Fourth Edition (April 2005) (Softcopy Only)

This edition replaces or makes obsolete the previous edition, GC27-1297-02. This edition is available in softcopy format only. The technical changes for this version are summarized under "Summary of Changes" on page xvii.

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About This Book

This information is available in PDF and BookManager® formats, and also as part of the DB2® Information Management Software Information Center for z/OS® Solutions. To view the information within the DB2 Information Management Software Information Center for z/OS Solutions, go to publib.boulder.ibm.com/infocenter/db2zhelp. To get the most current versions of the PDF and BookManager formats, go to the IMS Library page at www.ibm.com/software/data/ims/library.html.

This book is for IMS system programmers responsible for verifying the installation of the following IMS Version 8 environments on OS/390® V2R10 or later (including z/OS):
- Database (DB Batch)
- Database Control (DBCTL)
- Database/Data Communication (DB/DC)
- Database/Data Communication with Extended Recovery Facility (DB/DC with XRF)
- Data Communications Control (DCCTL)

The IMS Installation task includes the initial activity of installing IMS on your OS/390 V2R10 or later system, verifying that installation as described in this book, and a variety of other activities that are described in IMS Version 8: 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>
<thead>
<tr>
<th>Installation Subtask</th>
<th>Location of Information</th>
</tr>
</thead>
<tbody>
<tr>
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<td>Program Directory for Information Management System Version 8</td>
</tr>
<tr>
<td>Verifying the correct installation of an IMS system</td>
<td>Volume 1</td>
</tr>
<tr>
<td>Using the Installation Verification Program (IVP) system to test application or service changes</td>
<td>Volume 1</td>
</tr>
<tr>
<td>Using the IVP system for demonstrations, in-house training, or developing operation and recovery procedures</td>
<td>Volume 1</td>
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<tr>
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<td>Volume 2</td>
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<tr>
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<td>Volume 2</td>
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<tr>
<td>Installing the Transport Manager subsystem</td>
<td>Volume 2</td>
</tr>
<tr>
<td>Tailoring the IMS system for your environment</td>
<td>Volume 2</td>
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<tr>
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<td>Volume 2</td>
</tr>
</tbody>
</table>

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

- Use the Program Directory for Information Management System Version 8 for information on installing a new IMS system.
- Use the IMS Version 8: Installation Volume 1: Installation Verification after you have installed a new system to ensure that it has been installed properly.
- Use the IMS Version 8: 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 8 and both volumes of IMS Installation. If you are responsible for supporting an already-installed IMS system, you probably need access to IMS Version 8: Installation Volume 2: System Definition and Tailoring only.

Additionally, you can find information about IVP error messages in IMS Version 8: 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 INSTALL 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 OS/390, VTAM®, IMS service, and the IVP sample applications. Use this part for reference as you use the Program Directory for Information Management System Version 8 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 Information,” on page 125** 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 167** 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 8 to perform a complete installation of IMS Version 8 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 reference information that supplements the Program Directory for Information Management System Version 8. **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 Information,” on page 125** provides additional information that might be useful during the installation and 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 104 and 107).
File Tailoring (see pages 110 and 115), and Execution (see page 118) 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 OS/390 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 OS/390 and IMS to VTAM interface requirements, you will also need the assistance of OS/390 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 217. For more definitions of terminology and further references see the Master Index and Glossary.

How to Read Syntax Diagrams

This book contains syntax diagrams.

Each syntax diagram 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.

Table 2 describes the conventions that are used in syntax diagrams in this information:

Table 2. How to Read Syntax Diagrams

<table>
<thead>
<tr>
<th>Convention</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>➞ A ➞ B ➞ C ➞</td>
<td>You must specify values A, B, and C. Required values are shown on the main path of a syntax diagram.</td>
</tr>
<tr>
<td>➞ A ➞ B ➞ C</td>
<td>You must specify value A, B, or C.</td>
</tr>
<tr>
<td>➞ A ➞</td>
<td>You have the option to specify value A. Optional values are shown below the main path of a syntax diagram.</td>
</tr>
<tr>
<td>➞ A ➞</td>
<td>You have the option to specify A, B, C, or none of these values.</td>
</tr>
<tr>
<td>➞ A ➞ B ➞ C ➞</td>
<td>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.</td>
</tr>
</tbody>
</table>
Table 2. How to Read Syntax Diagrams  (continued)

<table>
<thead>
<tr>
<th>Convention</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1" alt="Diagram" /></td>
<td>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.</td>
</tr>
<tr>
<td><img src="image2" alt="Diagram" /></td>
<td>You have the option to specify value A multiple times. The separator in this example is optional.</td>
</tr>
<tr>
<td><img src="image3" alt="Diagram" /></td>
<td>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.</td>
</tr>
</tbody>
</table>

Name:

- **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**: Keywords, their allowable synonyms, and reserved parameters appear in lowercase letters for UNIX®. Enter these values exactly as shown.

- **Lowercase values in italic (for example, name)**: Supply your own text or value in place of the name variable.

- **\bslash symbol**: A \bslash symbol indicates one blank position.

Other syntax conventions include the following:
- When you enter 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.

```
hello
   | Name
   v Greeting

Name:

(1) name

Greeting:

(2) your_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 commands 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 or any other IMS information, 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 title, the part number of the title, the version of IMS, and, if applicable, the specific location of the text you are commenting on (for example, a page number in the PDF or a heading in the Information Center).
Summary of Changes

Changes to the Current Edition of This Book for Version 8

This edition, which is available in softcopy format only, includes technical and editorial changes.

Changes to This Book for IMS Version 8

This book contains new technical information for IMS Version 8, as well as editorial changes. The changes in this book reflect the following changes to the IVP:

- The title of this book has changed from *Installation Volume 1: Installation and Verification* to *Installation Volume 1: Installation Verification*.

- The name of the Installation Verification Program has been changed from “INSTALL/IVP” to “IVP.”

- The SMP/E installation process has been removed from the IVP. This change in the IVP is in support of the packaging and installation changes made to IMS. All information about installing a new IMS system has been moved to the *Program Directory for Information Management System Version 8*.

  It is highly recommended to use the IVP to verify that your installation of IMS is successful. The IVP continues to provide sample applications that demonstrate the use of select IMS functions.

- The DFSIVJ01, DFSIVJ02, and DFSIVJ03 jobs have been removed from the installation process.

- Steps Bx (of the IVP JOBS and TASKS) have been removed from the IVP process. Performing these installation steps is documented in the *Program Directory for Information Management System Version 8*.

- The IVP Dialog and Help panels have been updated to reflect the removal of the SMP/E installation process from the IVP.

- IVP variables related to the SMP/E installation of IMS have been removed from the IVP Variable Gathering dialog.

- A new Common Service Layer sample application is available through the new Steps Ox of the IVP JOBS and TASKS. This sample verifies and demonstrates the following:
  - Samples of the IMS.PROCLIB members for SCI, OM, and RM
  - Starting and stopping the SCI, OM, and RM
  - Starting and using the TSO SPOC

- A new Syntax Checker sample application is available through the new task IV_E305T in Steps Ex of the IVP JOBS and TASKS. This sample demonstrates the following:
  - General use of the Syntax Checker
  - Using the Syntax Checker to convert an IMS 7.1 “DFSPBxxx” PROCLIB member to IMS 8.1

- A new Fast Path option in the IVP allows you to include or exclude Fast Path in the IVP sample applications. This new option is available in the IVP Dialog Sub-option Selection panel.

  The following items are modified depending on the option to include or exclude Fast Path in the sample applications:
  - The IVP variables displayed in the variable-gathering phase
  - The steps displayed in the file-tailoring and execution phases
Library Changes for IMS Version 8

Changes to the IMS Library for Version 8 include the addition of new titles, the elimination of one title, organizational changes, and accessibility enhancements. Changes are indicated by a vertical bar (|) to the left of the changed text.

New, Revised, and Eliminated Titles

The following list details major changes to the IMS Version 8 library:

- **IMS Version 8: Common Service Layer Guide and Reference**
  The library includes new information: **IMS Version 8: Common Service Layer Guide and Reference** (CSL). This information is available only in PDF and BookManager formats.

- The information formerly titled **IMS Version 7: Common Queue Server and Base Primitive Environment Guide and Reference** has been divided in the IMS Version 8 library:
  - **IMS Version 8: Base Primitive Environment Guide and Reference**
  - **IMS Version 8: Common Queue Server Guide and Reference**

- The information formerly titled **IMS Version 7: Installation Volume 1: Installation and Verification** is now titled **IMS Version 8: Installation Volume 1: Installation Verification**. All installation information is now in the IMS Version 8 Program Directory.

- **IMS Version 8: Sample Operating Procedures**
  This information is no longer produced for the IMS library from IMS Version 8 and after.

- The information formerly titled **IMS Version 8: IMS Java™ User’s Guide** is now titled **IMS Version 8: IMS Java Guide and Reference**

Organizational Changes

Organizational changes to the IMS Version 8 library include changes to:

- **IMS Version 8: Application Programming: Database Manager**
- **IMS Version 8: Application Programming: EXEC DLI Commands for CICS and IMS**
- **IMS Version 8: Application Programming: Transaction Manager**
- **IMS Version 8: Messages and Codes, Volume 1**
- **IMS Version 8: Utilities Reference: Database and Transaction Manager**

The section titled “DL/I Return and Reason Codes” has been moved from **IMS Version 8: Application Programming: Database Manager**, **IMS Version 8: Application Programming: EXEC DLI Commands for CICS and IMS**, **IMS Version 8: Application Programming: Transaction Manager** to **IMS Version 8: Messages and Codes, Volume 1**.
The section titled “DL/I Status Codes” will now only appear in [IMS Version 8: Messages and Codes, Volume 1].

The section titled “MFS Language Utility” has been renamed to “MFS Language Utility Control Statements” and has been moved from [IMS Version 8: Application Programming: Transaction Manager] to [IMS Version 8: Utilities Reference: Database and Transaction Manager].

**Deleted Information**

z/OS does not support the Virtual Fetch function any longer. Consequently, all information associated with Virtual Fetch has been deleted from the following IMS Version 8 information:

- [IMS Version 8: Administration Guide: System]
- [IMS Version 8: Failure Analysis Structure Tables (FAST) for Dump Analysis]
- [IMS Version 8: Installation Volume 2: System Definition and Tailoring]
- [IMS Version 8: Messages and Codes, Volume 1]
- [IMS Version 8: Messages and Codes, Volume 2]

**Accessibility Enhancements**

Accessibility features help a user who has a physical disability, such as restricted mobility or limited vision, to use software products successfully. The major accessibility features in 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 user interfaces found in IMS. Consult the assistive technology documentation for specific information when using it to access these interfaces.

**Accessible Information**

Online information for IMS Version 8 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 Library Reader™ (for workstations) is available on the IMS Licensed Product Kit (CD), which is available for downloading from IBM® at [www.ibm.com](http://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: TSO/E Primer], [z/OS: TSO/E User’s Guide], [z/OS: ISPF User’s Guide]. 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

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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 8.

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 DFSIXC01

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 6 to determine which FMIDs are required, optional, or not applicable.
## IMS FMIDs

### Table 3. FMID Installation Requirements

<table>
<thead>
<tr>
<th>FMID</th>
<th>Description</th>
<th>DB Batch</th>
<th>DBCTL</th>
<th>DB/DC</th>
<th>DB/DC with XRF¹</th>
<th>DCCTL</th>
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<tbody>
<tr>
<td>HIR2101</td>
<td>Internal Resource Lock Manager V2R1</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>N</td>
</tr>
<tr>
<td>HMK8800²</td>
<td>System Services component IVP component</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
</tr>
<tr>
<td></td>
<td>Database Recovery Control</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Logging Component</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>JMK8801</td>
<td>Database Manager function</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>N</td>
</tr>
<tr>
<td>JMK8802</td>
<td>Transaction Manager function LU manager for IMS APPC</td>
<td>N</td>
<td>N</td>
<td>R</td>
<td>R</td>
<td>R</td>
</tr>
<tr>
<td>JMK8803</td>
<td>Extended Terminal Option feature</td>
<td>N</td>
<td>N</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>JMK8804</td>
<td>RSR Recovery-Level Tracking feature</td>
<td>O</td>
<td>O</td>
<td>O</td>
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<td>O</td>
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<tr>
<td>JMK8805</td>
<td>RSR Database-Level Tracking feature</td>
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<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
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<td>JMK8806³</td>
<td>IMS Java</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
</tbody>
</table>

**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 with XRF column refers to DB/DC with XRF. Although DCCTL with 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.
3. Refer to the "IMS Transaction and Database Servers Program Directory (GI10-8444-00)" for installation instructions.
4. Instructions for running the IMS Java IVPs are in the [IMS Version 8: IMS Java Guide and Reference](https://www.ibm.com/docs/en/ims)

### Components and Optional Features

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 8: Installation Volume 2: System Definition and Tailoring](https://www.ibm.com/docs/en/ims)

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.

**ETO Feature**

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

- DB/DC
- DCCTL

For the ETO Feature to be functional, the IMSCTRL macro must be changed to specify the ETOFEAT parameter. An IMS system definition must be performed, followed by an SMP/E JCLIN.

**Related Reading:** See [IMS Version 8: 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 8: 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 8: 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 Different Classes of IMS Systems

Attention: The following classes of IMS systems are mutually exclusive and cannot share the same IMS.SDFSRESL; the IMSGEN SUFFIX is not sufficient for separating system classes:
- DBCTL
- DB/DC
- DCCTL

Establish completely separate SMP/E service environments for each system type and release in order to properly service multiple types of IMS systems. Establish separate distribution libraries, target libraries, and SMP/E target zone, distribution zone, SDFSMAC, SMPLTS, SMPSTS, and SMPSCDS data sets. However, the Global Zone and SMPPTS data sets can be shared.

Using the Same Release Level and Environment

When using multiple copies of IMS at the same release level and environment, the following applies (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 8: 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.
- Under the OS/390 authorized program facility, authorize all libraries from which modules are to be loaded for the control region. For additional information, see “Authorizing IMS System Data Sets in the Authorized Program Facility” on page 70.
- Systems with the same combination of the following resources can share the same IMS.SDFSRESL and IMS.OPTIONS data sets (referred to here as the “data sets”):
  - VTAM
  - BTAM
  - Fast Path (DEDBs or EMH)
  - IRLM
  - MSC
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 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 a Version 8 system using the SVC from Version 7 is not supported. Similarly, running a Version 7 system using the SVC from Version 6 is not supported.

The IMS resource cleanup module (DFSMRCL0) and the dump formatting module (DFSAFMD0) installed in the host OS/390 system must be from the most recent release of IMS.

### 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 8: 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 8: Administration Guide: System for a full explanation of the IMS online change function and procedures for using data sets.

### IVP Dialog Data Sets

The 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
**/IVP Data Sets**

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>DSNTYPE</td>
<td>PDS</td>
</tr>
<tr>
<td>RECFM</td>
<td>FB</td>
</tr>
<tr>
<td>LRECL</td>
<td>80</td>
</tr>
<tr>
<td>BLKSIZE</td>
<td>Multiple of 80</td>
</tr>
</tbody>
</table>

**IMS.INSTATBL**

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

This data set has the following attributes:

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>DSORG</td>
<td>Partitioned</td>
</tr>
<tr>
<td>RECFM</td>
<td>FB</td>
</tr>
<tr>
<td>LRECL</td>
<td>80</td>
</tr>
<tr>
<td>BLKSIZE</td>
<td>Multiple of 80</td>
</tr>
</tbody>
</table>

**SMP/E Data Sets**

The 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:

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>DSORG</td>
<td>VSAM KSDS</td>
</tr>
</tbody>
</table>

**IMS.GLBLEZONE.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:

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>DSORG</td>
<td>VSAM KSDS</td>
</tr>
</tbody>
</table>

**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
SMP/E Data Sets

<table>
<thead>
<tr>
<th>LRECL</th>
<th>80</th>
</tr>
</thead>
<tbody>
<tr>
<td>BLKSIZE</td>
<td>Multiple of 80</td>
</tr>
</tbody>
</table>

**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.ADFSOLOAD
- 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.ADFSJDC8
- IMS.ADFSJHF8
- IMS.ADFSSJCL
- IMS.ADFSSJLIB
- IMS.ADFSSJSAM
- IMS.ADFSSJTOL

**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
DLIB Data Sets

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
**DLIB Data Sets**

**IMS.ADFSJDC8**

ADFSJDC8 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.ADFSJHF8**

ADFSJHF8 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
DLIB Data Sets

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
DLIB Data Sets

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 comprises 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
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 26):

- 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
Target Data Sets

**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 “Authorizing IMS System Data Sets in the Authorized Program Facility” on page 70.

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
Target Data Sets

**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 processing of NON-SYSGEN modules.

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 "Authorizing IMS System Data Sets in the Authorized Program Facility" on page 70.

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
Target Data Sets

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 the 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 21.)

IMS.FORMAT (described in “IMS.FORMAT” on page 35)
IMS.LGENIN
IMS.LGENOUT
IMS.OBJDSET
IMS.OPTIONS
IMS.PROCLIB
IMS.REFERAL (described in “IMS.REFERAL” on page 41)
IMS.TFORMAT (described in “IMS.TFORMAT” on page 42)

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 21.
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 OS/390 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. Its contents are copied by the Online Change utility to either IMS.MATRIXA or IMS.MATRIXB.

This data set has the following attributes:

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>DSORG</td>
<td>Partitioned</td>
</tr>
<tr>
<td>DSNTYPE</td>
<td>PDS</td>
</tr>
<tr>
<td>RECFM</td>
<td>U</td>
</tr>
<tr>
<td>LRECL</td>
<td>0</td>
</tr>
<tr>
<td>BLKSIZE</td>
<td>User choice. Default 6144.</td>
</tr>
</tbody>
</table>

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 OS/390 system. For more information, see “Authorizing IMS System Data Sets in the Authorized Program Facility” on page 70.

These data sets have the following attributes:

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>DSORG</td>
<td>Partitioned</td>
</tr>
<tr>
<td>DSNTYPE</td>
<td>PDS</td>
</tr>
<tr>
<td>RECFM</td>
<td>U</td>
</tr>
<tr>
<td>LRECL</td>
<td>0</td>
</tr>
<tr>
<td>BLKSIZE</td>
<td>User choice. Default 6144.</td>
</tr>
</tbody>
</table>

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 OS/390 system. For more information, see “Authorizing IMS System Data Sets in the Authorized Program Facility” on page 70.

These data sets have the following attributes:

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>DSORG</td>
<td>Partitioned</td>
</tr>
<tr>
<td>DSNTYPE</td>
<td>PDS</td>
</tr>
<tr>
<td>RECFM</td>
<td>U</td>
</tr>
</tbody>
</table>
**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 8: Installation Volume 2: System Definition and Tailoring](#) for additional information.

This data set has the following attributes:

- **DSORG**: Partitioned
- **DSNTYPE**: PDS
- **RECFM**: FB
System Data Sets

<table>
<thead>
<tr>
<th>LRECL</th>
<th>80</th>
</tr>
</thead>
<tbody>
<tr>
<td>BLKSIZE</td>
<td>Multiple of 80 less than or equal to 3200.</td>
</tr>
</tbody>
</table>

**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 46.

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 51.

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
Execution Data Sets

- 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 41 and to “SPOOL SYSOUT Data Sets” on page 56.
- Direct Output Data Sets—Refer to “Direct Output Data Sets” on page 45.

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

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 46.

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...
Execution Data Sets

The 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:

<table>
<thead>
<tr>
<th>DSORG</th>
<th>Sequential</th>
</tr>
</thead>
<tbody>
<tr>
<td>RECFM</td>
<td>VB</td>
</tr>
<tr>
<td>LRECL</td>
<td>4004</td>
</tr>
<tr>
<td>BLKSIZE</td>
<td>(LRECL*n)+4</td>
</tr>
</tbody>
</table>

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:

<table>
<thead>
<tr>
<th>DSORG</th>
<th>Sequential</th>
</tr>
</thead>
<tbody>
<tr>
<td>RECFM</td>
<td>VB</td>
</tr>
<tr>
<td>LRECL</td>
<td>4004</td>
</tr>
<tr>
<td>BLKSIZE</td>
<td>(LRECL*n)+4</td>
</tr>
</tbody>
</table>

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 46.

These data sets have the following attributes:

<table>
<thead>
<tr>
<th>DSORG</th>
<th>Sequential</th>
</tr>
</thead>
<tbody>
<tr>
<td>KEYLEN</td>
<td>1</td>
</tr>
<tr>
<td>RECFM</td>
<td>F</td>
</tr>
<tr>
<td>LRECL</td>
<td>2080</td>
</tr>
<tr>
<td>BLKSIZE</td>
<td>2080</td>
</tr>
</tbody>
</table>

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 46.

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.
Execution Data Sets

For additional information, refer to “Log Data Sets” on page 46.

This data set has the following attributes:

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>DSORG</td>
<td>Sequential</td>
</tr>
<tr>
<td>RECFM</td>
<td>VB</td>
</tr>
<tr>
<td>LRECL</td>
<td>BLKSIZE-4</td>
</tr>
<tr>
<td>BLKSIZE</td>
<td>User choice; IBM recommends a 2K multiple greater than or equal to 6K</td>
</tr>
</tbody>
</table>

**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:

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>DSORG</td>
<td>Sequential</td>
</tr>
<tr>
<td>RECFM</td>
<td>F</td>
</tr>
<tr>
<td>LRECL</td>
<td>80</td>
</tr>
<tr>
<td>BLKSIZE</td>
<td>80</td>
</tr>
</tbody>
</table>

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:

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>DSORG</td>
<td>Sequential</td>
</tr>
<tr>
<td>RECFM</td>
<td>F</td>
</tr>
<tr>
<td>LRECL</td>
<td>80</td>
</tr>
<tr>
<td>BLKSIZE</td>
<td>80</td>
</tr>
</tbody>
</table>

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:
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:
Execution Data Sets

**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
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 51.

These data sets have the following attributes:

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DSORG</td>
<td>Sequential</td>
</tr>
<tr>
<td>RECFM</td>
<td>Determined by IMS</td>
</tr>
<tr>
<td>LRECL</td>
<td>Determined by IMS</td>
</tr>
<tr>
<td>BLKSIZE</td>
<td>Determined by IMS</td>
</tr>
</tbody>
</table>

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
Execution Data Sets

- 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:

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>DSORG</td>
<td>Sequential</td>
</tr>
<tr>
<td>RECFM</td>
<td>Determined by IMS</td>
</tr>
<tr>
<td>LRECL</td>
<td>Determined by IMS</td>
</tr>
<tr>
<td>BLKSIZE</td>
<td>Determined by IMS</td>
</tr>
</tbody>
</table>

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:

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>DSORG</td>
<td>Sequential</td>
</tr>
<tr>
<td>RECFM</td>
<td>Determined by IMS</td>
</tr>
<tr>
<td>LRECL</td>
<td>Determined by IMS</td>
</tr>
<tr>
<td>BLKSIZE</td>
<td>Determined by IMS</td>
</tr>
</tbody>
</table>

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:

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>DSORG</td>
<td>Sequential</td>
</tr>
<tr>
<td>RECFM</td>
<td>Determined by IMS</td>
</tr>
</tbody>
</table>
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 [56](#).
Execution Data Sets

**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 OS/390 system. For more information see, "Authorizing IMS System Data Sets in the Authorized Program Facility" on page 70.

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

User level data sets are data sets that can be allocated by the user.
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.ISPTABL 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.ISPTABL data set at the same time. A user can have more than one USER.ISPTABL 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:

- **“Direct Output Data Sets”**
- “Log Data Sets” on page 46
- “Message Queue Data Sets” on page 51
- “OSAM Data Sets” on page 52
- “VSAM Data Sets” on page 53
- “Online Change Data Sets” on page 53
- “Data Set Allocation without Online Change” on page 55
- “SPOOL SYSOUT Data Sets” on page 56
- “XRF Data Set Considerations” on page 58
- “Dynamic Allocation Considerations” on page 60
- “Global Resource Serialization Considerations” on page 60
- “JES Considerations” on page 61
- “RACF Considerations” on page 61

**Related Reading:** The DBRC Recon data set is described in [IMS Version 8: Database Recovery Control (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>
<thead>
<tr>
<th>Device Type</th>
<th>RECFM</th>
<th>LRECL</th>
<th>BLKSIZE</th>
</tr>
</thead>
<tbody>
<tr>
<td>3211</td>
<td>VM</td>
<td>137</td>
<td>141</td>
</tr>
<tr>
<td>2540P</td>
<td>V</td>
<td>84</td>
<td>88 (note 1)</td>
</tr>
<tr>
<td>2400 series tape</td>
<td>VBM</td>
<td>125</td>
<td>(note 2)</td>
</tr>
<tr>
<td>DASD</td>
<td>VBM</td>
<td>125</td>
<td>1/4 Track</td>
</tr>
</tbody>
</table>

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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 8: Operations Guide and IMS Version 8: 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 8: 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>
<thead>
<tr>
<th>Device Type</th>
<th>OLDS Block Size</th>
<th>Blocks per Track</th>
<th>Bytes of Log Data per Track</th>
</tr>
</thead>
<tbody>
<tr>
<td>2105</td>
<td>26624</td>
<td>2</td>
<td>53248</td>
</tr>
<tr>
<td>2105</td>
<td>18432</td>
<td>3</td>
<td>55296</td>
</tr>
<tr>
<td>3330</td>
<td>12288</td>
<td>1</td>
<td>12288</td>
</tr>
<tr>
<td>3350</td>
<td>18432</td>
<td>1</td>
<td>18432</td>
</tr>
<tr>
<td>3380</td>
<td>22528</td>
<td>2</td>
<td>45056</td>
</tr>
<tr>
<td>3390</td>
<td>26624</td>
<td>2</td>
<td>53248</td>
</tr>
<tr>
<td>3390</td>
<td>18432</td>
<td>3</td>
<td>55296</td>
</tr>
<tr>
<td>9340</td>
<td>22528</td>
<td>2</td>
<td>45056</td>
</tr>
</tbody>
</table>

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:

\[
\text{Number of tracks in a WADS track group} = \left(\frac{\text{OLDS block size}}{2K}\right) + 1
\]

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:

\[
\text{Minimum WADS size (in tracks)} = \left(\frac{\text{number of tracks in a WADS track group}}{\text{number of OLDS blocks per track}}\right)
\]
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

<table>
<thead>
<tr>
<th>OLDS Block Size</th>
<th>WADS with OLDS on 3380</th>
<th>WADS with OLDS on 3390</th>
</tr>
</thead>
<tbody>
<tr>
<td>6K</td>
<td>28 tracks or 2 cylinders</td>
<td>32 tracks or 3 cylinders</td>
</tr>
<tr>
<td>8K</td>
<td>25 tracks or 2 cylinders</td>
<td>30 tracks or 2 cylinders</td>
</tr>
<tr>
<td>10K</td>
<td>24 tracks or 2 cylinders</td>
<td>30 tracks or 2 cylinders</td>
</tr>
<tr>
<td>12K</td>
<td>21 tracks or 2 cylinders</td>
<td>28 tracks or 2 cylinders</td>
</tr>
<tr>
<td>14K</td>
<td>24 tracks or 2 cylinders</td>
<td>24 tracks or 2 cylinders</td>
</tr>
<tr>
<td>16K</td>
<td>18 tracks or 2 cylinders</td>
<td>27 tracks or 2 cylinders</td>
</tr>
<tr>
<td>18K</td>
<td>20 tracks or 2 cylinders</td>
<td>30 tracks or 2 cylinders</td>
</tr>
<tr>
<td>20K</td>
<td>22 tracks or 2 cylinders</td>
<td>22 tracks or 2 cylinders</td>
</tr>
<tr>
<td>22K</td>
<td>24 tracks or 2 cylinders</td>
<td>24 tracks or 2 cylinders</td>
</tr>
<tr>
<td>24K</td>
<td>13 tracks or 1 cylinder</td>
<td>26 tracks or 2 cylinders</td>
</tr>
<tr>
<td>26K</td>
<td>14 tracks or 1 cylinder</td>
<td>28 tracks or 2 cylinders</td>
</tr>
<tr>
<td>28K</td>
<td>15 tracks or 1 cylinder</td>
<td>15 tracks or 1 cylinder</td>
</tr>
<tr>
<td>30K</td>
<td>16 tracks or 2 cylinders</td>
<td>16 tracks or 2 cylinders</td>
</tr>
</tbody>
</table>

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

\[
\text{Maximum number of tracks} = \left(\left\lfloor\frac{\text{OLDS block size}}{2K}\right\rfloor + 1\right) \times \text{number of OLDS buffers}
\]

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 IMS, see IMS Version 8 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 8: 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.

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

These libraries 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.

---

This process 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

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 IMSPLLEX.OLCSTAT data set must be initialized instead of the IMS.MODSTAT data set. See Chapter 2, “Data Sets,” on page 11 for more information about the IMSPLLEX.OLCSTAT data set.

**SPOOL SYSPUT 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 SYSPUT 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 OS/390 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>
<thead>
<tr>
<th>Macro</th>
<th>Coding</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>LINEGRP</td>
<td>DDNAME = (SPOOL1, SPOOL2)</td>
<td>2 data sets spooled SYSOUT</td>
</tr>
<tr>
<td></td>
<td>UNITYPE = SPOOL</td>
<td></td>
</tr>
<tr>
<td>LINE</td>
<td>BUFSIZE = 1200</td>
<td>Buffer size in bytes</td>
</tr>
<tr>
<td>TERMINAL</td>
<td>AUTOSCH</td>
<td>Optional, specified if automatic scheduling</td>
</tr>
<tr>
<td>NAME</td>
<td>RPT10</td>
<td>Use LTERM names that show nature of output</td>
</tr>
</tbody>
</table>

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 56, 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 DFSWTn00, 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 IMSWTO000 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 IMSWTn00 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 DFSWTn00 procedures are the executable portions that are invoked for each IMSWTn00 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 DFSWTn00 procedure before selecting names for the SPOOL data sets; see IMS Version 8: 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 IMSWTn000 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 DFSWTn000 procedure can be used to access the correct data sets.
XRF Considerations

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
- DFSOLPx (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
LGMSGSL
MSDBCP1
MSDBCP2
MSDBCP3
MSDBCP4
MSDBDUMP
QBLKS
QBLKSL
SHMSGx
SHMSGSL
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 GSAM)
- FORMATA
- FORMATB
- IMSACBA
- IMSACBB
- IMSTFMTA
- IMSTFMTB
- JOBS (used in the IMSRDR procedure)
- MATRIXA
- MATRIXB
- MODBLKSA
- MODBLKSB
- PGMLIB
- PROCLIB
- PSBLIB (used by GSAM)
- 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.
XRF Considerations

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

<table>
<thead>
<tr>
<th>Data Set</th>
<th>Description</th>
<th>Managed by SMP/E</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACBLIB</td>
<td>online change staging library</td>
<td>No</td>
</tr>
<tr>
<td>ADFSCLST</td>
<td>used during installation</td>
<td>Yes</td>
</tr>
<tr>
<td>ADFSEEXEC</td>
<td>used during installation</td>
<td>Yes</td>
</tr>
<tr>
<td>ADFSLOAD</td>
<td>used by SYSDEF</td>
<td>Yes</td>
</tr>
<tr>
<td>ADFSMAC</td>
<td>used by SYSDEF</td>
<td>Yes</td>
</tr>
<tr>
<td>ADFSMLIB</td>
<td>used during installation</td>
<td>Yes</td>
</tr>
<tr>
<td>ADFPLIB</td>
<td>used during installation</td>
<td>Yes</td>
</tr>
<tr>
<td>ADFSRTRM</td>
<td>used during installation</td>
<td>Yes</td>
</tr>
<tr>
<td>ADFSSLIB</td>
<td>used during installation</td>
<td>Yes</td>
</tr>
<tr>
<td>ADFSSRC</td>
<td>used by SYSDEF</td>
<td>Yes</td>
</tr>
<tr>
<td>ADFSTLIB</td>
<td>used during installation</td>
<td>Yes</td>
</tr>
<tr>
<td>FORMAT</td>
<td>online change staging library</td>
<td>No</td>
</tr>
<tr>
<td>INSTALIB</td>
<td>used during IVP</td>
<td>No</td>
</tr>
<tr>
<td>INSTATBL</td>
<td>used during IVP</td>
<td>No</td>
</tr>
<tr>
<td>MATRIX</td>
<td>online change staging library</td>
<td>No</td>
</tr>
<tr>
<td>MODBLKS</td>
<td>created by SYSDEF</td>
<td>Yes</td>
</tr>
<tr>
<td>OBJDSET</td>
<td>created by SYSDEF</td>
<td>No</td>
</tr>
<tr>
<td>OPTIONS</td>
<td>created by SYSDEF; used by SMP/E and SYSDEF</td>
<td>No</td>
</tr>
<tr>
<td>PROCLIB</td>
<td>created by SYSDEF</td>
<td>No</td>
</tr>
<tr>
<td>REFERAL</td>
<td>used in conjunction with FORMAT</td>
<td>No</td>
</tr>
<tr>
<td>SDFSMAC</td>
<td>created by SMP/E</td>
<td>Yes</td>
</tr>
<tr>
<td>SDFSRESL</td>
<td>created by SYSDEF and SMP/E</td>
<td>Yes</td>
</tr>
<tr>
<td>TFORMAT</td>
<td>online change staging library</td>
<td>No</td>
</tr>
</tbody>
</table>

Some of these data sets appear in other lists. 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 8: 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](#).
Chapter 4. OS/390 Interface Considerations

This chapter describes information that you must consider and required steps to complete while installing IMS and IRLM on OS/390.

**Important:** After the OS/390 and VTAM interface steps are completed, you must IPL OS/390 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 OS/390. 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 OS/390:

- Use OS/390 macro libraries for your IMS stage 2 definition. IMS runs on OS/390 V2R10 or later.
- 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 OS/390, IMS runs as an authorized program.
- 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 MVS Program Properties Table" on page 64 for more information.

**Related Reading:** For additional information on maintaining system integrity when running on OS/390, refer to OS/390 V2R10.0 MVS Initialization and Tuning Reference or z/OS V1R2.0 MVS Initialization and Tuning Reference.

**OS/390 JCL Considerations**

Note the following requirements when setting up your OS/390 JCL:

- The JOB or STEP libraries must be APF authorized for the control region. For the dependent region, PGMLIB need not 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 OS/390 JCL, refer to “The System Definition Process” in the [IMS Version 8: Installation Volume 2: System Definition and Tailoring]

Some Required Nonstandard OS/390 Macros

The assembly of certain IMS modules requires OS/390 macros not contained on the standard OS/390 System Macro libraries. Because these requirements are subject to change due to IMS and OS/390 maintenance, keep these macros in their original libraries, and use the JCL generated by IMS for SYS1.MODGEN (or SYS1.AMODGEN).

Updating the MVS Program Properties Table

IMS Entry for MVS PPT Table

An IMS online environment (DB/DC, DBCTL, DCCTL) requires this MVS 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 175] for the correct entry titled “Update SCHEDxx -- PPT Entries.”

```plaintext
/* IMS ONLINE CONTROL REGION */
PPT PGMNAME(DFSVMVRC0) /* 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 MVS PPT Table

If you are using IRLM, the following MVS 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 175] for the correct entry titled “Update SCHEDxx -- PPT Entries.”

```plaintext
/* 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 MVS PPT Table

If you are using CQS, the following MVS 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 175 for the correct entry titled “Update SCHEDxx -- PPT Entries.”

```c
/* 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 MVS 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:

```c
/* 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, do one of the following:

- Re-IPL the OS/390 or z/OS system.
- Issue the OS/390 SET SCH= command.

**Instructions for Installing MVS 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 MVS PPT entries. Unless you have deleted it, OS/390 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, do one of the following:
   - Re-IPL the OS/390 or z/OS system.
   - Issue the OS/390 SET SCH= command.

**Required IMS Links to OS/390 or z/OS**

Stage 2 of IMS system definition might make the following modifications, which must be incorporated into your OS/390 or z/OS system:

- Loads the following modules into IMS.SDFSRESL:
IMS - OS/390 Interface

- Type 2 SVC routine
- DBRC Type 4 SVC routine
- CTC channel-end appendage routine (if the MSC with the CTC option is defined)
- Resource cleanup module
- Abend formatting routine

- Copies cataloged procedures into IMS.PROCLIB

Table 9 is an overview of actions needed for your IMS system to run under OS/390 or z/OS.

Table 9. Steps Required to Run under OS/390 or z/OS

<table>
<thead>
<tr>
<th>Action</th>
<th>DB Batch System</th>
<th>DBCTL System</th>
<th>DB/DC System</th>
<th>DCCTL System</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bind the Type 2 SVC with the z/OS nucleus</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Load the Type 2 SVC from SYS1.NUCLEUS using one of the following methods:</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>- The Nucleus Module Loader facilities</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- A SYS1.IPLPARM member, NUCLSTxx</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- a SYS1.PARMLIB member, NUCLSTxx</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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. Resource cleanup module | Yes | Yes | Yes | Yes |
| 2d. Abend formatting routine | Yes | Yes | Yes | Yes |

Table 10 shows the modules required by the OS/390 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. OS/390 Interface Modules. The headings below indicate unique CSECT names.

<table>
<thead>
<tr>
<th>IMS.ADFSLOAD</th>
<th>IMS.SDFSRESL</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DFSVC200²</td>
<td>IGCii²</td>
<td>Type 2 SVC vector routine³</td>
</tr>
<tr>
<td>DSP00MVS</td>
<td>IGC00nn¹</td>
<td>DBRC Type 4 SVC routine³</td>
</tr>
<tr>
<td>DFSCMC10</td>
<td>IGG019zz¹</td>
<td>CTC channel-end appendage³</td>
</tr>
<tr>
<td>DFSMRCLO¹</td>
<td>DFSMRCLO¹</td>
<td>Resource cleanup routine⁴</td>
</tr>
<tr>
<td>DFSAFMD0¹</td>
<td>DFSAFMD0¹</td>
<td>Formatted dump⁴</td>
</tr>
</tbody>
</table>
IMS - OS/390 Interface

Table 10. OS/390 Interface Modules (continued). The headings below indicate unique CSECT names.

<table>
<thead>
<tr>
<th>IMS.ADFSLOAD</th>
<th>IMS.SDFSRESL</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Notes:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>iii</td>
<td></td>
<td>specifies the Type 2 SVC number</td>
</tr>
<tr>
<td>nnn</td>
<td></td>
<td>indicates the signed decimal Type 4 SVC number, for example, SVC 255 is 25E</td>
</tr>
<tr>
<td>zz</td>
<td></td>
<td>indicates the channel-end appendage number specified on the IMSCTF macro</td>
</tr>
<tr>
<td>1</td>
<td></td>
<td>These modules must be bound with the RENT and REF attributes.</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>This module must be bound with the RENT, REF, and SCTR Binder options. The module is placed in SYS1.NUCLEUS.</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>This module is bound by SYSGEN.</td>
</tr>
<tr>
<td>4</td>
<td></td>
<td>This module is bound by SMP/E APPLY processing.</td>
</tr>
</tbody>
</table>

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 and Type 4 SVCs are downward compatible. The Version 8 level can be used by versions 5, 6, and 7. However, version 5 cannot be used by versions 6, 7, and 8; version 6 cannot be used by versions 7 and 8; and version 7 cannot be used by version 8.

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 OS/390

When you define the IMS and DBRC SVCs to OS/390, 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 OS/390.

Installing the Type 2 SVC Module

The IMS Type 2 SVC must be incorporated into the z/OS nucleus. You can do this in one of the following ways:

- Bind the Type 2 SVC with the z/OS nucleus
- Load the Type 2 SVC from SYS1.NUCLEUS using the Nucleus Module Loader facilities
- Load the Type 2 SVC from SYS1.NUCLEUS using a SYS1.IPLPARM member, NUCLSTxx
- Load the Type 2 SVC from SYS1.NUCLEUS using a SYS1.PARMLIB member, NUCLSTxx
Attention: The SYS1.NUCLEUS must not have secondary extents. z/OS cannot recognize secondary extents.

Binding the Type 2 SVC with the z/OS nucleus
You can bind the Type 2 SVC with the z/OS nucleus by:
- Invoking the Binder utility through a batch job
- Creating and then performing a RECEIVE and APPLY for an SMP/E USERMOD

Loading the Type 2 SVC from SYS1.NUCLEUS using the Nucleus Module Loader facilities
Perform the following steps to load the Type 2 SVC:
1. Create a Nucleus Module List (IMS has been assigned the IEANS001 nucleus module list (NML) containing the list of IMS SVCs (for all IMS releases being used) that you want loaded into the z/OS nucleus.
2. Assemble and bind the Type 2 SVC into SYS1.NUCLEUS.

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

Loading the Type 2 SVC from SYS1.NUCLEUS using a SYS1.IPLPARM member, NUCLSTxx
Perform the following steps to load the Type 2 SVC:
1. Bind the IMS SVCs from IMS.SDFSRESL into SYS1.NUCLEUS.
   Attention: Determine, from the z/OS systems programmer, the appropriate NUCLSTxx member to use. Note that the LOADxx member and its associated NUCLSTxx member must both reside in SYS1.IPLPARM. If the 2 members are not in this library, IMS will enter a Disabled Wait state and the IPL process stops.
2. Define an INCLUDE statement for the IMS SVC in the NUCLSTxx member of SYS1.IPLPARM.

Loading the Type 2 SVC from SYS1.NUCLEUS using a SYS1.PARMLIB member, NUCLSTxx
Perform the following steps to load the Type 2 SVC:
1. Bind the IMS SVCs from IMS.SDFSRESL into SYS1.NUCLEUS.
   Attention: Determine, from the z/OS systems programmer, the appropriate NUCLSTxx member to use. Note that the LOADxx member and its associated NUCLSTxx member must both reside in SYS1.PARMLIB. If the 2 members are not in this library, IMS will enter a Disabled Wait state and the IPL process stops.
2. Define an INCLUDE statement for the IMS SVC in the NUCLSTxx member of SYS1.PARMLIB.

Binding the 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 IGG019zz, where zz is the CTC appendage number.

Installing the Resource Clean-up Module
Bind the IMS resource cleanup module, DFSMRCL0, into SYS1.LPALIB or an MLPA library. Also add the DFSMRCL0 module name to the IEAVTRML CSECT of module IGC0001C in SYS1.LPALIB.
Once the zap to the IEAVTRML CSECT is complete, ensure that DFSMRCL0 resides in SYS1.LPALIB or an MLPA library at the time of the next IPL, or your IPL may not be successful.

DFSMRCL0 is downward compatible. Upward compatibility is not supported. The most current version of this module must be used.

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

### Binding the 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.

### Adding the Offline Dump Formatting Routine to the Print Dump Exit Control Table

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 8: Diagnosis Guide and Reference and IMS Version 8: Utilities Reference: System.
- For information about controlling IMS dumping options, see IMS Version 8: Installation Volume 2: System Definition and Tailoring.

### Binding the 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.
Authorizing IMS System Data Sets in the Authorized Program Facility

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/OS/390. 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 OS/390 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.

Updating the APPC / OS/390 Administration Dialog Updates

To use the APPC / OS/390 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.

Ensuring that DFSMS Macros are Available

The IMS open and close module DFSZD110 (GSAM and BSAM) uses the DFSMS macros EZCTGPL and IEZCTGFL. Beginning with DFSMS 1.5, macros IEZCTGFL...
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 OS/390. These topics describe these requirements and required actions.

Adding IRLM CTRACE Module to OS/390 Link List

The IRLM CTRACE start/stop routine load module, DXRRL183, must reside in the OS/390 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, OS/390 preconditioning has already defined IRLM and JRLM as subsystems names. You can use these names, or you can define your own. Create an OS/390 subsystem name entry for each IRLM to be executed on the OS/390 system. When two IRLMs reside in the same OS/390 system, each must have a unique OS/390 subsystem name.

Related Reading: For information on defining a subsystem to OS/390, see "Suggestions for Naming Your IRLM" on page 74, and also see OS/390 V2R10.0 MVS Initialization and Tuning Reference.

Updating the MVS Program Properties Tables

Unless you have deleted it, OS/390 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 8: 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 8: Administration Guide: Transaction Manager](#).

Define all of the following:

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

A 3770P or 3790 defined as an SLUTYPE1 must be defined as unattended in its mode table entry. You can define an SLU 1 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 8: 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 8: Administration Guide: Transaction Manager](#). For more information on VTAM and Remote Site Recovery, see [IMS Version 8: Installation Volume 2: System Definition and Tailoring](#).

**Important:** After the OS/390 and VTAM interface steps are completed, you must IPL OS/390 and specify either CLPA or MLPA=xx, or both.
NCP Considerations

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 OS/390 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 irImproc,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.
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 78
- "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.
X 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. Run either the SMP/E RESTORE or ACCEPT commands on all outstanding service for all products present in the IMS distribution and target zones. Use the following sample SMP/E control statements to identify this outstanding service (SYSMODS that have been applied only):
   ```
   //SMPCNTL DD *
   SET BDY(targetzonename).
   LIST NOACCEPT.
   ```
6. Unload the target zone DDDEFs using the SMP/E UNLOAD command. Use the following sample SMP/E control statements and JCL to complete this task:
   ```
   //SMPCNTL DD *
   SET BDY(targetzonename).
   UNLOAD DDDEF.
   //SMPPUNCH DD DSN=IMS.SMPUNLD,DISP=(,CATLG),
   // UNIT=SYSDA,SPACE=(TRK,(5,1),RLSE),
   // DCB=(RECFM=FB,BLKSIZ=16000,LRECL=80)
   ```
7. Run the SMP/E LIST command on the target zone to determine the name of the OPTIONS entry. This OPTIONS entry will be used in Step 10 on page 79.
   Use the following sample SMP/E control statements to complete this task:
   ```
   //SMPCNTL DD *
   SET BDY(targetzonename).
   LIST TARGETZONE.
   ```
8. If you are processing maintenance, scratch and reallocate the following data sets:
   - SMPMTS
   - SMPSTS
   - SMPSCDS
   - SMPLTS
   If you are not performing maintenance, proceed to step 9 on page 79.

**Note:** The SMP/E CLEANUP command can be used instead of scratching and reallocating the SMPPTS, SMPSTS and SMPSCDS data sets. The SMP/E CLEANUP command cannot be used for the SMPLTS data set. You need to scratch and reallocate it.

Use the following sample SMP/E control statements to complete this task:
```
//SMPCNTL DD *
SET BDY(targetzonename).
CLEANUP.
```
9. Reinitialize the SMP/E target zone.
   a. Run the SMP/E ZONEDELETE command for the Target zone. Use the following
      sample SMP/E control statements to complete this task:
      //SMPCNTL DD *
      SET BDY(targetzonename).
      ZDEL TZONE(targetzonename).
   b. If no other SMP/E zones are in the target CSI (the VSAM cluster), run the
      IDCAMS DELETE and DEFINE commands on the target CSI to improve
      performance.
      **Attention**: If multiple zones are contained in the same CSI as the target
      zone, **do not** delete and redefine the cluster because you will also lose the
      information for those zones. Continue with step 9c.
   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 on page 78 and
      rebuild the relationship between this target zone and the distribution zone.
10. Re-initialize the new Target zone.
   a. Run the IDCAMS REPRO command to copy SYS1.MACLIB(GIMZPOOL) into
      the new CSI.
      **Attention**: If you did not delete and redefine the target CSI as described in
      Step 9 **do not** copy GIMZPOOL into the new target zone.
   b. Rebuild the relationship between the old DLIB zone and the new Target
      zone. Use the following sample SMP/E control statements to complete this
      task:
      //SMPCNTL DD *
      SET BDY(GLOBAL).
      UCLIN.
      ADD GZONE ZONEINDEX(  
      (targetzonename,target.zone.cluster.name,TARGET)  
      ).
      ENDUCL.
      SET BDY(targetzonename).
      UCLIN.
      ADD TARGETZONE(targetzonename)  
      SREL(P115)  
      RELATED(dlibzonename)  
      OPTIONS(xxxxxx).  
      ENDUCL.
      **Note**: Be sure that this new target points to the correct OPTIONS entry.
      The correct OPTIONS entry can be determined from the output created in
      step 7 on page 78
   c. Run UCLIN to add the DDDEFs back to the target zone. This step uses the
      data set created in step 6 on page 78 as input. Use the following SMP/E
      control statements and JCL to complete this task:
      //SMPCNTL DD *
      SET BDY(targetzonename).
      // DD DSN=IMS.SMPUNLD,DISP=SHR.
      **Note**: Return code 4 is expected in this step because DDDEFs are being
      added instead of being replaced.

**Attention**: Before processing SMP/E in step 11 on page 80 RECEIVE the
current Enhanced Holddata. This enables you to resolve PE’s during SMP/E
processing. You can get the most recent Holddata at:
11. If you are only processing maintenance, run the SMP/E RECEIVE and ACCEPT GROUPEXTEND BYPASS(APPLYCHECK) commands for the PTFs to be processed. Use the following sample SMP/E control statements to complete this task:

```
//SMPCNTL DD *
  SET BDY(GLOBAL).
  RECEIVE LIST
  SYSMODS
  HOLODATA.
  SET BDY(dlibzonename).
  ACCEPT GROUPEXTEND
    BYPASS(APPLYCHECK
      HOLOCLASS(ERREL,UCLREL)
      HOLOSYSTEM
    )
  SOURCEID(SMCREC,RSU01*,RSU020*,RSU0210,etc)
  PTFs.
```

**Attention:** After SMP/E processing is complete, run SMP/E REPORT ERRSYSMODS to identify missing HIPERs and PE exposures.

12. Run the SMP/E ZONEMERGE command specifying CONTENT to merge the distribution zone to the new target zone. Use the following sample SMP/E control statements to complete this task:

```
//SMPCNTL DD *
  SET BDY(targetzonename).
  ZONEMERGE(dlibzonename)
    INTO(targetzonename)
    CONTENT.
```

13. Run the SMP/E GENERATE command to create the JCL necessary to re-build the target libraries.

**Tip:** This requires ACCJCLIN being set in the distribution zone before the IMS FMID's were ACCEPTed.

Use the following sample SMP/E control statements and additional JCL to complete this task:

```
//CNTL DD DSN=yourpds,DISP=SHR
  //SMPPUNCH DD DSN=IMS.GENERATE,
  // DISP=(,CATLG),UNIT=SYSDA,
  // SPACE=(CYL,(25,5),RLSE),
  // DCB=(RECFM=FB,LRECL=80,BLKSIZE=16000)
  SET BDY(targetzonename).
  GENERATE JOBCARD(CNTL,J) REPLACE.
```

**Note:** In this example the data set for ddname CNTL, needs to have a member named J, which contains a sample JOB card.

14. Run the JCL that was created in Step 13.

**Note:** The SMPLTSS job will complete with a return code of 4 because of unresolved external references (IEW2454W). All other jobs should complete with a return code of 0.

15. Run an IMS ALL type of system definition (STAGE 1 and STAGE 2).

**Requirement:** If you are running a large IMS system (LGEN) you need to allocate the IMS.LGENIN and IMS.LGENOUT data sets before running the IMS SYSDEF preprocessor. The preprocessor performs Stage1 for a large system definition.

**Attention:** Ensure that Stage 2 processing is complete before performing step 16.

16. Run SMP/E JCLIN pointing to the STAGE 2 JCL as input.
**Special Considerations**

**Requirement:** If you are running a large IMS system, the output from the DFSIVG10 program must be used as input to JCLIN. For assistance with DFSIVG10, refer to IVP job IV_C401J or the skeleton module DFSIXSC5 (in IMS.DFSSLIB). See step 13 on page 80 for sample JCLIN statements.

17. Run the SMP/E APPLY command again on any IMS service that was not accepted. This service was identified in step 5 on page 78.

18. Run the SMP/E APPLY command again on service for other products that was not accepted. This service was identified in step 5 on page 78.

19. Test the new system.

**ACCEPT before APPLY (SYSDEF-Sensitive Service)**

This method is a variation of regeneration 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. Run the SMP/E ACCEPT or RESTORE commands on outstanding APPLY service for all products sharing the SMP/E zones with IMS.
6. Run the SMP/E ACCEPT CHECK GROUPEXTEND BYPASS(APPLYCHECK) command.
7. Research the ACCEPT CHECK reports, making changes as necessary.
8. Run the SMP/E ACCEPT GROUPEXTEND BYPASS (APPLYCHECK) command.
9. Run an IMS ALL type of 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:** Do not use the REDO parameter.
12. Research the APPLY CHECK reports, making changes as necessary.
13. Run SMP/E APPLY GROUPEXTEND.
    **Attention:** Do not use the REDO parameter.
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.
Special Considerations

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.
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 8 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 217.

The following sections are included in this chapter:

- “IVP Process”
- “The IVP Dialog” on page 87
- “User Modifications to IVP” on page 88
- “Post-Verification Uses for IVP” on page 89
- “Product Packaging” on page 89

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 8 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 OS/390 and VTAM
- Preparing the IMS system
- Using IPL OS/390
- 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 OS/390 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 175.

See "Steps Cx for System Definition (SYSDEF)" on page 176 through "Steps Ox for
Common Service Layer Sample Application" on page 185 for a list of the jobs and
tasks used by the IVP process.

See Part 3, "IVP Reference Information," on page 125 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 8 is operational.

Perform the following steps to run the IVP dialog:

1. Start the dialog (from ISPF/PDF Option 6).
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.

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**  
  DCCCTL 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

Dialog processing includes:

- Session initialization
- Variable gathering
- File tailoring
- Execution

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.

While in 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.
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 175 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 175 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**

The following examples describe 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 DFSDDLTI0 (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 HMK8800 SV1 and HMK8800 SV2 - System Services

  - IVP

  - Database Recovery Control (DBRC)

  - Logger

- FMID JMK8801 Database Manager

- FMID HIR2101 - IRLM V2 R1

- FMID JMK8806 - IMS Java

**TM Product**

- FMID HMK8800 SV1 and HMK8800 SV2 - System Services

  - IVP

  - Database Recovery Control (DBRC)

  - Logger
Summary of IVP Changes

- FMID JMK8802 - Transaction Manager
- APPC/LU Manager
- FMID JMK8806 - IMS Java

**TM-DB Product**
- FMID HMK8800 SV1 and HMK8800 SV2 - System Services
- IVP
- Database Recovery Control (DBRC)
- Logger
- FMID JMK8801 - Database Manager
- FMID JMK8802 - Transaction Manager
- APPC/LU Manager
- FMID JMK8803 - Extended Terminal Option (ETO)
- FMID HIR2101 - IRLM V2 R1
- FMID JMK8806 - IMS Java

**Orderable Features**

- **Extended Terminal Option (for the TM Product)**
  - FMID JMK8803

- **Remote Site Recovery / Recovery-Level Tracking (for all Products)**
  - FMID JMK8804

- **Remote Site Recovery / Database Level Tracking (for all Products)**
  - FMID JMK8805

**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" 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 96)
   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 104)
   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 109)
   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 117)
   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 122)
Dialog Start-up

7. Panel HELP (described in "Panel HELP—Table of Contents" on page 122)
   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

The IVP dialog must be started and run from within ISPF/PDF (IBM suggests 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:

```
EXEC 'dataset(DFSIXC01)' 'HLQ(qqq) HLQIV(iii) HLQDL(hhh) HLQSY(sss)

DLTA1(111) DLTA2(222) DLTA3(333) DLTA5(555)

DLTA6(666) DLTA7(777)
```

Where:

- **EXEC** is a TSO command to run CLISTs and REXX EXECs.
- **dataset** is the name of the CLIST library that contains CLIST DFSIXC01.
- **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 IVPIVP81.
- **HLQDL** is a keyword that identifies the high-level qualifier for the distribution libraries.
- **hhh** is the high-level qualifier for IMS distribution library (DLB) data sets.
  - The default is IVPDLB81.
- **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 IVPSYS81.
- **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 94.
- **222** is the fully qualified DSNAME for the second delta library.
  - No default exists.
- **333** is the fully qualified DSNAME for the third delta library.
  - No default exists.
- **555** is the fully qualified DSNAME for the fifth delta library.
  - See "IVP Dialog Delta Libraries" on page 94.
- **666** is the fully qualified DSNAME for the sixth delta library.
Dialog Start-up

See **"IVP Dialog Delta Libraries."**

777 Is the fully qualified DSNAME for the seventh delta library.

See **"IVP Dialog Delta Libraries."**

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.

**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 4.

![Figure 4. Dialog Delta Library Concatenations](image)

**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 5 on page 96](image) 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.
Copyright Panel

Figure 6 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 will appear only once for each TSO user ID.

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 7 on page 97 depicts the environment options panel of the IVP dialog. This panel is referred to as the primary option menu for the IVP dialog.
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 7](#), you are verifying an XRF system. Enter a 4 in the input field or on the command line.
Session-Initialization Phase

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 8 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.

Figure 8. 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 9 on page 99 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.
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 (marked by a slash) this sub-option 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 (marked by a slash) this sub-option for DBCTL, DCCTL, DB/DC, and DB/DC with XRF. This sub-option is not available for DB batch.

3. ETO Feature Installed
   - The default is not to use (no slash) this sub-option for DCCTL and the default is to use (marked by a slash) it for DB/DC and DB/DC with XRF. This sub-option is not available for DB batch or DBCTL.

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.
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 10. 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.

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 27 on page 119, 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 102) or by the CHG action in the variable-gathering phase (explained in "Variable-Gathering Phase" on page 104).

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 11 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.

![Table Merge Progress Indicator]

Figure 11. Table Merge Progress Indicator

Table Merge Completed

Figure 12 on page 102 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.
Copy Start-up Variables

After the table-merge process is complete (or bypassed), the dialog compares the start-up variables listed in this section 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 13 on page 103 depicts the IVP phase selection panel of the IVP dialog. Because you have changed the environment option, the

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**Figure 12. Table Merge Completed Panel**
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.

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.

Figure 13. 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.
Session-Initialization Phase

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, you can modify the variables that are used to prepare the IVP JCL.

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.

Variable-Gathering Action Commands

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**

<table>
<thead>
<tr>
<th>Action</th>
<th>Mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chg</td>
<td>BOTH</td>
<td>Change 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.</td>
</tr>
<tr>
<td>Doc</td>
<td>BOTH</td>
<td>Print variables documentation to the ISPF LIST data set. The DOC action prints all variables, not just the variable where the DOC action is requested.</td>
</tr>
<tr>
<td>eNT</td>
<td>LST</td>
<td>Switch to ENT mode. ENT mode presents items one at a time on a formatted screen.</td>
</tr>
<tr>
<td>Lst</td>
<td>ENT</td>
<td>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.</td>
</tr>
<tr>
<td>Nxt</td>
<td>ENT</td>
<td>Move forward to the next item.</td>
</tr>
<tr>
<td>Prv</td>
<td>ENT</td>
<td>Move backward to the previous item.</td>
</tr>
<tr>
<td>Rfr</td>
<td>BOTH</td>
<td>Refresh a variable value from the IVP master table.</td>
</tr>
</tbody>
</table>
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 to you.

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 14 depicts the LST Mode panel of the variable gathering phase. This mode provides the greatest visibility of the variables available for the selected option.

![Figure 14. Variable Gathering—LST Mode Panel](image)

**Tip:** You should take the time to become familiar with all of the variables. Even if you choose to accept the default value, you may 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.
Variable-Gathering Phase

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.

Variable Gathering—ENT Mode

Figure 15 depicts the ENT Mode panel corresponding to the item you selected in the LST Mode panel.

Figure 15. Variable Gathering—ENT Mode Panel

ENT Mode provides more information for each variable:

- Whether the variable can be blank.
Variable-Gathering Phase

- 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 16 depicts the DOC action panel for the variable-gathering phase.

```
Help
---------------------------------------
IVP Variables Documentation - XRF IMS 8.1
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 16. 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 16 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 17 on page 108 depicts the complete verification panel that is displayed whenever you use END to exit from the variable-gathering phase.
Variable-Gathering Phase

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 109.

Variable Gathering—Return to Phase Selection

The dialog always returns to the phase selection panel when you exit a phase. Figure 18 on page 109 depicts this panel. It allows you to return to a prior phase if you choose.
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**

<table>
<thead>
<tr>
<th>Action</th>
<th>Mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>All</td>
<td>BOTH</td>
<td>Perform the file-tailoring phase for INSTALIB members, starting with the item for which the request is made.</td>
</tr>
<tr>
<td>brM</td>
<td>BOTH</td>
<td>Browse an INSTALIB member.</td>
</tr>
<tr>
<td>brS</td>
<td>BOTH</td>
<td>Browse a SDFSSLIB or SDFSISRC member.</td>
</tr>
<tr>
<td>Doc</td>
<td>BOTH</td>
<td>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.</td>
</tr>
<tr>
<td>Edm</td>
<td>BOTH</td>
<td>Edit an INSTALIB member.</td>
</tr>
<tr>
<td>eNt</td>
<td>LST</td>
<td>Switch to ENT mode. ENT mode presents items one at a time on a formatted screen.</td>
</tr>
<tr>
<td>FtI</td>
<td>BOTH</td>
<td>Perform the file-tailoring phase for a single INSTALIB member.</td>
</tr>
<tr>
<td>Lst</td>
<td>ENT</td>
<td>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.</td>
</tr>
<tr>
<td>Nxt</td>
<td>ENT</td>
<td>Move forward to the next item.</td>
</tr>
<tr>
<td>Prv</td>
<td>ENT</td>
<td>Move backward to the previous item.</td>
</tr>
</tbody>
</table>

**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 19 on page**...
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 8.1

**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 19. 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 20 on page 112 depicts this progress indicator panel.
File-Tailoring Phase

Figure 21 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.

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—ALL Action Complete

[Figure 21] 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.

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

File-Tailoring—LST Mode

[Figure 22 on page 113] 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.

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:

<table>
<thead>
<tr>
<th>Character</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>!</td>
<td>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.</td>
</tr>
<tr>
<td>*</td>
<td>Indicates that the item has been processed by either the ALL action or the FTL action.</td>
</tr>
</tbody>
</table>

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 23 on page 114](image) depicts the ENT Mode panel that corresponds to the item you selected on the LST 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 24 on page 115] depicts the DOC action panel for the file-tailoring phase.
In this panel, select the type of output listing you want:
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 24. 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 24, 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 25 on page 116 depicts the phase complete verification panel of the file-tailoring phase. This panel is displayed whenever you use END from the file-tailoring phase.
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.

Figure 25. 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 26 on page 117. This allows you to return to a prior phase if you choose to do so.
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 Phase

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**

<table>
<thead>
<tr>
<th>Action</th>
<th>Mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>brM</td>
<td>BOTH</td>
<td>Browse an INSTALIB member.</td>
</tr>
<tr>
<td>Doc</td>
<td>BOTH</td>
<td>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.</td>
</tr>
<tr>
<td>Edm</td>
<td>BOTH</td>
<td>Edit an INSTALIB member.</td>
</tr>
<tr>
<td>eNt</td>
<td>LST</td>
<td>Switch to ENT mode. ENT mode presents items one at a time on a formatted screen.</td>
</tr>
<tr>
<td>eXe</td>
<td>BOTH</td>
<td>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).</td>
</tr>
<tr>
<td>Lst</td>
<td>ENT</td>
<td>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.</td>
</tr>
<tr>
<td>Nxt</td>
<td>ENT</td>
<td>Move forward to the next item.</td>
</tr>
<tr>
<td>Prv</td>
<td>ENT</td>
<td>Move backward to the previous item.</td>
</tr>
<tr>
<td>spR</td>
<td>BOTH</td>
<td>Execute a special processing routine that has been provided to assist with the performance of a task.</td>
</tr>
</tbody>
</table>

Execution Phase—LST Mode

When you enter the execution phase, you are in LST Mode. Figure 27 on page 119 depicts the LST Mode panel of the execution phase.
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 28 on page 120 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.
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 29 on page 121 depicts the complete verification panel of the execution phase. This panel is displayed whenever you use END to exit from the execution phase.
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 30. This allows you to return to a prior phase if you choose to do so.

**Figure 30. 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.
Ending the Session

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 31 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 8.1
Command ==>  
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 31. 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 32 depicts the HELP general information panel. This panel is accessed by selecting item ‘1’ from the Panel HELP table of contents.

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.
General Help
Part 3. IVP Reference Information

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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 193:

- "DBB - DB Batch (Batch) Stage 1” on page 193.
- "DBC - Database Control (DBCTL) Stage 1” on page 195.
- "DBT - Database/Data Communications (DB/DC) Stage 1” on page 197.
- "XRF - DB/DC with XRF (XRF) Stage 1” on page 203.
- "DCC - Data Communications Control (DCCTL) Stage 1” on page 209.

IVP Usage of IMS Facilities

The following sections list the IMS facilities used by the IVP in each of these five environments.

DBB (DB)

The IVP uses the following IMS facilities in this environment:

- GSAM
- DB (HISAM, HIDAM, HDAM, PHIDAM)
- Logging
- Database Recovery Control (DBRC)
- Internal Resource Lock Manager (IRLM) (optional)
- Batch applications

DBC (DBCTL)

The IVP uses the following IMS facilities in this environment:

- 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)

The IVP uses the following IMS facilities in this environment:

- GSAM
- DB (HISAM, HIDAM, HDAM, PHIDAM, DEDB, MSDB)
- Logging
- Database Recovery Control (DBRC)
- Internal Resource Lock Manager (IRLM) (optional)
- TM
- TCO
- Batch applications
IVP Usage of IMS Facilities

- 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)

The IVP uses the following IMS facilities in this environment:

- 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)

The IVP uses the following IMS facilities in this environment:

- 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 159.

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.

**Note:** 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 8: IMS Java Guide and Reference](#).

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>
<thead>
<tr>
<th>Part Name</th>
<th>Language</th>
<th>PSB</th>
<th>MFS</th>
<th>TRANCD</th>
<th>DBD</th>
<th>Compile and BIND JCL</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DFSIVD1</td>
<td>Assembler</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>DFSIVD1</td>
<td>n/a</td>
<td>HIDAM/OSAM database.</td>
</tr>
<tr>
<td>DFSIVD1I</td>
<td>Assembler</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>DFSIVD1I</td>
<td>n/a</td>
<td>HIDAM/OSAM primary index database.</td>
</tr>
<tr>
<td>DFSIVD2</td>
<td>Assembler</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>DFSIVD2</td>
<td>n/a</td>
<td>HDAM/VSAM database.</td>
</tr>
<tr>
<td>DFSIVD3</td>
<td>Assembler</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>DFSIVD3</td>
<td>n/a</td>
<td>DEDB/VSAM database.</td>
</tr>
<tr>
<td>DFSIVD4</td>
<td>Assembler</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>DFSIVD4</td>
<td>n/a</td>
<td>MSDB database.</td>
</tr>
<tr>
<td>DFSIVD5</td>
<td>Assembler</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>DFSIVD5</td>
<td>n/a</td>
<td>GSAM database.</td>
</tr>
<tr>
<td>DFSIVA1</td>
<td>Assembler</td>
<td>DFSIVP1</td>
<td>DFSIVF1</td>
<td>IVTNO</td>
<td>DFSIVD1</td>
<td>n/a</td>
<td>Non-conv. MPP.</td>
</tr>
<tr>
<td>DFSIVA2</td>
<td>Assembler</td>
<td>DFSIVP2</td>
<td>DFSIVF2</td>
<td>IVTNV</td>
<td>DFSIVD2</td>
<td>n/a</td>
<td>Non-conv. MPP.</td>
</tr>
<tr>
<td>DFSIVA3</td>
<td>Assembler</td>
<td>DFSIVP3</td>
<td>DFSIVF3</td>
<td>IVTCV</td>
<td>DFSIVD2</td>
<td>n/a</td>
<td>Conv. MPP.</td>
</tr>
<tr>
<td>DFSIVA31</td>
<td>Pascal</td>
<td>DFSIVP31</td>
<td>DFSIVF31</td>
<td>IVTCP</td>
<td>DFSIVD2</td>
<td>DFSIVJP3</td>
<td>Conv. MPP.</td>
</tr>
</tbody>
</table>

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### Table 14. IVP Sample Application Parts (continued)

<table>
<thead>
<tr>
<th>Part Name</th>
<th>Language</th>
<th>PSB</th>
<th>MFS</th>
<th>TRANCD</th>
<th>DBD</th>
<th>Compile and BIND JCL</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DFSIVA32</td>
<td>C</td>
<td>DFSIVP32</td>
<td>DFSIVF32</td>
<td>IVTCC</td>
<td>DFSIVD2</td>
<td>DFSIVJC3</td>
<td>Conv. MPP.</td>
</tr>
<tr>
<td>n/a</td>
<td>Java</td>
<td>DFSIVP37</td>
<td>DFSIVF37</td>
<td>IVTCM</td>
<td>DFSIVD2</td>
<td>n/a</td>
<td>Conv. JMP.</td>
</tr>
<tr>
<td>DFSIVA34</td>
<td>COBOL</td>
<td>DFSIVP34</td>
<td>DFSIVF34</td>
<td>IVTCB</td>
<td>DFSIVD2</td>
<td>DFSIVJB3</td>
<td>Conv. MPP.</td>
</tr>
<tr>
<td>DFSIVA35</td>
<td>REXX</td>
<td>DFSIVP35</td>
<td>DFSIVF35</td>
<td>IVTCX</td>
<td>DFSIVD2</td>
<td>n/a</td>
<td>Conv. MPP.</td>
</tr>
<tr>
<td>n/a</td>
<td>Java</td>
<td>DFSIVP67</td>
<td>n/a</td>
<td>n/a</td>
<td>DFSIVD2</td>
<td>n/a</td>
<td>JBP</td>
</tr>
<tr>
<td>DFSIVA4</td>
<td>Assembler</td>
<td>DFSIVP4</td>
<td>DFSIVF4</td>
<td>IVTFD</td>
<td>DFSIVD3</td>
<td>n/a</td>
<td>Non-conv. IFP (EMH). Display and Replace only.</td>
</tr>
<tr>
<td>DFSIVA5</td>
<td>Assembler</td>
<td>DFSIVP5</td>
<td>DFSIVF5</td>
<td>IVTFM</td>
<td>DFSIVD4</td>
<td>n/a</td>
<td>Non-conv. IFP (EMH). Display and Replace only.</td>
</tr>
<tr>
<td>DFSIVA6</td>
<td>Assembler</td>
<td>DFSIVP6</td>
<td>n/a</td>
<td>n/a</td>
<td>DFSIVD1</td>
<td>n/a</td>
<td>DB batch, BMP.</td>
</tr>
<tr>
<td>DFSIVA61</td>
<td>Pascal</td>
<td>DFSIVP61</td>
<td>n/a</td>
<td>n/a</td>
<td>DFSIVD1</td>
<td>DFSIVJP6</td>
<td>DB batch, BMP.</td>
</tr>
<tr>
<td>DFSIVA62</td>
<td>C</td>
<td>DFSIVP62</td>
<td>n/a</td>
<td>n/a</td>
<td>DFSIVD1</td>
<td>DFSIVJC6</td>
<td>DB batch, BMP.</td>
</tr>
<tr>
<td>DFSIVA64</td>
<td>COBOL</td>
<td>DFSIVP64</td>
<td>n/a</td>
<td>n/a</td>
<td>DFSIVD1</td>
<td>DFSIVJB6</td>
<td>DB batch, BMP.</td>
</tr>
<tr>
<td>DFSIVA65</td>
<td>REXX</td>
<td>DFSIVP65</td>
<td>n/a</td>
<td>n/a</td>
<td>DFSIVD1</td>
<td>n/a</td>
<td>DB batch, BMP.</td>
</tr>
<tr>
<td>DFSIVA7</td>
<td>Assembler</td>
<td>DFSIVP7</td>
<td>n/a</td>
<td>n/a</td>
<td>DFSIVD2</td>
<td>n/a</td>
<td>DB batch, BMP.</td>
</tr>
<tr>
<td>DFSIVA8</td>
<td>Assembler</td>
<td>DFSIVP8</td>
<td>n/a</td>
<td>n/a</td>
<td>DFSIVD3</td>
<td>n/a</td>
<td>DB BMP.</td>
</tr>
<tr>
<td>n/a</td>
<td>n/a</td>
<td>DFSIVP9</td>
<td>n/a</td>
<td>n/a</td>
<td>DFSIVD1</td>
<td>n/a</td>
<td>On-line image copy.</td>
</tr>
<tr>
<td>DFSDDLT0</td>
<td>n/a</td>
<td>DFSIVPA</td>
<td>n/a</td>
<td>n/a</td>
<td>DFSIVD1</td>
<td>n/a</td>
<td>HIDAM load.</td>
</tr>
<tr>
<td>DFSDDLT0</td>
<td>n/a</td>
<td>DFSIVPB</td>
<td>n/a</td>
<td>n/a</td>
<td>DFSIVD2</td>
<td>n/a</td>
<td>HDAM load.</td>
</tr>
<tr>
<td>DFSIVAC</td>
<td>Assembler</td>
<td>DFSIVPC</td>
<td>n/a</td>
<td>n/a</td>
<td>DFSIVD3</td>
<td>n/a</td>
<td>DEDB load BMP.</td>
</tr>
<tr>
<td>DFSIVAD</td>
<td>Assembler</td>
<td>DFSIVPD</td>
<td>DFSIVFD</td>
<td>IVTC17</td>
<td>n/a</td>
<td>Simulated n/a</td>
<td>Message driven WFI BMP.</td>
</tr>
<tr>
<td>DFSIVAE</td>
<td>Assembler</td>
<td>DFSIVPE</td>
<td>DFSIVFE</td>
<td>IVTC27</td>
<td>n/a</td>
<td>n/a</td>
<td>Non-conv. MPP. MSG switch to DFSIVAD.</td>
</tr>
<tr>
<td>DFSIVAF</td>
<td>Assembler</td>
<td>DFSIVPF</td>
<td>DFSIVFF</td>
<td>IVTC37</td>
<td>n/a</td>
<td>n/a</td>
<td>Conv. MPP. MSG switch to DFSIVAD.</td>
</tr>
<tr>
<td>DFSIVAG</td>
<td>Assembler</td>
<td>DFSIVPG</td>
<td>DFSIVFG</td>
<td>IVTC47</td>
<td>n/a</td>
<td>n/a</td>
<td>IFP (EMH). MSG switch to DFSIVAD.</td>
</tr>
<tr>
<td>DFSIVG20</td>
<td>Assembler</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>DFSIVG2</td>
<td>WTOR routine for Pascal.</td>
<td></td>
</tr>
<tr>
<td>DFSIVG30</td>
<td>Assembler</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>DFSIVG3</td>
<td>WTOR routine for C.</td>
<td></td>
</tr>
<tr>
<td>DFSIVC04</td>
<td>Assembler</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>Control statements for HD DB load (DFSDDLT0).</td>
</tr>
<tr>
<td>DFSIVC05</td>
<td>Assembler</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>DB batch, BMP GSAM input.</td>
</tr>
<tr>
<td>DFSIVC06</td>
<td>Assembler</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>Control statements for MSDB load.</td>
</tr>
<tr>
<td>DFSIVC07</td>
<td>Assembler</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>WFI BMP GSAM input.</td>
<td></td>
</tr>
</tbody>
</table>
IVP Sample Application

Table 14. IVP Sample Application Parts (continued)

<table>
<thead>
<tr>
<th>Part Name</th>
<th>Language</th>
<th>PSB</th>
<th>MFS</th>
<th>TRANCD</th>
<th>DBD</th>
<th>Compile and BIND JCL</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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 8: 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 8: 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.
The MFS (message format service) blocks for some of the application programs use a screen format similar to that shown in Figure 33. 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.

**Figure 33. IVP Screen Format**

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**

<table>
<thead>
<tr>
<th>Record number</th>
<th>Last Name</th>
<th>First Name</th>
<th>Ext. number</th>
<th>Zip Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>LAST1</td>
<td>FIRST1</td>
<td>8-111-1111</td>
<td>D01/R01</td>
</tr>
<tr>
<td>2</td>
<td>LAST2</td>
<td>FIRST2</td>
<td>8-111-2222</td>
<td>D01/R02</td>
</tr>
<tr>
<td>3</td>
<td>LAST3</td>
<td>FIRST3</td>
<td>8-111-3333</td>
<td>D01/R03</td>
</tr>
<tr>
<td>4</td>
<td>LAST4</td>
<td>FIRST4</td>
<td>8-111-4444</td>
<td>D02/R04</td>
</tr>
<tr>
<td>5</td>
<td>LAST5</td>
<td>FIRST5</td>
<td>8-111-5555</td>
<td>D02/R05</td>
</tr>
<tr>
<td>6</td>
<td>LAST6</td>
<td>FIRST6</td>
<td>8-111-6666</td>
<td>D03/R06</td>
</tr>
</tbody>
</table>

**DFSV1D1 - HIDAM/OSAM**

- Database Description
  - Database Name: IVPDB1
  - Segment Name: A1111111
Databases

Segment Length: 40
Key Field Name: A1111111
Key Field Length: 10
• Database Record Format: See Table 16.

Table 16. Database Record Format of DFSIVD1

<table>
<thead>
<tr>
<th>OFFSET</th>
<th>LENGTH</th>
<th>FIELD NAME</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>10</td>
<td>A1111111</td>
<td>Last Name</td>
</tr>
<tr>
<td>10</td>
<td>10</td>
<td>N/A</td>
<td>First Name</td>
</tr>
<tr>
<td>20</td>
<td>10</td>
<td>N/A</td>
<td>Extension Number</td>
</tr>
<tr>
<td>30</td>
<td>7</td>
<td>N/A</td>
<td>Internal Zip Code</td>
</tr>
<tr>
<td>37</td>
<td>3</td>
<td>N/A</td>
<td>Reserved</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>OFFSET</th>
<th>LENGTH</th>
<th>FIELD NAME</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>10</td>
<td>A1111111</td>
<td>Last Name</td>
</tr>
<tr>
<td>10</td>
<td>10</td>
<td>N/A</td>
<td>First Name</td>
</tr>
<tr>
<td>20</td>
<td>10</td>
<td>N/A</td>
<td>Extension Number</td>
</tr>
<tr>
<td>30</td>
<td>7</td>
<td>N/A</td>
<td>Internal Zip Code</td>
</tr>
<tr>
<td>37</td>
<td>3</td>
<td>N/A</td>
<td>Reserved</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>OFFSET</th>
<th>LENGTH</th>
<th>FIELD NAME</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>2</td>
<td>N/A</td>
<td>Segment Length</td>
</tr>
</tbody>
</table>
Databases

Table 18. Database Record Format of DFSIVD3 (continued)

<table>
<thead>
<tr>
<th>OFFSET</th>
<th>LENGTH</th>
<th>FIELD NAME</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>10</td>
<td>A1111111</td>
<td>Last Name</td>
</tr>
<tr>
<td>12</td>
<td>10</td>
<td>N/A</td>
<td>First Name</td>
</tr>
<tr>
<td>22</td>
<td>10</td>
<td>N/A</td>
<td>Extension Number</td>
</tr>
<tr>
<td>32</td>
<td>7</td>
<td>N/A</td>
<td>Internal Zip Code</td>
</tr>
<tr>
<td>39</td>
<td>3</td>
<td>N/A</td>
<td>Reserved</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>OFFSET</th>
<th>LENGTH</th>
<th>FIELD NAME</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>10</td>
<td>A1111111</td>
<td>Last Name</td>
</tr>
<tr>
<td>10</td>
<td>10</td>
<td>N/A</td>
<td>First Name</td>
</tr>
<tr>
<td>20</td>
<td>10</td>
<td>N/A</td>
<td>Extension Number</td>
</tr>
<tr>
<td>30</td>
<td>7</td>
<td>N/A</td>
<td>Internal Zip Code</td>
</tr>
<tr>
<td>37</td>
<td>3</td>
<td>N/A</td>
<td>Reserved</td>
</tr>
</tbody>
</table>

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>
<thead>
<tr>
<th>Part Name</th>
<th>Language</th>
<th>PSB</th>
<th>TRANCD</th>
<th>DBD</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DI21PART</td>
<td>Assembler</td>
<td>n/a</td>
<td>n/a</td>
<td>DI21PART</td>
<td>HISAM/VSAM database</td>
</tr>
<tr>
<td>DFSSAM01</td>
<td>REXX</td>
<td>DFSSAM11</td>
<td>n/a</td>
<td>DI21PART</td>
<td>DB batch - Database Load</td>
</tr>
<tr>
<td>DFSSAM02</td>
<td>REXX</td>
<td>DFSSAM12</td>
<td>PART</td>
<td>DI21PART</td>
<td>Non-conversational MPP</td>
</tr>
<tr>
<td>DFSSAM03</td>
<td>REXX</td>
<td>DFSSAM13</td>
<td>DSPINV</td>
<td>DI21PART</td>
<td>Non-conversational MPP</td>
</tr>
<tr>
<td>DFSSAM04</td>
<td>REXX</td>
<td>DFSSAM14</td>
<td>ADDPART ADDINV DLETPART DLETINV</td>
<td>DI21PART</td>
<td>Non-conversational MPP</td>
</tr>
<tr>
<td>DFSSAM05</td>
<td>REXX</td>
<td>DFSSAM15</td>
<td>CLOSE</td>
<td>DI21PART</td>
<td>Non-conversational MPP</td>
</tr>
<tr>
<td>DFSSAM06</td>
<td>REXX</td>
<td>DFSSAM16</td>
<td>DISBURSE</td>
<td>DI21PART</td>
<td>Non-conversational MPP</td>
</tr>
<tr>
<td>DFSSAM07</td>
<td>REXX</td>
<td>DFSSAM17</td>
<td>DSPALLI</td>
<td>DI21PART</td>
<td>Non-conversational MPP</td>
</tr>
<tr>
<td>DFSSAM08</td>
<td>Assembler</td>
<td>DFSSAM18</td>
<td>n/a</td>
<td>DI21PART</td>
<td>Non-conversational MPP</td>
</tr>
<tr>
<td>DFSDDLT0</td>
<td>Assembler</td>
<td>DFSSAM19</td>
<td>n/a</td>
<td>DI21PART</td>
<td>DB batch/BMP</td>
</tr>
<tr>
<td>DFSSAMC1</td>
<td>Assembler</td>
<td>DFSSAMC1</td>
<td>n/a</td>
<td>D121PART</td>
<td>CICS PSB DFHSAM04</td>
</tr>
<tr>
<td>DFSSAMC2</td>
<td>Assembler</td>
<td>DFSSAMC2</td>
<td>n/a</td>
<td>DI21PART</td>
<td>CICS PSB DFHSAM05</td>
</tr>
<tr>
<td>DFSSAMC3</td>
<td>Assembler</td>
<td>DFSSAMC3</td>
<td>n/a</td>
<td>DI21PART</td>
<td>CICS PSB DFHSAM14</td>
</tr>
<tr>
<td>DFSSAMC4</td>
<td>Assembler</td>
<td>DFSSAMC4</td>
<td>n/a</td>
<td>DI21PART</td>
<td>CICS PSB DFHSAM24</td>
</tr>
<tr>
<td>DFSSAMC5</td>
<td>Assembler</td>
<td>DFSSAMC5</td>
<td>n/a</td>
<td>DI21PART</td>
<td>CICS PSB DFHSAM15</td>
</tr>
<tr>
<td>DFSSAMC6</td>
<td>Assembler</td>
<td>DFSSAMC6</td>
<td>n/a</td>
<td>DI21PART</td>
<td>CICS PSB DFHSAM25</td>
</tr>
<tr>
<td>DFSUT04</td>
<td>REXX</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>Status code subroutine</td>
</tr>
<tr>
<td>MFDFSYSN</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>Control statements for database load</td>
</tr>
<tr>
<td>DFSSAMC1</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>Control statements for database dump (DFSDDLT0)</td>
</tr>
</tbody>
</table>

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 34 on page 136 shows the relationship between the logical and physical databases for each of the three logical databases parts, drawings, and end items.
The segments comprising the logical "parts" database are divided into two data set groups. Figure 35 on page 137 displays the hierarchy of these segments in the two data set groups (STD data and order control).
The segments comprising the logical database “drawings” are divided into two data set groups. Figure 36 on page 138 displays the hierarchy of these segments in the two data set groups (EDRS system and MAPL/EAPL parts list).

Figure 35. Parts Database

The segments comprising the logical database “drawings” are divided into two data set groups. Figure 36 on page 138 displays the hierarchy of these segments in the two data set groups (EDRS system and MAPL/EAPL parts list).
The segments comprising the logical database “end items” are all contained in one data set group. Figure 37 on page 139 displays the hierarchy of these segments in the end item data set group.
Sample Application

The entire three-database structure that is shown in Figure 34 on page 136, Figure 35 on page 137, Figure 36 on page 138, and Figure 37 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 38 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.
Sample Transactions

In [Figure 39] the six message processing programs (MPPs) process the nine transactions (provided by the sample application) using the “parts” database.
The six MPPs and their associated transactions are provided to allow you to perform the following nine online functions:

<table>
<thead>
<tr>
<th>Transaction</th>
<th>Online Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>PART</td>
<td>Inquire about a part and its description.</td>
</tr>
<tr>
<td>DSPALLI</td>
<td>Inquire about a part's inventory, cycle count, and back-order information.</td>
</tr>
<tr>
<td>DSPINV</td>
<td>Inquire about a part's total inventory in all locations or by specific inventory location.</td>
</tr>
<tr>
<td>ADDPART</td>
<td>Add a new part and its description.</td>
</tr>
<tr>
<td>ADDINV</td>
<td>Add part inventory information, by location, to an existing part description.</td>
</tr>
<tr>
<td>DLETINV</td>
<td>Delete part inventory information, by location.</td>
</tr>
<tr>
<td>DLETPART</td>
<td>Delete a part after deletion of all its subordinate part inventory information.</td>
</tr>
<tr>
<td>CLOSE</td>
<td>Close a part order to increase the part inventory at a specific location.</td>
</tr>
</tbody>
</table>

Figure 39. MPPs Processing the Parts Database
**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 40.

   
   ![Figure 40. PART Transaction - Entry](part AN960C10)

   The output or response format is shown in Figure 41.

   ![Figure 41. PART Transaction - Output](Part............ AN960C10; Desc............ WASHER
   Proc Code........ 74; Inv Code........ 2
   Make Dept........ 12-00; Plan Rev Num...
   Make Time........ 63; Comm Code........ 14)

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 42.

   ![Figure 42](DSPALLI Transaction - Entry)
The resulting terminal output is shown in Figure 43.

**Figure 42. DSPALLI Transaction - Entry**

The resulting terminal output is shown in Figure 43.

**Figure 43. 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 43. 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 44.

```
dspinv AN960C10,28009126
```

**Figure 44. DSPINV Transaction - Entry**

The resulting terminal output is shown in Figure 45.

```
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 Qmmts..... 630; On Order....... 15
Total Stock.... 680; Disb Planned... 1053
Disb Unplanned. 104; Stk Ct Variance 0
```

**Figure 45. 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 46.
The resulting terminal output is shown in Figure 47.

**Figure 47. ADDPART Transaction - Output**

Part Number A8960C10 Added To Data Base

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 48.

```
addinv A8960C10,80091260
```

**Figure 48. ADDINV Transaction - Entry**

The resulting terminal output is shown in Figure 49.

```
Inventory 80091260 Added To Part Number A8960C10
```

**Figure 49. ADDINV Transaction - Output**

If you want to display the part's updated inventory information, enter the command shown in Figure 50.

```
dspinv A8960C10,80091260
```

**Figure 50. DSPINV Transaction - Entry**

The resulting terminal output is shown in Figure 51.
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 52.

```
dletinv AB960C10,80091260
```

**Figure 52. DLETINV Transaction - Entry**

The resulting terminal output shown in Figure 53.

```
Inventory 80091260 Deleted From Part Number AB960C10
```

**Figure 53. 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 54.

```
dletpart AB960C10
```

**Figure 54. DLETPART Transaction - Entry**

The resulting terminal output is shown in Figure 55.

```
Part Number AB960C10 Deleted From Data Base
```

**Figure 55. 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 56.

```
close AN960C10,28009126,15,15
```

**Figure 56. CLOSE Transaction - Entry**

The resulting terminal output is shown in Figure 57.

```
17:43:38 PN= AN960C10 Invty Key=28009126 Excess Stock On Hand
```

**Figure 57. 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 58.

```
Update Complete
```

**Figure 58. 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 59.

```
dspinv AN960C10,28009126
```

**Figure 59. DSPINV Transaction - Entry**

The resulting terminal output is shown in Figure 60.

```
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 60. DSPINV Transaction - Output**

Compare the display in Figure 60 with the display in Figure 45 on page 143. 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 61.

```
disburse AN960C10,28009126,U,10
```

**Figure 61. DISBURSE Transaction - Entry**

The resulting terminal output is shown in Figure 62.

```
17:47:40 PN= AN960C10 Invty Key=28009126 Excess Stock On Hand
```

**Figure 62. 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 63.

```
Update Complete
```

**Figure 63. 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 64. The input is transaction code, part number, inventory-location-key.

```
dspinv AN960C10,28009126
```

**Figure 64. DSPINV Transaction - Entry**

The resulting terminal output is shown in Figure 65.

```
| 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 65. 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.

<table>
<thead>
<tr>
<th>Part Numbers:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>AN960C10</td>
<td>7438995P002</td>
</tr>
<tr>
<td>3003806 *</td>
<td>7618032P101*</td>
</tr>
<tr>
<td>3007228</td>
<td>922399-001</td>
</tr>
<tr>
<td>3013412</td>
<td>82125-869</td>
</tr>
<tr>
<td>652799</td>
<td></td>
</tr>
</tbody>
</table>
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>
<thead>
<tr>
<th>Part Name</th>
<th>Language</th>
<th>PSB</th>
<th>MFS</th>
<th>TRANCD</th>
<th>DBD</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DBFSAMD1</td>
<td>Assembler</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>DBFSAMD1</td>
<td>MSDB - General Ledger Database</td>
</tr>
<tr>
<td>DBFSAMD2</td>
<td>Assembler</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>DBFSAMD2</td>
<td>MSDB - Teller Database</td>
</tr>
<tr>
<td>DBFSAMD3</td>
<td>Assembler</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>DBFSAMD3</td>
<td>DEDB/VSAM - Customer Account Database</td>
</tr>
<tr>
<td>DBFSAMD4</td>
<td>Assembler</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>DBFSAMD4</td>
<td>HDAM/VSAM - Loan Database</td>
</tr>
<tr>
<td>DBFSAMA1</td>
<td>Assembler</td>
<td>DBFSAMP1</td>
<td>n/a</td>
<td>n/a</td>
<td>DBFSAMD3</td>
<td>BMP - DEDB/VSAM load</td>
</tr>
<tr>
<td>DBFSAMA2</td>
<td>Assembler</td>
<td>DBFSAMP2</td>
<td>n/a</td>
<td>n/a</td>
<td>DBFSAMD4</td>
<td>DB Batch - HDAM/VSAM load</td>
</tr>
<tr>
<td>DBFSAMA3</td>
<td>Assembler</td>
<td>DBFSAMP3</td>
<td>DBFSAMF1</td>
<td>FPSAMP1</td>
<td>DBFSAMD1 DBFSAMD2 DBFSAMD3 DBFSAMD4</td>
<td>Non-conversational IFP (EMH)</td>
</tr>
<tr>
<td>DBFSAMA3</td>
<td>Assembler</td>
<td>DBFSAMP4</td>
<td>DBFSAMF1</td>
<td>FPSAMP2</td>
<td>DBFSAMD1 DBFSAMD2 DBFSAMD3 DBFSAMD4</td>
<td>Non-conversational MPP</td>
</tr>
<tr>
<td>DFSDDLT0</td>
<td>Assembler</td>
<td>DBFSAMP5</td>
<td>n/a</td>
<td>n/a</td>
<td>DBFSAMD4</td>
<td>DB batch/BMP - HDAM/VSAM</td>
</tr>
<tr>
<td>DFSDDLT0</td>
<td>Assembler</td>
<td>DBFSAMP6</td>
<td>n/a</td>
<td>n/a</td>
<td>DBFSAMD3</td>
<td>BMP - DEDB/VSAM</td>
</tr>
<tr>
<td>DFSIVC06</td>
<td>Assembler</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>DBFSAMD1 DBFSAMD2</td>
<td>MSDB load control statements</td>
</tr>
</tbody>
</table>

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 66 on page 150 shows the relationship of these four databases as created and used by 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:

- 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:

- 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 67 on page 151. 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.
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 68 displays the segments (customer root and loan) 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

<table>
<thead>
<tr>
<th>Field</th>
<th>Variables</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transaction Code</td>
<td>aaaaaaa</td>
<td>• FMP1 - execute transaction in FP MSG DRIVEN REGION</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• FPSAMP2 - execute transaction in IMS MPP REGION</td>
</tr>
<tr>
<td>Customer Account</td>
<td>bbbbbbbbbcc</td>
<td>• bbbbbbbb - 8-character customer number</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• cc - 2-character account type</td>
</tr>
<tr>
<td>Transaction Type</td>
<td>def</td>
<td>• d - one of the following four characters:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- L - Loan¹</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- S - Savings account</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- C - Checking account</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- U - Current account</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• e - one of the following three characters:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- W - Withdrawment</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- D - Deposit</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- P - Account statement</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• f - one of the following five characters:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- P - Passbook²</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- 1 - Today³</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- 2 - This week³</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- 3 - This month³</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- 4 - This quarter³</td>
</tr>
<tr>
<td>Transaction Amount</td>
<td>gggggggggg</td>
<td>Amount ($3000.00, for example) up to nine characters.</td>
</tr>
</tbody>
</table>

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: AAAAAA BBBB BBBBB CC DEF GGGGGGGG

Where:

AAAAAAA: Transaction code suffix (0 or 1 depending on which region)
BBBB BBBB: 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 wwww

  TRANS TO BE ENTERED IN PASSBK:

  YYDDD HHMM t aaaaaaaaaa YYDDD HHMM t aaaaaaaaaa
  YYDDD HHMM t aaaaaaaaaa YYDDD HHMM t aaaaaaaaaa

  END OF PASSBOOK TRANSACTIONS

Where:

xxxxxxx: Customer account number
yyy: Transaction type
zzzzzzzzz: Transaction amount
wwwwww: 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 wwwwwwwwww uuuuuuuuu vvv

Where:

xxxxxxx: Customer account number
L: Transaction type (loan payment)
zzzzzzzzz: Loan payment amount
wwwwwwwwwww: Original loan balance
uuuuuuuuuu: New loan balance
vvvvv: Number of loan payments made on account

- Account Statement Transaction
  CUST. ACCT REQUEST BALANCE:

  BRxxxxxxxx yyy zzzzzzzz

  TRANSACTIONS THIS PERIOD:

  YYDDD HHMM t aaaaaaaa YYDDD HHMM t aaaaaaaa
  YYDDD HHMM t aaaaaaaa YYDDD HHMM t aaaaaaaa

  END OF TRANSACTIONS

Where:

xxxxxxxxxx: Customer account number
yyy: Transaction type
zzzzzzzzzz: Account balance
YYDDD: Transaction date
HHMM: Transaction time
t: Transaction type (D or W)
aaaaaaaa: 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
Fast Path Sample Application

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 DBFSMOU to display the MFS format.
   In the transaction sequence that follows, the terminal input is to be typed below the “AAAAAAA BBBB BBBBCC DEF GGGGGGGG” 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 HHHMM $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:
   PROCSE 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:
The transactions shown in "Running the Sample Transaction from Your Terminal" on page 153 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>
<thead>
<tr>
<th>Customer Account Number</th>
<th>Customer Name</th>
<th>Customer Address</th>
<th>Account Type</th>
<th>Account Balance $</th>
</tr>
</thead>
<tbody>
<tr>
<td>BR01-B01S1 C1</td>
<td>Robert Bennett</td>
<td>1601 California Ave. Palo Alto, CA 95432</td>
<td>S JT C TS</td>
<td>4,000.00</td>
</tr>
<tr>
<td>BR01-A01S1 S1</td>
<td>Mary Adams</td>
<td>2044 Hamilton Ave. Campbell, CA 95030</td>
<td>S JT</td>
<td>2,000.00</td>
</tr>
<tr>
<td>BR01-F01S1 C1</td>
<td>John Ford</td>
<td>4312 Skyline Road Mt. View, CA 96048</td>
<td>S BA C TR</td>
<td>15,000.00</td>
</tr>
<tr>
<td>BR01-H01C1</td>
<td>Betty Hill</td>
<td>7676 Santa Teresa Rd San Jose, CA 97050</td>
<td>C TR</td>
<td>6,000.00</td>
</tr>
<tr>
<td>BR02-B02U1</td>
<td>Samuel Brown</td>
<td>9624 Prospect Ave. San Jose, CA 95129</td>
<td>U UB</td>
<td>13,000.00</td>
</tr>
<tr>
<td>BR02-T01U1</td>
<td>James Taylor</td>
<td>5411 Ocean Dr. Santa Cruz, CA 96080</td>
<td>U UA</td>
<td>41,500.00</td>
</tr>
<tr>
<td>BR02-T02C1</td>
<td>Peter Thomas</td>
<td>1900 Stanford Ave. Palo Alto, CA 95432</td>
<td>C TR</td>
<td>9,000.00</td>
</tr>
</tbody>
</table>
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)

<table>
<thead>
<tr>
<th>Customer Account Number</th>
<th>Customer Name</th>
<th>Loan Amount $</th>
<th>Monthly Payment $</th>
</tr>
</thead>
<tbody>
<tr>
<td>BR01-B01A1</td>
<td>Robert Bennett</td>
<td>4,500.00</td>
<td>145.00</td>
</tr>
<tr>
<td>BR01-A01V1</td>
<td>Mary Adams</td>
<td>1,200.00</td>
<td>106.06</td>
</tr>
<tr>
<td>BR01-F01H1</td>
<td>John Ford</td>
<td>60,000.00</td>
<td>76.01</td>
</tr>
<tr>
<td>BR01-H01M1</td>
<td>Betty Hill</td>
<td>60,000.00</td>
<td>482.77</td>
</tr>
<tr>
<td>BR02-B02P1</td>
<td>Samuel Brown</td>
<td>1,000.00</td>
<td>88.38</td>
</tr>
<tr>
<td>BR02-T01H1</td>
<td>James Taylor</td>
<td>6,000.00</td>
<td>76.01</td>
</tr>
<tr>
<td>BR02-T02A1</td>
<td>Peter Thomas</td>
<td>4,000.00</td>
<td>129.07</td>
</tr>
</tbody>
</table>
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 129 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:

<table>
<thead>
<tr>
<th>Part Name</th>
<th>Language</th>
<th>PSB</th>
<th>MFS</th>
<th>TRANCD</th>
<th>DBD</th>
<th>Compile and BIND JCL</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DFSIVD1</td>
<td>Assembler</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>DFSIVD1</td>
<td>n/a</td>
<td>PHIDAM/OSAM database</td>
</tr>
<tr>
<td>DFSIVD1I</td>
<td>Assembler</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>DFSIVD1I</td>
<td>n/a</td>
<td>PHIDAM/OSAM Primary Index database</td>
</tr>
<tr>
<td>DFSIVA1</td>
<td>Assembler</td>
<td>DFSIVP1</td>
<td>DFSIVF1</td>
<td>IVTNO</td>
<td>DFSIVD1</td>
<td>n/a</td>
<td>Non-conv. MPP</td>
</tr>
</tbody>
</table>

1 These parts are installed by the IVP.

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.
Program Functions

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 69. 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
   ADD
FIRST NAME : ///////// DELETE
   UPDATE
EXTENSION NUMBER : ///////// DISPLAY
INTERNAL ZIP CODE : ///////// TADD
   input area
   message area
SEGMENT# : 0001
   system message area
```

Figure 69. 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

<table>
<thead>
<tr>
<th>OFFSET</th>
<th>LENGTH</th>
<th>FIELD NAME</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>10</td>
<td>A1111111</td>
<td>Last Name</td>
</tr>
<tr>
<td>10</td>
<td>10</td>
<td>N/A</td>
<td>First Name</td>
</tr>
</tbody>
</table>
Table 26. Database Record Format of DFSIVD1 (continued)

<table>
<thead>
<tr>
<th>OFFSET</th>
<th>LENGTH</th>
<th>FIELD NAME</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>10</td>
<td>N/A</td>
<td>Extension Number</td>
</tr>
<tr>
<td>30</td>
<td>7</td>
<td>N/A</td>
<td>Internal Zip Code</td>
</tr>
<tr>
<td>37</td>
<td>3</td>
<td>N/A</td>
<td>Reserved</td>
</tr>
</tbody>
</table>
Chapter 14. Other Sample Applications

The IVP provides sample applications in addition to the ones described in Chapter 10, “IVP Sample Application,” on page 129, Chapter 11, “IMS Sample Application,” on page 135, Chapter 12, “Fast Path Sample Application,” on page 149, and Chapter 13, “Partitioning Sample Application,” on page 159. For more information about each of the samples provided with the IVP, see the help information available in the IVP.

Common Service Layer Sample Application

This sample application demonstrates how to use the Operations Manager (OM), Resource Manager (RM), Structured Call Interface (SCI), and TSO single point of control (SPOC). Specifically, this sample application demonstrates:

- Adding Common Service Layer members OM, RM, and SCI to IMS.PROCLIB to define an IMSplex
- Starting and stopping an IMSplex
- Starting and using the TSO SPOC application

The steps for this sample application are described in “Steps Ox for Common Service Layer Sample Application” on page 185.

Related Reading: For more information about OM, RM, SCI, and TSO SPOC, see IMS Version 8: Common Service Layer Guide and Reference.

Syntax Checker Sample Application

This sample application demonstrates how to use the Syntax Checker.

The steps for this sample application are described in “Steps Ex for Prepare IVP Applications and System” on page 177.

Related Reading: For a detailed example of how to use the Syntax Checker, see IMS Version 8: Installation Volume 2: System Definition and Tailoring.
Part 4. Appendixes
Appendix A. IVP Variables

The listings in this section identify the user modifiable variables which the IVP Dialog uses when creating the JOBs and supporting materials used by the IVP Process. The variables which are actually presented by the IVP Dialog will be determined by your choice of option.

Additional documentation for the IVP variables may be printed 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 section, the variables are presented in the same sequence that is to be used by the IVP dialog.

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>IXUIVPHQ</td>
<td>IVP - High level DSNAME qualifier for IVP (IVP) data sets</td>
</tr>
<tr>
<td>IXURLHQP</td>
<td>IVP - High level DSNAME qualifier for IRLM (RLM) data sets</td>
</tr>
<tr>
<td>IXUSMPHQ</td>
<td>IVP - High level DSNAME qualifier for SMP/E (SMP) data sets</td>
</tr>
<tr>
<td>IXUDLBHQ</td>
<td>IVP - High level DSNAME qualifier for IMS DLIB (DLB) data sets</td>
</tr>
<tr>
<td>IXUSYSHQ</td>
<td>IVP - High level DSNAME qualifier for IMS System (SYS) data sets</td>
</tr>
<tr>
<td>IXUEXEHQ</td>
<td>IVP - High level DSNAME qualifier for Execution (EXE) data sets</td>
</tr>
<tr>
<td>IXUUTLHQ</td>
<td>IVP - High level DSNAME qualifier for Utility (UTL) data sets</td>
</tr>
<tr>
<td>IXUSCLS</td>
<td>SMS - Storage Class</td>
</tr>
<tr>
<td>IXUSMCLS</td>
<td>SMS - Management Class</td>
</tr>
<tr>
<td>IXUIVPVS</td>
<td>IVP - VOLSER for IVP (IVP) data sets</td>
</tr>
<tr>
<td>IXUDLBVS</td>
<td>IVP - VOLSER for IMS distribution, DLIB, (DLB) data sets</td>
</tr>
<tr>
<td>IXUSYSVS</td>
<td>IVP - VOLSER for IMS System, (SYS) data sets</td>
</tr>
<tr>
<td>IXUEX1VS</td>
<td>IVP - VOLSER for IMS Execution (EX1) data sets - group 1</td>
</tr>
<tr>
<td>IXUEX2VS</td>
<td>IVP - VOLSER for IMS Execution (EX2) data sets - group 2</td>
</tr>
<tr>
<td>IXUUTLVS</td>
<td>IVP - VOLSER for Utility (UTL) data sets - non-VSAM</td>
</tr>
<tr>
<td>IXUUTVVS</td>
<td>IVP - VOLSER for Utility (UTL) data sets - VSAM</td>
</tr>
<tr>
<td>IXUIVPDT</td>
<td>IVP - Device type for IVP (IVP) data sets</td>
</tr>
<tr>
<td>IXUDLBDT</td>
<td>IVP - Device type for IMS Distribution (DLB) data sets</td>
</tr>
<tr>
<td>IXUSYSDT</td>
<td>IVP - Device type for IMS System (SYS) data sets</td>
</tr>
<tr>
<td>IXUEX1DT</td>
<td>IVP - Device type for IMS Execution (EX1) data sets</td>
</tr>
<tr>
<td>IXUEX2DT</td>
<td>IVP - Device type for IMS Execution (EX2) data sets</td>
</tr>
<tr>
<td>IXUUTLDT</td>
<td>IVP - Device type for Utility (UTL) data sets - non-VSAM</td>
</tr>
<tr>
<td>IXUUTVDT</td>
<td>IVP - Device type for Utility (UTL) data sets - VSAM</td>
</tr>
<tr>
<td>IXUTEMP</td>
<td>IVP - Device type for temporary data sets</td>
</tr>
<tr>
<td>IXUPDSFB</td>
<td>IVP - BLKSIZE for PDSs with RECFM=FB and LRECL=80 - (PFB)</td>
</tr>
<tr>
<td>IXUPDSU0</td>
<td>IVP - BLKSIZE for PDSs with RECFM=U and LRECL=0 - (PU0)</td>
</tr>
<tr>
<td>IXUSEQVB</td>
<td>IVP - BLKSIZE for RECFM=VB sequential data sets - (SVB)</td>
</tr>
<tr>
<td>IXUOBJFB</td>
<td>IVP - BLKSIZE for OBJDSET (STAGE2 assembly output) (OBJ)</td>
</tr>
<tr>
<td>IXURESU0</td>
<td>IVP - BLKSIZE for IMS SDFSRESL (RESLIB)</td>
</tr>
<tr>
<td>IXUOLDVB</td>
<td>IVP - BLKSIZE for IMS OLDS (Online Log Data Set) (OLD)</td>
</tr>
<tr>
<td>IXULOGVB</td>
<td>IVP - BLKSIZE for IMS MONITOR and Batch Logs data sets (LOG)</td>
</tr>
<tr>
<td>IXUTRCVB</td>
<td>IVP - BLKSIZE for IMS External Trace data sets (TRC)</td>
</tr>
<tr>
<td>IXUAMODD</td>
<td>IVP - BLKSIZE for IMS External Trace data sets (TRC)</td>
</tr>
<tr>
<td>IXUGZDSN</td>
<td>SMP - Fully Qualified DSNAME - IMS SMP/E Global Zone</td>
</tr>
<tr>
<td>IXUTZONE</td>
<td>SMP - Zone id - IMS SMP/E Target Zone</td>
</tr>
<tr>
<td>IXUSPROC</td>
<td>IVP - Fully qualified DSNAME - SYS1.PROCLIB</td>
</tr>
<tr>
<td>IXUSMACL</td>
<td>SMP - Fully qualified DSNAME - SYS1.MACLIB (or AMACLIB)</td>
</tr>
<tr>
<td>IXUSAMOD</td>
<td>SMP - Fully qualified DSNAME - SYS1.MODGEN (or AMODGEN)</td>
</tr>
<tr>
<td>IXUSMCT</td>
<td>SMP - Fully qualified DSNAME - HLASM Toolkit Feature MACLIB</td>
</tr>
<tr>
<td>IXUMAC1</td>
<td>SMP - Fully qualified DSNAME - User Macro Library #1 &gt;&gt;&gt; See description</td>
</tr>
<tr>
<td>IXUMAC2</td>
<td>SMP - Fully qualified DSNAME - User Macro Library #2 &gt;&gt;&gt; See description</td>
</tr>
<tr>
<td>IXUMAC3</td>
<td>SMP - Fully qualified DSNAME - User Macro Library #3 &gt;&gt;&gt; See description</td>
</tr>
<tr>
<td>IXULELKD</td>
<td>SMP - Language Environment® Library (SCEELKED)</td>
</tr>
<tr>
<td>IXULESPC</td>
<td>SMP - Language Environment Resident Library (SCEESPC)</td>
</tr>
<tr>
<td>IXUJESTY</td>
<td>JCL - JES VERSION. (JES2 OR JES3)</td>
</tr>
<tr>
<td>IXUUPROC</td>
<td>JCL - User PROCLIB DDNAME (JES2) or DDNAME suffix (JES3)</td>
</tr>
<tr>
<td>IXUJOBNM</td>
<td>JCL - JOBNAME - USE IVP JOBNAME (Y) OR TSO USERID (N)</td>
</tr>
<tr>
<td>IXUJACT1</td>
<td>JCL - JOB statement accounting information - Part 1 of 5</td>
</tr>
<tr>
<td>IXUJACT2</td>
<td>JCL - JOB statement accounting information - Part 2 of 5</td>
</tr>
<tr>
<td>IXUJACT3</td>
<td>JCL - JOB statement accounting information - Part 3 of 5</td>
</tr>
<tr>
<td>IXUJACT4</td>
<td>JCL - JOB statement accounting information - Part 4 of 5</td>
</tr>
<tr>
<td>IXUJACT5</td>
<td>JCL - JOB statement accounting information - Part 5 of 5</td>
</tr>
<tr>
<td>IXUPGMNM</td>
<td>JCL - JOB statement programmer name</td>
</tr>
<tr>
<td>IXUJCLAS</td>
<td>JCL - JOB statement CLASS parameter - IVP JOBs</td>
</tr>
<tr>
<td>IXUJCLS2</td>
<td>JCL - JOB statement CLASS parameter - SYSDEF STAGE2 JOBs</td>
</tr>
<tr>
<td>IXUMCLAS</td>
<td>JCL - JOB statement MSGCLASS parameter</td>
</tr>
<tr>
<td>IXUGROUP</td>
<td>JCL - JOB statement GROUP parameter</td>
</tr>
<tr>
<td>IXUJRUSRID</td>
<td>JCL - JOB statement USER parameter</td>
</tr>
<tr>
<td>IXUPASWD</td>
<td>JCL - JOB statement PASSWORD parameter</td>
</tr>
</tbody>
</table>
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

Appendix A. IVP Variables 169
### Data Set Allocation Variables

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>IXUOBJD</td>
<td>OBJDSET allocation parameters - HLQ,VOL,BLK,TYP,PRM,SEC,DIR</td>
</tr>
<tr>
<td>IXULGNI</td>
<td>LGENIN allocation parameters - HLQ,VOL,BLK,TYP,PRM,SEC,DIR</td>
</tr>
<tr>
<td>IXULGNO</td>
<td>LGENOUT allocation parameters - HLQ,VOL,BLK,TYP,PRM,SEC,DIR</td>
</tr>
<tr>
<td>Data Set Allocation Variables</td>
<td></td>
</tr>
<tr>
<td>-----------------------------</td>
<td></td>
</tr>
<tr>
<td>IXUPROC</td>
<td>PROCLIB allocation parameters - HLQ, VOL, BLK, TYP, PRM, SEC, DIR</td>
</tr>
<tr>
<td>IXUMBKS</td>
<td>MODBLKS allocation parameters - HLQ, VOL, BLK, TYP, PRM, SEC, DIR</td>
</tr>
<tr>
<td>IXUMBKA</td>
<td>MODBLKSA allocation parameters - HLQ, VOL, BLK, TYP, PRM, SEC, DIR</td>
</tr>
<tr>
<td>IXUMBKB</td>
<td>MODBLKSB allocation parameters - HLQ, VOL, BLK, TYP, PRM, SEC, DIR</td>
</tr>
<tr>
<td>IXUMTRX</td>
<td>MATRIX allocation parameters - HLQ, VOL, BLK, TYP, PRM, SEC, DIR</td>
</tr>
<tr>
<td>IXUMRXA</td>
<td>MATRIXA allocation parameters - HLQ, VOL, BLK, TYP, PRM, SEC, DIR</td>
</tr>
<tr>
<td>IXUMRXB</td>
<td>MATRIXB allocation parameters - HLQ, VOL, BLK, TYP, PRM, SEC, DIR</td>
</tr>
<tr>
<td>IXUPGML</td>
<td>PGMLIB allocation parameters - HLQ, VOL, BLK, TYP, PRM, SEC, DIR</td>
</tr>
<tr>
<td>IXUPSBL</td>
<td>PSBLIB allocation parameters - HLQ, VOL, BLK, TYP, PRM, SEC, DIR</td>
</tr>
<tr>
<td>IXUDBDL</td>
<td>DBDLIB allocation parameters - HLQ, VOL, BLK, TYP, PRM, SEC, DIR</td>
</tr>
<tr>
<td>IXUACBL</td>
<td>ACBLIB allocation parameters - HLQ, VOL, BLK, TYP, PRM, SEC, DIR</td>
</tr>
<tr>
<td>IXUACBA</td>
<td>ACBLIBA allocation parameters - HLQ, VOL, BLK, TYP, PRM, SEC, DIR</td>
</tr>
<tr>
<td>IXUACBB</td>
<td>ACBLIBB allocation parameters - HLQ, VOL, BLK, TYP, PRM, SEC, DIR</td>
</tr>
<tr>
<td>IXUFMTL</td>
<td>FORMAT allocation parameters - HLQ, VOL, BLK, TYP, PRM, SEC, DIR</td>
</tr>
<tr>
<td>IXUFMTA</td>
<td>FORMATA allocation parameters - HLQ, VOL, BLK, TYP, PRM, SEC, DIR</td>
</tr>
<tr>
<td>IXUFMTB</td>
<td>FORMATB allocation parameters - HLQ, VOL, BLK, TYP, PRM, SEC, DIR</td>
</tr>
<tr>
<td>IXUTFMT</td>
<td>TFORMAT allocation parameters - HLQ, VOL, BLK, TYP, PRM, SEC, DIR</td>
</tr>
<tr>
<td>IXURFRL</td>
<td>REFERAL allocation parameters - HLQ, VOL, BLK, TYP, PRM, SEC, DIR</td>
</tr>
<tr>
<td>IXUMST1</td>
<td>MODSTAT allocation parameters - HLQ, VOL, BLK, TYP, PRM</td>
</tr>
<tr>
<td>IXUMST2</td>
<td>MODSTAT2 allocation parameters - HLQ, VOL, BLK, TYP, PRM - XRF</td>
</tr>
<tr>
<td>IXUMON1</td>
<td>IMSMON allocation parameters - HLQ, VOL, BLK, TYP, PRM, SEC</td>
</tr>
<tr>
<td>IXUMON2</td>
<td>IMSMON2 allocation parameters - HLQ, VOL, BLK, TYP, PRM, SEC - IVP2</td>
</tr>
<tr>
<td>IXUTRC1</td>
<td>DFSTRA01 allocation parameters - HLQ, VOL, BLK, TYP, PRM</td>
</tr>
<tr>
<td>IXUTRC2</td>
<td>DFSTRA02 allocation parameters - HLQ, VOL, BLK, TYP, PRM</td>
</tr>
<tr>
<td>IXUTRC3</td>
<td>DFSTRA01 allocation parameters - HLQ, VOL, BLK, TYP, PRM - IVP2</td>
</tr>
<tr>
<td>IXUTRC4</td>
<td>DFSTRA02 allocation parameters - HLQ, VOL, BLK, TYP, PRM - IVP2</td>
</tr>
<tr>
<td>IXURDS1</td>
<td>IMSRDS allocation parameters - HLQ, VOL, BLK, TYP, PRM</td>
</tr>
<tr>
<td>IXURDS2</td>
<td>IMSRDS2 allocation parameters - HLQ, VOL, BLK, TYP, PRM - XRF</td>
</tr>
<tr>
<td>IXURCN1</td>
<td>RECON1 allocation parameters - HLQ, VOL, BLK, TYP, PRM, SEC</td>
</tr>
<tr>
<td>IXURCN2</td>
<td>RECON2 allocation parameters - HLQ, VOL, BLK, TYP, PRM, SEC</td>
</tr>
<tr>
<td>Data Set Allocation Variables</td>
<td></td>
</tr>
<tr>
<td>-------------------------------</td>
<td></td>
</tr>
<tr>
<td>IXURCN3</td>
<td>RECON3 allocation parameters - HLQ, VOL, BLK, TYP, PRM, SEC</td>
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Data Set Allocation Variables
Appendix B. IVP JOBs and TASKs

The listings in this section 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 186 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 section, 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:

\[ \text{IV}_\text{ssnt} \]

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).

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IV_F208T MVS - Cancel jobs with dump
IV_F209J JOB - Batch Backout Utility - HIDAM Updates
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IV_F213T MVS - Stop IRLM #1 and IRLM #2
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IV_F302J JOB - Print a log with DFDSS
IV_F303J JOB - Print DB Monitor Report
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IV_G212T MVS - Stop DBCTL with a /CHE FREEZE
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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
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IV_H215T IVP1 - Stop IMS with a /CHE DUMPQ
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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
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IV_I219T IVP1 - /UNLOCK SYSTEM
IV_I220J JOB - Start DB/DC Region - IVP2
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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

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IV_I301J JOB - List RECON
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Steps Jx for IVP Execution - DCC System (DCCTL)

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--- | ---
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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
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
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Steps Ox for Common Service Layer Sample Application

The Common Service Layer sample demonstrates how to use the Operations Manager (OM), Resource Manager (RM), Structured Call Interface (SCI), and the TSO Single Point of Control (SPOC).

Related Reading: For detailed information on the OM, RM, SCI, and TSO SPOC, see [IMS Version 8: Common Service Layer Guide and Reference](#).

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<td>IMBED - DB/DC Execution Step for IVP1</td>
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<td>IMBED - IFP #1 Execution JCL for IVP1</td>
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<td>IMBED - HDAM BMP Execution Step for IVP3</td>
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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
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DFSIXS42  IMBED - Stage 1 Source - FP Sample Application
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DFSIXS51  IMBED - IVP1 HDAM BMP execution step
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DFSIXS53  IMBED - IMSWT000 - IVP1/IVP4
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DFSIXS56  IMBED - Statistical Analysis Utility In-line Proc
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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
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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

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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
Steps Zx

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<td>IMS - PSB - DSPINV Tran</td>
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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
Steps Zx

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 section 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, and DCCTL. The samples are not members of SDFSISRC.

**DBB - DB Batch (Batch) Stage 1**

*  **********************************************************************
  *  IVP IMS 8.1
  *  *  SKELETON: DFSIXSC1
  *  *  FUNCTION: STAGE 1 SOURCE FOR A DBB SYSTEM
  *  **********************************************************************
  *  **********************************************************************@SCPYRT*
  *  LICENSED MATERIALS - PROPERTY OF IBM
  *  "RESTRICTED MATERIALS OF IBM"
  *  5655-C56 (C) COPYRIGHT IBM CORP. 1989,1999
  *  ALL RIGHTS RESERVED.
  *  US GOVERNMENT USERS RESTRICTED RIGHTS -
  *  USE, DUPLICATION OR DISCLOSURE RESTRICTED BY
  *  GSA ADP SCHEDULE CONTRACT WITH IBM CORP.
  *  **********************************************************************@ECOPYRT*
  *  IMSCRT MACRO --
  *
  IMSCRT  SYSTEM=(VS/2,(BATCH,DB/DC),390), X
  IRLM=YES, X
  IRLMNM=IRLM, X
  DBRC=(,YES), X
  IMSID=IVP8
  *
  IMSCRT MACRO --
  *
  IMSCRT SVCNO=(,203,202), X
  LOG=SNGL, X
  PRDR=IVP81RD1
  **********************************************************************
  *  IVP DATABASES DEFINITION
  **********************************************************************
  DATABASE DBD=IVPDB1,ACCESS=UP HIDAM/OSAM
  DATABASE INDEX,DBD=IVPDB11,ACCESS=UP HIDAM/VSAM INDEX
  DATABASE DBD=IVPDB2,ACCESS=UP HDAM/VSAM
  **********************************************************************
  *  IVP BATCH/BMP APPLICATION DEFINITION
  **********************************************************************
  SPACE 2
  APPLCNT PSB=DFSIVP6,PGMTYPE=BATCH HIDAM/OSAM-ASSEM
  SPACE 2
  APPLCNT PSB=DFSIVP61,PGMTYPE=BATCH HIDAM/OSAM-PASCAL
  SPACE 2
  APPLCNT PSB=DFSIVP62,PGMTYPE=BATCH HIDAM/OSAM-C
  SPACE 2
  APPLCNT PSB=DFSIVP64,PGMTYPE=BATCH HIDAM/OSAM-COBOL
  SPACE 2
**DBB Stage 1**

```plaintext
APPLCNT PSB=DFSIVP65,PGMTYPE=BATCH HIDAM/OSAM-REXX
SPACE 2
APPLCNT PSB=DFSIVP7,PGMTYPE=BATCH HDAM/VSAM
SPACE 2
APPLCNT PSB=DFSIVP9,PGMTYPE=BATCH HIDAM/OSAM OLIC
SPACE 2
APPLCNT PSB=DFSIVPA,PGMTYPE=BATCH HIDAM LOAD
SPACE 2
APPLCNT PSB=DFSIVPB,PGMTYPE=BATCH HDAM LOAD
SPACE 2

**********************************************************************
* IMS SAMPLE DATABASES DEFINITION
**********************************************************************
SPACE 2
DATABASE DBD=DI2IPART,ACCESS=UP HISAM/VSAM
EJECT ,
**********************************************************************
* IMS SAMPLE APPLICATION DEFINITION - CICS IVP
**********************************************************************
SPACE 2
APPLCNT PSB=DFHSAM04,PGMTYPE=BATCH
SPACE 2
APPLCNT PSB=DFHSAM14,PGMTYPE=BATCH
SPACE 2
APPLCNT PSB=DFHSAM24,PGMTYPE=BATCH
SPACE 2
APPLCNT PSB=DFHSAM05,PGMTYPE=BATCH
SPACE 2
APPLCNT PSB=DFHSAM15,PGMTYPE=BATCH
SPACE 2
APPLCNT PSB=DFHSAM25,PGMTYPE=BATCH
EJECT ,
**********************************************************************
* IMS SAMPLE APPLICATION DEFINITION
**********************************************************************
SPACE 2
APPLCNT PSB=DFSSAM01,PGMTYPE=BATCH
SPACE 2
APPLCNT PSB=DFSSAM08,PGMTYPE=BATCH
SPACE 2
APPLCNT PSB=DFSSAM09,PGMTYPE=BATCH GENERAL PURPOSE
SPACE 2

* IMSGEN MACRO --
* IMGEN ASM=(HLASM,SYSLIN),ASMPRT=OFF, X
  LKPR=(XREF,LIST),LFSIZE=(880K,63K),LKRGN=900K, X
  SURVEY=YES, X
  NODE=(IVPEXE81, X
  IVPSYSB1, X
  IVPDLB81), X
  OBJDSET=IVPSYSB1.OBJDSET, X
  PROCLIB=YES, X
  USRIBN=IVPSYSB1.ADFSLOAD, X
  UMAC0=, X
  MACSYS=SYS1.MACLIB, X
  MODGEN=SYS1.MODGEN, X
  UMAC1=, X
  UMAC2=, X
  UMAC3=, X
  ONEJOB=(YES,Y), X
  JCL=(IMSGEN, X
  ACTINFO1, X
  'PGMNAME',H, X
  (CLASS=A,MSGLEVEL=(1,1),REGION=64M)), X
  SCL=(,,(TIME=600)), X
  UJCL1=, X
```

**Installation Volume 1: Installation Verification**
DBC - Database Control (DBCTL) Stage 1

* **************************************************************************
* IVP IMS 8.1
* * SKELETON: DFSIXSCL
* * FUNCTION: STAGE 1 SOURCE FOR A DBC SYSTEM
* **************************************************************************
* LICENSED MATERIALS - PROPERTY OF IBM
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* US GOVERNMENT USERS RESTRICTED RIGHTS - USE, DUPLICATION OR DISCLOSURE RESTRICTED BY
* GSA ADP SCHEDULE CONTRACT WITH IBM CORP.
* **************************************************************************
* IMSCTRL MACRO --
* IMSCTRL SYSTEM=(VS/2,(ALL,DBCTL),390),
  IRLM=YES,
  IRLNM=IRLM,
  CMDCHAR=/,
  DBRC=(YES,YES),
  DBRCNM=IVP81RC3,
  DLINM=IVP81DL3,
  IMSID=IVP3,
  NAMECHK=(YES,S1),
  MAXREGN=(005,512K,A,A),
  MCS=(2,7),
  DESC=7,
  MAXCLAS=016
* IMSCTF MACRO --
* IMSCTF SVCNO=(203,202),
  LOG=SNGL,
  CPLOG=500000,
  RDS=(LGDK,4096),
  PRDR=IVP81RD3
* FPCTRL MACRO --
* FPCTRL OTHREAD=5,
  BFALLOC=(10,50,2048)
* BUFPOOLS MACRO --
* BUFPOOLS PSB=24000,
  DMB=24000,
  SASPSB=(4000,20000),
### IVP Databases Definition

<table>
<thead>
<tr>
<th>Database</th>
<th>DBD</th>
<th>Access</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>IVPDB1</td>
<td>IVPDB1</td>
<td>UP</td>
<td>HIDAM/OSAM</td>
</tr>
<tr>
<td>IVPDB1I</td>
<td>IVPDB1I</td>
<td>UP</td>
<td>HIDAM/VSAM INDEX</td>
</tr>
<tr>
<td>IVPDB2</td>
<td>IVPDB2</td>
<td>UP</td>
<td>HDAM/VSAM</td>
</tr>
<tr>
<td>IVPDB3</td>
<td>IVPDB3</td>
<td>UP</td>
<td>DEDB</td>
</tr>
</tbody>
</table>

### IVP Batch/BMP Application Definition

<table>
<thead>
<tr>
<th>Application</th>
<th>PSB</th>
<th>Program Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>IVPDB1</td>
<td>DFSIVP6, DFSIVP61, DFSIVP62, DFSIVP64, DFSIVP65</td>
<td>BATCH HIDAM/OSAM-ASSEM</td>
</tr>
<tr>
<td>IVPDB2</td>
<td>DFSIVP7</td>
<td>BATCH HIDAM/VSAM</td>
</tr>
<tr>
<td>IVPDB3</td>
<td>DFSIVP9</td>
<td>BATCH HIDAM/OSAM O LIC</td>
</tr>
<tr>
<td>IVPDB3</td>
<td>DFSIVPA</td>
<td>BATCH H IDAM LOAD</td>
</tr>
<tr>
<td>IVPDB3</td>
<td>DFSIVP8</td>
<td>BATCH DEDB/VSAM</td>
</tr>
<tr>
<td>IVPDB3</td>
<td>DFSIVPC</td>
<td>BATCH DEDB (DB LOAD)</td>
</tr>
</tbody>
</table>

### IMS Sample Databases Definition

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</tr>
</thead>
<tbody>
<tr>
<td>DI21PART</td>
<td>DI21PART</td>
<td>UP</td>
<td>HISAM/VSAM</td>
</tr>
</tbody>
</table>

### IMS Sample Application Definition - CICS IVP

<table>
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<tr>
<th>Application</th>
<th>PSB</th>
<th>Program Type</th>
</tr>
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<tbody>
<tr>
<td>IVPDB1</td>
<td>DFSAM04, DFSAM14, DFSAM24, DFSAM05, DFSAM15, DFSAM25</td>
<td>BATCH</td>
</tr>
</tbody>
</table>

---

**DBC Stage 1**

PSBW=12000

* SECURITY MACRO --

  SECURITY TYPE=(AGNEXIT),
  SECNT=2,
  PASSWD=YES,
  TRANCMD=YES

**********************************************************************

**IVP Databases Definition**

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<td>UP</td>
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</tbody>
</table>
**DBT - Database/Data Communications (DB/DC) Stage 1**

```
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,
  LKPRRT=(XREF,LIST),LFSIZE=(880K,63K),LRGN=900K,
  SUFFIX=I,
  SURVEY=YES,
  NODE=(IVPXE81,
  IVPSSY81,
  IVPDLB81),
  OBJDSET=IVPSSY81.OBJDSET,
  PROCLIB=YES,
  USERLIB=IVPDLB81.ADFSLOAD,
  UMACD=,
  MACSYS=SYS1.MACLIB,
  MODGEN=SYS1.MODGEN,
  UMAC1=,
  UMAC2=,
  UMAC3=,
  ONEJOB=(YES,YES),
  JCL=(IMSGEN,
  ACTINFO1,
  'PGMRNAME',H,
  (CLASS=A,MSGLEVEL=(1,1),REGION=64M)),
  SCL=(),(TIME=600)),
  UJCL1=,
  UJCL2=,
  UJCL3=,
  UJCL4=,
  UJCL5=
END,
*

---

**DBT Stage 1**

```

---

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* IMSCTRL MACRO --
*
DBT Stage 1

IMSCTRL  SYSTEM=(VS/2,(ALL,DB/DC),390),
IRLM=YES,
IRLMNM=IRLM,
CMDCHAR=,
DBRC=(YES,YE),
DBRCNM=IVP81RC1,
DLINM=IVP81DL1,
DCLWA=YES,
IMSID=IVP1,
NAMECHK=(YES,S1),
MAXREGN=(005,512K,A,A),
MCS=(2,7),
DESC=7,
ETOFEAT=(YES,YE,ALL),
MAXCLAS=016
*
* IMSCTF MACRO --
*  IMSCTF SVCNO=(203,202),
LOG=SNGL,
CPLOG=500000,
RDS=(LGDK,4096),
PRDR=IVP81RD1
*
* MSGQUEUE MACRO --
*  MSGQUEUE DSETS=(LGDK,LGDK,LGDK),
RECLNG=(336,3360),
BUFFERS=(5,6720),
SHUTDWN=100
*
* FPCTRL MACRO --
*  FPCTRL OTHREAD=5,
BFALLOC=(10,50,2048)
*
* BUFPOOLS MACRO --
*  BUFPOOLS PSB=24000,
SASPSB=(4000,20000),
PSBW=12000,
DMB=24000,
FORMAT=(24000,256),
FRE=30
*
* SECURITY MACRO --
*  SECURITY TYPE=(AGNEXIT,NORACTRM,NOTRANEX,NOSIGNEX),
SECLVL=(NOTRAN,NOSIGN),
TERMNL=YES,
SECCNT=2,
PASSWD=YES,
TRANCMD=YES
******************************************************************************
* IVP DATABASES DEFINITION
******************************************************************************
DATABASE DBD=IVPDB1,ACCESS=UP  HIDAM/OSAM
DATABASE INDEX,DBD=IVPDBII,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=DF5IVP6,PGMNOTE=BATCH  HIDAM/OSAM-ASSEM
SPACE 2
**APPLECTN PSB=DFSIVP61,PGMTYPE=BATCH**  HIDAM/OSAM-PASCAL
SPACE 2

**APPLECTN PSB=DFSIVP62,PGMTYPE=BATCH**  HIDAM/OSAM-C
SPACE 2

**APPLECTN PSB=DFSIVP64,PGMTYPE=BATCH**  HIDAM/OSAM-COBOL
SPACE 2

**APPLECTN PSB=DFSIVP65,PGMTYPE=BATCH**  HIDAM/OSAM-REXX
SPACE 2

**APPLECTN PSB=DFSIVP7,PGMTYPE=BATCH**  HDAM/VSAM
SPACE 2

**APPLECTN PSB=DFSIVP9,PGMTYPE=BATCH**  HIDAM/OSAM OLIC
SPACE 2

**APPLECTN PSB=DFSIVPA,PGMTYPE=BATCH**  HIDAM LOAD
SPACE 2

**APPLECTN PSB=DFSIVPB,PGMTYPE=BATCH**  HDAM LOAD
SPACE 2

**APPLECTN PSB=DFSIVP8,PGMTYPE=BATCH**  DEDB/VSAM
SPACE 2

**APPLECTN PSB=DFSIVPC,PGMTYPE=BATCH**  DEDB (DB LOAD)
SPACE 2

******************************************************************************
* IVP NON-CONVERSATIONAL APPLICATIONS DEFINITION FOR DB/DC
******************************************************************************

**APPLECTN PSB=DFSIVP1,PGMTYPE=TP**  HIDAM/OSAM
TRANSACTION CODE=IVTNO,MODE=SNGL,
MSGTYPE=(SNGLSEG,NONRESPONSE,1)
SPACE

**APPLECTN PSB=DFSIVP2,PGMTYPE=TP**  HDAM/VSAM
TRANSACTION CODE=IVTNV,MODE=SNGL,
MSGTYPE=(SNGLSEG,NONRESPONSE,1)
SPACE 2

******************************************************************************
* IVP CONVERSATIONAL APPLICATION DEFINITION FOR DB/DC
******************************************************************************

**APPLECTN PSB=DFSIVP3,PGMTYPE=TP**  HDAM/VSAM-ASSEM
TRANSACTION CODE=IVTCV,SPA=(80,),MODE=SNGL,
MSGTYPE=(SNGLSEG,NONRESPONSE,1)

**APPLECTN PSB=DFSIVP31,PGMTYPE=TP**  HDAM/VSAM-PASCAL
TRANSACTION CODE=IVTCP,SPA=(80,),MODE=SNGL,
MSGTYPE=(SNGLSEG,NONRESPONSE,1)

**APPLECTN PSB=DFSIVP32,PGMTYPE=TP**  HDAM/VSAM-C
TRANSACTION CODE=IVTCC,SPA=(80,),MODE=SNGL,
MSGTYPE=(SNGLSEG,NONRESPONSE,1)

**APPLECTN PSB=DFSIVP33,PGMTYPE=TP**  HDAM/VSAM-JAVA
TRANSACTION CODE=IVTCV,SPA=(80,),MODE=SNGL,
MSGTYPE=(SNGLSEG,NONRESPONSE,1)

**APPLECTN PSB=DFSIVP34,PGMTYPE=TP**  HDAM/VSAM-COBOL
TRANSACTION CODE=IVTCA,SPA=(80,),MODE=SNGL,
MSGTYPE=(SNGLSEG,NONRESPONSE,1)

**APPLECTN PSB=DFSIVP35,PGMTYPE=TP**  HDAM/VSAM-REXX
TRANSACTION CODE=IVTCX,SPA=(80,),MODE=SNGL,
MSGTYPE=(SNGLSEG,NONRESPONSE,1)
SPACE 2

**APPLECTN PSB=DFSIVP37,PGMTYPE=TP**  HDAM/VSAM-JAVA
TRANSACTION CODE=IVTCM,SPA=(80,),MODE=SNGL,
MSGTYPE=(SNGLSEG,NONRESPONSE,1)
SPACE 2

******************************************************************************
* IVP DEDB AND MSDB APPLICATION DEFINITIONS FOR DB/DC
******************************************************************************

**APPLECTN RESIDENT,PSB=DFSIVP4,FPATH=256**  DEDB
TRANSACTION CODE=IVTFD,MODE=SNGL,
MSGTYPE=(SNGLSEG,RESPONSE,1)
SPACE 2

**APPLECTN RESIDENT,PSB=DFSIVP5,FPATH=256**  MSDB
**DBT Stage 1**

```plaintext
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
TRANSACT CODE=IVPREXX,MODE=SNGL, X
MSGTYPE=(SNGLSEG,NONRESPONSE,1)

**********************************************************************
*  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=ADDIV,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                            *
**********************************************************************
```

Installation Volume 1: Installation Verification
SPACE 2

DATABASE DB=DBFSAMD1, ACCESS=UP
DATABASE DB=DBFSAMD2, ACCESS=UP
DATABASE DB=DBFSAMD3, ACCESS=UP
DATABASE DB=DBFSAMD4, ACCESS=UP

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),
   APPLID=IVP81CR1,
   PASSWD=IVP81CR1,
   OPTIONS=(PAGING,TIMESTAMP,MFSTEST,FMTMAST,
   NOUSEMSG,NOMSPEX,NOMSLEX,
   VTAMAUTH,BLKREQD),
   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,
   LKPRT=(XREF,LST),LKSIZE=(880K,63K),LKRGN=900K,
   SUFFIX=I,
   SURVEY=YES,
   NODE=(IVPXE81,
   IVPSYS81,
   IVPDNB81),
   OBJDSET=IVPSYS81.OBJDSET,
   PROCLIB=YES,
   USERLIB=IVPDB81.ADFSLOAD,
   UMAC0=,
MACSYS=SYS1.MACLIB,
MODGEN=SYS1.MODGEN,
UMAC1=,
UMAC2=,
UMAC3=,
ONEJOB=(YES,YES),
JCL=IMSGEN,
ACTINFO1,
'PGMNAME':H,
(Class=A,MSGLEVEL=(1,1),REGION=64M),
SCL=(,,(TIME=600)),
UJCL1=,
UJCL2=,
UJCL3=,
UJCL4=,
UJCL5=

END,

XRF - DB/DC with XRF (XRF) Stage 1

*****************************************************************************
* IVP IMS 8.1
* SKELETON: DFSIXSC1
* FUNCTION: STAGE 1 SOURCE FOR A XRF SYSTEM
*****************************************************************************

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****************************************************************************@ECPYRT**

* IMSCTRL MACRO --
* IMSCTRL SYSTEM=(VS/2,(ALL,DB/DC),390),
  IRLM=YES,
  IRLMM=IRLM,
  CMDCHAR=,
  DBRC=(YES,YES),
  DBRCNM=IVP81RC1,
  DLINM=IVP81DL1,
  DCLWA=YES,
  IMSID=IVP1,
  NAMECHK=(YES,S1),
  MAXREGN=(005,512K,A,A),
  MCS=(2,7),
  DESC=7,
  HSB=YES,
  ETOFEAT=(YES,YES,ALL),
  MAXCLAS=016

* IMSCTF MACRO --
* IMSCTF SVCNO=(,203,202),
XRF Stage 1

LOG=SNGL,
CPLOG=500000,
RDS=(LGDK,4096),
PRDR=IVP81RD1

* MSGQUEUE MACRO --
* MSGQUEUE DSETS=(LGDK,LGDK,LGDK),
  RECLNG=(336,3360),
  BUFFERS=(5,6720),
  SHUTDOWN=100

* FPCTRL MACRO --
* FPCTRL OTHREAD=5,
  BFALLOC=(10,50,2048)

* BUFPOOLS MACRO --
* BUFPOOLS PSB=24000,
  SASPSB=(4000,20000),
  PSBW=12000,
  DMDB=24000,
  FORMAT=(24000,256),
  FRE=30

* SECURITY MACRO --
* SECURITY TYPE=(AGNEXIT,NORACTRM,NOTRANEX,NOSIGNEX),
  SECLVL=(NOTRAN,NOSIGN),
  TERMNL=YES,
  SECCNT=2,
  PASSWD=YES,
  TRANCMOD=YES

**********************************************************************
* IVP DATABASES DEFINITION
**********************************************************************
DATABASE DBD=IVPDB1,ACCESS=UP HIDAM/OSAM
DATABASE INDEX,DBD=IVPDBII,ACCESS=UP HIDAM/VSAM INDEX
DATABASE DBD=IVPDB2,ACCESS=UP HDAM/VSAM
DATABASE DBD=IVPDB3,ACCESS=UP DEBD
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 HIDAM/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=DFSIVPB,PGMTYPE=BATCH DEDB/VSAM
SPACE 2
APPLCTN PSB=DFSIVPC,PGMTYPE=BATCH DEDB (DB LOAD)
* IVP NON-CONVERSATIONAL APPLICATIONS DEFINITION FOR DB/DC

```
APPLCTN PSB=DFSIVP1,PGMTYPE=TP
   HIDAM/OSAM
   TRANSACT CODE=IVTN,MODE=SNGL,
   MSGTYPE={(SNGLSEG,NONRESPONSE,1),X}

APPLCTN PSB=DFSIVP2,PGMTYPE=TP
   HDAM/VSAM
   TRANSACT CODE=IVTNV,MODE=SNGL,
   MSGTYPE={(SNGLSEG,NONRESPONSE,1),X}
```

* IVP CONVERSATIONAL APPLICATION DEFINITION FOR DB/DC

```
APPLCTN PSB=DFSIVP3,PGMTYPE=TP
   HDAM/VSAM
   TRANSACT CODE=IVTCV,SPA=(80,),MODE=SNGL,
   MSGTYPE={(SNGLSEG,NONRESPONSE,1),X}

APPLCTN PSB=DFSIVP31,PGMTYPE=TP
   HDAM/VSAM-PASCAL
   TRANSACT CODE=IVTCP,SPA=(80,),MODE=SNGL,
   MSGTYPE={(SNGLSEG,NONRESPONSE,1),X}

APPLCTN PSB=DFSIVP32,PGMTYPE=TP
   HDAM/VSAM-C
   TRANSACT CODE=IVTCC,SPA=(80,),MODE=SNGL,
   MSGTYPE={(SNGLSEG,NONRESPONSE,1),X}

APPLCTN PSB=DFSIVP33,PGMTYPE=TP
   HDAM/VSAM-JAVA
   TRANSACT CODE=IVTCJ,SPA=(80,),MODE=SNGL,
   MSGTYPE={(SNGLSEG,NONRESPONSE,1),X}

APPLCTN PSB=DFSIVP34,PGMTYPE=TP
   HDAM/VSAM-COBOL
   TRANSACT CODE=IVTCB,SPA=(80,),MODE=SNGL,
   MSGTYPE={(SNGLSEG,NONRESPONSE,1),X}

APPLCTN PSB=DFSIVP35,PGMTYPE=TP
   HDAM/VSAM-REXX
   TRANSACT CODE=IVTCX,SPA=(80,),MODE=SNGL,
   MSGTYPE={(SNGLSEG,NONRESPONSE,1),X}
```

* IVP DEDB AND MSDB APPLICATION DEFINITIONS FOR DB/DC

```
APPLCTN RESIDENT,PSB=DFSIVP4,FPATH=256
   DEDB
   TRANSACT CODE=IVTFD,MODE=SNGL,
   MSGTYPE={(SNGLSEG,RESPONSE,1),X}

APPLCTN RESIDENT,PSB=DFSIVP5,FPATH=256
   MSDB
   TRANSACT CODE=IVTFM,MODE=SNGL,
   MSGTYPE={(SNGLSEG,RESPONSE,1),X}
```

* IVP APPLICATIONS DEFINITION FOR DB/DC, DCCTL

```
APPLCTN GPSB=IVPREXX,PGMTYPE=TP,LANG=ASSEM
   REXXTLI SAMPLE
   TRANSACT CODE=IVPREXX,MODE=SNGL,
   MSGTYPE={(SNGLSEG,NONRESPONSE,1),X}
```

* IMS SAMPLE DATABASES DEFINITION

```
DATABASE DBD=DI21PART,ACCESS=UP
   HISAM/VSAM
   EJECT ,
```

* IMS SAMPLE APPLICATION DEFINITION - CICS IVP

```
APPLCTN PSB=DFHSAM04,PGMTYPE=BATCH
```
**XRF Stage 1**

```
APPLCTN PSB=DFHSAM14,PGMTYPE=BATCH
SPAC 2
APPLCTN PSB=DFHSAM24,PGMTYPE=BATCH
SPAC 2
APPLCTN PSB=DFHSAM05,PGMTYPE=BATCH
SPAC 2
APPLCTN PSB=DFHSAM15,PGMTYPE=BATCH
SPAC 2
APPLCTN PSB=DFHSAM25,PGMTYPE=BATCH
EJECT ,

**********************************************************************
* IMS SAMPLE APPLICATION DEFINITION
**********************************************************************

APPLCTN PSB=DFSSAM01,PGMTYPE=BATCH
SPAC 2
APPLCTN PSB=DFSSAM02
TRANSACT CODE=PART,PRTY=(7,10,2),INQUIRY=YES,MODE=SNGL
SPAC 2
APPLCTN PSB=DFSSAM03
TRANSACT CODE=DSPINV,PRTY=(7,10,2),INQUIRY=YES,MODE=SNGL
SPAC 2
APPLCTN PSB=DFSSAM04
TRANSACT CODE=ADDOPART,PRTY=(7,10,2),INQUIRY=NO,MODE=SNGL
TRANSACT CODE=ADDINV,PRTY=(7,10,2),INQUIRY=NO,MODE=SNGL
TRANSACT CODE=DELPART,PRTY=(7,10,2),INQUIRY=NO,MODE=SNGL
TRANSACT CODE=DELETINV,PRTY=(7,10,2),INQUIRY=NO,MODE=SNGL
SPAC 2
APPLCTN PSB=DFSSAM05
TRANSACT CODE=CLOSE,PRTY=(7,10,2),INQUIRY=NO,MODE=SNGL
SPAC 2
APPLCTN PSB=DFSSAM06
TRANSACT CODE=DISBURSE,PRTY=(7,10,2),INQUIRY=NO,MODE=SNGL
SPAC 2
APPLCTN PSB=DFSSAM07
TRANSACT CODE=DSPALI,PRTY=(7,10,2),INQUIRY=NO,MODE=SNGL
SPAC 2
APPLCTN PSB=DFSSAM08,PGMTYPE=BATCH GENERAL PURPOSE
SPAC 2
APPLCTN PSB=DFSSAM09,PGMTYPE=BATCH
SPAC 2

**********************************************************************
* FAST PATH SAMPLE DATABASES DEFINITION
**********************************************************************

DATABASE DBD=DBFSAMD1 GENERAL LEDGER - MSDB
DATABASE DBD=DBFSAMD2 TELLER - MSDB
DATABASE DBD=DBFSAMD3,ACCESS=UP CUSTOMER ACNT - DEDB
DATABASE DBD=DBFSAMD4,ACCESS=UP CUSTOMER LOAN - HDAM/VSAM
EJECT ,

**********************************************************************
* FAST PATH SAMPLE APPLICATION DEFINITION
**********************************************************************

APPLCTN PSB=DBFSAMP1,PGMTYPE=BATCH DEDB LOAD
SPAC 2
APPLCTN PSB=DBFSAMP3,PGMTYPE=(TP),FPATH=256
TRANSACT CODE=FPSAMP1,MSGTYPE=(SNGLSEG,RESPONSE)
SPAC 2
APPLCTN PSB=DBFSAMP4
TRANSACT CODE=FPSAMP2,MODE=SNGL
SPAC 2
APPLCTN PSB=DBFSAMP6,PGMTYPE=BATCH DEDB MISC.
SPAC 2
APPLCTN PSB=DBFSAMP2,PGMTYPE=BATCH HDAM LOAD
SPAC 2
```
Appendix C. IVP System Definitions

XRF Stage 1

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 APPLIC'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 24X60 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 APPLIC 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),
**XRF Stage 1**

```
APPLID=(IVP81CR1,IVP81CR2),
PASSWD=(IVP81CR1,IVP81CR2),
OPTIONS=(PAGING,TIMESTAMP,MFSTEST,FMTMAST,
NOUSEMSG,NOMSPEX,NOMSLEX,
VTAMAUTH,BLKREQD),
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
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,
  OPTIONS=(TRANRESP,OPNDST,NOMTOMSG,NLTWA,FORCSESS),
  MSGDEL=SYSTINFO,
  SESSION=1,
  OUTBUF=256,
  SEGSIZE=256
  TERMINAL NAME=(IVP81CR1,IVP81CR2),
  COMPT=(SINGLE1,VLVB)
  NAME ISC4XRF,COMPT=1,ICOMPT=1
* IMSGEN MACRO --
```
DCC - Data Communications Control (DCCTL) Stage 1

* ***********************************************
* IVP IMS 8.1
* *
* SKELETON: DFSIXS1
*
* FUNCTION: STAGE 1 SOURCE FOR A DCC SYSTEM
*
* ******************************************************
* ***********************************************@SCPYRT**
* *
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* GSA ADP SCHEDULE CONTRACT WITH IBM CORP.
* *
* ***********************************************@ECPYRT**
* *
* IMSCTRL MACRO --
* *
* IMSCTRL  SYSTEM=(VS/2,(ALL,DCCTL),390),
DRC=(YES,YES),
DRCNM=IVP81RC4,
DCLWA=YES,
IMSID=IVP4,
NAMECHK=(YES,S1),
MAXREGN=(005,512K,A,A),
MCS=(2,7),
DCC Stage 1

DESC=7,
ETOFEAT=(YES,YEAS,ALL),
MAXCLAS=016
* IMSCTF MACRO --
* IMSCTF SVCNO=(203,202),
LOG=SNGL,
CPLLOG=500000,
RDS=(LGDK,4096),
PRDR=IVP81RD4
* MSGQUEUE MACRO --
* MSGQUEUE DSETS=(LGDK,LGDK,LGDK),
RECLNG=(336,3360),
BUFFERS=(5,6720),
SHUTDNWN=100
* FPCTRL MACRO --
* BUFPOOLS MACRO --
* BUFPOOLS PSB=24000,
PSBW=12000,
FORMAT=(24000,256),
FRE=30
* SECURITY MACRO --
* SECURITY TYPE=(AGNEXIT,NORACTRM,NOTRANEX,NOSIGNEX),
SECLVL=(NOTRAN,NOSIGN),
TERMNL=YES,
SECCNT=2,
PASSWD=YES,
TRANOMD=YES
**********************************************************************
* IVP APPLICATIONS DEFINITION FOR DCCTL
**********************************************************************
SPACE 2
APPLCTN PSB=DFSIVP0,PGMTYPE=BATCH
TRANSACTION CODE=IVTC1,MODE=SNGL,
MSGTYPE=(SNGLSEG,RESPONSE,1),WFI
SPACE 2
APPLCTN PSB=DFSIVP1,PGMTYPE=TP
TRANSACTION CODE=IVTC2,MODE=SNGL,
MSGTYPE=(SNGLSEG,RESPONSE,1)
SPACE 2
APPLCTN PSB=DFSIVP2,PGMTYPE=TP
TRANSACTION CODE=IVTC3,SPA=(80,),MODE=SNGL,
MSGTYPE=(SNGLSEG,RESPONSE,1)
SPACE 2
APPLCTN PSB=DFSIVP3,PGMTYPE=TP
TRANSACTION CODE=IVTC4,MODE=SNGL,
MSGTYPE=(SNGLSEG,RESPONSE,1)
SPACE 2
APPLCTN GPSB=IVPREXX,PGMTYPE=TP,LANG=ASSEM
REXXTDLI SAMPLE
TRANSACTION CODE=IVPREXX,MODE=SNGL,
MSGTYPE=(SNGLSEG,RESPONSE,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=IVP81CR4,
   X
   PASSWD=IVP81CR4,
   X
   OPTIONS=(PAGING,TIMESTAMP,MFSTEST,FMTMAST,
   X
   NOUSEMSG,NOMSPNX,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

Appendix C. IVP System Definitions 211
**DCC Stage 1**

EJECT ,
**********************************************************************
* IVP SPOOL LINE GROUP
**********************************************************************
LNGGRP 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,MMASTER)
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
*
* IMGEN MACRO -- *
*
IMGEN ASM=(HLASM,SYSLIN),ASMPRT=OFF, X
LKPR=(XREF,LIST),LKSIZE=(800K,63K),LKRGN=900K, X
SUFFIX=I, X
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