

**PUBLICATIONS
UPDATE**

Operating System/3 (OS/3)

System Installation

User Guide/Programmer
Reference (90/30)

For System 80 see UP-8839

UP-8074 Rev. 11-B

This Library Memo announces the release and availability of Updating Package B to "SPERRY Operating System/3 (OS/3) System Installation User Guide/Programmer Reference", UP-8074 Rev. 11.

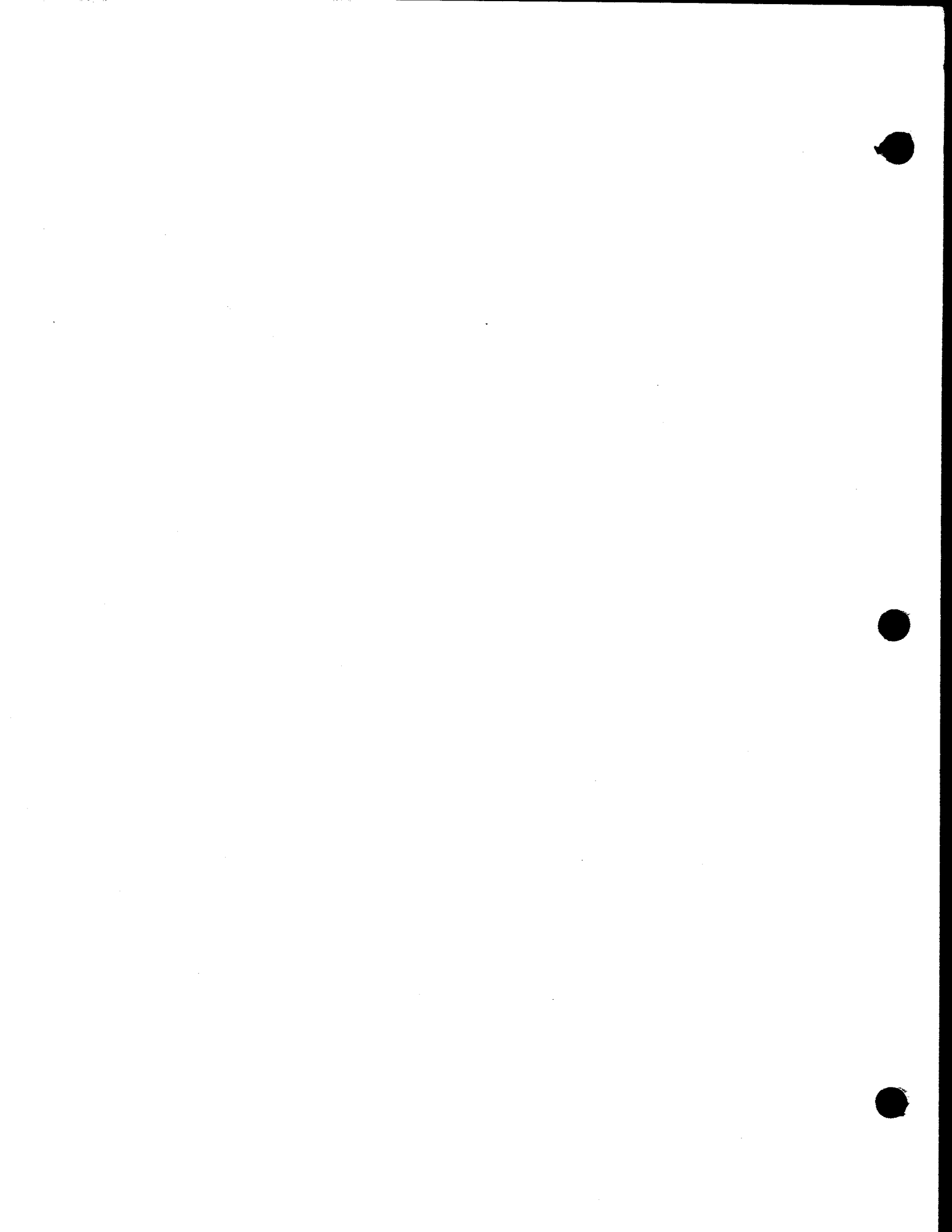
This update documents the following new system installation features for the 8.1 release:

- a new parameter to specify transient work areas
- guidelines for generating I/O devices if you intend to use the system activity monitor
- change in the default for the SCRENMEM parameter from dual to single screen support
- additions to the OS/3 optional software table
- a new parameter on the SG\$PREP job control stream for specifying the console instead of the card reader for prep parameter input
- changes to the SDU operation request screen
- clarification of required fields for SMC entry when working at either a console or a workstation, and clarification of SMC installation procedures, in general.

All other changes are corrections or expanded descriptions applicable to features in interactive services prior to the 8.1 release.

Copies of Updating Package B are now available for requisitioning. Either the updating package only or the complete manual with the updating package may be requisitioned by your local Sperry representative. To receive only the updating package, order UP-8074 Rev. 11-B. To receive the complete manual, order UP-8074 Rev. 11.

LIBRARY MEMO ONLY	LIBRARY MEMO AND ATTACHMENTS	THIS SHEET IS
Mailing Lists BZ, CZ, and MZ	Mailing Lists A00, A01, 18, 18U, 19, 19U, 20, 20U, 21, 21U, 75, 75U, 76 and 76U (Package B to UP-8074 Rev. 11, 86 pages plus Memo)	Library Memo for UP-8074 Rev. 11-B RELEASE DATE: June, 1983



forest

Operating System/3 (OS/3)
System Installation
User Guide/ Programmer Reference

This Library Memo announces the release and availability of Updating Package A to "SPERRY UNIVAC Operating System/3 (OS/3) System Installation User Guide/Programmer Reference", UP-8074 Rev. 11.

This update documents the following new system installation feature for the 8.0 release:

- New I/OGEN parameter REMPRINTER, which enables user to specify auxiliary printers for remote workstations.

All other changes in this update are corrections or expanded descriptions applicable to features present for system installation in the 8.0 release.

Copies of Updating Package A are now available for requisitioning. Either the updating package only, or the complete manual with the updating package may be requisitioned by your local Sperry Univac representative. To receive only the updating package, order UP-8074 Rev. 11-A. To receive the complete manual, order UP-8074 Rev. 11.

LIBRARY MEMO ONLY	LIBRARY MEMO AND ATTACHMENTS	THIS SHEET IS:
Mailing List BZ,CZ, and MZ	Mailing Lists A00,A01,18,18U,19,19U,20,20U,21, 21U,75,75U,76 and 76U (Package A to UP-8074 Rev.11, 77 pages plus Memo)	Library Memo for UP-8074 Rev. 11-A
		RELEASE DATE: March, 1983



**PUBLICATIONS
REVISION**

Operating System/3 (OS/3)

System Installation

(90/30)

User Guide/Programmer
Reference

FOR SYSTEM 80 SEE UP-8839

UP-8074 Rev. 11

This Library Memo announces the release and availability of "SPERRY UNIVAC® Operating System/3 (OS/3) System Installation User Guide/Programmer Reference", UP-8074 Rev. 11.

This revision documents the following new system installation features for the 8.0 release:

- New SUPGEN parameters to provide faster loading of shared code modules; specify whether the automatic volume recognition table should be resident in main storage; specify that a job must have an account number.
- I/O support for remote workstations.
- I/OGEN parameters to specify whether space key is destructive; specify single or dual screen support for workstations.
- RESGEN INCLUDE/DELETE parameters to specify the COBOL Editor; Menu Services; DDP file and job transfer modules; DDP file access modules; DDP transaction processing modules.
- New system definition utility (SDU) capabilities to update device information in the system definition file (\$Y\$SDF) and print or display the contents of \$Y\$SDF.
- Parameters on SG\$SUPMK and SG\$COMMK job control streams to provide temporary work space on an alternate device.
- Procedure for updating the ICAM symbiont table using the SGTRAN job control stream.
- New formats for MCP keyword parameter CACH.
- Parameter to specify whether buffer pool expansion routine is included in ICAM generation.
- New programs for installing system maintenance packages (SMPs) and system maintenance changes (SMCs).

All other changes are corrections or expanded descriptions that apply to features present in system installation prior to the 8.0 release.

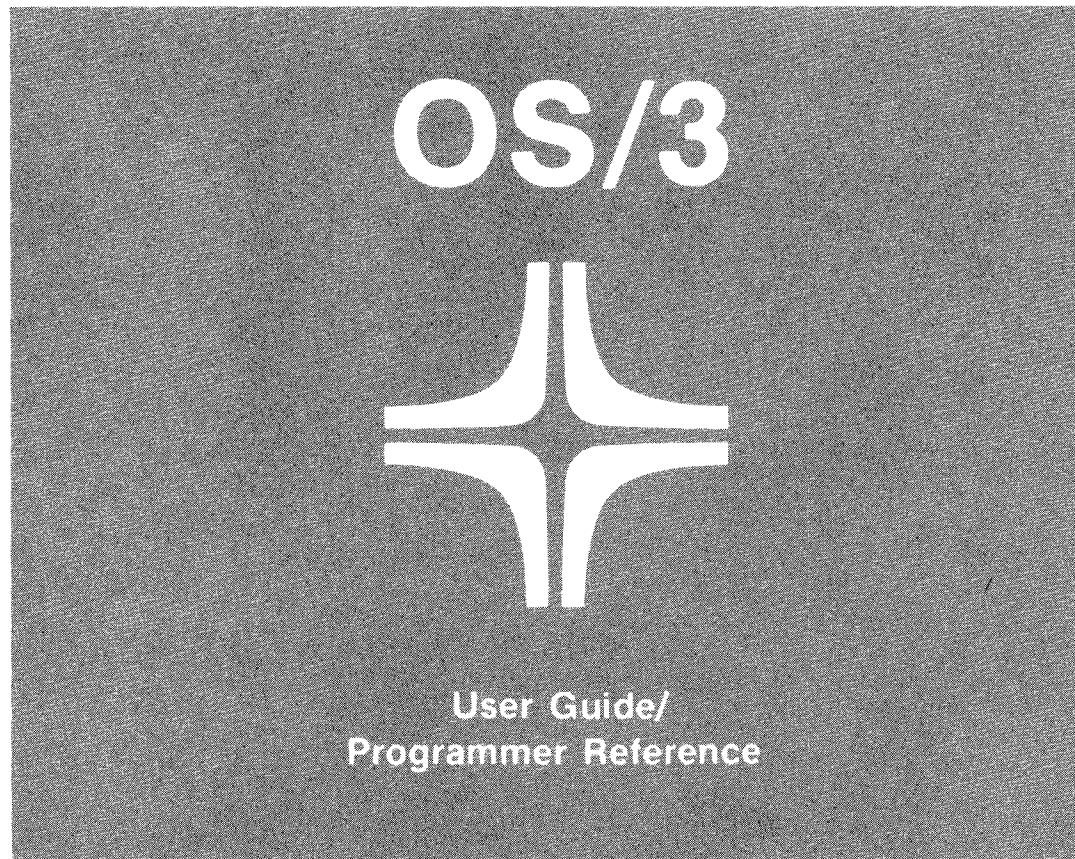
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Mailing Lists BZ, CZ and MZ	Mailing Lists A00, A01, 18, 18U, 19, 19U, 20, 20U, 21, 21U, 75, 75U, 76 and 76U (Cover and 230 pages)	Library Memo for UP-8074 Rev. 11 RELEASE DATE: October, 1982

Copies of UP-8074 Rev. 10 and UP-8074 Rev. 10-A will be available for 6 months after the release of 8.0. Should you need additional copies of this edition, you should order them within 90 days of the release of 8.0. When ordering the previous edition of a manual, be sure to identify the exact revision and update packages desired and indicate that they are needed to support an earlier release.

Additional copies may be ordered by your local Sperry Univac representative.

System Installation



Environment: 90/25, 30, 30B, 40 Systems

This document contains the latest information available at the time of preparation. Therefore, it may contain descriptions of functions not implemented at manual distribution time. To ensure that you have the latest information regarding levels of implementation and functional availability, please consult the appropriate release documentation or contact your local Sperry Univac representative.

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Preface

This manual is one of a series designed to instruct and guide the system administrator in the use of the SPERRY UNIVAC Operating System/3 (OS/3). This manual specifically describes the system generation (SYSGEN) procedure. It does not, however, describe in detail all of the components of OS/3. For this reason, you should familiarize yourself with the appropriate manuals in the OS/3 library before you begin to specify the size or type of system that you want to install.

An introductory manual, the introduction to system installation, UP-8077 (current version), briefly describes the general characteristics of OS/3 SYSGEN.

This manual is divided into the following parts:

- **PART 1. INTRODUCTION TO SYSTEM GENERATION**

Part 1 defines system generation, its design concepts, and what you must consider to properly use it.

- **PART 2. KEYWORD PARAMETER SPECIFICATIONS**

Part 2 defines the keyword parameters available for generating a supervisor, defining the input/output device configuration for the generated supervisor, creating your own system resident (SYSRES) volume, configuring an emulator or communications load module, and specifying default options for the COBOL compiler.

- **PART 3. SYSGEN EXAMPLES, OPERATING PROCEDURES, AND STATEMENT CONVENTIONS**

Part 3 gives coding examples of system generation and operating procedures enabling you to do a complete SYSGEN, including post-generation procedures. In addition, we provide a procedure for the system administrator to change the system bulletin. And we provide procedures for installing system maintenance packages. Part 3 also gives the conventions used to delineate the configuration parameter values in this manual.

OS/3 is the operating system for the 90/25, 90/30, 90/30B, and 90/40 data processing systems. In general, the specifications, procedures, and descriptions contained herein apply to any of these systems; however, there are some exceptions or restrictions. Because some devices are restricted to certain models, parameters for those devices apply only to those models. In the few cases where the requirements differ, the exceptions are noted.



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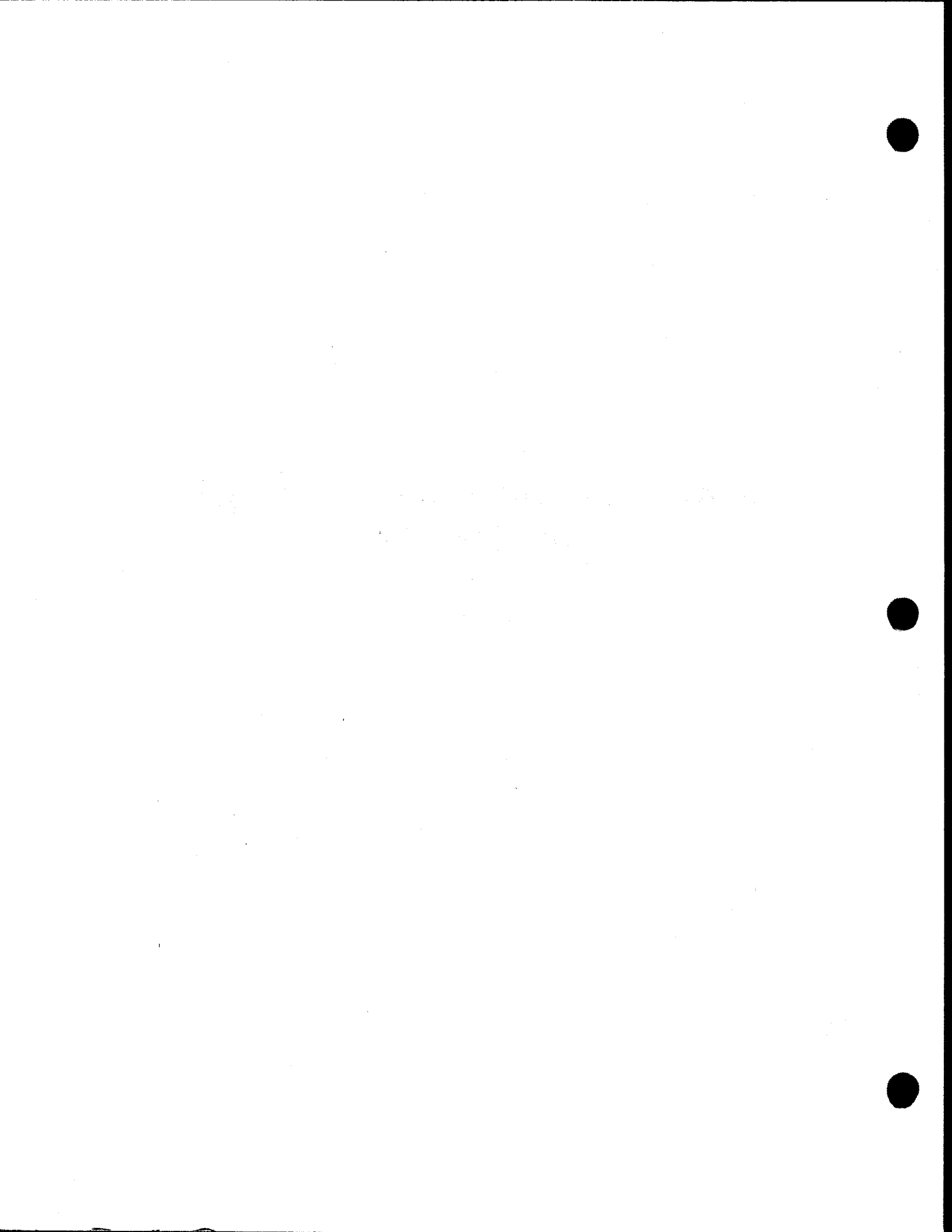
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**PART 1. INTRODUCTION TO SYSTEM
GENERATION**



1. Introduction

1.1. WHAT IS SYSTEM GENERATION?

System generation is the process by which you install, update, and tailor your SPERRY UNIVAC Operating System/3 (OS/3) software. It is the process that allows you to create an operating system that meets the specific needs of your facility.

The system generation (SYSGEN) procedures we provide in this manual allow you to:

- generate new supervisor configurations;
- define new input/output device configurations to complement both new and existing supervisors;
- tailor the system software residing on your existing system resident (SYSRES) volume;
- configure executable modules for emulation, communication, and nine-thousand-remote (NTR) networks; and
- redefine standard option default values for the American National Standard 1974 COBOL (ANSI'74) compiler.

With OS/3, you have the option of performing a SYSGEN in either a batch or an interactive environment. In the batch environment, in which OS/3 has traditionally operated, you enter the parameters defining your SYSGEN requirements on cards or card images on diskettes. In an interactive environment, you no longer prepare punched cards or diskettes to input and process your SYSGEN parameters. Instead, you enter these parameters directly from a workstation or a remote communications terminal. (In this manual, references to workstations include both local workstations and remote terminals that use interactivity through a communications network.)

To familiarize yourself with the SYSGEN process, see Figure 1-1 for an overview of the major areas you must consider when performing system generation.

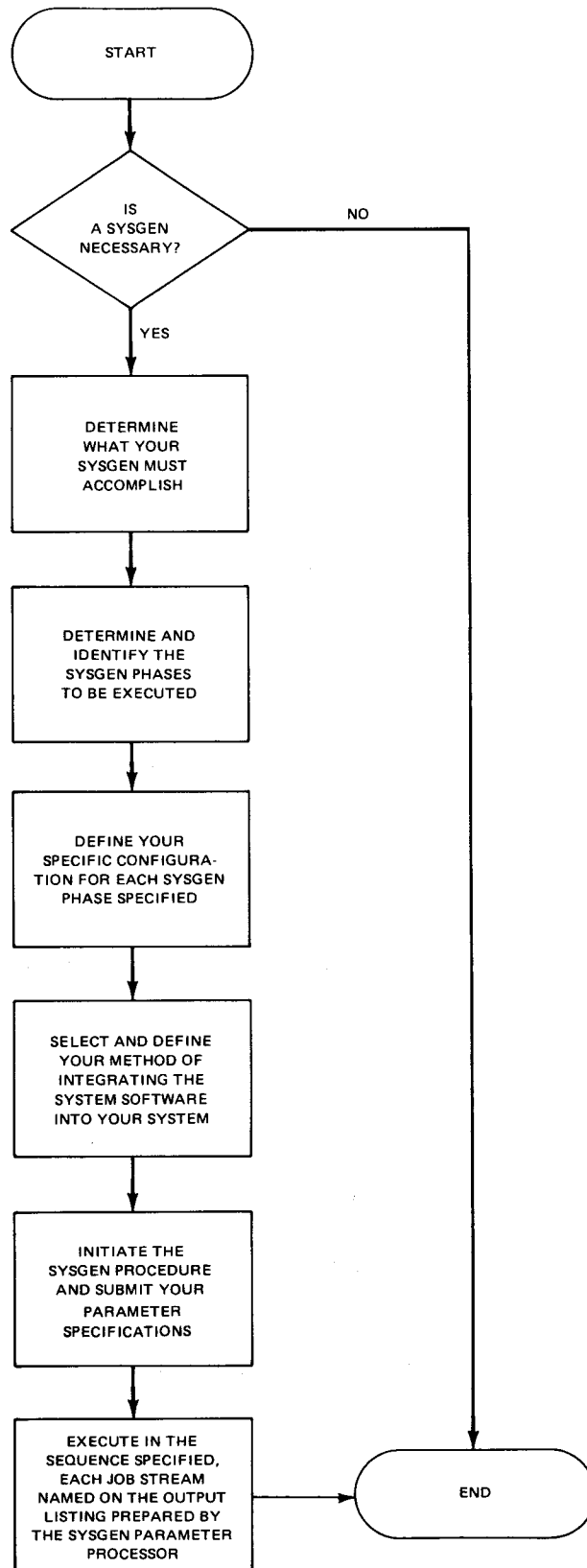


Figure 1-1. Overview of Requirements for SYSGEN

System generation is designed for ease of use. As such, Sperry Univac supplies several SYSGEN facilities to simplify your effort. Our objective is to make your SYSGEN as easy as possible to perform and to minimize the amount of coding and procedural definition you must provide. This design, however, does not prevent those of you who want to exercise greater control over the SYSGEN process from doing so. That is, you can define the details that govern specific SYSGEN processes. You decide how you want your operating system configured and then perform those phases of SYSGEN that you need to accomplish your goal.

1.2. HOW DO YOU ORDER OS/3?

You can order OS/3 software on one of two types of media: either a dump/restore tape or a disk volume. Those of you who order OS/3 on disk can immediately use the OS/3 release volume (OS/3REL) we deliver as input for SYSGEN. Tape delivery, however, does not offer this advantage. That is, if you receive your OS/3 software on tape, you must first copy it to a disk to create an OS/3REL volume before you can use it as SYSGEN input. Of course, you must have an existing OS/3 operating system to run the dump/restore job control stream that transfers the tape's contents to disk. We give the instructions for dumping your release tape to disk in 10.2.

You can also order separately-priced program products and programming aids (optional software) to complement your system's operation. This software comes on tape or disk. If you order optional software at the same time as you order your OS/3 release software, we deliver the optional software on the same media as your release software. If, however, you order optional software between major OS/3 releases, we deliver it either on tape or disk, according to how you order it.

To help you install optional software products into your system, we provide a prefiled job control stream called SG\$CPYPD that allows you to install those products from either type of media directly to the disk serving as your SYSRES. And it is capable of installing one or several products in one execution. We describe the procedure for installing separately-delivered program products in 10.3.

At regular intervals, we deliver system maintenance packages (SMPs) on tape or disk, depending on your hardware configuration, for you to install in your system. SMPs contain changes to OS/3 software that we find necessary to maintain the software's effectiveness. To install them, we provide system maintenance installation routines, which we describe in detail in Section 11. The SMP installation routines let you install SMPs from the SMP release media to the OS/3REL.

1.3. HOW DO WE SIMPLIFY SYSGEN?

Sperry Univac simplifies SYSGEN by including, as part of each OS/3 release, all of the SYSGEN software you need to install, update, and tailor the system software for your facility.

We supply the SYSGEN parameter processor to accept your parameter choices and actually process them. Based on your selections, the parameter processor prepares a listing that includes parameter specifications, error diagnostics, and instructions. If you omit parameters or incorrectly specify any, it supplies default values for those parameters and includes those default values in its listing, as well. Therefore, you can correct or change parameters before processing them. The parameter processor also lists the names of the OS/3 job control streams that you must run to perform your system generation.

We also supply prefiled SYSGEN job control streams to simplify the process of transferring your newly configured software onto your system resident (SYSRES) volume. The use of prefiled job control streams eliminates the need for you to know the OS/3 job control language (JCL) before attempting to generate your system.

If you are an interactive user, we've further simplified SYSGEN by providing a facility called the SYSGEN dialog to help you prepare and process your SYSGEN parameters. It is easy to use, helps you avoid common SYSGEN errors, and adapts readily to different kinds of users. By offering you only valid parameter choices, the SYSGEN dialog always produces syntactically correct output for the parameter processor.

To make certain that your SYSGEN is successful, we provide a complete set of installation verification procedures (IVPs). These procedures verify that your SYSGEN operation correctly installed all of your software onto your SYSRES. The installation verification procedures user guide/programmer reference, UP-8820 (current version) discusses IVPs and their use in detail.

1.3.1. Job Control Streams

The names and functions of the system-supplied SYSGEN job control streams are as follows:

- **SG\$BLD**

Interactive users run this job control stream from the workstation to use the SYSGEN dialog. It initiates the dialog processor, which displays the SYSGEN dialog on the workstation screen, accepts your parameter choices and selections, stores these parameter sets until the parameter processor needs them, and executes the parameter processor, if you are ready to process your parameters.

- **SG\$PARAM**

This is the job control stream you run to process your SYSGEN parameter definitions. It executes the parameter processor, which verifies your SYSGEN parameter definitions and lists all of the additional job streams that need to be run, as well as your parameter specifications, defaults, and error diagnostics.

- **SG\$PREP**

This is the first job control stream listed in the output listing prepared by the parameter processor if a new SYSRES volume is being created. That is, you are writing the output of your SYSGEN to any output disk volume other than the current OS/3REL volume or your present SYSRES volume. SG\$PREP initiates the routine that preps the disk volume to serve as your remodeled SYSRES. It copies the control storage code (COS) records, the initial program load (IPL), and boot block records to that disk and creates the volume table of contents (VTOC). The extent of disk preparation is determined by the options you select when specifying the parameters for generating a new SYSRES volume (RESGEN section of SYSGEN).

- **SG\$ASG**

This job control stream is required only if a new SYSRES is being created and must be run after the completion of SG\$PREP. It initiates the routine that allocates space for the system libraries and transient file.

- **SG\$TRANS**

This job control stream is also required if a new SYSRES is being created and must be run upon completion of SG\$ASG. It initiates the routine that transfers the transient library modules from the OS/3REL volume to your remodeled SYSRES volume. When the OS/3REL is also your current SYSRES, do not run SG\$TRANS in a multiprogramming environment.

- **SG\$LIB**

This job control stream is also required if a new SYSRES is being created and must be run upon completion of SG\$TRANS. It initiates the routine that transfers the system library modules from the current OS/3REL volume to your remodeled SYSRES volume.

- **SG\$SUPMK**

This job control stream initiates the routine that generates your supervisor configurations, and stores them in the system load library file (\$Y\$LOD) of the new SYSRES volume or the OS/3REL volume.

- **SG\$LIB2 (only for 8415 disk secondary release volumes)**

If you are operating with an 8415 disk, the OS/3REL volume is contained on the removable disk pack. In this case, either one, two, or three volumes are needed, depending on the operating system you intend to generate.

The first 8415 removable disk pack, called the primary release volume, contains the bulk of the operating system modules (basic system modules, assembler, linker). These are copied to the output SYSRES when you run SG\$LIB.

If, however, your system requires any of the modules not contained on the first volume, you will need either the second 8415 removable disk pack, called the secondary volume, or the third removable disk pack, called the tertiary volume. The software release document (SRD) that accompanies your OS/3REL lists the disks that contain specific system modules.

When you mount the 8415 disk secondary volume, use the SG\$LIB2 job control stream to copy the system components that you need from that volume. The secondary volume contains all of the language processor modules. Either the 8415 disk primary release volume or the output SYSRES may function as the IPL volume.

- **SG\$LIB3 (only for 8415 disk tertiary release volumes)**

If your system requires any of the program modules not contained on the first or second volumes, you will need the third 8415 removable disk pack, called the tertiary volume. When you mount the third disk pack, use the SG\$LIB3 job control stream to copy the remainder of the system components from the tertiary release volume. Either the 8415 primary disk pack or the output SYSRES may function as the IPL volume.

If you do not need the modules on either the secondary or the tertiary volumes, you do not need to run the job control streams that copy those modules. Therefore you should order only the 8415 removable disk packs that contain the modules needed for your particular SYSGEN.

- **SG\$EMUMK**

This job control stream initiates the routine that creates and transfers your configured emulator and/or tape loop definition load modules to your remodeled SYSRES or the OS/3REL volume.

- **SG\$EMJCL**

This job control stream initiates the routine that lists on the printer, and/or punches on cards, the necessary job streams to run your configured emulator. (This job control stream may be executed before or after completion of the SG\$EMUMK job.)

■ SG\$COMMK

This job control stream initiates the routine that creates and transfers the integrated communications access method (ICAM) load module to your remodeled SYSRES or the OS/3REL volume.

■ SG\$NTRMK

This job control stream creates a nine thousand remote (NTR) system utility load module and stores it in the \$Y\$LOD library of your output SYSRES or the OS/3REL volume.

■ SG\$PRB

This job control stream is used to equate your nonstandard printer character set and vertical format characteristics to your operating system. It processes the // LCB (load code buffer) and // VFB (vertical format buffer) job control statements used for defining your printer requirements and loads the appropriate printer buffers. If none of the printers in your system is a Sperry Univac 0768, 0770, 0773, 0776, or 0778 subsystem that uses either a 63-character standard, 48-character business, or 48-character scientific print set, this job control stream must be run before the parameter processor job (SG\$PARAM) can be called in. Otherwise, it may be used in a utility function for the purpose specified.

■ SG\$CATCP

This job control stream allows you to copy the catalog file from an existing SYSRES volume to the SYSRES volume being created.

■ SG\$COBMK

This job control stream allows you to configure processing options for the ANSI'74 COBOL compiler different from the compiler's standard default values.

1.3.2. The SYSGEN Dialog

The SYSGEN dialog is an easy-to-use facility that helps you prepare and process your SYSGEN parameters or requirements. At your workstation, the SYSGEN dialog:

1. displays questions, menu choices, explanations, and HELP screens concerning the various SYSGEN options;
2. accepts your answers and choices;
3. stores your parameters until you are ready to process them; and
4. executes the SYSGEN component that processes your parameters (the SYSGEN parameter processor).

From screens displayed at the workstation, you read explanations, questions, and menus – groups of options from which you choose the ones you want. If you need more information about a particular parameter to make a valid choice, you can request help. The dialog then shows a screen providing detailed explanations of that parameter. After it displays a HELP screen, the dialog resumes where it left off.

This flexibility allows an experienced SYSGEN user to build parameter sets quickly and easily, receiving help only when he needs it. Users less familiar with SYSGEN can use the HELP screens to learn about SYSGEN as the dialog guides them in building valid parameter sets. The following screens show typical examples of the first screen of the SYSGEN dialog and a sample HELP screen.

```
PROGRAM=DIALOG FOR SYSTEM GENERATION
THE DIALOG FOR SYSTEM GENERATION IS A
COMPUTER ASSISTED METHOD FOR PREPARING
SYSGEN PARAMETER SETS. FOR A
DESCRIPTION OF THE DIALOG PROCESS.
ENTER 'HELP' IN THE SPACE PROVIDED.
```

```
THE DIALOG METHOD USES THE COMPUTER TO
ASSIST YOU IN PREPARING PARAMETER SETS
BY PROVIDING EXPLANATIONS AND PROMPTING
FOR DATA ENTRY. AS PARAMETERS ARE NEEDED,
THE DIALOG PROCEEDS UNTIL A COMPLETE
PARAMETER SET HAS BEEN GENERATED. ALL THE
PARAMETERS ARE VERIFIED BY THE USER BEFORE
THEY ARE OUTPUT FOR USE BY THE SYSGEN
PARAMETER PROCESSOR. PARAMETERS ARE
SPECIFIED EITHER BY SELECTING OPTIONS
FROM A MENU OR BY ENTERING DATA DIRECTLY
FROM A WORKSTATION.
```

According to what you want your system to accomplish, you select the phases of SYSGEN that you want to perform by responding to a menu screen similar to the following one. We describe these phases in detail in Part 2.

```
SELECT THE SYSGEN PHASE TO BE PREPARED:
1. SUPERVISOR GENERATION (SUPGEN and IOGEN)
2. ICAM MODULE GENERATION (COMMCT)
3. COBOL COMPILER OPTIONS SPECS (COBGEN)
4. NTR UTILITY GENERATION (NTRGEN)
5. SYSTEM RESIDENT VOLUME CREATION (RESGEN)
6. NO FURTHER PHASE REQUIREMENTS
7. DISPLAY PHASE DESCRIPTIONS
   (ENTER NUMBER FOR SINGLE PHASE OR
    'HELP' FOR ALL PHASES)
ENTER CHOICE BY NUMBER
```

From this point on, the SYSGEN dialog displays only those screens that pertain to the SYSGEN phases you select. These screens display the parameter choices for each selected section, explain your options in specifying parameters, and give the parameter default values. You may want to specify values for some parameters, but keep in mind that OS/3 provides default values that create a workable system and are usually sufficient. At the end of each section of related SYSGEN parameters, the dialog shows a list of the selections you chose. You then have a choice of three actions:

1. to accept the list as it is;
2. to correct or change a selection; or
3. to completely erase and ignore a parameter set that you mistakenly specified.

After you respond to the choice at the end of each parameter section, you move on to the next set of parameter statements. By offering you this chance to doublecheck your choices, and by displaying only those parameters that apply to you, the SYSGEN dialog helps you to avoid common SYSGEN errors.

You may also request that your system save a record of your dialog sessions, in case you want to change your SYSGEN parameters. The dialog saves this record in a dialog audit file and provides a printed summary listing that you can use as a map to the audit file.

After you respond to all of the phases of SYSGEN that the dialog has displayed, you receive a system message at the workstation informing you that the dialog session is complete. The SYSGEN dialog then asks whether you want it to execute the parameter processor. If you are satisfied with your parameter choices and are ready to process them, you direct the SYSGEN dialog to execute the parameter processor for you.

1.4. YOUR RESPONSIBILITIES

Your responsibilities in preparing for and performing a SYSGEN procedure consist of the following 10 items:

1. If your OS/3 software release is on tape, copy that software to the disk that will serve as your OS/3 release volume (OS/3REL) during SYSGEN. Complete this procedure before you attempt SYSGEN. See subsection 10.2 for instructions to dump release software on tape to disk. You do not have to perform this step if we delivered your OS/3 release software on disk. This disk is your OS/3REL; therefore, you can use it as SYSGEN input immediately.
2. Install any separately-delivered program products and programming aids that you ordered between major OS/3 software releases onto your existing SYSRES volume. Subsection 10.3 gives the instructions for installing separately-delivered OS/3 software. You must complete this operation before going on to SYSGEN.
3. Prepare a backup copy of your software release volume (OS/3REL). Although this step is not required, we recommend it. Use the job control streams that we provide for this purpose. Subsection 10.4 describes the procedures for making a backup copy of your OS/3REL volume.
4. Determine what phases of SYSGEN must be executed to configure the system software required to operate your system in a batch or interactive environment.
5. Determine how you plan to integrate the system software supplied on the OS/3REL volume into your system. (This is dictated by the software level of the OS/3REL volume as compared to your existing SYSRES volume and your hardware configuration.)
6. Prepare the configuration parameter statements that define the SYSGEN phases to be executed as well as specifications to which each SYSGEN phase executed must conform.
7. Initiate the SYSGEN procedure.
8. Run the SYSGEN job control streams in the sequence listed in the output listing prepared by the parameter processor and output on the system printer or workstation screen.
9. Verify that your SYSGEN was successful by running the IVPs described in the installation verification procedures user guide/programmer reference, UP-8820 (current version).
10. Prepare a backup copy of your newly configured SYSRES volume. This step, also, is not required for SYSGEN. However, we recommend that you backup your SYSRES using the job streams that we supply for this purpose. Subsection 10.4 gives the procedures for making a backup copy of your SYSRES.

In addition, you are responsible for installing system maintenance packages (SMPs) as Sperry Univac delivers them at regular intervals. Section 11 describes SMPs in full detail and gives the procedures for installing them.

1.4.1. Determining the Phases of SYSGEN to Be Performed

This is the initial step in performing a SYSGEN. You must determine exactly what you want to accomplish through the performance of SYSGEN. The first requirement is that you ask, "Is it necessary for me to perform a SYSGEN?" If you answer "yes" to any of the following questions, then you need to perform a SYSGEN:

- Are you installing an operating system for the first time?
- Do you want to update your existing SYSRES volume to the level of the current OS/3REL volume?
- Do you want to add new supervisor configurations to your existing operating system?
- Do you want to remodel your existing SYSRES volume?
- Do you want to configure a SPERRY UNIVAC 9200/9300 or IBM 360/20 emulator?
- Do you want to configure an ICAM module?
- Do you want to configure an NTR system utility module?
- Do you want to configure options for the ANSI'74 COBOL compiler?

The exact phases of SYSGEN to be executed depend on which specific questions you have answered "yes".

To help clarify this, let's define each of the phases comprising the SYSGEN procedure.

■ SUPGEN

This phase allows you to generate a supervisor tailored to your particular needs by selecting those features you want included for your system. The SUPGEN phase must be followed by an I/OGEN phase.

■ I/OGEN

This phase allows you to define your specific input/output device configuration to the supervisor generated by SUPGEN. This phase must immediately follow a SUPGEN phase to form a complete supervisor configuration definition.

■ RESGEN

This phase allows you to generate a new SYSRES volume tailored to your specifications. It must follow an I/OGEN phase.

■ EMULAT

This phase allows you to configure either a SPERRY UNIVAC 9200/9300 emulator or an IBM 360/20 emulator and prepare tape loop definitions. It may be executed along with a supervisor generation or as a separate function of the SYSGEN procedure.

■ COMMCT

This phase allows you to configure an ICAM load module. It also may be executed with a supervisor generation or as an individual function.

■ NTRGEN

This phase allows you to configure an NTR system utility module so that a SPERRY UNIVAC 90/30 Data Processing System can be used as a remote device by a SPERRY UNIVAC 1100 Series Data Processing System. An NTR module cannot be used without an ICAM load module being available to support the NTR network.

■ COBGEN

This phase allows you to configure processing options for the ANSI'74 COBOL compiler different from the compiler's standard default values.

For batch users, the SYSGEN phases to be executed are submitted to the parameter processor in the form of keypunched cards read from the system reader. Each phase is identified by a label parameter coded in column 1 of the statement and delimited by a statement with the label parameter END coded in column 1. If you omit the label parameter for a particular phase of your SYSGEN procedure, that phase will not be executed; the system does not provide default capabilities for specifying the parameters identifying SYSGEN phases. A few typical coding methods used to identify SYSGEN phases are shown in the following examples:

Example 1:

Label	△Operation△
SUPGEN	
END	
I/OGEN	
END	

This example illustrates the label parameters required to identify a supervisor generation to the parameter processor. The output of this generation will automatically be stored on the OS/3REL volume.

Example 2:

Label	△Operation△
SUPGEN	
END	
I/OGEN	
END	
RESGEN	
END	

This example is basically the same as example 1, except that the output of the generation is to be written to your designated SYSRES volume as indicated by the RESGEN label parameter.

Example 3:

Label	△Operation△
SUPGEN	
END	
I/OGEN	
END	
SUPGEN	
END	
I/OGEN	
END	

This example illustrates the label parameters and their order of specification to configure multiple supervisors for your system.

Example 4:

Label	△Operation△
SUPGEN	
END	
I/OGEN	
END	
EMULAT	
END	

This example shows an emulator configuration being included in a single run as part of a supervisor generation.

Example 5:

Label	△Operation△
COMMCT	
END	

This example shows an ICAM configuration being submitted as the only phase of SYSGEN to be executed.

Example 6:

Label	△Operation△
SUPGEN	
END	
I/OGEN	
END	
COBGEN	
END	

This example shows a COBGEN phase being included as part of a single run for a supervisor generation.

1.4.2. Integrating System Software into Your System

There are basically three different methods that can be used to integrate the software provided on the OS/3REL volume into your system. Two of these methods let you install new release software to your system and can be used either by new users who are installing an operating system for the first time or existing users who are upgrading their software to a new release level. The third method is for the user who wants to regenerate or tailor his existing software without actually upgrading the level of the software. In all cases, the OS/3REL volume must be mounted on a disk drive and be online.

To compare your existing system software to that contained in the new release, we suggest that you review the software enhancements contained on the new OS/3REL volume delivered to your facility. The system release description (SRD) that accompanies your release describes the software contained on the new OS/3REL volume and lists the restrictions associated with its use.

1.4.2.1. Integration for New or Existing Users

If you are a new user initially installing OS/3, or an existing user who wants to upgrade his software to the current release level, two basic methods of software integration are available to you. One method allows you to place the SYSGEN output on the OS/3REL volume, which then becomes your permanent system resident volume (SYSRES). The other method allows you to create a new SYSRES on a separate disk pack.

In either method, the current OS/3REL volume functions as both operating system and source volume for the SYSGEN procedure.

Placing the SYSGEN output on the OS/3REL volume will give you a SYSRES that contains the entire OS/3 release, plus any tailored supervisors you generated as well as other optional software such as separately-priced program products and programming aids. ←

Creating a new SYSRES volume permits you to individualize your operating system to a greater extent; you can delete the system software you don't need, leaving more room on your SYSRES volume to place your own library files. Both methods are depicted in Figure 1-2.

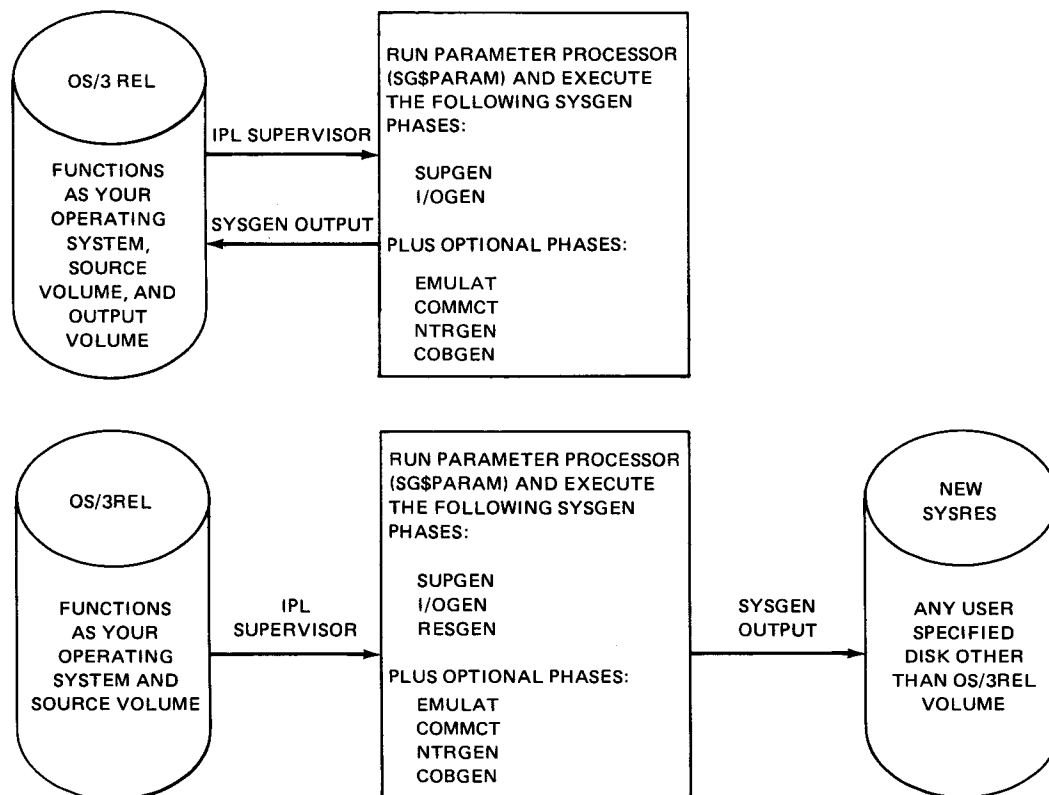


Figure 1-2. System Generation for New or Existing OS/3 Users

Before you can initiate the SYSGEN procedure, you must load control storage (COS) with the microprogramming needed by the hardware to perform its basic functions and you must initial program load (IPL) the starter supervisor into main storage. The procedures for loading COS and performing the IPL operation are given in the operations handbook for operators, UP-8072 (current version).

You may then call in the parameter processor (SG\$PARAM) to translate and validate your SYSGEN configuration parameter specifications. If you are generating your system from a workstation, you have the option of running SG\$PARAM after you see the summary listing of your dialog session or of having the system automatically run SG\$PARAM.

In either case, to get a printout from the parameter processor, your system must contain a printer that meets the printer characteristics supported by the starter supervisor. If it does not, you must call in the print buffer processor (SG\$PRB) to define your print band characteristics to the operating system before you can run job control stream SG\$PARAM. This procedure is described in 10.6.

The steps required for performing a SYSGEN are discussed in 1.4.4 and detailed in the operating procedures outlined in Section 10.

1.4.2.2. Regenerating at Same Release Level

The third method of system software integration is used when you simply want to add a new supervisor, emulator, communications module, or COBOL default options to your SYSRES volume. In this case, the OS/3REL used to generate your existing SYSRES volume must again be available for use as a source volume. This method cannot be used with an OS/3REL that is at a higher release level than your SYSRES.

If the current OS/3REL is your SYSRES volume, it functions as both your operating system and source volume (as in Figure 1-2), as well as your output volume. If the current OS/3REL is not your SYSRES volume, the OS/3REL serves as your source volume only and your SYSRES functions as your operating system and your output volume. In either case, simply IPL the supervisor into main storage and call in the parameter processor (SG\$PARAM) to translate and validate your SYSGEN configuration parameter specifications, as illustrated in Figure 1-3. This procedure can also be performed in a multijobbing environment.

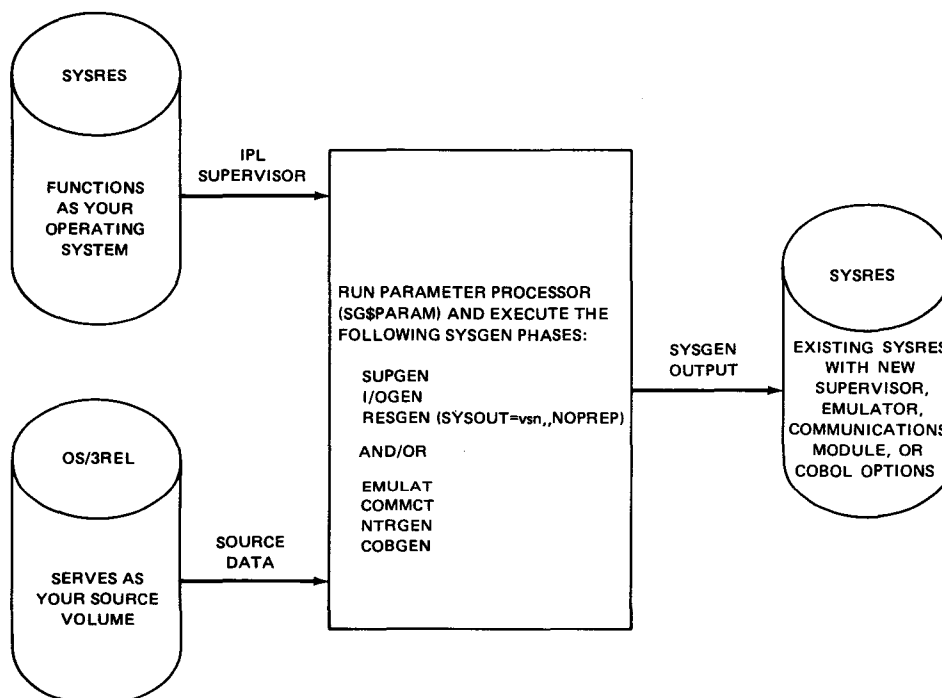


Figure 1-3. Adding Software at Same Release Level

1.4.3. Preparing SYSGEN Configuration Parameter Sets

Once you have determined that a SYSGEN is required, you are responsible for defining the specifications for each SYSGEN phase to be executed. This is accomplished by entering parameter specifications on cards or at a workstation and submitting them to the parameter processor (SG\$PARAM). You need only specify those parameters that do not meet the requirements of your particular configuration by default. Default values for most of the parameters omitted or misstated are automatically assigned and are usually sufficient.

Part 2 of this manual describes the parameters associated with each phase of SYSGEN. You should familiarize yourself with this information before attempting to define parameter definitions. The conventions for specifying parameter definitions are provided in Appendix A. Examples are given in Part 3.

1.4.4. Initiating the SYSGEN Procedure

Perhaps the best method of outlining the procedure for performing a SYSGEN operation is by summarizing everything that has been discussed in this section. The intent is to go through a SYSGEN procedure, considering all of the variables involved and the steps needed to achieve the end result. The procedural steps to perform an actual SYSGEN are given in Section 10.

As previously discussed in this section, you must initially determine whether a SYSGEN is required, the method that you are going to use to integrate the output of your SYSGEN into your system, and the SYSGEN phases of operation that must be executed to install, update, or tailor your existing system software. When this is accomplished, you are ready to proceed with the SYSGEN procedure.

1. Prepare your SYSGEN parameter specifications to identify the specific phases of SYSGEN to be performed and define the parameters under which those phases must be executed to meet the SYSGEN requirements of your configuration. (Take advantage of the default capability designed into the SYSGEN software.)
2. Initialize your system by:
 - mounting the OS/3REL volume on the proper disk drive and, if applicable, mounting your new output disk pack (required if creating a new SYSRES volume) and placing each unit in the run state;
 - loading the microcode into the COS (applicable only to initial installation of OS/3REL); and
 - loading the initial program records (IPL) and the starter supervisor into main storage.
3. Enter your SYSGEN parameter statements into the system.

4. Initialize the SYSGEN procedure, and execute the parameter processor to translate and verify the SYSGEN parameter statements.

The parameter processor reads the statements, verifies them, and prepares an output listing on the system printer that contains:

- all the statement images read;
 - all the default specification assignments;
 - diagnostics concerning your configuration specifications; and
 - the names and execution sequence of the job control streams that must be run to accomplish the SYSGEN procedure you have defined.
5. Correct any parameters needed to satisfy the diagnostic and warning messages displayed on the output listing report prepared by the parameter processor. Rerun the parameter processor job as many times as needed to resolve these problem areas.
 6. Observe the list of job control stream names to be executed and the sequence in which they are to be executed. When you use the SYSGEN dialog at the workstation, the names of the job control streams appear on your screen, one at a time, as you complete each successive job stream.

1.4.5. Running the SYSGEN Job Control Streams

→ Run each job control stream in succession, making certain that the first job is completed before proceeding to the next. The job control streams may be executed by keying in at the system console or at a workstation RU△ and the job control stream name. All job control streams except SG\$PARAM and SG\$PREP may alternatively be run with the system command RV instead of RUN. The RV command is preferable in a multijobbing environment, because use of the RUN command ties up the card reader for the length of time the RUN processor "preprocesses" the job stream and precludes its use by other jobs.

**PART 2. KEYWORD PARAMETER
SPECIFICATIONS**

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2. Supervisor Generation (SUPGEN)

2.1. GENERAL

The parameters used to configure a supervisor for your system are described in this section. We recommend that you first read the supervisor user guide, UP-8075 (current version) to fully understand the options available to you when generating a supervisor through the use of these keyword parameters. You should be aware that each optional feature you select adds to the size of the supervisor you configure; in each case, the tradeoff between performance and main storage requirements should be considered.

Throughout this section, we have estimated main storage requirements for many of the specifications, or have given formulas that enable you to make your own estimate. These estimates should be used only as guidelines. Since many of the SYSGEN parameters are interdependent, specifying one optional feature may result in increased main storage requirements for other functions.

The statements containing the supervisor configuration parameters immediately follow the statement with the SUPGEN parameter coded in the label field. This statement signifies the start of the supervisor section, which is delimited by the statement with END coded in the label field.

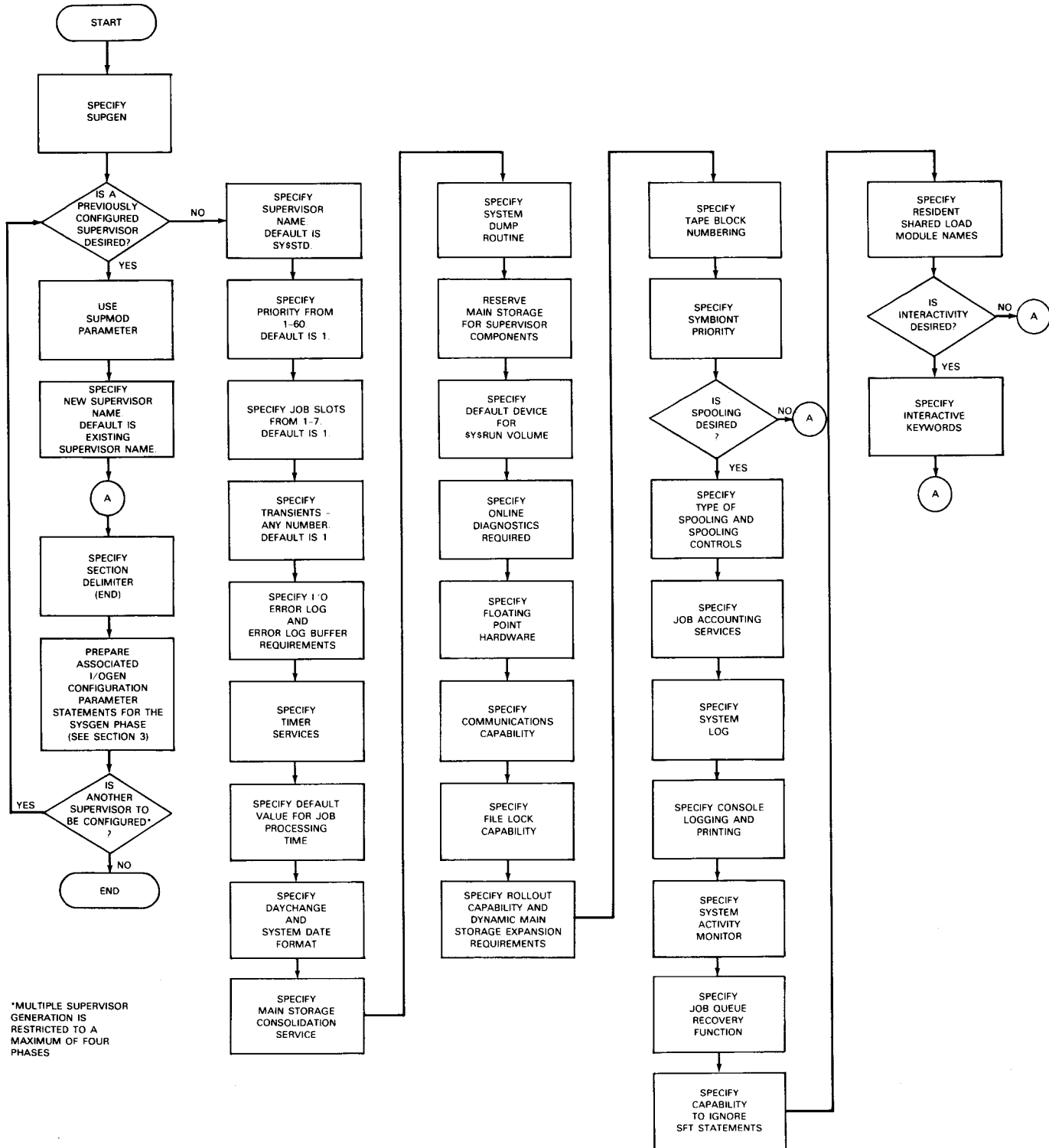
Although you may specify any supervisor keyword parameter, you are not required to do so to configure a supervisor. If any parameter is omitted or misstated, the default value for that parameter is automatically substituted. Misstated parameters cause a diagnostic warning code to be generated and displayed on the output listing presented at the system printer.

In cases where a parameter is duplicated, the first definition processed establishes the value for that parameter, unless otherwise indicated in the keyword parameter description, and a diagnostic warning code is generated on the output listing.

If you want to generate multiple supervisors, you can submit up to four SUPGEN phases to SG\$PARAM for processing. Each phase consists of one SUPGEN section immediately followed by its associated I/OGEN section. You may not submit the configuration parameter statements for more than one SUPGEN section (back-to-back) without having the associated I/OGEN configuration parameter statements intervene each SUPGEN section.

A restriction in the use of the SUPGEN keyword parameters is that the SUPMOD keyword parameter, if used, must be the first keyword specified in this section. All other keyword parameters may be specified in any order desired.

To code the SUPGEN keywords when you specify SUPMOD is actually a waste of time since SUPMOD tells the parameter processor to ignore all other keyword parameters for the SUPGEN section. (See the SUPMOD description for restrictions in its use.) A flowchart for the SUPGEN section is illustrated in Figure 2-1.



*MULTIPLE SUPERVISOR GENERATION IS RESTRICTED TO A MAXIMUM OF FOUR PHASES

Figure 2-1. Flowchart for SUPGEN Section

If you ever want to delete a supervisor to conserve SYSRES space, you do so using the system librarian delete (DEL) and pack (PAC) functions. We describe these functions in the system service programs user guide/programmer reference, UP-8062 (current version).

When deleting an unwanted supervisor, you must delete it from both the system load code library (\$Y\$LOD) and the system source code library (\$Y\$SRC). And when deleting the unwanted supervisor from \$Y\$SRC, you must prefix the name of the unwanted supervisor with S\$. For example, if the name of your unwanted supervisor is MYSUP1, you would specify to the librarian that you want to delete the supervisor module named S\$MYSUP1.

2.2. SUPGEN KEYWORD PARAMETERS

Format:

LABEL	△OPERATION△
SUPGEN	<pre> [SUPMOD=supvrnam] [SUPVRNAM={ supervisor name } { SYSST0 }] [PRIORITY={ 1-60 } { 1 }] [JOBSLOTS={ 1-7 } { 1 }] [TRANS={ 1-15 } { 1 }] [ERRLOG={ NO } { YES }] [ERRLOGBUF={ 3-2400 } { 3 }] [TIMER={ MAX(if COMM is specified) MIN(if SPOOLING is specified) NO NORM }] [MAXTYPE={ CPU } { WALL } { NONE }] [MAXTIME={ 1-999 } { 0 }] [DAYCHANGE={ NO } { YES }] [SYSTEMDATE={ YMD } { MDY } { DMY }] </pre>

(continued)

LABEL	△OPERATION△
SUPGEN (cont)	[MEMCONSOL={NO YES}]
	[SYSDUMP={NO YES}]
	[RESMOD={ [SM\$ASCKE][,SM\$ATCH][,SM\$DBS][,SM\$GTPUT] [,SM\$LOCK][,SM\$LOD][,SM\$STXIT][,SM\$TASK] NONE }]
	[RUNVSN={SYSRES SYSSPL vsn}]
	[SCDINDEX={NO YES}]
	[ONLNDIAG={NO YES}]
	[FLOATPT={NO YES}]
	[COMM={ ([[1]] [[2]] [[1-24]]) [YES] NO }]
	[FILELOCK={NO YES SHARE}]
	[ROLLOUT={NO YES}]
	[DLOADBUFR={0 1-32767}]
	[DLOADTABLE={0 1-255}]
	[TAPEBLKNO={NO YES}]
	[SYMBPRI={0 0-59}]
	[SPOOLING={INPUT NO OUTPUT REMOTE DDP}]
	[SPOOLVSN={SYSRES vsn}]

(continued)

LABEL	△OPERATION△
SUPGEN (cont)	<p>[SPOOLVSNn= (SYSRES) { * } vsn]</p>
	<p>[SPOOLCYL= (ALL { 1-1000 } 50]</p>
	<p>[SPOOLCYLn= (ALL { 1-1000 } 50]</p>
	<p>[SPOOLMAP= (1-32767 { 64]</p>
	<p>[SPOOLBUFR= (1 { 2 } 4 { 8 } 16 { 32]</p>
	<p>[SPOOLWBUFR= (2 { 4 } 8 { 16 } 32]</p>
	<p>[SPOOLBURST= (NO { YES]</p>
	<p>[SPOOLCOMP= (NO { YES]</p>
	<p>[SPOOLFARSI= (NO { YES]</p>
	<p>[SPOOLMODE= (ACCTNO, account-number CARTNAME, cartridge-name DEVICE, device-type-code FILE, filename FORM, form-name JOB, jobname PRI, 0]</p>
	<p>[SPOOLICAM= (C1 { Cn } Mn { C?]</p>
	<p>[SPOOLHDR= (NO { YES]</p>
	<p>[SPOOLNOINPUT= (NO { YES]</p>

(continued)

LABEL

△OPERATION△

SUPGEN
(cont)

```

[ SPOOLPRT= { ACT }
              { ALL }
              { LOG }
              { NO } ]
[ SPOOLRECV= { ALL }
              { CLOSED }
              { LOG }
              { NONE } ]
[ SPOOLTEST= { NO }
              { YES } ]
[ SPOOLUPDATE= { NO }
                { YES } ]
[ DDPSPOOL= { 1-128 }
             { 10 } ]
[ JOBACCT= { NO }
           { YES } ]
[ SYSLOG= { NO }
          { YES } ]
[ CONSOLOG= { MAX }
             { MIN }
             { NO }
             { NORM } ]
[ CONPRINT= { NO }
            { YES } ]
[ RETAINLOG= { NO }
             { YES } ]
[ SAM= { NO }
       { YES } ]
[ JOBQUEREC= { NO }
              { YES }
              { HOLD } ]
[ JOBACCTREQ= { NO }
              { YES } ]
[ VOLTABLE= { NO }
            { YES } ]
[ IGNORESFT= { NO }
             { YES } ]
[ RESHARE= { mod-name-1 } { { ,mod-name-2 } ... }
           { group-name-symbol-1 } { { ,group-name-symbol-2 } }
           { { ,mod-name-n }
             { ,group-name-symbol-n } } ]
[ RECOVERDS= { NO }
             { YES } ]

```

(continued)

LABEL	△OPERATION△
SUPGEN (cont)	<pre> INTERACTIVE={ NO } { YES } DMGTMODE={ DTF (if interactivity is not configured) { CDI { MIXED DYNBUFMGT={ NONE (if interactivity is not configured) { BASIC SHARED MGT={ 8 (if DTF mode and noninteractive environment) { 16 (if CDI mode and noninteractive environment) { 40 (if CDI mode and interactive environment) { 1-16384 EXPREGION={ 4096 { 0-999999 RESBUFSIZE={ 500 { 1-999999 TRNWKAREA={ NO } { YES ISINTLMT={ 8 { 1-255 ISBATCHLMT={ 8 { 1-255 ISINTPRI={ 1 { 1-60 ISKEYS={ NO } { YES [ISADMID=administrator name] ISLOGONSC={ NO } { YES </pre>
END	



Keyword Parameter SUPMOD:

SUPMOD=supvrnam

Specifies the name of a supervisor configuration that has been defined by a previous SYSGEN and saved in the system source library file (\$Y\$SRC) of your SYSRES volume or the OS/3 release volume (OS/3REL). The established supervisor may be requested through the use of this parameter. If used, SUPMOD must be the first keyword specified in this section.

When this keyword parameter is submitted, all other SUPGEN parameters with the exception of SUPVRNAM are ignored, and a diagnostic message is written on the output listing.

Keyword Parameter SUPVRNAM:**SUPVRNAM=supervisor name**

Specifies the name of the supervisor. The name can be a maximum of six characters. When used with the SUPMOD parameter, it renames the supervisor configuration copied from your existing SYSRES volume.

Keyword Parameter PRIORITY:**PRIORITY=1-60**

Establishes the number of task priority levels recognized by the supervisor and is used when the system has multijobbing capabilities.

Keyword Parameter JOBSLOTS:**JOBSLOTS=1-7**

Specifies the number of concurrent jobs that can be executed in the system. The maximum number is seven.

Each job slot requires four bytes of main storage for each data path, i.e., each subchannel configured in your system. Your system may include:

- A maximum of eight data paths for the multiplexer channel;
- A maximum of four data paths for the integrated peripheral channel;
- One data path for the integrated disk adapter; and
- One data path for each selector channel.

NOTE:

Specifying more than one job slot increases the size of the physical I/O control modules, thus forcing configuration of a larger supervisor.

Keyword Parameter TRANS:**TRANS=1-15**

Specifies the number of transient areas that should be established in main storage. The more transient areas declared, the more jobs requiring transient areas can be operating concurrently. Each transient area is allocated 1200 bytes of main storage whether it is being used or not. For most multijobbing applications, between two and four transient areas are sufficient.

NOTE:

If you specify RESMOD=SM\$LOD, be sure to specify at least 4 to 6 transient areas.

Keyword Parameter ERRLOG:**ERRLOG=NO**

Indicates that an I/O error log is not to be maintained by the supervisor.

Error logging requires 1K-bytes for its coding plus 280 bytes (minimum) for tables and three error log buffers. Space requirements for additional buffers can be calculated by using the formula:

$$n \times 80$$

where n is the number of additional error log buffers specified.

Error logging is not supported in a minimum OS/3 operating system configuration.

Keyword Parameter ERRLOGBUF:**ERRLOGBUF=3-2400**

Specifies the number of resident, 80-byte buffers assigned for error logging. The keyword is applicable only when error logging is configured into the generated supervisor.

Keyword Parameter TIMER:

Indicates the extent of timer services to be included in the supervisor.

TIMER=MAX (if COMM is specified)

Specifies time-out capabilities for I/O devices, with GETIME and SETIME macros available. If communications capability is configured, SYSGEN will default to **TIMER=MAX**, even if another option is specified. Maximum timer services require approximately 400 bytes of main storage.

TIMER=MIN (if SPOOLING is specified)

Specifies time-out capabilities for I/O devices. If spooling is specified for the system, **TIMER=MIN** is the default specification used instead of **TIMER=NO**. Minimum timer services require approximately 50 bytes of main storage.

TIMER=NO

Specifies no timer services are to be maintained.

TIMER=NORM

Specifies time-out capabilities for I/O devices, with the GETIME macro available. Normal timer services require approximately 200 bytes of main storage.

Keyword Parameter MAXTYPE:

MAXTYPE={ CPU
WALL
NONE }

Specifies whether the max-time parameter on the JOB statement defines elapsed wall-clock time or job CPU time.

Keyword Parameter MAXTIME:

MAXTIME={ 1-999
0 }

Specifies the default time (in minutes) for the maximum time parameter on the job statement. To specify MAXTIME you must also specify (not default) spooling, JOBACCTREQ=YES, and either TIMER=MAX or TIMER=NORM.

Keyword Parameter DAYCHANGE:

DAYCHANGE=NO

Specifies that the date and time are not to be automatically changed at midnight of each day. Automatic day change uses approximately 20 bytes of main storage.

Keyword Parameter SYSTEMDATE:

Specifies the system date format at IPL time.

SYSTEMDATE=YMD

Defines yy/mm/dd as the date format.

SYSTEMDATE=MDY

Define mm/dd/yy as the date format.

SYSTEMDATE=DMY

Defines dd/mm/yy as the date format.

Keyword Parameter MEMCONSOL:

MEMCONSOL=NO

Indicates that the supervisor is not to consolidate fragmented regions of main storage into large, contiguous regions of allocatable main storage. You can save approximately 50 bytes of main storage by specifying MEMCONSOL=NO.

Keyword Parameter SYSDUMP:

SYSDUMP=NO

Indicates the resident dump routine is not to be included in the supervisor. This routine provides a convenient system program debugging tool in the event of a system crash. Specifying SYSDUMP=NO reduces the size of the resident supervisor by approximately 1400 bytes.

Keyword Parameter RESMOD:

RESMOD=[SM\$ASCKE][,SM\$ATCH][,SM\$DBS][,SM\$GTPUT][,SM\$LOCK][,SM\$LOD]
[,SM\$STXIT][,SM\$TASK]

Specifies certain software modules that are to be included in main storage with the supervisor rather than transient. You may specify the subparameters in any order or in multiple calls of the keyword.

If, however, you are generating a supervisor for NTR (Section 7), you must specify SM\$ATCH, SM\$LOCK, SM\$STXIT, and SM\$TASK.

Subparameters:**SM\$ASCKE**

Specifies that the assign key function used by IMS for secondary storage key assignment is resident. Making this function resident increases IMS performance. This option adds approximately 700 bytes to the resident supervisor.

SM\$ATCH

Specifies that ATTACH function processing is resident. It creates and activates a task requiring control of the processor. Used mainly for start-up and end task processing. Specify this module as resident only if you operate in an unusually heavy multitasking or interactive environment. This option adds approximately 1200 bytes to the resident supervisor.

SM\$DBS

Specifies that the data base system (DBS) interface module is resident. This option adds approximately 300 bytes to the resident supervisor.

SM\$GTPUT

Specifies that the GETCOM, PUTCOM, and GETINF functions are resident. Do not specify this module as resident unless you know that you have a specific processing function that requires it to be resident. This option adds approximately 700 bytes to the resident supervisor.

SM\$LOCK

Specifies that the supervisor lock and unlock functions are resident. These functions provide the read and write file lock capability for lockable files. This option adds approximately 900 bytes to the resident supervisor and enhances the performance of your supervisor.

SM\$LOD

Specifies that the module loader is resident rather than transient. Making the loader resident decreases loading time. This option adds approximately 3300 bytes to the resident supervisor.

NOTE:

If you specify RESMOD=SM\$LOD, specify at least 4 to 6 transient areas in your supervisor through the TRANS= parameter.

SM\$STXIT

Specifies that STXIT processing is resident. It creates, changes, or terminates linkage between the supervisor and the user island code subroutine. Specify this module as resident if you are using the emulator. This option adds approximately 1400 bytes to the resident supervisor.

SM\$TASK

Specifies that the WAIT, TYIELD, CHAP, WAITM, and POST macros are resident. These macros help gain efficiency in a multitasking environment. SM\$TASK is automatically made a resident module if spooling is configured. This option adds approximately 1100 bytes to the resident supervisor.

If the entire keyword parameter is omitted and spooling is not configured, none of the referenced modules are made resident. If spooling is configured, the SM\$TASK module is made resident. If RESMOD=NONE is coded and another subparameter is also specified or defaulted, NONE is ignored.

Keyword Parameter RUNVSN:

RUNVSN= $\left. \begin{array}{l} \text{SYSRES} \\ \text{SYSSPL} \\ \text{vsn} \end{array} \right\}$

Specifies the default placement of the system RUN device.

RUNVSN=~~SYSRES~~

Specifies the use of the system resident volume as the RUN device.

RUNVSN=SYSSPL

Specifies the use of the first spooling volume as the RUN device (spooling must be configured).

RUNVSN=vsn

Specifies the serial number of the volume serving as the RUN device.

Keyword Parameter SCDINDEX:

SCDINDEX=YES

Specifies that shared code modules will be loaded faster into main storage and faster processing will occur between two or more shared code modules. Commonly used shared code modules include the OS/3 general editor (EDT), interactive services, screen format services, data management, and ESCORT. This feature uses approximately 4000 bytes of main storage.

Keyword Parameter ONLNDIAG:

ONLNDIAG=NO

Indicates that online diagnostics are not to be included. Omitting online diagnostics reduces the size of the resident supervisor by approximately 1300 bytes.

Keyword Parameter FLOATPT:

FLOATPT=YES

Indicates that floating-point hardware is part of your system. Floating-point hardware is required if you specify FORTRAN during RESGEN (4.2).

Keyword Parameter COMM:

$$\text{COMM} = \left(\left(\left[\begin{array}{c} \{1\} \\ \{2\} \\ \text{[YES]} \\ \text{NO} \end{array} \right] \left[\begin{array}{c} \{1\} \\ \{1-24\} \end{array} \right] \right) \right)$$

Specifies the extent to which your supervisor supports a communication capability. If communications capability is configured, maximum timer services are automatically included in your system.

Positional Subparameters:

2

Specifies the maximum number of communication adapters (CAs) supported.

1-24

Specifies the maximum number of communication lines supported.

The default value 1 is assigned if either subparameter is omitted or incorrectly specified.

YES

Specifies that ICAM supports local workstations only.

If the entire parameter is omitted, it is assumed that communications is not to be supported by your supervisor configuration.

Keyword Parameter FILELOCK:

Specifies the type of file lock system to be generated (described in the data management user guide, UP-8068 (current version)).

FILELOCK=~~NO~~

Indicates that the supervisor will maintain file lock capabilities only for system files (file-identifier prefixed by \$Y\$). \$LOK and other user designated files will not be lockable.

FILELOCK=YES

Indicates that the supervisor will maintain file lock capabilities for system files (\$Y\$) and user files prefixed with \$LOK01 to \$LOK99.

FILELOCK=SHARE

Indicates that the supervisor will maintain file lock capabilities for all files. This includes user files without \$LOK prefixes as well as system files (\$Y\$) and user files prefixed with \$LOK01 to \$LOK99.

Keyword Parameter ROLLOUT:**ROLLOUT=YES**

Specifies the capability of the supervisor to recognize jobs with preemptive priority. The supervisor can then roll lower priority jobs out of main storage for higher priority jobs and later roll those lower priority jobs back into main storage. If the ROLLOUT keyword parameter is not specified, the supervisor automatically equates the preemptive priority jobs to high priority jobs; thus, no rollin or rollout is performed.

NOTE:

Specifying FILELOCK=YES or FILELOCK=SHARE may interfere with your system's ROLLOUT capability because jobs with locked OPEN files are ineligible for ROLLOUT.

Keyword Parameter DLOADBUFR:
$$\text{DLOADBUFR} = \left\{ \begin{array}{l} 0 \\ 1-32767 \end{array} \right\}$$

Specifies the maximum number of 256-byte blocks of main storage that can be dynamically allocated (expanded) for a job. We recommend that you specify this parameter for use with the ANSI'74 COBOL compiler. If you want your COBOL CALL statements to dynamically expand your job's region, specify the maximum value, 32767, unless you know that you must limit the main storage expansion by specifying a smaller value.

Keyword Parameter DLOADTABLE:
$$\text{DLOADTABLE} = \left\{ \begin{array}{l} 0 \\ 1-255 \end{array} \right\}$$

Specifies the number of entries per job in the job DLOAD table. Choose a value equal to the maximum number of COBOL CALL statements in any one of your COBOL jobs. For example, if JOBA contains 4 CALL statements and JOBB contains 10 CALL statements, specify DLOADTABLE=10.

Keyword Parameter TAPEBLKNO:**TAPEBLKNO=YES**

Indicates that the supervisor supports tapes written with block numbers, as well as tapes without block numbers. If omitted, tapes written with block numbers are not supported.

Keyword Parameter SYMBPRI:
$$\text{SYMBPRI} = \left\{ \begin{array}{l} 0 \\ 0-59 \end{array} \right\}$$

Specifies the priority level at which system symbionts are to run (including the job scheduler, but excluding ICAM). Priority 0 is reserved for supervisor use only. Priorities 1 to 59 may be assigned to user job steps. If omitted, priority 0 is assigned.

You can use this keyword parameter to assign the execution priority of system symbionts relative to user jobs. For example, specifying SYMBPRI=3 results in user job steps at priority 1 and 2 (specified on the EXEC job control statement) executing at a higher priority than system symbionts. However, this technique should be used only in rare situations for user job steps that are extremely time critical.

Keyword Parameter SPOOLING:**SPOOLING=INPUT**

Specifies that both the input readers and output writers are to be used for spooling. Data is read from the card reader or diskette to a disk volume and then passed to the central processor where it is processed. Any print or punch output files generated are sent back to the disk volume and then written out to the appropriate device.

SPOOLING=NO

Specifies that no spooling capability is to be incorporated in the supervisor being generated.

SPOOLING=OUTPUT

Specifies that only the output writers are to be used for spooling. Any print or punch output generated from your job is sent to a disk volume and then written out to the appropriate device.

SPOOLING=REMOTE

Specifies that remote batch processors, as well as input readers and output writers, are to be used for spooling mode. When this keyword parameter is specified, the SPOOLICAM keyword parameter must also be specified.

SPOOLING=DDP

Specifies that distributed data processing, remote batch processors, input readers, and output writers are used for spooling. If SPOOLING=DDP, also specify SPOOLICAM.

Main storage requirements for spooling may be estimated as follows:

- 4800 bytes for the spooler, whether INPUT, OUTPUT, or REMOTE is specified;
- 720 bytes for the system spool control table;
- a directory requirement of
 - 72 bytes for OUTPUT,
 - 120 bytes for INPUT, or
 - 168 bytes for REMOTE;
- 32 bytes for each virtual device configured in the I/OGEN section; and
- 4 bytes times the number specified by the SPOOLMAP keyword parameter for the spool-file bit map.

In addition, any spooling option requires at least minimum timer services and a resident SM\$TASK module.

NOTE:

If spooling is not configured, all other keyword parameters associated with spooling will be ignored. In addition, virtual printers, readers, and punches cannot be allocated in the I/OGEN section.

Keyword Parameter SPOOLVSN:

SPOOLVSN=vsn

Specifies the volume serial number of the primary disk volume that the supervisor is to use as the spool file. If a volume serial number is not specified, the primary spool file will be allocated on your SYSRES volume.

Keyword Parameter SPOOLVSNn:

Indicates that multivolume spooling is to be supported. Up to eight disk volumes may be allocated for spooling.

SPOOLVSNn= { $\left. \begin{array}{c} \text{SYSRES} \\ * \\ \text{vsn} \end{array} \right\}$

Identifies the nth sequential volume of the spool file, where n is a decimal number from 2 to 8. You may identify each spool volume through multiple calls of the keyword (e.g., SPOOLVSN2=vsn, SPOOLVSN3=vsn, etc.), or you may denote only the last sequential volume. If you identify only the last volume, all other volumes will default to *, permitting you to specify the device addresses of the disk units containing the spooling volumes at IPL time.

Keyword Parameter SPOOLCYL:

$$\text{SPOOLCYL} = \left\{ \begin{array}{l} \text{ALL} \\ 1-1000 \\ 50 \end{array} \right\}$$

Specifies the number of cylinders to be allocated initially for the spool file on the primary spooling volume. For most users, the default value of 50 cylinders is recommended. If you plan to request more than the default number of virtual printers, readers, or punches in the I/OGEN section, you may also require more than the default number of spool cylinders. If ALL is specified, all available cylinders on the primary spooling volume will be allocated. This option should be used only for a dedicated spooling volume.

Keyword Parameter SPOOLCYLn:

If multivolume spooling is specified by the keyword parameter SPOOLVSNn, you may denote the number of cylinders to be initially allocated on each volume being used for the spool file.

$$\text{SPOOLCYLn} = \left\{ \begin{array}{l} \text{ALL} \\ 1-1000 \\ 50 \end{array} \right\}$$

Specifies the number of cylinders to be initially allocated for the spool file on the nth sequential spooling volume, where n is a decimal number from 2 to 8. If omitted, 50 cylinders will be allocated on each spooling volume.

Keyword Parameter SPOOLMAP:

$$\text{SPOOLMAP} = \left\{ \begin{array}{l} 1-32767 \\ 64 \end{array} \right\}$$

Indicates the number of full words (four bytes) of main storage to be reserved for the resident spool-file bit map. The bit map controls the suballocation of the spool file in units called *logical tracks*, each bit-map word representing 32 logical tracks. A logical track is at least forty 256-byte sectors long but its size can vary, depending on the size of the spool file and the number of bit-map words provided. For optimum performance, the number of bit-map words specified should allow the spool file to be divided into logical tracks 40 sectors in length.

The number of words required for the spool-file bit map depends on the cylinder capacity of the disk volume or volumes being used for the spool file. The default size of 64 words allows a spool file of 250 cylinders on 8416 or 8418 disks to be divided into 40-sector segments, or an entire 8414 disk (200 cylinders) to be divided in 40-sector segments. To calculate the optimum number of bit-map words, divide the number of cylinders reserved for the spool file by the factor indicated in Table 2-1 for the disk type being used. If the result is fractional, round to the next higher integer. The number of bit-map words required to optimize a spool file of 50 cylinders (the default value for the SPOOLCYL keyword parameter) for each disk type is indicated in the third column.

Table 2-1. Spool-File Bit Map Calculation

Disk Type	Division Factor	Bit-Map Words Needed for 50-Cylinder Spool File
8411	11	5
8414	3	17
8415F	10	5
8415R	16	4
8416	4	13
8418	4	13
8430	2	25
8433	2	25

Keyword Parameter SPOOLBUFR:

SPOOLBUFR={ 1
2
4
8
16
32 }

Indicates the size of the spooler work buffer allocated to each job preamble in terms of the number of 256-byte blocks of main storage. The only acceptable parameters are those shown in the format.

Keyword Parameter SPOOLWBUFR:

SPOOLWBUFR={ 2
4
8
16
32 }

Specifies the number of 256-byte blocks of main storage allocated to the spool buffers for the print and punch output writer. Specifying the larger values for this keyword parameter increases system performance by reducing the number of disk accesses to the spool file. The only acceptable parameters are those shown in the format.

Keyword Parameter SPOOLBURST:

SPOOLBURST=YES

Indicates that output spooling is to function in the burst mode of operation. Operating in the burst mode requires that an output processing criterion be configured to control the output writer's mode of processing for available output subfiles. Operating in the burst mode enables the output files to be written before the job they are associated with is terminated, depending upon the criterion selected. Operating in the nonburst mode implies that output subfile processing by the output writers is not done until job termination.

Keyword Parameter SPOOLCOMP:

SPOOLCOMP=NO

Specifies that the output image in the spool file is not to be compressed.

If omitted, the output image of the spool file is compressed if three or more consecutive blanks are present.

SPOOLCOMP=NO is not to be specified when:

- Most of the files created contain a large amount of blanks
- Most of the files created use block sizes greater than 120

Keyword Parameter SPOOLFARSI:

SPOOLFARSI=YES

Specifies that FARSI (Iranian language) translation is to be executed for all spool files containing *FARSI or @FARSI as the first six characters of the // LBL job control statement. (To accommodate this capability, the output writer is loaded with an additional 400₁₆ bytes of main storage space and the input reader is loaded with an additional 300₁₆ bytes of main storage space.)

Keyword Parameter SPOOLMODE:

Establishes an output file processing criterion for the spooler when operating in the burst mode. This keyword parameter allows configuration of output spooling to efficiently handle all the printed and punched output associated with your job. Output files are processed only when the criterion has been satisfied, thus giving you more control over all throughput. If operating in the burst mode and no criterion is specified, SPOOLMODE=PRI is assumed. Here, output is governed under a job priority basis (that is, preemptive, high, and normal priorities).

When selecting a parameter at SYSGEN time, you are establishing a priority for processing all of the available output files in the spool file. If you are uncertain at this time as to the criterion to be implemented, you can establish or change the specification from the system console at a later time. The procedure is explained in the handbook for operators, UP-8072 (current version).

Establishes the criteria for determining which spool files are processed by the output writer when operating in burst mode. The first positional subparameter in this keyword specifies the category used by the output writer to select the output file to be processed. The output writer uses the value specified in the second positional subparameter to locate the file to be processed. (Files that do not have a criterion value remain unprocessed in the spool file.) If you omit the second subparameter, the output is grouped by criteria category.

The criteria values for SPOOLMODE can be changed at any time from the system console as described in the handbook for operators, UP-8072 (current version).

The default specification for the SPOOLMODE keyword parameter is SPOOLMODE=PRI,0; where the output is processed according to job scheduling priorities with files from the higher priority jobs being processed first.

SPOOLMODE=ACCTNO, account-number

One to four alphanumeric characters indicating to the output writer that an account number is the criterion used for determining file processing. All subfiles created by jobs whose account number is the same as the criterion configured (as specified on the JOB control statement) are processed without operator intervention.

SPOOLMODE=CARTNAME, cartridge-name

One to eight alphanumeric characters indicating to the output writer that the cartridge name is the criterion used for determining file processing. All subfiles whose cartridge name is the same as the criterion configured (as specified on the LCB job control statement) are processed without operator intervention.

SPOOLMODE=DEVICE, device-type-code

Specifies the device type code as 0768, 0770, 0773, 0776, 0778, or 9300. Indicates to the output writer that the device type number is the criterion used for determining file processing. All the subfiles available for processing, whose device type is the same as the criterion configured, are processed without operator intervention.

SPOOLMODE=FILE, filename

One to eight alphanumeric characters indicating to the output writer that a filename is the criterion used for determining file processing. All the subfiles available for processing, whose filename is the same as the criterion configured, are processed without operator intervention.

SPOOLMODE=FORM, form-name

One to eight alphanumeric characters indicating to the output writer that the form-name is the criterion used for determining file processing. All subfiles whose form name is the same as the criterion configured (as specified on the VFB or SPL job control statements) are processed without operator intervention.

SPOOLMODE=JOB, jobname

One to eight alphanumeric characters indicating to the output writer that the jobname is the criterion used for determining file processing. All subfiles whose jobname is the same as the criterion configured (as specified on the JOB control statement) are processed without operator intervention.

Keyword Parameter SPOOLICAM:

SPOOLICAM= $\left. \begin{array}{l} C1 \\ Cn \\ Mn \\ C? \end{array} \right\}$

Indicates the name of the ICAM symbiont load module (C1–C9 and M1–M9) that is called by the spooler to service remote batch and distributed data processing spooling. If you specify SPOOLICAM=C?, your console operator receives a query at run time asking which ICAM symbiont to load. The keyword parameter SPOOLING=REMOTE or SPOOLING=DDP must have been specified, you must have configured the ICAM symbiont as described in the COMMCT section (Section 6), and you must specify a value for COMM during SUPGEN. If you omit this parameter, jobs creating output for remote batch or distributed data processing will encounter an error at the end of job and will require ICAM to be manually loaded in order to process the output.

Keyword Parameter SPOOLHDR:

SPOOLHDR=NO

Indicates that spooled output files are to be printed without headers. If omitted, a 3-page header will precede the printing of each spooled file.

Keyword Parameter SPOOLNOINPUT:

SPOOLNOINPUT=YES

Specifies that your supervisor suppresses input spooling for remote batch processing and distributed data processing. If you specify SPOOLNOINPUT, you cannot use the input reader.

Specify this parameter when you specify SPOOLING=REMOTE or SPOOLING=DDP and you want to suppress the INPUT SPOOLING capability throughout your SPOOLING system.

Keyword Parameter SPOOLPRT:

Specifies the log printing criteria for terminated jobs; includes log types for printing (L and A) and whether to print log records. Must specify JOBACCT=YES to have A records.

SPOOLPRT=ACT

Specifies that job accounting records are to be printed when a job terminates.

SPOOLPRT=ALL

Indicates that both job log and accounting records are to be printed when a job terminates.

SPOOLPRT=LOG

Specifies that only log records are to be printed when a job terminates.

SPOOLPRT=NO

Specifies that job log and accounting records are not to be printed.

Keyword Parameter SPOOLRECV:

Specifies the level of recovery wanted for the spool file when it is necessary to reinitialize the supervisor.

SPOOLRECV=ALL

Indicates that all spooled subfiles are to be recovered, whether complete or incomplete (warm restart).

SPOOLRECV=CLOSED

Indicates that only completed spooled subfiles are to be recovered (warm start).

SPOOLRECV=LOG

Indicates that only log files are to be recovered (warm start).

SPOOLRECV=~~NONE~~

Indicates that the spool file is not to be recovered (cold start).

Keyword Parameter SPOOLTEST:

The output writer can print a test lines page for each new form. This is a printout of the first page of output with all numerics converted to 9's and all alphabets converted to Z's. When the output writer detects a change in form name, a message is displayed on the system console asking the operator if a test lines page is to be printed.

SPOOLTEST=NO

Indicates that the output writer will not display the message asking the operator if a test lines page is printed.

If omitted, the test lines message will be displayed on the system console.

Keyword Parameter SPOOLUPDATE:**SPOOLUPDATE=NO**

Specifies that the spooler updates the subdirectory entry only when a program file closes. Should a program cancel, you lose any output that the program generated prior to cancellation.

If you omit this parameter, the spooler updates the subdirectory entry each time it crosses a logical track in a program file. Should a program cancel, you will be able to print any output that the program generated prior to cancellation.

Keyword Parameter DDPSPPOOL:**DDPSPPOOL=1-128**

Specifies the number of concurrently running tasks that can return spoolout of distributed data processing (DDP) jobs. Each task that can return DDP spoolout takes a task control block and at least 8K of dynamic buffer space.

In most cases, the default value of 10 tasks is sufficient. If, however, your system takes too much time to return the DDP spoolout, raise the value. On the other hand, if the default value of 10 tasks degrades your system's overall performance, lower the value.

Keyword Parameter JOBACCT:**JOBACCT=YES**

Indicates that the resident job accounting routines maintain a record of CPU time used by job and job step facilities, number of I/O requests made per device, number of supervisor requests generated, main storage usage, and transient function usage. This option may be specified only if spooling is configured. Job accounting requires approximately 350 bytes in the resident supervisor in addition to 100 bytes in each job prologue.

Keyword Parameter SYSLOG:**SYSLOG=YES**

Provides for accumulation of job and workstation log files (L, A, and W) accounting records in the spool file for future transfer to a user disk or tape file. If this capability is not configured at SYSGEN time, it can be requested by the operator from the system console later. The procedure is explained in the handbook for operators, UP-8072 (current version). You must specify JOBACCT=YES to have A records.

Keyword Parameter CONSOLOG:

Indicates whether console log (C records) and workstation log (W records) are collected. Also specifies the size of the main storage buffer area for storing them. The system collects a record of all communication between system and console (console log) and system and workstation (workstation log) in this buffer, then copies it into the spool file when it fills the buffer area.

CONSOLOG= $\left. \begin{array}{l} \text{MAX} \\ \text{MIN} \\ \text{NO} \\ \text{NORM} \end{array} \right\}$

Indicates the size of the buffer area assigned to accumulate system console and workstation messages. MIN specifies a 304-byte buffer; NORM specifies a 560-byte buffer; MAX specifies a 1072-byte buffer. If omitted or if NO is specified, the console and workstation log will not be recorded in the spool file.

Keyword Parameter CONPRINT:

CONPRINT=NO

Specifies that the console log (C records) is not to be printed when a file is breakpointed.

Keyword Parameter RETAINLOG:

RETAINLOG=YES

Specifies that the console log (C records) is to be retained in the spool file after printing.

Keyword Parameter SAM:

SAM=YES

Specifies that the system activity monitor dynamically links itself with your supervisor when you load the monitor. This monitor generates a record of your system's performance. The system activity monitor user guide/programmer reference, UP-8812 (current version), gives detailed information on how to use this record.

↓

NOTE:

SAM collects device statistics for both I/O and DSK classes according to the device's position in I/OGEN. It does not collect statistics for anymore than 72 devices. Therefore, be sure that the real devices which you intend to have SAM monitor are the first 72 listed in your I/OGEN.

↑

Keyword Parameter JOBQUEREC:

JOBQUEREC=YES

Indicates that at IPL, your system recovers all jobs that were scheduled and queued when it shut down.

JOBQUEREC=HOLD

Indicates that at IPL, your system recovers and holds all queued jobs until you are ready to run them.

Keyword Parameter JOBACCTREQ:

JOBACCTREQ=YES

Specifies that a job must have an account number. The account number can be supplied either as the eighth positional parameter on the JOB statement, or by inserting the OPTION ACCN statement in the job control stream. If this feature is specified and an account number is not provided, the job is aborted.

Keyword Parameter VOLTABLE:

VOLTABLE=YES

Specifies that the system's volume table is resident in main storage. This feature allows faster allocation and scheduling of volumes during job and command processing. Uses 512 bytes of main storage.

Keyword Parameter IGNORESFT:

IGNORESFT=~~NO~~

Specifies that the system processes all // SFT statements and loads the data management modules that these statements identify before the job is scheduled.

IGNORESFT=YES

Specifies that the system ignores all // SFT statements and loads the data management modules that these statements identify as the job needs them during execution. This option allows you to use dynamic shared code without having to delete // SFT statements from all of your control streams.

Keyword Parameter RESHARE:

**RESHARE= { mod-name }
 { group-name }**

Specifies a list of shared load module names or shared load module group names that you want resident in main storage. Option helps avoid fragmenting main storage space when modules are used frequently. If you want to specify individual module names, execute the SCLIST job stream by keying in RV△SCLIST. This job then lists all module names eligible for RESHARE. If you want to specify shared load module group names, use the group name symbols from Table 2-2.

To decide which modules to make resident for your applications, use the operator command, MI SC, to list all modules currently residing in main storage. Use MI SC several times to find which modules most frequently are resident for your applications. (Or, analyze system dumps.)

If you ever need to change your RESHARE specification, you can do so each time you IPL this supervisor. See the operations handbook for operators, UP-8072 (current version) for this procedure.

Table 2-2. Shared Load Module Groups

Group Name Symbol	Group Name
BAS	BASIC
DDPL	Local Distributed Data Processing
DDPR	Remote Distributed Data Processing
DP	Dialog Processor
EDT	Editor
ESC	ESCORT
ESCF	ESCORT Full
ISB	Basic Interactive Services
ISF	Full Interactive Services (for heavy interactive users who experience main storage fragmentation)
RPG	RPG Editor
SF	Screen Format Services

Keyword Parameter RECOVERDS:**RECOVERDS=YES**

Specifies that you have the option of either recovering disk space to retry a job or of terminating that job when the job step processor displays a warning that it cannot allocate sufficient disk space for a job.

Keyword Parameter INTERACTIVE:**INTERACTIVE=YES**

Indicates that your supervisor recognizes input from either a workstation or a communications terminal that supports interactivity. If your communications network supports interactivity, you must specify remote workstation parameters in I/OGEN (3.3.8).

NOTE:

If you do not configure interactivity, all other keyword parameters associated with interactivity will be ignored. The defaults shown for these parameters apply only if you specify INTERACTIVE=YES, unless otherwise shown.

Keyword Parameter DMGTMODE:**DMGTMODE=DTE** (if interactivity is not configured)

Indicates that your system uses only define-the-file (DTF) mode of data management. Interactive systems can use DTF mode only if SAT (disk, tape, or unit record processor) files are used.

DMGTMODE=CDI

Indicates that your system uses only common data interfaces (CDI) to data management. CDI data management can access only SAT or MIRAM files and provides enhanced file sharing and file lock capabilities.

DMGTMODE=MIXED (if interactivity is configured)

Indicates that your system operates in a mixed data management mode in which your programs may be written for execution in either CDI or DTF mode. MIXED data management can access all file types.

NOTE:

If you configure interactivity, you must specify either a CDI or MIXED mode of data management.

Keyword Parameter DYNBUFMGT:

DYNBUFMGT=~~NONE~~ (if interactivity is not configured)

Indicates that your system does not support dynamic buffer management.

DYNBUFMGT=~~BASIC~~ (if interactivity is configured)

Indicates that your system allocates main storage buffer space dynamically, or as your job needs it. Your system must have dynamic buffer management to use the spooling option to redirect output files temporarily to disk.

*NOTE:**If you specify CDI or MIXED data management, your system defaults to BASIC dynamic buffer management.*

Keyword Parameter SHARED MGT:

$$\text{SHARED MGT} = \left. \begin{array}{l} 8 \text{ (if DTF mode in noninteractive environment)} \\ 16 \text{ (if CDI mode in noninteractive environment)} \\ 40 \text{ (if CDI mode in interactive environment)} \end{array} \right\} \\ 1-16384$$

Specifies the total number of 24-byte slots to be reserved in a resident table that controls shared data management modules. Each shared module in main storage at a given time requires one table entry. For most multijobbing applications, the default values provided for each mode and environment are sufficient. If you need additional slots in an unusually heavy multijobbing system, you should specify a value above that of the default value. If you need fewer slots in a system with less than three job slots, you should decrease the value.

Keyword Parameter EXPREGION:

EXPREGION=0-999999

Specifies the size in bytes of your system's expansion regions within main storage from which your system dynamically allocates (expands) buffers to your job. If your system has more than four workstations in an unusually heavy interactive environment, increasing your expansion region size may help to reduce main storage fragmentation. As a minimum, you should specify the default size of 4096 bytes.

If you ever need to change the value that you specify now, you can do so each time you IPL this supervisor. See the operations handbook for operators, UP-8072 (current version), for the procedure.

Keyword Parameter RESBUFSIZE:

RESBUFSIZE=1-999999

Specifies the size in bytes of the resident buffer pool within the supervisor from which your system dynamically allocates buffers. If you specified a size equal to or greater than the 4096-byte default value for EXPREGION, the default size of 500 for RESBUFSIZE is probably sufficient for all systems using workstations. If you are a moderate to heavy workstation user, you may be able to improve system performance by specifying a large RESBUFSIZE value. For example: 100,000; then, raise or lower that size depending on your experience.

If you operate in a batch environment, you may want to specify a size less than the default value.

If you ever need to change the value that you specify now, you can do so each time you IPL this supervisor. See the operations handbook for operators, UP-8072 (current version), for the procedure.

Keyword Parameter TRNWKAREA:

TRNWKAREA=YES

Specifies that your system generates a 65K transient work area to keep the most recently used transient modules in main storage. If specified, transients can be loaded into main storage directly from the work area instead of from your SYSRES volume. This reduces the number of I/O delays that occur and thus improves performance.

If you ever need to change your TRNWKAREA specification, you can do so by issuing the TW command after you perform an initial program load (IPL). See the current version of the operations handbook, UP-8072, for the procedure for issuing the TW command.

Keyword Parameter ISINTLMT:

ISINTLMT=1-255

Specifies the maximum number of interactive users that your system recognizes at any one time. Interactive sessions use only workstation or interactive communications terminal input.

Keyword Parameter ISBATCHLMT:

ISBATCHLMT=1-255

Specifies the maximum number of batch sessions that can execute concurrently in your system. Batch sessions use only card image, tape, or disk input.

Keyword Parameter ISINTPRI:

ISINTPRI=1-60

Specifies the priority level of interactive commands entered from either a workstation or an interactive terminal.

Keyword Parameter ISKEYS:**ISKEYS=YES**

Indicates that your supervisor limits interactive services to using only its own space in main storage. Protecting interactive services uses a job slot, therefore, reduces the maximum number of concurrent user jobs to six.

Keyword Parameter ISADMID:**ISADMID=administrator id**

Specifies a 1- to 6-character id that identifies your system's security administrator. Your security administrator is the only user who can add or delete other user ids from your security file. The first character of administrator id must be an alpha character; the remaining five must be alphanumeric. If you don't specify this parameter id, the system defaults to no id and you will not have a system security administrator.

NOTE:

To use security maintenance utility (SMU), specify this parameter.

Keyword Parameter ISLOGONSC:**ISLOGONSC=YES**

Indicates that your system checks its security file when a user logs on. If you specify ISLOGONSC=YES, the user's identification must be a valid name in your security file. If ISLOGONSC=NO, any user can log on to your system with any identification.

NOTE:

To use security maintenance utility (SMU), specify YES.



3. Input/Output Device Configuration (I/OGEN)

3.1. GENERAL

The I/OGEN configuration specifications defined in this section allow you to relate the peripheral device configuration of your system to your particular supervisor. If you have specified the generation of multiple supervisor configurations in the SUPGEN section, you must also prepare individual I/OGEN sections for each of those supervisor configurations. Each I/OGEN section must immediately follow its associated SUPGEN section when it is submitted for processing.

The I/OGEN configuration specifications are presented in the form of label parameters and keyword parameters keypunched onto cards or keyed in at a workstation and submitted immediately following the statement containing the I/OGEN parameter coded in the label field. The I/OGEN parameter signifies the start of the I/OGEN section, which is delimited by the statement with END coded in the label field. The label parameters identify a device category (PRINTER, READER, PUNCH, DISC, TAPE, WORKSTATION, REMWORKSTATION, and REMPRINTER), and the keyword parameters define the particular specifications for that category (e.g., ADDR, TYPE). ←

There are various options available when you select the method of specifying the parameters for your I/O configuration. For example, if your existing SYSRES volume contains an I/O configuration that was defined for a previously generated supervisor, and it meets your present I/O configuration requirements, you may request this I/O configuration through the I/OMOD keyword parameter by naming the supervisor for which it applies.

In cases where the default values for the keyword parameters of a particular device category are identical to your I/O requirements, you need only specify the label parameters for the device category. The default values for that device category will be automatically generated for you. If, however, you need to modify some of the specifications for a particular device, you must specify both the label parameter for the device and those keyword parameters requiring change.

You should also be aware that although the keyword parameters have default values assigned to them in case they are omitted or misstated, the label parameters for device categories do not have default values. Therefore, if you omit a label parameter, the supervisor is generated with no I/O configuration for that device category.

The label parameter for a given device category must be repeated whenever that category contains (specifies) more than one type of device. For example, if you have two types of disks (SPERRY UNIVAC 8418 and 8430), you must specify two DISC label parameters and, therefore, two DISC device categories.

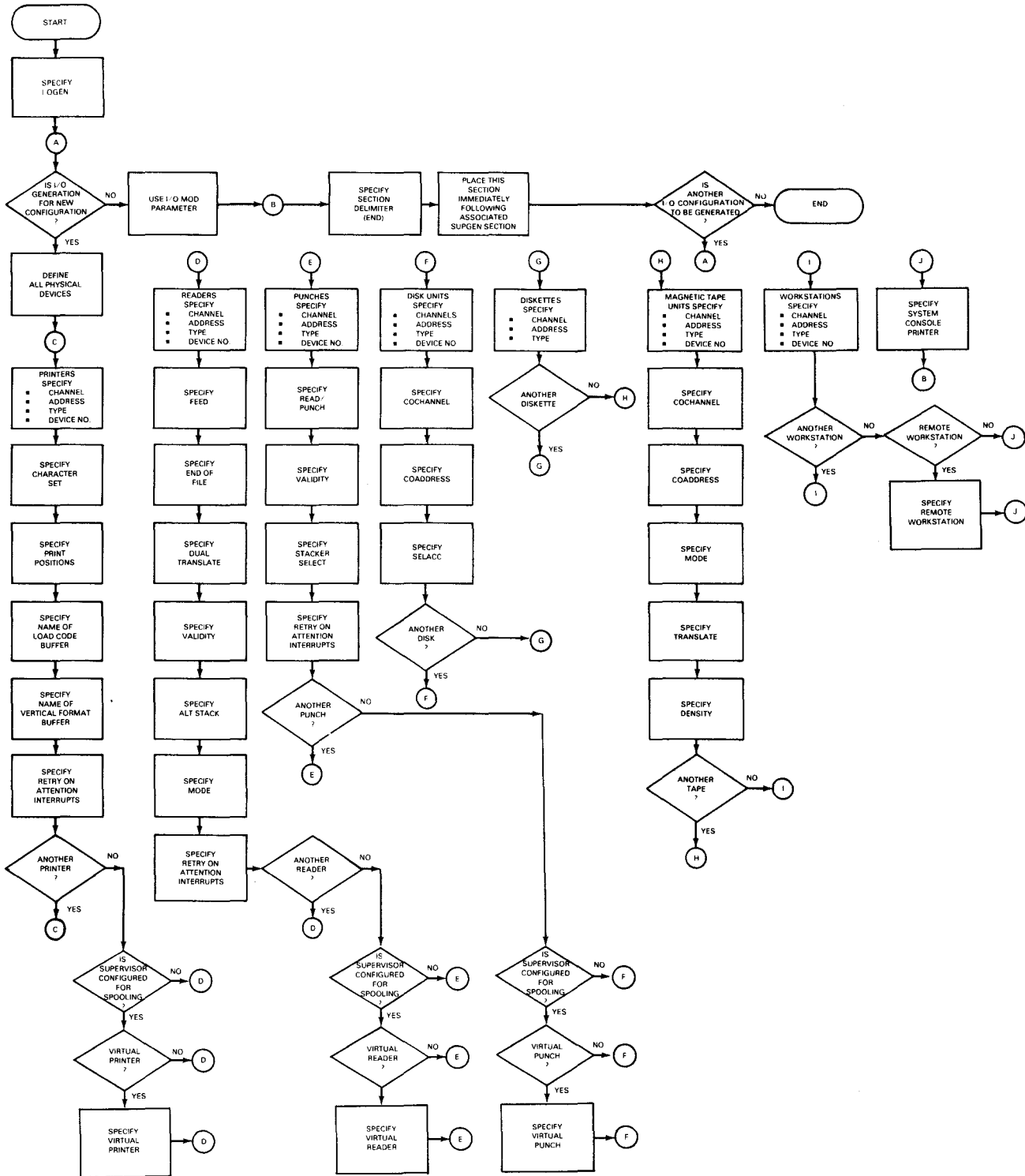
It is not necessary, however, to repeat the label parameter specification when you want to relate more than one device (of the same type) in a category to the supervisor being generated. You simply identify these additional devices by specifying their respective addresses.

We recommend that you define each I/O device in order of most frequent use. This will reduce I/O access time during later processing. You need not define all devices for the same category consecutively (even if they are the same type). For example, you may define the disk device containing your SYSRES volume first, followed by printers, readers, tapes, other disk devices, punches, and workstations.

As previously stated, keyword parameters that are misstated have default values assigned to them; however, a diagnostic message is generated and written into the output listing. Illegal keyword parameters for a device category are ignored, and a diagnostic warning is also written into the output listing.

A flowchart for the I/OGEN section is illustrated in Figure 3-1. This figure presents the system devices and the options that are available for those devices; it also presents the common parameters that pertain to all system devices and the parameter that pertains to the system console printer (COP).

When deleting an unwanted I/O configuration module, you must delete the module in the same way we discussed for deleting unwanted supervisor modules. (See 2.1.) Similar to supervisor deletion, when deleting the I/O configuration module for an unwanted supervisor from \$Y\$SRC, you must prefix the name of the unwanted supervisor with I\$. For example, if you wanted to delete the I/O configuration module for a supervisor named MYSUP1, you would specify to the librarian that you want to delete the I/O module named I\$MYSUP1.



NOTE:

Devices may be defined in any sequence desired.

Figure 3-1. Flowchart for I/OGEN Section

Format:

LABEL	△OPERATION△
I/ODEN PRINTER	<p>[I/OMOD=supvrnam]</p> <p>[CHAN={ channel 0 (for 0773/0778) 1 (for 0768/0770/0776/9200/9300) }]</p> <p>[ADDR={ address 02 (for 0773/0778) 43 (for 9200/9300) 60 (for 0770/0776) 70 (for 0768) }]</p> <p>[TYPE={ 0768 0770 0773 0776 0778 9200 9300 }]</p> <p>[DVCNO=lun]</p> <p>[CHARSET={ EXT 16 48 (for 0770/0773/0776/0778/9200/9300) 63 (for 0768) 94 108 }]</p> <p>[PRINTPOS={ 120 (for 0773/0778/9200/9300) 132 (for 0768/0770) 136 (for 0776) 144 160 }]</p> <p>[LCB={ 48-BUS (for 0770/0773/0776/0778) 48-SCI 63-STD (for 0768) OWNLC1 (for 9200/9300) OWNLC2 }]</p> <p>[VFB={ OWNVF1 STAND1 }]</p> <p>[ATTNRE={ NO YES }]</p> <p>[PRINTER VIRTUAL={ 2 x number of job slots 0 1-99 }]</p>

(continued)

LABEL

△ OPERATION △

I/OGEN
(cont)
READER

[CHAN=(channel
 { 0 (for 0717)
 1 (for 0716/0920/0930/2703/9200/9300) })]

[ADDR=(address
 { 01 (for 0717)
 10 (for 0716)
 20 (for 2703)
 30 (for 0920/0930)
 41 (for 9200/9300) })]

[TYPE=(0716
 0717
 0920
 0930 (NUK only)
 2703
 9200
 9300)]

[DVCNO=(un)]

[FEED=(51
 66
 80
 90
 96)]

[EOF=(NO
 YES)]

[DUALTRAN=(NO
 YES)]

[VALIDITY=(NO (for 0716/0920/2703/9200/9300)
 YES (for 0717))]

[ALTSTACK=(NO
 YES)]

[MODE=(ASCII
 COMPCD
 EBCDIC)]

[ATTNRE=(NO
 YES)]

[READER

[VIRTUAL=(1 x number of job slots
 0
 1-99)]

[PUNCH]

[CHAN=(channel
 { 0 (for 0605)
 1 (for 0604/0920/0930/9200/9300) })]

[ADDR=(address
 { 03 (for 0605)
 31 (for 0920/0930)
 42 (for 9200/9300)
 50 (for 0604) })]

(continued)

LABEL

△OPERATION△

I/OGEN
(cont)

TYPE= { 0604
0605
0920
0930 (NUK only)
9200
9300 }

[DVCNO=lun]

[READ/PUN={NO }
{YES}]

[VALIDITY={NO (for 0604/0920/9200/9300)}
{YES (for 0605)}]

[STACKSEL={NO }
{YES}]

[ATTNRE={NO }
{YES}]

[PUNCH

VIRTUAL={ 1 x number of job slots
0
1-99 }

[DISC]

[CHAN={ channel
3 (for 8415/8416/8418/8430M/8433M)
4 (for 8411/8414/8424/8425/8430/8433)}]

[COCHAN={4 }
{6}]

[ADDR={ address
00,01 (for 8415/8416/8418/8430/8433/8430M/8433M)
10,11 (for 8411)
40,41 (for 8414/8424/8425)}]

[COADDR=address]

[SELACC={2-64
2 (for 8411/8414/8424/8425/8430/8433)}]

TYPE= { 8411
8414
8415
8416
8418
8424
8425
8430
8433
8430M (NUK only)
8433M (NUK only) }

[DVCNO=lun]

[SEEKSEP={NO }
{YES}]

(continued)



LABEL	△OPERATION△
[DISKETTE]	[CHAN={channel { (for 8413)}] [ADDR={address { (for 8413)}] [TYPE= 8413] [DVCNO=lun]



LABEL	△OPERATION△
[TAPE]	<pre> [CHAN={ channel { 1 (for 6/10) { 4 (for 12/14/16/20) } }] [COCHAN={ 4 { 6 }] [ADDR={ address { 00,01 (for 6/10) { 20,21 (for 20) { 30,31 (for 12/14/16) } }] [COADDR=address] [TYPE={ 6 { 10 { 12 { 14 { 16 { 20 } } }] [DVCNO=lun] [MODE={ nn { 03 (for 10/12/14/16/20) { 83 (for 6) } }] [TRANSLAT={ NO { YES }] [DENSITY={ DUAL (for 10/12/14/16) { NRZI (for 6) { PHASE (for 20) } }] </pre>
[WORKSTATION]	<pre> [CHAN={ channel { 0 }] [ADDR={ address { 18,19 }] [TYPE=3560] [DVCNO=lun] [DESPACE={ NO { YES }] [KATAKANA={ NO { YES }] </pre>
[REWORKSTATION]	<pre> AMOUNT={ 1-99 }] [DESPACE={ NO { YES }] [SCREENMEM={ 1-2 }] [KATAKANA={ NO { YES }] </pre>
<p>[REPRINTER [COP] [END]</p>	<pre> AMOUNT={ 1-99 }] </pre>



3.2. REQUESTING A PREVIOUSLY CREATED I/O CONFIGURATION

We have included in the I/OGEN phase of system generation the capability that allows you to relate, to the new supervisor being generated, the I/O configuration defined for a previously generated supervisor. This established I/O configuration resides in the system source library file (\$Y\$SRC) of your SYSRES volume and the OS/3 release volume (OS/3REL). The convenience of this feature is that you don't need to redefine or process I/O specifications for the new supervisor, especially when your system configuration has not changed. Your responsibility is to include the I/OGEN section and to specify the I/OMOD keyword parameter.

Keyword Parameter I/OMOD:

I/OMOD=supvrnam

Specifies the name of a supervisor for which an I/O configuration previously has been created and saved in the system source library file of your SYSRES volume or the OS/3 release volume. You may request this established I/O configuration by specifying the I/OMOD keyword parameter as the only parameter immediately following the statement with the I/OGEN parameter in the label field. No other I/OGEN parameters are required. If other I/OGEN parameters are used with the I/OGEN parameter, they are ignored and an appropriate diagnostic message is written on the output listing.

3.3. CREATING A NEW I/O CONFIGURATION

The keyword parameters that define the I/O configuration related to your supervisor are described in 3.3.1 through 3.4. Four keyword parameters are common to each of the device categories defined in an I/OGEN operation. These common parameters are CHAN, ADDR, TYPE, and DVCNO. Instead of repeating their definitions in each device category listed, they are described collectively under the heading: Common Keyword Parameters (3.3.1). Those keywords applicable to a specific device are presented and defined under the name for that category of device.

Many of the parameters have default specifications that are device dependent. That is, the default specification selected by the operating system is based upon the device type (in each device category) specified, or defaulted to, by the TYPE keyword parameter. When this situation occurs, the applicable default specification is identified by enclosing its related device type in parentheses immediately following the specifications presented in the I/OGEN format.

3.3.1. Common Keyword Parameters

Keyword Parameter CHAN:

Identifies the physical I/O channels that have access to the device or group of devices being described.

CHAN=Ø

Identifies the integrated peripheral channel.

CHAN=1

Identifies the multiplexer channel.

CHAN=3

Identifies the integrated disk adapter.

CHAN=4

Identifies selector channel 1.

CHAN=6

Identifies selector channel 2.

The default specifications for this parameter are device dependent and are determined as a function of the TYPE keyword parameter specification presented for each device category. (See I/OGEN format.)

Keyword Parameter ADDR:

Identifies the hardware address of the device or group of devices being described, as well as the number of devices. The address must be a 2-digit hexadecimal number. If more than one address is being identified, the addresses must be separated by commas, or a hyphen may be used to indicate consecutive addresses.

```
ADDR=(address
      { 02 (for 0773/0778)
      { 43 (for 9200/9300)
      { 60 (for 0770/0776)
      { 70 (for 0768)
      }
```

Specifies the printer.

```
ADDR=(address
      { 01 (for 0717)
      { 10 (for 0716)
      { 20 (for 2703)
      { 30 (for 0920/0930)
      { 41 (for 9200/9300)
      }
```

Specifies the reader.

```
ADDR=(address
      { 03 (for 0605)
      { 31 (for 0920/0930)
      { 42 (for 9200/9300)
      { 50 (for 0604)
      }
```

Specifies the punch.

$$\text{ADDR} = \left\{ \begin{array}{l} \text{address} \\ \text{00,01 (for 8415/8416/8418/8430/8433/8430M/8433M)} \\ \text{10,11 (for 8411)} \\ \text{40,41 (for 8414/8424/8425)} \end{array} \right\}$$

Specifies the disk.

For the 8415, the device address for the fixed portion is an even number, while the device address for the removable portion is the next higher odd number. The default address is 00 for the fixed portion of the 8415 disk and 01 for the removable portion.

If you specify TYPE=8415, you can default to device address 00 and 01, or you can enter ADDR=00,01 or ADDR=02,03 or ADDR=00-03.

NOTE:

For each type of disk attached to the selector channel, you must specify at least one address ending with zero.

$$\text{ADDR} = \left\{ \begin{array}{l} \text{address} \\ \text{10,11 (for 8413)} \end{array} \right\}$$

Specifies the diskette.

$$\text{ADDR} = \left\{ \begin{array}{l} \text{address} \\ \text{00,01 (for 6/10)} \\ \text{20,21 (for 20)} \\ \text{30,31 (for 12/14/16)} \end{array} \right\}$$

Specifies the tape.

$$\text{ADDR} = \left\{ \begin{array}{l} \text{address} \\ \text{18,19} \end{array} \right\}$$

Specifies the workstation.

Keyword Parameter TYPE:

TYPE=device number

Identifies the type of device or group of devices being described. The device number must be one of the numbers shown in the format identifying the printer, reader, punch, disk, diskette, tape devices, or workstations.

Keyword Parameter DVCNO:

DVCNO=Lun

Changes the standard logical unit numbers for the specific devices within each device category. You may modify or replace the logical unit numbers for the device or group of devices by specifying the logical unit numbers in decimal. If two or more logical unit numbers are specified, they must be separated by commas. If consecutive numbers are specified, they must be separated by a hyphen. It is recommended that you do not alter logical unit numbers outside a device category or alter the logical unit numbers assigned to the "any" device.

Table 3-1 shows the logical unit numbers and their corresponding device types.

Keyword Parameter ATTNRE:

ATTNRE=YES

Indicates that the retry on attention interrupts feature is desired. This will permit automatic retry of a recoverable error when an attention interrupt is received on a printer, card reader, or punch card that has an unanswered physical IOCS error message. Instead of having to respond to the console error message with an R, the operator can initiate the recovery retry at the device by placing it in the online mode. This feature is available only for printers, card readers, and card punches; however, it does not apply to these devices on the 9200/9300.

Table 3-1. Logical Unit Numbers (Part 1 of 2)

Logical Unit No.	Device Type and Features
1, 2	Reader of 0920/0930 paper tape subsystem
3, 4	Punch of 0920/0930 paper tape subsystem
5, 6	2703 optical document reader
7	Online 9200/9300 printer
8	Online 9200/9300 card reader
9	Online 9200/9300 card punch
10-17	Spare
18, 19	Reserved
20, 21	Any printer, no features specified
22, 23	0773/0778 printer subsystem, no optional features
24, 25	0776 printer subsystem, no optional features
26, 27	0768 printer subsystem, no optional features
28*, 29*	0770 printer subsystem, no optional features
30, 31	Any card reader subsystem, no features specified
32, 33	0717 card reader subsystem, no features specified
34, 35	0716 card reader subsystem, no features specified
36-39	Reserved
40, 41	Any card punch subsystem, no features specified
42, 43	0605 card punch subsystem, no features specified
44, 45	0604 card punch subsystem, no features specified

* Device type code changed to that for 0776 during supervisor initialization, if 0776 printer is used in place of 0770.

Table 3-1. Logical Unit Numbers (Part 2 of 2)

Logical Unit No.	Device Type and Features
46, 47	Reserved
48, 49	Spare
50-59	Any disk
60-63	8416 disk subsystem
64-66	8418 disk subsystem (Mod-I) (low density)
67-69	8418 disk subsystem (Mod-II) (high density)
70-74	8430 disk subsystem
75-79	8433 disk subsystem
80-85	8414 disk subsystem
86-89	8411 disk subsystem
90-99	Any tape, no features specified
100-102	Any tape, 9-track phase encoded
103-105	Any tape, 9-track NRZI
106-109	Any tape, 7-track NRZI
110-112	Slow tape, 9-track phase encoded
113-115	Slow tape, 9-track NRZI
116-119	Slow tape, 7-track NRZI
120-122	Fast tape, 9-track phase encoded
123-125	Fast tape, 9-track phase encoded
126, 127	Fast tape, 7-track NRZI
128, 129	Reserved
130-133	Any diskette
134, 135	8413 diskette
136, 137	Reserved
138, 139	Any diskette, 128 byte
140, 141	Any diskette, 256 byte
142, 143	Any diskette, 512 byte
144, 145	Any diskette, 1024 byte
146, 147	Spare
148, 149	Double-density diskette
150, 151	Any diskette, autoloader
152, 153	Any diskette, double-sided
154-159	Reserved
160	8415 disk subsystem-fixed
161	8415 disk subsystem-removable
162	8415 disk subsystem-fixed
163-179	Reserved
180-185	8424/8425 disk subsystem
186-199	Reserved
200-215	Any workstation
216-219	Any workstation with 24 x 80 screen
220-254	Spare
255, 256	Reserved

3.3.2. Printer Keyword Parameters

Keyword Parameter CHARSET:

$$\text{CHARSET} = \left\{ \begin{array}{l} \text{EXT} \\ 16 \\ 48 \text{ (for } 0770/0773/0776/0778/9200/9300) \\ 63 \text{ (for } 0768) \\ 94 \\ 108 \end{array} \right\}$$

Identifies the number of printable characters contained in the font set of the printer subsystem being described.

CHARSET=EXT

Identifies the font set as being an expanded character set for the 0770, 0773, and 0776 printers.

Keyword Parameter PRINTPOS:

$$\text{PRINTPOS} = \left\{ \begin{array}{l} 120 \text{ (for } 0773/0778/9200/9300) \\ 132 \text{ (for } 0768/0770) \\ 136 \text{ (for } 0776) \\ 144 \\ 160 \end{array} \right\}$$

Identifies the number of print positions pertaining to the printer subsystem being described.

Keyword Parameter LCB:

Identifies the printer load code buffer that is to be used as the default buffer for the printer being defined. The various LCBs that may be specified for each type of printer are shown as follows.

$$\text{LCB} = \left\{ \begin{array}{l} 63\text{-STD} \\ \text{OWNLC1} \\ \text{OWNLC2} \end{array} \right\}$$

For printer type 0768.

$$\text{LCB} = \left\{ \begin{array}{l} 48\text{-BUS} \\ 48\text{-SCI} \\ 63\text{-STD} \\ \text{OWNLC1} \\ \text{OWNLC2} \end{array} \right\}$$

For printer types 0770/0773/0776/0778.

$$\text{LCB} = \left\{ \begin{array}{l} \text{OWNLC1} \\ \text{OWNLC2} \end{array} \right\}$$

For printer types 9200/9300.

If omitted, the appropriate default specification is assumed.

OWNLC1 and OWNLC2 reference user-generated load code buffers. See 10.6 for the procedure to generate your own LCB for supervisor default use.

Keyword Parameter VFB:

$$\text{VFB} = \left\{ \begin{array}{l} \text{OWNVF1} \\ \text{STAND1} \end{array} \right\}$$

Identifies the printer vertical format buffer that is to be used as the default buffer for the printer subsystem being defined.

OWNVF1 references the user-generated vertical format buffer. See 10.6 for the procedure to generate your own VFB for supervisor default use.

Keyword Parameter VIRTUAL:

$$\text{PRINTER VIRTUAL} = \left\{ \begin{array}{l} 2 \times \text{number of job slots} \\ 0 \\ 1-99 \end{array} \right\}$$

If you configured your supervisor for spooling and if you specified at least one real printer, then you can allocate virtual printers in your system. When you specify virtual printers, you indicate that your supervisor schedules jobs based on the number of virtual printers rather than real printers in your system. To calculate the optimum number of virtual printers, multiply the number of jobs that can run concurrently by the average number of printer files used for each job. A maximum of 99 virtual printers can be specified, but you should note that each one uses 32 bytes of main storage. If you omit this parameter, the number of virtual printers that your system creates for spooling, by default, equals twice the number of job slots that you specified in the SUPGEN section. Be sure that you include the VIRTUAL printer keyword statement in the parameter set with PRINTER coded in the label field if you use this parameter to specify the number as different from the default value.

3.3.3. Reader Keyword Parameters**Keyword Parameter FEED:**

$$\text{FEED} = \left\{ \begin{array}{l} 51 \\ 66 \\ 80 \\ 90 \\ 96 \end{array} \right\}$$

Specifies the size of the cards to be read by the card reader.

Keyword Parameter EOF:

EOF=YES

Indicates that the end-of-file feature is installed in the card reader being defined. This feature allows the card reader to sense an end-of-file condition regardless of whether the /* or //△FIN statement is missing from the job control stream. This applies only to a 1-job environment and is available only on the 0716 card reader.

Keyword Parameter DUALTRAN:

DUALTRAN=YES

Indicates that the dual translate is installed in the card reader being defined. This feature is available only on the 0716 or 0717 card readers.

Keyword Parameter VALIDITY:

VALIDITY=NO

Indicates that no validity check feature is installed. It is the default specification when the reader is a 0716, 0920, 2703, 9200, or 9300 device.

VALIDITY=YES

Indicates that the validity check feature is installed in the reader being defined. It is the default specification when the reader is a 0717 device.

Keyword Parameter ALTSTACK:

ALTSTACK=YES

Indicates that the alternate-stacker-fill feature is installed in the card reader being defined.

Keyword Parameter MODE:

$$\text{MODE} = \left\{ \begin{array}{l} \text{ASCII} \\ \text{COMPCD} \\ \text{EBCDIC} \end{array} \right\}$$

Indicates the mode of card interpretation of the reader as ASCII, COMPCD (compressed card code), or EBCDIC.

Keyword Parameter VIRTUAL:

$$\text{READER VIRTUAL} = \left\{ \begin{array}{l} 1 \times \text{number of job slots} \\ 0 \\ 1-99 \end{array} \right\}$$

If you configured your supervisor for spooling and if you specified at least one real reader, you can allocate virtual readers in your system. (A diskette containing card images is also considered a real reader.) When you specify virtual readers, you indicate that your supervisor schedules jobs based on the number of virtual readers rather than real readers in your system. To calculate the optimum number of virtual readers, multiply the number of jobs that can run concurrently by the average number of reader files used for each job. A maximum of 99 virtual readers can be specified, but you should note that each one uses 32 bytes of main storage. If you omit this parameter, the number of virtual readers that your system creates for spooling, by default, equals the number of job slots that you specified in the SUPGEN section. Be sure that you include the VIRTUAL reader keyword statement in the parameter set with READER coded in the label field if you use this parameter to specify the number as different from the default value.

3.3.4. Punch Keyword Parameters

Keyword Parameter READ/PUN:

READ/PUN=YES

Indicates that the read-before-punching feature is installed in the card punch being defined.

Keyword Parameter VALIDITY:

VALIDITY=NO

Indicates that no validity check feature is installed. It is the default specification when the punch is a 0604, 0920, 9200, or 9300 device.

VALIDITY=YES

Indicates that the validity check feature is installed in the punch being defined. It is the default specification when the punch is a type 0605 device.

Keyword Parameter STACKSEL:

STACKSEL=YES

Indicates that the stacker-select feature is installed in the card punch being defined.

Keyword Parameter VIRTUAL:

PUNCH VIRTUAL = $\left\{ \begin{array}{l} 1 \times \text{number of job slots} \\ \emptyset \\ 1-99 \end{array} \right\}$

If you configured your supervisor for spooling and if you specified at least one real card punch, you can allocate virtual card punches in your system. (A diskette to which you've written card images is also considered a real punch.) When you specify virtual punches, you indicate that your supervisor schedules jobs based on the number of virtual punches rather than real punches in your system. To calculate the optimum number of virtual punches, multiply the number of jobs that can run concurrently by the average number of punch files used for each job. A maximum of 99 virtual punches can be specified, but you should note that each one uses 32 bytes of main storage. If you omit this parameter, the number of virtual punches that your system creates for spooling, by default, equals the number of job slots that you specified in the SUPGEN section. Be sure that you include the VIRTUAL punch keyword statement in the parameter set with PUNCH coded in the label field if you use this parameter to specify a number different from the default value.

3.3.5. Disk Keyword Parameters

Keyword Parameter COCHAN:

COCHAN={4
6}

Specifies that the disk being defined can be accessed by multiple channels to provide for simultaneous operation. This parameter is valid only for selector channel devices.

Keyword Parameter COADDR:

COADDR=address

Specifies that the disk being defined can have multiple addresses to provide for simultaneous operation. Each address specified must be a 2-digit hexadecimal number. Multiple addresses must be separated by commas or a hyphen may be used to indicate consecutive addresses. The parameter is valid only for selector channel devices.

Keyword Parameter SELACC:

SELACC={2-64
2 (for 8411/8414/8424/8425/8430/8433)}

Specifies the maximum number of physical blocks on disk that may be written in one disk access when using the system access CCB mode (BCW commands). From 2 to 64 may be specified, depending on the multiblock I/O requirements of your applications. For each number of blocks specified for writing, approximately 3 times as many reads are provided for. This parameter may be used to optimize I/O for IRAM file applications or SPOOLBUFR specifications greater than 2.

Keyword Parameter SEEKSEP:

SEEKSEP={NO
YES}

Specifies that you want your system to issue separate seek commands to disk to allow overlapping seek commands to more than one disk on the same control unit. This option increases I/O access time to disk. The default is YES.

3.3.6. Tape Keyword Parameters

Keyword Parameter COCHAN:

COCHAN={4
6}

Specifies that the tape unit being defined can be accessed by multiple channels to provide for simultaneous operation. This parameter is valid only for selector channel devices.

Keyword Parameter COADDR:

COADDR=address

Specifies that the tape unit being defined can have multiple addresses to provide for simultaneous operation. Each address specified must be a 2-digit hexadecimal number. Multiple addresses must be separated by commas, or a hyphen may be used to indicate consecutive addresses. This parameter is valid only for selector channel devices.

Keyword Parameter MODE:

MODE=nn

Indicates the recording mode of the tape unit being defined; also defines the tape unit as a 9-track or 7-track device. The entry must be a 2-digit hexadecimal number. Tables 3-2 and 3-3 show the 9- and 7-track mode settings that are supported.

Table 3-2. 9-Track Recording Mode Settings

Recording Method	Tape Density (bpi)	Magnetic Tape Subsystem	MODE=nn Value (hex.)
Phase encoding	1600	UNISERVO 10, 12, 14, 16, and 20	C3
NRZI	800	UNISERVO 12 and 16	CB
NRZI	800	UNISERVO VI-C	83

Table 3-3. 7-Track Recording Mode Settings

Mode of Operation	Tape Parity	I/OGEN MODE=nn Values (hex.)		
		200 bpi tape	556 bpi tape	800 bpi tape
Normal processing ¹	Even	23	63	A3
	Odd	33	73	B3
Data conversion processing ²	Odd Only	13	53	93
Data translation processing ³	Even	2B	6B	AB
	Odd	3B	7B	BB

NOTES:

1. Permits 8-bit channel data to be written to tape as 6-bit data with appropriate parity bit. Data bits 0 and 1 of the channel data are ignored during tape write and padded with zeros during tape read operations.
2. Permits reading and writing of disassembled 8-bit channel data on tape.
3. Permits the reading and writing of 6-bit BCD data on tape to EBCDIC data for processing in the system.

Keyword Parameter TRANSLAT:**TRANSLAT=YES**

Indicates that the Extended Binary Coded Decimal Interchange Code to Binary Coded Decimal (EBCDIC to BCD) translate feature is being utilized.

Keyword Parameter DENSITY:

Indicates the recording modes of the tape unit being described.

DENSITY=~~DUAL~~

Identifies both the phase encoded and NRZI modes. It is the default specification when the tape unit is a type 10, 12, 14, or 16 device.

DENSITY=~~NRZI~~

Identifies the non-return-to-zero (NRZI) mode. It is the default specification when the tape unit is a type 6 device.

DENSITY=~~PHASE~~

Identifies the phase encoded mode. It is the default specification when the tape unit is a type 20 device.

3.3.7. Workstation Keyword Parameters

Workstation keyword parameters must be specified if your system supports interactive input from a local workstation.

Keyword Parameter DESPACE:

Specifies whether the space key protects or destroys the character the cursor is positioned on.

DESPACE=YES

Character is replaced with a blank when space key is pressed.

DESPACE=~~NO~~

Character is not changed when space key is pressed.

Keyword Parameter KATAKANA:**KATAKANA=YES**

Specifies that your workstation recognizes input in the Japanese Katakana code.

3.3.8. Remote Workstation Keyword Parameters

Remote workstation (REWORKSTATION) keyword parameters must be specified if your system supports interactive input from a remote communications terminal.

Keyword Parameter AMOUNT:

AMOUNT=**1**-99

Specifies the number of communications terminals that you want to support interactivity. If your communications network supports interactivity, you must specify how many terminals you want to function as remote workstations. You should note that the value you choose is the maximum number of interactive sessions that your system recognizes from remote terminals at any one time and should not be greater than the number of terminals in your system. Be sure to specify REMWORKSTATION in the label field.

Keyword Parameter DESPACE:

Specifies whether the space key protects or destroys the character the cursor is positioned on.

DESPACE=YES

Character is replaced with a blank when space key is pressed.

DESPACE=**NO**

Character is not changed when space key is pressed.

Keyword Parameter SCREMEM:

Specifies single or dual screen support for remote workstations.

SCREMEM=**1**

Indicates single screen support.

SCREMEM=2

Indicates dual screen support. This allows full screen system messages on screen 1 when the workstation is not allocated to a job. Screen 2 is used for auxiliary input/output only.

Keyword Parameter KATAKANA:

KATAKANA=YES

Specifies that your workstation recognizes input in the Japanese Katakana code.

3.3.9. Remote Printer Keyword Parameters

Remote printer (REMPRINTER) keyword parameters must be specified if your system supports auxiliary printers that are connected to a remote workstation.

Keyword Parameter AMOUNT:

AMOUNT=1-99

Specifies the total number of auxiliary printers that are connected to remote workstations in your system.

3.4. SPECIFYING THE SYSTEM CONSOLE PRINTER

You may include the system console printer in your I/O configuration by specifying COP as a label parameter in your I/OGEN section.



4. System Resident Volume Creation (RESGEN)

4.1. GENERAL

Your system resident (SYSRES) volume is configured by use of the RESGEN parameters described in this section. RESGEN enables you to place the output generated by the SYSGEN operation on any disk volume other than the OS/3 release volume (OS/3REL). If you don't want to create a new or remodeled SYSRES volume, simply omit the RESGEN section. The supervisor configuration generated by the SYSGEN operation is then stored in the system load library file (\$Y\$LOD) of the OS/3REL volume, which serves as your SYSRES volume. When you omit the RESGEN section, you may have to make modifications to the OS/3REL library files after the SYSGEN. Procedures for making these modifications are described in 10.8.

If you configure your system with a workstation or an interactive remote communications terminal, your system automatically transfers the various interactive products of OS/3 to your SYSRES volume during RESGEN.

If you wish to add a supervisor to your previously generated SYSRES volume, you will need a RESGEN section but should specify the NOPREP option. If you are not generating a supervisor but are simply configuring an emulator, an ICAM load module, or an NTR system utility module, you need not execute the RESGEN phase. There is an optional specification in the EMULAT, COMMCT, and NTRGEN keyword parameters that allows you to designate an output volume other than OS/3REL.

The RESGEN parameters are keypunched onto cards or keyed in at a workstation and must immediately follow the statement with RESGEN coded in the label field. This statement signifies the beginning of the RESGEN section, which is delimited by the statement with END coded in the label field. A flowchart for this section is illustrated in Figure 4-1.

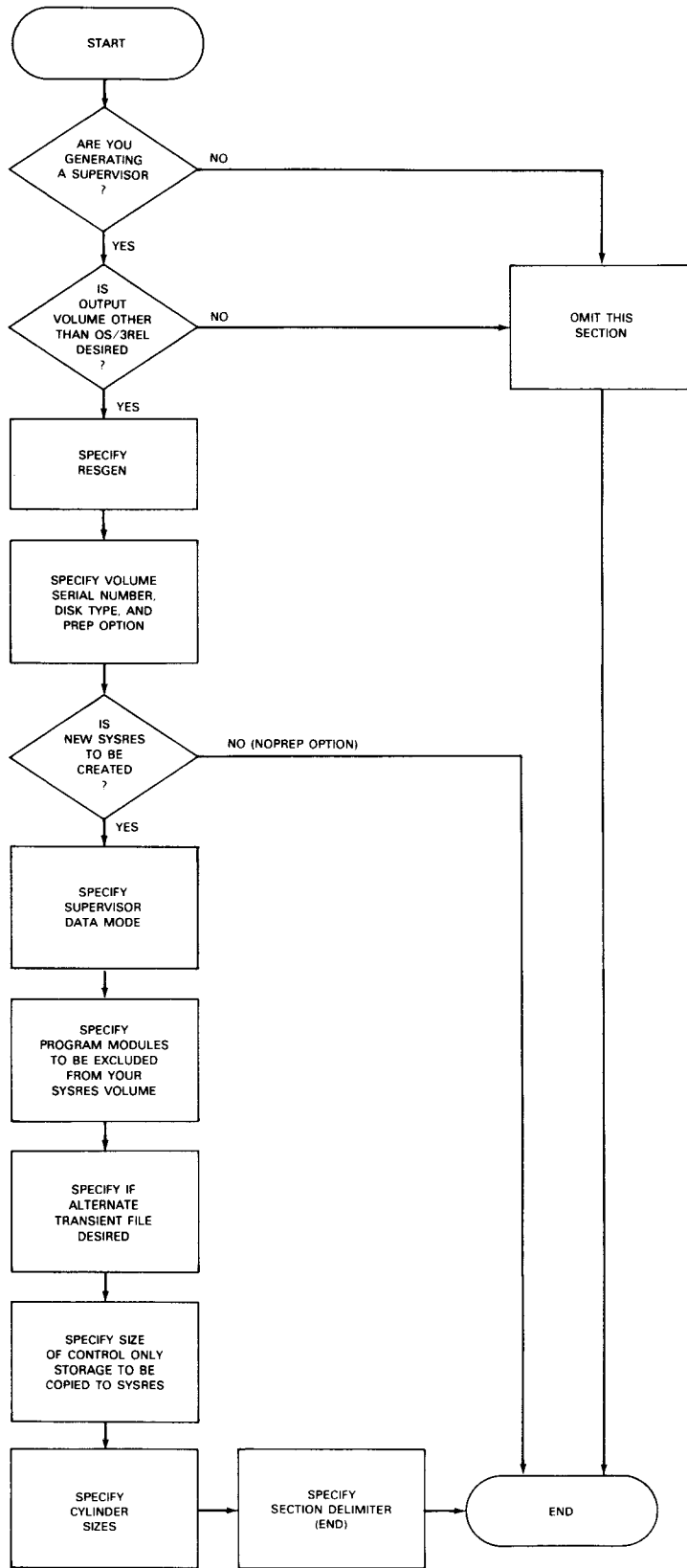


Figure 4-1. Flowchart for RESGEN Section

Format:

LABEL	△OPERATION△
RESGEN	<pre> SYSOUT={ {vsn } } [, {type }] [{ FULL }] { SYSRES } [{ OS/3REL }] [{ NOPREP }] { PARTIAL } [CDIMODE={ NO }] { YES } [DELETE= { [ASM][,BASIC][,BEMBAS][,BEMEDT][,BEMMON][,BEMRSP] INCLUDE [,COBEDT][,COBOL][,COBL74][,DATAUTL][,DDPFA][,DDPIMS] [,DDPTR][,DMS][,DSL][,EDITOR][,ESCORT][,EXTCOBOL] [,FORTRAN][,FORTIV][,ICAM][,IMSMT][,IMSST][,IVP] [,LINKER][,MENUS][,OCL][,OLM][,OLMC] [,OS4][,RPGARPT][,RPGEDT][,RPGII][,SAM][,SFGEN] [,SORT][,SORT3][,SPOOL][,SY3][,SY32] [,UTSCOB][,UTSEP][,UTS400][,VSB][,360/20EM][,92/93EM] }] ALL [ATRANS={ NO }] { YES } [COS={ 1 }] { 2 } { 3 } [FILELOCK={ n }] { 80 } [CATVSN=vsn] [\$\$LOD={ +1-999 }] { 1-999 } [\$\$JCS={ +1-999 }] { 1-999 } [\$\$MAC={ +1-999 }] { 1-999 } [\$\$OBJ={ +1-999 }] { 1-999 } [\$\$SRC={ +1-999 }] { 1-999 } END </pre>

4.2. RESGEN KEYWORD PARAMETERS

Keyword Parameter SYSOUT:

```

SYSOUT={ {vsn } } [ , {type } ] [ { FULL } ]
        { SYSRES } [ { OS/3REL } ] [ { NOPREP } ]
        { PARTIAL }

```

Indicates that the SYSGEN output is to be placed on a disk pack other than the OS/3REL volume. Subparameters must be written in the order shown.

Positional Subparameters:

vsn

Specifies the volume serial number of the disk to receive the output created by system generation. Do not assign a vsn identical to that of the OS/3REL volume.

If omitted, the name SYSRES is assigned by default.

type

Identifies the disk type receiving the output of system generation. This specification must agree with one of the TYPE specifications defined in the DISC category for I/OGEN (Section 3), except that, for the 8415 disk, you specify either 8415F (indicating the fixed portion) or 8415R (indicating the removable portion).

If omitted, the parameter processor uses as the default specification the same disk type as that on which the current OS/3 release volume resides.

NOTE:

For the 90/30 B, you cannot IPL from a selector channel disk.

{ FULL
NOPREP
PARTIAL }

Specifies the extent of disk preparation to be performed on the designated output volume (SYSOUT) being created or retailed.

FULL

Indicates a complete surface analysis is to be performed and a new BOOT block, IPL, and VTOC generated.

NOPREP

Indicates that you want to add the output of your SYSGEN to an existing SYSRES volume that was created from the current OS/3REL volume. When NOPREP is specified, all other keyword parameters in this section are ignored, and no library modules will be copied onto your SYSRES volume.

PARTIAL

Indicates no surface analysis is to be performed, but a new BOOT block, IPL, and VTOC are generated.

If omitted, a complete surface analysis is performed and a new BOOT, IPL, and VTOC are generated.

Keyword Parameter CDIMODE:**CDIMODE=YES**

Specifies that your system supplies only those program modules that support CDI data management. If you configure CDIMODE=YES, you must also specify DMGMTMODE=CDI or MIXED during SUPGEN (2.2).

Keyword Parameter DELETE or INCLUDE:

{DELETE} {INCLUDE}	= { <ul style="list-style-type: none"> [,ASM][,BASIC][,BEMBAS][,BEMEDT][,BEMMON][,BEMRSP][,COBEDT] [,COBOL][,COBL74][,DATAUTL][,DDPFA][,DDPIMS][,DDPTR][,DMS] [,DSLTL][,EDITOR][,ESCORT][,EXTCOBOL][,FORTRAN][,FORTIV][,ICAM] [,IMSMT][,IMSST][,IVP][,LINKER][,MENUS][,OCL][,OLM][,OLMC] [,OS4][,RPGARPT][,RPGEDT][,RPGII][,SAM][,SFGEN] [,SORT][,SORT3][,SPOOL][,SY3][,SY32] [,UTSCOB][,UTSEP][,UTS400][,VSB][,360/20EM][,92/93EM] ALL }
-------------------------------------	--

These parameters specify the system-supplied program modules (language processors, communications modules, utility modules, and diagnostic modules) that are to be copied onto your designated output volume (SYSOUT). You may specify the subparameters for either keyword parameter in any order or in multiple calls of the keyword itself.

You can either use DELETE to exclude the modules you don't want, or you can use INCLUDE to copy only the modules you do want. You cannot use both in the same RESGEN.

If neither keyword parameter is used, or if you enter INCLUDE=ALL, all the system-supplied modules are copied onto SYSOUT.

Subparameters:**ASM**

Specifies the current BAL assembler. (The system macro library, \$Y\$MAC, is abbreviated as a result of assembler exclusion.)

BASIC

Specifies the current BASIC compiler modules.

BEMBAS

Specifies the current BEM BASIC compiler modules.

BEMEDT

Specifies the current BEM editor modules.

BEMMON

Specifies the current BEM monitor modules.

BEMRSP

Specifies the current BEM remote spoolout processor modules.

COBEDT

Specifies the current COBOL EDITOR modules.

COBOL

Specifies the current basic COBOL compiler modules.

COBL74

Specifies the current ANSI COBOL '74 compiler modules.

DATAUTL

Specifies the current data utility modules.

DDPFA

Specifies the current distributed data processing file access modules.

DDPIMS

Specifies the current distributed data processing information management system transaction processing modules.

DDPTR

Specifies the current distributed data processing transfer facility modules.

DMS

Specifies the current data base management system (DMS) modules.

DSLTL

Specifies the current dialog specification language translator modules.

EDITOR

Specifies the current general editor modules.

ESCORT

Specifies the current ESCORT compiler modules.

EXTCOBOL

Specifies the current extended COBOL compiler modules.

FORTRAN

Specifies the current FORTRAN compiler modules. If you specify FORTRAN, you must also specify floating-point hardware during SUPGEN (2.2).

NOTES:

1. *A basic FORTRAN compiler will not run under a supervisor that operates in a CDI only (DMGTMODE=CDI) data management environment.*
2. *See 10.8.7 for special considerations for FORTRAN installations.*

FORTIV

Specifies the current FORTRAN IV compiler modules.

NOTE:

See 10.8.7 for special considerations for FORTRAN installations.

ICAM

Specifies the current ICAM modules.

IMSMT

Specifies the current information management system multi-thread modules.

IMSST

Specifies the current information management system single-thread modules.

IVP

Specifies the current installation verification procedure modules.

LINKER

Specifies the current linkage editor modules. (The system object library file, \$Y\$OBJ, is abbreviated as a result of linker exclusion.)

MENUS

Specifies the current menu services modules.

OCL

Specifies the current operating control language (OCL) modules.

OLM

Specifies the current online maintenance modules for the control system.

OLMC

Specifies the current online maintenance modules for communications.

OS4

Specifies the current Operating System/4 modules.

RPGARPT

Specifies the current RPG II auto-report modules.

RPGEDT

Specifies the current RPG II editor modules.

RPGII

Specifies the current RPG II compiler modules.

SAM

Specifies the current system activity monitor modules.

SFGEN

Specifies the current screen format generator modules.

SORT

Specifies the current sort/merge modules.

SORT3

Specifies the current sort/merge modules for System/3.

SP00L

Specifies the current spooling modules.

SY3

Specifies the current System/3 modules.

SY32

Specifies the current System/32 modules.

UTSC0B

Specifies the current UTS400 COBOL compiler modules.

UTSEP

Specifies the current UST400 edit processor modules.

UTS400

Specifies the current UTS400 upline link, load, and dump load modules and the upline dump and downline load procs.

VSB

Specifies the current verify system build modules.

360/20EM

Specifies the current 360/20 emulator modules.

92/93EM

Specifies the current 9200/9300 emulator modules.

Keyword Parameter ATRANS:**ATRANS=NO**

Specifies that an alternative transient file is not to be created on the SYSOUT volume for backup service.

Keyword Parameter COS:

$$\text{COS} = \left\{ \begin{array}{l} 1 \\ 2 \\ 3 \end{array} \right\}$$

Specifies the version of control only storage (COS) that is copied from the current OS/3 release volume to the output volume SYSOUT. These versions have the following capabilities:

1 = standard 1K COS.

2 = standard 2K COS.

3 = optimized 2K COS. This is part of an optional performance feature for 90/40 processors only.

If omitted, 1 is assumed.

NOTE:

COS version 1 (1K) does not support IMS, FORTRAN IV, extended COBOL, or COBL74.

Keyword Parameter FILELOCK:

$$\text{FILELOCK} = \left\{ \begin{array}{l} n \\ 80 \end{array} \right\}$$

Specifies the number of files for which space is to be reserved for the storage of dynamic file lock share information in the file lock/share table (\$Y\$SHR). Maximum number of files is 999.

Keyword Parameter CATVSN:

$$\text{CATVSN} = \text{vsn}$$

Specifies the volume serial number of the disk whose catalog file is to be copied onto the SYSRES being created.

The following keyword parameters let you add to or override the computed cylinder sizes of your system library files. To add to the computed size, specify $+n$; to override the computed size, simply specify n as the cylinder size. If you do not specify these parameters, your system automatically computes the cylinder sizes of your system library files for you.

Keyword Parameter \$Y\$LOD:

$$\text{\$Y\$LOD} = \left\{ \begin{array}{l} +1-999 \\ 1-999 \end{array} \right\}$$

Specifies the cylinder size of your system load module library files.

Keyword Parameter $\$Y\JCS :

$$\$Y\$JCS = \begin{cases} +1-999 \\ 1-999 \end{cases}$$

Specifies the cylinder size of your system job control stream library files.

Keyword Parameter $\$Y\MAC :

$$\$Y\$MAC = \begin{cases} +1-999 \\ 1-999 \end{cases}$$

Specifies the cylinder size of your system macro library files.

Keyword Parameter $\$Y\OBJ :

$$\$Y\$OBJ = \begin{cases} +1-999 \\ 1-999 \end{cases}$$

Specifies the cylinder size of your system object module library files.

Keyword Parameter $\$Y\SRC :

$$\$Y\$SRC = \begin{cases} +1-999 \\ 1-999 \end{cases}$$

Specifies the cylinder size of your system source module library files.

5. Emulator (EMULAT) Configuration

5.1. GENERAL

The EMULAT section allows you to configure an emulator for your previous SPERRY UNIVAC 9200/9300 System or IBM 360/20 System at system generation time. This section allows you to submit the emulator descriptor statements and configuration options that describe your previous hardware and software configurations. It also details how your programs are to be emulated. The descriptor statements immediately follow the statement with the EMULAT parameter specified in the label field. This statement signifies the start of the emulator section, which is delimited by the statement with END coded in the label field. If SG\$EMJCL is run in the spooling mode, the emulator JCL statements produced are preceded by two blank statements and a job accounting statement. These statements must be removed before using the parameter set to execute the emulator.

It is not the intent here to explain the specifics of preparing the emulator descriptor statements; the process is an involved one and requires that you have sufficient background information to properly use the parameters associated with these statements. It is recommended, therefore, that you familiarize yourself with the emulation data presented in the 9200/9300 emulation/conversion user guide, UP-8063 (current version) or 360/20 emulation/conversion user guide, UP-8064 (current version) before attempting to use the EMULAT section. A basic flowchart for the EMULAT section is illustrated in Figure 5-1.

Format:

```
LABEL          ΔOPERATIONΔ
-----
EMULAT
[emulator descriptor statements]
END
```

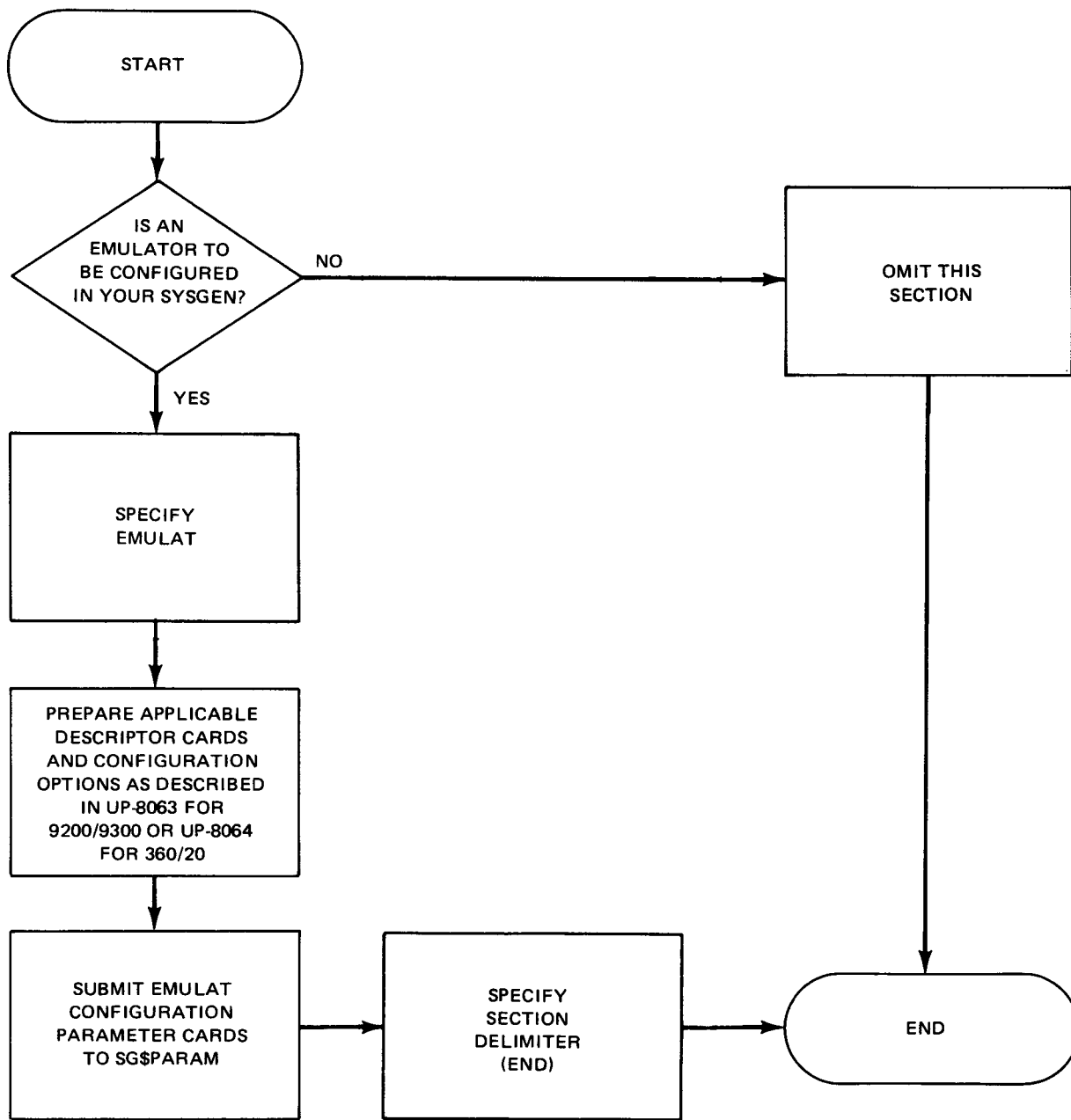


Figure 5-1. Flowchart for EMULAT Section

5.2. CREATING THE EMULATOR LOAD MODULE

The emulator load module is created by the job control stream SG\$EMUMK, which when initiated by a keyin at the system console or workstation, assembles and links your particular emulator. This job control stream and the sequence in which it is to be executed in the SYSGEN process appears in the output listing prepared by the SG\$PARAM job. The parameters for the EMULAT section may appear anywhere in the data stream of the SG\$PARAM job, except between the SUPGEN and I/OGEN sections, or they may be submitted as the only data section to SG\$PARAM. You have the option of submitting the EMULAT section with your supervisor configuration or as a separate section. Once SG\$PARAM has prepared its sequenced list of job control streams to be executed, all those job control streams must be completed before you can configure another emulator (run SG\$PARAM with the new EMULAT parameters). Therefore, only one emulator can be configured at a time. You may, however, resubmit the EMULAT section to SG\$PARAM as many times as necessary to resolve errors.

If you want to produce the job control statements required to execute your programs under the newly configured emulator, simply initiate the SG\$EMJCL job control stream for each program to be emulated. This option is also listed in its proper sequence of execution by the SG\$PARAM job. A diagnostic listing is provided following the processing of the emulator descriptor statements.



6. Communication (COMMCT) Configuration

6.1. GENERAL

The communication configuration parameters described in this section allow you to configure an integrated communication access method (ICAM) symbiont for your system. You have the option of submitting the COMMCT section with your supervisor configuration section or as a separate entity if only ICAM is to be configured. Only one COMMCT section may be configured at a time. That is, before you submit a second set of COMMCT parameters to the SG\$PARAM for processing, you must do two things. First, you must execute the job control stream SG\$COMMK, which assembles and links your ICAM symbiont. Second, you must execute all the remaining job control streams specified in the sequenced list prepared by SG\$PARAM. You may, however, resubmit the COMMCT parameters as many times as necessary to resolve errors.

If you want to use your ICAM terminals as interactive workstations, be sure to specify the following:

- During SUPGEN (Section 2):
 - Specify values for the number of lines and adapters in your communications network (COMM parameter).
 - Specify all applicable interactive keywords.
- During I/OGEN (Section 3):
 - Specify REMOTE workstations.
- During COMMCT:
 - Specify CCA TYPE=(GBL,,node) (global network).
 - Specify LOCAP TYPE=(DMI) (demand mode interface); MT=YES (multitasking); IAS=(YES, OFF) (interactive services); and MODE=SYSTEM (remote workstation).
 - Specify TERM TCTUPD=YES (translate tables for interactive services) for any terminal (other than a remote workstation) that is used as an interactive workstation.

In addition, be sure to use the field-protect feature on the terminal; otherwise, you will encounter errors when using interactive products.

The OS/3 interactive services commands and facilities user guide/programmer reference, UP-8845 (current version), outlines what you need to know to use interactive services with your terminals as remote workstations.

The COMMCT parameter formats are followed by Figure 6-1, which illustrates a basic flowchart for the COMMCT section.

Format:

LABEL	△OPERATION△
COMMCT	<pre> {[network-definition-macroinstructions] (Note 1.)} {CCAMOD=name (Note 2)} MCP [MCPNAME={C1} {Cn} {Mn}] [MCPVOL=vsn] [CACH={ (nn,network-name,line number) (nn,line speed [{FULL}] [{AUTODIAL,nn,eon}] [{half}] [{manual}] [,SWITCHED][,SYNC][,ILA] (nn,DIALER[,eon]) }] [PIOST=(nn-1,...,nn-n)] [FASTLOAD=NO] [BPOOLEXP=NO] </pre>
END	

NOTES:

1. Each network definition must begin with a CCA macroinstruction and end with an ENDCCA macroinstruction. For example:

```

CCA1 CCA Operands
    .
    . } Network macroinstructions
    .
ENDCCA
CCA2 CCA Operands
    .
    . } Network macroinstructions
    .
ENDCCA
                    
```

2. Each CCAMOD parameter must be followed by an ENDCCA parameter. For example:

CCAMOD=CCA1 CCAMOD=CCA2
ENDCCA ENDCCA

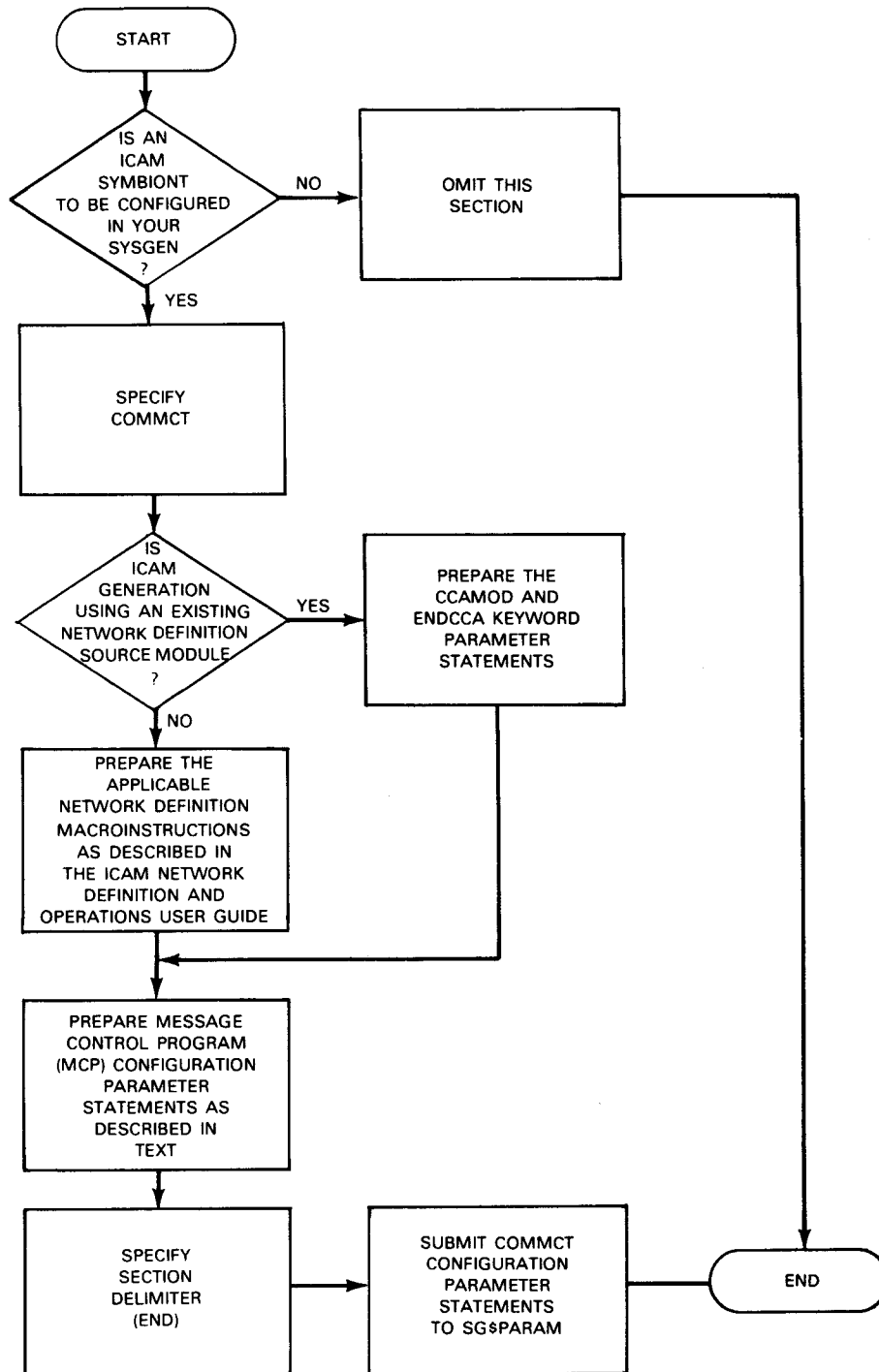


Figure 6-1. Flowchart for COMMCT Section

6.2. COMMCT PARAMETER DEFINITIONS

The parameters used to define the COMMCT section are divided into two categories: network definitions and message control program (MCP) definitions. The network definition portion creates a communications control area (CCA) and includes the processing modules needed by ICAM. The MCP portion specifies the name of the ICAM symbiont, the disk volume where you want it stored, and the characteristics of each communications line.

6.2.1. Network Definition

You may code the network definition part of COMMCT in two ways:

1. Coding network definition macroinstructions as described in the ICAM network definition and operations user guide, UP-8947 (current version).
2. Coding the CCAMOD keyword parameter to include a previously saved network definition source module.

An ICAM symbiont may contain as many as four logical network definitions plus one physical network definition. This means you may include up to four sets of network definition macroinstructions or four CCAMOD parameters (or a combination adding up to four in the COMMCT section, plus an additional network definition or CCAMOD parameter for a physical network. The logical network definitions support three ICAM interfaces: standard (STDMCP), transaction control (TCI), and direct data (DDI). A physical network definition supports only the communications physical interface (CPI). In addition, a global (GBL) specification allows for a mixture of interfaces within a single network.

As we discussed in the introduction section, SG\$PARAM performs syntax and illogical situation checking. For the COMMCT phase, it checks to see that you have correctly spelled all of the operands, that you coded them in the correct places, and that you have not specified a network that is impossible to configure. For example, the parameter processor checks to make certain that a dialed line is possible if you specify a telephone number, because some terminals are never used on dialed lines.

In cases where you make illogical or inconsistent choices, the parameter processor substitutes default values for you. And it flags these substituted values for you in its output listing. Obviously, you are the best judge of whether a substitution is correct for your situation. When generating a communications symbiont be sure that the SYSGEN parameter processor provides correct default substitutions for the ICAM element that you want to generate.

The ICAM network definition and operations user guide, UP-8947 (current version) describes the default values for the COMMCT phase.

6.2.1.1. Writing a New Network Definition

This manual does not describe the ICAM network definition macroinstructions, but only their use in generating the ICAM symbiont. You should familiarize yourself with the ICAM network definition and operations user guide, UP-8947 (current version) before attempting to configure an ICAM symbiont. The network definition macroinstructions immediately follow the statement with COMMCT coded in the label field. Each network definition starts with a CCA macroinstruction and ends with an ENDCCA macroinstruction. A physical I/O only CCA macroinstruction must be the last CCA in a multiple CCA generation.

With the exception of the MCP portion of COMMCT, which is presented in 6.2.2, the coding of network definition macroinstructions follows the OS/3 assembler coding rules. These rules apply:

- Each operand is followed by a comma, except the last operand.
- Multiple operands may be specified on one statement.
- A macroinstruction may be continued on additional statements by using standard continuation conventions.
- An operand, its specification, and its trailing comma (if required) must start and end on the same statement.

6.2.1.2. Using an Existing Network Definition

Keyword Parameter CCAMOD:

`CCAMOD=name`

Specifies the 4-character name of a previously saved network definition in the system source library file (\$Y\$SRC) of your SYSRES volume or the OS/3 release volume (OS/3REL). You specify this source module with the CCAMOD parameter in place of network definition macroinstructions. Each CCAMOD parameter must be followed by an ENDCCA parameter.

6.2.2. MCP Keyword Parameters

The MCP portion of COMMCT must begin with MCP coded as a nonlabel parameter. This parameter functions as a delimiter that signifies the end of the network definition and the start of the MCP parameters. The MCP parameters and the COMMCT section are delimited by the END statement coded in the label field. The MCP parameters differ in format from the network definition macroinstructions because they follow the SYSGEN coding rules. That is, they are delimited by blank characters, and their parameters can be submitted on separate statements without continuation indicated. In other words, be sure to leave column 72 blank.

Keyword Parameter MCPNAME:

MCPNAME= $\left\{ \begin{array}{l} C_1 \\ C_n \\ M_n \end{array} \right\}$

Identifies the indexed name of the ICAM symbiont, where n is a decimal number from 1 to 9. A maximum of 18 ICAM symbionts may be maintained on a given SYSRES volume. Duplicate names are not possible, as the name specified replaces a previous symbiont of the same name. The name is used to initiate the loading of the ICAM symbiont through the supervisor symbiont loader technique.

Keyword Parameter MCPVOL:

MCPVOL=vs_n

Specifies the volume serial number for the SYSRES volume on which the ICAM symbiont is to reside. The symbiont is copied into the \$Y\$LOD library of the specified volume.

If omitted, the volume serial number defaults to that of the OS/3 release volume.

Keyword Parameter CACH:

The MCP keyword parameter CACH describes each line adapter that the ICAM symbiont accesses or supports on the communications adapter (CA). It has three formats that identify line adapters used by communications lines, dialers, and virtual channels.

- Format 1 is the easiest to use; it lets system generation access your ICAM network definition and determine the line adapter requirements automatically. If you use this format to define an automatically-dialed (for output) switched line, do not also specify a format 3 CACH statement for the dialer line adapter.
- Format 2 lets you explicitly define the requirements for a line adapter that will carry data. When you use it to define an automatically-dialed switched line line adapter you must also include a format 3 CACH statement to define the dialer line adapter. Communications physical interface (CPI) users and universal data link control (UDLC) intelligent line adapter (ILA) users must use this format.
- Format 3 defines dialer line adapters. You only need to use this format when you have used format 2 to define a line adapter for an automatically dialed switched line.

Logical network users (including global network users) may specify either Format 1 or Format 2 for line adapters used by communications lines. Communications physical interface (CPI) network users and UDLC intelligent line adapter users must use Format 2. Format 3 is used in conjunction with Format 2 and describes a dialer line adapter. You use it only when the auto dial capability is included for a communications line.

Because ICAM supports local workstations that do not require CACH information, the CACH parameter is optional if you specified COMM=YES during SUPGEN (2.2).

Format 1:

```
CACH=(nn,network-name,line-number)
```

where the positional subparameters are:

nn

A 2-digit decimal number identifying the CA port.

network-name

Specifies the 4-character name used in the label of the CCA macro.

line-number

A 2-digit decimal number identifying a line that uses this port by its order in the network definition; i.e., the line-number of the first line defined in the network definition is 01. If autodial capability is specified for this line by the DIALER operand of the LINE macroinstruction, an auto-dial port is generated automatically.

For example, in the following partial network definition:

```
CCA1   CCA   ...
      .
      .
      .
LNE1   LINE ...,TYPE=(2400,SWCH,SYNC),...
      .
      .
      .
LNE2   LINE ...,TYPE=(9600,SYNC),...
```

these CACH statements would be appropriate in the MCP:

```
CACH=(06,CCA1,1)
CACH=(07,CCA1,2)
```

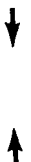
Format 2:

```
CACH=(nn,line-speed [,{FULL}] [,{AUTODIAL,nn,eon}] [,{SWITCHED}] [,{SYNC}] [,{ILA}]
      [,{half}] [,{manual}])
```

where:

nn

Is a 2-digit decimal number identifying a CA port.



Line-speed

Is a decimal number that specifies the maximum baud rate obtainable in the CA subchannel. The rates are listed in Table 6-1.

If this operand specifies a virtual channel (a VLINE), you must specify the same line speed value you specified in the TYPE operand of the applicable VLINE macroinstruction.

FULL

Specifies 2-way simultaneous transmission (full-duplex operation) using two CA ports. You must specify FULL for virtual channel lines.

If you omit this operand, 2-way alternate transmission (half-duplex operation) is assumed by default.

NOTE:

If an ICAM remote device handler uses 2-way-alternate protocol (half-duplex), the line must be defined as 2-way-alternate also. All ICAM remote device handlers utilize 2-way-alternate protocol except NTR, UDLC, ABM, and level 2 X.25 public data networks.

If 2-way simultaneous protocol is used, the same protocol must be specified in the ICAM generation (LINE and CACH).

2-way simultaneous modems and lines may be used with 2-way-alternate protocol if required.

AUTODIAL, nn, eon

Specifies that automatic dialing is to be performed. Also indicates that the data transfer port being defined has a dial adapter port associated with it to which dialing operations are directed.

If omitted, manual dialing is assumed or the line is a private line.

nn

Is a 2-digit decimal number of the port to which the dialing adapter is attached.

NOTE:

nn=04 to 15 and 20 to 31 (indicates where the dial adapter is attached for the port).

eon

Specifies an end-of-number code if required by the automatic calling unit. Refer to the operating instructions for your automatic calling unit for the required characters.

Table 6-1. Line Speed Values

User-Specified Value in CACH	CA Hardware Required Value
Asynchronous Line Speeds	
45	45.45
50	50.0
56	56.8
74	74.2
75	75.0
100	100.0
110	110.0
134	134.5
150	150.0
200	200.0
300	300.0
600	600.0
1050	1050.0
1200	1200.0
1800	1800.0
2400	2400.0
Synchronous Line Speeds	
Any decimal value less than 2000	Any decimal value less than 2000.0
2000	2000.0
2400	2400.0
4800	4800.0
7200	7200.0
9600	9600.0
19,200	19,200.0
48,000	48,000.0
56,000	56,000.0
64,000	64,000.0

SWITCHED

Indicates that the port supports switched network facilities only.

If omitted, dedicated line services are assumed.

SYNC

Specifies that synchronous operation is supported on this port.

If omitted, asynchronous operation is assumed.

ILA

Specifies that the Sperry Univac intelligent line adapter is used for bit-oriented procedures.

NOTE:

For 2-way, simultaneous lines, specify the even-numbered port; the odd-numbered port is automatically assigned. For intelligent line adapters, specify the odd-numbered port; the even-numbered port is automatically assigned. If you specify combinations of these lines, be sure that automatic assignments don't duplicate ports.

For example, in the following partial network definition:

```

CCA1   CCA   ...
      .
      .
      .
LNE1   LINE  ...,TYPE=(2400,SWCH,SYNC),...
      .
      .
      .
LNE2   LINE  ...,TYPE=(9600,SYNC),ID=07,...
      .
      .
      .
VLN1   VLINE ...,TYPE=(9600,ILA,FULL),ID=05,...

```

these CACH statements would be appropriate in the following partial MCP:

```

      .
      .
      .
CACH=(05,9600,ILA,FULL)
CACH=(06,2400,SWCH,SYNC)
CACH=(07,9600,SYNC)
      .
      .
      .

```

Format 3:

```
CACH=(nn,DIALER[,eon])
```

where the positional subparameters are:

nn

A 2-digit decimal number identifying the CA port used by the automatic calling unit.

DIALER

Specifies that an autodial adapter resides in this port.

eon

Specifies an end-of-number code if required by the automatic calling unit. Refer to the operating instructions for your automatic calling unit for the required characters.

Keyword Parameter PIOST:

PIOST=(nn-1,...,nn-n)

nn

A 2-digit decimal number identifying the address of the CA port that will receive priority interrupt handling. Up to seven ports may be specified.

Keyword Parameter FASTLOAD:

FASTLOAD=NO

Indicates that your ICAM symbiont suppresses the improved overlay loading facility. Suppressing this facility forces ICAM to perform a directory search each time it loads an overlay, instead of only the first time it loads that overlay.

Keyword Parameter BPOOLEXP:

BPOOLEXP=NO

Specifies that the dynamic buffer pool services expansion routine (BPSX) is not included in the ICAM generation. If you omit this parameter, the BPSX routine is automatically included in the generation. BPSX is not included for a transient TCI only or a CPI only ICAM.



7. NTR System Utility Module Generation (NTRGEN)

7.1. GENERAL

The NTR system utility module generation parameters described in this section allow you to configure an NTR (nine-thousand-remote) system utility load module for your system. An NTR system utility load module must be generated whenever a SPERRY UNIVAC Series 90 Data Processing System operating under OS/3 is going to be used as a remote device by a SPERRY UNIVAC 1100 Series Data Processing System. (For more information on the capabilities and operation of NTR, refer to the current version of the integrated communications access method (ICAM) utilities user guide, UP-8552.)

The NTRGEN phase of SYSGEN processes two distinct groups of keyword parameters: NTR keywords and LOCAL keywords. NTR keywords are used to define the general characteristics of the NTR module to be generated. LOCAL keywords define remote device handlers for the NTR module. Only one set of NTR keywords may be present in a SYSGEN run. Up to 14 sets of LOCAL keywords may be present. The NTR keywords are applicable to all the LOCAL sets provided for the generation of an NTR system utility generation module. The LOCAL keywords are unique to their respective set.

The first statement in the NTR generation set must be a statement with NTRGEN coded in the label field. This statement signifies the beginning of the NTR section. Following this statement are the statements containing the NTR and LOCAL keywords. Each set of statements is preceded by a label statement that identifies that particular group of keywords; the NTR set is preceded by a statement with NTR coded in the label field, and each LOCAL set is preceded by a statement with LOCAL coded in the label field. The last statement in the NTR generation set must be a statement with END coded in the label field to delimit the NTR section.

NTRGEN has the ability to accept and process various input NTR and LOCAL keyword set configurations. NTR keyword data may be followed or preceded by up to 14 sets of LOCAL keyword data, or NTR or LOCAL keyword data sets may be processed alone. This provides you with the ability to preprocess LOCAL keyword data sets and then link them with the NTR module when the NTR keyword data is processed. The job streams needed to produce an NTR system utility module are only produced when NTR keyword data is processed by NTRGEN, whether or not LOCAL keyword data sets are present. When the NTR section is omitted, LOCALS can be preassembled for future use by running the jobstream SG\$NTRMK.

In order for an NTR system utility module to be executed, an ICAM load module must have been generated with the following communication configuration (COMMCT) parameters: CCA TYPE=NTR, LINE DEVICE=NTR, and TERM FEATURES=NTR.

The supervisor used when executing the NTR system utility must have the following modules resident:

SM\$ATCH

SM\$LOCK

SM\$STXIT

SM\$TASK

These are specified through the RESMOD parameter at supervisor generation time (see Section 2).

A basic flowchart for generating an NTR system utility load module is illustrated in Figure 7-1.

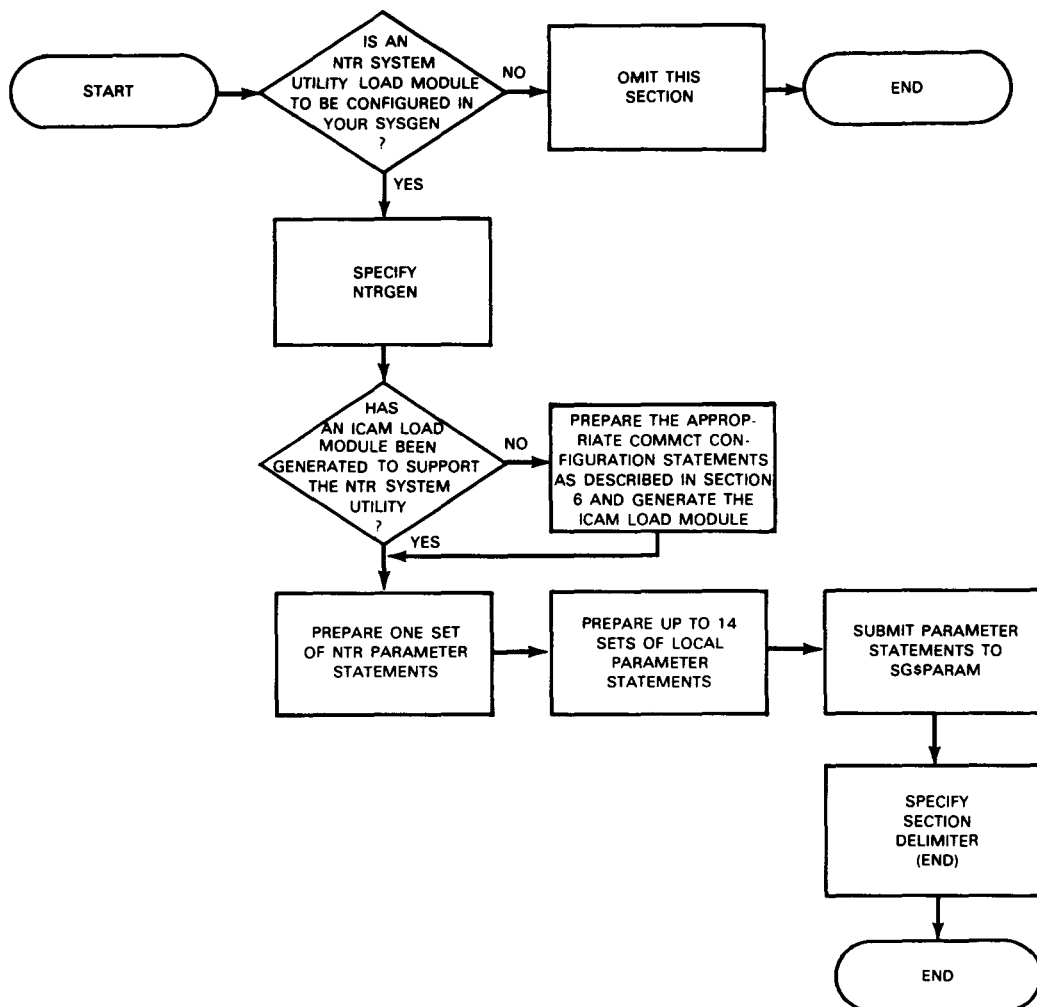


Figure 7-1. Flowchart for NTRGEN Section

LABEL	△OPERATION△
NTRGEN	
NTR	<pre> [NTRMOD=old-NTR-name [, { S }]] [0] NTRNAME=ntrname [NTRVOL=vsn] BLOCKIN=line-buffer-size (9999 max) [BLOCKOUT=line-buffer-size (9999 max)] [LINESP={ n }] [96] LINE=line-name (Must be the same as CCA label name) NET=network-name (Must be the same as CCA label name) SITE=id [TASK=taskname, { S }] [0] [PRTSPnn=hh] [NPRTSPnn=hh] </pre>
LOCAL	<pre> TASKNAME=taskname BLKSIZE=image-buffer-size [COMPRESS={ YES }] [NO] DEVICE=n [FUNCD={ function-codes }] [04] LFD=filename [TRANS={ YES }] [NO] [TYPE={ READER }] [PRINTER] [PUNCH] [VFBLN={ n }] [88] [VFBDEN={ 6 }] [8] [VFBHOME={ n }] [1] [VFIFORM=formname] </pre>
END	

7.2. NTRGEN PARAMETER DEFINITIONS

The parameters used to define the NTRGEN section are divided into two categories: the NTR keyword parameters and the LOCAL keyword parameters. A description of these keywords is provided in 7.2.1 and 7.2.2. A detailed description of these keywords and the functions they invoke is contained in the integrated communication access method utilities user guide, UP-8552 (current version).

7.2.1. NTR Keyword Parameters

Keyword Parameter NTRMOD:

NTRMOD=old-NTR-name [, { S }]

Identifies a previously generated NTR network by name and module type, so it may be linked with the LOCAL keyword sets being processed in the current run. If used, NTRMOD must be the first keyword specified in this section; all other parameters except NTRVOL, NTRNAME, and TASK are ignored, and a diagnostic message is written in the output listing.

Positional Subparameters:

old-NTR-name

Specifies the name of the previously generated NTR module and does not include any LOCAL keyword parameter sets.

S

Identifies a source module.

⊙

Identifies an object module.

If omitted, it is assumed that the NTR module is an object module residing in \$Y\$OBJ on OS/3 REL.

Keyword Parameter NTRNAME:

NTRNAME=ntrname

Specifies the name of the NTR network being generated.

Keyword Parameter NTRVOL:

NTRVOL=vsn

Specifies the volume serial number for the SYSRES volume on which the NTR system utility module is to reside. The NTR module is copied into the \$Y\$LOD library of the specified volume.

If omitted, the volume serial number defaults to that of the OS/3 release volume.

Keyword Parameter BLOCKIN:**BLOCKIN=**line-buffer-size

Specifies the line-buffer size in bytes for transmission from the 1100 system to the OS/3 system (SOH through BCC) as specified by the 1100 system. For the 1100 system versions 33 and earlier, the line-buffer size is either 240 bytes or 246 bytes when through half-word CTMC; for later versions, this value is configurable and should not exceed 9999 bytes.

Keyword Parameter BLOCKOUT:**BLOCKOUT=**line-buffer-size

Specifies the line-buffer size in bytes for transmission from the OS/3 system to the 1100 system (SOH through BCC) as specified by the 1100 system. For the 1100 system versions 33 and earlier, the line-buffer size is 121 bytes; for later versions, this value is configurable and should not exceed 9999 bytes.

If omitted, the value specified for BLOCKIN size is assumed.

Keyword Parameter LINESP:**LINESP=**{ n }
 { 96 }

Specifies the line speed being used.

Keyword Parameter LINE:**LINE=**line-name

Specifies the same line-name appearing as the label in the LINE macro under the CCA definition in the ICAM generation.

Keyword Parameter NET:**NET=**network-name

Specifies the same network-name appearing as the label for your CCA definition in the ICAM generation.

Keyword Parameter SITE:**SITE=**id

Specifies the full 6-character site identification (id) number configured for your 1100 series system. The OS/3 processor uses this 'id' for sign on (translated to truncate ASCII with odd parity). The operator, during execution of the NTR utility, can override this keyword parameter by use of the SIGN-ON key-in as described in the ICAM utilities user guide, UP-8552 (current version).

Keyword Parameter TASK:

TASK=taskname, { S }
(O)

Identifies a 1- to 6-character name and module type (source or object) of a previously generated NTR remote device handler. This keyword may be specified up to 14 times. The total TASK keywords plus LOCAL keyword sets may not exceed 14. Only object modules are permitted for user-own-code tasks.

Positional Subparameters:

taskname

Specifies a taskname not given in this run but defined by a previous LOCAL keyword parameter TASKNAME, or an object module name of a user-own-code task.

S

Specifies the LOCAL task was placed in \$Y\$SRC of your SYSRES volume by a previous SG\$PARAM job and must be assembled by the SG\$NTRMK job stream.

If omitted, it is assumed that the module is an object module that resides in \$Y\$OBJ on OS/3REL.

Keyword Parameter PRTSPnn=hh:

Specifies, for printer-type devices only, a hexadecimal byte used for space compression when TRANS=NO. This value corresponds to the 2-digit, decimal function codes (nn) listed in Table 7-1.

For example, PRTSP03=20 indicates that hexadecimal 20 is the space character for printers with function code 03 when the LOCAL keyword parameter TRANS=NO.

Keyword Parameter NPRTSPnn=hh:

Specifies, for nonprinter-type devices only, a hexadecimal byte used for space compression or decompression when TRANS=NO. This value corresponds to the 2-digit, decimal function codes (nn) listed in Table 7-1.

For example, NPRTSP05=05 indicates that hexadecimal 05 (field data space) is the space character for all nonprinter-type devices with function code 05 when the LOCAL keyword parameter TRANS=NO.

Table 7-1. Space Compression Characters

nn (decimal)	hh (hexadecimal)	
	Printer (PRTSP)	Nonprinter (NPRTSP)
00	05	FF
01	20	05
02	05	05
03	20	20
04	FF	20
05	FF	05
06	FF	20
07-14	FF	FF

7.2.2. LOCAL Keyword Parameters

Keyword Parameter TASKNAME:

TASKNAME=taskname

Specifies a 1- to 6-character name used to identify the NTR remote device handler being generated by this set of LOCAL keywords.

Keyword Parameter BLKSIZE:

BLKSIZE=image-buffer-size

Specifies the maximum image buffer size for the unit record device; this size should be a multiple of 12 for the card punch.

Keyword Parameter COMPRESS:

COMPRESS=NO

Specifies that the space compression option is not included for the reader/input device (TYPE) sending data to your 1100 series system.

If omitted, space compression is performed on all data sent to your 1100 series system by the reader/input device defined in the TYPE keyword parameter. The space compression character is defaulted to X'40' (EBCDIC space) when TRANS=YES, or taken from the NTR space compression table (Table 7-1) when TRANS=NO.

Keyword Parameter DEVICE:

DEVICE=n

Specifies the local device numbers for the NTR remote device handler being generated by this set of LOCAL keywords. This parameter must agree with the 1100 system device number.

Keyword Parameter FUNCD:

FUNCD={function-codes}

Specifies a 2-digit decimal function code that establishes the translation requirements for each image sent to your 1100 system. This parameter is used in conjunction with the TYPE and TRANS keyword parameters. The function codes and their respective meanings are listed for both input and output device types in Table 7-2.

Table 7-2. Device Function Codes

Function Code ^①	TRANS=YES		TRANS=NO ^②
Card Readers and Input Devices			
	Read	Send	Send
01	Hex fielddata ^③	Fielddata	Fielddata
02	EBCDIC	Fielddata	Fielddata
03	Hex fielddata ^③	ASCII	ASCII
04	EBCDIC	ASCII	ASCII
05	EBCDIC	Fielddata	Fielddata
06	EBCDIC	ASCII	ASCII
Card Punches and Nonprinter Output Devices			
	Receive	Punch	Receive
01	Fielddata	Hex fielddata ^③	Fielddata
02	Fielddata	EBCDIC	Fielddata
03	ASCII	Hex fielddata ^③	ASCII
04	ASCII	EBCDIC	ASCII
05	Fielddata	EBCDIC	Fielddata
06	ASCII	EBCDIC	ASCII
Printers			
	Receive	Print	Receive
00	Fielddata	EBCDIC	Fielddata
01	ASCII	EBCDIC	ASCII
02	Fielddata	EBCDIC	Fielddata
03	ASCII	EBCDIC	ASCII

NOTES:

- ① The function code is controlled by the 1100 system for all data sent to NTR.
- ② For TRANS=NO, NTR passes the data untranslated. Fielddata/ASCII is the standard 1100 correspondence for the device type and function code.
- ③ Hex fielddata is the hexadecimal equivalent of fielddata (Hollerith punch card codes).

Keyword Parameter LFD:

LFD=filename

Specifies the filename as it appears on the // LFD job control statement.

Keyword Parameter TRANS:

TRANS=NO

Specifies that the NTR translation feature is not included for the device type defined by the TYPE keyword parameter. (Space compression character is determined by function code. See Table 7-1.)

If omitted, the images sent to or received from your 1100 system are translated, respectively, to or from EBCDIC according to function code (FUNCD keyword parameter). Space compression character is defaulted to the EBCDIC space (X'40').

Keyword Parameter TYPE:TYPE= {
 READER
 PRINTER
 PUNCH
}

Specifies the device type for the NTR remote device handler being generated by this set of local keywords.

NOTE:*Because system-supplied NTR locals use unit record system access technique, to access a diskette instead of a card reader or punch, you must write your own locals that use standard data management. To do so, see ICAM utilities user guide, UP-8552.***Keyword Parameter VFBLEN:**VFBLEN= {
 n
 88
}

Specifies the number of lines (1 to 192) on the printer form.

Keyword Parameter VFBDEN:VFBDEN= {
 6
 8
}

Specifies the number of print lines per inch (6 or 8).

Keyword Parameter VFBHOME:
$$\text{VFBHOME} = \left\{ \begin{array}{l} n \\ \text{---} \end{array} \right\}$$

Specifies the location (line 1 to line 192) of the home paper position, which is the position where the first line of printer output is placed on each form (page). The value specified must not exceed the value specified by the VFBLEN keyword parameter.

Keyword Parameter VFBFORM:
$$\text{VFBFORM} = \text{formname}$$

Specifies the name (1- to 8-alphanumeric characters) to be associated with the form. A console message tells the operator to load this form on the printer. If omitted, no name is associated with the form.

8. COBOL Option Values Generation (COBGEN)

8.1. GENERAL

The parameter specifications described in this section allow you to configure processing option values for the ANSI '74 COBOL compiler (different from the standard option defaults). The parameter processor accepts and validates each COBGEN parameter, flags invalid specifications as errors, and substitutes the standard default options in their places. The changes specified affect the compiler on:

- the volume specified by the SYSOUT parameter in the RESGEN section (Section 4) if included as part of the SYSGEN operation; or
- the release volume if the RESGEN section is not part of the SYSGEN operation.

For more information on COBGEN, see the 1974 ANSI '74 COBOL programmer reference, UP-8613 (current version).

The COBGEN parameter specifications are keypunched onto cards or keyed in at the workstation and must be immediately preceded in the control stream by a statement with COBGEN coded in the label field. This statement signifies the beginning of the COBGEN section. The COBGEN section is delimited by a statement with END coded in the label field.

A basic flowchart for changing standard option defaults used by the ANSI '74 COBOL compiler is shown in Figure 8-1.

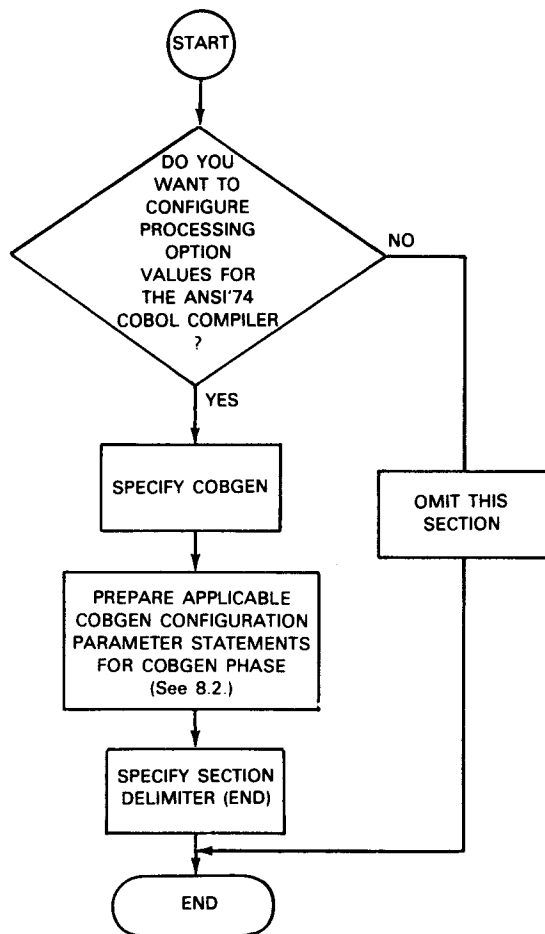


Figure 8-1. Flowchart for COBGEN Section

Format:

LABEL	△OPERATION△
COBGEN	<pre> [AXNON={NO } {YES}] [AXREF={NO } {YES}] [CALLST={NO } {YES}] [CDMIO={NO } {YES} {MI}] [CMCSST={NO } {YES}] [CPYTXT={NO } {YES}] </pre>

(continued)

LABEL	OPERATION
COBGEN (cont)	<p>[DIAG={NO } {YES }]</p> <p>[DIAGWN={NO } {YES }]</p> <p>[FIPS={ 1 } { 2 } { 3 } { 4 } { 5 }]</p> <p>[IMSCOD={NO } {YES }]</p> <p>[IN=module name/{filename } {SYSSRC }]</p> <p>[LIN={name } {COPYS }]</p> <p>[LIST={NO } {YES }]</p> <p>[LNKCON={NO } {YES }]</p> <p>[LSTREF={NO } {YES }]</p> <p>[LSTWTH={121-160 } {120 }]</p> <p>[MAP={NO } {YES }]</p> <p>[MXNON={NO } {YES }]</p> <p>[MXREF={NO } {YES }]</p> <p>[OBJ={name } {SYSRUN }]</p> <p>[OBJLST={NO } {YES }]</p> <p>[OBJMOD={NO } {YES }]</p> <p>[PAGOVF={NO } {YES }]</p> <p>[PROVER={NO } {YES }]</p> <p>[SPRLST={NO } {YES }]</p> <p>[SPROUT={ 1 } { 2 } { 3 }]</p>

(continued)

LABEL	△OPERATION△
COBGEN (cont)	<pre> [SYNCHK={NO } {YES}] [TRNADR={NO } {YES}] [TRUNC={NO } {YES}] </pre>
END	

8.2. COBGEN KEYWORD PARAMETERS

Keyword Parameter AXNON:

AXNON=YES

Suppresses nonreferenced entries in the alphanumerically ordered cross-reference listing.

Keyword Parameter AXREF:

AXREF=YES

Specifies an alphanumerically ordered cross-reference listing.

Keyword Parameter CALLST:

CALLST=YES

Specifies that subprograms named by the literal option of the CALL statement are to be linked with the main program.

Keyword Parameter CDMIO:

CDMIO=NO

Specifies that DTF interfaces will be used for all files except workstation files.

CDMIO=YES

Specifies that consolidated data management (CDM) will be used for all files except ISAM and SAM disk files.

CDMIO=MI

Specifies that CDM interfaces will be used for MIRAM and workstation files only; DTF interfaces will be used for all other files.

This parameter is applicable only for a system that supports both CDM and DTF interfaces.

Keyword Parameter CMCSST:

CMCSST=YES

Specifies that the COBOL communications control module is bound with the COBOL object program.

Keyword Parameter CPYTXT:

CPYTXT=NO

Specifies that copied COBOL library text is not to be included in source listing.

Keyword Parameter DIAG:

DIAG=NO

Specifies diagnostic listing is not to be prepared.

Keyword Parameter DIAGWN:

DIAGWN=NO

Specifies that warning diagnostics are not to be included in diagnostic listing.

Keyword Parameter FIPS:

$$\text{FIPS} = \left. \begin{array}{c} 1 \\ 2 \\ 3 \\ 4 \\ 5 \end{array} \right\}$$

Specifies FIPS PUB 21-1 flagging options.

For more information about these options, refer to Appendix D, OS/3 '74 ANSI COBOL programmer reference, UP-8613 (current version).

Keyword Parameter IMSCOD:

IMSCOD=YES

Specifies IMS compatible code. (COBOL programs are executed under control of IMS as action programs. The COBOL language elements restricted by IMS are flagged and deleted.)

Keyword Parameter IN:

$$\text{IN} = \text{module name} / \left. \begin{array}{c} \text{filename} \\ \text{SYSSRC} \end{array} \right\}$$

Specifies a 1- to 8-character name of a source module in the library and the 1- to 8-character LFD name identifying the file in which that module resides.

Keyword Parameter LIN:

$$\text{LIN} = \left. \begin{array}{c} \text{name} \\ \text{COPY} \end{array} \right\}$$

Specifies a 1- to 8-character LFD name that identifies the file on which the COPY library resides. This name is used if the library name is omitted from the COPY statement. Do not specify LIN if you are using JPROCS.

Keyword Parameter LIST:

LIST=NO

Specifies source program listing is not produced.

Keyword Parameter LNKCON:

LNKCON=NO

Specifies linker control statements are not included in object module.

Keyword Parameter LSTREF:

LSTREF=YES

Specifies a source listing with definition references.

Keyword Parameter LSTWTH:

LSTWTH=120-160

Specifies listing page width in number of characters printed per line. Values range from 120 to 160 characters per line. The default value is 120 characters.

Keyword Parameter MAP:

MAP=YES

Specifies an object program locator/MAP listing.

Keyword Parameter MXNON:

MXNON=YES

Suppresses nonreferenced entries in the MAP listing with cross-references.

Keyword Parameter MXREF:

MXREF=YES

Specifies MAP listing with cross-references.

Keyword Parameter OBJ:

OBJ={ name
 SYSRUN }

Specifies a 1- to 8-character LFD name of the file on which the generated object module is to be stored.

Keyword Parameter OBJLST:

OBJLST=YES

Specifies an object program listing.

Keyword Parameter OBJMOD:**OBJMOD=NO**

Suppresses production of an object module.

Keyword Parameter PAGOVF:**PAGOVF=YES**

Specifies automatic printer page eject in the object program.

Keyword Parameter PROVER:**PROVER=YES**

Produces a listing of procedure names and verbs with associated source line numbers and object program relative addresses.

Keyword Parameter SPRLST:**SPRLST=YES**

Suppresses all listings unconditionally. This parameter overrides all other listing specifications.

Keyword Parameter SPROUT:**SPROUT=** $\left. \begin{array}{l} 1 \\ 2 \\ 3 \end{array} \right\}$

Suppresses compiler output (except source listing, diagnostic listing, and related options) when severity code level 1, 2, or 3 errors are encountered.

Keyword Parameter SYNCHK:**SYNCHK=YES**

Specifies syntax check compile only. When SYNCHK=YES, the compiler produces only source program and diagnostic listings.

Keyword Parameter TRNADR:**TRNADR=NO**

Suppresses generation of a transfer address in the object module, in which case, the program cannot be executed unless it is called.

Keyword Parameter TRUNC:**TRUNC=NO**

Specifies that data truncation and detection of SIZE ERROR on binary and packed decimal items are based on the actual storage size allocated to those items. If omitted, data truncation and detection are based on the specified decimal digits in the PICTURE character string.



**PART 3. SYSGEN EXAMPLES, OPERATING
PROCEDURES, AND STATEMENT
CONVENTIONS**

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9. System Generation (SYSGEN) Examples

9.1. GENERAL

The coding samples described in 9.2 through 9.7 show typical examples of system generation (SYSGEN) for OS/3. They include creating a basic supervisor on the OS/3 release volume; creating a tailored SYSRES pack that includes a full batch supervisor, an interactive supervisor, and an ICAM network; adding a supervisor to a tailored SYSRES pack; duplicating an existing supervisor on a new release of OS/3; generating an NTR utility; and configuring processing option values for the ANSI'74 COBOL compiler.

9.2. CREATING A BASIC SUPERVISOR ON THE OS/3 RELEASE VOLUME

This example illustrates the parameter statements necessary to generate a basic supervisor onto the OS/3 release volume.

LABEL	△OPERATION△
SUPGEN	SUPVRNAM=SY\$BAS JOBSLOTS=2 TIMER=MAX PRIORITY=2 COMM=1,12 FLOATPT=YES
END	
I/OGEN	
COP	
PRINTER	
READER	
PUNCH	
DISC	TYPE=8418 ADDR=00-03
END	
// FIN	

The SUPGEN section defines a basic supervisor designed for small main storage machines. It supports two job slots and communications.

The I/OGEN section identifies each I/O device configured in the system: one console printer; one printer, reader, and punch all with default specifications; and a disk of type 8418 at an address that is not the default address.

9.3. CREATING A TAILORED SYSRES PACK FOR A BATCH SYSTEM

This example generates a tailored SYSRES pack that includes a full batch supervisor (SY\$ALL) and an ICAM network.

LABEL	△OPERATION△
SUPGEN	SUPVRNAM=SY\$ALL PRIORITY=5 JOBSLOTS=7 DMGTMODE=MIXED TRANS=2 TIMER=MAX COMM=1,12 FLOATPT=YES FILELOCK=YES RESMOD=SM\$TASK,SM\$STIXT,SM\$L0D RESMOD=SM\$GTPUT,SM\$ATCH,SM\$LOCK SPOOLING=OUTPUT
END	
I/OGEN	
COP	
PRINTER	TYPE=0770
PRINTER	TYPE=0768
READER	TYPE=0716
PUNCH	TYPE=0604
DISC	TYPE=8414 ADDR=40-42
DISC	TYPE=8418 ADDR=00-03
DISC	TYPE=8430 ADDR=10-12
TAPE	
TAPE	TYPE=20 ADDR=20-22
TAPE	TYPE=6 ADDR=00-02
DISKETTE	ADDR=00-03
END	
RESGEN	SYSOUT=DSP001,8430 DELETE=COBL74,DMS,IVP CDIMODE=YES COS=2
END	
COMMCT	
NET1	CCA TYPE=(STDMCP),PASSWORKD=JHB,FEATURES=(OPCOM,OUTDELV) BUFFERS 25,100,1,ARP=63
LNE1	LINE DEVICE=(UNISCOPE),TYPE=(2000,SWCH,SYNC), X CALL=555-2726,INPUT=PRC1
TRM1	TERM ADDR=(28,51),FEATURES=(U400,1920), X LOW=MAIN,MEDIUM=MAIN,HIGH=MAIN
PRC1	PRCS LOW=MAIN,MEDIUM=MAIN,HIGH=MAIN
NET2	CCA TYPE=(DDI,3) BUFFERS ARP=24

(continued)

LABEL	△OPERATION△	
LNE1	LINE DEVICE=(UNISCOPE),TYPE=(2000,SWCH,SYNC), CALL=555-2728	X
TRM1	TERM ADDR=(28,51),FEATURES=(U400,1920), AUX1=(TCS,73,74),AUX3=(TCS,75,76)	X
PIOCS	ENDCCA CCA USERS=2 ENDCCA MCP MCPNAME=M9 MCPVOL=SYSRES CACH=(04,NET1,01) CACH=(06,300,SWITCHED) CACH=(08,2000,SWITCHED,SYNC) CACH=(10,300,SWITCHED) CACH=(12,2000,SWITCHED,SYNC) CACH=(13,9600,SWITCHED,SYNC) CACH=(14,2000,SWITCHED,SYNC)	
END		

The SUPGEN section defines a full batch supervisor (SY\$ALL) with both CDI and DTF data management support. This system sacrifices main storage for throughput by specifying commonly used system routines as resident (RESMOD), by allowing seven job slots, and by configuring output spooling.

The I/OGEN section identifies each I/O device in the system: a console printer; a type 0770 printer, type 0768 printer, and a type 0716 reader, all with default specifications; three different type of disks with specific addresses; one tape device with all default specifications and a type 20 and type 6 tape with specific addresses; and a type 8413 diskette with all default specifications.

The RESGEN section specifies that a tailored 8430 SYSRES volume is created with this user's volume, DSP001. The system deletes COBL74, DMS, and IVP modules and uses CDI data management modules.

The COMMCT section defines an ICAM network.

9.4. CREATING A TAILORED SYSRES PACK FOR AN INTERACTIVE SYSTEM

This example generates a tailored SYSRES pack that includes an interactive supervisor (SY\$IAC) and an ICAM network.

LABEL	△OPERATION△	
SUPGEN	SUPVRNAM=SY\$IAC JOBSLOTS=7 TRAN=4 COMM=2,24 PRIORITY=5 SPOOLING=INPUT JOBACCT=YES INTERACTIVE=YES ISBATCLMT=3	
END		
I/OGEN		
COP		
PRINTER	TYPE=0770	
PRINTER	TYPE=0768	
READER	TYPE=0716	
PUNCH	TYPE=0604	
DISC	TYPE=8414 ADDR=40-42	
DISC	TYPE=8418 ADDR=00-03	
DISC	TYPE=8430 ADDR=10-12	
TAPE		
TAPE	TYPE=20 ADDR=20-22	
TAPE	TYPE=6 ADDR=-0-02	
DISKETTE	ADDR=00-03	
WORKSTATION	ADDR=18-1B	
END		
RESGEN	SYSOUT=DSP001,8430 DELETE=COBL74,DMS,IVP CDIMODE=YES COS=2	
END		
COMMCT		
NET1	CCA TYPE=(STDMCP),PASSWORWD=JHB,FEATURES=(OPCOM,OUTDELV) BUFFERS 25,100,1,ARP=63	
LNE1	LINE DEVICE=(UNISCOPE),TYPE=(2000,SWCH,SYNC), CALL=555-2726,INPUT=PRC1	X
TRM1	TERM ADDR=(28,51),FEATURES=(U400,1920), LOW=MAIN,MEDIUM=MAIN,HIGH=MAIN	X
PRC1	PRCS LOW=MAIN,MEDIUM=MAIN,HIGH=MAIN ENDCCA	
NET2	CCA TYPE=(DDI,3) BUFFERS ARP=24	
LNE1	LINE DEVICE=(UNISCOPE),TYPE=(2000,SWCH,SYNC), CALL=555-2728	X

(continued)

LABEL	△OPERATION△	
TRM1	TERM ADDR=(28,51),FEATURES=(U400,1920), AUX1=(TCS,73,74),AUX3=(TCS,75,76)	X
PIOCS	ENDCCA CCA USERS=2 ENDCCA MCP MCPNAME=M9 MCPVOL=SYSRES CACH=(04,NET1,01) CACH=(06,300,SWITCHED) CACH=(08,2000,SWITCHED,SYNC) CACH=(10,300,SWITCHED) CACH=(12,2000,SWITCHED,SYNC) CACH=(13,9600,SWITCHED,SYNC) CACH=(14,2000,SWITCHED,SYNC)	
END		

This SUPGEN section defines an interactive supervisor (SY\$IAC) that has spoofing and interactivity for both local workstations and remote terminals through interactive services (INTERACTIVE=YES).

The I/OGEN section is identical to that of the batch supervisor in example 9.3 with the exception that the interactive I/O configuration includes workstation specifications. (You cannot specify workstations without specifying interactivity during SUPGEN; therefore, you cannot use the I/OMOD parameter to specify the batch supervisor's I/O configuration.)

The RESGEN section specifies that a tailored 8430 SYSRES volume is created with this user's volume, DSP001. The system deletes COBL 74, DMS, and IVP modules and uses CDI modules.

The COMMCT section defines the same network for this interactive supervisor as for the batch supervisor in example 9.3.

9.5. ADDING A SUPERVISOR TO YOUR TAILORED SYSRES PACK

The following example adds a supervisor to this user's previously generated SYSRES.

LABEL	△OPERATION△
SUPGEN	SUPVRNAM=SY\$NRM PRIORITY=5 JOBSLOTS=7 TRANS=2 TIMER=MAX SPOOLING=INPUT
END	
I/OGEN	I/OMOD=SY\$BAS
END	
RESGEN	SYSOUT=DSP001,8430,NOPREP
END	
//FIN	

The SUPGEN section defines a typical supervisor configuration.

The I/OGEN section calls for the I/O configuration used in the previously generated supervisor, SY\$BAS, which resides on \$Y\$SRC on this user's release volume.

The RESGEN section directs the supervisor be placed on the previously generated SYSRES volume, DSP001.

9.6. DUPLICATING AN EXISTING SUPERVISOR ON A NEW OS/3 RELEASE VOLUME

In this example, this user duplicates the existing supervisor from the current SYSRES onto the new OS/3REL volume.

LABEL	△OPERATION△
SUPGEN	SUPMOD=SY\$BAS SUPVRNAM=SY\$TST
END	
I/OGEN	I/OMOD=SY\$BAS
END	
//FIN	

Both the SUPGEN and I/OGEN sections call for the configurations in the previously generated supervisor, SY\$BAS, which resides on \$Y\$SRC of SYSRES.

If this user includes a RESGEN section, the new supervisor would be placed on the volume named on the SYSOUT parameter.

9.7. GENERATING AN NTR UTILITY

This example generates a nine-thousand-remote (NTR) system utility and its supporting ICAM network.

LABEL	△OPERATION△
NTRGEN NTR	NTRNAME=NTR01 BLOCKIN=240 BLOCKOUT=121 NTRVOL=COMRES LINESP=20 NET=NTR2 LINE=LNE1 SITE=903001 TASK=NTRTK3,0 TASK=NTRTK4,0
LOCAL	TASKNAME=TSK1 BLKSIZE=80 DEVICE=1 FUNCD=01 LFD=RDR TYPE=READER
LOCAL	TASKNAME=TSK2 BLKSIZE=84 DEVICE=2 LFD=PUNCH TYPE=PUNCH
LOCAL	TASKNAME=TSK3 BLKSIZE=134 DEVICE=3 LFD=PRNTR TYPE=PRINTER VFBLN=72 VFBDEN=6 VFBHOME=1 VFBFORM=1100HDR
END	
COMMCT	
NTR2	CCA TYPE=(NTR),FEATURES=(TRACEMAX) BUFFERS ARP=50
LNE1	LINE DEVICE=(NTR),TYPE=(2000,FULL,SWCH,SYNC,CONNECT), X RETRY=(10,10),TIMEOUT=(15,8)
TRM1	TERM FEATURES=(NTR) ENDCCA MCP
	MCPNAME=C9 MCPVOL=COMRES CACH=(12,NTR2,01)
END	
// FIN	

In the NTR section, three sets of local keywords specify a reader, punch, and printer. The TASK parameter identifies two previously generated NTR remote device handlers.

In the COMMCT section, one CCA specifies an NTR mode and one line terminal. The MCP load module name is C9 and is used to load the generated MCP from the SYSRES volume. The one physical CA port, 12, will match the characteristics of the first line of CCA NTR2, which is LNE 1.

Both the MCP load module and the NTR utility module will reside on the SYSRES volume named COMRES.

9.8. CONFIGURING ANSI'74 COBOL COMPILER PROCESSING OPTION VALUES

The following illustration shows the statements needed to configure processing option values for the ANSI'74 COBOL compiler different from the standard option defaults.

LABEL	△OPERATION△
COBGEN	AXREF=YES MAP=YES MXREF=YES OBJLST=YES
END	
// FIN	

In the COBGEN section, this user changes the COBOL default parameters to specify:

- an alphabetically ordered cross-reference listing;
- an object program locator/map listing;
- a cross-reference listing; and
- an object program listing.

This user can override any of these new defaults using PARAM statements in the compilation job control stream. The OS/3 ANSI '74 COBOL programmer reference, UP-8613 (current version) lists the standard defaults.

10. SYSGEN Operating Procedures

10.1. GENERAL

This section gives the operating procedures for performing a SYSGEN. It includes the following steps:

	<u>Paragraph</u>
■ Copying the OS/3 release tape to the OS/3 release volume (OS/3REL)	10.2
■ Installing separately delivered OS/3 products	10.3
■ Making backup copies of the OS/3REL and SYSRES volumes	10.4
■ Choosing an operating supervisor	10.5
■ Defining print band characteristics (for nonstandard print cartridges)	10.6
■ SYSGEN procedures	10.7
1. Preparation of SYSGEN parameter statements	
2. System initialization	
3. Parameter processor execution	
4. SYSGEN jobstream execution	
■ Post-SYSGEN procedures	10.8

The system commands needed to perform all of these operating procedures can be keyed in at the system console or from a workstation. If operating from a console, you will receive messages concerning both your jobs and those of every other job being executed in your system. If operating from a workstation, you will receive system messages concerning only your jobs.

System messages are divided into two types:

1. Standard operating procedures messages, which we present in the system messages manual, UP-8076 (current version).
2. SYSGEN messages, which are self-explanatory, informational messages for the console or workstation user.

This manual presents examples of typical system messages that you receive when you run the SYSGEN JOB streams as part of the job stream execution procedures in 10.7.

10.2. COPYING THE OS/3 RELEASE TAPE TO THE OS/3REL VOLUME

If your OS/3 release software is on a dump/restore tape, you must copy the software from the tape onto a disk before you can go on to SYSGEN. That disk then serves as your OS/3REL volume and can be used as input for SYSGEN. To copy your release software from tape to disk, mount the release tape and the disk that will serve as your OS/3REL volume and proceed as follows:

NOTE:

To perform this procedure, we assume that your SYSRES is mounted and that your system is operating under the control of either a starter supervisor that we delivered or one that you've generated yourself.

1. Key in RV SG\$DMPTD and press the XMIT key.
2. When SG\$DMPTD requests IS THE INPUT TAPE MULTI-VOLUME (N, Y):
 - a. Respond with N if you received your software on one tape or Y if you received your software on two tapes.
 - b. Press the XMIT key.
3. When SG\$DMPTD requests ENTER VSN OF INPUT TAPE:
 - a. Key in the VSN identified on the tape label. If you received your release on two tapes, key in the VSN of the first tape.
 - b. Press the XMIT key.
4. When SG\$DMPTD requests ENTER VSN OF INPUT TAPE2:
 - a. Key in the VSN identified on the second tape.
 - b. Press the XMIT key.

NOTE:

This request appears only if you specified multi-volume input in step 2.

5. When SG\$DMPTD requests ENTER VSN OF OUTPUT DISK:
 - a. Key in the VSN of the disk that will serve as your OS/3 REL volume.
 - b. Press the XMIT key.
6. When SG\$DMPTD requests IS THE OUTPUT DISK A FIXED HEAD DEVICE (N,Y):
 - a. Key in Y if the OS/3REL volume has the fixed head feature; otherwise, key in N.
 - b. Press the XMIT key.

When SG\$DMPTD terminates, both the standard and optional software have been installed on your OS/3 REL volume.

10.3. INSTALLING SEPARATELY DELIVERED, OPTIONAL OS/3 PRODUCTS

Sperry Univac delivers optional software products that you order between major OS/3 releases on tape or disk, according to how you order them. The job control stream, SG\$CPYPD, lets you install these products from either type of media. And it is capable of installing one or several products in one execution.

To install optional program products or programming aids, proceed as follows:

NOTE:

To perform this procedure, we assume that your SYSRES is mounted and that your system is operating under the control of either a starter supervisor that we delivered or one that you've generated yourself.

1. Key in RV△SG\$CPYPD.
2. Press the XMIT key.
3. When SG\$CPYPD displays the message IS INPUT FROM TAPE (T) OR DISK(D)?, key in T if the product is on tape; key in D if it is on disk.
4. Press the XMIT key.
5. When SG\$CPYPD displays the message MOUNT VOL=A GO?, mount the tape or disk that contains your separate products.
6. Key in GO△SG\$CPYPD and press the XMIT key. SG\$CPYPD then initiates the routine, SG\$MVPD, that moves the separate products from the release media to your SYSRES. When SG\$CPYPD successfully copies your optional products to your SYSRES, it displays a message to inform you that the routine terminated normally.

7. If the optional product(s) that you installed requires operating system support, be sure to generate system modules that support that product before you attempt to use it. Table 10-1 lists all the optional products that OS/3 offers, and it indicates which SYSGEN phases you must perform (or reperform, if need be) to use these optional products. To use a specific program product or programming aid, each of the seven SYSGEN phases is either: required (R), not required (NR), or optional (O).

For example, if you just installed the NTR program product, you must perform the NTR phase of SYSGEN. And you must perform (or reperform, if need be) the ICAM, SUPGEN, and I/OGEN phases. You are required to include no other phases in your SYSGEN operation to support that product.

The manuals in the OS/3 library that concern separate, optional components give specific SYSGEN requirements for those products if, in fact, any specific requirements exist.

Table 10-1. SYSGEN Phases for Optional Software (Part 1 of 3)

OS/3 Optional Products	OS/3 SYSGEN Phases						
	SUPGEN*	I OGEN*	RESGEN	EMULAT	COMMCT	NTRGEN	COBGEN
PROGRAM PRODUCTS							
Extended System Software (ESS)	R	R	NR	NR	NR	NR	NR
Data Utility	NR	NR	NR	NR	NR	NR	NR
SORT/MERGE	NR	NR	NR	NR	NR	NR	NR
SORT3	NR	NR	NR	NR	NR	NR	NR
Spool/JA/Syslog /Joblog	R	R	NR	NR	NR	NR	NR
SORT/MERGE	NR	NR	NR	NR	NR	NR	NR
SORT3	NR	NR	NR	NR	NR	NR	NR
Screen Format Generator	NR	NR	NR	NR	NR	NR	NR
Dialog Spec. Language Translator	NR	NR	NR	NR	NR	NR	NR
Menu Generator	NR	NR	NR	NR	NR	NR	NR
IMS-ST**	R	R	NR	NR	R	NR	NR
IMS-MT**	R	R	NR	NR	R	NR	NR
DMS	NR	NR	NR	NR	NR	NR	NR
RPG Group	NR	NR	NR	NR	NR	NR	NR
RPGII	NR	NR	NR	NR	NR	NR	NR
RPGEDIT (CDM)	NR	NR	NR	NR	NR	NR	NR
RPG Auto Report	NR	NR	NR	NR	NR	NR	NR
COBOL-68 Basic (DTF)	NR	NR	NR	NR	NR	NR	NR
COBOL-68 Extended (DTF)	NR	NR	NR	NR	NR	NR	NR
COBOL-74	NR	NR	NR	NR	NR	NR	O
COBOL Editor	NR	NR	NR	NR	NR	NR	NR
FORTRAN IV	NR	NR	NR	NR	NR	NR	NR
FORTRAN Basic (DTF)	NR	NR	NR	NR	NR	NR	NR

Table 10-1. SYSGEN Phases for Optional Software (Part 2 of 3)

OS/3 Optional Products	OS/3 SYSGEN Phases						
	SUPGEN*	IOGEN*	RESGEN	EMULAT	COMMCT	NTRGEN	COBGEN
BASIC (CDM)	NR	NR	NR	NR	NR	NR	NR
ESCORT (CDM)	NR	NR	NR	NR	NR	NR	NR
EDITOR (CDM)	NR	NR	NR	NR	NR	NR	NR
ASSEMBLER	NR	NR	NR	NR	NR	NR	NR
ICAM TSF	R	R	NR	NR	R	NR	NR
NTR	R	R	NR	NR	R	R	NR
DCA Termination System	R	R	NR	NR	R	NR	NR
IBM 3270 RTH	R	R	NR	NR	R	NR	NR
IBM 3270 Emulator	R	R	NR	NR	R	NR	NR
RTP (HASP) Facility	R	R	NR	NR	R	NR	NR
DATEX-L PDN Support	R	R	NR	NR	R	NR	NR
DATEX-P	R	R	NR	NR	R	NR	NR
TRANSPAC	R	R	NR	NR	R	NR	NR
DATA PAC	R	R	NR	NR	R	NR	NR
DDX-P	R	R	NR	NR	R	NR	NR
PSS PDN	R	R	NR	NR	R	NR	NR
DDP Transfer Facility	R	R	NR	NR	R	NR	NR
DDP File Access	R	R	NR	NR	R	NR	NR
DDP IMS Transaction Processor	R	R	NR	NR	R	NR	NR
BEM Monitor (DTF)	NR	NR	NR	NR	NR	NR	NR
BEM EDT (DTF)	NR	NR	NR	NR	NR	NR	NR
BEM BASIC (DTF)	NR	NR	NR	NR	NR	NR	NR
BEM RSP (DTF)	NR	NR	NR	NR	NR	NR	NR
UTS 400 COBOL and LD/DMP Terminal Package	R	R	NR	NR	R	NR	NR
UTS 400 EDIT Processor and LD/DMP Terminal Package	R		NR	NR	NR	NR	NR
<u>PROGRAMMING AIDS</u>							
System Activity Monitor	R	R	NR	NR	NR	NR	NR
UTS 400 Software (DTF)	R	R	NR	NR	R	NR	NR
PL/M	R	R	NR	NR	R	NR	NR
SMS400	R	R	NR	NR	R	NR	NR
MAC80	R	R	NR	NR	R	NR	NR
Utilities	R	R	NR	NR	R	NR	NR



Table 10—1. SYSGEN Phases for Optional Software (Part 3 of 3)

OS/3 Optional Products	OS/3 SYSGEN Phases						
	SUPGEN*	IOGEN*	RESGEN	EMULAT	COMMCT	NTRGEN	COBGEN
Gangpunch/Reproduce (DTF)	NR	NR	NR	NR	NR	NR	NR
VSBs (DTF)	NR	NR	NR	NR	NR	NR	NR
FORTTRAN Extended (DTF)	NR	NR	NR	NR	NR	NR	NR
System/3 Conversion Aids							
SCON3 Srce and Proc Trans (1)	NR	NR	NR	NR	NR	NR	NR
COPYS3 Srce and Proc Trans	NR	NR	NR	NR	NR	NR	NR
System/34 Conversion Aids							
COPY 3 Srce and Proc Trans	NR	NR	NR	NR	NR	NR	NR
360/20 Conversion Aids (DTF)							
Unload Data Transcriber (2)	NR	NR	NR	R	NR	NR	NR
Reload Data Transcriber	NR	NR	NR	R	NR	NR	NR
Scan BAL Source Converter	NR	NR	NR	R	NR	NR	NR
360/20 Emulator	NR	NR	NR	R	NR	NR	NR
DCON 20 Proc for Unload and Reload (3)	NR	NR	NR	R	NR	NR	NR
OS/4 Conversion Aids							
DCON4 Disk Data Conv (4)	NR	NR	NR	NR	NR	NR	NR
ASMTRN Assembly Trans	NR	NR	NR	NR	NR	NR	NR
JCON 1 JCL Conv	NR	NR	NR	NR	NR	NR	NR
COPY94 Lib File Conv	NR	NR	NR	NR	NR	NR	NR
92/9300 Conversion Aids (DTF)							
Unload Data Transcriber (5)	NR	NR	NR	R	NR	NR	NR
Reload Data Transcriber	NR	NR	NR	R	NR	NR	NR
9200/9300 Emulator	NR	NR	NR	R	NR	NR	NR
Scan BAL Source Converter	NR	NR	NR	R	NR	NR	NR
On-line Diagnostics	NR	NR	NR	NR	NR	NR	NR

* Note that anytime you install a product that affects your supervisor, you must perform SUPGEN and IOGEN, even though you did not add any new I/O devices to your system.

** If you have installed IMS, you must configure your IMS as a post-SYSGEN procedure. To do so, see the IMS system support functions user guide, UP-8364 (current version).

LEGEND:

NR = Not required

R = Required

O = Optional

10.4. MAKING BACKUP COPIES OF THE OS/3REL AND SYSRES VOLUMES

Sperry Univac recommends that you make a backup copy of your OS/3 release volume before you begin SYSGEN. We also recommend that you make a backup copy of your tailored SYSRES after SYSGEN. Sperry Univac supplies job control streams (SETREL/COPYREL and DCOP) as part of the OS/3 release software to make your backup copies. When choosing one of these job control streams, keep the following tradeoff in mind:

- SETREL/COPYREL allows you to copy your release or SYSRES volume to any disk type but requires more time to execute;
- DCOP requires less execution time but allows you to copy your release or SYSRES volume to the same disk type only.

The subsections that follow (10.4.1 and 10.4.2) describe the procedures for making backup copies.



10.4.1. Using SETREL/COPYREL to Copy to Any Disk Type

10.4.1.1. Performing SETREL

The SETREL system utility prepares a disk volume for use as a RELEASE or SYSRES volume. This utility executes a disk initialization (prep) run and allocates the standard SYSRES files. The library size is allocated according to the type of volume required. Disks may be initialized with or without full surface analysis. The required parameters are supplied either as operands entered by keyins at the system console or workstation, on cards in the card reader, or on card images on diskette.

NOTE:

SETREL preps the disk pack with 1K COS. If 2K COS is required, you must run the canned job control stream PRP2KCOS immediately after running SETREL. This also applies to installations requiring 2K fast COS, in which case PRP3KCOS would be run. The procedure for running PRPnn COS is described in 10.4.1.2.

When the disk being prepared is to be a copy of the current SYSRES volume, a keyin at the system console or workstation may be used to initiate a SETREL run.

The keyin has the following format:

RUΔSETREL,,V=vsn,T=disk-type,P=prep-type

Keyword Parameters:

V=vsn

Specifies the volume serial number of the output disk pack being prepped. If omitted, the card reader is activated to read the parameters from cards.

T=disk-type

Specifies the type of disk subsystem being used. The values are as follows:

<u>Value</u>	<u>Disk Type</u>
11	8411
14	8414
15F	8415 fixed
15R	8415 removable
16	8416
18	8418 high and low density
24	8424
25	8425
30	8430
33	8433

P=prep-type

Specifies the type of prep to be performed. The codes may be:

<u>Code</u>	<u>Meaning</u>
F	Full prep (surface analysis)
P	Partial prep (no surface analysis)
N	No prep performed, assign files only

If codes are omitted, P is assumed.

When you omit the V keyword parameter, your parameters are read from the assigned system reader. In this case, the volume copy will be a release volume and the following statements must precede the disk prep parameter set (if present):

```
// PREP JSET 'prep-number'
// VSNO JSET 'vsn'
// TYPE JSET 'disk-type'
// FIN
```

These parameters are described previously with the exception of 'prep-number':

'1' Full prep (surface analysis)

'0' Partial prep (no surface analysis)

If you specify a full prep, you must insert one of the following statement sets in the assigned system reader:

```
■ INSERT cccchh
   .
   .
   .
// FIN
```

where:

cccchh

Specifies the hexadecimal address of the defective cylinder and track as listed on the disk pack. Use this statement set only if you wish to identify additional alternate tracks.

```
■ INSERT NONE
// FIN
```

where:

NONE

Indicates that you want to specify no further defective cylinders or tracks on the disk pack. (Omit the INSERT△△△NONE statement for selector devices and use the second // FIN statement instead.)

If unrecoverable errors occur during the prepping of a volume, you receive a message at your console or workstation and the job terminates immediately. If other errors occur, you receive a warning message and the job continues processing.

10.4.1.2. Performing PRPnnCOS

The PRPnnCOS routine repositions the COS module from the \$Y\$SRC file on SYSRES to the COS-IPL area on a disk you specify. The value you give for *nn* (1K, 2K, 3K) indicates the type of COS module to be repositioned. PRPnnCOS repositions the COS module from \$Y\$SRC to an area immediately following the VOL1 label on the disk; from this position, it can then be loaded into the system. This routine must be run before you try to load your COS module into the system, after SETREL, and before COPYREL.

The required parameters are supplied either as operands entered at the system console or workstation, on cards in the card reader, or on card images on diskette.

When you are performing PRPnnCOS to make a copy of your current SYSRES, the keyin has one of the following formats:

$$RV\Delta \left\{ \begin{array}{l} \text{PRP1KCOS} \\ \text{PRP2KCOS} \\ \text{PRP3KCOS} \end{array} \right\} , , V=vs_n, T=\text{disk-type}$$

Keyword Parameters:

V=vs_n

Specifies the volume serial number of the disk being prepared with COS.

T=disk-type

Specifies the type of disk subsystem being used. The values are as follows:

<u>Value</u>	<u>Disk Type</u>
11	8411
14	8414
15F	8415 fixed
15R	8415 removable
16	8416
18A	8418 low density
18B	8418 high density
24	8424
25	8425
30	8430
33	8433

You may alternatively specify these keyword parameters on cards in the card reader, or card images on diskette. To perform PRPnnCOS to make a copy of your release volume, specify the keyword parameters using the following format:

```
// VSN JSET 'vsn'
// TYPE JSET 'disk-type'
// FIN
```

The keyword parameters are described previously.

10.4.1.3. Performing COPYREL

The COPYREL system utility copies the RELEASE or SYSRES volume libraries listed in Table 10-2 to a second disk pack of any type. The capability provides a convenient mechanism for duplicating the libraries for backup purposes or for restoring SYSRES volumes between dissimilar devices. The new disk pack must be prepped and the files allocated (via SETREL) before they can be copied. The required parameters are supplied either as operands entered at the system console or workstation, on cards in the card reader, or on card images on diskette.

When you are performing COPYREL to copy your current SYSRES volume, COPYREL may be run using a keyin at the system console or workstation. The keyin has the following format:

```
RVΔCOPYREL [,V=vsn][,T=disk-type][,S=first-file][,E=last-file]
```

Keyword Parameters:

V=vsn

Specifies the volume serial number of the output disk pack. If omitted, the parameters must be input from cards.

T=disk-type

Specifies the type of disk subsystem being used. The values are:

<u>Value</u>	<u>Disk Type</u>
11	8411
14	8414
15F	8415 fixed
15R	8415 removable
16	8416
18A	8418 low density
18B	8418 high density
24	8424
25	8425
30	8430
33	8433

If the V parameter is specified, this parameter must also be specified.

S=first-file

Specifies the code for the first file to be copied. Table 10-2 shows the order that COPYREL copies the system files and shows the codes for each system file. If omitted, copying begins with S.

E=last-file

Specifies the code for the last file to be copied. (See Table 10-2). If omitted, copying ends with A.

The S and E keyword parameters are used to control the number of files to be copied. They can also be used to restart the COPYREL function with the library in which an error occurred or to restore a single library. For example:

```
RVΔCOPYREL,,V=ABC123,T=16,S=G,E=A
```

```
RVΔCOPYREL,,V=ABC123,T=16,S=L,E=L
```

Table 10-2. COPYREL Copy Order

Copy Order	Code	File Name
1	S	\$\$SRC
2	O	\$\$OBJ
3	L	\$\$LOD
4	M	\$\$MAC
5	J	\$\$JCS
6	G	SG\$JCS
7	SGMAC	SG\$MAC
8	SGOBJ	SG\$OBJ
9	SGLOD	SG\$LOD
10	SCLOD	\$\$SCLOD
11	MIC	\$\$MIC
12	IVP	IVPLIB
13	SMCFIL	SMCFIL
14	FMT	\$\$FMT
15	SAVE	\$\$SAVE
16	DIALOG	\$\$DIALOG
17	SDF	\$\$SDF
18	HELP	\$\$HELP
19	T	\$\$TRAN
20	A	\$\$TRANA

When you omit the V keyword parameter, your parameters are read from the assigned system reader. In this case, the volume copy will be a release volume and the following statements must be in the reader:

NOTE:

Cards 1, 2, 3, 4, and 7 are required.

	1	10	16	72
1.	//INVOL	JSET	'input-vsn'	X
2.	//INTYPE	JSET	'input-type'	
3.	//OUTVOL	JSET	'output-vsn'	
4.	//OUTTYPE	JSET	'output-type'	
5.	//S	JSET	'first-file'	
6.	//E	JSET	'last-file'	
7.	// FIN			

where:

'input-vsn'

Specifies the volume serial number of the input disk pack.

'input-type'

Specifies the type of disk subsystem containing the volume being copied. The values are supplied in the preceding value-disk type table.

'output-vsn'

Specifies the volume serial number of the output disk pack.

If running COPYREL for an 8415 removable disk, the utility must be run twice. For the first run, the // OUTVOL card is replaced with a // VSN1 card specifying the volume serial number of the primary disk. For the second run, the card is changed to // VSN2 and the volume serial number of the secondary disk is entered.

'output-type'

Specifies the type of disk subsystem to which the files are being copied. The values are the same as those specified for 'input-type'.

'first-file'

Specifies the first file to be copied. The code letters that may be specified are:

S, O, L, M, J, G, T, or A

The order the files are copied for card processing is the same as for console or workstation keyin.

'last-file'

Specifies the last file to be copied. The code letters that may be specified are:

S, O, L, M, J, G, T, or A

The order the files are copied for card processing is the same as for console or workstation keyin.

10.4.2. Using DCOP to Copy to the Same Disk Type

You can copy your SYSRES disk pack to another disk of the same type by keying in the following command at the system console or workstation.

```
RVΔDCOP [ , [ , T={disk-type} ] [ , N={number} ] [ , V={YES} ] ]
```

where:

T=disk-type

Specifies the type of disk subsystem being used. The values are:

<u>Value</u>	<u>Disk Type</u>
11	8411
14	8414
15F	8415 fixed
15R	8415 removable
16	8416
18A	8418 low density
18B	8418 high density
30	8430
33	8433

If omitted, the 8416 device is assumed.

N=number

Specifies the number of copies to be made. This is a decimal value from 1 to 7. If omitted, one copy is assumed.

V={YES}
{NO}

Specifies that verification is to be performed on the copied disks. If omitted, no verification is performed.

When the message MOUNT DEV=did VSN=DISC GO? appears, check that did is the device address of the disk you are copying your SYSRES to, key in GOΔDCOP, and press the XMIT key. DCOP then copies the entire contents of your SYSRES, including the VSN, to the backup disk. If you don't want two disks with the same VSN, use the CGV canned job stream as explained in the system service programs user guide, UP-8062 (current version). When it completes the copy operation, DCOP displays a message to inform you that it has terminated normally.

10.5. CHOOSING AN OPERATING SUPERVISOR

Regardless of whether you are an existing user or a user who is installing the OS/3 operating system for the first time, you must select an operating supervisor from the OS/3REL volume supplied to your facility. Choose a supervisor that supports your hardware configuration. Use the list contained in the release notice that accompanies the OS/3REL to aid you in this selection.

A new user must also define print cartridge characteristics if all of your printers use nonstandard print cartridges. This procedure is described in 10.6. The standard cartridges are:

- 48-BUS (except 0768 printer)
- 48-SCI (except 0768 printer)
- 63-STD (0768 printer only)

10.6. DEFINING PRINT BAND CHARACTERISTICS

If your printers use nonstandard print cartridges, you must define them to the starter supervisor by running job control stream SG\$PRB, which is prefiled on the OS/3REL volume. In addition, if your installation uses only nonstandard length printer forms (other than 11 inches), you should define their vertical format characteristics. We recommend that you define your printer requirements at this time for all your printers using nonstandard print bands and/or nonstandard vertical formats.

SG\$PRB accepts the job control statements that define nonstandard printer characteristics either from card input or from a source module you create in \$Y\$SRC on your SYSRES. You can create this source module in two ways:

1. Use the OS/3 general editor (EDT) to prepare the statements and then write them to a module in \$Y\$SRC.
2. Use the system librarian (LIBS) to add the statements from cards to a module in \$Y\$SRC (use the ELE statement to do this).

Regardless of the method you use to create input to SG\$PRB, refer to the job control user guide, UP-8065 (current version) for instructions on preparing the // LCB and // VFB job control statements that define your printer characteristics. To prepare these statements, proceed as follows:

NOTE:

To perform this procedure, initialize the system by loading control storage and IPL the starter supervisor into main storage as described in the operations handbook for operators, UP-8072 (current version).

1. Keypunch or key in from a workstation a // DVC job control statement for each printer for which you are defining print band and/or vertical format characteristics. You can submit one // DVC statement for both a // LCB and a // VFB statement, but if you are defining more than one print band or vertical format buffer for one printer, you must prepare a // DVC statement for each LCB-VFB set you define. Each // DVC statement and its associated // LCB and // VFB statements must be prepared separately. That is, you must include only one // DVC statement and one // LCB and/or // VFB statement in each card deck or source module you submit as input to SG\$PRB. On each // DVC statement:

- Identify the printer type by specifying the logical unit number (Table 3-1).
- Specify the hardware address so that the physical printer and not a virtual one is accessed at SG\$PRB scheduling time when running under the control of a supervisor configured with spooling. (If you do not specify the hardware address, the content of the default LCB/VFB is not changed by a spooling supervisor.)

2. Keypunch or key in from a workstation a // LCB job control statement for each print configuration you are defining for each printer.

- Specify user load code buffer OWNLC1 or OWNLC2 in the label field to specify that your printer uses a print band other than 48-BUS, 48-SCI, or 63-STD; if you want to specify character mismatch reporting for only one of these print bands, specify the name of your print band in the label field.
- Define your printer band configuration. (Refer to the job control user guide, UP-8065 (current version) for format.)

NOTE:

If you have an 0773/0778 printer with a nonstandard print band (that is, if your print band is greater than 64 characters in length), you must define a load code buffer 256 characters in length. The character array may be repeated until 256 bytes are defined. If your print band is 64 characters or less, you must define a load code buffer 64 characters in length.

3. Keypunch or key in from a workstation a // VFB job control statement for each printer if required.

- Specify vertical format buffer OWNVF1 in the label field.
- Specify FORMNAME=STAND1 as the form name parameter.

- Define the remainder of your vertical format requirements. (Refer to the job control user guide, UP-8065 (current version) for format.)
- 4. Key punch a // FIN job control statement if you are entering input to SG\$PRB on cards. Enter the // DVC, // LCB, and // VFB job control statements, in that order. Follow the last statement with the // FIN statement. If you used EDT or LIBS to create a module in \$Y\$SRC containing these statements, skip this step and proceed with step 5. But be sure to include the MOD parameter on your run command.
- 5. Run the SG\$PRB job control stream (to load the appropriate LCBs and VFBs with the new definitions) by keying in the following system command:

```
RVASG$PRB[, ,MOD=module name]
```

where:

```
MOD=module name
```

Specifies the module in \$Y\$SRC that contains the nonstandard printer characteristics. If you do not specify this parameter, you must enter input to SG\$PRB on cards.


- 6. When SG\$PRB terminates, reload the starter supervisor.

Example 1. Changing VFB characteristics:

```
EDT
1.0000 // DVC 20,330
2.0000 //OWNVF1 VFB FORMNAME=STAND1,DEN=8,LEN=88,OVF=80
3.0000 @WRITE MO=VFBCHG,FIL=$Y$SRC,VSN=REL080
4.0000 @HALT
RV SG$PRB, ,MOD=VFBCHG
```


In this example, we've created a source module with the general editor (EDT) to alter VFB printer characteristics. The // DVC statement shows the logical unit number (20) and the hardware address (330) of the printer. The // VFB statement must contain OWNVF1 in the label field and STAND1 as the formname. We've used a standard 11-inch form and specified a density (DEN) of 8 lines per inch, thus giving the form a length (LEN) of 88 lines. We've also specified overflow (OVF) at line 80. Printing will stop at line 80 and continue at the top of the next form, leaving a 1-inch margin at the bottom of each form.

We issue the @WRITE command to name the source module and write it in \$Y\$SRC on our SYSRES volume (VSN=REL080); then we terminate EDT with the @HALT command. After creating the source module, we run SG\$PRB using the module name specified in the @WRITE statement (VFBCHG). SG\$PRB displays a message when it terminates.

Example 2. Changing LCB characteristics: 

```
EDT
1.0000 // DVC 20,330
2.0000 //48-BUS LCB MISM=REPORT
3.0000 @WRITE MO=LCBCHG,FIL=$Y$SRC,VSN=REL080
4.0000 @HALT
RV SG$PRB,,MOD=LCBCHG
```

In this example, we've used EDT to create a source module to alter LCB printer characteristics. The // DVC statement shows the logical unit number (20) and the hardware address (330) of the printer. The LCB statement contains the cartridge name in the label field (48-BUS) and specifies that character mismatch errors will be reported.

We issue the @WRITE command to name the source module and write it in \$Y\$SRC on our SYSRES volume; then, we terminate EDT with the @HALT command. After creating the source module, we run SG\$PRB using the module name specified in the @WRITE statement (LCBCHG). SG\$PRB displays a message when it terminates. 



10.7. SYSGEN PROCEDURES

The SYSGEN procedures consist of four basic steps:

1. Preparing the SYSGEN parameter set containing your configuration specifications
2. Initializing your system and mounting the required disk packs
3. Running the parameter processor (SG\$PARAM) to process your SYSGEN parameter sets
4. Running the prefilled SYSGEN job control streams that configure your system

You now have the option of performing these four SYSGEN steps in one of two system environments: (1) a batch environment, in which OS/3 has traditionally operated, and (2) an interactive environment.

A system in a batch environment uses input entered on cards from a card reader or from card images on diskette in a cardless system. This manual outlines the procedure for generating a batch system with card input in 10.7.1.

To install a cardless system, use the CREATE diskette utility described in the system service programs user guide, UP-8062 (current version) or the enter mode described in the universal distributed system (UDS) 2000 manual, UP-8503 (current version).

A system in an interactive environment recognizes input from either a workstation or a remote communications terminal using an interactive facility of OS/3 called the SYSGEN dialog. This manual describes the procedure for generating an interactive system in 10.7.2.

10.7.1. Generating in a Batch System

10.7.1.1. Step 1 – Preparing the SYSGEN Parameter Deck

To prepare the SYSGEN parameter deck, proceed as follows:

1. Determine the SYSGEN phase or phases you want included in this generation procedure. (Refer to guidelines outlined in 1.4.1.) As we stated earlier, this manual specifically describes the SYSGEN procedure. It does not, however, describe in detail all of the components of OS/3. Therefore, before you begin to prepare your SYSGEN parameters, familiarize yourself with the components in your system by referencing the specific manuals in the OS/3 library that apply to those components.

2. Key punch the parameter specifications for each phase you want included in this SYSGEN. Each phase must be properly identified by a leading label card and trailing card. (See Table 10-3 for phase requirements.)
3. Follow the SYSGEN parameter deck with a // FIN card.

Table 10-3. SYSGEN Phase Requirements

Generation Requirement	Phases Required	Parameter Descriptions
New supervisor and/or I/O configuration	SUPGEN and I/OGEN	Section 2 Section 3
Emulator generation	EMULAT	Section 5
Communications module generation	COMMCT	Section 6
NTR system utility module generation	NTRGEN and COMMCT	Section 7 Section 6
ANSI'74 COBOL processing option default changes	COBGEN	Section 8
New SYSRES volume generation	RESGEN	Section 4

10.7.1.2. Step 2 – Initializing Your System

The procedure for initializing your system is determined by the method used to integrate the generated output into your system. (Subsection 1.4.2 outlines the various methods of integrating system software into a new installation, upgrading existing systems to a new release level, and regenerating system software or adding additional system software at the same release level.)

1. Mount the current OS/3REL volume on the proper disk drive unit. This volume serves as both the operating system and the source volume and is required for all methods of system software integration into your system.
2. Initialize your system by loading control storage (COS) and a starter supervisor from OS/3REL into main storage as described in the operations handbook for operators, UP-8072 (current version).

NOTE:

For 90/30 B, you cannot perform a IPL from a selector channel disk.

3. If SYSGEN output is to be placed on a disk pack other than the OS/3REL volume, mount a new output disk pack.

10.7.1.3. Step 3 – Running the Parameter Processor

To process your SYSGEN parameter deck, proceed as follows:

1. Enter your SYSGEN parameter deck into the system reader.
2. Key in the following system command to initiate the parameter processor:

```
RUΔSG$PARAM
```

The following example shows typical system messages that you receive when you run the SYSGEN job stream, SG\$PARAM.

```
RU SG$PARAM
11 JC01 JOB SG$PARAM EXECUTING JOB STEP SGCNFG00 #001
12 JC08 USING DEV=002 TYPE=PRNTR
13 JC02 JOB SG$PARAM TERMINATED NORMALLY
```

The parameter processor translates and verifies the SYSGEN parameters and lists the SYSGEN job control streams to be executed.

NOTE:

If the OS/3REL volume is provided on an 8415 removable disk pack, it will consist of three volumes: primary, secondary, and tertiary. Each volume supports only specific phases of the total SYSGEN procedure:

- *Primary volume = SUPGEN
I/OGEN
RESGEN*
- *Secondary volume = COBGEN
COMMCT*
- *Tertiary volume = NTRGEN
EMULAT*

An alternate command must be used to initiate the parameter processor for the secondary or tertiary volume if any one of these phases is included in this SYSGEN procedure. Key in the following system command if the secondary volume is used:

```
RUΔSG$PARAM,,ALT=YES
```

Key in the following system command if the tertiary volume is used:

```
RUΔSG$PARAM,,OTH=YES
```

3. Check output listing prepared by the parameter processor for diagnostic messages. Also, carefully check the SG\$PARAM listing to be sure that all of SG\$PARAM's default substitutions are correct for the type of system you are generating.
4. Correct any SYSGEN parameter card found to be in error and rerun the parameter processor (repeat steps 1 through 3).
5. Execute the prefiled job control stream (10.7.1.4) listed in the output listing.

10.7.1.4. Step 4 – Running the Prefiled SYSGEN Job Streams

The actual generation function is accomplished by running the SYSGEN job control streams listed on the parameter processor output report. (The job streams listed are selected on the basis of your configuration deck.) The job streams are to be run one at a time in the order that they are listed. You must wait until each job is completed before executing the next job in the sequence.

The names and functions of each prefiled job control stream that can appear in the output list are provided in 1.3.1.

NOTE:

Do not rerun SG\$PARAM until all the jobs listed in the output list have been run; otherwise, the variables generated by the first execution of SG\$PARAM will be lost and you will be able to run only the jobs listed for the current (second) execution of SG\$PARAM.

10.7.1.5. Creating a New SYSRES Volume

The following job control streams should be listed for execution when you have included the RESGEN phase in your SYSGEN parameter deck.

```
SG$PREP
SG$ASG
SG$TRANS
SG$LIB
SG$SUPMK
SG$LIB2 (only for 8415 release volumes)
SG$LIB3 (only for 8415 release volumes)
SG$CATCP (if catalog copy is desired)
```

Proceed as follows to execute job control streams listed:

1. Execute the SG\$PREP job control stream from the current release pack by keying in the following system command:

→ RU△SG\$PREP, [,CR=N0]

where:

CR=NO

Specifies that you're running SG\$PREP from the system console and your system does not have a card reader. The job stream then requests the prep parameters through the console.

The following example shows typical system messages that you receive when you run the SYSGEN job stream, SG\$PREP.

```

SG$PREP   (2)   (3)   (4)   (5)   (6)   (7)
JC06 USING DEV=301 VSN=SYSRES
JC08 USING DEV=FLE TYPE=ENTER
C01 JOB SG$PREP EXECUTING JOB STEP DSKPRP001001 15:10:37
KEY IN RV SG$ASG TO RUN NEXT SYSGEN JOB

```

NOTE:

When executed, SG\$PREP activates the card reader or requests card image input for the purpose of obtaining information concerning "bad" tracks as indicated by the manufacturer on SPERRY UNIVAC 8415, 8416, and 8418 disk packs or for specific requests for 8411/8414/8430 and 8433 disks. These bad tracks must be identified by an INSERT statement (one track per statement) and the set must be terminated with a // FIN statement. If you are using an 8415, 8416, or 8418 disk pack containing no bad tracks, you must place an INSERT statement with the word NONE starting in column 10, followed by a // FIN statement in the reader to satisfy the card or card image input request made by SG\$PREP. Messages at the system console request this information as your system needs it if you included the CR parameter on your run command.

- Execute the SG\$ASG job stream by keying in the following system command:

```
RVΔSG$ASG
```

The following example shows typical system messages that you receive when you run the SYSGEN job stream, SG\$ASG.

```

SG$ASG   (2)   (3)   (4)   (5)   (6)   (7)
JC08 USING DEV=002 TYPE=PRNTR
JC10 USING DEV=441 VSN=XXXXXX
JC01 JOB SG$ACG EXECUTING JOB STEP SG$OPN00 #002
KEY IN RV SG$TRANS TO RUN NEXT SYSGEN JOB
JC02 JOBSG$ASG TERMINATED NORMALLY

```

If the job terminates abnormally, you must rerun SG\$PREP and then rerun SG\$ASG. You can save approximately 15 minutes in processing time by specifying the PARTIAL prep option in the SYSOUT keyword of your RESGEN configuration and rerunning the SG\$PARAM job control stream.

The message displayed on the system console or workstation screen will indicate when you can execute the next job control stream.

3. Execute the following job control streams one at a time by keying in the following system commands:

```
RVΔSG$TRANS
RVΔSG$LIB
RVΔSG$SUPMK [, , TPWK=vsn]
```

where:

TPWK=vsn

Provides temporary work files for the assembler on an alternate disk device. VSN identifies the volume serial number of the alternate device.

NOTE:

When the OS/3REL is also your current SYSRES, do not run SG\$TRANS in a multiprogramming environment. Otherwise, you may encounter errors.

The following examples show typical system messages that you receive when you run the SYSGEN job streams, SG\$TRANS, SG\$LIB, and SG\$SUPMK.

```
SG$TRANS      (2)      (3)      (4)      (5)      (6)      (7)
JC01 JOB SG$TRANS EXECUTING JOB STEP SGTRAN00 #001
JC06 USING DEV=441 VSN=XXXXXX
JC08 USING DEV=002 TYPE=PRNTR
JC01 JOB SG$TRANS EXECUTING JOB STEP SGTRAN00 #002
JC06 USING DEV=441 VSN=XXXXXX
KEY IN RV SG$LIB TO RUN NEXT SYSGEN JOB
JC02 JOB SG$TRANS TERMINATED NORMALLY

SG$LIB        (2)      (3)      (4)      (5)      (6)      (7)
JC01 JOB SG$LIB EXECUTING JOB STEP LIBS0000 #001
JC06 USING DEV=441 VSN=XXXXXX
JC08 USING DEV=002 TYPE=PRNTR
KEY IN RV SG$SUPMK TO RUN NEXT SYSGEN JOB
JC02 JOB SG$LIB TERMINATED NORMALLY

SG$SUPMK      (2)      (3)      (4)      (5)      (6)      (7)
JC01 JOB SG$SUPMK EXECUTING JOB:STEP ASM00000 #001
JC06 USING DEV=441 VSN=XXXXXX
JC08 USING DEV=002 TYPE=PRNTR
JC01 JOB SG$SUPMK EXECUTING JOB STEP LNKEDT00 #002
JC02 JOB SG$SUPMK TERMINATED NORMALLY
```

If any of these jobs terminates abnormally, rerun it before proceeding.

4. This step applies only to 8415 secondary and tertiary release volumes. It copies the remainder of the system components from the secondary and tertiary release volume to complete the system.

If there are no other disk drives available, dismount the 8415 primary release volume and replace it with the secondary release volume. Initialize your system from the SYSRES just created. See the operations handbook for operators, UP-8072 (current version).

Execute SG\$LIB2 job control stream by keying in the following system command:

```
RVΔSG$LIB2
```

After SG\$LIB2 has finished, replace the secondary release volume with the tertiary release volume and initialize your system in the manner described above. Then, key in the following system command:

```
RVΔSG$LIB3
```

If either job terminates abnormally, rerun it.

5. If you want to copy an existing catalog file to your new SYSRES volume, you must have specified the volume serial number of the disk that contains the catalog file using the CATVSN keyword parameter in the RESGEN section.

Execute SG\$CATCP job control stream by keying in the following system command:

```
RVΔSG$CATCP
```

If this job terminates abnormally, rerun it.

6. Additional job control streams such as SG\$EMUMK, SG\$EMJCL, SG\$COMMK, SG\$NTRMK, and SG\$COBMK may also be listed if you included the parameters for these phases in your SYSGEN parameter set. If they are listed in the output listing, execute them as described in 10.7.1.7 through 10.7.1.10.

10.7.1.6. Supervisor Generation without Creating a New SYSRES

If you included a supervisor generation phase as part of your SYSGEN set but did not specify the creation of a new SYSRES pack, the job control stream SG\$SUPMK will be listed in the output listing. Execute this job stream by keying in the following system command:

```
RVΔSG$SUPMK[, ,TPWK=vsn]
```

where:

```
TPWK=vsn
```

Provides temporary work files for the assembler on an alternate disk device.
VSN identifies the volume serial number of the alternate device.

The supervisor generated is placed on the OS/3REL volume. (You may designate that the supervisor be placed on an alternate SYSRES volume by including a RESGEN phase in the SG\$PARAM run in which the keyword parameter SYSOUT=vsn,,NOPREP is specified.)

10.7.1.7. Emulator Generation

Execute the emulator generation job control stream SG\$EMUMK by keying in the following system command:

```
RVΔSG$EMUMK
```

The emulator load module generated is placed on the OS/3REL volume. (There is an optional specification in the emulator descriptor statements that allows you to designate an alternate output volume.)

To keypunch the job control stream to execute the generated emulator, execute the SG\$EMJCL job control stream by keying in the following system command

```
RVΔSG$EMJCL
```

10.7.1.8. ICAM Generation

Execute the ICAM generation job control stream SG\$COMMCK by keying in the following system command:

```
RVΔSG$COMMCK[, [,GENLST=Y][,TPWK=vsn]]
```

where:

```
GENLST = Y
```

Specifies that you want a complete listing of the ICAM macro generations.

TPWK=vsn

Provides temporary work files for the assembler on an alternate disk device. VSN identifies the volume serial number of the alternate device.

The generated communications load module is written to the OS/3REL volume. (There is an optional parameter, MCPVOL, in the COMMCT section that allows you to designate an alternate output volume.)

10.7.1.9. NTR Generation

Execute the NTR generation job control stream SG\$NTRMK by keying in the following system command:

```
RVΔSG$NTRMK
```

The NTR load module generated is placed on the OS/3REL volume. (There is an optional parameter in the NTR section that allows you to designate an alternate output volume.)

10.7.1.10. ANSI '74 COBOL Processing Option Value Generation

Execute the ANSI '74 COBOL option value generation job control stream SG\$COBMK by keying in the following system command:

```
RVΔSG$COBMK
```

The processing option values are placed on the OS/3REL volume unless a RESGEN phase is included in the SYSGEN parameter set to specify an alternate output volume.

NOTE:

To change values specified by an earlier COBGEN, you must specify every default that differs from the COBOL standard defaults, not the first COBGEN. If, for example, you specify AXREF=YES in the first COBGEN and want to keep that default, you must specify it in the second COBGEN, or else it will revert to the standard default of AXREF=NO.

10.7.2. Generating in an Interactive System

As a user with one or more workstations, you will want to take advantage of the interactive facility of OS/3 called the SYSGEN dialog. This facility helps you to prepare and process your SYSGEN parameter sets directly at a workstation or a remote communications terminal. This manual describes the SYSGEN dialog in 1.3.2.

10.7.2.1. Step 1 – Initializing Your System

The procedure for initializing your system is determined by the method used to integrate the generated output into your system. (Subsection 1.4.2 outlines the various methods of integrating system software into a new installation, upgrading existing systems to a new release level, and regenerating system software or adding additional system software at the same release level.)

1. Mount the OS/3REL volume on the proper disk drive unit. This volume serves as the operating system and source volume and is required for all methods of system software integration into your system.
2. Initialize your system by loading control storage (COS) and a starter supervisor from OS/3REL into main storage as described in the operations handbook for operators, UP-8072 (current version).

NOTE:

For 90/30 B, you cannot IPL from a selector channel disk.

3. If SYSGEN output is to be placed on a disk pack other than the OS/3REL volume, mount a new output disk pack.

10.7.2.2. Step 2 – Preparing the SYSGEN Parameter Set

The following paragraphs describe the procedure for preparing your SYSGEN parameter sets using the SYSGEN dialog. Sperry Univac supplies the SYSGEN dialog to enable you to prepare your parameter sets as easily as possible in an interactive environment. If, for any reason, you prefer to prepare your SYSGEN parameter sets without the aid of the SYSGEN dialog, you can prepare them using the interactive facility, the general editor. We describe the use of the general editor in the general editor user guide/programmer reference, UP-8828 (current version). However, because the SYSGEN dialog minimizes the risk of interactive users preparing invalid parameter sets, we recommend that only the most experienced SYSGEN users use the general editor. If you prepare your sets using the general editor, you must process them using the procedure for manual execution of the parameter processor, which we present in 10.7.2.3.2.

NOTES:

1. *Before performing the following procedure using the SYSGEN dialog, we recommend that you read through it thoroughly, learn the type of information the system will expect you to provide in response to its requests, and only then proceed to follow this procedure one step after another. If you terminate the SYSGEN dialog prematurely (using the F4 key), extraneous messages may be generated.*
2. *Before executing the SYSGEN dialog, you must create the file that will hold the audit file version of your dialog session. To create that file, follow the instructions in the job control user guide/programmer reference, UP-8065 (current version). Specifically, you must include the EXT job control statement in your job control stream to allocate a file that is two cylinders in size.*

To prepare your parameter sets using the SYSGEN dialog, proceed as follows:

1. Determine the SYSGEN phase or phases you want included in this generation procedure. Refer to the guidelines outlined in 1.4.1. As we stated earlier, this manual specifically describes the SYSGEN procedure. It does not, however, describe in detail all of the components of OS/3. Therefore, before you begin to prepare your SYSGEN parameters, familiarize yourself with the components in your system by referencing the specific manuals in the OS/3 library that apply to those components.
2. At your workstation, enter workstation mode by simultaneously pressing the FUNCTION key and the workstation mode key (WS MODE). Your system then displays the OS/3 LOGON request screen, which looks like this:

```

000000      SSSS      /      333
00000000    SSSSSS    //     33333
00  00  SS  SS      ///    33  33
00  00  SS                ///   33
00  00  SS                ///   33
00  00      SS          ///    333
00  00      SS          ///    33
00  00  SS  SS      ///    33  33
00000000    SSSSSS    //     3333333
000000      SSSS      /      3333

```

SPERRY UNIVAC INTERACTIVE OPERATING SYSTEM
DEPRESS TRANSMIT FOR LOGON

3. When you see the LOGON request screen, press the XMIT key. Your system then displays the LOGON menu screen, which looks like this:

```

                OS/3 INTERACTIVE SERVICES
LOGON IDENTIFICATION:  USER-ID      >.....<
                      ACCOUNT NUMBER >.....<
                      PASSWORD      >.....<
OPTIONS:              EXECUTION PROFILE >.....<
                      BULLETIN      >YES <
                      LOG            >YES <

```

4. When you see the LOGON menu screen, press the XMIT key if you are an initial user; if you are an existing user operating under a supervisor that includes interactive security, fill in the menu screen as the interactive services commands and facilities user guide/programmer reference, UP-8845 (current version) describes. Either action causes your system to display messages informing you that it accepted your logon and to display the system bulletin.
5. Enter system mode by simultaneously pressing the FUNCTION key and the system mode key (SYS MODE).

NOTE:

If you are performing this procedure at a remote communications terminal, be sure the terminal contains the field-protect feature; otherwise, you will encounter errors.

6. Execute the SYSGEN dialog by keying in:

RVASG\$BLD

7. Press the XMIT key. This response causes the dialog to display a short paragraph explaining RUN libraries.
8. When you've read the paragraph on RUN libraries, press the XMIT key. The dialog will then request if you want to save a RUN library.
9. When the message DO YOU WANT TO SAVE RUN LIBRARY? (Y OR N) appears, key in N.
10. Press the XMIT key. When you see the message ARE YOU CREATING A NEW AUDIT FILE (Y/N)?, key in Y for yes.
11. Press the XMIT key. When you see the message ENTER VSN OF DISC CONTAINING NEW AUDIT FILE _ _ _ _ _ , key in the volume serial number of your SYSRES disk.
12. Press the XMIT key. When you see the message ENTER FILE LABEL OF NEW AUDIT FILE _ _ _ _ _ , key in the file label (LBL) of the file that you previously created to hold the audit file version of your dialog session.
13. Press the XMIT key. When you see the message, ARE YOU AUDITING AN OLD AUDIT FILE? (Y/N), key in N for no.
14. Press the XMIT key. The dialog then displays the message, DIALOG PROCESSOR READY, to inform you that it is ready to help you prepare your SYSGEN parameters. Then, it requests what type of system you are using.
15. When you see the message WHAT SYSTEM ARE YOU GENERATING?, key in 1 for Series 90.

16. Press the XMIT key. The dialog then displays a short definition of the SYSGEN dialog.
17. When you see the paragraph titled PROGRAM=DIALOG FOR SYSTEM GENERATION, key in HELP and press the XMIT key. The dialog then displays a description of the dialog method for preparing SYSGEN parameters.
18. After you've read the description of the dialog method, press the XMIT key. The dialog then displays its master menu screen. Through the master menu screen, you can choose the SYSGEN *phases* that you need to generate.
19. When you see the master menu screen, which we show here, choose one of the selections in the following manner to prepare sets for all the SYSGEN phases that you must perform:

```
SELECT THE SYSGEN PHASE TO BE PREPARED:
1. SUPERVISOR GENERATION (SUPGEN and IOGEN)
2. ICAM MODULE GENERATION (COMMCT)
3. COBOL COMPILER OPTIONS SPECS (COBGEN)
4. NTR UTILITY GENERATION (NTRGEN)
5. SYSTEM RESIDENT VOLUME CREATION (RESGEN)
6. NO FURTHER PHASE REQUIREMENTS
7. DISPLAY PHASE DESCRIPTIONS
   (ENTER NUMBER FOR SINGLE PHASE OR
    'HELP' FOR ALL PHASES)
ENTER CHOICE BY NUMBER _____
```

- Key in 1 and press the XMIT key to perform the SUPGEN and IOGEN phases, which enable you to prepare all of the necessary parameters for generating a supervisor module and defining your hardware configuration to OS/3. If you key in response 1, the SYSGEN dialog displays screens requesting which services and facilities you want in your supervisor. Next, it displays menu screens enabling you to define your hardware configuration to OS/3. When specifying these devices, you do not have to define all devices in the same category at the same time. For example, you may define the disk device containing your SYSRES volume first, followed by your printers, workstations, and other disk devices. In fact, we recommend that you define each I/O device in the order of most frequent use to reduce I/O access time during later processing.

When it requires no other information from you, the dialog redisplay its master menu screen.

- Key in response 2 and press the XMIT key to perform the COMMCT phase, through which you prepare all the necessary parameters for generating an ICAM symbiont. If you respond with 2, the SYSGEN dialog displays only those messages concerning COMMCT, then redisplay its master menu screen.
 - Key in response 3 and press the XMIT key to perform the COBGEN phase, which enables you to generate processing options for the ANSI '74 COBOL compiler different from the compiler's standard default options. If you key in 3, the dialog displays only those screens that pertain to the COBGEN phase and then redisplay the master menu screen.
 - Key in response 4 and press the XMIT key to perform the NTRGEN phase, through which you prepare the necessary parameters for generating an NTR module in your system. If you respond with 4, the dialog displays only those messages concerning NTRGEN, then redisplay its master menu screen.
 - Key in response 5 and press the XMIT key to perform the RESGEN phase, which enables you to place your SYSGEN output on a disk other than the OS/3REL volume. If you respond with 5, the dialog displays only those screens that pertain to RESGEN, then redisplay its master menu screen.
 - Key in response 6 and press the XMIT key to inform the dialog that you have no other control modules for which you must prepare parameter sets, and that the current dialog session is complete. If you key in response 6, proceed to step 21.
 - Key in response 7 and press the XMIT key to read descriptions of each of the SYSGEN phases. After it displays these phase descriptions, the dialog redisplay its master menu screen.
20. After you respond to the master menu screen, the SYSGEN dialog guides you step-by-step in specifying SYSGEN parameter sets for the phases that you indicate. As you proceed through the dialog, press the XMIT key to go on to subsequent screens. If you need more information about a parameter, request help by keying in the choice that gives a HELP screen or by keying in *HELP* in the space provided. If a parameter does not concern you, simply press the TAB FORWARD key to ignore it and your system automatically provides a sufficient default value for you. Then, when you reach the bottom of the screen, press the XMIT key. (When specifying your hardware configuration to OS/3, be sure to specify a device category parameter and a type parameter for each device, whether you want to accept the default values for that device or not. Otherwise, OS/3 generates your supervisor without an I/O configuration for that device.)

While specifying some parameters, you may need to use the SYSGEN parameter reference tables in the sections on the SYSGEN phases. These tables give you guidelines and formulas for specifying particular SYSGEN parameters. Each time you complete the parameter specifications for a single phase, the dialog redisplay its master menu screen until you respond to it with choice 6.

To omit a parameter from your sets while using the dialog, you must replace the enter-field for that parameter with either underlines or spaces. For parameters that have only numeric values, you must use spaces since the underline character is not a numeric character and will be rejected by the system. On ICAM terminals, use a destructive space bar by putting (SP/DS) in the last field on the control page.

21. When you key in response 6 to inform the dialog that you've completed your session, the SYSGEN dialog displays the message DIALOG SESSION TERMINATED NORMALLY. Press the XMIT key. The dialog then displays a message requesting if you want it to execute the parameter processor.
22. When the message DO YOU WANT TO EXECUTE THE PARAMETER PROCESSOR AGAINST DIALOG OUTPUT? (Y OR N) appears, key in Y and press the XMIT key if you want to proceed with the SYSGEN process; if you want to review your parameter sets or, because of time limits, you do not want to execute the parameter processor, key in N and press the XMIT key. Either response causes the dialog to display a message (step 23) asking you where you want your dialog output stored.
23. When the message ENTER A 1-8 CHARACTER NAME FOR THIS OUTPUT MODULE appears, press the XMIT key if you want the dialog to store your parameter sets as a module named SG\$INPUT on \$\$\$SRC; if another dialog parameter set already exists with the module name SG\$INPUT and you want to keep that set, key in an alternate 1-8 character name for your new module and press the XMIT key.

NOTE:

After responding to step 23, your next action depends on your response to step 22. If you keyed in Y to step 22, go to 10.7.2.3.1 for automatic execution of the parameter processor. If you keyed in N to step 22, the dialog stores your sets under the module name that you specified in step 23 and then terminates. In this case, proceed to 10.7.2.3.2 for manual execution of the parameter processor.

10.7.2.3. Step 3 – Running the Parameter Processor

This subsection presents the procedures for processing your SYSGEN sets either by automatically or manually executing the parameter processor (SG\$PARAM). Which method you use depends, primarily, on how you prepared your sets.

If, at the end of your dialog session, you want the dialog to execute the parameter processor against your dialog session output, use the procedure for automatic execution of the parameter processor in 10.7.2.3.1.

On the other hand, you must manually execute the parameter processor, using the procedure in 10.7.2.3.2, for any of the following reasons:

- At the end of your dialog session, you wanted to review all your parameter sets to ensure that they are correct or, because of time limits, you did not want to execute the parameter processor.

- Your parameter sets are in one of the following forms:
 - as parameters prepared using the general editor;
 - as source modules created interactively and saved from a previous release; or
 - as parameters output from a previous dialog session and corrected by the general editor.

NOTE:

Never rerun SG\$PARAM until you run all the jobs listed by SG\$PARAM; otherwise, the variables generated by the first execution of SG\$PARAM will be lost and you will be able to run only the jobs listed for the current (second) execution of SG\$PARAM.

10.7.2.3.1. Automatic Execution of the Parameter Processor

Your system prepares to execute the parameter processor automatically when you answer Y (for yes) to the dialog's request DO YOU WANT TO EXECUTE THE PARAMETER PROCESSOR AGAINST DIALOG OUTPUT? (Y OR N). Then, after you inform your system of where to store the dialog output by responding to the message ENTER A 1-8 CHARACTER NAME FOR THIS OUTPUT MODULE, the dialog:

- stores your sets;
- automatically executes the parameter processor;
- supplies it with the parameter sets that you just created;
- prints a summary listing of your entire dialog session; and
- terminates normally.

The parameter processor then processes and verifies your SYSGEN parameter values. It provides a complete listing of all your parameter values, defaults, errors in your sets, and the execution sequence of the job control streams that you must execute if it finds no errors.

If the processor terminates normally and finds no errors in your sets, carefully check the SG\$PARAM listing to be sure that all its default substitutions are correct for your situation and the type of system you are generating. Then, proceed to the procedure for running the SYSGEN job control streams in 10.7.2.4. If the processor finds errors in your sets, it also displays a message on your screen informing you of the number of errors in your sets.

When this message appears, you must correct or change your parameter sets using the parameter processor output listing as a guide to identifying the errors. To correct or change parameters, use the audit capability of the SYSGEN dialog which we describe here. The audit capability lets you easily correct parameters that you prepared using the dialog and that reside in the audit file you allocated to contain them.

Or you can use the general editor to correct or change parameters. The general editor is a general purpose editor that lets you edit, change, or correct the contents of any module in your system. To use the editor, see the general editor user guide/programmer reference, UP-8828 (current version). When using the editor, specify the name of the source module containing your dialog output as the module that you want to edit. After you correct your parameter sets, go to step 1 of the procedure for manually executing the parameter processor. To use the audit file capability of the SYSGEN dialog, perform the following steps:

1. Create the file that will hold the new audit file version of your dialog session. To create that file, follow the instructions in the job control user guide/programmer reference, UP-8065 (current version). Specifically, you must include the EXT job control statement in your job control stream to allocate a file 2 cylinders in size.
2. Reexecute the SYSGEN dialog starting at step 6 of the procedure for preparing your parameter sets.
3. When you see the message ARE YOU CREATING A NEW AUDIT FILE? (Y/N), key in Y for yes.
4. Press the XMIT key. When you see the message, ENTER VSN OF DISC CONTAINING NEW AUDIT FILE - - - - - , key in the volume serial number of your SYSRES disk.
5. Press the XMIT key. When you see the message ENTER FILE LABEL OF OLD AUDIT FILE - - - - - , key in a different file label name than the file containing the audit version of the dialog session during which you prepared your parameter sets. In other words, provide a name for your new audit file different from the name you gave your old audit file.
6. Press the XMIT key. When you see the message ARE YOU AUDITING AN OLD AUDIT FILE?(Y/N), key in Y for yes.
7. Press the XMIT key. When you see the message, ENTER VSN OF DISC CONTAINING OLD AUDIT FILE - - - - - , key in the volume serial number of your SYSRES disk.
8. Press the XMIT key. When you see the message ENTER FILE LABEL OF OLD AUDIT FILE - - - - - , key in the file label name of the file containing the audit version of the dialog session during which you prepared your parameter sets.
9. Press the XMIT key. The dialog then displays a message that it is ready to help you audit your old audit file. Then it requests which paragraphs you want to change. Use the summary listing that the dialog provided at the end of the dialog session as a guide to the paragraphs you want to change. The paragraphs are numbered sequentially to act as a map to your audit file.

NOTES:

1. *If you need to make changes to the paragraph containing the SYSGEN dialog master menu screen, you must re-create the dialog entirely. In that case, go back to the procedure for preparing your SYSGEN parameter sets (10.7.2.2)*
 2. *At the end of the upcoming dialog audit session, the dialog either automatically executes the SYSGEN parameter processor or terminates. Which action takes place depends on the response that your new audit file contains to the dialog question DO YOU WANT TO EXECUTE THE PARAMETER PROCESSOR? If you do not change the paragraph containing that response, the dialog uses the same response that both your old and new audit file contain; if you change that response in the upcoming audit session, the dialog uses the response that your new audit file will contain after this session. Therefore, according to what you want the dialog to do at the end of this session, decide if you want to change the paragraph containing that response. If you do, specify it in step 10.*
10. When you see the following screen, key in the paragraph numbers of the paragraphs that you want to change or correct.

```

DP100 OS/3DIALOG PROCESSOR VERSION _____ READY
      ENTER PARAGRAPH NUMBERS TO BE EDITED.
      PARAGRAPH NUMBERS MUST BE IN ASCENDING ORDER
      WITH ONLY ONE NUMBER IN EACH AREA.

```

```

-----
-----

```

11. Press the XMIT key. The dialog then displays each of the paragraphs you indicated you want to change, one at a time.
12. Correct all the paragraphs you want to change according to the following instructions:
 - a. When the dialog displays a paragraph, the top of the screen shows what your old audit file contains for that paragraph. The middle of the screen is blank and the bottom of the screen displays your auditing options at the beginning of a paragraph. For example, in step 10, you tell the dialog that you want to change paragraph 8 of your old audit file. In this example, paragraph 8 contains part of the SUPGEN parameters. The dialog would show you a screen resembling this one:

```
8. SUPERVISOR SIZING PARAMETERS
  1. PRIORITY          TASK PRIORITY LEVELS          0
  2. JOBSLOTS         NUMBER OF JOBSLOTS             3
  3. TRANS            NUMBER OF TRANSIENT AREAS      4
  4. SHARED MGT       SHARED DATA MNGMENT TABLE SLOTS 5
  5. SYMBPRI         SYMBIONT PRIORITY LEVEL        6
  FOR HELP ENTER PARAMETER NUMBER OR 'ALL'
```

AT THE BEGINNING OF PARAGRAPH, YOU CAN:
ENDSESSION (F4), EDIT (F7), OR PROCEED (XMIT)

At this point, choose one of the following auditing options by pressing the FUNCTION key and simultaneously pressing the workstation function key that corresponds to it:

- ENDSESSION (F4) – This option lets you normally terminate an auditing session before you've made all your changes to the old audit file. If you choose ENDSESSION, the dialog displays a message informing you that it terminated normally, but your new audit file is incomplete and must not be used. When you subsequently want to complete the auditing session, you must perform this procedure over again starting at step 1 and specify the same name for the old audit file that you did in this session.
- EDIT (F7) – This option lets you make changes and corrections to the paragraph that you are working on. In most cases, you will choose EDIT at this point because you told the dialog that you want to change this paragraph in step 10. If you choose EDIT, go to step b.
- PROCEED (XMIT) – This option lets you go on to the next paragraph you indicated in step 10, without making any changes to the current paragraph. You choose PROCEED at this point only if, after rereading the paragraph, you realize you don't want to change it, but you had indicated so in step 10. If you choose PROCEED, go back to step a.

- b. When you tell the dialog that you want to EDIT a paragraph, the top of the screen again shows your old audit file, the middle of the screen is reserved for your changes, and the bottom of the screen shows your auditing options at a choice point in a paragraph. Using our same example, the dialog shows a screen resembling this one:

```
8. SUPERVISOR SIZING PARAMETERS
1. PRIORITY          TASK PRIORITY LEVELS          0
2. JOBSLOTS         NUMBER OF JOBSLOTS            3
3. TRANS           NUMBER OF TRANSIENT AREAS      4
4. SHARED MGT      SHARED DATA MNGMENT TABLE SLOTS 5
5. SYMBPRI        SYMBIONT PRIORITY LEVEL        6
FOR HELP, ENTER PARAMETER NUMBER OR 'ALL'

-----

-----

AT CHOICE POINT IN PARAGRAPH, YOU CAN:
CANCEL (F2), REEDIT (F3), ENDESESSION (F4),
INSERT (F5), DELETE (F6), EDIT (F7), OR PROCEED (XMIT)
```

At this point, choose only one of the following auditing options by pressing the FUNCTION key and simultaneously pressing the workstation function key that corresponds to it:

- CANCEL (F2) - This option is invalid at this point.
- REEDIT (F3) - This option is invalid at this point.
- ENDESESSION (F4) - See explanation under step a.
- INSERT (F5) - This option lets you insert a choice that you neglected to specify in the paragraph during your original dialog session. If you choose INSERT, the dialog displays the paragraph and positions the cursor at the first data field. To skip to the next data field without inserting a value at the current field, press the TAB FORWARD key. After you finish all the data fields, go to step c.
- DELETE (F6) - This option lets you delete a choice that you specified in the paragraph during the original dialog session. If you choose DELETE, the dialog displays the paragraph, deletes the first data field, then positions the cursor at the next data field. To delete the value, press F6 again; to the next data field without deleting the current value, press the TAB FORWARD key. After you finish all the data fields, go to step c.

- EDIT (F7) – This option lets you edit, or change, a value that you specified in the paragraph during the original dialog session. If you choose EDIT, the dialog displays the old audit file screen for that paragraph and positions the cursor at the first data field. Press the TAB FORWARD key to position the cursor at the data field that you want to change, key in the correct value over the incorrect the value, and press the XMIT key. After you edit the data fields, go to step c.
- c. After you perform the auditing option at the choice point in the paragraph, the top of the screen shows your old audit file, the middle of the screen shows your new audit file, and the bottom of the screen shows your auditing options at the end of the paragraph. Using our same example, assume we chose to edit paragraph 8 to change the number of jobslots from 3 to 7. The dialog shows you a screen resembling this one:

```

8. SUPERVISOR SIZING PARAMETERS
  1. PRIORITY          TASK PRIORITY LEVELS          0
  2. JOBSLOTS          NUMBER OF JOBSLOTS            3
  3. TRANS             NUMBER OF TRANSIENT AREAS       4
  4. SHARED MGT        SHARED DATA MNGMENT TABLE SLOTS 5
  5. SYMBPRI          SYMBIONT PRIORITY LEVEL        6
  FOR HELP, ENTER PARAMETER NUMBER OR 'ALL'

```

```

-----
8. SUPERVISOR SIZING PARAMETERS
  1. PRIORITY          TASK PRIORITY LEVELS          0
  2. JOBSLOTS          NUMBER OF JOBSLOTS            7
  3. TRANS             NUMBER OF TRANSIENT AREAS       4
  4. SHARED MGT        SHARED DATA MNGMENT TABLE SLOTS 5
  5. SYMBPRI          SYMBIONT PRIORITY LEVEL        6

```

```

-----
AT END OF PARAGRAPH, YOU CAN:
CANCEL (F2), REEDIT (F3), ENDESESSION (F4), OR PROCEED (XMIT)

```

At this point, choose one of the following auditing options:

- CANCEL (F2) – This option lets you cancel the changes you made to the paragraph in step b. Choose this function if you made many changes that you now want to cancel. If you choose CANCEL, go back to step a.
- REEDIT (F3) – This option lets you reedit the paragraph that you audited in step b. Choose this option if you made only a few changes that you now want to reedit. If you choose REEDIT, go back to step b.
- ENDESESSION (F4) – See explanation under step a.

- PROCEED (XMIT) – This option lets you either proceed to the next paragraph you indicated in step 10. Or, it automatically takes you back into the SYSGEN dialog if you made radical changes to your old audit file. If you did not make radical changes, it lets you terminate this auditing session when you have no other paragraphs to change. When you've made all your changes and, if necessary, gone through the SYSGEN dialog, you receive a message that your dialog session terminated normally. At this point, the dialog then automatically executes the parameter processor or terminates. Which action takes place depends on the response that your new audit file contains for the dialog question DO YOU WANT TO EXECUTE THE PARAMETER PROCESSOR?. If it contains "yes", go back to the beginning of this section for automatic execution of the parameter processor. If it contains "no", go to 10.7.2.3.2 for manual execution of the parameter processor.

10.7.2.3.2. Manual Execution of the Parameter Processor

The following paragraphs describe the procedure for manually executing the parameter processor. You must process your SYSGEN parameter sets in this way if your sets are in any of the following forms:

- as parameters prepared using the general editor;
- as source modules saved from a previous dialog session;
- as source modules created interactively and saved from a previous release; or
- as parameters, saved from a previous dialog session, and corrected by the general editor.

To manually execute the parameter processor, proceed as follows:

1. At your workstation in system mode, key in:

```
RVASG$PARAM, ,S=source-module [ ,F={filename} ] [ ,V=vsrn ]
      SYSGEN
```

where:

- S Identifies the name of the source module where you stored your parameter sets.
- F Identifies the name of the file that contains that source module.
- V Identifies the volume serial number of the volume that contains that file.

NOTES:

- *If you do not supply a value for the S parameter, the parameter processor asks whether you want to run interactively through the SYSGEN dialog. Respond Y for yes if you have not prepared SYSGEN parameters. If you respond N for no, the parameter processor will request the name of the source module where you stored your parameter sets.*
- *If you don't specify a volume serial number, the default is your SYSRES volume.*

The parameter processor then processes and verifies your SYSGEN parameter sets. It provides a complete listing of all your parameter values, defaults, errors in your sets, and the execution sequence of the job control streams that you must execute. If the processor finds no errors in your sets, carefully check the SG\$PARAM listing to be sure that all its default substitutions are correct for your situation and the type of system you are generating. Then, proceed to the procedure for running the SYSGEN job control streams presented in 10.7.2.4. If the processor finds errors in your sets, it will also display a message on your screen informing you of the number of errors in your sets.

2. If the parameter processor finds errors in your sets, correct or change your parameter sets using the parameter processor output listing as a guide to the errors. Use the general editor according to the instructions in the general editor user guide/programmer reference, UP-8828 (current version) to correct your parameters. When using the editor, specify the source module name that contains your parameter sets and the name of the file containing this source module.

When you correct all errors in your parameter sets, rerun the parameter processor starting at step 1 of this procedure.

10.7.2.4. Step 4 – Running the Prefiled SYSGEN Job Streams

You actually accomplish system generation by running the SYSGEN job control streams that the parameter processor lists collectively in its output listing and that the dialog processor lists individually on the workstation screen. The parameter processor selects these job streams based on your phase and parameter specifications. Run the SYSGEN job streams, at your workstation in system mode, one at a time in the order in which they appear on the workstation screen and in the parameter processor output list. You must wait until each job is completed before executing the next job in its sequence. This manual gives the names and functions of each prefired SYSGEN job stream that can appear in the output listing and on the screen in 1.3.1.

NOTE:

Do not rerun SG\$PARAM until all the jobs listed in the parameter processor output listing have been run; otherwise, the variables generated by the first execution of SG\$PARAM will be lost and you will be able to run only the jobs listed for the current (second) execution of SG\$PARAM.

The following SYSGEN procedures are identical in both batch and interactive systems. To perform these procedures, refer to the indicated procedure descriptions in 10.7.1.

- Creating a new SYSRES volume (10.7.1.5)
- Generating a supervisor without creating a new SYSRES (10.7.1.6)
- Emulator generation (10.7.1.7)
- ICAM generation (10.7.1.8)
- NTR generation (10.7.1.9)
- ANSI'74 COBOL processing option value generation (10.7.1.10)

10.8. POST-SYSGEN PROCEDURES

After you complete your SYSGEN operation, we recommend that you perform the following post-SYSGEN procedures (10.8.1 through 10.8.8).

10.8.1. Updating the System Definition File

If your system contains workstations, you must update the system definition file (\$YSSDF) each time you generate a new or updated OS/3 release or each time you install a system maintenance package (SMP). This update is necessary because, even though these processes add the microcode for those workstations to the system microcode file (\$Y\$MIC), they don't automatically place the names of that microcode in \$YSSDF. Therefore, the microcode names in \$YSSDF don't match the actual microcode in \$Y\$MIC.

However, for your system to operate correctly, the microcode names in \$YSSDF must match the names of the actual microcode in \$Y\$MIC. Whenever they don't match, you must update \$YSSDF to reflect the names of the actual microcode that your system contains.

The system release document (SRD) that accompanies an OS/3 release informs you if the release changes the microcode in \$Y\$MIC; the SMP document that accompanies an SMP gives this information concerning SMPs.

To update \$YSSDF, Sperry Univac supplies the system definition utility (SDU). The SDU provides three functions that let you:

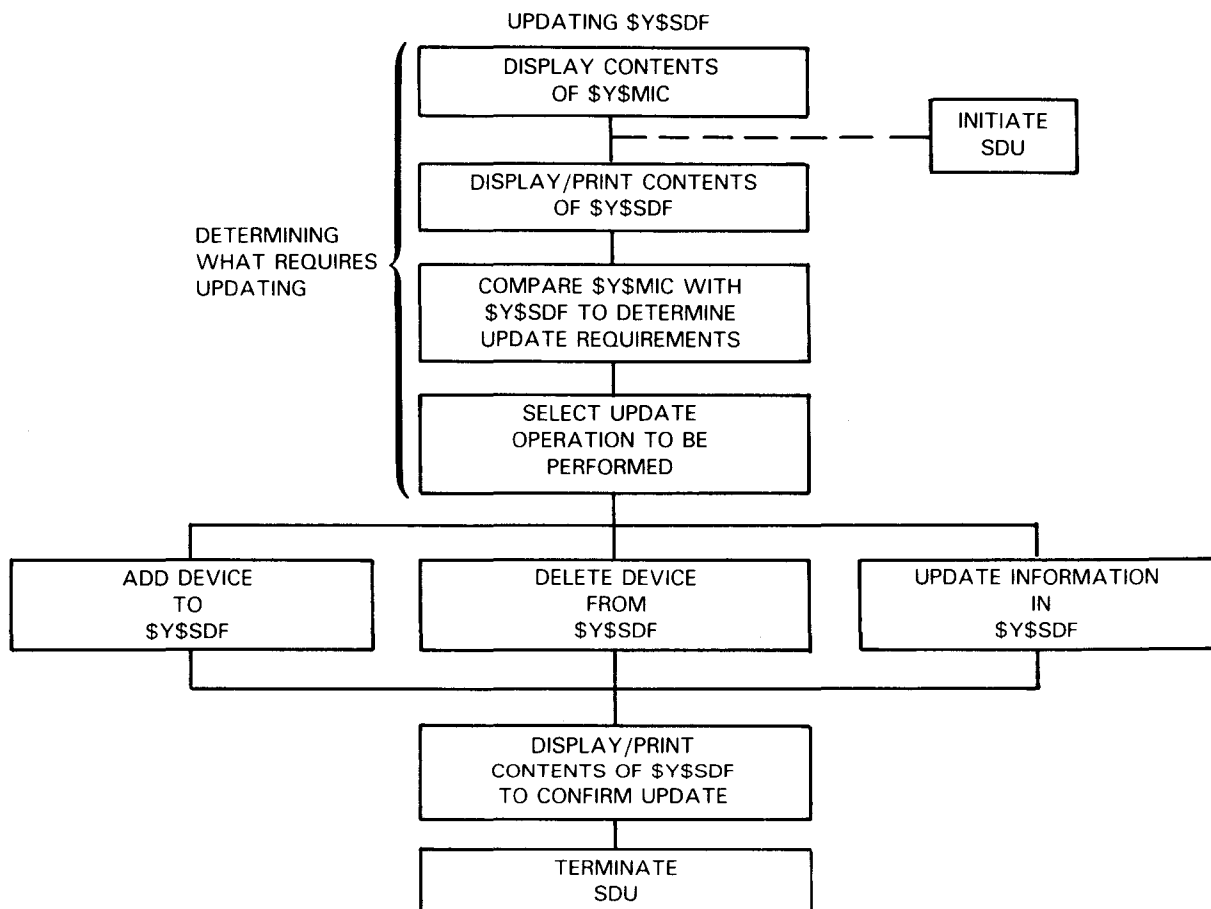
- Add a new device to \$YSSDF
- Delete an existing device from \$YSSDF
- Update information for an existing device in \$YSSDF

The SDU also has a print/display capability that lets you print the contents of `YSSDF` on your system printer or display its contents on your system console. By checking the contents of `YSSDF` both before and after you perform one of the update functions, you can be sure that the SDU properly updated `YSSDF`.

We also provide a facility to display the contents of `YMIC` at your system console. `YMIC` contains the information that SDU requests from you concerning the microcode in your system.

The actual updating of `YSSDF` is made up of several steps which are shown in the overview in Figure 10-1. The first step you must perform is to display the contents of `YMIC` to review the microcode applicable to your system. This review provides you with information that the SDU specifically requests as input when updating `YSSDF`.

Next, you must review the contents of `YSSDF` and compare it to the contents of `YMIC` to determine which entries in `YSSDF` you must update (add, delete, or modify). After determining what to update, select the appropriate SDU update procedure and proceed to update the contents of `YSSDF`. When completed, review the contents of `YSSDF` to confirm that the file was updated correctly. Once you have made certain that the microcode names in `YSSDF` now match the actual microcode in `YMIC`, you can terminate the SDU.



The procedures for updating \$YSSDF are presented in the following order:

1. Determining What to Update by Reviewing the Contents of \$Y\$MIC and \$YSSDF
2. Adding a Device to \$YSSDF
3. Deleting a Device from \$YSSDF
4. Updating Existing Device Information in \$YSSDF
5. Confirming that \$YSSDF is Updated Correctly

NOTES:

1. *With the exception of the messages included here, the system messages manual, UP-8076 (current version) describes all messages concerning this procedure in the section on unprefixed messages.*
2. *To perform this procedure, we assume that your system is operating under the control of either the starter supervisor or one that you've generated yourself.*

10.8.1.1. Determining What to Update by Reviewing Contents of \$Y\$MIC and \$YSSDF

1. At your console/workstation in console mode, key in:

FSTAT , \$Y\$MIC, RES

Then press XMIT. The contents of \$Y\$MIC is displayed at your system console.

2. Record the following information:

- microcode device
- microcode type
- microcode name

The SDU will request this information from you later.

3. Key in SDU, then press XMIT. The operation request screen is displayed at the console/workstation:

```

SYSTEM DEFINITION UTILITY DIALOGUE
ENTER THE OPERATION TO BE PERFORMED
1. ADD A DEVICE TO $$$SDF FILE
2. DELETE A DEVICE FROM $$$SDF FILE
3. UPDATE DEVICE INFORMATION IN $$$SDF FILE
4. PRINT/DISPLAY ENTRY(S) IN $$$SDF FILE
5. TERMINATE SDU.

```

SDU Operation Request Screen

4. Key in 4, then press XMIT. The print/display screen is displayed at the console/workstation:

```

ENTER OPERATION TO BE PERFORMED
1. DISPLAY ALL ENTRIES
2. DISPLAY BY DEVICE
3. PRINT ALL ENTRIES
4. TERMINATE PRINT/DISPLAY

```

SDU Print/Display Screen

This print/display screen offers you several choices for checking the contents of \$\$\$SDF for comparison to \$\$MIC:

a. DISPLAY ALL ENTRIES

Displays the entire contents of \$\$\$SDF on the console/workstation screen in the following format:

```

DVC ADDR  TYPE  MICROCODE NAME  SERIAL NUMBER  FCO NUMBER
HHHH      AAAA  AAAAAAAAAA      AAAAAAAAAA     XXXXX-XXXX

```

Note: H-hexdigit, A-alphanumeric, X-decimal

The information is displayed in 10-line increments.

b. DISPLAY BY DEVICE

Displays all entries in \$Y\$SDF for a particular device address. The format is the same as shown for choice 1.

c. PRINT ALL ENTRIES

Prints the entire contents of \$Y\$SDF on the system printer. The format is the same as shown for choice 1.

5. Key in 1, then press XMIT if you want to display the entire contents of \$Y\$SDF on your console/workstation screen. Otherwise, proceed to next step. Because the SDU displays the contents of \$Y\$SDF in 10 line increments, you must key in Y and press XMIT each time the following message appears to view the next 10 lines of information:

DO YOU WISH TO CONT (Y,N)

To discontinue the display and return to the print/display screen, key in N and press XMIT.

6. Key in 2, then press XMIT if you want to display all entries in \$Y\$SDF for a particular device address. Otherwise, proceed to next step. When the following message appears:

→ ENTER 'IMPL' OR DVC ADDRESS HHH TO BE DISPLAYED

Key in either IMPL or the address of the device you want displayed.

If no entries exist for the device specified, SDU displays the message:

NO ENTRIES FOUND FOR THIS DEVICE

When the display is completed, press XMIT to return to the print/display screen.

7. Key in 3, then press XMIT if you want to print the entire contents of \$Y\$SDF. Otherwise, proceed to next step. When printing is complete, press XMIT to return to the print/display screen.
8. Compare the contents of \$Y\$SDF (obtained in step 5, 6, or 7) with the contents of \$Y\$MIC (obtained in step 2). From this comparison, determine which entries must be updated in \$Y\$SDF.

If no update is necessary, terminate SDU as follows: Press XMIT. When the print/display request screen is displayed, key in 4 and press XMIT. When the operation request screen is displayed, key in 5 and press XMIT. If \$Y\$SDF requires updating, proceed to next step.

9. Key in 4, then press XMIT. The print/display screen terminates, and the operation request screen is redisplayed.

10. Determine from the options listed in the operation request screen, which function you want to perform.
 - If you want to add a device to \$Y\$SDF, proceed to 10.8.1.2
 - If you want to delete a device from \$Y\$SDF, proceed to 10.8.1.3, or
 - If you want to update existing device information in \$Y\$SDF, proceed to 10.8.1.4.

10.8.1.2. Adding a Device to \$Y\$SDF

Do not perform the following procedure unless you have completed steps 1 through 9 of 10.8.1.1 or are continuing from one of the other \$Y\$SDF update procedures.

1. Key in 1 on the SDU operation request screen, then press XMIT. SDU displays the message:

N=NUMERIC X=ALPHANUMERIC H=HEXADECIMAL
ENTER 'IMPL' OR DVC ADDRESS HHH TO BE ADDED

2. Key in 'IMPL' or the address of the device you are adding, then press XMIT. SDU then displays one of the following messages, depending on whether you entered 'IMPL' or a device address:

If you entered 'IMPL', SDU displays this message:

ENTER 'CPU', 'DBUS', 'IOMP', or 'CACH'

Respond to this message by entering the type of IMPL you are adding and proceed with step 3.

If you entered an address, SDU displays this message:

ENTER THE DEVICE TYPE NNNN OR 'WSC'

Respond to this message by entering the four-character device type you are adding or 'WSC' for workstation controller and proceed with step 3.

NOTE:

If you keyed in the address for a device not configured in your system, SDU displays the message:

DEVICE NOT CONFIGURED, DO YOU WISH TO CONTINUE (Y,N)

If you keyed in the address for a device that is configured but is nonloadable, SDU displays the message:

DEVICE NOT LOADABLE, DO YOU WISH TO CONTINUE (Y,N)

To continue the procedure in either case, key in Y, then press XMIT. If you don't want to continue the dialog, key in N then press XMIT. The operation request screen will be redisplayed.

3. Press the XMIT key. The SDU displays the message:

➔ ENTER MICROCODE NAME XXXXXXNN OR 'NONE'

4. Key in the 1–8 character name for the microcode you are adding, or NONE, then press XMIT. SDU displays the message:

ENTER SERIAL NUMBER XXXXXXXX OR 'NONE'

5. Key in the serial number of the specified device or NONE, then press XMIT. SDU displays the message:

➔ ENTER FCO NUMBER NNNN-NN OR 'NONE'

6. Key in the FCO number for the specified device or NONE, then press XMIT. SDU redisplay the operation request screen.

7. If you want to add another device to \$Y\$SDF, repeat steps 1–7 of this procedure.

8. If you want to perform one of the other SDU update functions listed on the operations request screen, refer to the appropriate procedure:

- To delete a device, see 10.8.1.3.
- To update existing device information, see 10.8.1.4.
- To confirm your \$Y\$SDF update, see 10.8.1.5.

10.8.1.3. Deleting a Device from \$Y\$SDF

Do not perform this procedure unless you have completed steps 1 through 9 of 10.8.1.1 or are continuing from one of the other \$Y\$SDF update procedures.

- ➔ 1. Key in 2 on the SDU operation request screen, then press XMIT. SDU displays the message:

➔ N=NUMERIC X=ALPHANUMERIC H=HEXADECIMAL
ENTER 'IMPL' or DVC ADDRESS HHH TO BE ADDED

- ↓ 2. Key in 'IMPL' or the address of the device you are deleting, then press XMIT. SDU then displays one of the following messages, depending on whether you entered 'IMPL' or a device address.

If you entered 'IMPL', SDU displays this message:

↑ ENTER 'CPU', 'DBUS', 'IOMP', or 'CACH'

Respond to this message by entering the type of IMPL you are deleting and proceed with step 3. ↓

If you entered an address, SDU displays this message:

ENTER THE DEVICE TYPE NNNN OR 'WSC'

Respond to this message by entering the four-character device type you are deleting or 'WSC' for workstation controller and proceed with step 3.

3. Press the XMIT key. SDU redisplay the operation request screen.
4. If you want to delete another device from \$Y\$SDF, repeat steps 1 through 3 of this procedure. ↑
5. If you want perform one of the other SDU update functions listed on the operation request screen, refer to the appropriate procedure:
 - To add a device, see 10.8.1.2.
 - To update existing device information, see 10.8.1.4.
 - To confirm your \$Y\$SDF update, see 10.8.1.5.

10.8.1.4. Updating Existing Device Information in \$Y\$SDF

Do not perform this procedure unless you have completed steps 1 through 9 of 10.8.1.1 or are continuing from one of the other \$Y\$SDF update procedures.

1. Key in 3 on the SDU operation request screen, then press XMIT. SDU displays the message: ←

N=NUMERIC X=ALPHANUMERIC H=HEXADECIMAL
ENTER 'IMPL' OR DVC ADDRESS HHH TO BE ADDED ←

2. Key in IMPL or the device address of the device you are updating, then press XMIT. SDU then displays one of the following messages, depending on whether you entered 'IMPL' or a device address. ↓

If you entered 'IMPL', SDU displays this message:

ENTER 'CPU', 'DBUS', 'IOMP', or 'CACH'

Respond to this message by entering the type of IMPL you are updating and proceed with step 3.

If you entered an address, SDU displays this message:

ENTER THE DEVICE TYPE NNNN OR 'WSC' ↑

↓
Respond to this message by entering the four-character device type you are updating or 'WSC' for workstation controller and proceed with step 3.

3. Press the XMIT key. SDU displays the message:

↑
ENTER MICROCODE ID XXXXXXNN OR 'CLEAR' (DEFAULT NO CHANGE)

4. Key in the new microcode name if you want to change the name of a microcode entry in \$Y\$SDF or CLEAR if you want to delete the microcode name for a device that is no longer loadable or configured; then press XMIT. If microcode is to remain unchanged, simply press XMIT. SDU displays the message:

→ ENTER SERIAL NUMBER XXXXXXXX OR 'CLEAR' (DEFAULT NO CHANGE)

NOTE:

You cannot use 'CLEAR' to delete the microcode name for a loadable, configured device. If you try to do so, SDU displays the message:

CANNOT CLEAR MICROCODE NAME, ENTER NEW NAME OR NULL STRING IF NO CHANGE

To continue the procedure, either enter a new microcode name and press XMIT, or simply press XMIT if the name is to remain unchanged.

5. Key in a new serial number or 'CLEAR' if you want to delete an old number, then press XMIT. If the serial number is to remain unchanged, simply press XMIT. SDU displays the message:

→ ENTER FCO NUMBER NNNN-NN OR 'CLEAR' (DEFAULT NO CHANGE)

6. Key in the new FCO number or 'CLEAR' if you want to delete an old number; then press XMIT. If the FCO number is to remain unchanged, simply press XMIT. SDU redisplay the operation request screen.
7. If you want to change information for another device, repeat the steps of this procedure.
8. If you want to perform one of the other SDU update functions listed on the operation request screen, refer to the appropriate procedure:
- To add a device, see 10.8.1.2
 - To delete a device, see 10.8.1.3
 - To confirm your \$Y\$SDF update, see 10.8.1.5.

10.8.1.5. Confirming Your \$Y\$SDF Update

This procedure is performed after you have completed \$Y\$SDF updating procedures, provided in 10.8.1.2, 10.8.1.3, or 10.8.1.4.

1. Key in 4 on the SDU operation request screen, then press XMIT. SDU displays the print/display screen. ←
2. Key in 1 or 3 on the print/display screen, then press XMIT. SDU displays or prints (based on your entry) the entire contents of \$Y\$SDF. ←
3. Check current entries in \$Y\$SDF to make certain that SDU performed your update properly.
4. Press XMIT to redisplay the print/display screen.
5. Key in 4, then press XMIT. SDU displays the operation request screen.
6. If \$Y\$SDF is not properly updated, repeat the appropriate update procedure provided in the paragraphs that follow:
 - See 10.8.1.2 to add a device
 - See 10.8.1.3 to delete a device
 - See 10.8.1.4 to update existing device information.
7. If \$Y\$SDF is properly updated, key in 5 then press XMIT. SDU terminates.

10.8.2. Copying and Restoring \$Y\$SDF

If you are an existing Series 90 user and are installing a new release, you can make a copy of your old \$Y\$SDF file and later restore it to your new SYSRES with the jobstream SDFSAVE. This jobstream lets you copy \$Y\$SDF from your old SYSRES to any of the following types of media:

1. Single-sided single-density diskette
2. Tape
3. Another disk volume (other than your SYSRES)



If you use diskette or tape, SDFSAVE preps the media and allocates a file to contain the copied version of \$Y\$SDF. If you use another disk volume, you must prep this volume and allocate a file for \$Y\$SDF yourself.

After you install your new release, you can run SDFSAVE again to restore \$Y\$SDF from the diskette, tape, or disk media to your SYSRES volume. Thus, you do not have to completely recreate \$Y\$SDF each time you install a new release.

To run SDFSAVE, mount the media you are copying to or restoring from and enter the following command at your system console:

RV SDFSAVE

Here are the messages that appear on the console screen along with the responses you must enter when running SDFSAVE:

ENTER THE APPROPRIATE FUNCTION' (DUMP OR RESTORE)

Enter DUMP if you want to make a copy of \$Y\$SDF or RESTORE if you want to restore \$Y\$SDF to your SYSRES.

THEN ENTER THE DEVICE TYPE. (DISK, DISKETTE, or TAPE)

Enter the type of media you are copying to or restoring from.

THEN ENTER THE VOLUME NAME FOR THE GIVEN DEVICE TYPE

Enter the volume serial number of the media you are copying to or restoring from.

WHEN DUMPING TO TAPE OR DISKETTE THE VOLUME NAME WILL BE USED FOR THE PREP

This is the last message displayed. You respond to it by pressing XMIT and SDFSAVE then performs the copy or restore function you specified.

10.8.3. Modifying the OS/3REL Volume Library Files

If you are using the OS/3REL volume as your permanent SYSRES, you may have to perform the following two additional procedures to modify the contents of your library files. When you create a new SYSRES, you make these modifications during the RESGEN phase of SYSGEN.

10.8.3.1. Configuring the 2K Version of COS Code

To use the IMS, FORTRAN IV, extended COBOL, or COBL74 processors, you must replace the 1K version of the control storage (COS) code in the COS load area on the OS/3REL with the 2K version. The procedure for configuring the 2K version of COS code is outlined in the system service programs user guide, UP-8062 (current version).

10.8.3.2. Deleting SYSGEN Files from the Release Volume

If you are using the OS/REL volume as your permanent SYSRES, you can scratch the SYSGEN files from the release volume by keying in the following system command:

```
RVASG$SCR
```

NOTE:

If you run this job stream, it is the last post-SYSGEN operation performed on the OS/3REL library files.

10.8.4. Changing the System Bulletin

The system bulletin is displayed whenever a user logs on to a workstation, or a terminal being used as a workstation. The system bulletin can be used to inform workstation users of system information, such as hours of system operation.

Initially, the system bulletin displayed is the *default bulletin*. This bulletin, which describes how to enter commands, is provided with the OS/3 interactive software you receive from Sperry Univac. It is as follows:

```
IS27 TODAYS BULLETIN IS:
  -- TO TYPE IN COMMANDS,  DEPRESS 'FUNCTION' AND --
  -- 'SYSTEM MODE' KEYS SIMULTANEOUSLY, THEN TYPE --
  -- THE COMMAND AND DEPRESS TRANSMIT.           --
  -- ON UNISCOPE'S DEPRESS 'MESSAGE WAITING' KEY. --
```

If you want to use the system bulletin to display other messages, you must change it, overwriting the present bulletin.

The system bulletin resides in a module named BULLETIN, in the \$\$\$SRC file, on the SYSRES volume. To change the bulletin, you must overwrite the contents of BULLETIN; there can be only one bulletin at a time in the \$\$\$SRC file.

You can change the bulletin in two ways. The first is to use the general editor to change the bulletin interactively. The second is to use the librarian in a batch environment.

■ General Editor

The following is an example of how to change the bulletin using the general editor:

```
LOGON PAULM
EDT
1.0000 @READ MODULE=BULLETIN,FILENAME=$Y$SRC
5.0000 @PRINT 1 4
1.0000 -- TO TYPE IN COMMANDS, DEPRESS 'FUNCTION' AND --
2.0000 -- 'SYSTEM MODE' KEYS SIMULTANEOUSLY, THEN TYPE --
3.0000 -- THE COMMAND AND DEPRESS TRANSMIT.
4.0000 -- ON UNISCOPES DEPRESS 'MESSAGE WAITING' KEY. --
5.0000 @DELETE 1 4
1.0000 SYSTEM AVAILABLE FROM 0900 TO 1900 TODAY
2.0000 @WRITE MODULE=BULLETIN,FILENAME=$Y$SRC
2.0000 @HALT
LOGOFF
```

■ Librarian Change

The following is an example of how to change the bulletin using the librarian:

```
// JOB BULLADD
// DVC 20 // LFD PRNTR
// EXEC LIBS
/$
FIL D1=$Y$SRC
ELE.D D1,S,BULLETIN
SYSTEM AVAILABLE FROM 0900 TO 1900 TODAY
EOD
/*
/&
// FIN
```

NOTE:

In the ELE statement, the D option causes the contents of the module (the bulletin text) to be printed.

When creating new text for the system bulletin, you must follow these rules:

- Do not write more than 60 characters in each line of the bulletin.
- Do not create a bulletin more than 20 lines long.
- Do not use the dollar sign (\$) as the first character of a line.
- Be sure that all of the characters in the bulletin text are printable characters.

If you want to save the default bulletin for future use, use the COPY command to copy it into another module in \$Y\$SRC. When you want to re-use the default bulletin, simply copy it back into the BULLETIN module.

10.8.5. Verifying System Installation

After you create your tailored SYSRES, we recommend that you verify successful installation of your version of OS/3. To do so, use the procedures outlined in the installation verification procedures user guide/programmer reference, UP-8820 (current version). If you created your SYSRES using the RESGEN phase, you must have specified IVP in the RESGEN INCLUDE/DELETE parameter to run the IVPs.

10.8.6. Making a Backup Copy of Your SYSRES

After you completely tailor your SYSRES and verify system installation, we recommend that you make a backup copy of your SYSRES by using the SETREL/COPYREL or DCOP procedures outlined in 10.4. SETREL/COPYREL allows you to copy your release volume to any type of disk but requires more time to execute; DCOP requires less execution time, but allows you to copy your release volume only to the same disk type.

10.8.7. Special Considerations for FORTRAN Installations

The OS/3 release volume (OS/3REL) contains two sets of FORTRAN compiler macros in the system macro library (\$Y\$MAC). It also contains two sets of FORTRAN compiler object modules in the system object code library (\$Y\$OBJ).

One set, called MIX, supports both CDI and DTF data management facilities. The other set, called DTF, supports only the DTF data management facility. As delivered, the OS/3REL favors the DTF-only data management by default because the DTF set comes first on the volume.

The following special considerations and procedures may apply to your FORTRAN installation, depending on the type of data management you configured your supervisor to support.

If you use the OS/3REL volume as your SYSRES and you configured your supervisor to use CDI data management support (In other words, you specified either DMGTMODE=CDI or DMGTMODE=MIXED during SUPGEN), you must reverse the order of the FORTRAN modules in \$Y\$MAC and \$Y\$OBJ before you assemble a unit definition or link a FORTRAN IV object program. Until you switch the order of the modules, you will encounter errors when using the FORTRAN IV compiler run-time modules in a CDI environment.

To reverse the order of the FORTRAN modules to favor a CDI environment, run the prefiled job stream, MIXFOR4, by keying in:

```
RVΔMIXFOR4
```

If you later want to switch back to the original DTF-only support, run the prefiled job stream, DTFFOR4, by keying in:

```
RVΔDTFFOR4
```

Further, if you are using both CDI and DTF data management facilities (DMGTMODE=MIXED during SUPGEN), and you intend to use both FORTRAN compilers, you must copy the DTF procs to an alternate library before you can use the basic FORTRAN compiler. Then, whenever you assemble the unit definition for a basic FORTRAN program, you must supply the assembler with the name of the alternate library that contains the DTF procs. To do this, use the LIN parameter on the // PARAM statement during the assembly operation.

To copy the DTF procs to an alternate library, you must use the system librarian, LIBS, which we describe in the system service programs user guide/programmer reference, UP-8062 (current version).

A sample job control stream to copy the DTF procs to an alternate library follows. Note that we deliver the DTF procs under the group name 9\$FORPDT.

```
// JOB FORTALT
// DVC 20 // LFD PRNTR
// DVC RES
// EXT ST,C,,CYL,1
// LBL ALTER1
// LFD alternate library name
// EXEC LIBS
           FIL      DO=$Y$MAC, D1=alternate library name
           COP.CG  DO,,9$FORPDT,D1
/*
/&
// FIN
```

In this control stream example, we are copying the DTF procs, those under the group name, 9\$FORPDT, to an alternate library on the OS/3REL volume (which is also the SYSRES volume).

If you build your SYSRES on a disk other than the OS/3REL volume and you configured your supervisors to use both CDI and DTF data management facilities (DMGTMODE=MIXED during SUPGEN), then the SYSGEN job control streams reverse the order of the FORTRAN compiler modules on your SYSRES to favor CDI support. However, you must still copy the DTF procs to an alternate library as previously described, if you intend to use the basic FORTRAN compiler.

Remember that you cannot use the basic FORTRAN compiler if you configured your supervisor to use CDI-only data management (DMGTMODE=CDI during SUPGEN).

10.8.8. Updating the ICAM Symbiont Table

If you generate an ICAM element and later copy this element to another disk device, you must update the ICAM symbiont table after you perform the copy. To update the symbiont table, we provide the SGTRAN job control stream.

The job control listing that was generated when you first ran SG\$COMMK to create the ICAM element contains the input parameter values from the original SGTRAN run. You must use these values whenever you run SGTRAN to update the symbiont table. The following job control stream is a sample execution of SGTRAN:

```
1. // JOB SGTRAN
2. // DVC 20 // LFD PRNTR
3. // DVC 51 // VOL SYSRES // LBL $$LLOD // LFD SYSLOD
4. // DVC 51 // VOL SYSRES // LBL $$STRAN // LFD IN1
5. // DVC 51 // VOL SYSRES // LBL $$STRANA // LFD OUT
6. // OPTION JOBDUMP
7. // EXEC SGTRAN,SYSL0D
8. // PARAM M9,04,02,00,1
9. /&
10. // FIN
```

NOTE:

Line 8 contains the input positional parameter values from the original SGTRAN run. These values specify the following:

- M9 2-alphanumeric-character message control program (MCP)*
- 04 2-digit decimal number of task control blocks (TCBs) assigned.*
- 02 2-digit decimal number of open file DTFs which are associated with DISCFIL/JRNFILE macros*
- 00 2-digit decimal number of physical unit blocks (PUBs). One PUB is required for each local workstation specified. If the ICAM element contains remote batch processing (RBP), this number must be equal to or greater than 1.*
- 1 Single-digit internal symbol dictionary generation. Set to 0 for TRANSIENT TCIs and to 1 for all others.*

11. System Maintenance

11.1. WHAT ARE SYSTEM MAINTENANCE PACKAGES?

System maintenance packages (SMPs) contain system maintenance changes (SMCs) that you install in your SYSRES volume to support your OS/3 software's operation and effectiveness. We deliver SMPs to all Series 90 customers at regular intervals, usually every two to three months, on tape or disk. We recommend that you order SMPs on tape unless your system does not support this media. If you order the SMP on disk, you must send a copy of your SYSRES to Sperry Univac so we can copy all the SMP software to this volume and then return it to you. Regardless of the media you order, the SMP is accompanied by an SMP document that you must read before installing the SMP.

The SMP document gives information about the specific SMP you are installing, the amount of time required to install the SMP, and the processing options you should specify during installation. Although the options you select may vary with each SMP, we recommend that you follow these general guidelines whenever you install an SMP:

- Install all SMPs as soon as possible upon delivery.
- Install SMPs in the order that we deliver them. For example, SMP 8A must be installed in your system before you can install SMP 8B, SMP 8C, etc. The SMP installation program will terminate in error and therefore will not install an SMP if your system does not contain the previous SMPs.
- Do not install SMPs while running other jobs because SMPs affect your operating system and unpredictable results could occur.
- Before you execute the SMP program, be sure you have a current and complete copy of your SYSRES volume. To do so, see 10.4.
- You may install SMPs and SMCs only to the OS/3REL volume with all the system files on it. If your OS/3REL is not your SYSRES volume, you must install the SMP on the OS/3REL. Then, after the SMP procedure terminates, you must regenerate your system and include a RESGEN section to place the SYSGEN output on your SYSRES. Last, you must copy any of your own files and modules (that you keep on SYSRES) from your backup SYSRES to your new SYSRES.

To copy your files onto your new SYSRES, use the COP statement of the system librarian, LIBS. To copy your modules back into your system files on your new SYSRES, use the ADD statement of the librarian. The system service programs user guide, UP-8062 (current version), describes use of the librarian and its statements in full detail.

To make system maintenance as easy as possible, we provide two installation programs. One program installs an SMP and the other installs individual SMCs that you require, but have not yet received as part of an SMP. These programs are very similar, and you can run them either from the system console or from a workstation. Each offers additional processing options that let you regenerate supervisors or ICAM symbionts or realign the system files \$Y\$LOD and \$Y\$JCS if any of these are affected during SMP or SMC installation.

In addition, you can direct each program to keep a copy of the affected modules in your SYSRES files as they are, before you install an SMP or SMC. These copies are saved in areas called back-out files on your SYSRES volume. We recommend that you specify this option as a precautionary measure in case an SMP or SMC produces adverse effects on your system and you must back it out under the direction of a Sperry Univac representative. By keeping the back-out copy, you can restore your system to the way it was before you installed the SMP or SMC.

For now, we'll give you an overview of the SMP and SMC installation programs and the options you can choose when you run them. We'll discuss the SMP program in more detail, but remember that you can also perform the same operations by running the SMC program. We'll also tell you about the additional options you can specify when you run the SMC program. Later in this section, we'll explain the procedures for running each program.

11.2. THE SMP INSTALLATION PROGRAM

As mentioned earlier, you can install SMPs either from a workstation or from the system console. Since you can perform all the installation tasks from either of these devices, choose whichever device you prefer. However, we recommend that you use a workstation since the SMP program provides help screens only to the workstation user. Of course, if your system does not have workstations, you must use the system console.

To install an SMP, enter the following command at the system console or at any workstation.

```
RV SMP,,INPUT={T,vsn}[ ,B={Y} ]
                {D,RES}[ ,N ]
```

This command calls the SMP installation program and has one optional parameter

$$B = \left\{ \begin{array}{l} Y \\ N \end{array} \right\}$$

which lets you specify whether or not you want to use the back-out feature. If you use this feature, the following guidelines apply:

- The use of the back-out feature increases the time required to install an SMP and requires additional disk space on your SYSRES to hold the saved modules. Therefore, the back-out parameter default is N (for no) and you must specify B=Y (for yes) to use the back-out feature during SMP installation.
- The SMP program creates the following files on your SYSRES volume. If you use the back-out feature, these files must be kept consistent with each other and you must not delete or change the contents of any of these files:

SMCFILE	A SAT library containing all SMCs that are part of an SMP.	
\$Y\$SMCLOG	A MIRAM file containing information relating to all the SMCs applied to the system.	
SMCBSAT SMCBMIR SMCBTRAN	Files used by the SMC/SMP programs as back-out files if that option is specified.	
M\$ files		Files that contain modules required by SMCs during SMP or SMC installation.



- To regain space on your SYSRES, you can create backup copies of these files on another disk, on tape, or on diskette, and then erase the files from your SYSRES (except for \$Y\$SMCLOG, which is a system file and therefore cannot be erased). Remember that, if you want to preserve back-out capability, you must restore these files to your SYSRES before running the SMP or SMC installation program again.
- The first time you run the SMP program to install a new SMP, the SMCFILE, \$Y\$SMCLOG, SMCBSAT, SMCBMIR, and SMCBTRAN are initialized and all existing M\$ files are deleted. Therefore, SMCs that have already been installed may no longer be backed out. On each subsequent SMP run, all SMP-related files are reinitialized; all M\$ files are deleted unless you specify the back-out feature (B=Y) when you enter the SMP run command.
- As each SMC in an SMP is applied, the modules changed by the SMC are stored in the appropriate back-out files and the entry in \$Y\$SMCLOG is marked BACKED UP. Each module is stored in the back-out file only once. Thus, each module in the back-out file is stored as it was prior to the application of any of the SMCs in the SMP.
- When either the SMP or SMC program is run to back-out an SMC, any other SMCs which affect the same modules are reapplied during the run.

- If you apply additional SMCs after installing an SMP, the new SMCs are added to the SMCFILE that was created by the original SMP run. Also, any additional modules affected by the new SMCs are added to the back-out files. The end result is the same as if the new SMCs had been included in the SMP.

→ After you enter the SMP run command, press XMIT to display a list of options on the console or workstation screen. How these options appear depends on whether you're working at a workstation or a console.

If you enter the command at a workstation, these options appear in menu format as shown in Figure 11-1:

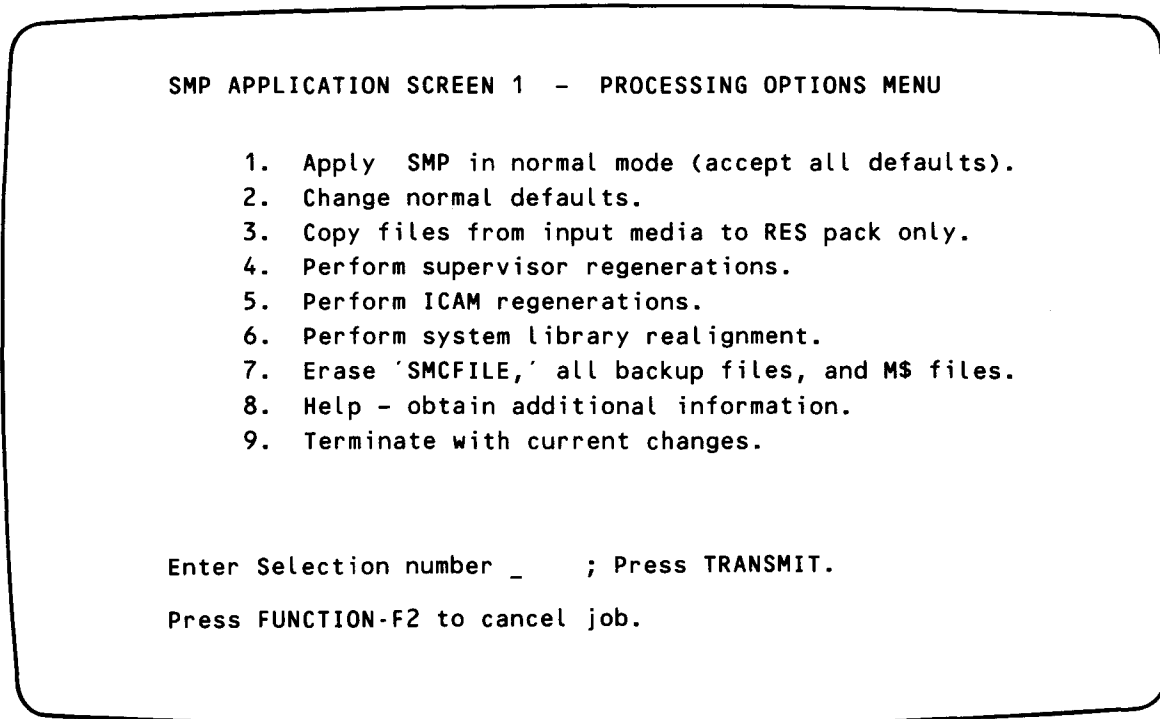


Figure 11-1. SMP Processing Options Menu

You simply choose the option you want to perform, enter its number after the prompt at the bottom of the screen, and press XMIT. If you do not understand one of the options offered, you can request help (option 8) and display a screen that provides additional information on that particular option. If you want to cancel the SMP job, press FUNCTION and the F2 key simultaneously. Depending on the option you select, the SMP program either begins processing immediately or, if it needs more information, displays additional screens for you to respond to and then begins processing.

If you run the SMP program from the system console, the options shown in Figure 11-1 appear as a series of messages that are scrolled up from the bottom of the screen. The help option is not displayed, however, since help screens are not provided to the console user. This is the final message displayed on the console screen:

```
mm # SMPQ19 ENTER MENU SELECTION NUMBER (DEF:1) OR C: CANCEL JOB
```

To perform one of the options, press the MSG WAIT key to position the cursor at the beginning of the next line, and key in the number of the option you want to perform. Then, press XMIT. The program either begins processing immediately, or displays additional messages for you to respond to, depending on which option you select. Notice also that you can cancel the SMP job by entering a C and pressing XMIT, or you can accept the default of option 1 and install the SMP in normal mode simply by pressing XMIT.

Let's discuss the operations you can perform with the SMP program. To simplify our discussion, we'll divide these operations into three categories:

1. Installing an SMP to your system (options 1 and 2)
2. Performing additional system maintenance tasks (options 4, 5, and 6)
3. Erasing files created by the SMP program after installing an SMP (option 7)

NOTE:

Option 3 is provided if you order the SMP on tape but do not have tape support. You can go to a site with tape support and use this option to copy the SMP files to your SYSRES volume without actually installing the SMP. Then, enter the following run command to install the SMP:

```
RV SMP,,INPUT=(D,RES)
```

11.2.1. Installing an SMP to Your System

You can install an SMP to your system either with normal default processing choices that we supply (option 1) or with nondefault choices that you specify (option 2). If you select option 1 and apply the SMP in normal mode, the installation program performs the following functions as part of its standard operation:

- Installs all the applicable system maintenance changes (SMCs) in the SMP.
- Regenerates SY\$MIX and the supervisor you loaded to install the SMP (if not SY\$MIX) if the SMP affects them in such a way that they must be regenerated to operate properly.
- Regenerates the basic C1 ICAM symbiont if the SMP affects it in such a way that it must be regenerated to operate properly.
- Prints an audit report of the status of all the SMCs in the package.

When you install an SMP in normal mode, the program begins execution immediately and does not display any additional screens or messages. Throughout the SMP execution, with the exception of a brief time when the SMP job terminates and then reexecutes itself, the SMP job occupies job slot 1. While there, it executes jobs that correspond to the specific SMC that it is applying. These jobs occupy job slot 2. After it installs all the SMCs in an SMP, the SMP program initiates any necessary regenerations or realignments. When it completes these functions, the SMP program executes SMCLIST and terminates.

SMCLIST then occupies job slot 1 and prints the contents of `Y$SMCLOG`. When SMCLIST has successfully printed this list, it displays a message to inform you that it has terminated normally. The SMP installation is then complete. We recommend that you keep the SMCLIST printout with your other system records so that you have a record of all the SMCs installed in your system. If you should ever need to print that list, see the system service programs user guide, UP-8062 (current version), which gives the instructions for executing SMCLIST as a separate function from the SMP process.

If you select option 2 and install an SMP without the normal defaults, the program executes just as it does in normal mode with the exception that supervisor and ICAM regenerations are not performed automatically. Before execution begins, three additional screens or messages are displayed that let you specify the additional processing options you want to perform. You can:

- regenerate up to three supervisors;
- ➔ ■ regenerate up to three ICAM symbionts; and
- realign the system files `Y$JCS` and `Y$LOD`.

In most cases, the defaults provided by option 1 of the SMP program should meet your processing needs. However, if you have supervisors or ICAM networks that are affected by an SMP but are not regenerated by the standard program or if you want to realign `Y$JCS` or `Y$LOD`, you must select option 2 to install the SMP. Refer to the SMP document we provide with each SMP if you need help deciding which option you should choose.

11.2.2. Performing Additional System Maintenance Tasks

The three additional screens or messages that are displayed when you select option 2 on the processing options menu and install an SMP without defaults can also be displayed individually by selecting options 4, 5, or 6, respectively. Option 4 lets you perform supervisor regeneration, option 5 specifies ICAM regeneration, and option 6 specifies system file realignment. By selecting one or more of these options, you can perform additional regenerations or realignments after you install an SMP should the need arise.

Regardless of whether you are performing these tasks during or after SMP installation, to regenerate supervisors or ICAM networks, the SMP program automatically uses the same parameter input that you specified when you originally generated your operating system. To do this, the parameter input must reside in the system source library (`Y$SRC`) on the OS/3REL volume and must not contain any errors. If your parameters are in the form of keypunched cards, you can use the ELE statement of the system librarian, LIBS, to transfer the parameter input from cards to `Y$SRC` on your OS/3REL volume. If you used the SYSGEN dialog to prepare your parameter sets, those sets already reside in `Y$SRC` on your SYSRES volume under the source module name you specified at the end of the dialog. However, if your SYSRES volume is not the OS/3 REL volume, you must first transfer those modules to `Y$SRC` on the OS/3REL volume

using the ADD statement of the system librarian, LIBS. There may be only one supervisor or ICAM network per module in `Y$SRC`. In addition, an ICAM module name must match the ICAM name that you want to regenerate.

The software maintenance routines do not regenerate EMULAT, NTR, or COBOL modules, nor do they regenerate information management systems (IMS) or data base management systems (DMS). However, do not regenerate these yourself unless the audit report directs you to do so. Remember that you must regenerate your IMS if the SMP program regenerates your ICAM network.

The system maintenance realignment process copies the entire contents of your system load library (`Y$LOD`) and the system job control library (`Y$JCS`) to temporary workfiles on the `Y$RUN` disk to perform the realignment of the system files `Y$LOD` and `Y$JCS`. Therefore, if you are performing the SMP installation procedure to realign your SYSRES files, we suggest that you first obtain a listing of the contents of these files. By doing so, you can check that the SMP program leaves `Y$LOD` and `Y$JCS` complete and intact on your SYSRES when it finishes the realignment process. To obtain this listing, use the LISTRES job control stream that we describe in the system service programs user guide, UP-8062 (current version). To ensure that the realignment process works properly, never erase either of the system files that the process realigns, do not terminate the process once it starts, and run the realignment jobs in a completely dedicated machine environment. That is, do not run other jobs or enter any console commands such as the REBUILD command during realignment. These actions could cause errors during the realignment.

11.2.3. Erasing SMP Files

After installing an SMP, you can erase the SMCFILE, a file containing all the SMCs that are a part of an SMP, all the M\$ files, and all back-out files by specifying option 7. The SMP program erases each of these files, updates the `Y$SMCLOG` to indicate that back-out files no longer exist, and displays a message to tell you that the SMP job terminated normally. Do not erase these files, however, unless you are certain all SMCs in the SMP have been successfully installed, and you no longer want to retain the back-out capability.

11.3. THE SMC INSTALLATION PROGRAM

If at any time you require an SMC that is not yet part of an SMP, Sperry Univac will provide that change to you as soon as possible without waiting for the next SMP to be released. For this reason, we provide a separate SMC installation program, also described in this section. When you enter the command that calls the SMC program, the following options are displayed on your console or workstation screen. As we said, these options appear as a series of messages on the console screen but as a menu on the workstation screen.



SMC APPLICATION SCREEN 1 - PROCESSING OPTIONS MENU

1. Apply SMC in normal mode (accept all defaults).
2. Change normal defaults.
3. Special processing.
4. Perform supervisor regenerations.
5. Perform ICAM regenerations.
6. Perform system library realignment.
7. Erase 'SMCFILE' and all backup and MSCO files only.
8. Help - obtain additional information.
9. Terminate with current changes.

Enter selection number: _ ; Press TRANSMIT

Press FUNCTION-F2 to cancel job.

Figure 11-2. SMC Processing Options Menu

As you can see, these options are identical to those offered by the SMP program with one exception, the special processing option (option 3), which is offered only when you run the SMC program. If you select special processing and press XMIT, the SMC program displays a screen to the workstation user, or a series of messages to the console user, which let you perform the following operations:

- Install exception SMCs that apply to specific types of users. We recommend that you do not install them unless your Sperry Univac representative directs you to do so.
- Install a subset of the SMCs in SMCFILE
- Prevent installation of certain SMCs in the SMCFILE
- Back out individual SMCs applied earlier to your system via the SMP or SMC program if they produce adverse effects on your system. A back-out copy of the bad SMC must exist for you to perform this procedure and, again, don't use this procedure unless directed by a Sperry Univac representative.

↓
If we supply the SMC to you over the phone or through the mail, you must build the SMC in the standard OS/3 change format yourself. The SMC installation program allows you to enter the changes from punched cards, disk, a workstation, or from the system console. If you elect to use a workstation, the SMC program initiates an interactive SMC entry process that helps you build the change module in the correct change format. If you have to use a console because your system does not include workstations, the SMC program initiates the SMC console dialog to help you build the change in the correct format. We recommend using the workstation as it provides more help facilities, but we'll show you how to use both methods later in this section.
↑

The SMC installation program, by default, performs the same tasks as the standard SMP installation program. You can also direct the SMC program to perform additional regenerations or system file realignments should the need arise. Unless you know that the SMC installation program must perform either of these additional tasks for your particular situation, use the default procedure for installing an SMC. Otherwise, install the SMC without the default option so you can specify the additional tasks you want to perform.

Figure 11-3 illustrates the installation of an SMC.

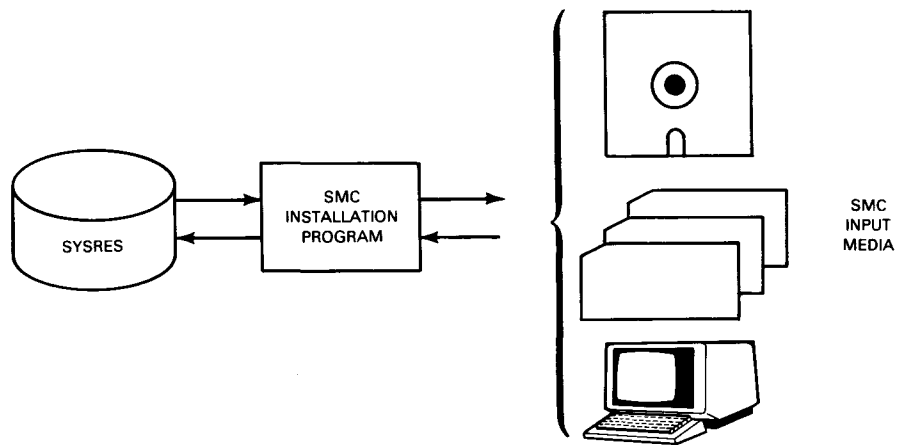


Figure 11-3. Installation of an SMC



11.4. RUNNING THE SMP INSTALLATION PROGRAM

The following subsections describe the procedure for running the SMP installation program to install an SMP or perform additional system maintenance tasks.

NOTES:

- This procedure shows the processing screens you'll see when you enter the SMP run command at a workstation, and explains the choices offered by those screens and how you respond to them. You can also use this procedure to run the SMP program from the system console, but you must respond to console messages displayed by the program instead of screens. We'll present each of those messages immediately after the workstation screen that the message corresponds to. If you run the SMP program from the system console, you must answer the messages the program displays as follows:*
 - *Press the MSG WAIT key to position the cursor at the beginning of the next line.*
 - *Key in the option you want to perform and press XMIT. Your keyin must be in the format:*

`mm△n`

where:

`mm`

Is the two character number of the console message you are responding to.

`n`

Is the number of the option you want to perform.

- The time it takes to install an SMP depends on several factors including the number of SMCs in the SMP, the number of optional components your system contains, and whether you have already installed some of the SMCs in the SMP. Refer to the timing estimator form in the SMP document (SMPD) to estimate the time required to install an SMP to your system.*

To run the SMP program, proceed as follows:

1. Perform an initial program load to load either the delivered supervisor, SY\$MIX, or one you've generated yourself into main storage. For the IPL procedure, see the operations handbook, UP-8072 (current version). For the SMP supervisor generation requirements, see the SMPD which accompanies the SMP.
2. Mount the SMP media.

3. At your workstation or system console, key in:

→ RV SMP,,INPUT={T,vsn} [D,RES] [B={Y}]{N}

where:

INPUT=

Describes the medium on which you are entering the SMP into your system.

(T,vsn)

Specifies the volume serial number of a tape.

(D,RES)

Specifies that you dumped the contents of the SMP release tape to your SYSRES.

B={Y}]{N}

Specifies whether or not you want to create permanent back-out copies of modules affected by the SMP.

4. Press the XMIT key. The SMP installation program displays messages to inform you that the OS/3 dump/restore and librarian facilities are copying the contents of the SMP media to your SYSRES to prepare for installation of the SMP. When dump/restore and the librarian complete the copy operation, the SMP job terminates, then reexecutes itself, and displays the following menu screen asking what type of processing you desire:

SMP APPLICATION SCREEN 1 - PROCESSING OPTIONS MENU

1. Apply SMP in normal mode (accept all defaults).
2. Change normal defaults.
3. Copy files from input media to RES pack only.
4. Perform supervisor regenerations.
5. Perform ICAM regenerations.
6. Perform system library realignment.
7. Erase 'SMCFIL', all backup files, and M\$ files.
8. Help - obtain additional information.
9. Terminate with current changes.

Enter selection number: _ ; Press TRANSMIT.

Press FUNCTION-F2 to cancel job.

NOTE:

If you run the SMP program from the system console, these options appear as a series of messages that are scrolled up from the bottom of the screen. All of the options appear with the exception of option 8 because the SMP program provides help screens only to workstation users.

5. Determine from the options listed on this screen which function you want to perform:
 - if you want to install an SMP, go to 11.4.1.
 - if you want to perform additional supervisor regenerations only, additional ICAM regenerations only, or realign SYSRES files only, go to 11.4.2.
 - if you want to erase files created by the SMP program after you have installed an SMP, go to 11.4.3.

NOTES:

1. *To cancel the SMP job, press the FUNCTION key and F2 simultaneously.*
2. *Options 1 and 2 on the SMP processing options menu are mutually exclusive to options 4, 5, and 6. Therefore, selecting option 1 or 2 after 4, 5, or 6, in the same run of the SMP job, cancels option 4, 5, or 6. And selecting 4, 5, or 6 after 1 or 2 cancels option 1 or 2. However, options 4, 5, and 6 are cumulative. So you can enter any of these four options in the same SMP run without cancelling any of the four.*

**11.4.1. Installing an SMP**

You can install an SMP either in normal mode and thus accept the default processing options we provide, or you can suppress the defaults and install an SMP with options you select yourself.

- To install an SMP in normal mode, go to step 1.
 - To install an SMP and change the defaults, go to step 2.
1. Key in 1 and press XMIT. The SMP program initiates a series of jobs to accomplish the following tasks:
 - installs all the SMCs that apply to your system;
 - regenerates SY\$MIX and the supervisor you loaded to install the SMP (if not SY\$MIX) if the SMP affects its operation.

- regenerates the C1 ICAM symbiont if the SMP affects its operation.
- prints an audit report of the status of all the SMCs installed to your system.

When the SMP program completes these tasks, go to step 3.

2. Key in 2 and press XMIT to install an SMP without the normal defaults.
 - a. The installation program then displays the first of three additional processing screens, the supervisor regeneration screen (Figure 11-4):

```

SMP/SMC APPLICATION SCREEN 3 - SUPERVISOR REGENERATION
Regeneration of up to three supervisors may be performed only or at
the end of the SMP/SMC installation.

Do you wish to regenerate a supervisor: ___. YES/NO

If you wish to do regenerations enter the names or prefixes (followed by
a period) of the supervisor parameter source modules and press TRANSMIT.

-----'-----'-----

Note: To regenerate a supervisor the module containing source code
parameters must be available in $$$SRC. If an SMP has already
been installed regenerated starter supervisions SY@BAS, SY@SMP
(for SYSTEM 80), and SY$MIX (for SYSTEM 90) have been installed.

Press FUNCTION-F1 to cancel screen and return to the master menu.
Press FUNCTION-F2 to cancel job.
Press FUNCTION-F13 for help information.

```

Figure 11-4. Supervisor Regeneration Screen

NOTE:

The following messages are displayed to the console user:

```

SMPQ30 ENTER UP TO 3 SUPERVISOR NAMES, N: NO SUPVR REGEN,
# SMPQ70 C: CANCEL JOB, OR M: RETURN TO MENU. DEFAULT: ipl'd supervisor

```

Enter the source module names of the supervisors that you want to regenerate, or prefixes of those names followed by a period, and press XMIT. Remember that a supervisor cannot be regenerated by the SMP program unless the supervisor source module resides in \$\$\$SRC on your SYSRES. If a prefix is entered, all supervisor modules in \$\$\$SRC with that prefix will be regenerated.

Also, if you're a workstation user, notice the options that appear at the bottom of this screen as well as on each of the additional processing screens displayed by the SMP program. You select one of these options simply by pressing the FUNCTION key and simultaneously pressing the workstation function key that corresponds to the option you want to perform:

FUNCTION – F1 Cancels the current screen and redisplay the processing options menu. Return to step 5 of 11.4 and select another option.

FUNCTION – F2 Cancels the SMP job.

FUNCTION – F13 Displays a help screen providing additional information about the choices on the current screen.

NOTE:

If you use the system console, you can return to the Processing Options Menu by entering an M and pressing XMIT or cancel the SMP job by entering a C and pressing XMIT. Help screens are not available to the console user.

- b. After you specify the supervisor modules you want to regenerate and press XMIT, the following screen (Figure 11-5) is displayed:

SMP/SMC APPLICATION SCREEN 4 - ICAM REGENERATION

Up to three ICAM regenerations may be performed only or at the end SMP/SMC installation.

Do you wish to regenerate an ICAM: ____ . YES/NO

If you wish to do regenerations enter the names or prefixes (followed by a period) of the ICAM parameter source modules and press TRANSMIT.

----- . ----- . -----

Note: To regenerate an ICAM, the module containing source code parameters must be available in \$Y\$SRC.

Press FUNCTION-F1 to cancel screen and return to the master menu.

Press FUNCTION-F2 to cancel job.

Press FUNCTION-F13 for help information.

Figure 11-5. ICAM Regeneration Screen

NOTE:

The following messages are displayed to the console user:

```
SMPQ30 ENTER UP TO 3 ICAM NAMES.          N: NO ICAM REGEN,
# SMPQ70 C: CANCEL JOB, OR M: RETURN TO MENU. DEFAULT:C1
```

→ You can regenerate up to three ICAM symbionts by entering the ICAM source module names or prefixes of those names followed by a period, and pressing XMIT. As with supervisor regeneration, an ICAM symbiont cannot be regenerated by the SMP program unless the ICAM source module resides in \$\$\$SRC on your SYSRES. If a prefix is entered, all ICAM modules in \$\$\$SRC with that prefix will be regenerated.

→ c. After you specify the ICAM modules you want to regenerate and press XMIT, the system file realignment screen (Figure 11-6) is displayed:

```
SMP/SMC APPLICATION SCREEN 5 - SYSTEM FILE REALIGNMENT
Realignment of $$JCS and $$LOD will be done in this
order. You may choose to realign only one of these files.
To do this answer 'YES' or 'NO' to the following and press TRANSMIT.
```

```
Realign $$JCS?   : ___
Realign $$LOD?  : ___
```

```
Press FUNCTION-F1 to cancel screen and return to the master menu.
Press FUNCTION-F2 to cancel job.
Press FUNCTION-F13 for help information.
```

Figure 11-6. System File Realignment Screen

NOTE:

The following messages are displayed to the console user:

```
SMPQ50 DO YOU WISH TO REALIGN $$JCS?  ENTER YES, NO,
# SMPQ70 C: CANCEL JOB, OR M: RETURN TO MENU. DEFAULT: NO
```

After you enter your response, these messages are repeated for \$\$LOD.

You can direct the SMP program to realign the system files `YJCS` and `YLOD` simply by entering YES on the appropriate lines on this screen and then pressing XMIT. Realignment of these files recovers file space lost during SMP installation due to overwriting of modules and provides proper positioning of the most frequently used modules for improved system performance.

- d. After you specify the realignments you want to perform and press XMIT, the processing options menu shown in Figure 11-1 is redisplayed. Key in 9 (or 8 if you're running the program from the system console) and press XMIT. The SMP program then:
 - installs all the SMCs that apply to your system;
 - performs any regenerations or realignments that you have specified; and
 - prints an audit report of the status of all the SMCs installed to your system.
3. After installing an SMP, the SMP program displays messages to tell you:
 - whether the SMP was installed successfully;
 - that the SMP job is issuing a command to execute SMCLIST; and
 - that the SMP job terminated normally.

The SMP job leaves job slot 1 and SMCLIST takes its place. SMCLIST then provides a printout of the contents of `YSMCLOG`, which is a record of all the SMCs that have been installed in your system. When SMCLIST successfully prints this list, you receive a message informing you that SMCLIST has terminated normally. The SMP installation process is now complete.

NOTE:

After you install an SMP, check the SMP document to see if the SMP requires that you update the system definition file, `YSDF`. If so, see 10.8.1 for the procedure for updating loadable microcode. Also, check the audit trail printout for special notes about the SMP you just installed.

4. Once the SMP installation is complete, perform an initial program load (IPL) to continue with your normal processing. For the IPL procedure, see the operations handbook, UP-8072 (current version).

NOTE:

If your system has any supervisors or any ICAM modules affected by the SMP (other than modules automatically regenerated as defaults) and you did not tell the SMP program to regenerate them, be sure to regenerate them yourself before you load and use them. See Section 10 for the system generation procedure.

11.4.2. Performing Additional Regenerations or Realignment

To perform additional regenerations or realignments after installing an SMP, proceed as follows:

- If you want to perform additional supervisor regenerations, go to step 1.
 - If you want to perform additional ICAM regenerations, go to step 2.
 - If you want to realign SYSRES files, go to step 3.
- 1. Key in 4 and press XMIT to display the supervisor regeneration screen (or console messages). This screen is shown in step 2a of 11.4.1 along with an explanation of the processing options that appear at the bottom of the screen. Enter the supervisor modules you want to regenerate and press XMIT. The SMP program then redisplay the processing options menu. If you want to perform additional tasks, continue with step 5 of 11.4. Otherwise, key in 9 (or 8 if you're running the program from the system console), press XMIT, and go to step 4 of this procedure.
 - 2. Key in 5 and press XMIT to display the ICAM regeneration screen (or console messages). This screen is shown in step 2b of 11.4.1 and the processing options that appear at the bottom of it are explained in 2a of 11.4.1. Enter the ICAM modules you want to regenerate and press XMIT. The SMP program redisplay the processing options menu. If you want to perform additional tasks, go to step 5 of 11.4. Otherwise, key in 9 (or 8 if you're running the program from the system console), press XMIT, and go to step 4 of this procedure.
 - 3. Key in 6 and press XMIT to display the system file realignment screen (or console messages). This screen is shown in step 2c of 11.4.1 and the processing options that appear at the bottom of it are explained in 2a of 11.4.1. Indicate whether or not you want to realign `Y$JCS` and `Y$LOD` and press XMIT. The SMP program redisplay the processing options menu. If you want to perform additional tasks, go to step 5 of 11.4. Otherwise, key in 9 (or 8 if you're running the program from the system console), press XMIT, and go to step 4 of this procedure.
 4. After you supply this information, the SMP program performs the additional tasks that you specified, informs you when it has successfully done so, and displays messages to tell you:
 - that the SMP job is issuing a command to execute SMCLIST; and
 - that the SMP job terminated normally.

The SMP job leaves job slot 1 and SMCLIST takes its place. SMCLIST then provides a printout of the contents of `Y$SMCLOG`, which is a record of all the SMCs that have been installed in your system. When SMCLIST successfully prints this list, you receive a message informing you that SMCLIST has terminated normally. The SMP process to perform additional tasks is now completed.

11.4.3. Erasing SMP Files

After you install an SMP, you can direct the SMP program to erase the SMCFILE, all M\$ files, and all back-out files. To do so, key in 7 and press XMIT. The program erases each of these files and updates the \$Y\$SMCLOG to indicate that back-out files no longer exist for any SMCs. The program then displays a message to tell you that the SMP job terminated normally.

NOTE:

Erase these files only if you no longer want to retain back-out capability for SMCs contained in the SMCFILE. Use the SMP program to erase SMP files as this automatically updates the \$Y\$SMCLOG to reflect this action.

11.5. RUNNING THE SMC INSTALLATION PROGRAM

The following subsections describe the procedure for installing SMCs that are not part of an SMP.

NOTE:

This procedure shows the processing screens you'll see when you enter the SMC run command at a workstation, and explains the choices offered by those screens and how you respond to them. You can also use this procedure to run the SMC program from the system console, but you must respond to console messages displayed by the program instead of screens. We'll present each of these messages immediately after the workstation screen that the message corresponds to. If you run the SMC program from the system console, you must answer the messages the program displays as follows:

- *Press the MSG WAIT key to position the cursor at the beginning of the next line.*
- *Key in the option you want to perform and press XMIT. Your keyin must be in the format:*

`mm△n`

where:

`mm`

Is the 2-character number of the console message you are responding to.

`n`

Is the number of the option you want to perform.

1. Perform an initial program load to load either the delivered supervisor, SY\$MIX, or one you've generated yourself into main storage, even if you are already operating under that supervisor. For the IPL procedure, see the operations handbook, UP-8072 (current version).

2. Mount the SMC media. If we delivered the change on keypunched cards, insert them in your card reader; if we supplied the change over the phone or through the mail, simply proceed with step 3.

NOTE:

If you are entering more than one SMC on cards, you can combine the SMC decks and key in the SMC run command once to install all the SMCs in the combined deck. To do so, you must remove the //△FIN cards from the end of each SMC deck except for the last deck and insert a / card immediately before the last //△FIN card. Then, put the combined deck in the card reader and key in the SMC run command as described in step 3.*

In addition, if you are entering one or more SMCs on cards and your system uses spooling, you must remove the //△FIN cards and insert a / card, and then create a spool file containing the data in the card decks before you run the SMC program. To do that, insert the following card at the beginning of the deck:*

```
//DATA△FILEID=SMCREADER,, IGNORE
```

Then, put this revised deck in the card reader and enter IN at your system console/workstation in console mode. Your system will create the spool file containing the data in your card deck. When it has successfully done so, you receive the message SPOOLFILE SMCREADER WAS CREATED and you can proceed with step 3.

3. Key in:

→

```
RV SMC [ [ INPUT = { C
              (D, RES)
              (D, vsn)
              (CR, vsn)
              (T, vsn)
              WS
            } ] [ , B = { N } ] ]
```

where:

INPUT

↓

Describes the medium on which you are entering the SMC into your system. If you run the SMC program only to perform supervisor or ICAM regenerations or to realign system files (without installing an SMC), you can omit this parameter.

↑

Note that the INPUT parameter does not describe the device at which you're running the SMC program. There is a difference: You can be running the SMC program from your workstation, but be inputting the SMC through any of the media described in the following list.

INPUT=C

Specifies you will build the SMC in the correct change format using the SMC console dialog at the system console. Choose this method if you received the SMC over the phone or through the mail but do not have workstations in your system.

INPUT=CR

Specifies the card reader. Specify this choice if you received the SMC on cards or if you have keypunched the cards yourself.

NOTE:

If you keypunch the SMC yourself, be sure that on card 2, you start the // OPTION SMC card in Column 30 and include only one space after the slashes and the word option. Otherwise, you will get errors.

INPUT=(D,RES)

Specifies that the SMCs to be installed reside in the SMCFILE on SYSRES.

INPUT=(D,vsn)

Specifies that the SMCs to be installed reside in the SMCFILE on the disk pack with the specified volume serial number.

INPUT=(CR,vsn)

Specifies the volume serial number of a diskette to be used as card reader input.

INPUT=(T,vsn)

Specifies that the SMCs to be installed reside on a tape with the specified volume serial number.



INPUT=WS

Specifies that you will build the SMC in the correct change format using the interactive SMC entry process at the workstation. Choose this method if you received the SMC over the phone or through the mail.

B=N

Specify this optional parameter only if you do not want the SMC job to create permanent back-out files.

NOTE:

If you specify INPUT=C, proceed with step 6. If you specify INPUT=WS, proceed with step 7. Otherwise, go to step 4.

4. Press the XMIT key. The SMC program displays the following menu screen asking what type of processing you desire:

SMC APPLICATION SCREEN 1 - PROCESSING OPTIONS MENU

1. Apply SMC in normal mode (accept all defaults).
2. Change normal defaults.
3. Special processing.
4. Perform supervisor regenerations.
5. Perform ICAM regenerations.
6. Perform system library realignment.
7. Erase 'SMCFILE' and all backup and M\$CO files only.
8. Help - obtain additional information.
9. Terminate with current changes.

Enter selection number: _ ; Press TRANSMIT.

Press FUNCTION-F2 to cancel job.

NOTE:

If you run the SMC program from the system console, these options appear as a series of messages that are scrolled up from the bottom of the screen. All of the options appear with the exception of option 8 because the SMC program provides help screens only to workstation users.

The options on this screen are identical to those on the SMP processing options menu and are described in 11.4, with the exception of the special processing option (option 3), which is offered only when you run the SMC installation program.

Determine from the options listed on this screen which function you want to perform:

- if you want to install an SMC, proceed to part a of this step;
- if you want to perform additional supervisor regenerations, additional ICAM regenerations, or realign SYSRES files, proceed to part b of this step;

- if you want to erase files created during SMC installation, proceed to part c of this step;
- if you want to perform one of the special processing operations, proceed to part d of this step.

NOTE:

Options 1 and 2 on the SMC processing options menu are mutually exclusive to options 3, 4, 5, and 6. Therefore, selecting option 1 or 2 after 3, 4, 5, or 6, in the same run of the SMC job, cancels option 3, 4, 5, or 6. And selecting 3, 4, 5, or 6 after 1 or 2 cancels option 1 or 2. However, options 3, 4, 5, and 6 are cumulative. So you can enter any of these four options in the same SMC run without cancelling any of the four.

- a. You can install an SMC either in normal mode and thus accept the default processing options we provide or you can suppress the defaults and install an SMC with options you select. Regardless of which mode you choose, the SMC program operates in the same way as the SMP program described in 11.4. Refer to that section if you do not understand the options offered by the SMC program.
 - To install an SMC in normal mode, key in 1 and press XMIT. The SMC program:
 - installs the SMC to your system;
 - regenerates SY\$MIX and the supervisor you loaded to install the SMC (if not SY\$MIX) if the SMC affects its operation;
 - regenerates the C1 ICAM symbiont if the SMC affects its operation; and
 - prints an audit report of the status of all the SMCs installed to your system.

When the SMC program completes these tasks, go to step 5.

- To install an SMC without the normal defaults, key in 2 and press XMIT.

The installation program then displays three additional processing screens (or equivalent console messages): the supervisor regeneration screen, the ICAM regeneration screen, and the system file realignment screen. These screens are shown in 11.4.1 and the processing options they offer are also explained in that section. If you need help answering these screens, refer to 11.4.1 or simply press the FUNCTION key and simultaneously press F13 to display a help screen.

NOTE:

The SMC program does not provide help screens to console users.

Fill in the first processing screen (or respond to the console messages) and press XMIT to display the second screen. Repeat the process for the second screen, and so forth. After you have answered all three screens, the SMC processing options menu is redisplayed. Key in 9 (or 8 if you're running the program from the system console), and press XMIT. The SMC program then:

- installs the SMC;
- performs the regenerations or realignments that you have specified; and
- prints an audit report of the status of all the SMCs installed to your system.

When the SMC program completes these tasks, go to step 5.

b. To perform additional regenerations or realignments, proceed as follows:

- To perform supervisor regenerations, key in 4 and press XMIT to display the supervisor regeneration screen (or equivalent console messages). Enter the supervisor modules you want to regenerate and press XMIT. The SMC program then redisplay the processing options menu. Key in 9 (or 8 if you're running the program from the system console), press XMIT, and go to step 5 of this procedure.
- To perform ICAM regenerations, key in 5 and press XMIT to display the ICAM regeneration screen (or equivalent console messages). Enter the ICAM modules you want to regenerate and press XMIT. The SMC program then redisplay the processing options menu. Key in 9 (or 8 if you're running the program from the system console), press XMIT, and go to step 5 of this procedure.
- To perform realignments, key in 6 and press XMIT to display the system file realignment screen (or equivalent console messages). Indicate whether or not you want to realign \$Y\$JCS and/or \$Y\$LOD and press XMIT. The SMC program then redisplay the processing options menu. Key in 9 (or 8 if you're running the program from the system console), press XMIT, and go to step 5 of this procedure.

c. After you install an SMC, you can direct the SMC program to erase the SMCFILE, all M\$ files, and all back-out files. To do so, key in 7 and press XMIT. The program erases each of these files and updates the \$Y\$SMCLOG to indicate that back-out files no longer exist for any SMCs. The program then displays a message to tell you that the SMC job terminated normally.

d. To perform one of the special processing options, key in 3 and press the XMIT key. The SMC program then displays the following screen (Figure 11-7):

SMC APPLICATION SCREEN 2 - SPECIAL PROCESSING

(1) EXCEPTION (2) SELECTED (3) EXCLUDE (4) BACKOUT

Enter the number of this type of processing to be performed. _

Enter the numbers of the SMCs to be processed:

-----	-----	-----	-----	-----	-----
-----	-----	-----	-----	-----	-----
-----	-----	-----	-----	-----	-----

Press FUNCTION-F1 to cancel screen and return to master menu.

Press FUNCTION-F2 to cancel job.

Press FUNCTION-F13 for help information.

Figure 11-7. SMC Special Processing Screen

NOTE:*The following messages are displayed to the console user:*■ *Primary request:*

SMPQ20 SPECIAL PROCESSING OPTIONS ARE:

SMPQ21 (1) EXCEPTION (2) SELECTED (3) EXCLUDE (4) BACKOUT

SMPQ22 ENTER NUMBER OF THE TYPE OF PROCESSING TO BE DONE

SMPQ70 C: CANCEL JOB, OR M: RETURN TO MENU. DEFAULT:1

■ *Secondary request: (displayed after you respond to the primary request by selecting one of the special processing options)*

SMPQ23 (n) ENTER UP TO 6 SMC NUMBERS, E: END OF INPUT,

SMPQ70 C: CANCEL JOB, OR M: RETURN TO MENU. DEFAULT:1

Messages SMPQ23 and SMPQ70 are repeated up to three times (as indicated by n), provided that six valid SMC numbers are entered for the current query. E can be entered for query SMPQ70 if no more entries are desired.

Select one of the four operations offered on this screen (Figure 11-7). The response and criteria for each selection follow:

- to install exception SMCs, key in 1. The SMC job then displays the following message: ENTER UP TO 6 SMC NUMBERS, E:END OF INPUT,C:CANCEL JOB, OR M:RETURN TO MENU? Respond to this message by keying in the numbers of the exception SMCs to be installed and press the XMIT key. If you key in less than six, the SMC job redisplayes the SMC processing options menu. If you have more than six, the message is redisplayed up to three times for you to enter more. When you have no more exception SMC numbers to enter, respond M so the SMC job returns you to the SMC processing options menu. On the SMC processing options menu, key in 9 (or 8 if you're running the program from the system console), press XMIT, and proceed to step 5. (Exception SMCs apply only to certain types of users, and you should not install them unless directed to do so by your Sperry Univac representative.)
 - to install a subset of the SMCs in the SMCFILE, key in 2 and enter the numbers of the SMCs to be processed on the lines provided. Then, press the XMIT key to redisplay the SMC processing options menu. Key in 9 (or 8 if you're running the program from the system console), press XMIT, and proceed to step 5.
 - to prevent the installation of certain SMCs in the SMCFILE, key in 3 and enter the numbers of the SMCs to be excluded. Then, press the XMIT key to redisplay the SMC processing options menu. Key in 9 (or 8 if you're running the program from the system console), press XMIT, and proceed to step 5.
 - to back-out bad SMCs, key in 4 and enter the numbers of the SMCs to be backed out. Then, press the XMIT key to redisplay the processing options menu. Key in 9 (or 8 if you're running the program from the system console), press XMIT, and proceed to step 5.
5. After you install an SMC or perform additional tasks, the SMC program displays messages to tell you:
- whether the SMC was installed successfully;
 - that the SMC job is issuing a command to execute SMCLIST; and
 - that the SMC job terminated normally.


The SMP job leaves job slot 1 and SMCLIST takes its place. SMCLIST then provides a printout of the contents of \$Y\$SMCLOG, which is a record of all the SMCs that have been installed in your system. When SMCLIST successfully prints this list, you receive a message informing you that SMCLIST has terminated normally. The SMC installation process is now complete.

- 6. Press the XMIT key. Because you specified INPUT=C on your SMC execution command, the SMC job initiates the SMC console dialog to build the change in the standard OS/3 change format. We provide a sample SMC in the correct change format at the end of this section (Figure 11-12). It shows the parts of the change that Sperry Univac provides and the information you must provide in response to the SMC console dialog queries. If you received the SMC over the phone, your Sperry Univac representative must supply all the information you need to answer the dialog queries. Respond to the dialog queries in the following manner.


NOTE:

If, at any time in the current dialog session, you respond incorrectly to a dialog query, key in CANCEL, press the XMIT key, and respond Y for yes to the subsequent message PROCESS ANOTHER SMC (Y OR N)?. The SMC dialog ignores all your previous responses, both correct and incorrect, and redisplay the dialog starting at step a so that you may enter correct responses.

- ↓
- ↑
- a. When the message ENTER SMC NUMBER (XXXXXXX): appears, key in the 7-character SMC number and press the XMIT key.
 - b. When the message ENTER COMPONENT NUMBER (XXXX): appears, key in the 4-character component number and press the XMIT key.
 - c. When the message ENTER APPLIES-TO RELEASE LEVEL (XXXXXX): appears, key in the release level that the SMC applies to and press the XMIT key. You must key in the release level as a 6-digit number. For example, release 8.0 would be 080000.
 - d. When the message ENTER PRODUCT TYPE NUMBER (XXXX-XX): appears, key in the 6-character, hyphenated product type number and press the XMIT key. If you write SMCs yourself, the product type number must be specified as USER-xx, where xx are any sequential digits.
 - e. When the message ENTER SYSTEM CODE (9=S/90, 8=S/80, C=COMMON): appears, key in the appropriate system code found in the job control we provide and press the XMIT key.
 - f. When the message ENTER REGEN FLAGS (XXXXXXXX): appears, check the REGEN specification in the job control we provide. Key in Y for yes, or N for no, for each of the eight fields in the specification, in exactly the way that we provide it. The REGEN flags identify the types of regenerations required as a result of installing this SMC. Each field contains a value, either Y or N, that tells whether regeneration is required or not required for each type of module your system could include. The eight fields in the value correspond to: supervisors, ICAM networks, NTR networks, emulation modules, ANSI '74 COBOL compiler modules, IMS modules, and DMS modules (the eighth field identifies any other modules affected by this SMC and explained in line 13 of the job control we provide). For example, installation of the sample SMC in Figure 11-12 requires no regenerations because all 8 REGEN flags show N for no.
-

- g. When the message REQUIRED SMCs? (XXXXXXXX,...MAX=5): appears, key in up to five 7-character SMC numbers of prerequired SMCs and press the XMIT key. If there are no required SMCs, simply press the XMIT key.
- h. When the message ENTER CHARACTER TO REPRESENT LEADING SPACE appears, key in any character on your keyboard that is not included in the actual SMC. This character must be keyed in in steps i and j, which follow, as a substitute for leading spaces in any change lines requiring them. If you don't specify a character, you must use the left bracket ([). 

NOTE:

The first time the messages in steps i and j appear, 32 will occupy the field XX because line 32 of an SMC is the first line of the actual change and the first line you must key in. Each successive time these messages appear, the number in the field XX will increase by one until you key in LAST to tell the SMC program you have no more change lines to key in. 



- i. When the message ENTER LINE XXX COLS 1 TO 60 appears, you can either continue entering the SMC at the console or you can use the card reader as the input device for the remainder of the SMC. ←
- (1) To use the card reader, enter the letters CR in response to the ENTER message and press XMIT. The card deck should contain the SMC preceded by a // JOB card and followed by a /*. Then, continue with step k of this procedure. ←
 - (2) If you continue using the console, respond to the ENTER message by keying in the first 60 columns of the following parts of each line of the job control for the SMC, then press the XMIT key. You must provide (including slashes):
 - DVC-LFD sequences of any files that the SMC affects;
 - execute statement for whatever system program that the SMC executes. The SMC could execute one of the following system programs to change the corresponding program module:
 - LIBS – execute LIBS to correct the SAT module;
 - TRNPAT – execute TRNPAT to correct the system transient file;
 - MLIB – execute MLIB to correct the system MIRAM module; and
 - MSGGEN – execute MSGGEN to correct the system message file;
 - /\$
 - any parameters associated with the system program you are executing; and
 - /*

If you have no more change lines, key in LAST, press the XMIT key and proceed with step k.
- j. When the message ENTER LINE XXX COLS 61 TO 80 appears, key in the last 20 columns of the information requested in step i and press the XMIT key. If your entire change line fits on the first 60 columns, press the XMIT key and go back to step i. ←
- k. When the message ACCEPT THIS SMC (Y OR N)? appears:
- check your responses to all of the previous queries;
 - key in Y for yes and press the XMIT key if they are all correct and proceed with step l; key in N for no and press the XMIT key if any are incorrect. This response causes the entire SMC to be disregarded and displays the message: PROCESS ANOTHER SMC (Y or N)?.

- i. When the message PROCESS ANOTHER SMC (Y OR N)? appears, key in Y for yes if you need to define another SMC and go back to step 6; key in N for no if you have no other SMCs to define and go back to step 4.

7. Press the XMIT key. Because you selected INPUT=WS on the SMC execution command, the SMC job initiates the interactive SMC entry process to build the change in the standard OS/3 change format. We provide a sample SMC at the end of this section (Figure 11-13). It shows both the parts of the SMC that Sperry Univac provides and the information you must fill in the blanks on the interactive SMC entry screens. These screens include blanks for many fields in an SMC. Some are required; some are optional. On the SMC entry screens in Figures 11-9 and 11-10, we show all of the fields you could fill in – both required and optional information. On the sample SMC at the end of this section, we show only those fields that you are required to fill in. If any fields on the entry screens start blinking after you press the XMIT key, you have not supplied the necessary information for those fields. In that case, re-enter the data for those fields, position the cursor at the bottom of the screen, and press the XMIT key. If you received the SMC over the phone, your Sperry Univac representative must supply all required information you'll need to use this process. Perform the interactive SMC entry process in the following manner.

NOTE:

If at any time during this process you want to terminate the SMC job, press the FUNCTION key and F1 simultaneously.

- a. The following screen (Figure 11-8), which contains an explanation of the interactive SMC entry process and instructions for using the workstation, is displayed. After you read this screen, press the XMIT key to continue with the SMC entry procedure.

I N T E R A C T I V E S M C E N T R Y I N S T R U C T I O N S C R E E N [01]

THE FOLLOWING SCREENS WILL REQUEST INFORMATION REQUIRED TO BUILD AN SMC IN OS/3 FORMAT. JUST ENTER THE REQUESTED INFORMATION BY FILLING IN THE BLANKS. YOU MAY TAB OVER FIELDS TO ACCEPT ANY DEFAULT VALUES.

A DATA FIELD WILL BLINK TO INDICATE THAT INVALID INFORMATION HAS BEEN ENTERED OR THAT A FIELD WHICH REQUIRES INFORMATION TO BE ENTERED WAS LEFT BLANK. JUST TAB TO THE BLINKING FIELD AND OVERWRITE IT WITH THE CORRECT INFORMATION.

WHEN YOU HAVE COMPLETED A SCREEN, PRESS THE XMIT KEY TO CONTINUE WITH THE NEXT SCREEN. AFTER COMPLETING THE TWO FORMAT SCREENS YOU WILL BE REQUESTED TO ENTER THE PATCH CARDS.

YOU MAY ELECT TO START OVER AT ANYTIME BY PRESSING FUNCTION KEY 1 [F1].

PRESS [XMIT] TO CONTINUE OR, [F1] TO TERMINATE. <_>

Figure 11-8. SMC Instruction Screen

- b. The first interactive SMC entry screen (Figure 11-9) is displayed. Fill in the required fields on this screen:

```

      I N T E R A C T I V E   S M C   E N T R Y   S C R E E N   [03]
// JOB _____,7000,14000                X__      !___001
// DVC 20 // LFD PRNTR           // OPTION SMC      !456002
} // NOP ***** !FFFF003
} // NOP CORRECTION IS FOR _____             !___004
} // NOP IT WAS SUBMITTED ON _____ AND IS _____ !___005
} // NOP IT APPLIES TO RELEASE _____ THRU _____ !___006
} // NOP IT IS ___ TESTED AND IS ___ FIELD VERIFIED _____ !___007
} // NOP THE SUR ORIGINATED IN _____             !___008
} // NOP CORRECTION HAS BEEN APPLIED TO RELEASE _____ !___009
} // NOP IT IS INCLUDED IN _____               !___010
} // NOP COMPONENT SOURCE IS CORRECTED IN RELEASE _____ !___011
} // NOP CONTINGENCY: SYSTEM=_          REGEN= _____ !___012
} // NOP _____                               !___013
} // NOP FIXES SURS: _____                   !___014
} // NOP REQUIRED COR: XXXX,XXXX,XXXX,XXXX,XXXX !___015
} // NOP REPLACES COR: XXXX,XXXX,XXXX,XXXX,XXXX !___016

      P R E S S   [ X M I T ]   T O   C O N T I N U E   O R ,   [ F 1 ]   T O   S T A R T   O V E R .   < _ >

```

Figure 11-9. First SMC Entry Screen

- c. Press the XMIT key to display the second SMC entry screen shown in Figure 11-10. Fill in the required fields on this screen:

```

      I N T E R A C T I V E   S M C   E N T R Y   S C R E E N   [04]
// NOP ' IS REQUIRED BY CORS: XXXX,XXXX,XXXX,XXXX,XXXX ' !___017
// NOP ' IS REPLACED BY CORS: XXXX,XXXX,XXXX,XXXX,XXXX ' !___018
// NOP ' CORRECTION REQUIRES _____ WITH VSN _____ MODULE=_ ' !___019
// NOP ' (FILEID=_____ ) ' !___020
// NOP ' CORRECTION DESCRIPTION: ' !___021
// NOP ' _____ ' !___022
// NOP ' _____ ' !___023
// NOP ' _____ ' !___024
// NOP ' _____ ' !___025
// NOP ' _____ ' !___026
// NOP ' ECN=NONE ' !___027
// NOP ' MODULES CORRECTED: ' !7040028
// NOP ' _____ ' !___029
// NOP ' CORRECTION CARD COUNT: _____ ' !___030
// NOP ' ***** ' !F001031

      P R E S S   [ X M I T ]   T O   C O N T I N U E ,   O R   [ F 1 ]   T O   S T A R T   O V E R .   < _ >

```

Figure 11-10. Second SMC Entry Screen

- d. Press the XMIT key. If you have made any errors on either of the entry screens, a warning message is displayed giving the number of the line containing the error. Should this occur, check the line to verify that you entered it correctly.

At this point, the workstation screen is cleared and an editor-like mode is provided for entering the remainder of the change. Multiple spaces are not required when entering an SMC. Therefore, hash information may be entered one space after the last data character on a line.

When the line number prompt appears, key in the first line of the actual SMC and press the XMIT key. Continue to enter all the lines of the actual SMC, pressing the XMIT key after each one. You must enter the complete SMC as shown. If any lines are omitted you will receive an error message.

If you have no more change lines, either press FUNCTION and the F2 key simultaneously, or enter the word LAST and press the XMIT key. Proceed with part e.

- e. When the message ACCEPT SMC (Y,N) OR CMD (P, U OR HELP): appears, check your previous entries, then:
- if all entries are correct, key in a Y (for YES) and press the XMIT key. Proceed with part f; or
 - if the SMC is not in acceptable format, you may be able to correct it with the SMC editor - a facility we provide to make SMCs easier to prepare. Entering the command HELP and pressing the XMIT key displays the editing commands help screen shown in Figure 11-11:

```

1
2      EDITING  COMMANDS  HELP  SCREEN  [#1]
3
4      The command request expects that you will enter the letter of a command
5      and then press the red [XMIT] key.
6
7      Some of the commands require a line number (indicated by the '#' symbol
8      following the command explanation below), which should be supplied with
9      the command letter.
10
11
12             SYNTAX      COMMAND
13             Y           Yes
14             N           No
15
16             P#         Print
17             U#         Update
18
19
20
21
22
23      For a more detailed explanation of any command, just enter it's letter here <x>
24      and press the [XMIT] key, otherwise just press [F1], [F2] or the [XMIT] key.

```

Figure 11-11. Editing Commands Help Screen

To perform one of the functions listed on this screen, simply enter the first letter of that function and press the XMIT key. The following functions should be particularly helpful to you in editing an SMC:

- P(rint) Displays the SMC on the workstation screen. You can supply a line number with this command in the format Pxxx (where xxx is the starting line number, of up to three digits, of the line to be displayed). If no line number is supplied, the entire SMC is displayed. The SMC is scrolled up from the bottom of the screen until either the last line has been displayed or you decide to halt the display by pressing FUNCTION and F17 simultaneously. To continue the display, press FUNCTION and F19 simultaneously. If at any time you want to end the display, press FUNCTION and F18 simultaneously.
- U(pdate) Displays the requested line and allows it to be changed. You must supply a line number with this command in the format Uxxx (where xxx is the line number, of up to three digits, you want to update). If you do not supply a line number with the command, a prompting message is displayed. When you use the update function to change a line, make sure you erase the has sequence (Innnnnn) in columns 73 to 80 before you press the XMIT key. If you update a line without deleting the has information, you will encounter a hash total error.

After you perform one of the editing functions, press the XMIT key to redisplay the ACCEPT message and return to part e.

- if the SMC cannot be corrected, enter N (for NO) and press the XMIT key. This response restarts the interactive SMC entry process beginning with part a of this step.
- f. When the message DO YOU WISH TO PROCESS ANOTHER SMC? (Y OR N): appears, key in Y (for yes) and go back to step 7 if you want to build another SMC. Otherwise, key in N (for no) and go to step 4.

The following sample (Figure 11-12) shows an SMC in the correct change format. It shows the parts of the change that Sperry Univac provides and also the information you must fill in the blanks on the interactive SMC entry screens. These screens include blanks for many fields in an SMC. Some are required; some are optional. On the SMC entry screens in Figures 11-9 and 11-10, we show all of the fields you could fill in – both required and optional information. Here, on this sample SMC, we show only those fields you are required to fill in. They are the shaded fields.



```

// JOB 001552,,7000,14000 * !D822001
// DVC 20 // LFD PRNTR // OPTION SMC !4650002
// NOP '*****' !FFFF003
// NOP 'CORRECTION IS FOR A710-DUMP FACILITY SYSDUMP-JOBDUMP ' !0997004
// NOP 'IT WAS SUBMITTED ON C83182 AND IS REQUIRED 083182 ' !2714005
// NOP 'IT APPLIES TO RELEASE 000001 THRU 080099 ' !A53A006
// NOP 'IT IS TESTED AND IS NOT FIELD VERIFIED 6210-00 ' !ABF2007
// NOP 'THE SUR ORIGINATED IN FIELD ' !3013008
// NOP 'CORRECTION HAS BEEN APPLIED TO RELEASE XX.X.X ' !92FC009
// NOP 'IT IS INCLUDED IN ' !7D75010
// NOP 'COMPONENT SOURCE IS CORRECTED IN RELEASE 09.0.0 ' !4903011
// NOP 'CONTINGENCY: SYSTEM=C, REGEN=NNNNNNNN ' !E7FB012
// NOP ' ' !2020013
// NOP 'FIXES SURS: 029484 ' !0059014
// NOP 'REQUIRES COR: XXXX,XXXX,XXXX,XXXX,XXXX ' !C866015
// NOP 'REPLACES COR: XXXX,XXXX,XXXX,XXXX,XXXX ' !C160016
// NOP 'IS REQUIRED BY CORS: XXXX,XXXX,XXXX,XXXX,XXXX ' !D900017
// NOP 'IS REPLACED BY CORS: XXXX,XXXX,XXXX,XXXX,XXXX ' !D406018
// NOP 'CORRECTION REQUIRES WITH VSN MODULES=N ' !82CE019
// NOP '(FILEID= ) ' !A404020
// NOP 'CORRECTION DESCRIPTION: ' !0299021
// NOP 'MISSING PUB IN SYSDUMP PUBS INTERPRETATION ' !E8E9022
// NOP ' ' !1F20023
// NOP ' ' !1F1F024
// NOP ' ' !1F1E025
// NOP ' ' !1F1D026
// NOP 'ECN=C075562 ' !18D5027
// NOP 'MODULES CORRECTED: ' !704D028
// NOP 'SYSDMP ' !835B029
// NOP 'CORRECTION CARD COUNT: 044 ' !B38A030
// NOP '*****' !FD01031
// DVC 20 // LFD PRNTR !3FF5032
// EXEC LIBS !BD05033
/$ !8817034
FIL D1=$Y$LOD !C3CD035
BOG C$SYSTEM,D1 !CA6D036
COR D1,L,SYSDMP !1EAC037
-12B4,40,45B0C1EC !CCD2038
-145C,40,9120303B071B4B70C3E807FB !6699039
EOD !D001040
EOG C$SYSTEM,D1 !C975041
/* !871A042
/& !870D043
// FIN !102C044

```

Figure 11-12. Sample SMC - Required Fields for SMC Console Dialog

```

// JOB C081552,,7000,14000 X !D822001
// DVC 20 // LFD PRNTR // OPTION SMC !4650002
// NOP '*****' !FFFF003
// NOP 'CORRECTION IS FOR A710-DUMP FACILITY SYSDUMP-JOBDUMP ' !0997004
// NOP 'IT WAS SUBMITTED ON C83182 AND IS REQUIRED 083182 ' !2714005
// NOP 'IT APPLIES TO RELEASE 080001 THRU 080099 ' !A53A006
// NOP 'IT IS TESTED AND IS NOT FIELD VERIFIED 0210-00 ' !ABF2007
// NOP 'THE SUR ORGINATED IN FIELD ' !3013008
// NOP 'CORRECTION HAS BEEN APPLIED TO RELEASE XX.X.X ' !92FC009
// NOP 'IT IS INCLUDED IN ' !7D75010
// NOP 'COMPONENT SOURCE IS CORRECTED IN RELEASE 09.0.0 ' !4903011
// NOP 'CONTINGENCY: SYSTEM=C, REGEN0NNNNNNNN ' !E7FB012
// NOP ' ' !2020013
// NOP 'FIXES SURS: 029484 ' !0D59014
// NOP 'REQUIRES COR: XXXX.XXXX,XXXX,XXXX,XXXX ' !C866015
// NOP 'REPLACES COR: XXXX.XXXX,XXXX,XXXX,XXXX ' !C160016
// NOP 'IS REQUIRED BY CORS: XXXX,XXXX,XXXX,XXXX,XXXX ' !D900017
// NOP 'IS REPLACED BY CORS: XXXX,XXXX,XXXX,XXXX,XXXX ' !D406018
// NOP 'CORRECTION REQUIRES WITH VSN MODULES=N ' !82CE019
// NOP '(FILEID= ) ' !A404020
// NOP 'CORRECTION DESCRIPTION: ' !0299021
// NOP 'MISSING PUB IN SYSDUMP PUBS INTERPRETATION ' !E6E9022
// NOP ' ' !1F20023
// NOP ' ' !1F1F024
// NOP ' ' !1F1E025
// NOP ' ' !1F1D026
// NOP 'ECN=C075562 ' !1BD5027
// NOP 'MODULES CORRECTED: ' !704D028
// NOP 'SYSDMP ' !B35B029
// NOP 'CORRECTION CARD COUNT: 044 ' !B38A030
// NOP '*****' !FD01031
// DVC 20 // LFD PRNTR !3FF5032
// EXEC LIBS !BD05033
/* !8617034
FIL D1=SYSLOD !C3CD035
EOG CSSYSTEM,D1 !CA6D036
COR D1,L,SYSDMP !1EAC037
-12B4,40,45B0C1EC !CCD2038
-145C,40,91203030071B4070C3E807FB !6699039
EOG !D001040
EOG CSSYSTEM,D1 !C975041
/* !871A042
/& !870D043
// FIN !102C044

```

Figure 11-13. Sample SMC - Required Fields for Interactive SMC Entry from Workstation



Appendix A. Statement Conventions

The conventions used to delineate the configuration parameter values in this manual are:

- Parameter definition is by keyword association. Keyword parameters consist of a word or a code immediately followed by an equal sign, which in turn, is followed by a specification. Keyword parameters can be written in any order except where restrictions are noted. Keyword parameters may be written in columns 1 through 71. More than one keyword parameter may be included on the same statement, but they must be separated by at least one blank character. Except for some parameters, which we explain later, keywords and their specifications must be contained on the same statement.

Special rules for coding ICAM network definition keywords and macros are described in 6.2.1.

Examples:

```
PRIORITY=5
PRIORITY=5   JOBSLOTS=3   TIMER=MAX
PRIORITY=5   TIMER=MAX   JOBSLOTS=3
```

- Capital letters, commas, equal signs, and parentheses must be coded exactly as shown. The exceptions are acronyms, which are part of the generic terms representing information to be supplied by the programmer.

Examples:

```
SUPMOD=supvrnam
COMM=2,18
CACH=(nn,CCA-name,line-number)
```

- Lowercase letters and words are generic terms representing information that must be supplied by the user. Such lowercase terms may contain hyphens and acronyms (for readability).

Examples:

```
channel
supervisor-name
vsn
```

- Information contained within braces represents alternate choices of which only one may be coded.

Examples:

```
( MAX )
( MIN )
( NO )
( NORM )
```

- Information contained within brackets represents optional entries that (depending upon program requirements) are included or omitted. Braces within brackets signify that one of the specified entries must be chosen if that parameter is to be included.

Examples:

```
[ SUPMOD=supvrnam ]
[ SUPVRNAM= { supervisor-name } ]
[ SYSSTD ]
```

- An optional parameter that has a list of alternate entries may have a default specification that is supplied by the operating system when the parameter is not specified by the user. Although the default may be specified by the user with no adverse effect, it is considered inefficient to do so. For easy reference, when a default specification occurs in the format delineation it is printed on a shaded background. If, by parameter omission, the operating system performs some complex processing other than parameter insertion, it is explained in an "if omitted" sentence in the parameter description.

Examples:

```
[ SUPVRNAM= { supervisor-name } ]
[ SYSSTD ]
```

- Keyword parameters may contain sublists called subparameters. Subparameters may be positional or nonpositional, as indicated in the text. Subparameters must be separated by commas.
 - Positional subparameters must be coded in the order shown, and commas must be retained for any that are omitted, with the exception of trailing commas.

Examples:

```
SYSOUT=DSP001,8414,PARTIAL
SYSOUT=DSP001,8414
SYSOUT=vsn.,NOPREP
SYSOUT=,,PARTIAL
```


- Nonpositional subparameters may be coded in any order on a single statement and separated by commas. (A comma is not required after the equal sign.) In the special cases where all subparameters do not fit on one parameter statement, that statement can exceed one line, providing you repeat the keyword parameter and its equal sign for each additional line that you need. Remember that this rule does not apply for parameters that fit on one line; in those cases, every keyword parameter and its specifications must be on one line.

Examples:

```
RESMOD=SM$ASCKE, SM$ATCH, SM$DBS, SM$GTPUT, SM$LOCK, SM$LOD, SM$STXIT, SM$TASK
```

This list of nonpositional subparameters will not fit on one statement line; therefore; what you must do is code it on two lines like this:

```
RESMOD=SM$ASCKE, SM$ATCH, SM$DBS, SM$GTPUT, SM$LOCK, SM$LOD, SM$STXIT
RESMOD=SM$TASK
```

- The label entry must begin in column 1.

Example:

Label	△Operation△
SUPGEN	
END	

- The assembler coding form (UD1-1548) is recommended for coding of the SYSGEN keyword parameters, since the LABEL, OPERATION, and OPERAND field limits are illustrated.
- Keyword parameters must not appear on the following label parameter cards:

```
SUPGEN
I/OGEN
RESGEN
EMULAT
COMMCT
NTRGEN
COBGEN
END
```



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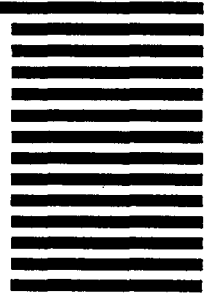
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