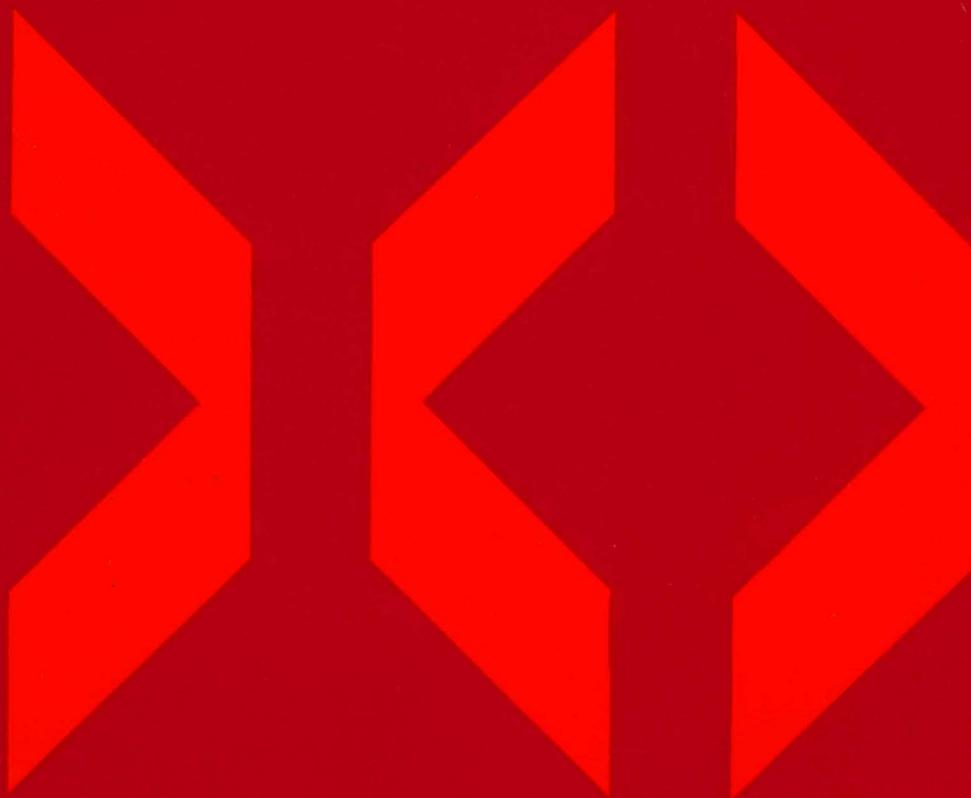




# MVS/Extended Architecture Installation: System Generation

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Program





**MVS/Extended Architecture  
Installation:  
System Generation**

Licensed  
Program

### **Third Edition (June 1987)**

This edition replaces GC26-4148-1 and applies to both MVS/System Product Version 2 (5665-291 and 5740-XC6) Release 2.0 and MVS/Extended Architecture Data Facility Product Version 2 (5665-XA2) Release 3.0, and to subsequent releases of the three products.

The changes for this edition are summarized under "Summary of Changes" following the preface. Because the technical changes in this edition are extensive and difficult to localize, they are not indicated by vertical bars in the left margin.

Changes are made periodically to this publication; before using this publication in connection with the operation of IBM systems, consult the latest *IBM System/370, 30xx, and 4300 Processors Bibliography*, GC20-0001, for the editions that are applicable and current.

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## Preface

This publication provides information on how to do a system generation (sysgen) for an MVS/Extended Architecture (MVS/XA) system.

## Organization

This publication contains the following:

Chapter 1, "Introduction," defines and discusses a sysgen. It also indicates which types of sysgen are obsolete for MVS/ XA.

Chapter 2, "Planning for an MVS/XA System," discusses the steps to consider when planning for a sysgen of an MVS/XA system.

Chapter 3, "Coding the Sysgen Statements," contains the detailed information needed to select and code the sysgen statements. Included are:

- The required and optional statements for a sysgen.
- An explanation of each sysgen statement, given alphabetically by the statement name. The format, parameters, and defaults of each statement are explained.
- An example of the coding of each statement.

Chapter 4, "Selecting and Defining the System Data Sets," describes the procedures for allocating space for the system data sets and cataloging them in the master catalog. Also included are descriptions of each of the system data sets.

Chapter 5, "Executing Sysgen," is divided into four sections:

- An explanation of Stage 1 input, processing, and output
- An explanation of Stage 2 input, processing, and output
- An explanation of causes for unsatisfactory completion of sysgen and suggested restart procedures
- Examples of sysgen error, warning, and informational messages

Chapter 6, "Testing the System," discusses the procedures for testing the newly installed MVS/XA system using the installation verification procedure (IVP).

Chapter 7, "Using Data Sets from the Old Production System," discusses the procedure for substituting data sets from the old production system for those in the newly installed system.

Chapter 8, "Installing ISMF," discusses how to install the interactive storage management facility (ISMF).

The appendix, "Sysgen Example," presents an example that illustrates Stage 1 input statements for a typical JES2 sysgen.

An index is also included.

## Related Publications

Within the text, references are made to the following publications:

### Access Method Services, Catalogs, and VSAM

Note that references to both of the access method services publications are abbreviated throughout this manual as *Access Method Services Reference*.

- *MVS/Extended Architecture Integrated Catalog Administration: Access Method Services Reference*, GC26-4135
- *MVS/Extended Architecture VSAM Catalog Administration: Access Method Services Reference*, GC26-4136
- *MVS/Extended Architecture Catalog Administration Guide*, GC26-4138
- *MVS/Extended Architecture VSAM Administration Guide*, GC26-4151
- *MVS/Extended Architecture VSAM Administration: Macro Instruction Reference*, GC26-4152

### ACF/TCAM, ACF/VTAM, and BTAM

- *Advanced Communications Function for TCAM Version 2 General Information: Functional Description*, GC30-3131
- *Advanced Communications Function for VTAM Version 2 General Information*, GC27-0608
- *OS/VS BTAM*, GC27-6980 (and supplement to *OS/VS BTAM* for *BTAM/System Product*, SC27-0604)

## **Assembler H, JCL, and Linkage Editor/Loader**

- *Assembler H Version 2 Application Programming: Guide*, SC26-4036
- *Assembler H Version 2 Application Programming: Language Reference*, GC26-4037
- *MVS/Extended Architecture JCL User's Guide*, GC28-1351
- *MVS/Extended Architecture JCL Reference*, GC28-1352
- *MVS/Extended Architecture Linkage Editor and Loader User's Guide*, GC26-4143

## **Data Management and Utilities**

- *MVS/Extended Architecture Data Administration: Utilities*, GC26-4150
- *MVS/Extended Architecture System—Data Administration*, GC26-4149

## **Device Publications**

- *3350/3344 Installation and Conversion Guide*, GC20-1780
- *Introduction to IBM 3375 Direct Access Storage*, GA26-1666
- *Introduction to IBM 3380 Direct Access Storage*, GA26-1662
- *IBM 3800 Printing Subsystem Programmer's Guide*, GC26-3846

## **Device Support Facilities, MVSCP, IOCP, and GSP**

- *Device Support Facilities User's Guide and Reference*, GC35-0033
- *MVS/Extended Architecture MVS Configuration Program: Guide and Reference*, GC28-1335
- *Input/Output Configuration Program User's Guide and Reference*, GC28-1027
- *OS/VS Graphic Subroutine Package (GSP) for FORTRAN IV, COBOL, and PL/1*, GC27-6973

## **Interactive Storage Management Facility (ISMF)**

- *MVS/Extended Architecture Interactive Storage Management Facility User's Guide*, GC26-4266
- *MVS/Extended Architecture Interactive Storage Management Facility Customization Guide*, GC26-4267
- *MVS/Extended Architecture Interactive Storage Management Facility Diagnosis Guide*, LY26-3906

## Messages and Codes

- *MVS/Extended Architecture Message Library: System Codes*, GC28-1157
- *MVS/Extended Architecture Message Library: System Messages, Volume 1*, GC28-1376, and *Volume 2*, GC28-1377

## System Programming, Initialization, Tuning, and Debugging

- *System Modification Program Extended User's Guide*, SC28-1302
- *MVS/Extended Architecture Operations: System Commands*, GC28-1206
- *MVS/Extended Architecture Supervisor Services and Macro Instructions*, GC28-1154
- *MVS/Extended Architecture System Programming Library: Initialization and Tuning*, GC28-1149
- *MVS/Extended Architecture System Programming Library: Service Aids*, GC28-1159
- *MVS/Extended Architecture System Programming Library: System Macros and Facilities, Volume 1*, GC28-1150, and *Volume 2*, GC28-1151
- *MVS/Extended Architecture System Programming Library: System Management Facilities*, GC28-1153
- *MVS/Extended Architecture Interactive Problem Control System User's Guide and Reference*, GC28-1152
- *MVS/Extended Architecture System Programming Library: SYS1.LOGREC Error Recording*, GC28-1162

## TSO

- *TSO Extensions Command Language Reference*, SC28-1307
- *System Programming Library: TSO/E Installation and Planning, Volume 1*, SC28-1379
- *System Programming Library: Time Sharing Option*, GC28-1173

## Summary of Changes

### Release 3.0, June 1987

With the installation of MVS/SP Version 2 Release 2.0 and DFP/XA Version 2 Release 3.0, the following changes occur in the sysgen process.

- An I/O device generation—usually called IOGEN—is no longer supported. The function of an IOGEN is now provided by the MVS configuration program and various PARMLIB members.
- An eligible device table (EDT) generation—usually called an EDTGEN—is no longer supported. The function of an EDTGEN is now provided by the MVS configuration program.
- The following sysgen statements become obsolete:
  - AFFINITY
  - CKPTREST
  - CONSOLE
  - CTRLPROG
  - EDIT
  - EDTGEN
  - IODEVICE
  - SCHEDULR
  - SVCTABLE
  - TSO
  - UNITNAME

The functions of the preceding statements are now provided by the MVS configuration program, various new/changed PARMLIB members, and SAMPLIB members.

- On the DATAMGT statement, the IND, TABLE, and UCSDFLT parameters are no longer supported.
- The specification for including/excluding MSS is added to the DATAMGT statement.
- The specification for including/excluding the full TSO command system is added to the DATAMGT statement.
- On the DATASET statement, SYS1.DCMLIB is no longer supported.

- On the GENERATE statement, only GENTYPE=ALL is supported. The OBJPDS parameter is no longer supported.
- All parameters on the JES statement are no longer supported.
- SYS1.LOGREC is no longer automatically defined during the sysgen process. SYS1.LOGREC must be preallocated or specified, using the DATASET macro with the SPACE parameter.

All of the obsolete sysgen statements and nonsupported parameters are still included in the publication with pointers to their functional replacements (if one exists).

## **Release 2.0, June 1986**

### **Enhancements and New Device Support**

#### **IBM 3422 Magnetic Tape Unit**

Information to support the IBM 3422 Magnetic Tape Unit has been added to the table of IODEVICE macro parameter values and to the IODEVICE statements in Appendix, "Sysgen Example."

#### **Interactive Storage Management Facility (ISMF) Support**

Chapter 4, "Selecting and Defining the System Data Sets" has been updated to include discussions of the ISMF system data sets.

"Installing ISMF" has been added to explain how to install ISMF. The chapter includes information on making ISMF available to users of the Time Sharing Option (TSO).

#### **Updated Space Allocations**

Chapter 4, "Selecting and Defining the System Data Sets" and Appendix, "Sysgen Example" include updated information on the amount of space to allocate for system data sets.

# Release 1.0, April 1985

## Enhancements and New Device Support

### 3262 Model 5 Printer

Information to support the IBM 3262 Model 5 Printer has been added to the DATAMGT and IODEVICE macros, and to the description of SYS1.IMAGELIB. The 3262 Model 5 printer is specified in the IODEVICE macro as UNIT=4248.

### 3350 Direct Access Storage Attached to 3880 Storage Control Model 21

The IBM 3350 Direct Access Storage, when attached to the IBM 3880 Storage Control Model 21, is specified in the IODEVICE macro as UNIT=3351P. The example of a complete sysgen in Appendix, "Sysgen Example," has been updated to include the 3351P specification.

"Functionally Equivalent I/O Devices" has also been updated to include the Model 21.

### 3380 Direct Access Storage Attached to 3880 Storage Control Model 23

The IBM 3380 Direct Access Storage, when attached to the IBM 3880 Storage Control Model 23, is specified in the IODEVICE macro as UNIT=3380. No other special parameters are required.

### 3380 Models AD4, BD4, AE4, and BE4 Direct Access Storage

Information has been added to support the IBM 3380 Models AD4, BD4, AE4, and BE4 Direct Access Storage.

### 3430 Magnetic Tape Subsystem

Information to support the IBM 3430 Magnetic Tape Subsystem has been added to the IODEVICE macro. Device tables and the example of sysgen in Appendix, "Sysgen Example" have also been changed to reflect the 3430.

### 3480 Magnetic Tape Subsystem

Information has been added to support the IBM 3480 Magnetic Tape Subsystem.

### 4245 Printer

Information to support the IBM 4245 Printer has been added to the DATAMGT and IODEVICE macros, and to the description of SYS1.IMAGELIB. Device tables and the example of sysgen in Appendix, "Sysgen Example" have also been changed to reflect the 4245.

## **4248 Printer**

Information to support the IBM 4248 Printer has been added to the DATAMGT and IODEVICE macros, and to the description of SYS1.IMAGELIB. Device tables and the example of sysgen in Appendix, "Sysgen Example" have also been changed to reflect the 4248.

## **Version 2 Publications**

The Preface includes new order numbers for Version 2 of MVS/XA.

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## Chapter 1. Introduction

System generation (usually referred to as sysgen) is a process that builds system libraries that reflect your operating system requirements. The sysgen process selects modules from the IBM distribution libraries (DLIBs), optionally combines them with installation-provided routines from one or more installation-specified partitioned data sets, and places the modules and routines in the appropriate system libraries.

### Sysgen

*Sysgen* is the process of creating system libraries customized to the data processing requirements of your installation. To do a sysgen,

- Define (allocate space for, and catalog) the system data sets. Some of the system data sets are required in all installations; the need for others depends on the specific products and options you select.
- Execute the sysgen process as a series of jobs.

An I/O device generation—usually called IOGEN—is no longer supported. The function of an IOGEN is now provided by the MVS configuration program, various PARMLIB members, and SAMPLIB members.

An eligible device table (EDT) generation—usually called EDTGEN—is no longer supported. The function of an EDTGEN is now provided by the MVS configuration program.

### Execution of Sysgen

The sysgen process runs as a series of jobs in two stages:

- **Stage 1** uses the information you code on the sysgen statements to create a job stream consisting of JCL statements and control statements, as well as a documentation listing. This job stream is the input to Stage 2, and to the SMP JCLIN function.
- **Stage 2** uses the job stream created in Stage 1 to link-edit and copy modules from the DLIBs into the new system data sets. The output from Stage 2 is the new or updated MVS/XA system libraries and a documentation listing.

Execute the jobs that comprise Stage 1 and Stage 2 on an existing system (called the generating system). To generate or update an MVS/XA system, the generating system must be an MVS/370 system at a Release 3.8 level, with or without MVS/System Product Version 1 or MVS/System Extensions installed, or an MVS/XA system.

Figure 1 illustrates the sysgen process. This process is only part of the MVS/XA installation process. Sysgen works with the following programs to create or update an MVS/XA system:

- System Modification Program Extended (SMP/E) or System Modification Program (SMP)
- MVS configuration program
- Input/Output Configuration Program (IOCP)

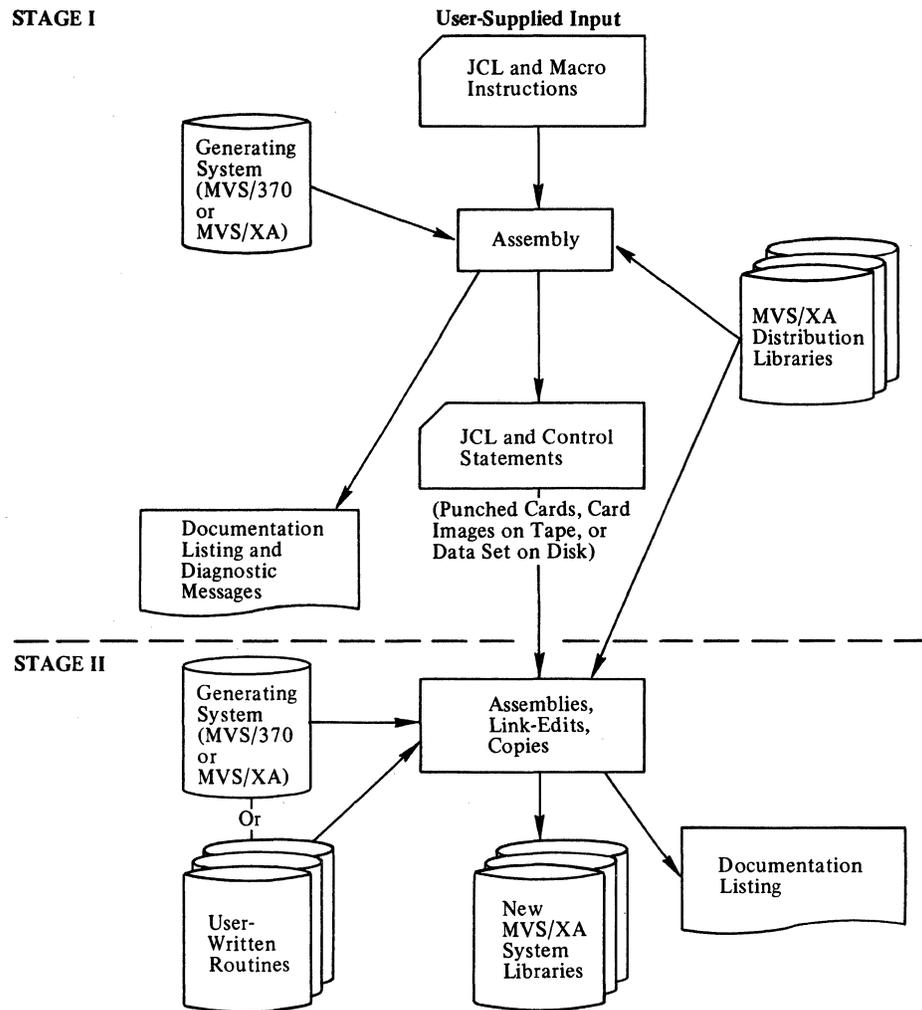


Figure 1. The Sysgen Process

Additionally, to build a complete MVS/XA system, use an editor or utility program to build the required PARMLIB members.

The next three topics describe the purpose of SMP/E (or SMP), the MVS configuration program, and IOCP.

## System Modification Program (SMP/E or SMP)

To create or update an MVS/XA system, you need the System Modification Program (SMP/E or SMP).

*Note:* The acronym SMP refers to both System Modification Program Extended (SMP/E) and System Modification Program (SMP Release 4 or later) unless otherwise stated.

Before doing a sysgen, use the ACCEPT function of SMP to incorporate into your existing DLIBs the products you are installing. Also use SMP to incorporate prerequisite and corequisite service into the DLIBs.

When you use SMP to update your DLIBs, SMP ensures that corequisites or prerequisites are present on the DLIBs for the products you are installing. To do this, SMP maintains two data sets:

- In SMP/E:
  - The control data set (target zone), which reflects the contents of the system libraries
  - The alternate control data set (DLIB zone), which reflects the contents of the DLIBs
- In SMP Release 4:
  - The control data set (CDS), which reflects the contents of the system libraries
  - The alternate control data set (ACDS), which reflects the contents of the DLIBs

After a sysgen, use the SMP JCLIN function to update the control data set to reflect changes in the system libraries.

For further information about SMP, see *SMP/E User's Guide* or *SMP System Programmer's Guide*.

## MVS Configuration Program

The MVS configuration program provides much of the function that was provided by an IOGEN as well as all of the function that was provided by an EDTGEN. The primary sources of input to the MVS configuration program are IODEVICE and UNITNAME statements. The output consists of a set of load modules that MVS uses to manage the I/O configuration.

You execute the MVS configuration program to define the I/O configuration to MVS. Required in the definition are the:

- I/O devices attached to control units
- Esoteric specifications for the I/O devices
- Device preference table specification
- NIP console devices

For additional information about the MVS configuration program, see *MVS/XA MVS Configuration Program: Guide and Reference*.

## Input/Output Configuration Program (IOCP)

Channel operations are controlled by the I/O subsystem in the processor complex running in extended architecture mode. To control the channel operations, the I/O subsystem requires specific data about the hardware I/O configuration.

You execute IOCP to define the I/O configuration for use by the I/O subsystem. Required in this definition are the:

- Channel paths on the processor complex
- Control units attached to the channel paths
- I/O devices attached to the control units

Both MVS and the hardware require data about the I/O configuration. To provide this data, use a common input stream for both IOCP and the MVS configuration program; that is, include IOCP statements in the MVS configuration program input stream to ensure identical definitions of software and hardware I/O configurations. For testing purposes, execute the MVS configuration program before IOCP. The MVS Configuration is described in *MVS/XA MVS Configuration Program: Guide and Reference*.

## Chapter 2. Planning for an MVS/XA System

Listed below are the steps to consider when you plan to build and install an MVS/XA system. Note that you can do several of the steps in sequences other than those shown. Technically, some of the steps are unnecessary or you can do them in different ways.

1. Ensure that you provide the required environment for running sysgen.
2. Provide for backup and recovery.
3. Incorporate the products being installed into the DLIBs.
4. Initialize the DASD volumes that will contain the MVS/XA system data sets.
5. Define (allocate space for, and catalog) the system data sets.
6. Code the sysgen statements.
7. Prepare to add user-written routines during sysgen.
8. Execute sysgen.
9. Create a new SMP control data set to reflect the new system libraries.
10. Install code not supported by the sysgen process.
11. Code the MVS configuration program and IOCP statements.
12. Execute the MVS configuration program.
13. Execute IOCP.
14. Build required PARMLIB members.
15. Make backup copies of the new system data sets.
16. Make ISMF execution libraries available to TSO users.
17. After initial program load (IPL), test the MVS/XA system.

The following topics describe each step.

## Providing the Required Environment for Sysgen

You can do an MVS/XA sysgen on an MVS/370 system or on an MVS/XA system. The MVS/370 system must be based on OS/VS2 MVS Release 3.8, with or without MVS/System Extensions or MVS/System Product Version 1 installed. The generating system must also support the devices on which the MVS/XA system libraries and DLIBs will reside; that is, if you are planning to use the IBM 3375 or 3380 Direct Access Storage device for MVS/XA system libraries, ensure that the appropriate device support is in the generating system.

If you define the master catalog as an integrated catalog facility catalog, the generating system must contain integrated catalog facility support through previous installations of either Data Facility Extended Function (DFEF) or Data Facility Product (DFP). If you do not already have integrated catalog facility support, define the new master catalog as a VSAM catalog and convert it to integrated after testing the newly built system.

Specific levels of certain programs (such as SMP and Assembler H) are required for a sysgen. The program directories shipped with MVS/SP Version 2 and DFP Version 2 identify programs required for sysgen and the required levels of those programs.

In addition, have the following programs available on the generating system:

- The AMBLIST utility in DFP, to help analyze incomplete or incorrect output from selected steps of the sysgen process
- Data Facility Data Set Services (DFDSS), to make a backup copy of the MVS/XA system libraries created by sysgen.

## Providing a Backup Copy of the Existing System

Before you update the DLIBs, you must copy them. MVS/SP Version 2 replaces and, therefore, completely deletes from the existing DLIBs the base control program (BCP) portion of MVS/370. Similarly, DFP deletes from the existing DLIBs the MVS/370 routines it replaces. Once you incorporate DFP and MVS/SP Version 2 into your DLIBs, there is no simple way to restore the DLIBs to their MVS/370 contents. You cannot use the SMP RESTORE function to restore DLIBs to their previous level.

## Updating the DLIBs

Unless otherwise stated, the acronym SMP refers to both System Modification Program Extended (SMP/E) and System Modification Program Release 4.

Sysgen creates new or updated system libraries from the DLIBs. Before doing a sysgen, use the SMP ACCEPT function to incorporate into the existing DLIBs the

products you are installing. See *SMP/E User's Guide* or *SMP System Programmer's Guide* for details on using the SMP ACCEPT function.

The DLIBs contain modules and macros that Stage 2 copies and link-edits into the appropriate system data sets. These can contain:

- The operating system program options
- Utility programs
- Data management routines
- Error recovery routines
- Job management routines
- Task management routines
- Problem determination routines
- Teleprocessing routines
- ISMF routines
- ISMF panels, messages, and tables
- System parameter lists
- Cataloged procedures
- Macro definitions for the system macros that the assembler uses.

The DLIBs also contain macros that are used during the Stage 1 assembly.

## Initializing the DASD Volumes

Before installing the MVS/XA system, initialize the DASD volumes that are to contain the new and updated MVS/XA system data sets. DASD volume initialization is the process of writing home addresses, a volume label, and a volume table of contents (VTOC) on a DASD volume. In addition, write the IPL text on the DASD volume that will become the system residence volume for the new system. The location of the IPL text is referenced in the *MVS/XA Program Directory*.

Initializing DASD volumes involves the following steps:

1. Vary the DASD volumes offline
2. Execute the appropriate Device Support Facilities control statements
3. Mount the DASD volumes

For more information on initializing DASD volumes, see *Device Support Facilities User's Guide and Reference*.

## Defining the System Data Sets

You can define the system data sets during sysgen using the DATASET statement, or before sysgen using JCL and/or access method services.

For more information on the data sets, see Chapter 4, "Selecting and Defining the System Data Sets" on page 45. Details on coding the DATASET statement are in Chapter 3, "Coding the Sysgen Statements" on page 11.

## Coding the Sysgen Statements

Chapter 3 describes the sysgen statements.

## Adding User-Written Routines during Sysgen

During sysgen, you can include your own macros, parameters, procedures, appendages, and routines in the system data sets using the DATASET statement described in Chapter 3.

## Executing Sysgen

Chapter 5, "Executing Sysgen" on page 105, describes the input, processing, and output of Stage 1 and Stage 2 of the sysgen process. Chapter 5 also outlines the specific jobs necessary for a sysgen.

## Creating a New Control Data Set

After doing a sysgen, create a new control data set to reflect the contents of the new system data sets. To do this, you:

- Allocate a new target zone (SMP/E) or CDS (SMP Release 4)
- Copy the DLIB zone or ACDS (created by the SMP ACCEPT function when you updated the DLIBs) into the new control data set
- Execute the SMP JCLIN function using the Stage 1 output to update the control data set to reflect the new system libraries

## Installing Code Not Supported by Sysgen

Some products require an installation procedure separate from sysgen. For each product you install, consult the program directory for any specific installation steps.

## Coding the MVS Configuration Program and IOCP Statements

To ensure that the I/O configuration defined to MVS by the MVS configuration program matches the I/O configuration defined to the hardware by IOCP, combine the IOCP statements with the MVS configuration program statements to form a combined input stream for use by both the MVS configuration program and IOCP.

For more information about coding the MVS configuration program statements, see *MVS/XA MVS Configuration Program: Guide and Reference* for more information about coding IOCP statements, see *IOCP User's Guide and Reference*.

## Executing the MVS Configuration Program

Always use the latest level of the MVS configuration program, which is contained in SYS1.LINKLIB of the system that you are generating.

Execute the MVS configuration program prior to executing IOCP. Both perform validity checks on the input; however, more of the input is related to the MVS configuration program than to IOCP.

For details on executing the MVS configuration program, see *MVS/XA MVS Configuration Program: Guide and Reference*.

## Executing IOCP

Always use the latest level of IOCP.

For details on executing IOCP, see *IOCP User's Guide and Reference*.

## Building PARMLIB Members

Build a CONSOLxx PARMLIB member to define your console configuration. If you install user-written SVC routines, you may need to update an IEASVCxx PARMLIB member.

In addition, edit the following PARMLIB members:

- CLOCKxx
- IEASYSxx
- IEFSSNxx

Also, you may want to build the following members:

- PFKTABxx
- SCHEDxx

For additional information on PARMLIB members, see *Initialization and Tuning*.

## **Making a Backup Copy of the New System Data Sets**

For backup and recovery, make a copy of the new system data sets created during sysgen.

## **Making ISMF Available to TSO Users**

After you have generated the MVS/XA system, you can use the steps described in Chapter 8, “Installing ISMF” on page 129 to make ISMF available to TSO users.

## **Testing the MVS/XA System**

Use the installation verification procedure (IVP) to test the new MVS/XA system. For information on using IVP, see Chapter 6, “Testing the System” on page 121.

## Chapter 3. Coding the Sysgen Statements

This chapter contains the detailed information needed to select and code the sysgen statements. Included in this chapter are:

- An explanation of the conventions used in this book to show the statements.
- A list of the sysgen statements.
- An alphabetic listing of the statements. In this section, the function, format, parameters, and defaults of each statement are described, and a coding example of each is given.

### Rules for Coding Sysgen Statements

The rules for coding sysgen statements are those of the assembler language. The following paragraphs are a summary of those rules, as stated in *Assembler H Version 2 Application Programming: Language Reference* and *Assembler H Version 2 Application Programming: Guide*.

Sysgen statements have the following standard format:

Name	Operation	Operand	Comments
Name	Statement name	Required and optional parameters	Optional

**Name** symbolically identifies the statement. If included, it contains from 1 through 8 alphanumeric characters, the first of which must be alphabetic. Begin the name in the first position of the statement and follow it with one or more blanks. Sysgen ignores the name field.

**Operation** identifies the statement. Precede it and follow it with one or more blanks.

**Operand** contains parameters separated by commas. You end this field by placing one or more blanks after the last parameter. In most sysgen statements, you use keyword parameters in the operand field. A parameter consists of a keyword followed by an equal sign (=) and the keyword value. The keyword value may be a single value or a list of values. If it is a list, separate the values with commas and enclose the list in parentheses.

Comments can be included on a sysgen statement. If included, separate them from the last parameter of the operand field with one or more blanks. Use an entire statement for a comment by placing an asterisk in the first column of each statement. A statement that has no parameters cannot have comments.

The rules for coding sysgen statements are:

- Code sysgen statements in columns 1 through 71.
- Continue a statement that exceeds 71 columns onto one or more additional statements by placing a nonblank character in column 72 to indicate continuation.
- Interrupt a sysgen statement either at column 71 or after any comma that separates parameters. Begin the continued portion in column 16 of the following statement.
- Comments may appear on every line of a continued statement.
- Use columns 73 through 80 to code any identification and/or sequence characters.

## Describing Sysgen Statements

The notation used to define the syntax of the sysgen statements is as follows:

1. The set of symbols listed below is used to define the syntax, but never use them on a statement.
  - logical OR           |
  - braces               { }
  - brackets             [ ]
  - underscore           \_\_\_\_\_
  - ellipsis              ...
2. Use uppercase letters, numbers, and the set of symbols shown in the following list on a statement exactly as shown in the syntax.
  - comma                ,
  - equal sign           =
  - parentheses          ( )
3. Lowercase letters appearing in the syntax represent variables for which you substitute specific information on a statement.
4. Items separated by the logical OR represent alternative items. Select only **one** of the items.
5. Braces group related, alternative items. Select only **one** of the items.
6. Brackets also group related, alternative items; however, everything within the brackets is optional. If you do not **explicitly** specify one of the items, the result is a **null** specification.

7. An underscore indicates a default alternative. If you select an underscored alternative, you need not explicitly specify it on a statement. The absence of an explicit specification is an **implicit** specification of the default alternative.
8. An ellipsis indicates that you may specify the preceding item or group of items:
  - zero times,
  - once, or
  - more than once in succession

## List of Statements

The sysgen statements are as follows:

<b>Statement</b>	<b>Description</b>
<b>DATAMGT</b>	A required statement that you use to specify the inclusion of optional access methods, graphic programming services, Mass Storage System (MSS), and TSO commands.
<b>DATASET</b>	A required statement that you use to define system data sets and include user-written routines in the system data sets.
<b>GENERATE</b>	A required statement that you use to specify the system residence volume and JCL information for Stage 2 jobs.
<b>JES</b>	An optional statement that you use to specify the inclusion of JES3 as the job entry subsystem.

## Obsolete Sysgen Statements

The following sysgen statements become obsolete in MVS/XA with the installation of MVS/SP Version 2 Release 2.0 and DFP/XA Version 2 Release 3.0:

- AFFINITY
- CKPTREST
- CONSOLE
- CTRLPROG
- EDIT
- EDTGEN
- IODEVICE
- SCHEDULR
- SVCTABLE
- TSO
- UNITNAME

Sysgen tolerates the obsolete statements in the Stage 1 input stream, but ignores them. Each obsolete statement left in the Stage 1 deck causes sysgen to issue an Mnote that indicates the functional replacement for the statement.

Do not include MVS configuration program statements in a sysgen deck. You can still include IOCP statements in a sysgen deck for compatibility; however, sysgen ignores the IOCP statements.

## AFFINITY

- The AFFINITY statement is no longer supported during sysgen, but is allowed in the Stage 1 deck for compatibility.
- The AFFINITY statement is functionally replaced by the SCHEDxx member of PARMLIB.
- For detailed information about SCHEDxx, see *Initialization and Tuning*.

Keeping the AFFINITY statement in your Stage 1 deck causes the following Mnote during Stage 1:

```
0,MACRO AFFINITY NOT SUPPORTED-USE `SCHEDXX IN PARMLIB
```

## CKPTREST

- The CKPTREST statement is no longer supported during sysgen, but is still allowed in the Stage 1 deck for compatibility.
- The CKPTREST statement is functionally replaced by the SCHEDxx member of PARMLIB.
- For detailed information about SCHEDxx, see *Initialization and Tuning*.

Keeping the CKPTREST statement in your Stage 1 deck causes the following Mnote during Stage 1:

```
0,MACRO CKPTREST NOT SUPPORTED-USE SCHEDXX IN PARMLIB
```

## CONSOLE

- The CONSOLE statement is no longer supported during sysgen, but is still allowed in the Stage 1 deck for compatibility.
- The CONSOLE statement is functionally replaced by the CONSOLxx member of PARMLIB.
- For detailed information about CONSOLxx, see *Initialization and Tuning*.

Keeping the CONSOLE statement in your Stage 1 deck causes the following Mnote during Stage 1:

```
0,MACRO CONSOLE NOT SUPPORTED-USE CONSOLXX IN PARMLIB
```

# CTRLPROG

- The CTRLPROG statement is no longer supported during sysgen, but is still allowed in the Stage 1 deck for compatibility.
- Some CTRLPROG statement parameters are functionally replaced by the following PARMLIB members; others have no functional replacement.
  - CLOCKxx
  - IEASYSxx
- For detailed information about CLOCKxx and IEASYSxx, see *Initialization and Tuning*.

Keeping the CTRLPROG statement in your Stage 1 causes the following Mnote during Stage 1:

```
0,*****THE CTRLPROG MACRO IS NO LONGER SUPPORTED*****
```

The following Mnotes may also be generated during Stage 1 depending upon the parameters you coded on the CTRLPROG statement.

```
0,***STORAGE IS NO LONGER SUPPORTED***
```

```
0,***CSA IS NO LONGER SUPPORTED. USE CSA KEYWORD  
IN SYS1.PARMLIB MEMBER IEASYSXX***
```

```
0,***APFLIB IS NO LONGER SUPPORTED. USE APF KEYWORD  
IN SYS1.PARMLIB MEMBER IEASYSXX***
```

```
0,***ACR CODE IS NO LONGER SUPPORTED***
```

```
0,***WARN IS NO LONGER SUPPORTED***
```

```
0,***OPTIONS IS NO LONGER SUPPORTED. USE IEASYSXX IN PARMLIB***
```

```
0,***TZ IS NO LONGER SUPPORTED. USE THE TIMEZONE KEYWORD  
IN SYS1.PARMLIB MEMBER CLOCKXX***
```

```
0,***ASCII PARAMETER IS NO LONGER SUPPORTED. ASCII  
SUPPORT IS ALWAYS INCLUDED***
```

```
0,***DEBTINC IS NO LONGER SUPPORTED***
```

```
0,***DEBTSZE IS NO LONGER SUPPORTED***
```

```
0,***PAGNUM IS NO LONGER SUPPORTED. USE THE PAGTOTL KEYWORD  
IN SYS1.PARMLIB MEMBER IEASYSXX***
```

```
0,***SQA IS NO LONGER SUPPORTED. USE THE SQA KEYWORD IN  
SYS1.PARMLIB MEMBER IEASYSXX***
```

```
0,***VRREGN IS NO LONGER SUPPORTED. USE THE VRREGN KEYWORD  
IN SYS1.PARMLIB MEMBER IEASYSXX***
```

```
0,***REAL IS NO LONGER SUPPORTED. USE THE REAL KEYWORD IN  
SYS1.PARMLIB MEMBER IEASYSXX***
```

# DATAMGT

## Required

Use the DATAMGT statement to specify the inclusion of optional access methods, graphic programming services, Mass Storage System (MSS), and TSO commands into the system.

Sysgen always includes the following access methods in the system:

BDAM basic direct access method

BPAM basic partitioned access method

BSAM basic sequential access method

QSAM queued sequential access method

VSAM virtual storage access method

For information on the optional access methods, see:

*Advanced Communications Function for VTAM, Version 2 General Information*

*Advanced Communications Function for TCAM, Version 2 General Information:  
Functional Description*

*Data Administration Guide*

*OS/VS BTAM*

For information on graphic programming services, see *Graphic Programming Services (GPS) for IBM 2250 Display Unit*.

[symbol]	DATAMGT	ACSMETH= ( {TCAM[,method]...   VTAM[,method]...   TCAM,VTAM[,method]...} )  [GRAPHCS= ( [GSP] [ ,PORRTNS] ) ]  [MSS= {NO   YES} ]  [TSOCMDS= {NO   <u>YES</u> } ]  IND  TABLE  UCSDFLT
----------	---------	--

**ACSMETH=method**

specifies the inclusion of one or more of the following access methods:

- BTAM** basic telecommunication access method (requires that you install BTAM/System Product)
- GAM** graphics access method (including Graphic Access Method/System Product)
- ISAM** basic and queued indexed sequential access methods
- TCAM** telecommunications access method (requires that you install ACF/TCAM Version 2)
- VTAM** virtual telecommunications access method (requires that you install ACF/VTAM Version 2)

If you specify VTAM, define SYS1.VTAMLIB and include it in the IEAAPFxx member of PARMLIB.

**GRAPHCS=**

specifies the inclusion of graphic programming services.

**GSP**

specifies the inclusion of the graphic subroutine package in SYS1.LINKLIB.

**PORRTNS**

specifies the inclusion of the problem oriented routines (PORS) in SYS1.LINKLIB.

*Note:* If you install GAM/SP, do not specify PORRTNS.

**MSS={NO | YES}**

specifies whether or not to include the Mass Storage System (MSS).

**TSOCMDS={NO | YES}**

specifies whether or not to include the full TSO command system. If you explicitly or implicitly specify YES, define SYS1.COMDLIB. If you specify

NO, the TSO command system is included, but with limited TSO command processing functions.

If you explicitly or implicitly specify TSOCMDS=YES, specify either VTAM or TCAM on the ACSMETH= parameter; or you will receive the following Mnote during Stage 1:

```
5,***IEIDAT106 TCAM or VTAM MUST BE SPECIFIED FOR
    TSOCMDS=YES
```

*Note:* If you use the Print Dump service aid (PRDMP), do not specify TSOCMDS=NO. Print Dump requires a full function SYS1.COMDLIB to execute properly.

#### **IND**

The IND parameter is no longer supported during sysgen, but is allowed in the Stage 1 deck for compatibility. Maintaining the IND parameter on the DATAMGT statement in your Stage 1 deck causes the following Mnote during Stage 1:

```
0,IND PARAMETER IGNORED. SPECIFY VTAM ON
    ACSMETH PARAMETER TO INSTALL VTAM
```

#### **TABLE**

The TABLE parameter is no longer supported during sysgen, but is allowed in the Stage 1 deck for compatibility. Maintaining the TABLE parameter on the DATAMGT statement in your Stage 1 deck causes the following Mnote during Stage 1:

```
0,TABLE PARAMETER IGNORED - ALL IMAGE SETS
    INCLUDED
```

#### **UCSDFLT**

The UCSDFLT parameter is no longer supported during sysgen, but is allowed in the Stage 1 deck for compatibility. Maintaining the UCSDFLT parameter on the DATAMGT statement in your Stage 1 deck causes the following Mnote during Stage 1:

```
0,UCSDFLT PARAMETER IGNORED - ALL UCS IMAGES ARE
    DEFAULTS
```

*Example:* This example specifies the following options:

- The inclusion of BTAM, TCAM, and ISAM.
- The inclusion of the graphic subroutine package and problem oriented routines in SYS1.LINKLIB.
- The inclusion of MSS.
- The inclusion of the full TSO command system (the default value).

```
DATAMGT  DATAMGT  ACSMETH=(BTAM,TCAM,ISAM),          X  
          GRAPHCS=(PORRTNS,GSP),MSS=YES
```

# DATASET

## Required

Use the DATASET statement to define (allocate space for, and catalog) system data sets (including the master catalog) during sysgen. Additionally, you can use the DATASET statement to include user-written routines, macros, parameters, procedures, and authorized EXCP appendages in the system data sets.

Note that you must catalog some of the optional system data sets, if certain conditions exist, even if you do not allocate space for them. You can use the DATASET statement to affect the cataloging.

Prior to sysgen, you can predefine the system data sets. Use access method services to catalog, and allocate space for, VSAM data sets. Use JCL to catalog and access method services to allocate space for non-VSAM data sets.

If you predefine a system data set and do not allocate space for it, and on the DATASET statement specify SPACE=(CYL,(0)), Stage 2 neither catalogs the data set nor allocates space for it.

## Page and Swap Data Sets

When you specify a page or swap data set on a DATASET statement, Stage 2 allocates space for it, catalogs it, and includes its name in IEASYS00 in SYS1.PARMLIB.

## User-Written Routines

Ensure that user-written routines are members of cataloged partitioned data sets. Except for some routines that will reside in SYS1.NUCLEUS, executable code must be in load module form; that is, you must have assembled and link-edited each routine.

If a routine can reside above 16 megabytes or if it supports 31-bit addressing, specify AMODE and RMODE using the linkage editor or in the assembler language source code. For a description of the control statements required by the assembler and linkage editor, see *Assembler H Version 2 Application Programming: Language Reference and Linkage Editor and Loader*.

## EXCP Appendages

You can include EXCP appendages written for use by unauthorized programs by specifying the name or names of the appendages in the ABEAPP, CHEAPP, EOEAPP, PCIAPP, or SIOAPP parameters when defining the system data set into which you want them included. Stage 2 includes the EXCP appendages in the specified system data sets and includes their names and types in IEAAPP00 in SYS1.PARMLIB. Even if you want to include the appendages after sysgen, specify their names on a DATASET statement. Stage 2 includes just the name and type of the appendage in IEAAPP00.

Although you can specify as many as 84 appendages for any one of the parameters, and the values you assign to each of these 5 parameters must be unique from the

other four, the naming convention limits the **total** number of appendages to 144 for the sum of the appendages you specify in the 5 parameters.

Information about EXCP appendages can be found in *System—Data Administration*.

[symbol]	DATASET	{system data set identifier  PAGE <span>DSN</span> =name  SWAP <span>DSN</span> =name  SMF <span>DSN</span> =(suffix[,suffix]...)   [ABEAPP=(suffix[,suffix]...)] <sup>1</sup>  [CHEAPP=(suffix[,suffix]...)] <sup>1</sup>  [EOEAPP=(suffix[,suffix]...)] <sup>1</sup>  [MEMBERS=(name[,name]...)] <sup>1</sup>  [NAME={master catalog name duplex data set name}] <sup>1</sup>  [PCIAPP=(suffix[,suffix]...)] <sup>1</sup>  [PDS=name] <sup>1</sup>  [RESIDNT=(name[,name]...)] <sup>1</sup>  [SIOAPP=(suffix[,suffix]...)] <sup>1</sup>  [SPACE=({blocksize CYL TRK}, (quantity))]  [VOL=({volser  <u>SYSRES</u> },{genname  3380})]
----------	---------	--

**ABEAPP=suffix**

specifies a user-written abnormal-end appendage. Specify an alphameric value, from WA through Z9, that is the last 2 characters of the appendage name; Stage 2 automatically assigns the first 6 characters (IGG019) of the name. You may specify as many as 84 appendages. Specify this parameter only for SYS1.LPALIB or SYS1.SVCLIB. If you specify this parameter, also specify the PDS parameter.

**CHEAPP=suffix**

specifies a user-written channel-end appendage. Specify an alphameric value, from WA through Z9, that is the last 2 characters of the appendage name; Stage 2 automatically assigns the first 6 characters (IGG019) of the name. You may specify as many as 84 appendages. Specify this parameter only for SYS1.LPALIB or SYS1.SVCLIB. If you specify this parameter, also specify the PDS parameter.

---

<sup>1</sup> The validity of these parameters depends on the type of system data set you define.

**EOEAPP=suffix**

specifies a user-written end-of-extent appendage. Specify an alphanumeric value, from WA through Z9, that is the last 2 characters of the appendage name; Stage 2 automatically assigns the first 6 characters (IGG019) of the name. You may specify as many as 84 appendages. Specify this parameter only for SYS1.LPALIB or SYS1.SVCLIB. If you specify this parameter, also specify the PDS parameter.

**MEMBERS=name**

specifies the member or members of a cataloged partitioned data set you are defining. Each name cannot exceed 8 alphanumeric characters. The first character must be alphabetic. You may specify as many as 20 members; however, the sum of the names specified by MEMBERS and RESIDNT cannot exceed 20.

Except for SYS1.NUCLEUS, if you specify this parameter, also specify the PDS parameter. Stage 2 selectively copies each member into the system data set. For SYS1.NUCLEUS, if you specify the PDS parameter, but neither MEMBERS nor RESIDNT, Stage 2 **copies** the members of the partitioned data set into SYS1.NUCLEUS as individual members. If you specify both the PDS and MEMBERS parameters, Stage 2 **link-edits** the members into the nucleus being generated (IEANUC01).

Do not specify the same **name** in both the MEMBERS parameter and the RESIDNT parameter.

Figure 2 on page 31 identifies the system data sets for which you may specify this parameter, and the form that the members must be in for inclusion in the system data sets.

**NAME=name**

specifies the unique name of the master catalog or the unique name of the duplex page data set.

For duplex page data sets, the name cannot exceed 44 characters. The characters can be alphanumeric, national (@, #, \$), or special characters, such as the hyphen. Separate names containing more than 8 characters by means of periods between segments of from 1 to 8 characters; periods count toward the maximum of 44 characters. The first character of any name or name segment must be an alphabetic or national character.

For the master catalog, specify the name as ICFCATLG (for an integrated catalog facility master catalog) or VSCATLG (for a VSAM master catalog).

Specify this parameter for the master catalog, even if you predefine it.

**PAGEDSN=name**

specifies the name of a page data set. The name cannot exceed 44 characters. The characters can be alphanumeric, national (@, #, \$), or special characters, such as the hyphen. Separate names containing more than 8 characters by means of periods between segments of from 1 to 8 characters; periods count toward the maximum of 44 characters. The first character of any name or name segment must be an alphabetic or a national character.

*Note:* Stage 2 does not append the index value you specify on the GENERATE statement to the page data set name you specify in this parameter.

Define at least 3 page data sets before or during sysgen, but not more than 25 using both this parameter and access method services. (You can define additional page data sets after sysgen.)

For additional information, see Figure 2 on page 31.

**PCIAPP=suffix**

specifies a user-written program-controlled interrupt (PCI) appendage. Specify an alphameric value, from WA through Z9, that is the last 2 characters of the appendage name; Stage 2 automatically assigns the first 6 characters (IGG019) of the name. You may specify as many as 84 appendages.

Specify this parameter only for SYS1.LPALIB or SYS1.SVCLIB. However, if your program runs in a V=R address space and uses a PCI appendage, do not include the PCI appendage, and any appendage it refers to, in SYS1.LPALIB. Instead, include those appendages in either SYS1.SVCLIB or the fixed link pack area.

If you specify this parameter, also specify the PDS parameter.

**PDS=name**

specifies the complete, fully qualified name of a cataloged partitioned data set that contains user-written routines you want included in a system data set. The name cannot exceed 44 characters. The characters can be alphameric, national (@, #, \$), or special characters, such as the hyphen. Separate names containing more than 8 characters by means of periods between segments of from 1 to 8 characters. SYS1. and periods count toward the maximum of 44 characters. The first character of any name or name segment must be an alphabetic or a national character. Catalog the partitioned data set you specify in the generating system.

Except for SYS1.NUCLEUS, if you specify this parameter, also specify the MEMBERS or RESIDENT parameters, or both. Stage 2 selectively copies each member of the partitioned data set into the system data set. For SYS1.NUCLEUS, if you specify this parameter and not MEMBERS, Stage 2 copies the members of the partitioned data set into SYS1.NUCLEUS as individual members. If you specify both PDS and MEMBERS, Stage 2 link-edits the members into the nucleus being generated (IEANUC01).

Figure 2 on page 31 identifies the system data sets for which you may specify this parameter, and the form that the members must be in for inclusion in the system data sets.

**RESIDENT=name**

specifies the name(s) of member(s) of a cataloged partitioned data set that Stage 2 copies into the system data set you define. Each name cannot exceed 8 alphameric characters. The first character must be alphabetic. You may specify as many as 10 members; however, the sum of the names you specify using MEMBERS and RESIDENT cannot exceed 20. Stage 2 includes the names you specify in the IEAFIX01 list in SYS1.PARMLIB. At IPL

time, MVS includes them in the resident portion of the link pack area. If you specify this parameter, also specify the PDS parameter.

Do not specify the same name in both the RESIDENT parameter and the MEMBERS parameter.

Figure 2 on page 31 identifies the system data sets for which you may specify this parameter, and the form that the members must be in for inclusion in the system data sets.

**SIOAPP=suffix**

specifies a user-written start I/O appendage. Specify an alphameric value, from WA through Z9, that is the last 2 characters of the appendage name; Stage 2 automatically assigns the first 6 characters (IGG019) of the name. You may specify as many as 84 appendages. Specify this parameter only for SYS1.LPALIB or SYS1.SVCLIB. If you specify this parameter, also specify the PDS parameter.

**SMFDSN=suffix**

allows you an alternate method of specifying the VSAM SMF data sets (SYS1.MANn) without specifying the system data set identifier. Using SMFDSN, the suffix(es) you supply replace the n value of SYS1.MANn. Specify the suffix as follows:

```
SMFDSN=n
SMFDSN=(n,n)
SMFDSN=(x-y)
SMFDSN=(x-y,n[,n]...)
```

where either n, x, or y is a value of A through Z or 0 through 9, and x through y is a range of values, where y is greater than x. For instance, SMFDSN=(A-C,1) specifies SYS1.MANA, SYS1.MANB, SYS1.MANC, and SYS1.MAN1. SMFDSN=(A-9) specifies 36 SMF data sets, SYS1.MANA-SYS1.MANZ and SYS1.MAN0-SYS1.MAN9.

**SPACE**

specifies a request that space allocation be based solely on the values you specify in this parameter.

**{blocksize | CYL | TRK}**

specifies the unit of space you want allocated. You can allocate space in maximum block length, cylinders, or tracks. You must allocate some data sets in specific units. For this information, see the notes to Figure 2 on page 31.

**quantity**

specifies how many units of space (blocks, cylinders, or tracks) you want allocated. Depending on the data set, **quantity** may have one of several forms. Generally the form is:

```
(primary quantity[,secondary quantity]
[,directory blocks])
```

**primary quantity**

specifies how many units of space you want allocated.

**secondary quantity**

specifies how many more blocks, cylinders, or tracks are you want allocated if additional space is required. Figure 2 identifies the data sets for which you want secondary space allocated. If secondary allocation is not permitted, omit the field; do not code a zero for the secondary quantity.

**Caution:** MVS does not update DEBs that are not resident in the nucleus at the time you allocate secondary space. An attempt to access a secondary allocation after you extend the data set, but before the next IPL, may cause an abend to occur.

**directory blocks**

specifies the number of 256-byte blocks you want allocated for the directory of a partitioned data set. Figure 2 identifies the system data sets for which this applies.

**SWAPDSN=name**

specifies the name of a swap data set. The name cannot exceed 44 characters. The characters can be alphameric, national (@, #, \$), or special characters, such as the hyphen. Separate names containing more than 8 characters by means of periods between segments of from 1 to 8 characters; periods count toward the maximum of 44 characters. The first character of any name or name segment must be an alphabetic or a national character.

MVS does not require swap data sets. You can define swap data sets during (or before) sysgen, but not more than a total of 10 using both this parameter and access method services. (You can define additional swap data sets after sysgen.)

*Note:* Stage 2 does not append the index value you specify on the GENERATE statement to the swap data set name you specify in this parameter.

For additional information, see Figure 2 on page 31.

**system data set identifier**

specifies the name of a system data set you can define during sysgen. The valid names are:

BROADCAST  
CMDLIB  
DAE  
DGTLLIB  
DGTMLIB  
DGTPLIB  
DGTTLIB  
DUMPnn  
DUPLXDS  
HELP  
IMAGELIB  
INDMAC  
JES3LIB  
JES3MAC  
LINKLIB

LOGREC  
LPALIB  
MACLIB  
MAN<sub>n</sub>  
master catalog (ICFCATLG or VSCATLG)  
NUCLEUS  
PARMLIB  
PROCLIB  
SAMPLIB  
SBLSCLI0  
SBLSKEL0  
SBLMSG0  
SBLSPNLO  
SBLSTBL0  
STGINDEX  
SVCLIB  
TCOMMAC  
TELCMLIB  
UADS  
VTAMLIB

SYS1.DCMLIB is no longer supported. Maintaining the specification of DCMLIB on a DATASET statement in your Stage 1 deck causes the following Mnote during Stage 1:

```
0,***IEIDT2W02 DCMLIB NO LONGER SUPPORTED. STATEMENT IGNORED
```

## VOL

specifies the volume serial number of the volume you want to contain the system data set, page data set, or swap data set, and the generic name of the device on which you want the volume to reside.

**{volser | SYSRES}**

specifies the volume serial number. The value cannot exceed 6 alphameric characters.

**{genname | 3380}**

specifies the generic name of the device. The generic names you may specify are: 2305-2, 3330, 3330-1, 3340, 3350, 3350P, 3351, 3375, and 3380.

The VOL parameter works in conjunction with the RESVOL parameter on the GENERATE statement. The default values for both are the same. If you specify other than the default values for RESVOL, the default values for VOL change to match the values you specify in the RESVOL parameter.

*Example 1:* This statement identifies SYS1.LPALIB to the generating system. SYS1.LPALIB has been predefined on a 3380 volume labeled 222222.

```
LPALIB DATASET LPALIB,VOL=(222222,3380)
```

*Example 2:* This statement specifies a VSAM master catalog. The name of the master catalog is SYS1.VSCATLG and it is to reside on the system residence volume.

```
VSCATLG DATASET VSCATLG,SPACE=(CYL,(50,5)), X
        NAME=SYS1.VSCATLG
```

*Example 3:* This example shows how to specify an integrated catalog facility master catalog. The name of the catalog is SYS1.ICFCATLG and it resides on the system residence volume.

```
ICFCATLG DATASET ICFCATLG,SPACE=(CYL,(50,5)), X
        NAME=SYS1.ICFCATLG
```

*Example 4:* This statement specifies a page data set, PAGE1, on a 3380 volume labeled PAGE.

```
PAGE1 DATASET PAGEDSN=PAGE1,VOL=(PAGE,3380), X
        SPACE=(CYL,(134))
```

*Example 5:* This statement specifies a swap data set, SWAP5, on a 3380 volume labeled SWAP.

```
SWAP5 DATASET SWAPDSN=SWAP5,VOL=(SWAP,3380), X
        SPACE=(CYL,(20))
```

*Example 6:* This statement specifies a duplex page data set, DUPLEX1, on a 3380 volume labeled DUPLX.

```
DUPLEX1 DATASET DUPLEXDS,NAME=DUPLEX1, X
        VOL=(DUPLX,3380),SPACE=(CYL,(10))
```

*Example 7:* This statement specifies the SYS1.NUCLEUS data set. Note that no secondary space allocation is allowed in the SPACE parameter.

```
NUCLEUS DATASET NUCLEUS,SPACE=(CYL,(30,,10))
```

*Example 8:* This statement specifies that SYS1.LOGREC is to be allocated on a 3380 volume named 333333. Note that no secondary space allocation is allowed in the SPACE parameter.

```
LOGREC DATASET LOGREC,VOL=(333333,3380),SPACE=(CYL,(5))
```

Data Set	SPACE= (unit, (pri., sec., dir. blks.))				PDS=	MEMBERS=	RESIDNT=	User- Written Rtns Format	Notes
BROADCAST	x	x							12
CMDLIB	x	x	x	x	x	x		Load Module	1
DAE	x	x	x						27
DGTLLIB	x	x	x	x	x	x		Load Module	29
DGTMLIB	x	x	x	x	x	x		Message Library	29
DGTPLIB	x	x	x	x	x	x		Panel Library	29
DGTTLIB	x	x	x	x	x	x		Table Library	29
DUMPnn	x	x							17
DUPLEXDS	x	x							9,10,18
HELP	x	x	x	x					13,17
IMAGELIB	x	x	x	x	x	x		FCB, UCS Images, 3800 Support Modules	3,11
INDMAC	x	x	x	x				Finance Macros	17,21
JES3LIB	x	x	x	x	x	x			23
JES3MAC	x	x	x	x	x	x		JES3 Macros	14,23
LINKLIB	x	x	x	x	x	x	x	Load Module	11,14
LOGREC									
LPALIB	x	x	x	x	x	x	x	Load Module	4,5,7, 11,14
MACLIB	x	x	x	x	x	x		System Macros	11,14
MANn	x	x							25
master catalog	x	x	x						2,11, 18,28
NUCLEUS	x	x		x	x	x		Load Module	6,7,8,11
page data sets	x	x							9,10,11, 18,22

Figure 2 (Part 1 of 2). Parameters Supported When Specifying Particular Data Sets with the DATASET Statement

Data Set	SPACE= (unit, (pri., sec., dir. blks.))				PDS=	MEMBERS=	RESIDNT=	User- Written Rtns Format	Notes
PARMLIB	x	x	x	x	x	x		System Parameters	11,14
PROCLIB	x	x	x	x	x	x		System Procedures	5,11,14
SAMPLIB	x	x	x	x	x				11,14
SBLSCLIO	x	x	x	x	x	x		IPCS CLIST	14
SBLSKELO	x	x	x	x	x	x		IPCS Tailoring	14
SBLMSGO	x	x	x	x	x	x		IPCS Dialog Messages	13
SBLSPNLO	x	x	x	x	x	x		IPCS Dialog Panels	13
SBLSTBLO	x	x	x	x	x	x		IPCS Dialog Table	14
STGINDEX	x	x							10,11, 18,26
SVCLIB	x	x	x	x	x	x	x	Load Modules	5,6,11
swap data sets	x	x							9,10,18
TCOMMAC	x	x	x	x	x				5,17,24
TELCMLIB	x	x	x	x	x		x	Load Modules	15,17
UADS	x	x	x	x					16
VTAMLIB	x	x	x	x	x	x		Load Modules	20

Figure 2 (Part 2 of 2). Parameters Supported When Specifying Particular Data Sets with the DATASET Statement

Notes follow.

**Notes to Figure 2:**

1. Catalog this system data set. Allocate space only if you activate TSO.
2. Unless you specify `TSOCMDS=NO`, define (allocate space for, and catalog) this system data set.
3. If you activate DAE, this system data set is required.
4. This data set is required when using the interactive storage management facility (ISMF).
5. If you use the TSO `HELP` command, this system data set is required.
6. If you specify the `SPACE` parameter, also specify the `VOL` parameter. If you do not specify the `SPACE` parameter, do not specify the `VOL` parameter.
7. Allocate space in cylinders.
8. During the first sysgen, allocate space for the master catalog, page data sets, `SYS1.STGINDEX`, and swap data sets on a single volume. After the initial IPL, performance considerations may require a different configuration.
9. Specify a `DATASET` statement. If you predefine this system data set, omit the `SPACE` parameter. The master catalog can be either an integrated catalog facility catalog or a VSAM catalog.
10. Forms control buffer (FCB) modules, universal character set (UCS) images, 3800 character arrangement image sets, 3800 copy modification modules, graphic character modification modules and library character set modules are in this library.
11. Do not specify the same name in both the `MEMBERS` parameter and the `RESIDNT` parameter. The total number of names (`MEMBERS` and `RESIDNT`) must not exceed 20.
12. For improved system efficiency, allocate space on a cylinder boundary.
13. This system data set must reside on the system residence volume.
14. If you include a type 3 SVC routine, the name of the SVC routine must be of the form: `IGC00nnn`, where `nnn` is a unique decimal number you assign in descending order from 255 to 200. This name must be the name of a member of a cataloged partitioned data set.

If you include a type 4 SVC routine, the name of the SVC routine must be of the form: `IGC $ss$ nnn`, where `nnn` is a unique decimal number you assign in descending order from 255 to 200, and `ss` is a unique decimal number of the load module you assign beginning with 01 for the first (or only) load. This name must be the name of a member of a cataloged partitioned data set.

If you specify type 3 or type 4 SVC routines, identify them in an `IEASVCxx` `PARMLIB` member or by an `SVCUPDTE` macro.

For more information on SVC routines, see IEASVCxx in *Initialization and Tuning*.

15. You can include a maximum of 10 load modules in the nucleus. If you include type 1 or type 2 SVC routines in the nucleus, each load module can contain more than one SVC routine.

If you include a type 1 or type 2 SVC routine, the name of the SVC routine must be of the form: IGCnnn, where nnn is a unique decimal number you assign in descending order from 255 to 200.

16. This system data set is required. You may define it with a DATASET statement.
17. If you do not specify this data set on a DATASET statement, it will reside on the volume you specify in the RESVOL parameter of the GENERATE statement (the system residence volume).
18. If you install BTAM/SP and/or ACF/TCAM, this system data set is required.
19. Catalog this system data set. Allocate space only if you activate TSO.
20. Specify this optional system data set on a DATASET statement. If you predefine the data set, omit the SPACE parameter.
21. Permanently mount or reserve the volume on which this data set resides while it is in use.
22. If you install ACF/VTAM, this system data set is required. Specify it in the IEAAPFxx member of PARMLIB.
23. If you install industry subsystem support, this system data set is required.
24. Specify at least 3 data sets. If you predefine the system data sets, omit the SPACE parameter.
25. If you install JES3, this system data set is required.
26. If you install ACF/TCAM, this system data set is required.
27. Allocate space only if SMF or other measurement facilities will do recording.
28. If MVS needs to save VIO pages across job steps and between IPLs, this system data set is required.
29. Name the master catalog either ICFCATLG or VSCATLG.

## **EDIT**

- The **EDIT** statement is no longer supported during sysgen, but is allowed in the Stage 1 deck for compatibility.
- The **EDIT** statement is functionally replaced by the **EDITSAMP** member of **SAMPLIB**.
- For detailed information about the **EDITSAMP** member of **SAMPLIB**, see *TSO*.

Keeping the **EDIT** statement in your Stage 1 deck causes the following **MNOTE** during Stage 1:

**0,MACRO EDIT NOT SUPPORTED, USE EDITSAMP IN SAMPLIB**

## EDTGEN

- The EDTGEN statement is no longer supported during sysgen, but is allowed in the Stage 1 deck for compatibility.
- The EDTGEN statement is functionally replaced by the MVS configuration program.
- For detailed information about the MVS configuration program, see *MVS/XA MVS Configuration Program: Guide and Reference*.

Keeping the EDTGEN statement in your Stage 1 deck causes the following Mnote during Stage 1:

0,MACRO EDTGEN NOT SUPPORTED, USE MVSCP

# GENERATE

## Required

Use the GENERATE statement to specify the volume serial number and generic or esoteric name of the device for the system residence volume of the system being generated, and the output class and job class for use during sysgen. Include this statement just before the assembler END statement in the Stage 1 input.

The serial number you specify in the RESVOL parameter cannot be the serial number of the system residence volume of the generating system. Do not specify the index of the system data sets as SYS1.

[symbol]	GENERATE	[GENTYPE=ALL] [INDEX={name SYSX}] [JCLASS={class A}] [OCLASS={class A}] [RESVOL=( [{volser SYSRES}] [, {genname 3380} ] )] OBJPDS
----------	----------	---

### GENTYPE=ALL

specifies a sysgen.

*Note:* Note: The specification of GENTYPE=(IO,x) is invalid. Use the MVS configuration program to obtain the equivalent function.

### INDEX={name|SYSX}

specifies the qualifier for the system data sets. The qualifier may be from 1 to 6 alphanumeric characters; the first character must be alphabetic. Specify an index value other than SYS1; Stage 2 changes the qualifier of the data sets to SYS1.

If you predefine any system data sets, specify their index values the same as the values you specify in this parameter.

This parameter does not apply to the page data sets, the swap data sets, the duplex data set, or the master catalog.

### JCLASS={class|A}

is a letter from A through O that specifies the job class for Stage 2 jobs.

### OCLASS={class|A}

is a letter from A through Z or a number from 0 through 9 that specifies the output class for output from Stage 2.

## RESVOL

specifies the volume serial number and the generic or esoteric name of the device on which the system residence volume will reside.

**{volser | SYSRES}**

specifies the volume serial number of the system residence volume.

*Note:* The volume serial number must not be the same as the volume serial number of the system residence pack of the generating system.

**{genname | 3380}**

specifies the device number, generic name, or esoteric name of the device you want used for the system residence volume. Valid generic names are 2305-2, 3330, 3330-1, 3340, 3350, 3375, and 3380.

The RESVOL parameter works in conjunction with the VOL parameter on the DATASET statement. The default values for both parameters are the same. If you specify other than the default values for RESVOL, the default values for VOL change to match the values you specify in the RESVOL parameter.

## OBJPDS

The OBJPDS parameter is no longer supported during sysgen, but is allowed in the Stage 1 deck for compatibility. Maintaining the OBJPDS parameter on the GENERATE statement in your Stage 1 deck causes the following Mnote during Stage 1:

```
0,***IEIGEN103 OBJPDS PARAMETER NO LONGER
SUPPORTED***
```

*Example:* This example specifies a sysgen. The system residence volume is a 3380 volume labeled SYSTEM. The index of the system data sets is SG2, which is renamed to SYS1 during Stage 2. The job class and output class are K.

```
GEN    GENERATE    GENTYPE=ALL,RESVOL=(SYSTEM,3380),          X
                    INDEX=SG2,JCLASS=K,OCLASS=K
```

## IODEVICE

- The IODEVICE statement is no longer supported during sysgen, but is allowed in the Stage 1 deck for compatibility.
- The IODEVICE statement is functionally replaced by the MVS configuration program.
- For detailed information about the MVS configuration program, see *MVS/XA MVS Configuration Program: Guide and Reference*.

Keeping the IODEVICE statement in your Stage 1 deck causes the following Mnote during Stage 1:

```
0,MACRO IODEVICE NOT SUPPORTED, USE MVSCP
```

# JES

## Optional

This statement specifies the inclusion of JES3 into the system; however, if you specify parameters with this statement, the parameters will be ignored.

*Note:* Unless you explicitly specify a residence volume for the JES3LIB and JES3MAC system data sets, they will reside on the SYSRES volume.

[symbol]	JES	CNS D3330 LOCLJES PARMID PROCID PRT PUN RDR T3400
----------	-----	---

The parameters on the JES statement are no longer supported during sysgen, but are allowed in the Stage 1 deck for compatibility.

Maintaining any parameters on the JES statement in your Stage 1 deck causes the following Mnote during Stage 1:

```
0,****ALL JES MACRO PARAMETERS ARE ALLOWED FOR  
COMPATIBILITY, BUT WILL BE IGNORED****
```

The **procid** always defaults to JES3. Ensure that the entry in the IEFSSNxx member of PARMLIB corresponds. The JES statement in your Stage 1 deck causes the following Mnote during Stage 1:

```
0,****JES3 PROCEDURE ID DEFAULTED TO: JES3****
```

# SCHEDULR

- The SCHEDULR statement is no longer supported during sysgen, but is allowed in the Stage 1 deck for compatibility.
- The parameters on the SCHEDULR statement are functionally replaced by the MVS configuration program, by PARMLIB and SAMPLIB members, or have no functional replacement.
  - BCLMT - replaced by BCSTSAMP in SAMPLIB
  - DEVPREF - replaced by the MVS configuration program
  - HARDCPY - replaced by CONSOLxx in PARMLIB
  - PRISUB - replaced by IEFSSNxx in PARMLIB
  - SUBSYS - replaced by IEFSSNxx in PARMLIB
  - TAVR - no longer supported
- For detailed information about the MVS configuration program, see *MVS/XA MVS Configuration Program: Guide and Reference*.
- For detailed information about CONSOLxx and IEFSSNxx, see *Initialization and Tuning*.
- For detailed information about the BCSTSAMP member of SAMPLIB, see *TSO Extensions Command Language Reference*.

Keeping the SCHEDULR statement in your Stage 1 deck causes the following Mnote during Stage 1:

```
0,*****THE MACRO SCHEDULR IS NO LONGER SUPPORTED*****
```

Maintaining parameters on the SCHEDULR statement causes some or all of the following Mnotes during Stage 1:

```
0,***FOR BCLMT SUPPORT USE BCSTSAMP IN SYS1.SAMPLIB***
```

```
0,***FOR DEVPREF SUPPORT USE THE MVSCP***
```

```
0,***FOR HARDCPY SUPPORT USE THE HARDCPY KEYWORD IN  
SYS1.PARMLIB MEMBER CONSOLXX***
```

```
0,***FOR PRISUB SUPPORT USE IEFSSNXX IN SYS1.PARMLIB***
```

```
0,***FOR SUBSYS SUPPORT USE IEFSSNXX IN SYS1.PARMLIB***
```

```
0,***TAVR IS NO LONGER SUPPORTED***
```

## SVCTABLE

- The SVCTABLE statement is no longer supported during sysgen, but is allowed in the Stage 1 deck for compatibility.
- The SVCTABLE statement is functionally replaced by the IEASVCxx member of PARMLIB.
- For detailed information about IEASVCxx, see *Initialization and Tuning*.

Keeping the SVCTABLE statement in your Stage 1 deck causes the following Mnote during Stage 1:

```
0,MACRO SVCTABLE NOT SUPPORTED-USE IEASVCXX IN PARMLIB
```

## TSO

- The TSO statement is no longer supported during sysgen, but is allowed in the Stage 1 deck for compatibility.
- The TSO statement is functionally replaced by the TSOSAMP member in SAMPLIB and the TSOCMDS parameter on the DATAMGT statement.
- For detailed information about the TSOSAMP member in SAMPLIB, see *TSO Extensions Command Language Reference*.

Keeping the TSO statement in your Stage 1 deck causes the following Mnote during Stage 1:

```
0,***MACRO TSO NOT SUPPORTED - USE TSOSAMP IN SAMPLIB***
```

Maintaining parameters on the TSO statement may cause one of following Mnotes during Stage 1:

```
0,CMDS PARAMETER SUPPORTED IN DATAMGT MACRO
```

```
0,USE DATAMGT MACRO FOR CMDS OPTION
```

## UNITNAME

- The UNITNAME statement is no longer supported during sysgen, but is allowed in the Stage 1 deck for compatibility.
- The UNITNAME statement is functionally replaced by the MVSCP.
- For detailed information about the MVSCP, see *MVS/XA MVS Configuration Program: Guide and Reference*.

Keeping the UNITNAME statement in your Stage 1 deck causes the following Mnote during Stage 1:

```
0,***MACRO UNITNAME NOT SUPPORTED, USE MVSCP***
```

## Chapter 4. Selecting and Defining the System Data Sets

You can define some or all of the system data sets either during sysgen, by using the DATASET statement, or before sysgen, by using JCL and/or access method services. This chapter contains information about each of the system data sets and how to define them.

“Defining the System Data Sets” tells how to allocate space for system data sets and catalog them in the master catalog. It gives examples of coding the parameters on the DATASET statement and JCL, and the command statements and parameters required to execute access method services.

The examples show the use of JCL and the access method services commands for defining the system data sets.

“System Data Set Summary” on page 55 presents an overview of the system data sets that may be helpful, particularly if you define them using JCL and/or access method services. Also in this section are discussions about each of the system data sets, which are arranged in alphabetic order by their qualified names.

### Defining the System Data Sets

Before you include components from the DLIBs and user-defined data sets in the system, build the master catalog, allocate space for the system data sets on system volumes, and catalog the data sets in the master catalog.

### Using the DATASET Statement to Define the System Data Sets

You can use the DATASET statement to define (allocate space for, and catalog) the system data sets. Include one statement for each data set you define during sysgen. The information necessary for coding the DATASET statement is in Chapter 3, “Coding the Sysgen Statements” on page 11. (Chapter 3 also contains information about using the DATASET statement to add user routines to some of the system data sets.) Each of the data sets is discussed later in this chapter. For an example of using the DATASET statement to define the system data sets, see Figure 3 on page 46.

During Stage 1, the assembler processes the information on the statements and generates the JCL and the commands required to execute access method services.

### Stage 2, using the Stage 1 output:

- allocates space on system volumes
- catalogs the system data sets in the master catalog

Stage 2 creates the master catalog first (if you specify it on a DATASET statement). Then, Stage 2 allocates space for the remaining system data sets and catalogs them. Stage 2 also changes the index for all the system data sets to SYS1 from the index name you coded on the GENERATE statement.

---

```
BROADCAST DATASET BROADCAST,VOL=(SG2001,3380),SPACE=(CYL,(3))
CMDLIB DATASET CMDLIB,VOL=(SG2001,3380),SPACE=(CYL,(6,2,100))
DAE DATASET DAE,VOL=(SG2001,3380),SPACE=(TRK,(6,2))
DGTL LIB DATASET DGTL LIB,VOL=(SG2001,3380)SPACE=(CYL,(5,1,50))
DGTMLIB DATASET DGTMLIB,VOL=(SG2001,3380)SPACE=(CYL,(1,1,20))
DGTPLIB DATASET DGTPLIB,VOL=(SG2001,3380)SPACE=(CYL,(5,1,50))
DGTTLIB DATASET DGTTLIB,VOL=(SG2001,3380)SPACE=(TRK,(9,1,10))
DUMPOO DATASET DUMPOO,VOL=(SG2001,3380),SPACE=(CYL,(30))
DUMPO1 DATASET DUMPO1,VOL=(SG2001,3380),SPACE=(CYL,(30))
HELP DATASET HELP,VOL=(SG2001,3380),SPACE=(CYL,(5,1,5))
IMAGELIB DATASET IMAGELIB,VOL=(SG2001,3380),SPACE=(CYL,(10,3,30))
INDMAC DATASET INDMAC,VOL=(SG2001,3380),SPACE=(CYL,(50,3))
JES3LIB DATASET JES3LIB,VOL=(SG2001,3380),SPACE=(CYL,(12,1,100))
JES3MAC DATASET JES3MAC,VOL=(SG2001,3380),SPACE=(CYL,(15,1,75))
LINKLIB DATASET LINKLIB,VOL=(SG2001,3380),SPACE=(CYL,(60,9,600))
LOGREC DATASET LOGREC,VOL=(SG2001,3380),SPACE=(CYL,(5))
LPALIB DATASET LPALIB,VOL=(SG2001,3380),SPACE=(CYL,(24,3,350))
MACLIB DATASET MACLIB,VOL=(SG2001,3380),SPACE=(CYL,(55,5,150))
SMFDSNS DATASET SMFDSN=(1-9),VOL=(SG2001,3380),SPACE=(CYL,(2))
NUCLEUS DATASET NUCLEUS,VOL=(SG2001,3380),SPACE=(CYL,(35,1,100))
PARMLIB DATASET PARMLIB,VOL=(SG2001,3380),SPACE=(CYL,(5,1,25))
PROCLIB DATASET PROCLIB,VOL=(SG2001,3380),SPACE=(CYL,(3,5,20))
SAMPLIB DATASET SAMPLIB,VOL=(SG2001,3380),SPACE=(CYL,(10,5,50))
SBLSC LI0 DATASET SBLSC LI0,VOL=(SG2001,3380),SPACE=(TRK,(4,4,5))
SBLSKEL0 DATASET SBLSKEL0,VOL=(SG2001,3380),SPACE=(TRK,(2,1,5))
SBLSMSGO DATASET SBLSMSGO,VOL=(SG2001,3380),SPACE=(TRK,(2,1,5))
SBLSPNL0 DATASET SBLSPNL0,VOL=(SG2001,3380),SPACE=(CYL,(2,1,15))
SBLSTBL0 DATASET SBLSTBL0,VOL=(SG2001,3380),SPACE=(TRK,(2,1,5))
STGINDEX DATASET STGINDEX,VOL=(SG2001,3380),SPACE=(CYL,(12))
SVCLIB DATASET SVCLIB,VOL=(SG2001,3380),SPACE=(CYL,(5,2,15))
TELCMLIB DATASET TELCMLIB,VOL=(SG2001,3380),SPACE=(CYL,(5,2,70))
TCOMM MAC DATASET TCOMM MAC,VOL=(SG2001,3380),SPACE=(CYL,(5,1,50))
UADS DATASET UADS,VOL=(SG2001,3380),SPACE=(CYL,(8,1,20))
VTAMLIB DATASET VTAMLIB,VOL=(SG2001,3380),SPACE=(CYL,(5,2,50))
ICFCATLG DATASET ICFCATLG,VOL=(SG2001,3380),SPACE=(CYL,(50,5)), X
NAME=ICFCAT
PAGE1 DATASET PAGEDSN=SG2PAGE1,VOL=(SG2001,3380),SPACE=(CYL,(25))
PAGE2 DATASET PAGEDSN=SG2PAGE2,VOL=(SG2001,3380),SPACE=(CYL,(25))
PAGE3 DATASET PAGEDSN=SG2PAGE3,VOL=(SG2001,3380),SPACE=(CYL,(100))
SWAP1 DATASET SWAPDSN=SG2SWAP1,VOL=(SG2001,3380),SPACE=(CYL,(40))
DUPL EX1 DATASET DUPL EX1,NAME=DUPL EX1,VOL=(SG2001,3380), X
SPACE=(CYL,(50))
```

Figure 3. Using the DATASET Statement to Define the System Data Sets

## Using JCL and Access Method Services to Define the System Data Sets

You can use JCL and access method services to predefine the system data sets. Use JCL to allocate space for non-VSAM data sets and access method services to catalog them. Use access method services to catalog and allocate space for VSAM data sets. Generally, the only requirements for predefining the system data sets are:

- Define the system data sets before Stage 2.
- Define the master catalog first, by defining it in the first step of the job and by defining the remaining system data sets in the second step.
- Specify the unique name of the master catalog on a DATASET statement.
- Include a DATASET statement for each system data set that you are predefining, except for those system data sets that must reside on the system residence volume or those that are assumed to reside on it. By omitting the SPACE parameter on a DATASET statement, Stage 2 does not allocate space for a data set.

See Figure 4 on page 48 through Figure 8 on page 54 for coding examples that:

1. Use the access method services commands to catalog and allocate space for VSAM system data sets (master catalog, SMF data sets, SYS1.STGINDEX, page and swap data sets, and duplex data sets)
2. Use JCL to allocate space for non-VSAM data sets and the access method services DEFINE command to catalog them

### Defining the Master Catalog

You can define either an integrated catalog facility catalog or a VSAM catalog as the master catalog.

Because the generating system already has a master catalog, the system catalogs the catalog you define here (or in job 0 of Stage 2) as a user catalog in the generating system's master catalog. During job 6, the user catalog becomes the master catalog of the generated system.

### Defining an integrated catalog facility master catalog

---

```
//DEFICAT JOB MSGLEVEL=1,MSGCLASS=A
//DEFINEIC EXEC PGM=IDCAMS
//CATVOL DD VOL=SER=SG2001,UNIT=3380,DISP=OLD
//SYSPRINT DD SYSOUT=A
//SYSIN DD *
DEFINE MASTERCATALOG (NAME(ALT1.A.NEW.ICF.CATALOG) -
FILE(CATVOL) -
ICFCATALOG -
VOLUME(SG2001) -
CYLINDERS(5 2))
LISTCAT CATALOG (SYS1.A.NEW.ICF.CATALOG)
/*
```

Figure 4. Defining an integrated catalog facility catalog

---

This job results in the creation of a VSAM volume data set (VVDS), if one does not already exist on the volume. For more information on defining an integrated catalog facility catalog, see *Data Facility Product: Planning Guide* and *Catalog Administration Guide*. For information on access method services commands, see *Access Method Services Reference*.

### Defining a VSAM master catalog

---

```
//DEFMCAT JOB MSGLEVEL=1,MSGCLASS=A
//DEFINEMC EXEC PGM=IDCAMS
//CATVOL DD VOL=SER=SG2001,UNIT=3380,DISP=OLD
//SYSPRINT DD SYSOUT=A
//SYSIN DD *
DEFINE MASTERCATALOG (NAME(ALT1.A.NEW.MASTER.CATALOG) -
FILE(CATVOL) -
VOLUME(SG2001) -
CYLINDERS(30 5)) -
DATA (CYLINDERS(5 2))
LISTCAT CATALOG (SYS1.A.NEW.MASTER.CATALOG)
/*
```

Figure 5. Defining a VSAM Master Catalog Using Access Method Services

---

This job allocates a data space and suballocates from that the master catalog space. The specifications on the MASTERCATALOG and CYLINDERS parameters of the DEFINE command determine the size of the data space allocation (150 cylinders). The specifications on the DATA and CYLINDERS parameters of the DEFINE command determine the size of the space suballocated for the master catalog (10 cylinders).

The VSAM master catalog does not require all the data space; consequently, you can use the remaining space for subsequent allocations of VSAM data sets on the same volume. For more information on defining a VSAM master catalog, see *VSAM Administration Guide* and *Access Method Services Reference*.

After defining the data space and/or the new integrated catalog facility or VSAM master catalog, use the LISTCAT command to print the names of the entries in the new catalog.

## Defining the Non-VSAM System Data Sets

### Cataloging the Non-VSAM System Data Sets

Figure 6 is an example of how to catalog the non-VSAM system data sets in a master catalog. Notes follow the figure.

```
//CATNVSAM JOB MSGLEVEL=1,MSGCLASS=A
//NONVSAM EXEC PGM=IDCAMS
//STEP CAT DD DSN=SYS1.A.NEW.ICF.CATALOG,DISP=SHR
//SYSPRINT DD SYSOUT=A
//SYSIN DD *
DEFINE NONVSAM (NAME (ALT1.BROADCAST) VOLUMES (SG2001) DEVICETYPES (3380))
DEFINE NONVSAM (NAME (ALT1.COMDLIB) VOLUMES (SG2001) DEVICETYPES (3380))
DEFINE NONVSAM (NAME (ALT1.DAE) VOLUMES (SG2001) DEVICETYPES (3380))
DEFINE NONVSAM (NAME (ALT1.DGTLLIB) VOLUMES (SG2001) DEVICETYPES (3380))
DEFINE NONVSAM (NAME (ALT1.DGTMLIB) VOLUMES (SG2001) DEVICETYPES (3380))
DEFINE NONVSAM (NAME (ALT1.DGTPLIB) VOLUMES (SG2001) DEVICETYPES (3380))
DEFINE NONVSAM (NAME (ALT1.DGTTLIB) VOLUMES (SG2001) DEVICETYPES (3380))
DEFINE NONVSAM (NAME (ALT1.DUMP00) VOLUMES (SG2001) DEVICETYPES (3380))
DEFINE NONVSAM (NAME (ALT1.FDEFLIB) VOLUMES (SG2001) DEVICETYPES (3380))
DEFINE NONVSAM (NAME (ALT1.FONTLIB) VOLUMES (SG2001) DEVICETYPES (3380))
DEFINE NONVSAM (NAME (ALT1.HELP) VOLUMES (SG2001) DEVICETYPES (3380))
DEFINE NONVSAM (NAME (ALT1.IMAGELIB) VOLUMES (SG2001) DEVICETYPES (3380))
DEFINE NONVSAM (NAME (ALT1.INDMAC) VOLUMES (SG2001) DEVICETYPES (3380))
DEFINE NONVSAM (NAME (ALT1.JES3LIB) VOLUMES (SG2001) DEVICETYPES (3380))
DEFINE NONVSAM (NAME (ALT1.JES3MAC) VOLUMES (SG2001) DEVICETYPES (3380))
DEFINE NONVSAM (NAME (ALT1.LINKLIB) VOLUMES (SG2001) DEVICETYPES (3380))
DEFINE NONVSAM (NAME (ALT1.LOGREC) VOLUMES (SG2001) DEVICETYPES (3380))
DEFINE NONVSAM (NAME (ALT1.LPALIB) VOLUMES (SG2001) DEVICETYPES (3380))
DEFINE NONVSAM (NAME (ALT1.MACLIB) VOLUMES (SG2001) DEVICETYPES (3380))
DEFINE NONVSAM (NAME (ALT1.NUCLEUS) VOLUMES (SG2001) DEVICETYPES (3380))
DEFINE NONVSAM (NAME (ALT1.OVERLIB) VOLUMES (SG2001) DEVICETYPES (3380))
DEFINE NONVSAM (NAME (ALT1.PARMLIB) VOLUMES (SG2001) DEVICETYPES (3380))
DEFINE NONVSAM (NAME (ALT1.PDEFLIB) VOLUMES (SG2001) DEVICETYPES (3380))
DEFINE NONVSAM (NAME (ALT1.PROCLIB) VOLUMES (SG2001) DEVICETYPES (3380))
DEFINE NONVSAM (NAME (ALT1.PSEGLIB) VOLUMES (SG2001) DEVICETYPES (3380))
DEFINE NONVSAM (NAME (ALT1.SAMPLIB) VOLUMES ('*****') DEVICETYPES (0000))
DEFINE NONVSAM (NAME (ALT1.SBLSCLI0) VOLUMES (SG2001) DEVICETYPES (3380))
DEFINE NONVSAM (NAME (ALT1.SBLSKEL0) VOLUMES (SG2001) DEVICETYPES (3380))
DEFINE NONVSAM (NAME (ALT1.SBLSMSG0) VOLUMES (SG2001) DEVICETYPES (3380))
DEFINE NONVSAM (NAME (ALT1.SBLSPNL0) VOLUMES (SG2001) DEVICETYPES (3380))
DEFINE NONVSAM (NAME (ALT1.SBLSTBL0) VOLUMES (SG2001) DEVICETYPES (3380))
DEFINE NONVSAM (NAME (ALT1.SVCLIB) VOLUMES (SG2001) DEVICETYPES (3380))
DEFINE NONVSAM (NAME (ALT1.TCOMMAL) VOLUMES (SG2001) DEVICETYPES (3380))
DEFINE NONVSAM (NAME (ALT1.TELCLIB) VOLUMES (SG2001) DEVICETYPES (3380))
DEFINE NONVSAM (NAME (ALT1.UADS) VOLUMES (SG2001) DEVICETYPES (3380))
DEFINE NONVSAM (NAME (ALT1.VTAMLIB) VOLUMES (SG2001) DEVICETYPES (3380))
LISTCAT LEVEL (ALT1) CATALOG (SYS1.A.NEW.ICF.CATALOG)
/*
```

Figure 6. Cataloging the Non-VSAM System Data Sets Using Access Method Services

### Notes to Figure 6:

The example assumes that you specified ALT1 in the INDEX parameter on the GENERATE statement.

The job CATNVSAM creates catalog entries in the new master catalog for each of the non-VSAM system data sets represented by a DEFINE command.

When the data sets are to reside on the system residence volume, you can specify the VOLUMES and DEVICETYPES parameters using indirect volume serial number and device type, as follows:

```
VOLUMES ('*****') DEVICETYPES (0000)
```

If you expect to change the system residence volume serial number, this allows you to use the non-VSAM data sets without having to recatalog them to point to the new volume. (For more information on indirect volume serial number and device type, see "DEFINE NONVSAM" in *Access Method Services Reference*.)

*Note:* For APF-authorized data sets, specify the volume serial number and device type explicitly.

Use the LISTCAT command to print the names of the non-VSAM entries in the new catalog.

### Allocating Space for the Non-VSAM System Data Sets

The job ALLOC allocates space for the non-VSAM system data sets that were cataloged by the previous job (CATNVSAM). Because these data sets are already cataloged, this job does not access or update the master catalog. For additional information about the DCB subparameters, see Figure 9 on page 56.

```

//ALLOC      JOB  MSGLEVEL=1,MSGCLASS=A
//ALLOCATE   EXEC PGM=IEFBR14
//BROADCAST  DD DSN=ALT1.BROADCAST,DISP=(,KEEP),VOL=(,RETAIN,SER=SG2001),
//           UNIT=3380,SPACE=(CYL,(3),,CONTIG)
//*
//CMDLIB     DD DSN=ALT1.CMDLIB,DISP=(,KEEP),VOL=(,RETAIN,SER=SG2001),
//           LABEL=EXPDT=99350,DCB=(RECFM=U,BLKSIZE=18432),
//           UNIT=3380,SPACE=(CYL,(6,2,50))
//*
//DAE        DD DSN=ALT1.DAE,DISP=(,KEEP),VOL=(,RETAIN,SER=SG2001),
//           DCB=(RECFM=FB,DSORG=PS,LRECL=255,BLKSIZE=23460),
//           UNIT=3380,SPACE=(TRK,(6,2))
//*
//DGTLLIB    DD DSN=ALT1.DGTLLIB,DISP=(,KEEP),VOL=(,RETAIN,SER=SG2001),
//           DCB=(RECFM=U,DSORG=PS,BLKSIZE=6144),
//           UNIT=3380,SPACE=(CYL,(5,1,50))
//*
//DGTMLIB    DD DSN=ALT1.DGTMLIB,DISP=(,KEEP),VOL=(,RETAIN,SER=SG2001),
//           DCB=(RECFM=FB,DSORG=PS,LRECL=80,BLKSIZE=3120),
//           UNIT=3380,SPACE=(CYL,(1,1,20))
//*
//DGTPLIB    DD DSN=ALT1.DGTMLIB,DISP=(,KEEP),VOL=(,RETAIN,SER=SG2001),
//           DCB=(RECFM=FB,DSORG=PS,LRECL=80,BLKSIZE=3120),
//           UNIT=3380,SPACE=(CYL,(5,1,50))
//*
//DGTTLIB    DD DSN=ALT1.DGTMLIB,DISP=(,KEEP),VOL=(,RETAIN,SER=SG2001),
//           DCB=(RECFM=FB,DSORG=PS,LRECL=80,BLKSIZE=3120),
//           UNIT=3380,SPACE=(TRK,(9,1,10))
//*
//DUMP       DD DSN=ALT1.DUMP00,DISP=(SHR,KEEP),VOL=(,RETAIN,SER=SG2001),
//           LABEL=EXPDT=99350,DCB=(RECFM=F,BLKSIZE=4104),
//           UNIT=3380,SPACE=(CYL,(12),,CONTIG)
//*
//FDEFLIB    DD DSN=ALT1.FDEFLIB,DISP=(,KEEP),VOL=(,RETAIN,SER=SG2001),
//           LABEL=EXPDT=99350,DCB=(RECFM=VBM,LRECL=8205,BLKSIZE=8209),
//           UNIT=3380,SPACE=(CYL,(2,1,5))
//*
//FONTLIB    DD DSN=ALT1.FONTLIB,DISP=(,KEEP),VOL=(,RETAIN,SER=SG2001),
//           LABEL=EXPDT=99350,DCB=(RECFM=VBM,LRECL=8205,BLKSIZE=8209),
//           UNIT=3380,SPACE=(CYL,(12,1,50))
//*
//HELP       DD DSN=ALT1.HELP,DISP=(,KEEP),VOL=(,RETAIN,SER=SG2001),
//           LABEL=EXPDT=99350,DCB=(RECFM=FB,LRECL=80,BLKSIZE=23440),
//           UNIT=3380,SPACE=(CYL,(5,1,15))
//*
//IMAGELIB   DD DSN=ALT1.IMAGELIB,DISP=(,KEEP),VOL=(,RETAIN,SER=SG2001),
//           LABEL=EXPDT=99350,DCB=(RECFM=U,BLKSIZE=18432),
//           UNIT=3380,SPACE=(CYL,(10,3,100))
//*
//INDMAC     DD DSN=ALT1.INDMAC,DISP=(,KEEP),VOL=(,RETAIN,SER=SG2001),
//           UNIT=3380,DCB=(RECFM=U,BLKSIZE=23440),
//           SPACE=(CYL,(50,3,5)),LABEL=EXPDT=99350
//*
//JES3LIB    DD DSN=ALT1.JES3LIB,DISP=(,KEEP),VOL=(,RETAIN,SER=SG2001),
//           UNIT=3380,DCB=(RECFM=U,BLKSIZE=18432),
//           SPACE=(CYL,(12,1,100)),LABEL=EXPDT=99350
//*

```

Figure 7 (Part 1 of 3). Allocating Space for the Non-VSAM System Data Sets Using JCL

```

//JES3MAC DD DSN=ALT1.JES3MAC,DISP=(,KEEP),VOL=(,RETAIN,SER=SG2001),
//          UNIT=3380,DCB=(RECFM=FB,LRECL=80,BLKSIZE=23440),
//          SPACE=(CYL,(15,1,75)),LABEL=EXPDT=99350
//*
//LINKLIB DD DSN=ALT1.LINKLIB,DISP=(,KEEP),VOL=(,RETAIN,SER=SG2001),
//          LABEL=EXPDT=99350,DCB=(RECFM=U,BLKSIZE=18432),
//          UNIT=3380,SPACE=(CYL,(60,9,600))
//*
//LOGREC  DD DSN=ALT1.LOGREC,DISP=(,KEEP),VOL=(,RETAIN,SER=SG2001),
//          LABEL=EXPDT=99350,
//          UNIT=3380,SPACE=(CYL,(5),,CONTIG)
//*
//LPALIB  DD DSN=ALT1.LPALIB,DISP=(,KEEP),VOL=(,RETAIN,SER=SG2001),
//          LABEL=EXPDT=99350,DCB=(RECFM=U,BLKSIZE=18432),
//          UNIT=3380,SPACE=(CYL,(24,3,350))
//*
//MACLIB  DD DSN=ALT1.MACLIB,DISP=(,KEEP),VOL=(,RETAIN,SER=SG2001),
//          LABEL=EXPDT=99350,DCB=(RECFM=FB,LRECL=80,BLKSIZE=23440),
//          UNIT=3380,SPACE=(CYL,(55,5,150))
//*
//NUCLEUS DD DSN=ALT1.NUCLEUS,DISP=(,KEEP),VOL=(,RETAIN,SER=SG2001),
//          LABEL=EXPDT=99350,DCB=(RECFM=U,BLKSIZE=18432),
//          UNIT=3380,SPACE=(CYL,(35,,100),,CONTIG)
//*
//OVERLIB DD DSN=ALT1.OVERLIB,DISP=(,KEEP),VOL=(,RETAIN,SER=SG2001),
//          LABEL=EXPDT=99350,DCB=(RECFM=VBM,LRECL=8205,BLKSIZE=8209),
//          UNIT=3380,SPACE=(CYL,(2,1,5))
//*
//PARMLIB DD DSN=ALT1.PARMLIB,DISP=(,KEEP),VOL=(,RETAIN,SER=SG2001),
//          LABEL=EXPDT=99350,DCB=(RECFM=FB,LRECL=80,BLKSIZE=23440),
//          UNIT=3380,SPACE=(CYL,(2,1,50),,CONTIG)
//*
//PDEFLIB DD DSN=ALT1.PDEFLIB,DISP=(,KEEP),VOL=(,RETAIN,SER=SG2001),
//          LABEL=EXPDT=99350,DCB=(RECFM=VBM,LRECL=8205,BLKSIZE=8209),
//          UNIT=3380,SPACE=(CYL,(2,1,5))
//*
//PROCLIB DD DSN=ALT1.PROCLIB,DISP=(,KEEP),VOL=(,RETAIN,SER=SG2001),
//          LABEL=EXPDT=99350,DCB=(RECFM=FB,LRECL=80,BLKSIZE=23440),
//          UNIT=3380,SPACE=(CYL,(2,1,50))
//*
//PSEGLIB DD DSN=ALT1.PSEGLIB,DISP=(,KEEP),VOL=(,RETAIN,SER=SG2001),
//          LABEL=EXPDT=99350,DCB=(RECFM=VBM,LRECL=8205,BLKSIZE=8209),
//          UNIT=3380,SPACE=(CYL,(2,1,5))
//*
//SAMPLIB DD DSN=ALT1.SAMPLIB,DISP=(,KEEP),VOL=(,RETAIN,SER=SG2001),
//          LABEL=EXPDT=99350,DCB=(RECFM=FB,LRECL=80,BLKSIZE=3200),
//          UNIT=3380,SPACE=(CYL,(10,5,50))
//*
//SBLSCLI0 DD DSN=ALT1.SBLSCLI0,DISP=(,KEEP),VOL=(,RETAIN,SER=SG2001),
//          DCB=(RECFM=FB,LRECL=255,BLKSIZE=3360),
//          UNIT=3380,SPACE=(TRK,(4,4,5))
//*
//SBLSKEL0 DD DSN=ALT1.SBLSKEL0,DISP=(,KEEP),VOL=(,RETAIN,SER=SG2001),
//          DCB=(RECFM=FB,LRECL=80,BLKSIZE=12960),
//          UNIT=3380,SPACE=(TRK,(2,1,5))
//*
```

Figure 7 (Part 2 of 3). Allocating Space for the Non-VSAM System Data Sets Using JCL

---

```

//SBLMSG0 DD DSN=ALT1.SBLMSG0,DISP=(,KEEP),VOL=(,RETAIN,SER=SG2001),
//          DCB=(RECFM=FB,LRECL=80,BLKSIZE=3120),
//          UNIT=3380,SPACE=(TRK,(2,1,5))
//*
//SBLSPNLO DD DSN=ALT1.SBLSPNLO,DISP=(,KEEP),VOL=(,RETAIN,SER=SG2001),
//          DCB=(RECFM=FB,LRECL=80,BLKSIZE=3120),
//          UNIT=3380,SPACE=(CYL,(2,1,15))
//*
//SBLSTBLO DD DSN=ALT1.SBLSTBLO,DISP=(,KEEP),VOL=(,RETAIN,SER=SG2001),
//          DCB=(RECFM=FB,LRECL=80,BLKSIZE=12960),
//          UNIT=3380,SPACE=(TRK,(2,1,5))
//*
//SVCLIB   DD DSN=ALT1.SVCLIB,DISP=(,KEEP),VOL=(,RETAIN,SER=SG2001),
//          LABEL=EXPDT=99350,DCB=(RECFM=U,BLKSIZE=18432),
//          UNIT=3380,SPACE=(CYL,(2,1,15))
//*
//TCOMM   DD DSN=ALT1.TCOMM,DISP=(,KEEP),VOL=(,RETAIN,SER=SG2001),
//          UNIT=3380,DCB=(RECFM=FB,LRECL=80,BLKSIZE=23440),
//          SPACE=(CYL,(5,1,50)),LABEL=EXPDT=99350
//*
//TELCMLIB DD DSN=ALT1.TELCMLIB,DISP=(,KEEP),VOL=(,RETAIN,SER=SG2001),
//          LABEL=EXPDT=99350,DCB=(RECFM=U,BLKSIZE=18432),
//          UNIT=3380,SPACE=(CYL,(4,1,100))
//*
//UADS     DD DSN=ALT1.UADS,DISP=(,KEEP),VOL=(,RETAIN,SER=SG2001),
//          DCB=(DSORG=PO,LRECL=80,RECFM=FB,BLKSIZE=23440),
//          UNIT=3380,SPACE=(CYL,(5,2,70))
//*
//VTAMLIB DD DSN=ALT1.VTAMLIB,DISP=(,KEEP),VOL=(,RETAIN,SER=SG2001),
//          LABEL=EXPDT=99350,DCB=(RECFM=U,BLKSIZE=18432),
//          UNIT=3380,SPACE=(CYL,(5,2,50))
//

```

**Figure 7 (Part 3 of 3). Allocating Space for the Non-VSAM System Data Sets Using JCL**

---

**Note to Figure 7:**

The example assumes that you specified ALT1 in the INDEX parameter on the GENERATE statement.

**Defining the VSAM System Data Sets**

**Cataloging and Allocating Space for the VSAM System Data Sets**

The job DEFVSAM (see Figure 8 on page 54) defines the VSAM system data sets—the storage index, the page data sets, the swap data set(s), a duplex data set, and an SMF data set.

```

//DEFVSAM JOB MSGLEVEL=1,MSGCLASS=1
//VSAMDEF EXEC PGM=IDCAMS
//STEP CAT DD DSN=SYS1.A.NEW.ICF.CATALOG,DISP=OLD
//VOLUME DD DISP=OLD,VOL=SER=SG2001,UNIT=3380
//SYSABEND DD SYSOUT=A
//SYSPRINT DD SYSOUT=A
//SYSIN DD *
DEFINE CLUSTER (NAME (ALT1.STGINDEX) -
VOLUMES (SG2001) -
CYLINDERS (5) -
KEYS (12 8) -
BUFFERSPACE (20480) -
RECORDSIZE (2041 2041) -
FILE (VOLUME) -
REUSE) -
DATA (CONTROLINTERVALSIZE (2048)) -
INDEX (CONTROLINTERVALSIZE (4096)) -
DEFINE CLUSTER (NAME (ALT1.MAN1) -
VOLUMES (SG2001) -
NONINDEXED -
CYLINDERS (12) -
REUSE -
RECORDSIZE (4086 32767) -
SPEED -
SPANNED -
CONTROLINTERVALSIZE (4096) -
SHAREOPTIONS (2)) -
DEFINE PAGESPACE (NAME (SYS1.PAGE1) -
CYLINDERS (15) -
FILE (VOLUME) -
VOLUMES (SG2001)) -
DEFINE PAGESPACE (NAME (SYS1.PAGE2) -
CYLINDERS (75) -
FILE (VOLUME) -
VOLUMES (SG2001)) -
DEFINE PAGESPACE (NAME (SYS1.PAGE3) -
CYLINDERS (100) -
FILE (VOLUME) -
VOLUMES (SG2001)) -
DEFINE PAGESPACE (NAME (SYS1.SWAP1) -
CYLINDERS (20) -
FILE (VOLUME) -
VOLUMES (SG2001) -
SWAP) -
DEFINE PAGESPACE (NAME (SYS1.DUPLEX) -
CYLINDERS (25) -
FILE (VOLUME) -
VOLUMES (SG2001)) -
LISTCAT ALL
/*

```

**Figure 8. Defining the VSAM System Data Sets, Using Access Method Services**

**Note to Figure 8:**

The example assumes that you specified ALT1 in the INDEX parameter on the GENERATE statement.

The first DEFINE CLUSTER command defines a VSAM key-sequenced data set with the characteristics of the system data set SYS1.STGINDEX.

The second DEFINE CLUSTER command defines a VSAM entry-sequenced data set with the characteristics of an SMF system data set.

The first three DEFINE PAGESPACE commands define system paging data sets for PLPA, COMMON, and the first LOCAL, respectively. You must define at least 3 page data sets. The total space for the first (PLPA) and second (COMMON) page data sets must be large enough to hold the PLPA (pageable link pack area) and CSA (common system area) pages. The remaining page data set, LOCAL, must be large enough to hold VIO pages and pageable private area pages.

If you do not define any swap data sets, MVS use the local page data sets to store the LSQA (local system queue area) areas of address spaces swapped out.

The fourth DEFINE PAGESPACE command defines a swap data set. You can define more than one swap data set. Allocate enough space to hold LSQA areas of address spaces swapped out.

The last DEFINE PAGESPACE command defines an optional page data set, the duplex data set. (If you define a duplex data set, still define at least three other page data sets.) Because duplex processing is done only for PLPA and CSA pages, the duplex data set need never be larger than the combined space of the first (PLPA) and second (COMMON) page data sets you define.

For information on how to determine the amount of space to allocate for each page or swap data set, see *Initialization and Tuning*.

For the initial sysgen, the example defines all data sets on one volume; however, after the first IPL, distribute these data sets on separate volumes for improved performance.

Finally, the LISTCAT command lists each entry in the catalog and its attributes.

## System Data Set Summary

Figure 9 on page 56 lists the required and optional system data sets. This figure may be helpful to refer to when you are defining the system data sets. If you allocate space for the non-VSAM system data sets before Stage 2 using JCL, specify the values shown for the DCB subparameters. (You cannot specify DCB subparameter values in the DATASET statement.)

System Data Set	Type	Required or Optional Data Set	Is Secondary Space Allocation Allowed?	DCB Parameters	Notes
Master Catalog	VSAM	required	yes	none	1,10,16
BROADCAST	BDAM	optional	no	none	13
CMDLIB	PDS	optional	yes	RECFM=U,BLKSIZE=nnnnn	2,14
DAE	seq.	required	yes	DSORG=PS,RECFM=FB, LRECL=255,BLKSIZE=nnnnn	10
DGTLIB	PDS	required	yes	REFM=U,BLKSIZE=6144	28
DGTM LIB	PDS	required	yes	REFM=FB,BLKSIZE=3120, LRECL=80	28
DGTPLIB	PDS	required	yes	REFM=FB,BLKSIZE=3120, LRECL=80	28
DGTTLIB	PDS	required	yes	REFM=FB,BLKSIZE=3120, LRECL=80	28
DUMPnn	seq.	optional	no	RECFM=F,BLKSIZE=4104	6,10,15, 22,23
Duplex Data Sets	VSAM	optional	no	none	11,16
FDEFLIB	PDS	optional	yes	RECFM=VBM,LRECL=8205, BLKSIZE=8209	26,27
FONTLIB	PDS	optional	yes	RECFM=VBM,LRECL=8205, BLKSIZE=8209	26,27
HELP	PDS	optional	yes	RECFM=FB,LRECL=80, BLKSIZE=nnnnn	3,7,15
IMAGELIB	PDS	required	yes	RECFM=U,BLKSIZE=nnnnn	2,15,23
INDMAC	PDS	optional	yes	RECFM=FB,LRECL=80, BLKSIZE=nnnnn	3,8,15,19
JES3LIB	PDS	optional	yes	RECFM=U,BLKSIZE=nnnnn	2,4
JES3MAC	PDS	optional	yes	RECFM=FB,LRECL=80, BLKSIZE=nnnnn	3,4,8
LINKLIB	PDS	required	yes	RECFM=U,BLKSIZE=nnnnn	2,8
LOGREC	seq.	required	no	none	10
LPALIB	PDS	required	yes	RECFM=U,BLKSIZE=nnnnn	2,8
MACLIB	PDS	required	yes	RECFM=FB,LRECL=80, BLKSIZE=nnnnn	3,8

Figure 9 (Part 1 of 3). Summary of Required and Optional System Data Sets

System Data Set	Type	Required or Optional Data Set	Is Secondary Space Allocation Allowed?	DCB Parameters	Notes
MANn	VSAM	optional	no	none	10,21,23
NUCLEUS	PDS	required	no	RECFM=U,BLKSIZE=nnnnn	2,5,8,10
OVERLIB	PDS	optional	yes	RECFM=VBM,LRECL=8205, BLKSIZE=8209	26,27
Page Data Sets	VSAM	required	yes	none	11,16
PARMLIB	PDS	required	yes	RECFM=FB,LRECL=80, BLKSIZE=nnnnn	3,8
PDEFLIB	PDS	optional	yes	RECFM=VBM,LRECL=8205, BLKSIZE=8209	26,27
PROCLIB	PDS	required	yes	RECFM=FB,LRECL=80, BLKSIZE=nnnnn	3,8
PSEGLIB	PDS	optional	yes	RECFM=VBM,LRECL=8205, BLKSIZE=8209	26,27
SAMPLIB	PDS	required	yes	RECFM=FB,LRECL=80, BLKSIZE=nnnn	25
SBLSCLI0	PDS	required	yes	RECFM=VB,LRECL=255, BLKSIZE=3360	14
SBLSKEL0	PDS	required	yes	RECFM=FB,LRECL=80, BLKSIZE=nnnnn	3,14
SBLMSG0	PDS	required	yes	RECFM=FB,LRECL=80, BLKSIZE=nnnnn	3,14
SBLSPNLO	PDS	required	yes	RECFM=FB,LRECL=80, BLKSIZE=nnnnn	3,14
SBLSTBL0	PDS	required	yes	RECFM=FB,LRECL=80, BLKSIZE=nnnnn	3,14
STGINDEX	VSAM	required	no	none	10,11,16, 17
SVCLIB	PDS	required	yes	RECFM=U,BLKSIZE=nnnnn	2,5,8,10
Swap Data Sets	VSAM	optional	no	none	11,16
TCOMMAC	PDS	optional	yes	RECFM=FB,LRECL=80, BLKSIZE=nnnnn	3,8,20
TELCMLIB	PDS	optional	yes	RECFM=U,BLKSIZE=nnnnn	2,8,12,15

Figure 9 (Part 2 of 3). Summary of Required and Optional System Data Sets

System Data Set	Type	Required or Optional Data Set	Is Secondary Space Allocation Allowed?	DCB Parameters	Notes
UADS	PDS	optional	yes	DSORG=PO,RECFM=FB, LRECL=nn,BLKSIZE=nnnnn	9,24
VTAMLIB	PDS	optional	yes	RECFM=U,BLKSIZE=nnnnn	2,18,19

Figure 9 (Part 3 of 3). Summary of Required and Optional System Data Sets

Notes to Figure 9:

1. Even if you predefine the master catalog, specify it on a DATASET statement. Define either an integrated catalog facility or a VSAM master catalog.
2. Use BLKSIZE=14660 for a 2305 Model 2, BLKSIZE=13030 for a 3330 or 3330 Model 11, BLKSIZE=8368 for a 3340, BLKSIZE=18432 for a 3350, BLKSIZE=17600 for a 3375, and BLKSIZE=18432 for a 3380.
3. The value of BLKSIZE must be a multiple of 80 that is less than or equal to 14640 for a 2305 Model 2, 12960 for a 3330 or 3330 Model 11, 8320 for a 3340, 19040 for a 3350, 17600 for a 3375, or 23440 for a 3380.
4. This system data set is required only if you install JES3.
5. Store this system data set on the system residence pack.
6. You may specify from 1 to 10 DUMP $nn$  (DUMP00–DUMP09) system data sets.
7. This system data set is required only if you use the TSO HELP command.
8. For improved system efficiency, allocate space on a cylinder boundary.
9. Catalog this system data set. Allocate space only if you activate TSO.
10. Do not share this system data set across systems.
11. Allocate space in cylinders.
12. This system data set is required only if you install BTAM/SP and/or ACF/TCAM.
13. Catalog this system data set. Allocate space only if you activate TSO.
14. Catalog this system data set and allocate space, unless you specify TSOCMDS=NO on the DATAMGT statement.
15. Even if you predefine this system data set, specify it on a DATASET statement and omit the space parameter.

16. During the first sysgen, allocate space for the master catalog, page data sets, and SYS1.STGINDEX on a single volume. After the initial IPL, performance considerations may require a different configuration.
17. The STGINDEX data set must reside on a volume that is permanently mounted or reserved while in use.
18. This system data set is required only if you install ACF/VTAM.
19. This system data set is required only if you install the industry subsystem support.
20. This system data set is required only if you install ACF/TCAM. Specify it on a DATASET statement.
21. Allocate space only if SMF or other measurement facilities will do recording. Catalog this data set.
22. Each DASD data set must reside on a single volume.
23. Each DASD data set must reside on a permanently resident volume.
24. The value of LRECL must be a multiple of 80 for TSO, and 172 for TSO/E.
25. Because SAMPLIB contains object module input to the linkage editor, the BLKSIZE must be a multiple of 80, but not greater than 3200.
26. Define this library as a partitioned data set with a record format of VBM, VBA, VM, or VA.
27. This system data set is required only if you install Print Services Facility (PSF).
28. This system data set is required to use the interactive storage management facility (ISMF).

# The Master Catalog

**Contents:** The master catalog contains data set and volume information necessary to locate data sets and user catalogs.

## **Requirements for Specification**

**General Information:** The master catalog is required. It must reside on a direct access volume, which can be the system residence volume.

Define the master catalog as an integrated catalog facility catalog, although you may define it as a VSAM catalog. For information on integrated catalog facility catalogs, see *Catalog Administration Guide*. Assign the catalog a unique name, and specify the name on a DATASET statement (even if you predefine the master catalog).

**Using DATASET:** Specify the NAME parameter. Allocate space only in units of tracks or cylinders.

**Using Access Method Services:** Define the master catalog as the first system data set. Specify a DATASET statement with the NAME parameter, even if you predefine the master catalog.

**Note:** Password protect the master catalog so that you can password protect the VSAM data sets cataloged in it. You can protect the master catalog by specifying the password and integrity parameters. Update the master catalog with passwords *after* Stage 2 completes to avoid password requests during Stage 2.

After IPLing the newly generated system, you can use the access method services ALTER command to password protect the new master catalog:

```
//ALTPSWD      JOB      ACCT123,PROGRAMMER,MSGLEVEL=(1,1)
//STEP1        EXEC     PGM=IDCAMS
//SYSPRINT     DD       SYSOUT=A
//SYSIN        DD       *
ALTER -
          SYS1.A.NEW.ICF.CATALOG -
          MASTERPW(masterpassword) -
          CONTROLPW(controlpassword)
/*
```

You may want to use the master catalog from a previous production system. Chapter 7, "Using Data Sets from the Old Production System" on page 125 contains an example and a procedure for combining the system data sets from a newly generated system with the master catalog, SYS1.STGINDEX, and page data sets from an existing production system.

**Note:** Do not share the master catalog across systems.

**Additional Information:** Information about using access method services to define the master catalog can be found in *Access Method Services Reference*. For information about the master catalog, see *Catalog Administration Guide*.

## SYS1.BROADCAST

**Contents:** SYS1.BROADCAST is a BDAM data set that contains two types of TSO messages:

- Notices—messages available to all users of a system
- Mail—messages available to specific users of a system

This system data set also contains a notice directory to facilitate the accessing of each type of message.

### ***Requirements for Specification***

**General Information:** SYS1.BROADCAST must reside on a direct access volume, which can be the system residence volume. Catalog it; but allocate space only if you activate TSO. Do not allocate secondary space.

**Using JCL and Access Method Services:** Do not specify any DCB subparameters. Use either access method services or JCL for cataloging.

### ***Notes:***

1. *Do not specify an expiration date for this data set.*
2. *Do not share this data set across systems unless GRS is installed and active.*

For a detailed explanation of resource sharing in this regard, see *SPL: TSO/E Installation and Planning: Volume 1*.

**Additional Information:** For additional information about this system data set, see “Creating, Converting and Maintaining UADS and Broadcast Data Sets” in *System Programming Library: TSO*.

# SYS1.COMDLIB

**Contents:** SYS1.COMDLIB is a partitioned data set that contains TSO command processor routines, service routines, and utility programs.

## **Requirements for Specification**

**General Information:** SYS1.COMDLIB must reside on a direct access volume, which can be the system residence volume.

Catalog it and allocate space unless you specify TSOCMDS=NO on the DATAMGT statement. You may allocate secondary space.

**Note:** If you use the Print Dump service aid (PRDMP), do not specify TSOCMDS=NO. Print Dump requires a full function SYS1.COMDLIB to execute properly.

**Using JCL and Access Method Services:** Use either for cataloging.

For allocation, specify the following DCB subparameters on the DD statement:

```
RECFM=U,  
BLKSIZE=nnnnn
```

where nnnnn is:

```
14660 for a 2305 Model 2  
13030 for a 3330 Model 1, 2, or 11  
13030 for a 3333 Model 1 or 11  
8368 for a 3340/3344  
23440 for a 3350  
17600 for a 3375  
18432 for a 3380
```

The preceding values represent optimal space utilization for the above devices.

## SYS1.DAE

**Contents:** SYS1.DAE is a fixed-block data set that contains a permanent record of unique dumps identified by DAE.

### **Requirements for Specification**

**General Information:** SYS1.DAE is required only if you activate DAE. This system data set must reside on a direct access volume, which can be the system residence volume. Catalog this data set and either password protect or RACF protect it. You may allocate secondary space.

Allocate the SYS1.DAE data set DISP=SHR so that you may browse records of unique dumps. The mapping macro, ADYSRCD, maps the records found in SYS1.DAE. You may add, update, or delete records in SYS1.DAE using TSO or ISPF editors or other data set facilities, but do not edit the symptom string.

**Using the DATASET statement:** If you activate DAE, specify this data set on a DATASET statement, even if you predefine it. If you predefine it, omit the SPACE parameter.

**Using JCL and Access Method Services:** Use either for cataloging.

For allocation, specify the following DCB subparameters on the DD statement:

```
RECFM=FB,  
LRECL=255,  
DSORG=PS,  
BLKSIZE=nnnnn
```

where nnnnn is:

```
14535 for a 2305 Model 2  
13005 for a 3330 Model 1, 2, or 11  
13005 for a 3333 Model 1 or 11  
8160 for a 3340/3344  
18870 for a 3350  
17595 for a 3375  
18432 for a 3380
```

The preceding values represent optimal space utilization for the above devices.

**Note:** Do not share this data set across systems.

**Additional Information:** For additional information on DAE and the use of this data set, see *System Modifications* and *System Logic Library, Volume 6*.

## SYS1.DGTLLIB

**Contents:** SYS1.DGTLLIB is a partitioned data set that contains system load modules for the interactive storage management facility (ISMF). These modules require the installation of the Interactive System Productivity Facility (ISPF).

### ***Requirements for Specification***

**General Information:** This system data set must reside on a direct access volume, which can be the system residence volume. It must be cataloged, and secondary space may be allocated.

**Using the DATASET Macro:** If this system data set is not specified in a DATASET macro, it will reside on the volume specified in the RESVOL parameter of the GENERATE macro (the system residence volume).

**Using JCL and Access Method Services:** Either may be used for cataloging.

Because this data set is an ISPF data set and must be concatenated to other ISPF data sets, it is recommended that the DCB subparameters used by the location for other ISPF data sets also be used for this data set.

If ISPF is not yet installed, a nominal set of DCB subparameters can be specified, such as:

RECFM=U

LRECL=0

BLKSIZE=6144

The preceding values represent optimal space utilization for the above devices.

**Note:** This data set must be concatenated in front of the ISPF load library.

## SYS1.DGTMLIB

**Contents:** SYS1.DGTMLIB is a partitioned data set that contains the message text for the interactive storage management facility (ISMF). These messages require the installation of the Interactive System Productivity Facility (ISPF).

### *Requirements for Specification*

**General Information:** This system data set must reside on a direct access volume, which can be the system residence volume. It must be cataloged, and secondary space may be allocated.

**Using the DATASET Macro:** If this system data set is not specified in a DATASET macro, it will reside on the volume specified in the RESVOL parameter of the GENERATE macro (the system residence volume).

**Using JCL and Access Method Services:** Either may be used for cataloging.

Because this data set is an ISPF data set, and must be concatenated to other ISPF data sets, it is recommended that the DCB subparameters used by the location for other ISPF data sets also be used for this data set.

If ISPF is not yet installed, a nominal set of DCB subparameters can be specified, such as:

RECFM=FB

LRECL=80

BLKSIZE=3120

**Note:** This data set must be concatenated in front of the ISPF message library.

# SYS1.DGTPLIB

**Contents:** SYS1.DGTPLIB is a partitioned data set that contains the panels for the interactive storage management facility (ISMF). These panels require the installation of the Interactive System Productivity Facility (ISPF).

## ***Requirements for Specification***

**General Information:** This system data set must reside on a direct access volume, which can be the system residence volume. It must be cataloged, and secondary space may be allocated.

**Using the DATASET Macro:** If this system data set is not specified in a DATASET macro, it will reside on the volume specified in the RESVOL parameter of the GENERATE macro (the system residence volume).

**Using JCL and Access Method Services:** Either may be used for cataloging.

Because this data set is an ISPF data set, and must be concatenated to other ISPF data sets, it is recommended that the DCB subparameters used by the location for other ISPF data sets also be used for this data set.

If ISPF is not yet installed, a nominal set of DCB subparameters can be specified, such as:

RECFM=FB

LRECL=80

BLKSIZE=3120

**Note:** This data set must be concatenated in front of the ISPF panel library.

## SYS1.DGTTLIB

**Contents:** SYS1.DGTTLIB is a partitioned data set that contains the tables for the interactive storage management facility (ISMF). These tables require the installation of the Interactive System Productivity Facility (ISPF).

### ***Requirements for Specification***

**General Information:** This system data set must reside on a direct access volume, which can be the system residence volume. It must be cataloged, and secondary space may be allocated.

**Using the DATASET Macro:** If this system data set is not specified in a DATASET macro, it will reside on the volume specified in the RESVOL parameter of the GENERATE macro (the system residence volume).

**Using JCL and Access Method Services:** Either may be used for cataloging.

Because this data set is an ISPF data set, and must be concatenated to other ISPF data sets, it is recommended that the DCB subparameters used by the location for other ISPF data sets also be used for this data set.

If ISPF is not yet installed, a nominal set of DCB subparameters can be specified, such as:

RECFM=FB

LRECL=80

BLKSIZE=3120

**Note:** This data set must be concatenated in front of the ISPF table library.

## SYS1.DUMPnn

**Contents:** The SYS1.DUMPnn system data sets (SYS1.DUMP00 through SYS1.DUMP09) are sequential data sets that contain system dumps, which record areas of virtual storage in case of system task failures.

### *Requirements for Specification*

**General Information:** SYS1.DUMP data sets are optional. You can define from 1 to 10 system dump data sets. They all can reside on tape, all on direct access devices, or on a combination of devices. You can add additional dump data sets after IPL with the DUMPDS command.

#### DASD dump data sets:

- You can define dump data sets before, during, or after sysgen.
- Dump data sets can reside on the system residence volume.
- Each dump data must reside on only one volume; each dump data set will contain only one dump.
- Specifications:
  - Allocate space for, and catalog, the dump data sets.
  - Place dump data sets on permanently resident volumes.
  - Do not allocate secondary space.
  - Specify CONTIG in the SPACE parameter.
  - Allocate several dump data sets that are large enough to contain the maximum size of any expected SVC dump.

#### Tape dump data sets:

You can define dump data sets that are to reside on tape during IPL.

**Using the DATASET Statement:** If you predefine a dump data set with an index other than SYS1, specify it on a DATASET statement; rename the data set to SYS1.DUMPnn; and omit the SPACE parameter.

**Using JCL and Access Method Services:** Use either for cataloging.

For allocation, specify the following DCB subparameters on the DD statement:

```
RECFM=F, BLKSIZE=4104
```

```
DISP=(SHR,KEEP)
```

**Note:** Do not share the dump data sets across systems.

**Additional Information:** For further information about the dump data set(s), see *Debugging Handbook*.

For information about defining the dump data sets and identifying existing dump data sets to the system at IPL time, see *Initialization and Tuning*.

For information about the AMDPRDMP service aid used to process the dumps, see *Service Aids*.

For general information about customizing dumps to prevent excessive output, see *System Modifications*.

## **SYS1.FDEFLIB**

**Contents:** SYS1.FDEFLIB is a partitioned data set that contains forms definition (FORMDEF) objects built by the Print Management Facility, or user objects conforming to FORMDEF specifications.

### ***Requirements for Specification***

**General Information:** SYS1.FDEFLIB is required only if you install the Print Management Facility with the IBM 3800 Model 3 Printing Subsystem. This system data set must reside on a direct access volume, which can be the system residence volume. Specify the volume with DISP=SHR.

**Using JCL and Access Method Services:** Allocate space for, and catalog, this data set. Use either access method services or JCL for cataloging.

Sample source objects are shipped with the Print Management Facility. You can build these source objects into SYS1.FDEFLIB using the Print Management Facility.

For allocation, specify the following DCB subparameters on the DD statement:

RECFM=VBM

LRECL=8205

BLKSIZE=8209

## SYS1.FONTLIB

**Contents:** SYS1.FONTLIB is a partitioned data set that contains various font objects (coded fonts, font character sets and code pages built by the Print Management Facility).

### ***Requirements for Specification***

**General Information:** SYS1.FONTLIB is required only if you install the Print Management Facility with the IBM 3800 Model 3 Printing Subsystem. This system data set must reside on a direct access volume, which can be the system residence volume. Specify the volume with DISP=SHR.

**Using JCL and Access Method Services:** Allocate space for, and catalog, this data set. Use either access method services or JCL for cataloging.

You can copy the font objects shipped with the Print Management Facility, and residing in the DLIBs, into SYS1.FONTLIB using the existing ACCEPT or APPLY commands of SMP, or with the IEBCOPY utility.

For allocation, specify the following DCB subparameters on the DD statement:

RECFM=VBM

LRECL=8205

BLKSIZE=8209

# SYS1.HELP

**Contents:** SYS1.HELP is a partitioned data set that contains HELP information regarding the syntax, operands, and function of each TSO command.

## **Requirements for Specification**

**General Information:** SYS1.HELP is required only if you use the TSO HELP command. This system data set must reside on a direct access volume, which can be the system residence volume. You may allocate secondary space.

**Using the DATASET Statement:** If you use the TSO HELP command, specify this data set on a DATASET statement, even if you predefine it. If you predefine it, omit the SPACE parameter.

**Using JCL and Access Method Services:** Use either for cataloging.

For allocation, specify the following DCB subparameters on the DD statement:

```
RECFM=FB,LRECL=80,  
BLKSIZE=nnnnn
```

Where nnnnn is a multiple of 80 that is less than or equal to:

```
14640 for a 2305 Model 2  
12960 for a 3330 Model 1, 2, or 11  
12960 for a 3333 Model 1 or 11  
8320 for a 3340/3344  
19040 for a 3350  
17600 for a 3375  
23440 for a 3380
```

The preceding values represent optimal space utilization for the above devices.

**Additional Information:** For information on this system data set, see *TSO Command Language Reference*.

## SYS1.IMAGELIB

**Contents:** SYS1.IMAGELIB is a partitioned data set that contains the 1403, 3203 Model 5, and 3211 universal character set (UCS) images; 3203 Model 5, 3211, and 3800 forms control buffer (FCB) modules; 3800 character arrangement table modules; 3800 graphic character modification modules; 3800 copy modification modules; 3800 library character sets; 3525 data protection images (DPI); and 3890 document processor SCI programs.

*Utilities* describes the use of the IEBIMAGE utility to install the IBM-supplied library character sets in SYS1.IMAGELIB. You may prefer to install library character sets in a different library before sysgen, and use the MEMBERS and PDS parameters on the DATASET statement to copy these library character sets from your library to SYS1.IMAGELIB during sysgen.

For information on adding either an IBM UCS (universal character set) or an IBM FCB (forms control buffer) image to SYS1.IMAGELIB, see *System—Data Administration*.

### **Requirements for Specification**

**General Information:** SYS1.IMAGELIB is required. This system data set must reside on a permanently mounted direct access volume, which can be the system residence volume. You may allocate secondary space.

**Using the DATASET Statement:** Specify this system data set on a DATASET statement, even if you predefine it. If you predefine it, omit the SPACE parameter.

You can include in this data set user-written forms control buffer (FCB) images, universal character set (UCS) images, and 3800 support modules.

**Using JCL and Access Method Services:** Use either for cataloging.

For allocation, specify the following DCB subparameters on the DD statement:

```
RECFM=U,  
BLKSIZE=nnnnn
```

where nnnnn is:

```
14660 for a 2305 Model 2  
13030 for a 3330 Model 1, 2, or 11  
13030 for a 3333 Model 1 or 11  
8368 for a 3340/3344  
18432 for a 3350  
17600 for a 3375  
18432 for a 3380
```

The preceding values represent optimal space utilization for the above devices.

**Note:** MVS automatically treats SYS1.IMAGELIB, when it is accessed through SVC 105, as an authorized library (that is, it sets the bit in the DEB as if you had included the library in IEAAPFxx). Installations sensitive to security considerations should protect SYS1.IMAGELIB to ensure that unauthorized programs cannot gain authorization by link-editing into this library.

**Additional Information:** For more information on maintaining SYS1.IMAGELIB, see the IEBIMAGE program in *Utilities*.

## SYS1.INDMAC

**Contents:** SYS1.INDMAC is a partitioned data set that contains the macro definitions for the industry subsystems.

### *Requirements for Specification*

**General Information:** SYS1.INDMAC is required only if you install industry subsystem support. This system data set must reside on a direct access volume, which can be the system residence volume. You may allocate secondary space.

**Using the DATASET Statement:** If you install industry subsystem support, specify this data set on a DATASET statement, even if you predefine it. If you predefine it, omit the SPACE parameter.

You can include user-written macros in SYS1.INDMAC during sysgen.

**Using JCL and Access Method Services:** Use either either for cataloging.

For allocation, specify the following DCB subparameters on the DD statement:

```
RECFM=FB,LRECL=80,  
BLKSIZE=nnnnn
```

where nnnnn is a multiple of 80 that is less than or equal to:

```
14640 for a 2305 Model 2  
12960 for a 3330 Model 1, 2, or 11  
12960 for a 3333 Model 1 or 11  
8320 for a 3340/3344  
19040 for a 3350  
17600 for a 3375  
23440 for a 3380
```

The preceding values represent optimal space utilization for the above devices.

## **SYS1.JES3LIB**

**Contents:** SYS1.JES3LIB is a partitioned data set that contains all the JES3 code except the modules that reside in SYS1.LPALIB and SYS1.LINKLIB.

### ***Requirements for Specification***

**General Information:** This system data set is required only if you install JES3. This system data set must reside on a direct access volume, which can be the system residence volume. Catalog this data set. You may allocate secondary space.

**Using the DATASET Statement:** If you do not specify this system data set on a DATASET statement, it will reside on the volume you specify in the RESVOL parameter on the GENERATE statement (the system residence volume).

**Using JCL and Access Method Services:** Use either for cataloging.

For allocation, specify the following DCB subparameters on the DD statement:

```
RECFM=U,  
BLKSIZE=nnnnn
```

where nnnnn is:

```
14660 for a 2305 Model 2  
13030 for a 3330 Model 1, 2, or 11  
13030 for a 3333 Model 1 or 11  
8368 for a 3340/3344  
18432 for a 3350  
17600 for a 3375  
18432 for a 3380
```

The preceding values represent optimal space utilization for the above devices.

## SYS1.JES3MAC

**Contents:** SYS1.JES3MAC is a partitioned data set that contains the macro definitions for JES3.

### ***Requirements for Specification***

**General Information:** This system data set is required only if you install JES3. This system data set must reside on a direct access volume, which can be the system residence volume.

For improved system efficiency, allocate space in cylinders. You may allocate secondary space.

**Using the DATASET Statement:** If you do not specify this system data set on a DATASET statement, it will reside on the volume you specify in the RESVOL parameter on the GENERATE statement (the system residence volume).

You can include user-written system macros in SYS1.JES3MAC during sysgen.

**Using JCL and Access Method Services:** Use either for cataloging.

For allocation, specify the following DCB subparameters on the DD statement:

```
RECFM=FB,LRECL=80,  
BLKSIZE=nnnnn
```

where nnnnn is a multiple of 80 that is less than or equal to:

```
14640 for a 2305 Model 2  
12960 for a 3330 Model 1, 2, or 11  
12960 for a 3333 Model 1 or 11  
8320 for a 3340/3344  
19040 for a 3350  
17600 for a 3375  
23440 for a 3380
```

The preceding values represent optimal space utilization for the above devices.

# SYS1.LINKLIB

**Contents:** SYS1.LINKLIB is a partitioned data set that contains programs and routines referred to by the XCTL, ATTACH, LINK, and LOAD macro instructions and nonresident system routines. SYS1.LINKLIB also contains the assembler program, the linkage editor, the utility programs, and service aids.

## **Requirements for Specification**

**General Information:** SYS1.LINKLIB is required. This system data set must reside on a direct access volume, which can be the system residence volume.

Allocate space in cylinders. For maximum efficiency, do not use alternate tracks. You may allocate secondary space.

**Using the DATASET Statement:** If you do not specify this system data set on a DATASET statement, it will reside on the volume you specify in the RESVOL parameter on the GENERATE statement (the system residence volume).

You can include user-written routines, in load module form, in SYS1.LINKLIB during sysgen.

**Using JCL and Access Method Services:** Use either for cataloging.

For allocation, specify the following DCB subparameters on the DD statement:

```
RECFM=U,  
BLKSIZE=nnnnn
```

where nnnnn is:

```
14660 for a 2305 Model 2  
13030 for a 3330 Model 1, 2, or 11  
13030 for a 3333 Model 1 or 11  
8368 for a 3340/3344  
18432 for a 3350  
17600 for a 3375  
18432 for a 3380
```

The preceding values represent optimal space utilization for the above devices.

## SYS1.LOGREC

**Contents:** SYS1.LOGREC is a sequential data set that contains statistical data about machine failures (processor failures, I/O device errors, channel errors). It also contains records for program error recording, missing-interrupt information, and dynamic device reconfiguration (DDR) routines.

**General Information:** SYS1.LOGREC is required. This system data set must reside on a direct access volume, which may be the system residence volume. Do not allocate secondary space.

IFCDIP00 initializes this data set during Stage 2.

**Using the DATASET Statement:** If you do not specify this system data set on a DATASET statement, pre-allocate it on the volume you specify in the RESVOL parameter on the GENERATE statement (the system residence volume).

**Using JCL and Access Method Services:** Do not specify DCB subparameters. Use either JCL or access method services for cataloging.

**Notes:**

1. Do not share this data set across systems.
2. After IPLing the newly generated system, execute the IFCDIP00 program to reinitialize SYS1.LOGREC.

**Additional Information:** You can increase or decrease the size of SYS1.LOGREC after sysgen using the IFCDIP00 program. Information on this program is given in *SYS1.LOGREC Error Recording*.

# SYS1.LPALIB

**Contents:** SYS1.LPALIB is a partitioned data set that contains all the modules loaded into the pageable link pack area (PLPA). This includes system routines, SVC routines, data management access methods, nonresident machine-check handler modules, authorization and accounting exit routines, logon mode tables, and some TSO modules.

## **Requirements for Specification**

**General Information:** SYS1.LPALIB is required. This system data set must reside on a direct access volume, which can be the system residence volume. Allocate space on a cylinder boundary. You may allocate secondary space.

MVS loads all the modules in this system data set into the LPA at IPL time; therefore, you may place it on a demountable volume that you can remove after IPL.

**Using the DATASET Statement:** If you do not specify this system data set on a DATASET statement, it will reside on the volume you specify in the RESVOL parameter on the GENERATE statement (the system residence volume).

You can include user-written routines, in load module form, in SYS1.LPALIB during sysgen.

**Using JCL and Access Method Services:** Use either for cataloging.

For allocation, Specify the following DCB subparameters on the DD statement:

```
RECFM=U,  
BLKSIZE=nnnnn
```

where nnnnn is:

```
14660 for a 2305 Model 2  
13030 for a 3330 Model 1, 2, or 11  
13030 for a 3333 Model 1 or 11  
8368 for a 3340/3344  
18432 for a 3350  
17600 for a 3375  
18432 for a 3380
```

The preceding values represent optimal space utilization for the above devices.

# SYS1.MACLIB

**Contents:** SYS1.MACLIB is a partitioned data set that contains the macro definitions for supervisor and data management macro instructions.

## ***Requirements for Specification***

**General Information:** SYS1.MACLIB is required. This system data set must reside on a direct access volume, which can be the system residence volume.

For improved system efficiency, allocate space in cylinders. You may allocate secondary space.

**Using the DATASET Statement:** If you do not specify this system data set on a DATASET statement, it will reside on the volume you specify in the RESVOL parameter on the GENERATE statement (the system residence volume).

You can include user-written system macros in SYS1.MACLIB during sysgen.

**Using JCL and Access Method Services:** Use either for cataloging.

For allocation, specify the following DCB subparameters on the DD statement:

```
RECFM=FB, LRECL=80,  
BLKSIZE=nnnnn
```

where nnnnn is a multiple of 80 that is less than or equal to:

```
14640 for a 2305 Model 2  
12960 for a 3330 Model 1, 2, or 11  
12960 for a 3333 Model 1 or 11  
8320 for a 3340/3344  
19040 for a 3350  
17600 for a 3375  
23440 for a 3380
```

The preceding values represent optimal space utilization for the above devices.

# SYS1.MANn

**Contents:** The SYS1.MANn system data sets (SYS1.MANA through SYS1.MANZ and SYS1.MAN0 through SYS1.MAN9) are VSAM data sets that contain information collected by the system management facilities (SMF) routines or other measurement facilities.

## **Requirements for Specification**

**General Information:** SYS1.MANn are required only if SMF or other measurement facilities will do recording. They must reside on a permanently mounted direct access volume, which can be the system residence volume. Do not allocate secondary space.

You can define these system data sets at any time.

**Using the DATASET Statement:** Allocate space only if SMF or other measurement facilities will do recording.

**Using JCL and Access Method Services:** You can use access method services to define these data sets. To define SYS1.MANn data sets, specify the following command and parameters with appropriate values where indicated:

```
DEFINE CLUSTER -  
  (NAME (SYS1.MANn) -  
  VOLUME (volser) -  
  FILE (ddname) -  
  NONINDEXED -  
  CYLINDERS (numcyl) -  
  REUSE -  
  RECORDSIZE (4086,32767) -  
  SPEED -  
  SPANNED -  
  CONTROLINTERVALSIZE (4096) -  
  SHAREOPTIONS (2))
```

## **Notes:**

1. These data sets have an expiration date of 99350. The operator should reply "U" to message IEC107D at IPL time.
2. Do not share these data sets across systems.

**Additional Information:** For information about SMF, see *System Management Facilities (SMF)*, in particular, "SMF Data Sets."

# SYS1.NUCLEUS

**Contents:** SYS1.NUCLEUS is a partitioned data set that contains the resident portion of the control program in two members, IEAVEDAT (DAT-off) and IEANUC0x (DAT-on). SYS1.NUCLEUS also contains the nucleus initialization program (NIP), a pointer to the master catalog (in member SYSCATLG), and the I/O configuration members built by the MVSCP. It may also contain a pointer to an alternate master catalog in member SYSCATxx.

## *Requirements for Specification*

**General Information:** SYS1.NUCLEUS is required. This system data set must reside on the system residence volume. Allocate space in cylinders. Do not allocate secondary space.

You may create additional specialized versions of the DAT-on nucleus.

**Using the DATASET Statement:** You can include a maximum of 10 user-written load modules in SYS1.NUCLEUS during sysgen.

**Using JCL and Access Method Services:** Use either for cataloging.

For space allocation, specify the following DCB subparameters on the DD statement:

```
RECFM=U,  
BLKSIZE=nnnnn
```

where nnnnn is:

```
14660 for a 2305 Model 2  
13030 for a 3330 Model 1, 2, or 11  
13030 for a 3333 Model 1 or 11  
8368 for a 3340/3344  
18432 for a 3350  
17600 for a 3375  
18432 for a 3380
```

The preceding values represent optimal space utilization for the above devices.

**Note:** Do not share this data set across systems.

**Additional Information:** MVS always initializes the CSECT named IEAPATCH, in the member IEANUC01, to zeros after a sysgen.

# **SYS1.OVERLIB**

**Contents:** SYS1.OVERLIB is a partitioned data set that contains overlays generated by you or by the Overlay Generation Language program.

## ***Requirements for Specification***

**General Information:** This system data set is required only if you install the Overlay Generation Language program with the IBM 3800 Model 3 Printing Subsystem. This system data set must reside on a direct access volume, which can be the system residence volume. Specify the volume with DISP=OLD when running the Overlay Generation Language program, and with DISP=SHR at all other times.

**Using JCL and Access Method Services:** Allocate space for, and catalog, this data set. Use either access method services or JCL for cataloging.

You may copy the sample JCL (used to create objects) shipped with the Overlay Generation Language program, and residing in the DLIBs, into SYS1.OVERLIB using the existing ACCEPT or APPLY commands in SMP, or with the IEBCOPY utility.

For allocation, specify the following DCB subparameters on the DD statement:

RECFM=VBM

LRECL=8205

BLKSIZE=8209

## SYS1.PARMLIB

**Contents:** SYS1.PARMLIB is a partitioned data set that contains IBM-supplied and installation-created lists of system parameter values.

### **Requirements for Specification**

**General Information:** SYS1.PARMLIB is required. This system data set must reside on a direct access volume, which can be the system residence volume. You may allocate secondary space.

**Using the DATASET statement:** If you do not specify this system data set on a DATASET statement, it will reside on the volume you specify in the RESVOL parameter on the GENERATE statement (the system residence volume).

You can include user-written system parameters in SYS1.PARMLIB during sysgen.

**Using JCL and Access Method Services:** Use either for cataloging.

For allocation, specify the following DCB subparameters on the DD statement:

```
RECFM=FB, LRECL=80, BLKSIZE=nnnnn
```

where nnnnn is a multiple of 80 that is less than or equal to:

```
14640 for a 2305 (Model 2)
12960 for a 3330 Model 1, 2, or 11
12960 for a 3333 Model 1 or 11
 8320 for a 3340/3344
19040 for a 3350
17600 for a 3375
23440 for a 3380
```

The preceding values represent optimal space utilization for the above devices.

**Additional Information:** For additional information, see *Initialization and Tuning*.

# **SYS1.PDEFLIB**

**Contents:** SYS1.PDEFLIB is a partitioned data set that contains page definitions built by the Print Management Facility or by you.

## ***Requirements for Specification***

**General Information:** SYS1.PDEFLIB is required only if you install the Print Management Facility with the IBM 3800 Model 3 Printing Subsystem. This system data set must reside on a direct access volume, which can be the system residence volume. Specify the volume with DISP=SHR.

**Using JCL and Access Method Services:** Allocate space for and catalog this data set. Use either access method services or JCL for cataloging.

You may copy the page definition objects shipped with the Print Management Facility, and residing in the DLIBs, into SYS1.PDEFLIB using the existing ACCEPT or APPLY commands in SMP, or with the IEBCOPY utility.

For allocation, specify the following DCB subparameters on the DD statement:

RECFM=VBM

LRECL=8205

BLKSIZE=8209

## SYS1.PROCLIB

**Contents:** SYS1.PROCLIB is a partitioned data set that contains the cataloged procedures used to perform certain system functions. The cataloged procedures can be for system tasks or processing program tasks invoked by the operator or the programmer.

### *Requirements for Specification*

**General Information:** SYS1.PROCLIB is required. This system data set must reside on a direct access volume, which can be the system residence volume. For improved system efficiency, allocate space on a cylinder boundary. You may allocate secondary space.

**Using the DATASET Statement:** If you do not specify this system data set on a DATASET statement, it will reside on the volume you specify in the RESVOL parameter on the GENERATE statement (the system residence volume).

You can include user-written procedures in SYS1.PROCLIB during sysgen.

**Using JCL and Access Method Services:** Use either for cataloging.

For allocation, specify the following DCB subparameters on the DD statement:

```
RECFM=FB,LRECL=80,  
BLKSIZE=nnnnn
```

where nnnnn is a multiple of 80 which is less than or equal to:

```
14640 for a 2305 (Model 2)  
12960 for a 3330 Model 1, 2, or 11  
12960 for a 3333 Model 1 or 11  
8320 for a 3340/3344  
19040 for a 3350  
17600 for a 3375  
23440 for a 3380
```

The preceding values represent optimal space utilization for the above devices.

## **SYS1.PSEGLIB**

**Contents:** SYS1.PSEGLIB is a partitioned data set that contains page segments built by the Print Management Facility or by you.

### ***Requirements for Specification***

**General Information:** This system data set is required only if you install the Print Management Facility with the IBM 3800 Model 3 Printing Subsystem. This system data set must reside on a direct access volume, which can be the system residence volume. Specify the volume with DISP=SHR.

**Using JCL and Access Method Services:** Allocate space for, and catalog, this data set. Use either access method services or JCL used for cataloging.

Sample source objects are shipped with the Print Management Facility. You can build these source objects into SYS1.PSEGLIB using the Print Management Facility.

For allocation, specify the following DCB subparameters on the DD statement:

**RECFM=VBM**

**LRECL=8205**

**BLKSIZE=8209**

## SYS1.SAMPLIB

**Contents:** SYS1.SAMPLIB is a partitioned data set that contains the installation verification procedure (IVP), the independent utilities, and the IPL text. It also contains sample exit routines.

### *Requirements for Specification*

**General Information:** SYS1.SAMPLIB is required. This system data set must reside on a direct access volume, which can be the system residence volume. You need not catalog this system data set. You may allocate secondary space.

**Using the DATASET Statement:** If you do not specify this system data set on a DATASET statement, it will reside on the volume you specify in the RESVOL parameter on the GENERATE statement (the system residence volume).

**Using JCL and Access Method Services:** Use either for cataloging.

For allocation, specify the following DCB subparameters on the DD statement:

```
RECFM=FB ,LRECL=80 ,BLKSIZE=nnnn
```

where nnnn is a multiple of 80, but not greater than 3200.

**Additional Information:** For information on IVP, see Chapter 6, "Testing the System" on page 121.

## **SYS1.SBLSCLI0**

**Contents:** SYS1.SBLSCLI0 is a partitioned data set that contains the text of the CLISTs for the Interactive Problem Control System (IPCS).

### ***Requirements for Specification***

**General Information:** To use the IPCS dialog programs, install the Interactive System Productivity Facility (ISPF).

This system data set must reside on a direct access volume, which can be the system residence volume. Catalog this data set. You may allocate secondary space.

**Using the DATASET Statement:** If you do not specify this system data set on a DATASET statement, it will reside on the volume you specify in the RESVOL parameter on the GENERATE statement (the system residence volume).

You can include user-written IPCS CLISTs in SYS1.SBLSCLI0 during sysgen.

**Using JCL and Access Method Services:** Use either for cataloging.

Because this data set is a CLIST data set, concatenate it to other CLIST data sets. Specify the same DCB subparameters for this data set as you do for the other CLIST data sets.

If you have not established CLIST data set conventions yet, specify a nominal set of DCB subparameters, such as:

RECFM=VB

LRECL=255

BLKSIZE=3360

## SYS1.SBLSKELO

**Contents:** SYS1.SBLSKELO is a partitioned data set that contains the file tailoring skeletons for the Interactive Problem Control System (IPCS) dialog programs.

### *Requirements for Specification*

**General Information:** To use the IPCS dialog programs, install the Interactive System Productivity Facility (ISPF).

This system data set must reside on a direct access volume, which can be the system residence volume. Catalog this data set. You may allocate secondary space.

**Using the DATASET Statement:** If you do not specify this system data set on a DATASET statement, it will reside on the volume you specify in the RESVOL parameter on the GENERATE statement (the system residence volume).

You can include user-written IPCS dialog file tailoring skeletons in SYS1.SBLSKELO during sysgen.

**Using JCL and Access Method Services:** Use either for cataloging.

Because this data set is an ISPF dialog message data set, concatenate it to other ISPF data sets. Specify the same DCB subparameters for this data set as you do for the other ISPF data sets.

If you have not installed ISPF yet, specify a nominal set of DCB subparameters, such as:

RECFM=FB

LRECL=80

BLKSIZE=3120

## **SYS1.SBLSMSG0**

**Contents:** SYS1.SBLSMSG0 is a partitioned data set that contains the message text for the Interactive Problem Control System (IPCS) dialog programs.

### ***Requirements for Specification***

**General Information:** To use the IPCS dialog programs, install the Interactive System Productivity Facility (ISPF).

This system data set must reside on a direct access volume, which can be the system residence volume. Catalog this data set. You may allocate secondary space.

**Using the DATASET Statement:** If you do not specify this system data set on a DATASET statement, it will reside on the volume you specify in the RESVOL parameter on the GENERATE statement (the system residence volume).

You can include user-written IPCS dialog message members in SYS1.SBLSMSG0 during sysgen.

**Using JCL and Access Method Services:** Use either for cataloging.

Because this data set is an ISPF dialog message data set, concatenate it to other ISPF data sets. Specify the same DCB subparameters for this data set as you do for the other ISPF data sets.

If you have not installed ISPF yet, specify a nominal set of DCB subparameters, such as:

RECFM=FB

LRECL=80

BLKSIZE=3120

**Note:** Concatenate this data set in front of the ISPF message library.

## SYS1.SBLSPNL0

**Contents:** SYS1.SBLSPNL0 is a partitioned data set that contains the dialog panels for the IPCS dialog programs.

### ***Requirements for Specification***

**General Information:** To use the IPCS dialog programs, install the Interactive System Productivity Facility (ISPF).

This system data set must reside on a direct access volume, which can be the system residence volume. Catalog this data set. You may allocate secondary space.

**Using the DATASET Statement:** If you do not specify this system data set on a DATASET statement, it will reside on the volume you specify in the RESVOL parameter on the GENERATE statement (the system residence volume).

You can include user-written IPCS dialog panels in SYS1.SBLSPNL0 during sysgen.

**Using JCL and Access Method Services:** Use either for cataloging.

Because this data set is an ISPF dialog panel data set, concatenate it to other ISPF data sets. Specify the same DCB subparameters for this data set as you do for the other ISPF data sets.

If you have not installed ISPF yet, specify a nominal set of DCB subparameters, such as:

RECFM=FB

LRECL=80

BLKSIZE=3120

**Note:** Concatenate this data set in front of the ISPF panel library.

# SYS1.SBLSTBL0

**Contents:** SYS1.SBLSTBL0 is a partitioned data set that contains the dialog tables for the IPCS dialog programs.

## ***Requirements for Specification***

**General Information:** To use the IPCS dialog programs, install the Interactive System Productivity Facility (ISPF).

This system data set must reside on a direct access volume, which can be the system residence volume. Catalog this data set. You may allocate secondary space.

**Using the DATASET Statement:** If you do not specify this system data set on a DATASET statement, it will reside on the volume you specify in the RESVOL parameter on the GENERATE statement (the system residence volume).

You can include user-written IPCS dialog tables in SYS1.SBLSTBL0 during sysgen.

**Using JCL and Access Method Services:** Use either for cataloging.

Because this data set is an ISPF dialog panel data set, concatenate it to other ISPF data sets. Specify the same DCB subparameters for this data set as you do for the other ISPF data sets.

If you have not installed ISPF yet, specify a nominal set of DCB subparameters, such as:

RECFM=FB

LRECL=80

BLKSIZE=3120

## SYS1.STGINDEX

**Contents:** SYS1.STGINDEX is a VSAM data set that contains auxiliary storage management records for virtual I/O (VIO) data sets that MVS saves across job steps and between IPLs.

### **Requirements for Specification**

**General Information:** SYS1.STGINDEX is required only if you want MVS to save VIO data sets across job steps and between IPLs. This system data set must reside on a direct access volume, which can be the system residence volume. Permanently mount or reserve this volume while it is in use. Do not allocate secondary space.

**Using the DATASET Statement:** Allocate space in cylinders.

**Using Access Method Services:** If you predefine this system data set, allocate space in cylinders. To predefine SYS1.STGINDEX, specify the following command and parameters with appropriate values where indicated.

```
DEFINE CLUSTER -  
  (NAME (SYS1.STGINDEX) -  
  VOLUME (volser) -  
  CYLINDERS (primary) -  
  KEYS (12 8) -  
  BUFFERSPACE (20480) -  
  RECORDSIZE (2041 2041) -  
  REUSE) -  
DATA -  
  (CONTROLINTERVALSIZE (2048)) -  
INDEX -  
  (CONTROLINTERVALSIZE (4096))
```

**Note:** Do not share this data set across systems.

**Additional Information:** The commands and parameters used to predefine SYS1.STGINDEX are discussed in *Access Method Services Reference*.

# SYS1.SVCLIB

**Contents:** SYS1.SVCLIB is a partitioned data set that contains some OLTEP and appendage modules.

## ***Requirements for Specification***

**General Information:** SYS1.SVCLIB is required. This system data set must reside on the system residence volume. Allocate space in cylinders; you may allocate secondary space.

**Using the DATASET Statement:** If you do not specify this system data set on a DATASET statement, it will reside on the volume you specify in the RESVOL parameter on the GENERATE statement (the system residence volume).

You can include user-written routines, in load module form, during sysgen.

**Using JCL and Access Method Services:** Use either for cataloging.

For allocation, specify the following DCB subparameters on the DD statement:

```
RECFM=U,  
BLKSIZE=nnnnn
```

where nnnnn is:

```
14660 for a 2305 Model 2  
13030 for a 3330 Model 1, 2, or 11  
13030 for a 3333 Model 1 or 11  
8368 for a 3340/3344  
18432 for a 3350  
17600 for a 3375  
23440 for a 3380
```

The preceding values represent optimal space utilization for the above devices.

**Note:** Do not share this data set across systems.

# SYS1.TCOMM MAC

**Contents:** SYS1.TCOMM MAC is a partitioned data set that contains ACF/TCAM record API macros.

## ***Requirements for Specification***

**General Information:** SYS1.TCOMM MAC is required only if you install ACF/TCAM. This data set must reside on a direct access volume, which can be the system residence volume. You need not catalog this data set. You may allocate secondary space.

**Using the DATASET Statement:** Specify this data set on a DATASET statement only if you install ACF/TCAM.

**Using JCL and Access Method Services:** Use either for cataloging.

For allocation, specify the following DCB subparameters on the DD statement:

```
RECFM=FB,LRECL=80,  
BLKSIZE=nnnnn
```

where nnnnn is a multiple of 80 that is less than or equal to:

```
14640 for a 2305 Model 2  
12960 for a 3330 Model 1, 2, or 11  
12960 for a 3333 Model 1 or 11  
8320 for a 3340/3344  
19040 for a 3350  
17600 for a 3375  
23440 for a 3380
```

The preceding values represent optimal space utilization for the above devices.

# SYS1.TELCMLIB

**Contents:** SYS1.TELCMLIB is a partitioned data set that contains telecommunications subroutines in load module form.

## ***Requirements for Specification***

**General Information:** SYS1.TELCMLIB is required only if you install BTAM/SP and/or ACF/TCAM. This system data set must reside on a direct access volume, which can be the system residence volume. For improved system efficiency, allocate space on a cylinder boundary. You may allocate secondary space.

**Using the DATASET Statement:** If you install BTAM/SP and/or ACF/TCAM, specify this data set on a DATASET statement, even if you predefine it. If you predefine it, omit the SPACE parameter.

You can include user-written routines, in load module form, during sysgen.

**Using JCL and Access Method Services:** Use either for cataloging.

For allocation, specify the following DCB subparameters on the DD statement:

```
RECFM=U,  
BLKSIZE=nnnnn
```

where nnnnn is:

```
14660 for a 2305 Model 2  
13030 for a 3330 Model 1, 2, or 11  
13030 for a 3333 Model 1 or 11  
8368 for a 3340/3344  
18432 for a 3350  
17600 for a 3375  
18432 for a 3380
```

The preceding values represent optimal space utilization for the above devices.

# SYS1.UADS

**Contents:** SYS1.UADS is a partitioned data set that contains a list of authorized TSO users, and information about them.

## **Requirements for Specification**

**General Information:** SYS1.UADS must reside on a direct access volume, which can be the system residence volume. Catalog this system data set, but allocate space only if you activate TSO. You may allocate secondary space.

**Using JCL and Access Method Services:** Use either for cataloging.

For allocation, specify the following DCB subparameters on the DD statement:

TSO	TSO/E
DSORG=PO, LRECL=80, RECFM=FB, BLKSIZE=nnnnn	DSORG=PO, LRECL=172, RECFM=FB, BLKSIZE=nnnnn

where nnnnn is a multiple of LRECL that is less than or equal to:

14640 for a 2305 Model 2  
12960 for a 3330 Model 1, 2, or 11  
12960 for a 3333 Model 1 or 11  
8320 for a 3340/3344  
19040 for a 3350  
17600 for a 3375  
23440 for a 3380

The preceding values represent optimal space utilization for the above devices.

## **Notes:**

1. Do not specify an expiration date for SYS1.UADS.
2. Do not share this data set across systems unless GRS is installed and active.

For a detailed explanation of resource sharing in this regard, see *SPL: TSO/E Installation and Planning: Volume 1*.

**Additional Information:** For more information about this system data set, see *System Programming Library: TSO*.

# SYS1.VTAMLIB

**Contents:** SYS1.VTAMLIB is a partitioned data set that contains the ACF/VTAM load modules, installation-coded logon exit routines, authorization and accounting exit routines, USS definition tables, and the network solicitor.

## **Requirements for Specification**

**General Information:** SYS1.VTAMLIB is required only if you install ACF/VTAM. This system data set must reside on a direct access volume, which can be the system residence volume. Catalog this data set. You may allocate secondary space.

**Using the DATASET Statement:** If you install ACF/VTAM, specify this data set on a DATASET statement.

You can include user-written routines, in load module form, in SYS1.VTAMLIB during sysgen.

**Using JCL and Access Method Services:** Use either for cataloging.

For allocation, specify the following DCB subparameters on the DD statement:

```
RECFM=U, BLKSIZE=nnnnn
```

where nnnnn is:

```
14660 for a 2305 Model 2  
13030 for a 3330 Model 1, 2, or 11  
13030 for a 3333 Model 1 or 11  
8368 for a 3340/3344  
18432 for a 3350  
17600 for a 3375  
18432 for a 3380
```

The preceding values represent optimal space utilization for the above devices.

**Note:** SYS1.VTAMLIB, as well as the user-defined network control program load module library, must be authorized. Therefore, include both libraries in the IEAAPFxx PARMLIB member.

## Page and Swap Data Sets

### Defining the Page and Swap Data Sets

This section contains general information about defining the page and swap data sets using either the DATASET macro or the access method services DEFINE command.

Page or swap data sets contain the paged-out portions of address spaces, the common service area (CSA), and the data written to virtual I/O data sets.

Defining a page or swap data set consists of allocating space for it on a direct access volume, cataloging it, formatting it, and including its name in the PAGE= or SWAP= portion of either the IEASYS00 or the IEASYSnn system parameter member in SYS1.PARMLIB.

At least 3 page data sets must be defined during sysgen. No swap data sets are required. Up to 25 page data sets and up to 10 swap data sets may be defined before or during sysgen, and additional page or swap data sets may be defined after sysgen. The page or swap data sets that are defined during sysgen are automatically included in the IEASYS00 member in SYS1.PARMLIB. For those page or swap data sets defined before sysgen, specify the name of the page or swap data set in a DATASET macro and then, during sysgen, the name will be included in the IEASYS00 member. For those page or swap data sets defined after sysgen, enter their names in either the IEASYS00 or IEASYSnn member. (Do this either by using the system utility IEBUPDTE before IPL, or by entering the name from the console in the PAGE=keyword during IPL.)

If page data sets from a previously generated system are to be reused, it is necessary to reuse the master catalog as well. See Chapter 7, "Using Data Sets from the Old Production System" on page 125.

The first-named page data set in either the IEASYS00 member or the IEASYSnn member in SYS1.PARMLIB will be used for the pageable link pack area (PLPA). For IEASYS00, this means that the data set name appearing in the first DATASET macro that contains the PAGEDSN parameter will be used for the PLPA. The second-named page data set in either the IEASYS00 member or the IEASYSnn member in SYS1.PARMLIB will be used as the system data set for the pages for the common areas.

For information about adding page or swap data set names to SYS1.PARMLIB and about system parameter members, see *Initialization and Tuning*.

### Defining Page or Swap Data Sets, Using the DATASET Macro

The DATASET macro can be used to define the page or swap data sets during sysgen. One macro must be specified for each page or swap data set to be defined. At least 3 page data sets must be defined. The parameters for the DATASET macro are discussed in Chapter 3, "Coding the Sysgen Statements" on page 11. When the DATASET macro is used to define a page or swap data set, its name is automatically included in the PAGE=, SWAP=, or DUPLEX= portion of the IEASYS00 member in SYS1.PARMLIB.

Even if predefining the page or swap data sets, use the DATASET macro to include the name of the page data sets in IEASYS00 as follows:

```
Name  DATASET  PAGEDSN=dsname
Name  DATASET  SWAPDSN=dsname
Name  DATASET  DUPLEXDS,NAME=dsname
```

Absence of the SPACE parameter prevents space allocation but allows the page or swap data set name to be entered in the IEASYS00 member in SYS1.PARMLIB. When the SPACE parameter is not specified, the VOL parameter need not be specified. If VOL is specified without the SPACE parameter, VOL will be ignored.

When using the DATASET macro to define page and swap data sets, space can only be allocated in cylinders and only primary extents can be specified.

Figure 3 on page 46 gives an example of the use of the DATASET macro to define the page and swap data sets.

## Defining Page or Swap Data Sets Using Access Method Services

The page and swap data sets can be defined before sysgen using the DEFINE command of access method services.

In allocating space using access method services, it is recommended that your allocation be in cylinders. Only primary extents may be specified for page or swap data sets.

Figure 8 on page 54 shows the input for using access method services for defining page and swap data sets as well as system data sets.

The DEFINE command does not include the data set names in the PAGE=, SWAP=, or DUPLEX= portion of the IEASYS00 member in SYS1.PARMLIB.

## Protecting Page and Swap Data Sets

Page and swap data sets should be password protected to prevent unauthorized use. During sysgen, the page and swap data sets are defined without password protection. At the successful conclusion of the sysgen process, update the master catalog to protect the page space data sets. The output from job 6 of a complete sysgen includes a listing of the master catalog. The names and data components of the page or swap space can be determined from this listing. Alternatively, the access method services LISTCAT command can be issued to determine the page or swap space and data component names of the data sets. The ALTER commands that follow will alter the catalog entries for a page data set. *Access Method Services Reference* provides additional details on the format and function of the LISTCAT and ALTER commands.

```

//ALTPSWD      JOB  ACCT123,PROGRAMMER,MSGLEVEL=(1,1)
//STEP1       EXEC PGM=IDCAMS
//SYSPRINT    DD   SYSOUT=A
//SYSIN       DD   *
ALTER -
  SYS1.pagedsn -
  MASTERPW(password) -
  CONTROLPW(password) -
  UPDATEPW(password) -
  READPW(password) -
  AUTHORIZATION(entrypoint[string]) -
  ATTEMPTS(0)
ALTER -
  frstqual.Tbbbbbbb.DFDyyddd.Taaaaaaa.Tbbbbbbb -
  MASTERPW(password) -
  CONTROLPW(password) -
  UPDATEPW(password) -
  READPW(password) -
  AUTHORIZATION(entrypoint[string]) -
  ATTEMPTS(0)
/*

```

*Note:* *pagedsn* is the name of a page data set as cataloged during sysgen.

The name of the data component is generated by the system and is listed in the LISTCAT output. It is always in the form

**frstqual.Tbbbbbbb.DFDyyddd.Taaaaaaa.Tbbbbbbb,**

where:

**frstqual**  
is the first qualifier of the cluster component.

**yy**  
is the year.

**ddd**  
is the day.

**aaaaaaa and bbbbbbb**  
are the time of definition of the page or swap data set.

For data sets cataloged in VSAM catalogs, **frstqual** is always VSAMDSET.



## Chapter 5. Executing Sysgen

This chapter contains four sections:

- “Stage 1: Producing the Job Stream” explains Stage 1 input, processing, and output: the production of the job stream for Stage 2
- “Stage 2: Processing the Job Stream” on page 107 explains Stage 2 input, processing of the job stream and output: the production of a generated system
- “Restart Procedures” on page 113 explains the possible causes for unsatisfactory completion of sysgen and suggested restart procedures for both Stage 1 and Stage 2
- “Sysgen Messages” on page 117 gives examples of sysgen error, warning, and informational messages that you might encounter

### Stage 1: Producing the Job Stream

#### Stage 1 Input

The input statements required for Stage 1 consist of JCL and sysgen statements. (See Figure 10 on page 106 for a sample of Stage 1 input.)

- A JOB statement with all required parameters.
- An EXEC statement with PGM=IEV90,REGION=2048K. IEV90 is the name assigned to Assembler H Version 2. In the example, 2048K is a sample REGION size.
- A SYSLIB DD statement that allocates the SYS1.AGENLIB and SYS1.AMODGEN libraries to this assembly.
- A SYSUT1 DD statement that allocates space for the temporary data set required by the assembler for Stage 1.
- A SYSPUNCH DD statement that defines the data set that is to contain the job stream produced during Stage 1.
- A SYSPRINT DD statement that defines the output class.
- A SYSIN DD \* statement.

- The sysgen statements.
- An END statement.
- A /\* statement.

The sequence of the statements is shown in Figure 10.

---

```
//SYSGEN      JOB MSGLEVEL=1
//START       EXEC PGM=IEV90,REGION=2048K
//SYSLIB      DD DSN=SYS1.AGENLIB,DISP=SHR
//            DD DSN=SYS1.AMODGEN,DISP=SHR
//SYSUT1      DD UNIT=SYSDA,SPACE=(CYL(5,5))
//SYSPUNCH    DD UNIT=unitadr,LABEL=(,NL)
//SYSPRINT    DD SYSOUT=A
//SYSIN       DD *
              sysgen statements
              END
/*
```

Figure 10. Sample Stage 1 Input

---

## Stage 1 Processing

The assembler processes the sysgen statements as one job during Stage 1. The statements are analyzed for valid parameters and dependencies upon other statements.

If the assembler finds no errors, it generates a job stream consisting of JCL and control statements for Stage 2, places /\* in columns 1 and 2 of the last record, and sets a return code of 0.

If the assembler finds errors, it writes error messages with severity codes of 5 or 7 (see "Sysgen Messages" on page 117) and normally does not generate the job stream.

## Diagnostic Override

Diagnostic override enables the assembler to generate a job stream during Stage 1 even though it finds errors in the Stage 1 input statements. The assembler identifies the errors by placing // in columns 1 and 2 of the last record. Any job stream the assembler generates is invalid.

To override errors, include the following statements in the Stage 1 input statements after the Stage 1 JCL statements:

```
                COPY  SGSYSPAK
&SGMENTB(16) SETB  1
```

## Stage 1 Output

The assembler generates the job stream as punched cards, card images on tape, or card images on a DASD volume, according to your specification on the Stage 1 SYSPUNCH DD statement. In addition to the job stream, the assembler generates a documentation listing, which is a printout of the processing of all the statements, including the PUNCH statements that comprise the input to Stage 2.

## Stage 2: Processing the Job Stream

When Stage 1 completes and the assembler generates a valid job stream, Stage 2 can begin.

### Stage 2 Input

The input to Stage 2 is the job stream output from Stage 1.

### The Job Stream

The job stream contains several JOB statements, each followed by one or more EXEC statements. Each EXEC statement is followed by its associated DD statements and other data required to execute the linkage editor, utility programs, and access method services.

*The JOB Statement:* The format of the Stage 2 JOB statements is:

```
//namen JOB 1,'SYSTEM GENERATION',MSGLEVEL=1,  
// CLASS=&SGCTRLC(42),MSGCLASS=&SGCTRLC(41)
```

where name is the value from the INDEX parameter on the GENERATE statement, and n represents the sequential identification numbers supplied Stage 2 to indicate the number of the job (0 through 6).

The value you specify for the JCLASS parameter on the GENERATE statement is substituted for the global &SGCTRLC(42) for the job class. The value you specify for the OCLASS parameter on the GENERATE statement is substituted for the global &SGCTRLC(41) for the output class for system messages.

*Note:* For job 6 of Stage 2, in addition to the parameters described above, the JOB statement includes the TYPRUN=HOLD parameter to enable MVS to hold the job indefinitely. (See "Initializing the New Master Catalog" on page 111 and "Stage 2 Processing of the Job Stream" on page 110.)

You may modify JOB statements by changing the jobname or the accounting information on the JOB statement before Stage 1. Use the IEBUPDTE utility program or an editor to modify the JOB statement information contained in member JOBCARD in SYS1.AGENLIB distribution library. (For information on using the IEBUPDTE utility program, see *Utilities*.)

When modifying the JOB statement, specify the NAME parameter as:

```
jobname &SGCTRLA(3)
```

where:

jobname consists of 1 through 6 alphanumeric or national (#, @, \$) characters, the first character being alphabetic or national;

and

&SGCTRLA(3) is a counter, incremented by the assembler, that produces unique jobnames.

(For information on coding a JOB statement, see *JCL*.)

Figure 11 is an example of creating unique JOB statements. The TYPRUN=HOLD parameter is present on the last job statement, as required when the system uses more than one initiator to process several jobs.

---

Col

1 3 9

```
//JOBA      JOB   (78700,J22),NAME,MSGLEVEL=(1,1)
//UPDTE     EXEC  PGM=IEBUPDTE,PARM=MOD
//SYSPRINT  DD    SYSOUT=A
//SYSUT1    DD    DSN=SYS1.AGENLIB,DISP=OLD
//SYSUT2    DD    DSN=SYS1.AGENLIB,DISP=OLD
//SYSIN     DD    *
./  REPL     NAME=JOB CARD,LIST=ALL
./  NUMBER  NEW1=10000,INCR=10000
        MACRO
        JOBCARD
        COPY  SGGBLPAK
PUNCH  '//SYS#10&SGCTRLA(3) JOB (USER ACCG.),'USER DESCRIPTION',
        AIF   (&SGHOLDB EQ 1).HOLD  IF JOB IS TO BE HELD
PUNCH  '//      MSGLEVEL=1,MSGCLASS=C,CLASS=C'
        AGO   .MEND
.*****
.****      PUNCH 'HOLD' FOR JOBS WHICH MUST BE HELD      ****
.*****
.HOLD      ANOP
PUNCH  '//      MSGLEVEL=1,MSGCLASS=C,CLASS=C,TYPRUN=HOLD'
.MEND      ANOP
&SGCTRLA(3) SETA  &SGCTRLA(3)+1          INCREMENT JOB NUMBER
&SGCTRLA(1) SETA  0                      INITIALIZE STEP NUMBER
        MEND
./
/*
//
```

Figure 11. Example of a Macro to Create JOB Statements for Stage 2 Input

---

**The EXEC Statement:** The format of the Stage 2 EXEC statements produced by Stage 1 is:

```
//name EXEC PGM=program[,parameter(s)]
```

or

```
//name EXEC procname[,parameter(s)]
```

The step name is either

- *SGnn* (for steps produced by internal macros), or
- *abnn* (for steps produced by the GENERATE statement), where *abb* is an abbreviation of the name of the target system data set (for example, LNK for SYS1.LINKLIB). In job 5, where Stage 2 creates many system data sets, the step name is MISC.

The suffix *nn* in both formats indicates the sequential number of the step within the job. The number of steps in a job may vary according to what you specified on the statements in Stage 1.

Service and utility programs executed during Stage 2 include: IDCAMS, IEBCOPY, IEBGENER, IEBUPDTE, IEHLIST, IFCDIP00. (IDCAMS is described in *Access Method Services Reference*. IFCDIP00 is described in *SYS1.LOGREC Error Recording*. The remaining programs are described in *Utilities*.)

The name of the supplied procedure executed is LINKS for the MVS/XA linkage editor.

## Stage 2 Processing

Execution of Stage 2 requires a job stream of seven jobs (or six jobs if you previously defined the master catalog).

During execution of the job stream, Stage 2 creates each system data set and page data set (if specified) within a single job. During the process of creating a data set, the following may occur:

- Definition of the system or page data set (if you included a DATASET statement).
- Link-editing of selected modules to construct members of the system data sets.
- Completing the construction of the system data sets using utility programs and service aids.

## Stage 2 Processing of the Job Stream

The job stream consists of seven jobs (or six jobs, if you previously defined the master catalog). If you do not use the DATASET statement to define the system and/or page data sets, Stage 2 does not allocate space for them.

*Job 0:* During job 0, define the master catalog. (Only include this job in the input stream if you have not previously defined the master catalog.)

*Job 1:* During job 1, create SYS1.LPALIB as follows:

- Define SYS1.LPALIB.
- Copy components from the DLIBs and from user-defined data sets into SYS1.LPALIB.
- Link-edit components from the DLIBs into SYS1.LPALIB.

*Job 2:* During job 2, create SYS1.LINKLIB as follows:

- Define SYS1.LINKLIB.
- Copy components from the DLIBs and from user-defined data sets into SYS1.LINKLIB.
- Link-edit components from the DLIBs into SYS1.LINKLIB.

*Job 3:* During job 3, create SYS1.SVCLIB as follows:

- Define SYS1.SVCLIB.
- Copy components from the DLIBs and from user-defined data sets into SYS1.SVCLIB.

*Job 4:* During job 4, create SYS1.NUCLEUS as follows:

- Define SYS1.NUCLEUS.
- Copy components from the DLIBs and from user-defined data sets into SYS1.NUCLEUS.
- Link-edit components from the DLIBs and user-defined data sets into SYS1.NUCLEUS.

*Job 5:* During job 5, create the remaining system data sets and the page data sets as follows:

- Define the remaining non-VSAM system data sets (including the TSO system data sets, if specified).
- Execute the IFCDIP00 program to initialize SYS1.LOGREC.
- Copy components from the DLIBs and from user-defined data sets into specific system data sets.

- Execute the IEBUPDTE utility program to add members to SYS1.PARMLIB, according to the specifications you made on the DATASET statement.
- Define the page data sets and the SYS1.STGINDEX VSAM system data set.

*Job 6:* Do not execute this job until jobs 0 through 5 run successfully. During job 6, the catalog Stage 2 becomes the master catalog of the new system, and the following occurs:

- Copy and link-edit into the system libraries products from the DLIBs that you can install independent of sysgen (for example; RACF, RMF, and HSM).
- List the VTOCs of all volumes containing the new system data sets.
- List the directories of the system data sets.
- List the master catalog.
- Delete (SCRATCH) the old master catalog pointer (in SYS1.NUCLEUS) for the generating system.
- Initialize the pointer to the new master catalog. Store the volume serial number of the new master catalog in member SYSCATLG of SYS1.NUCLEUS, thereby making the new catalog the master catalog.

After Stage 2 you can change the master catalog pointer in SYS1.NUCLEUS by re-executing the steps in job 6. (For additional information about job 6, see “Initializing the New Master Catalog.”)

Job 0 executes first. The first step of job 0 defines the master catalog. After creating the master catalog, jobs 1, 2, and 3 can execute simultaneously. Because these jobs are different sizes, they may finish out of sequence.

*Note:* Job 6 does not begin execution until the operator releases it from the queue (see “Initializing the New Master Catalog”).

## Initializing the New Master Catalog

Job 6 of Stage 2 initializes the master catalog. The JOB statement for job 6 includes the TYPRUN=HOLD parameter, which keeps job 6 from executing until released by the operator. The operator releases job 6 by issuing the command:

```
$A 'SYSGEN6'
```

**IMPORTANT:** Do not release job 6 until jobs 0 through 5 complete successfully. Job 6 initializes the pointer to the new master catalog and disconnects the generating system’s master catalog by:

- Deleting the pointer in the generating system’s master catalog that points to the new system’s master catalog and
- Storing a pointer in the new SYS1.NUCLEUS that points to the new system’s master catalog.

Some installations will want to use the master catalog from a previous production system. Chapter 7, "Using Data Sets from the Old Production System" on page 125 contains an example and a procedure for combining the system data sets from a newly generated system with the master catalog, SYS1.STGINDEX, and page data sets from an existing production system.

## **Multiprogramming the Job Stream**

The design of Stage 2 allows you to multiprogram the jobs in the job stream.

After MVS reads in and enqueues the job stream, start from one to three initiators to begin execution. (Start no more than three initiators for a Stage 2.) The following text assumes three initiators; it also assumes that you define the master catalog using a DATASET statement.

Job 0 executes first. The first step of Job 0 defines the master catalog. After creating the master catalog, the remainder of jobs 1 through 5 execute simultaneously, as initiators are freed. Because these jobs are different sizes, they may finish out of sequence. Job 6 does not begin execution until released from the queue by the operator (see "Initializing the New Master Catalog" on page 111).

## **Stage 2 Output**

The output from Stage 2 is the new and updated system data sets.

Stage 2 also produces a documentation listing that is a printout of all the steps executed by the linkage editor, the utility programs, and access method services.

## Restart Procedures

This section contains the information necessary to restart a sysgen after termination of the process by errors in either Stage 1 or 2.

### Restarting Stage 1

The most common causes of error during Stage 1 are data entry errors in the input statements, and contradictory or invalid specifications on the statements.

The assembler generates error messages to indicate the type of error and writes them to the SYSPRINT data set. (see "Sysgen Messages" on page 117)

If the assembler finds any errors during Stage 1, it does not generate the job stream (for exceptions, see "Diagnostic Override" on page 106).

In Stage 1, the assembler processes the sysgen statements for the first time. Therefore, you can only restart Stage 1 from the beginning. To restart, correct the errors in the input statements, and resubmit the job.

### Restarting Stage 2

The most common causes of error during Stage 2 are:

- Faulty space allocation for the system data sets
- Errors in the input statements that the assembler cannot detect during Stage 1
- Procedural errors, such as improper volume mounting

The most probable error during Stage 2 is faulty space allocation for a system data set. If this occurs, reallocate space for that system data set, increase its size, and re-execute that job starting at the beginning.

You can use Device Support Facilities to reinitialize the volume that is to contain the new master catalog.

If you restart with job 0, which defines a master catalog, you can use the access method services EXPORT command, as shown in the following example, to delete the new master catalog's name from the generating system's catalog.

```
//DELCA1NM      JOB ACCT123,PROGRAMMER,MSGLEVEL=(1,1)
//STEP1        EXEC PGM=IDCAMS
//SYSPRINT     DD SYSOUT=A
//SYSIN        DD *
EXPORT -
              SYS1.A.NEW.ICF.CATALOG -
              DISCONNECT
/*
```

If the system data set contains data, you can save the data and restart Stage 2 from the failing job step by doing the following:

1. Rename the system data set, using IEHPROGM.
2. Reallocate space for the system data set using its original name.
3. Copy the data in the renamed data set into the reallocated system data set using IEBCOPY.
4. Delete the renamed data set using IEHPROGM.
5. Restart Stage 2 from the beginning of the job step that failed. You can accomplish the actual restarting by using one of the methods described in "Restart Techniques."

If the problem you encounter is one other than space allocation, such as component failure or machine malfunction, follow the instructions printed out in the error messages and codes and then see *System Messages* or *System Codes*.

For information on IEHPROGM and IEBCOPY, see *Utilities*. For information on allocating space for system data sets, see Chapter 4, "Selecting and Defining the System Data Sets" on page 45 and *Access Method Services Reference*. For information on Device Support Facilities, see *Device Support Facilities User's Guide and Reference*.

## Restart Techniques

You can restart Stage 2 at the beginning of any job or job step. If you do not need to change any statements, restart the job stream from the job or job step that failed. This section discusses the techniques used for restarting the job stream after you perform any other necessary operations.

### Restarting from Cards

If the job stream is on cards, you can restart a job step by placing a JOB card ahead of the job step's EXEC card and beginning from that job step.

### Punching the Job Stream

If the unit (SYSPUNCH) you specified during Stage 1 for the job stream was not a card punch, and you want the job stream on cards, use the IEBEDIT utility to punch all or some of the job stream. Figure 12 on page 115 shows the statements required to punch the job stream using IEBEDIT.

When you use the IEBEDIT utility program to punch any part or all of the job stream, consider the following:

- The value of the UNIT parameter of the SYSUT1 DD statement is the unit name (generic or esoteric) of the device on which the job stream resides. If the job stream is on disk, specify a standard label in the LABEL parameter.

- You can specify one or more EDIT statements when executing IEBEDIT. You can also elect to punch certain jobs or job steps. For the control statements for punching certain jobs or job steps, see Figure 13 on page 115.

---

```

//PUNCH      JOB ACCOUNT123
//           EXEC PGM=IEBEDIT
//SYSPRINT   DD SYSOUT=A
//SYSUT1     DD UNIT=unitname,LABEL=(,NL),VOLUME=SER=volser,
//           DISP=(OLD,KEEP),DCB=(dcb information)
//SYSUT2     DD SYSOUT=B
//SYSIN      DD *
            EDIT START=name1,STEPNAME=xxx
            EDIT START=name2,STEPNAME=xxx
            EDIT START=name3,STEPNAME=xxx
            EDIT START=name4,STEPNAME=xxx
            EDIT START=name5,STEPNAME=xxx
            EDIT START=name6,STEPNAME=xxx
/*

```

**Figure 12. Punching the Job Stream**

---

### Restarting from Tape or a DASD Volume

You can also use the IEBEDIT utility to restart Stage 2 from any job or job step when the job stream is on tape or a DASD volume.

IEBEDIT creates a new job stream by editing and selectively copying the job stream provided as input. IEBEDIT can copy an entire set of jobs, including JOB statements and associated job step statements, or selected job steps in a job. Figure 13 shows the control statements required by IEBEDIT.

---

```

//RESTART    JOB
//           EXEC PGM=IEBEDIT
//SYSPRINT   DD SYSOUT=A
//SYSUT1     DD UNIT=3400-6,LABEL=(,NL),
//           VOLUME=SER=volser,DISP=(OLD,KEEP),
//           DSN=dsname,
//           DCB=(DCB information)
//SYSUT2     DD SYSOUT=(A,INTRDR)
//SYSIN      DD *
            EDIT START=namen,STEPNAME=SGxx[,NOPRINT]
/*

```

**Figure 13. Control Statements for IEBEDIT when the Job Stream is on Tape**

---

When you use the IEBEDIT utility program to create a job stream to permit the restart of Stage 2, consider the following:

- The value of the UNIT parameter of the SYSUT1 DD statement is the unit address of the magnetic tape drive or direct access storage device on which the job stream resides.

- **SYSUT2** is directed to an internal reader. The new job stream goes directly into the job queue for execution.
- You can specify one or more **EDIT** statements when executing **IEBEDIT**. If you omit the **TYPE** parameter, as in Figure 13 on page 115, **STEPNAME** specifies the first job step in the job specified by the **START** parameter included in the new job stream. If you specify **TYPE=INCLUDE** or **TYPE=EXCLUDE**, **STEPNAME** specifies the job steps you want included or excluded, respectively, from the new job stream. You can specify individual job steps and sequences of job steps for inclusion or exclusion.
- Include **NOPRINT**, if you do not want a listing of the new job stream.
- If the **SYSUT2 DD** statement designates a magnetic tape drive or direct access storage device, issue a **START RDR** command after the creation of the new job stream.

For additional information on the **IEBEDIT** utility program, see *Utilities*.

## Sysgen Messages

The assembler produces messages during the processing of sysgen statements and prints them in the assembler listing in the SYSPRINT data set. The assembler produces three types of messages: error messages, warning messages, and informational messages.

Figure 14 shows the severity code and format for error and warning messages.

---

**s,\*\*\*IEIaaannn text**

s = Severity code:  
\* Informational message; documents options selected for new system.  
\*\*\* Informational message; appears before any PUNCH statements produced by statement processing.  
0 Warning message; the condition indicated may cause errors in the new system.  
5 Error message; user error in coding of a sysgen statement.  
7 Error message; message is produced by the GENERATE statement.  
aaa = An abbreviation of the sysgen statement on which the error was detected:

aaa	Statement
DAT	DATAMGT
DTS	DATASET
GEN	GENERATE
JES	JES

nnn = Message serial number  
text = Message text

**Figure 14. Format of Sysgen Error and Warning Messages**

---

## Error Messages

The text for error messages indicates a coding error on a statement.

Examples of error messages are:

*Example 1:*

```
7,***IEIGEN113 QUIT SWITCH SET PRIOR TO GENERATE MACRO
```

*Explanation:* One or more errors, indicated by messages, were detected before processing the GENERATE statement.

*Severity:* 7

*User Response:* Correct the error or errors indicated, and begin the sysgen process from the start of Stage 1.

*Example 2:*

```
***IEIGEN116 QUIT SWITCH SET IN GENERATE MACRO
```

*Explanation:* One or more errors were detected during the processing of the GENERATE statement.

*Severity:* 7

*User Response:* Correct the error or errors indicated, and begin the sysgen process from the start of Stage 1.

*Example 3:*

```
7,***GENERATION TERMINATED***
```

*Explanation:* The sysgen process was abnormally terminated.

*Severity:* 7

*User Response:* None. This message follows message IEIGEN113 and/or IEIGEN116.

## Warning Messages

The text for warning messages indicates a condition on a statement that may cause errors in the new system.

Following is an example of a warning message:

*Example:*

```
0,***IEIDTSW01 VOLUME OR UNIT SUBPARM OF VOL PARM  
    IS NULL, WILL BE DEFAULTED TO RESVOL
```

*Explanation:* DATASET macro for a system data set did not specify a volume or unit. Sysgen assumes the data set is on the system residence volume.

*Severity:* 0

*User Response:* None, unless the default is unacceptable.

## Informational Messages

Two types of informational messages may occur. Their formats are as follows:

1. \*, message text
2. \*\*\*macro name\*\*\*component name\*\*\*component ID\*\*\*

The first type of message documents the options you selected for the new system through the sysgen statements. All options are described, whether your selection was explicit or implicit.

The second type of message appears before any PUNCH statements that the assembler generated processing a sysgen statement. The macro name is the name of the sysgen statement that produced any succeeding PUNCH statements. The component name is 3 characters representing the name by which the component is commonly referred; for example, ICF is the component name for the ICF catalog. The component ID is the identification you use to report a problem if you isolate the problem to the code produced by the particular statement.



## Chapter 6. Testing the System

The installation verification procedure (IVP) is a program that tests whether the newly installed MVS/XA system is operational. Test any other programs for which verification is required by using their own testing procedures or sample programs.

### IVP Minimum Configuration

The IVP job stream executes with all MVS/XA machine configurations and requires only the minimum MVS/XA machine configuration.

### The IVP Job Stream

The IVP job stream is contained in your MVS/XA system in the partitioned data set SYS1.SAMPLIB. Its member name is IVPJOBS. The IVP job stream consists of a job that:

- Executes an assemble/link-edit/go to test the basic functions of the newly installed system
- Provides a listing of selected SYS1.PARMLIB members
- Forces an 806 ABEND (see *System Codes*)

### Procedures for Using IVP

Once you have carried out the steps outlined in Chapter 2 and built a new MVS/XA system, use IVP to verify that the the system is operational:

- IPL the system.
- Issue a START RDR command to the IVP job stream (IVPJOBS). You can use the following command:

```
START RDR.R,132,VOL=SER=SYSRES,LABEL=(,SL),  
DSNAME=SYS1.SAMPLIB(IVPJOBS)
```

If 132 and SYSRES are not the unit address and serial number of the volume on which SYS1.SAMPLIB resides, enter the correct information.

- The JOB card on IVPJOBS is  

```
//IVPJOB JOB PS40230301,MSGLEVEL=1,MSGCLASS=A,REGION=256K
```

If this JOB card does not meet the requirements for your installation, modify the JOB card in SYS1.SAMPLIB(IVPJJOBS) before issuing the START RDR command.

- Review the results of the assemble/link-edit/go for errors.
- Verify that an 806 ABEND occurred.
- Save the IVP output for future reference.

The completion of the above steps and normal end-of-job (EOJ) of the IVP job stream (excluding the 806 ABEND) constitutes successful verification of your new MVS/XA system.

## Testing ISMF

This section shows a sequence of panels you can use to verify that ISMF has been installed correctly.

Before you test ISMF, be sure you have completed the steps described in Chapter 8, "Installing ISMF" on page 129, for making ISMF available to TSO users.

The steps in verifying installation are:

1. Log on to TSO.
2. Display the ISPF/PDF Primary Option Menu.

```
                                ISPF/PDF PRIMARY OPTION MENU
OPTION  ===>

0  ISPF PARMS - Specify terminal and user parameters  USERID - L841557
1  BROWSE     - Display source data or output listings  TIME    - 14:50
.
.
.
C  CHANGES  - Display summary of changes for this release
I  ISMF      - Invoke interactive storage management facility
T  TUTORIAL  - Display information about ISPF/PDF
X  EXIT      - Terminate ISPF using log and list defaults
```

3. From the ISPF/PDF Primary Option Menu, enter the option I. This displays the ISMF Primary Option Menu.

*Note:* If you cannot invoke ISMF from the ISPF/PDF Primary Option Menu, you do not have ISMF installed correctly. For more information, refer to "Reasons Why ISMF Could Have Failed" on page 123.

```

                                ISMF PRIMARY OPTION MENU
ENTER SELECTION OR COMMAND ===>

SELECT ONE OF THE FOLLOWING:

0  ISMF PROFILE                 - Change ISMF user profile
1  DATA SET APPLICATION        - Perform data set functions
2  VOLUME APPLICATION           - Perform volume functions

```

4. From the ISMF Primary Option Menu, enter **PANELID** on the command line. This redisplay the ISMF Primary Option Menu with the panel identification number **DGTSMMMD1** shown in the left-hand corner:

```

DGTSMMMD1                        ISMF PRIMARY OPTION MENU
ENTER SELECTION OR COMMAND ===>

SELECT ONE OF THE FOLLOWING:

0  ISMF PROFILE                 - Change ISMF user profile
1  DATA SET APPLICATION        - Perform data set functions
2  VOLUME APPLICATION           - Perform volume functions

```

5. From the DGTSMMMD1 panel, enter **HELP** on the command line. This causes the ISMF Overview Panel (**DGTHMD01**) to be shown:

```

DGTHMD01                        ISMF OVERVIEW                                HELP
COMMAND ===>

The Interactive Storage Management Facility (ISMF) of MVS/XA Data Facility
Product is an ISPF application that helps you manage data set storage

```

**Reasons Why ISMF Could Have Failed**

If the verification of ISMF installation failed, make sure you executed the new CLIST or used the new LOGON JCL before attempting the verification process.

You can recheck your installation process by retracing the installation steps until you find the cause of failure:

- 1. Log on to TSO.
- 2. Execute the CLIST or the LOGON JCL.

3. Make sure that the SMP APPLY processing was completed without errors.
4. Make sure that the SMP RECEIVE processing was completed without errors.
5. Make sure you have followed the steps described in Chapter 8, "Installing ISMF" on page 129 for making ISMF available to TSO users.

If you have verified all the above steps without finding errors, contact IBM for further assistance.

## Chapter 7. Using Data Sets from the Old Production System

You may want to substitute some of the data sets from your old production system for those in the newly generated system. This substitution can make it unnecessary for you to recatalog the data sets and change procedures that you have in the old system, but are not cataloged in the new system.

The example that follows describes a procedure in six steps for reconfiguring your system, substituting the master catalog, page data sets, and SYS1.STGINDEX data set from the old production system for their equivalent members in the newly generated system. Before using a procedure such as this, execute the installation verification procedure (IVP) to ensure that the new system is operational. (see Chapter 6, "Testing the System" on page 121). Figure 15 on page 127 shows selected data sets from an old production system on four volumes being combined with selected data sets from a newly generated system on three volumes.

The example that follows assumes that none of the volumes on the old production system or on the newly generated system contain both VSAM and non-VSAM data sets. If VSAM and non-VSAM data sets reside on any volume, redefine them on different volumes before using the following procedures.

When recataloging non-VSAM data sets that reside on the system residence volume and that are not APF-authorized, consider specifying the VOLUMES and DEVICETYPES parameters using indirect volume serial number and device type (see "Defining the Non-VSAM System Data Sets" on page 49).

The following procedure deletes the SYSCATLG member (STEPA), then adds the new member, which will contain the volume serial number of the volume on which the production master catalog for the old production system resides (STEPB).

**Step 1:** Update the SYSCATLG member of SYS1.NUCLEUS of the newly generated system to contain the volume serial number of the volume that contains the old production system's master catalog, which resides on the 666666 volume.

```
//STEPA      EXEC PGM=IEHPROGM
//NEWRES     DD  DISP=OLD,UNIT=3380,VOL=SER=111111
//SYSPRINT  DD  SYSOUT=A
//SYSIN      DD  *
              SCRATCH DSNAME=SYS1.NUCLEUS,VOL=3380=111111,MEMBER=SYSCATLG
/*

//STEPB      EXEC PGM=IEBGENER
//SYSIN      DD  DUMMY
//SYSUT2     DD  DSN=SYS1.NUCLEUS(SYSCATLG),DISP=(MOD,KEEP),
//              DCB=(BLKSIZE=18432),VOL=SER=111111,UNIT=3380
//SYSPRINT  DD  SYSOUT=A
//SYSUT1     DD  *
666666      (See note below.)
/*
```

**Note:** The input statement for STEPB has the following format:

**Column Content**

1-6 Volume serial number for the volume containing the catalog

7 Type of catalog

Catalog	Hex Code	Card Punch Code
ICF	F1	1
VSAM	00	12-0-9-8-1
	or	
	40	no punches

**Note:** Codes other than those specified are reserved.

8 Unused; previously device type code

9-10 CAS service task lower limit value: C'00' to C'08', where C'0C' is the default; previously unused

11-54 Master catalog name you specified in the old production system's sysgen, using the NAME parameter on the DATASET statement, or the NAME parameter of the access method services command DEFINE MASTERCATALOG or DEFINE USERCATALOG. You may also derive the master catalog name from the data component name printed using LISTCAT for an ICF catalog, or the cluster name printed using LISTCAT for a VSAM catalog.

55-80 Unused

**Step 2:** The volume that contains the master catalog, the page data sets, and the SYS1.STGINDEX data set of the newly generated system (the volume serial number is 555555) is no longer required. Demount it or vary it offline.

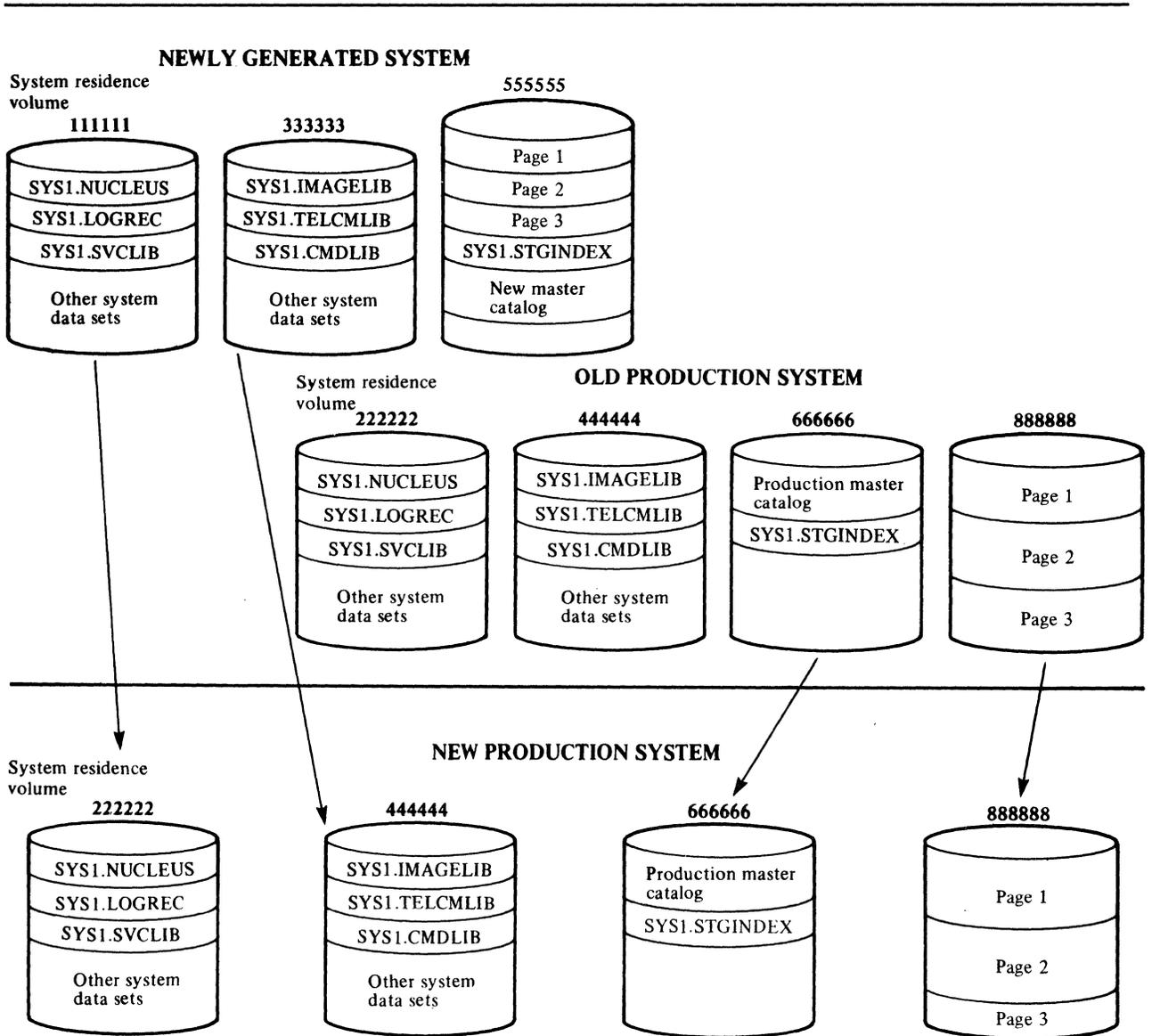
**Step 3:** Vary volumes 111111 and 333333 offline. Using the REFORMAT command of Device Support Facilities (see *Device Support Facilities User's Guide and Reference*), change the volume serial numbers of these volumes, which contain the newly generated versions of SYS1.NUCLEUS, SYS1.LOGREC, SYS1.SVCLIB, SYS1.IMAGELIB, SYS1.TELCMLIB, SYS1.CMDLIB, etc. Change the volume serial numbers of 111111 and 333333 to the volume serial numbers of their counterparts on the old production system, 222222 and 444444.

**Step 4:** Recatalog any new system libraries. In this example, none are shown. However, if, for example, SYS1.CMDLIB were on the system residence volume of the newly generated system; but on some volume other than the system residence volume in the old production system, uncatalog it, then recatalog it using access method services.

**Step 5:** Remove from the system the old production system residence volume and the volume containing SYS1.IMAGELIB, etc., from the old production system (the volume serial numbers are 222222 and 444444).

**Step 6:** IPL the integrated system, using the new configuration.

*Note:* For information on creating an alternate master catalog, see *Catalog Administration Guide*.



**Figure 15. Reconfiguring the New Production System**



## Chapter 8. Installing ISMF

This chapter explains how to install the interactive storage management facility (ISMF) portion of DFP. Full ISMF function is contained in three products: DFP/ISMF, which is included on the DFP tape; Data Facility Data Set Services (DFDSS)/ISMF and Data Facility Hierarchical Storage Management (DFHSM)/ISMF, which are distributed separately. For information on how to install DFDSS/ISMF and DFHSM/ISMF, see the appropriate installation guides. For clarity, DFP/ISMF will be referred to as "ISMF" throughout this chapter.

### Requirements

To use ISMF, you must have ISPF Version 2 Release 2 installed on your system. Figure 16 lists optional products you may want to install to provide additional function.

Product	Required to
RACF Version 1 Release 7	Protect and report on ISMF
ISPF/PDF Version 2 Release 2	Use BROWSE or EDIT
TSO/E Version 1 Release 2.0	Use DELETE and CLIST
TSO/E Version 1 Release 2.1	Run ISPF tables above the 16M virtual

Figure 16. Products That Can Be Used with ISMF

### Basic Tasks

ISMF is installed during normal sysgen processing; however, before users can use ISMF, you must:

1. Decide where to place the ISMF load modules
2. Decide whether ISMF will be protected by RACF
3. Make ISMF available to TSO users, either through a CLIST or logon JCL

4. Modify one or more menus to invoke ISMF

## Considerations for ISMF Load Modules

This section discusses placement and authorization considerations for the ISMF load modules.

### Placement Considerations

After you have completed sysgen processing, you have the following choices of where to place the load module libraries. The choice you make will affect the performance of your system. For example, there are maintenance considerations if the load modules exist anywhere other than in SYS1.DGTLLIB. In this case, you must notify SMP of the location of these modules.

You can choose from one of the following:

1. Leave SYS1.DGTLLIB where it is and add the data set name to the LOGON JCL, or to a new or existing CLIST for use with TSO.
2. Make the load modules a part of either of the following:
  - System link library
  - Pageable link pack area

**Using the System Link Library:** If you choose to use the system link library, you can do one of the following:

- Copy the data set to SYS1.LINKLIB.
- Add the data set name SYS1.DGTLLIB to LNKLSTnn, which is a member of the SYS1.PARMLIB.
- Copy the SYS1.DGTLLIB data set to an existing data set whose name is already in LNKLSTnn.

**Using the Pageable Link Pack Area:** If you choose to use the pageable link pack area, you can do one of the following:

- Copy the SYS1.DGTLLIB data set to SYS1.LPALIB.
- Add the SYS1.DGTLLIB data set name to LPALSTnn.
- Copy the SYS1.DGTLLIB data set to an existing data set that is part of LPALSTnn.

If you are not using SYS1.DGTLLIB at execution time and you have backed up and copied all of the load modules, you can delete the SYS1.DGTLLIB data set.

## Authorization Considerations

You can use RACF 1.7 to protect and report on ISMF. Using the program control feature, you can set up authorization levels for ISMF function: Either all of ISMF, or individual line operators and commands.

Because program control allows you to determine who can execute which ISMF function, you can use it to set up an authorization scheme that applies to both individual users and user groups. If you plan to use RACF 1.7 to restrict ISMF functions, you must make the load module library a part of the system link library.

In addition to authorizing ISMF functions, you can use standard RACF authorization checking to limit access to individual data sets, volumes, or catalogs. Used in conjunction with program control, authorization checking will ensure that appropriate ISMF data and function are available to the users when needed. For detailed information on how to restrict ISMF functions, refer to the *ISMF User's Guide*.

## Making ISMF Available to TSO Users

This section tells how to set up the execution environment to make ISMF available to TSO users.

Before TSO users can invoke ISMF, they must allocate specific data sets. Before this is possible, you need to make the execution libraries available either by modifying the TSO LOGON procedure or by setting up a CLIST.

## Modifying the TSO LOGON Procedure

The following sections describe the statements you should include in a logon procedure for ISMF.

### Specifying ISMF Execution Data Sets

The LOGON procedure should include the DD statements shown in Figure 17 on page 132 to allocate the data sets required for ISMF operation. You can add the execution data sets for ISMF to the existing DD statements for each library; however, you must put them above the ISMF and ISPF data set names in the concatenation.

*Note:* These data sets must be allocated prior to invoking ISMF.

```

//STEPLIB DD DSN=SYS1.DGTLLIB,DISP=SHR,
//        DD DSN=ISR.V2R2M0.ISRLOAD,DISP=SHR,
//        DD DSN=ISP.V2R2M0.ISPLOAD,DISP=SHR,
//        .
//        .
//ISPLLIB DD DSN=SYS1.DGTPLIB,DISP=SHR,
//        DD DSN=ISR.V2R2M0.ISRPLIB,DISP=SHR,
//        DD DSN=ISP.V2R2M0.ISPPLIB,DISP=SHR,
//        .
//        .
//ISPLLIB DD DSN=SYS1.DGTMLIB,DISP=SHR,
//        DD DSN=ISR.V2R2M0.ISRMLIB,DISP=SHR,
//        DD DSN=ISP.V2R2M0.ISPMLIB,DISP=SHR,
//        .
//        .
//ISPTLIB DD DSN=SYS1.DGTLLIB,DISP=SHR,
//        DD DSN=ISR.V2R2M0.ISRTLIB,DISP=SHR,
//        DD DSN=ISP.V2R2M0.ISPTLIB,DISP=SHR,
//        .
//        .

```

**Figure 17. Specifying ISMF Execution Data Sets**

## Setting Up a CLIST

As an alternative or supplement to modifying LOGON JCL, you can write a CLIST, which consists of a series of ALLOCATE commands for each execution library. You can add the name of the CLIST data set to the concatenation of SYSPROC or to the DDNAME ISPCLIB.

Figure 18 shows the ALLOCATE statements for each of the libraries.

```
ALLOCATE FILE(ISPLLIB) SHARE REUSE
                                DATASET('SYS1.DGTLLIB',      -
                                'ISR.V2R2MO.ISRLLIB',        -
                                'ISP.V2R2MO.ISPLLIB')
.
.
.
ALLOCATE FILE(ISPPLIB) SHARE REUSE
                                DATASET('SYS1.DGTPLIB',      -
                                'ISR.V2R2MO.ISRPLIB',        -
                                'ISP.V2R2MO.ISPPLIB')
.
.
.
ALLOCATE FILE(ISPMLIB) SHARE REUSE
                                DATASET('SYS1.DGTMLIB',      -
                                'ISR.V2R2MO.ISRMLIB',        -
                                'ISP.V2R2MO.ISPMLIB')
.
.
.
ALLOCATE FILE(ISPTLIB) SHARE REUSE
                                DATASET('SYS1.DGTTLIB',      -
                                'ISR.V2R2MO.ISRTLIB',        -
                                'ISP.V2R2MO.ISPTLIB')
.
.
.
```

Figure 18. Setting Up a CLIST

### Considerations for ISPTLIB and ISPTABL

After you allocate the execution data sets, you must decide whether users will share a common table library (SYS1.DGTTLIB), or whether each user will have a separate table library identified by his or her userid (userid.DGTTLIB).

This is an important consideration because ISMF saves the values that were last entered in the table. If each user has a separate table library, the user will see the values they last entered. However, if users share a table library, the values entered by the last user are the ones that are saved. The user may or may not see the values that they last entered.

Both ways of setting up the table library are shown below.

The CLIST in Figure 18 sets up a common table library by allocating SYS1.DGTTLIB.

If you decide to allocate a separate table library for each user, do the following:

1. For each user who will have a separate table library, preallocate a data set called `userid.DGTTLIB`. The `userid` must follow the TSO naming conventions for data sets. `userid.DGTTLIB` must have the same attributes as `SYS1.DGTTLIB`.
2. Modify the CLIST in Figure 18 on page 133.
  - a. Concatenate `userid.DGTTLIB` ahead of `SYS1.DGTTLIB` as shown in Figure 19. The `userid` is automatically appended to the data set name.

```
ALLOCATE FILE(ISPTLIB) SHARE REUSE          -
          DATASET(DGTTLIB,                   -
                  'SYS1.DGTTLIB',           -
                  'ISR.V2R2M0.ISRTLIB',     -
                  'ISP.V2R2M0.ISPTLIB')
```

**Figure 19.** Concatenating Separate Table Libraries.

- b. Immediately following the statements in Figure 19, add an `ALLOCATE` statement for `ISPTABL`, the ISPF output data set:

```
ALLOCATE FILE(ISPTABL) SHARE REUSE          -
          DATASET(DGTTLIB)
```

**Figure 20.** CLIST Statements for a Separate Table Library

The CLIST has now been modified to include a separate table library for this user.

## Modifying Menus to Invoke ISMF

The next installation step is to modify an interactive menu to invoke ISMF. You can do this by creating an option on one of the following menus:

- The ISPF/PDF Primary Option Menu
- The SPF Master Application Menu
- A menu of your own choosing

In the following example, we will create an option to invoke ISMF on the ISPF/PDF Primary Option Menu.

1. Log on to TSO. If you have coded your CLIST or logon JCL correctly, the ISPF/PDF Primary Option Menu automatically appears on your screen. Your screen should look similar to the one shown in Figure 21.

```
                                ISPF/PDF PRIMARY OPTION MENU
OPTION  ===>
0  ISPF PARMS  - Specify terminal and user parameters
1  BROWSE     - Display source data or output listings
2  EDIT       - Create or change source data
3  UTILITIES  - Perform utility functions
.
.
.
C  CHANGES   - Display summary of changes for this release
T  TUTORIAL   - Display information about ISPF/PDF
X  EXIT       - Terminate ISPF using log and list defaults

                                USERID  - L841557
                                TIME     - 14:49
                                TERMINAL - 3278
                                PF KEYS  - 24
```

Figure 21. ISPF/PDF Primary Option Menu

2. Select option 3, Utilities.
3. The Utilities Selection Menu appears on your screen. Select option 3, move/copy.
4. Copy member ISR@PRIM from the data set 'ISR.V2R2M0.ISRPLIB' to 'SYS1.DGTPLIB'.
5. Press PF3 to return to the Primary Option Menu.
6. Select option 2, Edit.
7. When you are prompted for the name of the data set to edit, specify 'SYS1.DGTPLIB(ISR@PRIM)'
8. Your screen should now look similar to the one shown in Figure 22 on page 136. Figure 22 on page 136 and Figure 23 on page 136 show the source code for ISR@PRIM. Figure 22 on page 136 shows the first section of the menu, the BODY section. The BODY section lists the options the user will see.

```

%----- ISPF/PDF PRIMARY OPTION MENU -----
%OPTION ==>_ZCMD
%
%                                +USERID   -  &ZUSER
% 0 +ISPF PARMS  - Specify terminal and user parameters  +TIME     -  &ZTIME
% 1 +BROWSE      - Display source data or output listings +TERMINAL -  &ZTERM
% 2 +EDIT        - Create or change source data          +PF KEYS  -  &ZKEYS
% 3 +UTILITIES  - Perform utility functions
%
%
% C +CHANGES    - Display summary of changes for this release
% T +TUTORIAL    - Display information about ISPF/PDF
% X +EXIT        - Terminate ISPF using log and list defaults
+Enter%END+command to terminate ISPF.
%
%
%
```

Figure 22. ISPF/PDF Primary Option Menu: Body Section

Figure 23 shows the INIT and PROC sections. The INIT section specifies the processing that occurs before the panel is displayed. The PROC section contains the code to execute the options. You will be adding entries to the BODY and PROC sections.

```

)INIT
  .HELP = ISR00003
  &ZPRIM = YES          /* ALWAYS A PRIMARY OPTION MENU    */
  &ZHTOP = ISR00003     /* TUTORIAL TABLE OF CONTENTS     */
  &ZHINDEX = ISR91000  /* TUTORIAL INDEX - 1ST PAGE       */
  VPUT (ZHTOP,ZHINDEX) PROFILE
)PROC
  &ZSEL = TRANS ( TRUNC ( &ZCMD, '.' )
    0, 'PANEL(ISPOPTA)'
    1, 'PGM(ISRBRO) PARM(ISRBR001)'
    2, 'PGM(ISREDIT) PARM(P,ISREDM01)'
    3, 'PANEL(ISRUTIL)'
    .
    .
    .
    C, 'PGM(ISPTUTOR) PARM(ISR00005)'
    T, 'PGM(ISPTUTOR) PARM(ISR00000)'
    ' ',' '
    X, 'EXIT'
    *, '?' )
  &ZTRAIL = .TRAIL
)END
```

Figure 23. ISPF/PDF Primary Option Menu: INIT and PROC Sections

9. Move down the menu until you find option C, "Display summary of changes for this release."

10. Create a blank line below this option.

11. Enter the option letter and text for invoking ISMF. The option letter and the text you should enter are shown below:

```
% I +ISMF - Invoke interactive storage management facility
```

12. Move down the menu to the PROC section, and find the line of code that corresponds to option C:

```
C, 'PGM(ISPTUTOR) PARM(ISR00005) '
```

13. Create a blank line below this line.

14. Enter the code to invoke ISMF. The text you should enter is shown below:

```
I, 'PGM(DGTFMD01) PARM(&ZCMD) NEWAPPL(DGT ) NOCHECK'
```

Now, when you select option I from ISPF/PDF Primary Option Menu, the ISMF Primary Option Menu is displayed.

15. Press PF3 to save the primary option menu.

## Testing ISMF

After you have modified a menu to invoke ISMF, you can test ISMF by following the steps in "Testing ISMF" on page 122.



## **Appendix. Sysgen Example**

The following example illustrates Stage 1 statements for a JES2 sysgen.

```

TITLE 'SAMPLE MVS/XA SYSGEN'
*
  DATA MANAGEMENT OPTIONS
DATAMAN DATAMGT  ACSMETH=(BTAM,TCAM,ISAM),GRAPHCS=(PORRTNS,GSP)
*
  SYSTEM DATA SET SPECIFICATIONS
BROADCAST DATASET BROADCAST,VOL=(SG2001,3380),SPACE=(CYL,(3))
CMDLIB    DATASET CMDLIB,VOL=(SG2001,3380),SPACE=(CYL,(6,2,100))
DAE       DATASET DAE,VOL=(SG2001,3380),SPACE=(TRK,(6,2))
DGTLLIB   DATASET DGTLLIB,VOL=(SG2001,3380)SPACE=(CYL,(5,1,50))
DGTMLIB   DATASET DGTMLIB,VOL=(SG2001,3380)SPACE=(CYL,(1,1,20))
DGTPLIB   DATASET DGTPLIB,VOL=(SG2001,3380)SPACE=(CYL,(5,1,50))
DGTTLIB   DATASET DGTTLIB,VOL=(SG2001,3380)SPACE=(TRK,(9,1,10))
DUMPDS1   DATASET DUMP01,VOL=(SG2001,3380),SPACE=(CYL,(3))
DUMPDS2   DATASET DUMP02,VOL=(SG2001,3380),SPACE=(CYL,(3))
HELP      DATASET HELP,VOL=(SG2001,3380),SPACE=(CYL,(5,1,15))
IMAGELIB  DATASET IMAGELIB,VOL=(SG2001,3380),SPACE=(CYL,(10,3,100))
INDMAC    DATASET INDMAC,VOL=(PUGRE1,3380),SPACE=(CYL,(45,3,5))
LINKLIB   DATASET LINKLIB,VOL=(SG2001,3380),SPACE=(CYL,(60,9,600))
LOGREC    DATASET LOGREC,VOL=(SG2001,3380),SPACE=(CYL,(5))
LPALIB    DATASET LPALIB,VOL=(SG2001,3380),SPACE=(CYL,(24,3,350))
MACLIB    DATASET MACLIB,VOL=(SG2001,3380),SPACE=(CYL,(55,5,150))
MANX      DATASET MAN7,VOL=(SG2001,3380),SPACE=(CYL,(30))
MANY      DATASET MANY,VOL=(SG2001,3380),SPACE=(CYL,(30))
NUCLEUS   DATASET NUCLEUS,VOL=(SG2001,3380),SPACE=(CYL,(35,,100))
PARMLIB   DATASET PARMLIB,VOL=(SG2001,3380),SPACE=(CYL,(5,,25))
PROCLIB   DATASET PROCLIB,VOL=(SG2001,3380),SPACE=(CYL,(3,5,200))
SBLSCLI0  DATASET SBLSCLI0,VOL=(SG2001,3380),SPACE=(TRK,(4,4,5))
SBLSKEL0  DATASET SBLSKEL0,VOL=(SG2001,3380),SPACE=(TRK,(2,1,5))
SBLSMG0   DATASET SBLSMG0,VOL=(SG2001,3380),SPACE=(TRK,(2,1,5))
SBLSPNLO  DATASET SBLSPNLO,VOL=(SG2001,3380),SPACE=(CYL,(2,1,15))
SBLSTBLO  DATASET SBLSTBLO,VOL=(SG2001,3380),SPACE=(TRK,(2,1,5))
SMFDS     DATASET SMFDSN=(1,2),VOL=(SG2001,3380),SPACE=(CYL,(30))
STGINDEX  DATASET STGINDEX,VOL=(SG2001,3380),SPACE=(CYL,(12))
SVCLIB    DATASET SVCLIB,VOL=(SG2001,3380),SPACE=(CYL,(5,3,150))
TCOMMAC   DATASET TCOMMAC,VOL=(PUGRE3,3380),SPACE=(CYL,(5,1,50))
TELCMLIB  DATASET TELCMLIB,VOL=(SG2001,3380),SPACE=(CYL,(5,2,70))
UADS      DATASET UADS,VOL=(SG2001,3380),SPACE=(CYL,(5,1,20))
VTAMLIB   DATASET VTAMLIB,VOL=(PUGRE2,3380),SPACE=(CYL,(5,2,50))
*
  THE MASTER CATALOG
ICFMASTR  DATASET ICFCATLG,VOL=(SG2001,3380),SPACE=(CYL,(30,3)),      X
          NAME=SYS1.ICFCAT
SAMPLIB   DATASET SAMPLIB,VOL=(SG2001,3380),SPACE=(CYL,(10,5,50))
PAGE1     DATASET PAGEDSN=SG2PAGE1,VOL=(SG2001,3380),SPACE=(CYL,(15))
PAGE2     DATASET PAGEDSN=SG2PAGE2,VOL=(SG2001,3380),SPACE=(CYL,(75))
PAGE3     DATASET PAGEDSN=SG2PAGE3,VOL=(SG2001,3380),SPACE=(CYL,(100))
SWAPDS1   DATASET SWAPDSN=SG2SWAP1,VOL=(SG2001,3380),SPACE=(CYL,(40))
SWAPDS2   DATASET SWAPDSN=SG2SWAP2,VOL=(SG2001,3380),SPACE=(CYL,(40))
SWAPDS3   DATASET SWAPDSN=SG2SWAP3,VOL=(SG2001,3380),SPACE=(CYL,(40))
*
  THIS STATEMENT SPECIFIES A SYSGEN
GENERATE  RESVOL=(SG2001,3380),INDEX=SG2,JCLASS=K,OCLASS=K
END

```

Figure 24. Example Stage I Input for a JES2 Sysgen

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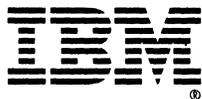
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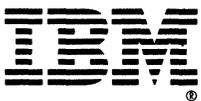
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