



SERENA[®] ChangeMan[®] ZMF 7.1.2

IMS Option Getting Started Guide

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Publication date: 5 June 2013

Table of Contents

	Welcome to Serena® ChangeMan® ZMF	7
	Guide to ChangeMan ZMF Documentation	8
	ChangeMan ZMF Documentation Suite	8
	Using the Manuals	9
	Searching the ChangeMan ZMF Documentation Suite	10
	ChangeMan ZMF Release Notes	10
	Online Help	10
	Online Tutorial	10
	Online Help Screens	11
	Online Error Messages	11
	Typographical Conventions	12
<i>Chapter 1</i>	Introduction	13
	About The IMS Option	14
	Administration Rules	14
	Package Creation Rules	14
	Staging Rules	15
	Promotion and Installation Rules	15
<i>Chapter 2</i>	Configuring the IMS Option	17
	Introduction	18
	IMS Component Types in ZMF	18
	Apply An IMS Option License	19
	Update ChangeMan ZMF Global Administration	19
	Update ChangeMan ZMF Application Administration	21
	Configure IMS Option Global Administration	24
	Define Global Control Regions	25
	IMS Library Subtypes	29
	DBD Overrides	30
	PSB Overrides	31
	Configure IMS Option Application Administration	33
	Application Control Regions	33
	Application Library Types for IMS	34
	Application DBD Overrides	34
	Application PSB Overrides	34
	Customize Exits for the IMS Option	34
	CMNEX026 for Referral Library	34
	CMNEX041 IMS Package Update Security	36
	Customize Skeletons for IMS	36
	IMS Library Names In Skeletons	36
	IMS Installation Skeletons	37

<i>Chapter 3</i>	Using the IMS Option	39
	Creating a Package with IMS Components	40
	Package Update.	40
	IMS Control Regions	41
	ACB Control Statements.	42
	DBD Overrides	43
	PSB Overrides.	44
	Package Staging Considerations	45
	Staging a PSB (IMS/DLI Application)	45
	Staging a DBD (DLI Database)	48
	Staging MFS (IMS Message Formats).	51
	Staging the DBB (DB2 Bind requirements).	55
	Staging the COBOL source.	57
	Package Promotion Considerations.	60
	Package Installation and Promotion Considerations	69
	Querying a Package with IMS Components	69
<i>Appendix A</i>	IMS Option Worksheets	75
	IMS Support Administration Worksheet 1	76
	IMS Support Administration Worksheet 2	76
	IMS Support Administration Worksheet 3	77
	IMS Support Administration Worksheet 4	78
<i>Appendix B</i>	IMS-Related Skeletons	79
	Introduction	80
	ISPF Variables for the IMS Option	80
	IMS Option Skeletons.	80
	General Use Skeletons That Use IMS Option Variables	82
	IMS Skeleton Hierarchy	83
<i>Appendix C</i>	IMS Batch Services	85
	CMNISPRES	86
	PSB ACBGEN Requirement	86
	DBD ACBGEN Requirement.	86
	Static Input Files	86
	Keyword Table	86
	Static Output Files.	87
	CMNISPRES Job Sample.	87
	CMNISPRES Sysprint Output Sample	87
	CMNISMFS	88
	Static Input Files.	88
	Keyword Table	88
	Static Output Files.	88
	CMNISMFS Job Sample	88
	CMNISMFS Sysprint Output Sample.	89
	CMNISOVR	89
	Static Input Files.	89
	Keyword Table	90

Control Word Table	90
CMNISOVR Job Sample	91
Static Output Files.	92
CMNISOVR ISPF Statistics Sample.	92
CMNISOVR Sysprint Output Sample	92
Index.	93

Welcome to Serena[®] ChangeMan[®] ZMF

ChangeMan ZMF is a comprehensive, fully integrated software change management solution for z/OS environments.

The IMS Option extends ChangeMan ZMF functions to manage IMS[™] components such as DBD, PSB, and MFS.

- Before you begin See the *Readme* file for the latest updates and corrections for this manual.
- Objective The *ChangeMan ZMF IMS Option Getting Started Guide* provides instructions for installing, configuring, and using the IMS Option of ChangeMan ZMF to manage changes to IMS components.
- Audience This document is intended for IMS administrators, configuration change managers, and ChangeMan ZMF users who are responsible for maintaining IMS applications. This document assumes that reader is familiar with basic ChangeMan ZMF functions and architecture, and with IMS.
- Change Bars Change bars in the left margin identify substantive changes in this publication since ChangeMan ZMF release 7.1.2.

Guide to ChangeMan ZMF Documentation

The following sections provide basic information about ChangeMan ZMF documentation.

ChangeMan ZMF Documentation Suite

The ChangeMan ZMF documentation set includes the following manuals in PDF format.

Manual	Description
<i>Administrator's Guide</i>	Describes ChangeMan ZMF features and functions with instructions for choosing options and configuring global and application administration parameters.
<i>ChangeMan ZMF Quick Reference</i>	Provides a summary of the commands you use to perform the major functions in the ChangeMan ZMF package life cycle.
<i>Customization Guide</i>	Provides information about ChangeMan ZMF skeletons, exits, and utility programs that will help you to customize the base product to fit your needs.
<i>DB2 Option Getting Started Guide</i>	Describes how to install and use the DB2 Option of ChangeMan ZMF to manage changes to DB2 components.
<i>ERO Concepts</i>	Discusses the concepts of the ERO Option of ChangeMan ZMF for managing releases containing change packages.
<i>ERO Getting Started Guide</i>	Explains how to install and use the ERO Option of ChangeMan ZMF to manage releases containing change packages.
<i>IMS Option Getting Started Guide</i>	Provides instructions for implementing and using the IMS Option of ChangeMan ZMF to manage changes to IMS components.
<i>INFO Option Getting Started Guide</i>	Describes two methods by which ChangeMan ZMF can communicate with other applications: <ul style="list-style-type: none"> ■ Through a VSAM interface file. ■ Through the Tivoli Information Management for z/OS product from IBM.
<i>Installation Guide</i>	Provides step-by-step instructions for initial installation of ChangeMan ZMF. Assumes that no prior version is installed or that the installation will overlay the existing version.
<i>Java / HFS Getting Started Guide</i>	Provides information about using ZMF to manage application components stored in USS file systems, especially Java application components.
<i>Load Balancing Option Getting Started Guide</i>	Explains how to install and use the Load Balancing Option of ChangeMan ZMF to connect to a ZMF instance from another CPU or MVS image.
<i>M+R Getting Started Guide</i>	Explains how to install and use the M+R Option of ChangeMan ZMF to consolidate multiple versions of source code and other text components.

Manual	Description
<i>M+R Quick Reference</i>	Provides a summary of M+R Option commands in a handy pamphlet format.
<i>Messages</i>	Explains messages issued by ChangeMan ZMF, SERNET, and System Software Manager (SSM) used for the Staging Versions feature of ZMF.
<i>Migration Guide Version 5.6.x to 7.1.3</i>	Gives guidance for upgrading ChangeMan ZMF from Version 5.6.x to 7.1.3.
<i>Migration Guide Version 6.1.x to 7.1.3</i>	Gives guidance for upgrading ChangeMan ZMF from Version 6.1.x.x to 7.1.3.
<i>Migration Guide Version 7.1.x to 7.1.3</i>	Gives guidance for upgrading ChangeMan ZMF from Version 7.1.x to 7.1.3.
<i>OFM Getting Started Guide</i>	Explains how to install and use the Online Forms Manager (OFM) option of ChangeMan ZMF.
<i>SER10TY User's Guide</i>	Gives instructions for applying licenses to enable ChangeMan ZMF and its selectable options.
<i>User's Guide</i>	Describes how to use ChangeMan ZMF features and functions to manage changes to application components.
<i>XML Services User's Guide</i>	Documents the most commonly used features of the XML Services application programming interface to ChangeMan ZMF.
<i>ZMF Web Services User's Guide</i>	Documents the Web Services application programming interface to ChangeMan ZMF.

Using the Manuals

Use Adobe® Reader® to view ChangeMan ZMF PDF files. Download the Reader for free at get.adobe.com/reader/.

This section highlights some of the main Reader features. For more detailed information, see the Adobe Reader online help system.

The PDF manuals include the following features:

- **Bookmarks.** All of the manuals contain predefined bookmarks that make it easy for you to quickly jump to a specific topic. By default, the bookmarks appear to the left of each online manual.
- **Links.** Cross-reference links within a manual enable you to jump to other sections within the manual with a single mouse click. These links appear in blue.
- **Comments.** All PDF documentation files that Serena delivers with ChangeMan ZMF have enabled commenting with Adobe Reader. Adobe Reader version 7 and higher has commenting features that enable you to post comments to and modify the contents of PDF documents. You access these features through the Comments item on the menu bar of the Adobe Reader.
- **Printing.** While viewing a manual, you can print the current page, a range of pages, or the entire manual.

- **Advanced search.** Starting with version 6, Adobe Reader includes an advanced search feature that enables you to search across multiple PDF files in a specified directory.

Searching the ChangeMan ZMF Documentation Suite

There is no cross-book index for the ChangeMan ZMF documentation suite. You can use the Advanced Search facility in Adobe Acrobat Reader to search the entire ZMF book set for information that you want. The following steps require Adobe Reader 6 or higher.

- 1 Download the ZMF All Documents Bundle ZIP file and the *ChangeMan ZMF Readme* to your workstation from the My Downloads tab on the Serena Support website.
- 2 Unzip the PDF files in the ZMF All Documents Bundle into an empty folder. Add the *ChangeMan ZMF Readme* to the folder.
- 3 In Adobe Reader, select **Edit | Advanced Search** (or press **Shift+Ctrl+F**).
- 4 Select the **All PDF Documents in** option and use **Browse for Location** in the drop down menu to select the folder containing the ZMF documentation suite.
- 5 In the text box, enter the word or phrase that you want to find.
- 6 Optionally, select one or more of the additional search options, such as **Whole words only** and **Case-Sensitive**.
- 7 Click **Search**.
- 8 In the **Results**, expand a listed document to see all occurrences of the search argument in that PDF.
- 9 Click on any listed occurrence to open the PDF document to the found word or phrase.

ChangeMan ZMF Release Notes

High-level descriptions of the enhancements that are delivered in the ChangeMan ZMF 7.1 major version release and in all subsequent ZMF 7.1.x maintenance releases are included in the "Features and Fixes" section of the latest *ChangeMan ZMF 7.1.x Readme*.

Online Help

Online help is the primary source of information about ChangeMan ZMF. Online help is available as a tutorial, through Help screens, and in ISPF error messages.

Online Tutorial

ChangeMan ZMF includes an online tutorial that provides information about features and operations, from high-level descriptions of concepts to detailed descriptions of screen fields.

To view the tutorial table of contents, select option T from the Primary Option Menu, or jump to it from anywhere in ChangeMan ZMF by typing =T and pressing ENTER.

Press PF1 from anywhere in the Tutorial for a complete list of Tutorial navigation commands and PF keys.

Online Help Screens

If you have questions about how a ChangeMan ZMF screen works, you can view a help panel by pressing PF1 from anywhere on the screen.

Online Error Messages

If you make an invalid entry on a ChangeMan ZMF screen, or if you make an invalid request for a function, a short error message is displayed in the upper right corner of the screen. Press PF1 to display a longer error message that provides details about the error condition.

Remember that the long message does not display automatically. Request the long message by pressing PF1.

Typographical Conventions

The following typographical conventions are used in the online manuals and online help. These typographical conventions are used to assist you when using the documentation; they are not meant to contradict or change any standard use of typographical conventions in the various product components or the host operating system.

Convention	Explanation
<i>italics</i>	Introduces new terms that you may not be familiar with and occasionally indicates emphasis.
bold	Emphasizes important information and field names.
UPPERCASE	Indicates keys or key combinations that you can use. For example, press the ENTER key.
monospace	Indicates syntax examples, values that you specify, or results that you receive.
<i>monospaced italics</i>	Indicates names that are placeholders for values you specify; for example, <i>filename</i> .
vertical rule	Separates menus and their associated commands. For example, select File Copy means to select Copy from the File menu. Also, indicates mutually exclusive choices in a command syntax line.

Chapter 1

Introduction

This chapter provides an overview of the ChangeMan ZMF IMS Option.

About The IMS Option	14
Administration Rules	14
Package Creation Rules	14
Staging Rules	15
Promotion and Installation Rules	15

About The IMS Option

The IMS Option enables programmers to manage IMS DB/DC application development under the control of ChangeMan ZMF.

The IMS Option is integrated seamlessly into ChangeMan ZMF. Most of the differences are additional considerations for the ChangeMan ZMF Administrator to define IMS control regions and IMS libraries and library types. The Administrator must also determine what IMS processes are required and when.

The management of IMS components creates several challenges for an automated change management tool. Most of these challenges stem from the need to process (generate or "gen," as opposed to copying) components as part of the IMS installation process.

ChangeMan ZMF manages installations to production and promotion (test) IMS regions. Once these components are processed, they must be cycled into the IMS execution environment through IMS utilities.

For ChangeMan ZMF to manage IMS installs, additional information about IMS must be defined. For example, ChangeMan ZMF must know what IMS control regions are called, what site ID names have been given to each site, and what promotion nicknames have been created. [Appendix A, "IMS Option Worksheets" on page 75](#) contains worksheets to help you gather this information.

Administration Rules

When defining the IMS system libraries, ChangeMan ZMF assumes that the MFS format libraries and ACB libraries are IMS intermediate or staging libraries used for swapping. Although the IMS Option includes skeletons for performing the swaps, most IMS shops already have jobs to do this. You can incorporate these jobs into the promotion and installation processes as defined by your shop's standards. The IMS Option does not provide a swapping process for format members and ACBs "in place," as this might cause problems for shops and their database Administrators.

When defining DBD and PSB overrides, you should be aware of the potential impact of doing this at the global, application and package level.

- Global overrides impact only the installation and baseline ripple remote sites.
- Application overrides impact all remote sites *and* override any global defined overrides.
- Package overrides impact all remote sites *and* override any global or application-defined overrides.
- You must check out a component before you can create a package level override for it.

Package Creation Rules

When creating a package, the IMS Option carries forward all active application-defined IMS regions to the package.

Staging Rules

When staging DBD, PSB, or MFS components, the IMS Option assumes that they are being staged with parameters configured for production on the site that they are being staged from. The IMS region information is set to this region provided it is defined. Otherwise, it is set to the first IMS region defined to the application.

Promotion and Installation Rules

When promoting or installing a package (installing means production installation and baseline rippling), the IMS Option assumes that the promotion, production or baseline libraries differ from the IMS libraries defined in the region definition. The promotion or installation process is configured to sync up the IMS region libraries and promotion or installation libraries.

- If overrides or GENs are not required, the process copies those members from staging libraries to promotion or installation libraries. Then, it copies those members to the IMS region libraries.
- If overrides or GENs are required, the members are GENed to the IMS region libraries and then copied to the promotion or installation libraries. If multiple region are associated with this process, the last region in the sequence is used for the copy to promotion or installation libraries.

When demoting or backing out a package, the IMS Option adjusts the promotion and installation libraries accordingly, but the IMS region libraries are untouched. This is done because most MVS™ shops already possess a process for backing out IMS changes and an emergency fix is routinely applied (no back out is required). For promotion, this allows the package to be demoted or promoted to another level without affecting the IMS region.

Chapter 2

Configuring the IMS Option

This chapter explains how to install and configure the ChangeMan ZMF IMS Option.

Introduction	18
Apply An IMS Option License	19
Update ChangeMan ZMF Global Administration	19
Update ChangeMan ZMF Application Administration	21
Configure IMS Option Global Administration	24
Configure IMS Option Application Administration	33
Customize Exits for the IMS Option	34
Customize Skeletons for IMS	36

Introduction

ChangeMan ZMF IMS Option components are delivered in the files and libraries that are delivered for the base ZMF product. When you follow the instructions in the *ChangeMan ZMF Installation Guide* to install ZMF base product components, IMS Option components are also installed.

To use the ChangeMan ZMF IMS Option, you must make entries in these areas of ZMF administration:

- ZMF Global Administration
- ZMF Application Administration
- IMS Option Global Administration
- IMS Option Application Administration

For information about the general administration of ChangeMan ZMF, see the *ChangeMan ZMF Administrator's Guide*.



TIP If you are installing ChangeMan ZMF for the first time, you can defer configuring the IMS Option until after your IMS administrator and application developers agree on how they want to manage IMS components with ChangeMan ZMF. The configuration described in this chapter does not play any part in the processing of non-IMS components through the ChangeMan ZMF package life cycle.

IMS Component Types in ZMF

There are no reserved library types in ChangeMan ZMF for IMS components. IMS component processing is determined by these attributes in library type definitions:

- Selectable Option I specified in the ZMF library type definition
- IMS Sub-Type specified in the IMS Option library type definitions.

This table shows you what IMS components are supported by ChangeMan ZMF. When you define IMS library types in ZMF administration and in IMS Option administration, use this table to specify the like-type, Selectable Option, and IMS Sub-type.

IMS Component	Like	Target Type	Lang	Compile Procedure	Sel Opt	Sub Typ
PSB Source	S	PSB Load	ASM	CMNPSBGN	I	P
PSB Load	L				I	S
DBD Source	S	DBD Load	ASM	CMNDBDGN	I	D
DBD Load	L				I	B
MFS Source	S	MFS Format	ASM	CMNMFSGN	I	M
MFS Format	L				I	F
MFS Referral	P				I	R

Apply An IMS Option License

To enable ChangeMan ZMF IMS Option functions, you must apply an IMS Option license.

If you license the IMS Option at the same time that you license ChangeMan ZMF, the license for the option is applied when you apply the license for the base product. You do not have to take further action to enable the IMS Option.

If you license the IMS Option after you apply licenses for ChangeMan ZMF and other selectable options, use the SER10TY™ License Manager to add the IMS Option license. See the *SER10TY User Guide* for instructions on how to apply a license. The load modules, JCL, and other components that you need to run SER10TY are included in the SERCOMC libraries that you installed from the ZMF installer.

After you have applied the license, shut down the SERNET started task where ChangeMan ZMF runs and restart the task.

Then, follow these steps to verify that the IMS Option is activated.

- 1 Connect to ChangeMan ZMF through ISPF.
- 2 From the **Primary Option Menu** type **=A.G.O** on the Option line to display the **Global Selectable Options** panel (CMNGBSOP):

```

CMNGBSOP ----- GLOBAL SELECTABLE OPTIONS -----
OPTION  ===>

  2  DB2   - Maintain DB2 information
  3  INFO  - Specify Info/Management change rule
  4  OFM   - Configure Online Forms Manager
  5  IMS   - IMS Control Region IDs, and Library Sub-Type information

Press ENTER to process; Enter END command to exit.

```

If option **5 IMS** is highlighted, the activation is successful.

Update ChangeMan ZMF Global Administration

Follow the instructions in the *ChangeMan ZMF Administrator's Guide* to update global administration with the following for IMS components:

- Library types
 - Language names
 - Compile procedures
- 1 Add global library types for IMS components.
 - a Use command **=A.G.2** to display the **Global Library Types Part 1 of 2** panel (CMNCGLT0).
 - b Insert lines and create a library type for each kind of IMS component that you will manage with ChangeMan ZMF.

The IMS component library types on the sample panel below correspond to the table of supported IMS components in topic "IMS Component Types in ZMF" on page 18.

```

CMNCGLT0 ----- GLOBAL LIBRARY TYPES PART 1 OF 2 --- Row 1 to 41 of 41
COMMAND =====> SCROLL =====> PAGE

Enter END command to save changes or CANCEL to exit.

      LIB                                LKE SEQ  DFR  TARGET SEL .
      TYPE DESCRIPTION                    (Y/N)  TYPE  OPT.
      ...
'''' DBD  IMS DBD Source_____ S  ___  Y   DBL  I_
'''' DBL  IMS DBD Load_____ L  ___  Y   ___  I_
'''' FMT  IMS MFS Load_____ L  ___  Y   ___  I_
'''' MFR  IMS MFS Referal_____ P  ___  Y   ___  I_
'''' MFS  IMS MFS Source_____ S  ___  Y   FMT  I_
'''' PSB  IMS PSB Source_____ S  ___  Y   PSL  I_
'''' PSL  IMS PSB Load_____ L  ___  Y   ___  I_
      ...
***** Bottom of data *****
    
```



NOTES

- Library types for IMS components must specify I in the Sel. Opt. field.
- There are no reserved library types for the IMS Option. The Sel. Opt. on this panel and the IMS Sub Type on a subsequent panel invoke special IMS processing for a library type.

c On the **Global Library Types Part 2 of 2** panel (CMNCGLT1), use these DCB parameters for the new library types.

Like	DCB Parameters	
Like-L	Record Format	U
	Record Length	0
Like-P and Like-S	Record Format	FB
	Record Length	80

- 2 Add global language ASM.
 - a Use command =A.G.3 to display the **Global Language Names** panel (CMNGGLNG).
 - b Add language **ASM** for assembler if it is not already defined.
- 3 Add global procedures for IMS component builds.
 - a Use command =A.G.4 to display the **Compile Procedure List** panel (CMNPRCNM).
 - b Insert lines and create a language/procedure for each kind of IMS like-source component.

The IMS compile procedures on the sample panel below correspond to the entries in the **Compile Procedures** column in the table of supported IMS components in topic "IMS Component Types in ZMF" on page 18.

```
CMNPRCNM ----- COMPILE PROCEDURE LIST ----- Row 1 to 17 of 17
COMMAND ==>>                                SCROLL ==>> PAGE
```

Enter END command to save changes or CANCEL to exit.

Enter * in LANGUAGE or PROCEDURE fields for selection list.

LANGUAGE	PROCEDURE	DESCRIPTION
...		
' ' ' ASM_____	CMNDBDGN	IMS DBD Gen_____
' ' ' ASM_____	CMNPSBGN	IMS PSB Gen_____
' ' ' ASM_____	CMNMFSGN	IMS MFS Gen_____
...		

***** Bottom of data *****

Update ChangeMan ZMF Application Administration

Follow the instructions in the *ChangeMan ZMF Administrator Guide* to update application administration with the following for IMS components:

- Library types
 - Language names
 - Compile procedures
 - Baseline libraries
 - Production libraries
 - Promotion libraries
- 1 Add application library types for IMS components.
 - a Use command **=A.A.2** to display the **application - Library Types Part 1 of 2** panel (CMNCLLT0).
 - b Insert lines and copy down global IMS library types.

The IMS component library types on the sample panel below correspond to the table of supported IMS components in topic "IMS Component Types in ZMF" on page 18.

```

CMNCLLT0 ----- IMSA - LIBRARY TYPES PART 1 OF 2 ----- Row 1 to 15 of 16
COMMAND ==>>>                                     SCROLL ==>> PAGE

Enter END command to save changes or CANCEL to exit.
Enter * in line command field for global staging libraries selection list.

```

LIB		LKE	SEQ	DFR	TARGET	SEL.
....						
''''	DBD IMS DBD Source	S	___	Y	DBL	I_
''''	DBL IMS DBD Load	L	___	Y	___	I_
''''	FMT IMS MFS Load	L	___	Y	___	I_
''''	MFR IMS MFS Referral	P	___	Y	___	I_
''''	MFS IMS MFS Source	S	___	Y	FMT	I_
''''	PSB IMS PSB Source	S	___	Y	PSL	I_
''''	PSL IMS PSB Load	L	___	Y	___	I_
....						



NOTES

- Library types for IMS components must specify I in the Sel. Opt. field.
 - There are no reserved library types for the IMS Option. The Sel. Opt. on this panel and the IMS Sub Type on a subsequent panel invoke special IMS processing for a library type.
- c If necessary, adjust the staging library attributes and options for each new library type using the **application - Library Types Part 2 Of 2** panel (CMNCLLT1).
 - 2 Add application language ASM.
 - a Use command =A.A.3 to display the **application - Language Names** panel (CMNCLLNG).
 - b Insert a line and copy down the global language **ASM** for assembler if it is not already defined.
 - 3 Add application procedures for IMS component builds.
 - a Use command =A.A.4 to display the **application - Compile Procedures** panel (CMNCLPRC).
 - b Insert new lines and copy down global IMS gen procedures.

The IMS compile procedures on the sample panel below correspond to the entries in the **Compile Procedures** column in the table of supported IMS components in topic "IMS Component Types in ZMF" on page 18.

```

CMNCLPRC ----- IMSA - COMPILE PROCEDURES ----- Row 1 to 4 of 4
COMMAND ==>>>                                     SCROLL ==>> PAGE

Enter END command to save changes or CANCEL to exit.
Enter * in line command field for global compile procedure list.

      LANGUAGE  PROCEDURE  DESCRIPTION
      ...
'''' ASM_____ CMNDBDGN   IMS DBD Gen_____
'''' ASM_____ CMNPSBGN   IMS PSB Gen_____
'''' ASM_____ CMNMFSGN   IMS MFS Gen_____
      ...
***** Bottom of data *****

```

4 Update promotion levels for IMS components.

To populate IMS test libraries with package components, add or modify promotion level definitions and add IMS promotion libraries.

- a Use command **=A.A.7** to display the **application Promotion Site List** panel (CMNLRPMS).
- b Select an existing **Site Name**, or insert a line, copy an application site name, complete the site definition, and select the new **Site Name**.
- c On the **application/level - Promotion Levels** (CMNLRPM2) panel, code one of the following in the **Procedure** field for any promotion level that will contain IMS components.
 - CMNIMPRM - Local promotion sites (same LPAR or shared DASD)
 - CMNIMRPM - Remote promotion sites

```

CMNLRPM2 ----- IMSA/SERT4P1 - PROMOTION LEVELS ----- Row 1 to 5 of 5
COMMAND ==>>>                                     SCROLL ==>> PAGE

Enter END command to save changes or CANCEL to exit.

      NICKNAME   ENTITY     LEVEL   PROCEDURE (* for a list)
      ...
'''' S4P1UT__   ACTPDEV__  10     CMNIMPRM
      ...
***** Bottom of data *****

```

- d On the **application/level - Promotion Levels** (CMNLRPM2) panel, select a **Site Nickname**, and on the **application/level - Promotion Libraries** panel (CMNLRPM3), add application IMS library types and IMS test target libraries.



IMPORTANT! Define promotion libraries for IMS like-source library types. IMS like-source components must be available at promotion sites to apply templates and execute IMS gens.

5 Add baseline definitions and libraries for IMS components.

- a Use command =A.A.2 to display the **application - Baseline Configuration Part 1 of 2** panel.
- b Insert lines, copy application IMS library types, and specify a baseline library definition for each.

The IMS baseline configuration on the sample panel below correspond to the table of supported IMS components in topic "IMS Component Types in ZMF" on page 18.

```

CMNCBAS1 IMSA - BASELINE CONFIGURATION PART 1 OF 2 ----- Row 1 to 16 of 16
COMMAND ==>>> SCROLL ==>> PAGE

Enter END command to save changes or CANCEL to exit.
Enter * in line command field for library type selection list.

          INSTALL      BASELINE STORAGE MEANS
          IN PROD      P-Standard PDS  PV-Panvalet
          (Y/N/C)      L-Librarian     LA-Librarian Archie
          H-HFS        SD-Stacked Reverse Delta

TYPE  LEVELS
....
'''' DBD    10_    Y    SD
'''' DBL    3_    Y    P_
'''' FMT    3_    Y    P_
'''' MFR    10_   Y    SD
'''' MFS    10_   Y    SD
'''' PSB    10_   Y    SD
'''' PSL    3_    Y    P_
....
***** Bottom of data *****
    
```



IMPORTANT! Set the **Install In Prod** indicator to **Y** for IMS like-source library types. IMS like-source components must be available at production sites to apply templates and execute IMS gens.

- c On the **Baseline Configuration Part 2 Of 2** panel, allocate new baseline libraries for IMS components, or verify existing libraries that you will use as baseline libraries.
- 6 Add production libraries for IMS components.
- a Use command =A.A.2 to display the on the **application - Baseline Configuration Part 1 of 2** panel.
 - b On the **application - Production Libraries** panel, insert application IMS production library types, and specify a set of production libraries for each type.

Configure IMS Option Global Administration

Global Administration for the ChangeMan ZMF IMS Option defines:

- IMS subsystems that are available to the IMS Option.
- IMS sub-types for global library types used for IMS components. IMS sub-types control automated processing for IMS components at stage, promotion, and install.
- DBD Overrides that can modify DBD at stage, promotion, and install.
- PSB Overrides that can modify PSB at stage, promotion, and install.

Type **=A.G.O.5** on any **Command** or **Option** line and press **Enter** to display the **Global IMS Administration** menu.

```

CMNIGGEN ----- GLOBAL IMS ADMINISTRATION -----
OPTION ==>

  1 Control Regions - Generate IMS Control Region Information
  2 Library Types  - Generate IMS Library Sub-Types
  3 DBD Overrides  - Generate DBD Override Statements
  4 PSB Overrides  - Generate PSB Override Statements

Press ENTER to process; Enter END command to exit.
    
```

Define Global Control Regions

IMS control region information is configured from Option 1 (Control Region); this is where you set up global control region information.

From the Global IMS Administration panel, select Option 1. The Global Definitions of IMS System Information Part 1 of 2 panel (CMNIGSLB) appears.

```

CMNIGSLB -- GLOBAL DEFINITIONS OF IMS SYSTEM INFORMATION PART  Row 1 to 5 of 5
COMMAND ==>                                         SCROLL ==> HALF

Enter END command to save changes or CANCEL to exit.
Enter * in Site for Global Site selection list.

      IMS   SITE      ACTIVE DEVCHAR  MFSGEN  PSBGEN  DBDGEN  ACB
      ID   NAME      Y/N   Suffix  Y/N     Y/N     Y/N     Y/N
'''' C115 SERT#___  Y      0      N       N       N       N
'''' C115 SERT4___  Y      0      N       N       N       N
'''' C115 SERT4P1_  Y      0      N       N       N       N
'''' C115 SERT4P2_  Y      0      N       N       N       N
'''' C115 SERT5___  Y      0      N       N       N       N
***** Bottom of data *****
    
```

The following table presents a summary of the fields on the Global Definitions of IMS System Information Part 1 of 2 panel (CMNIGSLB).

Fields	Meaning
Line Command	Type one of these line commands: I Insert a new line. R Repeat an existing line, repeating retains the information that had been previously keyed in. Use this command for modeling of IMS control regions. D Delete an existing line or IMS system. S Select an IMS control region to add the associated system libraries. This command displays.
IMS ID	A four-character ID assigned to the control region by the system programmer at system generation.

Fields	Meaning
SITE	Enter the site name as defined in ChangeMan ZMF where the IMS subsystem is running. A blank entry to this field defaults to the local ChangeMan ZMF subsystem. You may enter a mask of '*' to display a selection list of the sites defined in this ChangeMan ZMF instance.
ACTIVE (Y/N)	Type Y if this IMS region is active and can be defined at the application level. Type N if this IMS region is not active and cannot be defined at the application administration level.
DEVCHAR Suffix	Type a character or numeric value. This value is appended to an IMS module name DFSUDTOx for the device characteristics of 3270 or SLU2 terminals. This module is invoked when generating MFS source code.
MFSGEN (Y/N)	Type Y to always GEN MFSs when promoting or installing to this IMS region. Type N if you want the system to determine if an MFS GEN is required. If the DEVCHAR is different from that of the defined production IMS region for this ChangeMan ZMF instance then a GEN is required.
PSBGEN (Y/N)	Type Y if you want to always GEN PSBs when promoting or installing to this IMS region. Type N if you want the system to determine if a PSB GEN is required. If it is different than that of the defined production IMS region for this ChangeMan ZMF subsystem then a GEN is required.
DBDGEN (Y/N)	Type Y if you want to always GEN DBDs when promoting or installing to this IMS region. Type N if you want the system to determine if a DBD GEN is required. If it is different than that of the defined production IMS control region for this ChangeMan ZMF subsystem then a GEN is required.
ACB (Y/N)	Type Y to always create ACB build statements for PSBs during staging. Type N to have the system determine if an ACB build statement is required for a PSB. ACB build statements are always determined for DBDs.

You can identify the IMS control regions, and (in Part 2 of this panel) define the DD and data set names for the IMS system libraries (such as RESLIB, PSBLIB, DBDLIB, and IMSACB) assigned to that region.

To get to Part 2 of this panel, select a control region with the S line command. This panel is very similar to the Definitions of IMS System Information under Application Administration. There is one basic difference: in addition to the SITE shown above, you specify a LOGICAL SITE as well. See ["Configure IMS Option Application Administration" on page 33](#).

You can also specify whether to default to running GENs for MFS screens, PSBs and DBDs. For instance, if you do not update a PSB (and/or all of your IMS control regions are at the same IMS software level), it is much faster to just copy, rather than GEN it.



NOTE IMS control regions are logically related to ChangeMan ZMF promotion levels and/or production or baseline environment.

When an end-user updates an IMS package, this information can also be modified, with optional restrictions through ChangeMan ZMF exit routines. Specifically, ChangeMan ZMF User Exits 1 and 41 are likely to be of interest; this exit allows you to specify select users who can change package information.

For more information on this and other ChangeMan ZMF exit routines, see the *ChangeMan ZMF Administrator's Guide*.

When defining an IMS environment, you must identify the IMS control regions, and define the data set names under that region. The table below defines the purpose of the different choices here.

In general, you will want to automatically GEN if you are going to update a PSB or DBD, but not GEN (and merely copy) if you are not going to do an override. (This assumes that the target control region is at the same IMS software release level as the source control region.)



NOTE If you typed Y to any of the GEN options in IMS System information, the IMS Option will reassemble or generate those components into the IMS control region library whenever those component types are promoted, installed or baseline-rippled. The executable module is then synchronized with the promotion, install or baseline library.

For each IMS ID selected, you must enter global definition information on the Global Definitions of IMS System Information Part 2 of 2 panel (CMNIGSL2).



NOTE Although Hi-lev Node Bkup (high-level node backup), IMSGEN Macro Def, and Member Name appear on the panel, presently, they cannot be used.

```
CMNIGSL2 -- GLOBAL DEFINITIONS OF IMS SYSTEM INFORMATION PART 2 OF 2 -----
COMMAND ==>>                                SCROLL ==>> HALF
```

```
          IMS ID: C115   SITE: SERT4           ACTIVE: Y
```

```
Hi-lev Node Bkup ==> _____
IMSGEN Macro Def ==> _____
Member Name      ==> _____
```

```
DDNAME          IMS System Libraries
```

```
RESLIB          ==> SYS2.IMS1110.SDFSRESL_____
MODSTAT         ==> IMSC115.MODSTAT_____
MACLIB          ==> SYS2.IMS1110.SDFSMAC_____
PSBLIB          ==> CMNTP.IMSC115.PSBLIB_____
DBDLIB          ==> CMNTP.IMSC115.DBDLIB_____
IMSACB          ==> CMNTP.IMSC115.ACBLIB_____
FORMAT          ==> CMNTP.IMSC115.FORMAT_____
REFERAL         ==> CMNTP.IMSC115.REFERAL_____
```

```
Press ENTER to process; Enter END command to exit.
```

The following table describes the information you need to provide on this panel.

Field	Description								
Hi-lev Node Bkup	<p>High-level node backup is a variable for the IMS Option ISPF skeletons that are delivered as samples for backing up IMS control region libraries. There are samples for backups; these are provided for promoting, installing and performing a baseline ripple.</p> <p>The high-level node backup is the first node used for backups of the IMS system libraries for PSBs, DBDs, ACBs, format, and referral libraries. The rest of the backup data set name contains:</p> <p>xxx.application.remote.imsid where</p> <table> <tr> <td>xxx</td> <td>Library type (PSB, DBD, ACB, FMT or REF)</td> </tr> <tr> <td>application</td> <td>4 character application name as defined in ChangeMan ZMF</td> </tr> <tr> <td>remote</td> <td>Remote site as defined in ChangeMan ZMF</td> </tr> <tr> <td>imsid</td> <td>IMSID assigned to the subsystem</td> </tr> </table>	xxx	Library type (PSB, DBD, ACB, FMT or REF)	application	4 character application name as defined in ChangeMan ZMF	remote	Remote site as defined in ChangeMan ZMF	imsid	IMSID assigned to the subsystem
xxx	Library type (PSB, DBD, ACB, FMT or REF)								
application	4 character application name as defined in ChangeMan ZMF								
remote	Remote site as defined in ChangeMan ZMF								
imsid	IMSID assigned to the subsystem								
IMSGEN Macro Def	This is the data set that contains the IMS system generation member name.								
Member Name	<p>This is the member name that is in the IMSGEN data set. This contains the source code used to generate the IMS control region, databases, programs and terminals.</p> <p>The following table describes the DDNAMEs on the Global Definitions of IMS System Information Part 2 of 2 panel (CMNIGSL2)</p>								
RESLIB	This is where you enter the APF authorized IMS system library.								
MODSTAT	This is a sequential data set that contains information regarding the active libraries for MODBLKS, IMSACB and FORMAT.								
MACLIB	This is a PDS that contains all IMS MACROs used for system, PSB, DBD, ACB, and MFS generations.								
PSBLIB	This is the data set that contains all the PSBs and whose DD name is defined to IMS.								
DBDLIB	This is the data set that contains all the DBDs and whose DD name is defined to IMS. This data set is normally concatenated with the library for PSBs.								
IMSACB	This is the library that contains all pre-built control blocks used by the control region. This must be the IMS Staging Library which is input to the Online Change Utility.								
FORMAT	This is the library that contains all DIF/DOF and MID/MOD control blocks used by the control region. This must be the IMS Staging Library that is input to the Online Change Utility.								
REFERAL	This is the library that contains the intermediate text block that is output to step I of the MFS GEN Utility and input to step II.								

The next step, after setting up the control region information, is to define the global library types for IMS. For this, you would first return to the Global IMS Administration menu (CMNIGGEN).

IMS Library Subtypes

From the Global IMS Administration menu (CMNIGGEN), select Option 2 to display the **Global Ims Library Subtypes** panel (CMNIGLT0):

```

CMNIGLT0 ----- GLOBAL IMS LIBRARY SUBTYPES ----- Row 1 to 7 of 7
COMMAND ==>>                                     SCROLL ==>> HALF

Enter END command to save changes or CANCEL to exit.

LIB                                                    IMS
TYPE      DESCRIPTION                                SUB
DBD       IMS DBD Source_____                     D
DBL       IMS DBD Load_____                         B
FMT       IMS MFS Load_____                         F
MFR       IMS MFS Referal_____                     R
MFS       IMS MFS Source_____                     M
PSB       IMS PSB Source_____                     P
PSL       IMS PSB Load_____                         S
***** Bottom of data *****
    
```

The **IMS SUB TYPE** field designates that additional processing is done for these library types during staging, promotion, and installation. This allows you to use any naming convention for library types, but still allows ChangeMan ZMF to handle the special processing required for these types.

The following tables describes the IMS library types.

Lib Type	Meaning
P	PSB source library type
S	PSB load library type
D	DBD source library type
B	DBD load library type
M	MFS source library type
F	MFS format library type
R	MFS referral library type

DBD Overrides

From the Global IMS Administration menu, select Option 3 to display the Global DBD Override Control Statements panel (CMNIGDBD).

```

CMNIGDBD ----- GLOBAL DBD OVERRIDE CONTROL STATEMENTS -- Row 1 to 4 of 4
COMMAND ==>>                                     SCROLL ==>> HALF

Enter END command to save changes or CANCEL to exit.
Enter * in line command or Library Type for Global IMS or Library list.

MIXED CASE ==>> NO   (Yes/No)

      DBD                LIBRARY IMS   SITE        CONTROL
      NAME              + TYPE   ID    NAME       STATEMENT
'''' IMSDBD01_____ DBD      C115  SERT#___ DATASET_
      ORG  DEVICE=3380
      NEW  DEVICE=3400
'''' IMSDBD01_____ DBD      C115  SERT4___ DATASET_
      ORG  DEVICE=3380
      NEW  DEVICE=3400
'''' IMSDBD01_____ DBD      C115  SERT4P1_ DATASET_
      ORG  DEVICE=3380
      NEW  DEVICE=3400
'''' IMSDBD01_____ DBD      C115  SERT5___ DATASET_
      ORG  DEVICE=3380
      NEW  DEVICE=3400

```

This table describes the fields on the **Global Dbd Override Control Statements** panel.

Field	Description
MIXED CASE	N Fold DBD Name input to upper case regardless of the case you type. Y Process DBD Name input exactly as you type it, upper and lower case.
Line Command	Type one of these line commands: I Insert R Repeat D Delete * Select
DBD NAME	Enter the source name of the DBD you want to modify.
LIBRARY TYPE	Enter the library type that the DBD source was staged as. This library type must be an IMS DBD source sub-type. Enter an asterisk '*' for a list of valid IMS DBD source sub-types.
IMS ID	Enter the four-character ID that is assigned to the package.
SITE	Enter the remote site as defined in ChangeMan ZMF where the IMS subsystem is running. A blank entry to this field defaults to the local ChangeMan ZMF subsystem.

Field	Description
CONTROL STATEMENT	Enter the type of DBD control statement that is to have the override. Valid DBD control statements are: <ul style="list-style-type: none"> ■ DATASET ■ AREA ■ SEGM ■ FIELD ■ LCHILD ■ XDFLD ■ DBD ■ DBDGEN
ORG	Enter the original DBD source statements that are to be replaced.
NEW	Enter the new DBD source statements that are to replace the original DBD source statements.

From the Global DBD Override Control Statements panel (CMNIGDBD), you can modify your DBD control statements (this same capability exists for PSB control statements).

From this panel, you can add or delete Global IMS DBD override control statements. Global DBD and PSB overrides can be overridden at the application level. Application level overrides can be overridden at the package level.

Global overrides can only be used at installation time; this is due to the fact that there is no logical level assigned to an IMS region until the application level.

PSB Overrides

From the Global IMS Administration menu, select Option 4 (PSB Overrides) to display the Global PSB Override Control Statements panel (CMNIGPSB).

```

CMNIGPSB ----- GLOBAL PSB OVERRIDE CONTROL STATEMENTS -- Row 1 to 4 of 4
COMMAND ==>                                     SCROLL ==> HALF

Enter END command to save changes or CANCEL to exit.
Enter * in line command or Library Type for Global IMS or Library list.

MIXED CASE ==> NO (Yes/No)

      PSB          LIBRARY IMS   SITE      CONTROL
      NAME          + TYPE   ID     NAME     STATEMENT
'''' IMSPSB01_____ PSB     C115   SERT#___ PCB_____
      ORG  DBDNAME=IMSPSB01_____
      NEW  DBDNAME=IMSGBL01_____
'''' IMSPSB01_____ PSB     C115   SERT4___ PCB_____
      ORG  DBDNAME=IMSPSB01_____
      NEW  DBDNAME=IMSGBL01_____
'''' IMSPSB01_____ PSB     C115   SERT4P1_ PCB_____
      ORG  DBDNAME=IMSPSB01_____
      NEW  DBDNAME=IMSGBL01_____
'''' IMSPSB01_____ PSB     C115   SERT5___ PCB_____
      ORG  DBDNAME=IMSPSB01_____
      NEW  DBDNAME=IMSGBL01_____
    
```

This table describes the fields on the **Global Psb Override Control Statements** panel.

Field	Description
MIXED CASE	N Fold PSB Name input to upper case regardless of the case you type. Y Process PSB Name input exactly as you type it, upper and lower case.
Line Command	Type one of these line commands: I Insert R Repeat - Use this line command to model a PSB control statement. D Delete * Selectto an IMS region from the Global IMS region list.
PSB NAME	Type the source name of the PSB for which you want to have the override.
LIBRARY TYPE	Type the library type for which the PSB source was staged. This library type must be an IMS PSB source sub-type. Type an asterisk '*' for a list of valid IMS PSB source sub-types.
IMS ID	Type the four-character ID assigned to the IMS system.
SITE	Type the remote site as defined in ChangeMan ZMF where the IMS subsystem is running. A blank entry to this field defaults to the local ChangeMan ZMF subsystem.
CONTROL STATEMENT	Type the type of PSB control statement that is to have the override. Valid PSB control statements are: <ul style="list-style-type: none"> ■ PSBGEN ■ PCB ■ SENSEG ■ SENFLD
ORG	Type the original PSB source statements that are to be replaced.
NEW	Type the new PSB source statements that are to replace the original PSB source statements.

The Global PSB Override Control Statements panel (CMNIGPSB) is where the PSB overrides are entered.

Use the R (Repeat) line command to model a PSB control statement. Use the * (Select) line command to select an IMS region to be added from the Global IMS region list.

From the Global PSB Override Control Statements panel, add or delete Global IMS PSB override control statements. Global IMS PSB control will only be used for package installation not for promotion.

Global DBD and PSB overrides can be overridden at the application level. Application level overrides can be overridden at the package level.

Global overrides can only be used at installation time because there is no logical level assigned to an IMS region until the application level.

Configure IMS Option Application Administration

Application Administration for the ChangeMan ZMF IMS Option defines:

- IMS subsystems that are available to each application that manages IMS components.
- IMS sub-types for application library types used for IMS components. IMS sub-types control automated processing for IMS components at stage, promotion, and install.
- DBD Overrides that can modify DBD at stage, promotion, and install in each application that manages IMS components.
- PSB Overrides that can modify PSB at stage, promotion, and install in each application that manages IMS components.

Type **=A.A.O.5** on any **Command** or **Option** line and press **Enter** to display the **application - IMS Administration** menu.

```

CMNILGEN ----- ACTP - IMS ADMINISTRATION -----
OPTION ==>

  1 Control Regions - Generate IMS Control Region Information
  2 Library Types  - Generate IMS Library Sub-Types
  3 DBD Overrides  - Generate DBD Override Statements
  4 PSB Overrides  - Generate PSB Override Statements

Press ENTER to process; Enter END command to exit.
    
```

Application Control Regions

Same as the Global Control Region Definitions. We've customized the IMSQ definitions:

```

CMNILSLB PAYR - DEFINITIONS OF IMS SYSTEM INFORMATION PART 1 Row 1 to 5 of 5
COMMAND ==>                                     SCROLL ==> HALF

Enter END command to save changes or CANCEL to exit.
Enter * in line command or logical site name for selection lists.

      IMS   SITE      LOGICAL   ACTIVE DEVCHAR   MFSGEN   PSBGEN   DBDGEN   ACB
      ID   NAME      SITE NAME Y/N   Suffix   Y/N     Y/N     Y/N     Y/N
'''' C115 SERT#___  BASELINE   Y     0       Y       Y       Y       Y
'''' C115 SERT4___  BASELINE   Y     0       Y       Y       Y       Y
'''' C115 SERT4P1_ S4P1UT___ Y     0       Y       Y       Y       Y
'''' C115 SERT4P2_ S4P2AT___ Y     0       Y       Y       Y       Y
'''' C115 SERT5___  BASELINE   Y     0       Y       Y       Y       Y
***** Bottom of data *****
    
```

Application Library Types for IMS

To obtain an application library types selection panel (Application IMS Library Types panel), from the Application IMS Administration panel (CMNILGEN), select 2. The Application IMS Library Types Part 1 of 2 panel (CMNILLTO) appears.

```

CMNILLT0 ----- PAYR - IMS LIBRARY SUBTYPES ----- Row 1 to 7 of 7
COMMAND ==>>                                     SCROLL ==>> HALF

Enter END command to save changes or CANCEL to exit.

A NEW PACKAGE must be created, to pick up changes made on this panel.

LIB                                     IMS
TYPE      DESCRIPTION                   SUB
DBD        IMS DBD Source                TYPE
DBL        IMS DBD Load                  D
FMT        IMS MFS Load                  B
MFR        IMS MFS Referral               F
MFS        IMS MFS Source                 R
PSB        IMS PSB Source                 M
PSL        IMS PSB Load                   P
***** Bottom of data *****

```

Application DBD Overrides

This works the same as Global DBD Overrides, except at the Application level. You can get to the application DBD Overrides selection panel (Application DBD Override Control Statements panel), from the Application IMS Administration panel (CMNILGEN), select 3. The Application DBD Override Control Statements panel (CMNILDBD) appears

Application PSB Overrides

This works the same as Global PSB Overrides, except at the application level. You can display the Application PSB Overrides Selection panel (Application PSB Override Control Statements panel) by selecting 4 from the Application IMS Administration panel (CMNILGEN)

Customize Exits for the IMS Option

CMNEX026 for Referral Library

When you stage an MFS like-source component, two components are created:

- MFS load
- MFS Referral

An MFS load staging library is automatically allocated when you specify its library type as the Target Type for the MFS like-source library type in application library type definitions.

There are two ways to make an MFR staging library available when you stage an MFS like-source component:

- In the library type definition for MFS referral in application administration, set the Defer flag to N so that an MFS referral staging library is always allocated when you create a package.
- In the MFS referral library type definition, leave the Defer flag set to Y and customize exit program CMNEX026 to allocate an MFS staging library when the first MFS like-source component is staged in a package.

Follow these instructions to customize exit program CMNEX026.

- 1 If you have *not* already customized exit program CMNEX026:
 - a Copy member CMNEX026 from the delivered CMNZMF ASMSRC library to your custom CMNSRC library.
 - b Edit the program source to activate the exit according to instruction in the program comments.

```

ID          SOURCE LINES
-----+-----1-----+-----2-----+-----3-----+-----4-----+-----5-----+-----6-----+-----7-----+-----8
*****
*
* Comment (or delete) the following 2 lines to activate this exit.
*
I - *MNX026 CSECT
I - *      DC      Y(2046)          inactive module
D - CMNEX026 CSECT
D -      DC      Y(2046)          inactive module
*****
    
```

- 2 Add an entry to table X26@LTYP to allocate a staging library for your IMS referral library type when you stage a component in your MFS like-source library type.

In this code fragment, a new entry is added to table X26@LTYP to allocate an MFR staging library type when an MFS component is staged in any application.

```

ID          SOURCE LINES
-----+-----1-----+-----2-----+-----3-----+-----4-----+-----5-----+-----6-----+-----7-----+-----8
X26@LTYP DS      0CL37          library type description table
* Beginning of first entry
      DC      CL4'* '          application
      DC      CL3'JAV'         staged library type
      DC      CL3'LSH'         library type
      DC      CL27' '          the rest
* Beginning of second entry
I -      DC      CL4'* '          application SERA only
I -      DC      CL3'MFS'       staged library type (MFS)
I -      DC      CL3'MFR'       library type 1 (MFR)
I -      DC      CL27' '          the rest of them (CL30 - 3)
I - * Beginning of second entry
      DC      CL4'SERA'         application SERA only
      DC      CL3'JCL'         staged library type (JCL)
      DC      CL3'LSJ'         library type 1 (LSJ)
      DC      CL27' '          the rest of them (CL30 - 3)
    
```

- 3 Follow the instructions in the *ChangeMan ZMF Customization Guide* to assemble the program source into a custom LOAD library.

CMNEX041 IMS Package Update Security

When a change package is created in an application that is configured for the IMS Option, IMS control region information is copied from application administration records into the package records. You can use exit program CMNEX041 to restrict the TSO IDs that are allowed to update the IMS control information stored in the package records.

CMNEX041 is disabled as delivered. If you want to restrict who can update IMS control information at the package level, follow these instructions to customize exit program CMNEX041.

- 1 If you have *not* already customized exit program CMNEX041:
 - a Copy member CMNEX041 from the delivered CMNZMF ASMSRC library to your custom CMNSRC library.
 - b Edit the program source to activate the exit according to instruction in the program comments.

```

ID          SOURCE LINES
-----+---1---+---2---+---3---+---4---+---5---+---6---+---7---+---8
*****
*
* Comment (or delete) the following 2 lines to activate this exit.
*
I - *MNX026 CSECT
I - *      DC      Y(2046)          inactive module
D - CMNEX041 CSECT
D -      DC      Y(2046)          inactive module
*****

```

- 2 Read the program comments that explain how CMNEX041 works, and study the model rules and the sample code that implements those rules.
- 3 Make your own rules, customize the sample code, or write new code to support your business processes.
- 4 Follow the instructions in the *ChangeMan ZMF Customization Guide* to assemble the program source into a custom LOAD library.

Customize Skeletons for IMS

[Appendix B, "IMS-Related Skeletons" on page 79](#) lists all of the skeletons that are file tailored to execute IMS-specific functions in ChangeMan ZMF batch jobs. IMS-related file tailoring variables are listed in member #VARLIST in the ChangeMan ZMF skeleton library.



NOTE When you customize IMS option skeletons, remember to preserve the delivered skeletons. Copy skeleton members from the delivered CMNZMF SKELS library into your CUSTOM SKELS library and edit the skeleton in the CUSTOM library.

IMS Library Names In Skeletons

Before you can run the IMS Option you must update some IMS library names in skeletons.

This table lists the skeletons you must customize, the DD name where the change must be made, and the low level nodes of the data set name that must be updated.

Skeleton	Function	DDNAME	Library or File
CMN\$\$ACB	Build	COMPCTL	somnode.IMS.PROCLIB(DFSACBCP)
CMN\$\$MFS	Build	STEPLIB REFIN REFRD DUMMY STEPLIB DUMMY	somnode.IMS.RESLIB somnode.IMS.REFERAL somnode.IMS.REFERAL somnode.IMS.PROCLIB(REFCPY) somnode.IMS.RESLIB somnode.IMS.PROCLIB(FMTCPY)
CMN\$\$SYL	Build	&FIRSTDD	somnode.IMS.RESLIB
CMNINACB	Build	COMPCTL	somnode.IMS.PROCLIB(DFSACBCP)
CMNMFSIG	Install	DUMMY DUMMY	somenode.IMS.PROCLIB(REFCPY) somenode.IMS.PROCLIB(FMTCPY)
CMNMFSPG	Promote	DUMMY DUMMY	somnode.IMS.PROCLIB(REFCPY) somnode.IMS.PROCLIB(FMTCPY)
CMNMFSRG	Promote	DUMMY DUMMY	somnode.IMS.PROCLIB(REFCPY) somnode.IMS.PROCLIB(FMTCPY)

You must also add the IMS SDFSMAC library to the assembler SYSLIB concatenation.

```

ID          SOURCE LINES                                     TYPE  LEN  N-LN#  O-LN#
-----1-----2-----3-----4-----5-----6-----7-----8
//          '&COMPOPT')                                     00014 00014
//SYSPRINT DD DISP=(,PASS),DSN=#####LIST30C&C#,          00015 00015
//          UNIT=&DEFNVUN,SPACE=(CYL,(5,5),RLSE),          00016 00016
//          DCB=(RECFM=FBM,LRECL=121,BLKSIZE=23474)        00017 00017
)IM CMN$$SYC                                               00018 00018
)SEL &IMSLCNS EQ Y                                         00019 00019
)SEL &CMPSUBT EQ P OR &CMPSUBT EQ D                        00020 00020
//          DD DISP=SHR,DSN=&IMMACLB                       00021 00021
)ENDSEL &CMPSUBT EQ P OR &CMPSUBT EQ D                   00022 00022
)ENDSEL &IMSLCNS EQ Y                                     00023 00023
I - //          DD DISP=SHR,DSN=somnode.IMS.SDFSMAC        00026
//          DD DISP=SHR,DSN=SYS1.MACLIB                    MAT= 25 00027 00024
//          DD DISP=SHR,DSN=SYS1.MODGEN                    00028 00025
//SYSUT1 DD UNIT=SYSDA,SPACE=(CYL,(5,5))                  00029 00026
//SYSUT2 DD UNIT=SYSDA,SPACE=(CYL,(5,5))                  00030 00027
//SYSPUNCH DD DUMMY,DCB=BLKSIZE=80                        00031 00028
    
```

IMS Installation Skeletons

When ChangeMan ZMF detects a license for the IMS Option, it automatically substitutes certain IMS Option skeletons to file tailor installation and backout JCL for all packages, even packages in applications that are not set up for IMS components. If there are no IMS components in a package, the generated installation and backout JCL is exactly the same as if no IMS Option license had been applied.

If you want to customize installation and backout jobs, this table shows you the top level skeletons that are used for file tailoring when the IMS Option is enabled.

Standard Skeleton	IMS Option Skeleton	Description
CMN20	CMN20I	Install a package into production libraries
CMN20T	CMN20TI	Install a temporary package
CMN30	CMN30I	Perform baseline ripple of a package
CMN31T	CMN31TI	Cycle (de-install) a temporary package
CMN50	CMN50I	Backout a package from production libraries
CMN50T	CMN50TI	Backout a package from temporary libraries
CMN55	CMN55I	Perform baseline reverse ripple of a package
CMN55T	CMN55TI	Backout a package from temporary libraries

For example, if you license the IMS Option and if you want to modify the baseline ripple process, you must customize skeleton CMN30I instead of CMN30.

Chapter 3

Using the IMS Option

With the ChangeMan ZMF IMS Option, IMS programmers are able to update, stage and install packages in the usual way, with IMS-related options only appearing where appropriate.

For the most part, the IMS Option provides very little that is different or new to the experienced ChangeMan ZMF user. These special considerations will be explained in this chapter.

Creating a Package with IMS Components	40
Package Update	40
Package Staging Considerations	45
Package Promotion Considerations	60
Package Installation and Promotion Considerations	69
Querying a Package with IMS Components	69

Creating a Package with IMS Components

Creating a package with IMS components is identical to creating any package with ChangeMan ZMF.

In general, the only effect IMS has during package creation is that the IMS control region information is copied to the package level. Control region data sets can thus be updated by end users at the package level (unless this is disallowed by your ChangeMan ZMF administrator).

The next section discusses the issues in updating a package.

Package Update

Under the Package Update option, Option 2 of the Build Options panel (CMNBUILD), Option I of the Update Package Information panel has been added to allow you to obtain the Update IMS Package Update Options panel (CMNIMUPD) to view or update IMS information at the package level. The ability to make IMS updates is controlled by exit CMNEX041.

To display the Update IMS Package Update Options panel (CMNIMUPD), take the following steps:

- 1 From the Primary Option *Menu*, select 1 (Build). The Build Options panel (CMNBUILD) displays.
- 2 From the Build Options panel (CMNBUILD), select 2 (Update). The Update Package Information panel (CMNPGNLO) displays.

```
CMNPGNLO ----- UPDATE: PACKAGE INFORMATION -----
OPTION  ===>

PACKAGE ID ===> IMSQ000010

  1 Control          - Update package control information
  2 General          - Update general description
  3 Instruction      - Update installation instructions
  4 Dependencies     - Update job scheduling dependencies
  5 Affected Apps    - Update affected applications
  6 Complex/Super    - Update cmpx/supr package information
  7 Install Dates    - Update install date and site information
  8 Complex/Super    - Change complex/super package to CLO status
  9 Complex/Super    - Change complex/super package to OPN status
  D DB2 Information - Update DB2 package information
  E User Information- Change package user information
  I IMS Information - Update IMS package information
  R Release Info.   - Change package Release information

Press ENTER to process; Enter END command to exit.
```


- 3 From the Update Package Information panel (CMNPGNLO), select I (IMS Information). The Update IMS Package Update Options panel (CMNIMUPD) appears.

```

CMNIMUPD ----- UPDATE: IMS PACKAGE UPDATE OPTIONS -----
OPTION  ===>

      PACKAGE ID: IMSQ000010      STATUS: INS      INSTALL DATE: 20081231

1  IMS Regions   - Add/delete IMS Control Regions
2  ACB Statements - Add/delete/update ACB statements
3  DBD Overrides - Add/delete/update DBD override statements
4  PSB Overrides - Add/delete/update PSB override statements

Press ENTER to process; Enter END command to exit.

```

If the change package information that needs updating is in a FRZ (frozen) status, the GENERAL information category must be selectively unfrozen to allow this information to be updated. This category must be selectively refrozen when finished.



NOTE The updating of any of these options may be restricted through the use of ChangeMan ZMF exits 1 or 41. See the *ChangeMan ZMF Customization Guide* for information about exits.

IMS Control Regions

Option 1 displays IMS control region information on the Update: IMS System Definitions panel (CMNIMSYS).

```

CMNIMSYS ----- UPDATE: IMS SYSTEM DEFINITIONS ----- Row 1 to 5 of 5
COMMAND  ===>                                     SCROLL ===> PAGE

Enter END command to save changes or CANCEL to exit.
Enter * in line command for IMS systems selection list.

      PACKAGE ID: PAYR000019      STATUS: DEV      INSTALL DATE: 20131231

      IMS   SITE      LOGICAL  ACTIVE  DEVCHAR  MFSGEN  PSBGEN  DBDGEN  ACB
      ID    NAME      SITE NAME Y/N    Suffix  Y/N     Y/N     Y/N     Y/N
      ' ' ' C115  SERT#   BASELINE  Y      0      Y      Y      Y      Y
      ' ' ' C115  SERT4   BASELINE  Y      0      Y      Y      Y      Y
      ' ' ' C115  SERT4P1 S4P1UT   Y      0      Y      Y      Y      Y
      ' ' ' C115  SERT4P2 S4P2AT   Y      0      Y      Y      Y      Y
      ' ' ' C115  SERT5   BASELINE  Y      0      Y      Y      Y      Y
      ***** Bottom of data *****

```

From this menu, you can add or delete IMS systems available for your package. Depending on the authority set by the Administrator, you may be able to delete IMS IDs. You may also be able to add IMS IDs, but they must be defined by an Administrator before you will see them under Package Update.

This authority can be controlled through ChangeMan ZMF exits CMNEX001 and CMNEX041. See the chapter titled *User Exits* in the *ChangeMan ZMF Customization Guide*.

You will generally just select or deselect an entire line here. This is because you will just want to update the definitions for one IMS ID at a time.

See Chapter 2 Global Control Region Setup for details.

ACB Control Statements

Option 2 gives you information about your ACB control statements. ACB control statements are generated during the stage process and executed during the install process.

```

CMNIMACB ----- UPDATE: ACB CONTROL STATEMENTS ----- Row 1 to 6 of 10
COMMAND ==>> SCROLL ==>> PAGE

MIXED CASE ==>> NO (Yes/No)

Enter END command to save changes or CANCEL to exit.
Enter * in line command for IMS systems selection list.

PACKAGE ID: PAYR000019 STATUS: DEV INSTALL DATE: 20131231

PSB/DBD LIB IMS SITE LOGICAL ACB CONTROL
SOURCE/TARGET TYPE ID NAME SITE NAME TYPE STATEMENT
'''' S IMSDBD02_____ + DBD C115 SERT#___ BASELINE DBD BUILD___
T IMSDBD02_____ +
'''' S IMSDBD02_____ + DBD C115 SERT4___ BASELINE DBD BUILD___
T IMSDBD02_____ +
'''' S IMSDBD02_____ + DBD C115 SERT4P1_ S4P1UT___ DBD BUILD___
T IMSDBD02_____ +
'''' S IMSDBD02_____ + DBD C115 SERT4P2_ S4P2AT___ DBD BUILD___
T IMSDBD02_____ +
'''' S IMSDBD02_____ + DBD C115 SERT5___ BASELINE DBD BUILD___
T IMSDBD02_____ +
'''' S IMSPSB02_____ + PSB C115 SERT#___ BASELINE PSB BUILD___
T IMSPSB02_____ +

```

This screen is populated only with ACB control statements if there are PSBs or DBDs in your package. ChangeMan ZMF determines if ACB GENs may be needed, and fills in this screen accordingly.

With this option, you can add or delete IMS ACB control statements for this package. The fields in this option are discussed in the next sections.

All online PSB GENs (GENs of PSBs that are allocated to an IMS control region) require an ACB generation.

If you change something in the PSB or DBD specifications of your package (a PSB or a DBD override), ChangeMan ZMF will reflect that change here, in the form of "suggested" ACB control information. You can modify that information on this screen, or if you know you don't need an ACB generation, you can delete it.

The fields in the Update ACB Control Statements panel (CMNIMACB) are described in the following table.

Field	Description
MIXED CASE	N Fold PSB/DBD Source/Target input to upper case regardless of the case you type. Y Process PSB/DBD Source/Target input exactly as you type it, upper and lower case.

Field	Description
Line Command	Type one of these line commands: I Insert R Repeat D Delete * Select
PSB/DBD SOURCE	Type the source name of the PSB or DBD you wish to have an ACB generation performed on. The source must reside in the package or be reassembled from baseline.
PSB/DBD TARGET	Type the load name of the PSB or DBD you wish to have an ACB generation performed on.
LIBRARY TYPE	Type the library type that the PSB or DBD source was staged as. This library type must be an IMS PSB or DBD source sub-type.
IMS ID	A four-character ID that is assigned by the administrator for the control region.
SITE	Type the remote site as defined in ChangeMan ZMF where the IMS subsystem is running. A blank entry to this field defaults to the local ChangeMan ZMF subsystem. You may enter a mask of '*' to display and selection list of the remote sites defined in this ChangeMan ZMF subsystem.
LOGICAL SITE	Type the logical site as defined in ChangeMan ZMF where the IMS subsystem is running. A blank entry to this field defaults to a logical site of baseline. Baseline in this case means installation or production. A logical site is either Baseline or a promotion nickname as defined in ChangeMan ZMF. Promotion nicknames can either be local or remote promotion sites. If the field is blank, it defaults to Baseline. If it is a baseline library, then it is either Production or Baseline(0).
ACB TYPE	Type the IMS type of PSB or DBD for the ACB generation. Only a one character type of P or D is required.
CONTROL STATEMENT	Type the type of ACB control. BUILD or DELETE are the only valid types of control statements. Only a one character type of 'B' or 'D' is required.

DBD Overrides

For Packages, work just like DBD Overrides at the Global and Application levels. Option 3 displays the Update DBD Override Control Statements panel (CMNIMDBD), which allows

you to display the DBD override selections. DBD override statements are generated during the stage process and executed during the install process.

```

CMNIMDBD ----- UPDATE: DBD OVERRIDE CONTROL STATEMENTS Row 12 to 12 of 12
COMMAND ==> SCROLL ==> PAGE

MIXED CASE ==> NO (Yes/No)

Enter END command to save changes or CANCEL to exit.
Enter * in line command for IMS systems selection list.

PACKAGE ID: PAYR000019 STATUS: DEV INSTALL DATE: 20131231

DBD LIBRARY IMS SITE LOGICAL CONTROL
NAME + TYPE ID NAME SITE NAME STATEMENT
....
ORG _____
NEW _____
***** Bottom of data *****
    
```

With this option, you can add or delete IMS DBD control statements for this package. For each override, type the original (ORG) or the revised (NEW) DBD control statement.



NOTE It is of no consequence to do an override if you are not GENing the DBD. Make sure you are going to be re-GENing before specifying the overrides. Check the IMS control region definition (panel CMNIMSYS).

PSB Overrides

PSB Overrides at the Package level work the same as PSB overrides at the Global and Application levels. Option 4 displays the Update PSB Override Control Statement panel (CMNIMPSB) that allows you to display the PSB override selections. PSB override statements are generated during the stage process and processed during the promotion and install processes.

In the following example during the package installation process the original PSBGEN statement with LANG=ASSEM is replaced with LANG=COBOL.

```

CMNIMPSB ----- UPDATE: PSB OVERRIDE CONTROL STATEMENTS Row 12 to 12 of 12
COMMAND ==> SCROLL ==> PAGE

MIXED CASE ==> NO (Yes/No)

Enter END command to save changes or CANCEL to exit.
Enter * in line command for IMS systems selection list.

PACKAGE ID: PAYR000019 STATUS: DEV INSTALL DATE: 20131231

PSB LIBRARY IMS SITE LOGICAL CONTROL
NAME + TYPE ID NAME SITE NAME STATEMENT
....
ORG _____
NEW _____
***** Bottom of data *****
    
```

With this option, you can add or delete IMS PSB control statements for this package.

For each override, enter the original (ORG) or the revised (NEW) PSB control statement.



NOTE It is of no consequence to do an override if you are not GENING the PSB. Make sure you are going to be re-GENING before specifying the overrides. Check the IMS Control Region definitions.

Package Staging Considerations

DBDs are parsed for appropriate information to determine if BUILD statements are required for ACBs.

PSBs are parsed to determine if BUILD statements for ACBs are required. If the ChangeMan ZMF Administrator has specified to always generate BUILD statements, then no parsing is required.

Staging a PSB (IMS/DLI Application)

Select the PSB to stage:

```

CMNSTG02 ----- STAGE: FROM DEVELOPMENT -----
COMMAND ==>

          PACKAGE ID: IMSA000001      STATUS: DEV      INSTALL DATE: 20101231

ISPF LIBRARY:
  PROJECT ==> USER239
  GROUP   ==> TEST
  TYPE    ==> TEXT
  MEMBER  ==>                               (Blank or pattern for list; * for all members)

OTHER PARTITIONED, SEQUENTIAL, OR HFS DATASET:
  DSN      ==> CMNTP.SERT8.BASE.IMSQ.PSB      +
  ORG      ==>                               (PDS, SEQ, PAN, LIB, OTH, HFS)
  EXPAND   ==> NO                            (Yes/No Expand HFS subdirectories)

LIBRARY TYPE      ==> PSB                    (Blank for list)
STAGE NAME        ==>                               +
CONFIRM REQUEST   ==> YES                    (Yes/No)
STAGE MODE        ==> 1                      (1-Online, 2-Batch)
LOCK COMPONENT    ==> YES                    (Yes/No)

Press ENTER to process; Enter END command to exit.
    
```

Select the PSB to STAGE, in this case we chose IM2QPSB:

```

CMNSTG03 M - CMNTP.SERT7.BASE.IMSQ.PSB ----- Row 1 to 3 of 3
COMMAND ==>                               SCROLL ==> PAGE
  NAME      FUNCTION  VV.MM  CREATED          CHANGED          SIZE  INIT  ID
S IM2QPSB   01.00    2008/08/03  2008/08/03 14:40      4     4  USER252
_ IM2Q101   01.01    2008/08/01  2008/08/03 06:45      4     2  USER252
_ Q101PSB
***** Bottom of data *****
    
```

You'll need to fill in the PROCEDURE and LANGUAGE names:

```

CMNSTG04 ----- STAGE: BUILD -----
COMMAND ==>

      PACKAGE ID: IMSA000001      STATUS: DEV      INSTALL DATE: 20101231

STAGED NAME:  + IM2Q101
LIBRARY TYPE:  PSB - IMS PSB SOURCE
DATASET NAME:  + CMNTP.SERT8.BASE.IMSQ.PSB

LANGUAGE      ==>                (Blank for list; applies to source code)
COMPILE PROCEDURE ==>            (Blank for list; ? for designated procedure)
COMPILE PARMS ==>
PGM BINDER PARMS ==>
DB2 PRECOMPILE ==> NO          (Y/N)  PRECOMPILE VARIABLES ==> NO  (Y/N)
OTHER OPTIONS  ==> NO          (Y/N to display other options)
SUPPRESS MESSAGES ==> NO      (Y/N)
JOB STATEMENT INFORMATION:
==> //USER239L JOB (X170,374), 'S4.V710T19', TYPRUN=HOLD,
==> //          CLASS=A,MSGCLASS=Y
==> // *
==> // *

Press ENTER to process; Enter END command to exit.
    
```

Hit enter again you'll be prompted for a language, select ASM:

```

CMNSTG07 ----- LANGUAGE SELECTION LIST ----- Row 1 to 3 of 3
COMMAND ==>                                     SCROLL ==> PAGE

      LANGUAGE
S  ASM
_  COBOL2
_  MFS
***** Bottom of data *****
    
```

Then select CMNPSBGN:

```

CMNSTG06 ----- COMPILE PROCEDURE SELECTION LIST ----- Row 1 to 2 of 2
COMMAND ==>                                     SCROLL ==> PAGE

      PROCEDURE  LANGUAGE  DESCRIPTION
_  CMNDBDGN     ASM        Stage IMS DBD source
S  CMNPSBGN     ASM        Stage IMS PSB source
***** Bottom of data *****
    
```

This is the BUILD panel for the JOB to STAGE the PSB:

```

CMNSTG04 ----- STAGE: BUILD -----
COMMAND ==>

          PACKAGE ID: IMSA000001      STATUS: DEV      INSTALL DATE: 20101231

STAGED NAME:  +  IM2Q101
LIBRARY TYPE:   PSB - IMS PSB SOURCE
DATASET NAME:  +  CMNTP.SERT8.BASE.IMSQ.PSB

LANGUAGE          ==> ASM          (Blank for list; applies to source code)
COMPILE PROCEDURE ==> CMNPSBGN    (Blank for list; ? for designated procedure)
COMPILE PARMS     ==>
PGM BINDER PARMS ==>
DB2 PRECOMPILE    ==> NO          (Y/N)    PRECOMPILE VARIABLES ==> NO    (Y/N)
OTHER OPTIONS     ==> NO          (Y/N to display other options)
SUPPRESS MESSAGES ==> NO          (Y/N)
JOB STATEMENT INFORMATION:
==> //USER239L JOB (X170,374), 'S4.V710T19', TYPRUN=HOLD,
==> //          CLASS=A,MSGCLASS=Y
==> // *
==> // *

Press ENTER to process; Enter END command to exit.

```

Here's the PSB SOURCE:

```

CMNBROWS CMNTP.SERT8.BASE.IMSQ.PSB(IM2Q101) ----- LINE 00000000 COL 001 080
COMMAND ==>                                SCROLL ==> HALF
***** Top of Data *****
          PCB      TYPE=DB,DBDNAME=CUSEDDBD,PROCOPT=L,KEYLEN=4
          SENSEG  NAME=CUSESEGM,PARENT=0
          PSBGEN  PSBNAME=IM2Q101,LANG=ASSEM,CMPAT=YES
          END
***** Bottom of Data *****

```

Cycle through the remaining screens, and the job will be submitted. This is the JESMSGLG showing the PSBGEN job steps executed.

```

1      JES2 JOB LOG -- SYSTEM C001 -- NODE MP3JES2
0
17.37.37 J0854283 ---- THURSDAY, 23 DEC 2010 ----
17.37.37 J0854283 IRR010I USERID SERT      IS ASSIGNED TO THIS JOB.
17.37.51 J0854283 ICH70001I SERT      LAST ACCESS AT 13:37:21 ON THURSDAY, DECEMBER 23, 2010
17.37.51 J0854283 $HASP373 USER239L STARTED - INIT 1 - CLASS A - SYS C001
17.37.53 J0854283 -
17.37.53 J0854283 -STEPNAME PROCSTEP RC EXCP CONN TCB SRB CLOCK SERV WORKLOAD PAGE SWAP VIO SWAPS
17.37.53 J0854283 -SERCOPY          00  203 1185 .00 .00 .0 41228 BATCH      0  0  0  0
17.37.54 J0854283 -WRITE            00  787  597 .00 .00 .0 33800 BATCH      0  0  0  0
17.37.55 J0854283 -ASM              00  164  166 .00 .00 .0 20191 BATCH      0  0  0  0
17.37.56 J0854283 -SSIDN            00  105   78 .00 .00 .0 14179 BATCH      0  0  0  0
17.37.56 J0854283 -ALLOC            00   15   11 .00 .00 .0  1307 BATCH      0  0  0  0
17.37.56 J0854283 -ALLOCIN          00   36   25 .00 .00 .0  3970 BATCH      0  0  0  0
17.37.57 J0854283 -LINK             00  124  322 .00 .00 .0 12964 BATCH      0  0  0  0
17.37.59 J0854283 -BT90PSL         00  237  371 .00 .00 .0 28258 BATCH      0  0  0  0
17.38.00 J0854283 -COPYPSL         00  202  748 .00 .00 .0 39548 BATCH      0  0  0  0
17.38.01 J0854283 -PSBDBD          00   748  556 .00 .00 .0 29586 BATCH      0  0  0  0
17.38.03 J0854283 -SUCCESS          00   857  772 .00 .00 .0 42717 BATCH      0  0  0  0
17.38.03 J0854283 -CHKCOND         00   15   11 .00 .00 .0  1335 BATCH      0  0  0  0
17.38.03 J0854283 -FAILURE          00          0   0 .00 .00 .0    0 BATCH      0  0  0  0
17.38.04 J0854283 -PRINT           00  331  179 .00 .00 .0 33150 BATCH      0  0  0  0
17.38.05 J0854283 -COMPLST         00  154  596 .00 .00 .0 16907 BATCH      0  0  0  0
17.38.06 J0854283 -ILODLST         00   745  565 .00 .00 .0 25551 BATCH      0  0  0  0
17.38.06 J0854283 -USER239L ENDED. NAME=S4.V710T19      TOTAL TCB CPU TIME= .01 TOTAL ELAPSED TIME= .2
17.38.06 J0854283 $HASP395 USER239L ENDED
    
```

Staging a DBD (DLI Database)

Select the DBD for staging:

```

CMNSTG02 ----- STAGE: FROM DEVELOPMENT -----
COMMAND ==>

          PACKAGE ID: IMSA000001      STATUS: DEV      INSTALL DATE: 20101231

ISPF LIBRARY:
PROJECT  ==> USER239
GROUP   ==> TEST
TYPE    ==> CNTL
MEMBER  ==>
                                     (Blank or pattern for list; * for all members)

OTHER PARTITIONED, SEQUENTIAL, OR HFS DATASET:
DSN      ==> CMNTP.SERT8.BASE.IMSQ.DBD      +
ORG      ==>                               (PDS, SEQ, PAN, LIB, OTH, HFS)
EXPAND   ==> NO                             (Yes/No Expand HFS subdirectories)

LIBRARY TYPE  ==> DBD      (Blank for list)
STAGE NAME    ==>
                                                       +
CONFIRM REQUEST ==> YES    (Yes/No)
STAGE MODE    ==> 1       (1-Online, 2-Batch)
LOCK COMPONENT ==> YES    (Yes/No)

Press ENTER to process; Enter END command to exit.
    
```

Then select the DBD for staging, in this case we chose CUSEDDBD:

```

CMNSTG03 M - CMNTP.SERT8.BASE.IMSQ.DBD ----- Row 1 to 1 of 1
COMMAND ==>                               SCROLL ==> PAGE
          NAME  FUNCTION VV.MM  CREATED      CHANGED      SIZE INIT ID
S CUSEDDBD      01.01 2008/08/02 2008/08/03 15:23 00006 00006 USER25
***** Bottom of data *****
    
```


Concurrent development warnings, indicating CUSEDDBD.DBD is present in other PACKAGES:

```

CMNCMP5W ----- CUSEDDBD.DBD ----- Row 1 to 3 of 3
COMMAND ==>                                SCROLL ==> PAGE

Press ENTER or END to process or enter CANCEL command to exit.

This component is included in the following packages:

PACKAGE ID STA PROMOTED VV.MM LAST ACTION      SIZE PROCNAME  ID      RELEASE
IMSQ000010 INS          01.01 2008/08/03 06:55 00006 CMNDBDGN USER25
IMSQ000009 DIS C001AUT 01.01 2008/08/02 11:36 00006 CMNDBDGN USER252
IMSQ000008 DEL          01.03 2008/08/02 11:28 00006 CMNDBDGN USER252
***** Bottom of data *****
    
```

Here's what the Staging JOB will look like:

```

CMNSTG04 ----- STAGE: BUILD -----
COMMAND ==>

          PACKAGE ID: IMSA000001      STATUS: DEV      INSTALL DATE: 20101231

STAGED NAME:  + CUSEDDBD
LIBRARY TYPE:  DBD - IMS DBD SOURCE
DATASET NAME: + CMNTP.SERT8.BASE.IMSQ.DBD

LANGUAGE          ==> ASM      (Blank for list; applies to source code)
COMPILE PROCEDURE ==> CMNDBDGN (Blank for list; ? for designated procedure)
COMPILE PARMS     ==>
PGM BINDER PARMS ==>
DB2 PRECOMPILE   ==> NO      (Y/N)  PRECOMPILE VARIABLES ==> NO      (Y/N)
OTHER OPTIONS    ==> NO      (Y/N to display other options)
SUPPRESS MESSAGES ==> NO      (Y/N)

JOB STATEMENT INFORMATION:
==> //USER239L JOB (X170,374), 'S4.V710T19',
==> //          CLASS=A,MSGCLASS=Y
==> // *
==> // *

Press ENTER to process; Enter END command to exit.
    
```

Here's the DBD SOURCE:

```

BROWSE  CMNTP.SERT8.BASE.IMSQ.DBD(CUSEDDBD) - 01.01 Line 00000000 Col 001 080
Command ==>                                Scroll ==> PAGE
***** Top of Data *****
          DBD  NAME=CUSEDDBD,ACCESS=HDAM,RMNAME=(DFSHDC40,1,500,824)
          DATASET DD1=CUSED1,DEVICE=3390
          SEGM  NAME=CUSESEGM,BYTES=200,PARENT=0
          FIELD NAME=(CUSESEQ,SEQ,U),BYTES=4,START=1,TYPE=C
          FIELD NAME=CUSEDATA,BYTES=196,START=5,TYPE=C
          DBDGEN
***** Bottom of Data *****
    
```

Excerpts from the DBDGEN:

```

JES2 JOB LOG -- SYSTEM C001 -- NODE MP3JES2
15.24.22 J0525271 ---- SUNDAY, 03 AUG 2008 ----
15.24.22 J0525271 IRR010I USERID SERT IS ASSIGNED TO THIS JOB.
15.24.23 J0525271 ICH70001I SERT LAST ACCESS AT 14:56:22 ON SUNDAY, AUGUST 3, 2008
15.24.23 J0525271 $HASP373 S7IMSDDBD STARTED - INIT 1 - CLASS A - SYS C001
15.24.24 J0525271 -
15.24.24 J0525271 -JOBNAME STEPNAME PROCSTEP RC EXCP CONN TCB SRB CLOCK SERV PG PAGE SWAP VIO SWAPS
15.24.24 J0525271 -S7IMSDDBD SERCOPY 00 221 723 .00 .00 .0 27852 0 0 0 0 0
15.24.25 J0525271 -S7IMSDDBD WRITE 00 628 367 .00 .00 .0 49676 0 0 0 0 0
15.24.26 J0525271 -S7IMSDDBD ASM 04 288 232 .00 .00 .0 27824 0 0 0 0 0
15.24.27 J0525271 -S7IMSDDBD SSIDN 00 107 65 .00 .00 .0 10398 0 0 0 0 0
15.24.27 J0525271 -S7IMSDDBD ALLOC 00 15 6 .00 .00 .0 996 0 0 0 0 0
15.24.27 J0525271 -S7IMSDDBD ALLOCIN 00 35 15 .00 .00 .0 2729 0 0 0 0 0
15.24.28 J0525271 -S7IMSDDBD LINK 00 120 57 .00 .00 .0 10436 0 0 0 0 0
15.24.28 J0525271 -S7IMSDDBD BT90DBL 00 200 83 .00 .00 .0 15220 0 0 0 0 0
15.24.30 J0525271 -S7IMSDDBD COPYLOD 00 234 1146 .00 .00 .0 30624 0 0 0 0 0
15.24.30 J0525271 -S7IMSDDBD PSBDBD 00 574 303 .00 .00 .0 23008 0 0 0 0 0
15.24.31 J0525271 -S7IMSDDBD SUCCESS 00 678 326 .00 .00 .0 31819 0 0 0 0 0
15.24.31 J0525271 -S7IMSDDBD CHKCOND 00 15 6 .00 .00 .0 1008 0 0 0 0 0
15.24.32 J0525271 -S7IMSDDBD FAILURE FLUSH 0 0 .00 .00 .0 0 0 0 0 0
15.24.32 J0525271 -S7IMSDDBD PRINT 00 345 196 .00 .00 .0 24290 0 0 0 0 0
15.24.32 J0525271 -S7IMSDDBD COMPLST 00 132 73 .00 .00 .0 12006 0 0 0 0 0
15.24.33 J0525271 -S7IMSDDBD ILODLST 00 561 296 .00 .00 .0 27801 0 0 0 0 0
15.24.34 J0525271 -S7IMSDDBD ENDED. NAME-DEFINE UCAT TOTAL TCB CPU TIME= .01 TOTAL ELAPSED TIME= .1
15.24.34 J0525271 $HASP395 S7IMSDDBD ENDED
*****
* DDNAME: COPYLOD.SYSPRINT *
*****
IEBCOPY MESSAGES AND CONTROL STATEMENTS PAGE 1
IEB1135I IEBCOPY FMID HDZ1180 SERVICE LEVEL UA27650 DATED 20060711 DFSMS 01.08.00 z/OS 01.08.00 HBB7730 CPU 2096
IEB1035I S7IMSDDBD COPYLOD 15:24:29 SUN 03 AUG 2008 PARM='LIST=NO'
COPYMOD OUTDD=SYS00003,INDD=((SYSUT1,R)),LIST=NO * Copy
IEB190I MAXIMUM BLOCK SIZE IS 27920, MINIMUM BLOCK SIZE IS 1024
IEB1013I COPYING FROM PDS INDD=SYSUT1 VOL=SRSM7F DSN=SYS08216.T152422.RA000.S7IMSDDBD.LOAD.H04
IEB1014I TO PDS OUTDD=SYS00003 VOL=SRSM31 DSN=CMNTP.SERT7.DEV.IMSQ.#000011.DBL
IEB1098I 1 OF 1 MEMBERS COPIED FROM INPUT DATA SET REFERENCED BY SYSUT1
ChangeMan(R) 2009 CMNBATCH - 6.1.0 2008/08/03 15:24:33
ATTEMPTING TO INITIATE DIALOG WITH CHANGE MAN SUBTASK
SESSION ESTABLISHED WITH CHANGE MAN SUBTASK
SYSIN: IMSQ000011 90 RTP=ILOD
SYSIN: IMSQ000011 90 SLT=DBD
SYSIN: IMSQ000011 90 SNM=CUSEDDBD
SYSIN: IMSQ000011 90 SID=USER25
SYSIN: IMSQ000011 90 SSI=5B65C4E3
SYSIN: IMSQ000011 90 PRC=CMNDBDGN
SYSIN: IMSQ000011 90 LLT=LST
SYSIN: IMSQ000011 90 LNM=CUSEDDBD
Component CUSEDDBD is in ACTIVE status and the package master
LOAD record has been updated accordingly. IMSQ000011
LOAD COMPONENT ACTIVATED. IMSQ000011
LOAD COMPONENT ACTIVATION LOGGED. IMSQ000011
HISTORY RECORD has been updated accordingly. IMSQ000011
SYSIN: IMSQ000011 90 CID=
END OF DATA ON SYSIN - TERMINATING
SESSION TERMINATED WITH CHANGE MAN STARTED TASK
***** BOTTOM OF DATA *****

```

Staging MFS (IMS Message Formats)

Here's the MFS source:

```

BROWSE      CMNTP.SERT7.BASE.IMSQ.MFS(IM2QFMT) - 01.00 Line 00000000 Col 001 080
Command ===>                               Scroll ===> PAGE
***** Top of Data *****
          PRINT NOGEN
SQDF1      FMT
          DEV  TYPE=(3270,2),FEAT=IGNORE,DSCA=X'00A0',SYSMSG=MSGFLD
          DIV  TYPE=INOUT
          DPAGE CURSOR=((15,37))
          DFLD 'AUBREY SUSAN SUPPORT SYSTEMS',POS=(03,26,01)
          DFLD 'TRANCODE ',POS=(15,27)
TRANCODE   DFLD POS=(15,37),LTH=9
          DFLD 'STARTNUM ',POS=(16,27)
STARTNUM   DFLD POS=(16,37),LTH=9
          DFLD 'ENDNUM ',POS=(17,27)
ENDNUM     DFLD POS=(17,37),LTH=9
          DFLD 'RESULT ',POS=(18,27)
RESULT     DFLD POS=(18,37),LTH=9
MSGFLD     DFLD POS=(21,02),LTH=79
          FMTEND
SQM01      MSG  TYPE=OUTPUT,SOR=(SQDF1,IGNORE),NXT=SQMI1
          SEG
          MFLD TRANCODE,LTH=9
          MFLD STARTNUM,LTH=9
          MFLD ENDNUM,LTH=9
          MFLD RESULT,LTH=9
          MSGEND
SQMI1      MSG  TYPE=INPUT,SOR=(SQDF1,IGNORE),NXT=SQM01
          SEG
          MFLD TRANCODE,LTH=9
          MFLD STARTNUM,LTH=9
          MFLD ENDNUM,LTH=9
          MSGEND
          END
***** Bottom of Data *****

```

DIFs and DOFs and MIDs and MODs. The Device Input Format/Device Output Format name is SQDF1 (TYPE=INOUT). The Message Output Descriptor name is SQM01. The Device Input Format name is SQMI1. To initiate this transaction, issue a /FORMAT SQM01 from the IMS application terminal.

To stage the MFS control blocks:

```

CMNSTG02 ----- STAGE: FROM DEVELOPMENT -----
COMMAND ==>

          PACKAGE ID: IMSQ000011      STATUS: DEV      INSTALL DATE: 20081231

ISPF LIBRARY:
  PROJECT  ==>
  GROUP    ==>
  TYPE     ==>
  MEMBER   ==>                (Blank or pattern for list; * for all members)

OTHER PARTITIONED OR SEQUENTIAL DATASET:
  DSN      ==> 'CMNTP.SERT7.BASE.IMSQ.MFS'
  ORG      ==>                (PDS, SEQ, PAN, LIB, OTH)

LIBRARY TYPE      ==> MFS      (Blank for list)
STAGE NAME        ==>                (Optional if organization not SEQ)
CONFIRM REQUEST   ==> YES      (Y/N)
STAGE MODE        ==> 1        (1-Online, 2-Batch)
LOCK COMPONENT    ==> YES      (Y/N)

Press ENTER to process; Enter END command to exit.
    
```

Select the MFS member to STAGE, in this case we chose IM2QFMT

```

CMNSTG03 M - CMNTP.SERT7.BASE.IMSQ.MFS ----- Row 1 to 3 of 3
COMMAND ==>                SCROLL ==> PAGE
  NAME      FUNCTION VV.MM  CREATED      CHANGED      SIZE  INIT  ID
s IM2QFMT   01.00  2008/08/03  2008/08/03  14:39    30   30  USER252
_ IM2Q101   01.01  2008/08/01  2008/08/03  06:47    30   30  USER252
_ SQMFS
***** Bottom of data *****
    
```

Need to fill in Language and Procedure:

```

CMNSTG04 ----- STAGE: BUILD -----
COMMAND ==>

          PACKAGE ID: IMSQ000011      STATUS: DEV      INSTALL DATE: 20081231

STAGED NAME:      IM2QFMT
LIBRARY TYPE:     MFS - MFS SOURCE
DATASET NAME:     CMNTP.SERT7.BASE.IMSQ.MFS

LANGUAGE          ==>                (Blank for list; applies to source code)
COMPILE PROCEDURE ==>                (Blank for list; ? for designated procedure)
COMPILE PARMS     ==>
PGM BINDER PARMS ==>
DB2 PRECOMPILE    ==> NO              (Y/N)  PRECOMPILE VARIABLES ==> YES (Y/N)
OTHER OPTIONS     ==> YES              (Y/N to display other options)
SUPPRESS MESSAGES ==> NO              (Y/N)

JOB STATEMENT INFORMATION:
==> //S7IMSMFS JOB (AMW,000), 'DEFINE UCAT',MSGCLASS=Y,_____
==> //                TIME=(2),NOTIFY=USER25_____
==> //*_____
==> //*_____

Press ENTER to process; Enter END command to exit.
    
```

Language:

```

CMNSTG07 ----- LANGUAGE SELECTION LIST ----- Row 1 to 6 of 6
COMMAND ==> SCROLL ==> PAGE

LANGUAGE
_ ASM
_ COBOL
_ COBOL2
_ PLI
_ SQL
s MFS
***** Bottom of data *****
    
```

Procedure:

```

CMNSTG04 ----- STAGE: BUILD -----
COMMAND ==>

PACKAGE ID: IMSQ000011 STATUS: DEV INSTALL DATE: 20081231

STAGED NAME: IM2QFMT
LIBRARY TYPE: MFS - MFS SOURCE
DATASET NAME: CMNTP.SERT7.BASE.IMSQ.MFS

LANGUAGE ==> MFS (Blank for list; applies to source code)
COMPILE PROCEDURE ==> CMNMFSGN (Blank for list; ? for designated procedure)
COMPILE PARMS ==>
PGM BINDER PARMS ==>
DB2 PRECOMPILE ==> NO (Y/N) PRECOMPILE VARIABLES ==> YES (Y/N)
OTHER OPTIONS ==> YES (Y/N to display other options)
SUPPRESS MESSAGES ==> NO (Y/N)
JOB STATEMENT INFORMATION:
==> //S7IMSMFS JOB (AMW,000), 'DEFINE UCAT',MSGCLASS=Y,_____
==> // TIME=(2),NOTIFY=USER25_____
==> //*_____
==> //*_____

Press ENTER to process; Enter END command to exit.
    
```

Excerpts from the MFSGEN:

```

JES2 JOB LOG -- SYSTEM C001 -- NODE MP3JES2

15.50.27 J0525272 ---- SUNDAY, 03 AUG 2008 ----
15.50.27 J0525272 IRR010I USERID SERT IS ASSIGNED TO THIS JOB.
15.50.28 J0525272 ICH70001I SERT LAST ACCESS AT 15:24:23 ON SUNDAY, AUGUST 3, 2008
15.50.28 J0525272 $HASP373 S7IMSMFS STARTED - INIT 1 - CLASS A - SYS C001
15.50.29 J0525272 -
15.50.29 J0525272 -JOBNAME STEPNAME PROCSTEP RC EXCP CONN TCB SRB CLOCK SERV PG PAGE SWAP VIO SWAPS
15.50.29 J0525272 -S7IMSMFS SERCOPY 00 224 705 .00 .00 .0 30032 0 0 0 0 0 0
15.50.30 J0525272 -S7IMSMFS WRITE 00 621 369 .00 .00 .0 26367 0 0 0 0 0 0
15.50.31 J0525272 -S7IMSMFS MFSS1 04 166 98 .00 .00 .0 13373 0 0 0 0 0 0
15.50.32 J0525272 -S7IMSMFS MFSS2 00 128 75 .00 .00 .0 11763 0 0 0 0 0 0
15.50.32 J0525272 -S7IMSMFS BT90MFR 04 92 45 .00 .00 .0 6086 0 0 0 0 0 0
15.50.33 J0525272 -S7IMSMFS COPYMFR 00 179 599 .00 .00 .0 13832 0 0 0 0 0 0
15.50.34 J0525272 -S7IMSMFS BT90FMT 04 90 43 .00 .00 .0 5738 0 0 0 0 0 0
15.50.35 J0525272 -S7IMSMFS COPYFMT 00 179 590 .00 .00 .0 12926 0 0 0 0 0 0
15.50.36 J0525272 -S7IMSMFS SUCCESS 00 708 326 .00 .00 .0 33780 0 0 0 0 0 0
15.50.36 J0525272 -S7IMSMFS CHKCOND 00 15 6 .00 .00 .0 990 0 0 0 0 0 0
15.50.36 J0525272 -S7IMSMFS FAILURE FLUSH 00 0 0 .00 .00 .0 0 0 0 0 0 0
15.50.37 J0525272 -S7IMSMFS PRINT 00 400 266 .00 .00 .0 21794 0 0 0 0 0 0
15.50.37 J0525272 -S7IMSMFS COMPLST 00 138 118 .00 .00 .0 10786 0 0 0 0 0 0
15.50.38 J0525272 -S7IMSMFS ILODLST 00 565 299 .00 .00 .0 17975 0 0 0 0 0 0
15.50.39 J0525272 -S7IMSMFS ENDED. NAME-DEFINE UCAT TOTAL TCB CPU TIME= .00 TOTAL ELAPSED TIME= .1
15.50.39 J0525272 $HASP395 S7IMSMFS ENDED
    
```

More excerpts from the MFSGEN:

```

*****
* DDNAME: MFSS1.UTPRINT *
* DDNAME: MFSS2.UTPRINT *
*****

DFS1011I SQDF1 DOF SIZE=0184 3270 24X80 027F IGNORE DATE=08/03/08 TIME=15.50.31 ADDED.
DFS1011I SQDF1 DIF SIZE=0042 3270 24X80 027F IGNORE DATE=08/03/08 TIME=15.50.31 ADDED.
DFS1011I SQMI1 MSG SIZE=0048 DATE=08/03/08 TIME=15.50.31 ADDED.
DFS1011I SQM01 MSG SIZE=004A DATE=08/03/08 TIME=15.50.31 ADDED.

DFS1060I SQDF1 BUFFER SIZE = 0274
DFS1048I SQDF1 DOF SIZE=0184 3270 24X80 027F IGNORE DATE=08/03/08 TIME=15.50.31 CREATED.
DFS1048I SQDF1 DIF SIZE=0042 3270 24X80 027F IGNORE DATE=08/03/08 TIME=15.50.31 CREATED.
DFS1040I DEVICE MAPPING FOR FMT=SQDF1 DEVICE=3270 - 2 TYPE=INOUT DPAGE=01 PHYSICAL PAGE=01

*-----*
AUBREY SUSAN SUPPORT SYSTEMS

TRANCODE _____
STARTNUM _____
ENDNUM _____
RESULT _____

*-----*

DFS1026I SQMI1 MESSAGE DESCRIPTOR STRUCTURE:
DFS1021I SQMI1 MSG
DFS1023I SEG00025 SEG
DFS1024I MFL00026 MFLD
DFS1024I MFL00027 MFLD
DFS1024I MFL00028 MFLD
DFS1028I END OF DESCRIPTOR STRUCTURE.
DFS1060I SQMI1 BUFFER SIZE = 0031
DFS1048I SQMI1 MSG SIZE=0048 DATE=08/03/08 TIME=15.50.31 CREATED.
DFS1026I SQM01 MESSAGE DESCRIPTOR STRUCTURE:
DFS1021I SQM01 MSG
DFS1023I SEG00018 SEG
DFS1024I MFL00019 MFLD
DFS1024I MFL00020 MFLD
DFS1024I MFL00021 MFLD
DFS1024I MFL00022 MFLD
DFS1028I END OF DESCRIPTOR STRUCTURE.
DFS1048I SQM01 MSG SIZE=004A DATE=08/03/08 TIME=15.50.31 CREATED.

```

The remaining excerpts from the MFSGEN:

```

*****
* DDNAME: COPYMFR.SYSPRINT *
*****

SER9403I SERCOPY options: BSAM FULL REALLOC RETRY RSTATS
SER9405I Input dsname: SYS08216.T155027.RA000.S7IMSMFS.TEMPMFR.H04
SER9406E Output dsname: CMNTP.SERT7.DEV.IMSQ.#000011.MFR
SER9407I Begin copy: INFILE=CMNTP.SESYSUT1 OUTFILE=SYS00003
SER9420I Member successfully copied: SQDF1
SER9420I Member successfully copied: SQMI1
SER9420I Member successfully copied: SQM01
SER9424I Number of members copied: 3
SER9425I Copy completed successfully
*****
* DDNAME: COPYFMT.SYSPRINT *
*****

SER9403I SERCOPY options: BSAM FULL LMOD MFS REALLOC RETRY
SER9405I Input dsname: SYS08216.T155027.RA000.S7IMSMFS.TEMPFMT.H04
SER9406E Output dsname: CMNTP.SERT7.DEV.IMSQ.#000011.FMT
SER9407I Begin copy: INFILE=CMNTP.SESYSUT1 OUTFILE=SYS00005
SER9420I Member successfully copied: "sQDF1
SER9420I Member successfully copied: "SQDF1
SER9420I Member successfully copied: SQMI1
SER9420I Member successfully copied: SQM01
SER9424I Number of members copied: 4
SER9425I Copy completed successfully

Component "sQDF1 is in ACTIVE status and the package master
LOAD record has been updated accordingly. IMSQ000011
LOAD COMPONENT ACTIVATED. IMSQ000011
LOAD COMPONENT ACTIVATION LOGGED. IMSQ000011
HISTORY RECORD has been updated accordingly. IMSQ000011
SYSIN: IMSQ000011 90 LNM= "SQDF1
Component "SQDF1 is in ACTIVE status and the package master
LOAD record has been updated accordingly. IMSQ000011
LOAD COMPONENT ACTIVATED. IMSQ000011
LOAD COMPONENT ACTIVATION LOGGED. IMSQ000011
HISTORY RECORD has been updated accordingly. IMSQ000011
SYSIN: IMSQ000011 90 LNM=SQMI1
Component SQMI1 is in ACTIVE status and the package master
LOAD record has been updated accordingly. IMSQ000011
LOAD COMPONENT ACTIVATED. IMSQ000011
LOAD COMPONENT ACTIVATION LOGGED. IMSQ000011
HISTORY RECORD has been updated accordingly. IMSQ000011
SYSIN: IMSQ000011 90 LNM=SQM01
Component SQM01 is in ACTIVE status and the package master
LOAD record has been updated accordingly. IMSQ000011
LOAD COMPONENT ACTIVATED. IMSQ000011
LOAD COMPONENT ACTIVATION LOGGED. IMSQ000011
HISTORY RECORD has been updated accordingly. IMSQ000011
END OF DATA ON SYSIN - TERMINATING
SESSION TERMINATED WITH CHANGE MAN STARTED TASK
    
```

Staging the DBB (DB2 Bind requirements).

Here's the source:

```

CMNTP.SERT7.BASE.IMSQ.DBB(IM2Q101) - 01.01          Columns 00001 00080
===>                                               Scroll ==> PAGE
***** Top of Data *****
BIND PLAN(IM2Q101) PKLIST(CMN7.IM2Q101) ACT(REP) ISO(CS) EXPLAIN(NO) - 00030000
VALIDATE(BIND) ACQUIRE(USE) RELEASE(COMMIT)          00040000
***** Bottom of Data *****
    
```

Let's stage it:

```

CMNSTG03 M - CMNTP.SERT7.BASE.IMSQ.DBB ----- Row 1 to 2 of 2
COMMAND ===>                                SCROLL ===> PAGE
  NAME      FUNCTION VV.MM  CREATED      CHANGED      SIZE INIT  ID
_ CI2Q101   01.02  2008/03/27  2008/07/30  18:50      4   2  USER25
s IM2Q101   01.01  2008/08/01  2008/08/03  06:44      4   4  USER252
***** Bottom of data *****
    
```

Another warning:

```

CMNSTGWP ----- ChangeMan(R) STAGE WARNING -----
COMMAND ===>

*****
*
*   Staging member IM2Q101 will overlay USER25's version.
*
* INSTRUCTIONS:
*
*   Press ENTER to stage this component
*   Enter END command to cancel request.
*
*****
    
```

And another warning:

```

CMNCMP5W ----- IM2Q101.DBB ----- Row 1 to 7 of 7
COMMAND ===>                                SCROLL ===> PAGE

Press ENTER or END to process or enter CANCEL command to exit.

This component is included in the following packages:

PACKAGE ID STA PROMOTED VV.MM  LAST ACTION      SIZE PROCNAME  ID    RELEASE
IMSQ000011 DEV          01.01  2008/08/03  14:44  00004      USER25
IMSQ000010 INS          01.01  2008/08/03  06:55  00004      USER25
IMSQ000009 DIS C001AUT  01.01  2008/08/02  11:36  00004      USER252
IMSQ000008 DEL          01.01  2008/08/02  11:28  00004      USER252
IMSQ000006 DEL          01.01  2008/08/02  08:27  00004      USER252
IMSQ000004 DIS C001AUT  01.01  2008/08/01  17:51  00004      USER25
IMSQ000003 DIS C001AUT  01.01  2008/08/01  17:15  00004      USER25
***** Bottom of data *****
    
```

The DBB member is STAGED

```

CMNSTG03 M - CMNTP.SERT7.BASE.IMSQ.DBB ----- IM2Q101 STAGED
COMMAND ===>                                SCROLL ===> PAGE
  NAME      FUNCTION VV.MM  CREATED      CHANGED      SIZE INIT  ID
_ CI2Q101   01.02  2008/03/27  2008/07/30  18:50      4   2  USER25
_ IM2Q101  *STAGE  01.01  2008/08/01  2008/08/03  06:44      4   4  USER252
***** Bottom of data *****
    
```


Staging the COBOL source.

Make sure the DB2 ACTIVE LIBRARIES are set up properly:

```
CMNLD2AL ----- DB2 ACTIVE LIBRARY LIST ----- Row 1 to 4 of 4
COMMAND ==> SCROLL ==> PAGE

Enter END command to save changes or CANCEL to exit.

Enter * in LOGICAL NAME field for DB2 logical subsystem name list.

Active library names are Promotion, Production, Temporary or Baseline libraries
for DB2 component types. Enter HELP command for more information.

      LOGICAL   BIND
      NAME     /SQL DB2 ACTIVE LIBRARY NAME
'''' PROM810_ B   CMNTP.SERT7.PROM.IMSQ.C001AUT.DBR_____
'''' PROM810_ B   CMNTP.SERT7.PROM.IMSQ.C001AUT.DBB_____
'''' PROM810_ B   CMNTP.SERT7.PROM.IMSQ.C001AQA.DBR_____
'''' PROM810_ B   CMNTP.SERT7.PROM.IMSQ.C001AQA.DBB_____
***** Bottom of data *****
```

Select IM2Q101 for Staging:

```
CMNSTG03 M - CMNTP.SERT7.BASE.IMSQ.SRC ----- Row 1 to 1 of 1
COMMAND ==> SCROLL ==> PAGE
      NAME     FUNCTION VV.MM  CREATED      CHANGED      SIZE INIT  ID
s IM2Q101          01.01 2008/08/01 2008/08/03 06:50   102  102 USER252
***** Bottom of data *****
```

After some more warnings you'll get the following: Make sure DB2 PRECOMPILE is set to YES

```
CMNSTG04 ----- STAGE: BUILD ----- PRIOR ASSUMED
COMMAND ==>

      PACKAGE ID: IMSQ000011      STATUS: DEV      INSTALL DATE: 20081231

STAGED NAME:      IM2Q101
LIBRARY TYPE:     SRC - Source for programs to be Linked Executable
DATASET NAME:     CMNTP.SERT7.BASE.IMSQ.SRC

LANGUAGE          ==> COBOL2      (Blank for list; applies to source code)
COMPILE PROCEDURE ==> CMNCOB2     (Blank for list; ? for designated procedure)
COMPILE PARMS     ==>
PGM BINDER PARMS ==>
DB2 PRECOMPILE    ==> YES         (Y/N)  PRECOMPILE VARIABLES ==> YES (Y/N)
OTHER OPTIONS     ==> YES         (Y/N to display other options)
SUPPRESS MESSAGES ==> NO         (Y/N)

JOB STATEMENT INFORMATION:
==> //S7IMSSRC JOB (AMW,000), 'DEFINE UCAT',MSGCLASS=Y,_____
==> //          TIME=(2),NOTIFY=USER25_____
==> //*_____
==> //*_____

Press ENTER to process; Enter END command to exit.
```

Select C105:

```
CMNSTG18 ----- DB2 PHYSICAL SUBSYSTEMS ----- Row 1 to 2 of 2
COMMAND ==>                                     SCROLL ==> PAGE

VERSION ==> _____

If differences exist, select a DB2 subsystem.  ENTER  to continue.
Enter END command to exit.

  DB2          DB2 SYSTEM
SUBSYS  SITE   LOAD LIBRARY
_  C101  SERT7  SYS2.DB2810.SDSNLOAD
s  C105  SERT7  SYS2.DB2810.SDSNLOAD
***** Bottom of data *****
```

Excerpts from the job to Stage IM2Q101:

```

JES2 JOB LOG -- SYSTEM C001 -- NODE MP3JES2
16.15.47 J0525276 ---- SUNDAY, 03 AUG 2008 ----
16.15.47 J0525276 IRR010I USERID SERT IS ASSIGNED TO THIS JOB.
16.15.48 J0525276 ICH70001I SERT LAST ACCESS AT 15:50:28 ON SUNDAY, AUGUST 3, 2008
16.15.48 J0525276 $HASP373 S7IMSSRC STARTED - INIT 1 - CLASS A - SYS C001
16.15.49 J0525276 -
16.15.49 J0525276 -JOBNAME STEPNAME PROCSTEP RC EXCP CONN TCB SRB CLOCK SERV PG PAGE SWAP VIO SWAPS
16.15.49 J0525276 -S7IMSSRC SERCOPY 00 191 561 .00 .00 .0 29895 0 0 0 0 0
16.15.50 J0525276 -S7IMSSRC WRITE 00 606 320 .00 .00 .0 24172 0 0 0 0 0
16.15.51 J0525276 -S7IMSSRC DB2PC 04 432 188 .00 .00 .0 20044 0 0 0 0 0
16.15.51 J0525276 -S7IMSSRC BT90DBR 04 93 46 .00 .00 .0 5977 0 0 0 0 0
16.15.52 J0525276 -S7IMSSRC COBOL2 00 867 384 .00 .00 .0 27748 0 0 0 0 0
16.15.53 J0525276 -S7IMSSRC SSIDN 00 111 49 .00 .00 .0 10093 0 0 0 0 0
16.15.53 J0525276 -S7IMSSRC ALLOC 00 16 6 .00 .00 .0 10800 0 0 0 0 0
16.15.53 J0525276 -S7IMSSRC ALLOCIN 00 37 16 .00 .00 .0 2863 0 0 0 0 0
16.15.54 J0525276 -S7IMSSRC LINK 00 332 302 .00 .00 .0 22948 0 0 0 0 0
16.15.55 J0525276 -S7IMSSRC BT90L0D 00 208 82 .00 .00 .0 17339 0 0 0 0 0
16.15.56 J0525276 -S7IMSSRC COPYL0D 00 227 852 .00 .00 .0 29052 0 0 0 0 0
16.15.57 J0525276 -S7IMSSRC COPYDBR 00 176 549 .00 .00 .0 12436 0 0 0 0 0
16.15.58 J0525276 -S7IMSSRC SUCCESS 00 689 323 .00 .00 .0 22269 0 0 0 0 0
16.15.58 J0525276 -S7IMSSRC CHKCOND 00 18 8 .00 .00 .0 1043 0 0 0 0 0
16.15.58 J0525276 -S7IMSSRC FAILURE FLUSH 0 0 .00 .00 .0 0 0 0 0 0
16.15.59 J0525276 -S7IMSSRC PRINT 00 874 259 .00 .00 .0 34587 0 0 0 0 0
16.15.59 J0525276 -S7IMSSRC COMPLST 00 133 73 .00 .00 .0 12226 0 0 0 0 0
16.16.00 J0525276 -S7IMSSRC ILODLST 00 560 296 .00 .00 .0 20844 0 0 0 0 0
16.16.01 J0525276 -S7IMSSRC ENDED. NAME-DEFINE UCAT TOTAL TCB CPU TIME=.01 TOTAL ELAPSED TIME=.2
16.16.01 J0525276 $HASP395 S7IMSSRC ENDED
000176 MAIN-ROUTINE.
000177 * (1)
000178 *****EXEC SQL WHENEVER SQLERROR CONTINUE END-EXEC.
000179 * (2)
000180 CALL 'CBLTDLI' USING GET-UNIQUE EXT 37
000181 IO-PCB 151
000182 INPUT-MESSAGE. 42
000183 * (3)
000184 IF IO-STATUS NOT = SPACES 153 IMP
000185 * (4)
000186 1 GOBACK.
000187 * (5)
000188 PERFORM SQL-CALL. 198
000189 MOVE INPUT-TEXT TO OUTPUT-TEXT 45 54
000190 MOVE SQLCODE TO NUMBER1 IN OUTPUT-TEXT. 11 56 54
000191 MOVE SQLVALUE TO RESULT IN OUTPUT-TEXT. 33 58 54
000192 * (6)
000193 CALL 'CBLTDLI' USING INSRT EXT 38
000194 IO-PCB 151
000195 OUTPUT-MESSAGE. 51
000196 * (7)
000197 GO TO MAIN-ROUTINE. 176
000198 SQL-CALL.
000199 MOVE NUMBER1 IN INPUT-TEXT TO LOWNUM. 47 45 34
000200 MOVE NUMBER2 IN INPUT-TEXT TO HIGHNUM. 48 45 35
000201 *****EXEC SQL DECLARE TESTCURS CURSOR FOR
000202 ***** SELECT COUNT(*) FROM SQSYN
000203 ***** WHERE KSEQ BETWEEN :LOWNUM AND :HIGHNUM
000204 ***** AND K250K = 2
000205 ***** END-EXEC.
000206 *****EXEC SQL OPEN TESTCURS END-EXEC.
000207 PERFORM SQL-INITIAL UNTIL SQL-INIT-DONE 160 67
000208 CALL "DSNHLI" USING SQL-PLIST3. EXT 68
000209 *****EXEC SQL
000210 ***** FETCH TESTCURS INTO :SQLVALUE
000211 ***** END-EXEC.
000212 PERFORM SQL-INITIAL UNTIL SQL-INIT-DONE 160 67
000213 CALL "DSNHLI" USING SQL-PLIST4. EXT 106
000214 *****EXEC SQL
000215 ***** CLOSE TESTCURS
000216 ***** END-EXEC.
000217 PERFORM SQL-INITIAL UNTIL SQL-INIT-DONE 160 67
000218 CALL "DSNHLI" USING SQL-PLIST5. EXT 135

```

More excerpts from the JOB to Stage COBOL/DB2/DLI component IM2Q101

```

*****
* DDNAME: DB2PC.SYSPRINT *
*****

DB2 SQL PRECOMPILER          VERSION 8 REL. 1.0                      PAGE 1
DSNH527I W      DSNHOPTS THE PRECOMPILER ATTEMPTED TO USE THE DB2-SUPPLIED DSNHDECP MODULE
OPTIONS SPECIFIED: HOST(COB2).
DSNH024I W      DSNHOPTS SUBOPTION "COB2" INVALID FOR OPTION "HOST"
OPTIONS USED - SPECIFIED OR DEFAULTED
  ATTACH(TSO)
  CCSID(500)
  NOPADTSTR
  CONNECT(2)
  DEC(15)
  FLAG(I)
  HOST(IBMCOB)
  LINECOUNT(60)
  MARGINS(8,72)
  NEWFUN(YES)
  ONEPASS
  OPTIONS
  PERIOD
  QUOTE
  QUOTESQL
  NOSOURCE
  STDSQL(NO)
  SQL(DB2)
  NOXREF
DB2 SQL PRECOMPILER          MESSAGES                                PAGE 2
DSNH050I I      DSNHMAIN WARNINGS HAVE BEEN SUPPRESSED DUE TO LACK OF TABLE DECLARATIONS
DB2 SQL PRECOMPILER          STATISTICS                               PAGE 3
SOURCE STATISTICS
  SOURCE LINES READ: 102
  NUMBER OF SYMBOLS: 50
  SYMBOL TABLE BYTES EXCLUDING ATTRIBUTES: 3656
THERE WERE 3 MESSAGES FOR THIS PROGRAM.
THERE WERE 0 MESSAGES SUPPRESSED BY THE FLAG OPTION.
172344 BYTES OF STORAGE WERE USED BY THE PRECOMPILER.
RETURN CODE IS 4

*****
* DDNAME: BT90DBR.SYSPRINT *
*****

ChangeMan(R) 2009 CMNBAT90 - 6.1.0  SUNDAY AUGUST 3, 2008   16:15:51
Execution parameter: BINDLIST=NO
SYSIN: PKG=IMSQ000011
SYSIN: SLT=SRC
SYSIN: SNM=IM2Q101
SYSIN: SID=USER25
SYSIN: SSI=5B65D048
SYSIN: LLT=DBR
SYSIN: SUP=NO
CMN4575A - Unable to open BAT90LIB file, subroutine analysis is incomplete, this may affect audit results.

```

Package Promotion Considerations

DBD and/or PSB override information is processed to determine if DBDs and/or PSBs will need to be GENed. If you (the administrator) specified that you always want to generate PSBs and/or DBDs, then the override information is processed to determine if the override should be done first (before the generation takes place).

IMS control regions are processed for the appropriate control region. It is also determined whether the development DEVCHAR suffix is different from the production one, or if the referal libraries need to be updated. In the latter case, an MSF generation is required.

Let's Promote package IMSQzzzz; Here's what's in the package:

```

CMNSTG01 ----- STAGE: IMSQ000011 COMPONENTS ----- Row 1 to 5 of 5
COMMAND ==>
          NAME  TYPE  STATUS    CHANGED          PROCNAME  ID    REQUEST
___ CUSEDDBD  DBD  ACTIVE    20080803 152431  CMNDBDGN  USER25  LOCKED
___ IM2QFMT   MFS  ACTIVE    20080803 155035  CMNMFSGN  USER25  LOCKED
___ IM2QPSB   PSB  ACTIVE    20080803 145630  CMNPSBGN  USER25  LOCKED
___ IM2Q101   DBB  ACTIVE    20080803 160919          USER25  LOCKED
___ IM2Q101   SRC  ACTIVE    20080803 161558  CMNCOB2   USER25  LOCKED
***** Bottom of data *****
    
```

Back out to the Primary Menu, select option 3 Promote:

```

CMN@PRIM ----- SERENA ChangeMan(R) Primary Option Menu  SYS(7) -----
OPTION ==>

 1 Build      - Create, update and review package data
 2 Freeze     - Freeze or unfreeze a package
 3 Promote    - Promote or Demote a package
 4 Approve    - Approve or reject a package
 5 List       - Display (to process) package list
 6 Reports    - Generate ChangeMan batch reports
 7 Release    - Extended Release Management
 A Admin      - Perform administrative functions
 B Backout    - Back out a package in production
 C M+R        - Merge+Reconcile (formerly CDF)
 D Delete     - Delete or undelete a package
 L Log        - Browse the activity log
 M Monitor    - Monitor internal scheduler or packages in limbo
 N Notify     - Browse the Global Notification File
 O OFMlist    - Online Forms package list
 Q Query      - Query packages, components and relationships
 R Revert     - Revert a package to DEV status
 T Tutorial   - Display information about SERENA ChangeMan
 X Exit       - Exit SERENA ChangeMan

Press ENTER to process; enter END command to exit.
    
```

Select P:

```

CMNRPM00 ----- PROMOTE/DEMOT E A CHANGE PACKAGE -----
OPTION ==> p

  P Promote
  D Demote

PACKAGE ID ==> IMSQ000011

Press ENTER to process; Enter END command to exit.
    
```

Select F for full promotion:

```

CMNRPM03 ----- PROMOTE OPTIONS -----
OPTION ==> f
  F - Full promotion of the entire package to another promotion level
  S - Selective promotion of components to another promotion level
  H - Display promotion/demotion history for this site
  O - Check for potential overlay at next promotion level

PACKAGE ID: IMSQ000011  STATUS: DEV  INSTALL: 20081231

PROMOTION SITE      : SERT7              SCHEDULE DATE :
CURRENT PROMOTION LEVEL: STAGING + 0     SCHEDULE TIME :

NEXT PROMOTION LEVEL ==> 10  (blank, * or 0 for a list)
BYPASS OVERLAY CHECK ==> NO  (Y/N)
SUPPRESS MESSAGES   ==> NO  (Y/N)

JOB STATEMENT INFORMATION:
==> //S7IMSPRM JOB (AMW,000), 'DEFINE UCAT',MSGCLASS=Y,
==> //          TIME=(2),NOTIFY=USER25
==> //*
==> //*

Press ENTER to process; Enter END command to exit.

```

A JOB is submitted:

```

CMNRPM00 ----- PROMOTE/DEMOT A CHANGE PACKAGE --- REQUEST SUBMITTED
OPTION ==>

  P Promote
  D Demote

PACKAGE ID ==> IMSQ000011

Press ENTER to process; Enter END command to exit.

```

Upon completion of the promote job ChangeMan will notify the submitter of the success or failure of the promote job. Below is the message form a successful promote:

```

Job S7IMSPRM(J0525281) submitted CN(INTERNAL)
CMN402I - IMSQ000011 PROMOTED TO SERT7 C001AUT LEVEL 10 2008/08/03 @ 16:33:50.
CN(INTERNAL)
CMN9800I - DB2 PROCESSING/BINDS SUCCESSFUL ON 2008/08/03 @ 16:33:50. CN(INTERNAL)
16.34.23 J0525281 $HASP165 S7IMSPRM ENDED AT MP3JES2 MAXCC=0 CN(INTERNAL)
***

```

Excerpts from package promotion JOB:

```

***** TOP OF DATA *****
      J E S 2  J O B  L O G  --  S Y S T E M  C 0 0 1  --  N O D E  M P 3  J E S 2

16.34.02 J0525281 ---- SUNDAY,    03 AUG 2008 ----
16.34.02 J0525281 IRR010I  USERID  SERT    IS ASSIGNED TO THIS JOB.
16.34.03 J0525281 ICH70001I SERT    LAST ACCESS AT 16:15:48 ON SUNDAY, AUGUST 3, 2008
16.34.03 J0525281 $HASP373 S7IMSPRM STARTED - INIT 1 - CLASS A - SYS C001
16.34.03 J0525281 -
16.34.03 J0525281 -JOBNAME STEPNAME PROCSTEP  RC  EXCP  CONN  TCB  SRB  CLOCK  SERV  PG  PAGE  SWAP  VIO  SWAPS
16.34.03 J0525281 -S7IMSPRM DB2PL          00   138   73   .00   .00   .0  16187  0   0   0   0   0
16.34.05 J0525281 -S7IMSPRM C105BND       00   174   57   .00   .00   .0  35565  0   3   0   0   0
16.34.06 J0525281 -S7IMSPRM CPY1DBB       00    71   78   .00   .00   .0   5095  0   0   0   0   0
16.34.06 J0525281 -S7IMSPRM CPY1DBR       00    66  448   .00   .00   .0   5506  0   0   0   0   0
16.34.07 J0525281 -S7IMSPRM CPY1LOD       00   102  457   .00   .00   .0   8081  0   0   0   0   0
16.34.08 J0525281 -S7IMSPRM CPY1LST       00    67  313   .00   .00   .0   5875  0   0   0   0   0
16.34.09 J0525281 -S7IMSPRM CPY1SRC       00    80  471   .00   .00   .0   5853  0   0   0   0   0
16.34.09 J0525281 -S7IMSPRM CPY1PSB       00    72  194   .00   .00   .0   5990  0   0   0   0   0
16.34.10 J0525281 -S7IMSPRM CPY1PSL       00    92   53   .00   .00   .0   6237  0   0   0   0   0
16.34.11 J0525281 -S7IMSPRM CPY1DBD       00    67  464   .00   .00   .0   5651  0   0   0   0   0
16.34.11 J0525281 -S7IMSPRM CPY1DBL       00    88  488   .00   .00   .0   6881  0   0   0   0   0
16.34.12 J0525281 -S7IMSPRM CPY1MFS       00    57  212   .00   .00   .0   5620  0   0   0   0   0
16.34.13 J0525281 -S7IMSPRM CPY1MFR       00    76  238   .00   .00   .0   5999  0   0   0   0   0
16.34.14 J0525281 -S7IMSPRM CPY1FMT       00   148  683   .00   .00   .0   7843  0   0   0   0   0
16.34.16 J0525281 -S7IMSPRM SUCCESS      00   667  313   .00   .00   .0  32702  0   0   0   0   0
16.34.16 J0525281 -S7IMSPRM CHKCOND       00    15   6   .00   .00   .0  1025  0   0   0   0   0
16.34.16 J0525281 -S7IMSPRM FAILURE      FLUSH  0   0   .00   .00   .0   0   0   0   0   0   0
16.34.16 J0525281 -S7IMSPRM PRINT         00   156   64   .00   .00   .0  4801  0   0   0   0   0
16.34.17 J0525281 -S7IMSPRM CLNLCL       00    30  165   .00   .00   .0   787  0   0   0   0   0
16.34.17 J0525281 -S7IMSPRM ENDED.  NAME-DEFINE UCAT  TOTAL TCB CPU TIME= .00  TOTAL ELAPSED TIME= .2
16.34.17 J0525281 $HASP395 S7IMSPRM ENDED

                                IEBCOPY MESSAGES AND CONTROL STATEMENTS                                PAGE 1
IEB1135I IEBCOPY  FMID HDZ1180  SERVICE LEVEL UA27650  DATED 20060711  DFSMS 01.08.00  z/OS 01.08.00  HBB7730  CPU 2096
IEB1035I S7IMSPRM CPY1MFR 16:34:12 SUN 03 AUG 2008 PARM='
  COPY INDD=(STGMFR,R),OUTDD=PRMMFR
  SELECT MEMBER=SQDF1
  SELECT MEMBER=SQMI1
  SELECT MEMBER=SQM01
IEB1013I COPYING FROM PDS  INDD=STGMFR  VOL=SRS31  DSN=CMNTP.SERT7.DEV.IMSQ.#000011.MFR
IEB1014I          TO PDS  OUTDD=PRMMFR  VOL=C1054D  DSN=CMNTP.SERT7.PROM.IMSQ.C001AUT.MFR
IEB167I FOLLOWING MEMBER(S) COPIED FROM INPUT DATA SET REFERENCED BY STGMFR
IEB154I SQDF1  HAS BEEN SUCCESSFULLY COPIED
IEB154I SQMI1  HAS BEEN SUCCESSFULLY COPIED
IEB154I SQM01  HAS BEEN SUCCESSFULLY COPIED
IEB1098I 3 OF 3 MEMBERS COPIED FROM INPUT DATA SET REFERENCED BY STGMFR
IEB144I THERE ARE 11 UNUSED TRACKS IN OUTPUT DATA SET REFERENCED BY PRMMFR
IEB149I THERE ARE 74 UNUSED DIRECTORY BLOCKS IN OUTPUT DIRECTORY
IEB147I END OF JOB - 0 WAS HIGHEST SEVERITY CODE
SER9403I SERCOPY options: BSAM LMOD MFS
SER9405I Input dsname: CMNTP.SERT7.DEV.IMSQ.#000011.FMT
SER9406E Output dsname: CMNTP.SERT7.PROM.IMSQ.C001AUT.FMT
SER9407I Begin copy: INFILE=CMNTP.SESTGFMT  OUTFILE=PRMFMT
SER9420I Member successfully copied: "SQDF1
SER9420I Member successfully copied: "SQDF1
SER9420I Member successfully copied: SQMI1
SER9420I Member successfully copied: SQM01
SER9424I Number of members copied: 4
SER9425I Copy completed successfully

```

Still more excerpts from the package promotion.

```
ChangeMan(R) 2009 CMNBATCH - 6.1.0 2008/08/03 16:34:14
SYSIN: IMSQ000011 85 FUN=PROMOTE,NOD=SERT7
SYSIN: IMSQ000011 85 LVL=10,LNM=C001AUT,CID=USER25
SYSIN: IMSQ000011 85 SUP=NO,SSI=5B65D56E
SYSIN: IMSQ000011 85 TYP=DBB
SYSIN: IMSQ000011 85 CMP=IM2Q101
Component History has been updated.
Component Promotion History has been updated
Promotion logged IMSQ000011
SYSIN: IMSQ000011 85 TYP=DBR
SYSIN: IMSQ000011 85 CMP=IM2Q101
.
Promotion logged IMSQ000011
.
Promotion logged IMSQ000011
SYSIN: IMSQ000011 85 TYP=LST
SYSIN: IMSQ000011 85 CMP=CUSEDDB
.
Promotion logged IMSQ000011
SYSIN: IMSQ000011 85 CMP=IM2QFMT
.
Promotion logged IMSQ000011
SYSIN: IMSQ000011 85 CMP=IM2QPSB
.
Promotion logged IMSQ000011
SYSIN: IMSQ000011 85 CMP=IM2Q101
.
Promotion logged IMSQ000011
SYSIN: IMSQ000011 85 TYP=SRC
SYSIN: IMSQ000011 85 CMP=IM2Q101
.
Promotion logged IMSQ000011
SYSIN: IMSQ000011 85 TYP=PSB
SYSIN: IMSQ000011 85 CMP=IM2QPSB
.
Promotion logged IMSQ000011
SYSIN: IMSQ000011 85 TYP=PSL
SYSIN: IMSQ000011 85 CMP=IM2QPSB
.
Promotion logged IMSQ000011
SYSIN: IMSQ000011 85 TYP=DBD
SYSIN: IMSQ000011 85 CMP=CUSEDDB
.
Promotion logged IMSQ000011
SYSIN: IMSQ000011 85 TYP=DBL
SYSIN: IMSQ000011 85 CMP=CUSEDDB
.
Promotion logged IMSQ000011
SYSIN: IMSQ000011 85 TYP=MFS
SYSIN: IMSQ000011 85 CMP=IM2QFMT
.
Promotion logged IMSQ000011
SYSIN: IMSQ000011 85 TYP=MFR
SYSIN: IMSQ000011 85 CMP=SQDF1
.
Promotion logged IMSQ000011
SYSIN: IMSQ000011 85 CMP=SQMI1
.
Promotion logged IMSQ000011
SYSIN: IMSQ000011 85 CMP=SQMO1
.
Promotion logged IMSQ000011
SYSIN: IMSQ000011 85 TYP=FMT
SYSIN: IMSQ000011 85 CMP= "SQDF1
.
Promotion logged IMSQ000011
SYSIN: IMSQ000011 85 CMP= "SQDF1
.
Promotion logged IMSQ000011
SYSIN: IMSQ000011 85 CMP=SQMI1
.
Promotion logged IMSQ000011
SYSIN: IMSQ000011 85 CMP=SQMO1
.
Promotion logged IMSQ000011
SYSIN: IMSQ000011 85 FUN=END
Package Promotion history has been updated
Package IMSQ000011 PROMOTE
Package General record has been updated.
SYSIN: IMSQ000011 99 FUN=32,CID=USER25
```


After successful promotion, the package is now FROZEN before being Approved.

```

CMN@PRIM ----- SERENA ChangeMan(R) Primary Option Menu  SYS(7) -----
OPTION ==>

  1 Build      - Create, update and review package data
  2 Freeze    - Freeze or unfreeze a package
  3 Promote   - Promote or Demote a package
  4 Approve   - Approve or reject a package
  5 List      - Display (to process) package list
  6 Reports   - Generate ChangeMan batch reports
  7 Release   - Extended Release Management
  A Admin     - Perform administrative functions
  B Backout  - Back out a package in production
  C M+R      - Merge+Reconcile (formerly CDF)
  D Delete   - Delete or undelete a package
  L Log       - Browse the activity log
  M Monitor  - Monitor internal scheduler or packages in limbo
  N Notify   - Browse the Global Notification File
  O OFMlist  - Online Forms package list
  Q Query    - Query packages, components and relationships
  R Revert   - Revert a package to DEV status
  T Tutorial - Display information about SERENA ChangeMan
  X Exit     - Exit SERENA ChangeMan

Press ENTER to process; enter END command to exit.

```

Select 1 for Online Freeze.

```

CMNFRZ01 ----- FREEZE OPTIONS -----
OPTION ==> 1

PACKAGE ID ==> IMSQ000011

  1 Online    - Freeze package online
  2 Batch     - Freeze package in batch
  3 Selective - Selectively unfreeze/refreeze package components
  4 Reset     - Reset indicator after unsuccessful batch freeze
  5 Re-Build  - Re-submit install JCL build request

Press ENTER to process; Enter END command to exit.

```

It's frozen, on to Approval

```

CMNFRZ01 ----- FREEZE OPTIONS ----- PACKAGE FROZEN
OPTION ==>

PACKAGE ID ==> IMSQ000011

  1 Online    - Freeze package online
  2 Batch     - Freeze package in batch
  3 Selective - Selectively unfreeze/refreeze package components
  4 Reset     - Reset indicator after unsuccessful batch freeze
  5 Re-Build  - Re-submit install JCL build request

Press ENTER to process; Enter END command to exit.

```

Back out to the main menu select 4 for Approve:

```

CMN@PRIM ----- SERENA ChangeMan(R) Primary Option Menu  SYS(7) -----
OPTION  ==> 4

  1 Build      - Create, update and review package data
  2 Freeze    - Freeze or unfreeze a package
  3 Promote   - Promote or Demote a package
  4 Approve   - Approve or reject a package
  5 List      - Display (to process) package list
  6 Reports   - Generate ChangeMan batch reports
  7 Release   - Extended Release Management
  A Admin     - Perform administrative functions
  B Backout   - Back out a package in production
  C M+R       - Merge+Reconcile (formerly CDF)
  D Delete    - Delete or undelete a package
  L Log       - Browse the activity log
  M Monitor   - Monitor internal scheduler or packages in limbo
  N Notify    - Browse the Global Notification File
  O OFMlist   - Online Forms package list
  Q Query     - Query packages, components and relationships
  R Revert    - Revert a package to DEV status
  T Tutorial  - Display information about SERENA ChangeMan
  X Exit      - Exit SERENA ChangeMan

Press ENTER to process; enter END command to exit.

```

We are approving Simple Planned Permanent Package IMSQ000011:

```

CMNAPPRV ----- APPROVE PACKAGE PARAMETERS -----
COMMAND ==>

SPECIFY SELECTION CRITERIA:
PACKAGE ID          ==> IMSQ000011  (Full name or pattern; blank for list)
APPROVAL ENTITY NAME ==>           (Approvals for this security entity)
NOTIFIED USER ID   ==>           (Packages for which user was notified)
WORK REQUEST ID    ==>
DEPARTMENT         ==>
SITE AFFECTED      ==>
PACKAGE LEVEL      ==> 1           (1-Simple, 4-Participating)
PACKAGE TYPE       ==> p           (Planned or Unplanned)
PACKAGE TIME SPAN  ==> p           (Permanent or Temporary)
FROM INSTALL DATE  ==>           (YYYYMMDD)
  TO INSTALL DATE  ==>           (YYYYMMDD)
FROM CREATION DATE ==>           (YYYYMMDD)
  TO CREATION DATE ==>           (YYYYMMDD)
OTHER PARAMETERS   ==>           (Y/N)

Press ENTER to process; Enter END command to exit.

```

Select 1 for Approve:

```

CMNAPPOP ----- APPROVE/REJECT OPTIONS -----
OPTION ==> 1

      PACKAGE ID: IMSQ000011      STATUS: FRZ      INSTALL DATE: 20081231

1 Approve - Approve or reject a change package
2 Reasons - Display reasons a package was rejected
3 Query   - Query change package
4 Reset   - Reset approval in progress indicator
5 Re-Build - Re-submit install JCL build request

Press ENTER to process; Enter END command to exit.
    
```

Approve the first approver

```

CMNAPPLS ----- APPROVAL LIST ----- Row 1 to 2 of 2
COMMAND ==>                                SCROLL ==> PAGE

Press ENTER to process; enter END command to exit.

      PACKAGE ID: IMSQ000011      STATUS: FRZ      INSTALL DATE: 20081231

APPROVER DESCRIPTION                                ID
                                                    DATE      TIME SEQ LP  STATUS
a Lead Programmer - ACTP Application
                                                    10
_ Accounts Payable Manager
                                                    20
***** Bottom of data *****
    
```

Hit enter

```

CMNAPPLS ----- APPROVAL LIST ----- Row 1 to 2 of 2
COMMAND ==>                                SCROLL ==> PAGE

Press ENTER to process; enter END command to exit.

      PACKAGE ID: IMSQ000011      STATUS: FRZ      INSTALL DATE: 20081231

APPROVER DESCRIPTION                                ID
                                                    DATE      TIME SEQ LP  STATUS
_ Lead Programmer - ACTP Application                USER25
                                                    20080803 1644 10   Approve
a Accounts Payable Manager
                                                    20
***** Bottom of data *****
    
```

Approve the second id and hit enter:

```

CMN400I - Package IMSQ000011 approved by USER25 on 2008/08/03 at 16:47 CN(INTERNAL)
***
Job IMSQ1011(J0525283) submitted CN(INTERNAL)
CMN8700I - IMSQ000011 Installation JCL Build service completed CN(INTERNAL)
***
    
```

Now the package is installed via a series of JOBS. The JOBS in **BLUE** below are the STAGING JOBS (already run), the JOB in **GREEN** is the PROMOTION JOB (already run), and the JOBS in **RED** are the INSTALLATION JOBS(just ran).

```

SDSF STATUS DISPLAY ALL CLASSES                                LINE 43-54 (54)
COMMAND INPUT ==>                                           SCROLL ==> PAGE
NP  JOBNAME  JobID  Owner  Prty Queue      C  Pos  SAff  ASys Status
   S7IMSPSB J0525269 SERT      1 PRINT      A 3336
   S7IMSDDB J0525271 SERT      1 PRINT      A 3338
   S7IMSMFS J0525272 SERT      1 PRINT      A 3339
   S7IMSSRC J0525276 SERT      1 PRINT      A 3341
   S7IMSPRM J0525281 SERT      1 PRINT      A 3347
   IMSQ1011 J0525283 SERT      1 PRINT      A 3349
   IMSQ1111 J0525284 SERT      1 PRINT      A 3350
   IMSQ1511 J0525286 SERT      1 PRINT      A 3351
   IMSQ2011 J0525285 SERT      1 PRINT      A 3352
   IMSQ2511 J0525287 SERT      1 PRINT      A 3353
   SERT7    J0525290 SERT      1 PRINT      A 3355
   IMSQ3011 J0525288 SERT      1 PRINT      A 3356
    
```

The following table gives a brief overview of each INSTALLATION JOB:

JOB	Overview
IMSQ1011	JOB TO SEND PACKAGE IMSQ000011 FROM SERT7 TO SERT7 Log DIS at SITE SERT7
IMSQ1111	JOB TO INSERT IMSQ000011 INFORMATION IN PACKAGE MASTER AT SERT7 Update DIS at PROD SITE SERT7
IMSQ1511	JOB TO ACKNOWLEDGE PACKAGE IMSQ000011 SENT FROM SERT7 TO SERT7 DIStribution acknowledged and logged at DEV
IMSQ2011	IMS OPTION: JOB TO INSTALL PACKAGE IMSQ000011 INTO PRODUCTION Backup existing PRODUCTION environment, INSTALL new PRODUCTION environment, ACBGEN
IMSQ2511	JOB TO ACKNOWLEDGE PACKAGE IMSQ000011 INSTALLATION AT SERT7 and kickoff package cleanup.
SERT7	DEMOTE PACKAGE IMSQ000011 FROM C001AUT LVL 10 AT SERT7 SITE.
IMSQ3011	IMS OPTION: JOB TO PERFORM BASELINE RIPPLE OF PACKAGE IMSQ000011 including final PSBGEN, DBDGEN MFSGEN, and ACBGEN. Run DSPTM to update Impact Analysis data.

Upon successful PACKAGE installation you'll see something like the following after querying the package's SITE ACTIVITIES DATE AND TIME:

```

CMNQRY14 ----- QUERY: SITE ACTIVITIES DATE AND TIME --- Row 1 to 1 of 1
COMMAND ==>                                     SCROLL ==> PAGE

Press END command to exit.

      PACKAGE ID: IMSQ000007      STATUS: BAS      INSTALL DATE: 20080802

      SITE      TYPE OF ACTIVITY      DATE      TIME      TSOID
      SERT7     Distribution           20080802  0927
              Dis-Acknowledgment     20080802  0927
              Installation            20080802  0928
              Temp Change Cycled
              Full Back-Out
              Revert Back to DEV
***** Bottom of data *****
    
```

Package Installation and Promotion Considerations

The process for installation is similar to that for promotion to a remote site. The staging process of IMS components is for installation at the development site; it uses the specified IMS control region. Therefore, generation of PSBs or DBDs are not required unless there are overrides or the ChangeMan ZMF Administrator has specified to always generate them. (This is also true for a specification of ALL SITE promotion.)

Promotion to a remote site is the same as promotion to a local site, except that everything happens at the remote site. the GENing for a remote site only takes place if the administrator has specified to do so, or if there are overrides. Otherwise, it is simply a copy.

Querying a Package with IMS Components

You can query a package containing IMS components in the same way you query any package: select Q (for Query) from the Primary Options menu. The following panel appears.

```

CMNQDMNU ----- QUERY OPTIONS -----
OPTION ==>

  P Package - Query package information
  C Component - Query component information
  I Impact - Impact analysis of subordinate components
  B BofM - Component bill of materials
  A Approve - Approve In Limbo packages

Press ENTER to process; Enter END command to exit.
    
```

From this panel, you can Query the information in any package or component.

Select P to query package information.

```

CMNQRY00 ----- QUERY PACKAGE PARAMETERS -----
COMMAND ==>

SPECIFY SELECTION CRITERIA:
PACKAGE ID LIST:      (Blank, Full name or Mask separated by ;)
==> IMSQ000011
PACKAGE STATUS (Y/N)  Dev =   Frz =   Apr =   Rej =   Dis =   Ins =
                    Bas =   Bak =   Del =   Opn =   Clo =   Tcc =
PACKAGE LEVEL (Y/N)  Simple =   Super =   Complex =   Participating =
PACKAGE TYPE (Y/N)   Planned =   Unplanned =
PACKAGE SPAN (Y/N)   Permanent =   Temporary =
WORK REQUEST ID      ==>
DEPARTMENT           ==>
FROM INSTALL DATE    ==>                (YYYYMMDD)
  TO INSTALL DATE    ==>                (YYYYMMDD)
FROM CREATION DATE   ==>                (YYYYMMDD)
  TO CREATION DATE   ==>                (YYYYMMDD)
SITE NAME            ==>
APPROVER ENTITY      ==>
CREATOR'S TSO-ID LIST: (Blank, Full name or Mask separated by ;)
==>
MORE PARAMETERS (Y/N) ==>

Press ENTER to process; Enter END command to exit.

```

Select Source and Load Relationship:.

```

CMNQRY03 ----- PACKAGE INFORMATION CATEGORIES ---- Row 1 to 22 of 22
COMMAND ==>                                     SCROLL ==> PAGE

          PACKAGE ID: IMSQ000011      STATUS: INS      INSTALL DATE: 20081231
          CREATOR:      USER25        AUDIT RC:

_ General
_ Non-Source
_ Source
S Source and Load Relationship
_ Component Userid Work List
_ Renames and Scratches
_ Approval List
_ Site/Install Date Information
_ Site Activities Date and Time
_ Online Forms
_ Linked Package
_ Participating Package(s)
_ Status Start Date and Time
_ Revert Reasons
_ Backout Reasons
_ Promotion History
_ Promotion Libraries
_ Development Staging Libraries
_ Production Staging Libraries
_ Production Libraries
_ Baseline Libraries
_ IMS Information
***** Bottom of data *****

```

Hit enter, you'll get something like the following:.

```

CMNQRY21 ----- SOURCE TO LOAD RELATIONSHIP ----- Row 1 to 15 of 15
COMMAND ==>                                     SCROLL ==> PAGE

Press END command to exit.

      PACKAGE ID: IMSQ000011      STATUS: INS      INSTALL DATE: 20081231

      SOURCE      LOAD
      NAME  TYPE  NAME  TYPE  STATUS  PROMOTION      CHANGED      ID
CUSEDDBD  DBD  CUSEDDBD  DBL  FROZEN  0 STAGING  20080803  152431  USER25
           CUSEDDBD  LST  FROZEN  0 STAGING  20080803  152433  USER25
IM2QFMT   MFS  SQDF1  MFR  FROZEN  0 STAGING  20080803  155035  USER25
           ."SQDF1  FMT  FROZEN  0 STAGING  20080803  155035  USER25
           ."SQDF1  FMT  FROZEN  0 STAGING  20080803  155035  USER25
           IM2QFMT  LST  FROZEN  0 STAGING  20080803  155038  USER25
           SQMI1   FMT  FROZEN  0 STAGING  20080803  155035  USER25
           SQMI1   MFR  FROZEN  0 STAGING  20080803  155035  USER25
           SQM01   FMT  FROZEN  0 STAGING  20080803  155035  USER25
           SQM01   MFR  FROZEN  0 STAGING  20080803  155035  USER25
IM2QPSB   PSB  IM2QPSB  PSL  FROZEN  0 STAGING  20080803  145630  USER25
           IM2QPSB  LST  FROZEN  0 STAGING  20080803  145633  USER25
IM2Q101   SRC  IM2Q101  DBR  FROZEN  0 STAGING  20080803  161558  USER25
           IM2Q101  LOD  FROZEN  0 STAGING  20080803  161558  USER25
           IM2Q101  LST  FROZEN  0 STAGING  20080803  161600  USER25
***** Bottom of data *****
    
```

Let's query some COMPONENTS. Back to the QUERY OPTIONS panel, select C for Component:

```

CMNQDMNU ----- QUERY OPTIONS -----
OPTION ==> C

P Package - Query package information
C Component - Query component information
I Impact - Impact analysis of subordinate components
B BofM - Component bill of materials
A Approve - Approve In Limbo packages

Press ENTER to process; Enter END command to exit.
    
```

To Display all the FMT components, input the 'FMT' Lib Type in the Component type field, and an '*' in the Component name field then press enter. This will display all FMT

components for all applications, which could be a very large list. To reduce the size of the list, consider qualifying the search with an APPLication name.

```

CMNQCMP1 ----- QUERY COMPONENT PARAMETERS -----
COMMAND ==>

SPECIFY SELECTION CRITERIA:
COMPONENT NAME      ==> *                               +
                                                           (Full component name or pattern)
COMPONENT TYPE      ==> FMT                             (Full library type or pattern)
APPLICATION          ==>
PACKAGE ID           ==>
PROCEDURE NAME      ==>
TSOID                ==>
DISPLAY MODE        ==> LONG                           (S-Short, L-Long)
CHECKOUT/STAGING
  FROM DATE          ==>                               (YYYYMMDD)
  TO DATE            ==>                               (YYYYMMDD)

MIXED CASE          ==> NO                             (YES/NO)

Press ENTER to process; Enter END command to exit.
    
```

After hitting enter you'll get something like the following:

```

CMNQCMP2 ----- QUERY: COMPONENT LIST ----- Row 1 to 8 of 8
COMMAND ==>                                     SCROLL ==> HALF

  LIB  NAME
_ FMT  ."pAYF01
_ FMT  ."sQDF1
_ FMT  ."PAYF01
S FMT  ."SQDF1
_ FMT  PAYD01
_ FMT  PAYI01
_ FMT  SQMI1
_ FMT  SQM01
***** Bottom of data *****
    
```

Select an entry for more:

```

CMNCPH1 ----- ."SQDF1.FMT HISTORY ----- Row 1 to 1 of 1
COMMAND ==>                                     SCROLL ==> HALF

Press ENTER to continue; Enter END command to exit.

  PACKAGE ID STA P PROMOTION VV.MM  LAST ACTION  SIZE SETSSI  ID
S PAYR000013 DEV                2012/11/09 07:58          USER239
***** Bottom of data *****
    
```


Select a package to start the screens of information:

```
CMNCMPH2 ----- COMPILE AND LINK EDIT OPTIONS -----  
COMMAND ==>  
  
      PACKAGE ID: PAYR000013      STATUS: DEV  
  
STAGER'S TSO-ID : USER239  
COMPONENT NAME  : ."SQDF1          +  
COMPONENT TYPE  : FMT  
LANGUAGE        : ASM  
COMPILE PROC    : CMNMFSGN  
COMPILE PARMS   :  
LINK EDIT PARMS :  
DB2 PRECOMPILE  : NO  
OTHER OPTIONS ==> NO              (Y/N for additional user options)  
  
Press ENTER to continue; Enter END command to exit.
```


Appendix A

IMS Option Worksheets

To use the IMS Option, some information about your IMS environment must be supplied to ChangeMan ZMF. For example, to manage IMS, ChangeMan ZMF should know about the following:

- Your company site names
- The site types (Development, Production, DEV/PROD, and so on)
- The names of your IMS control regions
- The libraries used for IMS components
- The libraries used for promotion (testing)
- The languages used for IMS components
- The processes used to prepare IMS components for production

These worksheets will help you gather the needed information.

IMS Support Administration Worksheet 1	76
IMS Support Administration Worksheet 2	76
IMS Support Administration Worksheet 3	77
IMS Support Administration Worksheet 4	78

IMS Support Administration Worksheet 1

Use this worksheet to complete Part 1 of the Global Definition panels.

In the following table, supply the information required. The IMS ID is usually assigned by an IMS systems programmer when the IMS control region is created.

IMSID	Site	Logical Site	Active?	DEVCHAR Suffix	DBDGEN	PSBGEN	ACB

IMS Support Administration Worksheet 2

Use to complete the IMS System Library Global Declaration panels. Complete a Worksheet 2 for each entry in Worksheet 1.

IMS ID	SITE	LOGICAL SITE
(From Worksheet 1)	(From Worksheet 1)	(Enter information below.)

Hi-level Node Bkup	IMSGEN Macro Def.	Member Name
(The Hi-level node is a pattern for backups of the IMS system libraries during promotion and installation.)	(This is the IMS system generation data set containing the system generation member name.)	(This is the member that contains the source code that generated the IMS control region, databases, programs, and so on.)

For certain types of PSBs and DBDs, parsing source alone is not sufficient to determine if an ACB GEN is required. To completely determine if an ACB GEN is required, the IMSGEN Macro definition and member name must be analyzed. Because ChangeMan ZMF determines this requirement during Stage, the IMSGEN data set name entered here must be available on the development site.

DDName	IMS System Libraries
ACBLIB	
DBDLIB	
DFSES	
FORMAT	
MACLIB	
MODSTAT	
PSBLIB	
REFERRAL	

IMS Support Administration Worksheet 3

LIB TYPE	Description	Like (S/L/P)	Defer (Y/N)	IMS SUB TYP	TGT LIB TYP

The IMS subtypes must be one of the subtypes listed in the following table.

Like "S" (Source) Type	Target Type
A - ACB Control	C - ACB
D - DBD Source	B - DBD
M - MFS Source	F - MFS Format (if the Referral library is not used)
M - MFS Source	R - MFS Referral (if the Referral library is used)
P - PSB Source	S - PSB
R - MFS Referral	F - MFS Format (if the Referral library is used)

Any like L (Load) library requires additional processing by the AUDIT program and, as a result, causes the audit process to take longer to execute. Serena suggests that you use only like L (Load) for program load libraries.

IMS Support Administration Worksheet 4

In the following table, associate a compile procedure with each IMS global language name.

Language	Procedure
DBD	CMNDBDGN
MFS	CMNMFSGN
PSB	CMNPSBGN

Appendix B

IMS-Related Skeletons

This appendix tells you about ChangeMan ZMF ISPF skeletons and variables used by the IMS Option.

Introduction	80
IMS Option Skeletons	80
ISPF Variables for the IMS Option	80
General Use Skeletons That Use IMS Option Variables	82
IMS Skeleton Hierarchy	83

Introduction

You can modify the behavior of the ChangeMan ZMF IMS Option by customizing ZMF skeletons, exits, and panels, and by using Serena XML Services to access ZMF functions and data.

This appendix tells you where to find information about ChangeMan ZMF ISPF variables used by the IMS Option, and it lists skeletons involved in IMS component processing.

When you customize a ChangeMan ZMF component, preserve the original code by copying the component from the delivered library into a custom library, and edit the component in the custom library. If you customize and assemble an exit program, ensure that the customized load is written to a custom load library.

For general information about customizing ChangeMan ZMF, see the *ChangeMan ZMF Customization Guide*.

ISPF Variables for the IMS Option

When IMS Option batch job JCL is built by ISPF file tailoring, information from the following sources is passed to file tailoring in ISPF variables:

- Global administration
- Application administration
- IMS Option administration
- Package master
- Component history

ChangeMan ZMF ISPF variables and tables are listed in member #VARLIST in the CNMZMF SKELS library. ISPF variables and tables used exclusively by the IMS Option usually have names that start with &IMS...

Use #VARLIST to find ISPF variables that contains the information you want for a customized skeleton.

IMS Option Skeletons

This table lists fifty-six skeletons that are delivered for the IMS Option. The skeletons are grouped by the ChangeMan ZMF function they serve.

Skeleton	Function	Description
CMN\$\$IMS	Stage	Parse DBD/PSB source and build ACB statements
CMN\$\$MFS	Stage	Assemble IMS MFS source code
CMNDBDGN	Stage	Main process DBD source code
CMNMFSGN	Stage	Main procedure for IMS MFS assemble and link
CMNPSBGN	Stage	Process PSB source code

Skeleton	Function	Description
CMN\$\$ACB	Promotion	Perform an ACB GEN
CMN\$\$IGN	Promotion	Perform IMS gens at promote or install time
CMNIMCPY	Promotion	Synchronize IMS and promotion libraries
CMNIMPRM	Promotion	Perform package promotion or demotion
CMNIMPRO	Promotion	Copy staging libraries to promotion libraries
CMNIMRPM	Promotion	Main driver routine for promotion
CMNIMSIM	Promotion	Synchronize IMS and promotion libraries
CMNIMSPR	Promotion	Synchronize promotion and IMS libraries
CMNMFSPG	Promotion	Process MFS source code at promotion time
CMNMFSRG	Promotion	Process MFS source code at promotion time
CMNPDPEX	Promotion	Expand PSB/DBD source code at promotion
CMNPDPGN	Promotion	Process PSB/DBD source code at promotion
CMNPDPOV	Promotion	Apply overrides for PSB/DBD source code at promotion
CMNPRASW	Promotion	Sample ACB library swap for promotion
CMNPRFSW	Promotion	Sample format library swap for promotion
CMNPRIBK	Promotion	Sample IMS library back for promotion
CMNPRIRB	Promotion	Sample IMS library recovery for promotion
CMNPRMIM	Promotion	Check if we really copy to promotion
CMNRDPEX	Promotion	Expand PSB/DBD source code at remote promotion
CMNRDPGN	Promotion	Process PSB/DBD source code at remote promotion
CMNRDPOV	Promotion	Apply overrides for PSB/DBD source code at remote promotion
CMNRPICL	Promotion	Shadow library remote promotion or demotion
CMNRPICR	Promotion	Perform remote promotion or demotion
CMNRPIGN	Promotion	Perform IMS gens for remote promotion
CMNRPIPS	Promotion	Synchronize remote promotion libraries and IMS Libraries
CMNRPIRC	Promotion	Copy remote staging library to promotion library with IMS
CMNRPIRD	Promotion	Perform remote demotion with IMS
CMNRPISC	Promotion	Synchronize remote promotion libraries
CMNRPMIM	Promotion	Check if we really copy to remote promotion
CMN20I	Installation	Install a package into production libraries
CMN20TI	Installation	Install a temporary package
CMN30I	Installation	Perform baseline ripple of a package
CMN31TI	Installation	Cycle (de-install) a temporary package
CMN50I	Installation	Backout a package from production libraries
CMN50TI	Installation	Backout a package from temporary libraries
CMN55I	Installation	Perform baseline reverse ripple of a package
CMN55TI	Installation	Backout a package from temporary libraries
CMNIDPEX	Installation	Expand PSB/DBD source code at installation

Skeleton	Function	Description
CMNIDPGN	Installation	Process PSB/DBD source code at installation
CMNIDPOV	Installation	Apply overrides for PSB/DBD source code at installation
CMNIMSBL	Installation	Synchronize IMS and baselines libraries
CMNIMSPD	Installation	Synchronize IMS and production libraries
CMNIMSTP	Installation	Synchronize IMS and temporary libraries
CMNINACB	Installation	Perform ACB GEN at installation
CMNINASW	Installation	Sample ACB library swap for production/install
CMNINFSW	Installation	Sample format library swap for production/install
CMNINIBK	Installation	Sample IMS library back for install or baseline
CMNINIGN	Installation	Perform IMS gens at installation
CMNINIRB	Installation	Sample IMS library recovery for install or baseline
CMNMFSIG	Installation	Process MFS source code at installation
CMNPRDIM	Installation	Check if we really copy to production

General Use Skeletons That Use IMS Option Variables

Eighteen base ZMF skeletons refer to ISPF variables that are used to process IMS components.

Skeleton	Function	Description
CMN\$\$CKO	Checkout	Checkout components from baseline/promotion libraries
CMN\$\$ASM	Stage	Translate ASSEMBLER source code
CMN\$\$LNK	Stage	Link-edit a program
CMN\$\$SYL	Stage	Build SYSLIB link-edit concatenation sequence
CMN\$\$CLN	Promotion	Cleanup prior promotion libraries
CMN\$\$PMT	Promotion	Build temporary staging promotion data sets
CMNRPACL	Promotion	Perform shadow library remote promotion and demotion
CMN30CDT	Installation	Routine for Cascaded Delta baseline ripple component
CMN30CPY	Installation	Baseline ripple components using IEBCOPY
CMN30HFS	Installation	HFS delta baseline ripple/delete/rename processing
CMN30LIB	Installation	Routine for Librarian baseline ripple component
CMN30PDS	Installation	Routine for PDS baseline ripple component
CMN30SRD	Installation	Routine for Stacked Reverse Delta baseline ripple component
CMN55CDT	Installation	Cascaded delta baseline reverse ripple component
CMN55CPY	Installation	Reverse baseline ripple using IEBCOPY
CMN55HFS	Installation	Perform reverse ripple of HFS
CMN55LIB	Installation	Perform Librarian baseline reverse ripple component
CMN55PDS	Installation	Perform PDS baseline reverse ripple component

IMS Skeleton Hierarchy

For a complete picture of ChangeMan ZMF skeleton file tailoring, see the *ChangeMan ZMF Customization Guide* for charts that describe the hierarchy of imbedded skeletons in the base ChangeMan ZMF product and in the IMS Option.

Appendix C

IMS Batch Services

This section contains a selection of commonly used ChangeMan ZMF programs that can be customized and executed in batch mode.

CMNISPRES	86
CMNISMFS	88
CMNISOVR	89

CMNISPRES

CMNISPRES is executed in stage jobs for PSB and DBD source components. It scans the macro source to determine if an ACBGEN is required. If an ACBGEN is required, an ACB build statement record is created in the package master *for each IMS region defined to this instance of ChangeMan ZMF*.

Follow these steps to view the ACB build statements for a PSB or DBD component that has been staged in a package:

- 1 On the **Primary Option Menu** (CMN@PRIM), select option **1 Build**.
- 2 On the **Build Options** menu (CMNBUILD), select option **2 Update**.
- 3 On the **Update: Package Information** menu (CMNPGNL0), type the **Package ID** and select option **I IMS Information**.
- 4 On the **Update: IMS Package Update Options**, menu (CMNIMUPD), select option **2 ACB Statements**.

Review "[ACB Control Statements](#)" on page 42 to get a detailed explanation of this panel.

PSB ACBGEN Requirement

- PSB that contains both TYPE=TP and CMPAT=YES requires an ACBGEN.
- ACB flag setting. This flag is set up when the IMS System definitions are defined during Global and Application Administration. If the ACB flag is set to Y, always create the ACB build statement for PSBs. This flag is normally used during staging process but if this program is executed outside of ChangeMan ZMF this flag will be honored.

DBD ACBGEN Requirement

- DBD with either a Logical or GSAM access will require an ACBGEN.

Static Input Files

Input DD	Description
SYSFILE	Contains PSB/DBD source members.
SYSIN	80 byte card images in keyword format. See keyword table below.

Keyword Table

SYSIN Keyword	Description
IMS=	IMS subtype defined to ChangeMan ZMF. Valid IMS subtype entries are (P)sb or (D)bd.
LIB=	Library type of SYSPFILE DD defined to ChangeMan ZMF.

SYSIN Keyword	Description
MBR=	Member name of PSB/DBD source.
PKN=	Package name.

Static Output Files

Output DD	Description
SYSPRINT	A summary report reflecting SYSIN contents and processor activity. See SYSPRINT output sample below.

CMNISPRES Job Sample

The following is a sample job fragment after file tailoring that illustrates what the step looks like:

```
//PSBDBD EXEC PGM=CMNISPRES, *** DETERMINE IMSPSB03 ACB REQUIREMENTS
//          COND=(4,LT),
//          REGION=4M,
//          PARM='SUBSYS=4,USER=USER239'
//*)IM CMN$$$SPR
//SER#PARM DD DISP=SHR,DSN=CMNTP.S4.V712.SERCOMC.TCPIPORT
//SYSPRINT DD DISP=(,PASS),DSN=&&LIST199,
//          UNIT=SYSDA,SPACE=(CYL,(5,5),RLSE),
//          DCB=(RECFM=FA,LRECL=133,BLKSIZE=23474)
//SYSPFILE DD DISP=OLD,DSN=CMNTP.S4.V711.ST.PAYR.#000020.D.PSB
//ABNLIGNR DD DUMMY
//SYSUDUMP DD SYSOUT=*
//SYSIN DD *
PKN=PAYR000020
LIB=PSB
IMS=P
MBR=IMSPSB03
```

CMNISPRES Sysprint Output Sample

```
*****
* DDNAME: PSBDBD.SYSPRINT *
*****

ChangeMan(R) CMNISPRES - 7.1.2 20/13/03 16:31:36
Session established with Change Man Started task.

SYSIN: PKN=PAYR000020
SYSIN: LIB=PSB
SYSIN: IMS=P
SYSIN: MBR=IMSPSB03
Package IMS ACB information saved.

Session terminated with Change Man Started task.
```

CMNISMFS

The primary purpose of CMNISMFS is to stack MFS macro source code into a sequential file so that one MFSGEN can be issued. Each MFS source member is written to the sequential file without the END statement. The final MFS source member written to the sequential file will retain the END statement. This program is a standalone program and does not interact with the ChangeMan ZMF instance.

Static Input Files

Input DD	Description
SYSIMS	Contains MFS source members.
SYSIN	80 byte card images using MBR=keyword format.

Keyword Table

SYSIN Keyword	Description
MBR=	Member name of MFS source.

Static Output Files

Output DD	Description
SYSIOUT	All input MFS members processed through the SYSIN DD and are stacked into this sequential file.
SYSPRINT	A summary report reflecting SYSIN contents and processor activity. See SYSPRINT output sample below.

CMNISMFS Job Sample

The following is a sample job fragment after file tailoring that illustrates what the step looks like:

```
//MFSSTK1 EXEC PGM=CMNISMFS, *** STACK MFS SOURCE ONE GEN
//          COND=(4,LT)
//SYSPRINT DD DISP=(MOD,PASS),DSN=&&LIST90,
//          UNIT=SYSDA,SPACE=(CYL,(5,5),RLSE),
//          DCB=(RECFM=FBA,LRECL=133,BLKSIZE=13300)
//SYSIMS   DD DISP=SHR,
//          DSN=CMNTP.S4.V711.ST.PAYR.#000020.D.MFS
//SYSIOUT  DD DISP=(,PASS),DSN=&&MFSRRC1,
//          UNIT=SYSDA,SPACE=(CYL,(1,1)),
//          DCB=(RECFM=FB,LRECL=80,BLKSIZE=6160)
//ABNLIGNR DD DUMMY
//SYSUDUMP DD SYSOUT=*
//SYSIN    DD *
MBR=MFS00003
MBR=MFS00004
```


CMNISMFS Sysprint Output Sample

```

*****
* DDNAME: MFSSTK1.SYSPRINT *
*****

SYSIN: MBR=MFS00003
SYSIN: MBR=MFS00004
Temporary MFS file created.

```

CMNISOVR

CMNISOVR processes PSB/DBD macro source and allows PSB/DBD statements to be overridden. Whether an override occurs or not, all input members processed are written to a temporary PDS file.

Two search criteria are performed before an override can occur. The first is performed on Control Word (see Control Word Table below). A Control Word is either a PSB or DBD generation statement defined by IMS.

Once a control word has been found, the second criterion begins using the original statement. This subsequent search is performed on the actual character string that will be overridden.

Once the original statement is found, the original statement is replaced with the specified override statement.

For example:

```

MBR=PSBname
CTL=SENSEG
ORG=PARENT=PARTROOT
OVR=PARENT=OVERRIDE

```

All occurrences of PARENT=PARTROOT in the PSB source that has a control word of SENSEG will be replaced with PARENT=OVERRIDE.

Static Input Files

Input DD	Description
SYSIMSI	Contains PSB/DBD source members.
SYSIN	80 byte card images in keyword format requesting type of activity to occur. See keyword and control word table for specifications.

Keyword Table

SYSIN Keyword	Description
MBR=	PSB/DBD member name of the data set pointed to by the SYSIMSI DD statement. If MBR= is the only keyword specified, the input member is copied to the output file.
CTL=	Control word to perform first search criteria. If the control word is not found, the search for the original statement will not be performed. See PSB/DBD control table below for valid entries.
ORG=	Original statement. The PSB/DBD source is searched for a match on the original statement. The control word must be found before the original statement is searched for. Mutually inclusive with a corresponding OVR= statement.
OVR=	Override statement. The override statement will be used to override the corresponding original statement match. Mutually inclusive with a corresponding ORG= statement.

Control Word Table

DBD Control Words	PSB Control Words
DBD	PCB
DATASET	SENSEG
AREA	SENFLD
SEGM	PSBGEN
LCHILD	
FIELD	
XDFLD	
DBDGEN	

CMNISOVR Job Sample

The following is a sample job fragment after file tailoring which illustrates what the step may look like. There are three basic SYSIN formats.

```
//DPOVR1 EXEC PGM=CMNISOVR, *** DBD/PSB SOURCE OVERRIDE C115
//          COND=(4,LT)
//SYSPRINT DD DISP=(MOD,PASS),DSN=&&LIST90,
//          UNIT=SYSDA,SPACE=(CYL,(5,5),RLSE),
//          DCB=(RECFM=FBA,LRECL=133,BLKSIZE=13300)
//SYSIMSI  DD DISP=(OLD,DELETE),
//          DSN=&&DBDWR
//SYSIMSO  DD DISP=(,PASS),DSN=&&DBD10V,
//          UNIT=SYSDA,SPACE=(CYL,(10,10,100)),
//          DCB=(RECFM=FB,LRECL=80,BLKSIZE=6160)
//ABNLIGNR DD DUMMY
//SYSUDUMP DD SYSOUT=*
//SYSIN   DD *
MBR=IMSDBD01
LIB=PSL
CTL=DATASET
ORG=DEVICE=3380
OVR=DEVICE=3400
```

SYSIN Format 1

```
MBR=Dbdname or PSBname
CTL=Control_word
ORG=Original_statement
OVR=Override_statement
```

SYSIN Format 2

```
MBR=Dbdname or PSBname
CTL=Control_word
ORG=Original_statement
OVR=Override_statement
```

SYSIN Format 3

```
MBR=DDBname or PSBname
(copy from input to output)
```

Static Output Files

Output DD	Description
SYSIMSO	All input members from SYSIMSI DD are written to this PDS data set. When overrides occur for a member, the overrides are performed in memory. The memory copy is then written to this PDS file for further processing. The ISPF statistics for the updated member will reflect the activity. The last modification date, time, modification level and the userid are updated. If a member has not been overridden the ISPF statistics will remain unchanged. See ISPF statistics sample below.
SYSPRINT	A summary report reflecting SYSIN contents and processor activity. See SYSPRINT output sample below.

CMNISOVR ISPF Statistics Sample

Name	VV MM	Created	Changed	Size	Init	Mod	ID
* PSB1	01.07	1999/01/01	97/01/08 15:09	14	13	0	CHGMAN
. PSB2	01.03	1999/01/01	96/10/27 22:41	13	1	0	USER33
. PSB3	01.03	1999/01/01	96/10/27 22:41	13	1	0	USER33

The asterisk '*' in the panel above indicates Override Activity.

CMNISOVR Sysprint Output Sample

```

*****
* DDNAME: DPOVR1.SYSPRINT
* DDNAME: MFSSTK2.SYSPRINT
*****

SYSIN: MBR=IMSDDBD01
SYSIN: CTL=DATASET
SYSIN: ORG=DEVICE=3380
SYSIN: OVR=DEVICE=3400

Copy in memory has been altered with the following:
Original: DEVICE=3380
Override: DEVICE=3400
New member added to temporary PDS. Member IMSDDBD01

SYSIN: MBR=MFS00001
Temporary MFS file created.
SYSIN: MBR=IMSPSB01
SYSIN: CTL=PCB
SYSIN: ORG=DBDNAME=IMSPSB01
SYSIN: OVR=DBDNAME=IMSGBL01
No updates for member IMSPSB01
New member added to temporary PDS. Member IMSPSB01

```

Index

A

- ACB control statements
 - build statement generator 86
 - update 42
- administration, IMS
 - application 33
 - business rules 14
 - global 24
 - worksheets 75
- Adobe Acrobat 9
- application administration 34
 - IMS control regions 33
 - IMS DBD overrides 34
 - IMS PSB overrides 34

B

- batch services, IMS 85
- business rules, IMS
 - administration 14
 - package create 14
 - package install 15
 - package promote 15
 - package staging 15

C

- CMNISMFS program
 - described 88
 - job sample 88
 - keyword table 88
 - static input files 88
 - static output files 88
 - sysprint output sample 89
- CMNISOVR program
 - described 89
 - ISPF statistics sample 92
 - job sample 91
 - keyword table 90
 - static input files 89
 - static output files 92
 - sysprint output sample 92
- CMNISPRES program
 - control word table 90
 - DBD ACBGEN requirement 86
 - described 86

- job sample 87
- keyword table 86
- PSB ACBGEN requirement 86
- static input files 86
- static output files 87
- sysprint output sample 87
- compile procedures
 - IMS 78
- control regions
 - application administration 33
 - package update 41

D

- DBD control statements
 - application overrides 34
 - CMNISOVR override program 89
 - global overrides 30
 - package overrides, update 43

G

- global administration
 - IMS DBD overrides 30
 - IMS library subtypes 29
 - IMS PSB overrides 31

I

- IMS Option
 - administration, general 14
 - application administration 33
 - batch services 85
 - global administration 24
 - package considerations 39
 - skeletons 79
 - worksheets 75

L

- library subtypes, IMS 29
- library types, IMS 34
- license
 - SER10TY 19

M

macro file stacking program 88

IMS global definition panels 76
IMS languages & compile procedures 78
IMS library types & subtypes 77

O

online help 10

P

package IMS considerations

- create 40
- install 69
- promote 60, 69
- query 69
- stage 45
- update 40

package update

- IMS ACB control statements 42
- IMS control regions 41
- IMS DBD overrides 43
- IMS PSB overrides 44, 45, 48, 51, 55, 57

PSB control statements

- application overrides 34
- CMNISOVR override program 89
- global overrides 31
- package overrides, update 44, 45, 48, 51, 55, 57

S

SER10TY

- license 19

skeletons

- IMS procedures list 80
- IMS system variables 82
- IMS-related 79

system variables

- IMS-related 82

U

update package

- ACB control statements 42
- IMS control regions 41
- IMS DBD overrides 43
- IMS PSB overrides 44, 45, 48, 51, 55, 57

W

worksheets

- IMS global declaration panels 76