENTRY	✓
DB2TDEF	DB2TRAN	✓
EJCODEF	CORBASERVER	✓
EJDJDEF	DJAR	✓
DOCDEF	DOCTEMPLATE	✓
ENQMDEF	ENQMODEL	✓
FILEDEF	FILE	✓
IPCONDEF	IPCONN	✓

Table 23. Supported resource definition object types (continued)

Object type	Equivalent CSD-based object type	Can be included in a change package?
JRNMDEF	JOURNALMODEL	✓
JVMSVDEF	JVMSERVER	✓
LIBDEF	LIBRARY	✓
LSRDEF	LSRPOOL	✓
MAPDEF	MAPSET	✓
MQCONDEF	MQCONN	✓
PRTNDEF	PARTITIONSET	✓
PARTDEF	PARTNER	✓
PIPEDEF	PIPELINE	✓
PROCDEF	PROCESSTYPE	✓
PROFDEF	PROFILE	✓
PROGDEF	PROGRAM	✓
RASINDSC	1	✓
RASGNDEF	1	✓
RESGROUP	Group	
RESDESC	List	✓ (List, not RESDESC) 2
RESINDSC	1	
RQMDEF	REQUESTMODEL	✓
SESSDEF	SESSION	✓
SYSLINK	1	✓
TCPDEF	TCPIPSERVICE	✓
TDQDEF	TDQUEUE	✓
TERMDEF	TERMINAL	✓
TRANDEF	TRANSACTION	✓
TRNCLDEF	TRANCLASS	✓
TSMDEF	TSMODEL	✓
TYPTMDEF	TYPETERM	✓
URIMPDEF	URIMAP	✓
WEBSVDEF	WEBSERVICE	✓

1 This is a CICSPlex SM-only object. There is no equivalent CSD-based object.

2 You can add a list object from a CSD file to a change package, but you cannot add the equivalent CICSPlex SM RESDESC object to a change package.

Object criteria

```
<ObjGroup> resource_group </ObjGroup>
<ObjName> resource_name </ObjName>
<ObjDefVer> definition_version </ObjDefVer>
```

<ObjDefVer> is valid only when referring to resource definitions in a CICSPlex SM context. If you specify <ObjDefVer>, you cannot specify <ObjGroup>, and vice versa.

Object data

```
<attribute_name>value</attribute_name>
⋮
```

The names of the object data elements match the attribute names used by CICSPlex SM. For details, see the XML schema CCVXXRES supplied in sample library SCCVSAMP. For example, to set the PROGRAM attribute of a TRANDEF resource definition to QAAFLTC, you specify <Program>QAAFLTC</Program>. See "Examples" on page 375 for an example using the Create API command. For a complete list of attributes for each object, see the resource table descriptions in *CICS Transaction Server for z/OS: CICSPlex SM Resource Tables Reference*. To set an attribute to its default value, specify an empty element, such as <*attribute_name*/>, or an element containing whitespace only.

PASSWORD attributes of FILE resource definitions

For improved security, rather than returning the actual value of a file password, the CICS Configuration Manager server returns a string of 8 characters, consisting of the 8 hexadecimal digits of a 4-byte checksum of the file password, with the first digit replaced by an asterisk (for example, *F01E93C).

If the file password has not changed, the CICS Configuration Manager ISPF client sends the value as a string of 8 asterisks (********). If the file password specified by a client begins with an asterisk, the server ignores it, and does not attempt to update that attribute in the resource definition.

The CICS Configuration Manager ISPF client displays the file password on-screen as a string of 8 asterisks.

Repository objects

These object types represent records stored in the CICS Configuration Manager repository: CICS configurations, change packages and their related records, and system options.

AProfile (approval profile)
CConfig (CICS configuration)
ChgPkg (change package)
CmdAssociation (associates a command with a change package)
Exits (user exit points)
KeyAssociation (associates a resource definition with a change package)
PScheme (package-scheme)
Scheme (migration scheme)
SysOpts (system options)
TFRule (transformation rule set)

The following are also repository object types. However, these objects do not represent records stored in the repository; they are dynamically created by the server when it receives a List command that requests one of these objects.

ReadyLst (ready list)

SvrInfo (server information)

AProfile (approval profile)

Object criteria

```
<ObjName> approval_profile </ObjName>
```

Object data

Input data	List default output	
✓	✓	<Name> *approval_profile* </Name>
	✓	<Ver> *object_version* </Ver>
	✓	<ChangeTime> *time_stamp* </ChangeTime>
	✓	<UserID> *user_ID* </UserID>
✓	✓	<Description> *description* </Description>
✓		<RGroup> 1 <MSCount> *element_count* </MSCount> <RGroupElement> <Scheme> *migration_scheme* </Scheme> <Auth01> *approver_role* </Auth01> 2 <Auth02> *approver_role* </Auth02> <Auth03> *approver_role* </Auth03> <Auth04> *approver_role* </Auth04> <Auth05> *approver_role* </Auth05> </RGroupElement> *More repeating group elements...* </RGroup>

1 The <RGroup> ("repeating group") element is a container for a set of <RGroupElement> elements. Here, each <RGroupElement> identifies a migration scheme and up to five approver roles. The number of <RGroupElement> elements must match the *element_count* specified by <MSCount>.

2 You can specify up to five approver roles for each migration scheme. You can omit unused <Auth*nn*> elements.

CConfig (CICS configuration)

Object criteria

```
<ObjName> CICS_configuration </ObjName>
```

Object data

Input data	List default output	
✓	✓	<Name> *CICS_configuration* </Name>
	✓	<Ver> *object_version* </Ver>

```
                ✓       <ChangeTime> time_stamp </ChangeTime>
                ✓       <UserID> user_ID </UserID>
                ✓       <Description> description </Description>
    ✓           ✓       <Context> context </Context> 1
    ✓           ✓       <CSDName> CSD_DSN </CSDName> 1
    ✓                   <ExpTarg> export_file_DSN </ExpTarg>
    ✓                   <FileType> CSPM | CSD | EXPORT | CCM </FileType>
    ✓                   <ExpFormat> BATCHREP | DFHCSDUP | CCM | CCM </ExpFormat>
    ✓                   <ExpVer> Vvrm </ExpVer>
    ✓                   <ExpDisp> MOD | OLD </ExpDisp>
    ✓                   <CSDRLS> DYNAMIC | NOTRLS | RLS </CSDRLS>
    ✓                   <RGroup> 2
                          <MROCount> element_count </MROCount>
                          <RGroupElement>
                            <MROLink> MRO_link </MROLink>
                          </RGroupElement>

                          More repeating group elements...

                        </RGroup>
    ✓                   <RGroup> 3
                          <LTVCount> element_count </LTVCount>
                          <RGroupElement>
                            <XName> transformation_variable_name </XName>
                            <XValue> transformation_variable_value </XValue>
                          </RGroupElement>

                          More repeating group elements...

                        </RGroup>
```

1 You can specify either <Context> or <CSDName>, but not both. (A CICS configuration refers to either a context or a CSD file.)

2 The <RGroup> ("repeating group") element is a container for a set of <RGroupElement> elements. Here, each <RGroupElement> identifies a multiregion operation (MRO) link. The number of <RGroupElement> elements must match the *element_count* specified by <MROCount>.

<MROCount> and <MROLink> are currently not used; they are reserved for future use.

3 Here, <RGroupElement> defines a transformation variable and its value. The number of <RGroupElement> elements must match the *element_count* specified by <LTVCount>.

During migration processing, transformation variable values defined in the CICS configurations override values defined in the migration scheme.

ChgPkg (change package)

Object criteria

```
<CPID> change_package_ID </CPID>
```

Object data

Input data	List default output

✓	✓	<CPID> *change_package_ID* </CPID> 1
	✓	<Ver> *object_version* </Ver>
	✓	<ChangeTime> *time_stamp* </ChangeTime>
	✓	<UserID> *user_ID* </UserID>
✓	✓	<Description> *description* </Description>
✓	✓	<ExtRef> *external_reference* </ExtRef>
✓	✓	<AppProf> *approval_profile* </AppProf>
	✓	<LC_APICMD> *API_command_name* </LC_APICMD> 2
	✓	<LC_Scheme> *migration_scheme* </LC_Scheme>
	✓	<LC_DaTime> *time_stamp* </LC_DaTime>
	✓	<LC_UserID> *user_ID* </LC_UserID>
		<LC_EvID> *event_ID* </LC_EvID>
	✓	<LC_RC> *return_code* </LC_RC>
	✓	<LC_RSN> *reason_code* </LC_RSN>

1 When using the Create command to create a change package: if automatic change package numbering is active, then <CPID> is ignored. The server generates a new change package identifier, and returns it in the response.

2 The prefix "LC_" stands for "last command". Elements with this prefix describe the last command performed on the change package.

CmdAssociation (command association)

Purpose

Associates a command with a change package.

To restrict a user's authority to add or remove commands in a change package, you need to define security rules for Add or Remove commands. For details, see "Example security scenario" on page 114.

See the related object "KeyAssociation (key association)" on page 343.

Object criteria

```
<CmdAPost>
  <CPID> change_package_ID </CPID>
  <CConfig> CICS_configuration </CConfig>
  <CICSGroup> resource_group </CICSGroup>
  <CICSObjType> resource_type </CICSObjType>
  <CICSObjName> resource_name </CICSObjName>
</CmdAPost>
```

Exits

Purpose

Defines the status of each user exit point:
- Whether it is active
- The name of the program associated with the exit point, if any
- Whether CICS can load the program and find the program in the DFHRPL load library concatenation.

You can set these values using the CICS Configuration Manager ISPF dialog option **1.6 Exit Points**.

For more information about user exit points, see Chapter 21, “Extending and customizing the CICS Configuration Manager server,” on page 313.

Object criteria

Fixed object name:

```
<ObjName> Exits </ObjName>
```

Object data

Input data

```
<Name> EXITS </Name>
<Ver> object_version </Ver>
<ChangeTime> time_stamp </ChangeTime>
<UserID> user_ID </UserID>
<RGroup> 1
  <EPCount> element_count </EPCount>
  <RGroupElement>
    <EPName> exit_point_name </EPName>
    <EPPgmName> program_name </EPPgmName>
    <Defined> Yes | No </Defined>
    <Loadable> Yes | No </Loadable>
    <EPState> Enabled | Disabled </EPState>
  </RGroupElement>

  More repeating group elements...

</RGroup>
```

1 The <RGroup> (“repeating group”) element is a container for a set of <RGroupElement> elements. Here, each <RGroupElement> identifies a user exit point.

KeyAssociation (key association)

Purpose

Associates a resource definition with a change package.

To restrict a user's authority to add or remove resource definitions in a change package, you need to define security rules for Add or Remove commands. For details, see “Example security scenario” on page 114.

See the related object “CmdAssociation (command association)” on page 342.

Object criteria

For Add and Remove commands:

```
<KeyA>
  <CPID> change_package_ID </CPID>
  <CConfig> CICS_configuration </CConfig> 1
  <CICSGroup> resource_group </CICSGroup>
  <CICSObjType> resource_type </CICSObjType>
  <CICSObjName> resource_name </CICSObjName>
</KeyA>
```

1 <CConfig>, <CICSGroup>, <CICSObjType>, and <CICSObjName> specify the selection key of the resource definition (not its original or previous keys; for details, see the object data descriptions).

Object data

Input data	List default output	
✓	✓	<CPID> *change_package_ID* </CPID> **1**
✓	✓	<CConfig> *CICS_configuration* </CConfig> **2**
✓	✓	<CICSGroup> *resource_group* </CICSGroup>
✓	✓	<CICSObjType> *resource_type* </CICSObjType>
✓	✓	<CICSObjName> *resource_name* </CICSObjName>
	✓	<Ver> *object_version* </Ver>
	✓	<ChangeTime> *time_stamp* </ChangeTime>
	✓	<UserID> *user_ID* </UserID>
		<O_CConfig> *CICS_configuration* </O_CConfig> **3**
		<O_CICSGroup> *resource_group* </O_CICSGroup>
		<O_CICSObjType> *resource_type* </O_CICSObjType>
		<O_CICSObjName> *resource_name* </O_CICSObjName>
		<P_CConfig> *CICS_configuration* </P_CConfig> **4**
		<P_CICSGroup> *resource_group* </P_CICSGroup>
		<P_CICSObjType> *resource_type* </P_CICSObjType>
		<P_CICSObjName> *resource_name* </P_CICSObjName>
		<CRC> *checksum* </CRC>
		<CreMethod> D | P </CreMethod> **5**

1 *change_package_ID* identifies a change package to which the resource definition belongs.

2 The contents of <CConfig>, <CICSGroup>, <CICSObjType>, and <CICSObjName> collectively form the *selection key*. The Ready and Migrate commands use the selection key to locate the candidate resource definition. The original key and previous key (see below) contain historical selection keys.

3 Elements with the prefix "O_" contain the *original key*. This is the selection key of the resource definition when it was first added to the change package.

4 Elements with the prefix "P_" contain the *previous key*. This is the selection key of the resource definition before its previous migration.

5 <CreMethod> identifies how this key association was created:

D Defined. This key association was created by an Add command, when a user added the resource definition to the change package.

P Propagated. This key association was created by a Migrate command. When the Migrate command copies a resource definition from a source to a target CICS configuration, it creates a new key association. The selection key of the new key association consists of the key field values of the migrated resource definition (in the target CICS configuration, after the Migrate command has applied transformation rules).

Usage

The combination of CICS configuration, group, type, and name constitutes a key that uniquely identifies a resource definition. Each key association contains three sets of keys: selection, original, and previous. The following table describes a sequence of Add and Migrate commands, illustrating the relationships between these keys.

Table 24. Key association: examples of selection key, original key, previous key, and creation method

	Key association created by the command			
	CICS configuration, group, type, name			
Command	**Selection key**	**Original key**	**Previous key**	**Creation method**
1. Add (user adds a resource definition to the change package)	CICS**D** PAY TRANDEF PAY1	CICS**D** PAY TRANDEF PAY1		Defined
2. Migrate the change package from CICSD to CICST	CICS**T** PAY TRANDEF PAY1	CICS**D** PAY TRANDEF PAY1	CICS**D** PAY TRANDEF PAY1	Propagated
3. Migrate the change package from CICST to CICSP	CICS**P** PAY TRANDEF PAY1	CICS**D** PAY TRANDEF PAY1	CICS**T** PAY TRANDEF PAY1	Propagated

PScheme (package-scheme)

Purpose

Indicates the readiness of a change package for a particular migration scheme, including the user IDs of approvers. Also contains a history of the commands performed on this combination of change package and migration scheme.

Object data

List default output

- <CPID> *change_package_ID* </CPID>
- <Scheme> *migration_scheme* </Scheme>
- <Ver> *object_version* </Ver>

```
✓       <ChangeTime> time_stamp </ChangeTime>
✓       <UserID> user_ID </UserID>
        <CRCCRC> checksum </CRCCRC> 1
        <CRCScheme> checksum </CRCScheme> 2
        <RdyStat> YES | NO </RdyStat> 3
        <AppStat> NONE | PENDING | APPROVED </AppStat>
        <MigStat> NONE | INPROGRESS | FAILED | COMPLETE </MigStat>
        <AuthName1> approver_role </AuthName1>
        <AuthName2> approver_role </AuthName2>
        <AuthName3> approver_role </AuthName3>
        <AuthName4> approver_role </AuthName4>
        <AuthName5> approver_role </AuthName5>
        <UserID1> approver_user_ID </UserID1>
        <UserID2> approver_user_ID </UserID2>
        <UserID3> approver_user_ID </UserID3>
        <UserID4> approver_user_ID </UserID4>
        <UserID5> approver_user_ID </UserID5>
        <RGroup> 4
          <CHCount> element_count </CHCount>
          <RGroupElement>
            <CH_APICMD> API_command_name </CH_APICMD>
            <CH_DaTime> time_stamp </CH_DaTime>
            <CH_UserID> user_ID </CH_UserID>
            <CH_EvID> event_ID </CH_EvID>
            <CH_RC> return_code </CH_RC>
            <CH_Rsn> reason_code </CH_Rsn>
          </RGroupElement>

          More repeating group elements...

        </RGroup>
```

1 The <CRCCRC> element contains a "checksum of checksums": that is, it contains a checksum of the checksums for each resource definition (see the <CRC> element in the key association object). CICS Configuration Manager uses this value to detect whether any resource definitions in the change package have been updated, or whether resource definitions have been added to the change package, or deleted from the change package.

2 The <CRCScheme> element contains a checksum of the migration paths in the migration scheme. CICS Configuration Manager uses this value to detect whether any migration paths in the migration scheme have changed.

3 Ready status, approval status, and migration status.

4 The <RGroup> ("repeating group") element is a container for a set of <RGroupElement> elements. Here, <RGroup> contains the history of the change package with this migration scheme. Each <RGroupElement> identifies a command that has been performed on this combination of change package and migration scheme. The number of <RGroupElement> elements must match the *element_count* specified by <CHCount>.

Object criteria

```
<ObjType> PScheme </ObjType>
<CPID> change_package_ID </CPID>
<Scheme> migration_scheme </Scheme>
```

Usage

Inquire and List are the only commands that you can use with a package-scheme object. You cannot use the Create or Update commands to create or update a package-scheme object. Instead, the CICS Configuration Manager server creates and updates these objects as a result of other API commands, such as a Create command for a change package, or an Approve command.

ReadyLst (ready list)

Purpose

Contains the list of resource definitions and commands that are in a change package, optionally limited to the candidates for a particular migration scheme. Also identifies the ready status of each candidate.

Object criteria

```
<CPID> change_package_ID </CPID>
<Scheme> migration_scheme </Scheme>
```

Object data

```
<Sel_Command> A | R | D </Sel_Command> 1  2
<Sel_CPID> change_package_ID </Sel_CPID>
<Sel_CConfig> CICS_configuration </Sel_CConfig>
<Sel_Group> resource_group </Sel_Group>
<Sel_ObjType> resource_type </Sel_ObjType>
<Sel_ObjName> resource_name </Sel_ObjName>
<Sel_TContainer> resource_group </Sel_TContainer> 3
<CSD> CSD_DSN </CSD> 4
<Context> context </Context>
<CreMethod> D | P </CreMethod> 5
<CC_Type> C | D | E </CC_Type> 6
<Prev_CConfig> change_package_ID </Prev_CConfig> 7
<Prev_Group> resource_group </Prev_Group>
<Prev_ObjType> resource_type </Prev_ObjType>
<Prev_ObjName> resource_name </Prev_ObjType>
<Prev_TContainer> resource_group </Prev_TContainer>
<ReturnCode> return_code </ReturnCode>
<ReasonCode> reason_code </ReasonCode> 6
```

1 <Sel_Command> appears for packaged commands only (not for packaged resource definitions), and identifies the type of command: A (Add), R (Remove), or D (Delete).

2 Elements with the prefix "Sel_" contain the selection key of the resource definition. Elements with the prefix "Prev_" contain the previous key. These values are taken from either the key association object (for resource definitions; see "KeyAssociation (key association)" on page 343) or the command association object (for commands; see "CmdAssociation (command association)" on page 342).

3 Add and Remove commands only: refers to the target container (resource group) of the command.

4 If the resource definition is in a CSD file, then the <Context> element is empty; if the resource definition is in a context, then the <CSD> element is empty.

5 <CreMethod> identifies how the key association for this resource definition was created. For details, see "KeyAssociation (key association)" on page 343.

6 <CC_Type> identifies the file type of the CICS configuration where this resource definition is stored, or with which this command is associated: C (context), D (CSD file), or E (export file).

7 The reason code for each item identifies its ready status:

Table 25. Reason codes for items in a ready list

Return code	Reason code (last 4 digits*)	Status
0	0000	Ready
4	0018	Not ready: this item has been changed after the change package was marked as ready
4	004E	Not ready: either this item was added to the change package after the change package was marked as ready; or the change package has never been marked as ready. (For example, a key association was found for the resource definition, but its checksum was zero.)
4	0058	Not found: the change package refers to a resource definition that no longer exists. (The resource definition was added to the change package, but then subsequently deleted.)

* The reason code is returned in the response as 8 hexadecimal digits. The first four digits identify the CICS Configuration Manager server module that performed the processing. The last four digits (shown above) identify the status of the item in the ready list. For a list of all reason codes, see "Reason codes" on page 443.

Usage

A ready list is different from most other repository objects because it does not directly represent an equivalent record type in the repository. Instead, the CICS Configuration Manager server generates ready list objects dynamically, when it receives a List command that requests a ready list.

List is the only command that you can use with a ready list. Here is the request format:

```
<CCV210>
  <List>
    <LocationCriteria>
      <LocationType> Repository </LocationType>
    </LocationCriteria>

    <ObjectCriteria>
      <ObjType> ReadyLst </ObjType>
      <Scheme> migration_scheme </Scheme> 1
      <CPID> change_package_ID </CPID>
```

```
    </ObjectCriteria>

    <RestrictionCriteria> 2
          <ListCount> element_count </ListCount>
          <ListElement>
            <RestrictionField>CCONFIG</RestrictionField>
            <RestrictionOperator>EQ</RestrictionOperator>
            <RestrictionValue> CICS_configuration </RestrictionOperator>
          </ListElement>
    </RestrictionCriteria>

  </List>
</CCV210>
```

1 <Scheme> is optional. If specified, the List command returns the candidate resource definitions and commands for that migration scheme: that is, the resource definitions in the change package that belong to the source CICS configurations of the migration scheme, and the commands that are associated with either the source or the target CICS configurations of the migration scheme. Otherwise, the List command returns all resource definitions in the change package, regardless of which CICS configurations they belong to.

In either case, you can further limit the resource definitions returned by the List command by specifying restriction criteria, described below.

2 <RestrictionCriteria> is optional. If specified, it limits the items returned by the List command to resource definitions that belong to, or commands that are associated with, the specified CICS configuration name (which can be a masked value, such as PROD*).

Each list element in the response represents a resource definition or a command in the change package specified in the request:

```
<CCV210>
  <List>
    <OutputData>
      <ReturnCode> return_code </ReturnCode>
      <ReasonCode> reason_code </ReasonCode> 1
      <TaskNo> CICS_task_number </TaskNo>

      <ListCount> element_count </ListCount>
      <ListElement>
        <ObjectData>

          Object data for an item in the ready list

        </ObjectData>
      </ListElement>

      More list elements...

    </OutputData>
  </List>
</CCV210>
```

1 The last four digits of this reason code report the overall status of the ready list:

003F Nothing found that matches the request.

0042 The change package is not ready for the specified migration scheme. Review the reason codes for the individual items to identify which items are not ready.

004F Ready list has errors.

0055 The specified migration scheme has been changed after the change package was marked as ready.

0059 Missing package-scheme: the change package has not yet been used with the specified migration scheme.

Scheme (migration scheme)
Object criteria

```
<ObjName> migration_scheme </ObjName>
```

Object data

Input data	List default output	
✓	✓	<Name> *migration_scheme* </Name>
	✓	<Ver> *object_version* </Ver>
	✓	<ChangeTime> *time_stamp* </ChangeTime>
	✓	<UserID> *user_ID* </UserID>
✓	✓	<Description> *description* </Description>
✓		<AppOption> **No** | Yes </AppOption> **1**
✓		<RGroup> **2** <STCCount> *element_count* </STCCount> <RGroupElement> <S_CConfig> *source_CICS_configuration* </S_CConfig> <T_CConfig> *target_CICS_configuration* </T_CConfig> <XFormSet> *transformation_rule_set* </XFormSet> <Sce_Del_Opt> **NO** | YES </Sce_Del_Opt> </RGroupElement> *More repeating group elements...* </RGroup>
✓		<RGroup> **3** <STVCount> *element_count* </STVCount> <RGroupElement> <S_Name> *transformation_variable_name* </S_Name> <S_Value> *source_trans_variable_value* </S_Value> <T_Value> *target_trans_variable_value* </S_Value> </RGroupElement> *More repeating group elements...* </RGroup>

1 <AppOption> specifies whether or not to perform approval checking for change packages that use this migration scheme.

2 The <RGroup> ("repeating group") element is a container for a set of <RGroupElement> elements. Here, each <RGroupElement> identifies a migration path, consisting of a source and target CICS configuration and, optionally, a transformation rule set. The number of <RGroupElement> elements must match the *element_count* specified by <STCCount>.

3 Here, <RGroupElement> defines a transformation variable: its name, and its source and target values. The number of <RGroupElement> elements must match the *element_count* specified by <STVCount>.

During migration processing, transformation variable values defined in the migration scheme override values defined in the CICS configuration.

SvrInfo (server information)

Purpose

Contains information about the CICS Configuration Manager server.

Object criteria

None.

Object data

```
<CCVRel> CCV_release </CCVRel> 1
<CICSRel> CICS_release </CICSRel> 2
<SvrCSDName> CSD_DSN </SvrCSDName> 3
<SvrApplIDe> application_ID </SvrApplID> 4
<SvrSysIDe> system_ID </SvrSysID> 5
```

1 Product release level of CICS Configuration Manager.

2 Product release level of CICS Transaction Server that is running the CICS Configuration Manager server.

3 Fully qualified data set name of the CICS system definition file (with no enclosing quotes) used by the CICS region that is running the CICS Configuration Manager server.

4 Application ID (APPLID) of the CICS region that is running the CICS Configuration Manager server.

5 System ID (SYSID) of the CICS region that is running the CICS Configuration Manager server.

Usage

List is the only command that you can use for server information. Here is the request format:

```
<CCV210>
  <List>
    <LocationCriteria>
      <LocationType> Repository </LocationType>
    </LocationCriteria>

    <ObjectCriteria>
      <ObjType> SvrInfo </ObjType>
    </ObjectCriteria>

    <ProcessParms> 1
      <ConnectionData> NO|YES </ConnectionData>
    </ProcessParms>

  </List>
</CCV210>
```

1 Optional. Specify YES to return information about connections between the CICS Configuration Manager server and other remote CICS systems.

SysOpts (system options)
Purpose

Defines various aspects of CICS Configuration Manager behavior.

You can set most of these fields using the CICS Configuration Manager ISPF dialog option **1.1 System Options**.

Object data

Input data

```
            <Name> SYSTEM </Name>
            <Ver> object_version </Ver>
            <ChangeTime> time_stamp </ChangeTime>
            <UserID> user_ID </UserID>
✓           <PkgAppAct> Yes | No </PkgAppAct>
✓           <PkgAutNum> Yes | No </PkgAutNum>
✓           <XformAct> Yes | No </XformAct>
✓           <TraceFlg> trace_flag </TraceFlg>
✓           <SecChkAct> Yes | No </SecChkAct> 1
✓           <SAFClass> SAF_class </SAFClass>
✓           <SAFPrefix> security_key_prefix </SAFPrefix>
✓           <Sec02Act> Yes | No </Sec02Act> 1
✓           <Sec02_SAFClass> SAF_class </Sec02_SAFClass>
✓           <Sec02_SAFPrefix> security_key_prefix </Sec02_SAFPrefix>
✓           <MP_Context> maintenance_point_context </MP_Context>
            <HBIntSec> internal_use_only </HBIntSec>
✓           <ExitsAct> Yes | No </ExitsAct>
✓           <RGroup> 2
              <TCPCount> element_count </TCPCount>
              <RGroupElement>
                <TCPSvType> TCP_server_type </TCPSvType>
                <TCPSvName> TCP_server_name </TCPSvName>
                <TCPSvPort> TCP_server_port </TCPSvPort>
                <TCPSvIPA> TCP_server_IP_address </TCPSvIPA>
              </RGroupElement>

              More repeating group elements...

            </RGroup>
```

1 The elements <SecChkAct>, <SAFClass>, and <SAFPrefix> refer to the security check that the CICS Configuration Manager server can perform to restrict user access to API commands. The similar elements <Sec02Act>, <Sec02_SAFClass>, and <Sec02_SAFPrefix> refer to the security check that restricts access to resource definitions. For details, see "Restricting access to API commands and resource definitions" on page 107.

2 The <RGroup> ("repeating group") element is a container for a set of <RGroupElement> elements. Here, each <RGroupElement> identifies a TCP/IP connection to the CICS Configuration Manager server. The number of <RGroupElement> elements must match the *element_count* specified by <TCPCount>.

TFRule (transformation rule set)
Purpose

Contains transformation rules.

Object criteria

```
<ObjName> transformation_rule_set </ObjName>
```

Object data

Input data	List default output	
✓	✓	<Name> *transformation_rule_set* </Name>
	✓	<ChangeTime> *time_stamp* </ChangeTime>
	✓	<UserID> *user_ID* </UserID>
✓	✓	<Description> *description* </Description>
✓		<TFRSet> 1
		<TFRCount> *element_count* </TFRCount>
		<TFRElement>
		<Qualification> 2
		<Description> *description* </Description>
		<ProcOpt> CONTINUE | LOCKFIELD | LOCKRECORD | STOP </ProcOpt> 3
		<Scheme> *migration_scheme* </Scheme>
		<S_CConfig> *source_CICS_configuration* </S_CConfig>
		<T_CConfig> *target_CICS_configuration* </T_CConfig>
		<CICSGroup> *resource_group* </CICSGroup>
		<CICSObjType> *resource_type* </CICSObjType>
		<CICSObjName> *resource_name* </CICSObjName>
		<QField> *check_field_name* </QField>
		<Operator> EQ | GE | GT | LE | LT | NE </Operator>
		<QValue> *field_value* </QValue>
		</Qualification>
		<Transform> 4
		<FField> *transform_field_name* </FField>
		<FValue> *from_mask* </FValue>
		<TValue> *to_mask* </TValue>
		<Transform>
		</TFRElement>
		More repeating group elements...
		</RGroup>

1 The <TFRSet> ("transformation rule set") element is a container for a set of <TFRElement> elements. Each <TFRElement> identifies a transformation rule. The number of <TFRElement> elements must match the *element_count* specified by <TFRCount>.

2 The <Qualification> element defines the qualification criteria that limit the resource definitions to which the rule applies.

3 The <ProcOpt> ("processing option") element specifies what to do when a field matches the qualification criteria, the field name, and the "from" mask:

CONTINUE
Transform and continue

LOCKFIELD
Transform and lock field

LOCKRECORD
Transform and lock record (resource definition)

STOP Do not migrate this resource definition

4 The <Transform> element identifies the field to transform, and the mask strings that define the transformation.

Journal objects

These object types represent CICS Configuration Manager journal records:

EventStart
BAImage (“before” and “after” image)
EventData
EventEnd

You cannot create, update, or delete journal objects. Inquire and List are the only API commands that you can use with journal objects. These are also the only commands that do not create new journal objects. Every other command creates an EventStart object, followed by one or more EventData or BAImage objects, and then an EventEnd object.

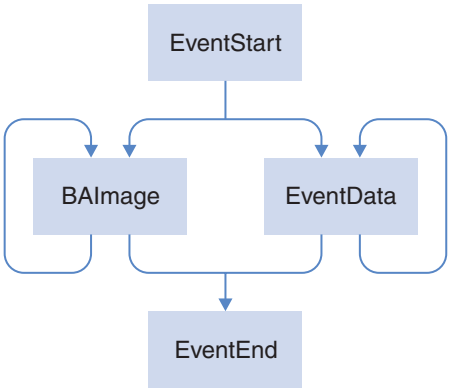


Figure 119. Journal objects created by an API command

EventStart and EventEnd mark the start and end of a command. Between these, there will be one BAImage or EventData object for each object processed by the command. Only the following API command create BAImage objects:

Alter
Backout
Copy
Create
Delete
Import
Migrate
Update

All other journalled commands create EventData objects.

API command requests that fail API command security checking are not journalled. If, while an API command request is being processed, a resource definition fails resource definition security checking, then the journal object for that resource definition contains return code 8 (failed) and reason code X'15' (security failure). For information about security checking, see “Restricting access to API commands and resource definitions” on page 107.

Every journal object contains the following common data:

Common journal object data:

```
<EventID> event_ID </EventID> 1
<Sequence> sequence </Sequence> 2
<RecType> journal_record_type </RecType>
<CreateTime> time_stamp </CreateTime>
<ObjType> object_type </ObjType>
<ObjGroup> resource_group </ObjGroup>
<ObjName> object_name </ObjName>
<CConfig> CICS_configuration </CConfig>
<API_Command> API_command_name </API_Command>
<UserID> user_ID </UserID>
<CPID> change_package_ID </CPID>
<Scheme> migration_scheme </Scheme>
<CSD> CSD_DSN </CSD>
<Context> context </Context>
<CCVRel> CCV_release </CCVRel>
<CICSRel> CICS_release </CICSRel>
<Ret_Code> return_code </Ret_Code>
<Res_Code> reason_code </Res_Code>
<A_CRC> checksum </A_CRC>
<B_CRC> checksum </B_CRC>
```

1 All of the journal objects for a particular instance of a command have the same event ID.

2 The sequence number identifies the relative order of each journal object within an event.

EventStart
Purpose

Marks the start of a command.

Format

List default output

✓ Common journal object data, including:

```
<Type> JOURNCOM </Type>
⋮
<RecType> EVENTSTART </RecType>

<ES_EventType> ONLINEEDIT | MIGRATE | BACKOUT | INSTALL </ES_EventType>
<ES_System> SMF_system_identifier </ES_System>
<ES_JobName> job_name </ES_JobName>
<ES_JobID> job_ID </ES_JobID>
<ES_TaskNum> CICS_task_number </ES_TaskNum>
```

BAImage (before/after image)
Purpose

Contains a “before” and an “after” image of a resource definition that has been changed by CICS Configuration Manager. For instance:

- A user editing the resource definition, via the CICS Configuration Manager ISPF dialog interface.
- A change package migration (that is, a Migrate command).
- An Update API command.

Format

List default output

- Common journal object data, including:

```
<Type> JOURNCOM </Type>
⋮
<RecType> BAIMAGE </RecType>

<BeforeImage>
  Data for this object type
</BeforeImage>
<AfterImage>
  Data for this object type
</AfterImage>
```

EventData
Purpose

Describes an object processed by an API command, and whether the object was successfully processed.

Format

List default output

- Common journal object data, including:

```
<Type> JOURNCOM </Type>
⋮
<RecType> EVENTDATA </RecType>
```

Unlike other journal objects, EventData objects contain only the common journal object data elements, with no additional elements.

EventEnd
Purpose

Marks the end of a command.

Format

List default output

- Common journal object data, including:

```
<Type> JOURNCOM </Type>
⋮
<RecType> EVENTEND </RecType>

<ET_EventType> ONLINEEDIT | MIGRATE | BACKOUT | INSTALL </ET_EventType>
<ET_System> SMF_system_identifier </ET_System>
<ET_JobName> job_name </ET_JobName>
<ET_JobID> job_ID </ET_JobID>
<ET_TaskNum> CICS_task_number </ET_TaskNum>
```

The All object type

The List API command allows you to specify an object type of All (or *), like this:

```
<ObjType> All </ObjType>
```

or

```
<ObjType> * </ObjType>
```

This indicates that you want the returned list to include objects of all types from the specified location.

The object criteria and restriction criteria that you can specify in the request, and the elements returned by List, depend on the location type.

Chapter 23. SOAP API reference

The SOAP API consists of a set of commands that a client can request a server to perform. Each command has a request format and a response format.

The description of each command includes the following information:

Request format and Response format
Describes the format of the SOAP message body that the client sends to the server (the request) and that the server returns to the client (the response).

Unless otherwise specified, all of the XML elements in the request format are required.

Many commands use a common subset of XML elements. Rather than repeating the descriptions for each command, the contents of the elements are described in "API parameters" on page 331.

Where the format refers to "Criteria for this object type" or "Data for this object type", the elements allowed depends on the object type. For details, see "API object types" on page 336.

Security key
Describes the format of the System Authorization Facility (SAF) resource key that the CICS Configuration Manager server sends to the external security manager (such as RACF), to verify that the user is authorized to perform the command. For some commands, the server also sends a key to verify that the user is authorized to manipulate the resource definitions that the command will affect. For more information on these keys, see "Restricting access to API commands and resource definitions" on page 107.

The server performs these security checks only if the system option for security checking is activated. For details, see "SysOpts (system options)" on page 352.

Add

Adds objects to a container object.

You can use the Add command to:

- Add resource definitions in a CICSPlex SM data repository to a ResGroup (resource group).
- Add ResGroups to a ResDesc (resource description).
- Add resource definitions or commands to a change package. This is also known as "packaging" resource definitions or commands.

See the related Remove command.

Request format

Adding resource definitions to a ResGroup:

```
<CCV210>
  <Add>
    <LocationCriteria>
      <LocationName> location_name </LocationName>
      <LocationType> CConfig | Context | CSD </LocationType>
    </LocationCriteria>

    <ObjectCriteria> 1
      <ListCount> element_count </ListCount>
      <ListElement>
        <DefA>
          <ObjGroup> resource_group </ObjGroup>
          <ObjType> resource_type </ObjType>
          <ObjName> resource_name </ObjName>
          <ObjDefVer> definition_version </ObjDefVer> 2
        </DefA>
      </ListElement>
    </ObjectCriteria>

    <InputData> 3
      <ContainerName> object_name </ContainerName>
      <ContainerType> ResGroup </ContainerType>
    </InputData>
  </Add>
</CCV210>
```

Adding ResGroups to a ResDesc:

```
<CCV210>
  <Add>
    <LocationCriteria>
      <LocationName> location_name </LocationName>
      <LocationType> CConfig | Context | CSD </LocationType>
    </LocationCriteria>

    <ObjectCriteria> 1
      <ListCount> element_count </ListCount>
      <ListElement>
        <GrpA>
          <ObjType> ResGroup </ObjType>
          <ObjName> resource_name </ObjName>
        </GrpA>
      </ListElement>
    </ObjectCriteria>

    <InputData> 3
      <ContainerName> object_name </ContainerName>
      <ContainerType> ResDesc </ContainerType>
    </InputData>
  </Add>
</CCV210>
```

Packaging resource definitions:

```
<CCV210>
  <Add>
    <LocationCriteria>
      <LocationType> Repository </LocationType>
    </LocationCriteria>
    <ObjectCriteria> 1
      <CConfig> CICS_configuration </CConfig> 4
      <ListCount> element_count </ListCount>
      <ListElement>
        <KeyA>
          <ObjGroup> resource_group </ObjGroup>
          <ObjType> resource_type </ObjType>
          <ObjName> resource_name </ObjName>
        </KeyA>
      </ListElement>

      More list elements...

    </ObjectCriteria>

    <InputData> 3
      <ContainerName> change_package_ID </ContainerName>
      <ContainerType> ChgPkg </ContainerType>
    </InputData>

  </Add>
</CCV210>
```

Packaging commands:

```
<CCV210>
  <Add>
    <LocationCriteria>
      <LocationType> Repository </LocationType>
    </LocationCriteria>
    <ObjectCriteria> 1
      <CConfig> CICS_configuration </CConfig> 4
      <ListCount> element_count </ListCount>
      <ListElement>
        <CmdAPost>
          <Command> Add | Remove | Delete </Command>
          <ObjGroup> resource_group </ObjGroup>
          <ObjType> resource_type </ObjType>
          <ObjName> resource_name </ObjName>
          <ObjDefVer> definition_version </ObjDefVer> 2
          <TContainer> resource_group </TContainer> 5
        </CmdAPost>
      </ListElement>

      More list elements...

    </ObjectCriteria>

    <InputData> 3
      <ContainerName> change_package_ID </ContainerName>
      <ContainerType> ChgPkg </ContainerType>
    </InputData>

  </Add>
</CCV210>
```

1 <ObjectCriteria> identifies the objects that you want to add to the container (for example, the resource definitions that you want to package).

You can specify the object criteria in several ways:

- To identify a single object, specify the contents of a single <ListElement>, but omit the <ListElement> start tag and the </ListElement> end tag. Omit the <ListCount> element. In the <Obj...> element values, do not use masking (wildcards).
- To identify one or more objects, either:
  - Specify <ListCount> followed by one or more <ListElement>. Each <ListElement> must identify a object, with no masking.

    or
  - Specify the contents of a single <ListElement>, but omit the <ListElement> start tag and the </ListElement> end tag. Omit the <ListCount> element. In the <Obj...> element values, do not use masking (wildcards).

When adding to a ResGroup or a ResDesc, <LocationCriteria> refers to the location of the resource definitions. However, when packaging resource definitions or commands, <LocationCriteria> refers to the CICS Configuration Manager repository, which is where the change package is stored. To specify the location of the resource definitions, or the CICS configuration associated with the commands, you use <CConfig> in <ObjectCriteria>.

2 When referring to a context-based resource definition, specify either <ObjDefVer> or <ObjGroup>. Specifying <ObjDefVer> enables you to refer to

a specific version of a context-based resource definition, even when the resource definition is an orphan (does not belong to any ResGroup).

3 <InputData> identifies the container object: ResGroup, ResDesc, or change package.

4 <CConfig> identifies the CICS configuration that contains the resource definitions, or the CICS configuration associated with the commands, that you want to add to the change package.

5 <TContainer> ("target container") is relevant only when packaging an Add command. It identifies the ResGroup to which you want the resource definitions added.

Response format

```
<CCV210>
  <Add>
    <OutputData>
      <ReturnCode> return_code </ReturnCode>
      <ReasonCode> reason_code </ReasonCode>
      <TaskNo> CICS_task_number </TaskNo>

      <ListCount> element_count </ListCount>
      <ListElement>
        <ReturnCode> return_code </ReturnCode>
        <ReasonCode> reason_code </ReasonCode>
        <Command> Add | Remove | Delete </Command> 1
        <ObjName> resource_name </ObjName>
        <ObjType> resource_type </ObjType>
        <ObjGroup> resource_group </ObjGroup> 2
        <ObjDefVer> definition_version </ObjDefVer>
        <Config> CICS_configuration </Config>
        <TContainer> resource_group </TContainer> 3
        <LocationName> CSD_DSN | context </LocationName>
      </ListElement>

      More list elements...

    </OutputData>
  </Add>
</CCV210>
```

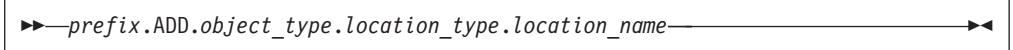
1 The response contains <Command> only when packaging a command.

2 When adding a resource definition to a ResGroup, the response returns the details of the resource definition specified in the request object criteria: for example, <ObjGroup> in the response matches the <ObjGroup> in the request, not the <ContainerName> in the request.

1 The response contains <TContainer> only when packaging an Add command.

Security key

API command (READ access authority):



Resource definitions (ALTER access authority):

Examples

The following example adds a CONNDEF resource definition to a RESGROUP. The CONNDEF and the RESGROUP are stored in a context.

```
<CCV210>
   <ADD>

  <LocationCriteria>
    <LocationName> CCVPLEXA </LocationName>
    <LocationType> CONTEXT </LocationType>
  </LocationCriteria>

  <ObjectCriteria>
    <ObjName> M001 </ObjName>
    <ObjGroup> QAAADDPR </ObjGroup>
    <ObjType> CONNDEF </ObjType>
  </ObjectCriteria>

  <InputData>
    <ContainerName> QAAADD01 </ContainerName>
    <ContainerType> RESGROUP </ContainerType>
  </InputData>

   </ADD>
</CCV210>
```

The following example adds a RESGROUP to a RESDESC.

```
<CCV210>
   <ADD>

  <LocationCriteria>
    <LocationName> CCVPLEXA </LocationName>
    <LocationType> CONTEXT </LocationType>
  </LocationCriteria>

  <ObjectCriteria>
    <ObjType> RESGROUP </ObjType>
    <ObjName> QAAADDPR </ObjName>
  </ObjectCriteria>

  <InputData>
```

```
    <ContainerName> QAACONNA </ContainerName>
    <ContainerType> RESDESC </ContainerType>
  </InputData>

   </ADD>
</CCV210>
```

Alter

Alters selected attribute values across one or more resource definitions, without affecting other attribute values.

Request format

```
<CCV210>
  <Alter>
    <LocationCriteria>
      <LocationName> location_name </LocationName>
      <LocationType> CConfig | Context | CSD </LocationType>
    </LocationCriteria>
    <ObjectCriteria> 1
      <ListCount> element_count </ListCount>
      <ListElement>
        <ObjName> resource_name </ObjName>
        <ObjGroup> resource_group </ObjGroup>
        <ObjType> resource_type </ObjType>
      </ListElement>

      More list elements...

    </ObjectCriteria>

    <InputData>
      <object_type> 2
        <ObjectData> 3

          <attribute_name>value</attribute_name> ...

        </ObjectData>
      </object_type>
    </InputData>

  </Alter>
</CCV210>
```

1 <ObjectCriteria> identifies the resource definitions that you want to alter.

You can specify the object criteria in several ways:

- To identify a single resource definition, specify only one set of <ObjName>, <ObjGroup>, and <ObjType>, with no masking (wildcards). Do not specify <ListCount> or <ListElement>.
- To identify one or more resource definitions, either:
  - Specify <ListCount> followed by one or more <ListElement>. Each <ListElement> must identify a single resource definition, with no masking.

    or
  - Specify only one set of <ObjName>, <ObjGroup>, and <ObjType> with masked values. Do not specify <ListCount> or <ListElement>. The values can be any combination of:
    - Mask or specific value for the resource name
    - Mask or specific value for the resource group
    - Specific resource type, or the value * or All to identify all resource types (you cannot use masking to identify a subset of resource types)

For example, to identify all program resource definitions beginning with the characters PAY, from all groups beginning with the characters FIN, specify:

```
<ObjectCriteria>
  <ObjName>PAY*</ObjName>
  <ObjGroup>FIN*</ObjGroup>
  <ObjType>PROGDEF</ObjType>
</ObjectCriteria>
```

2 *<object_type>* and its end tag are optional. Specifying this "wrapper" element allows you to use the supplied schema to validate the contents of the <ObjectData> element for that object type. For details, see "Using the supplied schema to write API commands" on page 327.

3 The child elements of <ObjectData> represent the resource definition attributes and their new values.

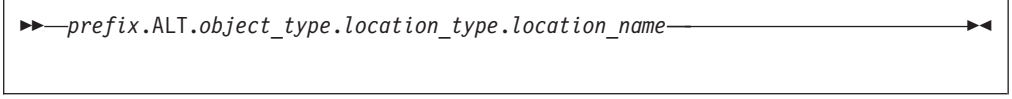
The names of the object data elements match the attribute names used by CICSPlex SM. For details, see the XML schema CCVXXRES supplied in sample library SCCVSAMP. For example, to set the PROGRAM attribute of a TRANDEF resource definition to QAAFLTC, you specify <Program>QAAFLTC</Program>. See "Examples" on page 375 for an example using the Create API command. For a complete list of attributes for each object, see the resource table descriptions in *CICS Transaction Server for z/OS: CICSPlex SM Resource Tables Reference*. To set an attribute to its default value, specify an empty element, such as *<attribute_name/>*, or an element containing whitespace only.

Response format

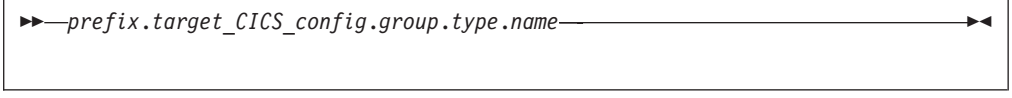
```
<CCV210>
  <Alter>
    <OutputData>
      <ReturnCode> return_code </ReturnCode>
      <ReasonCode> reason_code </ReasonCode>
      <TaskNo> CICS_task_number </TaskNo>

      <ListCount> element_count </ListCount>
      <ListElement>
        <ReturnCode> return_code </ReturnCode>
        <ReasonCode> reason_code </ReasonCode>
        <ObjName> resource_name </ObjName>
        <ObjGroup> resource_group </ObjGroup>
        <ObjType> resource_type </ObjType>
        <Config> CICS_configuration </Config>
        <LocationName> CSD_DSN | context </LocationName>
        <ChangeTime> time_stamp </ChangeTime>
        <IntegrityToken> integrity_token </IntegrityToken>
      </ListElement>

      More list elements...

    </OutputData>
  </Alter>
</CCV210>
```

Security key

API command (READ access authority):



Resource definitions (ALTER access authority):



Approve

Adds to a change package the approval of a particular approver role. This approval applies only to the specified migration scheme.

Request format

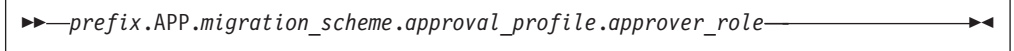
```
<CCV210>
  <Approve>
    <SelectionCriteria>
      <CPID> change_package_ID </CPID>
      <Scheme> migration_scheme </Scheme>
    </SelectionCriteria>

    <InputData>
      <Role> approver_role </Role>
    </InputData>
  </Approve>
</CCV210>
```

Response format

```
<CCV210>
  <Approve>
    <OutputData>
      <ReturnCode> return_code </ReturnCode>
      <ReasonCode> reason_code </ReasonCode>
      <TaskNo> CICS_task_number </TaskNo>
    </OutputData>
  </Approve>
</CCV210>
```

Security key

API command (READ access authority):



Examples

```
<CCV210>
  <APPROVE>
    <SELECTIONCRITERIA>
      <CPID> 00000015 </CPID>
      <SCHEME> PJCTEST </SCHEME>
    </SELECTIONCRITERIA>
    <INPUTDATA>
      <ROLE> PJC </ROLE>
    </INPUTDATA>
  </APPROVE>
</CCV210>
```

Backout

Backs out a previous change package migration.

Request format

```
<CCV210>
  <Backout>
    <SelectionCriteria>
      <CPID> change_package_ID </CPID>
      <Scheme> migration_scheme </Scheme>
      <EventID> event_ID </EventID> 1
    </SelectionCriteria>
  </Backout>
</CCV210>
```

1 <EventID> is optional:

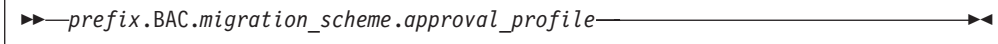
- If specified, <EventID> identifies a unique execution of the Migrate command for the change package. *event_ID* must identify a Migrate command execution for the specified change package and migration scheme.
- If omitted, the Backout command backs out the most recent Migrate command for the specified change package and migration scheme.

Response format

```
<CCV210>
  <Backout>
    <OutputData>
      <ReturnCode> return_code </ReturnCode>
      <ReasonCode> reason_code </ReasonCode>
      <TaskNo> CICS_task_number </TaskNo>
    </OutputData>
  </Backout>
</CCV210>
```

Security key

API command (READ access authority):



Usage

To determine the *event_ID* for the particular migration that you want to back out, use the List command.

Copy

Copies resource definitions between groups or CICS configurations.

Request format

```
<CCV210>
  <Copy>
    <LocationCriteria> 1
      <LocationName> location_name </LocationName>
      <LocationType> CConfig | Context | CSD </LocationType>
    </LocationCriteria>

    <ObjectCriteria>
      <ListCount> element_count </ListCount> 2
      <ListElement> 3
          <ObjName> resource_name </ObjName>
          <ObjGroup> resource_group </ObjGroup>
          <ObjType> resource_type </ObjType>
      </ListElement>

      More list elements...

    </ObjectCriteria>

    <InputData> 1
      <TargetLocationName> location_name </TargetLocationName>
      <TargetLocationType>  CConfig | Context | CSD </TargetLocationType>
      <TargetGroup> resource_group </TargetGroup> 4
    </InputData>

    <ProcessParms>
      <Replace> No | Yes </Replace> 5
    </ProcessParms>
  </Copy>
</CCV210>
```

1 `<LocationCriteria>` identifies the source location of the resource definitions that you want to copy.

`<InputData>` identifies the target location (where you want to copy the resource definitions to). `<TargetLocationName>` and `<TargetLocationType>` are required, even if they specify the same location as `<LocationName>` and `<LocationType>`.

If the source and target locations are the same, then you must specify a target group (see 4).

2 The *element_count* must match the number of list elements.

3 Each `<ListElement>` must uniquely identify a resource definition in the source location. You must specify the name, group, and type of each resource definition with no wildcards.

Each list element is treated individually. For example, if a list element identifies a resource definition that already exists at the target location, and you leave `<Replace>` at its default value of No, and you do not specify a different target group, then that resource definition is not copied, and the Copy command moves on to the next list element.

4 If the source and target locations are the same, then `<TargetGroup>` is required. Otherwise, `<TargetGroup>` is optional:

- If specified, <TargetGroup> identifies the group name that is assigned to the resource definition at the target location.
- If omitted, the target group name defaults to the source group name specified by <ObjGroup>.

If this group does not exist at the target location, then the Copy command creates it.

5 <Replace> is optional. It specifies whether or not to overwrite existing resource definitions at the target location. If omitted, the default is No.

Response format

```
<CCV210>
  <Copy>
    <OutputData>
      <ReturnCode> return_code </ReturnCode> 1
      <ReasonCode> reason_code </ReasonCode>
      <TaskNo> CICS_task_number </TaskNo>

      <ListCount> element_count </ListCount>
      <ListElement> 2
        <ObjName> resource_name </ObjName>
        <ObjGroup> resource_group </ObjGroup>
        <ObjType> resource_type </ObjType>
        <Config> CICS_configuration </Config>
        <LocationName> location_name </LocationName>
        <ReturnCode> return_code </ReturnCode> 1
        <ReasonCode> reason_code </ReasonCode>
      </ListElement>

      More list elements...

    </OutputData>
  </Copy>
</CCV210>
```

1 The output data contains a return code and a reason code for the command overall, and also for each list element. The overall return code and reason code are from the list element with the highest return code.

2 Each list element in the response matches a list element in the request, in the same order. The resource definition name, group, and type in the response reflects the resource definition at the source location, not the copied resource definition at the target. In particular, <ObjGroup> in the response reflects the <ObjGroup> in the request, not the <TargetGroup>.

Security key

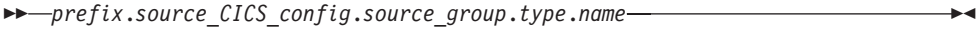
API command (READ access authority):

Notes:

1 *location_type* and *location_name* refer to the target location (where the object is being copied to).

Resource definitions:

For the source resource definition (READ access authority):



For the target resource definition (ALTER access authority):

If the source CICS configuration refers to an export file, then no security check is performed for the source resource definition.

Create

Creates a resource definition or a CICS Configuration Manager repository object.

To create key association or command association repository objects, use the Add command, not Create.

Request format

```
<CCV210>
  <Create>
    <LocationCriteria> 1
      <LocationName> location_name </LocationName>
      <LocationType> CConfig | Context | CSD | Repository </LocationType>
    </LocationCriteria>

    <ObjectCriteria>
      <ObjType> object_type </ObjType>

      Criteria for this object type

    </ObjectCriteria>

    <InputData>
      <object_type> 2
        <ObjectData>

          Data for this object type

        </ObjectData>
      </object_type>
    </InputData>
  </Create>
</CCV210>
```

If the object already exists, the request fails.

When creating a resource definition in a context, if you specify a resource group that does not exist, then, in addition to creating the resource definition, the Create command creates the resource group.

1 When creating a CICS Configuration Manager repository object, specify Repository as the location type and omit <LocationName>.

2 <*object_type*> and its end tag are optional. Specifying this "wrapper" element allows you to use the supplied schema to validate the contents of the <ObjectData> element for that object type. For details, see "Using the supplied schema to write API commands" on page 327.

Response format

```
<CCV210>
  <Create>
    <OutputData>
      <ReturnCode> return_code </ReturnCode>
      <ReasonCode> reason_code </ReasonCode>
      <TaskNo> CICS_task_number </TaskNo>
      <CPID> change_package_ID </CPID> 1
      <ChangeTime> time_stamp </ChangeTime> 2
      <IntegrityToken> integrity_token </IntegrityToken> 3
    </OutputData>
  </Create>
</CCV210>
```

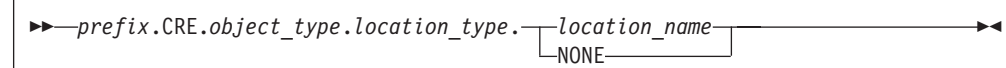
1 <CPID> is returned only for a change package.

2 <ChangeTime> identifies the time that CICSPlex SM, DFHEDAP, or a CICS SPI command (invoked by the CICS Configuration Manager server) created the object.

3 The response includes an integrity token in case you want to update the object soon after creating it. You can supply this integrity token to the Update command, ensuring that you do not overwrite changes by another user.

Security key

API command (READ access authority):



Resource definitions (ALTER access authority):

Examples

The following example creates a TRANDEF (TRANSACTION) resource definition in a CSD file.

```
<CCV210>
<CREATE>

  <LocationCriteria>
    <LocationName> CCV120.QAAUTO.CCVT22T.DFHCSD </LocationName>
    <LocationType> CSD </LocationType>
  </LocationCriteria>

  <ObjectCriteria>
    <ObjName> Q001 </ObjName>
```

```
    <ObjGroup> QAAUPD01 </ObjGroup>
    <ObjType> TRANDEF </ObjType>
  </ObjectCriteria>

  <InputData>
  <ObjectData>
    <ALIAS>  </ALIAS>
    <PROGRAM> QAADFLTC </PROGRAM>
    <REMOTENAME>  </REMOTENAME>
    <REMOTESYSTEM>  </REMOTESYSTEM>
    <PROFILE> DFHCICST </PROFILE>
    <FAILACTION> BACKOUT </FAILACTION>
    <INDOUBT> BACKOUT </INDOUBT>
    <CMDSEC> NO </CMDSEC>
    <SHUTDOWN> DISABLED </SHUTDOWN>
    <STATUS> ENABLED </STATUS>
    <TASKDATAKEY> USER </TASKDATAKEY>
    <TASKDATALOC> BELOW </TASKDATALOC>
    <TASKREQ>  </TASKREQ>
    <LOCALQ> N_A </LOCALQ>
    <RESSEC> NO </RESSEC>
    <STORAGECLEAR> NO </STORAGECLEAR>
    <RESTART> NO </RESTART>
    <SPURGE> NO </SPURGE>
    <TPURGE> NO </TPURGE>
    <WAIT> YES </WAIT>
    <TRACE> YES </TRACE>
    <TRPROF> DFHCICSS </TRPROF>
    <TRANCLASS> DFHTCL00 </TRANCLASS>
    <TCLASS> NO </TCLASS>
    <TWASIZE> 0 </TWASIZE>
    <PARTITIONSET>  </PARTITIONSET>
    <XTRANID>  </XTRANID>
    <ISOLATE> YES </ISOLATE>
    <DUMP> YES </DUMP>
    <DYNAMIC> NO </DYNAMIC>
    <PRIORITY> 1 </PRIORITY>
    <RUNAWAY> SYSTEM </RUNAWAY>
    <DTIMOUT> NO </DTIMOUT>
    <WAITTIMEDD> 0 </WAITTIMEDD>
    <WAITTIMEHH> 0 </WAITTIMEHH>
    <WAITTIMEMM> 0 </WAITTIMEMM>
    <TPNAME>  </TPNAME>
    <XTPNAME>  </XTPNAME>
    <TRANSEC> 1 </TRANSEC>
    <PRIMEDSIZE> 0 </PRIMEDSIZE>
    <EXTSEC> NO </EXTSEC>
    <RSL> 0 </RSL>
    <CONFDATA> NO </CONFDATA>
    <USERDATA1>  </USERDATA1>
    <USERDATA2>  </USERDATA2>
    <USERDATA3>  </USERDATA3>
    <DESCRIPTION>  </DESCRIPTION>
    <BREXIT>  </BREXIT>
    <ROUTABLE> NO </ROUTABLE>
    <OTSTIMEOUT> NO </OTSTIMEOUT>
  </ObjectData>
  </InputData>

</CREATE>
</CCV210>
```

The following example creates a PROGDEF (PROGRAM) resource definition in a context.

```
<CCV210>
   <CREATE>

  <LocationCriteria>
    <LocationName> CCVPLEXA </LocationName>
    <LocationType> CONTEXT </LocationType>
  </LocationCriteria>

  <ObjectCriteria>
    <ObjName> Q038 </ObjName>
    <ObjGroup> QAACRE01 </ObjGroup>
    <ObjType> PROGDEF </ObjType>
  </ObjectCriteria>

  <InputData>
  <ObjectData>
    <CEDF> YES </CEDF>
    <DATALOCATION> BELOW </DATALOCATION>
    <EXECKEY> USER </EXECKEY>
    <EXECUTIONSET> FULLAPI </EXECUTIONSET>
    <LANGUAGE> ASSEMBLER </LANGUAGE>
    <RELOAD> NO </RELOAD>
    <STATUS> ENABLED </STATUS>
    <USELPACOPY> NO </USELPACOPY>
    <USAGE> NORMAL </USAGE>
    <RESIDENT> NO </RESIDENT>
    <REMOTENAME>  </REMOTENAME>
    <REMOTESYSTEM>  </REMOTESYSTEM>
    <TRANSID>  </TRANSID>
    <RSL> 0 </RSL>
    <USERDATA1>  </USERDATA1>
    <USERDATA2>  </USERDATA2>
    <USERDATA3>  </USERDATA3>
    <DESCRIPTION>  </DESCRIPTION>
    <DYNAMIC> NO </DYNAMIC>
    <CONCURRENCY> QUASIRENT </CONCURRENCY>
    <JVM> NO </JVM>
    <JVMCLASS>  </JVMCLASS>
    <HOTPOOL> NO </HOTPOOL>
    <JVMPROFILE> DFHJVMPR </JVMPROFILE>
  </ObjectData>
  </InputData>

   </CREATE>
</CCV210>
```

The following example creates a RESDESC in a context.

```
<CCV210>
   <CREATE>

  <LOCATIONCRITERIA>
    <LOCATIONNAME> CCVPLEXA </LOCATIONNAME>
    <LOCATIONTYPE> CCONFIG </LOCATIONTYPE>
  </LOCATIONCRITERIA>

  <OBJECTCRITERIA>
    <OBJTYPE> RESDESC </OBJTYPE>
    <OBJNAME> QAACONNA </OBJNAME>
  </OBJECTCRITERIA>

  <INPUTDATA>
  <OBJECTDATA>
  <RESDESC> QAACONNA </RESDESC>
```

```
  <DESCRIPTION> THIS IS A TEMPORAY ADD LIST </DESCRIPTION>
  <LSREGSTR> NO </LSREGSTR>
  <AUTOINST> NO </AUTOINST>
  </OBJECTDATA>
  </INPUTDATA>

   </CREATE>
</CCV210>
```

The following example creates a RESGROUP in a context.

```
<CCV210>
   <CREATE>

  <LocationCriteria>
    <LocationName> CCVPLEXA </LocationName>
    <LocationType> CONTEXT </LocationType>
  </LocationCriteria>

  <ObjectCriteria>
    <ObjType> RESGROUP </ObjType>
    <ObjName> QAAADD05 </ObjName>
  </ObjectCriteria>

  <InputData>
  <ObjectData>
  <Description> This is a temporay ADD Group </Description>
  </ObjectData>
  </InputData>

   </CREATE>
</CCV210>
```

The following example creates a CICS configuration.

```
<CCV210>
   <CREATE>

 <LocationCriteria>
  <LocationType>
   REPOSITORY
  </LocationType>
 </LocationCriteria>

 <ObjectCriteria>
  <ObjType> CCONFIG </ObjType>
  <ObjName> QAACSD13 </ObjName>
 </ObjectCriteria>

 <InputData>
  <ObjectData>
   <CSDNAME> CCV000.QAAUTO.CCVT13T.DFHCSD </CSDNAME>
   <Description> CONFIG for 1.3 CSD </Description>

     <RGroup>
       <MROCount> 2 </MROCount>
       <RGroupElement>
         <MROLink> T13T </MROLink>
       </RGroupElement>
       <RGroupElement>
         <MROLink> T23T </MROLink>
       </RGroupElement>
     </RGroup>

     <RGroup>
```

```
      <LTVCount> 1 </LTVCount>
      <RGroupElement>
        <XName> APPLID </XName>
        <XValue> CCVT13T </XValue>
      </RGroupElement>
    </RGroup>
  </ObjectData>
 </InputData>

   </CREATE>
</CCV210>
```

The following example creates a migration scheme.

```
<CCV210>
   <CREATE>

 <LocationCriteria>
   <LocationType> Repository </LocationType>
 </LocationCriteria>

 <ObjectCriteria>
   <ObjType> SCHEME </ObjType>
   <Scheme> QAAMIG12 </Scheme>
 </ObjectCriteria>

 <InputData>
   <ObjectData>
     <Description> Create Migration Scheme - 2.3 to 3.1 </Description>
     <Appoption> Yes </Appoption>

     <RGroup>
       <STCCount> 1 </STCCount>
       <RGroupElement>
         <S_CCONFIG> QAACSD23 </S_CCONFIG>
         <T_CCONFIG> QAACSD31 </T_CCONFIG>
         <XFORMrSet>  </XFORMrSet>
       </RGroupElement>
     </RGroup>

     <RGroup>
       <STVCount> 0 </STVCount>
       <RGroupElement>
       </RGroupElement>
     </RGroup>

   </ObjectData>
 </InputData>

   </CREATE>
</CCV210>
```

The following example creates an approval profile.

```
<CCV210>
   <Create>

 <LocationCriteria>
   <LocationType> Repository </LocationType>
 </LocationCriteria>

 <ObjectCriteria>
   <ObjName> QAAAPP03 </ObjName>
   <ObjType> AProfile </ObjType>
 </ObjectCriteria>
```

```
 <InputData>
   <ObjectData>
     <Description> Approval Profile 3 for QAA </Description>

     <RGroup>
       <MSCount> 2 </MSCount>
       <RGroupElement>
         <Scheme> QAAMIG03 </Scheme>
         <Auth01> QAAALL </Auth01>
         <Auth02>  </Auth02>
         <Auth03>  </Auth03>
         <Auth04>  </Auth04>
         <Auth05>  </Auth05>
       </RGroupElement>
       <RGroupElement>
         <Scheme> QAAMIG12 </Scheme>
         <Auth01> QAAALL </Auth01>
         <Auth02> QAATEST </Auth02>
         <Auth03>  </Auth03>
         <Auth04>  </Auth04>
         <Auth05>  </Auth05>
       </RGroupElement>
     </RGroup>

   </ObjectData>
 </InputData>

   </Create>
</CCV210>
```

The following example creates a change package.

```
<CCV210>
   <CREATE>

 <LocationCriteria>
   <LocationType> Repository </LocationType>
 </LocationCriteria>

 <ObjectCriteria>
   <ObjType> CHGPKG </ObjType>
   <CPID> QAACPK05 </CPID>
 </ObjectCriteria>

 <InputData>
   <ObjectData>
     <Description> Change Package 05 for RJA </Description>
     <AppProf> ANYONE </AppProf>
   </ObjectData>
 </InputData>

   </CREATE>
</CCV210>
```

Delete

Deletes resource definitions or CICS Configuration Manager repository objects. The CICS Configuration Manager API does not allow you to delete:

- CICS Configuration Manager journal objects.
- ResGroup or ResDesc objects that have associated objects. To delete a ResGroup or a ResDesc, you must first delete any objects that refer to them.
- The SysOpts (system options) CICS Configuration Manager repository object.

Request format

Repository objects:

You can only delete repository objects one at a time.

```
<CCV210>
  <Delete>
    <LocationCriteria>
      <LocationType> Repository </LocationType>
    </LocationCriteria>

    <ObjectCriteria>
      <ObjType> object_type </ObjType>
      <ObjectInstance> object_instance </ObjectInstance>  1

      Criteria for this object type  2

    </ObjectCriteria>

    <ProcessParms>
      <IntegrityToken> integrity_token </IntegrityToken>  3
    </ProcessParms>
  </Delete>
</CCV210>
```

Resource definitions:

```
<CCV210>
  <Delete>
    <LocationCriteria>
      <LocationName> location_name </LocationName>
      <LocationType> CConfig | Context | CSD </LocationType>
    </LocationCriteria>

    <ObjectCriteria>  4
      <ListCount> element_count </ListCount>
      <ListElement>
          <ObjName> resource_name </ObjName>
          <ObjGroup> resource_group </ObjGroup>
          <ObjType> resource_type </ObjType>
          <ObjDefVer> definition_version </ObjDefVer>
      </ListElement>

      More list elements...

    </ObjectCriteria>

    <ProcessParms>
      <IntegrityToken> integrity_token </IntegrityToken>  3
    </ProcessParms>

  </Delete>
</CCV210>
```

1 `<ObjectInstance>` is optional, and is relevant only if *location_type* is `Repository`:

- If specified, the particular object instance is deleted, along with all older instances of the object.
- If omitted, all versions of the object are deleted.

2 For a repository object, the child elements of `<ObjectCriteria>` must uniquely identify an object.

3 `<IntegrityToken>` is optional. If supplied, it is only used if the object criteria specifies a single object without masking. (For example, a single `<ListElement>` preceded by a `<ListCount>` with a value of 1.)

4 `<ObjectCriteria>` identifies the objects that you want to delete.

You can specify the object criteria in several ways:

- To identify a single resource definition, specify only one set of `<ObjName>`, `<ObjGroup>`, and `<ObjType>`, with no masking (wildcards). Do not specify `<ListCount>` or `<ListElement>`.
- To identify one or more resource definitions, either:
  - Specify `<ListCount>` followed by one or more `<ListElement>`. Each `<ListElement>` must identify a single resource definition, with no masking.

    or
  - Specify only one set of `<ObjName>`, `<ObjGroup>`, and `<ObjType>` with masked values. Do not specify `<ListCount>` or `<ListElement>`. The values can be any combination of:
    - Mask or specific value for the resource name
    - Mask or specific value for the resource group

- Specific resource type, or the value * or All to identify all resource types (you cannot use masking to identify a subset of resource types)

For example, to identify all program resource definitions beginning with the characters PAY, from all groups beginning with the characters FIN, specify:

```
<ObjectCriteria>
  <ObjName>PAY*</ObjName>
  <ObjGroup>FIN*</ObjGroup>
  <ObjType>PROGDEF</ObjType>
</ObjectCriteria>
```

For context-based resource definitions, you can specify `<DefVer>` instead of `<ObjGroup>`.

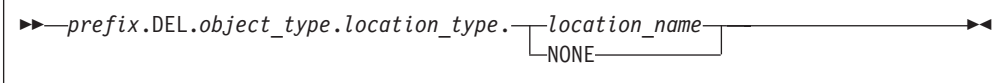
Response format

The response for a repository object contains a single list element.

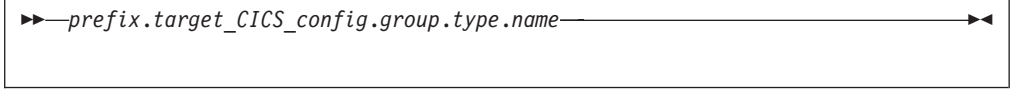
```
<CCV210>
  <Delete>
    <OutputData>
      <ReturnCode> return_code </ReturnCode>
      <ReasonCode> reason_code </ReasonCode>
      <TaskNo> CICS_task_number </TaskNo>

      <ListCount> element_count </ListCount>
      <ListElement>
        <ReturnCode> return_code </ReturnCode>
        <ReasonCode> reason_code </ReasonCode>
        <ObjName> resource_name </ObjName>
        <ObjGroup> resource_group </ObjGroup>
        <ObjType> resource_type </ObjType>
        <Config> CICS_configuration </Config>
        <LocationName> CSD_DSN | context </LocationName>
      </ListElement>

      More list elements...

  </Delete>
</CCV210>
```

Security key

API command (READ access authority):



Resource definitions (ALTER access authority):



Examples

The following example deletes a CONNDEF (CONNECTION) resource definition in a CSD file.

```
<CCV210>
   <DELETE>

  <LocationCriteria>
    <LocationName> CCV120.QAAUTO.CCVT22T.DFHCSD </LocationName>
    <LocationType> CSD </LocationType>
  </LocationCriteria>

  <ObjectCriteria>
    <ObjName> Q220 </ObjName>
    <ObjGroup> QAAUPD01 </ObjGroup>
    <ObjType> CONNDEF </ObjType>
  </ObjectCriteria>

   </DELETE>
</CCV210>
```

The following example deletes a RESGROUP in a context.

```
<CCV210>
   <DELETE>

  <LocationCriteria>
    <LocationName> CCVPLEXA </LocationName>
    <LocationType> CONTEXT </LocationType>
  </LocationCriteria>

  <ObjectCriteria>
    <ObjType> RESGROUP </ObjType>
    <ObjName> QAAADD09 </ObjName>
  </ObjectCriteria>

   </DELETE>
</CCV210>
```

The following example deletes a RESDESC in a context.

```
<CCV210>
   <DELETE>

  <LocationCriteria>
    <LocationName> CCVPLEXA </LocationName>
    <LocationType> CONTEXT </LocationType>
  </LocationCriteria>

  <ObjectCriteria>
    <ObjType> RESDESC </ObjType>
    <ObjName> QAACONNA </ObjName>
```

```
  </ObjectCriteria>

   </DELETE>
</CCV210>
```

Disapprove

Removes from a change package the approval of a particular approver role.

Request format

```
<CCV210>
  <Disapprove>
    <SelectionCriteria>
      <CPID> change_package_ID </CPID>
      <Scheme> migration_scheme </Scheme>
    </SelectionCriteria>

    <InputData>
      <Role> approver_role </Role>
    </InputData>
  </Disapprove>
</CCV210>
```

Response format

```
<CCV210>
  <Disapprove>
    <OutputData>
      <ReturnCode> return_code </ReturnCode>
      <ReasonCode> reason_code </ReasonCode>
      <TaskNo> CICS_task_number </TaskNo>
    </OutputData>
  </Disapprove>
</CCV210>
```

Security key

API command (READ access authority):

Discard

Discards the in-memory image of resource definitions from active CSD-based CICS regions. This does not affect the CSD file where the resource definition is stored.

You can only use the Discard command with CSD-based CICS configurations, not context-based CICS configurations.

Request format

```
<CCV210>
  <Discard>
    <LocationCriteria>
      <LocationName> CICS_configuration </LocationName> 1
      <LocationType> CConfig </LocationType> 2
    </LocationCriteria>

    <ObjectCriteria>  3
      <ListCount> element_count </ListCount>
      <ListElement>
        <ObjectData>
          <ObjName> resource_name </ObjName>
          <ObjGroup> resource_group </ObjGroup>
          <ObjType> resource_type </ObjType>
        </ObjectData>
      </ListElement>

      More list elements...

    </ObjectCriteria>

    <ProcessParms>
      <Quiesce> No | Yes </Quiesce> 4
      <CSDParms>
        <ConnectionCount> All | element_count | Local </ConnectionCount> 5
        <ConnectionElement>
          <ConnectionName> remote_system_connection </ConnectionName>
        </ConnectionElement>

        More connection elements...

      </CSDParms>
    </ProcessParms>
  </Discard>
</CCV210>
```

1 <LocationName> must specify the name of a CSD-based CICS configuration.

2 <LocationType> must contain CConfig.

3 <ObjectCriteria> identifies the resource definitions that you want to discard.

You can specify the object criteria in several ways:

- To identify a single resource definition, specify only one set of <ObjName>, <ObjGroup>, and <ObjType>, with no masking (wildcards). Do not specify <ListCount> or <ListElement>.
- To identify one or more resource definitions, either:
  - Specify <ListCount> followed by one or more <ListElement>. Each <ListElement> must identify a single resource definition, with no masking.

or

– Specify only one set of <ObjName>, <ObjGroup>, and <ObjType> with masked values. Do not specify <ListCount> or <ListElement>. The values can be any combination of:
  - Mask or specific value for the resource name
  - Mask or specific value for the resource group
  - Specific resource type, or the value * or All to identify all resource types (you cannot use masking to identify a subset of resource types)

  For example, to identify all program resource definitions beginning with the characters PAY, from all groups beginning with the characters FIN, specify:

```
<ObjectCriteria>
  <ObjName>PAY*</ObjName>
  <ObjGroup>FIN*</ObjGroup>
  <ObjType>PROGDEF</ObjType>
</ObjectCriteria>
```

4 <Quiesce> specifies whether or not to set the resource to a status that allows its definition to be discarded (for example, disabled, closed, or out of service), prior to attempting the action. The status depends on the resource type. If you do not specify this "quiesce" option, and a resource is in a status that does not allow the discard action, then the discard action for that resource definition will fail.

5 <ConnectionCount> specifies the CSD-based CICS regions on which to perform this action:

All Performs the action via all of the remote system connections defined in the CICS configuration. If you omit <ConnectionCount> or its parent <CSDParms>, this is the default.

element_count
Performs the action via the remote system connections identified by one or more <ConnectionElement> elements. The number of <ConnectionElement> elements must match *element_count*. Each <ConnectionElement> must refer to a remote system connection specified in the CICS configuration.

Local Performs the action on the CICS region that is running the CICS Configuration Manager server. If you specify "local":

- <LocationName> must specify a CICS configuration that refers to the CSD file used by the CICS Configuration Manager server.
- Do not specify any connection elements (if you do, they are ignored).

Response format

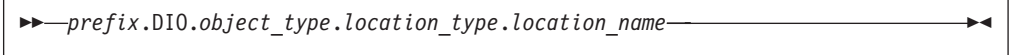
```
<CCV210>
  <Discard>
    <OutputData>
      <ReturnCode> return_code </ReturnCode> 1
      <ReasonCode> reason_code </ReasonCode>
      <TaskNo> CICS_task_number </TaskNo>

      <ListCount> element_count </ListCount>
      <ListElement>
        <ReturnCode> return_code </ReturnCode> 1
        <ReasonCode> reason_code </ReasonCode>
        <ObjName> resource_name </ObjName>
        <ObjType> resource_type </ObjType>
        <ObjGroup> resource_group </ObjGroup>
        <Config> CICS_configuration </Config>
        <LocationName> CSD_DSN </LocationName>
        <CSDInfo>
          <ConnectionCount> element_count </ConnectionCount>
          <ConnectionElement>
            <ConnectionName> remote_system_connection </ConnectionName>
            <ReturnCode> return_code </ReturnCode> 1
            <ReasonCode> reason_code </ReasonCode>

            <ExceptionData> exception data </ExceptionData> 2

          </ConnectionElement>

          More connection elements...

        </CSDInfo>
      </ListElement>

      More list elements...

    </OutputData>
  </Discard>
</CCV210>
```

1 The output data contains three types of return code and reason code: for the command overall, for each list element, and for the remote system connections for each list element. The overall return code and reason code are from the list element with the highest return code; the list element return code and reason code are from its connection with the highest return code and reason code.

2 Each list element in the response matches a list element in the request, in the same order.

Security key

API command (READ access authority):



Examples

The following example quiesces and then discards a map resource definition in two active CICS regions.

```
<CCV210>

  <Discard>

    <LocationCriteria>
      <LocationName> CCVT22M </LocationName>
      <LocationType> CCONFIG </LocationType>
    </LocationCriteria>

    <ObjectCriteria>
      <Listcount> 1 </Listcount>
      <ListElement>
        <ObjName> JAMES </ObjName>
        <ObjGroup> BINGLE </ObjGroup>
        <ObjType> MAPDEF </ObjType>
      </ListElement>
    </ObjectCriteria>

    <ProcessParms>
      <Quiesce> YES </Quiesce>
      <CSDPARMS>
        <CONNECTIONCOUNT> 2 </CONNECTIONCOUNT>
         <CONNECTIONELEMENT>
          <CONNECTIONNAME> T22M </CONNECTIONNAME>
         </CONNECTIONELEMENT>
         <CONNECTIONELEMENT>
          <CONNECTIONNAME> T23M </CONNECTIONNAME>
         </CONNECTIONELEMENT>
      </CSDPARMS>
    </ProcessParms>

  </Discard>

</CCV210>
```

Import

Imports resource definitions from an export file received from another CICS Configuration Manager system. Optionally, if the export file contains change package details, also registers change packages in the importing CICS Configuration Manager repository.

Request format

```
<CCV210>
  <Import>

    <LocationCriteria>
      <LocationType> CConfig </LocationType>
      <LocationName> location_name </LocationName> 1
    </LocationCriteria>

    <SelectionCriteria> 2
      <CPID> change_package_ID </CPID>
      <EventID> event_ID </EventID> 3
    </SelectionCriteria>

    <ObjectCriteria> 2
      <ObjName> resource_name </ObjName>
      <ObjType> resource_type </ObjType>
      <ObjGroup> resource_group </ObjGroup>
    </ObjectCriteria>

    <InputData>
      <TargetLocationType> CConfig | Context | CSD </TargetLocationType>
      <TargetLocationName> location_name </TargetLocationName>
    </InputData>

    <ProcessParms>
      <RegisterCPID> No | Yes </RegisterCPID>
      <PurgeImportedRecords> No | Yes </PurgeImportedRecords>
    </ProcessParms>

  </Import>
</CCV210>
```

1 `<LocationName>` must specify a CICS configuration that refers to a CICS Configuration Manager export file.

2 Specify either:

- `<SelectionCriteria>` to select resource definitions to import based on which change packages they belong to.

  or

- `<ObjectCriteria>` to select resource definitions to import based on filter criteria for name, group, and type. To import all resource definitions in the export file, specify an asterisk (*) for name, group, and type.

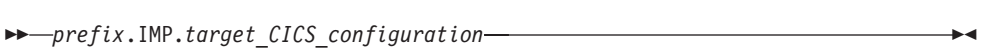
3 You can specify a change package ID with or without an event ID. Specifying an event ID selects a particular migration for the specified change package. This is relevant only when you have migrated the same change package ID to an export file more than once, and you have appended to the export file each time, not overwritten it.

Response format

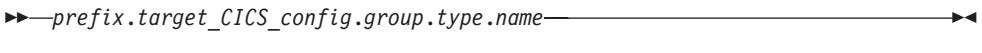
```
<CCV210>
  <Import>
    <OutputData>
      <ReturnCode> return_code </ReturnCode>
      <ReasonCode> reason_code </ReasonCode>
      <TaskNo> CICS_task_number </TaskNo>
    </OutputData>
  </Import>
</CCV210>
```

Security key

API command (READ access authority):



Resource definitions (ALTER access authority):



In this security key, the CICS configuration parameter refers to the target CICS configuration where the resource definition is to be imported (copied) to, not the source CICS configuration (that refers to the export file) where the resource definition is to be imported from.

Inquire

Returns all the fields for a single resource definition, CICS Configuration Manager repository object, or CICS Configuration Manager journal object.

The Inquire command returns all fields from a single object; the List command returns selected fields from one or more objects.

Request format

```
<CCV210>
  <Inquire>
    <LocationCriteria>
      <LocationName> location_name </LocationName>
      <LocationType> CConfig | Context | CSD | Repository | Journal </LocationType>
    </LocationCriteria>

    <ObjectCriteria>
      <ObjType> object_type </ObjType>

      Criteria for this object type

      <ObjectInstance> object_instance </ObjectInstance> 1
    </ObjectCriteria>
  </Inquire>
</CCV210>
```

1 `<ObjectInstance>` is relevant only if *location_type* is `Repository` or `Journal`:

- If *location_type* is `Repository`, then `<ObjectInstance>` is optional. If specified, the Inquire command returns that particular object instance. If omitted, the Inquire command returns the current (latest) instance of the object.
- If *location_type* is `Journal`, then `<ObjectInstance>` is required. You must specify the particular instance of the resource definition that you want from the journal.

To determine the appropriate *object_instance*, use the List command to return all the instances of the object.

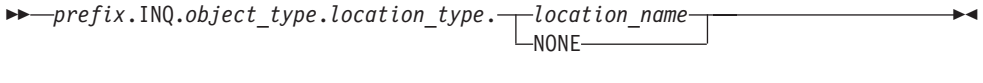
Response format

```
<CCV210>
  <Inquire>
    <OutputData>
      <ReturnCode> return_code </ReturnCode>
      <ReasonCode> reason_code </ReasonCode>
      <TaskNo> CICS_task_number </TaskNo>
      <IntegrityToken> integrity_token </IntegrityToken> 1

      <object_type>
        <ObjectData>
          <Type> object_type </Type>

          Data for this object type

        </ObjectData>
      </object_type>
    </OutputData>
  </Inquire>
</CCV210>
```

1 If *location_type* is `Journal`, then `<IntegrityToken>` is not returned.

Security key

API command (READ access authority):



Examples

The following example returns a FILEDEF (FILE) resource definition from a CSD file.

```
<CCV210>
   <INQUIRE>

  <LocationCriteria>
    <LocationName> CCV120.QAAUTO.CCVT23T.DFHCSD </LocationName>
    <LocationType> CSD </LocationType>
  </LocationCriteria>

  <ObjectCriteria>
    <ObjName> CAUAFF1 </ObjName>
    <ObjGroup> DFH$AFFY </ObjGroup>
    <ObjType> FILEDEF </ObjType>
  </ObjectCriteria>

   </INQUIRE>
</CCV210>
```

The following example returns a TRANDEF resource definition from a context.

```
<CCV210>
   <INQUIRE>

  <LocationCriteria>
```

```
    <LocationName> CCVPLEXA </LocationName>
    <LocationType> CONTEXT </LocationType>
  </LocationCriteria>

  <ObjectCriteria>
    <ObjName> Q442 </ObjName>
    <ObjGroup> QAAINQ01 </ObjGroup>
    <ObjType> TRANDEF </ObjType>
  </ObjectCriteria>

   </INQUIRE>
</CCV210>
```

The following example returns a migration scheme.

```
<CCV210>
  <INQUIRE>
    <LOCATIONCRITERIA>
      <LOCATIONTYPE> REPOSITORY </LOCATIONTYPE>
    </LOCATIONCRITERIA>
    <OBJECTCRITERIA>
      <OBJTYPE> SCHEME </OBJTYPE>
      <OBJNAME> PJCTEST </OBJNAME>
      <SCHEME> PJCTEST </SCHEME>
    </OBJECTCRITERIA>
  </INQUIRE>
</CCV210>
```

Install

Dynamically makes resource definitions available to an active CICS region.

This command has two formats:

- For resource definitions that are in a change package
- For ad hoc selection of resource definitions

Request format

Change packages:

This format is identified by the presence of the <SelectionCriteria> element.

```
<CCV210>
  <Install>
    <SelectionCriteria>
      <CPID> change_package_ID </CPID>
      <Scheme> migration_scheme </Scheme>
    </SelectionCriteria>

    <ProcessParms>
      <Quiesce> No | Yes </Quiesce>  1
      <Discard> No | Yes </Discard>  2

      <Force> No | Yes </Force>  3
      CICSPlex SM parameters  3

    </ProcessParms>
  </Install>
</CCV210>
```

Ad hoc:

This format is identified by the absence of the <SelectionCriteria> element.

```
<CCV210>
  <Install>
    <LocationCriteria>
      <LocationName> CICS_configuration </LocationName>
      <LocationType> CConfig </LocationType>
    </LocationCriteria>
    <ObjectCriteria>  4
      <ListCount> element_count </ListCount>
      <ListElement>
        <ObjName> resource_name </ObjName>
        <ObjType> resource_type </ObjType>
        <ObjGroup> resource_group </ObjGroup>  5
      </ListElement>

      More list elements...

    </ObjectCriteria>

    <ProcessParms>
      <Quiesce> No | Yes </Quiesce>  1
      <Discard> No | Yes </Discard>  2
      <CSDParms>  7
        <ConnectionCount> All | element_count | Local </ConnectionCount>
        <ConnectionElement>
          <ConnectionName> remote_system_connection </ConnectionName>
        </ConnectionElement>

        More connection elements...

      </CSDParms>

      <Force> No | Yes </Force>  3
      CICSPlex SM parameters  3

    </ProcessParms>
  </Install>
</CCV210>
```

CICSPlex SM parameters

```
<CPSMParms>
  <TargetScope> target_scope </TargetScope> 8
  <ResGroupObjectType> * | resource_type </ResGroupObjectType> 6
  <CONNDEF>
    <RefAssign> resource_assignment </RefAssign>
  </CONNDEF>
  <FILEDEF>
    <RelatedScope> related_scope </RelatedScope>
    <Usage> LOCAL | REMOTE </Usage>
  </FILEDEF>
  <PROGDEF>
    <RelatedScope> related_scope </RelatedScope>
    <Usage> LOCAL | REMOTE </Usage>
    <Mode> N/A | AUTO </Mode>
  </PROGDEF>
  <TDQDEF>
    <RelatedScope> related_scope </RelatedScope>
    <Usage> LOCAL | REMOTE </Usage>
    <Mode> N/A | IND | INTRA | EXTRA </RelatedScope>
  </TDQDEF>
  <TRANDEF>
    <RelatedScope> related_scope </RelatedScope>
    <Usage> LOCAL | REMOTE </Usage>
    <Mode> N/A | DYNAM | STAT </Mode>
  </TRANDEF>
</CPSMParms>
```

These notes apply to both command formats:

1 CSD-based CICS configurations only: <Quiesce> specifies whether or not to set the resource to a status that allows its definition to be installed (for example, disabled, closed, or out of service), prior to attempting the action. The status depends on the resource type. If you do not specify this "quiesce" option, and a resource is in a status that does not allow the install action, then the install action for that resource definition will fail.

2 CSD-based CICS configurations only: <Discard> specifies whether or not to discard the resource definition before attempting to install it.

3 Context-based CICS configurations only: for information about these CICSPlex SM parameters, see the *CICS Transaction Server for z/OS: CICSPlex SM Application Programming Reference*.

These notes apply only to the ad hoc format:

4 <ObjectCriteria> identifies the resources that you want to install.

You can specify the object criteria in several ways:

- To identify a single resource definition, specify only one set of <ObjName>, <ObjGroup>, and <ObjType>, with no masking (wildcards). Do not specify <ListCount> or <ListElement>.
- To identify one or more resource definitions, either:
  - Specify <ListCount> followed by one or more <ListElement>. Each <ListElement> must identify a single resource definition, with no masking.

    or
  - Specify only one set of <ObjName>, <ObjGroup>, and <ObjType> with masked values. Do not specify <ListCount> or <ListElement>. The values can be any combination of:

- Mask or specific value for the resource name
- Mask or specific value for the resource group
- Specific resource type, or the value * or All to identify all resource types (you cannot use masking to identify a subset of resource types)

For example, to identify all program resource definitions beginning with the characters PAY, from all groups beginning with the characters FIN, specify:

```
<ObjectCriteria>
  <ObjName>PAY*</ObjName>
  <ObjGroup>FIN*</ObjGroup>
  <ObjType>PROGDEF</ObjType>
</ObjectCriteria>
```

5 To install an entire group of resource definitions (as opposed to selecting resource definitions individually, or using masking values), specify the name of the group, specify the resource type as ResGroup, and omit the resource group. (If the resource type is ResGroup, the <ObjGroup> element is ignored.)

Context-based CICS configurations only: to select resource definitions of a particular type in the ResGroup, specify <ResGroupObjectType> in the CICSPlex SM parameters (see item **6**).

6 Context-based CICS configurations only: for list elements that identify a ResGroup, <ResGroupObjectType> sets a filter to select resource definitions of a particular type, excluding any other types of resource definition in the ResGroup. If you omit <ResGroupObjectType>, all resource definitions in the ResGroup are selected.

7 <ConnectionCount> specifies the CSD-based CICS regions on which to perform this action:

All Performs the action via all of the remote system connections defined in the CICS configuration. If you omit <ConnectionCount> or its parent <CSDParms>, this is the default.

element_count
Performs the action via the remote system connections identified by one or more <ConnectionElement> elements. The number of <ConnectionElement> elements must match *element_count*. Each <ConnectionElement> must refer to a remote system connection specified in the CICS configuration.

Local Performs the action on the CICS region that is running the CICS Configuration Manager server. If you specify "local":

- <LocationName> must specify a CICS configuration that refers to the CSD file used by the CICS Configuration Manager server.
- Do not specify any connection elements (if you do, they are ignored).

This note applies only to the CICSPlex SM parameters:

8 Context-based CICS configurations only: *target_scope* is required.

Response format

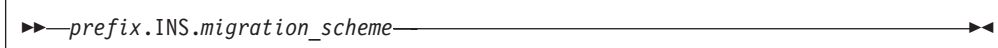
```
<CCV210>
  <Install>
    <OutputData>
      <ReturnCode> return_code </ReturnCode>
      <ReasonCode> reason_code </ReasonCode>
      <TaskNo> CICS_task_number </TaskNo>

      <ListCount> element_count </ListCount>
      <ListElement>
        <ReturnCode> return_code </ReturnCode>
        <ReasonCode> reason_code </ReasonCode>
        <ObjName> resource_name </ObjName>
        <ObjType> resource_type </ObjType>
        <ObjGroup> resource_group </ObjGroup>
        <Config> CICS_configuration </Config>
        <LocationName> CSD_DSN | context </LocationName>

        <CSDInfo> 1
          <ConnectionCount> element_count </ConnectionCount>
          <ConnectionElement>
            <ConnectionName> remote_system_connection </ConnectionName>
            <ReturnCode> return_code </ReturnCode>
            <ReasonCode> reason_code </ReasonCode>
          </ConnectionElement>

          More connection elements...

        </CSDInfo>

        <CPSMInfo> 1
          <ReturnCode> return_code </ReturnCode>
          <ReasonCode> reason_code </ReasonCode>
        </CPSMnfo>

      </ListElement>

      More list elements...

    </OutputData>
  </Install>
</CCV210>
```

1 <CSDInfo> contains information for CSD-based resource definitions.
<CPSMInfo> contains information for context-based resource definitions.

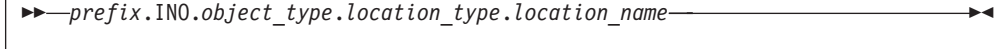
Security key

API command (READ access authority):

Change packages:



Ad hoc:



Examples

The following example installs three programs into two active CSD-based CICS regions, via the selected remote system connections defined in the CICS configuration:

```
<CCV210>
  <Install>

    <LocationCriteria>
      <LocationName> QAACSD22 </LocationName>
      <LocationType> CCONFIG </LocationType>
    </LocationCriteria>

    <ObjectCriteria>
      <Listcount> 3 </Listcount>
      <ListElement>
        <ObjName> DFH$AALL </ObjName>
        <ObjGroup> DFH$AFLA </ObjGroup>
        <ObjType> PROGDEF </ObjType>
      </ListElement>
      <ListElement>
        <ObjName> ACCT00 </ObjName>
        <ObjGroup> DFH$ACCT </ObjGroup>
        <ObjType> PROGDEF </ObjType>
      </ListElement>
      <ListElement>
        <ObjName> DFH$AREP </ObjName>
        <ObjGroup> DFH$AFLA </ObjGroup>
        <ObjType> PROGDEF </ObjType>
      </ListElement>
    </ObjectCriteria>

    <ProcessParms>
      <Quiesce> No </Quiesce>
      <Discard> No </Discard>
      <CSDPARMS>
        <CONNECTIONCOUNT> 2 </CONNECTIONCOUNT>
         <CONNECTIONELEMENT>
          <CONNECTIONNAME> T22T </CONNECTIONNAME>
         </CONNECTIONELEMENT>
         <CONNECTIONELEMENT>
          <CONNECTIONNAME> T13T </CONNECTIONNAME>
         </CONNECTIONELEMENT>
      </CSDPARMS>
```

```
    </ProcessParms>

  </Install>
</CCV210>
```

The following example installs a program via all of the remote system connections defined in the CICS configuration:

```
<CCV210>
  <Install>

    <LocationCriteria>
      <LocationName> QAACSD22 </LocationName>
      <LocationType> CCONFIG </LocationType>
    </LocationCriteria>

    <ObjectCriteria>
      <Listcount> 1 </Listcount>
      <ListElement>
        <ObjName> DFH$SXP1 </ObjName>
        <ObjGroup> DFH$SXP </ObjGroup>
        <ObjType> PROGDEF </ObjType>
      </ListElement>
    </ObjectCriteria>

    <ProcessParms>
      <Quiesce> YES </Quiesce>
      <Discard> NO </Discard>
    </ProcessParms>

  </Install>
</CCV210>
```

List

Returns selected fields from one or more resource definitions, CICS Configuration Manager repository objects, or CICS Configuration Manager journal objects.

You can use the List command in your client to display object selection lists (for example, of resource definitions) and to generate reports.

By default, the List command returns a subset of the fields for an object, plus any fields named by `<RestrictionCriteria>`. For resource definitions, the default subset consists of:

- TYPE
- GROUP
- CHANGETIME
- CHANGEAGENT
- CHANGEUSRID
- CHANGEAGREL
- DEFVER (this field is relevant only to context-based resource definitions; for CSD-based resource definitions, the List command response returns this field with value 0)
- NAME

For the default subset returned for other object types, see "API object types" on page 336.

To include additional fields in the response, add the fields to the `<RestrictionCriteria>`, even if you do not want to restrict their values. To include a field in the output data without restricting its values, specify = (or EQ) as the restriction operator, and * (an asterisk, representing any value) as the restriction value:

```
<RestrictionField> field_name </RestrictionField>
<RestrictionOperator> eq </RestrictionOperator>
<RestrictionValue> * </RestrictionValue>
```

To return the complete set of fields (that is, all attributes) for resource definitions, specify the `<AllAttributes>YES</AllAttributes>` process parameter. This process parameter applies only when listing resource definitions. You must specify the value YES in uppercase.

Request format

```
<CCV210>
  <List>
    <LocationCriteria>
      <LocationName> location_name </LocationName>
      <LocationType> CConfig | Context | CSD | Repository | Journal </LocationType> 1
    </LocationCriteria>

    <JnlCriteria> 2

      Journal record criteria

    </JnlCriteria>

    <ObjectCriteria> 3
      <ObjType> object_type | All | * </ObjType> 4

      Criteria for this object type

    </ObjectCriteria>

    <RestrictionCriteria> 5
      <RestrictionCount> element_count </RestrictionCount>
      <RestrictionElement>
        <ListCount> element_count </ListCount>
        <ListElement>
          <RestrictionField> restriction_field_name </RestrictionField>
          <RestrictionOperator> restriction_operator </RestrictionOperator>
          <RestrictionValue> restriction_field_value </RestrictionValue>
        </ListElement>

        More list elements...
      </RestrictionElement>

      More restriction elements...
    </RestrictionCriteria>

    <ProcessParms> 6
      <HashingScope> hashing_scope </HashingScope>
      <ObjectHistory> No | Yes </ObjectHistory>
      <CPIDFormula> APPROVE? | MIGRATE? </CPIDFormula>
      <Counts> None | All </Counts>
      <FilterDate> yyyy/mm/dd.hh:mm </FilterDate>
      <Limit> maximum_objects_to_return </Counts>
    </ProcessParms>
  </List>
</CCV210>
```

Journal record criteria:

```
<JnlRecType> journal_record_type </JnlRecType>
<JnlAPICMD> API_command_name </JnlAPI>

<JnlCCVRel> CCV_release </JnlCCVRel>
<JnlCICSRel> CICS_release </JnlCICSRel>

<JnlCConfig> CICS_configuration </JnlCConfig>
<JnlContext> context </JnlContext>
<JnlCSD> CSD_DSN </JnlCSD>
<JnlCreateTime> time_stamp </JnlCreateTime>

<JnlCPID> change_package_ID </JnlCPID>
<JnlScheme> migration_scheme </JnlScheme>
<JnlEventID> event_ID </JnlEventID>

<JnlJobID> job_ID </JnlJobID>
<JnlJobName> job_name </JnlJobName>
<JnlUserID> user_ID </JnlUserID>

<JnlObjGroup> resource_group </JnlObjGroup>
<JnlObjName> resource_name </JnlName>
<JnlObjType> resource_type </JnlObjType>

<JnlTaskNum> CICS_task_number </JnlTaskNum>
<JnlRC> return_code </JnlRC>
<JnlRsn> reason_code </JnlRsn>

<JnlSystem> SMF_system_identifier </JnlSystem>
```

The following alternative “search within results” request format enables you to send a list of resource definition keys (name, type, and group) to the server along with restriction criteria. The server returns results that match the restriction criteria *within the list of resource definitions that you sent*. This request format is characterized by the presence of the elements `<ListCount>` and `<ListElement>` inside `<ObjectCriteria>`.

Alternative request format, to search within results:

```
<CCV210>
  <List>
    <LocationCriteria>
      <LocationName> location_name </LocationName>
      <LocationType> CConfig | Context | CSD </LocationType>
    </LocationCriteria>

    <ObjectCriteria>
      <ListCount> element_count </ListCount>
      <ListElement>
        <ObjName> resource_name </ObjName>
        <ObjGroup> resource_group </ObjGroup>
        <ObjType> resource_type </ObjType>
      </ListElement>

      More list elements...
    </ObjectCriteria>

    <RestrictionCriteria>
      <RestrictionCount> element_count </RestrictionCount>
        <RestrictionElement>
          <ListCount> element_count </ListCount>
          <ListElement>
            <RestrictionField> restriction_field_name </RestrictionField> 5
            <RestrictionOperator> restriction_operator </RestrictionOperator>
            <RestrictionValue> restriction_field_value </RestrictionValue>
          </ListElement>

         More list elements...
       </RestrictionElement>

       More restriction elements...
    </RestrictionCriteria>
  </List>
</CCV210>
```

1 If the location type is `CConfig`, `Context`, or `CSD`, then *object_type* can be `All` or `*` to indicate all resource types.

2 If the location type is `Journal`, then `<JnlCriteria>` is optional. Otherwise, `<JnlCriteria>` is ignored.

3 If the location type is `Journal` and you specify `<JnlCriteria>`, then `<ObjectCriteria>` is optional. Otherwise, `<ObjectCriteria>` is required.

If you specify both `<JnlCriteria>` and `<ObjectCriteria>`, then `<ObjectCriteria>` describes a resource definition embedded in a `BAImage` (before/after image) journal record.

4 To include all object types in the list, specify *object_type* as `All` or `*`. This limits the object criteria and the restriction criteria that you can specify to the fields that are common to all object types for the location type. For details, see "The All object type" on page 357.

5 Restriction criteria are optional: they further limit the list within the object criteria. Fields that you name in the restriction criteria are included in the response `<ObjectData>`.

When processing a List command request, CICS Configuration Manager combines multiple `<RestrictionElement>` elements using a logical OR operator. Within a `<RestrictionElement>`, CICS Configuration Manager combines multiple `<ListElement>` using a logical AND operator.

When listing BAImage journal records, you must prefix the field names of the embedded resource definitions with B_ for "before" or A_ for "after". For example, to limit the list to journal records whose "before" resource definition was changed after 26 June 2004, specify:

```
<RestrictionField> B_ChangeTime </RestrictionField>
<RestrictionOperator> gt </RestrictionOperator>
<RestrictionValue> 2004/06/26 </RestrictionValue>
```

6 You can customize the List command response using process parameters (all of these elements are optional):

- <AllAttributes> specifies whether to return all attributes of the requested resource definitions or only a subset. Acceptable values are:

  NO Return the default subset of attributes, plus any attributes named by <RestrictionCriteria>.

  YES Return all attributes. This produces results similar to an "Inquire" on page 393 command, but for multiple resource definitions: while the Inquire command returns all attributes from a *single* resource definition, the List command with this process parameter returns all attributes from *one or more* resource definitions.

  You must specify these values in uppercase.

  <AllAttributes> is relevant only when listing resource definitions.

- <HashingScope> determines whether or not the List command response contains a <HashingValue> element with a checksum for each selected object, and which fields it uses to calculate the checksum:

  None Default. Do not calculate checksums, and do not include <HashingValue> elements in the List command response.

  Full Calculate the checksum using all object fields. This checksum will be identical to the integrity token calculated by the Inquire and Update commands.

  Partial Calculate the checksum using a subset of the object fields: exclude fields that typically differ between definitions of the same type. This includes the object name, group, description, and other fields depending on the object type. For details, see "Comparing a list panel of objects with a checksum column" on page 179.

  Group Only for use with when the object criteria specify the object type ResDesc: calculate the checksum using the names of the groups/ResDescs in the lists/ResDescs.

  Name Only for use when the object criteria specify the object type ResGroup: calculate the checksum using the names of the resource definitions in the groups/ResDescs.

  List Only for use when the object criteria specify a resource definition object type (not ResGroup or ResDesc), *, or All (to select all resource types): calculate the checksum using the specifically requested attributes for each object type.

  To specify the attributes to calculate the checksum for each object type, you must include elements of the following format in <ProcessParms>:

```
<object_type>
  <FieldCount> element_count </FieldCount>
  <FieldName> attribute_name </FieldName>
  More field names...
</object_type>

More object type elements...
```

For example, if the object criteria specify an object type of TranDef:

```
<ProcessParms>
  <HashingScope>List</HashingScope>
  <TranDef>
    <FieldCount>2</FieldCount>
    <FieldName>Description</FieldName>
    <FieldName>Program</FieldName>
  </TranDef>
⋮
</ProcessParms>
```

(If the object criteria specify * or All as the object type, then you can specify an <*object_type*> element for each resource definition object type.)

Critical
Calculate the checksum from all attributes excluding those that are not critical to the operation of the resource.

For details on each checksum type, see "Comparing a list panel of objects with a checksum column" on page 179.

- <ObjectHistory> specifies whether to return all versions of an object from the repository, or only the current version. Acceptable values are:

  No Default. Return only the current (latest) version of the object.

  Yes Return all versions of the object.

  <ObjectHistory> is relevant only if the location type is Repository. Otherwise, <ObjectHistory> is ignored. If the location type is Journal, then the List command always returns all versions of the selected object.

- <CPIDFormula> is relevant only when listing change packages (*object_type* is ChgPkg). Acceptable values are:

  APPROVE?
  Limits the list to change packages that are ready, and that require approval for a particular migration scheme.

  MIGRATE?
  Limits the list to change packages that require migration. These are change packages that are ready and approved (if necessary), and either have not yet been migrated or have been backed out from a previous migration.

- <Counts>All</Counts> requests the server to include various count values in the response. For details, see the response format.
- <FilterDate> limits the objects returned by List to those changed on or before the specified date and time. You can use this instead of, or in addition to, restriction criteria for change time.
- <Limit> sets an upper limit to the number of resource definitions returned by List. If the number of resource definitions that match the specifications of the List command exceeds this limit, then the List command returns an error, with no resource definitions. This avoids the

problems associated with returning a subset of objects that match the specifications: for example, depending on how a client sorts the results of the List command, omissions might not be apparent to the end user.

- `<ReportSet>` limits the resource definitions returned by List according to one of the following options listed below. `<ReportSet>` is only valid if the location type is `CConfig`, `Context`, or `CSD`.

  All Returns all objects (this is the default).

  DuplicateNames
  Returns resource definitions that have the same name and resource type as one or more other resource definitions.

  UniqueNames
  Returns resource definitions that have a unique combination of name and resource type in the specified location.

  DuplicateChecksums
  Returns resource definitions that have the same checksum value as one or more other resource definitions in the specified location.

  UniqueChecksums
  Returns resource definitions that have a unique checksum value in the specified location, according to the type of checksum specified by `<HashingScope>`.

  CPSMOrphans
  Returns resources definitions in the selected CICSPlex SM context that are not related to any ResGroups. Only valid if the location criteria specifies a context or a CICS configuration that refers to a context. This option does not support ResGroup or ResDesc resource types; however, you can specify object type All (or *) to return orphans of all other resource types.

  CPSMShared
  Returns resources definitions in the selected CICSPlex SM context where the same version of a resource definition belongs to multiple ResGroups. Only valid if the location criteria specifies a context or a CICS configuration that refers to a context.

  The List command applies these formulas after applying object criteria and restriction criteria to the resource definitions in the specified location.

  These report set options are used by the CICS Configuration Manager ISPF dialog interface options described in "Analyzing relationships between resource definitions" on page 218.

Response format

```
<CCV210>
  <List>
    <OutputData>
      <ReturnCode> return_code </ReturnCode>
      <ReasonCode> reason_code </ReasonCode>
      <TaskNo> CICS_task_number </TaskNo>

      <ListCount> element_count </ListCount>
      <ObjectKeysCount> count </ObjectKeysCount> 1
      <FilterDateCount> count </FilterDateCount>
      <FilterCriteriaCount> count </FilterCriteriaCount>
      <ResultsCount> count </ResultsCount>

      <ListElement>
        <ObjectData>
          <Type> object_type </Type> 2
          <ObjectInstance> object_instance </ObjectInstance> 3

          Data for this object type

          <HashingValue> checksum </HashingValue> 4
        </ObjectData>
      </ListElement>

      More list elements...

    </OutputData>
  </List>
</CCV210>
```

1 If the List command specified <Counts>All</Counts>, then the output data contains the following elements:

<ObjectKeysCount>
Count of resource definitions matching the object criteria.

<FilterDateCount>
Count of resource definitions excluded because of date filtering.

<FilterCriteriaCount>
Count of resource definitions excluded because of restriction criteria.

<ResultsCount>
Count of resource definitions that match the specifications of the List command.

2 If the List command specified a *location_type* of Journal, then *object_type* is always JournCom.

3 The output data contains <ObjectInstance> only if the List command request specified:

- *location_type* of Journal

  or

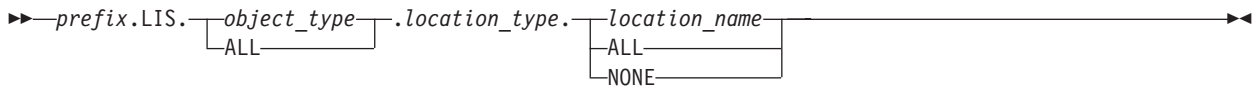
- *location_type* of Repository and Yes for <ObjectHistory>

You can use the returned *object_instance* with the Inquire command to retrieve specific versions of journal or repository objects, or with the Delete command to delete specific versions of repository objects.

4 The List command returns <HashingValue> only if *hashing_scope* is Partial or Full.

Security key

API command (READ access authority):



Examples

The following example lists PROGDEF resource definitions that:

- Have a name beginning with the letter Q.
- Belong to the group named QAACRE01
- Have a CEDF attribute value of YES, DATALOCATION of BELOW, and EXECKEY of USER

```
<CCV210>
<LIST>

  <LocationCriteria>
    <LocationName> CCVPLEXD </LocationName>
    <LocationType> CONTEXT </LocationType>
  </LocationCriteria>

  <ObjectCriteria>
    <ObjName> Q* </ObjName>
    <ObjGroup> QAACRE01 </ObjGroup>
    <ObjType> PROGDEF </ObjType>
  </ObjectCriteria>

  <RestrictionCriteria>
  <ListCount> 3 </ListCount>
  <ListElement>
    <RestrictionField> CEDF </RestrictionField>
    <RestrictionOperator> = </RestrictionOperator>
    <RestrictionValue> YES </RestrictionValue
  </ListElement>
  <ListElement>
    <RestrictionField> DATALOCATION </RestrictionField>
    <RestrictionOperator> = </RestrictionOperator>
    <RestrictionValue> BELOW </RestrictionValue
  </ListElement>
  <ListElement>
    <RestrictionField> EXECKEY </RestrictionField>
    <RestrictionOperator> = </RestrictionOperator>
    <RestrictionValue> USER </RestrictionValue
  </ListElement>
  </RestrictionCriteria>

</LIST>
</CCV210>
```

The following example lists the candidate resource definitions for a particular change package and migration scheme.

```
<CCV210>
  <LIST>
    <LOCATIONCRITERIA>
      <LOCATIONTYPE> REPOSITORY </LOCATIONTYPE>
    </LOCATIONCRITERIA>
    <OBJECTCRITERIA>
      <OBJTYPE> READYLST </OBJTYPE>
      <CPID> 00000015 </CPID>
      <SCHEME> PJCTEST </SCHEME>
    </OBJECTCRITERIA>
    <PROCESSPARMS>
      <HASHINGSCOPE> FULL </HASHINGSCOPE>
    </PROCESSPARMS>
  </LIST>
</CCV210>
```

Migrate

Copies the resource definitions in a change package from source to target CICS configurations, and invokes commands in the change package on target CICS configurations, according to the specified migration scheme.

Request format

```
<CCV210>
  <Migrate>
    <SelectionCriteria>
      <CPID> change_package_ID </CPID>
      <Scheme> migration_scheme </Scheme>
    </SelectionCriteria>
  </Migrate>
</CCV210>
```

Response format

```
<CCV210>
  <Migrate>
    <OutputData>
      <ReturnCode> return_code </ReturnCode>
      <ReasonCode> reason_code </ReasonCode>
      <TaskNo> CICS_task_number </TaskNo>
    </OutputData>
  </Migrate>
</CCV210>
```

Security key

API command (READ access authority):

Examples

```
<CCV210>
<MIGRATE>

 <SelectionCriteria>
   <CPID> QAACPK05 </CPID>
   <Scheme> QAAMIG13 </Scheme>
 </SelectionCriteria>

</MIGRATE>
</CCV210>
```

Newcopy

Reloads in-memory copies of resource definitions associated with a CICS program definition. This does not affect the stored resource definition referred to by the CICS configuration.

This command has two formats:

- For resource definitions that are in a change package
- For ad hoc selection of resource definitions

Request format

Change packages:

This format is identified by the presence of the <SelectionCriteria> element.

```
<CCV210>
  <Newcopy>
    <SelectionCriteria>
      <CPID> change_package_ID </CPID>
      <Scheme> migration_scheme </Scheme>
    </SelectionCriteria>

    <ProcessParms>
      <PhaseIn> No | Yes </PhaseIn> 1
      <CPSMParms>
        <TargetScope> target_scope </TargetScope> 2
      </CPSMParms>
    </ProcessParms>
  </Newcopy>
</CCV210>
```

1 <PhaseIn>Yes</PhaseIn> issues a phase-in action instead of a newcopy, to cater for in-use programs. For details, see the CICS documentation.

2 If the change package contains candidates for migration to context-based target CICS configurations, *target_scope* is required.

Ad hoc:

This format is identified by the absence of the <SelectionCriteria> element.

```
<CCV210>
  <Newcopy>
    <LocationCriteria>
      <LocationName> CICS_configuration </LocationName>
      <LocationType> CConfig </LocationType>
    </LocationCriteria>

    <ObjectCriteria> 1
      <ListCount> element_count </ListCount>
      <ListElement>
        <ObjectData>
          <ObjName> resource_name </ObjName>
          <ObjGroup> resource_group </ObjGroup>
          <ObjType> MAPDEF | PROGDEF | PRTNDEF </ObjType>
        </ObjectData>
      </ListElement>

      More list elements...

    </ObjectCriteria>

    <ProcessParms>
      <PhaseIn> No | Yes </PhaseIn> 2

      <CSDParms> 3
        <ConnectionCount> All | element_count | Local </ConnectionCount>
        <ConnectionElement>
          <ConnectionName> remote_system_connection </ConnectionName>
        </ConnectionElement>

        More connection elements...

      </CSDParms>

      <CPSMParms>
        <TargetScope> target_scope </TargetScope> 4
      </CPSMParms>

    </ProcessParms>
  </Newcopy>
</CCV210>
```

1 <ObjectCriteria> identifies the resource definitions that you want to newcopy.

You can specify the object criteria in several ways:

- To identify a single resource definition, specify only one set of <ObjName>, <ObjGroup>, and <ObjType>, with no masking (wildcards). Do not specify <ListCount> or <ListElement>.
- To identify one or more resource definitions, either:
  - Specify <ListCount> followed by one or more <ListElement>. Each <ListElement> must identify a single resource definition, with no masking.

    or
  - Specify only one set of <ObjName>, <ObjGroup>, and <ObjType> with masked values. Do not specify <ListCount> or <ListElement>. The values can be any combination of:

- Mask or specific value for the resource name
- Mask or specific value for the resource group
- Specific resource type, or the value * or All to identify all resource types (you cannot use masking to identify a subset of resource types)

For example, to identify all program resource definitions beginning with the characters PAY, from all groups beginning with the characters FIN, specify:

```
<ObjectCriteria>
  <ObjName>PAY*</ObjName>
  <ObjGroup>FIN*</ObjGroup>
  <ObjType>PROGDEF</ObjType>
</ObjectCriteria>
```

2 `<PhaseIn>Yes</PhaseIn>` issues a phase-in action instead of a newcopy, to cater for in-use programs. For details, see the CICS documentation.

3 `<ConnectionCount>` specifies the CSD-based CICS regions on which to perform this action:

All Performs the action via all of the remote system connections defined in the CICS configuration. If you omit `<ConnectionCount>` or its parent `<CSDParms>`, this is the default.

element_count
Performs the action via the remote system connections identified by one or more `<ConnectionElement>` elements. The number of `<ConnectionElement>` elements must match *element_count*. Each `<ConnectionElement>` must refer to a remote system connection specified in the CICS configuration.

Local Performs the action on the CICS region that is running the CICS Configuration Manager server. If you specify "local":

- `<LocationName>` must specify a CICS configuration that refers to the CSD file used by the CICS Configuration Manager server.
- Do not specify any connection elements (if you do, they are ignored).

4 Context-based CICS configurations only: *target_scope* is required.

Response format

Change packages:

```
<CCV210>
  <Newcopy>
    <OutputData>
      <ReturnCode> return_code </ReturnCode>
      <ReasonCode> reason_code </ReasonCode>
      <TaskNo> CICS_task_number </TaskNo>

      <ListCount> element_count </ListCount>
      <ListElement>
        <ReturnCode> return_code </ReturnCode>
        <ReasonCode> reason_code </ReasonCode>
        <ObjName> resource_name </ObjName>
        <ObjType> MAPDEF | PROGDEF | PRTNDEF </ObjType>
        <ObjGroup> resource_group </ObjGroup>
        <Config> CICS_configuration </Config>
        <LocationName> CSD_DSN | context </LocationName>

        <CSDInfo> 1
          <ConnectionCount> element_count </ConnectionCount>
          <ConnectionElement>
            <ConnectionName> remote_system_connection </ConnectionName>
            <ReturnCode> return_code </ReturnCode>
            <ReasonCode> reason_code </ReasonCode>
          </ConnectionElement>

          More connection elements...

        </CSDInfo>

        <CPSMInfo> 1
          <ReturnCode> return_code </ReturnCode>
          <ReasonCode> reason_code </ReasonCode>
        </CPSMnfo>

      </ListElement>

      More list elements...

    </OutputData>
  </Newcopy>
</CCV210>
```

1 <CSDInfo> contains information for CSD-based resource definitions. <CPSMInfo> contains information for context-based resource definitions.

Ad hoc:

```
<CCV210>
  <Newcopy>
    <OutputData>
      <ReturnCode> return_code </ReturnCode>
      <ReasonCode> reason_code </ReasonCode>
      <TaskNo> CICS_task_number </TaskNo>

      <ListCount> element_count </ListCount>
      <ListElement>
        <ReturnCode> return_code </ReturnCode>
        <ReasonCode> reason_code </ReasonCode>
        <ObjName> resource_name </ObjName>
        <ObjType> MAPDEF | PROGDEF | PRTNDEF </ObjType>
        <ObjGroup> resource_group </ObjGroup>
        <Config> CICS_configuration </Config>
        <LocationName> CSD_DSN | context </LocationName>

        <CSDInfo> 1
          <ConnectionCount> element_count </ConnectionCount>
          <ConnectionElement>
            <ConnectionName> remote_system_connection </ConnectionName>
            <ReturnCode> return_code </ReturnCode>
            <ReasonCode> reason_code </ReasonCode>
          </ConnectionElement>

          More connection elements...

        </CSDInfo>

        <CPSMInfo> 1
          <ReturnCode> return_code </ReturnCode>
          <ReasonCode> reason_code </ReasonCode>
        </CPSMnfo>

      </ListElement>

      More list elements...

    </OutputData>
  </Newcopy>
</CCV210>
```

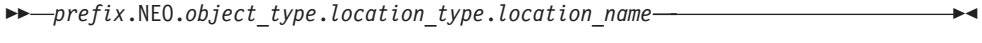
1 <CSDInfo> contains information for CSD-based resource definitions.
<CPSMInfo> contains information for context-based resource definitions.

Security key

API command (READ access authority):

Change packages:

Ad hoc:



Ready

Indicates that the resource definitions in a change package are ready for migration.

Request format

```
<CCV210>
  <Ready>
    <SelectionCriteria>
      <CPID> change_package_ID </CPID>
      <Scheme> migration_scheme </Scheme>
    </SelectionCriteria>
  </Ready>
</CCV210>
```

Response format

```
<CCV210>
  <Ready>
    <OutputData>
      <ReturnCode> return_code </ReturnCode>
      <ReasonCode> reason_code </ReasonCode>
      <TaskNo> CICS_task_number </TaskNo>
    </OutputData>
  </Ready>
</CCV210>
```

Security key

API command (READ access authority):

Examples

```
<CCV110.1>
<READY>

 <SelectionCriteria>
   <CPID> QAACPK05 </CPID>
   <Scheme> QAAMIG13 </Scheme>
 </SelectionCriteria>

</READY>
</CCV110.1>
```

Recover

Recovers before or after images of historical resource definitions from the journal.

Request format

```
<CCV210>
  <Recover>
    <LocationCriteria>
      <LocationType> Journal </LocationType>
    </LocationCriteria>

    <ObjectCriteria>
      <ListCount> element_count </ListCount> 1
      <ListElement> 2
        <ObjName> resource_name </ObjName>
        <ObjGroup> resource_group </ObjGroup>
        <ObjType> resource_type </ObjType>
        <ObjectInstance> object_instance </ObjectInstance>
      </ListElement>

      More list elements...

    </ObjectCriteria>

    <ProcessParms>
      <RecoverImage> Before | After </RecoverImage> 3
      <RollbackOption> No | Yes </RollbackOption> 4
    </ProcessParms>

  </Recover>
</CCV210>
```

1 The *element_count* must match the number of list elements.

2 Each `<ListElement>` must uniquely identify a change that you want to undo or redo: that is, a before/after image (BAImage) object in the journal. You must specify the name, group, type, and object instance of each BAImage with no wildcards.

You cannot recover changes to CICSPlex SM relationships, such as Add and Remove (that is, changes to *xxx*INGRP resource definition types). However, you can recover changes to the resource definition types List, ResGroup, and ResDesc.

If the resource type is ResDesc or List, then the `<ObjGroup>` element is ignored, and may be omitted.

Tip: Use a List command to get the details of a set of BAImage objects, and then use the response from that List command response to specify the list elements for this Recover command.

3 Specify whether to recover the before image (undo the change) or the after image (redo the change).

Note:

- Recovering the after image of a deletion, or the before image of a creation, deletes the current resource definition, if it exists.
- If you select multiple changes for the same resource definition (same name, type, group, and CICS configuration), then:

- Choosing to recover *after images* recovers the after image of the *most recent* of the selected changes for that resource definition.
- Choosing to recover *before images* recovers the before image for the *oldest* of the selected changes for that resource definition.

4 The rollback option applies only when recovering before images.

The rollback option protects you from unintentionally overwriting changes that are outside of the set you have selected. Specifically, the rollback option ensures that the selected changes for a resource definition form an unbroken chain that begins at the current resource definition and ends at the before image of the oldest selected change. The chain is unbroken if the following two conditions are true:

- The current resource definition must match the after image of the most recent of the selected changes.

  If no current resource definition exists (it has been deleted), then the after image of the most recent of the selected changes must be empty (reflecting the deletion).
- The before image of the most recent of the selected changes must match the after image of the second most recent; the before image of the second most recent must match the after image of the third most recent; and so on, until the oldest of the selected changes, whose after image must match the before image of the second oldest.

To match, two items must have the same attribute values *and* the same change date.

If you omit the `<RollbackOption>` element when recovering before images, the before images are recovered with no rollback processing.

When recovering after images, omit the `<RollbackOption>` element; if you specify this element, it is ignored.

Response format

```
<CCV210>
  <Recover>
    <OutputData>
      <ReturnCode> return_code </ReturnCode> 1
      <ReasonCode> reason_code </ReasonCode>
      <TaskNo> CICS_task_number </TaskNo>

      <ListCount> element_count </ListCount>
      <ListElement> 2
        <ReturnCode> return_code </ReturnCode>
        <ReasonCode> reason_code </ReasonCode>
        <ObjName> resource_name </ObjName>
        <ObjType> resource_type </ObjType>
        <ObjGroup> resource_group </ObjGroup>
        <Config> CICS_configuration </Config>
        <ObjectInstance> object_instance </ObjectInstance>
        <Action> CREATE | UPDATE | DELETE | SKIP </Action> 3
      </ListElement>

      More list elements...

    </OutputData>
  </Recover>
</CCV210>
```

1 The response contains a return code and a reason code for the entire command (known as the "rollup" return and reason codes) and a return code and a reason code for each list element.

2 The response contains the list elements specified in the request, in the same order. In addition to the details specified in the request, the response includes the name of the CICS configuration for each change.

3 `<Action>` indicates the action that the Recover command performed for this change:

CREATE
The Recover command created the resource definition, because no current version existed.

UPDATE
The Recover command updated the existing resource definition.

DELETE
The Recover command deleted the existing resource definition.

SKIP No action performed. Possible reasons include:

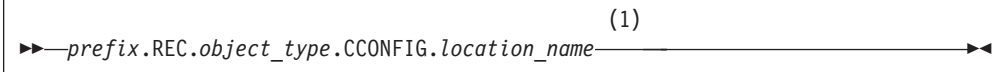
- The set of changes specified in the Recover request included multiple instances of the same resource definition (same name, type, group, and in the same CICS configuration).

  When recovering before images, the Recover command skips all except the oldest of the selected changes for a resource definition.

  When recovering after images, the Recover command skips all except the most recent of the selected changes for a resource definition.
- An error occurred while attempting recovery. For example, a security violation or a break in the rollback chain.

Security key

API command (READ access authority):



Notes:

1 *location_name* is the name of the CICS configuration where the change occurred (stored in the BAImage journal record).

Resource definitions (ALTER access authority):

Return and reason codes

The following tables describe combinations of return and reason codes that are specific to the Recover API command. For a complete list of reason codes that can be generated by this and other API commands, see “Reason codes” on page 443.

The following table describes rollup return and reason codes for the entire command:

Table 26. Recover API command: rollup return and reason codes

Return code	Reason code	Description
04	EB	Some of the objects failed recovery.
08	EC	All of the objects failed recovery.

The following table describes return and reason codes for each list element:

Table 27. Recover API command: rollup return and reason codes

Return code	Reason code	Description
04	CD	Resource definition already in the state required for recovery.
04	E5	Recovery skipped for ineligible duplicate. Either: • The Recover command was recovering before images, and this was not the oldest of the selected BAImage objects for the resource definition or • The Recover command was recovering after images, and this was not the most recent of the selected BAImage objects for the resource definition
08	03	BAImage object not found in journal.
04	E6	Recovery skipped deletion of non-existent definition. To recover an empty image (the before image of a creation, or the after image of a deletion), the Recovery command was going to delete the current resource definition. However, the resource definition no longer exists, so the Recover command performed no action.
08	E7	Recovery failed because the rollback chain was broken. This reason code identifies the BAImage object that would have been recovered if the rollback chain was unbroken. Reason code E9 identifies the BAImage object that broke the rollback chain.

Table 27. Recover API command: rollup return and reason codes (continued)

Return code	Reason code	Description
08	E8	Object data inconsistent with the object instance BAImage. Either: • The combination of name, group, and type specified in the request do not match the object instance specified in the request or • The BAImage object has a return code greater than 4. You can only recover BAImage objects with a return code of 4 or less. That is, you can only recover changes that succeeded; you cannot recover failed attempts to change a resource definition.
08	E9	Recovery rollback chain broken by this BAImage object. The before image of this BAImage does not match the after image of the next most recent selected BAImage for the resource definition.
08	EA	Recovery failed because the target CICSPlex SM resource group for recovery contains a different version of this resource definition.

Usage

For details on how the CICS Configuration Manager ISPF dialog interface uses the Recover command, see "Recovering historical versions of multiple resource definitions" on page 204.

Note: In the ISPF dialog, if you enter the **REC** (Recover) line action next to multiple changes, then all of those changes must be for the same CICS configuration. However, the Recover API command has no such restriction: each change in a Recover API command request can be for a different CICS configuration.

Remove

Removes objects from a container object.

You can use the Remove command to:

- Remove resource definitions or commands from a change package.
- Remove resource definitions in a CICSPlex SM data repository from a ResGroup (resource group).
- Remove ResGroups from a ResDesc (resource description).

See the related Add command.

Request format

Removing resource definitions from a ResGroup:

```
<CCV210>
  <Remove>
    <LocationCriteria>
      <LocationName> location_name </LocationName>
      <LocationType> CConfig | Context | CSD </LocationType>
    </LocationCriteria>

    <ObjectCriteria> 1
      <ListCount> element_count </ListCount>
      <ListElement>
        <DefA>
          <ObjGroup> resource_group </ObjGroup> 2
          <ObjType> resource_type </ObjType>
          <ObjName> resource_name </ObjName>
        </DefA>
      </ListElement>
    </ObjectCriteria>

    <InputData> 3
      <ContainerName> object_name </ContainerName>
      <ContainerType> ResGroup </ContainerType>
    </InputData>
  </Remove>
</CCV210>
```

Removing ResGroups from a ResDesc:

```
<CCV210>
  <Remove>
    <LocationCriteria>
      <LocationName> location_name </LocationName>
      <LocationType> CConfig | Context | CSD </LocationType>
    </LocationCriteria>

    <ObjectCriteria>  1
      <ListCount> element_count </ListCount>
      <ListElement>
        <GrpA>
          <ObjType> ResGroup </ObjType>
          <ObjName> resource_name </ObjName>
        </GrpA>
      </ListElement>
    </ObjectCriteria>

    <InputData>  3
      <ContainerName> object_name </ContainerName>
      <ContainerType> ResDesc </ContainerType>
    </InputData>
  </Remove>
</CCV210>
```

Removing resource definitions from a change package:

```
<CCV210>
  <Remove>
    <LocationCriteria>
      <LocationName> location_name </LocationName>
      <LocationType> Repository </LocationType>
    </LocationCriteria>
    <ObjectCriteria>  1
      <CConfig> CICS_configuration </CConfig>  4
      <ListCount> element_count </ListCount>
      <ListElement>
        <ObjName> resource_name </ObjName>
        <ObjGroup> resource_group </ObjGroup>
        <ObjType> resource_type </ObjType>
      </ListElement>

      More list elements...

    </ObjectCriteria>

    <InputData>  3
      <ContainerType> ChgPkg </ContainerType>
      <ContainerName> change_package_ID </ContainerName>
    </InputData>

  </Remove>
</CCV210>
```

Removing commands from a change package:

```
<CCV210>
  <Remove>
    <LocationCriteria>
      <LocationType> Repository </LocationType>
    </LocationCriteria>
    <ObjectCriteria> 1
      <CConfig> CICS_configuration </CConfig> 4
      <ListCount> element_count </ListCount>
      <ListElement>
        <CmdAPost>
          <Command> Add | Remove | Delete </Command>
          <ObjGroup> resource_group </ObjGroup>
          <ObjType> resource_type </ObjType>
          <ObjName> resource_name </ObjName>
          <ObjDefVer> definition_version </ObjDefVer> 2
          <TContainer> resource_group </TContainer> 5
        </CmdAPost>
      </ListElement>

      More list elements...

    </ObjectCriteria>

    <InputData> 3
      <ContainerName> change_package_ID </ContainerName>
      <ContainerType> ChgPkg </ContainerType>
    </InputData>

  </Remove>
</CCV210>
```

1 `<ObjectCriteria>` identifies the objects that you want to remove from the container.

You can specify the object criteria in several ways:

- To identify a single object, specify the contents of a single `<ListElement>`, but omit the `<ListElement>` start tag and the `</ListElement>` end tag. Omit the `<ListCount>` element. In the `<Obj...>` element values, do not use masking (wildcards).
- To identify one or more objects, either:
  - Specify `<ListCount>` followed by one or more `<ListElement>`. Each `<ListElement>` must identify a object, with no masking.

    or

  - Specify the contents of a single `<ListElement>`, but omit the `<ListElement>` start tag and the `</ListElement>` end tag. Omit the `<ListCount>` element. In the `<Obj...>` element values, do not use masking (wildcards).

When removing from a ResGroup or a ResDesc, `<LocationCriteria>` refers to the location of the resource definitions. However, when removing resource definitions or commands from a change package,, `<LocationCriteria>` refers to the CICS Configuration Manager repository, which is where the change package is stored. To specify the location of the resource definitions, or the CICS configuration associated with the commands, you use `<CConfig>` in `<ObjectCriteria>`.

2 When adding a ResGroup to a ResDesc, omit `<ObjGroup>`.

3 `<InputData>` identifies the container object.

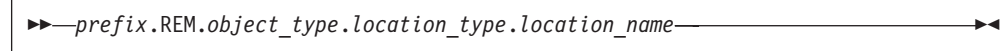
4 <CConfig> identifies the CICS configuration of the resource definitions that you want to remove. (A change package can contain resource definitions from multiple CICS configurations.)

Response format

```
<CCV210>
  <Remove>
    <OutputData>
      <ReturnCode> return_code </ReturnCode>
      <ReasonCode> reason_code </ReasonCode>
      <TaskNo> CICS_task_number </TaskNo>
    </OutputData>
  </Remove>
</CCV210>
```

Security key

API command (READ access authority):



Resource definitions (ALTER access authority):

Rename

Renames resource definitions, and optionally moves them to another group.

This command has two formats:

- For identifying individual resource definitions to rename.
- For specifying a group or ResGroup, and then moving some or all of its resource definitions to another group.

Request format

Renaming individual resource definitions:

```
<CCV210>
  <Rename>
    <LocationCriteria>
      <LocationName> location_name </LocationName>
      <LocationType> CConfig | Context | CSD </LocationType>
    </LocationCriteria>
    <ObjectCriteria>  1
      <ListCount> element_count </ListCount>
      <ListElement>
        <ObjName> resource_name </ObjName>
        <ObjGroup> resource_group </ObjGroup>
        <ObjType> resource_type </ObjType>
      </ListElement>

      More list elements...

    </ObjectCriteria>
    <InputData>
      <TargetCount> element_count </TargetCount>
      <TargetElement>
        <TargetName> resource_name </TargetName>
        <TargetGroup> resource_group </TargetGroup>
      </TargetElement>

      More target elements...

    </InputData>

    <ProcessParms>
      <Replace> No | Yes </Replace>
    </ProcessParms>

  </Rename>
</CCV210>
```

1 `<ObjectCriteria>` identifies the resource definitions that you want to rename.

You can specify the object criteria in several ways:

- To identify a single resource definition, specify only one set of `<ObjName>`, `<ObjGroup>`, and `<ObjType>`, with no masking (wildcards). Do not specify `<ListCount>` or `<ListElement>`.
- To identify one or more resource definitions, either:
  - Specify `<ListCount>` followed by one or more `<ListElement>`. Each `<ListElement>` must identify a single resource definition, with no masking.

    or

– Specify only one set of <ObjName>, <ObjGroup>, and <ObjType> with masked values. Do not specify <ListCount> or <ListElement>. The values can be any combination of:
  - Mask or specific value for the resource name
  - Mask or specific value for the resource group
  - Specific resource type, or the value * or All to identify all resource types (you cannot use masking to identify a subset of resource types)

  For example, to identify all program resource definitions beginning with the characters PAY, from all groups beginning with the characters FIN, specify:

```
<ObjectCriteria>
  <ObjName>PAY*</ObjName>
  <ObjGroup>FIN*</ObjGroup>
  <ObjType>PROGDEF</ObjType>
</ObjectCriteria>
```

Renaming from a group or ResGroup:

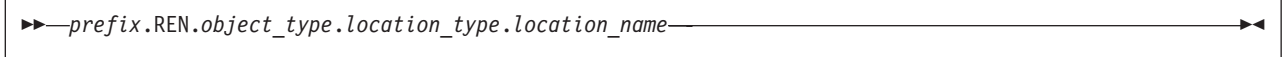
```
<CCV210>
  <Rename>
    <LocationCriteria>
      <LocationName> location_name </LocationName>
      <LocationType> CConfig ┆ Context | CSD </LocationType>
    </LocationCriteria>
    <ObjectCriteria>
      <ObjName> resource_group </ObjName>
      <ObjType> ResGroup </ObjType>
    </ObjectCriteria>
    <InputData>
      <SourceName> object_name </SourceName>
      <SourceType> object_type </SourceType>
      <TargetGroup> resource_group </TargetGroup>
    </InputData>

    <ProcessParms>
      <Replace> No | Yes </Replace>
    </ProcessParms>

  </Rename>
</CCV210>
```

Response format

```
<CCV210>
  <Rename>
      <ReturnCode> return_code </ReturnCode>
      <ReasonCode> reason_code </ReasonCode>
      <TaskNo> CICS_task_number </TaskNo>

      <ListCount> element_count </ListCount>
      <ListElement>
        <ReturnCode> return_code </ReturnCode>
        <ReasonCode> reason_code </ReasonCode>
        <ObjName> resource_name </ObjName>
        <ObjGroup> resource_group </ObjGroup>
        <ObjType> resource_type </ObjType>
      </ListElement>

      More list elements...

    </OutputData>
  </Rename>
</CCV210>
```

Security key

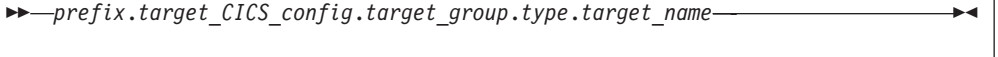
API command (READ access authority):



Resource definitions:

For the source resource definition (ALTER access authority):

For the target resource definition (ALTER access authority):



A Rename API command for a group/ResGroup involves resource definition security checks (requiring ALTER access authority) for all of the following:

- Each source resource definition (in the original group/ResGroup)
- Each target resource definition (in the renamed group/ResGroup)
- When renaming a ResGroup (not a group): the target ResGroup

Unready

Indicates that the resource definitions in a change package are no longer ready for migration.

Request format

```
<CCV210>
  <Unready>
    <SelectionCriteria>
      <CPID> change_package_ID </CPID>
      <Scheme> migration_scheme </Scheme>
    </SelectionCriteria>
  </Unready>
</CCV210>
```

Response format

```
<CCV210>
  <Unready>
    <OutputData>
      <ReturnCode> return_code </ReturnCode>
      <ReasonCode> reason_code </ReasonCode>
      <TaskNo> CICS_task_number </TaskNo>
    </OutputData>
  </Unready>
</CCV210>
```

Security key

API command (READ access authority):

Examples

```
<CCV210>
<UNREADY>

 <SelectionCriteria>
   <CPID> QAACPK01 </CPID>
   <Scheme> QAAMIG07 </Scheme>
 </SelectionCriteria>

</UNREADY>
</CCV210>
```

Update

Modifies a resource definition or a CICS Configuration Manager repository object.

Request format

```
<CCV210>
  <Update>
    <LocationCriteria>
      <LocationName> location_name </LocationName>
      <LocationType> CConfig | Context | CSD | Repository </LocationType>
    </LocationCriteria>

    <ObjectCriteria>
      <ObjType> object_type </ObjType>

      Criteria for this object type

    </ObjectCriteria>

    <ProcessParms>
      <IntegrityToken> integrity_token </IntegrityToken> 1
    </ProcessParms>

    <InputData>
      <object_type> 2
        <ObjectData>

          Data for this object type

        </ObjectData>
      </object_type>
    </InputData>
  </Update>
</CCV210>
```

1 <IntegrityToken> is optional.

2 <*object_type*> and its end tag are optional. Specifying this "wrapper"element allows you to use the supplied schema to validate the contents of the <ObjectData> element for that object type. For details, see "Using the supplied schema to write API commands" on page 327.

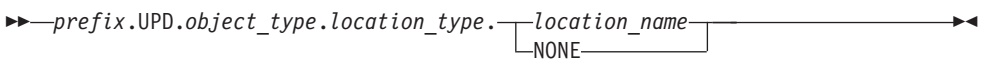
Response format

```
<CCV210>
  <Update>
    <OutputData>
      <ReturnCode> return_code </ReturnCode>
      <ReasonCode> reason_code </ReasonCode>
      <TaskNo> CICS_task_number </TaskNo>
      <ChangeTime> time_stamp </ChangeTime> 1
      <IntegrityToken> integrity_token </IntegrityToken>
    </OutputData>
  </Update>
</CCV210>
```

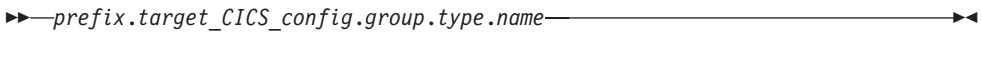
1 <ChangeTime> identifies the time that CICSPlex SM, DFHEDAP, or a CICS SPI command (invoked by the CICS Configuration Manager server) updated the object.

Security key

API command (READ access authority):



Resource definitions (ALTER access authority)



Part 5. Appendixes

Appendix A. Messages and codes

The following topics describe messages and codes issued by the CICS Configuration Manager server or its batch clients.

Abend codes

CCAC

Explanation

The SOAP pipeline manager could not link to the message adapter.

System action

The CICS Configuration Manager task is abnormally terminated but without a transaction dump.

User response

This is probably a User Error. Check previous CICS messages to determine why the message adapter could not be linked to.

CCAE

Explanation

The SOAPAction error exceeds 256 bytes.

System action

The CICS Configuration Manager task is abnormally terminated but without a transaction dump.

User response

This is probably a User Error. Check that user-written programs used earlier in the Pipeline stages do not create SOAPAction headers longer than 256 bytes.

CCBC

Explanation

A CICS Configuration Manager process, in attempting to invoke another, experienced an unexpected condition.

System action

The CICS Configuration Manager task is abnormally terminated with a transaction dump.

User response

This is probably an internal error. Please record any previous messages that may be related to this problem and contact IBM support.

CCCE

Explanation

The CICS Configuration Manager SOAP HTTP Dispatcher, when defining an Activity to process the CICS Configuration Manager API request, experienced an unexpected condition.

System action

The CICS Configuration Manager task is abnormally terminated with a transaction dump.

User response

This is probably an internal error. Please record any previous messages that may be related to this problem and contact IBM support.

CCCT

Explanation

The CICS Configuration Manager SOAP HTTP Dispatcher, while attempting to establish a Named Counter, experienced an unexpected condition.

System action

The CICS Configuration Manager task is abnormally terminated with a transaction dump.

User response

This is probably an internal error. Please record any previous messages that may be related to this problem and contact IBM support.

CCHE

Explanation

The CICS Configuration Manager SOAP HTTP Dispatcher experienced an unexpected condition after return from the Transport layer.

System action

The CICS Configuration Manager task is abnormally terminated with a transaction dump.

User response

This is probably an internal error. Please record any previous messages that may be related to this problem and contact IBM support.

CCIP

Explanation

A CICS Configuration Manager process has received a parameter list that does not conform to expectations.

System action

The CICS Configuration Manager task is abnormally terminated with a transaction dump.

User response

This is probably an internal error. Please record any previous messages that may be related to this problem and contact IBM support.

CCMC

Explanation

A container required by a pipeline stage was not found.

System action

The CICS Configuration Manager task is abnormally terminated but without a transaction dump.

User response

This is probably an internal error. Please record any previous messages that may be related to this problem and contact IBM support.

CCML

Explanation

The CICS Configuration Manager message handler has determined that a CICS Configuration Manager task is in a message sending loop.

System action

The CICS Configuration Manager task is abnormally terminated with a transaction dump.

User response

This is probably an internal error. Please record any previous messages that may be related to this problem and contact IBM support.

CCMP

Explanation

A CICS Configuration Manager process has been invoked with the address of the PAB missing.

System action

The CICS Configuration Manager task is abnormally terminated with a transaction dump.

User response

This is probably an internal error. Please record any previous messages that may be related to this problem and contact IBM support.

CCPE

Explanation

An attempt to access an Error Container experienced an unexpected condition.

System action

The CICS Configuration Manager task is abnormally terminated but without a transaction dump.

User response

This is probably an internal error. Please record any previous messages that may be related to this problem and contact IBM support.

CCUA

Explanation

A CICS Configuration Manager process has been requested to abnormally terminate with an unknown abend condition.

System action

The CICS Configuration Manager task is abnormally terminated with a transaction dump.

User response

This is probably an internal error. Please record any previous messages that may be related to this problem and contact IBM support.

Return codes

The following return codes are set by CICS Configuration Manager:

0 Operation was successful.

4 Operation completed, but a warning condition occurred during processing.

8 Operation may be incomplete. An error occurred, but CICS Configuration Manager continued processing.

12 Operation is incomplete. A failure condition caused premature termination.

16 Operation is incomplete. A severe error condition occurred.

If the return code for an API command is higher than 4, then the response includes additional diagnostic data. For details, see "Diagnostic data in the API response" on page 329.

Reason codes

CICS Configuration Manager reason codes consist of 8 hexadecimal digits:

mmmmcccc

where:

mmmm **(the first four digits)**
Identify the internal CICS Configuration Manager server function or module that reported the error.

cccc **(the last four digits)**
Identify the condition that triggered the error, described below.

Here is a list of conditions:

cccc	**Description**
0000	Successful. No errors.
0001	Invalid object type specified
0002	Required field missing
0003	Object not found in CICS configuration, repository, or journal
0004	No matching objects found
0005	CICS call error
0006	Record too long
0007	Integrity check failed. The supplied integrity token did not match the current integrity token value of the object.
0008	Key field too long for repository record
0009	Record too long for repository
000A	Task abended
000B	Data corruption detected
000C	WA obtain failed
000D	INIT function has not been called
000E	Invalid key length in journal record
000F	Invalid journal record length
0010	Internal processing error
0011	CICS Configuration Manager was not invoked as a BTS activity
0012	Analyzer has abended
0013	First child element of SOAP message envelope `<Body>` element was not `<CCV210>`
0014	Value is invalid in context
0015	User has insufficient authority to complete the command. If the user should have this authority, then check the SAF resource key for the command, and update the external security manager accordingly.
0016	GETNEXT/ENDPOSITION called before POSITION
0017	Invalid combination of parameters
0018	Cyclic redundancy checksum (CRC) mismatch: object data has changed
0019	Truncation occurred
001A	Message not found
001B	Bad definition in message table
001C	Literal not found in literal table
001D	Invalid mask specified for element
001E	Invalid data specified for element
001F	Invalid data type for mask

0020 Invalid exponent for mask

0021 Either:
- Data passed for setvalue tag

  or
- Bad data type for SET

0022 Message could not be formatted

0023 Illogical "state" request: item already has that state

0024 DFHEDAP or CICS SPI command exception occurred

0025 An object specified by this command is currently being updated by another process

0026 Non-default value encountered for an obsolete attribute

0027 Non-default value encountered for an unsupported attribute

0028 A field contains masking characters in an unsupported context

0029 Object already exists

002A CICSPlex SM exception occurred

002B Invalid attribute data

002C Invalid resource type

002D Invalid resource version

002E CICSPlex SM maintenance point unavailable

002F CICSPlex SM context not found

0030 Resource group not found

0031 Unsupported version of CICS

0032 Unable to acquire storage

0033 Unable to release storage

0034 The requested function is not supported for the current API command

0035 A service routine request could not be processed. For details, see the CCVLOG data set on the CICS Configuration Manager server.

0036 Language Environment timer request failed

0037 CICS Configuration Manager not enabled

0038 Orphan not allowed for *xxxx*DEF object

0039 CICS system definition (CSD) data set name not found in catalog

003A CSD file is already open for update by another process

003B CEDA transaction is running in CICS Configuration Manager

003C Attribute not found in table

003D Cannot delete this record

003E Change package contains no candidates

003F No candidate resource definitions found for Migrate or Ready

0040 Link error

0041 XML parsing error. Check the XML syntax of the command.

0042 Change package not ready

0043 Change package not approved

0044 A Migrate command is already active for this combination of change package and migration scheme

0045 Missing CICS configuration for the Migrate command

0046 Module not found

0047 Object is in use

0048 No fields are in this scope

0049 Referential integrity check failed

004A A journal record returned by the Inquire command does not match the supplied object criteria

004B No space on file or volume

004C Subsequent Migrate found checksum mismatch for one or more candidate

004D This event ID has already been backed out. The Backout command found a successful previous backout for this event ID.

004E Ready list found key association record with zero checksum

004F Ready list has objects in error

0050 SAF class not defined to external security manager
0051 Variable name in transform mask invalid (too long, or not terminated by a blank or a period)
0052 The security exit has modified the parameters used for the security check
0053 Transform rule failure
0054 Copy command has replaced the object
0055 Migration scheme was changed after the change package was marked as ready
0056 No migration candidates remain after transform completed
0057 CICSPlex SM API is not available
0058 A Ready list candidate was not found
0059 No PScheme (package-scheme) record exists
005A A migration is already active
005B The LocationType in the XML is invalid
005C All Backout objects are already in the desired state
005D Remote system connection name not valid for the CICS configuration
005E None of the selected objects installed successfully
005F Some objects installed successfully
0060 Nothing installed, no failures
0061 A CICS configuration had no remote system connections defined
0062 None of the target CICS configurations for install has remote system connections
0063 Rename of DFHCSD data set failed. DD DFHCSD may be in JCL
0064 None of the objects in the change package installed
0065 Some objects in the change package installed
0066 Remote transaction ID is spaces
0067 Remote link is not defined
0068 Remote link is out of service
0069 Remote link has no free sessions available
006A None of the objects newcopied
006B Some objects newcopied
006C Nothing newcopied, no failures
006D None of the objects in the change package newcopied
006E Some objects in the change package newcopied
006F CICS configuration CSD name does not match that on the remote system
0070 None of the objects were discarded
0071 Some objects discarded
0072 Nothing discarded, no failures
0073 None of the objects in the change package discarded
0074 Some objects in the change package discarded
0075 None of the target CICS configurations for newcopy has remote system connections
0076 None of the target CICS configurations for discard has remote system connections
0077 Newcopy of a program defined as “remote” is invalid
0078 Discard failed as the object state does not permit discard
0079 The server and client API software levels do not match
007A Discard is not a valid function for a change package
007B Discard is not supported for contexts
007C The CICS Configuration Manager remote transaction ID CCVR is not defined
007D The CICS Configuration Manager remote program CCVSREMP is not defined
007E The open failed for the CICS configuration's CSD file
007F The operation with an IBM reserved resource failed
0080 A valid API release element name was not found in the XML

0081 A SAF call failed owing to environmental factors
0082 Approver role not found in the approver profile
0083 Disapprover role not previously applied to the change package.
0084 A DELETE request failed for an object within a list
0085 Some objects within the DELETE request were deleted
0086 Nothing deleted for any objects in the DELETE request
0087 Export dataset in use
0088 Export dataset invalid
0089 Export data set open failed
008A Number of objects has exceeded internal table limits
008B Import data set in use
008C Import data set invalid
008D Import data set open failed
008E An ALTER request failed for an object within a list
008F Some objects within the ALTER request were altered
0090 Nothing altered for any objects within the ALTER request
0091 Mismatched parameter list (software) in Server programs
0092 Dynamic allocation failed
0093 An ADD request failed for an object within a list
0094 Some objects within the ADD request were added
0095 Nothing added for any objects within the ADD request
0096 A REMOVE request failed for an object within a list
0097 Some objects within the REMOVE request were removed
0098 Nothing removed for any objects within the REMOVE request
0099 Some objects replaced
009A A RENAME request failed for an object within a list
009B Some objects within the RENAME request were renamed
009C Nothing renamed for any objects within the RENAME request
009D DFHEDAP or CICS SPI command exception received for an object within a list
009E Non default value encountered for an UNSUPPORTED attribute
009F Non default value encountered for an OBSOLETE attribute
00A0 Attribute data invalid for an object within a list
00A1 CSD data set name not found in catalog
00A2 CSD open for update elsewhere
00A3 CEDA is running in CICS Configuration Manager server
00A4 CPSM exception received
00A5 Invalid resource type for an object within a list
00A6 Invalid resource version for an object within a list
00A7 CICSPlex SM maintenance point unavailable
00A8 Context not found
00A9 Resource group not found
00AA APPROVE? or MIGRATE? query returned 0 objects
00AB Some target objects exist for RENAME function
00AC READY resulted in no change from the current status
00AD Exits Extension Block eyecatcher portion is corrupted
00AE Exits Extension Block exit-point name is invalid
00AF Inappropriate CICS configuration type specified
00B0 No records on import file matched the selection criteria
00B1 User exit program issued RC > 8
00B2 A CICS Configuration Manager control block is corrupted
00B3 Trial-software expiration control was tampered
00B4 Trial-software activation period has expired
00B5 RLS open failed: CICS SIT RLS=NO or VSAM cluster error
00B6 Enqueue failure for concurrent CCVBHKP utility executions
00B7 DFHEDAP or CICS SPI command information messages returned

00B8 The CICS configuration type is not for this API
00B9 The XML limit number has been exceeded
00BA RLS open failed on CICS configuration defined as RLS=YES
00BB RLS open failed, the ACB password failed catalog checks
00BC The HTTP XML volume limit has been exceeded
00BD CPSM object in multiple groups
00BE Record exceeds file LRECL
00BF Change has no approval profile
00C0 XML has no association type
00C1 COMMAND only for CA record
00C2 CA COMMAND not found
00C3 CA object must be CPSM
00C4 XML control record not found
00C5 No relationship tag for ADD
00C6 Readylist list has commands in error
00C7 Readylist list has objects and commands in error
00C8 Duplicated and/or misplaced element
00C9 DEPLOY needs at least one verb before it can function
00CA At least one of the Deploy verbs failed
00CB Some migrate commands ignored
00CC All migrate commands ignored
00CD Object in desired state
00CE Command not for this config
00CF One or more Deploy verbs with warning
00D0 One or more Deploy verbs with error
00D1 CIC configuration and data set specified
00D2 Incompatible elements
00D3 Different object version already in group
00D4 Reserved
00D5 Reserved
00D6 CICS Configuration Manager does not support the install of this object
00D7 Backout found two updates but the checksums did not match
00D8 Transform resulted in a value that exceeded the attribute length
00D9 NOSPACE condition returned for a journal write operation
00DA No records match backout event ID for a journal write operation
00DB NSR CSD not supported with transaction isolation
00DC Container not found for an ADD
00DD The specified KILLTOKEN value is already in use
00DE The KILLTOKEN task belongs to a different user ID
00DF KILLTOKEN value is missing or invalid
00E0 The API command was terminated by a KILL request
00E1 The task matching the KILLTOKEN entry no longer exists
00E2 The dispatcher has marked a task for KILL termination
00E3 No matching tasks found for the KILL request
00E4 No migration scheme information found in the approval profile
00E5 Recovery skipped for ineligible duplicate
00E6 Recovery skipped for delete of non-existent definition
00E7 Recovery failed because the rollback chain was broken
00E8 Object data inconsistent with the object instance BAImage
00E9 Recovery rollback chain broken by this BAImage object
00EA Recovery failed as CICSPlex SM resource definition has a mismatched version
00EB Some of the objects recovered
00EC None of the objects recovered

Messages

CICS Configuration Manager messages begin with a unique message identifier, followed by message text that might contain variable information identifying the particular circumstance that caused the message.

The message identifier has the format **CCV*nnnnx*** where:

CCV Identifies the product that issued the message: CICS Configuration Manager.

nnnn Represents a four-digit message number. The preceding three-character prefix combined with this number uniquely identifies the message.

x Represents a single-letter severity level that indicates the return code, the purpose of the message, and the type of response required from you. The severity levels, from least to most severe, are:

I Information. No action is required.

W Warning. CICS Configuration Manager detected a possible error condition that you should evaluate.

E One of the following, depending on the return code (RC) reported in the CCVLOG data set on the CICS Configuration Manager server:

- Failure. CICS Configuration Manager detected a failure condition that you should evaluate.
- Error. Your action is required before CICS Configuration Manager can continue processing.
- Severe. CICS Configuration Manager processing is suspended until you have taken action.

CCV5000I System Options at Phase I Initialization follow.

Explanation: This message lists CICS Configuration Manager system options at initialization (Phase I). It is accompanied by successive CCV5014I messages specifying the individual options.

System action: None.

User response: None. This is an information-only message.

CCV5001E Severe error in Messaging Component during initialization. Processing cannot continue.

Explanation: The CICS Configuration Manager initialization component attempted to issue a message but there was a severe Messaging Failure.

System action: CICS Configuration Manager Initialization is terminated and CICS Configuration Manager will be unusable until the problem is resolved. There may be supplemental CCV9999I and CCV5002F messages accompanying this message.

User response: You may need further assistance from IBM to resolve this problem.

CCV5002E (Additional error information for CCV5001E)

Explanation: This message provides additional diagnostics for a messaging failure during CICS Configuration Manager initialization and follows message CCV5001E.

System action: See message CCV5001E.

User response: This is probably an internal error. Please record the message details and contact IBM support.

CCV5003E Initialization invoked during system quiesce. Processing terminated.

Explanation: The CICS Configuration Manager initialization component was invoked during system quiesce.

System action: CICS Configuration Manager initialization is terminated.

User response: Restart CICS Configuration Manager.

CCV5004E Initialization invoked during first phase PLTPI. Processing terminated.

Explanation: The CICS Configuration Manager initialization component was invoked during first phase PLTPI.

System action: CICS Configuration Manager initialization is terminated.

User response: Please confirm that CICS Configuration Manager has been properly installed and customized. If the problem cannot be resolved, contact IBM support.

CCV5005E Authorization error during initialization. Resource = *resource*

Explanation: The CICS Configuration Manager initialization component encountered a security error. CICS Configuration Manager initialization may not be complete.

System action: CICS Configuration Manager initialization is terminated.

User response: Please confirm that CICS Configuration Manager has been properly installed and customized. If the problem cannot be resolved, contact IBM support.

CCV5006E CICS error. Initialization terminated.

Explanation: The CICS Configuration Manager initialization component encountered an unexpected error during execution of a CICS request.

System action: CICS Configuration Manager initialization is terminated. EIBFN, EIBRESP, EIBRESP2 and RESOURCE are shown in succeeding CCV9999I messages.

User response: This is probably an internal error. Please record the message details and contact IBM support.

CCV5007E Initialization control blocks already present. Initialization terminated.

Explanation: The CICS Configuration Manager initialization component encountered a control block set up by a previous CICS Configuration Manager initialization.

System action: CICS Configuration Manager initialization is terminated.

User response: Check the PLTPI to ensure that only one entry is present for the CICS Configuration Manager initialization module. If the error persists, contact IBM support.

CCV5008W The CCVLOG TD queue was not present and was CREATEd. Initialization continues.

Explanation: The Transient Data destination CCVL was not defined to the CICS Configuration Manager Server region. It was dynamically CREATEd successfully.

System action: CICS Configuration Manager initialization continues normally.

User response: Please confirm that CICS Configuration Manager has been properly installed and customized. If the problem cannot be resolved, contact IBM support.

CCV5009E Invalid anchor length returned during initialization. Initialization terminated.

Explanation: The CICS Configuration Manager initialization component determined that the length of an internal CICS Configuration Manager control block was invalid.

System action: CICS Configuration Manager initialization is terminated.

User response: This is probably an internal error. Please record the message details and contact IBM support.

CCV5010E *program* **returned an error during initialization.**

Explanation: The CICS Configuration Manager initialization component encountered an unexpected error during a subprogram invocation.

System action: CICS Configuration Manager initialization is terminated. PROGRAM, RC, RSN, MODID, INFO, INFO2 and USERID are displayed in succeeding CCV9999I messages.

User response: This is probably an internal error. Please record the message details and contact IBM support.

CCV5011W System Options record not found. Default options will be set. Please create this record.

Explanation: The CICS Configuration Manager initialization component could not retrieve the System Options Record from the CICS CM Repository. CICS Configuration Manager initialization continues but CICS Configuration Manager will be unusable until a valid System Options record is received.

System action: CICS Configuration Manager will be be marked as unusable. After initialization has completed, CICS Configuration Manager will check every 60 seconds for a valid System Options record. If found, and successfully processed, CICS CM will be

marked as available and normal processing will continue.

User response: Please confirm that CICS Configuration Manager has been properly installed and customized. If the problem cannot be resolved, contact IBM support.

CCV5012I **CICS Configuration Manager** *version* **startup in progress.**

Explanation: This message indicates the start of CICS Configuration Manager initialization.

System action: None.

User response: None. This is an information-only message.

CCV5013I **System Options at Phase II initialization follow.**

Explanation: This message lists CICS Configuration Manager system options at Phase II initialization. It is accompanied by successive CCV5014I messages specifying the individual options.

System action: None.

User response: None. This is an information-only message.

CCV5014I **SystemOptions :** *option setting default_value*

Explanation: This is one of a series of messages which specify the System Options set at initialization.

System action: None.

User response: None. This is an information-only message.

CCV5015I **CICS Configuration Manager Phase I initialization completed** *status***.**

Explanation: This message identifies the end of CICS Configuration Manager Phase I initialization.

System action: None.

User response: If the CICS Configuration Manager initialization completed normally, no action needs to be taken. If the CICS Configuration Manager initialization completed with warnings, refer to previous initialization messages for the cause.

CCV5016I **CICS Configuration Manager** *version* **Phase II initialization processing started.**

Explanation: This message indicates the start of CICS Configuration Manager Phase II initialization processing.

System action: None.

User response: None. This is an information-only message.

CCV5017E **No Product Anchor Block found. Phase II processing terminated.**

Explanation: CICS Configuration Manager Phase II processing could not determine the address of a required control block, the Product Anchor Block (PAB).

System action: CICS Configuration Manager Phase II initialization processing is terminated. CICS Configuration Manager is unusable until this problem has been resolved.

User response: This is probably an internal error. Please record the message details and contact IBM support.

CCV5018E **Logic error for subroutine call during initialization. Processing cannot continue.**

Explanation: The CICS Configuration Manager initialization component attempted to LINK to an unrecognized subroutine.

System action: CICS Configuration Manager initialization is terminated. CICS Configuration Manager is unusable until the problem is resolved.

User response: This is probably an internal error. Please record the message details and contact IBM support.

CCV5019E **System Options record not available. Phase II initialization terminated due to shutdown.**

Explanation: During CICS Configuration Manager Phase II initialization, the initialization module attempts to read a valid Systems Option record. If not available, an attempt is made to re-read the record every 60 seconds until a valid record is found, or the system is (being) shut down. This message is issued if the system is shut down.

System action: CICS Configuration Manager initialization is terminated.

User response: Please confirm that CICS Configuration Manager has been properly installed and customized. If the problem cannot be resolved, contact IBM support.

CCV5020W **Phase II initialization waiting for System Options record.**

Explanation: During CICS Configuration Manager Phase II initialization, the initialization module attempts to read a valid Systems Option record. If not available, an attempt is made to re-read the record every 60 seconds until a valid record is found, or the

CICS Configuration Manager Server is (being) shut down. If the Server is not shut down, this message will be re-issued every 60 seconds until a valid System Options record is received.

System action: The system will wait 60 seconds and then retry the read. Also, see message CCV5019E.

User response: Please confirm that CICS Configuration Manager has been properly installed and customized. If the problem cannot be resolved, contact IBM support.

CCV5021I **CICS Configuration Manager** *version* **Phase II initialization processing ended normally.**

Explanation: This message indicates the normal completion of CICS Configuration Manager Phase II initialization processing.

System action: None.

User response: None. This is an information-only message.

CCV5022E **TCPIPSERVICE** *tcpip* **could not be closed at Phase II initialization. Processing ended.**

Explanation: During CICS Configuration Manager Phase II initialization, the TCPIPSERVICE names specified in the System Options record must be closed and re-created. CICS Configuration Manager could not successfully close the named TCPIPSERVICE within a defined wait period.

System action: CICS Configuration Manager Phase II processing is terminated. CICS CM is not usable until the problem is resolved.

User response: Investigate why the TCPIPSERVICE could not be closed and check that the Service named in the System Options record is correct. Retry the CCVI transaction as described in the CICS Configuration Manager User's Guide. If the problem cannot be resolved, contact IBM support.

CCV5023E **TCPIPSERVICE** *tcpip* **has an invalid security type setting in the System Options record.**

Explanation: During CICS Configuration Manager Phase II initialization, the TCPIPSERVICE names specified in the System Options record must be closed and re-created. The system could not create the named TCPIPSERVICE because the security type option in the System Options record for the corresponding TCPIP Service definition was not correct.

System action: CICS Configuration Manager Phase II processing is terminated. The system is not usable until the problem is resolved.

User response: This is probably an internal error. Please confirm that CICS Configuration Manager has been properly installed and customized. If the problem cannot be resolved, contact IBM support.

CCV5024W **CREATE failed for** *tcpip***. Initialization continues. RESP=***resp***, RESP2=***resp2*

Explanation: During CICS Configuration Manager Phase II initialization, a CREATE failed for the named TCPIPSERVICE in the System Options record.

System action: CICS Configuration Manager initialization continues. If no TCPIPSERVICE connections can be successfully CREATEd, CICS Configuration Manager initialization will fail.

User response: Check the associated DFHCAnnn message on the CSMT destination for the cause of the problem. Check the specified values for the named TCPIPSERVICE in the System Options record. If incorrect, correct them and retry the CCVI transaction as described in the CICS Configuration Manager User's Guide.

CCV5025E **None of the TCPIPSERVICE connections in the System Options record could be created. Initialization terminated.**

Explanation: During CICS Configuration Manager Phase II initialization, all CREATEs failed for the TCPIPSERVICE names in the System Options record.

System action: CICS Configuration Manager Phase II processing is terminated. CICS CM is not usable until the problem is resolved.

User response: Refer to preceding CCV5024W messages for the causes of the failures.

CCV5026E **CICS release** *release* **not supported. Initialization terminated.**

Explanation: CICS Configuration Manager does not support this release of CICS.

System action: CICS Configuration Manager initialization is terminated.

User response: Please check the CICS Configuration Manager User's Guide for a list of supported CICS releases.

CCV5027I **SystemOptions :** *optionsetting default_value*

Explanation: This is one of a series of messages which specify the System Options set at initialization.

System action: None.

User response: None. This is an information-only message.

CCV5028E CREATE failed for *program*. Initialization terminated. RESP=*resp*, RESP2=X'*resp2*'.

Explanation: During CICS Configuration Manager Phase II initialization, a CREATE failed for an internal control program.

System action: CICS Configuration Manager initialization is terminated.

User response: Check the associated DFHCAnnn message on the CSMT destination for the cause of the problem. If the problem cannot be resolved, contact IBM support.

CCV5029E The CSD file could not be opened. Initialization terminated.

Explanation: The CICS Configuration Manager Server CSD file could not be opened.

System action: CICS Configuration Manager initialization is terminated.

User response: Check the CICS log for any associated error messages and correct the reason for the failure. If the problem cannot be resolved, contact IBM support.

CCV5030W CSD file *csd* not found for Config *config*. Processing continues.

Explanation: After a CICS cold start, CICS Configuration Manager initialization attempts to read-only allocate all CSD files identified in CICS Configuration records stored in the CICS Configuration Manager Server Repository. This message indicates that the CSD file could not be allocated (probably because it has not been defined or no longer exists).

System action: CICS Configuration Manager initialization continues.

User response: None. This is an information-only message. The named CICS Configuration will remain unuseable until the error has been resolved.

CCV5031W CSD file *csd* could not be allocated for Config *config*. Processing continues.

Explanation: After a CICS cold start, CICS Configuration Manager initialization attempts to read-only allocate all CSD files identified in CICS Configuration records stored in the CICS Configuration Manager Server Repository. This message indicates that the CSD file could not be allocated (for example, if the CSD data set was in use). The cause of the failure is contained in the return code, reason code, INFO and INFO2 fields, displayed in succeeding CCV9999I messages.

System action: CICS Configuration Manager initialization continues.

User response: Determine the cause of the allocation error. The named CICS Configuration will remain unuseable until the error has been resolved.

CCV5032E The CSD array is full. Initialization processing continues, but no further CSDs will be allocated.

Explanation: After a CICS cold start, CICS Configuration Manager initialization attempts to read-only allocate all CSD files identified in CICS Configuration records stored in the CICS Configuration Manager Server Repository. This message indicates that some CSDs defined in CICS Configuratrion records could not be allocated and unpredictable results may occur later when processing these CSDs.

System action: CICS Configuration Manager initialization continues.

User response: Reduce the number of CICS Configuration records in the CICS Configuration Manager Repository. If this is not possible, or does not resolve the problem, contact IBM support.

CCV5033I There are *rocount* in-flight MIGRATE request(s):

Explanation: After a CICS cold start, CICS Configuration Manager initialization checks to see if there are any CICS Configuration Manager in-flight MIGRATE requests. If there are, then CICS Configuration Manager will attempt to roll-out each one out.

System action: If the roll-out count is greater than zero, CICS CM will attempt to roll-out each in-flight MIGRATE request.

User response: None. This is an information-only message.

CCV5034I Rolling out in-flight MIGRATE request *ronum* with Event ID *event_id*

Explanation: CICS Configuration Manager initialization has detected an in-flight MIGRATE request and is automatically rolling it out. This message may be accompanied by successive CCV9999I messages providing further details.

System action: An attempt will be made to roll out the inflight MIGRATE request. See message CCV5035I for the results of the roll-out.

User response: None. This is an information-only message.

CCV5035I In-flight MIGRATE request *ronum* rolled out *status*.

Explanation: This message indicates the success or otherwise of a roll-out of an in-flight MIGRATE

request. out. This message may be accompanied by successive CCV9999I messages providing further details.

System action: None.

User response: If the roll-out did not complete normally, the error that caused the roll-out to fail must be manually corrected. Following that, the in-flight MIGRATE command will have to be rolled out manually.

CCV5036I Roll-out processing has completed *status***.**

Explanation: This message indicates the completion of the CICS Configuration Manager roll-out processing and whether it completed normally.

System action: None.

User response: If the roll-out process did not complete normally, each error must be investigated and manually corrected.

CCV5037I *exittype* **exit point settings:**

Explanation: This is one of a series of messages which list the system exit points, their associated exit programs, and the status of each exit point.

System action: None.

User response: None. This is an information-only message.

CCV5038E CICS Configuration Manager installation incomplete. Initialization terminated.

Explanation: The CICS Configuration Manager initialization component determined that the product installation has not been completed.

System action: CICS Configuration Manager initialization is terminated.

User response: Ensure that the CICS Configuration Manager-supplied resource definition group has been installed in the region then restart the region. If the error persists, contact IBM support.

CCV5039E CICS Configuration Manager rollout processing deferred after abend. Initialization continues.

Explanation: The CICS Configuration Manager initialization component has called the BACKOUT API to backout a failed MIGRATE request, but the backout has abended.

System action: CICS Configuration Manager will attempt to delete the migration control record associated with the failing backout request, then continue processing as normal. However, no further backout processing will be attempted, even if there are other outstanding migration control records. These will be managed by the CCM scheduled clean-up process after CCM initialization has completed.

User response: Review CCVLOG to ensure CCM initialization continues successfully. If it has failed, attempt to restart the region. If the error persists, contact IBM support.

CCV5040I CICS Configuration Manager is being restarted.

Explanation: The CICS Configuration Manager initialization component encountered a control block set up by a previous CICS Configuration Manager initialization, indicating that the server process has already been run and the server is being restarted.

System action: CICS Configuration Manager initialization continues normally.

User response: No user action required. This message is for information only.

CCV5041I *tcpcount* **TCP/IP port(s) have been opened.**

Explanation: The CICS Configuration Manager initialization reports the number of TCP/IP ports defined to the server that were opened during initialization and are available for use.

System action: CICS Configuration Manager initialization continues normally.

User response: No user action required. This message is for information only.

CCV5042W No TCP/IP ports could be opened.

Explanation: The CICS Configuration Manager initialization was unable to open any of the TCP/IP ports defined in the System Options record. The server is initialized but not useable.

System action: CICS Configuration Manager initialization continues normally.

User response: Examine the server to identify the reason for the failure. If the TCP/IP ports can be opened manually, the server will be available for use.

CCV5043E Authorization error during initialization. Resource = *resource*

Explanation: The CICS Configuration Manager initialization component encountered a security error. CICS Configuration Manager initialization continues, but may not be complete.

System action: CICS Configuration Manager initialization continues.

User response: Please confirm that CICS

Configuration Manager has been properly installed and customized. If the problem cannot be resolved, contact IBM support.

CCV5044E Recoverable CICS error during initialization

Explanation: The CICS Configuration Manager initialization component encountered an unexpected error during execution of a CICS request, but is able to continue processing. Initialization continues, but may not be complete.

System action: CICS Configuration Manager initialization continues normally. EIBFN, EIBRESP, EIBRESP2 and RESOURCE are shown in succeeding CCV9999I messages.

User response: This is probably an error in the TCP/IP port definitions in the System Options record. Review and correct the definitions, if appropriate. Otherwise, record the message details and contact IBM support.

CCV5101E Invalid data was found in the XML string; the string could not be parsed. Field in error *xmlfield***, value** *xmltext*

Explanation: An API command handler has attempted to parse the XML but has not been able to recognise the field identified by XMLFIELD. The data may be displayed in XMLTEXT.

System action: Parsing is terminated and the API command handler terminates.

User response: Rectify the cause of the error in the XML string and re-submit the request.

CCV5120E API command *apicmd* **failed.**

Explanation: The API command handler for the APICMD command has encountered an error and cannot continue. The cause of the failure is contained in the return code, reason code, INFO and INFO2 fields, displayed in succeeding CCV9999I messages.

System action: The command handler terminates and, where possible, rolls-out any changes that it has made.

User response: If possible, determine and correct the cause of the error. If this is not possible, contact IBM support.

CCV5121E API command *apicmd* **failed.**

Explanation: The API command handler for the APICMD command has encountered an error in a CICS command and cannot continue to process the API request. The cause of the failure is contained in the return code, reason code, INFO, INFO2, EIBFN, RESP and RESP2 fields, displayed in succeeding CCV9999I messages.

System action: The command handler terminates and, where possible, rolls-out any changes that it has made.

User response: If possible, determine and correct the cause of the error. If this is not possible, contact IBM support.

CCV5122E CSDLSRNO=NONE with TRANISO=YES is not supported by CICS Configuration Manager in this release of CICS. Initialization failed.

Explanation: CICS Configuration Manager has been started in a region running with CSDLSRNO=NONE and TRANISO=YES specified in the SIT parameters. During initialization, a CICS Configuration record has been processed for a CSD.

System action: Initialization is terminated. CICS Configuration Manager is not available.

User response: The server must be restarted with either of the following SIT parameter combinations:.

CCV5201E Severe error in Messaging Component. Processing cannot continue.

Explanation: A CICS Configuration Manager component attempted to issue a message but there was a severe Messaging failure.

System action: The CICS Configuration Manager request is terminated. There may be supplemental CCV5202I and CCV9999I messages accompanying this message.

User response: This is probably an internal error. Please record the message details and contact IBM support.

CCV5202I (additional error information for CCV5201F)

Explanation: This message provides additional diagnostics after a CICS Configuration Manager Messaging failure message (CCV5201E).

System action: See CCV5201E.

User response: This is probably an internal error. Please record the message details and contact IBM support.

CCV5203E CICS error. Processing terminated.

Explanation: A CICS Configuration Manager component encountered an unexpected error during execution of a CICS request.

System action: The CICS Configuration Manager request is terminated. EIBFN, EIBRESP, EIBRESP2 and RESOURCE are shown in succeeding CCV9999I messages.

User response: This is probably an internal error.

Please record the message details and contact IBM support.

CCV5204E Authorization error. Resource=*resource*. Processing terminated.

Explanation: A CICS Configuration Manager component encountered a security error.

System action: The CICS Configuration Manager request is terminated.

User response: Please confirm that CICS Configuration Manager has been properly installed and customized. If the problem cannot be resolved, contact IBM support.

CCV5205E No Product Anchor Block found. Processing terminated.

Explanation: A CICS Configuration Manager component could not determine the address of a required control block, the Product Anchor Block (PAB).

System action: The CICS Configuration Manager request is terminated.

User response: This is probably an internal error. Please record the message details and contact IBM support.

CCV5206E Invalid anchor length returned. Processing terminated.

Explanation: A CICS Configuration Manager component determined that the length of an internal CICS Configuration Manager control block was invalid.

System action: The CICS Configuration Manager request is terminated.

User response: This is probably an internal error. Please record the message details and contact IBM support.

CCV5207E Program *program* received an unexpected RETRIEVE length. Processing terminated.

Explanation: The component issued a RETRIEVE but the length was not correct.

System action: The CICS Configuration Manager request is terminated.

User response: This is probably an internal error. Please record the message details and contact IBM support.

CCV5208E Program *program* received invalid function code. Processing terminated.

Explanation: A CICS Configuration Manager component received an invalid internal function code request. A succeeding CCV9999I message will contain the hex value for this code.

System action: The CICS Configuration Manager request is terminated.

User response: This is probably an internal error. Please record the message details and contact IBM support.

CCV5209E CICS Configuration Manager is not enabled. Processing terminated.

Explanation: Either CICS Configuration Manager failed to initialize successfully or it has been subsequently set to a disabled status.

System action: The CICS Configuration Manager request is terminated.

User response: Check that CICS Configuration Manager intialization has completed successfully (message CCV5021I). If the disabled state was set after initialization, ask the CICS CM System Administrator to run the CCVI transaction to re-enable CICS Configuration Manager.

CCV5210E Severe error for Command *handler*. Processing terminated.

Explanation: The listed CICS Configuration Manager API Command experienced a severe problem.

System action: The CICS Configuration Manager request is terminated.

User response: There may be preceding CICS Configuration Manager error messages related to this problem. This is probably an internal error. Please record the message details and contact IBM support.

CCV5211E Command Handler *handler* request failed. Processing terminated.

Explanation: The listed CICS Configuration Manager API Command could not satisfy an API request.

System action: The CICS Configuration Manager request is terminated.

User response: Check the associated CCV9999I messages for more details of the error and re-submit the request.

CCV5212W Command Handler *handler* request completed with warning(s)

Explanation: The listed CICS Configuration Manager API Command Handler could not satisfy the request completely.

System action: CICS Configuration Manager processing continues normally.

User response: Check the associated CCV9999I messages for further information.

CCV5213E Internal logic error. Processing terminated.

Explanation: CICS Configuration Manager has detected an illogical condition and cannot continue.

System action: The CICS Configuration Manager request is terminated.

User response: There may be preceding CICS Configuration Manager error messages related to this problem. This is probably an internal error. Please record the message details and contact IBM support.

CCV5214E Severe error in Service Routine *program*. Processing terminated.

Explanation: The listed CICS Configuration Manager internal Service Routine experienced a severe processing error.

System action: The CICS Configuration Manager request is terminated.

User response: There may be preceding CICS Configuration Manager error messages related to this problem. This is probably an internal error. Please record the message details and contact IBM support.

CCV5215E CSD file *csd* could not be allocated. It may be in use by another process.

Explanation: A CICS Configuration Manager API Command Handler was unable to allocate a required CSD data set. The data set was either in use by another process or there was an associated allocation failure.

System action: The CICS Configuration Manager request is terminated.

User response: Determine the cause of the allocation error. The probable cause of the failure is contained in the return code, reason code, INFO and INFO2 fields, displayed in succeeding CCV9999I messages.

CCV5216I Updated systems options follow:

Explanation: This message lists CICS Configuration Manager system options after the system options record has been updated. It is followed by successive CCV5217I/CCV5218I messages listing the individual options.

System action: None.

User response: None. This is an information-only message.

CCV5217I SystemOptions: *option setting default_value*

Explanation: This is one of a series of messages which specify the system options set after the systems options record has been updated.

System action: None.

User response: None. This is an information-only message.

CCV5218I SystemOptions: *optionsetting default_value*

Explanation: This is one of a series of messages which specify the system options set after the systems options record has been updated.

System action: None.

User response: None. This is an information-only message.

CCV5219I *exittype* exit point settings:

Explanation: This is one of a series of messages which list the system exit points, their associated exit programs, and the status of each exit point.

System action: None.

User response: None. This is an information-only message.

CCV5220E Insufficient storage to process request

Explanation: The server has requested storage to process the command, but CICS has returned a NOSTG condition. There is not enough free DSA available to process the request.

System action: The request is terminated.

User response: (1) If the error occurs during a list operation, retry the request with more restrictive criteria. (2) Otherwise, increase the server region's EDSA allocation (and corresponding region limit, if necessary) and retry the operation.

CCV5221E CICS returned 'NO SPACE' for a journal write in program *program*. Processing terminated

Explanation: The server tried to write to the journal but the journal is full (CICS returned a NOSPACE condition).

System action: The request is terminated.

User response: (1) Allocate more space to the journal file, if possible. (2) Use the batch housekeeping utility to offload and delete old journal records.

CCV5222E KILL control block identifier is invalid

Explanation: The KILL control block is used to maintain a list of registered tasks that may be purged by a KILL command. An attempt to update the control block has failed because the block identifier is not valid. This is probably an internal CICS Configuration Manager error.

System action: The update request is terminated. If the update was requested by a task attempting to register for KILL eligibility, the task is terminated. If the error was found in task clean-up processing, clean-up is terminated without updating the control block.

User response: (1) Run transaction CCVI to restart the CICS Configuration Manager server. This will delete and rebuild the corrupt control block. (2) If symptoms persist, please record the message details and contact IBM support.

CCV5301E Logic error for LINK to subroutine during initialization. Processing cannot continue.

Explanation: The CICS Configuration Manager Request Dispatcher attempted to LINK to an undefined subroutine.

System action: The CICS Configuration Manager request is terminated.

User response: This is probably an internal error. Please record the message details and contact IBM support.

CCV5302E Request Dispatcher invoked outside BTS. Processing terminated.

Explanation: The Request Dispatcher was not invoked as part of a BTS process.

System action: The CICS Configuration Manager request is terminated.

User response: This is probably an internal error. Please record the message details and contact IBM support.

CCV5303E Request Dispatcher could not retrieve SOAP body. Processing terminated.

Explanation: The Request Dispatcher issued a BTS GET CONTAINER for the SOAP request body and received a CONTAINERERR.

System action: The CICS Configuration Manager request is terminated.

User response: This is probably an internal error. Please record the message details and contact IBM support.

CCV5304E Event Timer call failed. Task number=*taskno*.

Explanation: A CICS Configuration Manager Request Dispatcher call to the CICS Configuration Manager Event Timer failed.

System action: The CICS Configuration Manager request is terminated.

User response: This is probably an internal error. Please record the message details and contact IBM support.

CCV5305E The Event Timer has abended with abcode=*abcode*.

Explanation: The CICS Configuration Manager Event Timer has abended.

System action: The CICS Configuration Manager request is terminated.

User response: This is probably an internal error. Please record the message details and contact IBM support.

CCV5306E POST logic error during Request Dispatcher wait. Request terminated.

Explanation: While waiting for a CICS Configuration Manager Command Handler request to complete, the CICS Configuration Manager Request Dispatcher was invalidly POSTed.

System action: The CICS Configuration Manager request is terminated.

User response: This is probably an internal error. Please record the message details and contact IBM support.

CCV5307E The Command Analyzer request terminated unexpectedly. The Analyzer Task Number was *taskno*.

Explanation: The CICS Configuration Manager Request Dispatcher was waiting for CICS Configuration Manager API request to complete, but the CICS Configuration Manager Command Handler terminated unexpectedly.

System action: The CICS Configuration Manager request is terminated.

User response: This is probably an internal error. Please record the message details and contact IBM support.

CCV5308E The Copy XML function had a serious failure. Processing terminated.

Explanation: The CICS Configuration Manager Request Dispatcher encountered a serious error when analyzing the input XML request.

System action: The CICS Configuration Manager request is terminated.

User response: This is probably an internal error. Please record the message details and contact IBM support.

CCV5309E The Command Analyzer could not be started. Dispatcher task no = *taskno*. Processing terminated.

Explanation: The CICS Configuration Manager Command Analyzer could not be started within a specific CICS Configuration Manager timer interval.

System action: The CICS Configuration Manager request is terminated.

User response: If possible, determine and correct the cause of the error (for example, the CICS Configuration Manager server may be SOS or at Max Tasks). If this is not possible, contact IBM support.

CCV5310E Required field *field* not supplied to Copy XML routine. Processing terminated.

Explanation: The CICS Configuration Manager Request Dispatcher could not locate a prerequisite XML element when analyzing the input XML request.

System action: The CICS Configuration Manager request is terminated.

User response: This is probably an internal error. Please record the message details and contact IBM support.

CCV5312E Supplied file name not found. Processing terminated.

Explanation: The CICS Configuration Manager Request Dispatcher could not find a prerequisite FILE when analyzing the input XML request.

System action: The CICS Configuration Manager request is terminated. There may be supplemental CCV9999I messages accompanying this message.

User response: This is probably an internal error. Please record the message details and contact IBM support.

CCV5313E Control Record has invalid XML length. Processing terminated.

Explanation: The CICS Configuration Manager Copy XML routine has read a control record in the encoded XML data set but the XML total length field is invalid.

System action: The CICS Configuration Manager request is terminated. There may be supplemental CCV9999I messages accompanying this message.

User response: This is probably an internal error. Please record the message details and contact IBM support.

CCV5314E Data Record for encoded XML has invalid format. Processing terminated.

Explanation: The CICS Configuration Manager Copy XML routine has read an encoded XML data record successfully, but length/data fields are invalid or inconsistent.

System action: The CICS Configuration Manager request is terminated. There may be supplemental CCV9999I messages accompanying this message.

User response: This is probably an internal error. Please record the message details and contact IBM support.

CCV5315E No free slots in Tag Table. Processing terminated.

Explanation: While processing the encoded XML data set, the CICS Configuration Manager Copy XML routine has detected an excessive number of logical levels.

System action: The CICS Configuration Manager request is terminated. There may be supplemental CCV9999I messages accompanying this message.

User response: This is probably an internal error. Please record the message details and contact IBM support.

CCV5316E Control Record contains invalid XML. Processing terminated.

Explanation: The CICS Configuration Manager Copy XML routine has read a control record in the encoded XML data set but the 'Invalid XML' flag has been set by the associated CICS Configuration Manager Command Handler.

System action: The CICS Configuration Manager request is terminated. There may be supplemental CCV9999I messages accompanying this message.

User response: This is probably an internal error. Please record the message details and contact IBM support.

CCV5317E XML record cleanup failed. Processing terminated.

Explanation: The CICS Configuration Manager Copy XML routine has successfully processed all relevant records in the encoded XML data set, but encountered an error when attempting to clean up those records.

System action: The CICS Configuration Manager request is terminated. There may be supplemental CCV9999I messages accompanying this message.

User response: This is probably an internal error. Please record the message details and contact IBM support.

CCV5318E XML record has error flag set. Processing terminated.

Explanation: The CICS Configuration Manager Copy XML routine has detected that a control record in the encoded XML data set has been flagged as 'in error' by the associated CICS CM Command Handler.

System action: The CICS Configuration Manager request is terminated. There may be supplemental CCV9999I messages accompanying this message.

User response: This is probably an internal error. Please record the message details and contact IBM support.

CCV5351E Product Anchor Block not valid. Processing terminated.

Explanation: The CICS Configuration Manager Heartbeat Monitor could not determine the address of a required control block, the Product Anchor Block (PAB).

System action: The CICS Configuration Manager request is terminated.

User response: This is probably an internal error. Please record the message details and contact IBM support.

CCV5352W Heartbeat value in Product Anchor Block is invalid. Default value *default* **set.**

Explanation: The CICS Configuration Manager Heartbeat Monitor found an incorrect value for the CICS Configuration Manager Heartbeat Interval in the Product Anchor Block.

System action: CICS Configuration Manager processing continues normally.

User response: This is probably an internal error. Please record the message details and contact IBM support.

CCV5353E BACKOUT for Event ID X'*event_id***' already run. Processing terminated.**

Explanation: A user-initiated BACKOUT was requested against an Event ID that has already been successfully backed out.

System action: The CICS Configuration Manager request is terminated.

User response: If an explicit Event ID was specified, check that it is correctly specified. If the condition persists, contact IBM support.

CCV5354I BACKOUT for Event ID X'*event_id***' already run. Processing terminated.**

Explanation: A CICS Configuration Manager-initiated BACKOUT was requested against an Event ID that has already been successfully backed out.

System action: The CICS Configuration Manager request is terminated.

User response: None. This is an information-only message.

CCV5355I Resource will be regressed

Explanation: During automated Cleanup processing for an incomplete MIGRATE, the BACKOUT Command Handler detected a resource which had been changed after the failed MIGRATE.

System action: The resource will be regressed to its status before the failed MIGRATE.

User response: None. This is an information-only message.

CCV5356E Backout failed for CICS object:

Explanation: A manually run backout has determined that the state of the object identified in the message is inconsistent with the backout request. The backout cannot continue.

System action: Backout processing stops. This failure will be trapped during object verification, before any objects have been changed.

User response: If the failing object can be restored to its state after the migrate, the backout may be re-run.

CCV5371I Transaction *tranid* **will prevent CICS CM users from accessing CSD related services. To minimize impact, exit this function as soon as practical. Press ENTER to continue.**

Explanation: The identified transaction (typically CEDA) has the capacity to hinder the operation of CICS Configuration Manager whilst the User is using the transaction. This message is issued to remind the

User to exit the transaction as soon as practicable.

System action: CICS Configuration Manager processing continues normally.

User response: Press Enter (and exit as soon as possible).

CCV5372I Transaction *tranid* cannot be run as another task is currently executing an RDO related function. Only a single instance of RDO can run in this region. Enqueue holder is *userid*.

Explanation: The identified transaction (typically CEDA) is a serial resource. Only one of these transactions may be running in a CICS Configuration Manager Server region.

System action: CICS Configuration Manager processing continues normally.

User response: Retry the action when the Transaction is no longer in use.

CCV5373I All CICS Configuration Manager initialization phases are now complete

Explanation: CICS Configuration Manager performs its startup in a number of Phases This messages signifies the end of the final stage.

System action: None. This is an information-only message.

User response: None. This is an information-only message.

CCV5400I completed normally.

Explanation: The CCVBDDDI batch utility has completed normally.

System action: None. This is an information-only message.

User response: None. This is an information-only message.

CCV5401E Parameter error.

Explanation: A required parameter is missing or in error.

System action: The utility terminates with return code 8.

User response: Specify or correct the required parameter.

CCV5402E CALL error

Explanation: A call to an internal routine has failed.

System action: The utility terminates with return code 8.

User response: If the condition persists, contact IBM support.

CCV5410E I/O error for file xxxxxxxx FILE STATUS=nn.

Explanation: An error occurred while accessing a VSAM file. This message may be accompanied by successive CCV9950I messages providing further details.

System action: The utility terminates with return code 8.

User response: Investigate and correct the cause of the error.

CCV5427E CORBASERVER is unusable (DFHAM4926).

Explanation: A CORBASERVER definition referenced by a DJAR definition must be successfully installed and in a usable state. This is a Deployment Analysis message; during an actual CICS start-up, one would expect message DFHAM4926E to be issued for this condition.

System action: The DJAR definition is reported as "not installable".

User response: Ensure that an appropriate CORBASERVER definition is present in the Group (Candidate) List and is in a usable state after installation.

CCV5428E SESSION Protocol is invalid for CONNECTION (DFHTO6009).

Explanation: A SESSION definition and its associated CONNECTION definition specify different protocols. This is a Deployment Analysis message; during an actual CICS start-up, one would expect message DFHTO6009E to be issued for this condition.

System action: The SESSION definition is reported as "not installable".

User response: If you wish to use the SESSION definition, alter either the SESSION definition or the CONNECTION definition or both.

CCV5429E SESSION send and receive counts must be greater than zero (DFHTO6011).

Explanation: A SESSION definition has been definied with either SENDCOUNT=0 or RECEIVECOUNT=0, and refers to a CONNECTION definition that specifies

ACCESSMETHOD=IRC|XM (that is, MRO). This is a Deployment Analysis message; during an actual CICS start-up, one would expect message DFHTO6011E to be issued for this condition.

System action: The SESSION definition is reported as "not installable".

User response: If you wish to use the SESSION definition, alter either the SESSION definition or the CONNECTION definition or both.

CCV5430E TCPIPSERVICE does not have Authenticate(CERTIFICATE) (DFHEJ0746).

Explanation: A CORBASERVER object references a TCPIPSERVICE object that does not have AUTHENTICATE as its CERTIFICATE value. This is a Deployment Analysis message; during an actual CICS start-up, one would expect message DFHTO0746E to be issued for this condition.

System action: The CORBASERVER definition is reported as being "not usable".

User response: If the correct TCPIPSERVICE definition name has been specified, alter the AUTHENTICATE attribute value in the TCPIPSERVICE definition to CERTIFICATE.

CCV5431E No DB2CONN installed, or not defined previously (DFHAM4837).

Explanation: A DB2ENTRY or a DB2TRAN definition has been encountered before a valid DB2CONN definition. DB2ENTRY and DB2TRAN definitions may only be installed after the successful processing of a DB2CONN definition. This is a Deployment Analysis message; during an actual CICS start-up, one would expect message DFHAM4837E to be issued for this condition.

System action: The DB2TRAN or DB2ENTRY definition is reported as "not installable".

User response: Ensure that an appropriate DB2CONN definition is present in the Group (Candidate) List and processed prior to any associated DB2TRAN/ DB2ENTRY definitions.

CCV5432E DB2TRAN installed before DB2ENTRY, or DB2ENTRY undefined (DFHAM4850).

Explanation: A DB2TRAN definition has been encountered before a valid corresponding DB2ENTRY definition. A DB2ENTRY definition must be successfully installed before a DB2CONN definition that references that DB2ENTRY definition may be processed. This is a Deployment Analysis message; during an actual CICS start-up, one would expect message DFHAM4850E to be issued for this condition.

System action: The DB2TRAN definition is reported as "not installable".

User response: Ensure that an appropriate DB2ENTRY definition is present in the Group (Candidate) List and processed prior to any associated DB2TRAN definition.

CCV5433E Same TRANSID installed by another DB2TRAN (DFHAM4853).

Explanation: A DB2TRAN definition was encountered specifying a transaction name that deplicates a transaction name on a previously processed DB2TRAN definition. You cannot install two DB2TRANs that specify the same transaction name. This is a Deployment Analysis message; during an actual CICS start-up, one would expect message DFHAM4853E to be issued for this condition.

System action: The DB2TRAN definition is reported as "not installable".

User response: Alter the transaction name on the affected DB2ENTRY to a name that is unique across all installed DB2ENTRY definitions.

CCV5434E Same APPLID/NETNAME installed by IPCONNECTION (DFHAM4885).

Explanation: An IPCONNECTION definition was encountered that specified a NETNAME/APPLID value that had been specified on a previously installed IPCONNECTION. The NETNAME/APPLID value in an IPCONNECTION must be unique across all installed IPCONNECTION definitions. This is a Deployment Analysis message; during an actual CICS start-up, one would expect message DFHAM4885E to be issued for this condition.

System action: The IPCONNECTION definition is reported as "not installable".

User response: Alter the NETNAME/APPLID value on the affected IPCONNECTION to a name that is unique across all installed IPCONNECTION definitions.

CCV5435E Same TEMPLATE installed by DOCTEMPLATE (DFHAM4908).

Explanation: A DOCTEMPLATE definition was encountered that specified a TEMPLATENAME that duplicated one that had been specified in a DOCTEMPLATE object processed earlier. This is a Deployment Analysis message; during an actual CICS start-up, one would expect message DFHAM4908E to be issued for this condition.

System action: The DOCTEMPLATE definition is reported as "not installable".

User response: Alter the TEMPLATENAME value on the affected DOCTEMPLATE to a name that is unique across all installed DOCTEMPLATE definitions.

CCV5436E CONNECTION with same name uses a different APPLID (DFHAM4913).

Explanation: An IPCONNECTION definition was encountered having the same name as a previously installed CONNECTION definition. However, the APPLID on the CONNECTION is different from the NETNAME value specified in the IPCONNECTION definition. Each definition represents a "system" and must, therefore, specify the same name. This is a Deployment Analysis message; during an actual CICS start-up, one would expect message DFHAM4913E to be issued for this condition.

System action: The IPCONNECTION definition is reported as "not installable".

User response: Alter one or both of the associated IPCONNECTION and CONNECTION definitions to specify the same APPLID value.

CCV5437E No CORBASERVER exists, or not defined previously (DFHAM4923).

Explanation: A DJAR definition has been encountered before a valid corresponding CORBASERVER definition. A CORBASERVER definition referenced by a DJAR definition must be successfully installed before a DJAR definition that references that CORBASERVER definition may be processed. This is a Deployment Analysis message; during an actual CICS start-up, one would expect message DFHAM4923E to be issued for this condition.

System action: The DJAR definition is reported as "not installable".

User response: Ensure that an appropriate CORBASERVER definition is present in the Group (Candidate) List and processed prior to any associated DJAR definition.

CCV5438E No PIPELINE exists, or not defined previously (DFHAM4931).

Explanation: A WEBSERVICE definition was encountered that referenced a PIPELINE definition that had not yet been processed. This is a Deployment Analysis message; during an actual CICS start-up, one would expect message DFHAM4931E to be issued for this condition.

System action: The WEBSERVICE definition is reported as "not installable".

User response: Ensure that an appropriate PIPELINE definition is present in the Group (Candidate) List and processed prior to any associated WEBSERVICE definition.

CCV5439E No TYPETERM exists (DFHTO6000).

Explanation: A TERMINAL definition was encountered that is based on a TYPETERM definition that does not exist This is a Deployment Analysis message; during an actual CICS start-up, one would expect message DFHTO6000E to be issued for this condition.

System action: The TERMINAL definition is reported as "not installable".

User response: Ensure that an appropriate TYPETERM definition is present in the Group (Candidate) List and processed prior to any associated TERMINAL definition.

CCV5440E No SESSION exists for CONNECTION (DFHTO6013).

Explanation: A CONNECTION definition was encountered that references a SESSION definition that does not exist. This is valid only for INDIRECT or REMOTE connections. This is a Deployment Analysis message; during an actual CICS start-up, one would expect message DFHTO6013E to be issued for this condition.

System action: The CONNECTION definition is reported as "not installable".

User response: Ensure that an appropriate SESSION definition is present in the Group (Candidate) List and processed prior to any associated CONNECTION definition.

CCV5441E Duplicate SESSION or modegroup-name for CONNECTION (DFHZC5939).

Explanation: A SESSION (MODE Group) was encountered whose NAME value duplicates that of another definition. Note that the other definition could be a CONNECTION, SESSION, or TERMINAL definition. Alternatively, it could also be the Local Connection whose name is specified by SYSIDNT in the system initialization table (SIT). This is a Deployment Analysis message; during an actual CICS start-up, one would expect message DFHZC5939E to be issued for this condition.

System action: The SESSION definition is reported as "not installable".

User response: Examine the SESSION definition and assign it a unique name, or change/remove other definitions to ensure that they have a non-conflicting NAME value.

CCV5442E TERMINAL already using NETNAME (DFHZC6301).

Explanation: A TERMINAL definition was encountered that has a NETNAME value specified in another TERMINAL definition. NATNAME values for Local TERMINAL definitions must be globally unique This is a Deployment Analysis message; during an actual CICS start-up, one would expect message DFHZC6301E to be issued for this condition.

System action: The TERMINAL definition is reported as "not installable".

User response: Examine the TERMINAL definition and assign a unique value to the NETNAME attribute.

CCV5443E Same NETNAME installed by another resource (DFHZC6302).

Explanation: A CONNECTION definition was encountered having the same NETNAME value as another deinfition. For further information, see CICS message DFHZC6302E This is a Deployment Analysis message; during an actual CICS start-up, one would expect message DFHZC6302E to be issued for this condition.

System action: The CONNECTION definition is reported as "not installable".

User response: Examine the CONNECTION definition and assign a unique value to the NETNAME attribute.

CCV5444E IPCONNECTION with same name uses another NETNAME (DFHZC6312).

Explanation: A CONNECTION definition was encountered having the same name as a previously installed IPCONNECTION definition. However, the APPLID on the CONNECTION is different from the NETNAME value specified in the IPCONNECTION definition. Each definition represents a "system" and must, therefore, specify the same name. This is a Deployment Analysis message; during an actual CICS start-up, one would expect message DFHZC6312E to be issued for this condition.

System action: The CONNECTION definition is reported as "not installable".

User response: Alter one or both of the associated IPCONNECTION and CONNECTION definitions to specify the same APPLID value.

CCV5445E URIMAP maps the same URI as another URIMAP (DFHAM4930).

Explanation: A URIMAP definition was encountered that specified the same HOST and PATH (and possibly TCPIPSERVICE) values as another URIMAP definition. This is a Deployment Analysis message; during an actual CICS start-up, one would expect message DFHAM4930E to be issued for this condition.

System action: The URIMAP definition is reported as "not installable".

User response: Modify one or both of the affected URIMAP definitions to ensure that the HOST and PATH (and possibly TCPIPSERVICE) values are unique.

CCV5446E CONNECTION does not exist or is uninstallable (DFHTO6002).

Explanation: A SESSION definition was encountered that referenced a CONNECTION definition that either did not exist or was not usable because of an error in that definition. This is a Deployment Analysis message; during an actual CICS start-up, one would expect message DFHTO6002E to be issued for this condition.

System action: The SESSION definition is reported as "not installable".

User response: Modify the SESSION definition to refer to the correct CONNECTION definition, or correct the error in the referenced CONNECTION definition that is making the CONNECTION definition unusable.

CCV5447E Same ENQNAME installed by another ENQMODEL (DFHAM4874).

Explanation: An ENQMODEL definition object was encountered having an ENQNAME value identical to the ENQNAME value in another ENQMODEL. The ENQNAME value in an ENQMODEL must be unique. This is a Deployment Analysis message; during an actual CICS start-up, one would expect message DFHAM4874E to be issued for this condition.

System action: The ENQMODEL definition is reported as "not installable" and may cause flow-on "not installable" conditions to occur.

User response: If you need multiple ENQMODEL definitions, ensure that they have unique ENQNAME values.

CCV5448E TCPIPSERVICE does not have SSL(NO) (DFHEJ0748).

Explanation: A CORBASERVER definition was encountered having an UNAUTH value that specifies the name of a TCPIPSERVICE definition that requires authentication. That is, the SSL attribute in the referenced TCPIPSERVICE definition has a value of YES or CLIENTAUTH where it should be NO This is a Deployment Analysis message; during an actual CICS start-up, one would expect message DFHEJ0748E to be issued for this condition.

System action: The CORBASERVER definition is reported as "not usable".

User response: Alter the CORBASERVER definition to refer to a TCPIPSERVICE definition that has SSL(NO) specified, or alter the referenced TCPIPSERVICE definition to specify SSL(NO).

CCV5449E TCPIPSERVICE does not have SSL(YES) or SSL(CLIENTAUTH) (DFHEJ0747).

Explanation: A CORBASERVER definition was encountered having an SSLUNAUTH value that specifies the name of a TCPIPSERVICE definition that does not support SSL. That is, the SSL attribute in the referenced TCPIPSERVICE definition has a value of NO. This is a Deployment Analysis message; during an actual CICS start-up, one would expect message DFHEJ0747E to be issued for this condition.

System action: The CORBASERVER definition is reported as "not usable".

User response: Alter the CORBASERVER definition to refer to a TCPIPSERVICE definition that has SSL(YES) or SSL(CLIENTAUTH), or alter the referenced TCPIPSERVICE definition to specify SSL(YES) or SSL(CLIENTAUTH).

CCV5450W PROGRAM does not exist.

Explanation: A CICS Resource Definition was encountered that named a PROGRAM definition that does not exist. Depending on the CICS start-up parameters, this may or may not be a problem.

System action: None. This is an information message indicating a potential problem.

User response: Depending on your CICS start-up parameters, you may need to define the non-existent resource definition.

CCV5451W No LSRPOOL for ID.

Explanation: A FILE definition has specified an LSRPOOLID value for which no matching LSRPOOL definition exists. This is a Deployment Analysis message; during an actual CICS start-up, one may see message DFHFC0208I issued for this condition.

System action: None. This is an information message indicating a potential problem.

User response: Depending on whether the missing LSRPOOL is causing a problem, you may wish to define the LSRPOOL definition referred to by the FILE definition, or alter the FILE definition to refer to an existing LSRPOOL definition.

CCV5452W TRANSACTION does not exist.

Explanation: A CICS Resource Definition was encountered that referenced a TRANSACTION definition that does not exist.

System action: The CICS Resource Definition will be installed but, based on other attribute values and the particular usage of the definition, it may or may not be functional.

User response: Examine the Resource Definition and determine whether the missing TRANSACTION definition will cause a problem, or whether the TRANSACTION name can be omitted from the flagged Resource Definition.

CCV5453W TCPIPSERVICE does not exist.

Explanation: A CICS Resource Definition was encountered that referenced a TCPIPSERVICE definition that does not exist.

System action: The CICS Resource Definition will be installed but, based on other attribute values and the particular usage of the definition, it may or may not be functional.

User response: Examine the Resource Definition and determine whether the missing TCPIPSERVICE definition will cause a problem, or whether the TCPIPSERVICE name can be omitted from the flagged Resource Definition.

CCV5454W NETNAME not found.

Explanation: A PARTNER definition was encountered whose NETNAME attribute value not specified in any existing CONNECTION definition.

System action: The CICS Resource Definition will be installed but, based on other attribute values and the particular usage of the definition, it may or may not be functional.

User response: Examine the PARTNER definition and determine whether the correct NETNAME has been specified, or whether the missing CONNECTION definition will cause a problem, or create a CONNECTION definition that specifies the same NETNAME value as the flagged PARTNER definition.

CCV5455W TERMINAL does not exist.

Explanation: A definition was encountered that referenced a TERMINAL definition that does not exist.

System action: The CICS Resource Definition will be installed but, based on other attribute values and the particular usage of the definition, it may or may not be functional.

User response: Examine the Resource Definition and determine whether the missing TERMINAL definition will cause a problem, or create an appropriate TERMINAL definition.

CCV5456W CORBASERVER does not exist.

Explanation: A REQUESTMODEL definition was encountered that referenced a CORBASERVER definition that does not exist.

System action: The CICS Resource Definition will be installed but, based on other attribute values and the

particular usage of the definition, it may or may not be functional.

User response: Examine the REQUESTMODEL definition and determine whether the correct CORBASERVER has been specified, or whether the missing CORBASERVER definition will cause a problem, or create a CORBASERVER definition matching the CORBASERVER attribute on the flagged REQUESTMODEL definition.

CCV5457W FILE does not exist.

Explanation: A CICS Resource Definition was encountered that referenced a FILE definition that does not exist.

System action: The CICS Resource Definition will be installed but, based on other attribute values and the particular usage of the definition, it may or may not be functional.

User response: Examine the Resource Definition and determine whether the missing FILE definition will cause a problem, or create an appropriate FILE definition.

CCV5458W TDQ does not exist.

Explanation: A CICS Resource Definition was encountered that referenced a TDQUEUE definition that does not exist.

System action: The CICS Resource Definition will be installed but, based on other attribute values and the particular usage of the definition, it may or may not be functional.

User response: Examine the Resource Definition and determine whether the missing TDQUEUE definition will cause a problem, or create an appropriate TDQUEUE definition.

CCV5459W PARTITIONSET does not exist.

Explanation: A TRANSACTION definition was encountered that referenced a PARTITIONSET definition that does not exist.

System action: The CICS Resource Definition will be installed but, based on other attribute values and the particular usage of the definition, it may or may not be functional.

User response: Examine the TRANSACTION definition and determine whether the correct PARTITIONSET has been specified, or whether the missing PARTITIONSET definition will cause a problem, or create a PARTITIONSET definition matching the PARTITIONSET attribute on the flagged TRANSACTION definition.

CCV5460W PROFILE does not exist.

Explanation: A CICS Resource Definition was encountered that referenced a PROFILE definition that does not exist.

System action: The CICS Resource Definition will be installed but, based on other attribute values and the particular usage of the definition, it may or may not be functional.

User response: Examine the Resource Definition and determine whether the missing PROFILE definition will cause a problem, or create an appropriate PROFILE definition.

CCV5461W TRANCLASS does not exist.

Explanation: A TRANSACTION definition was encountered that referenced a TRANCLASS definition that does not exist.

System action: The CICS Resource Definition will be installed but, based on other attribute values and the particular usage of the definition, it may or may not be functional.

User response: Examine the TRANSACTION definition and determine whether the correct TRANCLASS has been specified, or whether the missing TRANCLASS definition will cause a problem, or create a TRANCLASS definition matching the TRANCLASS attribute on the flagged TRANSACTION definition.

CCV5462W TSQPREFIX does not exist.

Explanation: A TCPIPSERVICE definition was encountered that referenced a TSMODEL definition (using the TSQPREFIX attribute) that does not exist.

System action: The CICS Resource Definition will be installed but, based on other attribute values and the particular usage of the definition, it may or may not be functional.

User response: Examine the TCPIPSERVICE definition and determine whether the correct TSQPREFIX has been specified, or whether the missing TSMODEL definition will cause a problem, or create a TSMODEL definition matching the TSQPREFIX attribute on the flagged TCPIPSERVICE definition.

CCV5463W PIPELINE does not exist.

Explanation: A URIMAP definition was encountered that referenced a PIPELINE definition that does not exist.

System action: The CICS Resource Definition will be installed but, based on other attribute values and the particular usage of the definition, it may or may not be functional.

User response: Examine the Resource Definition and determine whether the missing PIPELINE definition will cause a problem, or create an appropriate PIPELINE definition.

CCV5464W WEBSERVICE does not exist.

Explanation: A URIMAP definition was encountered that referenced a WEBSERVICE definition that does not exist.

System action: The CICS Resource Definition will be installed but, based on other attribute values and the particular usage of the definition, it may or may not be functional.

User response: Examine the Resource Definition and determine whether the missing WEBSERVICE definition will cause a problem, or create an appropriate WEBSERVICE definition.

CCV5465W TEMPLATE does not exist.

Explanation: A URIMAP definition was encountered that referenced a DOCTEMPLATE definition that does not exist.

System action: The CICS Resource Definition will be installed but, based on other attribute values and the particular usage of the definition, it may or may not be functional.

User response: Examine the Resource Definition and determine whether the missing DOCTEMPLATE definition will cause a problem, or create an appropriate DOCTEMPLATE definition.

CCV5466W CONNECTION does not exist.

Explanation: A definition was encountered that referenced a CONNECTION definition that does not exist.

System action: The CICS Resource Definition may be installed but, based on other attribute values and the particular usage of the definition, it may or may not be functional.

User response: Examine the Resource Definition and determine whether the missing CONNECTION definition will cause a problem, or create an appropriate CONNECTION definition.

CCV5467W RELOAD(YES) has been specified for a non-RPG program.

Explanation: A PROGRAM definition was encountered that specified a RELOAD attribute value of YES but the LANGUAGE value was not RPG.

System action: The CICS Resource Definition will be installed but, based on other attribute values and the particular usage of the definition, it may or may not be functional.

User response: Examine the PROGRAM definition and determine whether the RELOAD specification is appropriate.

CCV5480E PROGRAM exists with this name.

Explanation: From an in-memory control block perspective, CICS treats PROGRAM, MAPSET and PARTITIONSET definitions "equally". Therefore, it is strongly desirable to have the NAME attribute value in this set of definition types to be globally unique. If the NAME attribute is not unique in this set of Resource Types, CICS may replace a definition of one Type with another of a different Type. This may, or may not, have an undesirable outcome.

System action: The flagged definition is reported as "not installable".

User response: Examine all MAPSET, PARTITIONSET and PROGRAM definitions having duplicate NAME attribute values and either make them unique or remove them from the Group (Candidate) List.

CCV5481E PARTITIONSET exists with this name.

Explanation: From an in-memory control block perspective, CICS treats PROGRAM, MAPSET and PARTITIONSET definitions "equally". Therefore, it is strongly desirable to have the NAME attribute value in this set of definition types to be globally unique. If the NAME attribute is not unique in this set of Resource Types, CICS may replace a definition of one Type with another of a different Type. This may, or may not, have an undesirable outcome.

System action: The flagged definition is reported as "not installable".

User response: Examine all MAPSET, PARTITIONSET and PROGRAM definitions having duplicate NAME attribute values and either make them unique or remove them from the Group (Candidate) List.

CCV5482W ALIAS exists as TRANSACTION - ALIAS will be discarded.

Explanation: A TRANSACTION definition was encountered that specified an ALIAS attribute value that replicated an existing TRANSACTION name.

System action: The TRANSACTION will be installed but the ALIAS transaction will NOT be the alias of the current transaction. If the alias transaction is being used, this may cause undesirable outcomes.

User response: Examine the flagged TRANSACTION definition and determine whether the ALIAS attribute value is correct, changing it if necessary, or remove the duplicate TRANSACTION definition.

CCV5483E MAPSET exists with this name.

Explanation: From an in-memory control block perspective, CICS treats PROGRAM, MAPSET and PARTITIONSET definitions "equally". Therefore, it is strongly desirable to have the NAME attribute value in this set of definition types to be globally unique. If the NAME attribute is not unique in this set of Resource Types, CICS may replace a definition of one Type with another of a different Type. This may, or may not, have an undesirable outcome.

System action: The flagged definition is reported as "not installable".

User response: Examine all MAPSET, PARTITIONSET and PROGRAM definitions having duplicate NAME attribute values and either make them unique or remove them from the Group (Candidate) List.

CCV5484E DB2ENTRY/DB2TRAN deleted when DB2CONN replaced (DFHDB2103).

Explanation: During installation, if CICS encounters a second or subsequent DB2CONN definition with a different name for processing, the previous DB2CONN is deleted and all DB2ENTRY and DB2TRAN resources previously defined are deleted. This is a Deployment Analysis message; during an actual CICS start-up, one would expect message DFHDB2103 to report the deletion of the DB2CONN resource, and messages DFHDB2106 and DFHDB2109 to report the deletion of the associated DB2ENTRY and DB2TRAN definitions.

System action: The DB2TRAN or DB2ENTRY definition is reported as "not installable".

User response: Alter the names of the DB2CONN definitions to a name that is unique across all installed DB2CONNs.

CCV5485E JOURNALMODEL replaced as JOURNALNAME is reassigned (DFHLG0404).

Explanation: During installation, if CICS encounters a second or subsequent JOURNALMODEL with the same JOURNALNAME as a previously installed JOURNALMODEL, the earlier definition is removed and the later definition installed in its place. This is a Deployment Analysis message; during an actual CICS start-up, one would expect message DFHLG0404 to report this condition.

System action: The JOURNALMODEL definition is reported as "not installable".

User response: Alter the JOURNALNAME attributes of all JOURNALMODELs so that they are unique across all installed JOURNALMODELs.

CCV5486E Same CORBASERVER/HFSFILE combination already defined (DFHAM4927).

Explanation: A DJAR definition was encountered that specified a CORBASERVER and HFSFILE combination that duplicate the CORBASERVER/HFSFILE combination of a DJAR that was processed earlier. This is a Deployment Analysis message; during an actual CICS start-up, one would expect message DFHLG0404 to report this condition.

System action: The DJAR definition is reported as "not installable".

User response: Alter the the CORBASERVER and/or HFSFILE attributes so that they are unique across all installed DJARs.

CCV5487E Same attribute combination already defined (DFHAM4901).

Explanation: A Requestmodel definition was encountered that specified a combination of CORBASERVER, RTYPE, BEANNAME, INTFACETYPE, MODULE, INTERFACE and OPERATION that duplicates the combination in a Requestmodel that was processed earlier. This is a Deployment Analysis message; during an actual CICS start-up, one would expect message DFHAM4901 to report this condition.

System action: The Requestmodel definition is reported as "not installable".

User response: Alter the the attribute set of the Reuestmodels so that they are unique across all installed Requestmodels.

CCV5488E Same PREFIX installed by another TSMODEL (DFHAM4874).

Explanation: A TSMODEL definition object was encountered having a PREFIX value identical to the PREFIX value in another TSMODEL. The PREFIX value in a TSMODEL must be unique. This is a Deployment Analysis message; during an actual CICS start-up, one would expect message DFHAM4874E to be issued for this condition.

System action: The TSMODEL definition is reported as "not installable" and may cause flow-on "not installable" conditions to occur.

User response: If you need multiple TSMODEL definitions, ensure that they have unique PREFIX values.

CCV5489W JVMSERVER does not exist.

Explanation: A definition was encountered that referenced a JVMSERVER definition that does not exist.

System action: The resource definition might be installed but, based on other attribute values and the

particular usage of the definition, it might not be functional.

User response: Examine the resource definition and determine whether the missing JVMSERVER definition will cause a problem, or create an appropriate JVMSERVER definition.

CCV5490W ATOMSERVICE does not exist.

Explanation: A definition was encountered that referenced an ATOMSERVICE definition that does not exist.

System action: The resource definition might be installed but, based on other attribute values and the particular usage of the definition, it might not be functional.

User response: Examine the resource definition and determine whether the missing ATOMSERVICE definition will cause a problem, or create an appropriate ATOMSERVICE definition.

CCV5900E The ExitPoint Extension Block is corrupt

Explanation: The ExitPoint Extension Block (EEB) is an internal control block used to map CICS Configuration Manager ExitPoints, associated programs and their statuses. This error indicates that the EEB was found to be corrupt: either the eyecatcher or the name of the ExitPoint was incorrect.

System action: If this message is experienced in a Post Processing exit, CICS Configuration Manager processing continues; in all other cases, the processing of the API command will be halted. The message is always printed to CCVLOG. Multiple supplemental CCV9999I messages may accompany this message.

User response: This is probably an internal error. Please record the message details and contact IBM support.

CCV5901I *userid*,*epname*/*eppgm*,*apicmd*: *eptext*

Explanation: An ExitPoint program returned some text that it wanted displayed.

System action: CICS Configuration Manager processing continues; this message is printed to CCVLOG but no adverse response is returned to the Client.

User response: None. This is an information-only message.

CCV5902E Error response from ExitPoint processing

Explanation: An ExitPoint program returned a return code indicating an unacceptable processing error.

System action: CICS Configuration Manager processing of the API command that invoked the ExitPoint program terminates. Multiple supplemental CCV9999I messages may accompany this message.

User response: Check the ExitPoint program named in the message and determine why it set the Return Code. If there was a problem with the passed parameters, record the message details and contact IBM support.

CCV9000E The parameter file DDNAME: CCVPARMS is missing. Include the file and rerun the job.

Explanation: The CICS Configuration Manager batch command interface did not find the CCVPARMS DDCARD.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Include the DDCARD and rerun the job.

CCV9001E Connection is not possible as no Port number has been specified.

Explanation: The PORT keyword is not present or no value has been specified in CCVPARMS.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Supply or correct the PORT keyword and rerun the job.

CCV9002E Connection is not possible as no IPADDRESS value has been specified.

Explanation: The IPADDRESS keyword is not present or no value has been specified in CCVPARMS.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Correct the IPADDRESS keyword and resubmit the job.

CCV9003E The Analyser component of the CICS Configuration Manager server has ended abnormally.

Explanation: Examine the CICS Server job for: (1) MSGUSR output for any CICS transaction ABEND messages; (2) CEEMSG output for any language environment errors; (3) JESMSG output for any CICS environmental errors; (4) CCVLOG output for a record of the CICS Configuration Manager transaction response codes.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Address the above-mentioned conditions. If the problem persists, this is probably an internal error. Please record the message details and

contact IBM support if necessary.

CCV9004E Invalid or unknown input directive *string*.

Explanation: Batch processing encountered an unknown input directive.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Correct or remove the invalid directive and rerun the job.

CCV9005E Mandatory IPADDRESS keyword not specified or inerror.

Explanation: Batch processing found that an IPADDRESS keyword was either not present or in error.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Include or correct the IPADDRESS keyword and rerun the job.

CCV9006E SSL operand invalid. Must be YES or NO.

Explanation: The SSL keyword value was supplied but was not specified as YES or NO.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Correct the SSL keyword and rerun the job.

CCV9007E KEYRING keyword not specified or has a NULL value.

Explanation: The KEYRING keyword is missing or the keyword was supplied without a correcponding value.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Include or correct the KEYRING keyword and rerun the job.

CCV9008E Mandatory CPID/EXTREF keyword not specified or in error.

Explanation: The CPID/EXTREF keyword is missing or has no value.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Include or correct the CPID/EXTREF keyword and rerun the job.

CCV9009I Virtual storage exceeded. Increase REGION size and rerun the job.

Explanation: A request by the CICS Configuration Manager batch command interface to allocate storage failed because all available storage had been utilized.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Either increase the region storage via the REGION= JCL parameter or decrease the number of input statements and resubmit the job.

CCV9010E Mandatory PORT keyword not specified or in error.

Explanation: The CONNECT input directive did not contain the mandatory keyword, PORT. The PORT operand, which should be obtained from your CICS Configuration Manager System Administrator, is the port of the CICS Configuration Manager Server to which you are connecting (directing requests).

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Provide the missing input directive and resubmit the job.

CCV9011W No input directives found.

Explanation: No CICS Configuration Manager batch command interface input directives via the CCVPARM DDCARD were provided.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Provide input directives via the CCVPARMS DDCARD and resubmit the job.

CCV9012E *string* not found.

Explanation: An XML request to the server returned a NOTFOUND condition.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Ensure that the correct object was referenced and correct if necessary. Alternatively, create the missing object.

CCV9013E The requested version of CICS is not supported.

Explanation: CICS Configuration Manager suports a limited set of CICS Versions and this set is documented. The version of CICS that you are attempting to run CICS Configuration Manager under is not currently supported.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Run your CICS Configuration Manager processes under a supported version of CICS.

CCV9014E No candidates. The object is either empty or none of its resource candidates met specified criteria.

Explanation: A Change Package was specified that was either empty or contained objects, none of which matched specified criteria.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Ensure that the correct Change Package was specified, add objects to the Change Package or alter the specification criteria.

CCV9016E SSL keyword mandatory or must be set to YES when KEYRING keyword specified.

Explanation: The SSL keyword was not specified or had a NO value when a KEYRING was specified.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: If the KEYRING was validly specified, ensure SSL=Y(ES) is also specified otherwise omit both parameters.

CCV9017E The service routine within the CICS Configuration Manager could not process the request. Failure messages are logged in CCVLOG in the CICS Configuration Manager server job output.

Explanation: A Service Routine (a low level function within the CICS Configuration Manager Server) experienced an internal error.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: This is probably an internal error. Please record the message details and contact IBM support.

CCV9018I The CICS Configuration Manager system is not active in the requested server.

Explanation: You have attempted to establish a connection to a CICS Configuration Manager Server and that connection attempt was unsuccessful. The CICS Configuration Manager Server may not have finished initialization (look for message CCV5373I in th CCVLOG output), or it may be in the process of re-initialization (because somebody has issued a restart request) or the initialization may have failed. In all cases, the Server will not be available.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Ensure the CICS Configuration Manager Server is active in the nominated region (IPADDRESS and PORT) and re-run the job.

CCV9019E Mandatory SCHEME/EVID keyword not specified or in error.

Explanation: The SCHEME or EVID (Event ID) keyword is mandatory for the specified input directive.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Specify a valid SCHEME/EVID and resubmit the job.

CCV9020E Mandatory TARGETSCOPE keyword not specified or in error.

Explanation: The TARGETSCOPE keyword is mandatory for the specified input directive.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Specify a valid TARGETSCOPE and resubmit the job.

CCV9021E Mandatory ROLE keyword not specified or in error.

Explanation: The ROLE keyword is mandatory for the specified input directive.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Specify a valid ROLE and resubmit the job.

CCV9022I The CSD file was not found in the catalog

Explanation: The CICS Configuration Manager Server uses "shadow" files for any CSD data set referenced by a CICS Configuration record. These files are identified by dynamically created CCVRnnnn FCT entries in the CICS region running the CICS Configuration Manager Server. This condition arises when there is no CCVRnnnn FCT entry matching the data set name mentioned in the CICS Configuration record.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Ensure that the correct CICS Configuration record is being referenced. If the missing CCVRnnnn entry is missing because you freed it, it needs to be recreated. Either restart the CICS Configuration Manager Server, which will cause the CCVRnnnn entries to be rebuilt, or update the CICS Configuration record, which will cause the CCVRnnnn

entry to be rebuilt. Otherwise, if the problem persists, this is probably an internal error. Please record the message details and contact IBM support if necessary.

CCV9023E Mandatory CONNECT keyword not specified or in e rror.

Explanation: The CONNECT keyword was not specified in CCVPARMS.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Provide a valid CONNECT directive and resubmit the job.

CCV9024E Batch process terminated.

Explanation: An unacceptable processing event has been experienced by the CICS Configuration Manager batch command interface or the job has finished.

System action: None.

User response: Error messages resulting from the error that caused the job to abort will have been issued earlier. Address those errors and resubmit the job.

CCV9025E The CSD is currently open for update by another user.

Explanation: The CSD for the CICS region is open for UPDATE by another user. The CICS Configuration Manager Server will retry the attempt a number of times. This message is issued when all attempts failed.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Ensure that the CSD is free before resubmitting the job.

CCV9026E Unable to initialize SSL environment

Explanation: The CICS Configuration Manager batch command interface attempted to initialize an SSL environment but failed.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: This is possibly an internal error. Please record the message details and contact IBM support.

CCV9027E Unable to OPEN an SSL environment

Explanation: The CICS Configuration Manager batch command interface attempted to OPEN an SSL environment but failed.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: This is possibly an internal error. Please record the message details and contact IBM support.

CCV9028E Unable to CONNECT to an SSL port

Explanation: The CICS Configuration Manager batch command interface attempted to CONNECT to an SSL port but failed.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: This is possibly an internal error. Please record the message details and contact IBM support.

CCV9029E SSL connection is in incorrect state

Explanation: The CICS Configuration Manager batch command interface attempted to use an SSL socket and found it was not open.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: This is probably an internal error. Please record the message details and contact IBM support.

CCV9030E SSL socket initialization failed

Explanation: The CICS Configuration Manager batch command interface attempted to initialize a secure socket but failed.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: This is probably an internal error. Please record the message details and contact IBM support.

CCV9031E Mandatory TYPE keyword not specified or in error.

Explanation: The TYPE keyword is mandatory for the specified input directive and must have a valid value.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Specify a valid TYPE keyword and resubmit the job.

CCV9032E Invalid object type specified

Explanation: The TYPE keyword value is not valid within the context of its use.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Specify a valid TYPE operand and resubmit the job.

CCV9033E REPLACE value must be (Y)ES or N(O).

Explanation: A REPLACE keyword value has been specified but its value is neither YES nor NO.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Specify a valid REPLACE operand and resubmit the job.

CCV9034E OPEN failed for Configuration Take Up input file DDNAME: *string***.**

Explanation: The specified DDNAME was either omitted from the JCL, or the data set associated with the DDCARD could not be opened.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Ensure that the DDCARD is present in the JCL, that its DCB attributes are correct and, if it refers to a data set, that you have appropriate access.

CCV9035E Invalid record type in input file.

Explanation: The Record Type in the takeup input file is invalid. Please refer to the CICS Configuration Manager Users Guide and sample members (in the SCCVSAM2 data set) for a definition of which record types are valid.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Correct the offending input statements and resubmit the job.

CCV9036E SSL socket write failure

Explanation: The CICS Configuration Manager batch command interface attempted to write data to an SSL socket but failed.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: This is probably an internal error. Please record the message details and contact IBM support.

CCV9037E SSL socket read failure

Explanation: The CICS Configuration Manager batch command interface attempted to read data from an SSL socket but failed.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: This is probably an internal error. Please record the message details and contact IBM support.

CCV9038E Invalid Configuration Type.

Explanation: The configuration Type in the DATATAKEUP input file is invalid. Valid values are C and D.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Correct the Configuration Type in the input file and resubmit the job.

CCV9039E CEDA is currently in use within the CICS Configuration Manager server region. CICS Configuration Manager cannot allocate the DFHCSD file while it is use by the CEDA transaction.

Explanation: CEDA is currently active within the CICS SM Server region. CICS Configuration Manager attempts to acquire the CSD data set a number of times before returning this error.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Ensure that CEDA is not active within the CICS region being requested and resubmit the job.

CCV9040E A request to generate a passticket failed. Set up of the CICS Configuration Manager security environment may be incomplete or insufficient.

Explanation: The CICS Configuration Manager batch command interface attempted to generate a PassTicket but failed.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: This is probably a User error. Please check that the security environment for the CICS Configuration Manager Server has been established correctly. If the problem persists contact IBM support.

CCV9041E A referential integrity check failed for this request. Either one of the parameters in the command request references an object that does not exist, or the commands request would delete a definition which is required by related definitions.

Explanation: The referential integrity checks vary according to the CICS Configuration Manager resource type. For example, the creation of a change package will fail with this condition if it refers to a non-existent approval profile.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: This is probably a user error.

Correction of the request may be needed.

CCV9042I The BACKOUT request found a previously successful BACKOUT for this event.

Explanation: A request to BACKOUT previously migrated work has detected that an identical BACKOUT request has already been successfully processed. You cannot back out work that has already been successfully processed.

System action: CICS Configuration Manager initialization continues normally.

User response: No user action required. This message is for information only.

CCV9043E An integrity check failed. The CRC (checksum) of the resource no longer matches the value it had previously. This implies interleaving updates.

Explanation: The record being updated has been updated between reading the record and updating the record.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Rerun the job stand alone.

CCV9044E A required context is not defined to CICSplex SM.

Explanation: A CICSPlex SM Context has been referenced either explicitly by name, or implicitly via a CICS Configuration definition and that Context does not exist in the target CICSPlex SM environment.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Ensure that the CICSPlex SM Context name is correct and, if necessary, create the Context in CICSPlex Data Repository. Then resubmit the job.

CCV9045S The socket select failed. The select waits for completion of the socket connect to CICS server or timeout of the connect. Select was cancelled before completion.

Explanation: The CICS Configuration Manager batch command interface attempted to connect to a CICS Configuration Manager server but it did not respond in a suitable time period.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: This is probably a User error. Please check that the port details (Number and Type) are specified correctly and that the CICS Configuration Manager Server (and port) are available. If the problem persists contact IBM support.

CCV9046E Configuration name does not conform to naming conventions.

Explanation: A Configuration name on a DATATAKEUP input data record does not conform to naming conventions.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Ensure that the Configuration name on the input data record has the correct Case and Character Set and resubmit the job.

CCV9047E The Data set name does not conform to naming conventions.

Explanation: A CSD data set name on a DATATAKEUP input data record does not conform to naming conventions.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Correct the CSD data set name on the DATATAKEUP input data record and resubmit the job.

CCV9048E MRO link or Transform variable has no related Configuration record.

Explanation: The 'L' and/or 'V' type records in the DATATAKEUP input data file are out of sequence.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: In addition to ensuring that the input file is in the correct sequence, ensure that the CICS Configuration name on the 'V' record is the same as the CICS Configuration name on the associated 'C' record and resubmit the job.

CCV9049I Number of records read

Explanation: This message is issued on completion of the DATATAKEUP process detailing the number of input data statements present.

System action: None. This is an information-only message.

User response: None. This is an information-only message.

CCV9050I Number of records rejected

Explanation: This message is issued on completion of the DATATAKEUP process detailing the number of input data statements that had errors of some kind.

System action: None. This is an information-only message.

User response: None. This is an information-only message.

CCV9051I Number of Configurations created

Explanation: This message is issued on completion of the DATATAKEUP process detailing the number of CICS Configuration records created.

System action: None. This is an information-only message.

User response: None. This is an information-only message.

CCV9052I Takeup statistics for DD name

Explanation: Used as reporting text for takeup program.

System action: None. Information only.

User response: None.

CCV9053E Configuration name is mandatory.

Explanation: All records in the DATATAKEUP input data file require a CICS Configuration name and, in this case, it was omitted.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Supply the CICS Configuration name on the input record and resubmit the job.

CCV9054I Number of Configurations updated

Explanation: This message is issued on completion of the DATATAKEUP process detailing the number of CICS Configuration records that were modified (but not created).

System action: None. This is an information-only message.

User response: None. This is an information-only message.

CCV9055E Remote System Connection name does not conform to naming conventions.

Explanation: A remote system CONNECTION name in a DATATAKEUP input data record does not conform to naming conventions.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Ensure that the CONNECTION name on the input data record has the correct Case and Character Set and resubmit the job.

CCV9056E Transform Variable name does not conform to naming conventions.

Explanation: A Transform Rule VARIABLE name in a DATATAKEUP input data record does not conform to naming conventions.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Ensure that the VARIABLE name on the input data record has the correct Case and Character Set and resubmit the job.

CCV9057E Context name does not conform to naming conventions.

Explanation: A CICSPlex SM CONTEXT name in a DATATAKEUP input data record does not conform to naming conventions.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Ensure that the CONTEXT name on the input data record has the correct Case and Character Set and resubmit the job.

CCV9058E SOURCE keyword is mandatory.

Explanation: The SOURCE keyword is mandatory for the IMPORT function.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Supply the SOURCE keyword and resubmit the job.

CCV9059E TARGET keyword is mandatory.

Explanation: The TARGET keyword is mandatory for the IMPORT function.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Supply the TARGET keyword and resubmit the job.

CCV9060E Filter values and CPID keywords mutually exclusive.

Explanation: If FILTER values are specified, the CPID keyword must not be present and vice-versa.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Supply either the CPID keyword or the FILTER values and resubmit the job.

CCV9061E Filter values must consist of: NAME, TYPE and GROUP.

Explanation: Either not all of the FILTER attributes (NAME, TYPE and GROUP) have been supplied, or not all of the FILTER attribute values have been supplied.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Supply all FILTER attributes and values and resubmit the job.

CCV9062E The Migration Scheme was changed after the Ready process was run. As these changes affect Migrate processing, Ready must be rerun for the change package.

Explanation: One of the significant checks the READY process performs is to calculate checksums. Multiple checksums are created and cover Resource Definition integrity as well as environmental (metadata) integrity. In this case, a checksum mismatch has been detected indicating that the state that existed at the time of the READY command no longer exists.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Ready the change package and resubmit the job.

CCV9063E REGISTERCPID keyword values are: YES or NO.

Explanation: A REGISTERCPID keyword value has been specified but its value is neither YES nor NO.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Specify a valid REGISTERCPID operand and resubmit the job.

CCV9064E PURGE keyword values are: YES or NO.

Explanation: A PURGE keyword value has been specified but its value is neither YES nor NO.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Specify a valid PURGE operand and resubmit the job.

CCV9065E TYPE value is invalid.

Explanation: A TYPE keyword value has been specified but its value is neither YES nor NO.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Specify a valid TYPE operand and resubmit the job.

CCV9066I The Change package is empty. It has no CICS resources packaged into it that match the criteria for the current command request.

Explanation: An attempt has been made to migrate an empty Change Package. This is not permitted.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Package CICS Resource Definitions and/or Commands into the Change Package and resubmit the job.

CCV9067E Invalid RLS type. Use DYNAMIC, NOTRLS or RLS

Explanation: During a DATATAKEUP operation, an invalid value for the CSDRLS attribute was encountered on an input data record. Valid values for CSDRLS are: DYNAMIC, NOTRLS or RLS.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Correct the invalid CSDRLS value and resubmit the job.

CCV9068E Inappropriate or misplaced CRITERIASET keyword

Explanation: CITERIASET directives must be immediately preceded by a REPORT directive.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Ensure the REPORT and CRITERIASET directives are are both present and in the correct order and resubmit the job.

CCV9069W After applying all transform rules during Migrate, no candidate resources remained for processing.

Explanation: Transform Rules have the capacity to suppress objects in a Change Package from being processed. During the processing of a Change Package, it was found that Transform Rule processing had suppressed every candidate object resulting in a logically empty Change Package - that is, one that required no processing.

System action: None. This is an information-only message.

User response: None. This is an information-only message.

CCV9070E Invalid TYPE value. Use CICSDEFCHANGES

Explanation: The TYPE keyword of the REPORT directive must be CICSDEFCHANGES.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Correct the TYPE value and resubmit the job.

CCV9071E Mandatory VIEW keyword not specified or in error.

Explanation: The VIEW keyword of the REPORT directive was either not specified or was specified in error.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Include or correct the VIEW keyword and resubmit the job.

CCV9072E Invalid VIEW value. Use RESOURCE or PACKAGE

Explanation: The VIEW keyword of the REPORT directive must be RESOURCE or PACKAGE.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Correct the VIEW value and resubmit the job.

CCV9073E Mandatory LEVEL keyword not specified or in error.

Explanation: The LEVEL keyword of the REPORT directive was either not specified or was specified in error.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Include or correct the LEVEL keyword and resubmit the job.

CCV9074E Invalid LEVEL value. Use ATTRIBUTE or RESOURCE

Explanation: For VIEW=RESOURCE reports, the LEVEL value must be ATTRIBUTE or RESOURCE.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Correct the LEVEL value and resubmit the job.

CCV9075E Invalid LEVEL value. Use ACTIVITY, ATTRIBUTE or RESOURCE

Explanation: For VIEW=PACKAGE the LEVEL value must be ACTIVITY ATTRIBUTE or RESOURCE.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Include or correct the LEVEL keyword and resubmit the job.

CCV9076E Migrate processing failed during transformation rule processing. A transform rule could not be processed, because it was illogical or contained specification errors.

Explanation: A transform rule could not be processed, because it was illogical or contained specification errors. Review your transform rules. Ensure operators and change from/to masks are consistent with the types of fields to which they apply.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Review the Transform Rule(s) and ensure that they contain valid data. Ensure that if they modify attribute values, that those values are valid both for the attribute itself and are also valid when other associated attribute values in the Resource Definition are taken into account. Then resubmit the job.

CCV9077E PAGESIZE must be 0 or in the range 30-9999

Explanation: The value for the PAGESIZE keyword is not 0, or in the range 30 to 9999.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Specify a correct PAGESIZE value and resubmit the job.

CCV9078E Valid Sort fields are: CONFIGURATION, DATE, GROUP, NAME and USER

Explanation: The value for the SORT keyword contains invalid values or specifies too many fields.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Specify a correct SORT value and resubmit the job.

CCV9079E Migrate failed during transformation rule processing. A transform rule specified a variable name that was invalid. The syntax of the variable may be in error or the variable could not be resolved from the CICS Configuration or Migration Scheme definitions.

Explanation: An invalid CICS Configuration Manager Variable (name) was encountered. The Transform Rule process, amongst other things, can make use of Variables defined in a CICS Configuration and/or a Migration Scheme. In this case, either the Variable Name had an invalid format or did not have an assigned value.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Verify that the Variable Name is syntactically correct, that the Name references the correct Variable and that the Variable has an appropriate value. Then resubmit the job.

CCV9080E Open failed for Report File: *string*

Explanation: An open failed for the report file referenced by DDNAME keyword.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Investigate and correct the cause of the open error and resubmit the job.

CCV9081W SORT parameter ignored when VIEW=PACKAGE

Explanation: The SORT parameter is not supported when PACKAGE is specified for the VIEW keyword.

System action: Report processing continues. The SORT parameter is ignored.

User response: None. This is an information-only message.

CCV9082E The command request has failed because the change package has not been processed by the Ready command.

Explanation: A change package must be in a READY state before migration may proceed.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Ready the Change Package and resubmit the job.

CCV9083E Command processing did not complete for one or more objects because it would result in orphan objects.

Explanation: CICS Configuration Manager does not allow an action that would result in the creation of an orphan CICS Resource Definition, which is defined to be a CICS Resource Definition that is not related to a RESGROUP.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: a) If you are deleting a RESGROUP, you must first remove all associated Resource Definitions b) If you are removing an object from a RESGROUP and that object is only associated with one RESGROUP, you need to delete the object, or associate it with another RESGROUP first c) Resubmit the job.

CCV9084E Candidate objects within the change package have changed since the change package was processed by Ready. The change package requires Ready processing before it can be approved or manipulated by Migrate.

Explanation: The integrity of the candidate objects in the Change Package has potentially been compromised by being modified after the Ready command.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Ready the change package and resubmit the job.

CCV9085E CICS Configuration Manager has detected a non-default value in an unsupported attribute. This indicates that the CICS Configuration Manager server is running under a CICS release that is lower than the CICS definitions it is managing.

Explanation: New attribute (values) at a higher CICS release are (by definition) not supported at lower levels. CICS Configuration Manager tolerates these attribute (values) but only if they are set to the higher release's default value for that attribute. This message is issued when an unsupported attribute was encountered having had a non-default value. This problem is indicative of a CICS Resource Definition having been updated by a CICS release higher than that under which the CICS Configuration Manager Server is currently running. CICS Configuration Manager Server should be run at the highest CICS software release for your site to circumvent this problem.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Either specify attribute (values) that are valid at the CICS Configuration Server's CICS

release, or upgrade the CICS system running the CICS Configuration Manager Server.

CCV9086E The change package command did not complete successfully because one or more of the candidate objects was not found.

Explanation: An object that had previously been added to a Change Package was not found in the associated repository (CSD or CICSPlex SM Data Repository) at the time a Change Package command was issued.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Use the LIST function to view the Change Package candidate objects and their current status. Objects marked as Missing must either be re-created in the designated repository or removed from the Change Package.

CCV9087E The CICS Configuration Manager server could not process the request because the CICSplex SM API transactions are not running within the server CICS region.

Explanation: The CICSplex SM facilities are not available in the nominated CICS region. Either the CICS region does not support CICSplex SM or has not been properly defined to CICSPlex SM or the start up of the CICSplex SM API transactions is incomplete.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Ensure that you are connecting to the correct CICS Configuration Manager Server region. Ensure that that region is properly defined to CICSPlex SM. Note that you may use the COLM transaction to start the CICSplex SM API transaction in the affected CICS region.

CCV9088E The API command has failed. The command attempted to set a state for something that already had that state.

Explanation: When processing an API command, an attribute value was encountered that was illogical in the context in which it was being processed.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: This is possibly an internal error. Please record the message details and contact IBM support.

CCV9089E The CICS Configuration Manager server was unable to process the command because an EXEC-CICS service request failed. See the CCVLOG output of the CICS Configuration server for additional diagnostic information.

Explanation: An unacceptable response was received from an EXEC CICS call.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: This is possibly an internal error. Please record the message details and contact IBM support.

CCV9090E The API command has failed because the Package-Scheme record created by READY did not exist. Change package commands such as Approve, Migrate and Backout require a previously successful execution of the Ready command.

Explanation: The CICS Configuration Manager business process requires that READY is performed before any APPROVE, MIGRATE or BACKOUT. The running of READY will create a Package-Scheme object in the CICS Configuration Manager Repository. In this case, that Package-Scheme object was not found. Either the Package-Scheme object has been deleted or the CICS Configuration Manager business model is being executed out of sequence.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: This is probably a User error. Ready the change package and resubmit the job. If the problem persists, record the message details and contact IBM support.

CCV9091E No objects in the change package were installed.

Explanation: A request to install candidate objects in a Change Package was requested but none of the candidate objects installed successfully.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Examine the CICS region logs as well as the CICS CM log and determine why the INSTALL request(s) failed. Correct those errors and resubmit the job.

CCV9092E Some objects in the change package were installed.

Explanation: A request to install candidate objects in a Change Package was requested but not all of the candidate objects installed successfully.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Examine the CICS region logs as well as the CICS CM log and determine why the INSTALL request(s) failed. Correct those errors and resubmit the job.

CCV9093E No objects in the change package were newcopied.

Explanation: A request to NEWCOPY candidate objects in a Change Package was requested but none of the candidate objects requests was successful.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Examine the CICS region logs as well as the CICS CM log and determine why the NEWCOPY request(s) failed. Correct those errors and resubmit the job.

CCV9094E Some objects in the change package were newcopied.

Explanation: A request to NEWCOPY candidate objects in a Change Package was requested but not all the candidate objects requests was successful.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Examine the CICS region logs as well as the CICS CM log and determine why the NEWCOPY request(s) failed. Correct those errors and resubmit the job.

CCV9095E None of the objects in the change package was discarded.

Explanation: A request to DISCARD candidate objects in a Change Package was requested but none of the candidate objects requests was successful.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Examine the CICS region logs as well as the CICS CM log and determine why the DISCARD request(s) failed. Correct those errors and resubmit the job.

CCV9096E Some objects in the change package were discarded.

Explanation: A request to DISCARD candidate objects in a Change Package was requested but not all the candidate objects requests was successful.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Examine the CICS region logs as well as the CICS CM log and determine why the DISCARD request(s) failed. Correct those errors and resubmit the job.

CCV9097E None of the target CICS configurations for processing has CICS remote system connections defined.

Explanation: When CICS Configuration Manager has to perform processing in a remote CICS region, it schedules that processing using an existing connection identified on the associated CICS Configuration record. In this case, no CICS Configuration record had the requisite connection details specified.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Correct the target CICS configuration and resubmit the job.

CCV9098E Invalid CONDITION card.

Explanation: The COND= keyword for Journal Reporting was found to have a syntax error.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Correct the CONDITION value and resubmit the job.

CCV9099E The change package list includes new objects not previously processed by Ready. The change package requires Ready processing before it can be approved or manipulated by Migrate.

Explanation: At least one object has been added to a Change Package after being successfully processed by a READY command. The integrity of the Change Package has potentially been compromised by being modified after the Ready command.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Use the LIST function to view the Change Package candidate objects and their current status. Objects marked as New must either be removed from the Change Package and/or READY must be run against the Change Package.

CCV9100E Either the change packages list of candidates has changed or the candidates themselves have changed since the change package was processed by Ready. The change package requires Ready processing before it can be approved or manipulated by Migrate.

Explanation: One of the significant checks the READY process performs is to calculate hash codes. Multiple hash codes are created and cover Resource Definition

integrity as well as environmental (metadata) integrity. In this case, a hash code mismatch has been detected indicating that the state that existed at the time of the READY command no longer exists.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Ready the change package and resubmit the job.

CCV9101E The Migrate request has failed because a CICS Configuration definition referenced in either the Migration Scheme or in the Transform Rule Set was not defined.

Explanation: A CICS Configuration referenced in a Migration Scheme could not be located in the CICS Configuration Manager Repository. This should not happen as Referential Integrity checks should preclude the deletion of a "needed" object.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Ensure that the correct Migration Scheme has been used. If the Migration Scheme name is correct ensure that the correct CICS Configuration names have been specified. Now perform the same task for any referenced Transform Rules. If everything is correct, re-create the missing CICS Configuration record(s). You may need to run READY again.

CCV9102E The Migrate request failed because another Migrate for this change package using the same Migration Scheme is already active.

Explanation: Since migration can potentially affect a large number of Resource Definitions, they are serialized by Migration Scheme and Change Package name. In this case, another migration request for the same Change Package and Migration Scheme was already active.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Resubmit the job when no other Migrates using the same Migration Scheme and Change Package are active.

CCV9103E The command request has failed because the change package is not approved for processing.

Explanation: The change package is not approved for the command. The CICS Configuration Manager Change Package commands are READY, APPROVE, MIGRATE or BACKOUT and are run in that relative order. Your site has activated Approvals processing and the Approval process has not yet completed successfully.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Approve the Change Package and resubmit the job.

CCV9104E Newcopy of a program defined as "remote" is invalid.

Explanation: The CICS NEWCOPY command, when applied to Programs, is not valid for programs defined as "remote".

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Ensure that the NEWCOPY is being applied to the correct program. Either alter the applicable program definition or remove the NEWCOPY command and resubmit the job.

CCV9105E Discard failed as the state of the object does not permit Discard.

Explanation: Before a DISCARD command can be issued against a discardable Resource Definition, that definition must be in a pre-requisite state. In this case, the definition was not in that desired state.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Ensure that DISCARD is issued against the correct definition, that the definition is in the required state prior to issuing the DISCARD command, or remove the DISCARD command. Then, resubmit the job.

CCV9106E The Server and Client APIs are operating at different software releases.

Explanation: The Server and Client APIs are operating at different software releases. The XML root element indicates the CICS Configuration Manager API release level. CICS Configuration Manager requires that the API version obtained from the root element is the same as the CICS Configuration Manager version of the CICS Configuration Manager Server to which the XML is being directed. This message indicates that either the software release of the Server and Client do not match or the XML is malformed.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Ensure that you are running at the correct release of CICS Configuration Manager at both the Client and the Server.

CCV9107E Discard is not a valid function for a change package.

Explanation: The DISCARD command is only valid when used against a specific Resource Definition; it may not be issued against the entire Change Package.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Remove the DISCARD command and resubmit the job.

CCV9108E Discard is not supported for objects within a CICSplex context.

Explanation: In CICS Configuration Manager, the DISCARD line action may only be applied against objects residing in a CSD.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Ensure that DISCARD is issued against the correct CICS Configuration or remove the DISCARD command. Then resubmit the job.

CCV9109E The CICS Configuration Manager remote transaction CCVR is not available. The operation cannot be performed.

Explanation: The CCVR transaction is used for "remote" requests and should have been instaled as part of the CICS CM installation process. This message is issued when the CCVR transaction is unavailable.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Ensure that the CCVR transaction and its associated program is available. Note that if the CICS Configuration Manager server is shipping a request to another CICS region (for example, to use the CICS CM Agent program), you need to complete additional customization steps in that target region. These steps are described in the CICS Configuration Manager Users Guide. Then resubmit the job.

CCV9110E The CICS Configuration Manager remote program CCVSREMP is not defined. The operation cannot be performed.

Explanation: If CICS Configuration Manager needs to perform "remote" operations, it uses its agent program, CCVSREMP. In this case, CCVSREMP was not available as it had not been defined to CICS.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Correct the remote program definition and resubmit the job.

CCV9111E The open failed for a CICS Configuration CSD file. The operation cannot be performed.

Explanation: CICS Configuration Manager attempted to open a CSD data set and that attempt failed.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Examine the CICS TS and CICS Configuration Manager logs for reasons for the OPEN failure and address them. Then, resubmit the job.

CCV9112E The operation against an IBM reserved resource failed.

Explanation: As a general rule, the Groups that contain the IBM-supplied Resource Definitions may not be updated. In this case, you have attempted to modify one of those protected resources.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: If you need to modify an IBM-supplied Resource Definition, you will need to make a copy of it in a user-defined Group and then update that copy.

CCV9113E A SAF call failed owing to factors specific to your environment. Likely causes are (1) the security class cannot support the Security Key length; (2) a coding or parameter error has occurred in a site-defined security exit.

Explanation: A SAF call issued by the CICS Configuration Manager Server received an unacceptable reponse.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Resubmit the job with an XML trace activated to view additional diagnostic data returned by the CICS Configuration Manager Server.

CCV9114E An approver role is not valid. It is not one of the approval roles defined in the Approval Profile for the Migration Scheme currently in use. The Approve request has failed.

Explanation: An attempt was made to approve a Change Package using a Role that was not defined in the Approval Profile being used.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Either add the Role to the Approval Profile or use a Role that is in the Approval Profile being used. Then resubmit the job.

CCV9115E **A disapprover role is not valid. The change pacage has not been approved by this role for the Migration Scheme currently in use. The Disapprove request has failed.**

Explanation: The ROLE being used for the Disapproval process is not valid because it is not in the list of current approvers of the Change Package / Migration Scheme combination.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Ensure that the correct ROLE and Migration Scheme are being used. Note that you can also receive this message if the ROLE contains invalid characters (for example, masking characters).

CCV9116E **The command request cannot complete because the export file is currently in use by another user.**

Explanation: A file serialization problem has occurred on the Export File.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Ensure that the export file is available and resubmit the job.

CCV9117E **The command request has failed because the export file data set is invalid.**

Explanation: The export file data set could not be allocated. The file may have an invalid name, data set attributes, or in some other way be inconsistent with CICS Configuration Manager export file specifications.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Ensure that the export file is available and able to be allocated. Then resubmit the job.

CCV9118E **The command request has failed because the export file data set could not be opened.**

Explanation: The export file data set could not be opened. The file may not be cataloged or be accessible, dynamic creation may have failed, or security restrictions may have applied.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Ensure that the export file is available and resubmit the job.

CCV9119E **The command request cannot complete because the import file is currently in use by another user.**

Explanation: A file serialization problem has occurred on the Export File.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Ensure that the export file is available and resubmit the job.

CCV9120E **The command request has failed because the import file data set is invalid.**

Explanation: The export file data set could not be allocated. The file may have an invalid name, data set attributes, or in some other way be inconsistent with CICS Configuration Manager export file specifications.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Ensure that the export file is available and able to be allocated. Then resubmit the job.

CCV9121E **The command request has failed because the import file data set could not be opened.**

Explanation: The export file data set could not be opened. The file may not be cataloged or be accessible, dynamic creation may have failed, or security restrictions may have applied.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Ensure that the export file is available and resubmit the job.

CCV9122E **The command request has failed because the CICS Configuration Manager server has detected an inconsistency between the program parameter lists shared between two programs.**

Explanation: This may occur if software maintenance has been incorrectly applied, where programs of two different software releases or maintenance levels interact.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Ensure that CICS Configuration Manager maintenance levels are consistent at both the server and the client and resubmit the job. If the problem persists, record the message details and contact IBM support.

CCV9123W The change package was already marked as READY and no changes have occurred.

Explanation: READY status has been retained for the change package, and no changes have occurred to (1) the change package object list, (2) the object attributes, (3) the migration scheme source and target configurations as all objects were in the desired state.

System action: None. This is an information-only message.

User response: None. This is an information-only message.

CCV9124E An attempt to load the literal table failed.

Explanation: An attempt to reference an internal CICS Configuration Manager data structure failed.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Ensure that the proper STEPLIB concatenation has been specified and resubmit the job. If the problem persists, contact IBM support.

CCV9125E Expected continuation not received.

Explanation: A syntax error has been detected in a batch input statement.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Correct the statement where indicated and resubmit the job.

CCV9126E The Report Data set does not conform to naming conventions or does not exist.

Explanation: Either the user-specified report data set DDNAME has a syntax error, or the associated data set could not be opened.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Ensure that the DDNAME has been specified correctly and that the associated data set is valid and available. Then resubmit the job.

CCV9127E Syntax error. Embedded blanks not allowed.

Explanation: A syntax error has been detected in a batch input statement.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Correct the statement where indicated and resubmit the job.

CCV9128E Syntax error. Unexpected keyword *string* **found.**

Explanation: A syntax error has been detected in a batch input statement.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Correct the statement where indicated and resubmit the job.

CCV9129E CONNECT command must be first command in parameter list.

Explanation: Batch input processing directives that are dependent on a successful connection to a CICS Configuration Manager server were encountered before a CONNECT directive.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Ensure that a CONNECT command preceeds all other commands and resubmit the job.

CCV9130E DCB for *string* **must be: LRECL greater than or equalto** *n***, DSORG = PS and RECFM = F, FB or FBA.**

Explanation: A data set with invalid DCB attributes has been referenced.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Correct the DCB attributes for the specified data set and resubmit the job.

CCV9131E Open failed for *string***. Include the file and rerun the job.**

Explanation: A data set, referenced by the specified DDNAME, could not be opened. The file may not be cataloged or be accessible, dynamic creation may have failed, or security restrictions may have applied.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Ensure that the data set is available and resubmit the job.

CCV9132E Syntax error. No keywords for directive *string***.**

Explanation: A syntax error has been detected in a batch input statement. A Directive that requires additional keywords has been encountered without those required keywords.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Correct the directive where indicated and resubmit the job.

CCV9133E Mandatory PHASE parameter not specified or in error.

Explanation: The DEPLOY directive requires a PHASE keyword. In this case, it was omitted.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Provide a valid PHASE keyword and resubmit the job.

CCV9134E Invalid PHASE value. Use COLLECT, ANALYSE or REPORT.

Explanation: An invalid value has been supplied for the PHASE keyword.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Supply a valid PHASE operand and resubmit the job.

CCV9135E Invalid REPORT TYPE value.

Explanation: An invalid value has been supplied for the REPORT keyword.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Supply a valid REPORT operand and resubmit the job.

CCV9136E Invalid VIEW value. Use BYCLASSIFICATION or BYOBJECT.

Explanation: An invalid value has been supplied for the VIEW keyword.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Supply a valid VIEW operand and resubmit the job.

CCV9137E Invalid REPORTSET value. Use 1 or 2.

Explanation: An invalid value has been supplied for the REPORTSET keyword.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Supply a valid REPORTSET operand and resubmit the job.

CCV9138E Invalid Deploy TYPE value. Use RUNTIME or CANDIDATES.

Explanation: An invalid value has been supplied for the TYPE keyword.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Supply a valid TYPE operand and resubmit the job.

CCV9139E A LOCALSYSID is only valid for CSD file CANDIDATES.

Explanation: The LOCALSYSID keyword is only valid when processing a CICS Configuration that references a CSD. For all other CICS Configuration types, the LOCALSYSID specification is incorrect.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Ensure that the correct CICS Configuration has been specified, or remove the LOCALSYSID specification. Then resubmit the job.

CCV9140E A CONNECTION is only valid for a CSD file REGION.

Explanation: The CONNECTION keyword is only valid when processing a CICS Configuration that references a CSD. For all other CICS Configuration types, the CONNECTION specification is incorrect.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Ensure that the correct CICS Configuration has been specified, or remove the CONNECTION specification. Then resubmit the job.

CCV9141E A SCOPE, CONNECTION or LOCALSYSID is required for each COLLECT phase.

Explanation: When collecting data for Deployment Analysis, one needs to identify a CICS "system" from or for which data must be collected. In a non CICSPlex SM environment, this is achieved by specifying a CONNECTION and (local) SYSID; in a CICSPlex SM environment, this is achieved by specifying a SCOPE.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Ensure that the correct CICS Configuration has been specified, and specify either a CONNECTION and LOCALSYSID, or a SCOPE. Then resubmit the job.

CCV9142E At least one GRPLIST is required for CSD file CANDIDATES.

Explanation: When collecting CSD Candidate data for Deployment Analysis, CICS Configuration Manager needs to identify the CICS Group List (GRPLIST) that will be used during the CICS start-up. Without a Group List specification, it is not possible to determine the list of candidate resources.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Ensure that the correct CICS Configuration has been specified, and specify a valid GRPLIST value. Then resubmit the job.

CCV9143E A GRPLIST is only required for CSD file CANDIDATES.

Explanation: When collecting CSD Candidate data for Deployment Analysis, a CICS Group List (GRPLIST) is only used during CICS start-up when referencing the CSD specified on the DFHCSD DDCARD. A GRPLIST is not applicable to the CICSPlex SM environment.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Ensure that the correct CICS Configuration has been specified, and remove the GRPLIST keyword. Then resubmit the job.

CCV9144E Invalid EXTDATA value. Use YES or NO.

Explanation: An invalid value has been supplied for the EXTDATA keyword.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Supply a valid EXTDATA operand and resubmit the job.

CCV9145E Use only one of FILTERCONFIGURATION and FILTERDATASET.

Explanation: You have specified both the FILTERCONFIGURATION and the FILTERDATASET keywords but you may only specify one of them. The Filter Data set Name is obtained explicitly from FILTERDATASET and implicitly from FILTERCONFIGURATION.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Remove one of the two keywords and resubmit the job.

CCV9146I The batch utility CCVBMAIN ended successfully.

Explanation: This is the termination message issued by the CICS Configuration Manager batch command interface.

System action: None. This is an information-only message.

User response: None. This is an information-only message.

CCV9147I The batch utility CCVBMAIN ended unsuccessfully with Return Code *n*.

Explanation: This is the termination message issued by the CICS Configuration Manager batch command interface.

System action: None. This is an information-only message.

User response: None. This is an information-only message.

CCV9148I COND=(

Explanation: As per message.

System action: None.

User response: None.

CCV9149I Connected to server *string*.

Explanation: The CICS Configuration Manager batch command interface has successfully connected to the CICS Configuration Manager Server mentioned in the message.

System action: None. This is an information-only message.

User response: None. This is an information-only message.

CCV9150I Disconnected from server *string*.

Explanation: The CICS Configuration Manager batch command interface has successfully disconnected to the CICS Configuration Manager Server mentioned in the message.

System action: None. This is an information-only message.

User response: None. This is an information-only message.

CCV9151I CCV Release *string*.

Explanation: The CICS Configuration Manager batch command interface has successfully connected to the CICS Configuration Manager Server running at the release mentioned in the message.

System action: None. This is an information-only message.

User response: None. This is an information-only message.

CCV9152I CICS Release *string*.

Explanation: The CICS Configuration Manager batch command interface has successfully connected to the CICS Configuration Manager Server running at the release mentioned in the message.

System action: None. This is an information-only message.

User response: None. This is an information-only message.

CCV9153I The *string* command completed successfully.

Explanation: A requested command has completed successfully.

System action: None. This is an information-only message.

User response: None. This is an information-only message.

CCV9154I Generating report.

Explanation: A request to generate a report is being processed. This message is issued to indicate the start of preparation of the report.

System action: None. This is an information-only message.

User response: None. This is an information-only message.

CCV9155S A request was sent to CICS to return its REALM. The response was invalid.

Explanation: CICS is supposed to include its REALM (APPLID) in HTTP 401 responses. In this instance, the response was not what was expected.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: This is probably a program error. Please gather supporting information, including XML traces, and contact IBM support.

CCV9156S A request to generate a passticket failed. Set up of the CICS Configuration Manager security environment may be incomplete.

Explanation: A call to the CICS Configuration Manager PassTicket generation interface has failed. If an authenticated port in the CICS Configuration Manager Server region is being accessed, CICS Configuration Manager will attempt to generate a PassTicket.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Ensure that the instructions in the CICS Configuration Manager User's Guide have been followed. If the problem persists contact IBM Support.

CCV9157S Completion of Socket connect failed. The server may not be running or responding; or the TCP/IP address may be in error.

Explanation: A socket request returned an unacceptable response.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Determine why the requested CICS Configuration Manager Server is unavailable; ensure the correct port has been specified; ensure that the CICS Configuration Manager Server has completed its initialization (look for message CCV5373I). If the problem persists, contact IBM support.

CCV9158S Connection to the server timed out. The server may not be responding, or the TCP/IP address used for the connection may be in error.

Explanation: A socket request returned an unacceptable response.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Determine why the requested CICS Configuration Manager Server is unavailable; ensure the correct port has been specified; ensure that the CICS Configuration Manager Server has completed its initialization (look for message CCV5373I). If the problem persists, contact IBM support.

CCV9159S The Init-Environment call for SSL failed with error: *string*.

Explanation: A socket request returned an unacceptable response.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Determine why the requested CICS Configuration Manager Server is unavailable; ensure the correct port has been specified; ensure that the CICS Configuration Manager Server has completed its initialization (look for message CCV5373I). If the problem persists, contact IBM support.

CCV9160S Open of the SSL Environment failed with error: *string*.

Explanation: A socket request returned an unacceptable response.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Determine why the requested CICS Configuration Manager Server is unavailable; ensure the correct port has been specified; ensure that the CICS Configuration Manager Server has completed its initialization (look for message CCV5373I). If the problem persists, contact IBM support.

CCV9161E During the processing of the request, a corrupted CICS Configuration Manager block was detected. As a result, the request could not be completed and has failed. Error messages may be logged in CCVLOG in the CICS CM server region.

Explanation: An internal CICS Configuration Manager control block has been detected.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: This is possibly a CICS Configuration Manager program error and you may need to restart your CICS Configuration Manager Server Region and/or the CICS Configuration Manager Server. If the problem persists, gather relevant information (for example, program dumps, CICS logs, etc.) and contact IBM support.

CCV9162E Your trial version of the CICS Configuration Manager has been rendered unusable. Please contact your IBM representative if you wish to assess CICS Configuration Manager further.

Explanation: You are running a trial version of CICS Configuration Manager and it has expired.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Contact IBM support.

CCV9163E Your trial version of the CICS Configuration Manager has expired. Please contact your IBM representative if you wish to assess CICS Configuration Manager further.

Explanation: You are running a trial version of CICS Configuration Manager and it has expired.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Contact IBM support.

CCV9164E The CICS Configuration definition of the CSD file specifies RLS=YES access. However, the RLS open of the CSD file has failed.

Explanation: You have specified that the CSD must be opened using RLS. However, the data set could not be opened succesfully using RLS.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Ensure that RLS is a necessity for the CSD and change the RLS access to DYNAMIC if possible; ensure that the environment is set up correctly to enable RLS access for the data set. Then resubmit the job.

CCV9165S Establishing a secure socket connection failed.

Explanation: A socket request returned an unacceptable response.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Determine why the requested CICS Configuration Manager Server is unavailable; ensure the correct port has been specified; ensure that the CICS Configuration Manager Server has completed its initialization (look for message CCV5373I). If the problem persists, contact IBM support.

CCV9166E A required field is missing.

Explanation: This is a CICS Configuration Manager internal error. Data required by one routine has not been provided by its caller. The called routine cannot continue.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: This is a CICS Configuration Manager internal error. Please record the message details and contact IBM support.

CCV9167E A value is invalid in context.

Explanation: This is a CICS Configuration Manager internal error. Data supplied by one routine to another is not recognized in the context in which it has been provided. The called routine cannot continue.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: This is a CICS Configuration Manager internal error. Please record the message details and contact IBM support.

CCV9168E The CICS Configuration type is not valid for this collection type.

Explanation: The CONFIGURATION parameter of the DEPLOY API refers to a CICS Configuration of a type that is inconsistent with the specified SCOPE or GRPLIST parameter.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Correct the input parameters and resubmit the job.

CCV9169E Duplicated or misplaced XML element.

Explanation: A parameter of the DEPLOY API command has either been duplicated in the XML stream, or it has been included in the wrong part of the XML. This is probably an error in the CICS Configuration Manager batch program, but may be a result of an incorrectly handled error in the supplied parameters.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Review the parameters specified for the DEPLOY command, correct any errors, then resubmit the job.

CCV9170E DEPLOY needs at least one Phase element before it can function.

Explanation: At least one PHASE= parameter must be specified for the DEPLOY command. No PHASE= parameters were detected in the input stream.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Review the parameters specified for the DEPLOY command, correct the errors, then resubmit the job.

CCV9171E At least one Deploy phase has an error.

Explanation: At least one of the phases selected for the DEPLOY API command has completed with an error condition and cannot continue.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Check the messages from CCVBMAIN for a cause of the failure. If possible, amend the input parameters to correct the problem and resubmit the job. If the problem persists, please record the message details and contact IBM support.

CCV9172E Filter conflict.

Explanation: This message is reserved for future use.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: None. This message is reserved for future use.

CCV9173E Incompatible elements.

Explanation: Both 'FilterCConfig' and 'FilterDataset' have been specified in the parameters of the DEPLOY API command. These parameters are mutually exclusive.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Correct the parameters and resubmit the job.

CCV9174E Another Deployment Analysis request is active.

Explanation: This message is reserved for future use.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: None. This message is reserved for future use.

CCV9175E A collection phase for Deployment Analysis has failed.

Explanation: At least one of the COLLECT phases requested by DEPLOY API has failed. The DEPLOY command cannot continue.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Check the messages from CCVBMAIN for a cause of the failure. If possible, amend the input parameters to correct the problem and resubmit the job. If the problem persists, please record the message details and contact IBM support.

CCV9176E An internal processing error has occurred.

Explanation: The CICS Configuration Manager server has detected an internal problem while processing an API command and terminates immediatley.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Examine the CCVLOG entries in the server region to identify the failing component. Record the message details and contact IBM support.

CCV9177E DDname CCVPARMS and PARM directives both present.

Explanation: The CICS Configuration Manager batch command interface input directives are provided via the PARM= JCL keyword or the CCVPARMS input DDCard. Input must be provided via one (but not both) of these means and both were provided.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Provide input directives via the PARM= JCL keyword or the CCVPARMS DDCard and resubmit the job.

CCV9178S The SSL connection is not in Open state.

Explanation: Communication cannot be established between the CCVBMAIN batch process and the server region using the specified SSL socket.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Check that the correct port has been specified in the batch job and is defined to, and open in, the server region. Verify that the batch job has the necessary APF authorization, and the IP address is correct. If symptoms persist, contact your network specialist for assistance.

CCV9179S A Secure Socket Init failed. It could be: connection closed by peer; Incorrect message received from peer; Peer certificate is removed; Insufficient storage.

Explanation: The CCVBMAIN batch process has attempted to use an SSL socket to communicate with the server. The socket initialization request has failed. The message includes several possible causes of the problem, but it is not an exhaustive list.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Check that the correct port has been specified in the batch job and is defined to, and open in, the server region. Verify that the batch job has the necessary APF authorization, and the IP address is correct. If symptoms persist, contact your network specialist for assistance.

CCV9180S Socket failure. *n*.

Explanation: Either CCVBMAIN could not connect to the server using the specified port, or connection has been lost before CCVBMAIN has completed.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Check that the correct port has been specified in the batch job and is defined to, and open in, the server region. Verify that the batch job has the necessary APF authorization, and the IP address is correct. If symptoms persist, contact your network specialist for assistance.

CCV9181E An attempt to load the message table failed.

Explanation: The CICS Configuration Manager server has encountered a failure while loading the message table to process a message. The API command terminates immediatley. This is an internal logic error and requires assistance from IBM.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Examine the JESMSGLG and CCVLOG entries in the server region to identify the failing component. Record the message details and contact IBM support.

CCV9182E MIGRATE processing has failed because the change package does not specify an Approval Profile. The change package function MIGRATE is not allowed until an Approval Profile is assigned to the change package.

Explanation: The systems options record for this server has approval processing active, but the change package does not specify an approval profile. The migrate cannot proceed.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Review the change approval processing options for this server. If approval processing is active, assign a suitable approval profile to the change package, ensure it is READY and APPROVED, then resubmit the migrate request. If approval processing is not required, either disable it in the systems options record or chose an approval profile with no approval roles. Ensure the change is READY and APPROVED, then resubmit the migrate request.

CCV9183I Collection phase *n*.

Explanation: A collection phase for Deployment Analysis has been run.

System action: None. This is an information-only message.

User response: None. This is an information-only message.

CCV9184E The user is not authorised for the function.

Explanation: The z/OS System Authorization Facility has refused access to a resource required by the API command requested by this userid.

System action: The API request may either be terminated immediately, or may continue to process other objects, depending on the API and the reason for the failure.

User response: Review JESMSGLG and MSGUSR (or site equivalent) for the SAF messages related to the failure. Correct the authorization rules and resubmit the request.

CCV9185E The CICS Configuration *string* does not exist.

Explanation: A CICS Configuration referenced in a Deployment Analysis request could not be located in the CICS Configuration Manager Repository.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Ensure that the correct CICS Configuration names have been specified.

CCV9186E The CICS resource type *string* is not valid.

Explanation: A CICS resource type has been detected which is not valid at this release of CICS.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: None.

CCV9187E A CPSM exception has occurred with return code *n* and reason code *n*.

Explanation: A CICSPLEX SM exception has been detected.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: None.

CCV9188I Report phase

Explanation: A report phase for Deployment Analysis has been run.

System action: None. This is an information-only message.

User response: None. This is an information-only message.

CCV9189E Keywords CPID and EXTREF are mutually exclusive.

Explanation: A Package process has been run with both CPID and EXTREF keywords defined.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Delete one of the keywords and rerun the job.

CCV9190E No Packages found for EXTREF=*string*.

Explanation: A MIGRATE has been run with an EXTREF value that is not defined to any Package.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Correct the EXTREF value and rerun the job.

CCV9191E More than one Package found for EXTREF=*string*.

Explanation: A Package process has been run where the EXTREF value returned more than one Package.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Correct the EXTREF value to return only one Package and rerun the job.

CCV9192I EXTREF=*string* replaced by CPID=*string*.

Explanation: A Package process has been requested for a specific EXTREF value. The CPID value identifies the change package used for processing the request.

System action: None. Information only.

User response: None.

CCV9193E PHASEIN operand invalid. Must be YES or NO.

Explanation: The PHASEIN keyword value was supplied but had no value or was not specified as YES or NO.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Correct the PHASEIN keyword and rerun the job.

CCV9194E SCHEME not defined in APPROVAL PROFILE

Explanation: Change Package Approval is required for this Change Package with this Migration Scheme. The Approval Profile does not have an entry for this Migration Scheme, so the Change Package cannot be migrated.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Either update the Change Package to use an Approval Profile with an entry for this Migration Scheme, or add this Migration Scheme to the current Approval Profile.

CCV9195E REPORT TYPE=*string* requires COLLECTion for REPORTSET=1.

Explanation: A request for a deployment analysis candidates report (DEPLOY PHASE=REPORT,TYPE=CANDIDATES) or runtime resources report (DEPLOY PHASE=REPORT, TYPE=RUNTIME) specified an incorrect report set number for the collection phase. For these reports, PHASE=COLLECT must specify REPORTSET=1.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Correct the parameter and re-run the job.

CCV9196E REPORT TYPE=*string* mismatch with COLLECTION TYPE=*string*.

Explanation: A request for a deployment analysis candidates report (DEPLOY PHASE=REPORT,TYPE=CANDIDATES) or runtime resources report (DEPLOY PHASE=REPORT, TYPE=RUNTIME) specified a mismatching TYPE value for the collection phase. For these reports, the collection phase TYPE parameter must match the report phase TYPE parameter. For example if you specify DEPLOY PHASE=REPORT,TYPE=RUNTIME, then you can only specify PHASE=COLLECT,TYPE=RUNTIME.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Correct the parameter and re-run the job.

CCV9197E REPORT TYPE=*string* requires COLLECTion for REPORTSET=1 and REPORTSET=2.

Explanation: A request for a deployment analysis compare report (DEPLOY PHASE=REPORT,TYPE=...COMPARE) has not defined collection phases for two report sets. Compare reports require two report sets.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Correct the parameter and re-run the job.

CCV9198E REPORT TYPE=*string* inconsistent with COLLECTION TYPEs.

Explanation: A request for a deployment analysis compare report (DEPLOY PHASE=REPORT,TYPE=...COMPARE) has not specified the required combination of collection phases for that report.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Correct the parameter and re-run the job.

CCV9199E The Request to the CM Server was rejected. Additional information follows:

Explanation: A request to the CICS Configuration Manager server resulted in an error. Additional information is supplied where available.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Investigate the error and re-run the job.

CCV9200E A site defined exit program failed the request with reason code 8000. This generic code signals that the exit failed the request.

Explanation: The CICS Configuration Manager server is running with user exits enabled for the requested API command. The user exit program has determined that the command must not proceed, but does not need to return any additional data.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Resolve the condition that caused the exit to reject the request. If the exit program is in error, correct the exit program. Resubmit the request.

CCV9201E A site defined exit program failed the request with reason code 8001. This code indicates that exit exforcement has overwritten or overruled values in the request.

Explanation: The CICS Configuration Manager server

is running with user exits enabled for the requested API command. The user exit program has determined that the command must not proceed, and has set the appropriate values to modify the action of the API handler.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Resolve the condition that caused the exit to reject the request. If the exit program is in error, correct the exit program. Resubmit the request.

CCV9202E **A site defined exit program failed the request with reason code 8002. This code indicates that the exit program has failed with an internal error. The request could not be completed and has failed.**

Explanation: The CICS Configuration Manager server is running with user exits enabled for the requested API command. The user exit program has encountered an internal error and cannot continue. The reason code indicates that CICS Configuration Manager is to terminate the API handler.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Correct the error in the exit program, then resubmit the request.

CCV9203E **A site defined exit program failed the request with reason code 8003. This code indicates that the exit is not capable of processing the request.**

Explanation: The CICS Configuration Manager server is running with user exits enabled for the requested API command. The user exit program has determined that it was not coded to be invoked at this exit point. The exit program signals the server to terminate the API handler.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Verify that the correct user exit program has been associated with the failing API command. Correct the error and resubmit the request.

CCV9204E **A site defined exit program failed the request with reason code 8004. This code indicates that the user is not authorised for the function.**

Explanation: The CICS Configuration Manager server is running with user exits enabled for the requested API command. The user exit program has determined that it the userid associated with the request is not authorised to perform the requested function and signals the server to terminate the request.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Resolve the condition that caused the exit to reject the request. If the exit program is in error, correct the exit program. Resubmit the request.

CCV9205E **A site defined exit program failed the request with reason code 8005. This code indicates that the requested function cannot be performed at this time.**

Explanation: The CICS Configuration Manager server is running with user exits enabled for the requested API command. The user exit program has determined that the request cannot be performed and signals the server to terminate the request.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Resolve the condition that caused the exit to reject the request. If the exit program is in error, correct the exit program. Resubmit the request.

CCV9206E **A site defined exit program failed the request with reason code 8006. This code indicates that the requested function cannot be performed via this Server.**

Explanation: The CICS Configuration Manager server is running with user exits enabled for the requested API command. The user exit program has rejected the request in this server and signals the server to terminate the request.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Resubmit the request in the correct server. If the exit program is in error, correct the exit program. Resubmit the request.

CCV9207E **A site defined exit program failed the request with reason code 8007. This code indicates that the requested contravenes site standards.**

Explanation: The CICS Configuration Manager server is running with user exits enabled for the requested API command. The user exit program has rejected the request because it does not meet site-defined standards.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Resolve the condition that caused the exit to reject the request. If the exit program is in error, correct the exit program. Resubmit the request.

CCV9208E **A site defined exit program failed the request with reason code 800A. This code indicates that the external change management system does not contain a change number corresponding with the one used in the request.**

Explanation: The CICS Configuration Manager server is running with user exits enabled for the requested API command. The user exit program has rejected the request because it could not find a corresponding change in the change management system.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Resolve the condition that caused the exit to reject the request. If the exit program is in error, correct the exit program. Resubmit the request.

CCV9209E **A site defined exit program failed the request with reason code 800B. This code indicates that the external change management system is not accessible.**

Explanation: The CICS Configuration Manager server is running with user exits enabled for the requested API command. The user exit program has rejected the request because it could not contact the change management system.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Resolve the condition that caused the exit to reject the request. If the exit program is in error, correct the exit program. Resubmit the request.

CCV9210E **A site defined exit program failed the request with reason code 800C. This code indicates that an invalid or unacceptable change package ID was used in the request.**

Explanation: The CICS Configuration Manager server is running with user exits enabled for the requested API command. The user exit program has rejected the request because the Change Package ID is unacceptable.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Resolve the condition that caused the exit to reject the request. If the exit program is in error, correct the exit program. Resubmit the request.

CCV9211E **A site defined exit program failed the request with reason code 800D.**

Explanation: This code indicates that either: (1) an invalid or unacceptable External Reference Number was used; or (2) the change package ID used contained an invalid or unacceptable External Refererence Number.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Resolve the condition that caused the exit to reject the request. If the exit program is in error, correct the exit program. Resubmit the request.

CCV9212E **A site defined exit program failed the request with reason code 800E. This code indicates that an invalid or unacceptable Migration Scheme was used in the request.**

Explanation: This code indicates that the Migration Scheme cannot be used for this command.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Resolve the condition that caused the exit to reject the request. If the exit program is in error, correct the exit program. Resubmit the request.

CCV9213E **A site defined exit program failed the request with reason code 800F. This code indicates that an invalid or unacceptable user ID was used in the request.**

Explanation: This code indicates that the userid does not have authority to this command.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Resolve the condition that caused the exit to reject the request. If the exit program is in error, correct the exit program. Resubmit the request.

CCV9214E **A site defined exit program failed the request with reason code 8010. This code indicates that the requested function was rejected owing to the current status of the change package.**

Explanation: The CICS Configuration Manager server is running with user exits enabled for the requested API command. The user exit program has determined that the change package is not in a suitable state for processing. The exit signals the server to terminate the request.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Resolve the condition that caused the exit to reject the request. If the exit program is in error, correct the exit program. Resubmit the request.

CCV9215E **A site defined exit program failed the request with reason code 8014. This code indicates that the exit either: (1) signalled that the Ready verification check failed; or (2) forced the READY status to be UNREADY.**

Explanation: The CICS Configuration Manager server is running with user exits enabled for the requested API command. The user exit program has determined that the change package is not in a suitable state to be readied. The exit signals the server to terminate the request.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Resolve the condition that caused the exit to reject the request. If the exit program is in error, correct the exit program. Resubmit the request.

CCV9216E **A site defined exit program failed the request with reason code 8015. This code indicates that the exit either: (1) signalled that the Ready verification checks passed; or (2) forced the READY status to be READY.**

Explanation: The CICS Configuration Manager server is running with user exits enabled for the requested API command. The user exit program has determined that the change package is to be marked READY, even though CICS CM has determined that it is not READY.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Resolve the condition that caused the exit to reject the request. If the exit program is in error, correct the exit program. Resubmit the request.

CCV9217E **A site defined exit program failed the request with reason code 8016. This code indicates that the exit determined the change package as not Ready.**

Explanation: The CICS Configuration Manager server is running with user exits enabled for the requested API command. The user exit program has determined that the change package is to be marked NOT READY, even though CICS Configuration Manager has determined that it is READY.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Resolve the condition that caused the exit to reject the request. If the exit program is in error, correct the exit program. Resubmit the request.

CCV9218E **A site defined exit program failed the request with reason code 8017. This code indicates that the exit determined the change package as READY.**

Explanation: The CICS Configuration Manager server is running with user exits enabled for the requested API command. The user exit program has determined that the change package is to be marked READY, even though CICS CM has determined that it is not READY.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Resolve the condition that caused the exit to reject the request. If the exit program is in error, correct the exit program. Resubmit the request.

CCV9219E **A site defined exit program failed the request with reason code 8018. This code indicates that the exit determined that the change package was in a state inappropriate for READY.**

Explanation: The CICS Configuration Manager server is running with user exits enabled for the requested API command. The user exit program has determined that the change package is to be marked NOT READY, even though CICS Configuration Manager has determined that it is READY.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Resolve the condition that caused the exit to reject the request. If the exit program is in error, correct the exit program. Resubmit the request.

CCV9220E **A site defined exit program failed the request with reason code 8019. This code indicates that the exit determined that the change package was in a state inappropriate for UNREADY.**

Explanation: The CICS Configuration Manager server is running with user exits enabled for the requested API command. The user exit program has determined that the change package is not to be marked UNREADY, even though CICS Configuration Manager has determined that it may be 'unreadied'.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Resolve the condition that caused the exit to reject the request. If the exit program is in error, correct the exit program. Resubmit the request.

CCV9221E **A site defined exit program failed the request with reason code 801E. This code indicates that the exit either: (1) signalled that the Approval verification checks failed; or (2) forced the Approval**

status to be DISAPPROVED.

Explanation: The CICS Configuration Manager server is running with user exits enabled for the requested API command. The user exit program has determined that the change package is not to be marked APPROVED or is to be set to DISAPPROVED.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Resolve the condition that caused the exit to reject the request. If the exit program is in error, correct the exit program. Resubmit the request.

CCV9222E A site defined exit program failed the request with reason code 801F. This code indicates that the exit forced the Approval status to be pending approvals.

Explanation: The CICS Configuration Manager server is running with user exits enabled for the requested API command. The user exit program has determined that the change package is to be marked PENDING, even if CICS Configuration Manager would have set an alternative value.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Resolve the condition that caused the exit to reject the request. If the exit program is in error, correct the exit program. Resubmit the request.

CCV9223E A site defined exit program failed the request with reason code 8020. This code indicates that the exit either: (1) signalled that the Approval verification checks passed; or (2) forced the Approval status to be APPROVED.

Explanation: The CICS Configuration Manager server is running with user exits enabled for the requested API command. The user exit program has determined that the change package is to be marked APPROVED, even if CICS Configuration Manager would have set an alternative value.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Resolve the condition that caused the exit to reject the request. If the exit program is in error, correct the exit program. Resubmit the request.

CCV9224E A site defined exit program failed the request with reason code 8021. This code indicates that the exit detected an inconsistency between: (1) an Approval role and user; and/or (2) the Approval verification check and the Approval status.

Explanation: The CICS Configuration Manager server is running with user exits enabled for the requested API command. The user exit program has determined that either the user is not allowed to act in the specified role or the role is not in a state to be approved.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Resolve the condition that caused the exit to reject the request. If the exit program is in error, correct the exit program. Resubmit the request.

CCV9225E A site defined exit program failed the request with reason code 8022.

Explanation: This code indicates that either: (1) an invalid or unacceptable Approval Profile was used in the request; or (2) the change package ID used in the request contained an invalid or unacceptable Approval Profile.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Resolve the condition that caused the exit to reject the request. If the exit program is in error, correct the exit program. Resubmit the request.

CCV9226E A site defined exit program failed the request with reason code 8023.

Explanation: This code indicates that either: (1) an invalid or unacceptable approval role was used in the request; or (2) the change package ID used in the request contained an invalid or unacceptable approval role.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Resolve the condition that caused the exit to reject the request. If the exit program is in error, correct the exit program. Resubmit the request.

CCV9227E A site defined exit program failed the request with reason code 8024. This code indicates that the change package is not approved.

Explanation: The CICS Configuration Manager server is running with user exits enabled for the requested API command. The user exit program has determined that the change package requires approval before it can be migrated, but the package is not approved.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Resolve the condition that caused the exit to reject the request. If the exit program is in error, correct the exit program. Resubmit the request.

CCV9228E **A site defined exit program failed the request with reason code 8025. This code indicates that the change package is approved.**

Explanation: The CICS Configuration Manager server is running with user exits enabled for the requested API command. The user exit program has determined that the change package is approved and ready for migration.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Resolve the condition that caused the exit to reject the request. If the exit program is in error, correct the exit program. Resubmit the request.

CCV9229E **A site defined exit program failed the request with reason code 8026. This code indicates that the exit determined that the change package is in a state inappr opriate for APPROVE.**

Explanation: The CICS Configuration Manager server is running with user exits enabled for the requested API command. The user exit program has determined that the change package is cannot be approved, even though CICS Configuration Manager would have allowed the approval.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Resolve the condition that caused the exit to reject the request. If the exit program is in error, correct the exit program. Resubmit the request.

CCV9230E **A site defined exit program failed the request with reason code 8027. This code indicates that the exit determined that the change package is in a state inappr opriate for DISAPPROVE.**

Explanation: The CICS Configuration Manager server is running with user exits enabled for the requested API command. The user exit program has determined that the change package is cannot be disapproved, even though CICS CM would have allowed the disapproval.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Resolve the condition that caused the exit to reject the request. If the exit program is in error, correct the exit program. Resubmit the request.

CCV9231E **A site defined exit program failed the request with reason code 8028. This code indicates that the exit failed to pass the Migrate validation checks.**

Explanation: The CICS Configuration Manager server is running with user exits enabled for the requested API command. The user exit program has determined that the change package is not eligible to be migrated, even though CICS Configuration Manager would have allowed the migrate.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Resolve the condition that caused the exit to reject the request. If the exit program is in error, correct the exit program. Resubmit the request.

CCV9232E **A site defined exit program failed the request with reason code 8029. This code indicates that the exit failed to pass the Backout validation checks.**

Explanation: The CICS Configuration Manager server is running with user exits enabled for the requested API command. The user exit program has determined that the change package is not eligible to be backed-out, even though CICS Configuration Manager would have allowed the backout.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Resolve the condition that caused the exit to reject the request. If the exit program is in error, correct the exit program. Resubmit the request.

CCV9233E **A site defined exit program failed the request with reason code 802A. This code indicates that the exit determined that the change package is not Migrated.**

Explanation: The CICS Configuration Manager server is running with user exits enabled for the requested API command. The user exit program has determined that the change package is not migrated.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Resolve the condition that caused the exit to reject the request. If the exit program is in error, correct the exit program. Resubmit the request.

CCV9234E **A site defined exit program failed the request with reason code 802B. This code indicates that the exit determined that the change package is Migrated.**

Explanation: The CICS Configuration Manager server is running with user exits enabled for the requested API command. The user exit program has determined that the change package is migrated.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Resolve the condition that caused the exit to reject the request. If the exit program is in error, correct the exit program. Resubmit the request.

CCV9235E **A site defined exit program failed the request with reason code 802C. This code indicates that the exit determined that the change package is in a state inappropriate for Migrate.**

Explanation: The CICS Configuration Manager server is running with user exits enabled for the requested API command. The user exit program has determined that the change package is not eligible to be migrated, even though CICS Configuration Manager would have allowed the migrate.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Resolve the condition that caused the exit to reject the request. If the exit program is in error, correct the exit program. Resubmit the request.

CCV9236E **A site defined exit program failed the request with reason code 802D. This code indicates that the exit determined that the change package is in a state inappropriate for Backout.**

Explanation: The CICS Configuration Manager server is running with user exits enabled for the requested API command. The user exit program has determined that the change package is not eligible to be backed-out, even though CICS Configuration Manager would have allowed the backout.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Resolve the condition that caused the exit to reject the request. If the exit program is in error, correct the exit program. Resubmit the request.

CCV9237E **A site defined exit program failed with RC greater than 8. The request could not be completed and has failed.**

Explanation: The CICS Configuration Manager server is running with user exits enabled for the requested API command. The user exit program has terminated having set a return code above 8. This instructs CICS Configuration Manager to terminate the API command immediately.

System action: The CICS Configuration Manager batch command interface run is terminated.

User response: Resolve the condition that caused the exit to reject the request. If the exit program is in error, correct the exit program. Resubmit the request.

CCV9238E **The change package's list of commands has changed since the change package was processed by Ready. The change package requires Ready processing before it can be approved or manipulated by Migrate.**

Explanation: The change package includes packaged commands. One or more of the commands has changed since the change package was marked Ready, invalidating the Ready state of the package.

System action: None. An APPROVE or MIGRATE command request fails, RC=08.

User response: Review the change package's list of resource definitions and commands. READY the change package prior to APPROVE or MIGRATE processing.

CCV9239E **The change package's list of both candidates and commands has changed since the change package was processed by Ready. The change package requires Ready processing before it can be approved or manipulated by Migrate.**

Explanation: The change package includes both resource definitions and packaged commands. CICS Configuration Manager has detected changes in both the definitions and the commands since the change package was marked Ready, invalidating the Ready state of the package.

System action: None. An APPROVE or MIGRATE command request fails, RC=08.

User response: Review the change package's list of resource definitions and commands. READY the change package prior to APPROVE or MIGRATE processing.

CCV9240E **A change package ADD command has failed processing, because the target ResGroup already contains a different version of the resource definition. The MIGRATE of the change package has failed.**

Explanation: During the migrate of a change package, CICS Configuration Manager has encountered an ADD command for an object. A different version of the object is already associated with the target group. The existing association cannot be changed by a Migrate request.

System action: The MIGRATE request fails, RC=08.

User response: Either (1) remove the ADD command from the change package; or (2) remove the resource definition from the target ResGroup prior to executing the ADD command. Rerun the MIGRATE command request.

CCV9241E **A NOSPACE (out of space) condition occurred on the journal file CCVJNL during command processing. The command request has failed.**

Explanation: The journal file CCVJNL has run out of space.

System action: The command request fails, RC=08.

User response: Increase the space allocation for the CCVJNL data set, and restart the CICS Configuration Manager Server.

CCV9242W Backout found that there were no updates to be backed out.

Explanation: Backout found that there were no updates to be backed out. Either: (1) there were no journal records for the event requested for Backout; or (2) all updates for the event requested for Backout have already been reversed or are in the desired back-out state.

System action: The command completes with warnings, RC=04.

User response: No action is required.

CCV9243E A change package ADD command has failed processing, because the target container for the ADD request does not exist. The MIGRATE of the change package has failed.

Explanation: A change package ADD command cannot be processed because the container or ResGroup for updating does not exist.

System action: The command request fails, RC=08.

User response: Either ensure the contain or ResGroup exists prior to migrating the change package, or remove the ADD command from the change package. Resubmit your MIGRATE request.

CCV9300E Message not found *n*

Explanation: The CCV9300E error message is produced if the program requests a message that is not defined.

System action: None. The batch process continues.

User response: Contact IBM and report this as an error.

CCV9301I Batch processing commenced *string*

Explanation: This message is the header of the batch journal housekeeping report.

System action: None. Information only.

User response: None.

CCV9302I CCVBHKP, RC=*n*

Explanation: This message provides the highest return code from any CICS Configuration Manager API functions performed or attempted during the CICS Configuration Manager batch command interface.

System action: None. Information only.

User response: None.

CCV9303E Open failed for DDname *string* **- please check JCL**

Explanation: A required DDNAME was invalid or not found.

System action: Batch processing terminates.

User response: Correct the DDNAME and resubmit the job.

CCV9304W No input parameters found - please check JCL

Explanation: CCVPARMS DD did not contain any valid control cards.

System action: Batch processing terminates with a warning.

User response: Add valid control cards and resubmit the job.

CCV9305I The following parameters read from CCVPARMS

Explanation: This message is followed by CCVPARMS control cards.

System action: Batch processing continues.

User response: None. This is an information-only message.

CCV9306E Invalid input found at line *n*, **column** *n*

Explanation: CCVPARMS DD did not contain a valid control card.

System action: Batch processing terminates with an error.

User response: See previous CCV9305I message for invalid cards. Correct the control cards and resubmit the job.

CCV9307E Expected keyword *string* **not found or in error**

Explanation: CCVPARMS DD did not contain a valid keyword.

System action: Batch processing terminates with an error.

User response: Correct the control cards and resubmit the job.

CCV9308E Duplicate keyword found: *string*

Explanation: CCVPARMS DD contained a duplicate keyword.

System action: Batch processing terminates with an error.

User response: Correct the control cards and resubmit the job.

CCV9309E *string* **unknown input found**

Explanation: CCVPARMS DD did not contain a valid keyword.

System action: Batch processing terminates with an error.

User response: Correct the control cards and resubmit the job.

CCV9310E Keyword continuation found but no keyword specified

Explanation: A keyword continuation was found but no expected keyword was specified.

System action: Batch processing terminates with an error.

User response: Correct the control cards and resubmit the job.

CCV9311E LOAD and UNLOAD are mutually exclusive

Explanation: Load and unload cannot be used together.

System action: Batch processing terminates with an error.

User response: Correct the control cards and resubmit the job.

CCV9312E End bracket not found or in error

Explanation: An end bracket was expected but not found.

System action: Batch processing terminates with an error.

User response: Correct the control cards and resubmit the job.

CCV9313E Unable to connect to server

Explanation: Connection to the CICS Configuration Manager server failed using the specified IPADDRESS and port.

System action: Batch processing terminates with an error.

User response: This is probably a User error. Please check that the port details are specified correctly and that the CICS Configuration Manager Server (and port) are available. If the problem persists contact IBM support.

CCV9314I TCP/IP Connection established with applid *string*

Explanation: Connection to the CICS Configuration Manager server was successful.

System action: Information message, processing continues.

User response: None.

CCV9315E EXCI returned an error: rc=%02X rsn=%08X

Explanation: EXCI call to CICS failed.

System action: Batch processing terminates with an error.

User response: See external CICS interface manual. Correct the control cards and resubmit the job. If the problem persists contact IBM support.

CCV9316E CCVAMJNL error: rc=%02X rsn=%08X i1=%08X i2=*string*

Explanation: Server component CCVAMJNL failed.

System action: Batch processing terminates with an error.

User response: Correct and resubmit the job. If the problem persists contact IBM support.

CCV9317I *n* **records read from journal**

Explanation: Information only.

System action: None, processing continues.

User response: None.

CCV9318I *n* **records read from CCVLOAD**

Explanation: Information only.

System action: None, processing continues.

User response: None.

CCV9319I *n* **records matched criteria**

Explanation: Information only.

System action: None, processing continues.

User response: None.

CCV9320I *n* **duplicate records found**

Explanation: Information only.

System action: None, processing continues.

User response: None.

CCV9321I *n* **records loaded to journal**

Explanation: Information only.

System action: None, processing continues.

User response: None.

CCV9322I *n* **records deleted from journal**

Explanation: Information only.

System action: None, processing continues.

User response: None.

CCV9323I *n* **records written to CCVUNLD DD**

Explanation: Information only.

System action: None, processing continues.

User response: None.

CCV9324E Memory allocation error

Explanation: CCVBHKP attempted to obtain some above the line storage and failed.

System action: Batch processing terminates with an error.

User response: Check job region size and resubmit the job. If the problem persists contact IBM support.

CCV9325E Error connecting to region via EXCI. EXCI_RESPONSE=*n* **EXCI_REASON=***n***.**

Explanation: CCVBHKP attempted to connect via EXCI and failed.

System action: Batch processing terminates with an error.

User response: Check CICS configuration and resubmit the job. If the problem persists contact IBM support.

CCV9326I KEEPINSTANCES keyword ignored as DELETE=NO specified

Explanation: Information only.

System action: None, processing continues.

User response: None.

CCV9327E An IO Error has occurred on DD name *string*

Explanation: An IO Error has occurred.

System action: Batch processing terminates with an error.

User response: Examine the message log for further information. Correct the problem and resubmit the job.

CCV9328E *string* **: invalid DSORG. Must be PS**

Explanation: The DSORG of the data set is not of type PS.

System action: Batch processing terminates with an error.

User response: Correct the Data set Organization of the data set and resubmit the job.

CCV9329E *string* **: invalid RECFM. Must be V or VB.**

Explanation: The RECFM of the data set is not of type V or VB.

System action: Batch processing terminates with an error.

User response: Correct the Record Format of the data set and resubmit the job.

CCV9330E *string* **: invalid LRECL. Must greater than or equal to** *n*

Explanation: The LRECL of the data set is less than the required length.

System action: Batch processing terminates with an error.

User response: Correct the Logical record length of the data set and resubmit the job.

CCV9331E *string* **: invalid BLKSZ. Must greater than or equal to LRECL plus 4**

Explanation: The BLKSZ of the data set is less than the required length of LRECL + 4.

System action: Batch processing terminates with an error.

User response: Correct the Block size of the data set and resubmit the job.

CCV9332I *n* **records rejected**

Explanation: Information only.

System action: None, processing continues.

User response: None.

CCV9338E Only a minus sign is allowed for the TODAY parameter

Explanation: The format of the DATE= condition may be TODAY-100. An operand other than '-' has been used.

System action: Job is terminated.

User response: Correct the card in error and resubmit the job.

CCV9339E The number of days is not numeric

Explanation: The format of the DATE= condition may be TODAY-100. The amount specified is not numeric.

System action: Job is terminated.

User response: Correct the card in error and resubmit the job.

CCV9340E The number of days must not exceed 9999

Explanation: The format of the DATE= condition may be TODAY-100. The amount specified is greater than 9999.

System action: Job is terminated.

User response: Correct the card in error and resubmit the job.

CCV9341E Date must be a valid date in the format: YYYY/MM/DD or YYYY-MM-DD

Explanation: The format of the DATE= condition may only be YYYY/MM/DD or YYYY-MM-DD. 9999.

System action: Job is terminated.

User response: Correct the card in error and resubmit the job.

Appendix B. Reporting a problem to IBM

Before reporting a problem with CICS Configuration Manager to IBM support, gather the following information:

- Version, release, modification number, and details of applied maintenance (such as PTF numbers) for:
  - CICS Configuration Manager
  - CICS Transaction Server

    Typically, there are several instances of CICS Transaction Server involved:
    - The instance running the CICS Configuration Manager server.
    - The instances associated with the CICS configurations.

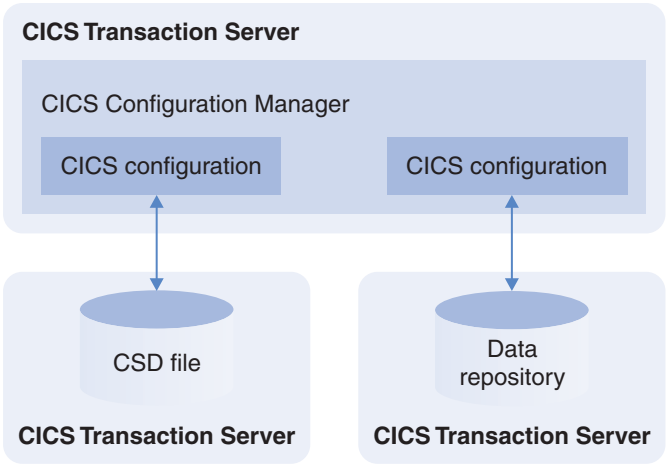


Figure 120. Example usage involving several instances of CICS Transaction Server

    Each instance of CICS Transaction Server involved could be at a different release. For example, you could be using CICS Configuration Manager to migrate resource definitions between CICS configurations that are associated with different releases of CICS Transaction Server. And both of these could be at different releases than the CICS Transaction Server that is running the CICS Configuration Manager server. In this case, you need to gather the details for three instances of CICS Transaction Server.
- Which CICS Configuration Manager interface you were using (batch or ISPF)
- A brief description of what you were doing at the time of the problem, including:
  - The JCL for the batch command

    or
  - The ISPF panel that you were using (use the ISPF command **PANELID** to get the panel identifier), with input field values.
- The keys (names) of the objects that you were working on. For example:
  - Resource definitions (names, types, and groups)
  - CICS configurations

    Important: For each CICS configuration, note the associated CICS Transaction Server release level, and also whether the CICS configuration refers to a CSD file or a CICSPlex SM context.

  - Change packages
  - Migration schemes
- Extracts from the following CICS Configuration Manager server SYSOUT output file ddnames:

  CCVLOG
  CICS Configuration Manager messages

  CCVPRINT (batch only)
  CICS Configuration Manager batch interface output

  JESMSGLG
  MVS, VSAM, and RACF

  CEEMSG
  Language Environment
- If possible, the XML of the CICS Configuration Manager API command and response.

  Tip: To capture the XML that is transferred between the server and the ISPF dialog interface, open the Settings pull-down menu and set XML print on.
- The effect of the problem on your workflow, including details of any workaround that you use.
- If available, a CICS system dump. If you have a re-createable problem that either produces a CICS system dump, or for which a CICS system dump can be captured, please ensure SPECIAL tracing is enabled for transaction CCVA. Even when CICS tracing is active, CICS suppresses trace records for CCVA, so that the system dump is missing data vital to problem determination. To activate special tracing:
  1. Sign on to CICS
  2. Run transaction CETR
  3. Press F5 (ter/trn)
  4. In the Transaction ID, enter CCVA
  5. In Transaction status, enter SPECIAL
  6. Press F3 to return to the CETR menu, but do not exit CETR (that would cancel the special trace request)
  7. Run the failing process and capture the system dump
  8. Now exit CETR

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