



IBM Software Group

CICS Transaction Server for z/OS V4.1

Upgrading to Version 4.1



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This presentation provides information about upgrading to CICS® Transaction Server for z/OS® Version 4.1.

Agenda

- Changes that affect CICS startup
- Changes to interfaces
- Discontinued functions
- Planning information
- Summary



This module describes the external changes to CICS, including new resources, new application and system programming interface, global user exits, and monitoring and statistics enhancements. This module also provides a summary of functions that have been removed in this release.

If you are upgrading from an earlier release than CICS Transaction Server Version 3.2, there might be additional changes and enhancements. Read the appropriate upgrading material in the CICS Transaction Server Version 4.1 information center for a summary of the changes between this release and previous releases. If you are upgrading from an earlier release than CICS Transaction Server V2.3, you can read the appropriate upgrading guide in the CICS Transaction Server Version 3.2 information center.

CICS local and global catalog changes

- Key length increased to 52 bytes
- Maximum record size increased
- Define new data sets
 - ▶ Initialize the local catalog
 - ▶ Perform an INITIAL start



Both the key length and the maximum record size of the CICS global and local catalogs have increased in CICS Transaction Server Version 4.1. Each catalog record has a 52-byte key. Each entry is one VSAM record, and the records for each type of table have different keys. You must redefine your catalog data sets, initialize the local catalog, and perform an INITIAL start of your CICS region. The “Setting up the catalog data sets” section of the information center describes how to create the global and local catalogs. It also provides a table listing the sizing for each type of installed resource definition, table entry, or control block. Most resource definitions have increased in size because of the resource signature.

New system initialization parameters

- USSHOME={/usr/lpp/cicsts/cicsts41/ | directory | NONE}
 - ▶ Name and path of the root directory for CICS files on z/OS UNIX®

- MNIDN={OFF|ON}
 - ▶ Status of the monitoring identity class



There are two new system initialization parameters in CICS Transaction Server Version 4.1. The USSHOME system initialization parameter specifies the name and path of the root directory for CICS Transaction Server Version 4.1 files on z/OS UNIX. The syntax of the values that you can specify, including the default value, is shown in the curly brackets. The value of this parameter must match the directory that you specified for CICS Transaction Server Version 4.1 files on z/OS UNIX when you installed CICS using the DFHISTAR installation job. The default value matches the default values for the DFHISTAR installation job. If you changed any of the TINDEX, PATHPREFIX, or USSDIR parameters in the DFHISTAR installation job, you must specify the same values in the USSHOME system initialization parameter. If you specify USSHOME=NONE, CICS does not use any default root directory in the UNIX System Services file system. In this case, some CICS functions that request data from this directory might produce unpredictable results.

The MNIDN system initialization parameter specifies whether the monitoring identity class is to be made active during CICS initialization. The monitoring identity class status is recorded in the CICS global catalog for use during warm and emergency restarts. The default value is OFF.

A new monitoring Identity Class data record is written by CICS as an SMF 110 subtype 1 record. The new record is created during transaction detach processing for each transaction that has identity context propagation data (a distinguished name and realm). The Performance Class record field now includes an indicator in the current Transaction Flags field that indicates that there is an identity record available for this task.

Changed system initialization parameters

- INITPARM=(DFHMQPRM=....)
 - ▶ DFHMQPRM no longer supported
 - ▶ Replaced by the MQCONN resource definition
- MQCONN={NO|YES}
 - ▶ Connect to MQ during initialization
 - ▶ Use the attributes in the MQCONN resource definition
- JVMPROFILEDIR={ /usr/lpp/cicsts/cicsts41/JVMProfiles | directory }
 - ▶ Location of the JVM profile directory
 - ▶ USSHOME SIT parameter + JVMPROFILEDIR
- PSTYPE={SNPS|MNPS|NOPS}
 - ▶ Specifies persistent session support required

You can no longer use the INITPARM system initialization parameter with a DFHMQPRM operand to specify a default WebSphere® MQ queue manager name and initiation queue name for the CICS-WebSphere MQ connection. Instead, use an MQCONN resource definition for the CICS region to provide these defaults. CICS issues a warning message if the DFHMQPRM operand is present when you start the CICS-WebSphere MQ connection, and the settings are ignored. The INITPARM system initialization parameter itself is still valid with other operands.

When you specify MQCONN=YES, the information that CICS requires to start the connection to WebSphere MQ is taken from the MQCONN resource definition for the CICS region.

An MQCONN resource definition must be installed before CICS can start the connection to WebSphere MQ. When you start the connection automatically at CICS initialization, the MQCONN resource definition must be present in one of the groups named in the list or lists named by the GRPLIST system initialization parameter. For a warm or emergency start of CICS, the MQCONN resource definition must be installed by the end of the previous CICS run.

The default value for the JVMPROFILEDIR system initialization parameter now includes the value of the new USSHOME system initialization parameter, followed by the subdirectory JVMProfiles. The default value for the JVMPROFILEDIR parameter is shown in the curly brackets.

NOPS is a new option for the PSTYPE system initialization parameter. If you do not require persistent sessions support, specify NOPS.

New and changed CICS supplied transactions

- CEMN
 - ▶ New options for DPL, file, and tsqueue resource limits
- CKQC
 - ▶ MQCONN resource definitions supplies default settings
- CRTE
 - ▶ Supports transaction routing over IPIC
- CWWU
 - ▶ Alias transaction for the system management client API
- CW2A
 - ▶ Alias transaction for Atom service requests

Some CICS supplied transactions have changed and new transactions have been added to support new functions. The CEMN transaction now includes the new distributed program link (DPL) resource limit. You can change the DPLLIMIT, FILELIMIT, and TSQUEUELIMIT values using the CEMN transaction.

When you use the CKQC transaction, the default settings in the transaction are now taken from the MQCONN resource definition for the CICS region, rather than from an INITPARM system initialization parameter.

The routing transaction, CRTE, now supports transaction routing over an IPIC connection.

The CICS management client interface (CMCI) uses transaction CWWU instead of CWBA to run the CICS alias program DFHWBA, to distinguish CMCI requests from other types of Web requests.

CICS uses CW2A, the default alias transaction for Atom feeds, for processing ATOMSERVICE resource definitions.

New category 1 transactions...

- New CICS RACF® category 1 transactions
 - ▶ CEPD
 - Event processing dispatcher
 - ▶ CEPM
 - Event processing queue manager
 - ▶ CISB
 - IPCONN release processing
 - ▶ CISM
 - IS remote scheduler
 - ▶ CISQ
 - IS local queue processor
 - ▶ CISX
 - IPCONN recovery processing
 - ▶ CIS4
 - IS external security interface
 - ▶ CJSR
 - JVM server resolution
 - ▶ CRLR
 - Bundle resource resolution

This is a list of new category 1 transactions. These transactions must be defined to your external security manager. The CICS region user ID must be authorized to use them, so that CICS can initialize successfully when it is running with security enabled; that is, with system initialization parameter SEC=YES. For a full list of all the CICS category 1 transactions, see *Category 1 transactions* in the information center. Also see the DFH\$CAT1 CLIST, supplied in the SDFHSAMP library.

Obsolete and new options on CEMT

- **Obsolete options**
 - ▶ INQUIRE CLASSCACHE (PROFILE option)
- **New options**
 - ▶ DISCARD
 - ATOMSERVICE, BUNDLE, EVENTBINDING, JVMSERVER, MQCONN
 - ▶ INQUIRE and SET
 - ATOMSERVICE, BUNDLE, EVENTBINDING, EVENTPROCESS, JVMSERVER, MQCONN, MQINI, XMLTRANSFORM
 - ▶ INQUIRE SYSTEM
 - CICSTSLEVEL returns 040100
 - RELEASE returns 0660



The CEMT transaction has one obsolete option. If you enter CEMT INQUIRE CLASSCACHE, the PROFILE option is obsolete and is no longer displayed. The PROFILE option used to specify the JVM profile for the master JVM, which is no longer required.

You can also use new options on CEMT to discard, inquire, and set the status on new resources. CEMT INQUIRE SYSTEM now returns the CICS version and release numbers.

Changed options on CEMT

- Changes to support IPv6
 - ▶ CORBASERVER, IPCONN, TCPIP SERVICE, WORKREQUEST
- INQUIRE DISPATCHER
 - ▶ ACTTHRDTCBS, MAXTHRDTCBS
- INQUIRE Monitor
 - ▶ Identity class
 - ▶ DPL limit
- INQUIRE TERMINAL and TRANSACTION
 - ▶ REMOTESYSTEM shows IP information
- INQUIRE URIMAP
 - ▶ New option AUTHENTICATE indicates whether specified host requires authentication
- INQUIRE VTAM®
 - ▶ Persistent sessions specification
- Resource signature data options added



The CEMT transaction also has changed options. The HOST option has been extended to display IPv6 addresses. The values HOSTNAME, IPV4HOST, IPV6HOST, and NOTAPPLIC filter the contents of the new HOST option. A new option, IPRESOLVED, displays the IPv4 or IPv6 address of the host. The values IPV4FAMILY, IPV6FAMILY, and UNKNOWN filter the contents of the new IPRESOLVED option.

Two new options are added to the CEMT INQUIRE DISPATCHER command for JVM servers. ACTTHRDTCBS displays the number of T8 mode open TCBS that are currently active; that is, allocated to a user task. MAXTHRDTCBS displays the maximum number of T8 mode open TCBS that can exist concurrently in the CICS region for all enabled JMVSERVER resources.

The CEMT INQUIRE MONITOR command has two new options. DPLLIMIT displays the maximum number of distributed program link requests for which transaction resource class monitoring data is being collected. IDNTYCLASS specifies whether identity class monitoring is enabled. The default for data compression has also changed so that monitoring records are compressed.

The CEMT INQUIRE TERMINAL and CEMT INQUIRE TRANSACTION commands both now return information about IPIC connections in the REMOTESYSTEM option.

The CEMT INQUIRE URIMAP has a new option, AUTHENTICATE, that displays information about whether the host specified in the USAGE(CLIENT) URIMAP resource requires authentication.

The CEMT INQUIRE VTAM command has a new option PSTYPE that displays the type of VTAM persistent sessions support for the CICS region.

The definition and installation signature options are added to the CEMT INQUIRE command for most CICS resources.

Resource definition

■ CICS system definition (CSD) data set

- ▶ Define new CSD
- ▶ REPRO existing CSD to new data set
- ▶ Run DFHCSDUP UPGRADE
 - Use DFHCSDUP SCAN command to check for user changes
 - Review CEE group
- ▶ Sharing the CSD
 - CICS V4.1 CSD can be shared with prior releases
 - Check for the appropriate compatibility groups



You must define a new CSD. You can either copy your existing CSD to a new data set using the REPRO command or create a new CSD. If you copy your existing CSD, run the DFHCSDUP utility program, specifying the UPGRADE command. DFHCSDUP upgrades the CICS-supplied definitions in your CSD to the latest CICS level. To create a new CSD, use the DFHCSDUP INITIALIZE command. You must ensure that you have enough space allocated to the CSD for your definition records.

If you have records in your CSD to support other IBM products, you might need to upgrade these definitions as well. For example, if your Language Environment resource definitions are not at the correct z/OS level, delete and replace the CSD group containing these definitions. The Language Environment resource definitions are in the SCEESAMP library in member CEECCSD.

You can share a CICS Transaction Server Version 4.1 CSD with CICS regions that run on older releases of CICS. Include the appropriate DFHCOMPx compatibility groups in your startup group list to provide the required support for earlier releases. You must install the compatibility groups in the correct order. Do not attempt to share a CSD with a CICS region running at a higher level than the CSD. For information about the ordering of compatibility groups, see the “CSD compatibility between different CICS releases” topic in the CICS Transaction Server Version 4.1 information center.

Resource definition changes

- New resource definitions
 - ▶ ATOMSERVICE
 - ▶ BUNDLE
 - ▶ JVMSERVER
 - ▶ MQCONN
- Changed resource definitions
 - ▶ Changes to support IPv6
 - CORBASERVER, IPCONN, TCPIPService
 - ▶ IPCONN
 - IDPROP option added
 - ▶ URIMAP
 - ATOMSERVICE and AUTHENTICATE option added
- New resource groups
 - ▶ DFHRL
 - ▶ DFHRS
 - ▶ DFHWEB2
 - ▶ DFHWU



There are new and changed resource definitions in this release.

The new ATOMSERVICE resource defines an Atom service, feed, collection, or category document. It also identifies the Atom configuration file, CICS resource or application program, and XML binding that supply the data for the feed.

The new BUNDLE resource defines the resources and artifacts associated with a bundle, a unit of deployment for an application. Applications that are deployed as bundles include Service Component Architecture (also known as SCA) composites, events, and XML transformations. Depending on the manifest declarations, CICS can dynamically create EVENTBINDING, CAPTURESPEC, XMLTRANSFORM, WEBSERVICE, and URIMAP resources.

The new JVMSERVER resource defines the runtime environment for a JVM server, including the Language Environment enclave options and the number of threads that can be used.

The new MQCONN resource definition defines the attributes of the connection between CICS and WebSphere MQ. Only one MQCONN resource definition can be installed at a time in a CICS region. You must install an MQCONN resource definition before you start the connection between CICS and WebSphere MQ. When you install an MQCONN resource definition that includes a setting for the INITQNAME attribute, CICS also installs an MQINI resource dynamically.

The CORBASERVER, IPCONN, and TCPIPService resources have all changed to support IPv6. The IPCONN resource definition also has a new attribute, IDPROP that you can use to specify whether the distributed identity is transmitted to the connected system by the sender.

The URIMAP resource has two new options, ATOMSERVICE and AUTHENTICATE. The ATOMSERVICE option applies when the URIMAP USAGE option is ATOM, so the resource is used for an Atom feed. The URIMAP definition maps the request URI to an ATOMSERVICE resource definition, which defines an Atom document. The ATOMSERVICE option defines the ATOMSERVICE resource that CICS uses to satisfy the request. The AUTHENTICATE option applies when the URIMAP USAGE option is CLIENT. The AUTHENTICATE option specifies whether to send HTTP basic authentication information from a Web service requester to a Web service provider using the global user exit, XWBAUTH.

The new CICS supplied resource definitions are provided in a set of new groups that are added to your CSD when you run the UPGRADE command. The DFHRL group contains the resource definitions for application bundles support. The DFHRS group contains the CICS region status support. The DFHWEB2 group contains the resource definitions for Atom feed support. The DFHWU group contains the resource definitions for the CICS management client interface.

New API commands

- BIF DIGEST
- SIGNAL EVENT
- TRANSFORM DATATOXML and TRANSFORM XMLTODATA
- WEB READ QUERYPARM and browse QUERYPARM
- WSACONTEXT
- WSAEPR CREATE
- INVOKE SERVICE command
 - ▶ Replaces INVOKE WEBSERVICE command
 - ▶ INVOKE WEBSERVICE available for compatibility

CICS Transaction Server V4.1 includes some new application programming interface commands (also known as API commands) that you can use to create application programs that use new CICS functions.

The EXEC CICS BIF DIGEST command calculates the SHA-1 digest of a string of data.

The EXEC CICS SIGNAL EVENT command identifies a place in an application program where one or more events can be emitted for event processing.

The EXEC CICS TRANSFORM DATATOXML command converts application data to XML.

The EXEC CICS TRANSFORM XMLTODATA command converts XML to application data.

The EXEC CICS WEB READ QUERYPARM command reads name and value pairs from a query string in a URL.

The EXEC CICS WEB STARTBROWSE QUERYPARM command starts browsing the query string data in a URL.

The EXEC CICS WEB READNEXT QUERYPARM command gets the next item in the query string.

The EXEC CICS WEB ENDBROWSE QUERYPARM command finishes browsing the query string data in a URL.

The EXEC CICS WSACONTEXT BUILD command inserts or replaces WS-Addressing message addressing properties (also known as MAPs) in the addressing context.

The EXEC CICS WSACONTEXT DELETE command deletes the addressing context.

The EXEC CICS WSACONTEXT GET command, when used in a service provider application, gets the message addressing properties sent by the service requester. Use the WSACONTEXT GET command in a service requester to get the MAPs of the reply message.

The EXEC CICS WSAEPR CREATE command creates an endpoint reference (also known as EPR) to represent a Web service or Web service resource.

The EXEC CICS INVOKE SERVICE command calls a service from a CICS application. The command specifies the name of a service or the CICS resource, such as a WEBSERVICE resource, that contains information about the service to be called. This command replaces the INVOKE WEBSERVICE command, although any existing applications that use INVOKE WEBSERVICE will continue to work.

Changed API commands

- Options added to support IPv6
 - EXTRACT TCPIP
 - EXTRACT WEB
 - WEB OPEN
 - WEB PARSE URL
- EXEC CICS ASKTIME
 - ▶ ABSTIME value returned is:
 - The system time-of-day clock
 - Adjusted for leap seconds and the local time zone offset
 - Truncated to the millisecond
 - No longer rounded to 1/100 of a second
- EXEC CICS CONVERTTIME
 - ▶ Recognizes date and time stamp strings in the RFC 3339 format
 - For example, 2003-04-01T10:01:02.498Z
- EXEC CICS FORMATTIME
 - ▶ STRINGFORMAT option now supports 'RFC3339'
 - ▶ New MILLISECONDS option

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The commands listed here have a HOST option that is extended to support IPv6 addresses. A new option, HOSTTYPE, returns the format of the HOST option.

The ABSTIME value that is returned by the EXEC CICS ASKTIME command is no longer rounded to the nearest 1/100 second. The absolute time returned is the system time-of-day clock, adjusted for leap seconds and the local time zone offset, truncated to the millisecond, and returned as a packed decimal of length eight bytes. It therefore represents the number of milliseconds since 00:00 on 1 January 1900 in the local time zone and adjusted for daylight saving time.

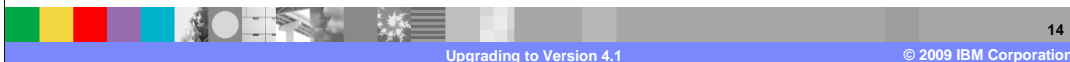
The CONVERTTIME command recognizes the dateTime datatype, specified in Request for Comments document (also known as RFC) 3339, which is taken from the ISO 8601 standard. This format is required for Atom feeds. An example of a date and time stamp in this format is "2003-04-01T10:01:02.498Z". Date and time stamps in this format are in Coordinated Universal Time (also known as UTC), which differs only slightly from GMT. The time zone offset (-12:00 to +12:00) is indicated at the end of the date and time stamp, or the letter Z for a zero offset (+00:00) might appear. The decimal fraction of a second that is shown in the example is optional.

The FORMATTIME command has a new CVDA value, RFC3339, for the STRINGFORMAT option which specifies the RFC 3339 format for the architected date and time stamp string returned in DATESTRING. This command also has a new option, MILLISECONDS, that returns the number of milliseconds in the current second that is specified by ABSTIME, as a binary integer in the range 0 - 999.

Before CICS Transaction Server Version 4.1, the EXEC CICS FORMATTIME command rounded up a returned time if the number of milliseconds was greater than 500, except where the ABSTIME argument contained a value representing the half-second before midnight. This rounding is no longer carried out. The returned time (for example, with the TIME option) is given with the number of completed seconds. You can use the new MILLISECONDS option to obtain the number of milliseconds and you can perform your own rounding if you need to replicate the former behavior of the command.

Systems programming interface

- New commands
 - ▶ CREATE
 - ATOMSERVICE, BUNDLE, JVMSERVER, MQCONN
 - ▶ DISCARD
 - ATOMSERVICE, BUNDLE, EVENTBINDNG, JVMSERVER, MQCONN
 - ▶ INQUIRE
 - ATOMSERVICE, BUNDLE, BUNDLEPART, CAPTURESPEC, EVENTBINDING, EVENTPROCESS, JVMSERVER, MQCONN, MQINI, XMLTRANSFORM
 - ▶ SET
 - ATOMSERVICE, BUNDLE, EVENTBINDING, EVENTPROCESS, JVMSERVER, MQCONN, XMLTRANSFORM
 - ▶ CSD
 - Allows manipulation of the CICS System Definition file
- Changed commands
 - ▶ Similar to CEMT changes



The system programming interface has new commands to control new system resources or to work in new ways with existing resources. You can use the system programming interface to create, discard, inquire, and set the resources listed here. The system programming interface has also been extended to provide a command-level alternative to the CEDA transaction and the DFHCSDUP utility to update the CSD. Like other system programming interface commands, you can use the CSD commands in programs written in any CICS-supported language. They are recognized by the command interpreter (CECI), the execution diagnostic facility (EDF), and the CICS translator. For details, see the Reference > System programming > System commands section of the CICS Transaction Server Version 4.1 information center.

The changed system programming interface commands are similar to the changed CEMT interface.

Global user exits

- Analyze all global user exits to ensure that they are threadsafe and change the PROGRAM definitions to specify CONCURRENCY(THREADSAFE)
- Changes to the standard parameter list (DFHUEPAR)
 - ▶ UEPGIND, task indicator field
 - EP
 - Event processing TCB
 - TP
 - Owns the Language Environment enclave and THRD TCB pool for a JVM server
 - T8
 - Used by a JVM server to attach pthreads for system processing
- All exits using XPI calls **MUST** be reassembled



If possible, analyze all of your global user exits to ensure that they are threadsafe and change the appropriate PROGRAM resource definitions to specify CONCURRENCY(THREADSAFE).

The DFHUEPAR standard parameter list of TCB two-character codes and symbolic values addressed by the global user exit task indicator field, UEPGIND, is extended to support the new EP, TP, and T8 open TCB modes.

If a global user exit or task-related user exit is assembled using CICS libraries from a release earlier than CICS Transaction Server Version 4.1 and makes an exit programming interface (also known as XPI) call on a CICS Transaction Server Version 4.1 system, the exit will fail. You will receive an error message and the transaction that called the exit might end. You must reassemble all global user exits and task-related user exits, against the CICS Transaction Server Version 4.1 libraries, if they contain any XPI calls.

New and changed GLUEs

- **New exits**
 - ▶ XISQLCL, XWSPRRWI, XWSPRROI, XWSPRROO, XWSPRRWO, XWSRQRWO, XWSRQROO, XWSRQROI, XWSRQRWI, XWSSRRWO, XWSSRROO, XWSSRROI, XWSSRRWI
- **Changed exits**
 - ▶ Changes to support IPv6
 - XWBAUTH, XWBOPEN, XWBSNDO
 - ▶ Changes to support Breaking Event Address Register
 - XPCTA, XPCABND, XPCHAIR
 - ▶ Changes to support extended z/Architecture®
 - XSRAB
 - ▶ Changes to support resource signatures and new resources
 - XRSINDI



You can use the XISQLCL exit for EXEC CICS START NOCHECK commands that are scheduled for an IPIC connection.

You can use new global user exits to control, monitor, and customize Web service requests. You can use four exit points when CICS is the service provider. When CICS is the service requester there are eight possible exit points. You can use four exit points in Web service requests that do not use Web services security and an additional four exit points when a security handler is present in the pipeline.

XWBAUTH, XWBOPEN, and XWBSNDO exits now support IPv6 addressing. You must ensure that any programs that use these global user exits can process IPv6 addresses that are passed in the UEPHOST parameter.

The transaction abend control block (also known as the TACB), now includes the breaking event address register information; that is, the BEAR information. The XPCTA, XPCABND, and XPCHAIR global user exits are passed a pointer to the TACB parameter. You must reassemble these exits only if the new information is to be processed by the exit or the ABNDMSGT is not referenced by its address in field ABNDAMSG. The TACB also includes additional general purpose and floating point register information.

The system recovery program exit, XSRAB, has new fields to support the extended z/Architecture MVS linkage support.

The XRSINDI global user exit is called when CICS installs or discards a resource definition. This global user exit has new parameters to support the resource signatures and the range of values in the 1-byte field addressed by the UEPIDTYP parameter includes the new resource types.

XWBAUTH global user exit

- Exit point moved to Web domain from the EXEC layer
- XWBAUTH driven for outbound Web services requests
 - ▶ Exit driven for a Web service requester if:
 - A URIMAP with USAGE(CLIENT) is present
 - Basic authentication is requested
 - AUTHENTICATE(BASIC)
 - Exit XWBAUTH is enabled
 - ▶ EXEC CICS WEB SEND|CONVERSE requests drive the exit

This is a change to where the XWBAUTH global user exit is driven. In CICS Transaction Server Version 3.2, the XWBAUTH exit is driven only for EXEC CICS requests. In CICS Transaction Server Version 4.1, if you want Web services to send requests over HTTP with authentication, you can use the parameter AUTHENTICATE(BASIC) on a USAGE(CLIENT) URIMAP. This configuration results in Web services driving the XWBAUTH global user exit, if enabled, on outbound requests where the user ID and password are added to the outbound HTTP request.

EXEC CICS WEB SEND and EXEC CICS WEB CONVERSE commands also drive the XWBAUTH exit.

User replaceable modules

- Changes to support IPv6
 - ▶ Analyzer program for Web support
 - ▶ Converter program for Web support
 - ▶ Web error program
- DFHPEP
 - ▶ Changes to support Breaking Event Address Register
 - ▶ Changes to support extended z/Architecture linkage conventions



The analyzer program for CICS Web support has new fields to handle IPv6 addressing. User replaceable modules will behave as before with all IPv4 connections and you do not have to recompile existing modules unless they use the new parameters. If you introduce an IPv6 connection, the fields are populated with zeros.

The converter program for CICS Web support also has new fields to handle IPv6 addressing. User replaceable modules will behave as before with all IPv4 connections and you do not need to recompile existing modules unless they use the new parameters. If you introduce an IPv6 connection, the fields are populated with zeros.

The Web error program, DFHWBEP, also has new fields to handle IPv6 addressing. User replaceable modules will behave as before with all IPv4 connections and you do not need to recompile existing modules unless they use the new parameters. If you introduce an IPv6 connection, the fields are populated with zeros.

The program error program, DFHPEP, has a new field to support the improvements in wild branch diagnosis and new fields to support the extended z/Architecture MVS linkage conventions.

Monitoring and statistics

- Monitoring
 - ▶ Record size increases to 2672 bytes
- COMPRESS=YES is now the default
 - ▶ New monitoring data
 - Event processing
 - Web services
 - Web 2.0
- Statistics
 - ▶ DFHSTUP support for new resources
 - ATOMSERVICE, BUNDLE, CAPTURESPEC, EVENTBINDING, EVENTPROCESS, JVMSERVER, PROGRAMDEF, XMLTRANSFORM



The changes to CICS monitoring data might affect user-written and vendor-written utilities that analyze and print CICS SMF 110 monitoring records.

The length of a standard performance class monitoring record, as output to SMF, has increased to 2672 bytes. The length does not take into account any user data that you add or any system-defined data fields that you exclude by using a monitoring control table. The offsets have changed for several default CICS dictionary entries in the dictionary data sections of CICS monitoring SMF 110 records.

CICS Transaction Server for z/OS, V3.2 introduced a data compression facility for SMF 110 monitoring records that can provide a significant reduction in the volume of data written to SMF. All monitoring records, except identity records, are compressed by default. If you do not want to compress monitoring records, you must change the compression option to COMPRESS=NO.

The statistics formatting utility program now formats additional statistics reports for the new statistics. You can code new resource types on the SELECT TYPE and IGNORE TYPE parameters using the keywords listed in the final bullet. You can retrieve all the new statistics using the EXEC CICS EXTRACT STATISTICS command, the EXEC CICS PERFORM STATISTICS RECORD command, and the CEMT PERFORM STATISTICS command.

CICSplex System Manager (SM)

- CICSplex® SM upgrade similar to previous releases
 - ▶ Maintenance point CMAS must be upgraded first

 - ▶ CMAS and MAS agent code must all be at V4.1 level
 - CMAS common work area (CWA) size is now 2048 bytes

 - ▶ WUI server and its connected CMAS must be at V4.1 level
 - Migrate contents of WUI server repository
 - Views and resource tables added to reflect the new resource types



If you are using CICSplex System Manager, you must upgrade your CICSplex SM address space (also known as your CMAS) to CICS Transaction Server Version V4.1 at the same time as you upgrade the CICS system on which it runs. A CMAS can run only in a CICS system at the same release level. The common work area of the CMAS is now 2048 bytes.

Both the Web User Interface server (also known as WUI server) and the CMAS that it connects to must be at the highest level of CICSplex SM within the CICSplex. Both must be at the same level as the maintenance point CMAS. Before you upgrade a WUI server, you must upgrade the CMAS that it connects to. You must upgrade the WUI server before you upgrade any other MASs; that is, any other CICS regions that are being managed by CICSplex SM. If the CMAS that the WUI server connects to is not the maintenance point CMAS, you must upgrade the maintenance point CMAS at the same time. As the CICS system that acts as your WUI server is a local MAS, all the considerations that apply to a local MAS also apply to a WUI server.

Discontinued function

- Support for the SOAP for CICS feature
- CICS documentation in Book Manager format
- Support for Java™ 1.4.2 and Java 5
- Support for the DFHCSDUP MIGRATE command
- Support for CICSplex SM WLMLOADCOUNT and WLMLOADTHRSH values



There are some functions that have been discontinued in CICS Transaction Server Version 4.1. Support for the SOAP for CICS feature is withdrawn. If you are using the SOAP for CICS feature, upgrade to the Web services capabilities provided as part of CICS Transaction Server Version 3, or later.

CICS documentation is no longer published in BookManager® format. Use the CICS Transaction Server Version 4.1 information center instead. The online information center is updated on a regular basis and includes documentation in HTML and PDF formats.

CICS Transaction Server for z/OS Version 4.1 support for Java Version 1.4.2 and Version 1.5.0 is withdrawn. You must upgrade to Version 6 of the SDK. When you upgrade to Java 6 from Java 1.4.2, you can benefit from the new Java language features and from the improvements to runtime technology in the IBM SDK for z/OS Version 6. These improvements include better garbage collection and simpler class sharing. CICS Transaction Server Version 4.1 supports only the 31-bit version of the IBM SDK for z/OS Version 6, and not the 64-bit version.

Support for the DFHCSDUP MIGRATE command is withdrawn in CICS Transaction Server Version 4.1. In previous versions of CICS, the DFHCSDUP MIGRATE command migrated the eligible DFHDCT, DFHRCT, DFHTCT, and DFHTST macro resource definitions to the CICS system definition data set (CSD). If you use any of these tables, you must migrate them to the CSD before you upgrade to CICS Transaction Server Version 4.1. To do so, you can use the DFHCSDUP MIGRATE command on any supported release up to and including CICS Transaction Server Version 3.2.

Support for the WLMLOADCOUNT and WLMLOADTHRSH EYUPARM values is discontinued. If you use either value, you must now specify them using the Task load health threshold and Task load queue mode attributes in the CSYSDEF resource table. If you are using WLMLOADTHRSH, you must now specify the WLMLOADTHRSH value as a Task load health threshold attribute in your target regions. This specification is a change from the discontinued EYUPARM that you previously specified in the routing regions.

Planning information

- To be removed in a future release of CICS
 - ▶ Enterprise Java Bean support
 - ▶ ONC RPC feature
 - ▶ CICS Web Interface COMMAREA interfaces
 - ▶ CICS Web Server plug-in

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Upgrading to Version 4.1

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CICS Transaction Server Version 4.1 support for session beans using the Enterprise Java Bean (also known as EJB) 1.1 specification and the associated CICS EJB server components are stabilized. It is IBM's intention to discontinue support for session beans in a future release of CICS. You are encouraged to upgrade these applications to be Java SE components and make them available through Web services or the JEE Connector Architecture (JCA). CICS continues to support Java as a first class application programming language for CICS applications, including enhancements to the CICS Java class library JCICS and support for Java 6.

CICS support for Open Network Computing Remote Procedure Call (also known as ONC RPC) clients will be removed in a future release of CICS. The recommended migration path is to access CICS using the new support for Web services.

The support for passing HTTP requests and responses using COMMAREAs between applications and CICS will be removed in a future release of CICS. This mechanism, which was part of the initial CICS Web Interface, was superseded by the CICS Web support application programming interfaces. Upgrade Web-aware programs and converters using this interface to use the EXEC CICS WEB commands designed for HTTP server applications.

As previously indicated in the announcement of the SOAP for CICS feature, the DFHWBCLI function introduced to provide outbound HTTP support will be withdrawn in a future release of CICS. Consider upgrading applications that link to DFHWBCLI to use the new CICS Web Support EXEC CICS WEB SESSTOKEN() commands for HTTP client applications, made available in this release.

The CICS Web Server plug-in, DFHWBAPI, will be removed in a future release of CICS. This is the CICS supplied plug-in program that enables a pass-through mechanism from the IBM HTTP Server, using the External CICS Interface, into CICS Web support using the CICS business logic interface. You are recommended to upgrade to use the CICS Transaction Gateway.

Summary

- Application programmers
 - Review use of time functions
- Systems programmers
 - Review all GLUEs, TRUEs, and URM



In summary, application programmers must review the use of time functions in CICS applications.

Systems programmers must review all exits for parameter list changes and threadsafe applicability. Analyze regions to determine if you are using the functions that were removed in CICS Transaction Server Version 4.1. Also, review Independent Software Vendor products (also known as ISV products) to determine the correct release levels that are required to support CICS Transaction Server Version 4.1.

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