

System Platform Software

for System 80 Model 50

UNISYS

The Operating System/3 (OS/3) System Platform Software (SPS) consists of system control software, utility programs, and the Integrated Communications Access Method (ICAM). SPS routines perform the functions needed to use OS/3, such as scheduling and running jobs; managing files; maintaining program libraries; and preparing disks and tapes for use.

SPS also provides a variety of interactive processing services and programs. In addition, SPS aids in software maintenance and in tailoring OS/3 to fit the needs of your site.

ICAM provides communications support for terminals and other communications devices connected to your system via distributed communications processors (DCPs).

Features

Supervisor

The supervisor interacts with system programs and user application programs to provide services and control.

The supervisor handles randomly occurring external events, such as errors, and minimizes their impact on the system.

The supervisor routines most often used always reside in main storage. Less frequently used routines are stored on the system resident volume. These routines are named transient routines because they are called into main storage, executed, and, when no longer needed, replaced. This arrangement increases supervisor efficiency in two ways. First, it minimizes the main storage needed. Second, it eliminates the input/output time needed to load the most frequently used routines by keeping them resident in main storage.

The supervisor does much of its work by manipulating tasks (basic units of work that compete with each other for control of the central processor). Each task controls a system or user program. The system is capable of handling up to 256 tasks simultaneously. This capability, called multitasking, maximizes processor use.

Job Control

Job control enables you to tell the system how a job is to be processed. It also allocates system resources to a job and determines how and when the job should run. With job control, you only specify a general outline of how the job is to be run; the processing is handled by job control itself. Job control facilities include the job control language, interactive job control preparation, run processor, job scheduler, and job step processor.

- **Job Control Language (JCL)** – JCL is the part of job control most visible to OS/3 users. It consists of individual job control statements that tell the operating system how to process a job. A set of these statements performing a specific function can be made into a job control procedure (jproc), which may then be called with a single statement. The statements and jprocs prepared for a job constitute its job control stream.
- **Interactive Job Control Preparation** – Users can code a job control stream independently or with the assistance of the system. The assistance is provided by a system program called interactive job control preparation. It engages the user in a dialog to build job control streams or jprocs and store them, ready to run, in a system library file.

Interactive job control preparation prompts the user for parameters that describe the job, checks the responses for syntactical correctness, and then uses the valid responses to tailor the job control stream.

- **Run Processor** – The run processor translates job control statements, expands jprocs (by replacing a jproc call with the statements contained in the body of the jproc), checks the order and syntax of the job control stream, and generates structures needed to begin running the job. The run processor may be initiated (or called) from the system operator's console, a user's terminal, or another job control stream or program.
- **Job Scheduler** – The job scheduler identifies the resources needed by a job, and when all needed resources become available, schedules the job for execution. Input to the job scheduler comes from the run processor.
- **Job Step Processor** – The job step processor performs housekeeping duties necessary between execution of job steps. It "cleans up" right after a job finishes, and prepares for the next job step to be initiated. Its housekeeping activities include scratching and allocating files needed by a job step, performing shared code analysis, and handling certain messages.

Interactive Services

The ease-of-use characteristics provided in OS/3 are derived in large measure from its interactive capabilities. Communicating with the operating system through a terminal lets you work faster and accomplish more than you would using batch processing.

Interactivity enables users to receive results more quickly and to work with the operating system to correct errors and solve

problems that may arise during job processing.

- **Interactive Command Language** – The Interactive Command Language is a set of commands that allow users to perform many functions previously available only to the system operator. Users can run jobs, monitor them as they run, and terminate them. The Interactive Command Language also allows users to perform utility functions, such as making copies of files, recovering deleted library file elements, sending messages to other interactive users and the system operator, and obtaining information about the files on a given disk volume.
- **Dialog Processor** – The Dialog Processor improves the efficiency of terminal input by managing interactive dialogs between users and the operating system. Dialogs consist of a series of queries to which the user responds with the appropriate information. The processor displays the dialog text, and users respond to the dialog through the keyboard.

The Dialog Processor works on behalf of an application or system program, to which it routes user responses.

Dialog processing offers several advantages over simple terminal use:

- A dialog can display different questions depending on previous responses. This can prevent users from responding to irrelevant questions and messages.

- It can validate responses to prevent inaccurate data from reaching the application program.
- It keeps a complete record of a dialog session for later use or for audit purposes.
- HELP screens can be written to explain dialog choices or concepts during the dialog session.

Unisys supplies certain dialogs for interactive system functions. Users who wish to use dialogs with application programs can write their own, using the Dialog Specification Language (DSL) and the Dialog Specification Language Translator (DSLTL).

- **Dialog Specification Language and Translator** – Users can create their own job-oriented dialogs using the Dialog Specification Language (DSL). DSL is an English-oriented language that has facilities for specifying dialog structures; messages to be displayed; input to be entered; and the content, format, and mapping rules for the output.

DSL source code is sent to the dialog specification language translator, which compiles the source code to produce the desired dialog and stores the dialog in a permanent file.

- **Screen Format Coordinator** – The Screen Format Coordinator manages pre-stored displays called screen formats. Using screen formats makes data

entry much easier because it presents users with a form on the screen, which can be filled out by entering data in designated spaces. Screen formats can contain fixed data for display and variable data for input and output.

Data output from a program can be made more intelligible because the data may be displayed in a format where fixed-screen information identifies the variable output data.

The Screen Format Coordinator can also verify and edit variable data to ensure uniformity.

Like the Dialog Processor, the Screen Format Coordinator operates on behalf of an application or system program. Unisys supplies certain screens used by some SPS facilities and system programs. You can also create your own screen formats for use in application programs through the Screen Format Generator.

- **Screen Format Generator** – The Screen Format Generator (SFG) is an easy-to-use, interactive utility program you use to create and maintain screen formats.

With SFG, users can lay out the format to their specifications and include up to 255 fields within the screen. Each data field is defined for field editing attributes (whether the field is for input or output or both), screen disposition after use, and edit characters. SFG provides extensive prompting to lead the

novice through the process of creating or modifying a format. SFG automatically stores completed formats in a user or system file.

SFG also has the capability to detect errors during the creation and modification of formats.

Consolidated Data Management

Consolidated Data Management (CDM) allows you to move data between the central processor and files on several peripheral devices with a minimum of programming effort. It also allows you to access files without your having to know which device the file resides on. All you need to do is make a request within the program and CDM moves the data to or from that particular device.

- **Disk Access Method** – Disk files may be accessed sequentially, by relative record number, or by up to five different keys in five indexes. Data records are written on disks in data record slots, which, for either fixed or variable-length records, are of uniform size and may span physical blocks, sectors, tracks, cylinders, and even volumes.
- **Workstation Access Method** – The Workstation Access Method (WSAM) enables system and user programs to use a terminal for data input and output. Through WSAM, you can control the management of your display screen, as well as the movement of data between a program and the terminal.

Integrated Communications Access Method (ICAM)

The OS/3 Integrated Communications Access Method is a flexible, modular communications package with a broad range of capabilities. ICAM interfaces directly with a DCP connected to the system via a dedicated selector channel.

ICAM offers:

- Flexibility.
ICAM is a modular software package that provides configuration flexibility to provide solutions for users with simple, moderate, or complex communications needs.
- Device independence.
Total device independence is provided to user programs that interface with the system, and to system programs that interface with ICAM.
- Network configuration.
ICAM allows a user to configure a variety of terminal device types and communications lines into a single network (using a DCP) that is accessible to a number of user and system programs concurrently.
- Resource assignment.
ICAM is responsible for preventing conflicting resource assignment, balancing the quantity of system resources, and releasing facilities when jobs terminate.

ICAM provides message queuing in main storage or disk (a user

option) while waiting for servicing. ICAM also allows you to specify multiple destinations for a single message. Scheduling activities and support for user-defined priority levels are also provided. Should a system failure occur, ICAM allows message and queue reconstruction from specified points. Complete facilities are provided for the accumulation of relevant statistical information.

A basic ICAM configuration includes:

- Software modules specified during system generation
- System utilities required by the ICAM network
- DCP interface control
- Communications lines
- Terminal devices
- Programs that interface with the network through the DCP

The Model 50 supports UDLC, PDN, bisync, async, and UNISCOPE[®] protocols.

Data Utilities

Data Utilities is an easy-to-use set of utility programs for reproducing and maintaining data files. Through the data utilities program, you can:

- Copy data files
- Reformat the records of a data file
- Select or delete specific areas of a file

File Sorting

SPS provides two file sorting packages: SORT/MERGE and SORT3.

- SORT/MERGE –
The SORT/MERGE system provides users with a varied group of sorting capabilities for a minimum amount of user effort. The SORT/MERGE software package has two components: a sort subroutine that is accessible through user programs, and a processor that is accessible through JCL.

The processor accepts input data to be sorted or merged from tape or disk and uses the sort subroutine to perform the actual sorting or merging operation.

- SORT3 –
SORT3 is a sort program compatible with the sort programs of IBM[®] System/3, System/32, and System/34. SORT3 sorts and reformats selected records from as many as nine input files. Input may be on tape or disk.

For compatibility with System/32 and System/34, SORT3 has these features:

- Messages concerning the operation of SORT3 may be output to a terminal.
- Comparisons against the following keyword parameters may be made: UDAY, UDATE, UMONTH, UYEAR.

Spooling

Spooling provides many features and tailoring options.

Output spooling lets you direct how output is to be processed and

written, and how system resources are to be used. Normally, when a job produces several files (subfiles), output spooling writes all of a terminated job's output files as a continuous entity in the order in which they were created.

An output file may optionally be retained in the spool file after it has been processed, or it may be held in the spool file without processing.

The system operator can change the output spooling operation so that completed output subfiles from different jobs are available before their jobs have terminated. Terminal users also have control over output spooling operations performed on jobs they are running from their terminals.

Additionally, you can direct output spooling to select only those files created by a particular job or with the same file name, or those records designated for the same device type.

Other output spooling features include:

- Option to print informational header lines to separate files
- Option to produce multiple copies of an output file
- Capability to test forms alignment on a printer
- Capability to redirect print output to a tape or disk for subsequent processing
- Capability to direct print output to an auxiliary printer connected to a terminal

The spooling definition is established during system generation. All jobs then run automatically according to the spooling parameter options selected. Additional control over spooling functions is provided through job control statements and spooling commands.

Job Accounting

As each job runs, informational log records pertaining to it are stored and then printed when the job terminates. The log for a job contains the job control used and the messages displayed on the system console screen, as well as accounting records. A formatted job accounting report can be produced from the accumulated accounting records.

The Log Accumulation Program is used to extract job log, console log, and accounting records and write them to tape or disk. The new file can be processed by the JOBLOG Report Program or by a locally developed program.

The JOBLOG Report Program produces a formatted job accounting report. This accounting report provides such job-related information as run date, account number, job and step names, resource use, and so on.

The system also provides accounting for interactive user sessions. Immediately after a user logs off, an accounting report of the session just completed is recorded in the terminal log and may be printed out on the system printer.

Like job logs, the interactive accounting records are held for future retrieval or accounting purposes. The accounting records are kept whether or not the user selects logging.

System Installation and Verification

The system installation programs are another part of the SPS package. They permit the installation or update of an operating system to meet the requirements of an individual site. The system installation functions are divided into many phases. Thus, a given site uses only as much of the system installation routine as necessary, whether the task is generating a new supervisor or updating the system resident volume to the current OS/3 release level.

Execution of system installation routines is controlled by entering parameters that tailor OS/3 to the specific needs of a given site.

SPS contains a routine that allows the system installation parameters to be entered interactively. With interactive preparation, the parameters are entered by using a terminal dialog. The system asks for parameters, checks them, and builds a module containing the valid input parameters for the system installation programs.

SPS also includes a set of installation verification programs. These programs demonstrate that the installation of a software product was successful and that the product is ready for customer use.

Software Maintenance

OS/3 is maintained through system maintenance packages (SMPs). The SMPs provide maintenance changes to OS/3 that enhance system stability or forestall potential difficulties. Each SMP consists of multiple system maintenance changes (SMCs). The SMCs may also be issued singly to meet individual user requirements.

Both SMPs and SMCs are installed interactively through the system console. Dialogs are available to assist in the installation.

Prerequisites

Hardware

The System Platform Software operates on any System 80 Model 50.

Software

The System Platform Software is the basis of the OS/3 operating system for the Model 50. All other OS/3 software products require it for operation.

Education

Unisys offers customer education related to this product. Course descriptions and schedules are contained in the Customer Education Course Catalog and the Customer Education Course Schedule. Contact your Unisys representative for enrollment information.

Ordering Information

The System Platform Software is an orderable product. Contact your Unisys representative for specific ordering information or assistance.

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