IMS

# Installation Volume 1: Installation Verification

*Version 9*

IMS

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*Version 9*

**Note**

Before using this information and the product it supports, be sure to read the general information under “Notices” on page 223.

**Quality Partnership Program (QPP) Edition (December 2003)**

This QPP edition applies to Version 9 of IMS (product number 5655-J38) and to all subsequent releases and modifications until otherwise indicated in new editions.

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# About This Book

This book is available in PDF and BookManager formats. This book is available on the IMS Version 9 Licensed Product Kit (LK3T-7213). To get the most current versions of the PDF and BookManager formats, go to the IMS Web site at www.ibm.com/ims and link to the Library page.

This book is for IMS system programmers responsible for verifying the installation of the following IMS Version 9 environments:

- Database (DB Batch)
- Database Control (DBCTL)
- Database/Data Communication (DB/DC)
- Database/Data Communication with Extended Recovery Facility (DB/DC with XRF)
- Transaction Manager Control (DCCTL)

The IMS Installation task includes the initial activity of installing IMS on your z/OS system, verifying that installation as described in this book, and a variety of other activities that are described in *IMS Version 9: Installation Volume 2: System Definition and Tailoring*. Table 1 lists the subtasks associated with the IMS installation task and identifies the location of key information about these subtasks.

*Table 1. IMS Installation Subtasks. In this table, "Volume 1" refers to IMS Version 9: Installation Volume 1: Installation Verification and "Volume 2" refers to IMS Version 9: Installation Volume 2: System Definition and Tailoring.*

| Installation Subtask | Location of Information |
|---|---|
| Installing an IMS system | *Program Directory for Information Management System Version 9* |
| Verifying the correct installation of an IMS system | *Volume 1* |
| Using the Installation Verification Program (IVP) system to test application or service changes | *Volume 1* |
| Using the IVP system for demonstrations, in-house training, or developing operation and recovery procedures | *Volume 1* |
| Building or moving your own systems onto a copy of the IVP system | *Volume 1* |
| Assigning system resource options with system configuration macros | *Volume 2* |
| Defining online applications with database and application macros | *Volume 2* |
| Defining terminals with Data Communication macros | *Volume 2* |
| Implementing ETO, RSR, or database recovery service in the IMS system | *Volume 2* |
| Implementing the system definition process | *Volume 2* |
| Installing the Transport Manager subsystem | *Volume 2* |
| Tailoring the IMS system for your environment | *Volume 2* |
| Accessing the IMS databases with CICS or DB2 database with IMS | *Volume 2* |

As you look at the installation-related activities in Table 1, notice three key sources of information:

- Use the *Program Directory for Information Management System Version 9* for information on installing a new IMS system.

- Use the *IMS Version 9: Installation Volume 1: Installation Verification* after you have installed a new system to ensure that it has been installed properly.
- Use the *IMS Version 9: Installation Volume 2: System Definition and Tailoring* to tune and tailor this IMS system on an ongoing basis throughout its life.

Therefore, if you are responsible for installing a new IMS system, you should have copies of the *Program Directory for Information Management System Version 9* and both volumes of *IMS Installation*. If you are responsible for supporting an already-installed IMS system, you probably need access to *IMS Version 9: Installation Volume 2: System Definition and Tailoring* only.

Additionally, you can find information about IVP error messages in *IMS Version 9: Messages and Codes, Volume 2*.

## Summary of Contents

This book is divided into four parts:

- Part 1, “Installation Reference Information,” on page 1 contains reference information for the installation process. Included are considerations for function modification identifiers (FMIDs), components, optional features, and multiple copies of IMS. This part also contains reference information on data sets and their allocation and on interface requirements for z/OS, VTAM, IMS service, and the IVP sample applications. Use this part for reference as you use the *Program Directory for Information Management System Version 9* to install IMS.
- Part 2, “IVP Information,” on page 83 contains information about using the IVP to verify your IMS installation. It describes a sample path through the IVP.
- Part 3, “IVP Reference Material,” on page 131 contains reference information for the IVP process. Included is information describing each of the IVP systems and each of the sample applications.
- Part 4, “Appendixes,” on page 173, includes lists of IVP variables, jobs, tasks, and Stage 1 source.

## How to Use This Book

Use the *Program Directory for Information Management System Version 9* to perform a complete installation of IMS Version 9 using system modification program/extended (SMP/E). Then use this book to verify your installation. This book documents how to define, prepare, and run a sample IMS system.

Part 1, “Installation Reference Information,” on page 1 provides installation information that supplements the *Program Directory for Information Management System Version 9*. Part 2, “IVP Information,” on page 83 includes information on how to use the IVP dialog to verify your IMS installation. Part 3, “IVP Reference Material,” on page 131 provides additional IVP information that might be useful during the verification of your IMS system.

Except for installing the IVP dialog itself, the documentation for the IVP dialog and the IVP process are contained online within the dialog itself. After installing the IVP dialog, you can review the online documentation before using the IVP dialog. You can use the “DOC” action from within Variable Gathering (see pages 105 and 113), File Tailoring (see pages 116 and 121), and Execution (see page 124) to print the online documentation for variables, jobs, and tasks.

## Prerequisite Knowledge

It is assumed that you have experience working with:

- Product installation and service using SMP/E
- The z/OS environment:
  - Job Entry Subsystem (JES2 or JES3)
  - Job Control Language (JCL)
  - Utilities
  - Operations
- The Time Sharing Option (TSO) environment:
  - CLISTs and REXX EXECs
  - Interactive Systems Productivity Facility (ISPF)
  - Interactive Systems Productivity Facility/Program Development Facility (ISPF/PDF)
- The Virtual Storage Access Method (VSAM) and the Integrated Catalog Facility (ICF)

## Additional Support Required

To complete the IMS to z/OS and IMS to VTAM interface requirements, you will also need the assistance of z/OS system programmers and VTAM system programmers.

## Terminology and Related Publications

The following environments are considered to be “online” systems:

DBCTL

DCCTL

DB/DC

These online systems are initially generated using an “ALL” system definition.

The following environments are “batch” systems:

- DB Batch

  This system is available as part of an “ALL” system definition for the following online systems:

  DBCTL

  DB/DC

  This system may also be generated as a stand-alone environment using a “BATCH” system definition for the following online systems:

  DBCTL

  DB/DC

- TM Batch

  This system is available as part of an “ALL” system definition for the following online system:

  DCCTL

  This system may also be generated as a stand-alone environment using a “BATCH” system definition for the following “online” system:

  DCCTL

"Fast Path" refers to situations where at least one of the following services is utilized: data entry databases (DEDBs), main storage databases (MSDBs), or expedited message handling (EMH).

For a list of related publications, refer to the "Bibliography" on page 227. For more definitions of terminology and further references see the *Master Index and Glossary*.

## How to Read Syntax Diagrams

Each syntax diagram in this book begins with a double right arrow and ends with a right and left arrow pair. Lines that begin with a single right arrow are continuation lines. You read a syntax diagram from left to right and from top to bottom, following the direction of the arrows.

Conventions used in syntax diagrams are described in Table 2:

*Table 2. How to Read Syntax Diagrams*

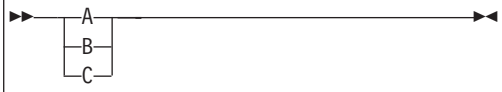
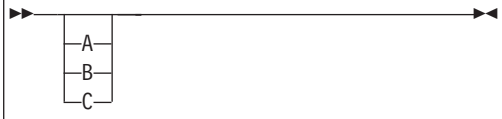
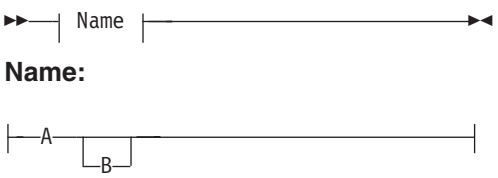
| Convention | Meaning |
|---|---|
|  | You must specify values A, B, and C. Required values are shown on the main path of a syntax diagram. |
|  | You have the option to specify value A. Optional values are shown below the main path of a syntax diagram. |
|  | You must specify value A, B, or C. |
|  | You have the option to specify A, B, C, or none of these values. |
|  | You have the option to specify A, B, C, or none of these values. If you don't specify a value, A is the default. |
|  | You have the option to specify one, more than one, or none of the values A, B, or C. Any required separator for multiple or repeated values (in this example, the comma) is shown on the arrow. |

*Table 2. How to Read Syntax Diagrams (continued)*

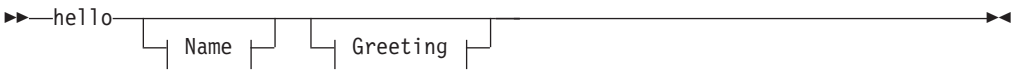
| Convention | Meaning |
|---|---|
|  | You have the option to specify value A multiple times. The separator in this example is optional. |
|  **Name:**  | Sometimes a diagram must be split into fragments. The syntax fragment is shown separately from the main syntax diagram, but the contents of the fragment should be read as if they are on the main path of the diagram. |
| Punctuation marks and numbers | Enter punctuation marks (slashes, commas, periods, parentheses, quotation marks, equal signs) and numbers exactly as shown. |
| Uppercase values | Keywords, their allowable synonyms, and reserved parameters, appear in uppercase letters for z/OS. Enter these values exactly as shown. |
| Lowercase values without italics | Keywords, their allowable synonyms, and reserved parameters, appear in lowercase letters for UNIX. Enter these values exactly as shown. |
| Lowercase values in italics (for example, *name*) | Supply your own text or value in place of the *name* variable. |
| ␣ | A ␣ symbol indicates one blank position. |

Other conventions include the following:

- When entering commands, separate parameters and keywords by at least one blank if there is no intervening punctuation.
- Footnotes are shown by a number in parentheses, for example, (1).
- Parameters with number values end with the symbol #.
- Parameters that are names end with 'name'.
- Parameters that can be generic end with the symbol *.

## Example Syntax Diagram

Here is an example syntax diagram that describes the **hello** command.



**Name:**

**Greeting:**


**Notes:**

1 You can code up to three names.

2 Compose and add your own greeting (for example, how are you?).

According to the syntax diagram, these are all valid versions of the **hello** command:

```
hello
hello name
hello name, name
hello name, name, name
hello, your_greeting
hello name, your_greeting
hello name, name, your_greeting
hello name, name, name, your_greeting
```

The space before the *name* value is significant. If you do not code *name*, you must still code the comma before *your_greeting*.

## How to Send Your Comments

Your feedback is important in helping us provide the most accurate and highest quality information. If you have any comments about this book or any other IMS documentation, you can do one of the following:

- Go to the IMS home page at www.ibm.com/ims. There you will find an online feedback page where you can enter and submit comments.
- Send your comments by e-mail to imspubs@us.ibm.com. Be sure to include the name of the book, the part number of the book, the version of IMS, and, if applicable, the specific location of the text you are commenting on (for example, a page number or table number).

## Change Indicators

Technical changes are indicated in this publication by a vertical bar (|) to the left of the changed text.

# Summary of Changes

## Changes to This Book for IMS Version 9

This edition is a draft version of this book intended for use during the Quality Partnership Program (QPP). Contents of this book are preliminary and under development.

This book contains new technical information for IMS Version 9, changed technical information, and editorial changes.

New information on V9 enhancements include:

- A new process for exporting and importing IVP variables between IMS releases. Two new variable-gathering action commands, export (Exp) and import (Imp), and the IVP Variable Export utility (DFSIVPEX) support this new process. See "Exporting and Importing IVP Variables between IMS Releases" on page 107 for more information.
- Information about the IMS Application Menu, which can be used to open several applications, including the IVP and the IVP Variable Export utility. See "IMS Application Menu" on page 94.
- Several new steps added to Appendix B, "IVP JOBs and TASKs," on page 181.
- New series of P steps for Enhanced Command Environment Sample Application in Appendix B, "IVP JOBs and TASKs," on page 181.
- New high level DSNAME for VSAM data sets called IXUVSMHQ. See Appendix A, "IVP Variables," on page 173.
- Support for RACF security, in Figure 10 on page 100, Appendix B, "IVP JOBs and TASKs," on page 181, and Appendix C, "IVP System Definitions," on page 201.
- Recommendations added to Chapter 1, "IMS Installation Reference Information," on page 7, Chapter 2, "Data Sets," on page 13, and Chapter 3, "Data Set Allocation Considerations," on page 47 to modify security implementation to use RACF or an equivalent product because support for SMU will be eliminated in releases after IMS Version 9.
- In IMS Version 9 and later, IMS uses a dynamic resource cleanup module (DFSMRC20). The resource cleanup module DFSMRCL0 is no longer required. See Chapter 1, "IMS Installation Reference Information," on page 7 and Chapter 4, "z/OS Interface Considerations," on page 65 for more information.
- CQS support added to the CSL sample.

The following information has changed significantly:

- The order of the parts in this book have changed so that all of the installation information appears before the IVP information.
- Several steps have been renamed in Appendix B, "IVP JOBs and TASKs," on page 181.
- The `ETOFEAT` keyword has been modified in Appendix C, "IVP System Definitions," on page 201.
- The variable IXUSMPHQ is not used in IMS Version 9 or later. Information about IXUSMPHQ has been removed from this book.

Organizational changes include:

- Changed order of book parts, so that all of the installation information appears before the IVP information.
- A new chapter, Chapter 14, “Other Sample Applications,” on page 169.

## Library Changes for IMS Version 9

Changes to the IMS Library for IMS Version 9 include the addition of new titles, the change of one title, and a major terminology change.

## New and Revised Titles

The following list details the major changes to the IMS Version 9 library:

- *IMS Version 9: HALDB Online Reorganization Guide and Reference*

  The library includes a new book: *IMS Version 9: HALDB Online Reorganization Guide and Reference*. This book is available only in PDF and BookManager formats.
- *IMS Version 9: An Introduction to IMS*

  The library includes a new book: *IMS Version 9: An Introduction to IMS*.
- The book formerly titled *IMS Version 8: IMS Java User's Guide* is now titled *IMS Version 9: IMS Java Guide and Reference*.

## Terminology Changes

IMS Version 9 introduces new terminology for IMS commands:

**type-1 command**
A command, generally preceded by a leading slash character, that can be entered from any valid IMS command source. In IMS Version 8, these commands were called *classic* commands.

**type-2 command**
A command that is entered only through the OM API. Type-2 commands are more flexible and can have a broader scope than type-1 commands. In IMS Version 8, these commands were called *IMSplex* commands or *enhanced* commands.

## Accessibility Enhancements

Accessibility features help a user who has a physical disability, such as restricted mobility or limited vision, to use software products. The major accessibility features in z/OS products, including IMS, enable users to:

- Use assistive technologies such as screen readers and screen magnifier software
- Operate specific or equivalent features using only the keyboard
- Customize display attributes such as color, contrast, and font size

### User Assistive Technologies

Assistive technology products, such as screen readers, function with the IMS user interfaces. Consult the documentation of the assistive technology products for specific information when you use assistive technology to access these interfaces.

### Accessible Documentation

Online documentation for IMS Version 9 is available in BookManager format, which is an accessible format. All BookManager functions can be accessed by using a keyboard or keyboard shortcut keys. BookManager also allows you to use screen readers and other assistive technologies. The BookManager READ/MVS product is

included with the z/OS base product, and the BookManager Softcopy Reader (for workstations) is available on the IMS Licensed Product Kit (CD), which you can download from the Web at www.ibm.com.

## Keyboard Navigation of the User Interface

Users can access IMS user interfaces using TSO/E or ISPF. Refer to the *z/OS V1R1.0 TSO/E Primer*, the *z/OS V1R1.0 TSO/E User's Guide*, and the *z/OS V1R1.0 ISPF User's Guide, Volume 1*. These guides describe how to navigate each interface, including the use of keyboard shortcuts or function keys (PF keys). Each guide includes the default settings for the PF keys and explains how to modify their functions.

# Part 1. Installation Reference Information

# Chapter 1. IMS Installation Reference Information

This chapter provides reference information for use during an IMS™ installation. Use this chapter as a supplement to the installation information found in the *Program Directory for Information Management System Version 9*.

## Distribution Media Considerations

IVP supports the following distribution media:

- CBPDO (Custom-Built Product Delivery Offering)
- ServerPac

For information on CBPDO considerations, see "CBPDO."

For information on ServerPac considerations, see "ServerPac."

## CBPDO

The CBPDO product package consists of one logical tape (multiple volumes). A CBPDO package that includes IMS can also include other products in the same System Release (SREL). CBPDO also provides service for the products included with the product order.

The service includes all PTFs available within one week of order fulfillment. All PTFs are identified by one or more SOURCEIDs, including PUTyymm, RSUyymm, SMCREC, and SMCCOR.

See the CBPDO "DBS Memo to User Extensions" (shipped with the CBPDO package) for additional information.

## ServerPac

ServerPac is an entitled software delivery package. It consists of products and service for which IBM has performed the SMP/E installation steps and some of the post-SMP/E installation steps. To install the package on your system and complete the installation of the software it includes, use the CustomPac Installation Dialog, which is the same dialog used for all CustomPac offerings, including SystemPac® (dump-by-data-set format), ProductPac®, and RefreshPac.

For IMS, ServerPac:

- Allocates, catalogs, and loads all the data sets
- Sets up the SMP/E environment
- Supplies a job to update PARMLIB (IEFSSNxx, PROGxx, IEASVCxx, and SCHEDxx)
- Directs you to start the IVP

## About the IMS FMIDs

The IMS product is packaged under several function modification identifiers (FMIDs). This packaging choice was made in response to IMS internal requirements and is subject to change in the future. ***The existence of an FMID does not imply that installation of the FMID is optional***. Refer to Table 3 on page 8 to determine which FMIDs are required, optional, or not applicable. All FMIDs are installed

outside of the IVP. See the *IMS Transaction and Database Servers Program Directory* (GI10-8444) for installation instructions.

*Table 3. FMID Installation Requirements*

| FMID | Description | DB Batch | DBCTL | DB/DC | DB/DC w/ XRF[1] | DCCTL |
|---|---|---|---|---|---|---|
| HIR2101 | Internal Resource Lock Manager V2R1 | O | O | O | O | N |
| HMK9900[2] | System Services component<br>IVP component<br>Database Recovery Control<br>Logging Component | R | R | R | R | R |
| JMK9901 | Database Manager function | R | R | R | R | N |
| JMK9902 | Transaction Manager function<br>LU manager for IMS APPC | N | N | R | R | R |
| JMK9903 | Extended Terminal Option feature | N | N | O | O | O |
| JMK9904 | RSR Recovery-Level Tracking feature | O | O | O | O | O |
| JMK9905 | RSR Database-Level Tracking feature | O | O | O | O | O |
| JMK9906 | IMS Java™ | O | O | O | O | O |

**Where:**

**R** FMID installation is required.

**O** FMID installation is optional.

**N** The FMID is not applicable to this environment.

**Notes:**

1. The DB/DC w/XRF column refers to DB/DC with XRF. Although DCCTL w/XRF is a supported combination, it is not yet included as an IVP option.
2. FMID installation is required even if the primary function provided by this FMID is not used.

## Components and Optional Features of IMS

The components and optional features of IMS described in this section can be installed during an IMS installation.

## IRLM Component

If IRLM V2 is already installed (for example, IRLM V2 has already been installed with DB2®), you do not need to reinstall it.

Be sure that IRLM is installed before running an IMS system definition requiring the IRLM.

**Related Reading:** See the IRLMNM operand in the IMSCTRL macro in *IMS Version 9: Installation Volume 2: System Definition and Tailoring*.

When using multiple IMS systems of the **same release level** on the same processor, you need only one IRLM. If two or more IMS systems share data at the block level, they must use the same IRLM.

When using multiple IMS systems of **different release levels** on the same processor, you can have one IRLM or you can choose to use two or more IRLM

address spaces. If two or more IMS systems share data and are running on the same processor, they should use the same IRLM.

When using multiple IMS systems on **different processors for inter-processor block-level data sharing**, you must have one IRLM on each processor.

When IMS communicates with DB2 subsystems, remember that IMS and DB2 do not force the use of a single IRLM. For availability and performance reasons, you might want to run two IRLMs.

## ETO Feature

The ETO feature is an optional feature for the following IMS base environments:

DB/DC

DCCTL

To enable the ETO feature, specify ETO=Y as a startup parameter.

If the ETOFEAT=(,,ALL) keyword is specified, system generation also creates the ETO descriptors.

**Related Reading:** See *IMS Version 9: Installation Volume 2: System Definition and Tailoring* for additional information.

## RSR Features

RSR, which is comprised of the RLT and DLT features, is an optional feature for the following IMS IVP base environments:

BATCH

DBCTL

DB/DC

DCCTL

When the IVP RLT and DLT options are selected in the IVP, the appropriate options are specified in the IMS SYSGEN to support RLT and DLT. The IVP does not currently provide testing of these features.

For the DLT feature of RSR to be functional, you must use both the RLT and DLT features. During the installation of the RLT feature, only the RLT feature becomes functional. In addition, you must set up a global service group (GSG) and set up a transport manager instance (TMI). The GSG and TMI can be defined in several different places. An IMS system definition must be performed, followed by an SMP/E JCLIN.

**Related Reading:** See *IMS Version 9: Installation Volume 2: System Definition and Tailoring* for additional information on including RSR in your IMS system.

# Using Multiple Copies of IMS

You can run multiple copies of IMS, with or without Multiple Systems Coupling (MSC), in the same processor and execute them concurrently. However, adding MSC allows communication and sharing of work between IMS systems.

**Related Reading:** For more information on MSC, see *IMS Version 9: Administration Guide: Transaction Manager*.

In an XRF complex, the active and alternate IMS subsystems can reside in the same processor (for example, for testing).

## Using the Same IMS Release Level and Environment

When using multiple copies of IMS at the same release level and environment, the following requirements and conditions apply (regardless of the operating system):

- A unique subsystem identifier is required for each IMS DB/DC, DBCTL, or DCCTL control region. Specify this parameter (IMSID) in the IMS procedure for IMS, or in the DBC procedure for DBCTL, and in the dependent address space procedures (IFP, BMP, and MPP) that override the value specified during system definition. The Parm Block member DFSPBxxx can also override the IMSID value specified during system definition. This value must not conflict with any subsystem identifier defined in the system, including other DB or DB/DC systems.
- Type 2 and Type 4 SVCs and the channel-end appendages can be shared.
- When using multiple copies of IMS systems at the same release level in the same processor, you only need one copy of the Type 2 and Type 4 SVCs.
- All suffixed modules must be unique.

  **Related Reading:** See the description of the SUFFIX= keyword of the IMSGEN macro in *IMS Version 9: Installation Volume 2: System Definition and Tailoring*.
- DFSVNUCx modules and security maintenance blocks are required to run different IMS control regions.
- You can store unique copies of module DFSVC000, module DFSVNUCx, and the security maintenance blocks (created by the Security Maintenance utility) for each IMS system in a partitioned data set (PDS), concatenated with and in front of IMS.SDFSRESL. Alternatively, you can have unique copies of DFSVC000 in a PDS as described, and separate other modules within IMS.SDFSRESL through the SUFFIX= parameter of the IMSGEN macro during system definition.

  **Recommendation:** Modify your security implementation to use Resource Access Control Facility (RACF®) or an equivalent product. Support for the Security Maintenance utility (SMU) will be eliminated in releases after IMS Version 9.
- Under the z/OS authorized program facility, authorize all libraries from which modules are to be loaded for the control region. For additional information, see “APF Authorization for IMS” on page 72.
- Systems with the same combination of the following resources can share the same IMS.SDFSRESL and IMS.OPTIONS data sets (referred to below as the “data sets”):

  VTAM®

  BTAM

  Fast Path (DEDBs or EMH)

  IRLM

  MSC

  XRF

  For example, if two systems both use VTAM and IRLM, they can share the data sets. However, if one uses VTAM and the other BTAM, each must have its own data sets.

Another example: If four systems use VTAM, Fast Path, IRLM, MSC, and XRF, they can share the same data sets. However, if one system does not use XRF, three systems can share data sets, but the system without XRF must have its own data sets.

- If systems share IMS.SDFSRESL, you can store DFSMDA definitions in separate, authorized PDSs concatenated in front of IMS.SDFSRESL or use the IMSDALIB feature.
- The following IMS data sets must be unique and separately allocated to each IMS control region:

  IMS.QBLKS

  IMS.SHMSGx

  IMS.LGMSGx

  IMS.IMSMON (IMS Monitor) if used

  IMS.MSDBCP1 if used

  IMS.MSDBCP2 if used

  IMS.MSDBDUMP if used

  IMS.MSDBINIT if used

  IMS.RDS

  Online log data sets (minimum of 3)

  Write-ahead data sets (minimum of 1)

  To make these data sets unique for each IMS control region, you can use the NODE= keyword of the IMSGEN macro.
- Each IMS system must have its own terminal network and MSC network (if MSC is included).

## Using Different IMS Release Levels

When running multiple copies of IMS at different release levels under the same operating system, the operating system must be at a version and release level that is required for the most recent release of IMS.

When installing different release levels of IMS in the same processor, remember that running a system using the SVC from a lower level system is not supported. For example, running an IMS Version 8 system using the SVC from IMS Version 7 is not supported. Similarly, running an IMS Version 7 system using the SVC from IMS Version 6 is not supported.

The IMS dump formatting module (DFSAFMD0) installed in the host z/OS system must be from the most recent release of IMS.

In IMS Version 9 and later, IMS uses a dynamic resource cleanup module (DFSMRC20). You do not need to install the static resource cleanup module (DFSMRCL0) on the host z/OS system.

For IMS Version 8 and earlier, DFSMRCL0 is required. If you are running a multiple versions of IMS systems, some of which are IMS Version 9 or later, and some of which are IMS Version 8 or earlier, you must install DFSMRCL0 from the most recent release of IMS up to IMS Version 8.

## IVP Preconditioning for CICS

When the full IMS IVP process is performed, the following functions have been performed to support the CICS® DBCTL IVP:

- The IMS Sample Application (DI21PART database) has been installed.
- PSBGEN and ACBGEN have been performed for the PSBs used by the CICS DBCTL IVP.
- The database resource adapter (DRA) interface module has been assembled and placed in IMS.SDFSRESL.

**Related Reading:** For more information on installing DBCTL in a CICS-IMS environment, see *CICS-IMS Database Control Guide*.

# Chapter 2. Data Sets

This chapter contains information on the data sets used by IMS. The types of data sets included in this chapter are:

- IVP Dialog data sets
- SMP/E data sets
- IMS Distribution (DLIB) data sets (SMP/E controlled)
- IMS Target (TLIB) data sets (SMP/E controlled)
- IMS System (SYSTEM) data sets
- IMS Execution (EXECUTION) data sets
- IRLM data sets (Distribution and Target, SMP/E controlled)
- Non-SMP/E data sets
- User level data sets

This chapter also provides the attribute values of each data set. These data set attributes include:

| | |
|---|---|
| **DSORG** | Data set organization |
| **DSNTYPE** | Data set name type |
| **RECFM** | Record format |
| **LRECL** | Logical record length |
| **BLKSIZE** | Block size |

The DSNAME high-level qualifier for DLIB, SYSTEM, and EXECUTION data sets must be specified on the NODE parameter of the IMSGEN macro. TLIB data sets are included in the NODE parameter for SYSTEM data sets. *IMS Version 9: Installation Volume 2: System Definition and Tailoring* describes the IMSGEN macro in detail.

The IMS online change function requires multiple copies of the system data sets IMS.MATRIX, IMS.ACBLIB, IMS.MODBLKS, and IMS.FORMAT. The base copies of these data sets are called “staging libraries,” and the copies form “active and inactive libraries.”

**Related Reading:** Refer to the sections “Tuning Your System” and “Modifying Your System Design” in the *IMS Version 9: Administration Guide: System* for a full explanation of the IMS online change function and procedures for using data sets.

## IVP Dialog Data Sets

IVP Dialog data sets are user data sets (not known to SMP/E) that are needed by the IVP dialog.

## IMS.INSTALIB

INSTALIB contains the IMS installation materials created by the file tailoring phase of the IVP dialog.

This data set has the following attributes:

**DSORG** Partitioned

**DSNTYPE** PDS

**RECFM** FB

**LRECL** 80

**BLKSIZE** Multiple of 80

## IMS.INSTATBL

INSTATBL contains the ISPF tables that are read and updated by the IVP dialog.

This data set has the following attributes:

**DSORG** Partitioned

**RECFM** FB

**LRECL** 80

**BLKSIZE** Multiple of 80

## IMS.IVP.EXPORT

IMS.IVP.EXPORT is the export data set that is used in the process for exporting and importing variables during the IVP variable-gathering phase. The data set can have any name. If the data set does not exist, you can create it during the export process. See “Exporting and Importing IVP Variables between IMS Releases” on page 107 for more information about this process.

**DSORG** Sequential or partitioned

**RECFM** FB

**LRECL** 80

**BLKSIZE** Multiple of 80

# SMP/E Data Sets

SMP/E data sets establish the SMP/E environment for IMS. IBM does not recommend sharing these data sets with other products.

Depending on your service philosophy, one SMP/E Consolidated Software Inventory (CSI) can support multiple ZONEs. Products having the same SMP/E SREL (P115 for IMS) are eligible for sharing the same SMP/E CSI.

For more information on SMP/E, refer to *OS/390 V2R10 SMP/E Reference*.

## IMS.DLIBZONE.CSI

DLIBZONE (for distribution, or DLIB, zone) is used to record information about the status and structure of the distribution libraries. You assign each distribution zone a one to seven-character name when you create it. This name appears in the `SET BDY` command.

The DLIBZONE data set has the following attribute:

**DSORG** VSAM KSDS

## IMS.GLBLZONE.CSI

GLBLZONE (for global zone) contains information about SYSMODS and HOLDDATA that have been processed by the SMP/E RECEIVE. It also contains

information that allows SMP/E to access the DLIBZONE and TRGTZONE, and information that allows you to tailor parts of SMP/E processing.

The GLBLZONE data set has the following attribute:

**DSORG** VSAM KSDS

## IMS.SMPLTS

The SMPLTS data set is a target library that maintains the base version of a load module. The load module specifies a SYSLIB allocation to implicitly include modules. A base version of a load module includes only the explicitly defined modules for the load module. It is maintained in the SMPLTS if the load module is defined to SMP/E with a SYSLIB allocation (that is, its LMOD entry contains a CALLLIBS subentry list). SMP/E uses the load module in the SMPLTS as input when binding the load module into its specified target libraries.

Each target zone must have its own SMPLTS data set. The SMPLTS cannot be shared with any other target zone.

This data set has the following attributes:

**DSORG** Partitioned data set extended (PDSE)

**DSNTYPE** LIBRARY

**RECFM** U

**LRECL** 0

**BLKSIZE** Greater than or equal to 6144

## IMS.SMPPTS

SMPPTS is used as temporary storage for SYSMODs. It contains one member for each SYSMOD that is received.

This data set has the following attributes:

**DSORG** Partitioned

**RECFM** FB

**LRECL** 80

**BLKSIZE** Multiple of 80

## IMS.SMPSCDS

SMPSCDS contains backup copies of target zone entries that are changed by inline JCLIN during APPLY processing.

Each target zone must have its own SMPSCDS data set. The SMPSCDS cannot be shared by any other target zone.

This data set has the following attributes:

**DSORG** Partitioned

**RECFM** FB

**LRECL** 80

**BLKSIZE** Multiple of 80

## IMS.SMPSTS

SMPSTS is a temporary target source library for source modules that exist only in a distribution library.

Each target zone must have its own SMPSTS data set. The SMPSTS cannot be shared by any other target zone.

This data set has the following attributes:

**DSORG** Partitioned

**RECFM** FB

**LRECL** 80

**BLKSIZE** Multiple of 80

## IMS.TRGTZONE.CSI

TRGTZONE (for target zone) is used to record information about the status and structure of the target libraries. You assign each target zone a one to seven-character name when you create it. This name appears in the `SET BDY` command.

Each TRGTZONE must have its own SMPLTS, SMPMTS, SMPSTS, and SMPSCDS data sets. Each TRGTZONE can support only one release of a given product. Products having the same SMP/E SREL (P115 for IMS) are eligible for sharing the same SMP/E TRGTZONE. However, IBM does not recommend this practice.

The TRGTZONE data set has the following attribute:

**DSORG** VSAM KSDS

## Other SMP/E Data Sets

**Related Reading:** Refer to *OS/390 V2R10 SMP/E Reference* for additional information.

# Distribution (DLIB) Data Sets

IMS distribution libraries (DLIBs) contain the master copy of elements in IMS and can be used to create or back up a target library. These data sets are maintained by SMP/E.

## Related DLIB Data Sets

### System Services Data Sets

The following DLIBs are used by the System Services component FMID:

IMS.ADFSBASE
IMS.ADFSCLST
IMS.ADFSDATA
IMS.ADFSEXEC
IMS.ADFSISRC
IMS.ADFSLOAD
IMS.ADFSMAC
IMS.ADFSMLIB

IMS.ADFSPLIB
IMS.ADFSRTRM
IMS.ADFSSLIB
IMS.ADFSSMPL
IMS.ADFSSRC
IMS.ADFSTLIB

### RSR Recovery-Level Tracking feature Data Sets
The RSR Recovery-Level Tracking feature FMID uses the IMS.ADFSLOAD DLIB.

### RSR Database-Level Tracking feature Data Sets
The RSR Database-Level Tracking feature FMID uses the IMS.ADFSLOAD DLIB.

### Database Manager Data Sets
The following DLIBs are used by the Database Manager FMID:

IMS.ADFSCLST
IMS.ADFSLOAD
IMS.ADFSPLIB
IMS.ADFSSRC

### Transaction Manager Data Sets
The following DLIBs are used by the Transaction Manager FMID:

IMS.ADFSEXEC
IMS.ADFSLOAD
IMS.ADFSPLIB
IMS.ADFSSMPL
IMS.ADFSSRC

### Extended Terminal Option Data Sets
The Extended Terminal Option Feature FMID uses the IMS.ADFSLOAD DLIB.

### IMS Java Data Sets
IMS Java uses the following DLIB data sets:

IMS.ADFSJCIC
IMS.ADFSJDC9
IMS.ADFSJHF9
IMS.ADFSJJCL
IMS.ADFSJLIB
IMS.ADFSJSAM
IMS.ADFSJTOL

## IMS.ADFSBASE

ADFSBASE contains SMP/E sample jobs to install IMS.

This data set has the following attributes:

**DSORG** Partitioned

**DSNTYPE** PDS

**RECFM** FB

**LRECL** 80

**BLKSIZE** Multiple of 80

## IMS.ADFSCLST

ADFSCLST contains TSO CLISTs.

This data set has the following attributes:

**DSORG** Partitioned

**DSNTYPE** PDS

**RECFM** FB

**LRECL** 80

**BLKSIZE** Multiple of 80

## IMS.ADFSDATA

ADFSDATA contains data.

This data set has the following attributes:

**DSORG** Partitioned

**DSNTYPE** PDS

**RECFM** FB

**LRECL** 80

**BLKSIZE** Multiple of 80

## IMS.ADFSEXEC

ADFSEXEC contains TSO REXX EXECs.

This data set has the following attributes:

**DSORG** Partitioned

**DSNTYPE** PDS

**RECFM** FB

**LRECL** 80

**BLKSIZE** Multiple of 80

## IMS.ADFSISRC

ADFSISRC contains DBRC skeletal JCL members, a sample application, and miscellaneous source modules.

This data set has the following attributes:

**DSORG** Partitioned

**DSNTYPE** PDS

**RECFM** FB

**LRECL** 80

**BLKSIZE** Multiple of 80

## IMS.ADFSJCIC

ADFSJCIC contains code required to access IMS when using IMS Java from CICS.

This data set has the following attributes:

| | |
|---|---|
| **DSORG** | Partitioned |
| **DSNTYPE** | PDS |
| **RECFM** | VB |
| **LRECL** | 255 |
| **BLKSIZE** | Greater than or equal to 259 |

## IMS.ADFSJDC9

ADFSJDC9 contains the documentation for JDK 1.3.1 JVM based IMS Java.

This data set has the following attributes:

| | |
|---|---|
| **DSORG** | Partitioned |
| **DSNTYPE** | PDS |
| **RECFM** | VB |
| **LRECL** | 255 |
| **BLKSIZE** | Greater than or equal to 259 |

## IMS.ADFSJHF9

ADFSJHF9 contains the IMS Java runtime library.

This data set has the following attributes:

| | |
|---|---|
| **DSORG** | Partitioned |
| **DSNTYPE** | PDS |
| **RECFM** | VB |
| **LRECL** | 255 |
| **BLKSIZE** | Greater than or equal to 259 |

## IMS.ADFSJJCL

ADFSJJCL contains the side decks for IMS Java.

This data set has the following attributes:

| | |
|---|---|
| **DSORG** | Partitioned |
| **DSNTYPE** | PDS |
| **RECFM** | FB |
| **LRECL** | 80 |
| **BLKSIZE** | Multiple of 80 |

## IMS.ADFSJLIB

ADFSJLIB contains local modules for IMS Java.

This data set has the following attributes:

**DSORG** Partitioned data set extended (PDSE)

**DSNTYPE** LIBRARY

**RECFM** U

**LRECL** 0

**BLKSIZE** Greater than or equal to 6144

## IMS.ADFSJSAM

ADFSJSAM contains sample Java programs.

This data set has the following attributes:

**DSORG** Partitioned

**DSNTYPE** PDS

**RECFM** VB

**LRECL** 255

**BLKSIZE** Greater than or equal to 259

## IMS.ADFSJTOL

ADFSJTOL contains code for IMS Java tools.

This data set has the following attributes:

**DSORG** Partitioned

**DSNTYPE** PDS

**RECFM** VB

**LRECL** 255

**BLKSIZE** Greater than or equal to 259

## IMS.ADFSLOAD

ADFSLOAD contains individually linked load modules.

This data set has the following attributes:

**DSORG** Partitioned

**DSNTYPE** PDS

**RECFM** U

**LRECL** 0

**BLKSIZE** Greater than or equal to 6144

## IMS.ADFSMAC

ADFSMAC contains system definition macros, utility macros, and the macros required for IMS module assembly.

This data set has the following attributes:

**DSORG** Partitioned

**DSNTYPE** PDS

**RECFM** FB

**LRECL** 80

**BLKSIZE** Multiple of 80: the BLKSIZE for this data set should be greater than or equal to the larger of the SYS1.SDFSMAC and SYS1.AMODGEN BLKSIZEs.

The BLKSIZEs for ADFSMAC and OPTIONS should be the same to prevent DCB conflicts during IMS system definition and SMP/E processing.

## IMS.ADFSMLIB

ADFSMLIB contains ISPF dialog message members.

This data set has the following attributes:

**DSORG** Partitioned

**DSNTYPE** PDS

**RECFM** FB

**LRECL** 80

**BLKSIZE** Multiple of 80

## IMS.ADFSPLIB

ADFSPLIB contains ISPF dialog panels.

This data set has the following attributes:

**DSORG** Partitioned

**DSNTYPE** PDS

**RECFM** FB

**LRECL** 80

**BLKSIZE** Multiple of 80

## IMS.ADFSRTRM

ADFSRTRM contains description members used by the IVP dialog.

This data set has the following attributes:

**DSORG** Partitioned

**DSNTYPE** PDS

**RECFM** FB

**LRECL** 80

**BLKSIZE** Multiple of 80

## IMS.ADFSSLIB

ADFSSLIB contains ISPF dialog file tailoring skeletons.

This data set has the following attributes:

**DSORG** Partitioned

**DSNTYPE** PDS

**RECFM** FB

**LRECL** 80

**BLKSIZE** Multiple of 80

## IMS.ADFSSMPL

ADFSSMPL contains sample jobs and exits.

This data set has the following attributes:

**DSORG** Partitioned

**DSNTYPE** PDS

**RECFM** FB

**LRECL** 80

**BLKSIZE** Multiple of 80

## IMS.ADFSSRC

ADFSSRC contains source modules for the IMS DB licensed program, the System Services component, and the Transaction Manager licensed program.

This data set has the following attributes:

**DSORG** Partitioned

**DSNTYPE** PDS

**RECFM** FB

**LRECL** 80

**BLKSIZE** Multiple of 80

## IMS.ADFSTLIB

ADFSTLIB contains ISPF dialog tables.

This data set has the following attributes:

**DSORG** Partitioned

**DSNTYPE** PDS

**RECFM** FB

**LRECL** 80

**BLKSIZE** Multiple of 80

# Target (TLIB) Data Sets

The TLIB data sets are the IMS SMP/E target libraries (SYSLIBs), which contain the executable code that makes up IMS.

# Related Target Data Sets

## IMS Data Sets Maintained by SMP/E

The following data sets are built by the SMP/E APPLY job:

IMS.MODBLKS
IMS.SDFSBASE
IMS.SDFSCLST
IMS.SDFSDATA
IMS.SDFSEXEC
IMS.SDFSISRC
IMS.SDFSJLIB
IMS.SDFSJSID
IMS.SDFSMAC
IMS.SDFSMLIB
IMS.SDFSPLIB
IMS.SDFSRESL
IMS.SDFSRTRM
IMS.SDFSSLIB
IMS.SDFSSMPL
IMS.SDFSSRC
IMS.SDFSTLIB

## IMS System Definition Data Sets

The following data sets are initially loaded or updated by Stage 2 of the IMS system definition (SYSDEF) process (see also “IMS SYSDEF Data Sets” on page 28):

IMS.MODBLKS
IMS.SDFSRESL

# IMS.MODBLKS

MODBLKS contains the control block modules created by IMS system definition. Its contents are copied by the Online Change utility to either IMS.MODBLKSA or IMS.MODBLKSB.

This data set has the following attributes:

**DSORG** Partitioned

**DSNTYPE** PDS

**RECFM** U

**LRECL** 0

**BLKSIZE** Greater than or equal to 32760. Default 32760. IMS.SDFSRESL, MODBLKS, MODBLKSA, and MODBLKSB should have the same BLKSIZE.

## IMS.SDFSBASE

SDFSBASE is the target library for ADFSBASE and contains sample jobs.

This data set has the following attributes:

**DSORG** Partitioned

**DSNTYPE** PDS

**RECFM** FB

**LRECL** 80

**BLKSIZE** Multiple of 80

## IMS.SDFSCLST

SDFSCLST is the target library for ADFSCLST and contains TSO CLISTs.

This data set has the following attributes:

**DSORG** Partitioned

**DSNTYPE** PDS

**RECFM** FB

**LRECL** 80

**BLKSIZE** Multiple of 80

## IMS.SDFSDATA

SDFSDATA is the target library for ADFSDATA and contains data.

This data set has the following attributes:

**DSORG** Partitioned

**DSNTYPE** PDS

**RECFM** FB

**LRECL** 80

**BLKSIZE** Multiple of 80

## IMS.SDFSEXEC

SDFSEXEC is the target library for ADFSEXEC and contains TSO REXX EXECs.

This data set has the following attributes:

**DSORG** Partitioned

**DSNTYPE** PDS

**RECFM** FB

**LRECL** 80

**BLKSIZE** Multiple of 80

## IMS.SDFSISRC

SDFSISRC is the target library for ADFSISRC and contains DBRC skeletal JCL members, and sample application and miscellaneous source modules.

This data set has the following attributes:

**DSORG** Partitioned

**DSNTYPE** PDS

**RECFM** FB

**LRECL** 80

**BLKSIZE** Multiple of 80

## IMS.SDFSJLIB

SDFSJLIB contains the bind output for IMS Java and load modules. It must be APF authorized.

**Related Reading:** For more information, see “APF Authorization for IMS” on page 72.

This data set has the following attributes:

**DSORG** Partitioned data set extended (PDSE)

**DSNTYPE** LIBRARY

**RECFM** U

**LRECL** 0

**BLKSIZE** Greater than or equal to 32760. Default 32760.

## IMS.SDFSJSID

SDFSJSID is the target library for ADFSJJCL and contains side decks.

This data set has the following attributes:

**DSORG** Partitioned

**DSNTYPE** PDS

**RECFM** FB

**LRECL** 80

**BLKSIZE** Multiple of 80

## IMS.SDFSMAC

IMS.SDFSMAC is the target library for ADFSMAC, and it contains the IMS macros.

This data set has the following attributes:

**DSORG** Partitioned

**DSNTYPE** PDS

**RECFM** FB

**LRECL** 80

**BLKSIZE** Multiple of 80: the BLKSIZE for this data set should be greater than or equal to the larger of the SYS1.SDFSMAC and SYS1.AMODGEN BLKSIZEs.

The BLKSIZEs for SDFSMAC and OPTIONS should be the same to prevent DCB conflicts during IMS system definition and SMP/E processing.

## IMS.SDFSMLIB

SDFSMLIB is the target library for ADFSMLIB and contains ISPF dialog message members.

This data set has the following attributes:

**DSORG** Partitioned

**DSNTYPE** PDS

**RECFM** FB

**LRECL** 80

**BLKSIZE** Multiple of 80

## IMS.SDFSPLIB

SDFSPLIB is the target library for ADFSPLIB and contains ISPF dialog panels.

This data set has the following attributes:

**DSORG** Partitioned

**DSNTYPE** PDS

**RECFM** FB

**LRECL** 80

**BLKSIZE** Multiple of 80

## IMS.SDFSRESL

IMS.SDFSRESL contains the IMS nucleus and required action modules. This data set is built by a combination of SYSGEN and SMP/E APPLY processing.

IMS.SDFSRESL must reside on DASD that supports a maximum record size of 18K or greater. This includes 3350s, 3375s, 3380s, and 3390s.

Prior to running online, you should APF authorize IMS.SDFSRESL and any data set concatenated to it on JOBLIB or STEPLIB DD statements. For more information see “APF Authorization for IMS” on page 72.

For IMS batch, APF authorize IMS.SDFSRESL and any data set concatenated to it on the DFSRESLB DD statement. This DD statement provides an authorized library for the IMS SVC modules. You do not need to authorize the JOBLIB or STEPLIB statement for IMS batch. If you omit the DFSRESLB DD statement, the IMS SVC modules are loaded from JOBLIB or STEPLIB, and JOBLIB or STEPLIB data sets must be authorized.

This data set has the following attributes:

**DSORG** Partitioned

**DSNTYPE** PDS

**RECFM** U

**LRECL** 0

**BLKSIZE** Greater than or equal to 32760. Default 32760. IMS.SDFSRESL, IMS.MODBLKS, IMS.MODBLKSA, and IMS.MODBLKSB should have the same BLKSIZE.

## IMS.SDFSRTRM

SDFSRTRM is the target library for ADFSRTRM and contains description members used by the IVP dialog.

This data set has the following attributes:

**DSORG** Partitioned

**DSNTYPE** PDS

**RECFM** FB

**LRECL** 80

**BLKSIZE** Multiple of 80

## IMS.SDFSSLIB

SDFSSLIB is the target library for ADFSSLIB and contains ISPF dialog file tailoring skeletons.

This data set has the following attributes:

**DSORG** Partitioned

**DSNTYPE** PDS

**RECFM** FB

**LRECL** 80

**BLKSIZE** Multiple of 80

## IMS.SDFSSMPL

SDFSSMPL is the target library for ADFSSMPL and contains sample jobs and exits.

This data set has the following attributes:

**DSORG** Partitioned

**DSNTYPE** PDS

**RECFM** FB

**LRECL** 80

**BLKSIZE** Multiple of 80

## IMS.SDFSSRC

SDFSSRC is the target library for ADFSSRC and contains source programs.

This data set has the following attributes:

**DSORG** Partitioned

**DSNTYPE** PDS

**RECFM** FB

**LRECL** 80

**BLKSIZE** Multiple of 80

## IMS.SDFSTLIB

SDFSTLIB is the target library for ADFSTLIB and contains ISPF dialog tables.

This data set has the following attributes:

**DSORG** Partitioned

**DSNTYPE** PDS

**RECFM** FB

**LRECL** 80

**BLKSIZE** Multiple of 80: INSTATBL and SDFSTLIB must have the same BLKSIZE.

# System (SYSTEM) Data Sets

The SYSTEM data sets are IMS system libraries. These data sets are user data sets (not known to SMP/E).

# Related System Data Sets

### IMS SYSDEF Data Sets

The following data sets are initially loaded by Stage 2 of the IMS system definition (SYSDEF) process. (See also “IMS System Definition Data Sets” on page 23.)

IMS.FORMAT (described in “IMS.FORMAT” on page 37)

IMS.LGENIN

IMS.LGENOUT

IMS.OBJDSET

IMS.OPTIONS

IMS.PROCLIB

IMS.REFERAL (described in “IMS.REFERAL” on page 43)

IMS.TFORMAT (described in “IMS.TFORMAT” on page 44)

### JOBS Data Sets

JOBS data sets include various IMS jobs.

### MATRIX Data Sets

The MATRIX data sets contain the IMS optional security data. The MATRIX data sets include:

IMS.MATRIX

IMS.MATRIXA

IMS.MATRIXB

All three data sets must be read protected. However, you need write authorization for the job, which builds the IMS security tables and matrixes. If required, you can assign a RACF password and user ID. The active MATRIX data set (in use in the online system) at any time corresponds directly to the MODBLKS data set that is active; they must have the same suffix. If MODBLKSA is the active data set, security data is taken from MATRIXA. If MODBLKSB is the active data set, security data is taken from MATRIXB.

### MODBLKS Data Sets

The IMS control region, the SMU, and the MSVERIFY utility use IMS.MODBLKS data sets that contain the IMS system definition output for the control block modules affected by online change. The MODBLKS data sets include:

IMS.MODBLKS

IMS.MODBLKSA

IMS.MODBLKSB

For more information see “IMS.MODBLKS” on page 23.

**Recommendation:** Modify your security implementation to use Resource Access Control Facility (RACF) or an equivalent product. Support for the Security Maintenance utility (SMU) will be eliminated in releases after IMS Version 9.

### TCFSLIB Data Sets

TCFSLIB data sets contain TCO SCRIPTS.

## IMS.JOBS

JOBS contains job streams that are submitted for execution by either the IMS operator command: `/START REGION` or the z/OS command: `START IMSRDR,MBR=`. You must customize any jobs stored in this data set with your installation job names, job statement parameters, and other pertinent specifications. This data set also contains the RACF password or user ID (on a job statement), and therefore must be read protected. You can assign a RACF password and user ID to this data set, and optionally code a RACF system task authorization exit routine to verify the use of protected data sets. Otherwise, system security cannot be assured.

This data set has the following attributes:

**DSORG** Partitioned

**DSNTYPE** PDS

**RECFM** FB

**LRECL** 80

**BLKSIZE** Multiple of 80

## IMS.LGENIN

LGENIN contains the input for the LGEN System Definition Sort/Split function.

This data set has the following attributes:

**DSORG** Partitioned

**DSNTYPE** PDS

**RECFM** FB

**LRECL** 80

**BLKSIZE** Multiple of 80. Default 11440. IBM recommends a large BLKSIZE for processing efficiency.

## IMS.LGENOUT

LGENOUT contains the output from the LGEN System Definition Sort/Split function. The members of this data set are used as input for conditional assembly steps during stage 2 of system definition.

This data set has the following attributes:

**DSORG** Partitioned

**DSNTYPE** PDS

**RECFM** FB

**LRECL** 80

**BLKSIZE** Multiple of 80. Default 11440. IBM recommends a large BLKSIZE for processing efficiency.

## IMS.MATRIX

MATRIX contains the security tables created by the IMS Security Maintenance Utility (SMU). Its contents are copied by the Online Change utility to either IMS.MATRIXA or IMS.MATRIXB.

**Recommendation:** Modify your security implementation to use Resource Access Control Facility (RACF) or an equivalent product. Support for the Security Maintenance utility (SMU) will be eliminated in releases after IMS Version 9.

This data set has the following attributes:

**DSORG** Partitioned

**DSNTYPE** PDS

**RECFM** U

**LRECL** 0

**BLKSIZE** User choice. Default 6144.

## IMS.MATRIXA, IMS.MATRIXB

MATRIXA and MATRIXB contain MATRIX members. When one of these libraries is active (in use by the online system), the contents of IMS.MATRIX are copied to the other, or inactive, library for use in the next online change run.

IMS.MATRIXA or IMS.MATRIXB can be brought online by a sequence of master terminal operator `/MODIFY` commands.

Prior to running online, you should APF authorize these data sets to the z/OS system. For more information, see “APF Authorization for IMS” on page 72.

These data sets have the following attributes:

**DSORG** Partitioned

**DSNTYPE** PDS

**RECFM** U

**LRECL** 0

**BLKSIZE** User choice. Default 6144.

## IMS.MODBLKSA, IMS.MODBLKSB

MODBLKSA and MODBLKSB contain MODBLKS members. When one of these libraries is active (in use by the online system), the contents of IMS.MODBLKS are copied to the other, or inactive, library for use in the next online change run.

IMS.MODBLKSA or IMS.MODBLKSB can be brought online by a sequence of master terminal operator `/MODIFY` commands.

Prior to running online, you should APF authorize these data sets to the z/OS system. For more information, see “APF Authorization for IMS” on page 72.

These data sets have the following attributes:

**DSORG** Partitioned

**DSNTYPE** PDS

**RECFM** U

**LRECL** 0

**BLKSIZE** Greater than or equal to 32760. Default 32760. IMS.SDFSRESL, MODBLKS, MODBLKSA, and MODBLKSB should have the same BLKSIZE.

## IMS.OBJDSET

OBJDSET contains the assembler output created during IMS system definition Stage 2 execution. You specify the name of this data set in the IMSGEN macro.

This data set has the following attributes:

**DSORG** Partitioned

**DSNTYPE** PDS

**RECFM** FB

**LRECL** 80

**BLKSIZE** Multiple of 80 less than or equal to 3200. This BLKSIZE limit of 3200 is a binder-imposed maximum for data sets containing object modules referenced by INCLUDE.

## IMS.OPTIONS

OPTIONS contains the configuration dependent macros stored there by Stage 2 processing.

This data set has the following attributes:

**DSORG** Partitioned

**DSNTYPE** PDS

**RECFM** FB

**LRECL** 80

**BLKSIZE** Multiple of 80. The BLKSIZE for this data set should be greater than or equal to the larger of the SYS1.SDFSMAC and SYS1.AMODGEN BLKSIZEs.

The BLKSIZEs for SDFSMAC and OPTIONS should be the same to prevent DCB conflicts during IMS system definition and SMP/E processing.

## IMS.PROCLIB

PROCLIB contains the cataloged procedure and control statement members that are created by IMS system definition. It also contains user-created control

statement members that are used to tailor IMS. After system definition, you might need to move some procedures to SYS1.PROCLIB.

**Related Reading:** Refer to *IMS Version 9: Installation Volume 2: System Definition and Tailoring* for additional information.

This data set has the following attributes:

**DSORG** Partitioned

**DSNTYPE** PDS

**RECFM** FB

**LRECL** 80

**BLKSIZE** Multiple of 80 less than or equal to 3200.

## IMS.TCFSLIB

TCFSLIB contains control statement members (scripts) used by IMS time-controlled operations (TCO).

This data set has the following attributes:

**DSORG** Partitioned

**DSNTYPE** PDS

**RECFM** F

**LRECL** 80

**BLKSIZE** 80

# Execution (EXECUTION) Data Sets

These data sets are used during the execution of the IMS system and its related utilities. These data sets are user data sets (not known to SMP/E).

# Related Execution Data Sets

### ACBLIB Data Sets

The ACBLIB data sets contain the application description and database control blocks. The ACBLIB data sets include:

IMS.ACBLIB

IMS.ACBLIBA

IMS.ACBLIBB

They require space for each PSB and all unique physical DBDs.

In systems that share data, the ACBLIBs in both systems must be identical, or the systems must share the same ACBLIB.

### DBDLIB Data Sets

The IMS.DBDLIB data set contains the database description blocks (DBDs) created by the DBDGEN utility.

### DBRC RECON Data Sets

The RECON data sets contain the registration information for all IMS databases identified to it. The RECON data sets include:

IMS.RECON1
IMS.RECON2
IMS.RECON3

### FORMAT Data Sets

These data sets contain MFS definitions. The FORMAT data sets include:

IMS.FORMAT
IMS.FORMATA
IMS.FORMATB
IMS.REFERAL
IMS.TFORMAT

IMS.REFERAL, IMS.FORMAT, and IMS.TFORMAT are initialized during Stage 2 of IMS system definition. IMS.FORMATA and IMS.FORMATB are created by copying the staging library, IMS.FORMAT. You must allocate one additional track for each user-defined format/message descriptor set for the IMS.FORMAT, IMS.REFERAL, and IMS.TFORMAT data sets.

### Log Data Sets

The log data sets include:

IMS.DFSOLPnn
IMS.DFSOLSnn
IMS.DFSWADSn
IMS.IEFRDER
IMS.IEFRDER2
IMS.IMSMON
IMS.MSDBCP1
IMS.MSDBCP2
IMS.MSDBCP3
IMS.MSDBCP4
IMS.RDS
IMS.RDS2

Refer to “Log Data Sets” on page 48.

### Message Queue Data Sets

The message queue data sets are used for message queueing. The message queue data sets include:

IMS.LGMSG
IMS.LGMSG1-LGMSG9
IMS.LGMSGL
IMS.MODSTAT
IMS.QBLKS
IMS.QBLKSL
IMS.SHMSG
IMS.SHMSG1-SHMSG9
IMS.SHMSGL

For information on allocating the Message Queue Data Sets, refer to “Message Queue Data Sets” on page 53.

### MSDB Data Sets

MSDB data sets contain information associated with MSDB databases. The MSDB data sets include:

- IMS.MSDBCP1
- IMS.MSDBCP2
- IMS.MSDBCP3
- IMS.MSDBCP4
- IMS.MSDBDUMP
- IMS.MSDBINIT

### Online Change Data Sets

The online change data sets include:

- IMS.MODSTAT
- IMS.MODSTAT2
- IMSPLEX.OLCSTAT

### PGMLIB Data Sets

The IMS.PGMLIB data set contains user-written application programs and required and optional user exit routines.

### PSBLIB Data Sets

The IMS.PSBLIB data set contains the program specification blocks (PSBs) created by the PSBGEN utility.

### SYSOUT Data Sets

SYSOUT data sets include:

- IMS.SYSOnnn Data Sets—Refer to “IMS.SYSOnnn” on page 43 and to “SPOOL SYSOUT Data Sets” on page 58.
- Direct Output Data Sets—Refer to “Direct Output Data Sets” on page 47.

### Trace Data Sets

Trace data sets contain output from IMS internal tracing. The trace data sets include:

- IMS.DFSTRA01
- IMS.DFSTRA02
- IMS.DFSTRA0T

## IMS.ACBLIB

ACBLIB contains the application control blocks (ACBs) created by the ACBGEN utility. Its contents are copied by the Online Change Utility to either IMS.ACBLIBA or IMS.ACBLIBB.

This data set has the following attributes:

| | |
|---|---|
| **DSORG** | Partitioned |
| **DSNTYPE** | PDS |
| **RECFM** | U |
| **LRECL** | 0 |
| **BLKSIZE** | User choice. Default 6144. |

## IMS.ACBLIBA, IMS.ACBLIBB

ACBLIBA and ACBLIBB contain ACBLIB members. When one of these libraries is active (in use by the online system), the contents of IMS.ACBLIB are copied to the other, or inactive, library for use in the next online change run.

IMS.ACBLIBA or IMS.ACBLIBB can be brought online by a sequence of master terminal operator `/MODIFY` commands.

If you specify DOPT in the APPLCTN macro, concatenate the library containing these PSBs after the library containing the non-DOPT PSBs (that is, after the library pointed to by the IMS.ACBLIBA or IMS.ACBLIBB DD cards). The order of concatenation must be the same for IMS.ACBLIBA and IMS.ACBLIBB.

These data sets have the following attributes:

**DSORG** Partitioned

**DSNTYPE** PDS

**RECFM** U

**LRECL** 0

**BLKSIZE** User choice. Default 6144.

## IMS.DBDLIB

DBDLIB contains the database description blocks (DBDs) created by the DBDGEN utility. Each DBD (one per database) requires approximately 1500 to 2500 bytes of direct access storage. Exact requirements depend on the number of data set groups, segments, fields, and hierarchic levels.

This data set has the following attributes:

**DSORG** Partitioned

**DSNTYPE** PDS

**RECFM** U

**LRECL** 0

**BLKSIZE** User choice. Default 6144.

## IMS.DFSOLPnn, IMS.DFSOLSnn

DFSOLPnn and DFSOLSnn are the online log data sets (OLDS) used by the IMS online systems. OLDS can occur singly (SNGL) or in pairs (DUAL). DFSOLPnn is the primary (or SNGL) OLDS. DFSOLSnn is the secondary OLDS. The nn suffix can range from 00 to 99. A minimum of 3 OLDSs (SNGL or DUAL) must be available to start IMS.

**Related Reading:** For additional information, refer to “Log Data Sets” on page 48.

These data sets have the following attributes:

**DSORG** Sequential

**RECFM** VB

**LRECL** BLKSIZE-4

**BLKSIZE** Multiple of 2048 greater than or equal to 6144. These data sets

must be allocated as a single extent (contiguous tracks). Secondary allocation must not be specified. IBM recommends that you choose a BLKSIZE that results in from 1 to 4 blocks per track.

## IMS.DFSTRA01, IMS.DFSTRA02

DFSTRA01 and DFSTRA02 are the external trace data sets used by the IMS online systems. The two data sets are used when the trace table `OUT` parameter is used in the DFSVSMxx OPTIONS statement or when the `/TRACE SET ON TABLE nnn OPTION LOG` command is used. The data sets are used in a wrap-around fashion. (When DFSTRA01 fills, then DFSTRA02 is used. When DFSTRA02 fills, then DFSTRA01 is used.)

These data sets have the following attributes:

**DSORG** Sequential

**RECFM** VB

**LRECL** 4004

**BLKSIZE** (LRECL*n)+4. The block size must be a multiple of the LRECL (4004), with an additional 4 bytes for the block descriptor word. The recommended BLKSIZE is 20024, which is 5 logical records (4004*5) plus the block descriptor word (4). The BLKSIZE of 20024 is recommended for current DASD, because it is 1/2 track. Future DASD might change the track size, and older DASD might have different track sizes.

These data sets must be allocated as a single extent (contiguous tracks). Secondary allocation must not be specified.

## IMS.DFSTRA0T

If you prefer to use tape for the external trace data set, you must use DFSTRA0T instead of DFSTRA01 and DFSTRA02.

DFSTRA0T must be dynamically allocated.

This data set has the following attributes:

**DSORG** Sequential

**RECFM** VB

**LRECL** 4004

**BLKSIZE** (LRECL*n)+4

## IMS.DFSWADSn

DFSWADSn are the write-ahead data sets (WADS) used by the IMS online systems. WADS can occur singly (SNGL) or in pairs (DUAL), but primary or secondary concepts do not apply as they do with OLDS. The n suffix can range from 0 to 9. A minimum of 1 WADS must be available to start IMS.

For additional information, refer to “Log Data Sets” on page 48.

These data sets have the following attributes:

**DSORG** Sequential

**KEYLEN** 1

**RECFM** F

**LRECL** 2080

**BLKSIZE** 2080

These data sets must be allocated as a single extent (contiguous tracks). Secondary allocation must not be specified.

## IMS.FORMAT

FORMAT contains the message format service blocks (MFS) created by the Message Format Services Language utility. Its contents are copied by the Online Change Utility to either IMS.FORMATA or IMS.FORMATB.

This data set has the following attributes:

**DSORG** Partitioned

**DSNTYPE** PDS

**RECFM** U

**LRECL** 0

**BLKSIZE** User choice. Default 6144. The FORMAT, FORMATA, FORMATB, and TFORMAT data sets must all have the same BLKSIZE.

## IMS.FORMATA, IMS.FORMATB

FORMATA and FORMATB contain FORMAT members. When one of these libraries is active (in use by the online system), the contents of IMS.FORMAT are copied to the other, or inactive, library for use in the next online change run.

IMS.FORMATA or IMS.FORMATB can be brought online by a sequence of master terminal operator /MODIFY commands.

These data sets have the following attributes:

**DSORG** Partitioned

**DSNTYPE** PDS

**RECFM** U

**LRECL** 0

**BLKSIZE** User choice. Default 6144. The FORMAT, FORMATA, FORMATB, and TFORMAT data sets must all have the same BLKSIZE.

## IMS.IEFRDER, IMS.IEFRDER2

IEFRDER usually refers to the primary IMS batch log. IEFRDER2 usually refers to the secondary IMS batch log. They can also refer to the input data set in the IMSRDR procedure.

For additional information, refer to “Log Data Sets” on page 48.

In batch logging, these data sets have the following attributes:

**DSORG** Sequential

**RECFM** VB

**LRECL** BLKSIZE-4

**BLKSIZE** User choice between 4K and 32K; IBM recommends a 2K multiple greater than or equal to 6K.

## IMS.IMSMON

IMSMON contains the trace records for either the DB Monitor or IMS (System) Monitor if the trace records are not routed to the IMS log.

For additional information, refer to “Log Data Sets” on page 48.

This data set has the following attributes:

**DSORG** Sequential

**RECFM** VB

**LRECL** BLKSIZE-4

**BLKSIZE** User choice; IBM recommends a 2K multiple greater than or equal to 6K.

## IMS.MODSTAT

MODSTAT contains information to indicate which of the following suffixed data sets the IMS online system must use at initialization time. MODSTAT must be the ddname for these data sets.

ACBLIBA or ACBLIBB

FORMATA or FORMATB

MODBLKSA and MATRIXA or MODBLKSB and MATRIXB

This data set has the following attributes:

**DSORG** Sequential

**RECFM** F

**LRECL** 80

**BLKSIZE** 80

This data set is a single-record BSAM data set and requires one track of storage.

Before the IMS system can be run, you need to initialize IMS.MODSTAT.

## IMS.MODSTAT2

MODSTAT2 is used only in an XRF complex; this data set is identical in function to IMS.MODSTAT. Its ddname must be MODSTAT2. As with MODSTAT, you need to initialize this data set before the IMS system can run.

This data set has the following attributes:

**DSORG** Sequential

**RECFM** F

**LRECL** 80

**BLKSIZE** 80

This data set is a single-record BSAM data set and requires one track of storage.

## IMS.MSDBCP1, IMS.MSDBCP2

MSDBCP1 and MSDBCP2 are required if MSDBs are defined to the system. During each IMS checkpoint, a control record followed by the contents of the contiguous block of virtual storage occupied by the MSDBs is written to one of these data sets. The data sets are used alternately by successive checkpoints, with each subsequent checkpoint overlaying a previous one.

These data sets have the following attributes:

**DSORG** Sequential

**RECFM** Determined by IMS

**LRECL** Determined by IMS

**BLKSIZE** Determined by IMS

These data sets must be allocated as a single extent (contiguous tracks). Secondary allocation must not be specified.

## IMS.MSDBCP3, IMS.MSDBCP4

MSDBCP3 and MSDBCP4 are used only in an XRF complex; these data sets are identical in function to MSDBCP1 and MSDBCP2. With XRF, any two of the four data sets can contain the latest MSDB checkpoint. Although an active subsystem can select the data set containing the latest MSDB checkpoint and any other, the alternate subsystem must select the two data sets not used by the active subsystem.

These data sets have the following attributes:

**DSORG** Sequential

**RECFM** Determined by IMS

**LRECL** Determined by IMS

**BLKSIZE** Determined by IMS

These data sets must be allocated as a single extent (contiguous tracks). Secondary allocation must not be specified.

## IMS.MSDBDUMP

MSDBDUMP is required when the command `/DBDUMP` specifies database MSDB. This command causes a dump of all MSDBs to be written to this data set. The contents are identical to that of MSDBCPx. Successive executions of the command cause the previous contents to be overlaid.

This data set has the following attributes:

**DSORG** Sequential

**RECFM** Determined by IMS

**LRECL** Determined by IMS

**BLKSIZE** Determined by IMS

This data set must be allocated as a single extent (contiguous tracks). Secondary allocation must not be specified.

## IMS.MSDBINIT

MSDBINIT is required for an IMS system that includes MSDBs. This data set contains a record for each MSDB segment. It is read during all cold starts and during a normal restart if the MSDBLOAD parameter is specified for the /NRESTART command. It is produced by executing the MSDB Dump Recovery or MSDB Maintenance utility. MSDBINIT can contain one, several, or all MSDBs defined.

This data set has the following attributes:

**DSORG** Sequential

**RECFM** VBT

**LRECL** BLKSIZE-4

**BLKSIZE** User choice

This data set must be allocated as a single extent (contiguous tracks). Secondary allocation must not be specified.

## IMS.PGMLIB

PGMLIB contains user-written application programs and required and optional user exit routines.

This data set has the following attributes:

**DSORG** Partitioned or Partitioned Extended (PDSE)

**RECFM** U

**LRECL** 0

**BLKSIZE** User choice. Default 6144.

## IMSPLEX.OLCSTAT

OLCSTAT is an optional data set that contains global online change information and status. OLCSTAT is a global data set that is dynamically allocated by IMS. The MODSTAT and MODSTAT2 data sets do not need to be defined in the IMS control region JCL when OLCSTAT is used.

To enable global online change, OLCSTAT must be defined instead of the local MODSTAT data set. All IMSs in an IMSplex must define the same physical OLCSTAT data set. Otherwise, IMS initialization fails. OLCSTAT is required if OLC=GLOBAL is defined.

To initialize the OLCSTAT data set, run the global online change utility DFSUOLC0.

This data set has the following attributes:

**DSORG** Sequential

**RECFM** V

**LRECL** 5204

**BLKSIZE** Default 5208

## IMS.PSBLIB

PSBLIB contains the program specification blocks (PSBs) created by the PSBGEN utility. Each PSB (one per program) requires approximately 250 to 500 bytes of

direct access storage. Exact requirements depend on the number of databases (PCBs) in the PSB and the number of sensitive segments. This data set is required in DB and DB/DC systems.

This data set has the following attributes:

**DSORG** Partitioned

**DSNTYPE** PDS

**RECFM** U

**LRECL** 0

**BLKSIZE** User choice. Default 6144.

## IMS.QBLKS, IMS.SHMSG/1-9,IMS.LGMSG/1-9

QBLKS, SHMSG, and LGMSG are required by the IMS DB/DC system for message queuing. Space requirements for message queue data sets vary with the system environment. Allocation guidelines are presented separately under “Message Queue Data Sets” on page 53.

These data sets have the following attributes:

**DSORG** Sequential

**RECFM** Determined by IMS

**LRECL** Determined by IMS

**BLKSIZE** Determined by IMS

These data sets must be allocated as a single extent (contiguous tracks). Secondary allocation must not be specified.

For SHMSG and LGMSG, up to ten data sets can be provided for each. Multiple message queue data sets provide for configuration flexibility and performance.

If you use multiple data sets, you must do the following:

- Add the data sets in sequence, with SHMSG or LGMSG specified first.
- Specify the same space allocation for all data sets. Even if you allocate different amounts for multiple data sets, the smallest amount specified is the amount used for all data sets. For example, if four data sets are allocated with 600, 600, 500, and 400 cylinders respectively, the actual total available space is 1600 cylinders (4 X 400), rather than 2100 cylinders (the sum of the allocated amounts). Records are assigned to the data sets cyclically; thus, the smallest space allocated controls the amount of space for all, which in turn determines the total space available and the highest valid record number.

The DDNAMEs for the data sets must be:

- For SHMSG:
  - SHMSG
  - SHMSG1
  - SHMSG2
  - SHMSG3
  - SHMSG4
  - SHMSG5

  - SHMSG6
  - SHMSG7
  - SHMSG8
  - SHMSG9
- For LGMSG:
  - LGMSG
  - LGMSG1
  - LGMSG2
  - LGMSG3
  - LGMSG4
  - LGMSG5
  - LGMSG6
  - LGMSG7
  - LGMSG8
  - LGMSG9

## IMS.QBLKSL, IMS.SHMSGL, IMS.LGMSGL

QBLKSL, SHMSGL, and LGMSGL are used only in an XRF complex; these data sets are similar in function to the regular message queue data sets. These data sets are always cold started and used as local message queues on an XRF alternate subsystem, from startup until completion of takeover, when the regular message queues become available. The DCB specification for the local message queue data sets must match the regular message queue data sets. However, the local message queues can be much smaller. The local message queues must be large enough to hold the shutdown message margin, plus primary and secondary IMS master terminal messages until they are dequeued.

These data sets have the following attributes:

**DSORG** Sequential

**RECFM** Determined by IMS

**LRECL** Determined by IMS

**BLKSIZE** Determined by IMS

These data sets must be allocated as a single extent (contiguous tracks). Secondary allocation must not be specified.

## IMS.RDS

RDS contains information required for recovery, including the checkpoint ID table required for restarting IMS. However, RDS does not contain any log records.

This data set has the following attributes:

**DSORG** Sequential

**RECFM** Determined by IMS

**LRECL** Determined by IMS

**BLKSIZE** Determined by IMS

You should allocate a minimum of five contiguous tracks to this data set.

## IMS.RDS2

RDS2 is used only in an XRF complex; this data set is identical in function to IMS.RDS.

This data set has the following attributes:

**DSORG** Sequential

**RECFM** Determined by IMS

**LRECL** Determined by IMS

**BLKSIZE** Determined by IMS

You should allocate a minimum of five contiguous tracks to this data set. Do not manage either RDS data set with a migration or recall system that might recall the data set to a volume other than the one to which it was originally allocated. If you do so, IMS might be unable to warm start or emergency start the system.

## IMS.RECON1, IMS.RECON2, IMS.RECON3

RECON1, RECON2, and RECON3 contain system restart and recovery information managed by the Database Recovery Control (DBRC) function.

These data sets have the following attribute:

**DSORG** VSAM KSDS

## IMS.REFERAL

REFERAL contains intermediate text copies of descriptions supplied to the MFS Language utility.

This data set has the following attributes:

**DSORG** Partitioned

**DSNTYPE** PDS

**RECFM** FB

**LRECL** 80

**BLKSIZE** Multiple of 80

## IMS.SYSOnnn

The SYSOnnn DASD data sets are used to store spool SYSOUT data. The contents of these data sets can be printed using the SPOOL SYSOUT Print utility. This utility is either scheduled automatically or must be submitted manually, depending upon an option in the LINEGRP system definition macro. *nnn* is a one- to three-digit suffix assigned sequentially by IMS during system definition.

This data set has the following attributes:

**DSORG** Sequential

**RECFM** UM

These data sets must be allocated as a single extent (contiguous tracks). Secondary allocation must not be specified.

These data sets must be initialized before they are used by IMS. For example, these data sets can be allocated on the SYSUT2 DD statement for the IEBGENER utility. Use DD DUMMY for SYSUT1. Specify DCB attributes for both SYSUT1 and SYSUT2.

For more information on how to allocate SPOOL data sets, see “SPOOL SYSOUT Data Sets” on page 58

## IMS.TFORMAT

TFORMAT contains the online MFS descriptors, created by the MFS Language utility, for MFSTEST (test mode) online execution.

This data set must be concatenated in front of FORMATA or FORMATB in the IMSTFMTA or IMSTFMTB DD statements in the IMS execution procedure.

If you change MFS formats online, two DD statements must point to this TFORMAT data set, or the DD statements can point to two separate TFORMAT data sets.

This data set has the following attributes:

**DSORG** Partitioned

**DSNTYPE** PDS

**RECFM** U

**LRECL** 0

**BLKSIZE** User Choice. Default 6144. The FORMAT, FORMATA, FORMATB, and TFORMAT data sets must all have the same BLKSIZE.

This data set must be allocated as a single extent (contiguous tracks). Secondary allocation must not be specified.

# IRLM Data Sets

The IRLM data sets are the distribution and target libraries associated with the IRLM.

## IMS.ADXRLOAD

ADXRLOAD is the IRLM distribution library that contains object modules.

This data set has the following attributes:

**DSORG** Partitioned

**DSNTYPE** PDS

**RECFM** U

**LRECL** 0

**BLKSIZE** User choice. Greater than or equal to 6144.

## IMS.ADXRSAMP

ADXRSAMP is the IRLM distribution library that contains JCL.

This data set has the following attributes:

**DSORG** Partitioned

**DSNTYPE** PDS

**RECFM** FB

**LRECL** 80

**BLKSIZE** Multiple of 80.

## IMS.SDXRSAMP

SDXRSAMP is the IRLM target library that contains load modules.

This data set has the following attributes:

**DSORG** Partitioned

**DSNTYPE** PDS

**RECFM** FB

**LRECL** 80

**BLKSIZE** Multiple of 80.

## IMS.SDXRRESL

IMS.SDXRRESL is the IRLM target library that contains load modules.

Prior to running online, you should APF authorize IMS.SDXRRESL to the z/OS system. For more information see, “APF Authorization for IMS” on page 72.

This data set has the following attributes:

**DSORG** Partitioned

**DSNTYPE** PDS

**RECFM** U

**LRECL** 0

**BLKSIZE** User choice. Greater than or equal to 32760.

# Non-SMP/E Data Sets

These data sets are not installed by SMP/E.

## IMS.ADFSOPSC

ADFSOPSC contains optional machine-readable material (assembler language source output from the PL/X compiler) for the IMS System Services and IMS Database Manager (IMS DB) licensed program product and its dependent features and functions.

This data set has the following attributes:

**DSORG** Partitioned

**DSNTYPE** PDS

**RECFM** FB

**LRECL** 80

**BLKSIZE** Multiple of 80

## User Level Data Sets

These data sets can be allocated by the user.

## USER.TLIB

Some IMS programs use ISPF as a dialog manager and might require the use of a user level table data set. The user data set might be required to use some of the features of DFSSPOC, DFSHALDB, and Syntax Checker. The USER.TLIB data set needs to be the only data set allocated to file ISPTABL and must also be in the ISPTLIB concatenation before the IMS.SDFSTLIB data set.

Multiple users cannot use the same USER.TLIB data set at the same time. A user can have more than one USER.TLIB data set but can use only one data set at a time.

This data set has the following attributes:

**DSORG** Partitioned

**DSNTYPE** PDS

**RECFM** FB

**LRECL** 80

**BLKSIZE** Multiple of 80

# Chapter 3. Data Set Allocation Considerations

This chapter includes the following information that you should consider when allocating data sets:



**Related Reading:** The DBRC Recon data set is described in *IMS Version 9: DBRC Guide and Reference*.

## Direct Output Data Sets

For direct SYSOUT lines defined to IMS, you can use any valid output device supported by the operating system's BSAM. You can specify the following record formats: F, FM, FB, FBM, FBS, FBSM, V, VM, VB, and VBM. You can specify block sizes, but these are adjusted downward at execution time if they are larger than system-definition maximums.

For fixed-format records, the system-defined buffer size must be at least 20 bytes longer than the DCB block size for the data set. For variable-length records, the buffer size must be 16 bytes longer than the desired block size, including Block Descriptor Word and Record Descriptor Word. To accommodate the data to be written, you can select logical record specifications that are restricted as follows:

- For fixed-format records, the block size must be an even multiple of logical record length.
- For unblocked variable-format records, maximum logical record length equals block size minus 4, and must include the RDW (4 bytes).

Table 4 lists device types and the corresponding default data set values for direct output data sets. If you do not supply DCB parameters, these default record format, logical record length, and block size values apply.

*Table 4. Default Data Set Attributes for Direct Output Data Sets*

| Device Type | RECFM | LRECL | BLKSIZE |
|---|---|---|---|
| 3211 | VM | 137 | 141 |
| 2540P | V | 84 | 88 (note 1) |
| 2400 series tape | VBM | 125 | (note 2) |
| DASD | VBM | 125 | 1/4 Track |

**Notes:**

1. Control characters are not supported.
2. Block size only depends on system-definition buffer size. Each segment is treated as a logical record. When you specify blocking, all segments of a message are contained within a block, unless the block size is not large enough.

   Fixed-length segments are padded with trailing blanks. If blocking is used, the balance of the block is also padded when a message does not have the same number of segments as logical records in the block.

   Tape blocks are not shorter than 18 bytes, regardless of the record format.

   Because volume switching is provided by operator command when tape is used, specify a large value (for example, 99) for the volume count sub-parameter of the VOLUME keyword on the associated DD statement. In an IMS system in which binary synchronous devices are also operating, and only one tape drive is allocated, timeout problems can occur.

## Log Data Sets

For online IMS executions, allocate the IMS log to multiple data sets on DASD. Log records are initially written to an OLDS, and subsequently copied (archived) to the system log data set (SLDS). An SLDS can be on DASD or tape. Batch users can allocate a log (also known as the system log data set) to DASD or tape.

In addition, for log write-ahead, provide the write-ahead data sets (WADS). You can specify log write-ahead options in the DCLWA keyword of the TRANSACT macro. Log records created by IMS can be written to a WADS before the results of processing are externalized. Thus, a WADS contains a copy of committed log records in the online log data set buffers that have not yet been written to an OLDS.

**Related Reading:** For additional information on IMS logging, see *IMS Version 9: Operations Guide*. For the JCL requirements for the IMS log data sets, see *IMS Version 9: Installation Volume 2: System Definition and Tailoring*.

You do not need DD statements for this log and the system output log (IEFRDER and IEFRDER2) for online IMS executions; you must remove the DD statements from your JCL. With batch, however, do not change the DD statements for logging. If you specify a secondary log in the IMSCTF macro, the ddnames for the primary and secondary log data sets must be IEFRDER and IEFRDER2. The system rounds the BLKSIZE for IEFRDER and IEFRDER2 data sets to a double-word boundary (a multiple of eight).

If you specify MONITOR in the IMSCTF macro, the IMSMON DD statement is used for both the DB and IMS Monitor data sets. You can allocate the IMSMON data set on DASD or tape (SL or SUL). You need a minimum of two buffers. If the block size you specify is smaller than the system-calculated minimum, the latter is used. The block size is rounded up to a double-word boundary (a multiple of eight). You can specify the IMSMON data set through a JCL DD statement or a DFSMDA dynamic allocation member. If the block size is dynamically allocated, the default is 4096. If it is JCL allocated and DCB=BLKSIZE=NNNN is not specified in the IMSMON DD statement, the default block size is 1048 even if a larger block size is preallocated.

If you do not specify BLKSIZE, or if BLKSIZE=0 is coded in the JCL, the default for batch log data sets is LRECL=4092 and BLKSIZE=4096.

## Online Log Data Set

The online log data sets are required for online IMS execution. Because OLDS can be required for restart, it cannot be a temporary data set. Single or dual online logs can be specified by the OLDSDEF control statement in the DFSVSMxx member of IMS.PROCLIB. The only specific naming requirements for online log data sets is that they be unique. However, ddnames for the online log data set must be of the form DFSOLPnn for primary online log data sets, and DFSOLSnn for secondary online log data sets, where nn can be any numeric value. An OLDS must be a single volume and extent, and at least three data sets must be allocated. However, if an OLDS is to be stopped and started with `/STA` and `/STO` commands, DFSMDA members must exist with IMS.SDFSRESL for each such data set. You must provide DFSMDA members for all OLDSs. The maximum number of OLDSs is 100.

If you use dual logging, you should allocate at least 6 data sets with corresponding numeric values, with a maximum of 200 possible. You can dynamically allocate an additional OLDS using the `/START OLDS` master terminal operator command. If you use dynamic allocation you should preallocate and catalog candidate data sets, and specify data set names using the dynamic allocation macro, DFSMDA. You must provide a DFSMDA member for each OLDS.

**Related Reading:** For information on using DFSMDA, see *IMS Version 9: Utilities Reference: System*.

Define the initial set of OLDSs to be acquired by restart initialization in the OLDSDEF control statement in the DFSVSMxx member of IMS.PROCLIB. You can dynamically allocate this set of OLDSs, or specify them through DD statements.

**Recommendation:** Consider assigning enough OLDS space to each OLDS so that it almost fills an SLDS volume at the end of each archive process. If the size of an OLDS exceeds the capacity of a tape volume, additional tape mounts are required. If an OLDS can be contained on a single SLDS volume, the Log Archive utility accesses the SLDS while still allocated to the IMS online system. You can use DISP=OLD **only** if you can allocate sufficient OLDS space to hold all the log records generated by the online system between startup and shutdown. Archiving **must** then be performed while the online system is not active.

OLDS block sizes must be equal. Predefine the OLDS with block size, logical record length (LRECL), and record format specified at definition time. The OLDS LRECL must equal the OLDS block size minus 4 bytes (BLKSIZE–4 = LRECL). The OLDS record format must be variable blocked (VB), and block size must meet the following requirements:

- It must be a minimum of 6KB and a multiple of 2048. If IMS is going to run in z/Architecture™ mode, log buffer storage will only be fixed above 2 gigabytes if the block size is a multiple of 4096.
- It must not exceed a maximum of 30,720 bytes, because this is the largest multiple of 2048 supported by BSAM.
- At a minimum, its length must be the same as the length of the largest log record, plus 20 bytes. The largest log record length is a function of the block size for the message queue data sets, the EMH terminal buffer size, and the DEDB control interval size.

The main factor that determines OLDS block size is the track size of the OLDS devices. The OLDS block size cannot exceed the OLDS track size.

The WADS temporarily holds partially filled OLDS buffers, which means that only full OLDS buffers are written to the OLDS. Therefore, choose a large OLDS block size to achieve more efficient DASD space utilization.

Table 5 provides some recommended OLDS block sizes that maximize DASD space utilization for several DASD devices. It also provides information on blocks per track and bytes of log data per track.

*Table 5. Recommended OLDS Block Sizes*

| Device Type | OLDS Block Size | Blocks per Track | Bytes of Log Data per Track |
|---|---|---|---|
| 2105 | 26624 | 2 | 53248 |
| 2105 | 18432 | 3 | 55296 |
| 3330 | 12288 | 1 | 12288 |
| 3350 | 18432 | 1 | 18432 |
| 3380 | 22528 | 2 | 45056 |
| 3390 | 26624 | 2 | 53248 |
| 3390 | 18432 | 3 | 55296 |
| 9340 | 22528 | 2 | 45056 |

Log initialization ensures that the block size specified in the OLDS data set control block (DSCB) data set is large enough to handle the maximum length log record. If the block size is too small, an abend can occur.

To change the OLDS block size, archive all OLDS data, and scratch and reallocate each OLDSs to ensure that all OLDS block sizes remain identical. Also use the `DELETE.LOG DBRC` command to remove the OLDS from the DBRC RECON.

DASD space for each OLDS must be contiguous, and secondary extents are not permitted. Pairs of OLDSs (primary and secondary) must have the same space allocation.

The minimum number of buffers that you can specify is 2, with a maximum of 999. The OLDSDEF control statement in the DFSVSMxx member of PROCLIB specifies the desired number of OLDS buffers. The default number of buffers is 5.

## TOD Clock Setting During IPL

**Attention:** Setting the Greenwich mean time (GMT) clock value back at IPL time can cause severe database integrity and recovery problems. Issuing a `SET CLOCK` command to change the local time, for example at the end of daylight savings time, has no effects on IMS recoverability.

The time-of-day (TOD) clock setting is critical to IMS log integrity and the proper functioning of database recovery, IMS restart, and XRF tracking/takeover. **Never** set the TOD clock to a time earlier than the immediate prior shutdown or failure without taking actions to reset the recovery base. You can reset the recovery base by invalidating the existing log, image copy, and change accumulation data sets. If the TOD clock must be set to a time earlier than the previous shutdown or failure, you must complete the following procedure to reset the recovery base:

1. Reallocate a different block size for the OLDS data sets.
2. Reinitialize the DBRC RECON.
3. Make image copies of all database data sets.

4. Cold start IMS.

Issuing a SET CLOCK command does not reset the TOD clock. You can set the TOD clock only at system IPL either by changing the setting of the sysplex timer (external time reference or ETR); or by replying to the IPL prompts for setting the clock with the GMT option. Therefore, you don't need to reset the recovery base if you issue a SET CLOCK command when the TOD setting must be changed for daylight savings time (for example).

### Using Newly Initialized (Reinitialized) Volumes for OLDS

If a newly initialized (or reinitialized) volume is to contain an OLDS, prior to use in the online production system, you must format the volume or space occupied by the OLDS. If it is not formatted, **severe performance degradation and excessive device and channel utilization** can be expected until the OLDS is completely filled once. This problem is noticeable during emergency restart and XRF tracking/takeover.

Although IMS does not provide a formatting utility, many techniques for formatting are available, such as:

- Copy an existing OLDS (of the same size) into the new OLDS.
- Copy an existing volume into the new volume, rename the OLDS to a new name, and delete unrelated VTOC entries.
- Use another IMS subsystem to fill the OLDS (turn on all traces to the log, and issue checkpoint commands until the OLDS is filled).
- Write your own program to write at least 1 byte of data in each track on the volume, or to fill the OLDS with the maximum number of LRECL blocks.

## Write-Ahead Data Set

The write-ahead data set (WADS) is a small DASD data set containing a copy of log records reflecting committed operations in the OLDS buffers that have not yet been written to the OLDS. WADS space is continually reused after the records it contains are written to the OLDS. You can specify this required data set by JCL, or you can dynamically allocate it. You can specify single or dual WADSs by the execution time parameter WADS=S|D. The WADS ddname is DFSWADSn, where n is a number from 0 through 9. If you define multiple instances of a WADS, they are used in the WADS DD statement suffix sequence as indicated by the n in the ddname. Preallocate the WADS on DASD supporting Count Key Data (CKD) architecture, (with a /NRE or /ERE FORMAT WA command) at least once before it is used. Each WADS must be on the same device type and have the same space allocation. Each WADS must be allocated on a minimally used device and data path.

Tracks in the WADS data set are used in groups. The size of a WADS track group depends on the size of the OLDS block size. Use the following formula to calculate the size of a WADS track group:

```
Number of tracks in a WADS track group = (OLDS block size/2K) + 1
```

The WADS should be large enough to hold at least one WADS track group for each OLDS block that fits on an OLDS track. You can use the WADS track group size (or the number of tracks in a WADS track group) to calculate the recommended minimum WADS sizes using the following formula:

```
Minimum WADS size (in tracks) = (number of tracks in a WADS track group) x
 (number of OLDS blocks per track)
```

Table 6 provides the calculated recommended minimum WADS sizes based on the OLDS block size and on the DASD device type being used.

*Table 6. Recommended Minimum WADS Sizes*

| OLDS Block Size | WADS with OLDS on 3380 | WADS with OLDS on 3390 |
|---|---|---|
| 6K | 28 tracks or 2 cylinders | 32 tracks or 3 cylinders |
| 8K | 25 tracks or 2 cylinders | 30 tracks or 2 cylinders |
| 10K | 24 tracks or 2 cylinders | 30 tracks or 2 cylinders |
| 12K | 21 tracks or 2 cylinders | 28 tracks or 2 cylinders |
| 14K | 24 tracks or 2 cylinders | 24 tracks or 2 cylinders |
| 16K | 18 tracks or 2 cylinders | 27 tracks or 2 cylinders |
| 18K | 20 tracks or 2 cylinders | 30 tracks or 2 cylinders |
| 20K | 22 tracks or 2 cylinders | 22 tracks or 2 cylinders |
| 22K | 24 tracks or 2 cylinders | 24 tracks or 2 cylinders |
| 24K | 13 tracks or 1 cylinder | 26 tracks or 2 cylinders |
| 26K | 14 tracks or 1 cylinder | 28 tracks or 2 cylinders |
| 28K | 15 tracks or 1 cylinder | 15 tracks or 1 cylinder |
| 30K | 16 tracks or 2 cylinders | 16 tracks or 2 cylinders |

The maximum number of WADS tracks that are ever used is calculated by the following formula:

```
Maximum number of tracks = ([OLDS block size/2K] + 1) x (number of OLDS buffers)
```

The maximum amount of space that is used for each WADS is large enough to contain 255 OLDS buffers.

WADS should be allocated in the range of the recommended minimum size from the table (or by using the minimum WADS size formula). Obtain the maximum size by using the maximum number of tracks formula. Most installations find that four to five cylinders are appropriate.

Define the initial set of WADSs to be acquired by restart initialization in the WADSDEF control statement in the DFSVSMxx member of IMS.PROCLIB.

## System Log Data Set

A system log data set (SLDS) can be on tape or DASD, single or dual.

An SLDS is the log data set created by IMS batch execution.

An SLDS is also one of the output data sets created when the Log Archive utility is used to archive an OLDS. The Log Archive utility can also be used to copy a batch log (SLDS) from DASD to tape (or another DASD data set).

When the Log Archive utility is used to archive an OLDS to tape, you can force the primary and secondary SLDS volumes to contain the same data by specifying the number of log blocks per volume. SLDS block size can be different from the block size of the OLDSs being archived, but the block size of the primary SLDS must be the same as the secondary SLDS block size.

If 3480 tape drives are used for logging, they are forced to run in tape-write-immediate mode.

The SLDS is dynamically allocated to the address space if needed by restart. Define the SLDS (IMSLOGR) through the dynamic allocation macro DFSMDA.

If SMS-managed generation data sets (GDS) are used for the SLDS, certain error conditions might cause the SLDS to be overwritten. For batch allocations of SMS GDS, the data set is cataloged in deferred roll-in status at step allocation time, and rolled-in at step deallocation time. If a power failure occurs after the SLDS has been written and closed, but before step deallocation, IMS assumes the SLDS is valid; however, SMS does RECLAIM processing at the next allocation. RECLAIM processing means that a data set in deferred roll-in status is reused. For DISP=NEW, the new data would overwrite the existing data.

## Message Queue Data Sets

The amount of DASD space allocated to the message queue data sets depends on how many transaction codes and logical terminal names you specify during system definition, and how many short and long messages are to be held by the system during any period of time. The DASD space becomes reusable when the message it was allocated for is processed, and when the space is no longer required for recovery. You can change the amount of DASD space for the message queue data sets prior to a start of IMS. Allocating less space (than in the previous execution) prior to a `/NRE or /ERE BLDQ` can cause the restart to abnormally terminate.

For single-mode transactions, a message space is available as soon as it is processed by an application program (for example, the program terminates normally or requests the next message).

For multiple-mode transactions, the message spaces are available only after the application program that processes them terminates normally or takes a checkpoint.

For logical terminal messages, a given message space is made available after the successful receipt of this message by the terminal device.

The number of records to be reserved in each data set to allow the system to shut down depends on message throughput and the number of regions scheduled.

**Recommendations:** Observe the following recommendations for message queue data sets:

- If you use emergency restart procedures using BLDQ, reallocate logical record size and data set spaces carefully. Allocate enough space to the data set to hold log records relating to message queue activity occurring between checkpoints. The BLDQ procedure always restores the message queue entries to the relative position in the respective queue data sets at the time saved. If the logical record or data set size is decreased, you might be unable to restart in some situations.

  **Related Reading:** For information on restarting, see the section "Starting/Restarting IMS" in the *IMS Version 9: Operations Guide*.
- Do not manage the QBLKS, SHMSG, and LGMSG queue data sets with a migration/recall system that might recall the data sets to a volume other than the one to which they were originally allocated. If you do so, IMS might be unable to warm start or emergency start the system.
- Secondary allocation is not allowed for message queue data sets.

# OSAM Data Sets

The recommended method of allocation for OSAM (overflow sequential access method) single or multiple volumes is through the use of JCL at the time the data set is loaded using the SPACE parameter.

If your installation control of DASD storage and volumes is such that the OSAM data sets must be reserved ahead of time, or you decide that a message queue data set requires more than one volume, the OSAM data sets can be preallocated.

**Restrictions:** Preallocation has the following restrictions:

- DCB parameters must not be specified.
- If the data set is to be expanded beyond the preallocated space, a secondary quantity must be specified during preallocation. Queue data sets are constrained to only that space that is preallocated.

When a multiple-volume data set is preallocated, the method of allocation must allocate extents on all volumes to be used. The end of the data set needs to be correctly indicated in the data set control block (DSCB) on the last volume.

The suggested method is to use the IEFBR14 utility once for each volume on which space is desired. **Do not** merely use IEFBR14 and specify a DD statement for a multivolume data set. This action only puts an extent on the first volume and does not indicate which volume is the last volume of the data set. Figure 1 displays the recommended OSAM data set allocation JCL.

```
//OSAMALL  JOB
//S1      EXEC PGM=IEFBR14
//SYSPRINT  DD SYSOUT=A
//EXTENT1   DD DSNAME=OSAM.SPACE,DISP=(,KEEP),
//             UNIT=3380,VOL=SER=AAAAAA,
//             SPACE=(CYL,(10,5))
//S2      EXEC PGM=IEFBR14
//SYSPRINT  DD SYSOUT=A
//EXTENT2   DD DSNAME=OSAM.SPACE,DISP=(,KEEP),
//             UNIT=3380,VOL=SER=BBBBBB,
//             SPACE=(CYL,(15,5))
:
//LAST    EXEC PGM=IEFBR14
//SYSPRINT  DD SYSOUT=A
//EXTENTL   DD DSNAME=OSAM.SPACE,DISP=(,KEEP),
//             UNIT=3380,VOL=SER=LLLLLL,
//             SPACE=(CYL,(15,5))
```

*Figure 1. Sample OSAM Data Set Allocation JCL*

**Note:** If the OSAM data sets must be cataloged, use IEHPROGM or Access Method Services (AMS) to ensure that all volumes are included in the catalog entry.

**Attention:** Do not reuse multivolume OSAM data set extents without scratching and reallocating the space first. If you do not scratch and reallocate the space first, an invalid end-of-file mark can be left in the DSCB of the last volume of the data set. This causes an embedded EOF mark somewhere in the middle of the data set.

## VSAM Data Sets

VSAM database data sets are defined by an AMS DEFINE CLUSTER command.

**Related Reading:** This command and all its parameters are described in *OS/390 V2R10.0 DFSMS Access Method Services for Catalogs*. For additional information on optional keywords for IMS databases, see “Optional Functions Specified in the Access Method Services Define Cluster Command” in *IMS Version 9: Administration Guide: Database Manager*.

Sharing of VSAM data sets is specified by the DEFINE CLUSTER SHAREOPTIONS keyword. IMS VSAM databases that use data sharing must be defined with at least SHAREOPTIONS (3,3). This allows IMS to access the VSAM VSI so that any extensions to the VSAM data set are known by all IMS sharing systems.

VSAM data sets opened for update by XRF-capable IMS online systems must also use at least SHAREOPTIONS (3,3), in order for extensions to the VSAM data set to be tracked by the alternate system. Because VSAM data sets opened for input are not extended by VSAM, the VSAM VSI is not required. SHAREOPTIONS (3,3) can be used even if the online system is XRF capable. SHAREOPTIONS (3,3) is not necessary for Fast Path DEDBs; SHAREOPTIONS (2,3) can be used for this environment.

## Online Change Data Sets

In many installations, it is important that the online system be available during a large portion of the day. The ability to add, delete, and replace IMS databases, programs, transactions, and MFS formats online, without the necessity to bring down your IMS system, is a major step toward continuous operations. Adding, deleting, or changing IMS resources involves changes to the control blocks set up for these resources. If your system is to use the online change facility of IMS, it requires a MODBLKS system definition. A MODBLKS system definition generates the control block members for resources that can be added or changed online. These control blocks are stored in the library IMS.MODBLKS, and are used by the IMS control region, the Security Maintenance utility, and the Multiple Systems Coupling Verification utility when an online change to your IMS system is requested.

**Recommendation:** Modify your security implementation to use Resource Access Control Facility (RACF) or an equivalent product. Support for the Security Maintenance utility (SMU) will be eliminated in releases after IMS Version 9.

When you first install the IMS online change function, it is necessary to create three copies of each of the following libraries:

- IMS.MODBLKS–the library that contains the control blocks to support online change of databases, programs, transactions, routing codes, and MFS formats
- IMS.MATRIX–the library that contains your system’s security tables
- IMS.ACBLIB–the library that contains database and program descriptors
- IMS.FORMAT–the library that contains your MFS maps produced by the MFS Language and Service utilities

The libraries listed above are for the exclusive use of IMS offline functions and are called the staging libraries. For each library, a copy is made to produce a data set

with a data set name suffixed with an A and a B, for example, IMS.FORMATA and IMS.FORMATB. These two copies of each library are used by the IMS online system.

At initial installation, the staging libraries and the IMS A libraries are identical. At this time, the A libraries are referred to as the active libraries. They are the libraries from which IMS draws its execution information. The B libraries are not used at this time and are referred to as the inactive libraries.

Figure 2 illustrates how libraries are used when you change your system online:

1. You apply changes to the staging libraries.
2. The staging libraries are subsequently copied to the inactive (B) libraries using the Online Change utility.
3. Operator commands are issued to cause the B libraries to become the active ones; the old active (A) libraries become the inactive ones.

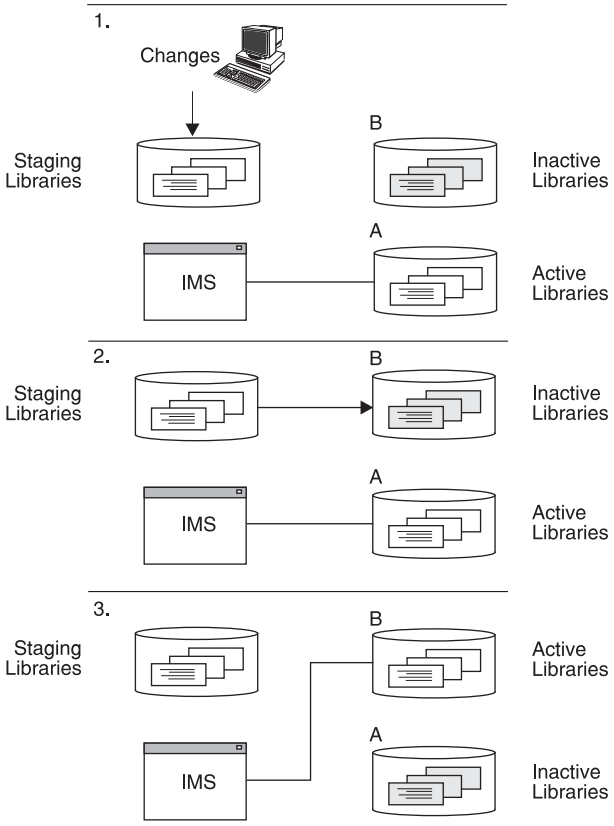



*Figure 2. How Libraries Are Used When You Change Your System Online*

The process above is repeated as necessary. When you choose to add, replace, or delete any of the IMS resources mentioned in this section, you apply your changes to the offline staging libraries by running one of the following:

- A MODBLKS system definition–if you have added, changed, or deleted applications, programs, full-function databases, DEDBs, or routing codes
- An ACBGEN–if you have added or changed any databases or programs
- The MFS Language and Service utilities–if you have added or changed any MFS format definitions

- The Security Maintenance utility–if you have added, changed, or deleted resources

**Recommendation:** Modify your security implementation to use Resource Access Control Facility (RACF) or an equivalent product. Support for the Security Maintenance utility (SMU) will be eliminated in releases after IMS Version 9.

You can apply changes to IMS.FORMAT, IMS.ACBLIB, or IMS.MATRIX independently or in combination. IMS.MODBLKS is changed by the MODBLKS system definition. If the security tables are changed, the suffix of the inactive library must match that of the inactive IMS.MODBLKS library.

After the sequence of commands (`/MODIFY` for local online change or `INITIATE OLC` for global online change) has been issued to cause the previously inactive libraries to become the active libraries, your previously active libraries now become the inactive libraries. They are not destroyed until they are overwritten by the next online change sequence. You can return to the inactive libraries if backup and recovery are necessary, or if an incorrect definition occurs during your online change run.

Additionally, IMS monitors for you which set of libraries is currently active. If local online change is enabled, this information is kept in a status data set, IMS.MODSTAT. If global online change is enabled, this information is kept in the IMSPLEX.OLCSTAT data set.

After an online change is successfully completed, it persists across all types of IMS restarts. Additionally, the new resources can be easily maintained by running an SMP/E JCLIN against the Stage 1 output stream produced by your MODBLKS system definition to record the contents of the new system definition in your SMP/E control data set. This ensures that any maintenance applied to your IMS system is applied to the currently active system. Do not manage the online change data sets with a migration/recall system that might recall the data set to a volume other than the one to which it was originally allocated. If you do so, IMS might be unable to warm start or emergency start the system.

## Data Set Allocation without Online Change

If you do not plan to use the online change function, you do not need to maintain the full set of staging, active, and inactive libraries. You only need to manage the staging libraries, and not to make copies for the active data sets, which would have exactly the same contents.

You need to modify the JCL, generated in the IMS member of IMS.PROCLIB, for the online execution for the following ddnames:

- MODBLKSA
- MODBLKSB
- IMSACBA
- IMSACBB
- FORMATA
- FORMATB
- MATRIXA
- MATRIXB

Each of these DD statements must use a DSN parameter pointing to a staging library. For example, ddnames MODBLKSA and MODBLKSB use DSN=IMS.MODBLKS, and ddnames FORMATA and FORMATB use DSN=IMS.FORMAT. If you plan to use terminals in MFSTEST mode, the DD statements for the MFS library that contain the formats under test (ddnames IMSTFMTA and IMSTFMTB) have the staging library (IMS.FORMAT) concatenated to IMS.TFORMAT.

In addition, the IMS.MODSTAT data set must be initialized appropriately, which is most conveniently done using the INITMOD procedure. This procedure initializes IMS.MODSTAT so that the ddnames with suffix A are set to be the active libraries.

If global online change is enabled, the IMSPLEX.OLCSTAT data set must be initialized instead of the IMS.MODSTAT data set. See Chapter 2, “Data Sets,” on page 13 for more information about the IMSPLEX.OLCSTAT data set.

## SPOOL SYSOUT Data Sets

When allocating SPOOL data sets, be sure that they are properly initialized (empty), or that the first record is a non-status record. Do this with the IEBGENER utility.

Allocate space for spool SYSOUT data sets as required, but do not specify secondary allocation. You need DCB parameters DSORG=PS and RECFM=UM. If not supplied, these parameters are set automatically. You can specify block size in the DD statement, but it can be adjusted downward by the system, if larger than the system definition specification.

Records written to this data set are standard z/OS variable-length blocked (VBM) records. The designation of the undefined record format (UM) specification reduces the buffer space requirement in the IMS control region. The minimum block size is 20 bytes, which is sufficient for one print line. The maximum block size is the track size of the device on which the data set is allocated.

**Recommendation:** Allocate at least two data sets.

IMS uses BSAM EXCP to maintain the end-of-file (EOF) mark on the subsequent track of the SPOOL data sets to support online access (TSO browsing).

**Restriction:** EXCP does not support partitioned data sets extended (PDSEs), extended format data sets, or hierarchical file system (HFS) data sets.

## Defining Spool Line Groups

You specify, in system definition, a LINEGRP macro to be dedicated to spool output. Associated with the LINEGRP macro are LINE, TERMINAL, and NAME macro specifications. The specification requirements for one such group are illustrated in Table 7.

*Table 7. Example of Spooled SYSOUT in System Definition*

| Macro | Coding | Comments |
|---|---|---|
| LINEGRP | DDNAME = (SPOOL1, SPOOL2)<br>UNITYPE = SPOOL | 2 data sets spooled SYSOUT |
| LINE | BUFSIZE = 1200 | Buffer size in bytes |
| TERMINAL | AUTOSCH | Optional, specified if automatic scheduling |

*Table 7. Example of Spooled SYSOUT in System Definition (continued)*

| Macro | Coding | Comments |
|---|---|---|
| NAME | RPT10 | Use LTERM names that show nature of output |

System definition execution automatically generates appropriate DD statements in the IMS procedure in IMS.PROCLIB. The ddnames are those given in the LINEGRP macro, and the data set names are of the form IMS.SYSnn. The order of the ddnames in the Stage 1 input stream determines the incremented value of *nn*. If, in the example shown in Table 7 on page 58, the LINEGRP macro is the first spool line group, the data set name for the DDNAME SPOOL2 is IMS.SYS02.

System definition also automatically generates procedures named DFSWTnnn, members in IMS.PROCLIB that are tailored to the print operation for the data sets implied in each line group. Referring to the same example, a member of the IMS.JOBS data set named IMSWT000 invokes DFSWT000, because it is the first individual job to print output for a spool line group.

The default values for job class and message class used for execution of the IMSWTnnn procedures are derived from the parameters of the MAXREGN keyword on the IMSCTRL macro. You must review these generated procedures for your installation's output class requirements. The DFSWTnnn procedures are the executable portions that are invoked for each IMSWTnnn member.

For spool lines, the logical record length specification must be the maximum segment length desired +8, and the block size must be at least equal to LRECL+10. Assign a nonzero value to LRECL. Message segments are truncated at a value of LRECL+4. For example, if the buffer size you specify in the LINE macro is 132, block size can be 116, and LRECL 106. The combined size of the data sets must be at least as large as the largest possible message. If the physical block size of the data set is larger than the buffer size specified in the LINE macro during IMS system definition, IMS adjusts the block size (DCBBLKSI) downward to the specified BUFSIZE −10. Likewise, if the physical LRECL size of the data set is larger than the newly adjusted DCBBLKSI, DCBLRECL is set to DCBBLKSI-10.

When all spool SYSOUT data sets defined for a line group are full, IMS shuts the line down and sends a message (DFS998I) to the master terminal that the physical terminal is inoperative. If you specify the AUTOSCH option in the TERMINAL macro during system definition, a spool print program is scheduled as each data set is filled.

## XRF Considerations for SPOOL Line Groups

To properly implement SPOOL data sets in an XRF complex, note the following considerations:

- Separate SPOOL data sets must be used for the active and alternate subsystems.

  **Related Reading:** Refer to the documentation for the DFSWTnnn procedure before selecting names for the SPOOL data sets; see *IMS Version 9: Utilities Reference: Database and Transaction Manager*.
- The appropriate DD statements must be added to the execution procedures for the active and alternate subsystems.
- Separate JOBS data sets must be used for the active and alternate subsystems.

- Separate IMSRDR procedures must be used for the active and alternate subsystems (use the PRDR= execution parameter).
- The IMSRDR procedures used for the active and alternate subsystems must reference the appropriate JOBS data set.
- The IMSWTnnn members of the JOBS data sets must reference the appropriate SPOOL data sets. Depending upon the names chosen for the SPOOL data sets, the SYS2= parameter in the DFSWTnnn procedure can be used to access the correct data sets.

## XRF Data Set Considerations

Three main XRF requirements for placing your IMS data sets are:

- Availability of data sets during tracking and takeover

  An XRF complex consists of two systems that must sometimes access the same data sets or identical copies of the same data sets. Therefore, use of XRF requires that you load some data sets on DASD shared by the two systems. IBM recommends that you load other data sets on shared DASD. However, you can switch some data sets through a switching device or maintain separate copies of them.
- Prevention of single points of failure

  Use of XRF requires that you maintain and constantly synchronize separate copies of some data sets for the two systems.
- Accessibility of data sets to one IMS system

  IBM recommends keeping the data sets unique to one system on local DASD.

## Mandatory Shared Data Sets

Use of XRF requires that some IMS system data sets, such as the system logs, be available to both the active and the alternate subsystems during the tracking phases. Use of XRF requires that others, such as the DEDB data sets, be present immediately at takeover.

The following data sets must reside on DASD that active and alternate subsystems share:

CRITICAL DL/I DATABASE (DFSMDA definitions)
DEDB AREA
DFSOLPxx (DFSMDA definitions are recommended)
DFSOLSxx (DFSMDA definitions are recommended)
DFSWADSx (DFSMDA definitions are recommended)
IMSRDS
IMSRDS2
MODSTAT
MODSTAT2
MSDBINIT
RECON1 (DFSMDA definitions are recommended)
RECON2 (DFSMDA definitions are recommended)
RECON3 (DFSMDA definitions are recommended)

These data sets must be accessible to both subsystems through the catalog structure. Also, do not store OLDS, WADS, or RDS on volumes containing data sets (IMS or otherwise) that can be subject to a RESERVE operation. Keep such data sets separated.

## Mandatory Replication Data Sets

Certain IMS execution data sets contain information unique to only one subsystem. Replicate these data sets, so each active and alternate subsystem has its own unique data sets. Store these data sets on local, non-shared DASD, and define them in a separate catalog structure. The data sets in this category are:

- IMSMON
- LGMSGx
- LGMSGL
- MSDBCP1
- MSDBCP2
- MSDBCP3
- MSDBCP4
- MSDBDUMP
- QBLKS
- QBLKSL
- SHMSGx
- SHMSGL
- SPOOLx
- SYSABEND
- SYSUDUMP

If your XRF configuration requires that both IMS subsystems be executable on either CPC, these data sets must be on shared or switchable DASD, and in a catalog structure accessible to both subsystems.

## Optional Replication Data Sets

To avoid single points of failure, you can duplicate certain other IMS execution data sets and store them in non-shared local DASD. Data sets in this category are:

- DBDLIB (used by DL/I batch)
- FORMATA
- FORMATB
- IMSACBA
- IMSACBB
- IMSTFMTA
- IMSTFMTB
- JOBS (used in the IMSRDR procedure)
- MATRIXA
- MATRIXB
- MODBLKSA
- MODBLKSB
- PGMLIB
- PROCLIB

PSBLIB (used by DL/I batch)
SDFSRESL
SDXRRESL
TCFSLIB
OTHER STEPLIB DATA SETS

If your XRF configuration requires that both IMS subsystems be executable on either CPC, these data sets must be on shared or switchable DASD and in a catalog structure accessible to both subsystems.

## Other Data Sets Impacted by XRF

When planning your XRF configuration, it is important to consider the possible impact on the other IMS data sets. Also examine the impact on activities other than online execution, such as IMS system definition and the application of SMP/E service. Table 8 provides information on data sets in this category, including descriptions and whether or not they are managed by SMP/E.

*Table 8. Other Data Sets Impacted by XRF*

| Data Set | Description | Managed by SMP/E |
|---|---|---|
| ACBLIB | online change staging library | No |
| ADFSCLST | used during installation | Yes |
| ADFSEXEC | used during installation | Yes |
| ADFSLOAD | used by SYSDEF | Yes |
| ADFSMAC | used by SYSDEF | Yes |
| ADFSMLIB | used during installation | Yes |
| ADFSPLIB | used during installation | Yes |
| ADFSRTRM | used during installation | Yes |
| ADFSSLIB | used during installation | Yes |
| ADFSSRC | used by SYSDEF | Yes |
| ADFSTLIB | used during installation | Yes |
| FORMAT | online change staging library | No |
| INSTALIB | used during IVP | No |
| INSTATBL | used during IVP | No |
| MATRIX | online change staging library | No |
| MODBLKS | created by SYSDEF | Yes |
| OBJDSET | created by SYSDEF | No |
| OPTIONS | created by SYSDEF; used by SMP/E and SYSDEF | No |
| PROCLIB | created by SYSDEF | No |
| REFERAL | used in conjunction with FORMAT | No |
| SDFSMAC | created by SMP/E | Yes |
| SDFSRESL | created by SYSDEF and SMP/E | Yes |
| TFORMAT | online change staging library | No |

Some of these data sets appear in earlier lists in this section. You must avoid possible synchronization conflicts.

## Dynamic Allocation Considerations

It is essential to synchronize the DFSMDA members in the IMS SDFSRESL(s), or associated libraries, across the XRF complex.

## Global Resource Serialization Considerations

Include all IMS data set names in the global resource serialization SYSTEMS exclusion resource name lists (RNLs). Do not include the DBRC RECON or the OLDS and WADS names in the RESERVE conversion RNL.

## JES Considerations

If you use JES3, include all IMS data sets and databases in the RESDSN statement.

## RACF Considerations

Store the Resource Access Control Facility (RACF) data sets on DASD shared by the active and alternate subsystems.

To avoid single points of failure, use the RACF backup facility to keep a second copy of these data sets also on shared DASD.

RACF protects IMS databases from unauthorized users. In a DB/DC system, RACF is bypassed by VSAM for all its databases. However, RACF is invoked to verify that the control region is authorized to access any OSAM database known to it and that is being opened. OSAM does not provide a way to bypass RACF.

In an IMS batch region, RACF is invoked when VSAM or OSAM databases known to RACF are accessed. RACF verifies that the application accessing the database is authorized.

RACF can provide signon verification security by requiring user identification at signon. User accountability is possible by logging the user ID in database change records, and by producing a log record during signon and signoff at the terminal. User exit routines are available for this type of security verification with or without the use of RACF.

**Related Reading:** For more information on the use of RACF to provide database security, see “Establishing IMS Security” in *IMS Version 9: Administration Guide: System*. You might have to make modifications to the RACF user installation exit routine for IMS control regions running as started tasks.

For additional information on RACF, see *Resource Access Control Facility (RACF) General Information*.

**Recommendation:** Modify your security implementation to use Resource Access Control Facility (RACF) or an equivalent product. Support for the Security Maintenance utility (SMU) will be eliminated in releases after IMS Version 9.

# Chapter 4. z/OS Interface Considerations

This chapter describes information and required steps that you must consider while installing IMS and IRLM on z/OS.

**Important:** After the z/OS® and VTAM interface steps are completed, you must IPL z/OS and specify either CLPA or MLPA=xx, or both.

## IMS

There are many requirements that you must consider and required steps to ensure a complete and correct installation of IMS on z/OS. These topics describe these requirements and required actions.

### Preventing Installation Problems

Be sure to take the following actions to prevent problems during the installation of IMS on z/OS:

- Use z/OS macro libraries for your IMS stage 2 definition. IMS runs only under z/OS.
- Include the libraries from which IMS is loaded and executed in the appropriate authorization table, so that the control region executes as an APF-authorized program. In z/OS, IMS runs as an authorized program.

  **Related Reading:** For information about APF authorization, see *z/OS V1R2.0 MVS Initialization and Tuning Reference*.
- Use JOBLIB or STEPLIB DD statements instead of having the IMS.SDFSRESL in LNKLSTxx (those data sets concatenated to SYS1.LINKLIB). If IMS.SDFSRESL is in LNKLSTxx, it is possible for a different IMS release level (whose own IMS.SDFSRESL is not properly APF authorized) to load the modules from LNKLSTxx. The incompatible module release level can cause unpredictable results.
- Update the program properties table. The IMS control region operates as a job step task or as a system task. All control region execution is in supervisor state. See “Updating the z/OS Program Properties Table” on page 66 for more information.

**Related Reading:** For additional information on maintaining system integrity when running under OS/390, refer to *OS/390 V2R10.0 MVS Conversion Notebook*.

### z/OS JCL Considerations

Note the following requirements when setting up your z/OS JCL:

- The JOB or STEP libraries must be APF authorized for the control region. For the dependent region, PGMLIB does not need to be authorized and can be concatenated with SDFSRESL as STEPLIB.
- The EXEC statement must specify PGM=DFSMVRC0 for the control region.
- IMS.SDFSRESL must be APF authorized.
- IMS.MATRIXA and IMS.MATRIXB must be APF authorized.
- IMS.MODBLKSA and IMS.MODBLKSB must be APF authorized.
- IMS.SDXRRESL must be APF authorized.
- IMS.SDFSJLIB must be APF authorized.

- The library into which your DB2 modules are loaded (DFSESL or a JOBLIB or STEPLIB) must be APF authorized.

**Related Reading:** For more information on z/OS JCL, refer to the information on the system definition process in *IMS Version 9: Installation Volume 2: System Definition and Tailoring*.

## Some Required Nonstandard z/OS Macros

The assembly of certain IMS modules requires z/OS macros not contained on the standard z/OS System Macro libraries. Because these requirements are subject to change due to IMS and z/OS maintenance, keep these macros in their original libraries, and use the JCL generated by IMS for SYS1.MODGEN (or SYS1.AMODGEN).

## Updating the z/OS Program Properties Table

All of the following modules are predefined in the default PPT that is shipped with z/OS V1R4 and later:

- BPEINI00
- CQSINIT0
- DFSMVRC0
- DXRRLM00

If you do not modify the default z/OS PPT, these IMS modules are automatically added to the PPT. If you have removed the default entries for these modules, you must reinstate the entries using the procedures described in this section.

### IMS Entry for z/OS PPT Table

An IMS online environment (DB/DC, DBCTL, DCCTL) requires this z/OS PPT entry. If you are only using IMS BATCH, this entry is not needed. A sample of the required entry is shown below and may be found in the IMS.INSTALIB data set. Please refer to Appendix B, “IVP JOBs and TASKs,” on page 181 for the correct entry titled ″Update SCHEDxx -- PPT Entries.″

```
                        /* IMS ONLINE CONTROL REGION           */
PPT PGMNAME(DFSMVRC0)   /* PROGRAM NAME = DFSMVRC0             */
         CANCEL         /* PROGRAM CAN BE CANCELLED            */
         KEY(7)         /* PROTECT KEY ASSIGNED IS 7           */
         NOSWAP         /* PROGRAM IS NOT-SWAPPABLE            */
         NOPRIV         /* PROGRAM IS NOT PRIVILEGED           */
         SYST           /* PROGRAM IS A SYSTEM TASK            */
         DSI            /* DOES REQUIRE DATA SET INTEGRITY     */
         PASS           /* PASSWORD PROTECTION ACTIVE          */
         AFF(NONE)      /* NO CPU AFFINITY                     */
         NOPREF         /* NO PREFERRED STORAGE FRAMES         */
```

The PPT Entry for program DFSMVRC0 must specify NOSWAP as shown.

### IRLM Entry for z/OS PPT Table

If you are using IRLM, the following z/OS PPT entry is required. A sample of the required entry is shown below and may be found in the IMS.INSTALIB data set. Please refer to Appendix B, “IVP JOBs and TASKs,” on page 181 for the correct entry titled ″Update SCHEDxx -- PPT Entries.″

```
                        /* IRLM - RESOURCE LOCK MANAGER        */
PPT PGMNAME(DXRRLM00)   /* PROGRAM NAME = DXRRLM00             */
         CANCEL         /* PROGRAM CAN BE CANCELLED            */
         KEY(7)         /* PROTECT KEY ASSIGNED IS 7           */
         NOSWAP         /* PROGRAM IS NOT-SWAPPABLE            */
         NOPRIV         /* PROGRAM IS NOT PRIVILEGED           */
```

```
          SYST            /* PROGRAM IS A SYSTEM TASK            */
          DSI             /* DOES REQUIRE DATA SET INTEGRITY     */
          PASS            /* PASSWORD PROTECTION ACTIVE          */
          AFF(NONE)       /* NO CPU AFFINITY                     */
          NOPREF          /* NO PREFERRED STORAGE FRAMES         */
```

The PPT Entry for program DXRRLM00 must specify NOSWAP as shown.

## CQS Entry for z/OS PPT Table

If you are using CQS, the following z/OS PPT entry is required. A sample of the required entry is shown below and may be found in the IMS.INSTALIB data set. Please refer to Appendix B, “IVP JOBs and TASKs,” on page 181 for the correct entry titled ″Update SCHEDxx -- PPT Entries.″

```
                          /* CQS - COMMON QUEUE SERVER           */
  PPT PGMNAME(CQSINIT0)   /* PROGRAM NAME = CQSINIT0             */
          CANCEL          /* PROGRAM CAN BE CANCELLED            */
          KEY(7)          /* PROTECT KEY ASSIGNED IS 7           */
          NOSWAP          /* PROGRAM IS NOT-SWAPPABLE            */
          NOPRIV          /* PROGRAM IS NOT PRIVILEGED           */
          SYST            /* PROGRAM IS A SYSTEM TASK            */
          DSI             /* DOES REQUIRE DATA SET INTEGRITY     */
          PASS            /* PASSWORD PROTECTION ACTIVE          */
          AFF(NONE)       /* NO CPU AFFINITY                     */
          NOPREF          /* NO PREFERRED STORAGE FRAMES         */
```

The PPT Entry for program CQSINIT0 must specify NOSWAP as shown.

## CSL Entry for z/OS PPT Table

The Common Service Layer (CSL), comprised of address spaces Operations Manager (OM), Resource Manager (RM), and Structured Call Interface (SCI), requires an entry in the PPT. Only one entry is necessary for the CSL.

To make this entry, edit the SCHEDxx member of the SYS1.PARMLIB data set. Add the following entry to the SCHEDxx member:

```
                          /* CSL - COMMON SERVICE LAYER           */
  PPT PGMNAME(BPEINI00)   /* PROGRAM NAME = BPEINI00              */
          CANCEL          /* PROGRAM CAN BE CANCELLED             */
          KEY(7)          /* PROTECT KEY ASSIGNED IS 7            */
          NOSWAP          /* PROGRAM IS NOT-SWAPPABLE             */
          NOPRIV          /* PROGRAM IS NOT PRIVILEGED            */
          DSI             /* REQUIRES DATA SET INTEGRITY          */
          PASS            /* CANNOT BYPASS PASSWORD PROTECTION    */
          SYST            /* PROGRAM IS A SYSTEM TASK             */
          AFF(NONE)       /* NO CPU AFFINITY                      */
          NOPREF          /* NO PREFERRED STORAGE FRAMES          */
```

To make the SCHEDxx changes effective, take one of the following actions:

- Re-IPL the z/OS system.
- Issue the z/OS `SET SCH=` command.

## Instructions for Installing z/OS PPT Entries

**Note:** Please refer to the IVP information supplied in the IMS.INSTALIB data set for the most current form of any of these z/OS PPT entries.
Unless you have deleted it, z/OS preconditioning has already defined a DFSMVRC0 PPT entry for IMS.

**Related Reading:** For information on updating the PPT, see *OS/390 V2R10.0 MVS Initialization and Tuning Reference*.

1. Edit the SCHEDxx member of the SYS1.PARMLIB data set.

2. Add the required entry or entries to the SCHEDxx member.
3. To make the SCHEDxx changes effective, take one of the following actions:
   - Re-IPL the z/OS system.
   - Issue the z/OS `SET SCH=` command.

## Required IMS Links to z/OS

Stage 2 of IMS system definition might make the following modifications, which you must install on your z/OS system:

- Loads the following modules into IMS.SDFSRESL:
  - Type 2 SVC routine
  - DBRC Type 4 SVC routine
  - CTC channel-end appendage routine (if the MSC with the CTC option is defined)
  - Abend formatting routine
- Copies cataloged procedures into IMS.PROCLIB

Table 9 provides is an overview of the actions needed in order for your IMS system to run under z/OS.

*Table 9. Steps Required to Run under z/OS*

| Action | DB Batch System | DBCTL System | DB/DC System | DCCTL System |
|---|---|---|---|---|
| 1. Bind Type 2 SVC modules into the z/OS nucleus, define the IMS Nucleus Module List (NML), or define the NUCLSTxx member of SYS1.PARMLIB | Yes | Yes | Yes | Yes |
| 2. Bind the following modules into LPALIB (or, optionally, into an MLPA library): | | | | |
| 2a. DBRC Type 4 SVC module | Yes | Yes | Yes | Yes |
| 2b. CTC channel-end appendage (if your system has MSC with the CTC option) | No | No | Yes | Yes |
| 2c. Abend formatting routine | Yes | Yes | Yes | Yes |

Table 10 shows the modules that are required by the z/OS interface. The table shows the module name in its distribution library (IMS.ADFSLOAD) and the load module name in its target library (IMS.SDFSRESL) after the module is bound.

*Table 10. z/OS Interface Modules*

| IMS.ADFSLOAD | IMS.SDFSRESL | Description |
|---|---|---|
| DFSVC200 [2] | IGCiii [2] | Type 2 SVC vector routine [3] |
| DSP00MVS | IGC00nnn[1] | DBRC Type 4 SVC routine [3] |
| DFSCMC10 | IGG019zz[1] | CTC channel-end appendage [3] |
| DFSAFMD0 [1] | DFSAFMD0[1] | Formatted dump |

*Table 10. z/OS Interface Modules (continued)*

| IMS.ADFSLOAD | IMS.SDFSRESL | Description |
|---|---|---|
| **Notes:** | | |
| **iii** | Specifies the Type 2 SVC number | |
| **nnn** | Indicates the signed decimal Type 4 SVC number, for example, SVC 255 is 25E | |
| **zz** | Indicates the channel-end appendage number specified on the IMSCTF macro | |
| **1** | These modules must be bound with the RENT and REFR attributes. | |
| **2** | These modules must be bound with the RENT, REFR, and SCTR Binder options. The modules are placed in SYS1.NUCLEUS. | |
| **3** | These modules are bound by SYSGEN. | |

### IMS SVC Modules

IMS uses a Type 2 supervisor call (SVC), in the range of 200-255, for batch, DBCTL, DCCTL, and DB/DC IMS control program functions, and a Type 4 supervisor call (SVC), in the range of 200-255, for DBRC functions. Specify these routines in IMS system definition.

If you are installing different release levels of IMS in the same processor, note that the Type 2 SVCs and Type 4 SVCs are downward compatible. The IMS Version 9 level can be used by Versions 6, 7, and 8. However, the IMS Version 7 level cannot be used by IMS Versions 8 and 9, and the IMS Version 8 level cannot be used by IMS Version 9.

IMS system definition creates the SVC routines using the IMSCTF macro-defined user-specified numbers, or the IMS-provided default numbers. IMS system definition copies the load modules representing the SVC routine into IMS.SDFSRESL.

### Defining IMS SVCs to z/OS

When you define the IMS and DBRC SVCs to z/OS, follow this format:

**Example:**

```
SVCPARM 254,REPLACE,TYPE(2)
SVCPARM 255,REPLACE,TYPE(4)
```

**Related Reading:** Refer to *OS/390 V2R10.0 MVS Initialization and Tuning Reference* for information on defining SVCs to z/OS.

## Installing the Type 2 SVC Module

The IMS Type 2 SVC must be incorporated into the z/OS nucleus. The IMS Type 2 SVC can either be bound with the z/OS nucleus, loaded from SYS1.NUCLEUS using the Nucleus Module Loader facilities, or loaded from SYS1.NUCLEUS through the use of a SYS1.PARMLIB member, NUCLSTxx.

**Attention:** The SYS1.NUCLEUS must not have secondary extents. z/OS cannot recognize secondary extents.

- Binding with the z/OS nucleus can be accomplished by one of the following methods:
  - Batch job invoking the Binder utility.

    This method is included as an example in the IVP materials.
  - SMP/E USERMOD.
  - Nucleus Module Loader which involves 2 steps:

1. Create a Nucleus Module List (IMS has been assigned the IEANS001 NML) containing the list of IMS SVCs (for all IMS releases being used) that are to be loaded into the z/OS nucleus. The NML is assembled and binded into SYS1.NUCLEUS.
2. Bind the IMS SVCs from IMS.SDFSRESL to SYS1.NUCLEUS.

This method is included as an example in the IVP materials.

- The use of SYS1.PARMLIB member, NUCLSTxx, involves two steps:
  1. Bind the IMS SVC from IMS.SDFSRESL into SYS1.NUCLEUS.
  2. Determine, from the z/OS systems programmer, the appropriate NUCLSTxx member to use. Define an INCLUDE statement for the IMS SVC in the NUCLSTxx member of SYS1.PARMLIB.

## Channel-to-Channel (CTC) Channel-End Appendage

If you define Multiple Systems Coupling (MSC) with the CTC option, bind the CTC channel-end appendage named IGG019*zz,* where *zz* is the CTC appendage number.

## Resource Clean-up Module

In IMS Version 8 and earlier, you must install the IMS module DFSMRCL0 in the host z/OS system as a static resource cleanup module. You are required to bind DFSMRCL0 into SYS1.LPALIB or an MLPA library. The module name DFSMRCL0 must be added to the IEAVTRML CSECT of z/OS module IGC0001C in SYS1.LPALIB.

In IMS Version 9 and later, IMS uses a dynamic resource cleanup module (DFSMRC20). No user setup is required; you do not need to install the status resource cleanup module (DFSMRCL0) on the host z/OS system.

If you are running multiple versions of IMS systems, some of which are IMS Version 9 or later, and some of which are IMS Version 8 or earlier, you must continue to use DFSMRCL0 for the IMS Version 8 or earlier systems. You must use DFSMRCL0 from the most recent release of IMS up to IMS Version 8.

**Recommendation:** Do not uninstall DFSMRCL0 from releases of IMS earlier than IMS Version 9 until your migration to IMS Version 9 is complete and there is no possibility that you will run an earlier release of IMS. DFSMRCL0 and the dynamic resource cleanup module (DFSMRC20) can coexist on the same system.

Although DFSMRCL0 is not required for IMS Version 9 or later, this module is provided to support users who point to DFSMRCL0 directly in the IMS library. DFSMRCL0 from IMS Version 9 or later can also be used to provide resource cleanup for IMS Version 8 and earlier.

### Uninstalling DFSMRCL0

When you have completely migrated to IMS Version 9 or later and there is no possibility of running an earlier release of IMS (both IMS control and IMS batch jobs), you can remove DFSMRCL0 from the host z/OS system by performing the following steps:

1. Remove the name `DFSMRCL0` from the IEAVTRML CSECT of module IGC0001C in SYS1.LPALIB. Removing this name prevents the operating system from installing DFSMRCL0 as a static resource cleanup routine at the next IPL.
2. Remove module DFSMRCL0 from SYS1.LPALIB or the MLPA library where DFSMRCL0 was bound.

3. Restart with CLPA to enable these changes.

**Important:** You must perform these tasks in the order specified. If you do not remove the name DFSMRCL0 from IEAVTRML before you delete module DFSMRCL0 from SYS1.LPALIB, your z/OS system will not start.

If you previously used the AMASPZAP utility to zap DFSMRCL0 into the IEAVTRML CSECT (as is done in the IMS IVP), you must use the AMASPZAP utility to remove the name DFSMRCL0 from IEAVTRML. IEAVTRML is a table of 12-byte entries. The first 8 bytes of each entry is the name of the resource cleanup routine; the last 4 bytes must be zero. The last entry in the table must be all zeros, to indicate the end of the table. If DFSMRCL0 is not the last entry in the table, then in addition to removing the DFSMRCL0 entry, you must move any subsequent entries to ensure that no all-zero entries exist before the end of the table.

The following example shows how to remove DFSMRCL0 from IEAVTRML.

1. Use the AMASPZAP utility to dump the current contents of IEAVTRML:

```
//DMPVTRML JOB  ...
//STEP001 EXEC PGM=AMASPZAP
//SYSLIB   DD DSN=SYS1.LPALIB,DISP=SHR
//SYSPRINT DD SYSOUT=A
//SYSIN    DD *
 DUMP IGC0001C IEAVTRML
/*
```

2. Examine the contents of IEAVTRML from the AMASPZAP dump job output. Locate the entry containing DFSMRCL0 (in hex: X'C4C6E2D4D9C3D3F0'):

```
**CCHHR- 03C3000517   RECORD LENGTH- 000F38         MEMBER NAME  IGC0001C  CSECT NAME  IEAVTRML
 000000   C4C6E2D4   D9C3D3F0   00000000   D4E5D7E3     E3D9D4D3   00000000   C3C1D9F2   D9E2C3F0
 000020   00000000   00000000   00000000   00000000     00000000   00000000   00000000   00000000
 000040   00000000   00000000
```

3. Use the AMASPZAP utility to replace the entry containing DFSMRCL0 with zeros. In the example output above, DFSMRCL0 is the first entry in IEAVTRML, and there are two other entries following it. To remove DFSMRCL0, entries 2 and 3 must be moved to become entries 1 and 2, and entry 3 must be zapped to be all zeros, as shown:

```
//DMPVTRML JOB  ...
//STEP001 EXEC PGM=AMASPZAP
//SYSLIB   DD DSN=SYS1.LPALIB,DISP=SHR
//SYSPRINT DD SYSOUT=A
//SYSIN    DD *
  NAME IGC0001C IEAVTRML
  VER 0000 C4C6E2D4D9C3D3F0
  VER 000C D4E5D7E3E3D9D4D3
  VER 0018 C3C1D9F2D9E2C3F0
  REP 0000 D4E5D7E3E3D9D4D3
  REP 000C C3C1D9F2D9E2C3F0
  REP 0018 0000000000000000
/*
```

**Related Reading:** For additional information, refer to *OS/390 V2R10.0 MVS Authorized Assembler Services Guide*.

## Abend Formatting Routine

Bind the abend formatting module DFSAFMD0 into SYS1.LPALIB or an MLPA library as CSECT DFSAFMD0, load module DFSAFMD0. Also add the DFSAFMD0 load module name to IEAVADFM CSECT of module IGC0805A in SYS1.LPALIB.

DFSAFMD0 is downward compatible. Upward compatibility is not supported. The most current version of this module must be used.

**Related Reading:** For additional information, see *OS/390 V2R10.0 MVS Installation Exits*.

If the IMS formatting dump routines are not installed, IMS control blocks are not formatted, making problem determination somewhat lengthy and difficult.

## Offline Dump Formatting Routine

Add the offline dump formatting module name to the Print Dump Exit Control Table in SYS1.PARMLIB member BLSCECT.

The entry must contain:

Module name DFSOFMD0

Exit flag 0

User verb IMSDUMP

An IMS Interactive Dump Formatter is also available from the component analysis section of the IPCS dialogs (IPCS ISPF selection 2.6).

If SDFSRESL is not in LNKLSTxx, IPCS users must have SDFSRESL available in the JOBLIB or STEPLIB concatenation in order to be able to load DFSOFMD0.

**Related Reading:**

- For a description of the exit control table, see *OS/390 V2R10.0 MVS Initialization and Tuning Reference*.
- For more information about installing and using the Offline Dump Formatter, see *IMS Version 9: Diagnosis Guide and Reference* and *IMS Version 9: Utilities Reference: System*.
- For information about controlling IMS dumping options, see *IMS Version 9: Installation Volume 2: System Definition and Tailoring*.

## DBRC Type 4 SVC

Bind the DBRC Type 4 SVC into an LPALIB or an MLPA library. It is named IGC00nnn, where nnn is the signed decimal SVC number.

## APF Authorization for IMS

The following IMS system data sets must be APF authorized:

- IMS.SDXRRESL
- IMS.SDFSRESL
- IMS.SDFSJLIB
- IMS.MATRIXA, IMS.MATRIXB
- IMS.MODBLKSA, IMS.MODBLKSB
- DFSESL, or the JOBLIB or STEPLIB into which your DB2 modules and tables are loaded

In addition to these data sets in a DB/DC or DCCTL environment, SYS1.CSSLIB must be APF authorized. This is true regardless of whether you use APPC/z/OS. Even though SYS1.CSSLIB is in LNKLSTxx and LNKLSTxx is authorized, you must

also have SYS1.CSSLIB in IEAAPFxx, because IMS accesses SYS1.CSSLIB without using the LNKLSTxx concatenation. SYS1.CSSLIB must be explicitly APF-authorized.

**Recommendation:** Do not have the IMS.SDFSRESL in LNKLSTxx when running multiple levels of IMS or when migrating to a new version or release level.

**Related Reading:** Refer to information on IEAAPFxx in *OS/390 V2R10.0 MVS Initialization and Tuning Reference*.

If you use JOBLIB/STEPLIB with region types of CTL (DB/DC region type), DBC (DBCTL region type), or DCC (DCCTL region type), all concatenations of the JOBLIB/STEPLIB must be APF authorized.

IMS conforms to z/OS rules for data set authorization. If you authorize an IMS job step, authorize all libraries used in that job step. To run an IMS batch region as non-authorized, concatenate a non-authorized library to IMS.SDFSRESL. To make this concatenation, the batch job must contain a DFSRESLB DD statement pointing to IMS.SDFSRESL.

## APPC / z/OS Administration Dialog Updates

To use the APPC / z/OS Administration Dialog utility with IMS TP Profiles, you must first add “IMS” as a transaction scheduler. To do this, you must add one line to the non-display panel ICQASE00 where the variable QASTSPE is defined. The format of the line is as follows:

```
IMS,DFSTPPE0'
```

You must also change the single quote (') on the current last line of the assignment to a plus sign (+).

In addition, IMS.SDFSEXEC must be added to the TSO SYSPROC concatenation, and IMS.SDFSPLIB must be added to the TSO ISPPLIB concatenation.

For more information on modifying this panel, see “Customizing the Dialog” in *OS/390 V2R9 MVS Planning: APPC/MVS Management*.

## DFSMS Macros

The IMS open and close module DFSZD110 (GSAM and BSAM) uses the DFSMS macros EZCTGPL and IEZCTGFL. Beginning with DFSMS 1.5, macros IEZCTGPL and IEZCTGFL are provided on the optional source tape only. If DFSZAD110 needs to be assembled, these macros must be available.

**Note:** DFSZD110 does not need to be assembled to process PTFs. It needs to be assembled only when processing any APARs or USERMODs that affect it.

# IRLM

There are many requirements that you must consider and required steps to ensure a complete and correct installation of IRLM on z/OS. These topics describe these requirements and required actions.

## Adding IRLM CTRACE Module to z/OS Link List

The IRLM CTRACE start/stop routine load module, DXRRL183, must reside in the z/OS Link List (LL). This module also contains the automatic restart manager (ARM) support for IRLM.

**Related Reading:** See *OS/390 V2R10.0 MVS Initialization and Tuning Reference* for information on responding to the messages and setting up PARMLIB members to contain trace options and parameters.

## APF Authorization for IRLM

The IMS.SDXRRESL system data set must be APF authorized.

**Related Reading:** Refer to IEAAPFxx in *OS/390 V2R10.0 MVS Initialization and Tuning Reference*.

## Creating IRLM Subsystem Names

Unless you have deleted them, z/OS preconditioning has already defined IRLM and JRLM as subsystems names. You can use these names, or you can define your own. Create an z/OS subsystem name entry for each IRLM to be executed on the z/OS system. When two IRLMs reside in the same z/OS system, each must have a unique z/OS subsystem name.

**Related Reading:** For information on defining a subsystem to OS/390, see "Suggestions for Naming Your IRLM" on page 76 and also see *OS/390 V2R10.0 MVS Initialization and Tuning Reference*.

## Updating the z/OS Program Properties Tables

Unless you have deleted it, z/OS preconditioning has already defined a PPT entry for DXRRLM00.

**Related Reading:** For information on adding an entry to the PPT, see *OS/390 MVS Initialization and Tuning Reference*.

## Updating the Print Dump Exit Control Table

Add the IRLM dump formatting module name to the Print Dump Exit Control Table.

**Related Reading:** See *OS/390 MVS Initialization and Tuning Reference*.

The entry must contain:

Module name DXRRLM50

Exit flag 0

User verb IRLM

**Related Reading:** For more information about of the dump formatting module, see "IMS Dumping and Dump Formatting Options" in *IMS Version 9: Installation Volume 2: System Definition and Tailoring*.

Ensure that one of these is true:

- The print dump formatting module DXRRLM50 is in SYS1.LINKLIB.
- The job that prints the dump contains a JOBLIB or STEPLIB statement specifying the library containing the modules.

# Chapter 5. VTAM Interface Considerations

If your IMS system requires VTAM, the VTAM mode table must contain entries for all VTAM terminals defined to IMS. You can use the table entry name at logon as any of the following:

- LOGMODE parameter on the `VTAM VARY` command
- MODE parameter on the `/OPNDST` command
- Parameter on the other terminal's `INIT SELF` command
- MODETBL parameter of the TERMINAL macro

The MODETBL parameter overrides any other entry supplied with the ACF/VTAM LOGON or SCIP exit CINIT. The MODETBL name for all parallel sessions with a given terminal is the same. Do not specify MODETBL for cross-domain resources.

The mode table entry creates the session parameters and thus controls the session established between IMS and the terminal. Except for Inter-System Communication (ISC), IMS does not support user data on the LOGON command, except the CRYPTO and PACING operands, or on the CINIT or BIND operand.

**Related Reading:** For a list of the BIND parameters for VTAM logical units, refer to *IMS Version 9: Administration Guide: Transaction Manager*.

Define all of the following terminals:

- 3600, 3614, and SLU P as LUTYPE=0
- SLU 1 as LUTYPE=1
- SLU 2 as LUTYPE=2
- LU 6 as LUTYPE6

A 3770P or 3790 terminal defined as SLUTYPE1 must be defined as unattended in its mode table entry. You can define a SLU 1 terminal as an exception or definite response for the secondary terminal. For terminals defined as SLUTYPEP, no options are allowed in the first 7 bytes of the `BIND` command.

**Related Reading:** For additional information, refer to *IMS Version 9: Administration Guide: Transaction Manager*.

When you specify PARSESS=NO in the VTAM APPL macro for IMS, VTAM parallel session support is not included. In this case, IMS counts as '1' within the MAXAPPL keyword of the VTAM START parameter.

When you specify PARSESS=YES in the VTAM APPL macro for IMS, VTAM parallel session support is included in the system. IMS counts as '2' within the MAXAPPL keyword of the VTAM START parameters.

**Related Reading:** For information on IMS support for parallel sessions, see *IMS Version 9: Administration Guide: Transaction Manager*. For more information on VTAM and Remote Site Recovery, see *IMS Version 9: Installation Volume 2: System Definition and Tailoring*.

**Important:** After the z/OS and VTAM interface steps are completed, you must start z/OS and specify either CLPA or MLPA=xx, or both.

## Network Control Program (NCP) Considerations

**Recommendation:** Set the value of the DELAY parameter on the HOST macro to `0` or as low as possible considering the other work in your system.

## Suggestions for Naming Your IRLM

Each message that the IRLM issues includes the IRLM z/OS subsystem name (IRLMNM on the start procedure) concatenated with the ID (IRLMID on the start procedure). A naming convention that allows easy identification of which IRLM issued a specific message is recommended. The following IRLM command displays all of the IRLM names and IDs associated with this IRLM or sharing group.

**Example:**

```
F irlmproc,STATUS,ALLI
```

# Chapter 6. IMS Service Considerations

IMS provides maintenance packaged in SMP/E format. IMS maintenance is packaged as one of three types of SMP/E SYSMODs: Program Temporary Fixes (PTFs), Authorized Program Analysis Report (APAR) fixes, and USERMODs. This chapter describes these types of SYSMODs, recommends a strategy for maintaining IMS, and describes how to obtain and install IMS service. This chapter also provides information to help prevent potential maintenance problems.

**Related Reading:** For more detailed SMP/E information, see *OS/390 V2R10 SMP/E Reference*.

## Program Temporary Fixes (PTFs)

Program Temporary Fixes (PTFs) are considered preventative service. PTFs contain solutions for valid problems and are distributed with the source changes, object modules, or both in machine-readable format. The PTF is considered the final solution for a problem for the release of IMS for which it is provided.

For modules that supersede a previous level of a module, the source changes are the cumulative delta source changes for the module. If a PTF has a prerequisite, the source changes included in the PTF are not cumulative, but reflect only the code changed for the PTF.

## Authorized Program Analysis Reports (APARs)

Authorized Program Analysis Report (APAR) fixes are considered corrective service. APARs contain solutions for valid problems and are distributed with the source changes, object modules, or both in machine-readable format. The APAR is considered an *interim solution*, or temporary solution, for a problem. The final solution is the corresponding PTF or PTFs created at the end of the APAR process. One APAR can become one or more PTFs.

## USERMODs

IMS will provide USERMODS in the following situations:

- As an APAR fixtest, to ensure that the problem reported by an APAR is corrected or to provide relief until the APAR or PTF is available
- As a circumvention to a problem, to provide relief until the final APAR or PTF is available
- As a trap (or specialized code) to obtain additional documentation or information (such as a dump) necessary to analyze and understand a problem

USERMODs provided by IMS define as prerequisites (PRE, IFREQ, and so on) only those SYSMODs for which the USERMOD has code dependencies. USERMODs list the corresponding APARs, not PTFs, as prerequisites. In this way, USERMODS are like APARs. Whenever IMS USERMODS are processed by SMP/E, regression messages might be encountered. These messages must be analyzed to ensure that no regression is actually taking place. If needed, contact the IBM Support Center for assistance.

USERMODs provided by IMS are not superseded (SUP) by a corresponding APAR or PTF. When the final fix is available, you must RESTORE the USERMOD from

the system. The ++HOLD information provided with each USERMOD indicates that you must RESTORE the USERMOD and contains instructions on how to do so.

**Important:** The SMP/E ACCEPT command should not be processed for USERMODs.

## Recommended IMS Maintenance Strategy

The IMS service process normally makes APARs available as soon as they are completed, which is normally a few weeks before the corresponding PTF or PTFs are completed. In situations in which a fix is urgently needed after the APAR is completed, but before the PTF is available, using the APAR might be the best short-term solution.

APARs provided by IMS define as prerequisites (PRE, IFREQ, and so on) only those SYSMODS for which the APAR has code dependencies. The APARs list other APARs, not PTFs, as prerequisites.

PTFs contain as requisites (PRE, IFREQ, and so on) all prior PTFs affecting the same elements. Processing a PTF might require the processing of many additional SYSMODS, while processing an APAR might not. In emergency situations where a problem exists and a solution must be implemented quickly, the APAR might be the best short-term solution as it might require the least amount of change. However, you must always use the PTF as the final fix.

When processing APARs, encountering regression messages from SMP/E is normal. These messages must be analyzed to ensure that no regression will occur. If needed, contact the IBM Support Center for assistance.

PTFs supersede (SUP) their corresponding APARs. Therefore, removing the APAR prior to processing the PTF is not required.

**Important:** APAR fixes should not be processed using the SMP/E ACCEPT command. The corresponding PTF or PTFs should be processed as the final fix.

## Obtaining IMS Service

PTFs are available through the following channels:

- IBM Support Center: Specific PTFs can be requested through the IBM Support Center. They can be downloaded from IBMLINK, downloaded from a File Transfer Protocol (FTP) site, or mailed on a cartridge.
- Extended Support Offering (ESO): ESO tapes are available to licensed users on a monthly basis or as requested.
- Custom Built Product Delivery Offering (CBPDO): CBPDO service tapes are created upon customer request.
- ServerPac: ServerPac tapes are sent upon customer request. In addition to products, ServerPac tapes also contain PTFs that have been incorporated in the products.

You can also use ShopzSeries to order service, at
http://www14.software.ibm.com/webapp/ShopzSeries/ShopzSeries.jsp

## Installing IMS Service

IMS service can be installed in several ways, including the following SMP/E methods:

- "RECEIVE/APPLY/ACCEPT (Standard Sequence)"
- "ACCEPT without APPLY (Pregeneration Mode)" on page 80
- "ACCEPT before APPLY (SYSDEF-Sensitive Service)" on page 81

**Important:** Do not ACCEPT APARs or USERMODs.

If you have any questions about these processes, contact the IBM Support Center before you begin.

## RECEIVE/APPLY/ACCEPT (Standard Sequence)

This SMP/E method is the standard method for processing service.

1. Back up the IMS environment.
   a. Back up the SMP/E data sets (such as Zones, SMPMTS, and SMPPTS).
   b. Back up IMS product data sets (such as SDFSRESL and ADFSLOAD).
2. Obtain the desired service.
3. Read the documentation accompanying the package:
   - ESO tape documentation
   - CBPDO Memo to Users Extensions
   - Preventative Service Planning (PSP)
4. Run the SMP/E RECEIVE command.
5. Run the SMP/E APPLY CHECK GROUPEXTEND command.

   SMP/E Messages GIM43401 and GIM44402 can be received for modules not included in the target system during the APPLY CHECK and APPLY process. You can ignore these messages if they refer to a part that pertains to an IMS function or feature that you are not going to use. Programming exceptions (PEs) need to be resolved to ensure that service is processed to the desired level. If needed, contact the IBM Support Center for assistance.

   **Attention:** IMS service frequently includes in-line JCLIN information. For this type of service, SMP/E does not recommend the re-APPLY of service using the REDO parameter. If REDO is used for this type of service (without NOJCLIN), SMP/E RESTORE processing might not work properly.
6. Research the APPLY CHECK reports, making changes as needed.
7. Run the SMP/E APPLY GROUPEXTEND command.
8. Test the corrective service.

   If an IMS system generation is done with service in APPLY only status, that service might be partially or completely regressed.

   **Recommendation:** For all SYSMODs in APPLY only status, issue the following SMP/E command after every IMS system generation:

   ```
   APPLY S(xxxx,xxxx) REDO NOJCLIN BYPASS (....)
   ```

   where *xxxx,xxxx* is a list of all SYSMODs in APPLY only status (separated by commas or spaces).
9. Run the SMP/E ACCEPT CHECK GROUPEXTEND command.
10. Research the ACCEPT CHECK reports.
11. Run the SMP/E ACCEPT GROUPEXTEND command.

## ACCEPT without APPLY (Pregeneration Mode)

**Important:** This information is accurate as of its printing. For the most current and more detailed information, see Information APAR II13024.

This procedure requires that ACCJCLIN has been set in the distribution zone when the FMIDs are ACCEPTed.

1. Back up the IMS environment.
   a. Back up the SMP/E data sets (such as Zones, SMPMTS, and SMPPTS).
   b. Back up IMS product data sets (such as SDFSRESL and ADFSLOAD).
2. Obtain the desired service.
3. Read the documentation accompanying the package:
   - ESO tape documentation
   - CBPDO Memo to Users Extensions
   - Preventative Service Planning (PSP)
4. Run the SMP/E RECEIVE command.
5. ACCEPT or RESTORE outstanding APPLY service for all products sharing the SMP/E zones with IMS.
6. Unload the target zone DDDEFs using the SMP/E UNLOAD command.
7. List the SMP/E target zone.
8. Reinitialize the SMP/E target zone.
   a. Run the SMP/E ZONEDELETE command for the Target zone.
   b. If no other SMP/E zones are in this CSI, take the following actions:
      1) Delete and redefine the CSI.
      2) Reinitialize the target zone by running IDCAMS REPRO to copy GIMZPOOL into the new CSI.
   c. Add the reinitialized zone to the SMP/E GLOBAL zone.

      **Note:** Be sure that this new target points to the correct OPTIONS entry that can be determined from the output created in Step 7 and rebuild the relationship between this target zone and the distribution zone.
9. Run UCLIN to add the DDDEFs back to the target zone. This step uses the data set created in Step 6 as input.
10. Scratch and reallocate the SMPMTS, SMPSTS, SMPSCDS, and SMPLTS data sets.
11. Run the SMP/E ACCEPT CHECK GROUPEXTEND BYPASS(APPLYCHECK) command.
12. Research the ACCEPT CHECK reports, making changes as necessary.
13. Run SMP/E ACCEPT GROUPEXTEND BYPASS(APPLYCHECK).
14. Run the SMP/E ZONEMERGE command specifying CONTENT to merge the Distribution Zone to the Target Zone.
15. Run SMP/E GENERATE command to create the JCL necessary to re-build the target libraries.

    **Note:** This requires ACCJCLIN has been set in the distribution zone when the FMIDs are ACCEPTed.
16. Run the JCL that was created in Step 15.
17. Run an IMS 'ALL' system definition (SYSGEN) STAGE 1 and STAGE 2.
18. Run SMP/E JCLIN pointing to the STAGE 2 JCL as input.
19. Run APPLY for any service that was RESTOREd earlier (and not ACCEPTed) and still needs to be processed.

20. Test the new system.

## ACCEPT before APPLY (SYSDEF-Sensitive Service)

This method is a variation of pregeneration mode that can be useful when you have many products sharing the same SMP/E zones and you need to install a PTF that would normally require an ACCEPT BYPASS(APPLYCHECK) sequence (typically a PTF that affects system definition). This method avoids disturbing other products that have service outstanding (service that has been APPLIED but not ACCEPTed).

1. Back up the IMS environment.
   a. Back up the SMP/E data sets (such as Zones, SMPMTS, and SMPPTS).
   b. Back up IMS product data sets (such as SDFSRESL and ADFSLOAD).
2. Obtain the desired service.
3. Read the documentation accompanying the package:
   - ESO tape documentation
   - CBPDO Memo to Users Extensions
   - Preventative Service Planning (PSP)
4. Run the SMP/E RECEIVE command.
5. ACCEPT or RESTORE outstanding APPLY service for all products sharing the SMP/E zones with IMS.
6. Run SMP/E ACCEPT CHECK GROUPEXTEND BYPASS(APPLYCHECK).
7. Research the ACCEPT CHECK reports, making changes as necessary.
8. Run the SMP/E ACCEPT GROUPEXTEND BYPASS (APPLYCHECK).
9. Run an IMS 'ALL' system definition (SYSGEN) STAGE 1 and STAGE 2.
10. Run SMP/E JCLIN pointing to the STAGE 2 JCL as input.
11. Run SMP/E APPLY CHECK GROUPEXTEND.
    **Attention:** The REDO parameter **should not** be used.
12. Research the APPLY CHECK reports, making changes as necessary.
13. Run SMP/E APPLY GROUPEXTEND.
    **Attention:** The REDO parameter **should not** be used.
14. Test the new system.

# Special Service and Maintenance Considerations

Be aware of the special IMS service considerations in this section to prevent potential problems.

## SYSDEF with Maintenance in APPLY Status

If an IMS system definition is performed when maintenance is in APPLY status, the maintenance might be regressed. To avoid regression, make certain that all maintenance is in ACCEPT status before performing an IMS system definition. Alternatively, for all SYSMODs in APPLY only status, issue the following SMP/E command after performing SYSGEN STAGE 1 and STAGE 2 and JCLIN:

```
APPLY S(xxxx,xxxx) REDO NOJCLIN BYPASS (....),
```

where xxxx,xxxx is a list of *each* SYSMOD in APPLY only status (separated by commas or spaces).

**Note:** Use only the NOJCLIN parameter when processing REDO. Otherwise, you might not be able to RESTORE the service.

## Non-SYSDEF Target Libraries

Some elements of IMS are not included in the IMS system definition (SYSGEN) process. These elements are identified to SMP/E and built during APPLY processing for their FMIDs.

The SMP/E GENERATE command can be used to create JCL that can be used to rebuild these components in their target libraries. SMP/E GENERATE can also be used to create JCL for other products in the IMS distribution zone, such as IRLM. SMP/E GENERATE processing is dependent on the SMP/E parameter ACCJCLIN being set in the distribution zone when the FMID is ACCEPTed.

DFSJCLIN is no longer provided by IMS. Instead, use SMP/E GENERATE if JCL is needed to build the non-sysdef target IMS elements. SMP/E GENERATE can also be used to build JCL to build target elements for other FMIDs. For example, use GENERATE instead of DXRJCLIN for the IRLM.

## IVP Dialog Process

Service affecting the IVP dialog process can require special processing to be performed.

SMP/E HOLDDATA identifies the required actions, if any needs to be performed.

The following actions might need to be performed, as identified in HOLDDATA:

- Table Merge

  Table Merge is necessary if rows have been added, changed, or deleted in one of the master tables. Table merge causes the changes to be propagated to the user tables in INSTALIB. Default values for variables are not updated for variables that have been changed by dialog processing.
- Variable Gathering

  You can modify the default values for new and changed variables.
- File Tailoring

  You can rerun File Tailoring to add INSTALIB members for new JOBs or TASKs or to update INSTALIB members with new or changed variable values.
- Execution

  You can run or rerun portions of the IVP processes.

# Part 2. IVP Information

# Chapter 7. Introduction to the IVP

This chapter introduces the Installation Verification Program (IVP) facility, which you use to verify a new IMS system.

This chapter assumes that you have already installed a new IMS system. The *Program Directory for Information Management System Version 9* contains information on installing IMS.

**Definitions:** IVP (Installation Verification Program) is a facility for *initially* verifying (testing) the installation of IMS using a sample IMS system.

Use the IVP dialog to verify the majority of IMS features and functions. Other IMS books contain procedures for running some features and functions not covered by the IVP dialog. See the list of IMS books in “Bibliography” on page 227.

The following sections are included in this chapter:



## IVP Process

The IVP process consists of verifying the installation using a sample IMS system. IVP creates a sample IMS system that exercises a broad scope of IMS functions.

The IVP process includes all of the materials necessary for you to define, prepare, and run a sample IMS system. For example, IVP provides:

- Step-by-step instructions
- Customized JCL
- IMS Stage 1 Input
- Database data sets (DBDs)
- Program specification blocks (PSBs)
- Message formatting services (MFSs)
- Application programs
- Execution instructions

### INSTALL

See the *Program Directory for Information Management System Version 9* for information on using system modification program/extended (SMP/E) to install a new IMS system.

### IVP

IVP is a sample IMS system. When installing IMS, using the IVP is highly recommended.

IVP is also useful for IMS system programmers who want to maintain an environment for the initial installation and testing of IMS service.

You can use the IVP materials as a set of samples even if you do not want to run the IVP.

The IVP provides guidance for performing a combination of the following jobs and tasks (depending on your environment):

- Allocating data sets
- Performing IMS system definition (SYSDEF)
- Establishing IMS interfaces to z/OS and VTAM
- Preparing the IMS system
- Using IPL z/OS
- Preparing the IVP system and IMS applications
- Initializing the IVP system and runs IMS applications

**Important:** You must perform IMS system definition and you must establish the interface between your IMS system and z/OS and VTAM before you can execute your system using the new IMS release.

**Related Reading:** For the complete details of the jobs and tasks, see Appendix B, "IVP JOBs and TASKs," on page 181.

See "Steps Cx for System Definition (SYSDEF)" on page 182 through "Steps Ox for Common Service Layer and Common Queue Server Sample Application" on page 191 for a list of the jobs and tasks used by the IVP process.

See Part 3, "IVP Reference Material," on page 131 for additional information that may be useful during the IVP process.

In the IVP process, you run a combination of jobs and perform a set of tasks to create a fully executable sample IMS system. Then you exercise the system using several sample applications. You must manually submit and verify the jobs and perform the tasks that make up the IVP process (the dialog "EXE" action). You can use SDSF and the split screen capability of ISPF to browse job output while running the IVP.

When the jobs and tasks run successfully, IMS Version 9 is operational.

## The IVP Dialog

The IVP dialog is an ISPF/PDF dialog that is designed to act as a front-end to the IVP process. Installing IMS also installs the IVP.

IVP verifies the following environments for initial installation:

| | |
|---|---|
| **DBB** | DB batch environment |
| **DBC** | DBCTL online environment |
| **DBT** | DB/DC online environment |
| **XRF** | XRF (DB/DC) online environment |
| **DCC** | DCCTL online environment |

The following sub-options are available, depending on the options selected during the IMS INSTALL:

- IRLM - Use IRLM in IVP Applications

- FP - Use Fast Path in IVP Applications
- ETO Feature Installed
- CQS - Add CQS to CSL Application

Dialog processing includes:

- Session initialization
- Variable gathering
- File tailoring
- Execution

Perform the following steps to run the IVP dialog:

1. Start the dialog.
2. Perform session initialization:
   a. Select an environment option.
   b. Select sub-options.
   c. Perform table merge (to create the user tables).
   d. Copy startup variables.
3. Perform variable gathering.

   Specify or accept the user variable values that are to be used during file tailoring to create the IVP materials.
4. Perform file tailoring.

   Create the IVP materials (INSTALIB members) by combining the user variables, from the variable-gathering phase, with the IVP file-tailoring skeletons using the ISPF file-tailoring facilities.
5. Perform the execution phase.

   Run the jobs and perform the tasks to define, prepare, and run a sample IMS system.

## Starting the IVP Dialog

You can start the IVP dialog from within ISPF/PDF (Option 6 recommended) or the IMS Application Menu. For detailed information, see “Starting the IVP Dialog” on page 92.

## Session Initialization

Session initialization occurs each time the dialog is started. It also occurs any time an option or sub-option change is made. Session initialization can perform the following functions, depending on the options selected during IMS INSTALL:

- Dialog restart/recovery
- Option selection
- Sub-option selection
- Table merge
- Copy startup parameters
- Phase selection (variable gathering, file tailoring, execution)

## Variable Gathering

The variable-gathering phase presents the variables used by the file-tailoring phase to produce the JCL and other materials to be used by the IVP process. The

variables presented are specific to the selections made during session initialization. Online documentation is provided to describe each variable.

During the variable-gathering phase, you can perform the following functions:

- Modify the value associated with each variable.
- Refresh a variable to its distribution default value.
- View the online descriptions of the variables.
- Print the online documentation for variables to the ISPF list data set.
- Import variables from a previous release of IMS.
- Export variables from an installed release of IMS (for IMS Version 9 and later) to the next release of IMS to be installed, to ease migration. For example, if you are currently using IMS Version 9, and want to migrate to IMS Version 10, you can export the variables from IMS Version 9 to IMS Version 10.

See Appendix A, “IVP Variables,” on page 173 for a list of the user variables supported by IVP.

## File Tailoring

The file-tailoring phase uses the ISPF file-tailoring services to combine the variables from the variable-gathering phase with skeletons from SDFSSLIB to create members (JCL and other materials) in INSTALIB.

The JOBs, TASKs, and INDEX items presented during the file-tailoring phase are specific to the selections made during session initialization. The JOBs and TASKs are presented in the order in which they are to be performed. In addition to creating INSTALIB members, this phase serves as a directory for the members of INSTALIB, SDFSSLIB, and SDFSISRC. Online documentation is provided to describe each item.

While in the file-tailoring phase, you can perform the following functions:

- File tailor all or selected items.
- BROWSE INSTALIB, SDFSSLIB, or SDFSISRC members.
- EDIT INSTALIB members.
- View the online descriptions of the members.
- Print the online documentation for JOBs, TASKs, and INDEX items to the ISPF list data set.

See Appendix B, “IVP JOBs and TASKs,” on page 181 for a list of the JOBS, TASKS, and INDEX items used by the IVP options and sub-options.

## Execution

The execution phase involves a subset of the items that were presented during the file-tailoring phase. Only the JOBs and TASKs specific to the selections made during session initialization are presented. The JOBs and TASKs are presented in the order in which they are to be performed. Online documentation is provided to describe each item.

While in the execution phase, you can perform the following functions:

- BROWSE INSTALIB members.
- EDIT INSTALIB members. JOBs can be submitted for execution from within EDIT.

- Submit INSTALIB members for execution. Successful JOB execution must be manually verified.
- View the online documentation of the JOBs and TASKs.
- Print the online documentation for JOBs and TASKs to the ISPF list data set.
- Perform special processing routine setup for a task.

See Appendix B, “IVP JOBs and TASKs,” on page 181 for a list of the JOBS, TASKS, and supporting materials used by the IVP options and sub-options.

## User Modifications to IVP

IBM does not recommend user modifications. However, because all of the IVP jobs are built from ISPF file-tailoring skeletons, you can modify them if necessary (for example, job statement changes) to adjust IVP to fit individual requirements.

**Attention:** If you are going to modify the IVP materials, here are four points to be aware of:

- **Do not** change the contents of an SMP/E controlled library, unless you use the SMP/E USERMOD facility.
- As an alternative to SMP/E USERMODs, the IVP dialog supports *delta* libraries.

  **Definition:** Delta libraries are user data sets (PDSs) that the IVP dialog concatenates before the SMP/E-controlled libraries. Delta libraries affect only IVP dialog functions; they are not used in any of the jobs in the IVP process. See Chapter 8, “Using the IVP Dialog,” on page 91 for more information.
- **Do not** change the contents of INSTALIB directly unless you are willing to repeat the changes each time you rerun the file-tailoring phase of the IVP dialog (for example, after service is applied). The file-tailoring process of the IVP dialog causes INSTALIB members to be replaced.
- **Do not** modify the JCL in the execution phase. You will lose these changes when you rerun the file-tailoring phase of the IVP dialog.

## Post-Verification Uses for IVP

**Example:** Here are some examples of uses of the IVP after verification:

- Use the IVP system as your first-level test system.
- Use the IVP system as a test system for IMS service.
- Use the IVP system for demonstrations.
- Use the IVP system for training.
- Use the IVP system to develop operation and recovery procedures.
- Build or move your own systems onto a copy of the IVP system.
- Experiment with the IVP systems.
- Use DFSDDLT0 (the DL/I Test Program) and the sample databases to experiment with DL/I call sequences.

## Product Packaging

This section lists the names and FMIDs of the orderable products, orderable features, and orderable optional source associated with this release.

# Orderable Products—Licensed Program Number 5655–C56

### DB Product

FMID HMK9900 SV1 and HMK9900 SV2 - System Services
- IVP
- Database Recovery Control (DBRC)
- Logger

FMID JMK9901 Database Manager

FMID HIR2101 - IRLM V2 R1

FMID JMK9906 - IMS Java

### TM Product

FMID HMK9900 SV1 and HMK9900 SV2 - System Services
- IVP
- Database Recovery Control (DBRC)
- Logger

FMID JMK9902 - Transaction Manager
- APPC/LU Manager

FMID JMK9906 - IMS Java

### TM-DB Product

FMID HMK9900 SV1 and HMK9900 SV2 - System Services
- IVP
- Database Recovery Control (DBRC)
- Logger

FMID JMK9901 - Database Manager

FMID JMK9902 - Transaction Manager
- APPC/LU Manager

FMID JMK9903 - Extended Terminal Option (ETO)

FMID HIR2101 - IRLM V2 R1

FMID JMK9906 - IMS Java

# Orderable Features

### Extended Terminal Option (for the TM Product)

FMID JMK9903

### Remote Site Recovery / Recovery-Level Tracking (for all Products)

FMID JMK9904

### Remote Site Recovery / Database Level Tracking (for all Products)

FMID JMK9905

# Orderable Optional Source

Database

System Services

# Chapter 8. Using the IVP Dialog

This chapter provides an overview of the IVP dialog using a sample IVP dialog session. The panels in this sample appear in the same sequence as when you run the IVP dialog. A brief explanation accompanies each panel, and additional information is available online through the ISPF HELP command after you start your own dialog session.

The IVP dialog panels appear in the following sequence:

1. Dialog Start-up (described in “Starting the IVP Dialog” on page 92)
   a. Starting the IVP Dialog
   b. Logo Panel
   c. Copyright Panel
2. Session-Initialization Phase (described in “Session-Initialization Phase” on page 97)
   a. Dialog Option Selection
      1) Option Selection
      2) Option Change Verification
   b. Dialog Sub-Option Selection
   c. Table Merge Request
      1) Table Merge Request
      2) Table Merge In Progress
      3) Table Merge Completed
   d. Copy Start-up Variables
   e. Phase Selection
3. Variable-Gathering Phase (described in “Variable-Gathering Phase” on page 105)
   a. LST Mode
   b. ENT Mode
   c. Phase Complete Verification
   d. Return to Phase Selection
4. File-tailoring Phase (described in “File-Tailoring Phase” on page 115)
   a. ALL Action Request
   b. File-tailoring In Progress
   c. ALL Action Complete Notification
   d. LST Mode
   e. ENT Mode
   f. Phase Complete Verification
   g. Return to Phase Selection
5. Execution Phase (described in “Execution Phase” on page 123)
   a. LST Mode
   b. ENT Mode
   c. Phase Complete Verification
   d. Return to Phase Selection
6. Ending the IVP Dialog Session (described in “Ending the IVP Dialog Session” on page 128)

7. Panel HELP (described in “Panel HELP—Table of Contents” on page 128)
   a. Panel HELP—Table of Contents
   b. Panel HELP—General Information

The panels and information that follow are common to all of the IVP dialog options. Information for the panels that are not presented here can be obtained through the ISPF HELP.

**Important:** This document illustrates a subset of all the ISPF panels in the IVP. The panels shown in this document are samples and, as such, might not completely match the actual panels that appear on your screen. The purpose of the panels here is to help guide you through the IVP process.

As each panel in the dialog is displayed, the position of the cursor is as follows:

- At the input field for selection panels
- At the action command field for entry panels
- At the action command field for the first item on list panels
- At the command line for information panels
- At the command line for HELP panels

To select an option, type the number or letter of the service and press ENTER.

To request an action, type either the complete three-character command or the single-character short form of the command and press ENTER.

You can also enter single-entry selections and action commands for entry panels on the command line. The single digit-entry is the capitalized letter in the command.

If you need further explanation for any panel, press the HELP key or select the HELP pulldown.

## Starting the IVP Dialog

The IVP dialog can be started and run from within ISPF/PDF (IBM suggests Option 6), as described in “ISPF/PDF (Option 6)” It can also be started from the IMS Application Menu, as described in “IMS Application Menu” on page 94.

## ISPF/PDF (Option 6)

The partial command syntax for invoking the IVP dialog is shown in Figure 3.

```
------------------  TSO COMMAND PROCESSOR  ------------------
ENTER TSO COMMAND OR CLIST BELOW:
===> EXEC 'sss.SDFSCLST(DFSIXC01)' 'HLQ(qqq)'
```

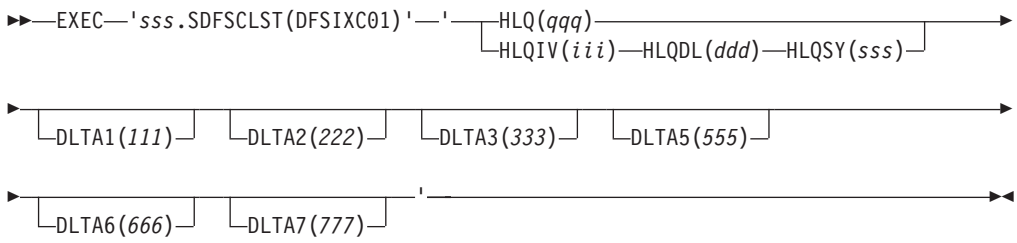
*Figure 3. Invoke the IVP Dialog (Partial Syntax)*

The IVP dialog dynamically allocates the data sets needed to support dialog processing; therefore, it is not necessary to put the IMS ISPF data sets in your TSO logon procedure.

The dialog is designed to run from one ISPF logical screen on one terminal. Attempts to run the dialog from multiple logical screens, multiple physical terminals,

or multiple logical terminals (sessions) will result in an ISPF error message. However, the ISPF split screen-facility is not disabled, and you can use it for other functions.

The full syntax for the TSO command that is used to invoke the IVP start-up CLIST is:




Where:

**EXEC** Is a TSO command to run CLISTs and REXX EXECs.

**HLQ** Is a keyword that identifies the high-level qualifier for the IVP, system, and distribution libraries.

*qqq* Is the data set high-level qualifier for the IVP, system, and distribution libraries.

**HLQIV** Is the keyword that identifies the high-level qualifier for the IVP libraries.

*iii* Is the high-level qualifier for IVP data sets (INSTALIB and INSTATBL).

The default is IVPIVP91.

**HLQDL** Is a keyword that identifies the high-level qualifier for the distribution libraries.

*ddd* Is the high-level qualifier for IMS distribution library (DLB) data sets.

The default is IVPDLB91.

**HLQSY** Is the keyword that identifies the high-level qualifier for the system libraries.

*sss* Is the high-level qualifier for IMS system (SYS) data sets.

The default is IVPSYS91.

**DLTAx** Is the keyword that specifies the various delta libraries that contain site-defined data sets for the IVP.

*111* Is the fully qualified DSNAME for the first delta library.

See “IVP Dialog Delta Libraries” on page 95.

*222* Is the fully qualified DSNAME for the second delta library.

No default exists.

See “IVP Dialog Delta Libraries” on page 95.

*333* Is the fully qualified DSNAME for the third delta library.

No default exists.

See “IVP Dialog Delta Libraries” on page 95.

*555* Is the fully qualified DSNAME for the fifth delta library.
See “IVP Dialog Delta Libraries” on page 95.

*666* Is the fully qualified DSNAME for the sixth delta library.
See “IVP Dialog Delta Libraries” on page 95.

*777* Is the fully qualified DSNAME for the seventh delta library.
See “IVP Dialog Delta Libraries” on page 95.

**PDF** This keyword is obsolete and is ignored if specified.

If you specify delta libraries, then:

1. Copy the DFSIXC01 CLIST to a user library (for example, INSTALIB).
2. Modify the CLIST to specify the desired defaults.
3. Run the CLIST from the user library.

## IMS Application Menu

The IMS Application Menu provides a common interface to IBM-supplied IMS applications that run on TSO and ISPF, such as:

- Single Point of Control (SPOC)
- Knowledge-Based Log Analysis (KBLA)
- HALDB Partition Definition utility
- IMS Syntax Checker
- Installation Verification Program (IVP)
- IVP Export utility

To provide access to the IMS Application Menu, include the IMS.SDFSEXEC data set in the SYSPROC DD concatenation.

To start the IMS Application Menu, you can either use a TSO command or an EXEC command:

- TSO %DFSAPPL HLQ(*myhlq*)
- EXEC ’IMS.SDFSEXEC(DFSAPPL)’ ’HLQ(*myhlq*)’

The HLQ parameter is required for the first use of either command. If you do not specify it for subsequent uses, the command uses the most recently specified high-level qualifier.

The IMS Application Menu is shown in Figure 4.

```
 Help
------------------------------------------------------------------
                IMS Application Menu
COMMAND ===>_____________________________________________________

 Select the desired application and press Enter.
   1. Single Point of Control (SPOC)
   2. Knowledge-Based Log Analysis (KBLA)
   3. HALDB Partition Definition utility (PDU)
   4. Syntax Checker for IMS parameters (SC)
   5. Installation Verification Program (IVP)
   6. IVP Export utility (IVPEX)
```

*Figure 4. IMS Application Menu*

Using the IMS Application Menu, you can start any of the TSO or ISPF applications by selecting the application and pressing the Enter key.

You can also link to the IMS Application Menu from your local ISPF option menu. The following panel is an example:

```
)BODY
            Local Option Menu
Option ===>_ZCMD

  I    IMS Application Menu
  .
  .
)PROC
&ZSEL = TRANS(TRUNC(&ZCMD,'.')
  I,'CMD(%DFSAPPL HLQ(myhlq)) NEWAPPL(DFS) NOCHECK'
  .
  .
)END
```

## IVP Dialog Start-up Messages

The following messages are issued by CLIST DFSIXC01. Take the appropriate action and rerun.

- `DFSIXC01 - SYSISPF=INACTIVE - This CLIST must be invoked from within ISPF`

  The IVP Dialog must be invoked from ISPF/PDF Option 6.
- `DFSIXC01 - Input parm HLQ is too long`

  The HLQ parameter can be a maximum of 26 characters.
- `DFSIXC01 - Input parm HLQIPO is too long`

  The HLQIPO parameter can be a maximum of 26 characters.
- `DFSIXC01 - Input parm HLQIV is too long`

  The HLQIV parameter can be a maximum of 26 characters.
- `DFSIXC01 - Input parm HLQDL is too long`

  The HLQDL parameter can be a maximum of 26 characters.
- `DFSIXC01 - Input parm HLQSY is too long`

  The HLQSY parameter can be a maximum of 26 characters.
- `DFSIXC01 - Parameter DLTA1, DLTA2, DLTA3, DLTA5, DLTA6, or DLTA7 is too long`

  The DLTA1, DLTA2, DLTA3, DLTA5, DLTA6, and DLTA7 parameters can be a maximum of 44 characters.
- `DFSIXC01 - Parameter DLTA5 must not be the same as DLTA1, DLTA2, and DLTA3`

  The DLTA5 parameter cannot have the same value as DLTA1, DLTA2 or DLTA3.
- `DFSIXC01 - Parameter DLTA6 must not be the same as DLTA1, DLTA2, or DLTA3`

  The DLTA6 parameter cannot have the same value as DLTA1, DLTA2 or DLTA3.
- `DFSIXC01 - Parameter DLTA7 must not be the same as DLTA1, DLTA2, or DLTA3`

  The DLTA7 parameter cannot have the same value as DLTA1, DLTA2 or DLTA3.

## IVP Dialog Delta Libraries

The IVP dialog delta libraries facilitate development and service of the IVP dialog. This support allows delta libraries to be concatenated in front of the dialog system libraries. The delta libraries allow changes to the dialog parts to be tested without affecting the contents of SMP/E-controlled distribution and target libraries.

This support is an alternate method for supporting customer modifications, commonly called usermods, of the IVP materials. You can use delta libraries for the replacement of the IVP job statements (SDFSSLIB members DFSIXS05, DFSIXS32, and DFSIXS36). If the proper names are retained, the file-tailoring phase can pick up your job statement from the delta libraries.

The delta libraries are specified using the DLTA1, DLTA2, DLTA3, DLTA5, DLTA6, and DLTA7 options of the start-up CLIST. The default for these options is null. If the null default value is used for these options, INSTALIB is used for DLTA1 and INSTATBL is used for DLTA5. DLTA5, DLTA6, and DLTA7 must be unique from DLTA1, DLTA2, or DLTA3.

The delta library support provides the dialog delta (DD) concatenations as shown in Figure 5.

```
DD >>> SYSPROC  ISPMLIB   ISPPLIB   ISPSLIB   ISPTLIB
       -------  -------   -------   -------   --------
                                              INSTATBL
       DLTA1    DLTA1     DLTA1     DLTA1     DLTA1
       DLTA2    DLTA2     DLTA2     DLTA2     DLTA2
       DLTA3    DLTA3     DLTA3     DLTA3     DLTA3
       SDFSCLST SDFSMLIB  SDFSPLIB  SDFSSLIB  SDFSTLIB
       SDFSEXEC

DD >>> INSTATBL ISPFILE  SDFSISRC  SDFSRTRM
       -------  -------  --------  -------
                         DLTA1     DLTA5
                         DLTA2     DLTA6
                         DLTA3     DLTA7
       INSTATBL INSTALIB SDFSISRC  SDFSRTRM
```

*Figure 5. Dialog Delta Library Concatenations*

**Figure Notes:**

1. The SDFSISRC concatenation is only used for dialog internal processing. It is **not** used within the IMS cataloged procedures or in any of the IVP process jobs. For example, DBD, PSB, MFS, and PGM assemblies obtain their source from SDFSISRC; the delta libraries are not involved.
2. In the ISPTLIB concatenation, INSTATBL is concatenated in front of the delta libraries.
3. The DD for INSTATBL is used in place of a DD for ISPTABL.
4. DCBs must be consistent within a group of concatenated data sets.

## Logo Panel

Figure 6 on page 97 depicts the logo panel of the IVP dialog. When the logo panel for the IVP dialog is displayed, press ENTER to continue. The logo panel will appear only once for each TSO user ID.

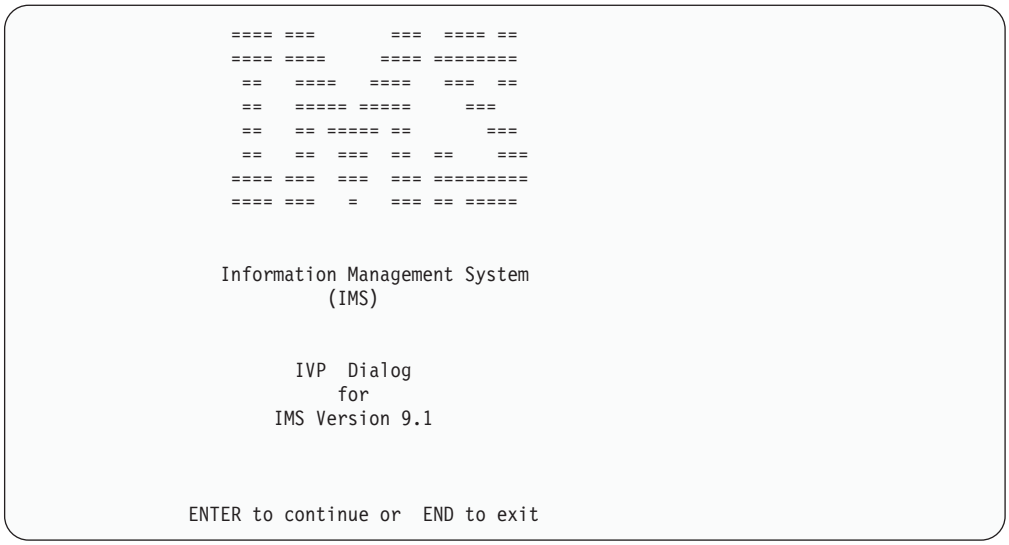



*Figure 6. Logo Panel*

## Copyright Panel

Figure 7 depicts the copyright panel of the IVP dialog. When the copyright panel for the IVP dialog is displayed, press Enter to continue. The copyright panel appears only once for each TSO user ID.

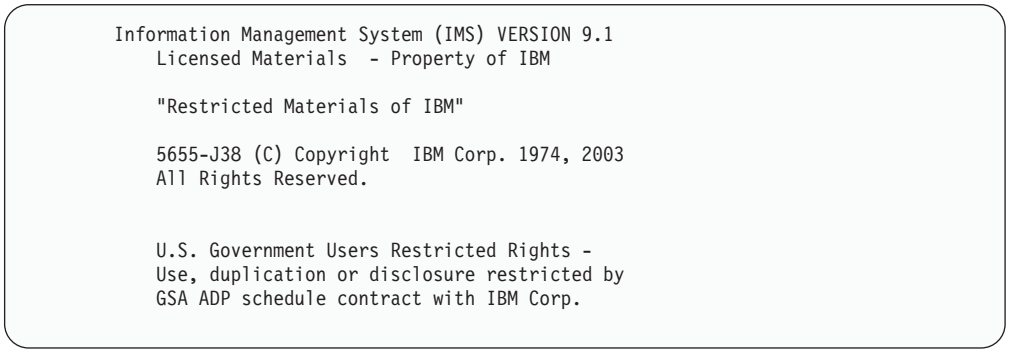



*Figure 7. Copyright Panel*

## Session-Initialization Phase

The IVP is initialized in the session-initialization phase. You select the installation option and suboption values. Based on this input, the IVP builds customized tables of the specific jobs and tasks that need to be run. These tables are the internal driving force behind the phases that follow. In addition, some variables are initialized in this phase in preparation for the variable-gathering phase.

## Initial Installation Environment Options

Figure 8 on page 98 depicts the environment options panel of the IVP dialog. This panel is referred to as the primary option menu for the IVP dialog.

```
IVP               IVP Environment Options                 IMS 9.1
Command ===>
   DFSIX023: DFSIXX01 - Prior session completed successfully for "DBB"
   Select the desired option and press ENTER
Option. .  4
    IVP Environments
  1.  DBB - Database Management (Batch)
  2.  DBC - Database Management (DBCTL)
  3.  DBT - Database and Transaction Management (DB/DC)
  4.  XRF - DB/DC with Extended Recovery Facility (DB/DC with XRF)
  5.  DCC - Transaction Management (DCCTL)
```

*Figure 8. Environment Options Panel*

The environment options dialog panel supports the following primary options:

1. DBB— IMS batch environment

   This environment supports batch job access of IMS full-function databases. It can also be used to support DB2 applications.

2. DBC— IMS DBCTL environment

   This environment supports the online access of IMS full-function databases and DEDBs with batch-oriented BMPs. It can also be used as the basis for supporting CICS/DBCTL, ODBA, DB2, batch, and other applications. This environment includes all of the function of the DBB environment.

3. DBT— IMS DB/DC environment

   This environment supports the online access of IMS full-function databases, DEDBs, and MSDBs. IMS DB/DC is a full IMS Transaction and Database Management environment supporting both message-driven and batch-oriented applications. It can also be used for supporting the CICS/DBCTL, ODBA, DB2, batch, and other applications. This environment includes all of the function of the DBC and DBB environments.

4. XRF— IMS XRF environment

   This option extends the DBT (DB/DC) environment to include XRF support. A single CPC configuration (active and alternate subsystems on the same CPC) is used. It can also be used to support the TM environment, CICS/DBCTL, ODBA, DB2, and batch applications. This environment includes all of the function of the DBT, DBB, and DBC environments.

5. DCC— IMS DCCTL environment

   IMS DCCTL is a full IMS Transaction Management environment supporting both message-driven and batch-oriented applications. It can be used as the basis for supporting DB2 applications.

**Note:** Each option in the environment options panel, except option 5, includes the options listed before it. For example, if you select option 3, you are building the IMS batch, DBCTL, and DB/DC IVP environments. Select the highest number representing the system you want to build. Option 5 does not build the environments of options 1, 2, 3, and 4.

**Related Reading:** If you are using an IMS DBCTL environment to support CICS/DBCTL applications, please see *CICS-IMS Database Control Guide* for guidance on installing interfaces for and using DBCTL.

The first selection you must make in establishing a dialog session is to select the environment option. In the example on Figure 8, you are verifying an XRF system. Enter a 4 in the input field or on the command line.

A DFSIX023 message on the panel long-message line indicates that a previous session was working with a DBB system. In the DFSIX023 message, DFSIXX01 is the name of the function (a REXX EXEC, in this case) issuing the message.

After selecting option 4, press ENTER to continue.

## Option Change Verification

The environment option change verification panel in Figure 9 is displayed because the option selected, XRF, is not the same as the option that was last active, DBB. The IVP dialog maintains state data about the dialog progress separately for each option.

```
  Help
------------------------------------------------------------------
IVP -- Environment Option Change Verification - XRF--IMS 9.1
COMMAND ===>

 The Environment Option you have just chosen is not the same as
 the Option which was last active:


       XRF - Requested Option

       DBB - Previous Option


 To confirm your change of Options to XRF :  Press ENTER

 To return to the Environment Option Selection menu:  Press END
```

*Figure 9. Environment Option Change Verification Panel*

To verify an XRF system, press ENTER to continue. The dialog saves your DBB status and loads your prior XRF status, if any exists. The dialog also reruns session initialization for the new option. This option change panel is displayed because you selected an option that is different from the option that was last active (possibly because you were experimenting with another system).

## Sub-option Selection

The next selection that you must make in establishing a dialog session is to select the sub-options you want to add to your primary option selection. Figure 10 on page 100 depicts the sub-options selection panel of the IVP dialog. Use a slash (/) to indicate that you want a sub-option. The absence of a slash indicates that you do not want that particular sub-option.

```
 Help
-------------------------------------------------------------------
 IVP -------- Sub-Option Selection - XRF ------- IMS 9.1
 COMMAND ===>

    Select the desired Sub-Options and press ENTER
 /  IRLM -  Use IRLM in IVP Applications
 /  FP -  Use Fast Path in IVP Applications
 /  ETO Feature Installed
    CQS - Add CQS to CSL Application
    RACF - Select RACF Security


    NOTE:  Your Sub-Option selection affects the user variables,
    jobs, and tasks that will be presented.  If you later change
    your selection, you must redo the IVP Table Merge, Variable
    Gathering, File Tailoring, and Execution processes.
```

*Figure 10. Sub-Option Selection Panel*

**Note:** The sub-option, unless it is the FP sub-option, must have been installed during the SMP/E Install phase. The FP sub-option is different because FP is not a unique FMID.

The supported sub-options are:

1. Use IRLM in IVP Applications

   The default is to use this sub-option (marked by a slash) for DB batch, DBCTL, DB/DC, and DB/DC with XRF.

   This sub-option is not available for DCCTL.

   If you select this sub-option, the IRLM is defined during system definition and the IVP is run using the IRLM for the single-lock manager. If you do not select this sub-option, the IRLM is not used and program isolation (PI) is used as the single-lock manager.

   Use of IRLM is only required if you plan to use block-level data sharing. (The IVP is configured to support block-level data sharing.) Optionally, you can elect to use the IRLM, instead of PI, as the single-lock manager.

   If you select IRLM, IVP creates a simulated inter-CPC block-level data sharing configuration using two IRLMs.

2. Use Fast Path in IVP Applications

   The default is to use this sub-option (marked by a slash) for DBCTL, DCCTL, DB/DC, and DB/DC with XRF. This sub-option is not available for DB batch.

3. ETO Feature Installed

   For DCCTL, the default is not to use this sub-option (no slash). For DB/DC and DB/DC with XRF, the default is to use this sub-option (marked by a slash). This sub-option is not available for DB batch or DBCTL.

4. Add CQS to CSL Application

   The default is not to use this sub-option (no slash). If you select this option, the IVP adds the necessary jobs and tasks to the CSL sample application to use CQS.

5. Select RACF Security

   The default is not to use this sub-option (no slash). If you select this option, the IVP builds the necessary jobs and tasks to set up the use of several IMS security user exits. These user exits always authorize the user to the resource. The IVP provides a task to define resources to RACF. You can modify this sample task.

If this option is not selected, the IVP builds the necessary steps to use the Security Maintenance Utility (SMU).

If you change the selections that are displayed, a sub-option Change verification panel (not pictured) is displayed. The dialog asks you to confirm your request for change because a change of sub-options will require that you rerun the table-merge, variable-gathering, file-tailoring, and execution phases.

After selecting the appropriate sub-options, or to accept the default sub-options that are displayed, press ENTER.

## Table Merge Request

After you have selected an environment option and sub-options, the dialog gives you the option of performing the table-merge process, as displayed in Figure 11. The Table Merge panel is displayed only during dialog initialization. After you respond to this panel, it disappears for the rest of the dialog session.

```
  Help
-----------------------------------------------------------------
IVP         Table Merge Request - XRF        IMS 9.1
COMMAND ===>

 The IVP Dialog is driven from a set of ISPF tables
 which contain information about the variables, JOBs, TASKs,
 and sequence of presentation you will need to perform your
 specific installation.

 Since the tables will be updated by the dialog, working
 copies must be made the first time you use the dialog.

 If service is applied to your IMS system, or if you decide
 to use the IVP dialog to verify a different
 environment, then either the existing copies must be updated
 or new copies created.

 Please indicate whether you wish to perform Table Merge/Create:


1 1  YES  - Create / Update working tables from master tables.
  2  NO   - Use existing tables.
```

*Figure 11. Table Merge Request Panel*

The IVP dialog logic depends upon the information contained within several ISPF Tables. Master tables are shipped in the IMS distribution libraries. Because the dialog updates these tables during its processing, the master tables must be copied into a user data set, INSTATBL. The table-merge process performs this copy for the variable-gathering, file-tailoring, and execution tables.

The table-merge process is also used to update the INSTATBL copies with PTF service. The PTF contains a ++HOLD action when you need to rerun the table-merge process.

**Requirements:** The table-merge process:

- **Must** be run the first time an option is selected.
- **Must** be run whenever the installation of service requires it.
- Can be run to reset the ! indicator that is displayed on the phase panels (as shown in Figure 33 on page 125, for example).
- Can be run any time you want.

- Does not change variable values that have been changed by the copy-startup-variables process (explained in “Copy Start-up Variables” on page 103) or by the CHG action in the variable-gathering phase (explained in “Variable-Gathering Phase” on page 105).

Because the option selection has changed, accept the default value of 1 (for YES) and press ENTER to continue.

## Table Merge in Progress

The table-merge process is a long-running process. While the table-merge process is taking place, a panel with the message “Please do not interrupt this process” is displayed. Figure 12 depicts the table merge process indicator. This panel is updated frequently as the tables are processed. There are three distinct phases and the “Percent Complete” value is updated to indicate the progress of the table merge.

```
IVP ----- FT Table Merge In Progress - XRF ---- IMS 9.1



                     Table Merge Progress Indicator

                  Variable Gathering Table:  DFSIXBV1
                     Current row . . . . .:  Done.......
                     Percent completed . .:  100

                  File Tailoring Table . .:  DFSIXBF1
                     Current row . . . . .:  DFSIXS01
                     Percent completed . .:  19

                  Execution Table. . . . .:  DFSIXBE1
                     Current row . . . . .:  Patience...
                     Percent completed . .:  000



                  Please do not interrupt this process
```

*Figure 12. Table Merge Progress Indicator Panel*

## Table Merge Completed

Figure 13 on page 103 depicts the panel that is displayed when the table-merge process has completed. This panel serves as a reminder of the processing implications of the table-merge process. Press ENTER to continue.

```
 Help
-------------------------------------------------------------
IVP ----- Table Merge has completed - XRF ----- IMS 9.1



  The Table Merge process has completed and the Phase Complete
  flags have been turned off for all phases.

  If Table Merge has just been performed for the first time for
  this option, then the resetting of Phase Complete flags is of
  no special interest.

  If Table Merge has been performed for some other reason, then
  the resetting of Phase Complete flags will force you to
  revisit each of the phases in sequence (Variable Gathering,
  File Tailoring, and Execution).  Make use of this opportunity
  to examine the tables for changes (the "!" indicator will be
  set in the action field for items which have been added or
  changed by service).  Your position in each phase has been
  retained so that you may return to your last position
  after you have browsed for changes.


  Press ENTER to continue.
```

*Figure 13. Table Merge Completed Panel*

## Copy Start-up Variables

After the table-merge process is complete (or bypassed), the dialog compares the following start-up variables with their corresponding table values. If the table value is different and has not been changed by a prior copy-startup-variables process or by the CHG action in the variable-gathering phase, the table value is updated with the start-up value. This process is provided so you don't need to enter the same information several times.

The variables affected by this process are:

- The IVP data set HLQ passed to the start-up CLIST
- The DLB data set HLQ passed to the start-up CLIST
- The SYS data set HLQ passed to the start-up CLIST
- The current TSO user ID

  This user ID is used for the USER and NOTIFY job statement parameters. When you enter the variable-gathering phase, you need to either supply a value for the PASSWORD job statement parameter or change the USER value back to blanks.

All variables that are changed by the copy-startup-variables process (or by the CHG action in the variable-gathering phase) are marked with either an asterisk (*****) or an at sign (**@**) indicator in their action field. If errors are encountered, the character string `ERR` is displayed in the action field.

## Phase Selection

The next selection that you must make to establish a dialog session is a processing phase and a restart phase. Figure 14 on page 104 depicts the IVP phase selection panel of the IVP dialog. Because you have changed the environment option, the dialog has preselected 1 (VG1) for you. This is the same selection that would have been made if you had selected the XRF option for the first time.

```
 Help
-------------------------------------------------------------------------------
IVP                   IVP Phase Selection - XRF            IMS 9.1
COMMAND ===>

Select the desired Phase and positioning option and press ENTER

1_
    VG - Variable Gathering-(Define user values for variables)
    1.  VG1 Start/Restart from the beginning of the phase
    2.  VG2 Start/Restart from the last known position within the phase


    FT - File Tailoring - (Create customized INSTALIB members)
    3.  FT1 Start/Restart from the beginning of the phase
    4.  FT2 Start/Restart from the last known position within the phase
    5.  FT3 Start/Restart from the beginning of a selected step

    EX - Execution - (Run the IVP jobs)
    6.  EX1 Start/Restart from the beginning of the phase
    7.  EX2 Start/Restart from the last known position within the phase
    8.  EX3 Start/Restart from the beginning of a selected step
```

*Figure 14. IVP Phase Selection Panel*

The IVP phases must be run in the following sequence:

1. Variable gathering

   The user-modifiable variables that you use during customization (file-tailoring) of the installation materials are presented for review and modification.

2. File-tailoring

   The jobs and other materials that you use during the installation of the selected option are customized using the file-tailoring facilities of ISPF.

3. Execution

   The jobs and tasks that make up the IVP process for the selected option are presented for execution.

As you exit from each phase, you return to this panel so that you can select the next phase or return to a prior phase. The dialog always preselects a default. You can override the dialog's selection with your own. Frequent reasons for overriding the default are to:

- Return to a prior phase.
- Choose a different positioning option.
  - 1 (VG1), 3 (FT1), and 6 (EX1) take you to the first item (the beginning) of a phase.
  - 2 (VG2), 4(FT2), and 7 (EX2) take you to the last known item within a phase. The dialog saves separate position information for each phase (for each option).
  - 5 (FT3) and 8 (EX3) take you to the first item (the beginning) of a step. (The jobs and tasks that are presented in the file-tailoring and execution phases are grouped into steps). A panel is displayed, which allows you to select the desired step.

If you make an invalid phase selection, a notification panel (not shown) is displayed to inform you of the error. Because it is always permissible to back up to a prior phase, the only invalid selection that can be made is to try to progress forward out of sequence. Pressing ENTER on this panel returns you to the Phase Selection panel (in which case the appropriate default value is restored).

After selecting 1 (VG1), press ENTER to continue.

## Variable-Gathering Phase

In the variable-gathering phase, the IVP panel displays the variables that are used by the file-tailoring phase to customize IVP JCL to your environment. The variables that are displayed are specific to the selections made in the Environment Options panel (Figure 8 on page 98) and the Sub-Option Selection panel (Figure 10 on page 100). Enter or modify the variables to fit your environment. You can import variables from a previous release of IMS using the IVP Variable Gathering Export and Import facilities.

## Variable-Gathering Action Commands

Two modes are used to display the variables:

**LST** Variables are presented as a scrollable list of items. One or more items may be modified at a time, but minimal information is displayed for each item. LST is the default.

**ENT** Variables are presented one at a time. Scrollable descriptive information is provided for each variable.

Action commands are provided to support the IVP dialog during the variable-gathering phase. Action commands are also referred to as action verbs.

Table 11 contains the action commands, accepted modes, and command descriptions. Mode indicates whether the commands are accepted in:

**LST** for LST Mode

**ENT** for ENT Mode

**Both** for LST Mode and ENT Mode

In Table 11, the capitalized letters in the action column indicate the shortest allowable abbreviation for each command.

*Table 11. Variable-Gathering Action Commands*

| Action | Mode | Description |
|---|---|---|
| **C**hg | Both | Changes information in an item. The dialog performs basic validity checking for the new value. If an item is modified, CHG is the default. It is not necessary to use CHG in the action field. |
| **D**oc | Both | Prints variables documentation to the ISPF LIST data set. The DOC action prints all variables, not just the variable where the DOC action is requested. |
| e**N**t | LST | Switches to ENT mode. ENT mode presents items one at a time on a formatted screen. |
| **L**st | ENT | Switches to LST mode. LST mode presents a scrollable list of items. Within ENT Mode, the ISPF END command is also interpreted as the LST action. |
| **N**xt | ENT | Moves forward to the next item. |
| **P**rv | ENT | Moves backward to the previous item. |
| **R**fr | Both | Refreshes a variable value from the IVP master table. |
| **I**mp | Both | Imports the IVP variables. See “Import Action Command (Imp)” on page 110 for more information. |

*Table 11. Variable-Gathering Action Commands (continued)*

| Action | Mode | Description |
|---|---|---|
| **E**xp | Both | Exports the IVP variables. See “Export Action Command (Exp)” on page 109 for more information. |

In LST Mode, you can either change one item at a time or make changes to many items before pressing ENTER. Whenever two or more changes are made before pressing ENTER, the dialog attempts to process all change requests before returning control.

If errors occur during the variable-gathering phase, the item is updated with the supplied information and the character string `ERR` is placed into the action field. If errors exist after all requests have been processed, a single error message is displayed and the screen is positioned at the first item containing `ERR` in the action field. All errors **must be corrected** before the dialog allows you to enter the file-tailoring or execution phases. If you cannot tell what is wrong with a given item, type `CHG` in the action field for that item, and change one item at a time. When you press ENTER, the dialog reruns variable edit for that item and produces an appropriate error message.

## Variable Gathering—LST Mode

When you enter the variable-gathering phase, you are in LST Mode. Figure 15 depicts the LST Mode panel of the variable gathering phase. This mode provides the greatest visibility of the variables available for the selected option.

```
 Help
--------------------------------------------------------------------------------
IVP          Variable Gathering (LST Mode)- XRF        IMS9.1 ROW 1 to 8 of 154
COMMAND ===>                                             SCROLL ===> PAGE

Action Codes: Chg Doc eNt Rfr Imp Exp - CHG is the default for a modified
               item
      Variable = Value.....................................
          Var-Title.....................................
 *       IXUIVPHQ = IVPIVP91
               IVP - High level DSNAME qualifier for IVP (IVP) data sets
 *       IXURLMHQ = IVPRLM91
               IVP - High level DSNAME qualifier for the IRLM (RLM) data sets
 *       IXUDLBHQ = IVPIVP91
               IVP - High level DSNAME qualifier for IMS DLIB (DLB) data sets
 *       IXUSYSHQ = IVPIVP91
               IVP - High level DSNAME qualifier for IMS System (SYS) data sets
 *       IXUEXEHQ = IVPIVP91
               IVP - High level DSNAME qualifier for Execution (EXE) data sets
 *       IXUUTLHQ = IVPIVP91
               IVP - High level DSNAME qualifier for Utility (UTL) data sets
 !       IXUSSCLS =
               SMS - Storage Class
 !       IXUSMCLS =
               SMS - Management Class
 !       IXUTAPEU = 3480
               IVP - Tape device type
```

*Figure 15. Variable Gathering (LST Mode) Panel*

**Recommendation:** You should take the time to become familiar with all of the variables. Even if you choose to accept the default value, you might find that you need a different value after you begin the execution phase. It is much easier to return to the variable-gathering phase, change a variable value, and rerun the file-tailoring phase, than to manually change a large number of jobs.

If you are not sure what a variable is, you can use the ENT action to switch to ENT Mode, read the variable description, and use the LST action to return to LST Mode. You can also use the ENT action to switch to ENT Mode, and then progress one at a time through the variables.

Special characters in the action field indicate changes to variables:

**!** indicates that either a variable has been added to the table (due to service) or that the RFR action has been used to restore the master table default value. You can blank out the ! indicator by rerunning the table-merge process.

***** indicates that the variable has been changed, either by the CHG action or by the copy-startup variables process.

**@** indicates that the variable has been changed, either by the CHG action or by the copy-startup variables process, as the result of propagating the change of a global variable to the affected data set allocation variables.

Try the ENT action for the first item. You must type ENT (or N) into the action field next to the desired item; the command line cannot be used for action commands on LST Mode panels.

To switch modes, press ENTER.

## Exporting and Importing IVP Variables between IMS Releases

The IVP variable-gathering phase can contain over 280 variables that you can set. When a new release of IMS is installed, you can save the variables of a previous release and reload them into a new IMS release. To do this, use the process for exporting and importing variables during the IVP variable-gathering phase.

### IVP Variable Export Utility (DFSIVPEX)

Use DFSIVPEX, the IVP Variable Export utility, to export the variables from IMS Version 6, IMS Version 7, or IMS Version 8 into an export data set. You can then import the variables from that data set into your current release of IMS (IMS Version 9 or later only).

You can invoke the IVP Variable Export utility by:

- Issuing a command from ISPF/PDF (Option 6 recommended)
- Using the IMS Application Menu

For information about the IMS Application Menu, see “IMS Application Menu” on page 94.

Figure 16 shows the command syntax for invoking the IVP Variable Export utility from ISPF/PDF (Option 6). You can use the ISPF split screen capability to invoke the IVP Variable Export utility without exiting the IVP.

```
------------------  TSO COMMAND PROCESSOR  ------------------
ENTER TSO COMMAND OR CLIST BELOW:
===> EXEC 'sss.SDFSEXEC(DFSIVPEX)' 'HLQ(sss)'
```

*Figure 16. Invoke the IVP Variable Export Utility (Full Syntax)*

The following syntax diagram illustrates how to issue the TSO command shown in Figure 16.

```
►►—EXEC—'sss.SDFSEXEC(DFSIVPEX)'—'—HLQ(sss)—————————————————————————►◄
```

Where:

**EXEC** Is a TSO command to run CLISTs and REXX EXECs.

*sss* Is the high-level qualifier for IMS Version 9 system (SYS) libraries.

The default is IVPSYS91.

**HLQ** Is a keyword that identifies the high-level qualifier for the system libraries.

*sss* Is the high-level qualifier for IMS Version 9 system (SYS) libraries.

The default is IVPSYS91.

Figure 17 shows the IVP Variable Export Utility ISPF panel.

```
                  IVP Variable Export Utility
Command ===>

Enter the following information, then press enter.

_ 1. Select the IVP Environment
     1.  DBB - Database Management (Batch)
     2.  DBC - Database Management (DBCTL)
     3.  DBT - Database and Transaction Management (DB/DC)
     4.  XRF - DB/DC with Extended Recovery Facility (DB/DC with XRF)
     5.  DCC - Transaction Management (DCCTL)

  2. Specify the IVP High Level Qualifier (HLQ) of the INSTATBL data set
     ____________________________________________________

  3. Specify the export data set. (If the data set does not exist, you will be
     prompted to create it.)
     ____________________________________________________
```

*Figure 17. IVP Variable Export Utility Panel*

The IVP Variable Export Utility panel requests the following information:

- The IVP environment, which identifies the variables to be exported.
- The IVP High Level Qualifier (HLQ), which is used to identify the IVP user table data set IMS.INSTATBL of IMS Version 6, IMS Version 7, or IMS Version 8. Specify the HLQ of the release of IMS from which you are exporting the variables.
- The name of the export data set.

  Enter the export data set name in the TSO data set format. You should use single quotation marks around the data set name. If the data set is a partitioned data set, include the member name. For example, if `xxx.yyy.zzz` is the partitioned data set and `QQQ` is the member, enter the following name:

  ```
  'xxx.yyy.zzz(QQQ)'
  ```

If a problem exists with the table data set or member, the panel displays an error message.

**Related Reading:** See *IMS Version 9: Messages and Codes, Volume 2* for more information about the error message.

If the export data set does not exist, the panel shown in Figure 18 is displayed so that you can create the data set.

```
                  IVP Export Data Set Allocation
Command ===>

Export data set does not exist.

Select an option to allocate the data set:

  1.  DSUTIL - ISPF data set utility panel (3.2)

  2.  ALLOC - Allocate using TSO allocate command

TSO Allocate Command:
ALLOC DATASET ('IMSV9.IVP.EXPORT14')  NEW CATALOG SPACE(1 1) TRACKS RECFM(F B)
LRECL(80) BLKSIZE(0)_____________________________________________________________
_____________________________________________________________________________
_____________________________________________________________________________
```

*Figure 18. IVP Export Data Set Allocation Panel*

**Option 1**

If you select the DSUTIL option, the ISPF DSUTIL (3.2) panel is displayed. Use this panel to allocate the export data set. This data set has the following attributes:

| | |
|---|---|
| **DSORG** | Sequential or partitioned |
| **RECFM** | FB |
| **LRECL** | 80 |
| **BLKSIZE** | Multiple of 80 |

Then press the PF3 key (END) and return to the IVP Variable Export Utility. The IVP Variable Export Utility verifies that the export data set exists. If it does exist, processing continues. If it does not exist, the IVP Export Data Set Allocation panel displays again with the following message:

`DFSIX093 Export data set` *`exdsn`* `not allocated`

**Option 2**

If you select the ALLOC option, the TSO allocate command specified on the panel is issued to TSO to allocate the data set. If the export data set name includes a member name, the TSO allocate command allocates a PDS data set. You can edit the command on the panel before selecting this option.

If the return code from the TSO allocate command is not 0, the IVP Export Data Set Allocation panel displays again with the error message indicating the problem.

If there are no errors, the IVP variables are written to the export data set.

## IVP Variable-Gathering Phase Export and Import Action Commands

Export (Exp) and import (Imp) action commands are provided to support the process of exporting and importing variables during the IVP variable-gathering phase.

***Export Action Command (Exp):*** Use the export action command to export IVP variables to an export data set. When the export data set is created, you can import the variables from that data set to your target IVP. Your target IVP can be in an IMS

of the same release or an IMS of a later release. Note that the export functionality is available for IMS Version 9 or later releases only.

The export action command (Exp) is issued in the action field of any variable. It does not export a specific variable; it exports all of the variables in the active variable gathering panel to the IVP export data set. The exported variables are specific to the active IVP environment and sub-options.

Figure 19 shows the IVP Export Data Set Name panel that displays when you issue the export action command. In this panel, enter the name of the export data set to which you want to export the IVP variables. If the data set is a partitioned data set, include the member name. If the export data set that you specify in this panel does not exist, the IVP Export Data Set Allocation panel shown in Figure 18 on page 109 displays. See the descriptions of these panels in “Exporting and Importing IVP Variables between IMS Releases” on page 107.

***Import Action Command (Imp):*** The import action command (Imp) imports the variables from the export data set into the target IVP. This command is issued in the action field of any variable. It does not import a specific variable; it imports all of the variables from an IVP export data set. This export data set must be created before issuing the import action command. You can create the export data set using the DFSIVPEX utility, as described in “Exporting and Importing IVP Variables between IMS Releases” on page 107. If you are exporting variables from IMS Version 9 or later, use the export action command (Exp) of the Variable Gathering (LST Mode) panel (Figure 15 on page 106).

If you issue the import action command in the Variable Gathering (LST Mode) panel in Figure 15 on page 106, a panel displays to prompt you for the name of the IVP export data set. Figure 19 shows this panel.

```
                  IVP Export Data Set Name                        IMS 9.1
IVP
Command ===>

Enter the name of the IVP export file, then press enter:
   Export data set: _____________________________________________________
```

*Figure 19. IVP Export Data Set Name Panel*

Enter the export data set name in the TSO data set format. You should use single quotation marks around the data set name. If the data set is a partitioned data set, include the member name. If the export data set does not exist, the IVP Export Data Set Name panel displays again with the following message:

`DFSIX095 Export data set exdsn does not exist.`

See *IMS Version 9: Messages and Codes, Volume 2* for more information about this message.

The exported variables are associated with their specific IVP environment. If the current IVP environment does not match the environment in which the variables were exported, the IVP Import Environment Mismatch panel shown in Figure 20 on page 111 displays.

```
                  IVP Import Environment Mismatch                      IMS 9.1
IVP
Command ===>

The current IVP environment and the export data set IVP environment do not match.
Current Environment:
Export Environment:

Select an option:
    1. Continue import
    2. Cancel import
```

*Figure 20. IVP Import Environment Mismatch Panel*

You can choose to continue the import process or cancel it.

If a mismatch exists between the IVP environments or releases, the following processing occurs:

- Any variable that is not valid in the current IVP release or for the current IVP environment and sub-options being processed is ignored.
- Any variable with a value that is specified in the export data set is replaced with the export value, even if you have modified that variable.
- The value of each of the variables is checked against the valid values for the variable in the release being processed.
- After the import process finishes, any variable with a value not specified in the export data set remains unchanged from its value before the import.

## Variable Gathering—ENT Mode

Figure 21 on page 112 depicts the ENT Mode panel corresponding to the item you selected in the LST Mode panel.

```
  Help
-------------------------------------------------------------------
IVP         Variable Gathering (ENT Mode)-XRF           IMS 9.1
COMMAND ===>                                            SCROLL ===> PAGE
DFSIX001: DFSIXX08 - "ENT" action complete
Action..... *   Select one of: Chg  Doc  Lst  Nxt  Prv  Rfr Imp Exp
Name........: IXUIVPHQ
User Value..: IVPIVP91
Title.......: IVP - High level DSNAME qualifier for IVP (IVP) data sets
Blank-OK....: N  HLQ-Group...    VOL-Group...    BLK-Group...
-------------------------------------------------------------------------------
*************** Top of Data ******************************
This variable specifies the high level DSNAME qualifier (HLQ) to be
used when allocating and referencing IVP data sets.

This grouping of data sets includes those data sets which are specific
to the IVP process:
  o INSTALIB, INSTATBL, ...

Data sets associated with this HLQ variable belong to the "IVP"
group. If this variable is changed, then the HLQ variables for ALL
data sets belonging to this group will be changed accordingly.

NOTE:
Press HELP for additional information on the following:
   o  Global Variables
   o  Data Set Allocation Variables
       (including the overriding of global VOLSER and BLKSIZE values)

JCL (and VSAM, if applicable) coding rules apply.

*************** BOTTOM OF DATA *****************
```

*Figure 21. Variable Gathering (ENT Mode) Panel*

ENT Mode provides more information for each variable:

- Whether the variable can be blank.
- Membership in the global variable groups. These fields are blank for all variables except those used for data set allocation.
- A scrollable description of the variable.

You can view all of the items in the variable table by using the NXT and PRV actions.

Use the DOC action to get a printed copy of the online documentation. Type `DOC` into the action field and press ENTER.

## Variable Gathering—DOC Action

Figure 22 on page 113 depicts the DOC action panel for the variable-gathering phase.

```
 Help
-------------------------------------------------------------------
IVP        Variables Documentation - XRF       IMS 9.1
COMMAND ===>

   Select (1 or 2) the type of output:
_  1 - LST Mode equivalent containing names, titles, and current values
   2 - ENT Mode equivalent containing full descriptions

   Select (/) the types of variables to be documented:
_  General variables (HLQ, VOL, BLK, JOB, SMP, SYSDEF, etc.)
_  Data set allocation variables




   Press END to return to Variable Gathering.
   Press ENTER to initiate the documentation request.

   NOTE:  Output will be printed to the ISPF List data set.
   Maximum output (for XRF/ISD) is about 2K lines for Type 1
   and 12K lines for Type 2.
```

*Figure 22. Variable Gathering (DOC Action) Panel*

In this panel, select the type of output listing you want:

1. LST Mode equivalent
2. ENT Mode equivalent

Then select the variables you want to print. Press ENTER when all selections have been made. The requested documentation will be printed to the ISPF LIST data set. Even though the DOC action is entered against a single item, the resulting documentation is for all of the selected types of items.

For the example in Figure 22, no documentation is printed. Press END twice to return to LST Mode, and then press END again to exit from the variable-gathering phase.

## Variable Gathering—Phase Complete Verification

Figure 23 on page 114 depicts the complete verification panel that is displayed whenever you use END to exit from the variable-gathering phase.

```
  Help
-------------------------------------------------------------------
IVP       VG Complete Verification - XRF     IMS 9.1
COMMAND ===>
DFSIX029: DFSIXX08 - Variable Gathering Phase ended for "XRF"
 You have just ENDed the Variable Gathering Phase of the
 IVP dialog.

 If you have completed your customization of the dialog
 variables, you may set the Variable Gathering Complete flag
 and proceed to the File Tailoring Phase.  You may return to
 Variable Gathering at any time.

 If you have not completed your customization of the dialog
 variables, you should return to the Variable Gathering Phase.

 If Variable Gathering is complete:  Press ENTER

 If Variable Gathering is NOT complete:  Press END

 NOTE:  After the phase complete flag has been set, this panel
        will no longer be displayed and the phase execution
        sequence for this phase will not be enforced.

        The phase complete flags are reset by rerunning
        Table Merge.
```

*Figure 23. Variable Gathering Phase Complete Verification Panel*

You can progress to the file-tailoring phase by pressing ENTER. If you are not yet finished with the variable-gathering phase, press the END key. When you indicate that you have completed the variable-gathering phase, this panel disappears until the table-merge process is rerun.

Press ENTER to continue with the file-tailoring phase described in “File-Tailoring Phase” on page 115.

## Variable Gathering—Return to Phase Selection

The dialog always returns to the phase selection panel when you exit a phase. Figure 24 on page 115 depicts this panel. It allows you to return to a prior phase if you choose.

```
 Help
-------------------------------------------------------------------------------
IVP        IVP Phase Selection - XRF          IMS 9.1
COMMAND ===>

Select the desired Phase and positioning option and press ENTER

3_
    VG - Variable Gathering-(Define user values for variables)
    1.  VG1 Start/Restart from the beginning of the phase
    2.  VG2 Start/Restart from the last known position within the phase

    FT - File Tailoring - (Create customized INSTALIB members)
    3.  FT1 Start/Restart from the beginning of the phase
    4.  FT2 Start/Restart from the last known position within the phase
    5.  FT3 Start/Restart from the beginning of a selected step

    EX - Execution - (Run the IVP jobs)
    6.  EX1 Start/Restart from the beginning of the phase
    7.  EX2 Start/Restart from the last known position within the phase
    8.  EX3 Start/Restart from the beginning of a selected step
```

*Figure 24. Phase/Restart Position Selection Panel*

Because you have told the dialog that you have completed the variable-gathering phase, the dialog has preselected a new default for this panel.

Accept the default value of 3 (FT1) and press ENTER to continue with the file-tailoring phase.

## File-Tailoring Phase

The variables that were presented in the variable-gathering phase are used to prepare the IVP JCL and supporting materials that are to be used during the execution phase. The ISPF file-tailoring facility is used to create these materials. In the file-tailoring phase, you place completed members into the INSTALIB data set. INSTALIB members are named according to the environment option that was chosen:

1. IV1ssnnt - DBB - Batch system
2. IV2ssnnt - DBC - DBCTL system
3. IV3ssnnt - DBT - DB/DC system
4. IV4ssnnt - XRF - XRF system
5. IV9ssnnt - DCC - DCCTL system

Where:

**ss** Step number

**nn** JOB/TASK/INDEX item number within the step

The item numbers are **not** guaranteed to be in ascending sequence. Service changes might disrupt the apparent sequence.

**t** J for job, T for task, N for miscellaneous materials

**Attention:** The dialog maintains status information for **all** current options. The dialog will also permit file-tailoring of all options into INSTALIB. However, the concurrent execution of more than **one** option requires that extreme care be exercised during the variable-gathering phase to ensure that each option will be separate and distinct from each other option.

Two modes are used to display the INSTALIB members:

**LST** JOBS, TASKS, and INDEX entries are presented as a scrollable list of items. LST is the default.

**ENT** JOBS, TASKS, and INDEX entries are presented one at a time. Scrollable descriptive information is provided for each item.

In addition to jobs and tasks, the file-tailoring panels serve as an index for the additional members of SDFSSLIB and SDFSISRC, which are used by the jobs.

## File-Tailoring Action Commands

Action commands are provided to support the IVP dialog during the file-tailoring phase. Table 12 contains the action commands, accepted modes, and command descriptions.

In Table 12, the bold-faced letters in the Action column indicate the shortest allowable abbreviation for each command. The entries in the Mode column indicate whether the commands are accepted in:

**LST** for LST Mode

**ENT** for ENT Mode

**Both** for LST Mode and ENT Mode

*Table 12. File-Tailoring Commands*

| Action | Mode | Description |
|---|---|---|
| **A**ll | Both | Perform the file-tailoring phase for INSTALIB members, starting with the item for which the request is made. |
| br**M** | Both | Browse an INSTALIB member. |
| br**S** | Both | Browse a SDFSSLIB or SDFSISRC member. |
| **D**oc | Both | Print JOB/TASK/INDEX documentation to the ISPF LIST data set. The DOC action prints all items, not just the item where the DOC action is requested. |
| **E**dm | Both | Edit an INSTALIB member. |
| e**N**t | LST | Switch to ENT mode. ENT mode presents items one at a time on a formatted screen. |
| **F**tl | Both | Perform the file-tailoring phase for a single INSTALIB member. |
| **L**st | ENT | Switch to LST mode. LST mode presents a scrollable list of items. Within ENT Mode, the ISPF END command is also interpreted as the LST action. |
| **N**xt | ENT | Move forward to the next item. |
| **P**rv | ENT | Move backward to the previous item. |

## File-Tailoring—ALL Action Request

Whenever you enter the file-tailoring phase for the first time for an option, you are given the opportunity to have the dialog automatically perform file-tailoring for materials used by the selected option. This panel, depicted in Figure 25 on page 117, will be presented only once for each option (unless you change sub-options or rerun the table-merge phase). If you reply `NO` on this panel, you can accomplish the

same result by requesting the **all** action for the first item in the file-tailoring phase LST Mode panel.

```
  Help
------------------------------------------------------------------
IVP        File Tailor ALL Request - XRF       IMS 9.1
COMMAND ===>

   You are entering the File Tailoring Phase.  For one of the
   following reasons, the File Tailoring Complete flag is not
   set:

   * You are entering File Tailoring for the first time.
   * You are re-entering File Tailoring and you did not cause
     the File Tailoring Complete flag to be set when you last
     exited this Phase.
   * The File Tailoring Complete flag was reset by Table Merge.

   If you wish, File Tailoring will be performed for ALL JOBs
   at this time.  Please select one of the following:

1  1  YES   - Perform the ALL action before going to the File
              Tailoring Panels
   2  NO    - Go directly to the File Tailoring Panels

   NOTE:  YES is recommended the first time you enter File
          Tailoring for an Option and any time service is
          applied.
```

*Figure 25. File-Tailoring—ALL Action Request Panel*

Accept the default value of `1` (for YES). You must also accept the default the first time you enter the file-tailoring phase for an option or if required by service.

At any other time, override the default and reply `2` (for NO). You are either passing through the file-tailoring phase on the way to the execution phase or you only need to perform file-tailoring on a subset of the installation materials.

You can run the file-tailoring phase at any time. Also, INSTALIB must be compressed periodically (ISPF/PDF facilities can be used).

**Attention:** The file-tailoring phase replaces INSTALIB PDS members. User modifications made directly to INSTALIB members will be lost.

Press ENTER to accept the default.

## File-Tailoring in Progress

The file-tailoring phase is a long-running process. While file-tailoring is taking place, a panel with the message `Please do not interrupt this process` is displayed and the keyboard is locked. This panel is updated frequently as the table items are processed. Figure 26 on page 118 depicts this progress indicator panel.

```
IVP        File Tailoring in progress - XRF        IMS 9.1


                      File Tailoring Progress Indicator

                      Current row . . . . .: IV4F120J
                      Percent completed . .: 18









                   Please do not interrupt this process
```

*Figure 26. File-Tailoring Progress Indicator*

## File-Tailoring—ALL Action Complete

Figure 27 depicts the panel that is displayed when processing is complete after the ALL action is issued against the first item in the file-tailoring table.

```
IVP         FT ALL has completed - XRF         IMS 9.1
COMMAND ===>

 File Tailoring has completed the ALL action for members used
  by the XRF IVP option.


   *  If you requested the ALL action upon entry to the File
      Tailoring Phase then members were processed beginning
      at the top of the File Tailoring Table.

   *  If you requested the ALL action on one of the File
      Tailoring panels, then members were processed from the
      point of request to the end of the File Tailoring Table.


 When you leave this panel, you will be returned to the File
 Tailoring LST MODE panel.  The File Tailoring panels may be
 used at a later time to individually rerun file tailoring for
 one or more members.


                           Press ENTER to continue
```

*Figure 27. File-Tailoring—ALL Action Complete Panel*

This panel serves as a reminder of the scope of processing performed.

Press ENTER to continue on the file-tailoring LST Mode panel.

## File-Tailoring—LST Mode

Figure 28 on page 119 depicts the LST mode panel of the file-tailoring phase. When you enter the file-tailoring phase, you are placed in LST Mode. This mode provides the greatest visibility of the jobs and tasks available for the selected option. Except when you are browsing INDEX items, this mode is the only mode that you need for

the file-tailoring phase, because the item descriptions that are displayed in ENT Mode are actually intended for use during the execution phase.

```
  Help
------------------------------------------------------------------
IVP  -  File Tailoring (LST Mode)  - XRF     ROW 1 OF 17 of 369
COMMAND ===>                                    SCROLL ===> PAGE

Action Codes :  All brM brS Doc Edm eNt Ftl
     Member..    Skeleton      Step
Title.....................................................................
!  IV4A001T   IVPA001T   A0    NOTE-Step Introduction-Dialog Set-up
*  IV4A301N   DFSIXSA4   A3    CLIST - Offline Formatted Dump - IVP1/2/3/4
*  IV4A302N   DFSIXSA5   A3    CLIST - Offline Dump Formatter - BATCH
*  IV4A303N   DFSIXSA6   A3    CNTRL - MSDB Load Cntrl Stmts - DBFSAMD1/DBFSA
!  IV4C001T   IVPC001T   C0    NOTE - Step Introduction - System Definition
*  IV4C101J   DFSIXSC0   C1    JOB - Alloc SYSDEF Data Sets
*  IV4C201T   DFSIXSC1   C2    TASK - Browse the STAGE1 Source Deck
*  IV4C202J   DFSIXSC2   C2    JOB - Run SYSDEF Preprocessor
*  IV4C203J   DFSIXSC3   C2    JOB - Run SYSDEF STAGE1
*  IV4C301J   DFSIXSC4   C3    JOB -     Run SYSDEF STAGE2     >>> SEE DESCRIPT
*  IV4C401J   DFSIXSC5   C4    JOB - Run SMP/E JCLIN
!  IV4C405T   IVPC405T   C4    TASK - Edit IMS PROCLIB Members
!  IV4D001T   IVPD001T   D0    NOTE - Step Introduction - MVS and VTAM Interf
*  IV4D101T   DFSIXSD0   D1    XMPL - Allocate Interface Data Sets
*  IV4D201T   DFSIXSD1   D2    XMPL - Update JESx Procedure
*  IV4D202T   DFSIXSD2   D2    XMPL - Update BLSCECTX - DFSOFMD0 / DXRRLM50
*  IV4D203T   DFSIXSD3   D2    XMPL - Udpate IEAAPFxx or PROGxx - Authorized
```

*Figure 28. File-Tailoring (LST Mode) Panel*

If you scroll towards the bottom of the list, you can see items belonging to the “Zn” steps. These are INDEX entries. The “Z1” items are members of SDFSSLIB (file-tailoring skeletons), which are imbedded by the earlier items. The “Z2” items are members of SDFSISRC (DBDs, PSBs, MFSs, PGMs, for example). Use the BRS action to browse these members.

Special characters are used in the action field as described below:

**!** Indicates that an item has been added to the table (due to service). You can blank out the ! indicator by rerunning the table-merge process.

***** Indicates that the item has been processed by either the ALL action or the FTL action.

Try the ENT action for the first item. You must type ENT (or N) into the action field next to the desired item; the command line cannot be used for action commands on LST Mode panels.

Press ENTER to switch modes.

## File-Tailoring—ENT Mode

Figure 29 on page 120 depicts the ENT Mode panel that corresponds to the item you selected on the LST Mode panel.

```
  Help
-------------------------------------------------------------------
IVP      File Tailoring(ENT Mode) - XRF      IMS 9.1  ROW 1 OF 22
COMMAND ===>                                    SCROLL ===> CSR
DFSIX001: DFSIXX09 - "ENT" action complete
Action......> DOC  <----- All brM brS Doc Edm Ftl Lst Nxt Prv
Member......: IV4A001T
Skeleton....: IVPA001T
Step........: A0
Title.......: NOTE - Step Introduction - Dialog Set-up
-------------------------------------------------------------------
o Item Type:

  NOTE - Information only

o Action Required:

  Read the description below.

  Use the "NXT" action to proceed to the next item.

o Description:

  The items within the "Ax" series of steps are used to perform
  initialization for the IVP Dialog.  There are no user
  executable JOBs within these steps.  Please skip to the first
  item for Step C0 (This is the default starting position for
  the Execution Phase of the IVP Dialog.).
```

*Figure 29. File-Tailoring (ENT Mode) Panel*

The only additional information provided by ENT Mode is the scrollable item description. Except for the INDEX items, these descriptions are intended for the execution phase and have no special meaning for the file-tailoring phase.

The NXT and PRV actions can be used to view all of the items in the file-tailoring table.

Use the DOC action to get a printed copy of the online documentation. Type `DOC` into the action field and press ENTER.

## File-Tailoring—DOC Action

Figure 30 on page 121 depicts the DOC action panel for the file-tailoring phase.

```
Help
-------------------------------------------------------------------
IVP       JOB/TASK/INDEX Documentation - XRF     IMS 9.1
COMMAND ===>

  Select (1 or 2) the type of output and press Enter.
  1 - LST Mode equivalent containing names and titles
  2 - ENT Mode equivalent containing full descriptions

  Select (/) the types of JOBs/TASKs to be documented:
   SETUP  - IVP Preparation (CLISTs, Control statements)
   IVP        - IMS System Definition
   IVP        - MVS/VTAM Interface
   IVP        - IVP System and Application Build
   IVP        - IVP Execution
   INDEX  - DFSSLIB (IMBEDs) and DFSISRC members


   NOTE:  Output will be printed to the ISPF List data set.
   Maximum output (for XRF/ISD) is about 3K lines for Type 1
   and 22K lines for Type 2.
```

*Figure 30. File-Tailoring (DOC Action) Panel*

In this panel, select the type of output listing you want:

1. LST Mode equivalent
2. ENT Mode equivalent

Then select which items you want to have printed. Press ENTER when all selections have been made. The requested documentation prints to the ISPF LIST data set.

Even though the DOC action is entered against a single item, the resulting documentation is for all of the selected types of items.

You can print the documentation for jobs and tasks during either the file-tailoring or the execution phase. The documentation for index items only prints from the file-tailoring phase.

For the example in Figure 30, no documentation is printed. Press END twice to return to LST Mode and then press END again to exit from the file-tailoring phase.

## File-Tailoring—Phase Complete Verification

Figure 31 on page 122 depicts the phase complete verification panel of the file-tailoring phase. This panel is displayed whenever you use END from the file-tailoring phase.

```
  Help
-------------------------------------------------------------------
IVP       FT Complete Verification - XRF      IMS 9.1
COMMAND ===>
DFSIX033: DFSIXX09 - File Tailoring Phase ended for "XRF"
 You have just ENDed the File Tailoring Phase of the IVP
 dialog.

 If you have completed your customization of the dialog jobs,
 you may set the File Tailoring Complete flag and proceed to the
 Execution Phase.  You may return to File Tailoring at any time.

 If you have not completed your customization of the dialog
 jobs, you should return to the File Tailoring Phase.

 If File Tailoring is complete:  Press ENTER

 If File Tailoring is NOT complete:  Press END

 NOTE:  After the phase complete flag has been set, this panel
        will no longer be displayed and the phase execution
        sequence for this phase will not be enforced.

        The phase complete flags are reset by rerunning
        Table Merge.
```

*Figure 31. File-Tailoring Phase Complete Verification Panel*

You can progress to the execution phase after telling the dialog that you have completed the file-tailoring phase by pressing ENTER. If you are not finished with the file-tailoring phase, press END.

Press ENTER and continue to the execution phase. Because you have indicated that you finished the file-tailoring phase, this panel will disappear until the table-merge process is rerun. Also, the File-Tailoring All Request panel will be suppressed if you decide to return to the file-tailoring phase.

## File-Tailoring—Return to Phase Selection

The dialog always returns to the Phase Selection panel when you exit a phase, as depicted in Figure 32 on page 123. This allows you to return to a prior phase if you choose to do so.

```
  Help
-------------------------------------------------------------------------------
IVP       IVP Phase Selection - XRF         IMS 9.1
COMMAND ===>

Select the desired Phase and positioning option and press ENTER

6_
    VG - Variable Gathering-(Define user values for variables)
    1.  VG1 Start/Restart from the beginning of the phase
    2.  VG2 Start/Restart from the last known position within the phase


    FT - File Tailoring - (Create customized INSTALIB members)
    3.  FT1 Start/Restart from the beginning of the phase
    4.  FT2 Start/Restart from the last known position within the phase
    5.  FT3 Start/Restart from the beginning of a selected step

    EX - Execution - (Run the IVP jobs)
    6.  EX1 Start/Restart from the beginning of the phase
    7.  EX2 Start/Restart from the last known position within the phase
    8.  EX3 Start/Restart from the beginning of a selected step
```

*Figure 32. Phase/Restart Position Selection Panel*

In this example, the dialog has preselected a new default for this panel because you have told the dialog that you have completed the file-tailoring phase.

Accept the default value of 6 (EX1), and press ENTER to continue with the execution phase.

## Execution Phase

The IVP jobs and tasks that were prepared by the file-tailoring phase are now presented to you in the order that you need to process them. The execution phase **is not** automatic. You must process one job or task at a time through the execution phase.

**Jobs:** You can browse, edit, or submit the job. The browse option allows you to review the whole IVP sequence before actually running any jobs. When you are ready to run a job, you can either submit the job using the EXE action or you can edit and submit the job. Each job has a scrollable description associated with it to assist you in running the job.

Some items are meant to be nonexecutable examples. For these examples, the submit action is disabled, but the browse and edit actions are available. You can use ISPF split-screen mode to create an executable version of nonexecutable items.

**Tasks:** You are provided a scrollable description to assist you in performing the task. The browse, edit, and submit actions are disabled for tasks.

Two modes are used to display the jobs and tasks:

**LST** The items are presented in a scrollable list. Each item represents one job or task. LST is the default.

**ENT** The job and task members are presented one at a time in sequence. Scrollable information is provided to describe each item.

## Execution Action Commands

Action commands are provided to support the IVP dialog during the execution phase. Table 13 contains the action commands, accepted modes, and command descriptions.

In Table 13, the bold-faced, capitalized letters in the action column indicate the shortest allowable abbreviation for each command. The entries in the mode column indicate whether the commands are accepted in:

**LST** for LST Mode

**ENT** for ENT Mode

**Both** for both LST Mode and ENT Mode

*Table 13. Execution Action Commands*

| Action | Mode | Description |
|---|---|---|
| br**M** | Both | Browse an INSTALIB member. |
| **D**oc | Both | Print job or task documentation to the ISPF LIST data set. The DOC action prints all items, not just the item where the DOC action is requested. |
| **E**dm | Both | Edit an INSTALIB member. |
| e**N**t | LST | Switch to ENT mode. ENT mode presents items one at a time on a formatted screen. |
| e**X**e | Both | Use the TSO SUBMIT command to submit an INSTALIB job for execution. Alternatively, you can issue the TSO SUBMIT command directly while editing an INSTALIB member through the EDM action (see EDM in this table). |
| **L**st | ENT | Switch to LST mode. LST mode presents a scrollable list of items. Within ENT Mode, the ISPF END command is also interpreted as the LST action. |
| **N**xt | ENT | Move forward to the next item. |
| **P**rv | ENT | Move backward to the previous item. |
| sp**R** | Both | Execute a special processing routine that has been provided to assist with the performance of a task. |

## Execution Phase—LST Mode

When you enter the execution phase, you are in LST Mode. Figure 33 on page 125 depicts the LST Mode panel of the execution phase.

```
  Help
-------------------------------------------------------------------
IVP              Execution (LST Mode) - XRF                ROW 10 to 26 OF 177
COMMAND ===>                                                 SCROLL ===> PAGE

Action Codes :  Brm Doc Edm eNt eXe spR
     JOB/Task  Step         Title..............................
!    IV4C001T  C0   NOTE  - Step Introduction - System Definition
!    IV4C101J  C1   JOB   - Allocate SYSDEF Data Sets
!    IV4C201T  C2   TASK  - Browse the STAGE1 Source Deck
!    IV4C202J  C2   JOB   - Run SYSDEF Preprocessor
!    IV4C203J  C2   JOB   - Run SYSDEF STAGE1
*    IV3C301J  C3   JOB   - Run SYSDEF STAGE2  >>> SEE DESCRIPTION
!    IV3C401J  C4   JOB   - Run SMP/E JCLIN
!    IV3C405T  C4   TASK  - Edit IMS PROCLIB Members
!    IV3D001T  D0   NOTE  - Step Introduction - MVS and VTAM Interface
!    IV3D101T  D1   XMPL  - Allocate Interface Data Sets
!    IV3D201T  D2   XMPL  - Update JESx Procedure
!    IV3D202T  D2   XMPL  - Update BLSCECTX - DFSOFMD0 / DXRRLM50
!    IV3D203T  D2   XMPL  - Update IEAAPFxx or PROGxx - Authorized DSN
!    IV3D204T  D2   XMPL  - Update IEALPAxx - MLPA Modules
!    IV3D207T  D2   XMPL  - Update IEASVCxx - SVC Numbers
!    IV3D208T  D2   XMPL  - Update SCHEDxx - PPT Entries
```

*Figure 33. Execution Phase (LST Mode) Panel*

LST Mode provides the greatest visibility of the items that make up the IVP process. However, only minimal descriptive information is provided. Do not use LST Mode for the execution phase until you are completely familiar with the requirements for each job and task. Use ENT Mode instead.

Special characters in the action field indicate changes to variables:

**!** Indicates that an item has been added to the table (due to service).

***** Indicates that the item has been processed by either the SUB action or EDM action. (The dialog assumes that if you edited an item, you have also submitted that item.)

You can blank out the ! and * indicators by rerunning the table-merge process.

Try the ENT action for the second item. Type ENT (or N) in the action field.

To switch modes, press ENTER.

## Execution Phase—ENT Mode

Figure 34 on page 126 depicts the ENT Mode panel of the execution phase. The item displayed is the item for which you requested the ENT action on the LST Mode panel.

```
  Help
-------------------------------------------------------------------
IVP           Execution (ENT Mode) - XRF               IMS 9.1
COMMAND ===>                                    SCROLL ===> PAGE
DFSIX001: DFSIXX10 - "ENT" action complete
Action...... !    Select one of: Brm Doc Edm eXe Lst Nxt Prv spR
JOB or Task....: IV4C101J
Step........: C1
Title.......: JOB - Alloc SYSDEF Data Sets
-------------------------------------------------------------------
********** Top of Data ********************
o Item Type:

  JOB - The batch JOB provided for this item must be run.

o Action Required:

  1. Review "Description" below.
  2. If desired (or required by the description below), use the
     "EDM" action to edit the supplied JOB. (The "BRM" action
     can be used to browse the JOB.)
  3. Submit the JOB to be run. Use the TSO SUBMIT command
     from within edit or use the "EXE" action from the Execution
     Phase panels.
  4. When the JOB completes execution, review all step completion
     for successful completion. See "Completion Codes and Messages"
     below for acceptable completion codes for this JOB.

  It might be necessary to review the printed output generated by
  this JOB in order to verify successful completion.

  If the JOB does not complete successfully, see "Error Recovery" below.

  5. When you are satisfied that the JOB completed successfully, use
     the "NXT" action to proceed to the next item.

o Description:
  This JOB scratches and reallocates the data sets needed, in addition to
  those allocated for SMP/E processing, for IMS system definition.
```

*Figure 34. Execution Phase (ENT Mode) Panel*

The NXT and PRV actions can be used to progress through the items in the execution table.

When you have become familiar with the requirements for each job and task (possibly by browsing the entire process before you actually begin submitting jobs), you can switch back to LST Mode.

For this example, press END to return to LST Mode and then press END again to exit from the execution phase.

## Execution Phase—Phase Complete Verification

Figure 35 on page 127 depicts the complete verification panel of the execution phase. This panel is displayed whenever you use END to exit from the execution phase.

```
Help
-------------------------------------------------------------------
IVP         EX Complete Verification - XRF      IMS 9.1
COMMAND ===>
DFSIX046: DFSIXX10 - Execution Phase ended for "XRF"
 You have just ENDed the Execution phase of the IVP
 dialog.

 You may return to Execution at any time.


 If Execution is complete:  Press ENTER

 If Execution is NOT complete:  Press END

 NOTE:  After the phase complete flag has been set, this panel
        will no longer be displayed and the phase execution
        sequence for this phase will not be enforced.

        The phase complete flags are reset by rerunning
        Table Merge.
```

*Figure 35. Execution Phase Complete Verification Panel*

If you have completed the execution phase, press ENTER. If you have not completed the execution phase, press END.

Press ENTER and then end the dialog session.

## Execution Phase—Return to Phase Selection

The dialog always returns to the Phase Selection panel when you exit a phase, as depicted in Figure 36. This allows you to return to a prior phase if you choose to do so.

```
 Help
-------------------------------------------------------------------------------
IVP           IVP Phase Selection - XRF           IMS 9.1
COMMAND ===>

Select the desired Phase and positioning option and press ENTER

7_
    VG - Variable Gathering-(Define user values for variables)
    1.  VG1 Start/Restart from the beginning of the phase
    2.  VG2 Start/Restart from the last known position within the phase


    FT - File Tailoring - (Create customized INSTALIB members)
    3.  FT1 Start/Restart from the beginning of the phase
    4.  FT2 Start/Restart from the last known position within the phase
    5.  FT3 Start/Restart from the beginning of a selected step

    EX - Execution - (Run the IVP jobs)
    6.  EX1 Start/Restart from the beginning of the phase
    7.  EX2 Start/Restart from the last known position within the phase
    8.  EX3 Start/Restart from the beginning of a selected step
```

*Figure 36. Phase/Restart Position Selection Panel*

Because you told the dialog that you completed the execution phase, the dialog preselects a new default for this panel.

You are now ready to end the dialog session.

## Ending the IVP Dialog Session

You can end the dialog session in any of the following ways:

- Press END repeatedly until you have backed all the way out of the dialog.
- Press RETURN to back out of the dialog completely.

The first method is the slowest; the last is the fastest.

These methods can be used to terminate the dialog session from any panel except the “Please do not interrupt this process” panels.

When you reestablish the dialog session, you are prompted (through the preselection of defaults) to return to your last phase position.

## Help

Online help is available by pressing F1 or by using the **Help** menu. The following help menus are available:

- Panel HELP—table of contents
- Panel HELP—general information

## Panel HELP—Table of Contents

Figure 37 depicts the HELP table of contents panel. This panel is displayed if you type a T in the command line of a HELP panel or if the end of a HELP panel hierarchy (or chain) is reached.

```
IVP             HELP - Table of Contents            IMS 9.1
Command ===>

The following topics are presented only if selected by number:
   1   General Information
   2   Primary   Options - Initial Installations
   3        '                   '      - Sub-Option Selection
   4   Table Merge Request
   5   Copy Startup Variables
   6   Dialog Phase Selection
   7   Variable Gathering Phase
   8   File Tailoring Phase
   9   Execution Phase
  10   Help Index
```

*Figure 37. HELP—Table of Contents Panel*

This panel serves as a table of contents for the panel HELP provided by the IVP dialog. With the exception of the general information topic, the panels that are accessed from this panel are the same panels you see when you request HELP from one of the dialog panels.

Use the command line for input from an IVP HELP panel.

To return to the primary option menu (or the previous dialog panel), press END.

# Panel HELP—General Information

Figure 38 depicts the HELP general information panel. This panel is accessed by selecting item '1' from the Panel HELP table of contents.

```
IVP     HELP - Dialog General Information       IMS 9.1
Command ===>

The following topics are presented in sequence or may be
selected by number:

   1   Dialog Flow
   2   Dialog use of ISPF tables
   3   Dialog Restart/Recovery
   4   Dialog use of PFKs
   5   Panel navigation commands
   6   Scrolling
   7   The Command line
   8   JOB and User JESx statements
   9   JOBNAME options
  10   Reporting Problems and Making Comments
```

*Figure 38. HELP—General Information Panel*

**Recommendation:** When you start your own dialog session, review all of the General Information topics before you proceed with your first dialog session. These topics contain information that can help you as you get acquainted with the dialog.

To return to the primary option menu (or the previous dialog panel), press END.

# Part 3. IVP Reference Material

# Chapter 9. The IVP Systems

The IVP supports five initial installation environments, each of which is described in Appendix C, “IVP System Definitions,” on page 201:

- “DBB - DB Batch (Batch) Stage 1” on page 201.
- “DBC - Database Control (DBCTL) Stage 1” on page 203.
- “DBT - Database/Transaction Manager (DB/DC) Stage 1” on page 205.
- “XRF - DB/DC with XRF (XRF) Stage 1” on page 211.
- “DCC - Transaction Manager Control (DCCTL) Stage 1” on page 218.

## IVP Usage of IMS Facilities

The following sections list the IMS facilities used by the IVP in each of these five environments.

### DBB (DB)

GSAM
DB (HISAM, HIDAM, HDAM, PHIDAM)
Logging
Database Recovery Control (DBRC)
Internal Resource Lock Manager (IRLM) (optional)
Batch applications

### DBC (DBCTL)

GSAM
DB (HISAM, HIDAM, HDAM, PHIDAM, DEDB)
Logging
Database Recovery Control (DBRC)
Internal Resource Lock Manager (IRLM) (optional)
Batch applications
Batch-oriented BMP applications
HALDB sample
Common Service Layer sample

### DBT (DB/DC)

GSAM
DB (HISAM, HIDAM, HDAM, PHIDAM, DEDB, MSDB)
Logging
Database Recovery Control (DBRC)
Internal Resource Lock Manager (IRLM) (optional)
TM
TCO
Batch applications
Batch-oriented BMP applications
Non-conversational message processing program (MPP) applications
Conversational MPP applications

IFP applications
HALDB sample
Common Service Layer sample

## XRF (DB/DC with XRF)

GSAM
DB (HISAM, HIDAM, HDAM, PHIDAM, DEDB, MSDB)
Logging
Database Recovery Control (DBRC)
Internal Resource Lock Manager (IRLM) (optional)
TM
MSC/ISC
Time Control Option (TCO) file
Batch applications
Batch-oriented BMP applications
Non-conversational MPP applications
Conversational MPP applications
IFP applications
HALDB sample
Common Service Layer sample

## DCC (DCCTL)

GSAM
Logging
Database Recovery Control (DBRC)
TM
TCO
Transaction-driven WFI BMP applications
Non-conversational MPP applications
Conversational MPP applications
IFP applications
Common Service Layer sample

After you complete the IVP, you can disable the use of features, functions, or facilities that your IMS system does not need.

# Chapter 10. IVP Sample Application

The IVP sample application is a simple telephone book application. Each of the application programs performs the same add, change, delete, and display functions.

For information on the IVP partitioning sample application, which demonstrates the conversion of a non-partitioning database to a partitioned database, refer to Chapter 13, “Partitioning Sample Application,” on page 165.

The SDFSISRC target library contains the source for all programs, PSBs, DBDs, and MFSs, and other supporting materials used by this application.

**Note:** The following programs are shipped source only:

DFSIVA31
DFSIVA32
DFSIVA34
DFSIVA61
DFSIVA62
DFSIVA64
DFSIVG20
DFSIVG30

These programs perform the same function as their assembler counterparts. They (along with the DFSIVA35 and DFSIVA65 REXX programs) are not used in the IVP. If you want to use these programs, you must have the appropriate compiler. Sample compile and bind JCL is provided, as indicated in the table. Stage 1 support, PSBGEN, ACBGEN, and MFSUTL are included in the IVP.

Table 14 provides information on the parts used by the IVP sample application. It includes the language, PSB, MFS, transaction code, DBD, JCL, and description associated with those parts (where applicable).

*Table 14. IVP Sample Application Parts*

| Part Name | Language | PSB | MFS | TRANCD | DBD | Compile and BIND JCL | Description |
|---|---|---|---|---|---|---|---|
| DFSIVD1 | Assembler | n/a | n/a | n/a | DFSIVD1 | n/a[1] | HIDAM/OSAM database. |
| DFSIVD1I | Assembler | n/a | n/a | n/a | DFSIVD1I | n/a[1] | HIDAM/OSAM primary index database. |
| DFSIVD2 | Assembler | n/a | n/a | n/a | DFSIVD2 | n/a[1] | HDAM/VSAM database. |
| DFSIVD3 | Assembler | n/a | n/a | n/a | DFSIVD3 | n/a[1] | DEDB/VSAM database. |
| DFSIVD4 | Assembler | n/a | n/a | n/a | DFSIVD4 | n/a[1] | MSDB database. |
| DFSIVD5 | Assembler | n/a | n/a | n/a | DFSIVD5 | n/a[1] | GSAM database. |
| DFSIVA1 | Assembler | DFSIVP1 | DFSIVF1 | IVTNO | DFSIVD1 | n/a[1] | Non-conv. MPP. |
| DFSIVA2 | Assembler | DFSIVP2 | DFSIVF2 | IVTNV | DFSIVD2 | n/a[1] | Non-conv. MPP. |
| DFSIVA3 | Assembler | DFSIVP3 | DFSIVF3 | IVTCV | DFSIVD2 | n/a[1] | Conv. MPP. |
| DFSIVA31[2] | Pascal | DFSIVP31 | DFSIVF31 | IVTCP | DFSIVD2 | DFSIVJP3 | Conv. MPP. |
| DFSIVA32[2] | C | DFSIVP32 | DFSIVF32 | IVTCC | DFSIVD2 | DFSIVJC3 | Conv. MPP. |

*Table 14. IVP Sample Application Parts (continued)*

| Part Name | Language | PSB | MFS | TRANCD | DBD | Compile and BIND JCL | Description |
|---|---|---|---|---|---|---|---|
| DFSIVP37 [3] | Java | DFSIVP37 | DFSIVF37 | IVTCM | DFSIVD2 | n/a [3] | Conv. JMP. |
| DFSIVA34[2] | COBOL | DFSIVP34 | DFSIVF34 | IVTCB | DFSIVD2 | DFSIVJB3 | Conv. MPP. |
| DFSIVA35[5] | REXX | DFSIVP35 | DFSIVF35 | IVTCX | DFSIVD2 | n/a | Conv. MPP. |
| DFSIVP67 [3] | Java | DFSIVP67 | n/a | n/a | DFSIVD2 | n/a [4] | JBP. |
| DFSIVA4 | Assembler | DFSIVP4 | DFSIVF4 | IVTFD | DFSIVD3 | n/a | Non-conv. IFP (EMH). |
| DFSIVA5 | Assembler | DFSIVP5 | DFSIVF5 | IVTFM | DFSIVD4 | n/a | Non-conv. IFP (EMH). Display and Replace only. |
| DFSIVA6 | Assembler | DFSIVP6 | n/a | n/a | DFSIVD1 | n/a | DB batch, BMP. |
| DFSIVA61[6] | Pascal | DFSIVP61 | n/a | n/a | DFSIVD1 | DFSIVJP6 | DB batch, BMP. |
| DFSIVA62[6] | C | DFSIVP62 | n/a | n/a | DFSIVD1 | DFSIVJC6 | DB batch, BMP. |
| DFSIVA64[6] | COBOL | DFSIVP64 | n/a | n/a | DFSIVD1 | DFSIVJB6 | DB batch, BMP. |
| DFSIVA65[5] | REXX | DFSIVP65 | n/a | n/a | DFSIVD1 | n/a | DB batch, BMP. |
| DFSIVA7 | Assembler | DFSIVP7 | n/a | n/a | DFSIVD2 | n/a | DB batch, BMP. |
| DFSIVA8 | Assembler | DFSIVP8 | n/a | n/a | DFSIVD3 | n/a | DB BMP. |
| n/a | n/a | DFSIVP9 | n/a | n/a | DFSIVD1 | n/a | On-line image copy. |
| DFSDDLT0 | n/a | DFSIVPA | n/a | n/a | DFSIVD1 | n/a | HIDAM load. |
| DFSDDLT0 | n/a | DFSIVPB | n/a | n/a | DFSIVD2 | n/a | HDAM load. |
| DFSIVAC | Assembler | DFSIVPC | n/a | n/a | DFSIVD3 | n/a | DEDB load BMP. |
| DFSIVAD | Assembler | DFSIVPD | DFSIVFD | IVTC1[7] | Simulated | n/a | Message driven WFI BMP. |
| DFSIVAE | Assembler | DFSIVPE | DFSIVFE | IVTC2[7] | n/a | n/a | Non-conv. MPP. MSG switch to DFSIVAD. |
| DFSIVAF | Assembler | DFSIVPF | DFSIVFF | IVTC3[7] | n/a | n/a | Conv. MPP. MSG switch to DFSIVAD. |
| DFSIVAG | Assembler | DFSIVPG | DFSIVFG | IVTC4[7] | n/a | n/a | IFP (EMH). MSG switch to DFSIVAD. |
| DFSIVG20[8] | Assembler | n/a | n/a | n/a | n/a | DFSIVJG2 | WTOR routine for Pascal. |
| DFSIVG30[8] | Assembler | n/a | n/a | n/a | n/a | DFSIVJG3 | WTOR routine for C. |
| DFSIVC04 | Assembler | n/a | n/a | n/a | n/a | n/a | Control statements for HD DB load (DFSDDLT0). |
| DFSIVC05 | Assembler | n/a | n/a | n/a | n/a | n/a | DB batch, BMP GSAM input. |
| DFSIVC06 | Assembler | n/a | n/a | n/a | n/a | n/a | Control statements for MSDB load. |
| DFSIVC07 | Assembler | n/a | n/a | n/a | n/a | n/a | WFI BMP GSAM input. |

*Table 14. IVP Sample Application Parts (continued)*

| Part Name | Language | PSB | MFS | TRANCD | DBD | Compile and BIND JCL | Description |
|---|---|---|---|---|---|---|---|

[1] These parts are installed by the IVP.

[2] After being compiled and bound, programs DFSIVA31/32/34 are executable from any 24x80 (3270) MFS device. You must add run-time libraries for either PL/I or Pascal to the IVP execution JCL.

[3] The Java program and the steps necessary to compile and run the IVP sample with a Java application program are described in the *IMS Version 9: IMS Java Guide and Reference*.

[4] The Java program is provided in the HFS file system. For information on compiling and running the Java sample application, see the *IMS Version 9: IMS Java Guide and Reference*.

[5] Programs DFSIVA35 and DFSIVA65 are fully installed by the IVP. DFSIVA35 can be executed from any 24x80 (3270) MFS device. DFSIVA65 can be executed by modifying the IVP execution JCL for DFSIVA6.

[6] After being compiled and bound, programs DFSIVA61/62/64 can be executed by modifying the IVP execution JCL for DFSIVA6. You must add run-time libraries for either PL/I or Pascal to the IVP execution JCL.

[7] These transaction codes are provided only in a DCCTL system.

[8] DFSIVG20 and DFSIVG30 are assembler subroutines that provide WTOR support for the Pascal and C programs.

## Program Functions

The application program action is determined by a process code provided with the input data. The process codes are ADD, DELETE, UPDATE, DISPLAY, and TADD. Except for TADD, the process codes are self-explanatory. TADD causes the application program to add a record to the database and issue a WTOR request. Any character string may be used to reply to the WTOR issued by the TADD process. The database is changed, but the change is not committed. The TADD process code is used during the recovery portions of the IVP scripts.

For the EMH program that accesses the main storage database (MSDB), a TUPD process code is used instead of the TADD.

The online transactions are executed through an MFS block. For example, the DFSIVP1 program is executed by entering `/FOR IVTNO` at an IMS user terminal, and then entering a process code and data on the formatted screen. For more information on the application screen formats, see the screen format description.

When processing for the DFSIVP1 program is finished, press the Clear key and enter a new `FORMAT` command to execute a different application program.

The batch/BMP programs execute using JCL. In the DCCTL environment, the IVP database is simulated through the use of a data area within program DFSIVAD (a message-driven WFI BMP). Programs DFSIVAE, DFSIVAF, and DFSIVAG perform message switches to send their transaction input to DFSIVAD for processing. DFSIVAD processes its input under the control of extended checkpoint/restart and returns its output to the originating terminal.

## Screen Format

The MFS (message format service) blocks for some of the application programs use a screen format similar to that shown in Figure 39. To display or delete a record, only the process code and the last name field are required input. To add or replace a record, all input fields are required.

```
              ************************************************
              *     IMS INSTALLATION VERIFICATION PROCEDURE    *
              ************************************************


                                    TRANSACTION TYPE : NON-CONV (VSAM DB)
                                    DATE             : mm/dd/yyyy

          PROCESS  CODE  (*1) :  ////////
                                                        (*1) PROCESS CODE
          LAST  NAME          :  //////////                     ADD
                                                                DELETE
          FIRST  NAME         :  //////////                     UPDATE
                                                                DISPLAY
          EXTENSION  NUMBER   :  //////////                     TADD

          INTERNAL  ZIP CODE  :  ///////
                                   input  area

          ////////////////////////////////////          SEGMENT# :  0001
                        message  area
/////////////////////////////////////////////////////////////////////////////////
                             system  message  area
```

*Figure 39. IVP Screen Format*

## Databases

In the DCCTL environment, the IVP database is simulated through the use of a data area within program DFSIVAD.

Each of four root-only databases in the IVP contains the same six records. Table 15 displays the contents (last name, first name, extension number, and zip code) of these records.

*Table 15. Contents of IVP Root-only Database Records*

| Record number | Last Name | First Name | Ext. number | Zip Code |
|---|---|---|---|---|
| 1 | LAST1 | FIRST1 | 8-111-1111 | D01/R01 |
| 2 | LAST2 | FIRST2 | 8-111-2222 | D01/R02 |
| 3 | LAST3 | FIRST3 | 8-111-3333 | D01/R03 |
| 4 | LAST4 | FIRST4 | 8-111-4444 | D02/R04 |
| 5 | LAST5 | FIRST5 | 8-111-5555 | D02/R05 |
| 6 | LAST6 | FIRST6 | 8-111-6666 | D03/R06 |

## DFSIVD1 - HIDAM/OSAM

- Database Description

  **Database Name:** IVPDB1

  **Segment Name:** A1111111

  **Segment Length:** 40

**Key Field Name:** A1111111

**Key Field Length:** 10

- Database Record Format: See Table 16.

*Table 16. Database Record Format of DFSIVD1*

| OFFSET | LENGTH | FIELD NAME | DESCRIPTION |
|---|---|---|---|
| 0 | 10 | A1111111 | Last Name |
| 10 | 10 | N/A | First Name |
| 20 | 10 | N/A | Extension Number |
| 30 | 7 | N/A | Internal Zip Code |
| 37 | 3 | N/A | Reserved |

## DFSIVD2 - HDAM/VSAM

- Database Description

**Database Name:** IVPDB2

**Segment Name:** A1111111

**Segment Length:** 40

**Key Field Name:** A1111111

**Key Field Length:** 10

- Database Record Format: See Table 17.

*Table 17. Database Record Format of DFSIVD2*

| OFFSET | LENGTH | FIELD NAME | DESCRIPTION |
|---|---|---|---|
| 0 | 10 | A1111111 | Last Name |
| 10 | 10 | N/A | First Name |
| 20 | 10 | N/A | Extension Number |
| 30 | 7 | N/A | Internal Zip Code |
| 37 | 3 | N/A | Reserved |

## DFSIVD3 - DEDB/VSAM

- Database Description

**Database Name:** IVPDB3

**Segment Name:** A1111111

**Segment Length:** 42

**Key Field Name:** A1111111

**Key Field Length:** 10

- Database Record Format: See Table 18.

*Table 18. Database Record Format of DFSIVD3*

| OFFSET | LENGTH | FIELD NAME | DESCRIPTION |
|---|---|---|---|
| 0 | 2 | N/A | Segment Length |
| 2 | 10 | A1111111 | Last Name |

*Table 18. Database Record Format of DFSIVD3 (continued)*

| OFFSET | LENGTH | FIELD NAME | DESCRIPTION |
|---|---|---|---|
| 12 | 10 | N/A | First Name |
| 22 | 10 | N/A | Extension Number |
| 32 | 7 | N/A | Internal Zip Code |
| 39 | 3 | N/A | Reserved |

## DFSIVD4 - MSDB

- Database Description

  **Database Name:** IVPDB4

  **Segment Name:** A1111111

  **Segment Length:** 40

  **Key Field Name:** A1111111

  **Key Field Length:** 10

- Database Record Format: See Table 19.

*Table 19. Database Record Format of DFSIVD4*

| OFFSET | LENGTH | FIELD NAME | DESCRIPTION |
|---|---|---|---|
| 0 | 10 | A1111111 | Last Name |
| 10 | 10 | N/A | First Name |
| 20 | 10 | N/A | Extension Number |
| 30 | 7 | N/A | Internal Zip Code |
| 37 | 3 | N/A | Reserved |

## DFSIVD5 - GSAM/BSAM

- Database Description

  **Database Name:** IVPDB5

  **RECFM:** F

  **RECORD:** 80

# Chapter 11. IMS Sample Application

The SDFSISRC target library contains the source for all programs, PSBs, DBDs, and MFSs, and other supporting materials used by this application.

Table 20 provides information on the parts used by the IMS sample application. It includes the language, PSB, transaction code, DBD, and description associated with those parts (where applicable).

*Table 20. IMS Sample Application Parts*

| Part Name | Language | PSB | TRANCD | DBD | Description |
|---|---|---|---|---|---|
| DI21PART | Assembler | n/a | n/a | DI21PART | HISAM/VSAM database |
| DFSSAM01 | REXX | DFSSAM11 | n/a | DI21PART | DB batch - Database Load |
| DFSSAM02 | REXX | DFSSAM12 | PART | DI21PART | Non-conversational MPP |
| DFSSAM03 | REXX | DFSSAM13 | DSPINV | DI21PART | Non-conversational MPP |
| DFSSAM04 | REXX | DFSSAM14 | ADDPART<br>ADDINV<br>DLETPART<br>DLETINV | DI21PART | Non-conversational MPP |
| DFSSAM05 | REXX | DFSSAM15 | CLOSE | DI21PART | Non-conversational MPP |
| DFSSAM06 | REXX | DFSSAM16 | DISBURSE | DI21PART | Non-conversational MPP |
| DFSSAM07 | REXX | DFSSAM17 | DSPALLI | DI21PART | Non-conversational MPP |
| DFSSAM08 | Assembler | DFSSAM18 | n/a | DI21PART | Non-conversational MPP |
| DFSDDLT0 | Assembler | DFSSAM19 | n/a | DI21PART | DB batch/BMP |
| DFSSAMC1 | Assembler | DFSSAMC1 | n/a | D121PART | CICS PSB DFHSAM04 |
| DFSSAMC2 | Assembler | DFSSAMC2 | n/a | DI21PART | CICS PSB DFHSAM05 |
| DFSSAMC3 | Assembler | DFSSAMC3 | n/a | DI21PART | CICS PSB DFHSAM14 |
| DFSSAMC4 | Assembler | DFSSAMC4 | n/a | DI21PART | CICS PSB DFHSAM24 |
| DFSSAMC5 | Assembler | DFSSAMC5 | n/a | DI21PART | CICS PSB DFHSAM15 |
| DFSSAMC6 | Assembler | DFSSAMC6 | n/a | DI21PART | CICS PSB DFHSAM25 |
| DFSSUT04 | REXX | n/a | n/a | n/a | Status code subroutine |
| MFDFSYSN | n/a | n/a | n/a | n/a | Control statements for database load |
| DFSSAMC1 | n/a | n/a | n/a | n/a | Control statements for database dump (DFSDDLT0) |

## Manufacturing Industry Sample Database Organization

The sample application is based on a scenario from the manufacturing industry. It includes the creation, usage, and maintenance of the logical databases associated with the product data. Three logical databases (parts, drawings, and end items) contain the data. The data is related to engineering part numbers, drawings, or product structure.

Figure 40 on page 142 shows the relationship between the logical and physical databases for each of the three logical databases parts, drawings, and end items.

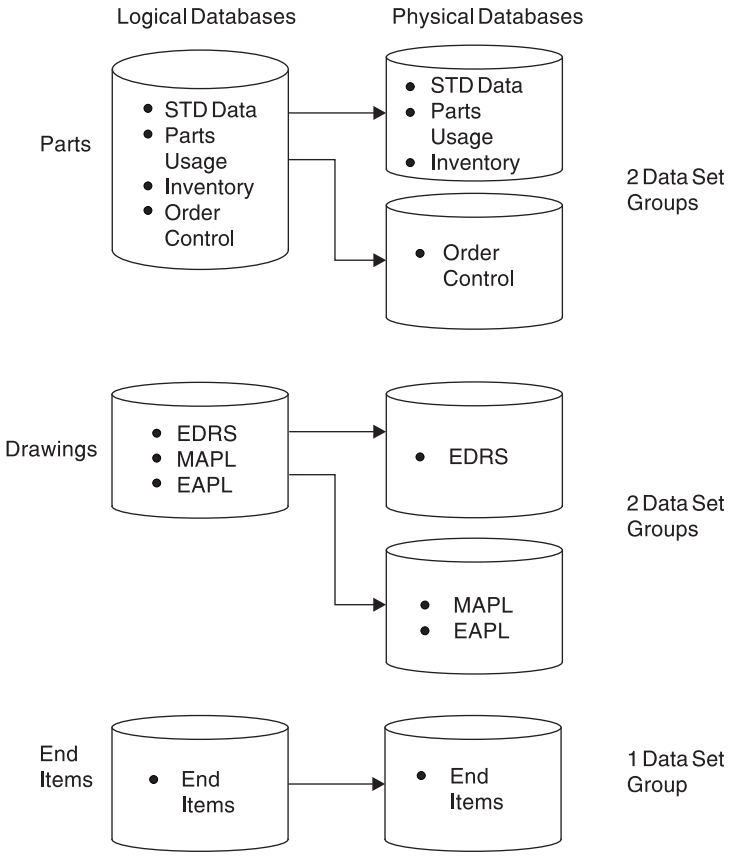



*Figure 40. Logical and Physical Databases for Parts, Drawings, and End Items*

The segments comprising the logical “parts” database are divided into two data set groups. Figure 41 on page 143 displays the hierarchy of these segments in the two data set groups (STD data and order control).

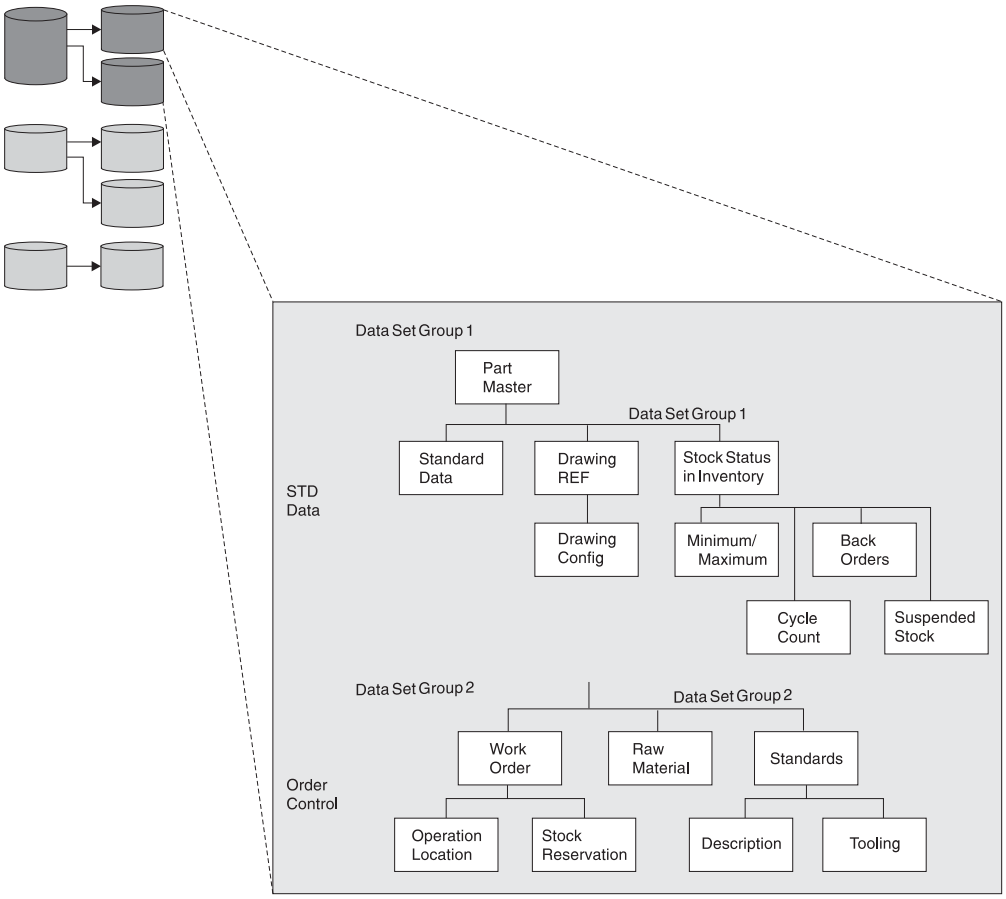



*Figure 41. Parts Database*

The segments comprising the logical database “drawings” are divided into two data set groups. Figure 42 on page 144 displays the hierarchy of these segments in the two data set groups (EDRS system and MAPL/EAPL parts list).

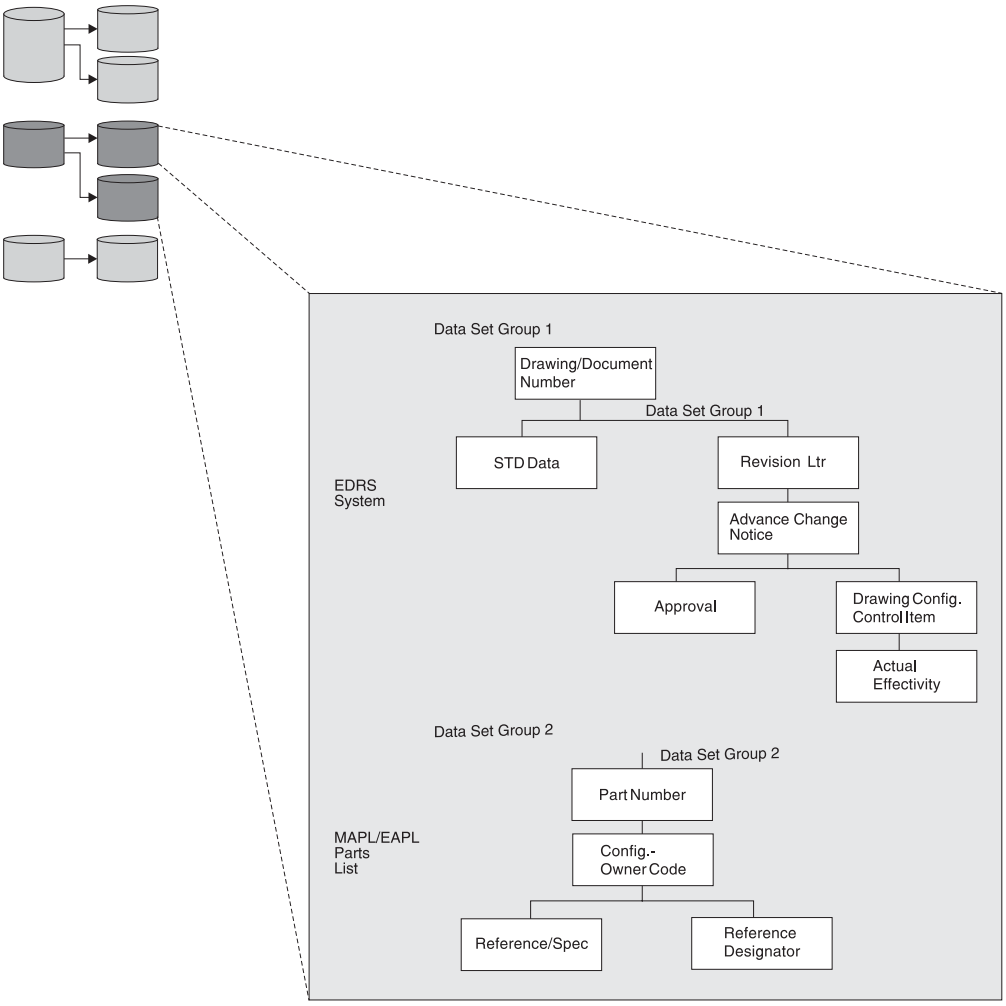



*Figure 42. Drawings Database*

The segments comprising the logical database “end items” are all contained in one data set group. Figure 43 on page 145 displays the hierarchy of these segments in the end item data set group.

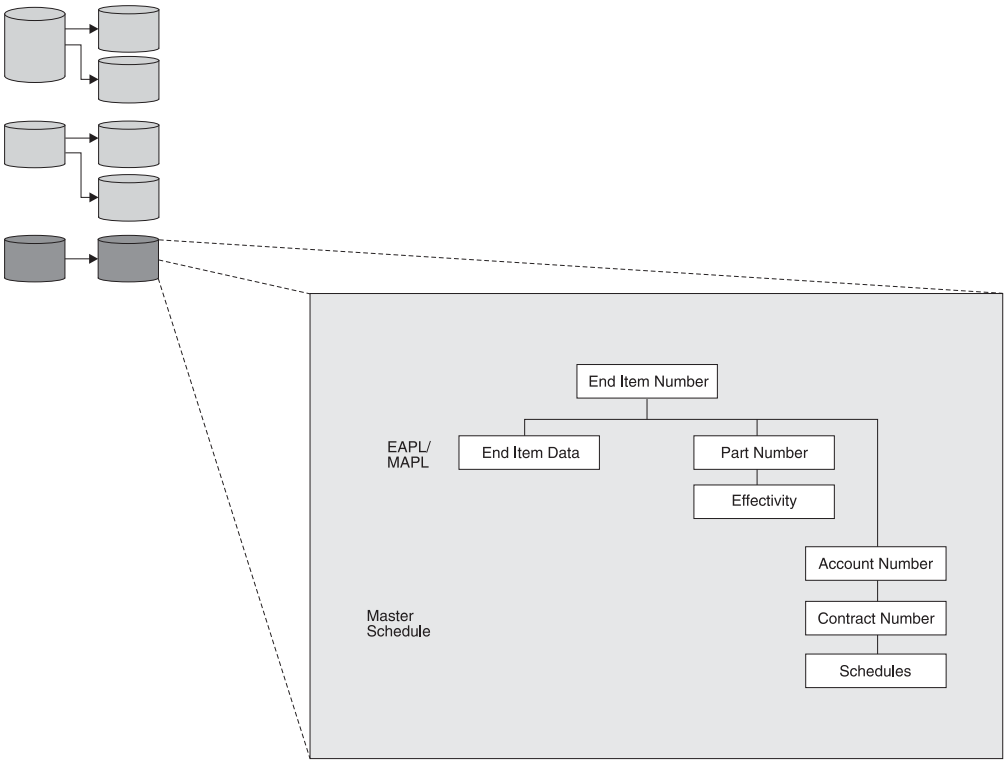



*Figure 43. End Items Database*

## Sample Application

The entire three-database structure that is shown in Figure 40 on page 142, Figure 41 on page 143, Figure 42 on page 144, and Figure 43 provides a context for the sample application. The sample application that you are installing and using requires only a few of the total segments.

Figure 44 shows the sample application's logical view of the "parts" database. The application requires five segments of the "parts" database:

- One part number description segment for each part within the database.
- A standard data segment for each part that provides additional information of a standard nature about the part.
- Inventory stock status segments for each part. The application is designed with multiple inventory locations permissible, and normally required, for any particular part.
- Cycle count segments (from 0 to n).
- Back-order segments for each inventory location of a particular part.

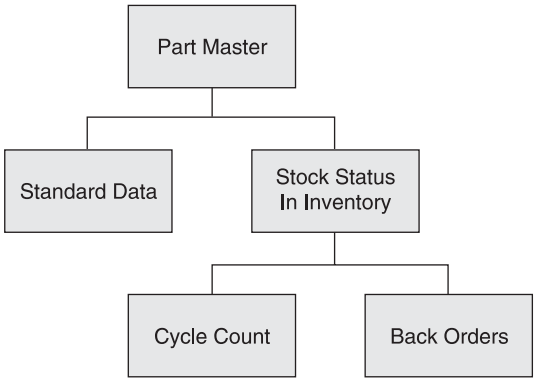



*Figure 44. IMS Sample Application's Logical View of the Parts Database*

## Sample Transactions

In Figure 45, the six message processing programs (MPPs) process the nine transactions (provided by the sample application) using the "parts" database.

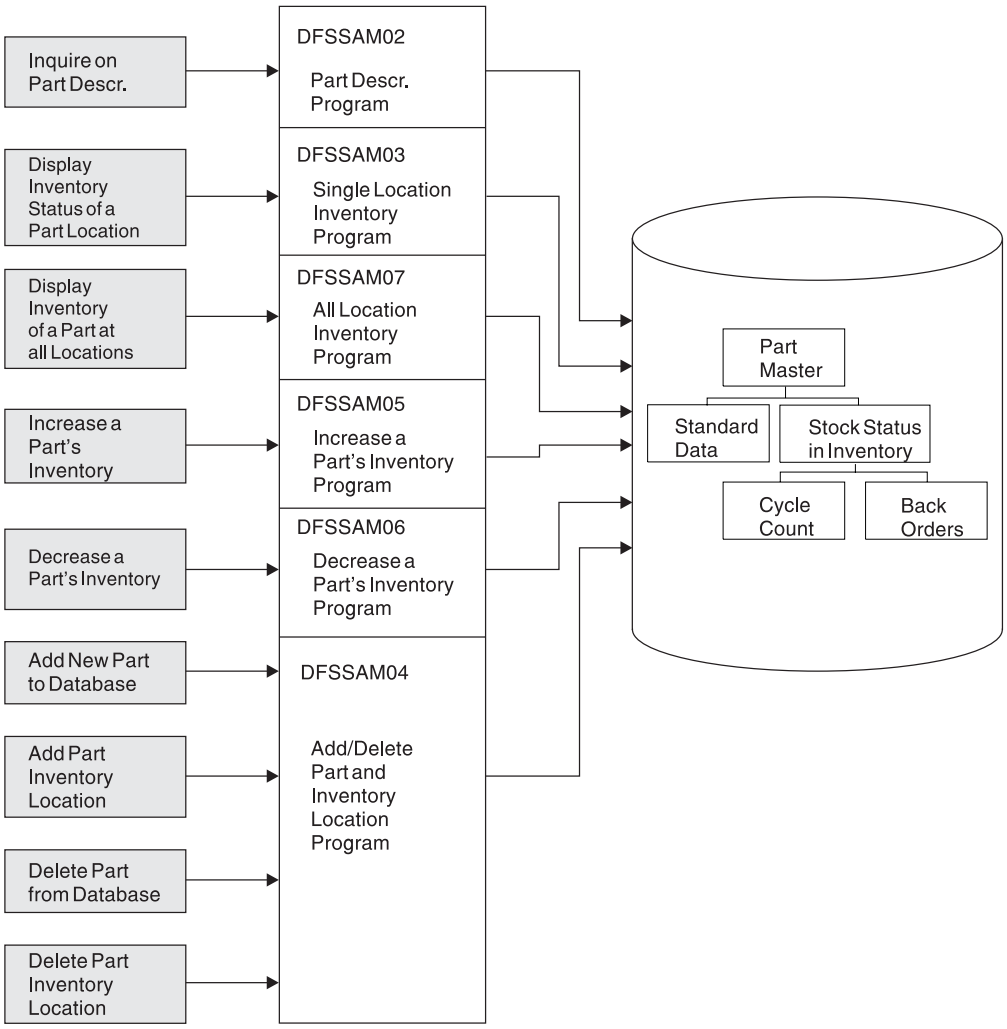



*Figure 45. MPPs Processing the Parts Database*

The six MPPs and their associated transactions are provided to allow you to perform the following nine online functions:

| Transaction | Online Function |
|---|---|
| **PART** | Inquire about a part and its description. |
| **DSPALLI** | Inquire about a part's inventory, cycle count, and back-order information. |
| **DSPINV** | Inquire about a part's total inventory in all locations or by specific inventory location. |
| **ADDPART** | Add a new part and its description. |
| **ADDINV** | Add part inventory information, by location, to an existing part description. |
| **DLETINV** | Delete part inventory information, by location. |
| **DLETPART** | Delete a part after deletion of all its subordinate part inventory information. |
| **CLOSE** | Close a part order to increase the part inventory at a specific location. |

**DISBURSE** Disburse a specific quantity of a particular part, on a planned or unplanned basis, at a particular part inventory location, thereby reducing inventory.

Using one of the USER terminals, execute the IMS sample application transactions. The general format of all transactions is:

- TRANSACTION_CODE OPERAND,OPERAND,OPERAND, . . .

One blank must separate the transaction code from the first operand. No blanks can be entered between one operand and another. Most of the transaction codes have been defined as multiple segment transactions and require an EOT (for 2740), or equivalent, to complete input.

This application was originally designed for terminals that support output that is greater than 80 characters wide. As a result, some of the output is wider than 80 characters, resulting in truncation of the output line if your terminal supports a maximum width of 80 characters. Press CLEAR and then PA2. Repeat this sequence until a blank screen is returned. This sequence causes queued-up messages to be displayed. Also use the CLEAR and PA2 combination before each new transaction code.

The nine transactions associated with MPPs are listed below. Examples of the input and output screens for each transaction are also provided.

1. PART

   The transaction PART inquires into the part number database for information from the part master and standard information segments of a specific part number. The input format is transaction code, part number entered as shown in Figure 46.

```
part AN960C10
```

*Figure 46. PART Transaction - Entry*

   The output or response format is shown in Figure 47.

```
          Part...........     AN960C10; Desc........... WASHER
          Proc Code......           74; Inv Code.......        2
          Make Dept......        12-00; Plan Rev Num...
          Make Time......           63; Comm Code......       14
```

*Figure 47. PART Transaction - Output*

2. DSPALLI

   The DSPALLI transaction displays all inventory, cycle count, and back-order information for a specific part. The input format is transaction code and part number entered as shown in Figure 48.

```
dspalli AN960C10
```

*Figure 48. DSPALLI Transaction - Entry*

   The resulting terminal output is shown in Figure 49.

```
Part=AN960C10;   Desc=WASHER;   Proc Code=74

   Area  Inv  Proj  Div  Unit   Current   On     In     Total  Count Back
         Dept  CD        Price  Reqmts  Order  Stock  Disburse Taken Ordr
   ----  ----  ---  ---  -----  ------  -----  -----  -------- ----- ----
1.        AA   165   11  0.000   146     20     126      104     No    0
2.        AK   287   7F  0.000    88      0      88       37     No    0
3.   2    80   091   26  0.000   630     15     680     1157     No    0
```

*Figure 49. DSPALLI Transaction - Output*

3. DSPINV

   The DSPINV transaction displays inventory information from a specific inventory location. Assume you want to display only the 3rd inventory entry listed in Figure 49. Obtain inventory location key by concatenating AREA, INVDEPT, PROJCD, and DIV. The input format is transaction code, part number, inventory-location-key entered as shown in Figure 50.

```
dspinv AN960C10,28009126
```

*Figure 50. DSPINV Transaction - Entry*

   The resulting terminal output is shown in Figure 51.

```
         Part...........     AN960C10; Desc........... WASHER
         Proc...........           74; Area...........        2
         Inv Dept.......           80; Prj............      091
         Div............           26; Price..........    0.000
         Stk Ct Date....          513; Unit...........     EACH
         Curr Reqmts....          630; On Order.......       15
         Total Stock....          680; Disb Planned...     1053
         Disb Unplanned.          104; Stk Ct Variance        0
```

*Figure 51. DSPINV Transaction - Output*

4. ADDPART

   The ADDPART transaction adds a new part and its associated description and procurement code to the database. The input format is transaction code, part number, description, procurement-code entered as shown in Figure 52.

```
addpart AB960C10,RIVET,74
```

*Figure 52. ADDPART Transaction - Entry*

   The resulting terminal output is shown in Figure 53.

```
 Part Number AB960C10 Added To Data Base
```

*Figure 53. ADDPART Transaction -Output*

5. ADDINV

   The ADDINV transaction adds inventory location key information to an existing part in the database. The input format is transaction code, part number, inventory-location-key entered as shown in Figure 54.

```
addinv AB960C10,80091260
```

*Figure 54. ADDINV Transaction - Entry*

The resulting terminal output is shown in Figure 55.

```
Inventory 80091260 Added To Part Number AB960C10
```

*Figure 55. ADDINV Transaction - Output*

If you want to display the part's updated inventory information, enter the command shown in Figure 56.

```
dspinv AB960C10,80091260
```

*Figure 56. DSPINV Transaction - Entry*

The resulting terminal output is shown in Figure 57.

```
          Part...........     AB960C10; Desc........... RIVET
          Proc...........           74; Area...........        8
          Inv Dept.......           00; Prj............      912
          Div............           60 ; Price..........    0.000
          Stk Ct Date....             ; Unit...........
          Curr Reqmts....            0; On Order.......        0
          Total Stock....            0; Disb Planned...        0
          Disb Unplanned.            0; Stk Ct Variance        0
```

*Figure 57. DSPINV Transaction - Output*

6. DLETINV

   The DLETINV transaction code deletes a specific inventory item for a specific part. The input format is transaction code, part number, inventory-location-key entered as shown in Figure 58.

```
dletinv AB960C10,80091260
```

*Figure 58. DLETINV Transaction - Entry*

The resulting terminal output shown in Figure 59.

```
Inventory 80091260 Deleted From Part Number AB960C10
```

*Figure 59. DLETINV Transaction - Output*

7. DLETPART

   If all the inventory items are deleted, you can delete a particular part number from the database with the transaction code DLETPART. The input format is transaction code, part number entered as shown in Figure 60.

```
dletpart AB960C10
```

*Figure 60. DLETPART Transaction - Entry*

The resulting terminal output is shown in Figure 61.

```
Part Number AB960C10 Deleted From Data Base
```

*Figure 61. DLETPART Transaction - Output*

8. CLOSE

   You can close an open order for a specific part in a specific inventory item using the CLOSE transaction code. The input format is transaction code, part number, inventory-location-key, on-order-decrement, total-stock increment. Enter the command as shown in Figure 62.

```
close AN960C10,28009126,15,15
```

*Figure 62. CLOSE Transaction - Entry*

The resulting terminal output is shown in Figure 63.

```
17:43:38 PN= AN960C10 Invty Key=28009126 Excess Stock On Hand
```

*Figure 63. CLOSE Transaction - Output*

Other messages can follow depending upon the sample database update status (you might need to press PA1 first). An example is shown in Figure 64.

```
Update Complete
```

*Figure 64. CLOSE Transaction - Output (Additional)*

To verify the operation of the CLOSE transaction, you can display inventory item 28009126 for part AN960C10. The input format is transaction code, part number, inventory-location-key. Enter the command as shown in Figure 65.

```
dspinv AN960C10,28009126
```

*Figure 65. DSPINV Transaction - Entry*

The resulting terminal output is shown in Figure 66.

```
         Part...........     AN960C10; Desc........... WASHER
         Proc...........           74; Area...........        2
         Inv Dept.......           80; Prj............      091
         Div............           26; Price..........    0.000
         Stk Ct Date....          513; Unit...........     EACH
         Curr Reqmts....          630; On Order.......        0
         Total Stock....          695; Disb Planned...     1053
         Disb Unplanned.          104; Stk Ct Variance        0
```

*Figure 66. DSPINV Transaction - Output*

Compare the display in Figure 66 with the display in Figure 51 on page 149. Notice that the on-order quantity has been reduced by 15 and the total stock quantity has been increased by 15 to 695.

9. DISBURSE

   The DISBURSE transaction code allocates a quantity of a part from an inventory item on a planned or unplanned basis. The input format is transaction code, part number, inventory-location-key, planned or unplanned code, quantity. Enter the command as shown in Figure 67.

```
disburse AN960C10,28009126,U,10
```

*Figure 67. DISBURSE Transaction - Entry*

The resulting terminal output is shown in Figure 68.

```
17:47:40 PN= AN960C10 Invty Key=28009126 Excess Stock On Hand
```

*Figure 68. DISBURSE Transaction - Output*

Other messages can follow depending upon the sample database update status (you might need to press PA1 first). An example is shown in Figure 69.

```
Update Complete
```

*Figure 69. DISBURSE Transaction - Output (Additional)*

If you want to display the inventory information for key 28009126 and part number AN960C10, enter the command as shown in Figure 70. The input is transaction code, part number, inventory-location-key.

```
dspinv AN960C10,28009126
```

*Figure 70. DSPINV Transaction - Entry*

The resulting terminal output is shown in Figure 71.

```
          Part...........     AN960C10; Desc........... WASHER
          Proc...........           74; Area...........        2
          Inv Dept.......           80; Prj............      091
          Div............           26; Price..........    0.000
          Stk Ct Date....          513; Unit...........     EACH
          Curr Reqmts....          630; On Order.......        0
          Total Stock....          685; Disb Planned...     1053
          Disb Unplanned.          114; Stk Ct Variance        0
```

*Figure 71. DSPINV Transaction - Output*

## IMS Sample Application Parts Records

This section lists the available part numbers in the database that you can use for message processing. The part numbers marked with an asterisk (*) have dependent back-order segments. All part numbers have at least one dependent inventory status segment.

Part Numbers:

```
AN960C10                    7438995P002
3003806 *                   7618032P101 *
3007228                     922399-001
3013412                     82125-869
652799
```

# Chapter 12. Fast Path Sample Application

The SDFSISRC target library contains the source for all programs, PSBs, DBDs, and MFSs, and other supporting materials used by this application.

Table 21 provides information on the parts used by the Fast Path sample application. It includes the language, PSB, MFS, transaction code, DBD, and description associated with those parts (where applicable).

*Table 21. Fast Path Sample Application Parts*

| Part Name | Language | PSB | MFS | TRANCD | DBD | Description |
|---|---|---|---|---|---|---|
| DBFSAMD1 | Assembler | n/a | n/a | n/a | DBFSAMD1 | MSDB - General Ledger Database |
| DBFSAMD2 | Assembler | n/a | n/a | n/a | DBFSAMD2 | MSDB - Teller Database |
| DBFSAMD3 | Assembler | n/a | n/a | n/a | DBFSAMD3 | DEDB/VSAM - Customer Account Database |
| DBFSAMD4 | Assembler | n/a | n/a | n/a | DBFSAMD4 | HDAM/VSAM - Loan Database |
| DBFSAMA1 | Assembler | DBFSAMP1 | n/a | n/a | DBFSAMD3 | BMP - DEDB/VSAM load |
| DBFSAMA2 | Assembler | DBFSAMP2 | n/a | n/a | DBFSAMD4 | DB Batch - HDAM/VSAM load |
| DBFSAMA3 | Assembler | DBFSAMP3 | DBFSAMF1 | FPSAMP1 | DBFSAMD1<br>DBFSAMD2<br>DBFSAMD3<br>DBFSAMD4 | Non-conversational IFP (EMH) |
| DBFSAMA3 | Assembler | DBFSAMP4 | DBFSAMF1 | FPSAMP2 | DBFSAMD1<br>DBFSAMD2<br>DBFSAMD3<br>DBFSAMD4 | Non-conversational MPP |
| DFSDDLT0 | Assembler | DBFSAMP5 | n/a | n/a | DBFSAMD4 | DB batch/BMP - HDAM/VSAM |
| DFSDDLT0 | Assembler | DBFSAMP6 | n/a | n/a | DBFSAMD3 | BMP - DEDB/VSAM |
| DFSIVC06 | Assembler | n/a | n/a | n/a | DBFSAMD1<br>DBFSAMD2 | MSDB load control statements |

## Sample Database Organization

The sample application demonstrates a banking application. This sample application creates and uses four databases (two MSDBs, one HDAM, and one DEDB). Data is related to general ledger (MSDB), teller (MSDB), loan (HDAM), and customer account (DEDB) information for each account. DEDB and HDAM databases are loaded offline using IMS supplied utilities. All four databases are processed online using message processing regions (MPP) and Fast Path regions (IFP).

Figure 72 on page 156 shows the relationship of these four databases as created and used by the Fast Path sample application.

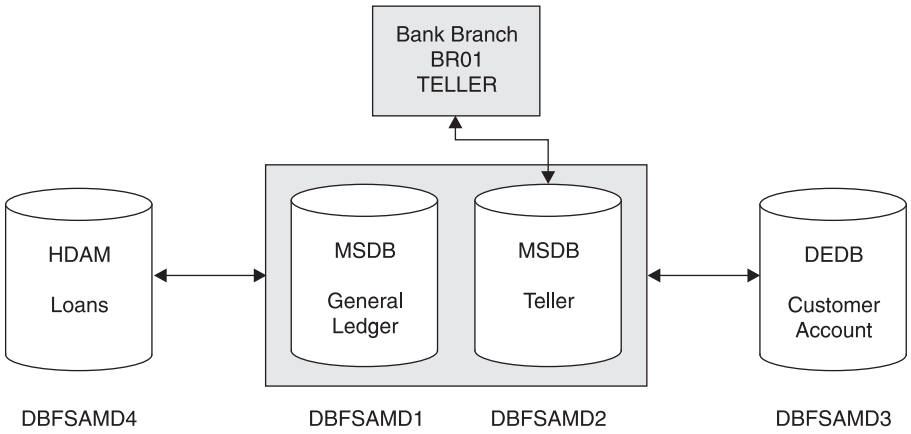



*Figure 72. Relationship of the Databases of the Fast Path Sample Application*

The general ledger database is a non-terminal-related MSDB. The DBD for the general ledger file contains a segment description consisting of the following items:

General ledger account number
General ledger account balance
Transaction count
Filler area

The teller database is a terminal-related MSDB. The DBD for the teller file contains a segment description consisting of the following items:

Withdrawal amount
Deposit amount
Loan payment amount
Teller balance
Transaction code
Key to general ledger
Filler area

The customer account database (a DEDB) includes nine segment types in a three-level hierarchy, as represented in Figure 73 on page 157. The segment types include a root segment type, a sequential dependent segment type, and seven types of direct dependent segments. In addition, subset pointers point to the three account segment types that are represented in the database. This configuration allows the application to demonstrate the use of multiple SSAs and the use of command codes (including subset pointer references) for a DEDB.

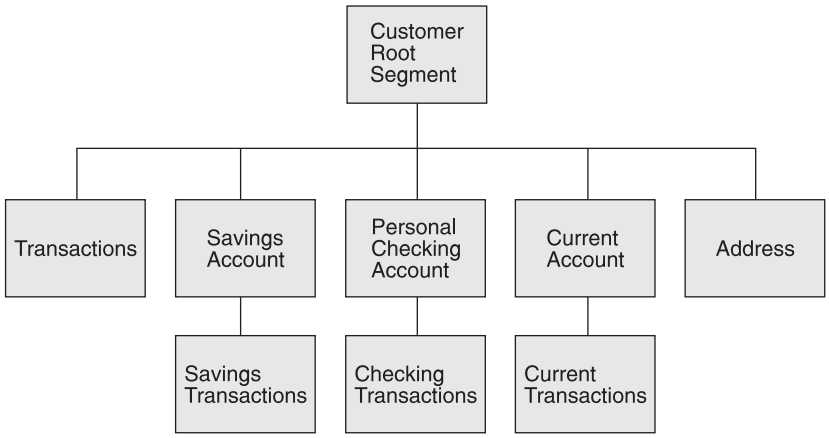



*Figure 73. A Hierarchical Diagram of the Customer Account Database (a DEDB)*

The second level transactions segment is sequential dependent; all others are direct dependents.

The loan database (HDAM) contains customer identification and transaction information. Transaction information can include all aspects of a banking scenario, including loan information, account numbers, and date and times of transactions.

The hierarchical diagram in Figure 74 displays the segments (customer root and loan) of an HDAM/VSAM loan database.

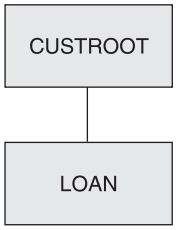



*Figure 74. Segments of an HDAM/VSAM Loan Database*

## Sample Application for Fast Path

The sample application consists of programs to perform the following functions:

1. Prepare the two MSDBs used by the transaction processing program. (The loading of the MSDBs is performed at IMS startup.)
2. Perform the initial load of the DEDB account database with an IMS batch message processing program (BMP).
3. Perform the initial load of the HDAM loan database with a batch application program.
4. Process the transaction using the following call sequence:
   a. GU I/O PCB (get message).
   b. If the transaction is a statement request:
      1) GU first account transaction for the requested period (use of multiple SSAs, path call, and subset pointers).
      2) Move heading, account balance, and first transaction line to table.
      3) GNP next account transaction.

4) Add transaction line to table.
5) Loop until no more transactions (PCB status GE) or table full.
6) Insert table to I/O PCB (MFS edit).

c. If not statement request, GHU teller record (cash counter).
d. If it is a loan transaction:
   1) GHU loan record (HDAM).
   2) REPL loan record (HDAM).
   3) FLD update general ledger record (MSDB).
   4) REPL teller record (MSDB).
e. If it is an account transaction:
   1) Decide which account type.
   2) GHU account record (DEDB) (Multiple SSAs).
   3) REPL account record (DEDB).
   4) ISRT account transaction record (DEDB) (Conditionally set subset pointers).
   5) ISRT DEDB sequential dependent transaction record.
   6) Update general ledger record (MSDB FLD call).
   7) REPL teller record (MSDB).
f. ISRT to I/O PCB (reply to terminal). Display all transactions not entered in passbook.
g. Loop to (a) for next message.

To process the transaction, the sample program acquires a message (representing a statement request, an account transaction, or a loan transaction).

If the transaction is an account transaction, the appropriate account segment is updated by the amount of the transaction, and the transaction is inserted as a dependent segment to the account segment. Depending on the type of account segment, different types of subset pointers are maintained for the transaction segments. An application program is assumed to be there to update the subset pointers in a daily offline run. The “first today, this week, this month, and this quarter” subset pointers are set to 0 at the end of the period. The “first without passbook” subset pointer is set to 0 by the sample application when a passbook is presented.

The transaction is added to the account DEDB as a sequential dependent segment. From an application viewpoint, this data could be used as historical information in an offline process (not included in the sample application).

The transaction is reflected in a general ledger (MSDB 1) item associated with the particular branch by means of a FLD add call.

The (teller) cash counter database (related MSDB-containing segments associated with a specific teller terminal) is updated.

A reply to the teller terminal is generated and inserted to the terminal by an ISRT message call.

## Running the Sample Transaction from Your Terminal

Using one of the USER terminals, run the transactions for the Fast Path sample application:

- The Fast Path sample application transactions

  There are two transaction codes used in the Fast Path sample application:

  FPSAMP1 - executes in an IFP REGION

  FPSAMP2 - executes in an MPP REGION

  The two transaction codes both execute the same application functions. The MOD name of the MFS format used by these transactions is DBFSMOUT. The IMS command `/FORMAT DBFSMOUT` causes this format to be displayed.

  The general format of the input for these transactions is given in Table 22 and in the following example:

*Table 22. Example Input Format for Fast Path Sample Application Transactions*

| Field | Variables | Description |
|---|---|---|
| Transaction Code | *aaaaaaa* | • FMP1 - execute transaction in FP MSG DRIVEN REGION<br>• FPSAMP2 - execute transaction in IMS MPP REGION |
| Customer Account | *bbbbbbbbcc* | • *bbbbbbbb* - 8-character customer number<br>• *cc* - 2-character account type |
| Transaction Type | *def* | • *d* - one of the following four characters:<br>– L - Loan[1]<br>– S - Savings account<br>– C - Checking account<br>– U - Current account<br>• *e* - one of the following three characters:<br>– W - Withdrawal<br>– D - Deposit<br>– P - Account statement<br>• *f* - one of the following five characters:<br>– P - Passbook[2]<br>– 1 - Today[3]<br>– 2 - This week[3]<br>– 3 - This month[3]<br>– 4 - This quarter[3] |
| Transaction Amount | *ggggggggg* | Amount ($3000.00, for example) up to nine characters. |

**Notes:**

1. Transaction amount is not required on loan transactions or account statement requests. Loan payment amount is predefined in the database.
2. For savings account deposits and withdrawals with a passbook. If no passbook, leave blank.

3. Valid combinations for statement requests are: SP3, SP4, CP2, CP3, CP4, UP1, UP2, UP3, UP4.

– INPUT MESSAGE

The transaction input message is entered on the third line of the screen, under the heading, NEW TRAN.

All transactions

```
NEW TRAN:
AAAAAAA BBBBBBBBCC DEF GGGGGGGGG
_______ __________ ___ _________
```

Where:

| | |
|---|---|
| **AAAAAAA:** | Transaction code suffix (0 or 1 depending on which region) |
| **BBBBBBBB:** | Customer account number |
| **CC:** | Customer account type |
| **DEF:** | Transaction type |
| **GGGGGGGGG:** | Transaction amount (freeform up to 9 characters) |

– OUTPUT MESSAGE The transaction output messages are displayed beginning on the fourth line of the screen. The various output displays are explained below.

- Customer Account Transaction

```
CUST. ACCT TRANSACTION:

 BRxxxxxxxx yyy zzzzzzzzz wwwwwwwww

 TRANS TO BE ENTERED IN PASSBK:

 YYDDD HHMM   t aaaaaaaaa          YYDDD HHMM   t aaaaaaaaa

 YYDDD HHMM   t aaaaaaaaa          YYDDD HHMM   t aaaaaaaaa

 END OF PASSBOOK TRANSACTIONS
```

Where:

| | |
|---|---|
| **xxxxxxxx:** | Customer account number |
| **yyy:** | Transaction type |
| **zzzzzzzzz:** | Transaction amount |
| **wwwwwwwww:** | Account balance |
| **YYDDD:** | Transaction date |
| **HHMM:** | Transaction time |
| **t:** | Transaction type (D or W) |
| **aaaaaaaaa:** | Transaction amount |

- Loan Payment Transaction

```
LOAN PAYMENT DETAILS:

BRxxxxxxxx L  zzzzzzzzz wwwwwwwww uuuuuuuuu vvvv
```

Where:

**xxxxxxxx:** Customer account number

**L:** Transaction type (loan payment)

**zzzzzzzzz:** Loan payment amount

**wwwwwwwww:** Original loan balance

**uuuuuuuuu:** New loan balance

**vvvv:** Number of loan payments made on account

- Account Statement Transaction

```
CUST. ACCT  REQUEST   BALANCE:

BRxxxxxxxx yyy zzzzzzzzz

TRANSACTIONS THIS PERIOD:

YYDDD HHMM   t aaaaaaaaa          YYDDD HHMM   t aaaaaaaaa

YYDDD HHMM   t aaaaaaaaa          YYDDD HHMM   t aaaaaaaaa

END OF TRANSACTIONS
```

Where:

**xxxxxxxx:** Customer account number

**yyy:** Transaction type

**zzzzzzzzz:** Account Balance

**YYDDD:** Transaction date

**HHMM:** Transaction time

**t:** Transaction type (D or W)

**aaaaaaaaa:** Transaction amount

- Error Message Format

```
REQUEST CAN NOT BE SERVICED:
PROCSG ERROR xx yy zz...
```

Where:

**xx:** Error code set by application program

**yy:** PCB status code, if applicable

**zz:** Input data

– ERROR CODES

**IE -** Invalid input data

**LM -** Missing loan segment (HDAM)

**LU -** Error in updating loan segment (HDAM)

**MA -** Missing customer account segment (DEDB)

**MR -** Missing customer root segment (DEDB)

**MT -** Missing teller segment (MSDB)

**MX -** Missing transaction segment (DEDB)

**OD -** Transaction amount on withdrawal greater than customer account balance

**RB -** Error in processing and rollback

**TR -** Terminal transmission error on input

**UA -** Error in updating account segment (DEDB)

**UG -** Error in updating general ledger (MSDB)

**UI -** Error in adding sequential dependent (DEDB)

**UT -** Error in updating teller database (MSDB)

**UX -** Error in adding account transaction segment (DEDB)

- Running the sample transactions from your terminal
  1. Press CLEAR and then PA2. Repeat this sequence until a blank screen is returned. This sequence causes queued-up messages to be displayed.

     Enter `/FORMAT DBFSMOUT` to display the MFS format.

     In the transaction sequence that follows, the terminal input is to be typed below the "AAAAAAA BBBBBBBBCC DEF GGGGGGGGG" prompting string in the screen input area.
  2. Terminal Input:

     ```
     FPSAMP1 BR01-H01M1 L
     ```

     Terminal Output:

     ```
     LOAN PAYMENT DETAILS:
     BR01-H01M1 L     $482.77  $60,000.00  $59,517.23  0001
     ```
  3. Terminal Input:

     ```
     FPSAMP2 BR01-A01S1 SWP 1000.00
     ```

     Terminal Output:

     ```
     CUST. ACCT TRANSACTION:
     BR01-A01S1 SWP        $1,000.00   $1000.00
     TRANS TO BE ENTERED IN PASSBK:
     YYDDD HHMM  W  $1000.00          END OF PASSBOOK TRANSACTIONS
     ```
  4. Terminal Input:

     ```
     FPSAMP1 BR02-T02C1 CD 1000.00
     ```

     Terminal Output:

     ```
     CUST. ACCT TRANSACTION:
     BR02-T02C1 CD         $1,000.00   $1,900.00
     ```
  5. Terminal Input:

     ```
     FPSAMP2 BR01-F01C1 CW 900.00
     ```

     Terminal Output:

     ```
     REQUEST CAN NOT BE SERVICED:
     PROCSG ERROR OD      BR01-F01C1    CW    $900.00
     ```
  6. Terminal Input:

     ```
     FPSAMP2 BR01-F01C1 CP2
     ```

     Terminal Output:

     ```
     CUST. ACCT  REQUEST        BALANCE:
     BR01-F01C1 CP2               $800.00
     NO TRANSACTIONS THIS PERIOD
     ```
  7. Terminal Input:

```
FPSAMP1 BR01-A01S1 SW 500.00
```

Terminal Output:

```
CUST. ACCT TRANSACTION:
BR01-A01S1 SW          $500.00    $500.00
```

8. Terminal Input:

```
FPSAMP1 BR01-B01A1 L
```

Terminal Output:

```
LOAN PAYMENT DETAILS:
BR01-B01A1 L     $145.20   $4,500.00   $4,354.80   0001
```

9. Terminal Input:

```
FPSAMP1 BR01-A01S1 SDP 400.00
```

Terminal Output:

```
CUST. ACCT TRANSACTION:
BR01-A01S1 SDP          $400.00    $900.00
TRANS TO BE ENTERED IN PASSBK:
YYDDD HHMM  W           $500.00  YYDDD HHMM  D  $400.00
END OF PASSBOOK TRANSACTIONS
```

10. Terminal Input:

```
FPSAMP2 BR01-A01S1 SP3
```

Terminal Output:

```
CUST. ACCT  REQUEST      BALANCE:
BR01-A01S1 SP3            $900.00
TRANSACTIONS THIS PERIOD:
YYDDD HHMM  W         $1,000.00  YYDDD HHMM W        $500.00
YYDDD HHMM  D           $400.00  END OF TRANSACTIONS
```

11. Terminal Input:

```
FPSAMP1 BR02-T01U1 UW 11500.00
```

Terminal Output:

```
CUST. ACCT TRANSACTION:
BR02-T01U1    UW     $11,500.00    $30,000.00
```

## IMS Fast Path Sample Application Customer Account Information

The transactions shown in “Running the Sample Transaction from Your Terminal” on page 159 can assist you in becoming familiar with the sample databases. Along with the following customer account information, they give you the resources to prepare online training exercises for operators and programmers.

Table 23 shows customer account numbers, loaded into the DEDB, which can be used in running the sample application. It also provides the corresponding customer names, addresses, account types, and account balance.

*Table 23. Customer Savings Account Database – Root Segment (DEDB)*

| Customer Account Number | Customer Name | Customer Address | Account Type | Account Balance $ |
|---|---|---|---|---|
| BR01-B01S1 | Robert | 1601 California Ave. | S JT C TS | 4,000.00 |
| C1 | Bennett | Palo Alto, CA 95432 | | 1,500.00 |
| BR01-A01S1 | Mary Adams | 2044 Hamilton Ave. Campbell, CA 95030 | S JT | 2,000.00 |

*Table 23. Customer Savings Account Database – Root Segment (DEDB) (continued)*

| Customer Account Number | Customer Name | Customer Address | Account Type | Account Balance $ |
|---|---|---|---|---|
| BR01-F01S1 C1 | John Ford | 4312 Skyline Road Mt. View, CA 96048 | S BA C TR | 15,000.00 800.00 |
| BR01-H01C1 | Betty Hill | 7676 Santa Teresa Rd San Jose, CA 97050 | C TR | 6,000.00 |
| BR02-B02U1 | Samuel Brown | 9624 Prospect Ave. San Jose, CA 95129 | U UB | 13,000.00 |
| BR02-T01U1 | James Taylor | 5411 Ocean Dr. Santa Cruz, CA 96080 | U UA | 41,500.00 |
| BR02-T02C1 | Peter Thomas | 1900 Stanford Ave. Palo Alto, CA 95432 | C TR | 9,000.00 |

Table 24 shows customer account numbers, loaded into the HDAM DB, which can be used in running the sample application. It also provides the corresponding customer names, loan amounts, and monthly payments.

*Table 24. Customer Loan Account Database (HDAM)*

| Customer Account Number | Customer Name | Loan Amount $ | Monthly Payment $ |
|---|---|---|---|
| BR01-B01A1 | Robert Bennett | 4,500.00 | 145.00 |
| BR01-A01V1 | Mary Adams | 1,200.00 | 106.06 |
| BR01-F01H1 | John Ford | 60,000.00 | 76.01 |
| BR01-H01M1 | Betty Hill | 60,000.00 | 482.77 |
| BR02-B02P1 | Samuel Brown | 1,000.00 | 88.38 |
| BR02-T01H1 | James Taylor | 6,000.00 | 76.01 |
| BR02-T02A1 | Peter Thomas | 4,000.00 | 129.07 |

# Chapter 13. Partitioning Sample Application

The IVP partitioning sample application demonstrates the conversion of a non-partitioning database to a partitioned database. This sample is based on the HIDAM database and applications of the IVP sample application but does not depend on it. Refer to Chapter 10, “IVP Sample Application,” on page 135 for information on the IVP sample application. This partitioning sample application is stand alone; that is, the IVP sample application does not need to be run.

The basic steps of the IVP sample partitioning application are:

1. Create and initialize a non-partitioned HIDAM database.
2. Unload the database using “Migrate = YES”.
3. Delete the old database from the RECON data sets.
4. Run DBDGEN and ACBGEN for the partitioned database. The IVP places the database definitions (DBDs) into IMS.DBDLIBP and the application control blocks (ACBs) into IMS.ACBLIBP to preserve the integrity of the sample applications.
5. Define the partitioned database using %DFSHALDB.
6. Allocate the partitioned database.
7. Initialize the partitioned database.
8. Re-load the partitioned database.
9. Image copy the partitioned database.
10. Initialize IMS and allow the user to run sample transactions.
11. Terminate IMS and perform clean-up activities.

The SDFSISRC target library contains the source for all programs, PSBs, DBDs, and MFSs, and other supporting materials used by this application.

The parts used by the IVP sample partitioning application are identified in Table 25. These parts are all installed by the IVP.

*Table 25. IVP Sample Partitioning Application Parts*

| Part Name | Language | PSB | MFS | TRANCD | DBD | Compile and BIND JCL | Description |
|---|---|---|---|---|---|---|---|
| DFSIVD1 | Assembler | n/a | n/a | n/a | DFSIVD1 | n/a[1] | PHIDAM/OSAM database |
| DFSIVD1 | Assembler | n/a | n/a | n/a | DFSIVD1I | n/a[1] | PHIDAM/OSAM Primary Index database |
| DFSIVA1 | Assembler | DFSIVP1 | DFSIVF1 | IVTNO | DFSIVD1 | n/a[1] | Non-conv. MPP |

## Partitioning Sample Program Functions

The application program action is determined by a process code provided with the input data. The process codes are ADD, DELETE, UPDATE, DISPLAY, and TADD. Except for TADD, the process codes are self-explanatory. TADD causes the application program to add a record to the database and issue a WTOR request. Any character string may be used to reply to the WTOR issued by the TADD process. The database is changed, but the change is not committed. The TADD process code is used during the recovery portions of the IVP scripts.

The online transactions are executed through an MFS block. For example, the DFSIVP1 program is executed by entering `/FOR IVTNO` at an IMS user terminal, and then entering a process code and data on the formatted screen. For more information on the application screen formats, see the screen format description.

When processing for the DFSIVP1 program is finished, press the Clear key and enter a new FORMAT command to execute a different application program.

## Screen Format

The MFS (message format service) blocks for some of the application programs use a screen format similar to that shown in Figure 75. To display or delete a record, only the process code and the last name field are required input. To add or replace a record, all input fields are required.

```
              ************************************************
              *     IMS INSTALLATION VERIFICATION PROCEDURE    *
              ************************************************


                                    TRANSACTION TYPE : NON-CONV (VSAM DB)
                                    DATE             : mm/dd/yyyy

          PROCESS  CODE  (*1) :  ////////
                                                       (*1) PROCESS CODE
          LAST  NAME          :  //////////                    ADD
                                                               DELETE
          FIRST  NAME         :  //////////                    UPDATE
                                                               DISPLAY
          EXTENSION  NUMBER   :  //////////                    TADD

          INTERNAL  ZIP CODE  :  ///////
                                 input  area

          ////////////////////////////////////          SEGMENT# :  0001
                          message  area
/////////////////////////////////////////////////////////////////////////////////
                              system  message  area
```

*Figure 75. IVP Screen Format*

## Databases: DFSIVD1 - HIDAM/OSAM

- Database Description

  **Database Name:** IVPDB1

  **Segment Name:** A1111111

  **Segment Length:** 40

  **Key Field Name:** A1111111

  **Key Field Length:** 10

- Database Record Format: See Table 26.

*Table 26. Database Record Format of DFSIVD1*

| OFFSET | LENGTH | FIELD NAME | DESCRIPTION |
|---|---|---|---|
| 0 | 10 | A1111111 | Last Name |
| 10 | 10 | N/A | First Name |
| 20 | 10 | N/A | Extension Number |
| 30 | 7 | N/A | Internal Zip Code |

*Table 26. Database Record Format of DFSIVD1 (continued)*

| OFFSET | LENGTH | FIELD NAME | DESCRIPTION |
|---|---|---|---|
| 37 | 3 | N/A | Reserved |

# Chapter 14. Other Sample Applications

The IVP provides sample applications in addition to the ones described in Chapter 10, “IVP Sample Application,” on page 135, Chapter 11, “IMS Sample Application,” on page 141, Chapter 12, “Fast Path Sample Application,” on page 155, and Chapter 13, “Partitioning Sample Application,” on page 165. For more information about each of the samples provided with the IVP, see the help information available in the IVP.

## Common Service Layer and Common Queue Server Sample Application

This sample application demonstrates how to use the Operations Manager (OM), Resource Manager (RM), Structured Call Interface (SCI), TSO single point of control (SPOC), and Common Queue Server (CQS). Specifically, this sample application demonstrates:

- Adding Common Service Layer members OM, RM, and SCI to IMS.PROCLIB to define an IMSplex
- Adding CQS members to IMS.PROCLIB
- Starting and stopping an IMSplex and CQS
- Starting and using the TSO SPOC application, including how to issue IMS type-1 and type-2 commands

The steps for this sample application are described in “Steps Ox for Common Service Layer and Common Queue Server Sample Application” on page 191.

**Related Reading:** For more information about OM, RM, SCI, and TSO SPOC, see *IMS Version 9: Common Service Layer Guide and Reference*. For detailed information about CQS, see *IMS Version 9: Common Queue Server Guide and Reference*.

## Enhanced Command Environment Sample Application

This sample application demonstrates how to use OM, SCI, and TSO SPOC without RM. Specifically, this sample application demonstrates:

- Adding OM and SCI members to IMS.PROCLIB to define an environment in which RM is not required, and type-2 commands can be issued
- Using TSO SPOC to issue commands to IMS

The steps for this sample application are described in “Steps Px for Enhanced Command Environment Sample Application” on page 192.

## Syntax Checker Sample Application

This sample application demonstrates how to use the Syntax Checker. Specifically, it demonstrates how to migrate an IMS Version 8 DFSPBxxx PROCLIB member to IMS Version 9.

The steps for this sample application are described in “Steps Ex for Prepare IVP Applications and System” on page 183.

**Related Reading:** For a detailed example of how to use the Syntax Checker, see *IMS Version 9: Installation Volume 2: System Definition and Tailoring*.

# Part 4. Appendixes

# Appendix A. IVP Variables

The listings in this chapter identify the user modifiable variables that the IVP Dialog uses when creating the JOBs and supporting materials used by the IVP process. The variables that are actually presented by the IVP Dialog are determined by your choice of options.

You can print additional documentation for the IVP variables using the DOC action during the variable-gathering phase of the IVP Dialog.

Use the IVP dialog to obtain current information regarding IVP variables.

In the lists in this chapter, the variables are presented in the same sequence in which they are used by the IVP dialog.

## General Variables

| Name | Title |
|---|---|
| **IXUIVPHQ** | IVP - High level DSNAME qualifier for IVP (IVP) data sets |
| **IXURLMHQ** | IVP - High level DSNAME qualifier for IRLM (RLM) data sets |
| **IXUDLBHQ** | IVP - High level DSNAME qualifier for IMS DLIB (DLB) data sets |
| **IXUSYSHQ** | IVP - High level DSNAME qualifier for IMS System (SYS) data sets |
| **IXUEXEHQ** | IVP - High level DSNAME qualifier for Execution (EXE) data sets |
| **IXUUTLHQ** | IVP - High level DSNAME qualifier for Utility (UTL) data sets |
| **IXUVSMHQ** | IVP - High level DSNAME qualifier for VSAM (VSM) data sets |
| **IXUSSCLS** | SMS - Storage Class |
| **IXUSMCLS** | SMS - Management Class |
| **IXUIVPVS** | IVP - VOLSER for IVP (IVP) data sets |
| **IXUDLBVS** | IVP - VOLSER for IMS distribution, DLIB, (DLB) data sets |
| **IXUSYSVS** | IVP - VOLSER for IMS System, (SYS) data sets |
| **IXUEX1VS** | IVP - VOLSER for IMS Execution (EX1) data sets - group 1 |
| **IXUEX2VS** | IVP - VOLSER for IMS Execution (EX2) data sets - group 2 |
| **IXUUTLVS** | IVP - VOLSER for Utility (UTL) data sets - non-VSAM |
| **IXUUTVVS** | IVP - VOLSER for Utility (UTL) data sets - VSAM |
| **IXUIVPDT** | IVP - Device type for IVP (IVP) data sets |
| **IXUDLBDT** | IVP - Device type for IMS Distribution (DLB) data sets |
| **IXUSYSDT** | IVP - Device type for IMS System (SYS) data sets |
| **IXUEX1DT** | IVP - Device type for IMS Execution (EX1) data sets |
| **IXUEX2DT** | IVP - Device type for IMS Execution (EX2) data sets |
| **IXUUTLDT** | IVP - Device type for Utility (UTL) data sets - non-VSAM |
| **IXUUTVDT** | IVP - Device type for Utility (UTL) data sets - VSAM |
| **IXUTEMPU** | IVP - Device type for temporary data sets |

| | |
|---|---|
| **IXUPDSFB** | IVP - BLKSIZE for PDSs with RECFM=FB and LRECL=80 - (PFB) |
| **IXUPDSU0** | IVP - BLKSIZE for PDSs with RECFM=U and LRECL=0 - (PU0) |
| **IXUSEQVB** | IVP - BLKSIZE for RECFM=VB sequential data sets - (SVB) |
| **IXUOBJFB** | IVP - BLKSIZE for OBJDSET (STAGE2 assembly output) (OBJ) |
| **IXURESU0** | IVP - BLKSIZE for IMS SDFSRESL (RESLIB) |
| **IXUOLDVB** | IVP - BLKSIZE for IMS OLDS (Online Log Data Set) (OLD) |
| **IXULOGVB** | IVP - BLKSIZE for IMS MONITOR and Batch Logs data sets (LOG) |
| **IXUTRCVB** | IVP - BLKSIZE for IMS External Trace data sets (TRC) |
| **IXUVSAMD** | IVP - BLKSIZE for VSAM data CIs (VSD) |
| **IXUGZDSN** | SMP - Fully Qualified DSNAME - IMS SMP/E Global Zone |
| **IXUTZONE** | SMP - Zone id - IMS SMP/E Target Zone |
| **IXUSPROC** | IVP - Fully qualified DSNAME - SYS1.PROCLIB |
| **IXUSMACL** | SMP - Fully qualified DSNAME - SYS1.MACLIB (or AMACLIB) |
| **IXUSAMOD** | SMP - Fully qualified DSNAME - SYS1.MODGEN (or AMODGEN) |
| **IXUSMACT** | SMP - Fully qualified DSNAME - HLASM Toolkit Feature MACLIB |
| **IXUUMAC1** | SMP - Fully qualified DSNAME - User Macro Library #1 >>> See description |
| **IXUUMAC2** | SMP - Fully qualified DSNAME - User Macro Library #2 >>> See description |
| **IXUUMAC3** | SMP - Fully qualified DSNAME - User Macro Library #3 >>> See description |
| **IXULELKD** | SMP - Language Environment® Library (SCEELKED) |
| **IXULESPC** | SMP - Language Environment Resident Library (SCEESPC) |
| **IXUJESTY** | JCL - JES VERSION. (JES2 OR JES3) |
| **IXUUPROC** | JCL - User PROCLIB DDNAME (JES2) or DDNAME suffix (JES3) |
| **IXUJOBNM** | JCL - JOBNAME - USE IVP JOBNAME (Y) OR TSO USERID (N) |
| **IXUJACT1** | JCL - JOB statement accounting information - Part 1 of 5 |
| **IXUJACT2** | JCL - JOB statement accounting information - Part 2 of 5 |
| **IXUJACT3** | JCL - JOB statement accounting information - Part 3 of 5 |
| **IXUJACT4** | JCL - JOB statement accounting information - Part 4 of 5 |
| **IXUJACT5** | JCL - JOB statement accounting information - Part 5 of 5 |
| **IXUPGMNM** | JCL - JOB statement programmer name |
| **IXUJCLAS** | JCL - JOB statement CLASS parameter - IVP JOBs |
| **IXUJCLS2** | JCL - JOB statement CLASS parameter - SYSDEF STAGE2 JOBs |
| **IXUMCLAS** | JCL - JOB statement MSGCLASS parameter |
| **IXUGROUP** | JCL - JOB statement GROUP parameter |
| **IXUUSRID** | JCL - JOB statement USER parameter |
| **IXUPASWD** | JCL - JOB statement PASSWORD parameter |

| | |
|---|---|
| **IXUNOTFY** | JCL - JOB statement NOTIFY parameter |
| **IXURGNSZ** | JCL - JOB statement REGION parameter (4M or larger) |
| **IXUJTIME** | JCL - JOB statement TIME parameter |
| **IXUSTIM1** | JCL - EXEC statement TIME parameter for SMP/E, STAGE1, STAGE2 |
| **IXUSTIM2** | JCL - EXEC statement TIME parameter for DL/I Batch and BMP Jobs |
| **IXUSTIM3** | JCL - EXEC statement TIME parameter for MPPs, IFPs, and so on |
| **IXUJESC1** | JCL - JESx statement - 1 of 5 |
| **IXUJESC2** | JCL - JESx statement - 2 of 5 |
| **IXUJESC3** | JCL - JESx statement - 3 of 5 |
| **IXUJESC4** | JCL - JESx statement - 4 of 5 |
| **IXUJESC5** | JCL - JESx statement - 5 of 5 |
| **IXUIMIDB** | GEN - IMSID for Batch >>> See description |
| **IXUIMID1** | GEN - IMSID for DB/DC (and DB/DC with XRF) >>> See description |
| **IXUIMID2** | GEN - IMSID for DB/DC with XRF >>> See description |
| **IXUIMID3** | GEN - IMSID for DBCTL >>> See description |
| **IXUIMID4** | GEN - IMSID for DCCTL >>> See description |
| **IXUCRC1** | GEN - Command Recognition Character (CRC) for CCTL - IVP1 |
| **IXUCRC2** | GEN - Command Recognition Character (CRC) for CCTL - IVP2 |
| **IXUCRC3** | GEN - Command Recognition Character (CRC) for CCTL - IVP3 |
| **IXUSVCT2** | GEN - IMS Type 2 SVC |
| **IXUSVCT4** | GEN - IMS Type 4 SVC (for DBRC) |
| **IXURLSS** | IVP - IRLM Subsystem Names |
| **IXURLNM1** | IVP - IRLM #1 JOBNAME |
| **IXURLNM2** | IVP - IRLM #2 JOBNAME |
| **IXUIMNM1** | IVP - IMS DB/DC JOBNAME and PROC name for system IVP1 |
| **IXUIMNM2** | IVP - IMS DB/DC JOBNAME and PROC name for system IVP2 |
| **IXUIMNM3** | IVP - IMS DBCTL JOBNAME and PROC name for system IVP3 |
| **IXUIMNM4** | IVP - IMS DCCTL JOBNAME and PROC name for system IVP4 |
| **IXURCNM1** | GEN - DBRC procedure name for system IVP1 |
| **IXURCNM2** | IVP - DBRC procedure name for system IVP2 |
| **IXURCNM3** | GEN - DBRC procedure name for system IVP3 |
| **IXURCNM4** | GEN - DBRC procedure name for system IVP4 |
| **IXUDLNM1** | GEN - DLISAS procedure name for system IVP1 |
| **IXUDLNM2** | IVP - DLISAS procedure name for system IVP2 |
| **IXUDLNM3** | GEN - DLISAS procedure name for system IVP3 |

| | |
|---|---|
| **IXUPRDR1** | GEN - IMSRDR procedure name for system IVP1 |
| **IXUPRDR2** | IVP - IMSRDR procedure name for system IVP2 |
| **IXUPRDR3** | IVP - IMSRDR procedure name for system IVP3 |
| **IXUPRDR4** | IVP - IMSRDR procedure name for system IVP4 |
| **IXUMPP11** | IVP - MPP #1 - JOBNAME and JOBS member name - IVP1 |
| **IXUMPP21** | IVP - MPP #1 - JOBNAME and JOBS member name - IVP2 |
| **IXUMPP41** | IVP - MPP #1 - JOBNAME and JOBS member name - IVP4 |
| **IXUIFP11** | IVP - IFP #1 - JOBNAME and JOBS member name - IVP1 |
| **IXUIFP21** | IVP - IFP #1 - JOBNAME and JOBS member name - IVP2 |
| **IXUIFP41** | IVP - IFP #1 - JOBNAME and JOBS member name - IVP4 |
| **IXUIFP12** | IVP - IFP #2 - JOBNAME and JOBS member name - IVP1 |
| **IXUIFP22** | IVP - IFP #2 - JOBNAME and JOBS member name - IVP2 |
| **IXUIFP13** | IVP - IFP #3 - JOBNAME and JOBS member name - IVP1 |
| **IXUVAPL1** | GEN - VTAM APPLID for system IVP1 |
| **IXUVAPL2** | GEN - VTAM APPLID for system IVP2 |
| **IXUVAPL4** | GEN - VTAM APPLID for system IVP4 |
| **IXUVPWD1** | GEN - VTAM PASSWORD for system IVP1 |
| **IXUVPWD2** | GEN - VTAM PASSWORD for system IVP2 |
| **IXUVPWD4** | GEN - VTAM PASSWORD for system IVP4 |
| **IXUVNDP1** | GEN - VTAM node name for the Master Terminal - IVP1 |
| **IXUVNDP2** | GEN - VTAM node name for the Master Terminal - IVP2 |
| **IXUVNDP4** | GEN - VTAM node name for the Master Terminal - IVP4 |
| **IXULTNP1** | GEN - LTERM name for the Master Terminal |
| **IXULTNS1** | GEN - LTERM name for the Secondary Master Terminal |
| **IXUVNDU1** | GEN - VTAM node name for IMS User Terminal #1 |
| **IXULTNU1** | GEN - LTERM name for IMS User Terminal #1 |
| **IXUVNDU2** | GEN - VTAM node name for IMS User Terminal #2 |
| **IXULTNU2** | GEN - LTERM name for IMS User Terminal #2 |
| **IXUSUFIX** | GEN - Character to be assigned as the IMS Nucleus suffix |
| **IXURSENM** | IVP - IMS RSE name for XRF |

## Data Set Allocation Variables

| Name | Title |
|---|---|
| **IXUOBJD** | OBJDSET allocation parameters - HLQ,VOL,BLK,TYP,PRM,SEC,DIR |
| **IXULGNI** | LGENIN allocation parameters - HLQ,VOL,BLK,TYP,PRM,SEC,DIR |
| **IXULGNO** | LGENOUT allocation parameters - HLQ,VOL,BLK,TYP,PRM,SEC,DIR |

| | |
|---|---|
| **IXUPROC** | PROCLIB allocation parameters - HLQ,VOL,BLK,TYP,PRM,SEC,DIR |
| **IXUMBKS** | MODBLKS allocation parameters - HLQ,VOL,BLK,TYP,PRM,SEC,DIR |
| **IXUMBKA** | MODBLKSA allocation parameters - HLQ,VOL,BLK,TYP,PRM,SEC,DIR |
| **IXUMBKB** | MODBLKSB allocation parameters - HLQ,VOL,BLK,TYP,PRM,SEC,DIR |
| **IXUMTRX** | MATRIX allocation parameters - HLQ,VOL,BLK,TYP,PRM,SEC,DIR |
| **IXUMRXA** | MATRIXA allocation parameters - HLQ,VOL,BLK,TYP,PRM,SEC,DIR |
| **IXUMRXB** | MATRIXB allocation parameters - HLQ,VOL,BLK,TYP,PRM,SEC,DIR |
| **IXUPGML** | PGMLIB allocation parameters - HLQ,VOL,BLK,TYP,PRM,SEC,DIR |
| **IXUPSBL** | PSBLIB allocation parameters - HLQ,VOL,BLK,TYP,PRM,SEC,DIR |
| **IXUDBDL** | DBDLIB allocation parameters - HLQ,VOL,BLK,TYP,PRM,SEC,DIR |
| **IXUACBL** | ACBLIB allocation parameters - HLQ,VOL,BLK,TYP,PRM,SEC,DIR |
| **IXUACBA** | ACBLIBA allocation parameters - HLQ,VOL,BLK,TYP,PRM,SEC,DIR |
| **IXUACBB** | ACBLIBB allocation parameters - HLQ,VOL,BLK,TYP,PRM,SEC,DIR |
| **IXUFMTL** | FORMAT allocation parameters - HLQ,VOL,BLK,TYP,PRM,SEC,DIR |
| **IXUFMTA** | FORMATA allocation parameters - HLQ,VOL,BLK,TYP,PRM,SEC,DIR |
| **IXUFMTB** | FORMATB allocation parameters - HLQ,VOL,BLK,TYP,PRM,SEC,DIR |
| **IXUTFMT** | TFORMAT allocation parameters - HLQ,VOL,BLK,TYP,PRM,SEC,DIR |
| **IXURFRL** | REFERAL allocation parameters - HLQ,VOL,BLK,TYP,PRM,SEC,DIR |
| **IXUMST1** | MODSTAT allocation parameters - HLQ,VOL,BLK,TYP,PRM |
| **IXUMST2** | MODSTAT2 allocation parameters - HLQ,VOL,BLK,TYP,PRM - XRF |
| **IXUMON1** | IMSMON allocation parameters - HLQ,VOL,BLK,TYP,PRM,SEC |
| **IXUMON2** | IMSMON2 allocation parameters - HLQ,VOL,BLK,TYP,PRM,SEC - IVP2 |
| **IXUTRC1** | DFSTRA01 allocation parameters - HLQ,VOL,BLK,TYP,PRM |
| **IXUTRC2** | DFSTRA02 allocation parameters - HLQ,VOL,BLK,TYP,PRM |
| **IXUTRC3** | DFSTRA01 allocation parameters - HLQ,VOL,BLK,TYP,PRM - IVP2 |
| **IXUTRC4** | DFSTRA02 allocation parameters - HLQ,VOL,BLK,TYP,PRM - IVP2 |
| **IXURDS1** | IMSRDS allocation parameters - HLQ,VOL,BLK,TYP,PRM |
| **IXURDS2** | IMSRDS2 allocation parameters - HLQ,VOL,BLK,TYP,PRM - XRF |
| **IXURCN1** | RECON1 allocation parameters - HLQ,VOL,BLK,TYP,PRM,SEC |
| **IXURCN2** | RECON2 allocation parameters - HLQ,VOL,BLK,TYP,PRM,SEC |

| | |
|---|---|
| **IXURCN3** | RECON3 allocation parameters - HLQ,VOL,BLK,TYP,PRM,SEC |
| **IXUOLP0** | DFSOLP00 allocation parameters - HLQ,VOL,BLK,TYP,PRM |
| **IXUOLP1** | DFSOLP01 allocation parameters - HLQ,VOL,BLK,TYP,PRM |
| **IXUOLP2** | DFSOLP02 allocation parameters - HLQ,VOL,BLK,TYP,PRM |
| **IXUOLP3** | DFSOLP03 allocation parameters - HLQ,VOL,BLK,TYP,PRM |
| **IXUOLP4** | DFSOLP04 allocation parameters - HLQ,VOL,BLK,TYP,PRM |
| **IXUOLP5** | DFSOLP05 allocation parameters - HLQ,VOL,BLK,TYP,PRM |
| **IXUOLP9** | DFSOLP99 allocation parameters - HLQ,VOL,BLK,TYP,PRM |
| **IXUOLS0** | DFSOLS00 allocation parameters - HLQ,VOL,BLK,TYP,PRM |
| **IXUOLS1** | DFSOLS01 allocation parameters - HLQ,VOL,BLK,TYP,PRM |
| **IXUOLS2** | DFSOLS02 allocation parameters - HLQ,VOL,BLK,TYP,PRM |
| **IXUOLS3** | DFSOLS03 allocation parameters - HLQ,VOL,BLK,TYP,PRM |
| **IXUOLS4** | DFSOLS04 allocation parameters - HLQ,VOL,BLK,TYP,PRM |
| **IXUOLS5** | DFSOLS05 allocation parameters - HLQ,VOL,BLK,TYP,PRM |
| **IXUOLS9** | DFSOLS99 allocation parameters - HLQ,VOL,BLK,TYP,PRM |
| **IXUWAD0** | DFSWADS0 allocation parameters - HLQ,VOL,BLK,TYP,PRM |
| **IXUWAD1** | DFSWADS1 allocation parameters - HLQ,VOL,BLK,TYP,PRM |
| **IXUWAD8** | DFSWADS8 allocation parameters - HLQ,VOL,BLK,TYP,PRM |
| **IXUWAD9** | DFSWADS9 allocation parameters - HLQ,VOL,BLK,TYP,PRM |
| **IXUJOB1** | JOBS allocation parameters - HLQ,VOL,BLK,TYP,PRM,SEC,DIR |
| **IXUJOB2** | JOBS allocation parameters - HLQ,VOL,BLK,TYP,PRM,SEC,DIR - IVP |
| **IXUTCFS** | TCFSLIB allocation parameters - HLQ,VOL,BLK,TYP,PRM,SEC,DIR |
| **IXUQBK1** | QBLKS allocation parameters - HLQ,VOL,BLK,TYP,PRM |
| **IXUQBK2** | QBLKS allocation parameters - HLQ,VOL,BLK,TYP,PRM - IVP2 |
| **IXUQBL1** | QBLKSL allocation parameters - HLQ,VOL,BLK,TYP,PRM - XRF |
| **IXUQBL2** | QBLKSL allocation parameters - HLQ,VOL,BLK,TYP,PRM - IVP2 |
| **IXUSHM1** | SHMSG allocation parameters - HLQ,VOL,BLK,TYP,PRM |
| **IXUSHM2** | SHMSG allocation parameters - HLQ,VOL,BLK,TYP,PRM - IVP2 |
| **IXUSHM3** | SHMSG1 allocation parameters - HLQ,VOL,BLK,TYP,PRM |
| **IXUSHM4** | SHMSG1 allocation parameters - HLQ,VOL,BLK,TYP,PRM - IVP2 |
| **IXUSHL1** | SHMSGL allocation parameters - HLQ,VOL,BLK,TYP,PRM - XRF |
| **IXUSHL2** | SHMSGL allocation parameters - HLQ,VOL,BLK,TYP,PRM - IVP2 |
| **IXULGM1** | LGMSG allocation parameters - HLQ,VOL,BLK,TYP,PRM |
| **IXULGM2** | LGMSG allocation parameters - HLQ,VOL,BLK,TYP,PRM - IVP2 |
| **IXULGM3** | LGMSG1 allocation parameters - HLQ,VOL,BLK,TYP,PRM |
| **IXULGM4** | LGMSG1 allocation parameters - HLQ,VOL,BLK,TYP,PRM - IVP2 |
| **IXULGM5** | LGMSG2 allocation parameters - HLQ,VOL,BLK,TYP,PRM |

| | |
|---|---|
| **IXULGM6** | LGMSG2 allocation parameters - HLQ,VOL,BLK,TYP,PRM - IVP2 |
| **IXULGL1** | LGMSGL allocation parameters - HLQ,VOL,BLK,TYP,PRM - XRF |
| **IXULGL2** | LGMSGL allocation parameters - HLQ,VOL,BLK,TYP,PRM - IVP2 |
| **IXUSPL1** | SYSO1 allocation parameters - HLQ,VOL,BLK,TYP,PRM |
| **IXUSP12** | SYSO1 allocation parameters - HLQ,VOL,BLK,TYP,PRM - IVP2 |
| **IXUSPL2** | SYSO2 allocation parameters - HLQ,VOL,BLK,TYP,PRM |
| **IXUSP22** | SYSO2 allocation parameters - HLQ,VOL,BLK,TYP,PRM - IVP2 |
| **IXUSPL3** | SYSO3 allocation parameters - HLQ,VOL,BLK,TYP,PRM |
| **IXUSP32** | SYSO3 allocation parameters - HLQ,VOL,BLK,TYP,PRM - IVP2 |
| **IXUMCP1** | MSDBCP1 allocation parameters - HLQ,VOL,BLK,TYP,PRM |
| **IXUMCP2** | MSDBCP2 allocation parameters - HLQ,VOL,BLK,TYP,PRM |
| **IXUMCP3** | MSDBCP3 allocation parameters - HLQ,VOL,BLK,TYP,PRM - XRF |
| **IXUMCP4** | MSDBCP4 allocation parameters - HLQ,VOL,BLK,TYP,PRM - XRF |
| **IXUMDM1** | MSDBDUMP allocation parameters - HLQ,VOL,BLK,TYP,PRM |
| **IXUMDM2** | MSDBDMP2 allocation parameters - HLQ,VOL,BLK,TYP,PRM - XRF |

# Appendix B. IVP JOBs and TASKs

The listings in this chapter identify all of the JOBs and TASKs that can be used during the IVP process. The JOBs and TASKs that are actually presented by the IVP dialog are determined by your choice of environment option and distribution media.

The final list in this group, “Steps Zx for Index of Additional PDS Members” on page 192 does not identify JOBs or TASKs in the IVP process. It identifies members of DFSSLIB and DFSISRC that support the IVP process.

Additional documentation for the IVP JOBs and TASKs can be printed using the DOC action during either the File Tailoring phase or the Execution phase of the IVP dialog.

Use the IVP dialog to obtain current information regarding IVP JOBs and TASKs.

In the lists in this chapter, the JOBs and TASKs are presented in the same sequence that is used by the IVP dialog. The naming convention used for JOBs and TASKs is:

IV_ssnnt

Where:

- _ - (underscore) identifies the selected environment option:
  - 1 - DBB - Batch
  - 2 - DBC - DBCTL
  - 3 - DBT - DB/DC
  - 4 - XRF - DB/DC with XRF
  - 5 - DCC - DCCTL
- ss - identifies the IVP step
- nn - a number assigned by IVP that provides a unique name
- t - identifies the item type:
  - J - JOB

    A PDS member with the same name is placed into INSTALIB during the File Tailoring phase. Item types J are intended to be submitted for execution.
  - T - TASK

    TASKs represent items of work that must be prepared by the user. For some TASKs, an example is provided in INSTALIB. These examples are not intended for execution.
  - N - Supporting materials

    INSTALIB can also contain members that support other JOBs (such as CLISTs and control statements).

## Steps Ax for IVP Preparation

| Name | Title |
|---|---|
| **IV_A001T** | NOTE - Introduction - Dialog Set-up |
| **IV_A301N** | CLIST - Offline Formatted Dump - IVP1/2/3/4 |
| **IV_A302N** | CLIST - Offline Dump Formatter - BATCH |

| | |
|---|---|
| **IV_A303N** | CNTRL - MSDB Load Cntrl Stmts - DBFSAMD1/DBFSAMD2 |

## Steps Cx for System Definition (SYSDEF)

| Name | Title |
|---|---|
| **IV_C001T** | NOTE - Introduction - System Definition |
| **IV_C101J** | JOB - Alloc SYSDEF Data Sets |
| **IV_C201T** | TASK - Browse the STAGE1 Source Deck |
| **IV_C202J** | JOB - Run SYSDEF Preprocessor |
| **IV_C203J** | JOB - Run SYSDEF STAGE1 |
| **IV_C301J** | JOB - Run SYSDEF STAGE2 >>> See Desc. |
| **IV_C401J** | JOB - Run SMP/E JCLIN |
| **IV_C405T** | TASK - Edit IMS PROCLIB Members |

## Steps Dx for Interface IMS to z/OS and VTAM

| Name | Title |
|---|---|
| **IV_D001T** | NOTE - Introduction - MVS and VTAM Interface |
| **IV_D101T** | XMPL - Allocate Interface Data Sets |
| **IV_D201T** | XMPL - Update JESx Procedure |
| **IV_D202T** | XMPL - Update BLSCECT - DFSOFMD0 / DXRRLM50 |
| **IV_D203T** | XMPL - Update IEAAPFxx or PROGxx - Authorized DSN |
| **IV_D204T** | XMPL - Update IEALPAxx - MLPA Modules |
| **IV_D206T** | XMPL - Update IEFSSNxx - RLM Subsystem Names |
| **IV_D207T** | XMPL - Update IEASVCxx - SVC Numbers |
| **IV_D208T** | XMPL - Update SCHEDxx - PPT Entries |
| **IV_D209T** | XMPL - Install TYPE 2 SVC |
| **IV_D210T** | XMPL - Link-edit TYPE 4 SVC |
| **IV_D211T** | XMPL - Link-edit Resource Cleanup Module |
| **IV_D212T** | XMPL - Link-edit Abend Formatting Module |
| **IV_D213T** | XMPL - Add DFSMRCL0 to IEAVTRML CSECT of IGC0001C |
| **IV_D214T** | XMPL - Add DFSAFMD0 to IEAVADFM CSECT of IGC0805A |
| **IV_D215T** | XMPL - Update BLSCECTX IPCS Exits |
| **IV_D216T** | XMPL - IPCS ISPF data set Concatenation |
| **IV_D217T** | XMPL - Define MVS Dump Options |
| **IV_D218T** | XMPL - Define RACF Security |
| **IV_D301T** | XMPL - Define VTAM Application Nodes |
| **IV_D302T** | XMPL - Define VTAM Network Nodes |
| **IV_D303T** | XMPL - Define VTAM Logon Mode Tables |
| **IV_D304T** | XMPL - Define VTAM Interpret Tables |

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|---|---|
| **IV_D305T** | XMPL - Define VTAM USS Definition Tables |
| **IV_D306T** | XMPL - Define VTAM Configuration List (ATCCONxx) |
| **IV_D307T** | XMPL - Define VTAM Start Option List (ATCSTRxx) |
| **IV_D308T** | XMPL - Copy VTAM Procedure to SYS1.PROCLIB |
| **IV_D401T** | TASK - IPL MVS with MLPA or CLPA Option |

## Steps Ex for Prepare IVP Applications and System

| Name | Title |
|---|---|
| **IV_E001T** | NOTE - Introduction - Build IVP Appl / System |
| **IV_E101J** | JOB - Allocate Data Sets |
| **IV_E201J** | JOB - DBDGENs |
| **IV_E202J** | JOB - PSBGENs |
| **IV_E203J** | JOB - ACBGEN |
| **IV_E204J** | JOB - MFS Language Utility |
| **IV_E206J** | JOB - Assembly/Link-edit Applications |
| **IV_E301J** | JOB - Create Dynamic Allocation Members |
| **IV_E302J** | JOB - Add Control Statements to IMS.PROCLIB |
| **IV_E303J** | JOB - Add CSL Members to IMS.PROCLIB |
| **IV_E304J** | JOB - Add CQS Members to IMS.PROCLIB |
| **IV_E305J** | JOB - Define EXEC PARM Defaults |
| **IV_E306T** | TASK - Syntax Checker Sample |
| **IV_E307J** | JOB - Define CFRM policy for CQS to MVS |
| **IV_E308J** | JOB - Define DRA Start-up Table |
| **IV_E309J** | JOB - Verify TCO Scripts |
| **IV_E3010J** | JOB - Create XRF Procedures |
| **IV_E3011T** | TASK - Modify IMS PROCs >>> SEE DESCRIPTION |
| **IV_E312J** | JOB - Copy STC Procedures to SYS1.PROCLIB |
| **IV_E313J** | JOB - Copy Jobs to IMS JOBS |
| **IV_E314J** | JOB - Copy DBRC Skeletons to IMS.PROCLIB |
| **IV_E315J** | JOB - ASM/LKED DFSISIS0 - Replace Default AGN Exit |
| **IV_E316J** | JOB - Establish IMS Security |
| **IV_E317J** | ASM/LKED RACF Security Exits |
| **IV_E318J** | JOB - Initialize MODSTAT |
| **IV_E320J** | JOB - Copy Staging Libraries |
| **IV_E401T** | TASK - Back Up System |

## Steps Fx for IVP Execution - DBB System (Batch)

| Name | Title |
|---|---|

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|---|---|
| **IV_F001T** | NOTE - Introduction - IVP Execution - DBB |
| **IV_F101J** | JOB - Allocate Data Sets |
| **IV_F102J** | JOB - Initialize RECON / Register Data Bases |
| **IV_F103J** | JOB - Data Base Initial Load |
| **IV_F104J** | JOB - Batch Image Copy |
| **IV_F105T** | MVS - Clear MVS DUMPXX Data Sets |
| **IV_F201J** | JOB - Start IRLM #1 |
| **IV_F202J** | JOB - Start IRLM #2 |
| **IV_F204J** | JOB - FF HIDAM Update |
| **IV_F205J** | JOB - FF HDAM Update |
| **IV_F206J** | JOB - FF HIDAM Update |
| **IV_F207J** | JOB - FF HDAM Update |
| **IV_F208T** | MVS - Cancel jobs with dump |
| **IV_F209J** | JOB - Batch Backout Utility - HIDAM Updates |
| **IV_F210J** | JOB - Batch Backout Utility - HDAM Updates |
| **IV_F211J** | JOB - FF HIDAM Update |
| **IV_F212J** | JOB - FF HDAM Update |
| **IV_F213T** | MVS - Stop IRLM #1 and IRLM #2 |
| **IV_F301J** | JOB - List RECON |
| **IV_F302J** | JOB - Print a log with DFDSS |
| **IV_F303J** | JOB - Print DB Monitor Report |
| **IV_F304J** | JOB - Offline Formatted Dump Utility |
| **IV_F305J** | JOB - File Select and Print Utility |
| **IV_F401J** | JOB - Scratch Data Sets |

## Steps Gx for IVP Execution - DBC System (DBCTL)

| Name | Title |
|---|---|
| **IV_G001T** | NOTE - Introduction - IVP Execution - DBC |
| **IV_G101J** | JOB - Allocate Data Sets |
| **IV_G102J** | JOB - Initialize RECON / Register Data Bases |
| **IV_G103J** | JOB - Data Base Initial Load |
| **IV_G104J** | JOB - Batch Image Copy |
| **IV_G105T** | MVS - Clear MVS DUMPXX Data Sets |
| **IV_G201J** | JOB - Start IRLM #1 |
| **IV_G202J** | JOB - Start IRLM #2 |
| **IV_G203J** | JOB - Start DBCTL Region - IVP3 |
| **IV_G204T** | MVS - Cold Start DBCTL |
| **IV_G205T** | MVS - Review DBCTL Operator Commands |

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|---|---|
| **IV_G206J** | JOB - FP BMP - DEDB Load |
| **IV_G207J** | JOB - FF BMP - Online Image Copy |
| **IV_G208J** | JOB - Concurrent Image Copy |
| **IV_G209J** | JOB - FF BMP - HIDAM Update |
| **IV_G210J** | JOB - FF BMP - HDAM Update |
| **IV_G211J** | JOB - FP BMP - DEDB Update |
| **IV_G212T** | MVS - Stop DBCTL with a /CHE FREEZE |
| **IV_G213J** | JOB - Start DBCTL Region - IVP3 |
| **IV_G214T** | MVS - Warm Start DBCTL |
| **IV_G215J** | JOB - FF BMP - HIDAM Update |
| **IV_G216J** | JOB - FF BMP - HDAM Update |
| **IV_G217J** | JOB - FP BMP - DEDB Update |
| **IV_G218T** | MVS - Stop BMP Regions with a /STO REGION ABDUMP |
| **IV_G219J** | JOB - FF BMP - HIDAM Update |
| **IV_G220J** | JOB - FF BMP - HDAM Update |
| **IV_G221J** | JOB - FP BMP - DEDB Update |
| **IV_G222T** | MVS - Stop DBCTL with a MODIFY IMS,DUMP |
| **IV_G223J** | JOB - Log Recovery Utility - CLS / WADS |
| **IV_G224J** | JOB - Start DBCTL Region - IVP3 |
| **IV_G225T** | MVS - Emergency Restart DBCTL |
| **IV_G226J** | JOB - FF BMP - HIDAM Update |
| **IV_G227J** | JOB - FF BMP - HDAM Update |
| **IV_G228J** | JOB - FP BMP - DEDB Update |
| **IV_G229T** | MVS - Stop DBCTL with /CHE FREEZE |
| **IV_G230T** | MVS - Stop IRLM #1 and IRLM #2 |
| **IV_G301J** | JOB - List RECON |
| **IV_G302J** | JOB - Print an OLDS with DFDSS |
| **IV_G303J** | JOB - Print DC Monitor Reports |
| **IV_G304J** | JOB - Offline Formatted Dump Utility |
| **IV_G305J** | JOB - Print Fast Path Log Analysis |
| **IV_G306J** | JOB - Log Recovery Utility - PSB Mode |
| **IV_G307J** | JOB - File Select and Print Utility |
| **IV_G308J** | JOB - Program Isolation (PI) Trace Report |
| **IV_G309T** | TASK - IPCS Dump Sample |
| **IV_G401J** | JOB - Scratch Data Sets |

## Steps Hx for IVP Execution - DBT System (DB/DC)

| Name | Title |
|---|---|

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|---|---|
| **IV_H001T** | NOTE - Introduction - IVP Execution - DBT |
| **IV_H101J** | JOB - Allocate Data Sets |
| **IV_H102J** | JOB - Initialize RECON / Register Data Bases |
| **IV_H103J** | JOB - Data Base Initial Load |
| **IV_H104J** | JOB - Batch Image Copy |
| **IV_H105T** | MVS - Clear OS/390 DUMPXX Data Sets |
| **IV_H201J** | JOB - Start IRLM #1 |
| **IV_H202J** | JOB - Start IRLM #2 |
| **IV_H203J** | JOB - Start DB/DC Region IVP1 |
| **IV_H204T** | IVP1 - Cold Start IMS |
| **IV_H205T** | IVP1 - Review MTO Operator Commands |
| **IV_H206T** | USER - Review User Operator Commands |
| **IV_H207J** | JOB - FP BMP - DEDB Load |
| **IV_H208J** | JOB - FF BMP - Online Image Copy |
| **IV_H209J** | JOB - Concurrent Image Copy |
| **IV_H210J** | JOB - FF BMP - HIDAM Update |
| **IV_H211J** | JOB - FF BMP - HDAM Update |
| **IV_H212J** | JOB - FP BMP - DEDB Update |
| **IV_H213T** | USER - FF MPP Transactions |
| **IV_H214T** | USER - FP IFP Transactions |
| **IV_H215T** | IVP1 - Stop IMS with a /CHE DUMPQ |
| **IV_H216J** | JOB - Start DB/DC Region - IVP1 |
| **IV_H217T** | IVP1 - Warm Start IMS |
| **IV_H218J** | JOB - FF BMP HIDAM Update |
| **IV_H219J** | JOB - FF BMP HDAM Update |
| **IV_H220J** | JOB - FP BMP DEDB Update |
| **IV_H221T** | USER - FF MPP Transaction |
| **IV_H222T** | IVP1 - Stop Dependent Region /STO REGION ABDUMP |
| **IV_H223J** | JOB - FF BMP - HIDAM Update |
| **IV_H224J** | JOB - FF BMP - HDAM Update |
| **IV_H225J** | JOB - FP BMP - DEDB Update |
| **IV_H226T** | USER - FF MPP Transaction |
| **IV_H227J** | JOB - FF BMP - HIDAM Update |
| **IV_H228J** | JOB - FF BMP - HDAM Update |
| **IV_H229J** | JOB - FP BMP - DEDB Update |
| **IV_H230T** | USER - FF MPP Transaction |
| **IV_H231T** | MVS - Stop IMS with a MODIFY IMS,DUMP |

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| **IV_H232J** | JOB - Log Recovery Utility - CLS/WADS |
| **IV_H233J** | JOB - Start DB/DC Region - IVP1 |
| **IV_H234T** | IVP1 - Emergency Restart IMS |
| **IV_H235J** | JOB - FF BMP - HIDAM Update |
| **IV_H236J** | JOB - FF BMP - HDAM Update |
| **IV_H237J** | JOB - FP BMP - DEDB Update |
| **IV_H238T** | USER - FF MPP Transaction |
| **IV_H239T** | IVP1 - Stop IMS with a /CHE FREEZE |
| **IV_H240T** | MVS - Stop IRLM #1 and IRLM #2 |
| **IV_H301J** | JOB - List RECON |
| **IV_H302J** | JOB - Print an OLDS with DFDSS |
| **IV_H303J** | JOB - Print DC Monitor Reports |
| **IV_H304J** | JOB - Offline Formatted Dump Utility |
| **IV_H305J** | JOB - Print Log Statistics |
| **IV_H306J** | JOB - Print Log Transaction Analysis |
| **IV_H307J** | JOB - Print Fast Path Log Analysis |
| **IV_H308J** | JOB - Log Recovery Utility - PSB Mode |
| **IV_H309J** | JOB - File Select and Print Utility |
| **IV_H310J** | JOB - PI Trace Report Utility |
| **IV_H311T** | TASK - IPCS Dump Sample |
| **IV_H401J** | JOB - Scratch Data Sets |

## Steps Ix for IVP Execution - DB/DC with XRF System (XRF)

| Name | Title |
|---|---|
| **IV_I001T** | NOTE - Introduction - IVP Execution - XRF |
| **IV_I101J** | JOB - Allocate Data Sets |
| **IV_I102J** | JOB - Initialize RECON / Register Data Sets |
| **IV_I103J** | JOB - Data Base Initial Load |
| **IV_I104J** | JOB - Batch Image Copy |
| **IV_I105T** | MVS - Clear OS/390 DUMPXX Data Sets |
| **IV_I201J** | JOB - Start IRLM #1 |
| **IV_I202J** | JOB - Start IRLM #2 |
| **IV_I203J** | JOB - Start DB/DC Region - IVP1 |
| **IV_I204T** | IVP1 - Cold Start IVP1 as Active |
| **IV_I205J** | JOB - Start DB/DC Region - IVP2 |
| **IV_I206T** | IVP2 - Emergency Restart IVP2 as Alternate |
| **IV_I207J** | JOB - FP BMP - DEDB Load |
| **IV_I208T** | USER - FF MPP Transactions |

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| **IV_I209T** | USER - FP IFP Transactions |
| **IV_I210T** | IVP1 - /DIS HSB |
| **IV_I211T** | IVP2 - /DIS HSB |
| **IV_I212T** | OS/390 - TKOVR IVP1 to IVP2 with a MODIFY IVP1,STOP |
| **IV_I213T** | IVP2 - /UNLOCK SYSTEM |
| **IV_I214J** | JOB - Start DB/DC Region - IVP1 |
| **IV_I215T** | IVP1 - Emergency Restart IVP1 as Alternate |
| **IV_I216T** | USER - FF MPP transactions |
| **IV_I217T** | USER - FP IFP transactions |
| **IV_I218T** | IVP1 - TKOVER IVP2 to IVP1 with /SWI SYSTEM FORCE |
| **IV_I219T** | IVP1 - /UNLOCK SYSTEM |
| **IV_I220J** | JOB - Start DB/DC Region - IVP2 |
| **IV_I221T** | IVP2 - Emergency Restart IVP2 as Alternate |
| **IV_I222T** | USER - FF MPP Transactions |
| **IV_I223T** | USER - FP IFP Transactions |
| **IV_I224T** | IVP2 - Stop IVP2 with a /STO BACKUP |
| **IV_I225T** | IVP1 - Stop IVP1 with a /CHE FREEZE |
| **IV_I226T** | MVS - Stop IRLM #1 and IRLM #2 |
| **IV_I301J** | JOB - List RECON |
| **IV_I401J** | JOB - Scratch Data Sets |

## Steps Jx for IVP Execution - DCC System (DCCTL)

| Name | Title |
|---|---|
| **IV_J001T** | NOTE - Introduction - IVP Execution - DCC |
| **IV_J101J** | JOB - Allocate Data Sets |
| **IV_J102J** | JOB - Initialize RECON |
| **IV_J103T** | MVS - Clear MVS DUMPxx Data Sets |
| **IV_J201J** | JOB - Start DCCTL Region IVP4 |
| **IV_J202T** | IVP4 - Cold Start IMS |
| **IV_J203T** | IVP4 - Review MTO Operator Commands |
| **IV_J204T** | USER - Review User Operator Commands |
| **IV_J205J** | JOB - Start the WFI BMP |
| **IV_J206T** | USER - BMP/MPP/IFP Transactions |
| **IV_J208T** | IVP4 - Stop IMS with a /CHE DUMPQ |
| **IV_J209J** | JOB - Start DCCTL Region IVP4 |
| **IV_J210T** | IVP4 - Warm Start IMS |
| **IV_J211J** | JOB - Start the WFI BMP |
| **IV_J212T** | USER - BMP TADD Transaction |

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| **IV_J214T** | IVP4 - Abend the WFI BMP - /STO REGION ABDUMP |
| **IV_J215J** | JOB - Restart (XRST) the WFI BMP |
| **IV_J216T** | USER - BMP TADD Transaction |
| **IV_J218T** | MVS - Stop IMS with a MODIFY IMS,DUMP |
| **IV_J219J** | JOB - Log Recovery Utility - CLS/WADS |
| **IV_J220J** | JOB - Start DCCTL Region IVP4 |
| **IV_J221T** | IVP4 - Emergency Restart IMS |
| **IV_J222J** | JOB - Restart (XRST) the WFI BMP |
| **IV_J223T** | USER - WFI BMP TADD Transaction |
| **IV_J224T** | USER - BMP/MPP/IFP Transactions |
| **IV_J225T** | IVP4 - Stop IMS with a /CHE FREEZE |
| **IV_J301J** | JOB - List RECON |
| **IV_J302J** | JOB - Print an OLDS with DFDSS |
| **IV_J303J** | JOB - Print DC Monitor Reports |
| **IV_J304J** | JOB - Offline Formatted Dump Utility |
| **IV_J305J** | JOB - Print Log Statistics |
| **IV_J306J** | JOB - Print Log Transaction Analysis |
| **IV_J307J** | JOB - Log Recovery Utility - PSB Mode |
| **IV_J308J** | JOB - File Select and Print Utility |
| **IV_J309T** | TASK - IPCS Dump Sample |
| **IV_J401J** | JOB - Scratch Data Sets |

## Steps Lx for Execution - IMS Sample Application

| Name | Title |
|---|---|
| **IV_L001T** | NOTE - Introduction - Execution - IMS Sample |
| **IV_L101J** | JOB - Allocate Data Sets |
| **IV_L102J** | JOB - Initialize RECON / Register Data Bases |
| **IV_L103J** | JOB - Data Base Initial Load |
| **IV_L104J** | JOB - Batch Image Copy |
| **IV_L201J** | JOB - Start IRLM #1 |
| **IV_L202J** | JOB - Start IRLM #2 |
| **IV_L203J** | JOB - Dump Data Base (DBBBATCH) |
| **IV_L204J** | JOB - Start DBCTL Region - IVP3 |
| **IV_L205T** | MVS - Cold Start IMS - IVP3 |
| **IV_L206J** | JOB - Dump Data Base using DFSDDLT0 (BMP) |
| **IV_L207T** | MVS - Stop IMS with a /CHE FREEZE |
| **IV_L208J** | JOB - Start DB/DC Region - IVP1 |
| **IV_L209T** | IVP1 - Cold Start IMS - IVP1 |

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| **IV_L210J** | JOB - Dump Data Base Using DFSDDLT0 (BMP) |
| **IV_L211T** | USER - Sample Transactions |
| **IV_L212T** | IVP1 - Stop IMS with a /CHE FREEZE |
| **IV_L213T** | OS/390 - Stop IRLM #1 and IRLM #2 |
| **IV_L301J** | JOB - List RECON |
| **IV_L401J** | JOB - Scratch Data Sets |

## Steps Mx for Execution - Fast Path Sample Application

| Name | Title |
|---|---|
| **IV_M001T** | NOTE - Introduction - Execution - FP Sample |
| **IV_M101J** | JOB - Allocate Data Sets |
| **IV_M102J** | JOB - Initialize RECON / Register Data Bases |
| **IV_M103J** | JOB - Data Base Initial Load |
| **IV_M104J** | JOB - Batch Image Copy |
| **IV_M201J** | JOB - Start IRLM #1 |
| **IV_M202J** | JOB - Start IRLM #2 |
| **IV_M203J** | JOB - Start DB/DC Region - IVP1 |
| **IV_M204T** | IVP1 - Cold Start IMS - IVP1 |
| **IV_M205J** | JOB - BMP to load DEDB |
| **IV_M206T** | USER - Sample Transactions |
| **IV_M207T** | IVP1 - /CHE FREEZE |
| **IV_M208T** | MVS - Stop IRLM #1 and IRLM #2 |
| **IV_M301J** | JOB - List RECON |
| **IV_M401J** | JOB - Scratch Data Sets |

## Steps Nx for Execution - Partition Database Sample Application

| Name | Title |
|---|---|
| **IV_N001T** | NOTE - Introduction - Partition Data Base Sample |
| **IV_N101J** | JOB - Allocate Data Sets |
| **IV_N102J** | JOB - Initialize RECON / Register Data Bases |
| **IV_N103J** | JOB - Data Base Initial Load |
| **IV_N202J** | JOB - Unload Data Base - Migrate = YES |
| **IV_N203J** | JOB - Delete DBD |
| **IV_N204J** | JOB - DBDGEN |
| **IV_N205J** | JOB - ACBGEN |
| **IV_N206T** | TASK - Partition Data Base Using %DFSHALDB |
| **IV_N207J** | JOB - Allocate Partitioned Data Bases |
| **IV_N208J** | JOB - Initialize Partitioned Data Bases |

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| **IV_N209J** | JOB - Re-load Data Bases |
| **IV_N210J** | JOB - Batch Image Copy |
| **IV_N211J** | JOB - Copy Staging Library |
| **IV_N301J** | JOB - Start IRLM #1 |
| **IV_N302J** | JOB - Start IRLM #2 |
| **IV_N303J** | JOB - Start DB/DC Region - IVP1 |
| **IV_N304T** | JOB - Cold Start IMS - IVP1 |
| **IV_N305T** | USER - Sample Transactions |
| **IV_N306T** | IVP1 - Stop IMS with a /CHE FREEZE |
| **IV_N307T** | MVS - Stop IRLM #1 and IRLM #2 |
| **IV_N313J** | JOB - Start DBCTL Region - IVP3 |
| **IV_N314T** | MVS - Cold Start DBCTL |
| **IV_N315J** | JOB - FF BMP - HIDAM Update |
| **IV_N316T** | MVS - Stop DBCTL with a /CHE FREEZE |
| **IV_N317T** | OS/390 - Stop IRLM #1 and IRLM #2 |
| **IV_N401J** | JOB - Cleanup |
| **IV_N402J** | JOB - Scratch Data Sets |

## Steps Ox for Common Service Layer and Common Queue Server Sample Application

| Name | Title |
|---|---|
| **IV_O001T** | NOTE - Introduction - Common Service Layer and CQS Sample |
| **IV_O101J** | JOB - Allocate Data Sets |
| **IV_O102J** | JOB - Allocate CQS Execution Data Sets |
| **IV_O103J** | JOB - Initialize RECON/Register Data Bases |
| **IV_O104J** | JOB - Data Base Initial Load |
| **IV_O105J** | JOB - Batch Image Copy |
| **IV_O201J** | JOB - Start SCI |
| **IV_O202J** | JOB - Start OM |
| **IV_O203J** | JOB - Start CQS |
| **IV_O204J** | JOB - Start RM |
| **IV_O205T** | TASK - SPOC Sample I |
| **IV_O210J** | JOB - Start IRLM #1 |
| **IV_O211J** | JOB - Start IRLM #2 |
| **IV_O214J** | JOB - Start DCCTL Region IVP4 |
| **IV_O215J** | JOB - Start DB/DC Region IVP1 |
| **IV_O216J** | JOB - Start DBCTL Region - IVP3 |
| **IV_O217T** | IVP1 - Cold Start IMS |

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|---|---|
| **IV_O218T** | IVP3 - Cold Start DBCTL |
| **IV_O219T** | IVP4 - Cold Start DCCTL |
| **IV_O220T** | TASK - SPOC Sample II |
| **IV_O229T** | IVP4 - STOP DCCTL with a /CHE FREEZE |
| **IV_O230T** | IVP1 - Stop IMS with a /CHE FREEZE |
| **IV_O231T** | IVP3 - Stop DBCTL with a /CHE FREEZE |
| **IV_O232T** | MVS - Shut Down SCI/OM/RM/CQS |
| **IV_O233T** | MVS - Stop IRLM #1 and IRLM #2 |
| **IV_O401J** | JOB - Scratch Data Sets |

## Steps Px for Enhanced Command Environment Sample Application

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|---|---|
| **IV_P001T** | NOTE - Introduction - Enhanced Command Environment Sample |
| **IV_P101J** | JOB - Allocate Data Sets |
| **IV_P102J** | JOB - Initialize RECON/Register Databases |
| **IV_P103J** | JOB - Database Initial Load |
| **IV_P104J** | JOB - Batch Image Copy |
| **IV_P210J** | JOB - Start IRLM #1 |
| **IV_P211J** | JOB - Start IRLM #2 |
| **IV_P214J** | JOB - Start DCCTL Region IVP4 |
| **IV_P215J** | JOB - Start DB/DC Region IVP1 |
| **IV_P216J** | JOB - Start DBCTL Region IVP3 |
| **IV_P217T** | TASK - SPOC Sample I |
| **IV_P218T** | TASK - IVP1 - Cold Start IMS |
| **IV_P219T** | TASK - IVP3 - Cold Start DBCTL |
| **IV_P220T** | TASK - IVP4 - Cold Start DCCTL |
| **IV_P221T** | TASK - SPOC - SPOC Sample II |
| **IV_P229T** | TASK - IVP4 - Stop DCCTL with a `/CHE FREEZE` |
| **IV_P230T** | TASK - IVP1 - Stop IMS with a `/CHE FREEZE` |
| **IV_P231T** | TASK - IVP3 - Stop DBCTL with a `/CHE FREEZE` |
| **IV_P232T** | TASK - MVS - Shut Down SCI and OM |
| **IV_P233T** | TASK - MVS - Stop IRLM #1 and IRLM #2 |
| **IV_P401J** | JOB - Scratch data sets |

## Steps Zx for Index of Additional PDS Members

| Name | Title |
|---|---|
| **IV_Z001T** | NOTE - Introduction - INDEX to PDS Members |
| **DFSAAAS0** | Copyright Statement - //* |
| **DFSAAAS1** | Copyright Statement - * |

| | |
|---|---|
| **DFSAAAS2** | Copyright Statement - /* */ |
| **DFSIXS00** | IMBED - Copyright Statement - //* |
| **DFSIXS01** | IMBED - Copyright Statement - * |
| **DFSIXS02** | IMBED - Copyright Statement - /* */ |
| **DFSIXS03** | IMBED - EXAMPLE Block |
| **DFSIXS04** | IMBED - IRLM 2.1 DXRJCLIN JCLIN and bind JCL |
| **DFSIXS05** | IMBED - Standard JOB Statement |
| **DFSIXS06** | IMBED - SMP/E Cataloged Procedure |
| **DFSIXS07** | IMBED - IRLM DXRJPROC In-line Procedure |
| **DFSIXS09** | IMBED - DFSPBIV3 for DBCTL |
| **DFSIXS10** | IMBED - DFSPBIV1 for DB/DC |
| **DFSIXS11** | IMBED - DFSPBIV2 for XRF - System IVP2 |
| **DFSIXS12** | IMBED - DFSPBIV1 for XRF - System IVP1 |
| **DFSIXS13** | IMBED - DFSPBIV4 for DCCTL - System IVP4 |
| **DFSIXS14** | IMBED - IRLM #1 Execution JCL |
| **DFSIXS15** | IMBED - IRLM #2 Execution JCL |
| **DFSIXS16** | IMBED - DBCTL Execution Step for IVP3 |
| **DFSIXS17** | IMBED - DB/DC Execution Step for IVP1 |
| **DFSIXS18** | IMBED - DB/DC Execution Step for IVP2 |
| **DFSIXS19** | IMBED - MPP #1 Execution JCL for IVP1 |
| **DFSIXS20** | IMBED - IFP #1 Execution JCL for IVP1 |
| **DFSIXS21** | IMBED - IFP #2 Execution JCL for IVP1 |
| **DFSIXS22** | IMBED - IFP #3 FP Sample Application for IVP1 |
| **DFSIXS23** | IMBED - MPP #1 Execution JCL for IVP2 |
| **DFSIXS24** | IMBED - IFP #1 Execution JCL for IVP2 |
| **DFSIXS25** | IMBED - IFP #2 Execution JCL for IVP2 |
| **DFSIXS26** | IMBED - HIDAM BMP Execution Step for IVP3 |
| **DFSIXS27** | IMBED - HDAM BMP Execution Step for IVP3 |
| **DFSIXS28** | IMBED - DEDB BMP LOAD Execution Step for IVP3 |
| **DFSIXS29** | IMBED - DEDB BMP Execution Step for IVP3 |
| **DFSIXS30** | IMBED - DBRC in-line procedure |
| **DFSIXS32** | IMBED - DBRC Skeletal JCL - JOBJCL2 |
| **DFSIXS33** | IMBED - DBRC Skeletal JCL - ARCHJCL |
| **DFSIXS34** | IMBED - DBRC Skeletal JCL - CAJCL |
| **DFSIXS35** | IMBED - DBRC Skeletal JCL - ICJCL |
| **DFSIXS36** | IMBED - DBRC Skeletal JCL - JOBJCL |
| **DFSIXS37** | IMBED - DBRC Skeletal JCL - LOGCLJCL |

| | |
|---|---|
| **DFSIXS38** | IMBED - DBRC Skeletal JCL - OICJCL |
| **DFSIXS39** | IMBED - DBRC Skeletal JCL - RECOVJCL |
| **DFSIXS40** | IMBED - Stage 1 Source - IVP Sample Application |
| **DFSIXS41** | IMBED - Stage 1 Source - IMS Sample Application |
| **DFSIXS42** | IMBED - Stage 1 Source - FP Sample Application |
| **DFSIXS43** | IMBED - Stage 1 Source - Communications |
| **DFSIXS46** | IMBED - JES Control Statement for User PROCLIB |
| **DFSIXS47** | IMBED - User Supplied JES Control Statements |
| **DFSIXS48** | IMBED - IVPB HIDAM Batch execution step |
| **DFSIXS49** | IMBED - IVPB HDAM Batch execution step |
| **DFSIXS50** | IMBED - IVP1 HIDAM BMP execution step |
| **DFSIXS51** | IMBED - IVP1 HDAM BMP execution step |
| **DFSIXS52** | IMBED - IVP1 DEDB BMP LOAD execution step |
| **DFSIXS53** | IMBED - IMSWT000 - IVP1/IVP4 |
| **DFSIXS54** | IMBED - IMSWT000 - IVP2 |
| **DFSIXS56** | IMBED - Statistical Analysis Utility In-line Proc |
| **DFSIXS57** | IMBED - Log Transact Analysis Utility In-line Proc |
| **DFSIXS58** | IMBED - FP Log Analysis Utility In-line Proc |
| **DFSIXS59** | IMBED - DEDB BMP Execution Step for IVP1 |
| **DFSIXS60** | IMBED - DFSIVD1 - HIDAM/OSAM - DB Load JOB Step |
| **DFSIXS61** | IMBED - DFSIVD2 - HDAM/VSAM - DB Load JOB Step |
| **DFSIXS62** | IMBED - DFSIVD3 - DEDB/VSAM - DB Load JOB Step |
| **DFSIXS63** | IMBED - DI21PART - HISAM/VSAM - DB Load JOB Step |
| **DFSIXS64** | IMBED - DBFSAMD3 - DEDB/VSAM - DB Load JOB Step |
| **DFSIXS65** | IMBED - DBFSAMD4 - HDAM/VSAM - DB Load JOB Step |
| **DFSIXS66** | IMBED - MSDBs - DB Load JOB Step - IVP & FP Sample |
| **DFSIXS67** | IMBED - INIT.RECON Control Statement |
| **DFSIXS68** | IMBED - INIT.DB/DBDS/ADS - DFSIVD1 - HIDAM/OSAM |
| **DFSIXS69** | IMBED - INIT.DB/DBDS/ADS - DFSIVD2 - HDAM/VSAM |
| **DFSIXS70** | IMBED - INIT.DB/DBDS/ADS - DFSIVD3 - DEDB/VSAM |
| **DFSIXS71** | IMBED - INIT.DB/DBDS/ADS - DI21PART - HISAM/VSAM |
| **DFSIXS72** | IMBED - INIT.DB/DBDS/ADS - DBFSAMD3 - DEDB/VSAM |
| **DFSIXS73** | IMBED - INIT.DB/DBDS/ADS - DBFSAMD4 - HDAM/VSAM |
| **DFSIXS74** | IMBED - Allocation JCL - DFSIVD1 - HIDAM/OSAM |
| **DFSIXS75** | IMBED - Allocation JCL - DFSIVD2 - HDAM/VSAM |
| **DFSIXS76** | IMBED - Allocation JCL - DFSIVD3 - DEDB/VSAM |
| **DFSIXS77** | IMBED - Allocation JCL - DI21PART - HISAM/VSAM |

| | |
|---|---|
| **DFSIXS78** | IMBED - Allocation JCL - DBFSAMD3 - DEDB/VSAM |
| **DFSIXS79** | IMBED - Allocation JCL - DBFSAMD4 - HDAM/VSAM |
| **DFSIXS80** | IMBED - Allocation JCL - MSDBINIT - IVP & FP SMPL |
| **DFSIXS81** | IMBED - Allocation JCL - DBRC RECON Data Sets |
| **DFSIXS82** | IMBED - Scratch JCL - DFSIVD1 - HIDAM/OSAM |
| **DFSIXS83** | IMBED - Scratch JCL - DFSIVD2 - HDAM/VSAM |
| **DFSIXS84** | IMBED - Scratch JCL - DFSIVD3 - DEDB/VSAM |
| **DFSIXS85** | IMBED - Scratch JCL - DI21PART - HISAM/VSAM |
| **DFSIXS86** | IMBED - Scratch JCL - DBFSAMD3 - DEDB/VSAM |
| **DFSIXS87** | IMBED - Scratch JCL - DBFSAMD4 - HDAM/VSAM |
| **DFSIXS88** | IMBED - Scratch JCL - MSDBINIT - IVP & FP SMPL |
| **DFSIXS89** | IMBED - Scratch JCL - DBRC RECON Data Sets |
| **DFSIXS90** | IMBED - DCCTL execution step for system IVP4 |
| **DFSIXS91** | IMBED - Execution step for BMP - IVP4 |
| **DFSIXS92** | IMBED - Execution JCL for MPP #1 - IVP4 |
| **DFSIXS93** | IMBED - Execution JCL for IFP #1 - IVP4 |
| **DFSIXS94** | IMBED - XRST Execution JCL for WFI BMP - IVP4 |
| **DFSIXS95** | IMBED - PI Trace Report Utility - In-line Proc |
| **DFSIVC04** | IVP - CPY - HD DB Load control statements |
| **DFSIVC05** | IVP - CPY - HD DB DLI/DBB/BMP control statements |
| **DFSIVC06** | IVP - CPY - MSDB Load control statements |
| **DFSIVC07** | IVP - CPY - WFI BMP (DCCTL) load statements |
| **DFSIVD1** | IVP - DBD - HIDAM/OSAM |
| **DFSIVD1I** | IVP - DBD - HIDAM Index/VSAM |
| **DFSIVD2** | IVP - DBD - HDAM/VSAM |
| **DFSIVD3** | IVP - DBD - DEDB/VSAM |
| **DFSIVD4** | IVP - DBD - MSDB |
| **DFSIVD5** | IVP - DBD - GSAM/BSAM |
| **DFSIVP1** | IVP - PSB - Non-conv HIDAM |
| **DFSIVP2** | IVP - PSB - Non-conv HDAM |
| **DFSIVP3** | IVP - PSB - Conv HDAM |
| **DFSIVP31** | IVP - PSB - Conv HDAM - PASCAL Version |
| **DFSIVP32** | IVP - PSB - Conv HDAM - C Version |
| **DFSIVP34** | IVP - PSB - Conv HDAM - COBOL Version |
| **DFSIVP35** | IVP - PSB - Conv HDAM - REXX Version |
| **DFSIVP37** | IVP - PSB - JMP |
| **DFSIVP4** | IVP - PSB - IFP DEDB |

| | |
|---|---|
| **DFSIVP5** | IVP - PSB - IFP MSDB |
| **DFSIVP6** | IVP - PSB - DLI/DBB/BMP HIDAM |
| **DFSIVP61** | IVP - PSB - DLI/DBB/BMP HIDAM - PASCAL Version |
| **DFSIVP62** | IVP - PSB - DLI/DBB/BMP HIDAM - C Version |
| **DFSIVP64** | IVP - PSB - DLI/DBB/BMP HIDAM - COBOL Version |
| **DFSIVP65** | IVP - PSB - DLI/DBB/BMP HIDAM - REXX Version |
| **DFSIVP67** | IVP - PSB - JMP |
| **DFSIVP7** | IVP - PSB - DLI/DBB/BMP HDAM |
| **DFSIVP8** | IVP - PSB - BMP DEDB |
| **DFSIVP9** | IVP - PSB - OLIC BMP - HIDAM/OSAM |
| **DFSIVPA** | IVP - PSB - HIDAM Load |
| **DFSIVPB** | IVP - PSB - HDAM Load |
| **DFSIVPC** | IVP - PSB - DEDB Load |
| **DFSIVPD** | IVP - PSB - DCCTL WFI BMP |
| **DFSIVPE** | IVP - PSB - DCCTL Non-Conversational MPP |
| **DFSIVPF** | IVP - PSB - DCCTL Conversational MPP |
| **DFSIVPG** | IVP - PSB - DCCTL IFP |
| **DFSIVF1** | IVP - MFS - Non-conv HIDAM |
| **DFSIVF2** | IVP - MFS - Non-conv HDAM |
| **DFSIVF3** | IVP - MFS - Conv HDAM |
| **DFSIVF31** | IVP - MFS - Conv HDAM - PASCAL Version |
| **DFSIVF32** | IVP - MFS - Conv HDAM - C Version |
| **DFSIVF34** | IVP - MFS - Conv HDAM - COBOL Version |
| **DFSIVF35** | IVP - MFS - Conv HDAM - REXX Version |
| **DFSIVF37** | IVP - MFS - JMP |
| **DFSIVF4** | IVP - MFS - IFP DEDB |
| **DFSIVF5** | IVP - MFS - IFP MSDB |
| **DFSIVFD** | IVP - MFS - WFI BMP |
| **DFSIVFE** | IVP - MFS - Non-Conversational MPP |
| **DFSIVFF** | IVP - MFS - Conversational MPP |
| **DFSIVFG** | IVP - MFS - IFP |
| **DFSIVA1** | IVP - PGM - Non-conv HIDAM |
| **DFSIVA2** | IVP - PGM - Non-conv HDAM |
| **DFSIVA3** | IVP - PGM - Conv HDAM |
| **DFSIVA31** | IVP - PGM - Conv HDAM - PASCAL Version |
| **DFSIVA32** | IVP - PGM - Conv HDAM - C Version |
| **DFSIVA34** | IVP - PGM - Conv HDAM - COBOL Version |

| | |
|---|---|
| **DFSIVA35** | IVP - PGM - Conv HDAM - REXX Version |
| **DFSIVA4** | IVP - PGM - IFP DEDB |
| **DFSIVA5** | IVP - PGM - IFP MSDB |
| **DFSIVA6** | IVP - PGM - DLI/DBB/BMP HIDAM |
| **DFSIVA61** | IVP - PGM - DLI/DBB/BMP HIDAM - PASCAL Version |
| **DFSIVA62** | IVP - PGM - DLI/DBB/BMP HIDAM - C Version |
| **DFSIVA64** | IVP - PGM - DLI/DBB/BMP HIDAM - COBOL Version |
| **DFSIVA65** | IVP - PGM - DLI/DBB/BMP HIDAM - REXX Version |
| **DFSIVA7** | IVP - PGM - DLI/DBB/BMP HDAM |
| **DFSIVA8** | IVP - PGM - BMP DEDB |
| **DFSIVAC** | IVP - PGM - DEDB Load |
| **DFSIVAD** | IVP - PGM - WFI BMP for DCCTL |
| **DFSIVAE** | IVP - PGM - Non-Conversational MPP for DCCTL |
| **DFSIVAF** | IVP - PGM - Conversational MPP for DCCTL |
| **DFSIVAG** | IVP - PGM - IFP for DCCTL |
| **IV_REXX** | IVP - PGM - IVPREXX Generic EXEC Driver |
| **DFSIVG20** | IVP - PGM - WTOR Subroutine for PASCAL |
| **DFSIVG30** | IVP - PGM - WTOR Subroutine for C |
| **DFSIVJG2** | IVP - JCL - Sample Assemble and Link for DFSIVG20 |
| **DFSIVJG3** | IVP - JCL - Sample Assemble and Link for DFSIVG30 |
| **DFSIVJP3** | IVP - JCL - Sample Compile and Link for DFSIVA31 |
| **DFSIVJP6** | IVP - JCL - Sample Compile and Link for DFSIVA61 |
| **DFSIVJC3** | IVP - JCL - Sample Compile and Link for DFSIVA32 |
| **DFSIVJC6** | IVP - JCL - Sample Compile and Link for DFSIVA62 |
| **DFSIVJB3** | IVP - JCL - Sample Compile and Link for DFSIVA34 |
| **DFSIVJB6** | IVP - JCL - Sample Compile and Link for DFSIVA64 |
| **DI21PART** | IMS - DBD - HISAM/VSAM |
| **DFSSAMC1** | IMS - CPY - DI21PART Dump Control Statements |
| **DFSSAM11** | IMS - PSB - DB Load |
| **DFSSAM12** | IMS - PSB - PART Tran |
| **DFSSAM13** | IMS - PSB - DSPINV Tran |
| **DFSSAM14** | IMS - PSB - ADDPART/ADDINV/DLETPART/DLETINV Tran |
| **DFSSAM15** | IMS - PSB - CLOSE Tran |
| **DFSSAM16** | IMS - PSB - DISBURSE Tran |
| **DFSSAM17** | IMS - PSB - DSPALLI Tran |
| **DFSSAM18** | IMS - PSB - DB Dump |
| **DFSSAM19** | IMS - PSB - Batch/BMP Misc |

| | |
|---|---|
| **DFSSAM01** | IMS - PGM - DB Load |
| **DFSSAM02** | IMS - PGM - PART Tran |
| **DFSSAM03** | IMS - PGM - DSPINV Tran |
| **DFSSAM04** | IMS - PGM - ADDPART/ADDINV/DLETPART/DLETINV Tran |
| **DFSSAM05** | IMS - PGM - CLOSE Tran |
| **DFSSAM06** | IMS - PGM - DISBURSE Tran |
| **DFSSAM07** | IMS - PGM - DSPALLI Tran |
| **DFSSAM08** | IMS - PGM - DB Dump |
| **DFSSUT04** | IMS - PGM - Unexpected Status Exit |
| **MFDFSYSN** | IMS - CPY - DB Load input |
| **DFSIVPC1** | IMS - PSB - CICS IVP DFHSAM04 |
| **DFSIVPC2** | IMS - PSB - CICS IVP DFHSAM05 |
| **DFSIVPC3** | IMS - PSB - CICS IVP DFHSAM14 |
| **DFSIVPC4** | IMS - PSB - CICS IVP DFHSAM24 |
| **DFSIVPC5** | IMS - PSB - CICS IVP DFHSAM15 |
| **DFSIVPC6** | IMS - PSB - CICS IVP DFHSAM25 |
| **DBFSAMD1** | FP - DBD - MSDB |
| **DBFSAMD2** | FP - DBD - MSDB |
| **DBFSAMD3** | FP - DBD - DEDB |
| **DBFSAMD4** | FP - DBD - HDAM/VSAM |
| **DBFSAMP1** | FP - PSB - DEDB Load |
| **DBFSAMP2** | FP - PSB - HDAM Load |
| **DBFSAMP3** | FP - PSB - FPSAMP1 |
| **DBFSAMP4** | FP - PSB - FPSAMP2 |
| **DBFSAMP5** | FP - PSB - HDAM MISC |
| **DBFSAMP6** | FP - PSB - DEDB MISC |
| **DBFSAMF1** | FP - MFS - FPSAMP1/FPSAMP2 |
| **DBFSAMA1** | FP - PGM - DEDB Load |
| **DBFSAMA2** | FP - PGM - HDAM Load |
| **DBFSAMA3** | FP - PGM - FPSAMP1/FPSAMP2 |
| **DFSIVJ01** | JOB - Dialog init - Define ICF User Cat. / ALIASs |
| **DFSIVJ02** | JOB - Dialog init - Alloc INSTALIB / Copy Tape |
| **DFSIVJ03** | JOB - Dialog init - Alloc SYSLIBS / Copy from tape |
| **DFSJCLIN** | JOB - Pre-SYSDEF JCLIN for IMS |
| **ARCHJCL** | SKEL - ARCHJCL |
| **CAJCL** | SKEL - CAJCL |
| **ICJCL** | SKEL - ICJCL |

| | |
|---|---|
| **JOBJCL** | SKEL - JOBJCL |
| **LOGCLJCL** | SKEL - LOGCLJCL |
| **OICJCL** | SKEL - OICJCL |
| **RECOVJCL** | SKEL - RECOVJCL |

# Appendix C. IVP System Definitions

The IMS SYSDEF Stage 1 input streams appearing in this chapter are generated by the IVP Dialog. This chapter includes one sample for each of the following environments:

- DB batch
- DBCTL
- DB/DC
- DB/DC with XRF
- DCCTL

The samples are not members of SDFSISRC.

## DBB - DB Batch (Batch) Stage 1

```
*
********************************************************************
* IVP IMS 9.1
*
* SKELETON: DFSIXSC1
*
* FUNCTION: STAGE 1 SOURCE FOR A DBB SYSTEM
********************************************************************
*
*****************************************************************@SCPYRT**
*                                                                       *
*         LICENSED MATERIALS - PROPERTY OF IBM                          *
*                                                                       *
*         "RESTRICTED MATERIALS OF IBM"                                 *
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*         GSA ADP SCHEDULE CONTRACT WITH IBM CORP.                      *
*                                                                       *
*****************************************************************@ECPYRT**
*
* IMSCTRL MACRO --
*
         IMSCTRL  SYSTEM=(VS/2,(BATCH,DB/DC),390),                     X
               IRLM=YES,                                               X
               IRLMNM=IRLM,                                            X
               DBRC=(,YES),                                            X
               IMSID=IVPB
*
* IMSCTF  MACRO --
*
         IMSCTF SVCNO=(,203,202),                                      X
               LOG=SNGL,                                               X
               PRDR=IVP91RD1
*********************************************************************
*   IVP DATABASES DEFINITION
*********************************************************************
         DATABASE DBD=IVPDB1,ACCESS=UP              HIDAM/OSAM
         DATABASE INDEX,DBD=IVPDB1I,ACCESS=UP       HIDAM/VSAM INDEX
         DATABASE DBD=IVPDB2,ACCESS=UP              HDAM/VSAM
*********************************************************************
*   IVP BATCH/BMP APPLICATION DEFINITION
*********************************************************************
         SPACE 2
```

```
         APPLCTN PSB=DFSIVP6,PGMTYPE=BATCH           HIDAM/OSAM-ASSEM
         SPACE 2
         APPLCTN PSB=DFSIVP61,PGMTYPE=BATCH          HIDAM/OSAM-PASCAL
         SPACE 2
         APPLCTN PSB=DFSIVP62,PGMTYPE=BATCH          HIDAM/OSAM-C
         SPACE 2
         APPLCTN PSB=DFSIVP64,PGMTYPE=BATCH          HIDAM/OSAM-COBOL
         SPACE 2
         APPLCTN PSB=DFSIVP65,PGMTYPE=BATCH          HIDAM/OSAM-REXX
         SPACE 2
         APPLCTN PSB=DFSIVP7,PGMTYPE=BATCH           HDAM/VSAM
         SPACE 2
         APPLCTN PSB=DFSIVP9,PGMTYPE=BATCH           HIDAM/OSAM OLIC
         SPACE 2
         APPLCTN PSB=DFSIVPA,PGMTYPE=BATCH           HIDAM LOAD
         SPACE 2
         APPLCTN PSB=DFSIVPB,PGMTYPE=BATCH           HDAM  LOAD
         SPACE 2
*********************************************************************
*   IMS SAMPLE DATABASES DEFINITION
*********************************************************************
         SPACE 2
         DATABASE DBD=DI21PART,ACCESS=UP              HISAM/VSAM
         EJECT  ,
*********************************************************************
*   IMS SAMPLE APPLICATION DEFINITION - CICS IVP
*********************************************************************
         SPACE 2
         APPLCTN PSB=DFHSAM04,PGMTYPE=BATCH
         SPACE 2
         APPLCTN PSB=DFHSAM14,PGMTYPE=BATCH
         SPACE 2
         APPLCTN PSB=DFHSAM24,PGMTYPE=BATCH
         SPACE 2
         APPLCTN PSB=DFHSAM05,PGMTYPE=BATCH
         SPACE 2
         APPLCTN PSB=DFHSAM15,PGMTYPE=BATCH
         SPACE 2
         APPLCTN PSB=DFHSAM25,PGMTYPE=BATCH
         EJECT  ,
*********************************************************************
*   IMS SAMPLE APPLICATION DEFINITION
*********************************************************************
         SPACE 2
         APPLCTN  PSB=DFSSAM01,PGMTYPE=BATCH
         SPACE 2
         APPLCTN  PSB=DFSSAM08,PGMTYPE=BATCH
         SPACE 2
         APPLCTN  PSB=DFSSAM09,PGMTYPE=BATCH           GENERAL PURPOSE
         SPACE 2
*
* IMSGEN MACRO --
*
         IMSGEN ASM=(HLASM,SYSLIN),ASMPRT=OFF,                        X
               LKPRT=(XREF,LIST),LKSIZE=(880K,63K),LKRGN=900K,        X
               SURVEY=YES,                                            X
               NODE=(IVPEXE91,                                        X
               IVPSYS91,                                              X
               IVPDLB91),                                             X
               OBJDSET=IVPSYS91.OBJDSET,                              X
               PROCLIB=YES,                                           X
               USERLIB=IVPDLB91.ADFSLOAD,                             X
               UMAC0=,                                                X
               MACSYS=SYS1.MACLIB,                                    X
               MODGEN=SYS1.MODGEN,                                    X
               UMAC1=,                                                X
               UMAC2=,                                                X
```

```
                UMAC3=,                                                 X
                ONEJOB=(YES,YES),                                       X
                JCL=(IMSGEN,                                            X
                ACTINFO1,                                               X
                'PGMRNAME',H,                                           X
                (CLASS=A,MSGLEVEL=(1,1),REGION=64M)),                   X
                SCL=(,,(TIME=600)),                                     X
                UJCL1=,                                                 X
                UJCL2=,                                                 X
                UJCL3=,                                                 X
                UJCL4=,                                                 X
                UJCL5=
          END ,
*
```

## DBC - Database Control (DBCTL) Stage 1

```
*
*********************************************************************
* IVP IMS 9.1
*
* SKELETON: DFSIXSC1
*
* FUNCTION: STAGE 1 SOURCE FOR A DBC SYSTEM
*********************************************************************
*
*****************************************************************@SCPYRT**
*                                                                       *
*         LICENSED MATERIALS - PROPERTY OF IBM                          *
*                                                                       *
*         "RESTRICTED MATERIALS OF IBM"                                 *
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*         GSA ADP SCHEDULE CONTRACT WITH IBM CORP.                      *
*                                                                       *
*****************************************************************@ECPYRT**
*
* IMSCTRL MACRO --
*
         IMSCTRL  SYSTEM=(VS/2,(ALL,DBCTL),390),                        X
               IRLM=YES,                                                X
               IRLMNM=IRLM,                                             X
               CMDCHAR=/,                                               X
               DBRC=(YES,YES),                                          X
               DBRCNM=IVP91RC3,                                         X
               DLINM=IVP91DL3,                                          X
               IMSID=IVP3,                                              X
               NAMECHK=(YES,S1),                                        X
               MAXREGN=(005,512K,A,A),                                  X
               MCS=(2,7),                                               X
               DESC=7,                                                  X
               MAXCLAS=016
*
* IMSCTF  MACRO --
*
         IMSCTF SVCNO=(,203,202),                                       X
               LOG=SNGL,                                                X
               CPLOG=500000,                                            X
               RDS=(LGDK,4096),                                         X
               PRDR=IVP91RD3
*
* FPCTRL   MACRO --
*
```

```
         FPCTRL OTHREAD=5,                                             X
               BFALLOC=(10,50,2048)
*
* BUFPOOLS MACRO --
*
         BUFPOOLS PSB=24000,                                           X
               DMB=24000,                                              X
               SASPSB=(4000,20000),                                    X
               PSBW=12000
* ********************************************************************

* NOTE: Use only one of the following security macros, depending on    *

* whether you are using SMU or IMS user exits (if RACF is specified).  *

**********************************************************************
* SECURITY MACRO, IF USING SMU --
*
         SECURITY TYPE=(AGNEXIT),                                      X
               SECCNT=2,                                               X
               PASSWD=YES,                                             X
               TRANCMD=YES

*
* SECURITY MACRO, IF USING IMS USER EXITS --
*
         SECURITY TYPE=(RASEXIT),                                      X
               SECCNT=2

**********************************************************************
*   IVP DATABASES DEFINITION
**********************************************************************
         DATABASE DBD=IVPDB1,ACCESS=UP               HIDAM/OSAM
         DATABASE INDEX,DBD=IVPDB1I,ACCESS=UP        HIDAM/VSAM INDEX
         DATABASE DBD=IVPDB2,ACCESS=UP               HDAM/VSAM
         DATABASE DBD=IVPDB3,ACCESS=UP               DEDB
**********************************************************************
*   IVP BATCH/BMP APPLICATION DEFINITION
**********************************************************************
         SPACE 2
         APPLCTN PSB=DFSIVP6,PGMTYPE=BATCH           HIDAM/OSAM-ASSEM
         SPACE 2
         APPLCTN PSB=DFSIVP61,PGMTYPE=BATCH          HIDAM/OSAM-PASCAL
         SPACE 2
         APPLCTN PSB=DFSIVP62,PGMTYPE=BATCH          HIDAM/OSAM-C
         SPACE 2
         APPLCTN PSB=DFSIVP64,PGMTYPE=BATCH          HIDAM/OSAM-COBOL
         SPACE 2
         APPLCTN PSB=DFSIVP65,PGMTYPE=BATCH          HIDAM/OSAM-REXX
         SPACE 2
         APPLCTN PSB=DFSIVP7,PGMTYPE=BATCH           HDAM/VSAM
         SPACE 2
         APPLCTN PSB=DFSIVP9,PGMTYPE=BATCH           HIDAM/OSAM OLIC
         SPACE 2
         APPLCTN PSB=DFSIVPA,PGMTYPE=BATCH           HIDAM LOAD
         SPACE 2
         APPLCTN PSB=DFSIVPB,PGMTYPE=BATCH           HDAM  LOAD
         SPACE 2
         APPLCTN PSB=DFSIVP8,PGMTYPE=BATCH           DEDB/VSAM
         SPACE 2
         APPLCTN PSB=DFSIVPC,PGMTYPE=BATCH           DEDB (DB LOAD)
         SPACE 2
**********************************************************************
*   IMS SAMPLE DATABASES DEFINITION
**********************************************************************
         SPACE 2
         DATABASE DBD=DI21PART,ACCESS=UP              HISAM/VSAM
```

```
         EJECT  ,
*********************************************************************
*   IMS SAMPLE APPLICATION DEFINITION - CICS IVP
*********************************************************************
         SPACE 2
         APPLCTN PSB=DFHSAM04,PGMTYPE=BATCH
         SPACE 2
         APPLCTN PSB=DFHSAM14,PGMTYPE=BATCH
         SPACE 2
         APPLCTN PSB=DFHSAM24,PGMTYPE=BATCH
         SPACE 2
         APPLCTN PSB=DFHSAM05,PGMTYPE=BATCH
         SPACE 2
         APPLCTN PSB=DFHSAM15,PGMTYPE=BATCH
         SPACE 2
         APPLCTN PSB=DFHSAM25,PGMTYPE=BATCH
         EJECT  ,
*********************************************************************
*   IMS SAMPLE APPLICATION DEFINITION
*********************************************************************
         SPACE 2
         APPLCTN  PSB=DFSSAM01,PGMTYPE=BATCH
         SPACE 2
         APPLCTN  PSB=DFSSAM08,PGMTYPE=BATCH
         SPACE 2
         APPLCTN  PSB=DFSSAM09,PGMTYPE=BATCH           GENERAL PURPOSE
         SPACE 2
*
* IMSGEN MACRO --
*
         IMSGEN ASM=(HLASM,SYSLIN),ASMPRT=OFF,                         X
               LKPRT=(XREF,LIST),LKSIZE=(880K,63K),LKRGN=900K,         X
               SUFFIX=I,                                               X
               SURVEY=YES,                                             X
               NODE=(IVPEXE91,                                         X
               IVPSYS91,                                               X
               IVPDLB91),                                              X
               OBJDSET=IVPSYS91.OBJDSET,                               X
               PROCLIB=YES,                                            X
               USERLIB=IVPDLB91.ADFSLOAD,                              X
               UMAC0=,                                                 X
               MACSYS=SYS1.MACLIB,                                     X
               MODGEN=SYS1.MODGEN,                                     X
               UMAC1=,                                                 X
               UMAC2=,                                                 X
               UMAC3=,                                                 X
               ONEJOB=(YES,YES),                                       X
               JCL=(IMSGEN,                                            X
               ACTINFO1,                                               X
               'PGMRNAME',H,                                           X
               (CLASS=A,MSGLEVEL=(1,1),REGION=64M)),                   X
               SCL=(,,(TIME=600)),                                     X
               UJCL1=,                                                 X
               UJCL2=,                                                 X
               UJCL3=,                                                 X
               UJCL4=,                                                 X
               UJCL5=
         END ,
*
```

## DBT - Database/Transaction Manager (DB/DC) Stage 1

```
*
*********************************************************************
* IVP IMS 9.1
*
* SKELETON: DFSIXSC1
```

```
*
* FUNCTION: STAGE 1 SOURCE FOR A DBT SYSTEM
*********************************************************************
*
*************************************************************@SCPYRT**
*                                                                   *
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*                                                                   *
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*         GSA ADP SCHEDULE CONTRACT WITH IBM CORP.                  *
*                                                                   *
*************************************************************@ECPYRT**
*
* IMSCTRL MACRO --
*
         IMSCTRL  SYSTEM=(VS/2,(ALL,DB/DC),390),                    X
               IRLM=YES,                                            X
               IRLMNM=IRLM,                                         X
               CMDCHAR=,                                            X
               DBRC=(YES,YES),                                      X
               DBRCNM=IVP91RC1,                                     X
               DLINM=IVP91DL1,                                      X
               DCLWA=YES,                                           X
               IMSID=IVP1,                                          X
               NAMECHK=(YES,S1),                                    X
               MAXREGN=(005,512K,A,A),                              X
               MCS=(2,7),                                           X
               DESC=7,                                              X
               ETOFEAT=(,,ALL),                                     X
               MAXCLAS=016
*
* IMSCTF  MACRO --
*
         IMSCTF SVCNO=(,203,202),                                   X
               LOG=SNGL,                                            X
               CPLOG=500000,                                        X
               RDS=(LGDK,4096),                                     X
               PRDR=IVP91RD1
*
* MSGQUEUE MACRO --
*
         MSGQUEUE DSETS=(LGDK,LGDK,LGDK),                           X
               RECLNG=(336,3360),                                   X
               BUFFERS=(5,6720),                                    X
               SHUTDWN=100
*
* FPCTRL   MACRO --
*
         FPCTRL OTHREAD=5,                                          X
               BFALLOC=(10,50,2048)
*
* BUFPOOLS MACRO --
*
         BUFPOOLS PSB=24000,                                        X
               SASPSB=(4000,20000),                                 X
               PSBW=12000,                                          X
               DMB=24000,                                           X
               FORMAT=(24000,256),                                  X
               FRE=30
* ******************************************************************
```

```
* NOTE: Use only one of the following security macros, depending on    *
* whether you are using SMU or IMS user exits (if RACF is specified).  *
*********************************************************************
*
* SECURITY MACRO, IF USING SMU --
*
         SECURITY TYPE=(AGNEXIT,NORACTRM,NOTRANEX,NOSIGNEX),           X
               SECLVL=(NOTRAN,NOSIGN),                                 X
               TERMNL=YES,                                             X
               SECCNT=2,                                               X
               PASSWD=YES,                                             X
               TRANCMD=YES
*
* SECURITY MACRO, IF USING IMS USER EXITS --
*
         SECURITY TYPE=(RASEXIT,NORACTRM,SIGNEXIT,TRANEXIT),           X
               SECLVL=(SIGNAUTH,TRANAUTH),                             X
               SECCNT=2
*********************************************************************
*   IVP DATABASES DEFINITION
*********************************************************************
         DATABASE DBD=IVPDB1,ACCESS=UP               HIDAM/OSAM
         DATABASE INDEX,DBD=IVPDB1I,ACCESS=UP        HIDAM/VSAM INDEX
         DATABASE DBD=IVPDB2,ACCESS=UP               HDAM/VSAM
         DATABASE DBD=IVPDB3,ACCESS=UP               DEDB
         DATABASE DBD=IVPDB4                         MSDB
*********************************************************************
*   IVP BATCH/BMP APPLICATION DEFINITION
*********************************************************************
         SPACE 2
         APPLCTN PSB=DFSIVP6,PGMTYPE=BATCH           HIDAM/OSAM-ASSEM
         SPACE 2
         APPLCTN PSB=DFSIVP61,PGMTYPE=BATCH          HIDAM/OSAM-PASCAL
         SPACE 2
         APPLCTN PSB=DFSIVP62,PGMTYPE=BATCH          HIDAM/OSAM-C
         SPACE 2
         APPLCTN PSB=DFSIVP64,PGMTYPE=BATCH          HIDAM/OSAM-COBOL
         SPACE 2
         APPLCTN PSB=DFSIVP65,PGMTYPE=BATCH          HIDAM/OSAM-REXX
         SPACE 2
         APPLCTN PSB=DFSIVP7,PGMTYPE=BATCH           HDAM/VSAM
         SPACE 2
         APPLCTN PSB=DFSIVP9,PGMTYPE=BATCH           HIDAM/OSAM OLIC
         SPACE 2
         APPLCTN PSB=DFSIVPA,PGMTYPE=BATCH           HIDAM LOAD
         SPACE 2
         APPLCTN PSB=DFSIVPB,PGMTYPE=BATCH           HDAM  LOAD
         SPACE 2
         APPLCTN PSB=DFSIVP8,PGMTYPE=BATCH           DEDB/VSAM
         SPACE 2
         APPLCTN PSB=DFSIVPC,PGMTYPE=BATCH           DEDB (DB LOAD)
         SPACE 2
*********************************************************************
*   IVP NON-CONVERSATIONAL APPLICATIONS DEFINITION FOR DB/DC
*********************************************************************
         SPACE 2
         APPLCTN PSB=DFSIVP1,PGMTYPE=TP              HIDAM/OSAM
           TRANSACT CODE=IVTNO,MODE=SNGL,                              X
               MSGTYPE=(SNGLSEG,NONRESPONSE,1)
         SPACE
         APPLCTN PSB=DFSIVP2,PGMTYPE=TP              HDAM/VSAM
           TRANSACT CODE=IVTNV,MODE=SNGL,                              X
               MSGTYPE=(SNGLSEG,NONRESPONSE,1)
         SPACE 2
*********************************************************************
```

```
*   IVP CONVERSATIONAL APPLICATION DEFINITION FOR DB/DC
*********************************************************************
         SPACE 2
         APPLCTN PSB=DFSIVP3,PGMTYPE=TP              HDAM/VSAM-ASSEM
           TRANSACT CODE=IVTCV,SPA=(80,),MODE=SNGL,                    X
               MSGTYPE=(SNGLSEG,NONRESPONSE,1)
         APPLCTN PSB=DFSIVP31,PGMTYPE=TP             HDAM/VSAM-PASCAL
           TRANSACT CODE=IVTCP,SPA=(80,),MODE=SNGL,                    X
               MSGTYPE=(SNGLSEG,NONRESPONSE,1)
         APPLCTN PSB=DFSIVP32,PGMTYPE=TP             HDAM/VSAM-C
           TRANSACT CODE=IVTCC,SPA=(80,),MODE=SNGL,                    X
               MSGTYPE=(SNGLSEG,NONRESPONSE,1)
         APPLCTN PSB=DFSIVP33,PGMTYPE=TP             HDAM/VSAM-JAVA
           TRANSACT CODE=IVTCJ,SPA=(80,),MODE=SNGL,                    X
               MSGTYPE=(SNGLSEG,NONRESPONSE,1)
         APPLCTN PSB=DFSIVP34,PGMTYPE=TP             HDAM/VSAM-COBOL
           TRANSACT CODE=IVTCB,SPA=(80,),MODE=SNGL,                    X
               MSGTYPE=(SNGLSEG,NONRESPONSE,1)
         APPLCTN PSB=DFSIVP35,PGMTYPE=TP             HDAM/VSAM-REXX
           TRANSACT CODE=IVTCX,SPA=(80,),MODE=SNGL,                    X
               MSGTYPE=(SNGLSEG,NONRESPONSE,1)
         SPACE 2
         APPLCTN PSB=DFSIVP37,PGMTYPE=TP             HDAM/VSAM-JAVA
           TRANSACT CODE=IVTCM,SPA=(80,),MODE=SNGL,                    X
               MSGTYPE=(SNGLSEG,NONRESPONSE,1)
*********************************************************************
*   IVP DEDB AND MSDB APPLICATION DEFINITIONS FOR DB/DC
*********************************************************************
         SPACE 2
         APPLCTN RESIDENT,PSB=DFSIVP4,FPATH=256      DEDB
           TRANSACT CODE=IVTFD,MODE=SNGL,                              X
               MSGTYPE=(SNGLSEG,RESPONSE,1)
         SPACE 2
         APPLCTN RESIDENT,PSB=DFSIVP5,FPATH=256      MSDB
           TRANSACT CODE=IVTFM,MODE=SNGL,                              X
               MSGTYPE=(SNGLSEG,RESPONSE,1)
*********************************************************************
*   IVP APPLICATIONS DEFINITION FOR DB/DC, DCCTL
*********************************************************************
         SPACE 2
         APPLCTN GPSB=IVPREXX,PGMTYPE=TP,LANG=ASSEM  REXXTDLI SAMPLE
           TRANSACT CODE=IVPREXX,MODE=SNGL,                            X
               MSGTYPE=(SNGLSEG,NONRESPONSE,1)
         SPACE 2
*********************************************************************
*   IMS SAMPLE DATABASES DEFINITION
*********************************************************************
         SPACE 2
         DATABASE DBD=DI21PART,ACCESS=UP              HISAM/VSAM
         EJECT  ,
*********************************************************************
*   IMS SAMPLE APPLICATION DEFINITION - CICS IVP
*********************************************************************
         SPACE 2
         APPLCTN PSB=DFHSAM04,PGMTYPE=BATCH
         SPACE 2
         APPLCTN PSB=DFHSAM14,PGMTYPE=BATCH
         SPACE 2
         APPLCTN PSB=DFHSAM24,PGMTYPE=BATCH
         SPACE 2
         APPLCTN PSB=DFHSAM05,PGMTYPE=BATCH
         SPACE 2
         APPLCTN PSB=DFHSAM15,PGMTYPE=BATCH
         SPACE 2
         APPLCTN PSB=DFHSAM25,PGMTYPE=BATCH
         EJECT  ,
*********************************************************************
```

```
*   IMS SAMPLE APPLICATION DEFINITION
*********************************************************************
         SPACE 2
         APPLCTN  PSB=DFSSAM01,PGMTYPE=BATCH
         SPACE 2
         SPACE 2
         APPLCTN  PSB=DFSSAM02
         TRANSACT CODE=PART,PRTY=(7,10,2),INQUIRY=YES,MODE=SNGL
         SPACE 2
         APPLCTN  PSB=DFSSAM03
         TRANSACT CODE=DSPINV,PRTY=(7,10,2),INQUIRY=YES,MODE=SNGL
         SPACE 2
         APPLCTN  PSB=DFSSAM04
         TRANSACT CODE=ADDPART,PRTY=(7,10,2),INQUIRY=NO,MODE=SNGL
         TRANSACT CODE=ADDINV,PRTY=(7,10,2),INQUIRY=NO,MODE=SNGL
         TRANSACT CODE=DLETPART,PRTY=(7,10,2),INQUIRY=NO,MODE=SNGL
         TRANSACT CODE=DLETINV,PRTY=(7,10,2),INQUIRY=NO,MODE=SNGL
         SPACE 2
         APPLCTN  PSB=DFSSAM05
         TRANSACT CODE=CLOSE,PRTY=(7,10,2),INQUIRY=NO,MODE=SNGL
         SPACE 2
         APPLCTN  PSB=DFSSAM06
         TRANSACT CODE=DISBURSE,PRTY=(7,10,2),INQUIRY=NO,MODE=SNGL
         SPACE 2
         APPLCTN  PSB=DFSSAM07
         TRANSACT CODE=DSPALLI,PRTY=(7,10,2),INQUIRY=NO,MODE=SNGL
         SPACE 2
         APPLCTN  PSB=DFSSAM08,PGMTYPE=BATCH
         SPACE 2
         APPLCTN  PSB=DFSSAM09,PGMTYPE=BATCH           GENERAL PURPOSE
         SPACE 2
*********************************************************************
*   FAST PATH SAMPLE DATABASES DEFINITION
*********************************************************************
         SPACE 2
         DATABASE DBD=DBFSAMD1           GENERAL LEDGER - MSDB
         DATABASE DBD=DBFSAMD2                   TELLER - MSDB
         DATABASE DBD=DBFSAMD3,ACCESS=UP CUSTOMER ACCNT - DEDB
         DATABASE DBD=DBFSAMD4,ACCESS=UP CUSTOMER  LOAN - HDAM/VSAM
         EJECT  ,
*********************************************************************
*   FAST PATH SAMPLE APPLICATION DEFINITION
*********************************************************************
         SPACE 2
         APPLCTN  PSB=DBFSAMP1,PGMTYPE=BATCH       DEDB LOAD
         SPACE 2
         APPLCTN  PSB=DBFSAMP3,PGMTYPE=(TP),FPATH=256
         TRANSACT CODE=FPSAMP1,MSGTYPE=(SNGLSEG,RESPONSE)
         SPACE 2
         APPLCTN  PSB=DBFSAMP4
         TRANSACT CODE=FPSAMP2,MODE=SNGL
         SPACE 2
         APPLCTN  PSB=DBFSAMP6,PGMTYPE=BATCH       DEDB MISC.
         SPACE 2
         APPLCTN  PSB=DBFSAMP2,PGMTYPE=BATCH       HDAM LOAD
         SPACE 2
         APPLCTN  PSB=DBFSAMP5,PGMTYPE=BATCH       HDAM MISC.
         SPACE 2
*********************************************************************
*  IVP COMMUNICATIONS NETWORK DEFINITION
*********************************************************************
         SPACE 2
*********************************************************************
*
* THE IVP SYSTEMS
* MAKE USE OF 5 TERMINALS --
*
```

```
*       MVS MASTER CONSOLE   - IMS LTERM NAME = WTOR
*
*       IMS MASTER CONSOLE   - IMS LTERM NAME = PMASTER
*       IMS SECONDARY MASTER - IMS LTERM NAME = SMASTER
*
*       IMS USER TERMINALS   - IMS LTERM NAME = USER1
*       IMS USER TERMINALS   - IMS LTERM NAME = USER2
*
*
* THE MVS MASTER TERMINAL IS DEFINED AUTOMATICALLY.
*
* THE SECONDARY MASTER IS DEFINED AS A PRINTER LINE GROUP. (A SPOOL
* LINE GROUP IS ALSO AVAILABLE FOR USE AS A SECONDARY MASTER)
*
* THE USER MUST MAKE A CHOICE IN THE DEFINITION OF THE OTHER
* TERMINALS.  THIS SAMPLE STAGE 1 SOURCE DECK INCLUDES SAMPLE
* TERMINAL DEFINITIONS FOR THE FOLLOWING TERMINAL TYPE --
*
*           VTAM 3270 LOCAL
*
* THE IVP IS NOT DEPENDENT UPON NODE (LINE/PTERM) NAMES.
*
* LTERM NAMES AND TRANSACTION CODES ARE USED TO ESTABLISH TERMINAL
* SECURITY.
*
* THE USER MUST ENSURE THAT THE SELECTED TERMINALS ARE PROPERLY
* DEFINED TO VTAM AND MVS.
*
* THE MESSAGE FORMAT SERVICES USED BY THE IVP TRANSACTIONS ARE
* DEFINED FOR A DEVICE TYPE OF 3270-A02 (A 24X80 SCREEN SIZE).
* IF THE TERMINALS WHICH ARE SELECTED SPECIFY A DIFFERENT TYPE,
* THEN THE MFS SOURCE WILL HAVE TO BE CHANGED.
*
*********************************************************************
         SPACE 2
*
* COMM    MACRO --
*      THE APPLID OPERAND SPECIFIES VTAM APPLID FOR THE IMS CONTROL
*           REGION.
*           THE PASSWD OPERAND SPECIFIES APPLICATION PASSWORDS.
*           THESE OPERANDS MUST MATCH THE APPLICATION IDENTIFICATION
*           SPECIFIED IN THE  VTAM ACB(S) FOR THESE IMS DB/DC
*           SYSTEMS.
         COMM RECANY=(5,4095),                                         X
               APPLID=IVP91CR1,                                        X
               PASSWD=IVP91CR1,                                        X
               OPTIONS=(PAGING,TIMESTAMP,MFSTEST,FMTMAST,              X
               NOUSEMSG,NOMSPEX,NOMSLEX,                               X
               VTAMAUTH,BLKREQD),                                      X
               COPYLOG=ALL
         EJECT ,
*********************************************************************
*   IVP PRINTER LINE GROUP
*********************************************************************
         LINEGRP  DDNAME=IVPPRT1,UNITYPE=PRINTER
          LINE     ADDR=000
           TERMINAL
             NAME  (SMASTER,SECONDARY)
             NAME  IVPPRT1
         EJECT ,
*********************************************************************
*   IVP SPOOL LINE GROUP
*********************************************************************
         LINEGRP  DDNAME=(IVPSPL1,IVPSPL2,IVPSPL3),UNITYPE=SPOOL
          LINE     BUFSIZE=166
SPOOL001   TERMINAL FEAT=AUTOSCH
             NAME  IVPSPL1
```

```
         EJECT ,
*********************************************************************
*   IVP VTAM DEFINITIONS
*********************************************************************
         SPACE 2
*********************************************************************
*   IVP 3270 LOCAL - VTAM
*********************************************************************
         SPACE 2
         TYPE  UNITYPE=(3270,LOCAL),TYPE=3270-A02,SIZE=(24,80)
           TERMINAL  NAME=PMASTER1
             NAME  (PMASTER,MASTER)
         SPACE 2
           TERMINAL  NAME=USER1,OPTIONS=(TRANRESP,NOCOPY)
             NAME  USER1
             NAME  HOWARD            USED BY THE IMS SAMPLE APPLICATION
         SPACE 2
           TERMINAL  NAME=USER2,OPTIONS=(TRANRESP,NOCOPY)
             NAME  USER2
         SPACE 2
*
* IMSGEN MACRO --
*
         IMSGEN ASM=(HLASM,SYSLIN),ASMPRT=OFF,                         X
               LKPRT=(XREF,LIST),LKSIZE=(880K,63K),LKRGN=900K,         X
               SUFFIX=I,                                               X
               SURVEY=YES,                                             X
               NODE=(IVPEXE91,                                         X
               IVPSYS91,                                               X
               IVPDLB91),                                              X
               OBJDSET=IVPSYS91.OBJDSET,                               X
               PROCLIB=YES,                                            X
               USERLIB=IVPDLB91.ADFSLOAD,                              X
               UMAC0=,                                                 X
               MACSYS=SYS1.MACLIB,                                     X
               MODGEN=SYS1.MODGEN,                                     X
               UMAC1=,                                                 X
               UMAC2=,                                                 X
               UMAC3=,                                                 X
               ONEJOB=(YES,YES),                                       X
               JCL=(IMSGEN,                                            X
               ACTINFO1,                                               X
               'PGMRNAME',H,                                           X
               (CLASS=A,MSGLEVEL=(1,1),REGION=64M)),                   X
               SCL=(,,(TIME=600)),                                     X
               UJCL1=,                                                 X
               UJCL2=,                                                 X
               UJCL3=,                                                 X
               UJCL4=,                                                 X
               UJCL5=
         END ,
*
```

## XRF - DB/DC with XRF (XRF) Stage 1

```
*
*********************************************************************
* IVP IMS 9.1
*
* SKELETON: DFSIXSC1
*
* FUNCTION: STAGE 1 SOURCE FOR A XRF SYSTEM
*********************************************************************
*
*****************************************************************@SCPYRT**
*                                                                     *
*         LICENSED MATERIALS - PROPERTY OF IBM                        *
```

```
*                                                                     *
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*         GSA ADP SCHEDULE CONTRACT WITH IBM CORP.                    *
*                                                                     *
*********************************************************@ECPYRT**
*
* IMSCTRL MACRO --
*
         IMSCTRL  SYSTEM=(VS/2,(ALL,DB/DC),390),                      X
               IRLM=YES,                                              X
               IRLMNM=IRLM,                                           X
               CMDCHAR=,                                              X
               DBRC=(YES,YES),                                        X
               DBRCNM=IVP91RC1,                                       X
               DLINM=IVP91DL1,                                        X
               DCLWA=YES,                                             X
               IMSID=IVP1,                                            X
               NAMECHK=(YES,S1),                                      X
               MAXREGN=(005,512K,A,A),                                X
               MCS=(2,7),                                             X
               DESC=7,                                                X
               HSB=YES,                                               X
               ETOFEAT=(,,ALL),                                       X
               MAXCLAS=016
*
* IMSCTF  MACRO --
*
         IMSCTF SVCNO=(,203,202),                                     X
               LOG=SNGL,                                              X
               CPLOG=500000,                                          X
               RDS=(LGDK,4096),                                       X
               PRDR=IVP91RD1
*
* MSGQUEUE MACRO --
*
         MSGQUEUE DSETS=(LGDK,LGDK,LGDK),                             X
               RECLNG=(336,3360),                                     X
               BUFFERS=(5,6720),                                      X
               SHUTDWN=100
*
* FPCTRL   MACRO --
*
         FPCTRL OTHREAD=5,                                            X
               BFALLOC=(10,50,2048)
*
* BUFPOOLS MACRO --
*
         BUFPOOLS PSB=24000,                                          X
               SASPSB=(4000,20000),                                   X
               PSBW=12000,                                            X
               DMB=24000,                                             X
               FORMAT=(24000,256),                                    X
               FRE=30

* ********************************************************************

* NOTE: Use only one of the following security macros, depending on    *

* whether you are using SMU or IMS user exits (if RACF is specified).  *

**********************************************************************
```

```
*
* SECURITY MACRO, IF USING SMU --
*
         SECURITY TYPE=(AGNEXIT,NORACTRM,NOTRANEX,NOSIGNEX),           X
               SECLVL=(NOTRAN,NOSIGN),                                 X
               TERMNL=YES,                                             X
               SECCNT=2,                                               X
               PASSWD=YES,                                             X
               TRANCMD=YES

* SECURITY MACRO, IF USING IMS USER EXITS --
*
         SECURITY TYPE=(RASEXIT,NORACTRM,SIGNEXIT,TRANEXIT),           X
               SECLVL=(SIGNAUTH,TRANAUTH),                             X
               SECCNT=2

*********************************************************************
*   IVP DATABASES DEFINITION
*********************************************************************
         DATABASE DBD=IVPDB1,ACCESS=UP               HIDAM/OSAM
         DATABASE INDEX,DBD=IVPDB1I,ACCESS=UP        HIDAM/VSAM INDEX
         DATABASE DBD=IVPDB2,ACCESS=UP               HDAM/VSAM
         DATABASE DBD=IVPDB3,ACCESS=UP               DEDB
         DATABASE DBD=IVPDB4                         MSDB
*********************************************************************
*   IVP BATCH/BMP APPLICATION DEFINITION
*********************************************************************
         SPACE 2
         APPLCTN PSB=DFSIVP6,PGMTYPE=BATCH           HIDAM/OSAM-ASSEM
         SPACE 2
         APPLCTN PSB=DFSIVP61,PGMTYPE=BATCH          HIDAM/OSAM-PASCAL
         SPACE 2
         APPLCTN PSB=DFSIVP62,PGMTYPE=BATCH          HIDAM/OSAM-C
         SPACE 2
         APPLCTN PSB=DFSIVP64,PGMTYPE=BATCH          HIDAM/OSAM-COBOL
         SPACE 2
         APPLCTN PSB=DFSIVP65,PGMTYPE=BATCH          HIDAM/OSAM-REXX
         SPACE 2
         APPLCTN PSB=DFSIVP7,PGMTYPE=BATCH           HDAM/VSAM
         SPACE 2
         APPLCTN PSB=DFSIVP9,PGMTYPE=BATCH           HIDAM/OSAM OLIC
         SPACE 2
         APPLCTN PSB=DFSIVPA,PGMTYPE=BATCH           HIDAM LOAD
         SPACE 2
         APPLCTN PSB=DFSIVPB,PGMTYPE=BATCH           HDAM  LOAD
         SPACE 2
         APPLCTN PSB=DFSIVP8,PGMTYPE=BATCH           DEDB/VSAM
         SPACE 2
         APPLCTN PSB=DFSIVPC,PGMTYPE=BATCH           DEDB (DB LOAD)
         SPACE 2
*********************************************************************
*   IVP NON-CONVERSATIONAL APPLICATIONS DEFINITION FOR DB/DC
*********************************************************************
         SPACE 2
         APPLCTN PSB=DFSIVP1,PGMTYPE=TP              HIDAM/OSAM
           TRANSACT CODE=IVTNO,MODE=SNGL,                              X
               MSGTYPE=(SNGLSEG,NONRESPONSE,1)
         SPACE
         APPLCTN PSB=DFSIVP2,PGMTYPE=TP              HDAM/VSAM
           TRANSACT CODE=IVTNV,MODE=SNGL,                              X
               MSGTYPE=(SNGLSEG,NONRESPONSE,1)
         SPACE 2
*********************************************************************
*   IVP CONVERSATIONAL APPLICATION DEFINITION FOR DB/DC
*********************************************************************
         SPACE 2
         APPLCTN PSB=DFSIVP3,PGMTYPE=TP              HDAM/VSAM-ASSEM
```

```
           TRANSACT CODE=IVTCV,SPA=(80,),MODE=SNGL,                    X
               MSGTYPE=(SNGLSEG,NONRESPONSE,1)
         APPLCTN PSB=DFSIVP31,PGMTYPE=TP             HDAM/VSAM-PASCAL
           TRANSACT CODE=IVTCP,SPA=(80,),MODE=SNGL,                    X
               MSGTYPE=(SNGLSEG,NONRESPONSE,1)
         APPLCTN PSB=DFSIVP32,PGMTYPE=TP             HDAM/VSAM-C
           TRANSACT CODE=IVTCC,SPA=(80,),MODE=SNGL,                    X
               MSGTYPE=(SNGLSEG,NONRESPONSE,1)
         APPLCTN PSB=DFSIVP33,PGMTYPE=TP             HDAM/VSAM-JAVA
           TRANSACT CODE=IVTCJ,SPA=(80,),MODE=SNGL,                    X
               MSGTYPE=(SNGLSEG,NONRESPONSE,1)
         APPLCTN PSB=DFSIVP34,PGMTYPE=TP             HDAM/VSAM-COBOL
           TRANSACT CODE=IVTCB,SPA=(80,),MODE=SNGL,                    X
               MSGTYPE=(SNGLSEG,NONRESPONSE,1)
         APPLCTN PSB=DFSIVP35,PGMTYPE=TP             HDAM/VSAM-REXX
           TRANSACT CODE=IVTCX,SPA=(80,),MODE=SNGL,                    X
               MSGTYPE=(SNGLSEG,NONRESPONSE,1)
         SPACE 2
*********************************************************************
*   IVP DEDB AND MSDB APPLICATION DEFINITIONS FOR DB/DC
*********************************************************************
         SPACE 2
         APPLCTN RESIDENT,PSB=DFSIVP4,FPATH=256      DEDB
           TRANSACT CODE=IVTFD,MODE=SNGL,                              X
               MSGTYPE=(SNGLSEG,RESPONSE,1)
         SPACE 2
         APPLCTN RESIDENT,PSB=DFSIVP5,FPATH=256      MSDB
           TRANSACT CODE=IVTFM,MODE=SNGL,                              X
               MSGTYPE=(SNGLSEG,RESPONSE,1)
*********************************************************************
*   IVP APPLICATIONS DEFINITION FOR DB/DC, DCCTL
*********************************************************************
         SPACE 2
         APPLCTN GPSB=IVPREXX,PGMTYPE=TP,LANG=ASSEM  REXXTDLI SAMPLE
           TRANSACT CODE=IVPREXX,MODE=SNGL,                            X
               MSGTYPE=(SNGLSEG,NONRESPONSE,1)
         SPACE 2
*********************************************************************
*   IMS SAMPLE DATABASES DEFINITION
*********************************************************************
         SPACE 2
         DATABASE DBD=DI21PART,ACCESS=UP              HISAM/VSAM
         EJECT  ,
*********************************************************************
*   IMS SAMPLE APPLICATION DEFINITION - CICS IVP
*********************************************************************
         SPACE 2
         APPLCTN PSB=DFHSAM04,PGMTYPE=BATCH
         SPACE 2
         APPLCTN PSB=DFHSAM14,PGMTYPE=BATCH
         SPACE 2
         APPLCTN PSB=DFHSAM24,PGMTYPE=BATCH
         SPACE 2
         APPLCTN PSB=DFHSAM05,PGMTYPE=BATCH
         SPACE 2
         APPLCTN PSB=DFHSAM15,PGMTYPE=BATCH
         SPACE 2
         APPLCTN PSB=DFHSAM25,PGMTYPE=BATCH
         EJECT  ,
*********************************************************************
*   IMS SAMPLE APPLICATION DEFINITION
*********************************************************************
         SPACE 2
         APPLCTN  PSB=DFSSAM01,PGMTYPE=BATCH
         SPACE 2
         SPACE 2
         APPLCTN  PSB=DFSSAM02
```

```
         TRANSACT CODE=PART,PRTY=(7,10,2),INQUIRY=YES,MODE=SNGL
         SPACE 2
         APPLCTN  PSB=DFSSAM03
         TRANSACT CODE=DSPINV,PRTY=(7,10,2),INQUIRY=YES,MODE=SNGL
         SPACE 2
         APPLCTN  PSB=DFSSAM04
         TRANSACT CODE=ADDPART,PRTY=(7,10,2),INQUIRY=NO,MODE=SNGL
         TRANSACT CODE=ADDINV,PRTY=(7,10,2),INQUIRY=NO,MODE=SNGL
         TRANSACT CODE=DLETPART,PRTY=(7,10,2),INQUIRY=NO,MODE=SNGL
         TRANSACT CODE=DLETINV,PRTY=(7,10,2),INQUIRY=NO,MODE=SNGL
         SPACE 2
         APPLCTN  PSB=DFSSAM05
         TRANSACT CODE=CLOSE,PRTY=(7,10,2),INQUIRY=NO,MODE=SNGL
         SPACE 2
         APPLCTN  PSB=DFSSAM06
         TRANSACT CODE=DISBURSE,PRTY=(7,10,2),INQUIRY=NO,MODE=SNGL
         SPACE 2
         APPLCTN  PSB=DFSSAM07
         TRANSACT CODE=DSPALLI,PRTY=(7,10,2),INQUIRY=NO,MODE=SNGL
         SPACE 2
         APPLCTN  PSB=DFSSAM08,PGMTYPE=BATCH
         SPACE 2
         APPLCTN  PSB=DFSSAM09,PGMTYPE=BATCH           GENERAL PURPOSE
         SPACE 2
*********************************************************************
*   FAST PATH SAMPLE DATABASES DEFINITION
*********************************************************************
         SPACE 2
         DATABASE DBD=DBFSAMD1           GENERAL LEDGER - MSDB
         DATABASE DBD=DBFSAMD2                  TELLER - MSDB
         DATABASE DBD=DBFSAMD3,ACCESS=UP CUSTOMER ACCNT - DEDB
         DATABASE DBD=DBFSAMD4,ACCESS=UP CUSTOMER  LOAN - HDAM/VSAM
         EJECT  ,
*********************************************************************
*   FAST PATH SAMPLE APPLICATION DEFINITION
*********************************************************************
         SPACE 2
         APPLCTN  PSB=DBFSAMP1,PGMTYPE=BATCH       DEDB LOAD
         SPACE 2
         APPLCTN  PSB=DBFSAMP3,PGMTYPE=(TP),FPATH=256
         TRANSACT CODE=FPSAMP1,MSGTYPE=(SNGLSEG,RESPONSE)
         SPACE 2
         APPLCTN  PSB=DBFSAMP4
         TRANSACT CODE=FPSAMP2,MODE=SNGL
         SPACE 2
         APPLCTN  PSB=DBFSAMP6,PGMTYPE=BATCH       DEDB MISC.
         SPACE 2
         APPLCTN  PSB=DBFSAMP2,PGMTYPE=BATCH       HDAM LOAD
         SPACE 2
         APPLCTN  PSB=DBFSAMP5,PGMTYPE=BATCH       HDAM MISC.
         SPACE 2
*********************************************************************
*  IVP COMMUNICATIONS NETWORK DEFINITION
*********************************************************************
         SPACE 2
*********************************************************************
*
* THE IVP SYSTEMS
* MAKE USE OF 5 TERMINALS --
*
*       MVS MASTER CONSOLE   - IMS LTERM NAME = WTOR
*
*       IMS MASTER CONSOLE   - IMS LTERM NAME = PMASTER
*       IMS SECONDARY MASTER - IMS LTERM NAME = SMASTER
*
*       IMS USER TERMINALS   - IMS LTERM NAME = USER1
*       IMS USER TERMINALS   - IMS LTERM NAME = USER2
```

```
*
* THE IMS DB/DC SYSTEM WITH XRF ADDS ONE MORE TERMINAL --
*
*       XRF ISC LINK         - IMS LTERM NAME = ISC4XRF
*
* THE XRF SURVEILLANCE ISC DEFINITION REQUIRES A PAIR OF NODE NAMES
* WHICH MATCH THE VTAM APPLID'S SPECIFIED ON THE COMM MACRO
* FOR THE ACTIVE AND ALTERNATE SYSTEMS.  THE IMS PRIMARY MASTER
* TERMINAL DEFINITION IDENTIFIES TWO TERMINALS (ACTIVE AND
* ALTERNATE SYSTEM PRIMARY MASTER TERMINALS).
*
* THE MVS MASTER TERMINAL IS DEFINED AUTOMATICALLY.
*
* THE SECONDARY MASTER IS DEFINED AS A PRINTER LINE GROUP. (A SPOOL
* LINE GROUP IS ALSO AVAILABLE FOR USE AS A SECONDARY MASTER)
*
* THE USER MUST MAKE A CHOICE IN THE DEFINITION OF THE OTHER
* TERMINALS.  THIS SAMPLE STAGE 1 SOURCE DECK INCLUDES SAMPLE
* TERMINAL DEFINITIONS FOR THE FOLLOWING TERMINAL TYPE --
*
*           VTAM 3270 LOCAL
*
* THE IVP IS NOT DEPENDENT UPON NODE (LINE/PTERM) NAMES.
*
* LTERM NAMES AND TRANSACTION CODES ARE USED TO ESTABLISH TERMINAL
* SECURITY.
*
* THE USER MUST ENSURE THAT THE SELECTED TERMINALS ARE PROPERLY
* DEFINED TO VTAM AND MVS.
*
* THE MESSAGE FORMAT SERVICES USED BY THE IVP TRANSACTIONS ARE
* DEFINED FOR A DEVICE TYPE OF 3270-A02 (A 24X80 SCREEN SIZE).
* IF THE TERMINALS WHICH ARE SELECTED SPECIFY A DIFFERENT TYPE,
* THEN THE MFS SOURCE WILL HAVE TO BE CHANGED.
*
*********************************************************************
         SPACE 2
*
* COMM    MACRO --
*      THE APPLID OPERAND SPECIFIES VTAM APPLID FOR THE IMS CONTROL
*           REGION.
*           THE PASSWD OPERAND SPECIFIES APPLICATION PASSWORDS.
*           THESE OPERANDS MUST MATCH THE APPLICATION IDENTIFICATION
*           SPECIFIED IN THE  VTAM ACB(S) FOR THESE IMS DB/DC
*           SYSTEMS.
*           IN AN XRF ENVIRONMENT, APPLID'S AND PASSWORD'S ARE
*           SPECIFIED FOR BOTH THE ACTIVE AND ALTERNATE SYSTEMS.
*
         COMM RECANY=(5,4095),                                        X
               APPLID=(IVP91CR1,IVP91CR2),                            X
               PASSWD=(IVP91CR1,IVP91CR2),                            X
               OPTIONS=(PAGING,TIMESTAMP,MFSTEST,FMTMAST,             X
               NOUSEMSG,NOMSPEX,NOMSLEX,                              X
               VTAMAUTH,BLKREQD),                                     X
               COPYLOG=ALL
         EJECT ,
*********************************************************************
*   IVP PRINTER LINE GROUP
*********************************************************************
         LINEGRP  DDNAME=IVPPRT1,UNITYPE=PRINTER
          LINE     ADDR=000
           TERMINAL
             NAME  (SMASTER,SECONDARY)
             NAME  IVPPRT1
         EJECT ,
*********************************************************************
*   IVP SPOOL LINE GROUP
```

```
*********************************************************************
         LINEGRP  DDNAME=(IVPSPL1,IVPSPL2,IVPSPL3),UNITYPE=SPOOL
          LINE     BUFSIZE=166
SPOOL001   TERMINAL FEAT=AUTOSCH
             NAME  IVPSPL1
         EJECT ,
*********************************************************************
*   IVP VTAM DEFINITIONS
*********************************************************************
         SPACE 2
*********************************************************************
*   IVP 3270 LOCAL - VTAM
*********************************************************************
         SPACE 2
         TYPE  UNITYPE=(3270,LOCAL),TYPE=3270-A02,SIZE=(24,80)
           TERMINAL  NAME=(PMASTER1,PMASTER2)
             NAME  (PMASTER,MASTER)
         SPACE 2
           TERMINAL  NAME=USER1,OPTIONS=(TRANRESP,NOCOPY)
             NAME  USER1
             NAME  HOWARD            USED BY THE IMS SAMPLE APPLICATION
         SPACE 2
           TERMINAL  NAME=USER2,OPTIONS=(TRANRESP,NOCOPY)
             NAME  USER2
         SPACE 2
*********************************************************************
*   IVP LU6 - VTAM
*********************************************************************
         SPACE 2
*
* LU6 (ISC) DEFINITION --
*      THE FOLLOWING ISC LINK IS USED BY XRF AS A SURVEILLANCE
*           LINK BETWEEN THE ACTIVE AND ALTERNATE SYSTEMS.
*
*      THE NAME= OPERAND ON THE TERMINAL MACRO SPECIFIES THE VTAM
*           APPLID'S OF THE ACTIVE AND ALTERNATE SYSTEMS.  THESE NAMES
*           MUST MATCH THE NAMES SPECIFIED ON THE COMM MACRO, ABOVE.
*
         TYPE  UNITYPE=LUTYPE6,                                      X
               OPTIONS=(TRANRESP,OPNDST,NOMTOMSG,NLTWA,FORCSESS),    X
               MSGDEL=SYSINFO,                                       X
               SESSION=1,                                            X
               OUTBUF=256,                                           X
               SEGSIZE=256
           TERMINAL  NAME=(IVP91CR1,IVP91CR2),                       X
               COMPT1=(SINGLE1,VLVB)
             NAME  ISC4XRF,COMPT=1,ICOMPT=1
*
* IMSGEN MACRO --
*
         IMSGEN ASM=(HLASM,SYSLIN),ASMPRT=OFF,                       X
               LKPRT=(XREF,LIST),LKSIZE=(880K,63K),LKRGN=900K,       X
               SUFFIX=I,                                             X
               SURVEY=YES,                                           X
               NODE=(IVPEXE91,                                       X
               IVPSYS91,                                             X
               IVPDLB91),                                            X
               OBJDSET=IVPSYS91.OBJDSET,                             X
               PROCLIB=YES,                                          X
               USERLIB=IVPDLB91.ADFSLOAD,                            X
               UMAC0=,                                               X
               MACSYS=SYS1.MACLIB,                                   X
               MODGEN=SYS1.MODGEN,                                   X
               UMAC1=,                                               X
               UMAC2=,                                               X
               UMAC3=,                                               X
               ONEJOB=(YES,YES),                                     X
```

```
                JCL=(IMSGEN,                                            X
                ACTINFO1,                                               X
                'PGMRNAME',H,                                           X
                (CLASS=A,MSGLEVEL=(1,1),REGION=64M)),                   X
                SCL=(,,(TIME=600)),                                     X
                UJCL1=,                                                 X
                UJCL2=,                                                 X
                UJCL3=,                                                 X
                UJCL4=,                                                 X
                UJCL5=
        END ,
*
```

## DCC - Transaction Manager Control (DCCTL) Stage 1

```
*
********************************************************************************
* IVP IMS 9.1
*
* SKELETON: DFSIXSC1
*
* FUNCTION: STAGE 1 SOURCE FOR A DCC SYSTEM
********************************************************************************
*
*****************************************************************@SCPYRT**
*                                                                           *
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*                                                                           *
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*                                                                           *
*****************************************************************@ECPYRT**
*
* IMSCTRL MACRO --
*
        IMSCTRL  SYSTEM=(VS/2,(ALL,DCCTL),390),                           X
              DBRC=(YES,YES),                                             X
              DBRCNM=IVP91RC4,                                            X
              DCLWA=YES,                                                  X
              IMSID=IVP4,                                                 X
              NAMECHK=(YES,S1),                                           X
              MAXREGN=(005,512K,A,A),                                     X
              MCS=(2,7),                                                  X
              DESC=7,                                                     X
              ETOFEAT=(,,ALL),                                            X
              MAXCLAS=016
*
* IMSCTF  MACRO --
*
        IMSCTF SVCNO=(,203,202),                                          X
              LOG=SNGL,                                                   X
              CPLOG=500000,                                               X
              RDS=(LGDK,4096),                                            X
              PRDR=IVP91RD4
*
* MSGQUEUE MACRO --
*
        MSGQUEUE DSETS=(LGDK,LGDK,LGDK),                                  X
              RECLNG=(336,3360),                                          X
              BUFFERS=(5,6720),                                           X
              SHUTDWN=100
```

```
*
* FPCTRL   MACRO --
*
         FPCTRL
*
* BUFPOOLS MACRO --
*
         BUFPOOLS PSB=24000,                                           X
               PSBW=12000,                                             X
               FORMAT=(24000,256),                                     X
               FRE=30
*********************************************************************

* NOTE: Use only one of the following security macros, depending on    *

* whether you are using SMU or IMS user exits (if RACF is specified).  *

*********************************************************************

*
* SECURITY MACRO, IF USING SMU --
*
         SECURITY TYPE=(AGNEXIT,NORACTRM,NOTRANEX,NOSIGNEX),           X
               SECLVL=(NOTRAN,NOSIGN),                                 X
               TERMNL=YES,                                             X
               SECCNT=2,                                               X
               PASSWD=YES,                                             X
               TRANCMD=YES
*
* SECURITY MACRO, IF USING IMS USER EXITS --
*
         SECURITY TYPE=(RASEXIT,NORACTRM,SIGNEXIT,TRANEXIT),           X
               SECLVL=(SIGNAUTH,TRANAUTH),                             X
               SECCNT=2

*********************************************************************
*   IVP APPLICATIONS DEFINITION FOR DCCTL
*********************************************************************
         SPACE 2
         APPLCTN PSB=DFSIVPD,PGMTYPE=BATCH           WFI BMP
           TRANSACT CODE=IVTC1,MODE=SNGL,                              X
               MSGTYPE=(SNGLSEG,NONRESPONSE,1),WFI
         SPACE 2
         APPLCTN PSB=DFSIVPE,PGMTYPE=TP              NON-CONV MPP
           TRANSACT CODE=IVTC2,MODE=SNGL,                              X
               MSGTYPE=(SNGLSEG,NONRESPONSE,1)
         SPACE 2
         APPLCTN PSB=DFSIVPF,PGMTYPE=TP              CONV MPP
           TRANSACT CODE=IVTC3,SPA=(80,),MODE=SNGL,                    X
               MSGTYPE=(SNGLSEG,NONRESPONSE,1)
         SPACE 2
         APPLCTN PSB=DFSIVPG,PGMTYPE=TP,FPATH=256    IFP
           TRANSACT CODE=IVTC4,MODE=SNGL,                              X
               MSGTYPE=(SNGLSEG,RESPONSE,1)
         SPACE 2
*********************************************************************
*   IVP APPLICATIONS DEFINITION FOR DB/DC, DCCTL
*********************************************************************
         SPACE 2
         APPLCTN GPSB=IVPREXX,PGMTYPE=TP,LANG=ASSEM  REXXTDLI SAMPLE
           TRANSACT CODE=IVPREXX,MODE=SNGL,                            X
               MSGTYPE=(SNGLSEG,NONRESPONSE,1)
         SPACE 2
*********************************************************************
*  IVP COMMUNICATIONS NETWORK DEFINITION
*********************************************************************
         SPACE 2
```

```
*********************************************************************
*
* THE IVP SYSTEMS
* MAKE USE OF 5 TERMINALS --
*
*       MVS MASTER CONSOLE   - IMS LTERM NAME = WTOR
*
*       IMS MASTER CONSOLE   - IMS LTERM NAME = PMASTER
*       IMS SECONDARY MASTER - IMS LTERM NAME = SMASTER
*
*       IMS USER TERMINALS   - IMS LTERM NAME = USER1
*       IMS USER TERMINALS   - IMS LTERM NAME = USER2
*
*
* THE MVS MASTER TERMINAL IS DEFINED AUTOMATICALLY.
*
* THE SECONDARY MASTER IS DEFINED AS A PRINTER LINE GROUP. (A SPOOL
* LINE GROUP IS ALSO AVAILABLE FOR USE AS A SECONDARY MASTER)
*
* THE USER MUST MAKE A CHOICE IN THE DEFINITION OF THE OTHER
* TERMINALS.  THIS SAMPLE STAGE 1 SOURCE DECK INCLUDES SAMPLE
* TERMINAL DEFINITIONS FOR THE FOLLOWING TERMINAL TYPE --
*
*           VTAM 3270 LOCAL
*
* THE IVP IS NOT DEPENDENT UPON NODE (LINE/PTERM) NAMES.
*
* LTERM NAMES AND TRANSACTION CODES ARE USED TO ESTABLISH TERMINAL
* SECURITY.
*
* THE USER MUST ENSURE THAT THE SELECTED TERMINALS ARE PROPERLY
* DEFINED TO VTAM AND MVS.
*
* THE MESSAGE FORMAT SERVICES USED BY THE IVP TRANSACTIONS ARE
* DEFINED FOR A DEVICE TYPE OF 3270-A02 (A 24X80 SCREEN SIZE).
* IF THE TERMINALS WHICH ARE SELECTED SPECIFY A DIFFERENT TYPE,
* THEN THE MFS SOURCE WILL HAVE TO BE CHANGED.
*
*********************************************************************
         SPACE 2
*
* COMM    MACRO --
*      THE APPLID OPERAND SPECIFIES VTAM APPLID FOR THE IMS CONTROL
*           REGION.
*           THE PASSWD OPERAND SPECIFIES APPLICATION PASSWORDS.
*           THESE OPERANDS MUST MATCH THE APPLICATION IDENTIFICATION
*           SPECIFIED IN THE  VTAM ACB(S) FOR THESE IMS DB/DC
*           SYSTEMS.
         COMM RECANY=(5,4095),                                        X
               APPLID=IVP91CR4,                                       X
               PASSWD=IVP91CR4,                                       X
               OPTIONS=(PAGING,TIMESTAMP,MFSTEST,FMTMAST,             X
               NOUSEMSG,NOMSPEX,NOMSLEX,                              X
               VTAMAUTH,BLKREQD),                                     X
               COPYLOG=ALL
         EJECT ,
*********************************************************************
*   IVP PRINTER LINE GROUP
*********************************************************************
         LINEGRP  DDNAME=IVPPRT1,UNITYPE=PRINTER
          LINE     ADDR=000
           TERMINAL
             NAME  (SMASTER,SECONDARY)
             NAME  IVPPRT1
         EJECT ,
*********************************************************************
*   IVP SPOOL LINE GROUP
```

```
*********************************************************************
         LINEGRP  DDNAME=(IVPSPL1,IVPSPL2,IVPSPL3),UNITYPE=SPOOL
          LINE     BUFSIZE=166
SPOOL001   TERMINAL FEAT=AUTOSCH
             NAME  IVPSPL1
         EJECT ,
*********************************************************************
*   IVP VTAM DEFINITIONS
*********************************************************************
         SPACE 2
*********************************************************************
*   IVP 3270 LOCAL - VTAM
*********************************************************************
         SPACE 2
         TYPE  UNITYPE=(3270,LOCAL),TYPE=3270-A02,SIZE=(24,80)
           TERMINAL  NAME=PMASTER4
             NAME  (PMASTER,MASTER)
         SPACE 2
           TERMINAL  NAME=USER1,OPTIONS=(TRANRESP,NOCOPY)
             NAME  USER1
             NAME  HOWARD            USED BY THE IMS SAMPLE APPLICATION
         SPACE 2
           TERMINAL  NAME=USER2,OPTIONS=(TRANRESP,NOCOPY)
             NAME  USER2
         SPACE 2
*
* IMSGEN MACRO --
*
         IMSGEN ASM=(HLASM,SYSLIN),ASMPRT=OFF,                         X
               LKPRT=(XREF,LIST),LKSIZE=(880K,63K),LKRGN=900K,         X
               SUFFIX=I,                                               X
               SURVEY=YES,                                             X
               NODE=(IVPEXE91,                                         X
               IVPSYS91,                                               X
               IVPDLB91),                                              X
               OBJDSET=IVPSYS91.OBJDSET,                               X
               PROCLIB=YES,                                            X
               USERLIB=IVPDLB91.ADFSLOAD,                              X
               UMAC0=,                                                 X
               MACSYS=SYS1.MACLIB,                                     X
               MODGEN=SYS1.MODGEN,                                     X
               UMAC1=,                                                 X
               UMAC2=,                                                 X
               UMAC3=,                                                 X
               ONEJOB=(YES,YES),                                       X
               JCL=(IMSGEN,                                            X
               ACTINFO1,                                               X
               'PGMRNAME',H,                                           X
               (CLASS=A,MSGLEVEL=(1,1),REGION=64M)),                   X
               SCL=(,,(TIME=600)),                                     X
               UJCL1=,                                                 X
               UJCL2=,                                                 X
               UJCL3=,                                                 X
               UJCL4=,                                                 X
               UJCL5=
         END ,
*
```

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- “COBOL for OS/390 & VM” is referred to as “COBOL”.
- “DB2 for OS/390” is referred to as “DB2”.
- “PL/I for OS390 & VM” is referred to as “PL/I”.

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This bibliography includes all the publications cited in this book, including the publications in the IMS library.


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*OS/390 V2R10.0 DFSMS Access Method Services for Catalogs*, SC26-7326

*OS/390 V2R10.0 MVS Authorized Assembler Services Guide*, GC28-1763

*OS/390 V2R10.0 MVS Conversion Notebook*, GC28-1747

*OS/390 V2R10.0 MVS Installation Exits*, SC28-1753

*OS/390 V2R9 MVS Planning: APPC/MVS Management*, GC28-1807

*OS/390 V2R10 SMP/E Reference*, SC28-1806

*Resource Access Control Facility (RACF) General Information*, GC28-0722

*z/OS DFSMS Access Method Services for Catalogs*, SC26-7394

*z/OS V1R2.0 MVS Initialization and Tuning Reference*, SA22-7592


## IMS Version 9 Library

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|---|---|---|
| ZES1-2330 | ADB | *IMS Version 9: Administration Guide: Database Manager* |
| ZES1-2331 | AS | *IMS Version 9: Administration Guide: System* |
| ZES1-2332 | ATM | *IMS Version 9: Administration Guide: Transaction Manager* |
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| ZES1-2336 | APTM | *IMS Version 9: Application Programming: Transaction Manager* |
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**Supplementary Publications**

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| GC17-7825 | LPS | *IMS Version 9: Licensed Program Specifications* |
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**Accessibility Titles Cited in this Book**

| | | |
|---|---|---|
| SA22-7787 | | z/OS V1R1.0 TSO Primer |
| SA22-7794 | | z/OS V1R1.0 TSO/E User's Guide |
| SC34-4822 | | z/OS V1R1.0 ISPF User's Guide, Volume 1 |

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