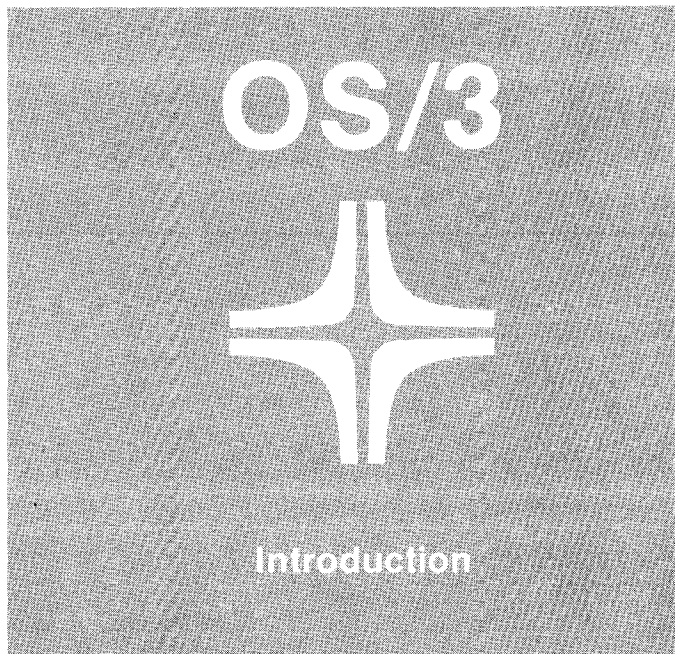


# System Installation



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.

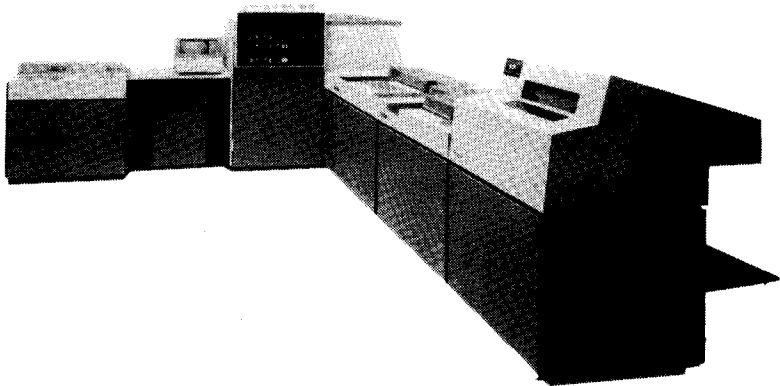
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**SYSTEM GENERATION  
CREATES AND  
UPDATES YOUR  
OPERATING SYSTEM**





## **system generation is a simple procedure**

System installation (generation) is the process of tailoring the manufacturer-supplied operating system software to create an operating system that fits your particular requirements. It is very much like the founding of a city. You are immediately faced with the need for leadership, construction of accesses or highways to provide necessary communication links, and governing charters. Leadership in terms of your operating system is provided by the supervisor, the manager of job processing; communication links between your central processing unit and peripheral devices are provided by input/output (I/O) specifications; and the function of governing charters is performed by system configuration parameters. You create and update these components at system generation (SYSGEN).

With SPERRY UNIVAC Operating System/3 (OS/3), you have the option of installing your system either in a batch or an interactive environment. In a batch environment, input is entered on cards from the card reader or, in a cardless system, from card images on a diskette.

An interactive system, on the other hand, recognizes input entered from a workstation or a remote communications terminal using an interactive facility of OS/3 called the SYSGEN dialog.

Using the SPERRY UNIVAC system generation software supplied on the OS/3 release disk volume (OS/3REL) and the hardware available at your computer installation, you can initially generate an operating system, and then update your existing operating system as new releases become available.

The system generation procedure is a disk operation that combines essential system foundation components with your configuration parameters.

Five simple, efficient methods, described later in this manual, provide the framework for the system generation process. You choose the method that most nearly corresponds to the state of your system at generation time. The operator then initiates system generation by running the control streams SG\$INIT and/or SG\$PARAM supplied on the OS/3REL volume.

## **what's needed to generate the OS/3 system**

When you are ready to generate OS/3, you can be faced with one of two situations:

- the original system generation, where no supervisor or other OS/3 components exist in your system; or
- the updating or restructuring of an existing operating system.

No matter which situation confronts you at system generation time, you need:

- An OS/3 release volume
- A system resident volume
- The SG\$PARAM control stream
- Your configuration parameters

If you are updating an existing operating system, you also need the SG\$INIT control stream.

## **OS/3 RELEASE VOLUME**

Whether you are generating a system for the first time or updating your existing system, the OS/3REL volume provides all the system libraries and software facilities needed to perform system generation.

Software facilities that reside on OS/3REL include:

- OS/3 Starter Supervisor
- Job Control
- SYSGEN Dialog
- Linkage Editor
- Assembler
- Librarian
- Disk Prep Routine
- System Access Technique (SAT)
- Library Utilities
- Data Management Print Routine



## **SYSTEM RESIDENT VOLUME**

The software making up your operating system is contained on a disk pack known as your system resident volume (SYSRES). If you are initially generating an operating system, the OS/3REL volume functions as your SYSRES. If you are updating or restructuring your operating system, you already have a SYSRES volume. In either instance, the purpose of your system generation operation is to produce a SYSRES volume that is tailored to suit the particular needs of your installation.

## **SG\$PARAM AND SG\$INIT CONTROL STREAMS**

OS/3REL contains two control streams that perform important functions in system generation:

- SG\$PARAM
- SG\$INIT

The control stream SG\$PARAM is used in every system generation procedure. The control stream SG\$INIT is used only if you are updating your present system.

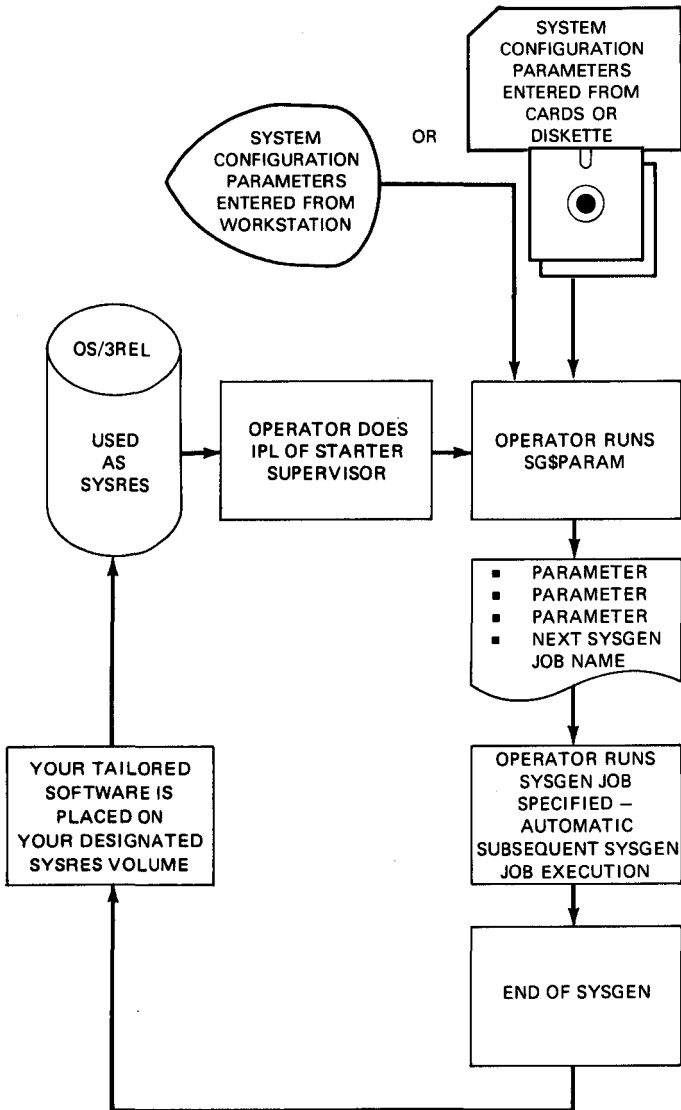
If you are installing an operating system for the first time, you initiate the system generation procedure by loading control storage and a starter supervisor from the OS/3REL volume and running the parameter input control stream, SG\$PARAM. In an interactive environment, you have the option of running SG\$PARAM yourself or of having your system run it for you.

Now the system is ready to receive your OS/3 configuration parameters, which you enter on punched cards through the system card reader, a diskette, or from a workstation using the SYSGEN dialog. You may even choose to tailor multiple supervisors. The SG\$PARAM control stream translates and verifies the configuration parameters and supplies a listing containing:

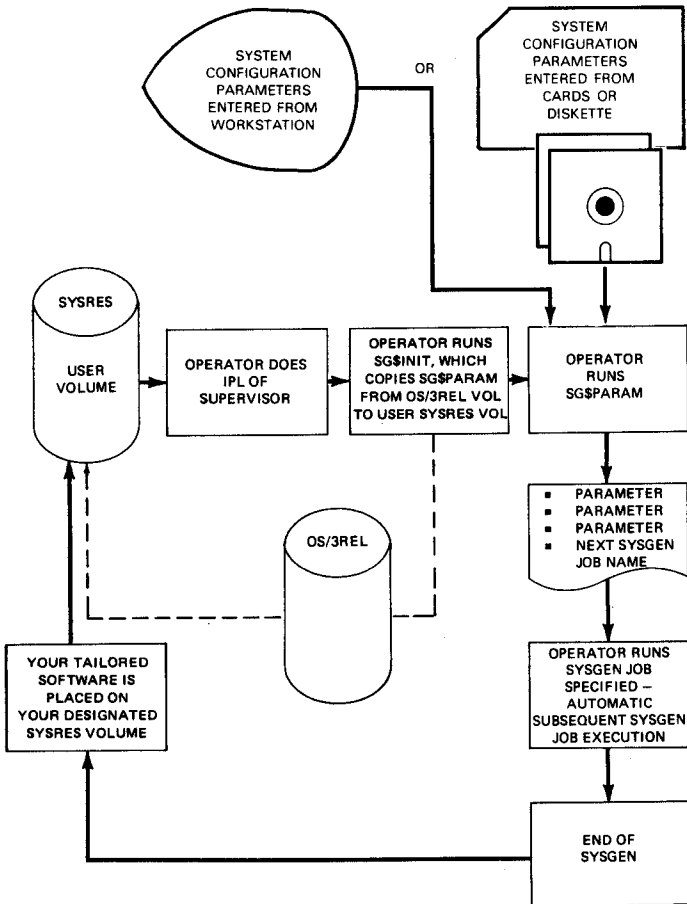
- diagnostic information; and
- sequence and starting job name of the next SYSGEN control stream to be run.

If you want to add or change any parameters after seeing the listing, you can change your configuration parameters and rerun the SG\$PARAM control stream to satisfy error diagnostics and warning messages. Otherwise, the operator runs the SYSGEN control stream specified on the diagnostic output listing, and subsequent SYSGEN job execution is internally controlled without further operator intervention.

At the completion of system generation, your tailored software is placed on your designated SYSRES volume. A typical SYSGEN operation of this nature is shown in the following illustration.



If you want to update your existing operating system, you do so by running the SG\$INIT control stream, which copies the job SG\$PARAM and other contents of the OS/3REL needed later, from OS/3REL to your SYSRES volume. The remainder of the process is similar to that previously described, as shown in the following illustration.



## **YOUR CONFIGURATION PARAMETERS**

With OS/3, you can prepare your configuration parameters on punched cards (or card images on diskette) or from a workstation. If you prepare your parameter sets in a batch environment, you keypunch cards (or card images on diskette) using the coding formats outlined in the system installation manual. If you prepare your parameters in an interactive environment, you respond to questions and menu choices displayed by the SYSGEN dialog.

The SYSGEN dialog is an easy to use, interactive facility of OS/3 that allows you to prepare your parameter sets at a workstation and to store them until the parameter processor needs them.

You do not need to specify all system configuration parameters to generate a basic OS/3 that includes a supervisor. This basic system is automatically created by default values that are assumed by the system in the absence of your specifications.

Sometimes, even the default values give you more than you need; therefore, it is usually wiser to specify some of the configuration parameters according to your particular system requirements. The configuration parameters enable you to specify, in detail, the version of OS/3 that you want created.

If you operate in a batch environment, the only specifications required in your system configuration parameters are a label card and an END card for each section and the PRINTER, READER, and DISC parameter specifications.

If you operate in an interactive environment, your parameter sets do not require label cards or end cards because you use the SYSGEN dialog; however, you must include parameter specifications for at least one printer, card reader, and disk, as well as for at least one workstation or interactive terminal.

There is also a time-saving method whereby you can use previously specified system generation parameters when updating a system.

All configuration parameters are supplied to the parameter processor in sections. The various sections that may be included are:

- **SUPGEN**

This section contains the configuration parameters that enable you to configure a supervisor tailored to your system.

- **I/OGEN**

This section contains the configuration parameters that relate the peripheral device configuration of your system to your particular supervisor.

- **RESGEN**

This section contains the configuration parameters that enable you to place the output generated by the other sections of SYSGEN onto a disk volume other than OS/3REL.

- **EMULAT**

This section allows you to submit the emulator descriptor cards describing your previous hardware and software configuration and details how your programs are to be emulated.

- **COMMCT**

This section contains the configuration parameters that allow you to configure an integrated communications access method (ICAM) load module for your system.

- **NTRGEN**

This section contains the configuration parameters that allow you to use the SPERRY UNIVAC 90/30 Data Processing System as a remote terminal for the SPERRY UNIVAC 1100 Data Processing System.

- **COBGEN**

This section contains the configuration parameters that allow you to change the standard option defaults used by the 1974 American National Standard COBOL compiler.



# methods of system generation

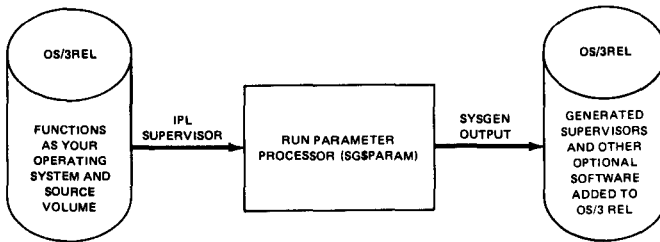
SPERRY UNIVAC Operating System/3 (OS/3) offers you five methods of installing operating systems. These five methods handle a variety of situations in which you may choose to run system generation. One thing to remember is that any method you choose always uses an OS/3REL volume.

Earlier, you learned there were two possible situations at SYSGEN time. You might be running SYSGEN initially or from a previously existing operating system. Although any of the five system installation methods could be your framework for SYSGEN, certain operational characteristics of each method dictate your choice.

The central purpose of all five methods is to give you a variety of ways in which to handle the system generation process and to keep that process relative to your current operating system needs. The SYSGEN methods available to you are outlined in the following paragraphs.

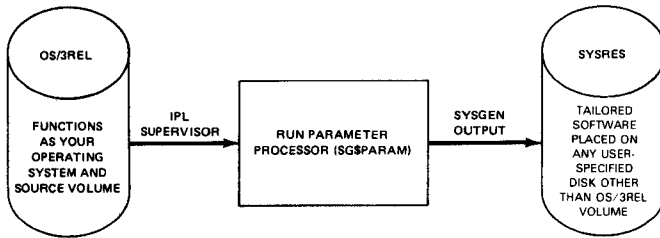
## METHOD 1 - NEW USERS, BASIC SYSTEM

In method 1, the OS/3REL volume is used as the SYSRES for execution of SYSGEN jobs. After the operator loads the starter supervisor and runs the SG\$PARAM control stream, the software generated as a result of the SYSGEN process is stored on the OS/3REL volume. Then, the operator does an initial program load (IPL) of your tailored supervisor from the OS/3REL volume, which has become your SYSRES. An IPL places your supervisor into main storage and initializes it.



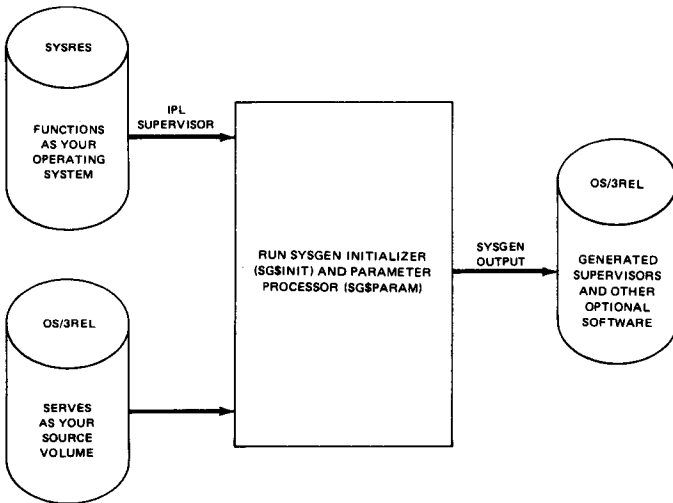
## METHOD 2 - NEW USERS, MORE EXTENSIVE REQUIREMENTS

Method 2 also uses the new OS/3REL volume as SYSRES to create a tailored system. This method allows you to remove the system software you don't want from your generated SYSRES volume. Here again, the operator does an IPL of the starter supervisor from OS/3REL and runs the SG\$PARAM control stream. Your tailored supervisors and system libraries are transferred to an output disk volume (SYSRES) other than OS/3REL. Then the operator does an IPL of your tailored supervisor from the output disk volume.



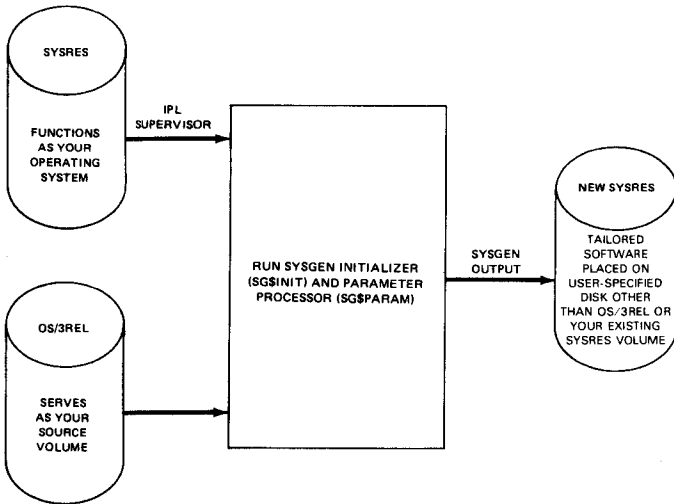
## METHOD 3 - MINOR UPDATES

Method 3 uses your existing SYSRES volume (possibly your former OS/3REL volume used as a SYSRES) to update your operating system. After the operator does an IPL of the supervisor from your SYSRES, he runs the SG\$INIT and SG\$PARAM control streams. The tailored supervisor, and other software generated as a result of the SYSGEN process, is placed on the new OS/3REL volume. The operator then does an IPL of the tailored supervisor from the OS/3REL, which has become your SYSRES.



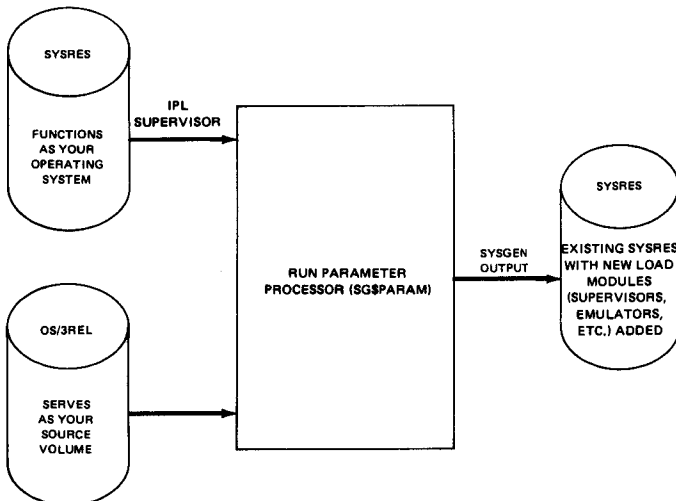
## METHOD 4 - MAJOR UPDATES

Method 4 uses the existing SYSRES volume to create a new updated SYSRES volume. After the operator does an IPL of your supervisor, he runs the SG\$INIT and SG\$PARAM control streams. The updated system software is then transferred from the new OS/3REL to a new SYSRES volume. This method allows the system libraries to be restructured (made larger or smaller as necessary) because a new SYSRES volume is being created. The operator then runs an IPL of your tailored supervisor from the new SYSRES volume.



## METHOD 5 - ADDING MORE SUPERVISORS, ETC.

The final method is used when you simply want to add a new supervisor, emulator, or communications module to your SYSRES volume. In this case, the OS/3REL volume used to generate your existing SYSRES volume must again be available for use as a source volume. The operator does an IPL of the supervisor from your SYSRES volume and runs the SG\$PARAM control stream. The new software modules produced are placed on your SYSRES volume. The SG\$INIT control stream is not needed because your existing SYSRES volume and the OS/3REL are at the same software release level.



If you are initially running SYSGEN and have no previously existing operating system, you would choose methods 1 or 2 because the SYSGEN process originates in OS/3REL, which contains all the new software and, if you wish, your tailored system.

As OS/3 is updated by Sperry Univac to include additional capabilities or to make existing codes more efficient, new OS/3REL volumes will be made available to you from time to time. After a new OS/3REL is issued, you would choose methods 3 or 4 to run SYSGEN from a previously existing operating system because the SYSGEN process in these methods originates in your own SYSRES volume containing your previous operating system configurations.

If you simply want to add more supervisors, communications modules, or emulators to your operating system, you would choose method 5.

Of course, you could use methods 1 or 2 on a succeeding SYSGEN if you weren't interested in keeping any part of your previous operating system configurations. Because most users wish to keep a large portion of their previously existing operating system's configuration, they choose methods 3, 4, or 5 to run succeeding SYSGEN operations.

## **summary**

The SPERRY UNIVAC Operating System/3 (OS/3) system installation procedure (SYSGEN) is an easy-to-use method of creating and updating your operating system. With minimal configuration specifications, you can create a substantial system by default option. On the other hand, you have the alternative to tailor the system that best meets your needs, or to retain your previous operating system configurations.

In addition, you have the option of performing SYSGEN in a batch or an interactive environment. You can perform SYSGEN under a variety of situations using any of the five available system installation methods that apply to your initial and expanding system requirements.



