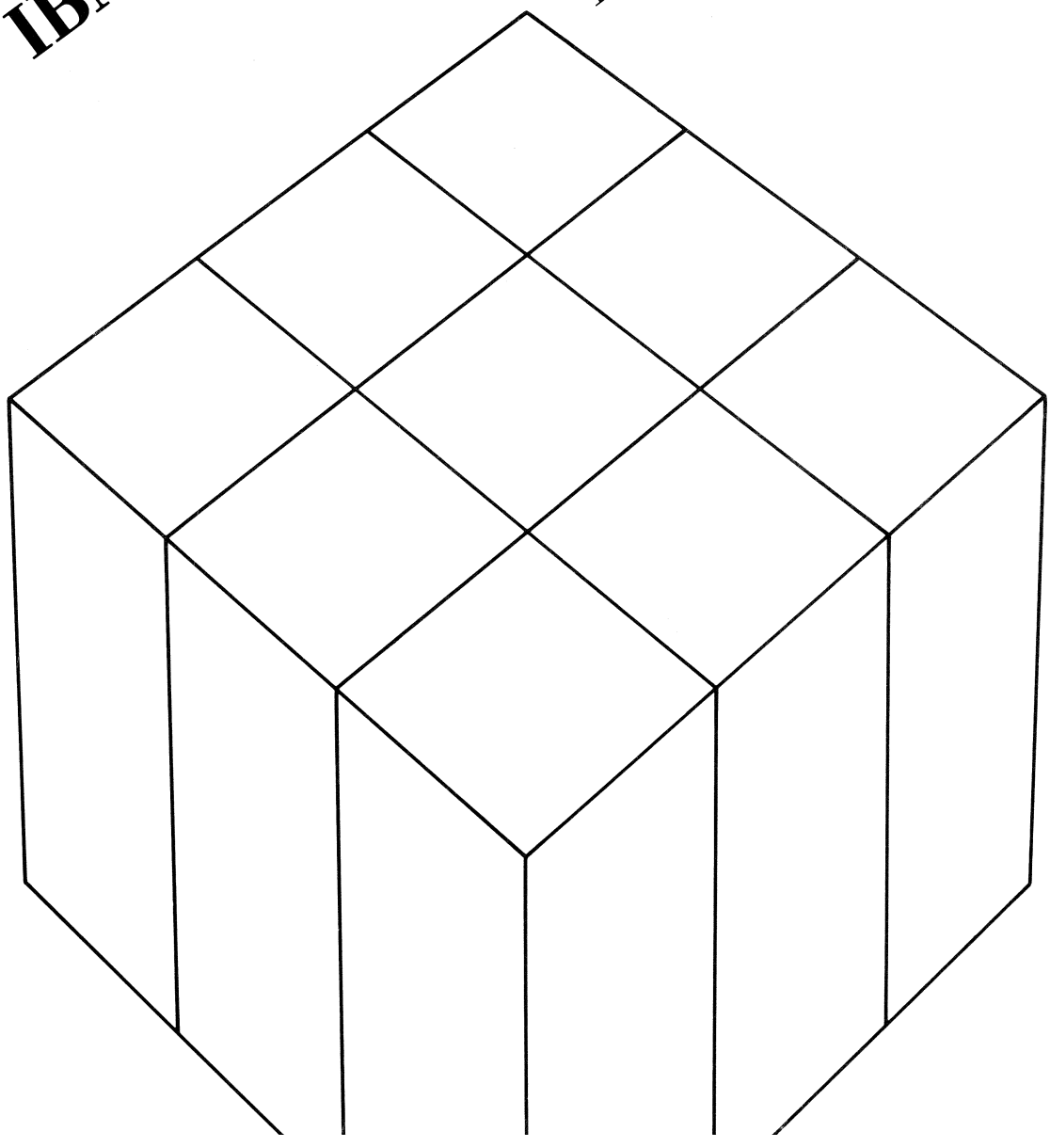
IBM Virtual Storage Extended System Package

Installation Planning



IBM Virtual Storage Extended System Package

Installation Planning

Version 3 Release 1

Program Number 5666-345

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Preface

Purpose

This manual describes planning considerations for the IBM Virtual Storage Extended/System Package (VSE/SP) Version 3, Release 1. It provides information which helps you plan for the installation and use of VSE/SP.

Audience

The manual is intended for those who install the system and who perform administrative tasks. A knowledge of VSE and the IBM licensed programs included in VSE/SP is required.

Contents

The information in this manual is primarily meant to help you plan for the initial installation of your VSE/SP system. Major topics include:

Notes:

1. *A list of related publications and a glossary follow the appendixes.*

2. *The manual IBM VSE/SP Communications and Networking has planning information for adding remote devices or installing your system in a network. In addition, you may want to use publications for VSE/SP's licensed programs to make a planning decision.*

Manuals for VSE/SP

Along with the distribution tape(s) for VSE/SP, you will receive a set of the latest VSE/SP manuals. All of the manuals shown below will be shipped to you.

Figure 1. Manuals for VSE/SP

IBM VSE/SP General Information – A basic overview of VSE/SP that covers topics such as:

- Functions provided by VSE/SP.
- Installation and system use.
- Supported hardware devices.

IBM VSE/SP Installation Planning – The manual you are reading.

IBM VSE/SP System Planning – Information to help you plan for daily system use, once initial installation is complete. Much of this involves *tailoring* your system to meet your particular data processing needs. For example, there are chapters describing how to:

- Modify system startup jobs and procedures.
- Change the Interactive Interface.
- Add a user-written application to the system.

In addition, the manual outlines the basic tasks for activating support for IBM Personal Computers and for sharing DASDs between systems.

IBM VSE/SP Installation – Detailed information for installing:

- VSE/SP and the Generation Feature.
- Optional programs.
- System service.

IBM VSE/SP Administration – Detailed information on how to perform tasks such as:

- Tailoring IPL and system startup.
- Configuring local hardware.
- Tailoring the Interactive Interface.
- File and catalog management.

IBM VSE/SP Operation – Detailed information on how to perform tasks such as:

- Managing batch queues.
- Backing up and restoring data.
- Displaying system activity.

IBM VSE/SP Using IBM 3270 Display Stations and Personal Computers – Information for programmers and application end users on how to use:

- Basic functions of the Interactive Interface.
- VSE/ICCF user libraries.
- Intelligent Work Station support (IWS).

IBM VSE/SP Communications and Networking – Information on how to:

- Configure local and remote communication devices.
- Operate the communication part of a single-domain or multiple-domain network.

Planning information for these tasks is also included.

IBM VSE/SP Messages and Codes – Messages that are issued by VSE/SP and the programs included in it. Message explanations have a description of what action, if any, should be taken.

Online explanations for messages are also available through VSE/SP's system console function.

IBM VSE/SP Guide for Solving Problems – Instructions for isolating the cause of operating problems and collecting data for further analysis. The manual also describes utilities and aids for problem determination and resolution.

IBM VSE/SP Master Index – An index for finding information in VSE/SP's manuals and key related publications. The entries in the index point to manuals, not to specific page numbers. When referred to a manual, use its more detailed index to locate page numbers.

Contents

Figures

Summary of Amendments

The manual *VSE/SP Planning*, SC33-6177, was written for VSE/SP 2.1. This manual has been split into two for VSE/SP 3.1:

- *IBM VSE/SP Installation Planning*, SC33-6303, which is the manual you are reading, and
- *IBM VSE/SP System Planning*, SC33-6304.

Topics from the *VSE/SP Planning* manual, which reappear here, have been completely rewritten for VSE/SP 3.1. For the items new with VSE/SP 3.1, refer to Chapter 2, "New Functions for VSE/SP 3.1" on page 7.

Chapter 1. The VSE/System Package

VSE/System Package (VSE/SP) Version 3 Release 1 is a complete, pregenerated VSE system. It contains an integrated set of IBM licensed programs, and it has a number of usability functions that make it easier for you to install and work with your VSE system.

You can install VSE/SP from its IBM distribution tape(s) onto the DASD types listed in "Disk Requirements" on page 36. This *initial installation* is performed using VSE/SP job streams. Once initial installation is complete, you use VSE/SP's *Interactive Interface* for other installation or tailoring tasks.

The pregenerated VSE/SP system contains the IBM licensed programs listed in Figure 2 on page 2. It includes modules and macros required for tailoring and using the system.

Other licensed programs that you can order and use with your VSE/SP system are stacked on one or more additional tapes. Figure 3 on page 4 lists the VSE/SP optional licensed programs available when this manual was printed. You can install VSE/SP optional licensed programs either at initial installation or later using the Interactive Interface.

Note: Besides the pregenerated system, the distribution tape(s) for VSE/SP 3.1 also contain a standard feature called the *Generation Feature*. This is source code which provides generation capability for the VSE/Advanced Functions supervisor and certain CICS/DOS/VS modules. If you decide to use the Generation Feature, you can install it using the Interactive Interface. For more information, refer to "Installing the Generation Feature" on page 46.

IBM Licensed Programs Included in VSE/SP

Figure 2 lists the IBM licensed programs included in VSE/SP 3.1. In the figure, VR stands for a program's Version and Release.

Note: Refer to the *VSE/SP Program Directory* for more information on the VSE/SP Licensed Programs, including the Program ID, Component ID and Component Level Code (CLC).

PROGRAM NAME	PROGRAM NUMBER	VR	VSE/SP SUBLIBRARY
VSE/Advanced Functions	5666-301	2.1	IJSYSRS.SYSLIB
ACF/VTAM	5666-313	3.1	PRD1.BASE
BTAM-ES	5746-RC5	1.1	PRD1.BASE
CICS/DOS/VS	5746-XX3	1.7	PRD1.BASE
CICS/DOS/VS REPORT CONTROLLER	5746-XX3	1.7	PRD1.BASE
VSE/ICCF	5666-302	2.1	IJSYSRS.SYSLIB
VSE/POWER	5666-273	2.3	IJSYSRS.SYSLIB
VSE/VSAM	5746-AM2	1.3	IJSYSRS.SYSLIB
VSE/VSAM Space Management	5746-AM2	1.3	IJSYSRS.SYSLIB
VSE/VSAM Backup/ Restore	5746-AM2	1.2	IJSYSRS.SYSLIB
DITTO for VSE and VM	5668-722	2.1	PRD1.BASE
VSE/Fast Copy	5746-AM4	1.2	PRD1.BASE
VSE/SP Base Functions	5666-345	3.1	IJSYSRS.SYSLIB
VSE/SP Base NL	5666-345	3.1	IJSYSRS.SYSLIB
Generation Feat.			
VSE/Advanced Functions	5666-301	2.1	PRD2.GEN1
CICS/DOS/VS	5746-XX3	1.7	PRD2.GEN1
Device Support Facilities	5747-DS2	1.8	IJSYSRS.SYSLIB
EREP	5656-260	3.3	PRD1.BASE
EREP Functional Feature 1	5656-260	3.3	PRD1.BASE
VSE/OLTEP	5656-092	1.1	PRD1.BASE
BTAM-ES SCP	5747-CG1	1.1	PRD1.BASE

Figure 2. IBM Licensed Programs Included in VSE/SP

Notes:

1. *The DOS/VSE System Control Programming (5745-030) was integrated into VSE/Advanced Functions 2.1.0.*

2. *The VSE/POWER Shared Spool feature was integrated into VSE/POWER 2.2.0.*

3. *IBM provides National Language Support (NLS) for VSE/SP 3.1. When you receive distribution tape(s) for VSE/SP, one of them will contain the language that you specified when placing your order.*

4. *The following prerequisite System Control Programming components are shipped with VSE/SP. They are not part of the licensed program specifications of VSE/SP:*

   - *BTAM-ES SCP*
   - *Device Support Facilities*
   - *EREP*
   - *VSE/OLTEP*

Optional Licensed Programs

Certain VSE licensed programs are designated as VSE/SP *optional licensed programs*. These optional licensed programs are tested together with VSE/SP and supported for simplified installation.

Note: Figure 3 lists the optional licensed programs for VSE/SP that were available when this manual was printed. Note that IBM may have announced other optional licensed programs since then. The figure shows the programs' Version (V), Release (R), and, if significant, also their Modification Level (M).

For more information about VSE/SP optional licensed programs, their Program ID, Component ID, and Component Level Code (CLC), refer to the VSE/SP *Program Directory*, or contact your IBM representative.

Figure 3 shows the default sublibrary for an optional licensed program if you automatically install it during initial installation. If you install VSE/SP optional licensed programs later using the Interactive Interface, you can specify the sublibrary.

PROGRAM NAME	PROGRAM NUMBER	VRM	VSE/SP SUBLIBRARY
ACF/NCP SUBS Generation Part	5668-754	4.1	PRD2.COMM2 PRD2.GEEPSP31
ACF/NCP 3725 Generation Part	5668-854	4.1	PRD2.COMM2 PRD2.GEEPSP31
ACF/SSP for VSE Generation Part	5666-322	3.2	PRD2.COMM2 PRD2.GESSP320
ACF/VTAM X.25 Communication Adapter for VSE	5666-313	3.1	PRD2.COMM
CSP/AD	5668-813	3.1.1	PRD2.DBASE
CSP/AE	5668-814	3.1.1	PRD2.DBASE
CSP/Q	5668-918	1.2.1	PRD2.DBASE
DISOSS/370	5666-270	3.3	PRD2.PROD
DISPF (See Note 1 on page 5.)	5666-361	1.1.1	PRD2.PROD
DL/I DOS/VS Generation Part	5746-XX1	1.7.1	PRD2.DBASE PRD2.GEDLI
DM/VSE	5666-339	1.1.2	PRD2.PROD
DMS/CICS/AGF (See Note 2 on page 5.)	5746-XC4	1.4	PRD2.DBASE
DMS/CICS/VS	5746-XC4	1.4.1	PRD2.DBASE
DOS PL/I Compiler/Lib.	5736-PL3	1.6	PRD2.PROD
DOS PL/I Opt. Compiler	5736-PL1	1.6	PRD2.PROD
DOS PL/I Res. Library	5736-LM4	1.6	PRD2.PROD
DOS PL/I Trans. Library	5736-LM5	1.6	PRD2.PROD
DOS/VS COBOL	5746-CB1	1.3	PRD2.PROD

Figure 3 (Part 1 of 2). Optional Licensed Programs for VSE/SP

PROGRAM NAME	PROGRAM NUMBER	VRM	VSE/SP SUBLIBRARY
DOS/VS RPG II	5746-RG1	1.3	PRD2.PROD
DSNX	5666-284	1.2	PRD2.COMM
DSX	5668-915	3.2	PRD2.COMM
EP for 3725	5735-XXB	1.3	PRD2.COMM2
Generation Part			PRD2.GEEPSP31
File Transfer	5668-932	2.2	PRD2.COMM
Program			
GDDM Version 2			
GDDM/VSE	5666-328	2.1	PRD2.PROD
GDDM/VSE NL	5666-328	2.1	PRD2.PROD
GDDM/VSE NL	5666-328	2.1	PRD2.PROD
GDDM/VSE NL	5666-328	2.1	PRD2.PROD
GDDM/VSE NL	5666-328	2.1	PRD2.PROD
GDDM-IMD	5668-801	2.1	PRD2.PROD
GDDM-IVU	5668-723	2.1	PRD2.PROD
GDDM-PGF	5668-812	2.1	PRD2.PROD
GDDM-PGF NL	5668-812	2.1	PRD2.PROD
INFO/SYSTEM/VSE	5735-OZS	1.1	PRD2.DBASE
ISPF	5668-960	1.1	PRD2.PROD
ISPF/PDF	5666-281	1.1	PRD2.PROD
NCCF	5666-285	2.2	PRD2.COMM
Generation Part			PRD2.GENCCF22
NLDM	5668-971	1.3	PRD2.COMM
Generation Part			PRD2.GENLDM13
NPDA	5666-295	3.2	PRD2.COMM
Generation Part			PRD2.GENPDA32
(See Note 3.)			
NPDA/TARA	5666-295	3.2	PRD2.COMM
Generation Part			PRD2.GENPDA32
Personal	5666-318	1.2	PRD2.PROD
Services/CICS			
QMF/VSE	5666-292	1.1	PRD2.PROD
SDF/CICS	5746-XXT	1.5	PRD2.PROD
Sort/Merge II	5746-SM2	2.5	PRD2.PROD
SQL/DS	5748-XXJ	1.3.5	PRD2.DBASE
VSE/Access	5746-XE7	1.2	PRD2.PROD
Control-Logging	and Reporting		
VSE/OCCF	5746-XC5	1.2	PRD2.COMM
Generation Part			PRD2.GEOCCF

Figure 3 (Part 2 of 2). Optional Licensed Programs for VSE/SP

Notes:

1. *When you order DISPF (Decision and Information Support Productivity Facility), you can select one of three functional packages:*

   - *Decision and Information Support (DIS)*
   - *Information Development (ID)*
   - *Decision Support (DS)*

2. *DMS/CICS/AGF requires DMS/CICS/VS.*

3. *NPDA requires NCCF.*

You can also install other VSE licensed programs which are not VSE/SP optional licensed programs. For information about these licensed programs and how to install them, see "Installing Additional Licensed Programs" on page 50.

Chapter 2. New Functions for VSE/SP 3.1

This chapter is an overview of the major new functions provided by VSE/SP 3.1. It has information about programming developed especially for VSE/SP (its *base functions*) and improvements to IBM licensed programs included in VSE/SP.

VSE/SP Base Functions

Major enhancements to VSE/SP 3.1 base functions include:

- Automated system startup.
- Intelligent Work Station (IWS) support.
- Use of synonyms to access dialogs.

Automated System Startup

The *Startup* facility of VSE/SP 3.1 has procedures and jobs for performing a fast and efficient system startup. In most cases, no operator intervention is required, except for IPL.

The facility defines five possible startup *modes* (WARM, RECOV, COLD, BASIC, and MINI). The mode used for a specific startup depends on the status of the system at that time. A WARM startup is performed, for example, if the last system shutdown completed with no problems.

Startup modes WARM and RECOV can only be selected by the system. VSE/SP allows the operator to interrupt startup processing, however, and request a COLD, BASIC, or MINI startup.

You may use the procedures and jobs of the Startup facility as shipped by IBM, or you can tailor them to meet your needs. Chapter 2 in the manual *IBM VSE/SP System Planning* has basic information about the Startup facility and how to tailor it.

When actually performing startup tailoring, refer to the manual *IBM VSE/SP Administration.* Also note that the manual *IBM VSE/SP Guide for Solving Problems* explains how and when COLD, BASIC, and MINI startups should be used.

Intelligent Work Station Support

In VSE/SP 2.1, IWS users only could convert data files from EBCDIC to ASCII and vice versa. IWS for VSE/SP 3.1 now enables them to convert individual records or record fields using IBM-supplied conversion routines.

Conversion is controlled by *Data Conversion Descriptor Files (DCDF)* prepared by the user. A DCDF defines the record layout (fields) of a data file that is to be converted to another format. When the data file is transferred between the host system and a Personal Computer, a DCDF can be specified for data conversion.

Besides support for Data Conversion, IWS also provides a new *IWS PC* dialog. PC users can use it instead of SEND and RECEIVE commands to exchange data with the host system. The dialog has options for transferring data to/from the Host Transfer File or CICS/DOS/VS temporary storage. It also has an option for creating and maintaining a DCDF.

VSE/SP provides an interface that allows CICS/DOS/VS application programs to read data from or write data to the Host Transfer File. The interface provides the following functions for a user-written application program:

- READ from the Host Transfer File.
- WRITE to the Host Transfer File.
- SHARE a file in the Host Transfer File.
- DELETE a file in the Host Transfer File.

For basic information about IWS support in VSE/SP 3.1, see Chapter 7 in *IBM VSE/SP System Planning.*

Synonyms for Accessing Dialogs

Previous versions of VSE/SP supported a "fast path" function for reaching dialogs. This function, which also is supported by VSE/SP 3.1, lets users go directly to a dialog by entering a number string in a selection panel. With the number string, they bypass all intermediate panels to the dialog.

In addition, VSE/SP 3.1 enables users to access applications and dialogs by entering character strings (*synonyms*) in selection panels. They can use synonyms (which are easier to remember than number strings) from any selection panel of the Interactive Interface or from selection panels that you create.

Appendix B in *IBM VSE/SP System Planning* shows which synonyms are predefined for dialogs. The manual *IBM VSE/SP Administration* has information about using the *Maintain Synonyms* dialog to create and maintain synonyms. It also has information about creating synonym *models.*

Additional Improvements

Besides the improvements described above, the base functions for VSE/SP 3.1 also provide enhancements to:

- National Language Support (NLS).

  The KANJI support introduced with VSE/SP Version 2 has been extended. The Interactive Interface now supports any double-byte character language and mixed mode data input (double-byte and single-byte mixed) for some functions.

  Note: Conversion of DBCS (double-byte character set) data is not supported by the IWS data conversion function.

- Interactive Interface

  To increase function and ease of use, the Interactive Interface for VSE/SP 3.1 includes the following enhancements:

  - A single dialog for configuring system hardware.
  - New dialogs for maintaining ACF/VTAM application names and startup options.
  - Improvements to the dialogs for applying system service.
  - Support for the new Report Controller of CICS/DOS/VS (described on page 10).
  - A new dialog, called *Display Storage Layout*, which allows you to display the virtual storage layout of
    - a particular active VSE/SP partition.
    - the Shared Virtual Area (SVA).

- Extended support for defining auto install terminals.
- Product delete jobs.
- 200MB layout for 9332 disks.

CICS/DOS/VS

This section briefly summarizes three of the major improvements in CICS/DOS/VS 1.7 that are especially important for VSE/SP. For detailed information about this release of CICS/DOS/VS, refer to the manual *CICS/DOS/VS 1.7.0 Release Guide.*

Resource Definition Online (RDO)

The RDO facility for CICS/DOS/VS 1.7 has been extended so that you can define ACF/VTAM communication resources interactively. This includes definition of both terminal-to-terminal and system-to-system connections.

In addition, RDO supports definition of *autoinstall* terminals. Table entries for autoinstall terminals are not permanent. They only exist when users sign on to the system from these terminals.

For more information about using autoinstall terminals in a VSE/SP system, refer to

- Chapter 1, "Defining System Hardware" and
- Appendix H, "VSE/SP Definitions for Autoinstall Terminals"

in *IBM VSE/SP System Planning.*

Report Controller

The Report Controller feature is new to CICS/DOS/VS 1.7 and part of the pregenerated VSE/SP system. It allows users to control and print information (*reports*) created by both online applications and batch programs.

The Report Controller provides a number of panels. With these panels (which can be accessed through the Interactive Interface), users can easily manage their reports. They can, for example, change a report's characteristics or print it either at a terminal printer controlled by CICS/DOS/VS or at a channel-attached printer controlled by VSE/POWER. Print output may also be controlled by the system operator using VSE/POWER commands at the console.

Note that inclusion of the Report Controller in VSE/SP *eliminates the requirement for a channel-attached printer in your system configuration.* Instead, you can use a locally-attached terminal printer controlled by CICS/DOS/VS as your "system" printer. If you do, it is recommended that this terminal printer has a minimum speed of 300 lpm.

Appendix G of *IBM VSE/SP System Planning* describes manuals for the Report Controller and how the Report Controller is implemented in VSE/SP.

Multiregion Operation (MRO)

Virtual Addressability Extension (VAE), part of VSE/Advanced Functions, provides support for multiple address spaces. With CICS/DOS/VS 1.7, you can use either MRO or ISC (Intersystem Communication) to communicate between CICS/DOS/VS subsystems in different address spaces.

VSE/POWER 2.3

This section summarizes what is new for VSE/POWER Version 2, Release 3. For further information, refer to the manual *VSE/POWER Installation and Operation Guide.*

Hardware-Related Changes

- Additional spool devices.

  The maximum number of output spool devices is now 14 printers or punch devices.

- Support of systems with no line printer.

  Dumps of the VSE/POWER partition or the VIO area now can be directed to tape instead of a printer. The VSE/POWER disk dump utility IPW$$DD also can dump selected portions of the spool files to tape.

Software-Related Changes

VSE/POWER Spool File

- Restructure of the spool file.

  The organization of the VSE/POWER data and queue file has been improved to increase overall performance. In addition, a new queue file recovery technique eliminates chain errors.

- Use of the spool file.

  Use of the queue file is improved by blocking queue records and allowing only one queue record per queue entry. Also, use of the data file no longer depends on device characteristics such as track capacity. Instead, the data file can be tailored to meet installation requirements.

- Space allocations.

  The number of data file extents is now 15 (previously 5).

- Threshold message.

  A *threshold value*, in terms of the percentage of spool space used, can be specified for efficient use of the spool files. The system operator is alerted via a message when either the queue file or the data file exceeds the specified value.

Job Handling

- Job number limit.

  The highest number that can be assigned to a VSE/POWER job is now 65,535 (previously 32,767).

- Additional * $$ JOB statement operands.

  The * $$ JOB statement has been extended to include new ownership and distribution information such as:

  - Programmer name
  - Room number
  - Building number
  - Department number

- Queue manipulation by date and user ID.

  The queue manipulation commands (PALTER, PDELETE, PDISPLAY, PHOLD, and PRELEASE) now allow an installation to manipulate one or more queue entries based on the creation date or the specified user ID.

- User-defined output operands.

  A new interface allows a user-written application program or an IBM licensed program to define its own, additional output operands. These output operands, which can be specified in a * $$ LST or PUN statement, accompany the queue entry.

- Temporary disposition Y.

  Spool-access support and external-device support allow a temporary disposition of Y to indicate that the processing of an output queue entry has failed.

- Recovery of partially-produced output.

  The new *RBC* operand for the * $$ LST and PUN statements allows you to take checkpoints during output spooling. If VSE/POWER terminates abnormally, the incomplete output entry is no longer lost. VSE/POWER recovery makes it available up to the last recorded checkpoint and flags the entry with a temporary disposition of X.

Additional Improvements

- Status report statistics.

  The VSE/POWER status report produced at startup/shutdown contains new values showing the virtual storage occupied by the VSE/POWER phases and the maximum GETVIS storage requested. These values can be used when tailoring the VSE/POWER partition.

- Use of POFFLOAD.

  The POFFLOAD command now allows reloading of one or more queue entries back to the VSE/POWER queues. Spool tapes can also be reloaded.

- Channel-to-channel attachment.

  This support is part of VSE/POWER's networking function. It allows data to be exchanged between two virtual machines under control of VM/SP if:

  - Both of these machines use VSE/POWER with networking or
  - One machine uses VSE/POWER with networking and the other uses the networking capability of RSCS.

  With this support, there is no need for a hardware link (such as a communication controller) for the exchange of data between virtual machines operating under a VM/SP host system.

  Note: ACF/VTAM also provides its own support for Channel-to-Channel Attachment.

Other Licensed Programs

ACF/VTAM

The manual *Network Program Products General Information* describes ACF/VTAM Version 3, Release 1. Enhancements to ACF/VTAM 3.1 include extended network addressing and automatic SSCP-to-SSCP session restart.

In addition, ACF/VTAM 3.1 enables VSE/SP to support multi-system communication via:

- The channel-to-channel adapter feature of IBM /370 processors and
- The virtual channel-to-channel facility of VM/SP.

This support is equivalent to the channel-to-channel support provided by ACF/VTAM Versions 2 and 3 for the MVS environment.

Note: The CTCA function of ACF/VTAM is used in *IBM VSE/SP System Planning* to help create a DASD-sharing environment.

VSE/Advanced Functions

Changes to VSE/Advanced Functions Version 2, Release 1 include:

- Serviceability improvements:
  - MSHP history file extension up to 16MB.
  - Improved dump formatting.
- New PUNCH command operand.

  A new operand in the librarian PUNCH command controls punching/suppressing of CATALOG and EOD statements.
- Multiple commands for EXEC LIBR.

  More than one command can be passed to the librarian in the PARM operand of the EXEC LIBR job control statement.
- Disposition parameter for job abends.

  A third disposition parameter can be specified in the // DLBL statement for job abend cases. VSE/VSAM uses this parameter to decide whether a reusable file should be kept or deleted.

VSE/ICCF

VSE/ICCF Version 2, Release 1 has been adapted to meet the requirements of CICS/DOS/VS 1.7. This includes:

- Dynamic selection of a CICS/DOS/VS release-dependent phase.
- WAITM support.

VSE/VSAM

VSE/VSAM Version 1, Release 3 supports a new disposition parameter for ABEND cases. This parameter is used to determine whether a reusable file should be kept or deleted (if it was opened during a job that ended abnormally). The parameter can be specified in the GENCB and MODCB macros via the DLBL statement or as second close disposition in the access control block (ACB).

DITTO for VSE and VM

DITTO for VSE and VM Version 2, Release 1 provides:

- A new full screen interface of selection panels and function-processing panels.
- Mapping functions for tape and disk volume tables of contents.
- A browse function for tape, disk, diskette, and VSE/VSAM.

Note: VSE/SP predefines the application profile *IESDITTO*. Adding this profile to a selection panel for a user provides access to DITTO via the Interactive Interface.

Chapter 3. System Organization

Predefined System Environments

Overview

VSE/SP 3.1 predefines four general system *environments*. During initial installation, you *must* choose one of these environments as the basis for your system. After initial installation, you can use the VSE/SP *startup* skeletons at any time to modify that environment.

Before you install your system, be sure to read the information given here. *Carefully planning for your system's initial environment may considerably reduce any tailoring that you may later do.*

Figure 4 shows the basic characteristics of each predefined environment. Note that the first two environments support E, VM, and 370 mode supervisors. Environments 3 and 4 only can be used with a MODE=370 supervisor.

	ENV 1	ENV 2	ENV 3	ENV 4
Number of Address Spaces	1	1	2	3
Number of Partitions	6	8	9	12
VSIZE (MB)	16	16	24	40
MODE=E Supervisor	Yes	Yes	No	No
MODE=VM Supervisor	Yes	Yes	No	No
MODE=370 Supervisor	Yes	Yes	Yes	Yes

Figure 4. Predefined System Environments for VSE/SP

Notes:

1. *Page Data Set extents are used for MODE=E and MODE=370 only.*

2. *For the 200MB option of the 9332 DASD you can only use Environments 1 or 2.*

Use of VAE in Environments 3 and 4

As shown in Figure 4, Environments 1 and 2 have a single address space. Environment 3, however, has two separate address spaces, and environment 4 has three. This is because they use *Virtual Addressability Extension (VAE).*

VAE, which is part of VSE/Advanced Functions, provides support for multiple address spaces. Each address space can be up to 16MB, within a total system limit of 40MB. The maximum number of address spaces is three. The maximum number of partitions is twelve.

VAE support is available with all supervisors generated with MODE=370. In this mode, there are *two* types of virtual areas:

- **Shared** areas

  Some areas are shared among all address spaces. They are provided for code and data that must be accessible to several or all partitions. These areas include the supervisor and SVA.

  Some subsystems such as VSE/POWER and ACF/VTAM also must run in shared address space. Therefore, they are executed in partitions that are defined as shared areas.

- **Private** areas.

  The space between the end of the supervisor and the start of the shared areas is available for private areas. Code and data in a private area are not generally accessible from outside of that area.

VAE is implemented using:

1. The **VSIZE** parameter in the first statement of the IPL procedure.

   VSIZE specifies the maximum total size of all allocated virtual areas (up to 40MB). This includes the supervisor, SVA, and all virtual partitions. Real allocations are not counted.

2. **ALLOC** commands in the BG startup procedure.

   With the ALLOC command, you subdivide virtual storage into partitions. When using VAE, you must specify the address space to which each allocated partition belongs.

Figure 5 on page 19 is an example of a VAE system with shared and private areas and three address spaces. For detailed information about these topics, refer to the *VSE/Advanced Functions System Management Guide*.

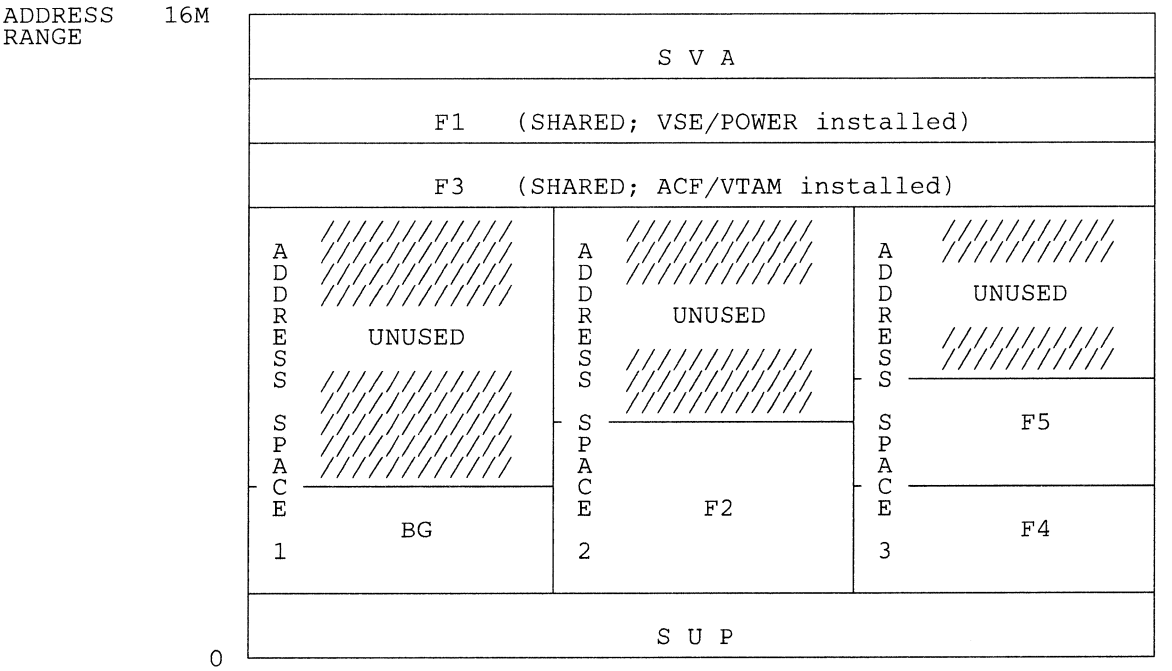

Figure 5. Example of a VAE System

Use of Partitions BG Through F5

All four of the predefined environments for VSE/SP use the partition layout for BG through F5 that is shown in Figure 6. Note that IBM licensed programs included in VSE/SP run in F1, F2, and F3.

PARTITION	USE
BG	Available
F1	VSE/POWER active
F2	CICS/DOS/VS and VSE/ICCF active
F3	ACF/VTAM active (if used)
F4	Available
F5	Available

Figure 6. Predefined Layouts for BG and F1 Through F5

Figure 7 through Figure 9 show the:

- Initial allocations for these partitions and
- Additional partitions that are defined for Environments 2, 3, and 4. These partitions are available for your own use.

Initial Partition Allocations

Figure 7 through Figure 9 give the initial allocations for the partitions of each predefined environment. In a VSE system, the VSE/Advanced Functions *ALLOC* command is used to allocate virtual and processor storage to partitions. For information about the ALLOC command, see the manual *VSE/Advanced Functions System Control Statements.*

ENVIRONMENT 1

PARTITION	INIT. ALLOC.	VIRT. SIZE	REAL SIZE	PROGRAM RUNNING IN PARTITION	PARTITION GETVIS AREA
BG	1536K	1280K	0K	——	256K
F1	768K	580K	64K	VSE/POWER	188K
F2	5888K	5120K	144K	CICS/ICCF	768K
F3	2560K	200K	296K	VTAM	2360K
F4	1024K	768K	0K	——	256K
F5	1024K	768K	0K	——	256K

Figure 7. Partition Allocations for Environment 1

ENVIRONMENT 2

PARTITION	INIT. ALLOC.	VIRT. SIZE	REAL SIZE	PROGRAM RUNNING IN PARTITION	PARTITION GETVIS AREA
BG	1536K	1280K	0K	——	256K
F1	768K	580K	64K	VSE/POWER	188K
F2	5888K	5120K	144K	CICS/ICCF	768K
F3	2560K	200K	296K	VTAM	2360K
F4	1024K	768K	0K	——	256K
F5	512K	400K	0K	——	112K
F6	512K	400K	0K	——	112K
F7	512K	400K	0K	——	112K

Figure 8. Partition Allocations for Environment 2

ENVIRONMENT 3

ADDRESS SPACE	INIT. ALLOC.	VIRT. SIZE	REAL SIZE	PARTITION	PROGRAM RUNNING IN PARTITION	PARTITION GETVIS AREA
S	768K	580K	64K	F1	VSE/POWER	188K
	2560K	200K	296K	F3	VTAM	2360K
1	1536K	1280K	0K	BG	——	256K
	2048K	768K	0K	F5	——	1280K
	1024K	768K	0K	F7	——	256K
	4096K	3584K	128K	F8	——	512K
2	5888K	5120K	144K	F2	CICS/ICCF	768K
	2048K	768K	128K	F4	——	1280K
	1024K	768K	0K	F6	——	256K

Figure 9. Partition Allocations for Environment 3

ENVIRONMENT 4

ADDRESS SPACE	INIT. ALLOC.	VIRT. SIZE	REAL SIZE	PARTITION	PROGRAM RUNNING IN PARTITION	PARTITION GETVIS AREA
S	768K	580K	64K	F1	VSE/POWER	188K
	2560K	200K	296K	F3	VTAM	2360K
1	1536K	1280K	0K	BG	——	256K
	2048K	768K	0K	F5	——	1280K
	1024K	768K	0K	F7	——	256K
	4096K	3584K	128K	F8	——	512K
2	5888K	5120K	144K	F2	CICS/ICCF	768K
	2048K	768K	128K	F4	——	1280K
	1024K	768K	0K	F6	——	256K
3	2048K	1536K	0K	F9	——	512K
	5120K	4096K	128K	FA	——	1024K
	2048K	1536K	0K	FB	——	512K

Figure 10. Partition Allocations for Environment 4

Standard Label Procedures

Three procedures are used for label information for both OPTION STDLABEL and OPTION PARSTD labels.

- STDLABEL.PROC

  This procedure is automatically created during initial installation. It is based on the disk type you use for installation, and it contains labels for all files that are *not* in VSAM-managed space.

  The system-supplied procedure for defining BG executes STDLABEL.PROC. You should modify STDLABEL.PROC *only if* you extend or move a VSE/SP system file to a different location.

- STDLABUP.PROC

  This procedure is only used for VSE/VSAM file labels. These are labels for files that:

  - Are created automatically during installation.
  - You define using the Interactive Interface.

  When you use the dialogs for defining or deleting VSE/VSAM files, the jobs created by the dialog automatically update the STDLABUP procedure.

  The STDLABEL procedure executes STDLABUP.PROC.

- STDLABUS.PROC

  VSE/SP provides the STDLABUS skeleton in VSE/ICCF library 59. You use this skeleton to include standard labels for user files that are not in VSAM-managed space.

  The STDLABEL procedure executes STDLABUS.PROC.

  VSE/SP initially provides a dummy STDLABUS procedure in IJSYSRS. The manuals *IBM VSE/SP System Planning* and *IBM VSE/SP Administration* describe how to use the supplied skeleton to create labels for non-VSAM files.

System File Assignments

VSE/SP supplies procedures which contain the assignments for key system files. These are automatically invoked by the startup job stream and by other VSE/SP job streams. You should change them only if you move the corresponding files.

Procedure Name	Assignment	For	Partition
DTRICCF.PROC	SYS010	VSE/ICCF DTSFILE	F2
DTRPOWR.PROC	SYS000 to SYS002	VSE/POWER	F1
DTRSYSWK.PROC	SYS001 to SYS004 and SYSLNK	system link files and system work files	—
DTRINFOA.PROC	SYS016 to SYS017	Info/Analysis work files	—
DTRCICST.PROC	SYS018	CICS/ICCF sequential work file MSGUSR	F2
	SYS001 to SYS002	work files for DTSANALS to recover DTSFILE	F2

Figure 11. Procedures for System File Assignments

Note: VSE/SP predefines four files for CICS/DOS/VS journaling: CICS.SYSTEM.LOG.A, CICS.SYSTEM.LOG.B, CICS.USER.JOURNAL.A, and CICS.USER.JOURNAL.B. Refer to the *CICS/DOS/VS Installation and Operations Guide* for more information.

The VSE/ICCF library 59 has skeletons to define a CICS/DOS/VS Journal Control Table (DFHJCTSP) and to format the journal data sets (SKJOURN) for all DASD types except the 200MB version of the IBM 9332.

VSE/SP Libraries

This section describes the libraries that are delivered with VSE/SP. Chapter 5 in *IBM VSE/SP System Planning* has information about creating VSE *user* libraries for your own applications.

VSE Libraries

All *VSE* libraries are serviced by the librarian of VSE/Advanced Functions. This includes both the VSE libraries that are provided with VSE/SP and VSE user libraries that you may later create.

Figure 12 lists the VSE libraries (and sublibraries) that VSE/SP predefines. Note that *IJSYSRS* is often referred to as the *system* library.

LIBRARY	SUBLIB.	SPACE	CREATED BY
IJSYSRS	SYSLIB	Non—VSAM	Standalone restore
PRD1	BASE	Non—VSAM	Initial installation
PRD2	CONFIG	VSAM	Initial installation
PRD2	SAVE	VSAM	Initial installation
PRD2	PROD	VSAM	Initial installation
PRD2	DBASE	VSAM	Initial installation
PRD2	COMM	VSAM	Initial installation
PRD2	COMM2	VSAM	Initial installation
PRD2	GEN1	VSAM	Generation Feature installation
SYSDUMP	BG — FB	Non—VSAM	Initial installation

Figure 12. Overview of the VSE Libraries

IJSYSRS

VSE/SP allocates space for IJSYSRS on the DOSRES volume. As shown above, IJSYSRS has only one sublibrary, *SYSLIB*.

The following programs and functions are in sublibrary SYSLIB:

- VSE/SP functions
- VSE/Advanced Functions
- Device Support Facilities
- VSE/POWER
- VSE/VSAM
- VSE/VSAM Space Management Feature
- VSE/VSAM Backup/Restore Feature
- VSE/ICCF

IJSYSRS is only intended for the licensed programs included in VSE/SP that provide hardware and/or functional support at IPL time and for automatic startup. You should

1. *Not* move this library or change its size.

2. *Not* create another sublibrary within the library.

3. *Not* copy members into it, *except* for the following:

   - FCBs and UCBs
   - User reader or accounting exits
   - IPL or JCL procedures

Service Aspects: Any of your own members that you catalog in IJSYSRS may be affected by a *system refresh* for VSE/SP. Because of this, you should also catalog a copy of them in PRD2.SAVE.

Note: A system refresh is sometimes referred to as a *Fast Service Upgrade (FSU).*

PRD1

The PRD1 library is also allocated on DOSRES. It contains the licensed programs of VSE/SP that are not required to be in IJSYSRS. It has only one sublibrary:

- *BASE* - You should

  1. *Not* move this library or change its size.

  2. *Not* create another sublibrary within the library.

The following components are in sublibrary BASE:

- ACF/VTAM
- BTAM-ES
- CICS/DOS/VS
- DITTO
- VSE/Fast Copy
- VSE/OLTEP
- EREP

PRD2

During initial installation, VSE/SP allocates PRD2 in VSE/VSAM space. This VSE/VSAM space is owned by the master catalog. On the condition that the master catalog has sufficient space available, PRD2 will be extended automatically as soon as it is full.

The extensions will be done according to the values given in Figure 13 on page 26. Secondary allocations are done on the same volume. A primary allocation is required for a new volume if the old volume is full. As shown

in Figure 13 on page 26, the initial allocation depends on the disk type you are using.

Device	System Provided VSE/VSAM Space		PRD2 Allocations in Library Blocks	
	in Blocks/ Tracks	in Library Blocks	Primary Allocation	Secondary Allocation
3350	7500 Trks.	112500	22500	22500
3370 (all models)	226920 Blks.	113460	22692	22692
3375	4500 Trks.	112500	22500	22500
3380 (all models)	3675 Trks.	113925	22785	22785
9332 (both layouts)	90520 Blks.	45260	14600	15330
9335	226845 Blks.	113422	22791	22578

Figure 13. Allocations for PRD2 Library

PRD2 has the following predefined sublibraries:

- *CONFIG* – Contains user-unique members that are not required in IJSYSRS. These include:
  - Members created during initial installation.
  - Members created when you use the Interactive Interface (for example, CICS/DOS/VS tables and ACF/VTAM startup books).

  This sublibrary is not used when you apply service.

  You should *not* change the name of this sublibrary.

- *SAVE* – After initial installation, mainly contains system procedures (PROCs).

  If you ever add a member to IJSYSRS, you should also catalog a copy of it in PRD2.SAVE. Doing this means that:
  - You then can use a special startup (MINI, for example) to recover from problems that may be caused by your changes.
  - The member will not be lost if you install a system refresh (FSU).

  You should *not* change the name of this sublibrary.

  Notes:

  1. *The skeletons for tailoring system startup automatically catalog copies of the procedures that you create in PRD2.SAVE.*
  2. *If you modify an IBM-supplied member of IJSYSRS, do not save a copy of either the original member or your changed version in*

PRD2.SAVE. Doing this might later cause problems when you install a system refresh using the Fast Service Upgrade dialogs. If you want to save copies of the original member and your changed version, you could create another VSE sublibrary and catalog them there.

- *PROD*, *DBASE*, *COMM*, and *COMM2* – Four default sublibraries for VSE/SP optional licensed programs or other VSE licensed programs that you install. Figure 3 on page 4 shows the VSE/SP optional licensed programs and the corresponding sublibrary into which they are installed.

- *GEN1* – Sublibrary into which the Generation Feature is installed. You should *not* change the name of this sublibrary.

Besides the predefined sublibraries you can define more sublibraries in PRD2 for VSE/SP optional licensed programs or additional VSE licensed programs. It is recommended, however, that you create separate VSE user libraries for your own application programs.

SYSDUMP

SYSDUMP is the VSE library that is used for partition dump information.

VSE/ICCF Libraries

The VSE/ICCF *DTSFILE* defines 99 VSE/ICCF libraries. These libraries are also referred to as *program development* libraries.

Figure 14 shows the VSE/ICCF libraries and their use. Note that some libraries are reserved for VSE/SP. The members that VSE/SP ships in these libraries take up approximately 20% of the space reserved for the DTSFILE.

Library	Type	Contents	Usage
1	Private	VSE/ICCF administrative library. Contents shipped with VSE/ICCF.	system
2	Common	Common library. Macros and procedures. VSE/ICCF and VSE/SP code members.	system
3 - 6	Public	Empty.	user
7	Private	Empty.	user
8	Private	Default primary library for operator profile.	system
9	Private	Default primary library for programmer profile.	system
10	Private	Default primary library for administrator profile.	system
11 - 49	Private	Empty.	user
50 - 58	Public	Reserved for VSE/SP.	system
59	Public	VSE/SP job streams, skeletons, CICS/DOS/VS tables, and IWS sample programs.	system
60 - 67	Public	Reserved for VSE/SP.	system
68	Public	VSE/SP members for Personal Computer tasks.	system
69	Public	Reserved for VSE/SP.	system
70 - 99	Private	Empty.	user

Figure 14. VSE/ICCF Libraries

The skeleton *SKICFFMT* in VSE/ICCF library 59 shows how the DTSFILE is *formatted.* For information about allocating more space for the DTSFILE, see "Extending the VSE/ICCF DTSFILE" on page 32.

Note: The *Program Development Library* dialog helps you access and use VSE/ICCF libraries. For detailed information about this dialog, refer to the manual *IBM VSE/SP Using IBM 3270 Display Stations and Personal Computers.*

VSE/ICCF Interactive Partition Layout

The Interactive Interface uses interactive partitions that are allocated within the VSE/ICCF partition (F2).

Figure 15 shows the characteristics of the default VSE/ICCF interactive partitions. You can increase their size, or you can add class A and B partitions.

As shown in Figure 15, the interactive partitions take up more than 4M (4352K) of storage. If you increase the size of the existing partitions or add partitions, you also should make a corresponding increase in the size of the F2 partition.

Note that you should *not*:

- Add a second class I partition. Some functions of the Interactive Interface use class I. These functions should *not* be performed concurrently.
- Decrease the size of any partition.
- Define less than the default partition and class settings.

Interactive Partition	Class	Minimum Size	Used By
0	T	2048K	CICS/DOS/VS
1	A	256K	Interactive Interface
2	A	256K	Interactive Interface
3	A,B	512K	Interactive Interface
4	A,B	512K	Interactive Interface
5	A,B,I	768K	Interactive Interface

Figure 15. Default VSE/ICCF Interactive Partition Characteristics

Disk Layout Considerations

VSE/SP provides default disk layouts for each disk type that is supported for initial installation. Appendix B, "VSE/SP Disk Layouts" on page 109 shows the specific layouts that are defined.

The default layouts are general ones that allow all users to use VSE/SP. You may want to modify them for:

- Additional disk file requirements.
- Additional disk space requirements for some of the provided files.
- Ease of recovery/restart in case of a disk path or actuator outage.
- Enhancing access performance of key files.

Space Allocated for PRD2

Figure 13 on page 26 shows the initial allocations for PRD2. In some cases, the amount of space predefined for PRD2 may not be sufficient. To extend PRD2, define additional VSE/VSAM data space in the master catalog, for example, if you:

- Install a large number of VSE/SP optional licensed programs.
- Install additional VSE licensed programs in PRD2.

If you install VSE/SP optional licensed programs using the Interactive Interface dialog, the dialog scans the tape and prints information about the required space for each optional program.

If you install additional VSE licensed programs that are in the format used by the *old* VSE/Advanced Functions librarian, you may need to calculate the number of library blocks that are required. The example below illustrates how you can manually calculate the library blocks. In the example, *new* refers to the VSE/Advanced Functions librarian available with VSE/SP 2.1 and later releases.

```
PHASE   -  1 new LB   =    1  old LB     (factor 1.0)
OBJ     -  1 new LB   =    3  old LB     (factor 0.35)
SOURCE  -  1 new LB   =    6  old LB     (factor 0.17)
PROC    -  1 new LB   =   12  old LB     (factor 0.09)
```

To ensure a correct library concept, you should add about 10% to 20% to your result. This is because the programs usually do not end exactly at the block boundaries.

After you calculate the library blocks, you should determine the total space you need for PRD2. Add the number of library blocks which you need to the number of blocks which the predefined sublibraries require. Convert the total to tracks or FBA blocks. A new library block is 1024 bytes long.

Notes:

1. *The librarian command* **LD** *provides useful space information about libraries.*

2. *You should consider the contents and location of a VSE library in terms of head contention and volatility. If necessary, you can split the library into multiple libraries and place it on different actuators (and paths).*

3. *The predefined allocations for PRD2 may be checked using the File and Catalog Management dialogs.*

Requirements for VSE/POWER Files

VSE/POWER Queue File

The disk size requirements for the VSE/POWER queue file are directly related to the number of queue file entries you plan to hold at one time. For an extension of a queue file, free space is provided right after the queue file location on DOSRES (not for the 200MB option of 9332 disks).

Refer to *VSE/POWER 2.3 Installation and Operations Guide* for more information.

VSE/POWER Data Files

Figure 16 shows the allocations required for VSE/POWER data files.

Device Type	DBLK	DBLK/ Track	Bytes/ Track	Approximate Cards/DBLK	Approximate Lines/DBLK	Default DBLK Size Used by VSE/SP
3350	1954	9	17586	24	14	1952
	3665	5	18325	45	27	
	6233	3	18699	76	46	
3375	2016	15	30240	24	15	2016
	4080	8	32640	50	30	
	6816	5	34080	84	51	
	8608	4	34432	106	64	
	11616	3	34848	143	87	
3380	2004	19	38076	24	15	2016
	3860	11	42460	47	29	
	6356	7	44492	78	47	
	11476	4	45904	141	86	
All FBA disks	2032	---	---	25	15	2032
	4080	---	---	50	30	
	6128	---	---	75	46	
	8176	---	---	100	61	

Figure 16. Examples of DBLK Sizes

Notes:

1. *If you use shared spooling, consider the following:*

   - *Place the queue and data files on separate shared disks and not on the same actuator as the lock file.*

   - *Define multiple extent data files on multiple actuators.*

2. *The manual IBM VSE/SP Administration explains how to extend the space reserved for the VSE/POWER files. Only do this, however, when absolutely necessary. Incorrect specifications will most likely cause startup problems.*

Extending the VSE/ICCF DTSFILE

The VSE/ICCF DTSFILE (file ID = *ICCF.LIBRARY*) is allocated with approximately 40 megabytes on each of the different device types. You should estimate the VSE/ICCF library requirements for each user and ensure there is sufficient space for additional library requirements in this file.

After allocating a library for each user, determine the total requirement for the DTSFILE. Compare this to the default allocation. If there is insufficient space, you should reallocate the file.

You should also consider multiple extents on multiple volumes, regardless of whether or not the size of the DTSFILE is sufficient.

For information on how to extend the DTSFILE, see the manual *IBM VSE/SP Administration*. It describes how to use the skeleton *SKDTSEXT* for this task.

DUMP Library

If you use SYSDUMP and you process many dumps on the system, you may have to reallocate the file *VSE.DUMP.LIBRARY* with a larger area.

If you use Info/Analysis to view dumps from other systems, you should reallocate this library for this requirement.

The manual *IBM VSE/SP Guide for Solving Problems* has information about working with SYSDUMP.

System Work Files

The following is important for system work files:

- A standard SORT work file has been allocated in VSE/VSAM space. You should ensure that the allocation is sufficient for your sort requirements.

- All work file labels are part of system standard labels.
- All work files are allocated in VSAM-managed space and have secondary allocations (with the exception of the SORT work file).
- The VSE/ICCF work files IKSYS11 to IKSYS54 are allocated in VSAM-managed space.

Control File

The file *VSE.CONTROL.FILE* is the central repository file for system access information for the Interactive Interface. It contains:

- User profile records
- Selection panel records
- Application profile records
- Synonym records
- News records (messages displayed to users after they sign on)

Using this file for user profile information provides coordination between CICS/DOS/VS, VSE/ICCF, and the Interactive Interface.

Text Repository File

The file *VSE.TEXT.REPSTORY.FILE* contains Interactive Interface information such as HELP text and messages which the Interactive Interface dialogs display.

Online Messages File

The file *VSE.MESSAGES.ONLINE* contains the console messages for the licensed programs included in VSE/SP. By using the *System Console* dialog, you can request an explanation of a console message online. The explanations in the file are the same as the explanations given in the manual *IBM VSE/SP Messages and Codes.*

Online Problem Determination File

The file *VSE.ONLINE.PROB.DET.FILE* contains information about CICS/DOS/VS transaction abends. Abend information is collected and stored in this file. You use the *Online Problem Determination* dialog to view the abend information.

Message Routing File

The file *VSE.MESSAGE.ROUTING.FILE* supports the exchange of messages between the system and its users. Messages sent by the system to a user are stored in this file. They can be retrieved by the user after notification.

When a user retrieves a message, it is deleted from the file. If a user is not signed on, the system keeps any messages for that user in the file until a sign on is performed. To avoid a possible overflow, the administrator may need to sign on for a user who is not working with the system.

Other System Files

The remaining files predefined for DOSRES and SYSWK1 are listed below. You should *not* move these files.

Files in BAM Space	VSAM-Managed Files
DOS.LABEL.FILE.CPUID	VSAM.MASTER.CATALOG
INFO.ANALYSIS.DUMP.MGNT.FILE	VSESP.USER.CATALOG
INFO.ANALYSIS.EXT.RTNS.FILE	DFHTEMP
VTAM.TRACE.FILE	CICS.AUTO.STATS.A
VSESP.JOB.MANAGER.FILE	CICS.AUTO.STATS.B
VSE.HARDCOPY.FILE	CICS.CSD
VSE.RECORDER.FILE	CICS.RSD
VSE.SYSTEM.HISTORY.FILE	CICS.TD.INTRA
CU370X.LOAD.FILE (see note)	CICS.DUMPA
CU370X.DIAG.FILE (see note)	CICS.DUMPB
PAGING.DATA.SET.ONE PAGING.DATA.SET.TWO PAGING.DATA.SET.THREE (see note) PAGING.DATA.SET.FOUR (see note)	CICS.AUXTRACE
CICS.MSGUSR	
CICS.SYSTEM.LOG.A (see note)	
CICS.SYSTEM.LOG.B (see note)	
CICS.USER.JOURNAL.A (see note) CICS.USER.JOURNAL.B (see note)	

Note: These files are not predefined for the 200MB option of 9332 disks.

See also Appendix B, "VSE/SP Disk Layouts" on page 109 for more information.

Chapter 4. Installing the Initial VSE/SP System

Overview of Installation Tasks

This chapter and the next describe different installation tasks for a VSE/SP system. In VSE/SP, installation tasks are varied. You do some tasks just once, like installing the initial VSE/SP system. You may repeat other installation tasks a number of times. Such tasks include installing VSE licensed programs or applying IBM service. The manual *IBM VSE/SP Installation* describes the installation tasks for VSE/SP in detail.

Of course, your system is not completely "installed" until users can sign on and do productive work. Before your system is fully operational, you may also need to do a number of *resource definition* tasks. With these tasks (creating user profiles or tailoring system startup, for example), you define or modify system resources.

The manual *IBM VSE/SP System Planning* has planning information for major resource definition tasks. Actual procedures for these tasks are described in the manual *IBM VSE/SP Administration.*

Note: The manual *IBM VSE/SP Communications and Networking* describes networking tasks.

Hardware Requirements for Initial Installation

Processor Types and Storage

Figure 17 shows the processor types you can use for initial installation.

	MODE = 370	MODE = E	MODE = VM
Processors	135-II 138 145 [1] 148 155-II [2] 158 [3] 3031 [3] 3033 [3] 43xx [3] 937x	4321 4331 4341 4361	ANY

[1] Requires floating point feature, CPU timer, and clock comparator.

[2] Requires floating point feature.

[3] No multiprocessor mode.

Figure 17. Processors Supported for Initial Installation

VSE/SP runs in a minimum of one megabyte of real processor storage. Two megabytes, however, are more adequate for most systems, particularly for those using ACF/VTAM.

Disk Requirements

You can use the following disk types for initial installation of VSE/SP:

- 3350
- 3370 (Models 1 and 2)
- 3375
- 3380 (Models A, D, and E)
- 9332-400
- 9335

Two volumes of the *same* device type are required for initial installation (and service). You cannot use one 3350 volume and one 3370 volume, for example. In addition, the following device mixtures cannot be used for initial installation:

- 3380, Model A with Model E
- 3380, Model D with Model E
- 3370, Model 1 with Model 2

The first volume always has the ID *DOSRES*. The second volume always has the ID *SYSWK1*. Appendix B, "VSE/SP Disk Layouts" on page 109

shows the space allocations on DOSRES and SYSWK1 that are created during initial installation.

Notes:

1. *DOSRES and SYSWK1 may not have enough space for all of the VSE/SP optional licensed programs that you order.*

2. *The following disk devices are not supported for initial installation of VSE/SP 3.1:*

   - *3310*
   - *3330 (Models 1 and 11)*
   - *3340 (all models)*
   - *3344*

   You can use them, however, for user files and data.

Special Considerations for 9332 DASDs (200MB Layout)

The 200MB layout of the 9332 disk device offers you more space for your application needs. However, it does not contain all files normally contained in the standard layout of 9332 DASDs. The following files are not provided for the 200MB option:

- CU370X.LOAD.FILE
- CU370X.DIAG.FILE
- CICS.SYSTEM.LOG.A
- CICS.SYSTEM.LOG.B
- CICS.USER.JOURNAL.A
- CICS.USER.JOURNAL.B

In addition, there is less space reserved for

- VSE/ICCF libraries
- VSE.PRD1.LIBRARY
- VSE.DUMP.LIBRARY
- VSE.POWER.DATA.FILE
- VSE.SYSTEM.HISTORY.FILE
- WORK.HISTORY.FILE

Note that there is *no alternate VTOC location* available. Furthermore, the 200MB option of 9332 DASDs supports only environments 1 or 2 as described in Figure 4 on page 17.

These alterations do not have any impact on FSU processing.

Switching from the 200MB layout option to the 9332 standard layout is **not supported**.

Additional Hardware Requirements

In addition to the processor and disk requirements, VSE/SP requires the following minimum hardware for initial installation:

- A VSE/SP operator console.
- A magnetic tape or cartridge device.
- A channel-attached or adapter-attached printer controlled by VSE/POWER *or* a terminal printer controlled by CICS/DOS/VS.
- A local terminal that supports a 24 x 80 character screen format and has at least 10 Program Function (PF) keys.

Note: Terminals with a screen format larger than 24 x 80 (the IBM 3278-5, for example) are supported by VSE/SP. The Interactive Interface only uses the first 24 x 80 screen positions, however.

Preparing a Hardware Configuration List

Prior to installation, you should prepare a list of all the devices in your hardware configuration. The information you need corresponds to the parameters of the VSE/Advanced Functions *ADD* statement. The manual *VSE/Advanced Functions System Control Statements* describes this IPL statement and its parameters.

For each channel-attached device in your hardware configuration, you should record the:

1. Device address (cuu)
2. Device type (3370 disk, for example)
3. Device type code (FBA for a 3370 disk, for example)
4. Mode (Some devices require a mode specification of two, three, or four digits.)

In addition, you should note if a:

- Tape and disk device can be physically attached (switched) to two adjacent channels.
- Disk device can be shared by two or more systems.

Creating such a device list may be of value to you when performing initial installation. As described in "Completing Initial Installation" on page 44, you sometimes will need to specify device information during installation.

When you plan for system installation, be aware that you cannot add more than 254 I/O devices. Most I/O devices such as disks and tapes are attached via control units. Each address configured for a control unit counts as one I/O device for VSE/SP. This is true even if no device exists physically for a configured address.

For terminals, you must distinguish between SNA and non-SNA terminals:

- Terminals attached to a non-SNA control unit are handled in the same way as described for tape and disk devices.
- Terminals attached to an SNA control unit or a communication controller are not counted individually. VSE/SP only considers the SNA communication controller or control unit as an I/O device, not the terminals attached to it.

After working with your system for a time, you may decide to change the configuration. The manuals *IBM VSE/SP System Planning* and *IBM VSE/SP Administration* have information about performing this task.

Note: Some system programs (SDAID, for example) internally use the hardware address **000**. To avoid device assignment errors, do not configure your system with an I/O device using that address.

Performing Initial Installation

Initial installation of VSE/SP has two major parts. The first part begins when you perform an IPL from the VSE/SP distribution tape(s) that you receive from IBM. It ends when CICS/DOS/VS is given control of the system.

You use the Interactive Interface to perform the second part of initial installation. This involves specifying MSHP information and completing the configuration of your system's hardware. For details, see "Completing Initial Installation" on page 44.

Beginning Initial Installation

The following list outlines the first part of the initial installation process. Note that the system does most of this processs automatically.

1. IPL from tape, and load Device Support Facilities.
2. Initialize the disk volumes.
3. IPL from tape again, and restore IJSYSRS to the DOSRES volume.
4. IPL from DOSRES.

   VSE/SP uses device sensing to automatically define most of the devices on your system.
5. An installation job stream gathers information about your configuration. Several jobs also catalog hardware information and the ASI IPL procedure. You are asked to specify:

   a. The address of the tape drive used for installation.

   b. If you want to automatically install VSE/SP optional licensed programs during initial installation.

   c. Whether you want to migrate information from a previous VSE/SP 2.1 system during installation.

      Note: This step only applies to migration from a VSE/SP 2.1 system. For more information, see Chapter 7, "Migrating to VSE/SP 3.1" on page 85.

   d. Your system's operating environment:

Env.	Virtual Storage	Number of Addr. Spaces	Number of Partitions	Supervisor Mode
1	16M	1	6	E, VM, or 370
2	16M	1	8	E, VM, or 370
3	24M	2	9	370
4	40M	3	12	370

Note: If you install VSE/SP as a guest machine under VM/SP, selecting an environment with a MODE=370 supervisor will slow VSE/SP's performance. For more information, see Chapter 6, "Installing and Using VSE/SP Under VM" on page 59.

e. Whether you are using ACF/VTAM or BTAM-ES for the telecommunications access method.

   BTAM-ES users define at least one, but not more than three, 3270 display terminals.

   ACF/VTAM users are asked for information about the control unit and one to three 3270 display terminals.

   Note: The decision to use either ACF/VTAM or BTAM-ES should be carefully reviewed. The telecommunications access method you choose *cannot* easily be changed after your system is installed. This is because VSE/SP uses this information in different tables and members.

f. Information about terminals that you can later use to complete installation.

6. The VSE/SP *Job Manager* takes control and releases a number of installation jobs.

7. You have the option to create a printer forms control buffer (FCB) or universal character set buffer (UCB).

8. You are asked to start the VSE/POWER printer, *if* you have a system printer installed.

9. A number of jobs run which:

   - Restore the System History file.
   - Define VSE/VSAM catalogs, space, and clusters.
   - Define libraries and sublibraries.
   - Restore the VSE/ICCF DTSFILE defined for VSE/SP.
   - Punch information to the DTSFILE.
   - Install the VSE/SP sublibrary PRD1.BASE.
   - Restore members related to National Language Support (NLS) into IJSYSRS and the VSE/ICCF DTSFILE.
   - Initialize and load VSE/VSAM files.

- Initialize Info/Analysis work files.
- Migrate information from a VSE/SP 2.1 system, if earlier specified. Configuration tables and user IDs from VSE/SP 2.1 are cataloged.
- Catalog members into sublibraries.

10. VSE/SP optional licensed programs are installed, if you specified that you want them installed during initial installation.

11. Startup of CICS/DOS/VS and VSE/ICCF. For ACF/VTAM users, an ACF/VTAM partition is also started.

12. Installation processing under the Job Manager completes, and CICS/DOS/VS receives control. At this time, you complete initial installation using the Interactive Interface.

Completing Initial Installation

You can complete initial installation of VSE/SP after control is given to CICS/DOS/VS. This is indicated by the *VSE/SP Online* panel being displayed on the terminal(s) that you specified during initial installation.

Sign on to the system from the *VSE/SP Online* panel using the predefined user ID **POST** and the password **BASE**. When you do this, the system automatically performs special processing such as loading internal VSE/SP files and defining system tables.

Note: The only purpose for POST is to help you complete initial installation. After you have used POST for initial installation, you can *not* use it again to sign on to the system.

Next, you must sign on using the user ID *SYSA* as described in *IBM VSE/SP Installation*. You should also change the password of the user ID POST.

Specifying MSHP Information

After the system is finished with the special processing, a dialog asks you for information about your installation. You enter your name, address, telephone number, and a programmer's name. The system updates the System History file and produces a listing of the current history file contents. You should save this listing. It provides a list of the currently installed products.

Completing Hardware Configuration

When you perform installation, the system automatically tries to identify the devices that are present in the hardware configuration. In many cases, it can create all the necessary internal information for these devices *without* your intervention.

If your system needs more information about one or more devices, however, you will now need to supply it. You do this by completing an *unidentified device* list. This list shows all of the devices for which additional information is needed.

Once you reach this point, initial installation is complete. End the POST session by signing off from the system. You then can sign on as the administrator (user ID **SYSA**) and perform any of the tasks described in Chapter 5, "Additional Installation Tasks" on page 45. This includes installing the VSE/SP Generation Feature and VSE/SP optional licensed programs.

Note: The first action after the POST session should be the *Hardware Configuration* dialog to create and activate the ACF/VTAM and CICS/DOS/VS definitions of your system.

Chapter 5. Additional Installation Tasks

Changing Passwords of Predefined Users

Shortly after completing initial installation, you should change the *passwords* of the three user profiles that VSE/SP ships:

PROFILE	USER ID	PASSWORD
System administrator	SYSA	SYSA
System console operator	OPER	OPER
Programmer	PROG	PROG

Figure 18. VSE/SP Predefined User Profiles

The passwords are defined with no expiration date. You should change them, however, for security reasons. Doing this helps ensure that unauthorized users do not have access to your system.

To change the passwords:

1. Sign on as the administrator (user ID **SYSA**) and
2. Use the *Maintain User Profiles* dialog as described in *IBM VSE/SP Administration.*

Note that besides the three user IDs shown in Figure 18, VSE/SP ships another predefined user ID which is used **only** to complete intitial installation. This is the user ID *POST* which uses the password *BASE.* After you have completed initial installation the system will reject POST/BASE. Instead, sign on using the user ID *SYSA.*

Installing the Generation Feature

The VSE/SP distribution tape(s) contain source code that provides generation capability for the VSE/Advanced Functions supervisor and certain CICS/DOS/VS control programs. *Installation of this code (called the Generation Feature) is optional.* You only need it if the options of the pregenerated system are not adequate for your needs.

Supervisor Generation Parameters

Figure 19 shows the specifications for the pregenerated supervisors that are shipped with VSE/SP.

MACRO	OPTION	E	370	VM
SUPVR	ID	E	3	V
	MICR	1419	1419	NO
	NPARTS	12	12	12
	MODE	E	370	VM
FOPT	DASDSHR	YES	YES	YES
	FASTTR	YES	YES	NO
	RPS	YES	YES	YES
	TRKHLD	12	12	12
	TTIME	NO	NO	NO
IOTAB	IODEV	254	254	254
	NPGR	3060	3060	3060

Figure 19. VSE/Advanced Functions Supervisor Generation Parameters

You may change any of the above default values and generate your own supervisor if the supervisors provided by VSE/SP do not meet your requirements. For the meaning of the above options and the allowed values, refer to the appendix *Supervisor and Generation Macros* in *VSE/Advanced Functions Planning and Installation.*

CICS/DOS/VS Generation Modules

VSE/SP provides generated versions of the CICS/DOS/VS control programs that have few SYSGEN options and no user exits. With the CICS/DOS/VS source code of the Generation Feature, you can generate modules that need user exits or have other local requirements.

Figure 20 on page 47 lists the CICS/DOS/VS modules that you can generate.

DFHACEE	DFHISP	DFHTACP	DFHZCC
DFHACP	DFHKCP	DFHTBP	DFHZCP
DFHALP	DFHPCP	DFHTCP	DFHZCW
DFHCPY	DFHPRK	DFHTDP	DFHZCX
DFHCSA	DFHP3270	DFHTPR	DFHZCY
DFHDBP	DFHRKB	DFHTRP	DFHZCZ
DFHDSCTS	DFHRTY	DFHTSP	DFHZNAC
DFHEXI	DFHSCP	DFHXFP	DFHZNEP
DFHFCP	DFHSCR	DFHXSP	DFHZRLG
DFHGMM	DFHSPP	DFHZCA	DFHZRSP
DFHICP	DFHSRP	DFHZCB	

Figure 20. CICS/DOS/VS Modules of the Generation Feature

Note: For information about CICS/DOS/VS generation modules, refer to the *CICS/DOS/VS 1.7.0 Customization Guide.*

When to Install the Generation Feature

If you decide to install the Generation Feature, *it is recommended that you do so immediately after initial installation.* If you receive VSE/SP 3.1 on a 3480 cartridge tape, the Generation Feature will be part of that tape. Otherwise, it and your system's National Language Support will be stacked on a separate tape.

To install it, use the *Install Generation Feature* dialog. The job created by this dialog places the source code in sublibrary PRD2.GEN1. In addition, the job updates the System History file. This ensures that the Generation Feature is available when you perform other tasks that require it (service application, for example).

If you choose to install the Generation Feature after having applied service to either VSE/Advanced Functions or CICS/DOS/VS, *you must first bring your system to the same service level as the Generation Feature.* This means that you have to do one of the following:

- If a system *refresh* of VSE/SP is available that is at a service level higher than your present system:

  1. Order the refresh. The Generation Feature will automatically be included.

  2. Use the *Fast Service Upgrade (FSU)* dialogs to install the refresh.

  3. Use the *Install Generation Feature* dialog to install the source code from the refresh tapes.

- If no refresh at a higher service level is available:

  1. Use the *Install Generation Feature* dialog to install the Generation Feature.

2. Reinstall any service for VSE/Advanced Functions and CICS/DOS/VS that you previously had applied.

Notes:

1. *"Preventive Service" on page 56 has information about system refreshes for VSE/SP.*

2. *The approximate space allocations required for the PRD2.GEN1 sublibrary are shown below. The disk devices listed are those that can be used for initial installation of VSE/SP 3.1.*

Disk Device	Required Space for PRD2.GEN1	Library Blocks
3350	1660 tracks (55 cylinders, 10 tracks)	24,900
3375	996 tracks (83 cylinders, 0 tracks)	24,900
3380	804 tracks (53 cylinders, 9 tracks)	24,900
All FBA disks, except 3310	49,800 blocks	24,900

Figure 21. Space Requirements for PRD2.GEN1

Deleting VSE/SP Programs You Do Not Need

As soon as you have finished the initial installation of your VSE/SP system, you may decide to delete certain licensed programs of VSE/SP that you do not need. VSE/SP provides *delete jobs* for this purpose in the VSE/ICCF library 59. The names of the delete jobs always start with *DEL*, followed by an identifier for the licensed program, for example, *DTO* for the base product DITTO. The delete jobs will delete the program not needed and update the history file accordingly.

Below you find a list of the available delete jobs together with the corresponding licensed program.

Delete Job	VSE/SP Program
DELBTM	BTAM/ES V 1.1
DELDTO	DITTO for VM and VSE V 2.1
DELDTS	ICCF V 2.1
DELFCO	FASTCOPY V 1.2
DELPWR	POWER V 2.3
DELVSM	VSAM V 1.3
DELVSMBR	VSAM Backup/Restore V 1.2
DELVTM	VTAM V 3.1
DELXX3	CICS V 1.7
DELXX3RC	CICS Report Controller V 1.7

Figure 22. Delete Jobs for VSE/SP Programs

Installing Additional Licensed Programs

VSE/SP supports the installation of VSE licensed programs that are shipped in two formats:

- Version 1 (V1)
  - Distributed in the librarian format of pre-Version 2 VSE/Advanced Functions.
  - One licensed program resides on a single tape.
  - No **dialog** is offered to scan V1-format tapes.
- Version 2 (V2)
  - Distributed in VSE/Advanced Functions Version 2 librarian format.
  - The programs may be stacked on tape. **If so**, the tape can be scanned to determine the space needed by each licensed program on the tape.

  There are two types of licensed programs in the Version 2 category:

  - VSE/SP optional licensed programs

    These are a defined list of VSE licensed programs that VSE/SP supports. These licensed programs are stacked on tape. A dialog (*Prepare for Installation*) is offered which allows you to scan the tape. A preliminary list of VSE/SP optional licensed programs is shown in Figure 3 on page 4. Refer to the *Program Directory* for the most current information.

  - Other VSE licensed programs in Version 2 format.

    These are programs other than the VSE/SP optional licensed programs which are also distributed in Version 2 format. They are not stacked on tape and should not be scanned using the *Prepare for Installation* dialog.

After initial installation of your system, you can install all additional VSE licensed programs in MSHP format using dialogs supplied by the Interactive Interface. You can also install VSE/SP optional licensed programs automatically at initial installation. Review the information in the following sections to decide when you will install optional licensed programs.

Installing Optional Licensed Programs at Initial Installation

You can install VSE/SP optional licensed programs automatically during initial installation. This is possible **only for VSE/SP optional licensed programs**. However, it is recommended to install the optional programs **after** initial installation. This allows you a better control of your installation. In addition, you can install your own libraries at a later time.

During initial installation, you are asked if you want to automatically install the optional licensed programs. If so:

- All VSE/SP optional licensed programs on a tape are installed.
- They are installed in library PRD2 and specific default sublibraries. The default sublibraries are shown in Figure 3 on page 4.
- Installation terminates if problems occur.

  It is assumed that there is sufficient space in the default sublibraries for the optional licensed programs. If there is not enough space, the optional licensed programs are not installed. You must then use the Interactive Interface dialog to install the optional licensed programs.

Installing Optional Licensed Programs After Initial Installation

When you install optional licensed programs after initial installation, you use the:

1. *Prepare for Installation* dialog to print a tape scan report. The report provides information about the optional licensed program on the tape(s) and the amount of library space that is needed. In addition, the dialog creates internal tables for the installation.

   The information from the scan report is useful in planning for your library structure before installing the optional licensed programs.

   Note: You should not use this dialog if the programs you want to install are not stacked on tape. This, however, applies only to VSE licensed programs other than the optional VSE licensed programs. The dialog is not offered for VSE licensed programs in V1-format.

2. *Install Product(s) from Tape* dialog to install one or more of the optional licensed programs or other VSE licensed programs that you received.

Installing IBM Service

Overview

In general, IBM recommends that you only apply service to your VSE/SP system when it is necessary to do so. That is, you just fix the actual problems that may occur from time to time. If your system environment is stable, then you do not need to apply either *corrective* service or *preventive* service.

Figure 23 summarizes the types of service available for VSE/SP and when they are applied.

Situation	PTF	Refresh
Initial Installation	–	X
Corrective Service	X	–
Preventive Service		
– stable environment	–	–
– changed environment	–	X *

* = Pending investigation of refresh benefits

Figure 23. Service Overview

As shown above:

- The installation tapes for VSE/SP that you receive from IBM will be at the latest *system refresh* level.

  IBM will (as long as required) periodically "refresh" VSE/SP by adding available corrective service to the VSE/SP libraries. A refresh may also provide additional functions.

  IBM plans to provide refreshes at identical service levels as required for the pregenerated system, the Generation Feature, the National Language Feature, and the optional IBM licensed programs.

  When you receive your VSE/SP installation tapes, therefore, you get a system with the most recent level of *complete* system service that is available.

  Note: To receive the latest refresh, you should request that IBM ships VSE/SP to you just before the date that you plan for initial installation.

- If you detect a problem with your installed IBM software, you normally correct it by applying a *Program Temporary Fix (PTF)*. IBM recommends application of such corrective service as the usual method of resolving problems.

- Under certain conditions, it may be advisable to apply preventive service to an existing system by installing the latest system refresh.

"Performing Problem Analysis" outlines what you need to do if a problem occurs. If the problem is caused by IBM software, you should contact your IBM Support Center and order a corrective fix.

For more information about system refreshes, see "Preventive Service" on page 56.

Corrective Service

Performing Problem Analysis

You are responsible for handling problems that may occur in your VSE/SP system. To help personnel at your site with this task, VSE/SP provides the manual *IBM VSE/SP Guide for Solving Problems*. It has valuable information on how to analyze error situations and recover from them.

As described in *IBM VSE/SP Guide for Solving Problems*, problem handling can be divided into three distinct tasks:

- Problem Determination.

  Problem determination is the task of assessing whether a problem is in your system's hardware or software. It is complete when an examination of the available symptoms has isolated the problem to either hardware or software.

- Problem Source Identification.

  If problem determination shows that the source of the problem is software, problem source identification takes place. This process involves using all appropriate tools and resources such as traces and dumps to examine the problem's symptoms.

  Problem source identification is not complete simply by discovering whether the source of the problem is IBM-supplied code or user code. If the problem resides in VSE/SP, the failing component (VSE/POWER or VSE/ICCF, for example) must be identified.

- Problem Diagnosis and Resolution.

  Problem diagnosis and resolution begins on completion of problem source identification. It involves all activities required to identify the actual code defect and provide a fix (such as a PTF) for it.

Receiving Corrective Service from IBM

Your IBM Support Center can assist you in all phases of problem handling. When a problem is detected, you can contact the Support Center with a description and the symptoms of the problem. Support Center representatives will use this information to perform a search of the IBM data bases containing descriptions and symptoms of known problems.

If your problem is known and a PTF for it exists, the PTF will be made available to you. The PTF is IBM's official correction to the problem. It contains replacements of units of code in your product libraries.

If the problem is known but a PTF is not available, you may request to be added as an interested party to the known problem. When a PTF is available, all interested parties will be notified. The PTF will then be delivered automatically.

If the problem is not known, an Authorized Program Analysis Report (APAR) is created by your Support Center Representative and sent to the appropriate IBM Change Team. You may also be asked to provide additional documentation to assist the Change Team in analyzing the problem.

The Change Team will analyze and correct the problem, may write an APAR fix, and build a PTF. You, and other interested parties, will be notified when the PTF is available for distribution. The problem description and symptoms will also be added to the IBM problem data base to assist other users who have the same problem.

In severe problem situations when no PTF is yet available, your Support Center Representative can, at your request, send an APAR fix. An APAR fix is also a correction in response to an APAR. It is not yet available as a PTF and often is not in machine readable form. When no APAR fix is available, a bypass or circumvention for the problem may be developed for you.

Dialogs for Corrective Service

The Interactive Interface provides several dialogs for performing corrective service. There are dialogs, for example, to:

- Print documentation from an IBM service tape.
- Apply PTFs, APARs, and local fixes.
- Print information from the System History file.
- Remove information from the System History file.
- Personalize information in the System History file.

To ensure that service is applied correctly, use the dialogs exactly as described in the manual *IBM VSE/SP Installation.*

You should note that the service dialogs invoke the Maintain System History Program (MSHP) of VSE/Advanced Functions. When you apply service, MSHP checks if all requisite PTFs are either applied on the system

or contained on the service tape. MSHP also updates the System History file to reflect the current service on your system.

You can use several of the service dialogs to apply and record your own local fixes to application programs that you have installed using MSHP. For detailed information about MSHP and its functions, refer to the manual *VSE/Advanced Functions Planning and Installation.*

For information about applying service to non-IBM programs that you have installed, refer to the manual *IBM VSE/SP Installation.* It shows the skeleton that is provided in VSE/ICCF library 59 for performing this task.

Note: The Service dialogs use predefined nicknames for the licensed programs included in VSE/SP. You will see these nicknames in their panels. For a list of the predefined nicknames, refer to the manual *IBM VSE/SP Installation.*

Additional Considerations for Corrective Service

Indirect Service Application for PTFs: *Indirect service application* means that a PTF is applied to a copy of IJSYSRS rather than to the IJSYSRS in use at the time of service application. Some PTFs require this form of application. If this is so, their MSHP statements will force this technique *without your intervention.*

When using the dialog for applying PTFs, you can force indirect application for all IJSYSRS service. Do this, however, only in exceptional situations. Remember, MSHP control statements force indirect application automatically, when necessary.

Service for VSE/ICCF Members: When service affects a VSE/ICCF member provided by VSE/SP, the member is simply replaced. Thus if you modify any members such as the SUBMIT procedure, you should rename them or copy them to another VSE/ICCF library.

When you use a VSE/SP skeleton, you should copy it to another library before you make your changes. If you do not do this, the member will be replaced if it is affected by service.

Service Affecting the Generation Feature: Some PTFs for VSE/Advanced Functions and CICS/DOS/VS of the pregenerated system require application of other PTFs to the Generation Feature. If you receive a service tape with such PTFs and have the Generation Feature installed, using the dialogs for applying PTFs will create a job sequence that applies PTFs to both the pregenerated system and the Generation Feature.

If you install the Generation Feature and keep it off line, be sure to restore it before applying service to VSE/Advanced Functions and CICS/DOS/VS. Doing this ensures that all required service will be applied to your entire system.

If you apply service to VSE/Advanced Functions and CICS/DOS/VS and *later* want to install the Generation Feature, you will receive a warning message indicating that you will have to reapply service to VSE/Advanced

Functions and CICS/DOS/VS after installing the Generation Feature. For this reason, it is recommended that you install the Generation Feature immediately after initial installation and before you apply service to the system.

Preventive Service

As stated on page 52, IBM will periodically refresh VSE/SP by adding available corrective service to the VSE/SP libraries. This refreshed system will be thoroughly tested. It may also provide additional functions for VSE/SP.

System Refreshes – Initial Installation

When you order VSE/SP, you will receive installation tapes which reflect the latest system refresh. Your new system will have the most recent level of complete system service, and you should not encounter problems that were previously discovered and fixed.

System Refreshes – Stable Environment

In general, refreshes are *not* intended as service mechanism for VSE/SP systems that are functioning properly. If your system and its environment are both stable, ordering and installing refreshes should not be necessary.

System Refreshes – Changed Environment

If you later want to make major changes to your system (add hardware devices or IBM licensed programs, for example), you should research the maintenance requirements for these changes. Installing a refresh as preventive maintenance may be the most efficient way to meet these requirements.

Your IBM System Engineer can help you decide whether a refresh should be installed as preventive maintenance. In addition, your IBM Support Center will have information about refreshes for VSE/SP. This includes general information, documentation changes, and service recommendations. Service recommendations may discuss corrections that were not available for inclusion in the latest refresh.

If you order a system refresh, install it using the *FSU Preparation* and *FSU Installation* dialogs. The second of these Fast Service Upgrade dialogs creates a job stream that only replaces VSE/SP information. It does not change or delete your own libraries or installation-unique information.

Notes:

1. *In general, you should not add your own members to IJSYSRS, PRD1, or VSE/ICCF libraries reserved for use by VSE/SP. If you do, be sure to have copies in another library such as PRD2.SAVE or a VSE/ICCF user library. This ensures that your members will not be lost when you install a system refresh.*

Note that many of the skeletons provided by VSE/SP automatically catalog copies of the members you create in PRD2.SAVE.

2. *If you modify an IBM-supplied member of IJSYSRS for which no skeleton or dialog is available, do not save a copy of either the original member or your changed version in PRD2.SAVE. Doing this might later cause problems when you install a system refresh using the Fast Service Upgrade dialogs. If you want to save copies of the original member and your changed version, you could create another VSE sublibrary and catalog them there.*

3. *When you refresh the system using the FSU dialogs, you are asked if you want to reinstall the Generation Feature. If you previously installed this code but now choose not to reinstall it, its entry in the System History file is removed. The sublibrary where the source code resides (PRD2.GEN1) is also reinitialized (cleared).*

4. *If you order a refresh of VSE/SP and do not change your original order for optional licensed programs, you will also receive all of those programs with the refresh. Reinstalling the programs after refreshing VSE/SP ensures that all IBM licensed programs on your system are at the same level.*

Service Summary

Figure 24 summarizes some important points for VSE/SP service. If you have any further questions regarding service, contact your local IBM Branch Office.

Corrective Service	• Fix the detected problem individually. • Use the PTF and APAR process.
Preventive Service	• Possible using a system refresh. • Should be thoroughly investigated and planned.

Figure 24. Service Summary

Chapter 6. Installing and Using VSE/SP Under VM

The information in this chapter supplements the information that is available in the manual *VM/SP Running Guest Operating Systems.* Refer to that manual when you are planning to install and use VSE/SP under VM/SP.

In this chapter, *virtual machine console* refers to a device that is defined for every VM user. *VSE/SP console* refers to the VSE/SP system console that is used to control operation of VSE/SP.

You can install and use VSE/SP as a "guest machine" with any supported version of VM/SP. In this combined environment, you can:

- Log on to VM using the ID and password defined for the VSE/SP virtual machine. Your terminal can then serve as the VSE/SP console.
- Dial into the VSE/SP system and use the functions provided by the Interactive Interface. If your VM system has the VM/PASSTHRU licensed program installed, you can quickly switch between CMS and VSE/SP environments.
- Log on to CMS and interact with VSE/SP. VSE/SP provides the VM/VSE Interface, which allows CMS users to operate VSE/SP systems concurrently. This is described in "VM/VSE Interface" on page 78.

Note: The VM/VSE Feature of VSE System IPO/E is no longer available. The VM Interactive Productivity Facility dialog manager and the dialogs to install, maintain, and operate VSE from VM Interactive Productivity Facility are no longer provided for VSE/SP.

Installing VSE/SP Under VM

Defining a VM Directory Entry

Each user in a VM system has a *directory entry* that defines the virtual machine associated with the user. Statements in the directory entry, for example, define the virtual machine's configuration and operating characteristics.

Figure 25 shows a sample VM directory entry for a VSE/SP system named *VSESP31*. The letters to the left of the figure are used here as reference points for various statements. They are not part of the actual directory entry.

Note: When you install VSE/SP under VM, VSE/SP will automatically sense the devices defined in the directory for its configuration. If you have any devices not supported under VM, you can bypass device sensing by adding the EML operand in the ADD statement.

```
A   USER VSESP31 VSESP31 8M 16M GB 30
B   OPTION ECMODE BMX REALTIMER 370E CPUID 111111
C   ACCOUNT 100 VSESYS
D   IPL CMS
E    CONSOLE 009 3215 T OPERATOR
F    DEDICATE 01F 01F
G    SPECIAL 080 3270
     SPECIAL 081 3270
     SPECIAL 082 3270
     SPECIAL 083 3270
     SPECIAL 084 3270
     SPECIAL 085 3270
H    SPOOL 00C 3505 A
     SPOOL 00D 3505 A
     SPOOL 00E 3211 A
     SPOOL 02C 3505 A
     SPOOL 02D 3505 A
     SPOOL 02E 3211 A
I    LINK MAINT 190 190 RR
     LINK MAINT 19E 19E RR
     LINK VSEMAINT 191 191 RR
J    MDISK 240 FB-512 16 557984 SPADOS MWV
     MDISK 241 FB-512 16 557984 SPASY1 MWV
     MDISK 220 FB-512 00 558000 SPADOS MW
     MDISK 221 FB-512 00 558000 SPASY1 MW
```

Figure 25. Sample VM Directory Entry

In the directory entry:

A **USER** defines the:

- Name and password of the user as VSESP31.
- Virtual storage size for the VSE/SP machine as 8 megabytes. This size can be redefined up to 16 megabytes using the CP DEF STOR command.

- Maximum virtual storage size that can be defined after logging on as 16 megabytes.
- User classes G (general) and B (resource). Class B means that VSESP31 can attach and detach devices using CP ATTACH and DETACH commands.
- Priority setting of 30. The default is 64.

B **OPTION** defines:

- **ECMODE** for Extended Control Mode. This option allows the virtual machine to use the complete set of VM control registers and the dynamic address translation feature. VSE/SP requires ECMODE.
- **BMX** for all I/O of the VSE virtual machine to occur as block multiplexer channel operation (not valid for channel 0).
- **REALTIMER:** for Timer Interrupts.
- **370E** to make hardware performance routines (370 Extended Code Feature) available on the CPU for use by the VSE/SP virtual machine.

  When VSE/SP is IPLed, it issues an IPTE (Invalidate Page Table Entry) instruction to check whether or not these routines are present. If they are, VSE/SP enables them. For more information, see "Using IPTE" on page 80.
- **CPUID** specifies a unique processor identification (ID). This option is required if DASD (disk) sharing is used.

  Note: If you use VAE in a V=R machine, you should also specify the option **VIRT=REAL** in the OPTION statement.

C **ACCOUNT** defines an account number and a distribution identification. VSESYS is the default name that appears on printouts originating from the VSE/SP system.

D **IPL CMS** is not required. If you define a PROFILE EXEC for the VSE/SP user ID, however, you can execute it with the IPL CMS statement. "Defining a CMS Profile Exec" on page 63 has more information about a PROFILE EXEC for a VSE/SP system.

E **CONSOLE** defines the virtual machine console. In the statement:

- **009** is the virtual address of the console.
- **3215** defines the virtual machine console as a 3215 printer-keyboard terminal.
- **T** defines the spool class.

- **OPERATOR** defines the secondary VM user. If the primary user (VSE/SP) is disconnected, the VM user OPERATOR will receive all CP messages for the VSE/SP virtual machine. The secondary user also can send CP commands to the disconnected VSE/SP virtual machine.

F **DEDICATE** specifies that a real device is to be dedicated to this user ID. The example on page 60 reserves the real processor console for use as VSESP31's system console.

G **SPECIAL** defines terminal devices to the VSE/SP system. The terminals do *not* have to be real devices on the system.

When you define a terminal as SPECIAL, you can use the address to dial into the VSE/SP system. You should ensure that you have a sufficient number of addresses defined as SPECIAL for users who require the DIAL function.

Devices defined in this manner are added to the VSE/SP IPL procedure through device sensing.

Note: SPECIAL GRAF definitions in the VM directory should *not* use the same 16-device control unit range that is used for the virtual machine console.

H **SPOOL** defines virtual unit record devices. One entry is required for each unit record device.

For information about defining virtual printers to VSE/SP, refer to "Defining an IBM 3203-5" on page 73.

I **LINK** performs a link to a device that belongs to another user.

J **MDISK** defines the DASD extent to be owned by the user on a direct access device. The DASD area assigned with the statement becomes the user's minidisk.

If you share disks between two or more VSE/SP guest systems on the same VM host, you must define the disks using the MDISK statement. Refer also to "Defining Shared Minidisks" on page 69.

Note that the sample in Figure 25 on page 60 reflects the names of one of the systems as shown in the example in Figure 29 on page 71. If you have more and/or different systems with different names, you must change the names accordingly.

If, for example, you had used 3380 disks instead of the FBA disks shown in Figure 25 on page 60, this part of your VM directory entry might have looked like this:

```
MDISK 240 3380 1 884 SPADOS MWV
MDISK 241 3380 1 884 SPASY1 MWV
MDISK 220 3380 0 885 SPADOS MW
MDISK 221 3380 0 885 SPASY1 MW
```

Item 2 on page 70 has some explanations for the above example.

In order to backup VSE-related data, for example for Fast Copy, use addresses 240 and 241 in the above example. In order to backup VM-related data, use addresses 220 and 221. This will backup the entire disk.

For more information, refer to "Defining Shared Minidisks" on page 69.

Defining a CMS Profile Exec

If you want additional options to be executed when VSE/SP is IPLed, you can define a CMS PROFILE EXEC for the VSE/SP user ID. The command **IPL CMS** executes this file before VSE/SP is IPLed. You can add the command to the VM directory entry for VSE/SP, or you can enter it under CMS.

If you define a PROFILE EXEC, you also must define a CMS minidisk work space for the VSE/SP system.

Note that the sample PROFILE EXEC below set up for two user IDs. *VSESP3A* is a VSE/SP system with 16M of address space and a supervisor with MODE=VM. *VSESP3B* is a VSE/SP VAE system with a V=R specification of 2M. The supervisor is generated with MODE=370.

```
&STACK Q USERID
EXECIO *CP
* NEXT LINE SETS VARIABLE NL TO HEX'15'
&NL = "
&READ VARS &USERID &AT &NODE
&IF &USERID EQ VSESP3B &SKIP 7
&CD1 = &LITERAL OF CP DEF STOR 16M
&CD1 = &LITERAL OF CP SP RDR CONT
&CD1 = &LITERAL OF CP SET RUN ON
&CD2 = &LITERAL OF CP TERM CON 3270 SCRN ON BRE GUEST
&CD3 = &LITERAL OF CP IPL 240
&COM = &CONCAT OF &CD1 &NL &CD2 &NL &CD3
&SKIP 6
&CD4 = &LITERAL OF CP DEF STOR 2M
&CD1 = &LITERAL OF CP SP RDR CONT
&CD1 = &LITERAL OF CP SET RUN ON
&CD5 = &LITERAL OF CP TERM CON 3270 SCRN ON BRE GUEST
&CD6 = &LITERAL OF CP IPL 240
&COM = &CONCAT OF &CD4 &NL &CD5 &NL &CD6
CP &COM
&EXIT
```

Figure 26. Sample PROFILE EXEC for Two VSE/SP Guest Machines

Be sure that the last concatenated command is the IPL command for VSE/SP.

You can have the following CP commands in the PROFILE EXEC. Note that if you do not want to use a PROFILE EXEC, you can enter these commands from CP mode.

- DEF STOR nM – The DEF STOR command can be used to acquire the maximum amount of virtual storage specified in the directory entry for the VSE/SP virtual machine. **n** can be a value from 1 to 16.

- SPOOL READER CONT – Ignores intermediate end-of-file indications or CLOSE requests for virtual readers. Reading is continuous, with all end-of-file indicators ignored until all files spooled to the virtual machine are read. If this option is not in effect, a unit exception is reflected to the virtual machine at the end of each spooled file.

- SET RUN ON – Allows you to activate the Attention key (causing a read of a CP command) without stopping the virtual machine.

- TERM CONMODE 3270 – Specifies full screen operation mode of the virtual machine console. This command is required if you use a shared VSE/SP console in 3270 mode (see "Defining a Shared Console" on page 67).

- TERM SCRNSAVE ON – Saves a copy of the VSE/SP console before going into CP mode. This command is required if you use a shared VSE/SP console with TERM CONMODE 3270.

- TERM BREAKIN GUEST – Prevents CP messages from being displayed on the VSE/SP console.

- IPL cuu – This is the IPL statement for VSE/SP. You should replace **cuu** with the address of IJSYSRS. *This must be the last CP command in the PROFILE EXEC.*

If you use the TERM CONMODE 3270 command in the PROFILE EXEC, you should combine it with other CP commands into a single command line. This is because TERM CONMODE 3270 causes CMS to terminate. If it is on a separate command line, other commands in the PROFILE EXEC will not be executed.

Combining the commands into a single command line ensures that they are read from the CP console stack when CMS terminates. To combine (concatenate) commands, you can use the coding technique shown in Figure 26 on page 63. *The new line character (X'15') must be entered in hexadecimal mode.* This is displayed as a double quote (").

Below you find a similar sample written in REXX.

```
/*
--
--
*/
Signal on NOVALUE
/* ------------------------------------------------------------- */
Queue 'Q USERID'
'EXECIO * CP'
/*
-- Next line sets variable nl to hex'15' to seperate commands
*/
nl = '15'x
Parse Upper Pull userid at node .
If userid ¬= 'VSESP3B' then Do
   cd.1 = 'CP DEF STOR 16M'
   cd.1 = 'CP SP RDR CONT'
   cd.1 = 'CP SET RUN ON'
   cd.2 = 'CP TERM CON 3270 SCRN ON BRE GUEST'
   cd.3 = 'CP IPL 240'
   com = cd.1||nl||cd.2||nl||cd.3
End
Else Do
   cd.4 = 'CP DEF STOR 2M'
   cd.1 = 'CP SP RDR CONT'
   cd.1 = 'CP SET RUN ON'
   cd.5 = 'CP TERM CON 3270 SCRN ON BRE GUEST'
   cd.6 = 'CP IPL 240'
   com = cd.4||nl||cd.5||nl||cd.6
End
'CP' com
Exit
Exit 0  /* end of program */

NOVALUE:
/*
-- Report undefined variable and exit
*/
Parse source . . fn ft fm .
Say "Undefined variable referenced on line" sigl "of" fn ft fm
Exit 99
```

Figure 27. Sample PROFILE EXEC for Two VSE/SP Guest Machines (in REXX)

Defining a VSE/SP Console

The CONSOLE control statement in a directory entry specifies the *virtual machine* console for that user. In the VSE/SP – VM environment, the way you define the *VSE/SP* console (the *system* console) depends in part on the following considerations:

1. Will VSE/SP and VM have separate consoles?
2. Will the VSE/SP console support VM operations?
3. Will VSE/SP be logged on manually or autologged?
4. Will the VSE/SP console be disconnected?

5. Will the virtual machine run disconnected?

The rest of this section explains three possible ways to define the VSE/SP console.

Note: VM's *autolog* facility can be used to automatically IPL one or more VSE/SP virtual machines without operator intervention. The virtual machine is logged on in disconnected mode. The same restrictions that apply to any disconnected virtual machine also apply to virtual machines logged on with the autolog facility.

When VM autologs a VSE/SP virtual machine, the correct IPL and JCL procedures for VSE/SP are selected, based on CPU running mode and the disk types. CICS/DOS/VS and ACF/VTAM can be autostarted in the JCL procedure by using the *PWR* job control statement in the BG IPL procedure.

For detailed information about the autolog facility, refer to the manual *VM/SP Running Guest Operating Systems.*

Defining a Dedicated Console

A VM installation can dedicate (reserve) one of its terminals for use as the VSE/SP console. Doing this means that the VSE/SP operator can work from this device as if it were a console for a stand-alone VSE/SP system.

The DEDICATE statement in the program directory entry on page 60 defines a dedicated VSE/SP console. It specifies that the real device at 01F will be used as the VSE/SP console. You can also use another terminal as the VSE/SP console.

To use a dedicated VSE/SP console:

1. The device specified in the DEDICATE statement must not be enabled before the VSE/SP virtual machine is logged on.

   If it has been enabled, you can disable it using the command:

   ```
   CP DISABLE cuu
   ```

   where **cuu** is the address of the real device.

2. If the VSE/SP system is not automatically IPLed, you must log on the VSE/SP virtual machine and perform an IPL from a VM terminal. This must be a *different* terminal from the one specified in the DISABLE command.

   You can, if you wish, disconnect the VSE/SP virtual machine after IPL completes.

Defining a Shared Console

Instead of defining a dedicated console for VSE/SP, you can operate the system from a *shared* console. In this environment, the *same* VM terminal used to log on and IPL the VSE/SP virtual machine is also used as the VSE/SP console.

To use a shared console:

1. From a VM terminal, log on using the ID and password defined for the VSE/SP virtual machine.

2. Enter the following CP commands *after* you IPL CMS but *before* you IPL VSE/SP:

   ```
   CP SP RDR CONT
   CP SET RUN ON
   CP TERM CONMODE 3270
   CP TERM SCRNSAVE ON
   CP TERM BREAKIN GUEST
   ```

   Besides manually entering these commands in CP mode, you can also make them a part of a PROFILE EXEC that you define for the VSE/SP virtual machine. "Defining a CMS Profile Exec" on page 63 shows how to do this.

   Notes:

   a. *If your VSE/SP system runs with MODE=370 and you use TERM CONMODE 3270, do not disconnect the VSE/SP virtual machine. A disconnected VSE/SP console is not supported with MODE=370.*

   b. *Releases of VM prior to Release 5 only accept a TERM CONMODE 3270 command for a local device. If you have the VM/PASSTHRU licensed program installed, you can use it to make a remote device look like a local device to VM.*

3. IPL VSE/SP. The VSE/SP console screen now will be displayed.

4. If you want to return to VM from the VSE/SP console, press the PA1 key. This puts the screen in CP mode.

5. To return to the VSE/SP console from CP mode, enter the command B (for **CP BEGIN**).

Defining a Disconnected Console

You can also define the VSE/SP console as a *disconnected* console. The VSE/SP console may or may not be active (displayed at a terminal) at any given time.

To define the VSE/SP console to operate in disconnect mode:

1. Define the virtual machine console in the VSE/SP directory entry as a printer keyboard device. This will allow you to autolog VSE/SP and

disconnect the virtual machine. For example, the directory entry could be:

```
CONS 009 3215
```

2. In the directory entry, define the device to be used for the VSE/SP console with a **SPECIAL** statement. For example:

   ```
   SPECIAL 2FF 3270
   ```

   The address specified here should be the *highest* one used in the directory entry's SPECIAL statements. This minimizes the chance that a user later will dial into the VSE/SP guest machine and get the VSE/SP console by mistake.

3. Have an **ADD** statement in the IPL procedure for VSE/SP that uses the same device address as in the SPECIAL statement. For example:

   ```
   ADD 2FF,3277
   ```

4. Have an **ASSIGN** statement similar to the following in the JCL ASI procedure for the BG partition:

   ```
   ASSGN SYSLOG,2FF
   ```

   After VSE/SP is IPLed, this statement re-assigns the terminal at 2FF as the VSE/SP console.

To use the disconnected console:

1. From a VM terminal, log on using the ID and password defined for the VSE/SP virtual machine.

2. IPL VSE/SP.

3. Once IPL is complete, you can disconnect the VSE/SP virtual machine and use the terminal for other purposes.

4. Whenever you want to use the VSE/SP console, enter the following command from a VM terminal:

   ```
   DIAL xxxxxxxx 2FF
   ```

   where **xxxxxxxx** is the user ID of the VSE/SP virtual machine. The VSE/SP console will be displayed at the terminal.

5. When you are done using the VSE/SP console, enter the following command in the command line at the bottom of the console screen:

   ```
   * CP DISC
   ```

   This is one of the commands provided by the VM/VSE interface, which is discussed on page 78.

Defining Shared Minidisks

Under VM, shared DASDs must be defined as minidisks in the directory entry for each system that accesses them. VM provides multiple access to the same devices through MDISK and LINK definitions. As Figure 28 shows, the MDISK and LINK definitions create *one* access path to these DASDs.

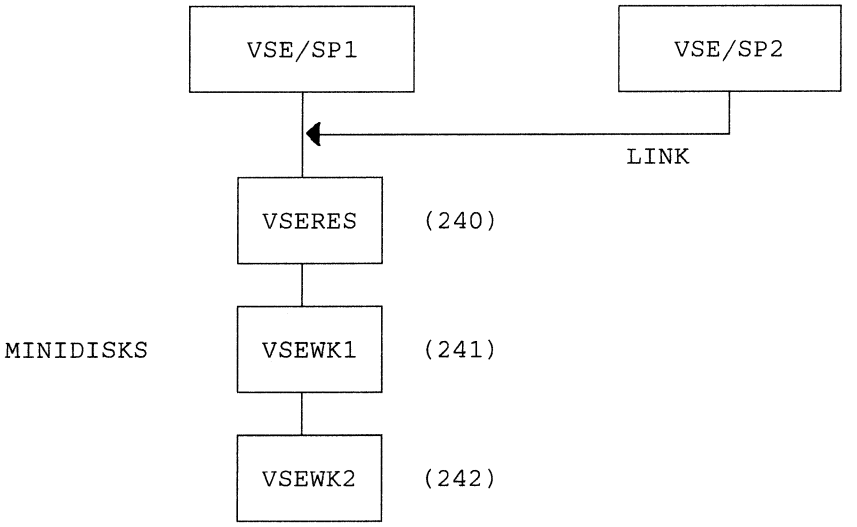

Figure 28. Access Path to Shared VM Minidisks

The MDISK definition for a shared minidisk should specify access mode **MWV**. This indicates that a write link is given to the disk and that the CP virtual RESERVE/RELEASE function is used in the I/O operation of that disk.

For further information about DASD sharing under VM, refer to Chapter 10 of *IBM VSE/SP System Planning*.

Initializing Minidisks

VSE/SP always uses DOSRES and SYSWK1 as the volume IDs for its system disks. If you want to run several VSE/SP guest machines under VM that do not share DASDs, you will have multiple DOSRES and SYSWK1.

VM, however, does not accept duplicate volume IDs on real disks. To solve this problem, you must have two volume IDs on such disks:

- A unique volume ID on the real disk used by VM.
- The label DOSRES or SYSWK1 on a minidisk.

To set this up:

1. Use the information in the manual *VM/SP Operator's Guide* to initialize and format the DASDs that will have the minidisks. This creates the unique volume labels required by VM. The volume label and Allocation Byte Map for CKD devices are on cylinder 0. On FBA devices, the volume label and VTOC are part of the first 16 blocks.

2. In the directory entries for each VSE/SP guest machine, define minidisks on the DASDs you initialized and formatted. As shown in the examples on page 60, do *not* define minidisks that start on block or cylinder 0. For CKD devices, minidisks can begin at cylinder 1. For FBA devices, they can begin following the initial blocks reserved for use by VM. For example, the second minidisk defined on page 60 begins at block 16.

3. Initialize the minidisks for each VSE/SP guest system. To do this:

   a. Log on to VM using the user ID and password defined for each VSE/SP system.

   b. Use DSF to initialize the minidisks as shown in the following two examples. Note that these definitions do not affect the VM information that you created in Step 1.

Example for an FBA Device (3370-2)

```
INIT UNIT(cuu) NVFY NOMAP PURGE FBAVTOC(711946,99,1024) VOLID(xxxxxx)
```

Example for a CKD Device (3350)

```
INIT UNIT(cuu) NVFY PURGE MIMIC(MINI(554)) DEVTYPE(3350) DVTOC(553,0,30) VOLID(xxxxxx)
```

Notes:

1. *If the above init commands are too long to fit into one single line on your screen, use a dash (-) as the continuation character. The system will then ask you for additional information.*

2. *You cannot use these DASDs when running VSE/SP in native mode.*

Figure 29 on page 71 is an example of how DOSRES and SYSWK1 disk volumes for three VSE/SP systems would be known by unique volume IDs to VM. All three systems thus could run at the same time.

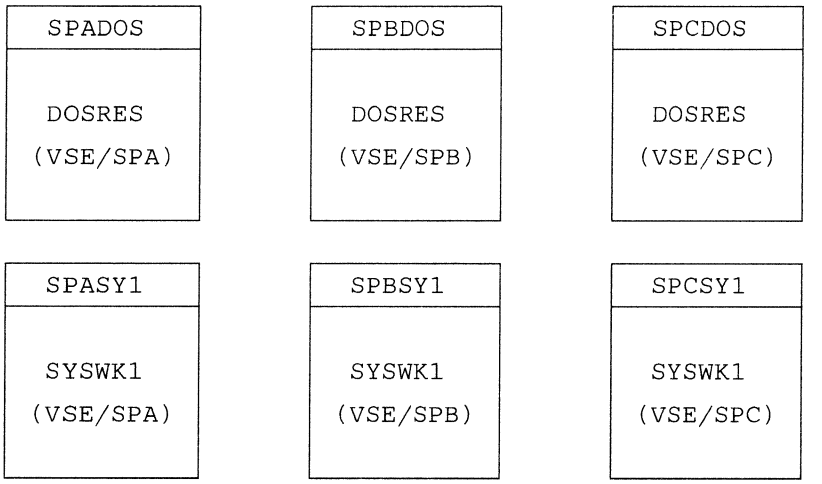

Figure 29. VM Volume IDs for Three VSE/SP Systems

IPL and JCL Procedures

Initial installation of VSE/SP as a VM guest machine involves three IPLs. Each of these IPLs is done under VM using the command:

```
IPL cuu
```

For the first two IPLs, **cuu** = address of the tape unit with the VSE/SP distribution tapes. For the third IPL, **cuu** = address of the disk with IJSYSRS.

The first IPL loads Device Support Facilities from the VSE/SP distribution tapes and initializes disks. DSF can use a large amount of channel time when you initialize the disks. This can impact other users on the system.

The second IPL loads stand-alone utilities used to restore IJSYSRS.

The third IPL is from disk and is known as the *sense* IPL. VSE/SP uses device sensing to automatically define:

- Each device attached to VSE/SP (for example, a tape attached as 181).
- Each device defined in the VM directory entry for VSE/SP.

When VSE/SP runs under VM, sensing is done with a CP DIAGNOSE X'24'.

The sensed devices are used to build an IPL procedure called *$IPL370*. This procedure is used for all subsequent IPLs of VSE/SP under VM.

Figure 30 shows a sample $IPL370 procedure.

```
01F,$$A$SUPV            * SUPERVISOR MODE=VM
ADD  009,1050A          * VIRTUAL MACHINE CONSOLE
ADD  00C,3505           * VM SPOOLED DEVICE
ADD  00D,3525           * VM SPOOLED DEVICE
ADD  00E,3211           * VM SPOOLED DEVICE
ADD  01F,3277           * VSE/SP CONSOLE
ADD  02C,3505           * VM SPOOLED DEVICE
ADD  02D,3525           * VM SPOOLED DEVICE
ADD  02E,3211           * VM SPOOLED DEVICE
ADD  080:085,3277       * TERMINALS DEFINED AS SPECIAL
ADD  181,3420T9         * ATTACHED TAPE
ADD  350:351,3350       * SYSTEM MINIDISKS (CKD)
ADD  450,FBA            * SYSTEM MINIDISK (3370)
ADD  FEC,3505           * ADDED FOR POWER
ADD  FED,3525           * ADDED FOR POWER
ADD  FEE,PRT1           * ADDED FOR POWER
ADD  FEF,PRT1           * ADDED FOR POWER
ADD  FFA,3505           * ADDED FOR ICCF
ADD  FFC,3505           * ADDED FOR ICCF
ADD  FFD,3525           * ADDED FOR ICCF
ADD  FFE,PRT1           * ADDED FOR ICCF
DEF SYSCAT=DOSRES,SYSREC=SYSWK1
SYS JA=YES
DLA VOLID=DOSRES,CYL=1,NCYL=2,DSF=N,NAME=AREA1
SVA PSIZE=534K,SDL=250,GETVIS=64K
```

Figure 30. Sample $IPL370 Procedure

Because of device sensing, you should do the following *before* the sense IPL. If you do not, you must later use the Interactive Interface to modify the IPL procedure that is created.

1. Attach the devices to be used by VSE/SP (for example, tapes).

2. If you have a real 3203, you should *not* define a virtual printer as a 3203. Refer to "Defining an IBM 3203-5" on page 73 for information.

After you install VSE/SP, you can use the Interactive Interface to change your hardware configuration (for example, to add tape drives). Detach devices you do *not* want in the IPL procedure (for example, CMS disks or MAINT's 190 minidisk).

Note: If you use VM in a DASD-sharing environment, also refer to the information in Chapter 10 of *IBM VSE/SP System Planning*.

Supervisors for Running Under VM

VSE/SP supplies two pregenerated supervisors that can run under VM:

- *$$A$SUPV* for MODE=VM
- *$$A$SUP3* for MODE=370

With MODE=VM, you have one address space of up to 16M. MODE=VM supports the complete set of VM Linkage Enhancements (VMLE).

With MODE=370, you can use VAE and have up to three address spaces with a total of up to 40M. MODE=370 supports a subset of VM Linkage Enhancements.

Figure 31 shows the differences in VMLE support between MODE=VM and MODE=370.

VM LINKAGE ENHANCEMENTS	MODE=VM	MODE=370	COMMENTS
VM paging and CCW translation only	Yes	No	—
CPCOM Macro	Yes	Yes	—
SET PAGEX ON with VSE/ICCF	Yes	Yes	—
BTAM Autopoll Assist	Yes	Yes	—
Use of PAGE Release	Yes	No	Diagnose code 10 in VM.
Disconnected VSE/SP console	Yes	No	—
VMCF Support	Yes	No	Used by VM/VSE Interface and VCNA. With MODE=370, you can submit a job from VM to VSE/SP, but without the echo facility.
IUCV Support	Yes	No	Used by VCNA.

Figure 31. Differences in VMLE Support

Defining an IBM 3203-5

If you have an IBM 3203-5 printer defined in the directory entry for a VSE/SP guest machine, the printer will be sensed as a *3203-1* during IPL of VSE/SP. The printer is stored in the PUB as a 3203-1.

Because of this, an *incorrect* FCB is loaded. A VSE/SP user cannot use the enhanced performance functions of the PRT1/3800 LIOCS, because IPL overrides a user-specified statement such as:

```
ADD 02E,PRT1
```

You can circumvent this problem by defining the virtual printer as a *3211*. You then can use 3211 naming conventions to catalog an FCB for a 3203-5.

Virtual I/O for MODE = VM

When you use MODE = VM, VM does the paging, not VSE/SP. Because of this:

1. *No* Page Data Set exists on VSE/SP.
2. The VIO parameter is *not* used.
3. The size specified for the VPOOL must be large enough to do all of your link-edit work.

Note: VSE/SP 3.1 defines a VPOOL of 320K for the MODE = VM supervisor. Of this 320K, CICS/DOS/VS uses 64K; VSE/POWER uses 192K. If you run a VSE/SP guest machine with more than one CICS/DOS/VS subsystem, you should increase the size of the VPOOL by 64K for each additional subsystem.

Accessing the VSE/SP Guest Machine

Dialing into the VSE/SP System

If you have a VSE/SP guest machine installed on your VM system, you can access it using the CP command:

```
DIAL user cuu
```

where **user** = the name defined in the directory entry for the VSE/SP system and **cuu** = the terminal address to be used. If you do not enter the address, you will get the first available port.

Dial into the VSE/SP system *instead of* logging on to the VM system. You cannot enter the DIAL command if you have already logged on to VM.

The DIAL command initiates a VM session with the VSE/SP system. When the *VSE/SP Online* panel appears, sign on to the VSE/SP system using an ID and password known to it.

After completing your work, return to the *VSE/SP Online* panel and press **PF3** (TO V/M). This terminates the session and returns you to CP mode. You can then log on to the VM system, if you wish.

Note: To use PF3 for the return function, *the last three characters of the CICS/DOS/VS terminal ID must equal the cuu.*

Using VM/PASSTHRU

VM/PASSTHRU is an optional VM licensed program. If you have VM/PASSTHRU installed, you can use it to access VSE/SP guest machines on your CPU or other CPUs.

VM/PASSTHRU runs in a virtual machine under the control of VM. You can activate or deactivate it at any time. You usually activate it using VM's autolog facility.

PASSTHRU Command Parameters

To begin working with VM/PASSTHRU, you only need to enter the CMS command:

```
PASSTHRU
```

PASSTHRU is the name of a CMS EXEC that is part of the VM/PASSTHRU licensed program.

You can also enter up to eight parameters with the command. Doing this overrides the system defaults that are defined for these parameters.

The command parameters are *positional.* To ensure proper command execution, enter an asterisk (*****) for the defaults that you do not override. Do *not* simply omit them from the command.

The parameters for the PASSTHRU command specify the:

1. **Name** of the VM system to be accessed. This is also referred to as the *node ID* or *NODEA*.

   Entering an asterisk for this parameter displays a screen with the node IDs of the systems that you can access. This screen also appears when you enter the PASSTHRU command with no parameters.

2. **Port address** to be used for the connection. An asterisk is required when you pass through to the same VM system.

3. **User ID** of the PASSTHRU virtual machine. This ID usually is PVM.

4. **PF key** to be used for VM/PASSTHRU's "capture" facility.

   After you have accessed the other system, you can use this key whenever you want to save a hard copy of the information that appears on your screen. The information is saved in a CMS file called *PASSTHRU DATA A*. This file is stored on the system from where you initiated the PASSTHRU EXEC.

5. **Number** of lines per screen to be captured. For example, if you had a 24-line screen and entered 20, you would save only the first 20 lines of information every time you pressed the PF key.

6. **Width** of the lines. If the terminal screen had a width of 80 columns and you entered 72, for example, you would not save the information in the last eight columns.

7. **Temporary disconnect** character string (1 to 4 characters).

   This parameter allows you to return to the system from where you entered the PASSTHRU command *without* signing off from the other system.

   You should note that the default amount of time defined for a temporary disconnect is 20 minutes. The person responsible for maintaining VM/PASSTHRU on your system can change the default by redefining the TDISC parameter in the file *PVM CONFIG*. The maximum length allowed for a temporary disconnect is 9999 seconds (2.7 hours).

8. **Permanent disconnect** character string (1 to 4 characters).

   The character string that you define for this parameter ends the session with the system that you accessed. You return to the system from where you entered the PASSTHRU EXEC.

Note: If you use a PF key for the capture facility that VSE/SP defines for one of its functions, your setting will override the setting in the Interactive Interface. For example, if you use PF5 for the capture facility, you cannot use the function which PF5 represents in the Interactive Interface.

Therefore, if your keyboard has more than twelve PF keys, use a PF key greater than PF12 for the capture facility.

Example of Using PASSTHRU

The following example of using VM/PASSTHRU to access a VSE/SP guest machine assumes that:

- You have a user ID for the VM system **BOEVM1**.
- You work from an IBM 3278 terminal with a 24 X 80 screen.
- BOEVM1 is in a network with another VM system **BOEVM2**.
- The VSE/SP guest machine **VSESP31** is installed and running on the BOEVM2 system.

To access the VSE/SP guest machine, you would:

1. Log on to BOEVM1 with your VM user ID and password.

2. Enter the following command when in CMS:

```
PASSTHRU BOEVM2 3 PVM 11 24 80 $$ %%%%
```

   The command parameters specify:

   a. BOEVM2 as the VM system you want to access using port 3.

   b. PVM as the name of the PASSTHRU virtual machine.

   c. PF11 as the PF key to be used for the capture function. Pressing PF11 will save a copy of what is shown on the entire terminal screen.

   d. Character strings for temporary and permanent disconnect.

3. Enter the following CP command after reaching BOEVM2:

```
DIAL VSESP31
```

4. Enter your VSE/SP user ID and password from the *VSE/SP Online* panel.

Once you have signed on to the VSE/SP system, you can easily switch back and forth between it and CMS. To return to CMS, just enter the character string **$$** after the arrow (= = >) in any selection panel of the Interactive Interface. To return from CMS to VSE/SP, enter the command:

```
PASSTHRU
```

This redisplays the selection panel where you made the temporary disconnect.

Notes:

1. *It is recommended that you sign off from the Interactive Interface (return to the VSE/SP Online panel) before you perform a permanent disconnect. If you do not sign off first, the terminal remains dialed into the VSE/SP system, waiting for a reconnect.*

2. *You will have problems with the use of the Interactive Interface if you use PASSTHRU and extended data streams (double-byte character data). The problems will arise every time a screen is saved, for example, if you press PF1 for HELP or if you send a message to another user. In these cases the screen cannot be redisplayed.*

VM/VSE Interface

Functions Supported by the VM/VSE Interface

The VM/VSE Interface is a set of VSE phases and CMS modules supplied by VSE/SP. These phases and modules provide function for interfacing to one or more VSE/SP guest machines from CMS.

With the VM/VSE Interface, users can:

- Retrieve up to twenty of the most recent messages from a VSE/SP guest machine.
- Submit jobs from a CMS terminal to a VSE/SP guest machine and have none, some, or all messages from the job be echoed to a specified job owner (CMS user ID).
- Reply to messages resulting from the execution of a job. The job must have a unique job owner ID (CMS user ID).
- Execute CP commands within JCL statements and have the resulting CP messages routed to the CMS job owner.
- Issue VSE/SP commands to a VSE/SP guest machine and have the resulting AR (Attention Routine) messages echoed to the CMS user.
- Issue CP commands for execution in the virtual machine and have the resulting CP messages routed to the CMS job owner.

The VM/VSE Interface routines are distributed in IJSYSRS.SYSLIB. You must obtain the routines from the library and install them on a CMS minidisk.

Note: The above functions can only be used for communication with a VSE/SP guest machine using a MODE=VM supervisor.

Installing the VM/VSE Interface

Before CMS users can work with the VM/VSE Interface, you must make the following CMS modules and related EXPLAIN and XEDIT files available on a shared disk. Users who are authorized to use one or more of the functions can link to the disk:

- VSEMSG (retrieve messages)
- SUBVSE (submit a job to VSE/SP)
- VSEREP (reply to outstanding messages)
- VSECMD (issue VSE/SP commands)

- VSECP (issue CP commands)

VSEMSG, SUBVSE (a CMS EXEC2 file), and VSEREP can be linked by all CMS users. The use of VSECMD and VSECP should be carefully controlled, however. These functions are mainly intended for the system administrator.

VSE/SP provides the *SKVMVSE* skeleton in VSE/ICCF library 59. The manual *IBM VSE/SP Installation* explains how to use the skeleton to punch the MODULES, EXPLAINS, and EXECs to the VM machine **MAINT**.

After you submit the job, the members are placed in MAINT's reader queue. You should access the CMS minidisk where the routines will be loaded. (The default is the first accessed R/W minidisk). The minidisk can be:

- MAINT 319 for general access.
- A specific minidisk (for example, 301).

Figure 32 lists the modules and phases of the VM/VSE Interface.

CMS File Name (fn)	CMS File Type (ft)	VSE Library Book Name	Function
		$VMCF.PHASE	VM/VSE Interface processing routines.
		$VMCFOPN.PHASE	VM/VSE Interface initialization routines.
VSEMSG	MODULE	VSEMSG.Z	Retrieve messages from VSE system.
VSEMSG	EXPLAIN	EXPMSG.Z	VSEMSG command HELP panel.
SUBVSE	EXEC	SUBVSE.Z	Submit a job for execution on a virtual VSE system.
SUBVSE	XEDIT	SUBVSX.Z	Submit a job for execution from an XEDIT environment.
VSEREP	MODULE	VSEREP.Z	Reply to outstanding messages.
VSEREP	EXPLAIN	EXPREP.Z	VSEREP command HELP panel.
VSECMD	MODULE	VSECMD.Z	Execute VSE commands on VSE/SP system.
VSECMD	EXPLAIN	EXPCMD.Z	VSECMD command HELP panel.
VSECP	MODULE	VSECP.Z	Execute CP commands on VSE/SP system.
VSECP	EXPLAIN	EXPCP.Z	VSECP command HELP panel.

Figure 32. Modules and Phases of the VM/VSE Interface

Note: If the VM/VSE interface is activated during IPL and the console is defined as TERM CONMODE 3270, do not use the VSE command **SET HC=CREATE**. If you do, the system will issue the message:

```
1S02D INVALID STATEMENT
```

Performance Under VM

This section provides general performance information for running VSE/SP under VM. Chapter 8 in *IBM VSE/SP System Planning* has more performance information related to VSE/SP systems.

Using IPTE

The 370 Extended Code Feature (370E) consists of hardware performance routines. VSE/SP uses these routines to enhance the performance of its virtual machine.

When VSE/SP is IPLed, it issues an IPTE (Invalidate Page Table Entry) instruction to check whether or not the routines are available. If they are, VSE/SP enables them for its use.

You should make sure that the proper hardware environment is defined before VSE/SP issues the IPTE instruction. You can do this either by:

- Defining an **OPTION 370E** statement in the VM directory entry for VSE/SP, or
- Entering the CP command **SET 370E ON** before you IPL VSE/SP.

If the routines are available on the hardware but you do *not* do one of the above, VM will return an OPERATION EXCEPTION on the IPTE. VSE/SP then will not enable the routines for its use.

Notes:

1. *It is recommended that you always let VM determine if the hardware routines are present by issuing the SET command or defining the OPTION 370E statement. If they are available, then VSE/SP will use them. If they are not available, the following message is displayed:*

   ```
   DMKLOG250E 370E FEATURE NOT AVAILABLE
   ```

2. *If the routines are available, you can verify whether they are enabled for VSE/SP by entering the CP command* **Q SET** *after logging on the VSE/SP virtual machine.*

Operating Modes

V=R

If VAE is required, you should set up the guest VSE/SP system with V=R mode. Doing this dedicates part of the available machine real storage to VSE/SP.

In this mode, VM does *not* handle paging. You should review the performance considerations for a native system, especially the splitting of the Page Data Set.

V=V

If you have a second VSE/SP guest machine, you can use V=V mode when the second system does not need more than 16M. Specify MODE=VM for the VSE/SP supervisor. This ensures that the full set of VM Linkage Enhancements will be used.

If the second system (V=V) has a MODE=370 supervisor, its guest performance will be reduced.

Using System Activity Dialogs

The Interactive Interface provides two dialogs that display general information about current system activity. These are the *Display System Activity* and the *Display Channel and Device Activity* dialogs. With them, you can monitor information such as CPU use, paging, and I/O activity.

When using these dialogs for a VSE/SP guest machine, note that:

- All data is valid, except for data displayed as the number of events per second (for example, SIO/Sec).
- The information only describes VSE activity.
  - The percentage of CPU use shows what the guest virtual machine (VTIME) used. It does *not* include the time used by CP to service VSE (TTIME-VTIME).
  - If the guest machine runs in V=V mode, the dialog displays zeros for paging activity. This reflects that VM handles paging.

Summary of VSE/SP and VM Operating Environments

The following figure summarizes some of the major points that you should consider when planning to install VSE/SP under VM.

VSE MODE	MODE=VM		MODE=370	
VM MODE	V=V	V=R	V=V	V=R
When Recommended	Normal when ≤16M of VSE virt. stor. required	No benefit gained; can LOCK all VSE pages to get same results.	VAE required; and V=R already used	if VAE required
VM Paging	Yes	No	Yes	No
VSE Paging	No	No	Yes	Yes
VSE DAT	Off	Off	On	On
Page Fault Reflection	Yes	Not Applicable	Yes	Not Applicable
Shadow Table in VM	Not used; not needed	Not used; not needed	Yes; reduce overhead by: SET STBYPASS SET STMULTI4	Not needed; set off by: SET STBYPASS VR
VM CCW Translate	Yes	Not needed; set off by: SET NOTRANS ON	Yes	Not needed; set off by: SET NOTRANS ON
VSE CCW Translate	No	No	Yes	Yes
VSE Real Size	≤16M Both real and virt. size from DEF STOR	≤16M Same as V=V, except that defined stor. also VM real	≤16M Real from DEF STOR; virt. from VAE def.	V=R area Real = size of V=R area; virt. from VAE def.
VSE Virtual Size	≤16M	≤16M	≤40M	≤40M

Figure 33 (Part 1 of 2). Summary of VSE/SP - VM Operating Environments

VSE MODE	MODE=VM		MODE=370	
VM MODE	V=V	V=R	V=V	V=R
LINKAGE ENHANCEMENTS				
CPCOM Macro	Yes		Yes	
BTAM Autopoll	Yes		Yes	
PAGEX	Yes		Yes	
PAGE Rel. (DIAG 10)	Yes		No	
Disconnect Console	Yes		No	
VMCF Support	Yes		No	
IUCV Support	Yes		No	

Figure 33 (Part 2 of 2). Summary of VSE/SP - VM Operating Environments

Chapter 7. Migrating to VSE/SP 3.1

Migrating to a new release of an operating system is a unique task for each user. The operating environment, system tailoring required, or additional installed software all contribute to make each system unique. No single method, therefore, can rigidly be applied to every separate migration effort.

This chapter's main purpose is to outline tasks necessary to migrate from SSX/VSE to VSE/SP 3.1. That information begins on page 88. The following section only references functions that VSE/SP provides to migrate from VSE/SP 2.1 or earlier IBM VSE systems.

Migrating from VSE/SP 2.1 or Earlier VSE Systems

Migrating from VSE/SP 2.1 At Initial Installation

If you have a VSE/SP 2.1 system, you have the option to migrate your hardware configuration and user profiles during initial installation of VSE/SP 3.1. *This is only possible for users with a VSE/SP 2.1 system.* If you have an earlier VSE system, you must migrate this information after initial installation.

To migrate this 2.1 information during initial installation, you will need to:

- Back up the VSE/ICCF DTSFILE from your 2.1 system using DTSUTIL and
- Create a copy of the VSE/SP Control File using the COPY function of the *Display or Process a File* dialog. The following should be specified:
  - RECORD FORMAT = 3 (variable-length blocked records)
  - BLOCK SIZE = 4000

  This copy function uses a VSE/VSAM REPRO command which **must** be used.

Both of these files must be stored on separate tape volumes that the tape unit which you use for initial installation can read. Thus you cannot have these files on magnetic tape when you receive VSE/SP from an IBM 3480 cartridge.

During initial installation, you will be asked if you want to migrate from VSE/SP 2.1. If you answer **YES**, then you will be asked to mount the two backup tapes at the proper time.

After initial installation completes, you must:

1. Assemble and catalog the migrated hardware tables using the *Configure Hardware* dialog.

2. Validate and process ACF/VTAM startup options and APPLIDs using the *Maintain Startup Options* and the *Maintain VTAM Application Names* dialogs.

Note that if you have new devices in your 3.1 configuration, you will have to add them using the *Configure Hardware* dialog. They will not automatically be added to the migrated 2.1 tables.

For details about migrating from a VSE/SP 2.1 system to VSE/SP 3.1 during initial installation, refer to the manual *IBM VSE/SP Installation.*

Migration Aids

VSE/SP 3.1 provides a number of migration aids to help your personnel perform migration. If you are moving from VSE/SP 2.1 to 3.1, you can use:

- A VSE/SP utility program (*IESBLDUP*) to transfer both Control File records and user profiles to the 3.1 system. The utility can be used, for example, if you did not migrate this information during initial installation.

  "Overview of IESBLDUP" on page 87 summarizes the functions of IESBLDUP. For detailed information about its use, refer to the manual *IBM VSE/SP Administration.*

- Dialogs of the Interactive Interface to back up and restore libraries and VSE/VSAM files.

- VSE/POWER's POFFLOAD facility to save and later reload jobs and output in the VSE/POWER queues.

If you are migrating from an IBM VSE system earlier than VSE/SP 2.1, the above aids can also be used to create user profiles, restore libraries and files from tape, and save and reload the VSE/POWER queues. In addition, you may want to order a manual written for VSE/SP 2.1, *VSE/SP Migration*. The manual has information such as how to:

- Transfer files from a system earlier than VSE/SP 2.1.
- Check JCL in jobs using the *job control scanner* utility.

The migration manual has the order number SC33-6179. *Please note that it has not been updated for VSE/SP 3.1.* Because of this, be sure to use this

manual and *IBM VSE/SP Administration* for current information about system organization and functions.

Overview of IESBLDUP

As shown in the manual *IBM VSE/SP Administration*, the VSE/SP 3.1 utility program IESBLDUP helps:

- VSE/SP users migrate their old user profiles and other Control File data to VSE/SP Release 3.1. To do this, they first must create the following on the VSE/SP 2.1 system:
  - A copy of the VSE/SP Control File.
  - A copy of the VSE/ICCF DTSFILE.
- Users of VSE systems earlier than VSE/SP create *new* user profiles. IESBLDUP does this via input from:
  - A copy of the old VSE/ICCF DTSFILE (DTSRSTR).
  - Current (VSE/SP 3.1) VSE/ICCF DTSFILE.
  - Current (VSE/SP 3.1) CICS/DOS/VS Sign-on table (DFHSNT).
  - Add statements from SYSIPT.

  In this case, IESBLDUP processes the user IDs defined for VSE/ICCF and CICS/DOS/VS and uses a model VSE/SP profile to define new users to VSE/SP.

IESBLDUP must run in a batch partition controlled by VSE/POWER. VSE/POWER must be generated with the SPOOL=YES (the default for VSE/SP 3.1).

IESBLDUP updates the current Control File, creates the job *DTRMIGR*, and places DTRMIGR into the VSE/POWER reader queue. It defines DTRMIGR as CLASS=A, DISP=K. The job class helps ensure that DTRMIGR runs immediately after IESBLDUP has finished.

When it runs, DTRMIGR invokes the VSE/ICCF utility DTSUTIL to:

- Add new user profiles to the current VSE/ICCF DTSFILE.
- Alter VSE/ICCF DTSFILE options that are incompatible with VSE/SP 3.1.
- Catalog the updated table ADM$USRT in VSE/ICCF library 50.

Note: *You can also use IESBLDUP to create a status report of your system's users. Such a report lists all user IDs and related data defined in the VSE/SP Control File, VSE/ICCF DTSFILE, and the CICS/DOS/VS Sign-on table DFHSNT. It thus provides valuable information for maintaining user profiles and data.*

The manual IBM VSE/SP Administration has information about how to create a status report.

Migrating from SSX/VSE

Introduction

This section outlines what you should consider when migrating from SSX/VSE 1.4 to VSE/SP 3.1. It does not address migrating from earlier releases of SSX/VSE.

When reviewing the information here, note that:

1. It is not meant as a step-by-step "cookbook" for performing actual migration. Instead, it summarizes which parts of the SSX/VSE system contain data that you may want to use when moving to VSE/SP.

2. Migration from SSX/VSE to VSE/SP is *manual.* That is, there is no one utility or tool for migrating directly from SSX/VSE to VSE/SP. You must do a number of separate tasks to transfer information and data from SSX/VSE to VSE/SP.

Although VSE/SP 3.1 has implemented most of the SSX/VSE ease-of-use functions, such as automatic system installation and startup as well as dialogs (prompters) for most system functions, it is recommended to go through some basic VSE/SP education before migration. This will help you to take advantage of VSE/SP functions not in SSX/VSE, such as the new library concept, conditional job control, virtual address extension, DASD sharing, user profile tailoring, etc.

Major Differences Between VSE/SP 3.1 and SSX/VSE

In general, VSE/SP 3.1 offers the full range of functions provided by VSE/Advanced Functions. There are no restrictions in function, device support or device addresses.

Optional Licensed Programs

Some of the licensed programs which were included in the SSX/VSE base code are not part of VSE/SP. If you need them, you have to order them as optional licensed programs for VSE/SP.

These programs are:

- DOS/VS COBOL
- DOS/VS SORT/MERGE
- VSE/OCCF

Other optional licensed programs which you installed on your SSX/VSE system into the feature libraries IESPPCL, IESPPRL or IESPPSL should also be reordered for VSE/SP. This ensures that you get the latest version

of these products and keep the service information on your system up-to-date.

The table IESFEAT stored in your ICCF library 4 of SSX/VSE contains a list of optional licensed programs installed on your system. You can use it as a reference for reordering.

Unsupported Functions

SSX/VSE supports an automatic time-initiated shutdown procedure which can be used to shut down SSX/VSE partially or completely. This shutdown procedure optionally allows to power off the processor. There is no equivalent support in VSE/SP.

In SSX/VSE, DASD volumes are automatically initialized during initial installation or during local reconfiguration. In VSE/SP, initialization of DASD volumes must be done manually using the Device Support Facilities (DSF) program.

System Residence

In VSE/SP 3.1, IBM 3310 disk devices are not supported as system residence disks (volumes DOSRES and SYSWK1). However, you can use them as work DASDs (SYSWK2 through SYSWKn).

Saving SSX/VSE Information

Before migrating to VSE/SP, you should first do a Fast Copy of all volumes used by SSX/VSE and then back up or print certain SSX/VSE data and information. Later you will use this as input for your new system.

Backing Up Libraries and Files

On your SSX/VSE system, use prompters to back up:

- All VSE/ICCF libraries (the DTSFILE).
- All VSE/VSAM user files.
- The following libraries:
  - USERSL1, USERRL1, and USERCL1 – Source, relocatable, and core image libraries for your own programs. Also back up USERSL2, USERRL2, and USERCL2 if you created them.
  - USERPL – User procedure library (if you ever added your own procedures to it).

Notes:

1. *Do* **not** *back up VSE/VSAM files beginning with* **IES**, **INW**, *or* **DFH**. *These are SSX/VSE or CICS/DOS/VS internal files and cannot be restored to your VSE/SP system.*

   If you used the IWS support in SSX/VSE, you may wish to migrate the contents of the Host Transfer File (INWFILE) to your VSE/SP system. For information about doing this, see *"Restoring VSE/VSAM Files" on page 96.*

2. *VSE/SP uses a new VSE librarian and a new library concept. If you wish, you can restore your SSX/VSE user libraries (old VSE format) to VSE/SP libraries (new VSE format).*

Printing VSE/ICCF Members

On your SSX/VSE system, print the following VSE/ICCF library members. All of these members are in library 4:

IESUSER		APACT01
CONFLIST	(See Note 1.)	APACT02
IESNETSK	(See Note 2.)	APPLT01
IESUSSCD	(See Note 3.)	APPLT02
IESUSSTX		APPLT03
IESUPSI	(See Note 4.)	APSTC
IESPNDT		APSTJ
IESPNDTB		APSTJ1
IESPWRSK		APSTL
IESIES2	(see Note 5.)	APSTA
		APSTO
		APTEMP
		APTST

Figure 34. VSE/ICCF Library Members to be Printed

Notes:

1. *Before printing this member, use the Configuration List prompter to bring it up-to-date. You can use this information when configuring your VSE/SP hardware (see* *"Configuring Hardware" on page 91).*

2. *If you are using networking, IESNETSK, the networking skeleton for SSX/VSE, is a member of VSE/ICCF library 1. You should print the completed copy (copies) that you made of it in VSE/ICCF library 4. See* *"Networking Information" on page 98 for more information.*

3. *If you have defined remote applications, IESUSSCD and IESUSSTX are used for the SSX/VSE Remote Applications panel. IESUSSCD defines the commands for the options that appear on the panel. IESUSSTX defines the text of the panel.*

By default, IESUSSCD and IESUSSTX are members of VSE/ICCF library 4. You may have changed these members when creating your networking skeleton and copied them into another VSE/ICCF library.

4. *IESUPSI defines the UPSI bit for CICS/DOS/VS startup and logging. You only need to print this member if you have changed the system default. "Updating CICS/DOS/VS" on page 93 has more information available.*

5. *If you have modified the program IESIES2 to create user specific selection panels for SSX/VSE, you can use the information contained in this program to define the VSE/SP application profiles using the Maintain Application Profile dialog.*

In addition to the above mentioned members, there are some ICCF libraries under SSX/VSE used for information on optional licensed programs or for skeletons. Depending on whether you have these programs installed, you should have a look at the members contained in these libraries and copy or print them if required. The information of these members may be helpful during the installation of these products on your VSE/SP system.

The following list shows you which ICCF library under SSX/VSE contains information about what optional licensed program:

ICCF Library	Opt. Licensed Program
library 61,62	ELIAS
library 63	SQL
library 64	NCP
library 65	ISPF/PDF
library 66	CSP/Q (DS/3)
library 67	FTP
library 70	LOGREP

Installing VSE/SP 3.1

Perform initial installation of VSE/SP as described in the manual *IBM VSE/SP Installation*. Answer NO to the question:

```
DO YOU MIGRATE YOUR VSE/SP 2.1 CONFIGURATION DATA?
```

As the message implies, migration during initial installation is limited to moving data from VSE/SP 2.1 to VSE/SP 3.1.

Configuring Hardware

When you configure your system hardware, refer to the printout you made of SSX/VSE member CONFLIST. It has information about devices that will help you complete VSE/SP's *Configure Hardware* dialog. For example, it shows the SSX/VSE terminal codes which define the terminal features. These features must be defined in the CICS PARM LIST of the VSE/SP *Configure Hardware* dialog for each terminal.

Creating User Profiles

After installing the VSE/SP system, you can define user profiles using the *Maintain User Profiles* dialog. The information in your copy of IESUSER from SSX/VSE will help you do this.

Note: It is not possible to use the VSE/SP program IESBLDUP to migrate SSX/VSE user profiles to VSE/SP.

Entries in IESUSER have the format shown in Figure 35.

```
$$$107**TUSER   TOPER   TPWD    TPLIB   TALIB1  TALIB2  TALIB3  TALIB4
TR1     TR2     TR3     TR4     TR5     TR6     TR7     TR8     TR9
TR10    TR11    TR12    TR13    TR14    TR15    TR16    TR17    TR18
TR19    TR20    TR21    TR22    TR23    TR24    TRGR1   TRGR2   TSP1
TSP2    TS2     TS3     TS4     TS5     TS6     TS7     TS8     TS9
TS10    TS11    TS12    TS13    TS14    TS15    TS16    TS17    TS18
TS19    TS20    TS21    TS22    TS23    TS24    TS25    TS26    TS27
TS28    TS29    TS30    TS31    TS32    TS33    TS34    TS35    TS36
TS37    TS38    TS39    TS40    TS41    TS42    TS43    TS44    TS45
TS46    TS47    TS48    TS49    TS50    TS51    TS52    TS53    TS54
TS55    TS56    TS57    TS58    TS59    TS60    TS61    TS62    TS63
TS64    TSGR2   TSGR3   TSGR4   TCUSER  TOPTN1  TOPTN2  TSP3    TSP4
$$$107**K
```

Figure 35. Format of IESUSER

The keywords shown above have the following meanings:

TUSER	User ID
TOPER	Operator ID
TPWD	Password
TPLIB	VSE/ICCF primary library
TALIB1-4	VSE/ICCF alternate libraries
TR1-24	CICS/DOS/VS resource security keys 1 to 24
TRGR1-2	N/A
TSP1-64	CICS/DOS/VS transaction security key 1 to 64
TSGR2-4	N/A
TCUSER	0 = administrator; 1 = programmer; 2 = general user
TOPTN1-2	N/A
TSP3-4	N/A

N/A = Not Applicable (internal SSX/VSE information)

Figure 36 on page 93 is an example from IESUSER for the user ADMN. As shown, ADMN's password is ADMNPW; the operator ID is ADM. The primary VSE/ICCF library for ADMN is 4. No alternate libraries are defined.

ADMN has all CICS/DOS/VS resource security keys except 2,3,4,5,6,7,8 and all transaction security keys except 20 to 26.

```
$$$107**ADMN     ADM      ADMNPW  04
1        ,        ,        ,       ,       ,       ,       ,9
,10      ,11      ,12      ,13     ,14     ,15     ,16     ,17     ,18
19       ,20      ,21      ,22     ,23     ,24     ,       ,
         ,2       ,3       ,4      ,5      ,6      ,7      ,8      ,9
,10      ,11      ,12      ,13     ,14     ,15     ,16     ,17     ,18
19       ,        ,        ,       ,       ,       ,       ,       ,27
,28      ,29      ,30      ,31     ,32     ,33     ,34     ,35     ,36
37       ,38      ,39      ,40     ,41     ,42     ,43     ,44     ,45
,46      ,47      ,48      ,49     ,50     ,51     ,52     ,53     ,54
55       ,56      ,57      ,58     ,59     ,60     ,61     ,62     ,63
,64      ,        ,        ,       0
$$$EOF**
```

Figure 36. Sample Entry in IESUSER

Updating CICS/DOS/VS

CICS/DOS/VS Startup

Any modifications to the CICS/DOS/VS startup (such as the UPSI settings) can be made in member SKCICS in VSE/ICCF library 59.

CICS/DOS/VS Tables from SSX/VSE

From the backup tape that has the SSX/VSE system DTSFILE, restore the members of VSE/ICCF library 4 that are listed in Figure 37 on page 94. Restore them to the VSE/ICCF library that you want to use for maintaining CICS/DOS/VS tables.

The VSE/ICCF members whose names start with **DFH** have CICS/DOS/VS table entries that you created either manually or via the CICSTAB procedure of SSX/VSE. The names starting with **AP** have entries that were created via the application interface of SSX/VSE (*APPINST*). When you added applications via this interface, entries for them were made to these tables.

There are other CICS/DOS/VS tables from your SSX/VSE system that may contain application information, but they are not needed now.

Note: At this time, you may also restore:

- *Your VSE/ICCF user libraries that contain user data and source code. In SSX/VSE, VSE/ICCF libraries 11 to 49 are defined as user libraries.*
- *Any of the other members that are listed in Figure 34 on page 90. Restoring one or more of these members depends on your specific system environment.*

MEMBER	CONTENTS
DFHPCT	User PCT entries
APPCT	Application PCT entries
DFHPPT	User PPT entries
APPPT	Application PPT entries
DFHFCT	User FCT entries
APFCT	Application FCT entries
DFHDCT01	User DCT SDSCI entries
DFHDCT02	User DCT EXTRA entries
DFHDCT03	User DCT INDIRECT entries
DFHDCT04	User DCT INTRA entries
APDCT01	Application SDSCI entries
APDCT02	Application DCT EXTRA entries
APDCT03	Application DCT INDIRECT entries
APDCT04	Application DCT INTRA entries
APACT01	DL/I DLZACT type program
APACT02	DL/I DLZACT type buffer

Figure 37. SSX/VSE Members for Updating CICS/DOS/VS Tables

If you decide not to migrate certain applications, edit the appropriate VSE/ICCF members, and remove the entries that are no longer required. When you edit the AP members, columns 73 to 80 show the name of the application to which each entry belongs.

Once you have restored and edited the members (if necessary):

1. Copy the skeletons DFHPCTSP, DHFPPTSP, DFHFCTSP, and DFHDCTSP into the VSE/ICCF library with the SSX/VSE members. These skeletons for CICS/DOS/VS tables are in VSE/ICCF library 59.

2. Add /INCLUDE statements to the VSE/SP skeletons for the old SSX/VSE members.

3. Assemble the CICS/DOS/VS table.

For example, to add transaction IDs to DFHPCTSP, you would edit the copied skeleton and locate the box:

```
LOCAL ENTRIES SHOULD BE PLACED BELOW THIS BOX
```

Then you would add the following statements:

```
/INCLUDE DFHPCT
/INCLUDE APPCT
```

This includes your old SSX/VSE PCT entries into the VSE/SP PCT at assembly time.

Repeat this for the other copied skeletons. For DFHDCTSP, you have to include the SSX/VSE members at four different places in the skeleton, depending on entry type.

Note: If you have SDSCI entries in either DFHDCT01 or APDCT01, you have to make the correct assignments required for them in the CICS/DOS/VS startup job for your VSE/SP system.

CICS/DOS/VS Startup Overrides

The VSE/ICCF member APSTO has parameters that were used in your SSX/VSE system to override information in the System Initialization Table (DFHSIT). If you wish, you can use this information to modify DFHSITSP. VSE/SP provides a skeleton for this table in VSE/ICCF library 59.

CICS/DOS/VS Initialization and Shutdown

In your SSX/VSE system, the members APPLT01, APPLT02, and APPLT03 specify which – if any – programs should run during CICS/DOS/VS startup or shutdown. APPLT01 is used for initialization of CICS/DOS/VS. APPLT02 and APPLT03 are for the first and second CICS/DOS/VS quiesce stages, respectively.

You can use the information in these members to tailor DFHPLTI and DFHPLTSD. Skeletons for these tables are in VSE/ICCF library 59.

Note: *In SSX/VSE, you could use the member APSTJ to specify if certain JCL statements or programs were to run before CICS/DOS/VS startup. In addition, member APSTJ1 was available for JCL statements or programs that were to run after CICS/DOS/VS was shut down. This was done before the partition for CICS/DOS/VS was deactivated.*

You can use the information from APSTJ and APSTJ1 to modify SKCICS, the VSE/SP skeleton for starting CICS/DOS/VS in F2. The definitions from APSTJ1 can be added to the end of the CICS/DOS/VS startup procedure.

CICS/DOS/VS Temporary Storage

VSE/ICCF member APTST contains CICS/DOS/VS TST entries that may have been imported via APPINST. If you wish, you can enter an /INCLUDE statement for APTST in DFHTSTSP. VSE/SP provides a skeleton for this table in VSE/ICCF library 59.

APTEMP – if available – shows changes to the VSE/VSAM file specifications for CICS/DOS/VS temporary storage. You can compare its information with the VSE/VSAM file definitions for temporary storage that are used in VSE/SP.

Additional Considerations

Restoring VSE/VSAM Files

You can restore the VSE/VSAM user files that you backed up on your SSX/VSE system using the restore dialogs of the Interactive Interface. These dialogs allow you to specify a user catalog for your old files. After you have restored your files on the VSE/SP system, you must define the file name and generate a label for each file. Use option 2 (*Define an Alternate Name*) of the *Define an Alternate Index or Name* dialog (fast path 224). Define a file name for each file that you have restored. The dialog will automatically generate and catalog the necessary labels.

Be sure that you do not have copies of any file starting with IES, INW, DFH on your backup tape. Restoring SSX/VSE files with these names will destroy important VSE/SP internal information.

If you want to transfer the contents of the INWFILE from your SSX/VSE system to the VSE/SP Host Transfer File:

1. Back up the INWFILE on tape using a VSE/VSAM **REPRO** command.

2. Define the VSE/SP Host Transfer File using the skeleton provided by VSE/SP. This is *SKIWSTF* of VSE/ICCF library 59.

3. Restore the INWFILE to the Host Transfer File using another VSE/VSAM REPRO command.

The manual *IBM VSE/SP Administration* shows sample job streams for the REPRO commands.

Remote Application Panel

If you want to create a remote application panel for your VSE/SP system, review your printouts of IESUSSCD and IESUSSTX. These members in VSE/ICCF library 4 were used in SSX/VSE to define the *Remote Applications* panel.

VSE/SP provides the skeleton *SKVTMUSS* to help you define remote application panels. This skeleton is a member of VSE/ICCF library 59.

The job created by the skeleton creates the *VTAM Application Selection Menu*. Users can access this panel via **PF4** (REMOTE APPLICATIONS) from the *VSE/SP Online* panel that is used for signing on to the system.

VSE/POWER PNET and BSC Definitions

In SSX/VSE, member IESPNDT was used to create a node definition table for VSE/POWER (SDLC lines). Two other members were used for BSC definitions:

```
IESPWRSK  -  BSC lines
IESPNDTB  -  BSC node definition table
```

VSE/SP provides the following skeletons in VSE/ICCF library 59 to help you create VSE/POWER PNET and BSC definitions:

Member Name	Use
SKPWRNDT	Create PNET network definition table.
SKPWRSNA	Define SDLC work stations.
SKPWRBSC	Define POWER BSC lines and work stations.

Figure 38. Skeletons for VSE/POWER PNET and BSC Definitions

POWER Printer Addresses

The POWER printer addresses defined in the POWER startup job are different in SSX/VSE and VSE/SP. If you migrate SSX/VSE jobs that have a printer address in the * $$ LST control statement, you must add these addresses in the PRINTERS= statement in the VSE/SP POWER startup procedure (skeleton SKPWSTRT in library 59).

Partition Allocations

Partition allocations are different in SSX/VSE and VSE/SP. To modify the VSE/SP partition allocations to your requirements, use the skeletons SKALLCxx in library 59.

Date Format

In SSX/VSE the format of the date mm/dd/yy or dd/mm/yy can be selected during installation or reconfiguration. This is not possible in VSE/SP. To change the default format mm/dd/yy to dd/mm/yy, add the parameter DATE=DMY in the STDOPT statement in skeleton SKJCL0 in library 59.

Programmer Logical Units

The number of programmer logical units (SYSxxx) provided for each partition is different in SSX/VSE and VSE/SP. You can check the available number with the statement

```
0 LISTIO nn
```

where nn is the partition ID.

To increase the number of programmer logical units, change the corresponding parameter in the NPGR statement in skeleton SKALLCxx in library 59.

Number of Directory Entries of VSE/ICCF Libraries

In VSE/SP, a maximum of 200 directory entries is defined for the VSE/ICCF user libraries. To increase this number, select

6 (Command Mode)

in the initial *VSE/SP Function Selection* panel. Now that you have accessed the VSE/ICCF environment, enter the command:

```
$DTSUTIL ALTER LIB(25) MAXDIR(500)
```

The above example will increase the maximum number of directory entries for library 25 to 500.

Installing Programs

In order to transfer your programs from the SSX/VSE private libraries (USERxxx) to VSE/SP, make a backup of these libraries using the SSX/VSE *Save/Restore* dialog.

In order to restore the SSX/VSE libraries on your VSE/SP system, use the dialog *Restore VSE Libraries from Tape* (fast path 371). This dialog restores the SSX/VSE libraries, which are in the old format, to new VSE/SP libraries. The libraries are automatically converted to the new VSE/SP format.

Networking Information

The network skeleton that you may have used for SSX/VSE is very similar to the one for VSE/SP. You should have a copy (or copies) of the completed skeleton on backup tape. Before completing the networking skeleton for VSE/SP, print the SSX/VSE member(s) and review that information.

Appendix A. Supported Hardware

This appendix lists the IBM-supplied hardware devices supported by VSE/SP.

When planning your system configuration, note that:

- IBM may have announced other processors or input/output devices as supported by VSE/SP after this manual was printed. Your IBM representative will be glad to provide you with the latest information.
- The manual *Introducing the IBM 9370 Information System*, GA24-4030, has details about the hardware available with IBM 9370 processors.

In this appendix, devices are listed by type and number. Model information is given only if this is of significance.

IBM-supplied devices that link to a channel-attached communication control unit are supported by VSE/SP through this control unit. Some of the listed devices may be accessible for data transfer only if you write your own channel program.

Processors

You can install VSE/SP as an independent system on IBM processors with a minimum of one megabyte of processor storage. This includes:

System/370 Processors	4300 Processors	9370 Processors
135-II	4321	9373
138	4331	9375
145 [1]	4341	9377
148	4361	
155-II [2]	4381 [3]	
158 [3]		
3031 [3]		
3033 [3]		

[1] Requires floating point feature, CPU timer, and clock comparator

[2] Requires floating point feature

[3] No multiprocessor mode

The maximum processor storage size supported by VSE/SP is 16 megabytes. When installed under VM/SP, VSE/SP can also run under other processors than those listed above. Two megabytes of processor storage are required, however.

System Consoles

VSE/SP requires a system (operator) console. To meet this requirement for a standalone environment, your system can use one of the following consoles:

IBM 3210
IBM 3215
IBM 3277 (Model 2)
IBM 3278 (Model 2)
IBM 3278 (Model 2A)
IBM 3279 (Models S2A, S2B, 2X)
IBM 3279 (Model 2C)
IBM PC AT-2 (for 937x processors)
with high density double diskette drive.

Notes:

1. *System software supports base colors (white, green, blue, and red) for the IBM 3279.*

2. *When VSE/SP is used as a guest machine under VM/SP, additional devices can also be used as the system console.*

Local Display Stations

VSE/SP requires at least one local display station with the following characteristics:

1. 24-line screen (80 characters per line) and at least 10 Program Function (PF) keys.

2. Supported by ACF/VTAM or BTAM-ES, whichever you choose during initial installation.

Local installation of the following display stations is supported:

IBM 3178 (Models C10 and C20)
IBM 3179
IBM 3180
IBM 3277 (Model 2)
IBM 3278 (Models 2 - 5)
IBM 3279 (Models S2A, S2B, S3A, S3B, S3G, 2X, and 3X)
IBM 3290
IBM 5555
IBM 8775 (Models 1 and 2)

The asynchronous four-line communication adapter (#6032) provides for ASCII-3270 protocol conversion. It is supported as a 3174. This allows running 3270 CICS/DOS/VS applications on ASCII.

Personal Computers

VSE/SP 3.1 supports use of any IBM Personal Computer with 3270 Emulation as a system terminal.

VSE/SP 3.1 provides IWS support, that is, file transfer between a PC and VSE/SP for the IBM Personal Computers listed in the next figure. In the figure:

Communication Adapter

1 = IBM PC 3278/79 Emulation Adapter
2 = IBM 3270 System Adapter (integrated in IBM 3270 PC and IBM 5550 PC)
3 = IBM PC SDLC Communication Adapter
4 = IBM PC Asynchronous Communication Adapter
5 = IBM Token Ring Newtork PC Adapter

Control Program

1 = IBM PC 3270 Emulation Program, Entry Level
2 = IBM PC 3270 Emulation Program
3 = IBM 3270-PC Control Program
4 = IBM 3270-PC Graphics Control Program
5 = IBM PC/Host File Transfer and Emulator Program
6 = IBM Japanese/Korean/PRC 3270 Personal Computer (Graphics) System - TCA/SNA and TCA/non-SNA
7 = IBM Japanese/Korean/PRC 3270 Personal Computer (Graphics) System - Single Station

Host Connections

1 = IBM 3174/3274 Control Unit – CUT
2 = IBM 3174/3274 Control Unit – DFT
3 = IBM 4300 Display Printer Adapter – CUT
4 = IBM 9370 Work Station Subsystem Controller or IBM 4361 Work Station Adapter – CUT or DFT
5 = IBM 9370 Telecommunications Subsystem Controller, IBM 4300 Integrated Communication Adapter, or IBM 37xx Communication Controller – DFT
6 = IBM 3708 Network Conversion Unit or IBM 3710 Network Controller – CUT
7 = IBM 3174-01L Control Unit with IBM Token Ring Network 3270 Gateway Feature (3025) - DFT

Note that the manual *IBM VSE/SP System Planning* has information about CUT and DFT attachment.

IBM Personal Computers that have an SDLC Communication Adapter, SNA 3270 Emulation, and the RJE Support Program installed can be used in a

VSE/SP system as Remote Job Entry (RJE) work stations (no file transfer). These devices are attached via a remote line like a 3274-51C control unit.

Refer to *IBM VSE/SP Using IBM 3270 Display Stations and Personal Computers* for more information.

When reading the figure, move from left to right. For example, IWS supports an IBM PC XT/AT that has an IBM 3279/79 Emulation Adapter and an IBM PC 3270 Emulation Program, Entry Level. The PC can be attached to the host in one of four possible ways.

	Communication Adapter					Control Program							Possible Host Connections						
PC	1	2	3	4	5	1	2	3	4	5	6	7	1	2	3	4	5	6	7
IBM PC XT/AT	X					X							X		X	X			
	X						X							X					
					X*		X*												X*
			X				X										X		
				X						X								X	
IBM 6150 PC RT	X					X							X	X	X	X			
IBM 3270 PC XT/AT		X						X					X	X	X	X			
IBM 3270 PC G/GX		X							X					X		X			
IBM 5550 Multistations		X									X			X		X			
			X									X					X		

* For PCs connected to a 3174-01L control unit and the IBM Token Ring Network, Version 3 of the IBM 3270 PC Emulation Program is required.

Information for defining PCs in an IBM Token Ring Network is given in *IBM VSE/SP Communication and Networking.*

Disk Devices

CKD Devices	FBA Devices
IBM 2311 [1 2]	IBM 3310 [1 2 4 6]
IBM 2314/19 [1 2]	IBM 3370-1 [4 6]
IBM 3330-1 [1]	IBM 3370-2 [4 6]
IBM 3330-11 [1]	IBM 9332-400 [4 6]
IBM 3340-70 [1]	IBM 9335 [4 6]
IBM 3340-70F [1]	
IBM 3344 [1 3]	
IBM 3350 [4]	
IBM 3375 [5]	
IBM 3380 [5]	
IBM 3380-E [5]	

1 Supported as input/output device for user data. Not supported for initial installation of VSE/SP 3.1.

2 Not supported for sharing of data across computing systems.

3 Supported as an IBM 3340, with one head/disk assembly of the IBM 3344 simulating four IBM 3348 Model 70 data modules on IBM 3340 disk drives.

4 ISAM is not available for the device, unless the device is used in simulation or emulation mode (simulating or emulating a device which ISAM supports).

5 ISAM is not supported for this device.

6 DAM is not supported for this device.

Magnetic Tape Devices

IBM 2401
IBM 2415
IBM 2420
IBM 3410/11
IBM 3420
IBM 3422
IBM 3430
IBM 3480-I/II Tape Subsystem
IBM 8809
IBM 9347

Punched Card Devices

IBM 1442 Read/Punch (Model N1)
IBM 1442 Punch (Model N2)
IBM 2501 Reader
IBM 2520 Read/Punch (Model B1)
IBM 2520 Punch (Models B2 and B3)
IBM 2540 Read/Punch
IBM 2560 Multifunction Card Machine
IBM 2596 Read/Punch (See Note.)
IBM 3505 Reader
IBM 3525 Punch
IBM 5424 Multifunction Card Unit
IBM 5425 Multifunction Card Unit

Note: You cannot use these devices as a *system* input or *system* output device.

Printers

IBM 1403
IBM 1443
IBM 3200 (Supported like an IBM 3800. See Note.)
IBM 3203 (Models 4 and 5)
IBM 3211
IBM 3262 (Models 1, 5, and 11)
IBM 3289 (Model 4)
IBM 3800 (Models 1 and 3. See Note.)
IBM 3820
IBM 4245 (Models 12 and 20)
IBM 4248 (All models)
IBM 5203

Note: You must order the logical input/output support separately. For ordering details, contact your IBM marketing representative.

Terminal Printers

IBM 3213 (For use with the console of a 3158 processor.)
IBM 3262 (Models 3 and 13)
IBM 3268 (Model 2)
IBM 3284
IBM 3286
IBM 3287 (Models 1, 2, 1C, and 2C)
IBM 3288
IBM 3289 (Models 1 and 2)
IBM 4224
IBM 4234
IBM 4245 (Models 12D and 20D)
IBM 5210

IBM 5553
IBM 5557

Optical and Magnetic Character Reader Equipment

IBM 1255 [1]
IBM 1259 [1]
IBM 1270 [1]
IBM 1275 [1]
IBM 1287
IBM 1288
IBM 1419 [2]
IBM 3881
IBM 3886
IBM 3890 [3]

1 Supported like an IBM 1419. The IBM 1270 and 1275 are not available in the United States.

2 To use an IBM 1419 with a dual address adapter, you must install the source code available on the VSE/SP distribution tapes.

3 You must order the logical input/output support separately. For ordering, contact your IBM representative.

Miscellaneous Input/Output Devices

IBM 3540 Diskette I/O Unit [1]
Feature 3401 Diskette Drive for IBM 4331 [2]
IBM 7443 Service Record File [3]
IBM 7770 Audio Response Unit

1 Supported as a card input/output device.

2 Supported like an IBM 3540.

3 Used on the IBM 3031 service support console.

Communication Control Units

Support is available for the devices that you can attach to an Integrated Communication Adapter of an IBM 4300 processor, to 937x processors, or to the following communication control units:

IBM 2701
IBM 2702
IBM 2703
IBM 3174 (All local non-SNA and SNA models)

IBM 3272
IBM 3274 (All local non-SNA and SNA models)
IBM 37xx
IBM 3791L (A local communication controller)

Remote Devices/Subsystems

You can install the IBM devices shown in the following table over SDLC link connections. For information about attaching other devices via SDLC links or devices that use BSC line protocol, ask your IBM representative.

IBM DEVICE OR SUBSYSTEM	CONTROL UNIT
3270 Information Display System (See the Note on the next page.)	3174-1R, 2R, 3R 3174-5xR 3274-21C 3274-31C, 51C 3274-41C, 61C 3274-52C 3276-12, 13, 14
5550 Display System (single device)	5553 5555 5557
3770 Data Communication System	3771-1, 2, 3 3773-1, 2, 3 3774-1, 2 3775-1 3776-1, 2 3777-1
3600 / 4700 Finance Communication System	3601 3602 4701
3630/3640 Plant Communication System	3631 3632 8100
3650 Retail Store System	3651-A50, B50
3660 Supermarket System	3651-A60, B60 3661
3680 Programmable Store System	3684
IBM Personal Computers (See "Personal Computers" on page 102.)	
Scanmaster	8815
3790 Communication System	3791
3820 Printer	3820
5520 Administrative System	5520
5280 Distributed Data System	5280
6670 Information Distributor	6670

IBM DEVICE OR SUBSYSTEM	CONTROL UNIT
8100 Information System	8130 8140
8775 Display Terminal	8775-11, 12
Series/1	Series/1
System/34	System/34
System/36	System/36
System/38	System/38

Note: The following devices can be attached to control units supported for the IBM 3270 Information Display System:

IBM 3178 (Models C10 and C20)
IBM 3179
IBM 3180
IBM 3262 (Models 3 and 13)
IBM 3268 (Model 2)
IBM 3278 (Models 2 - 5)
IBM 3279 (Models S2A, S2B, S3A, S3B, S3G, 2X, and 3X)
IBM 3287 (Models 1, 2, 1C, and 2C)
IBM 3289 (Models 1 and 2)
IBM 3290
IBM 5210 (Models G01 and G02)
IBM 5550

Appendix B. VSE/SP Disk Layouts

The figures in this appendix show the space that is reserved on DOSRES and SYSWK1 for VSE/SP. If values have changed since this manual was printed, the *Program Directory* that you receive with your VSE/SP distribution tapes will document the changes.

To help you more easily study the figures, DOSRES for a disk type is on the left-hand page, and SYSWK1 is on the right-hand page.

3350 Disks

DOSRES -------- 3350

Start Track	Number of Tracks	File ID
1	1859	VSE.SYSRES.LIBRARY
1860	30	DOS.LABEL.FILE.CPUID.AREA1
1890	12	VSE.POWER.QUEUE.FILE
1902	18	UNUSED.SPACE
1920	90	VSAM.MASTER.CATALOG
2010	2340	VSAM.DATA.SPACE.DOSRES
		%DOS.WORKFILE.SYSLNK
		VSE.CONTROL.FILE
		VSE.TEXT.REPSTORY.FILE
		VSE.MESSAGES.ONLINE
		VSE.ONLINE.PROB.DET.FILE
		VSE.MESSAGE.ROUTING.FILE
		%DOS.WORKFILE.SYS001.RECOVER
		CICS.AUTO.STATS.A
		CICS.AUTO.STATS.B
		CICS.TD.INTRA
		DFHTEMP
		CICS.CSD
		CICS.RSD
4350	30	ALTERNAT.VTOC.LOCATION
4380	540	PAGING.DATA.SET.ONE
4920	2130	VSE.PRD1.LIBRARY
7050	3000	LIBR.DATA.SPACE.DOSRES
		VSE.PRD2.LIBRARY
10050	60	CICS.SYSTEM.LOG.A
10110	60	CICS.SYSTEM.LOG.B
10170	60	CICS.USER.JOURNAL.A
10230	60	CICS.USER.JOURNAL.B
10290	540	PAGING.DATA.SET.THREE
10830	1080	PAGING.DATA.SET.FOUR
11910	4710	UNUSED.SPACE
16620	30	VTOC

Figure 39. DOSRES Layout for a 3350 Disk

SYSWK1 -------- 3350

Start Track	Number of Tracks	File ID
1	1859	SYS.NEW.RES
1860	180	WORK.HIST.FILE
2040	4500	LIBR.DATA.SPACE.SYSWK1
6540	1260	VSE.DUMP.LIBRARY
7800	120	VSESP.USER.CATALOG
7920	1020	VSAM.DATA.SPACE.SYSWK1 %DOS.WORKFILE.SYS001 to %DOS.WORKFILE.SYS004 %DOS.WORKFILE.SYS002.RECOVER %DOS.WORKFILE.SYS001.SORT %WORK.FILE.N11 to %WORK.FILE.N54 CICS.DUMPA CICS.DUMPB CICS.AUXTRACE
8940	30	ALTERNAT.VTOC.LOCATION
8970	2970	ICCF.LIBRARY
11940	540	PAGING.DATA.SET.TWO
12480	2850	VSE.POWER.DATA.FILE
15330	90	VSE.POWER.ACCOUNT.FILE
15420	30	VSESP.JOB.MANAGER.FILE
15450	180	VSE.HARDCOPY.FILE
15630	30	VSE.RECORDER.FILE
15660	180	VSE.SYSTEM.HISTORY.FILE
15840	20	INFO.ANALYSIS.DUMP.MGNT.FILE
15860	10	INFO.ANALYSIS.EXT.RTNS.FILE
15870	30	VTAM.TRACE.FILE
15900	30	CU370X.LOAD.FILE
15930	30	CU370X.DIAG.FILE
15960	30	CICS.MSGUSR
15990	630	UNUSED.SPACE
16620	30	VTOC

Figure 40. SYSWK1 Layout for a 3350 Disk

3370 Disks

DOSRES -------- 3370-1

Start Block	Number of Blocks	File ID
2	55116	VSE.SYSRES.LIBRARY
55118	744	DOS.LABEL.FILE.CPUID.AREA1
55862	372	VSE.POWER.QUEUE.FILE
56234	372	UNUSED.SPACE
56606	2232	VSAM.MASTER.CATALOG
58838	62372	VSAM.DATA.SPACE.DOSRES
		%DOS.WORKFILE.SYSLNK
		VSE.CONTROL.FILE
		VSE.TEXT.REPSTORY.FILE
		VSE.MESSAGES.ONLINE
		VSE.ONLINE.PROB.DET.FILE
		VSE.MESSAGE.ROUTING.FILE
		%DOS.WORKFILE.SYS001.RECOVER
		CICS.AUTO.STATS.A
		CICS.AUTO.STATS.B
		CICS.TD.INTRA
		DFHTEMP
		CICS.CSD
		CICS.RSD
121210	62	ALTERNAT.VTOC.LOCATION
121272	16864	PAGING.DATA.SET.ONE
138136	63240	VSE.PRD1.LIBRARY
201376	90768	LIBR.DATA.SPACE.DOSRES
		VSE.PRD2.LIBRARY
292144	2976	CICS.SYSTEM.LOG.A
295120	2976	CICS.SYSTEM.LOG.B
298096	2976	CICS.USER.JOURNAL.A
301072	2976	CICS.USER.JOURNAL.B
304048	16864	PAGING.DATA.SET.THREE
320912	31920	PAGING.DATA.SET.FOUR
352832	205106	UNUSED.SPACE
557938	62	VTOC

Figure 41. DOSRES Layout for a 3370-1 Disk

SYSWK1 -------- 3370-1

Start Block	Number of Blocks	File ID
2	55116	SYS.NEW.RES
55118	5208	WORK.HIST.FILE
60326	136152	LIBR.DATA.SPACE.SYSWK1
196478	37200	VSE.DUMP.LIBRARY
233678	2976	VSESP.USER.CATALOG
236654	67704	VSAM.DATA.SPACE.SYSWK1 %DOS.WORKFILE.SYS001 to %DOS.WORKFILE.SYS004 %DOS.WORKFILE.SYS002.RECOVER %DOS.WORKFILE.SYS001.SORT %WORK.FILE.N11 to %WORK.FILE.N54 CICS.DUMPA CICS.DUMPB CICS.AUXTRACE
304358	62	ALTERNAT.VTOC.LOCATION
304420	75144	ICCF.LIBRARY
379564	17040	PAGING.DATA.SET.TWO
396604	73656	VSE.POWER.DATA.FILE
470270	2232	VSE.POWER.ACCOUNT.FILE
472502	100	VSESP.JOB.MANAGER.FILE
472602	4994	VSE.HARDCOPY.FILE
477596	752	VSE.RECORDER.FILE
478348	5208	VSE.SYSTEM.HISTORY.FILE
483556	186	INFO.ANALYSIS.DUMP.MGNT.FILE
483742	62	INFO.ANALYSIS.EXT.RTNS.FILE
483804	500	VTAM.TRACE.FILE
484304	1600	CU370X.LOAD.FILE
485904	1000	CU370X.DIAG.FILE
486904	340	CICS.MSGUSR
487244	70694	UNUSED.SPACE
557938	62	VTOC

Figure 42. SYSWK1 Layout for a 3370-1 Disk

DOSRES -------- 3370-2

Start Block	Number of Blocks	File ID
2	55116	VSE.SYSRES.LIBRARY
55118	744	DOS.LABEL.FILE.CPUID.AREA1
55862	372	VSE.POWER.QUEUE.FILE
56234	372	UNUSED.SPACE
56606	2232	VSAM.MASTER.CATALOG
58838	62372	VSAM.DATA.SPACE.DOSRES
		%DOS.WORKFILE.SYSLNK
		VSE.CONTROL.FILE
		VSE.TEXT.REPSTORY.FILE
		VSE.MESSAGES.ONLINE
		VSE.ONLINE.PROB.DET.FILE
		VSE.MESSAGE.ROUTING.FILE
		%DOS.WORKFILE.SYS001.RECOVER
		CICS.AUTO.STATS.A
		CICS.AUTO.STATS.B
		CICS.TD.INTRA
		DFHTEMP
		CICS.CSD
		CICS.RSD
121210	62	ALTERNAT.VTOC.LOCATION
121272	16864	PAGING.DATA.SET.ONE
138136	63240	VSE.PRD1.LIBRARY
201376	90768	LIBR.DATA.SPACE.DOSRES
		VSE.PRD2.LIBRARY
292144	2976	CICS.SYSTEM.LOG.A
295120	2976	CICS.SYSTEM.LOG.B
298096	2976	CICS.USER.JOURNAL.A
301072	2976	CICS.USER.JOURNAL.B
304048	16864	PAGING.DATA.SET.THREE
320912	33800	PAGING.DATA.SET.FOUR
352832	359858	UNUSED.SPACE
712690	62	VTOC

Figure 43. DOSRES Layout for a 3370-2 Disk

SYSWK1 -------- 3370-2

Start Block	Number of Blocks	File ID
2	55116	SYS.NEW.RES
55118	5208	WORK.HIST.FILE
60326	136152	LIBR.DATA.SPACE.SYSWK1
196478	37200	VSE.DUMP.LIBRARY
233678	2976	VSESP.USER.CATALOG
236654	67704	VSAM.DATA.SPACE.SYSWK1
		%DOS.WORKFILE.SYS001
		to
		%DOS.WORKFILE.SYS004
		%DOS.WORKFILE.SYS002.RECOVER
		%DOS.WORKFILE.SYS001.SORT
		%WORK.FILE.N11
		to
		%WORK.FILE.N54
		CICS.DUMPA
		CICS.DUMPB
		CICS.AUXTRACE
304358	62	ALTERNAT.VTOC.LOCATION
304420	75144	ICCF.LIBRARY
379564	17040	PAGING.DATA.SET.TWO
396604	73656	VSE.POWER.DATA.FILE
470270	2232	VSE.POWER.ACCOUNT.FILE
472502	100	VSESP.JOB.MANAGER.FILE
472602	4994	VSE.HARDCOPY.FILE
477596	752	VSE.RECORDER.FILE
478348	5208	VSE.SYSTEM.HISTORY.FILE
483556	186	INFO.ANALYSIS.DUMP.MGNT.FILE
483742	62	INFO.ANALYSIS.EXT.RTNS.FILE
483804	500	VTAM.TRACE.FILE
484304	1600	CU370X.LOAD.FILE
485904	1000	CU370X.DIAG.FILE
486904	340	CICS.MSGUSR
487244	225446	UNUSED.SPACE
712690	62	VTOC

Figure 44. SYSWK1 Layout for a 3370-2 Disk

3375 Disks

DOSRES -------- 3375

Start Track	Number of Tracks	File ID
1	1103	VSE.SYSRES.LIBRARY
1104	48	DOS.LABEL.FILE.CPUID.AREA1
1152	6	VSE.POWER.QUEUE.FILE
1158	6	UNUSED.SPACE
1164	120	VSAM.MASTER.CATALOG
1284	2664	VSAM.DATA.SPACE.DOSRES
		%DOS.WORKFILE.SYSLNK
		VSE.CONTROL.FILE
		VSE.TEXT.REPSTORY.FILE
		VSE.MESSAGES.ONLINE
		VSE.ONLINE.PROB.DET.FILE
		VSE.MESSAGE.ROUTING.FILE
		%DOS.WORKFILE.SYS001.RECOVER
		CICS.AUTO.STATS.A
		CICS.AUTO.STATS.B
		CICS.TD.INTRA
		DFHTEMP
		CICS.CSD
		CICS.RSD
3948	12	ALTERNAT.VTOC.LOCATION
3960	324	PAGING.DATA.SET.ONE
4284	1272	VSE.PRD1.LIBRARY
5556	1800	LIBR.DATA.SPACE.DOSRES
		VSE.PRD2.LIBRARY
7356	48	CICS.SYSTEM.LOG.A
7404	48	CICS.SYSTEM.LOG.B
7452	48	CICS.USER.JOURNAL.A
7500	48	CICS.USER.JOURNAL.B
7548	324	PAGING.DATA.SET.THREE
7872	648	PAGING.DATA.SET.FOUR
8520	2976	UNUSED.SPACE
11496	12	VTOC

Figure 45. DOSRES Layout for a 3375 Disk

SYSWK1 -------- 3375

Start Track	Number of Tracks	File ID
1	1103	SYS.NEW.RES
1104	90	WORK.HIST.FILE
1200	2700	LIBR.DATA.SPACE.SYSWK1
3900	744	VSE.DUMP.LIBRARY
4644	168	VSESP.USER.CATALOG
4812	1104	VSAM.DATA.SPACE.SYSWK1 %DOS.WORKFILE.SYS001 to %DOS.WORKFILE.SYS004 %DOS.WORKFILE.SYS002.RECOVER %DOS.WORKFILE.SYS001.SORT %WORK.FILE.N11 to %WORK.FILE.N54 CICS.DUMPA CICS.DUMPB CICS.AUXTRACE
5916	12	ALTERNAT.VTOC.LOCATION
5928	2376	ICCF.LIBRARY
8304	336	PAGING.DATA.SET.TWO
8640	2316	VSE.POWER.DATA.FILE
10956	72	VSE.POWER.ACCOUNT.FILE
11028	12	VSESP.JOB.MANAGER.FILE
11040	24	VSE.HARDCOPY.FILE
11064	36	VSE.RECORDER.FILE
11100	90	VSE.SYSTEM.HISTORY.FILE
11190	8	INFO.ANALYSIS.DUMP.MGNT.FILE
11198	4	INFO.ANALYSIS.EXT.RTNS.FILE
11202	24	VTAM.TRACE.FILE
11226	48	CU370X.LOAD.FILE
11274	48	CU370X.DIAG.FILE
11322	24	CICS.MSGUSR
11346	150	UNUSED.SPACE
11496	12	VTOC

Figure 46. SYSWK1 Layout for a 3375 Disk

3380 Disks

DOSRES -------- 3380-A or 3380-D

Start Track	Number of Tracks	File ID
1	899	VSE.SYSRES.LIBRARY
900	45	DOS.LABEL.FILE.CPUID.AREA1
945	4	VSE.POWER.QUEUE.FILE
949	11	UNUSED.SPACE
960	105	VSAM.MASTER.CATALOG
1065	2040	VSAM.DATA.SPACE.DOSRES
		%DOS.WORKFILE.SYSLNK
		VSE.CONTROL.FILE
		VSE.TEXT.REPSTORY.FILE
		VSE.MESSAGES.ONLINE
		VSE.ONLINE.PROB.DET.FILE
		VSE.MESSAGE.ROUTING.FILE
		%DOS.WORKFILE.SYS001.RECOVER
		CICS.AUTO.STATS.A
		CICS.AUTO.STATS.B
		CICS.TD.INTRA
		DFHTEMP
		CICS.CSD
		CICS.RSD
3105	15	ALTERNAT.VTOC.LOCATION
3120	240	PAGING.DATA.SET.ONE
3360	1020	VSE.PRD1.LIBRARY
4380	1470	LIBR.DATA.SPACE.DOSRES
		VSE.PRD2.LIBRARY
5850	45	CICS.SYSTEM.LOG.A
5895	45	CICS.SYSTEM.LOG.B
5940	45	CICS.USER.JOURNAL.A
5985	45	CICS.USER.JOURNAL.B
6030	240	PAGING.DATA.SET.THREE
6270	480	PAGING.DATA.SET.FOUR
6750	6510	UNUSED.SPACE
13260	15	VTOC

Figure 47. DOSRES Layout for a 3380-A or 3380-D Disk

SYSWK1 -------- 3380-A or 3380-D

Start Track	Number of Tracks	File ID
1	899	SYS.NEW.RES
900	75	WORK.HIST.FILE
975	2205	LIBR.DATA.SPACE.SYSWK1
3180	600	VSE.DUMP.LIBRARY
3780	135	VSESP.USER.CATALOG
3915	840	VSAM.DATA.SPACE.SYSWK1 %DOS.WORKFILE.SYS001 to %DOS.WORKFILE.SYS004 %DOS.WORKFILE.SYS002.RECOVER %DOS.WORKFILE.SYS001.SORT %WORK.FILE.N11 to %WORK.FILE.N54 CICS.DUMPA CICS.DUMPB CICS.AUXTRACE
4755	15	ALTERNAT.VTOC.LOCATION
4770	1785	ICCF.LIBRARY
6555	240	PAGING.DATA.SET.TWO
6795	1740	VSE.POWER.DATA.FILE
8535	60	VSE.POWER.ACCOUNT.FILE
8595	15	VSESP.JOB.MANAGER.FILE
8610	30	VSE.HARDCOPY.FILE
8640	45	VSE.RECORDER.FILE
8685	75	VSE.SYSTEM.HISTORY.FILE
8760	10	INFO.ANALYSIS.DUMP.MGNT.FILE
8770	5	INFO.ANALYSIS.EXT.RTNS.FILE
8775	15	VTAM.TRACE.FILE
8790	45	CU370X.LOAD.FILE
8835	45	CU370X.DIAG.FILE
8880	30	CICS.MSGUSR
8910	4350	UNUSED.SPACE
13260	15	VTOC

Figure 48. SYSWK1 Layout for a 3380-A or 3380-D Disk

DOSRES -------- 3380-E

Start Track	Number of Tracks	File ID
1	899	VSE.SYSRES.LIBRARY
900	45	DOS.LABEL.FILE.CPUID.AREA1
945	4	VSE.POWER.QUEUE.FILE
949	11	UNUSED.SPACE
960	105	VSAM.MASTER.CATALOG
1065	2040	VSAM.DATA.SPACE.DOSRES
		%DOS.WORKFILE.SYSLNK
		VSE.CONTROL.FILE
		VSE.TEXT.REPSTORY.FILE
		VSE.MESSAGES.ONLINE
		VSE.ONLINE.PROB.DET.FILE
		VSE.MESSAGE.ROUTING.FILE
		%DOS.WORKFILE.SYS001.RECOVER
		CICS.AUTO.STATS.A
		CICS.AUTO.STATS.B
		CICS.TD.INTRA
		DFHTEMP
		CICS.CSD
		CICS.RSD
3105	15	ALTERNAT.VTOC.LOCATION
3120	240	PAGING.DATA.SET.ONE
3360	1020	VSE.PRD1.LIBRARY
4380	1470	LIBR.DATA.SPACE.DOSRES
		VSE.PRD2.LIBRARY
5850	45	CICS.SYSTEM.LOG.A
5895	45	CICS.SYSTEM.LOG.B
5940	45	CICS.USER.JOURNAL.A
5985	45	CICS.USER.JOURNAL.B
6030	240	PAGING.DATA.SET.THREE
6270	480	PAGING.DATA.SET.FOUR
6750	19785	UNUSED.SPACE
26535	15	VTOC

Figure 49. DOSRES Layout for a 3380-E Disk

SYSWK1 -------- 3380-E

Start Track	Number of Tracks	File ID
1	899	SYS.NEW.RES
900	75	WORK.HIST.FILE
975	2205	LIBR.DATA.SPACE.SYSWK1
3180	600	VSE.DUMP.LIBRARY
3780	135	VSESP.USER.CATALOG
3915	840	VSAM.DATA.SPACE.SYSWK1 %DOS.WORKFILE.SYS001 to %DOS.WORKFILE.SYS004 %DOS.WORKFILE.SYS002.RECOVER %DOS.WORKFILE.SYS001.SORT %WORK.FILE.N11 to %WORK.FILE.N54 CICS.DUMPA CICS.DUMPB CICS.AUXTRACE
4755	15	ALTERNAT.VTOC.LOCATION
4770	1785	ICCF.LIBRARY
6555	240	PAGING.DATA.SET.TWO
6795	1740	VSE.POWER.DATA.FILE
8535	60	VSE.POWER.ACCOUNT.FILE
8595	15	VSESP.JOB.MANAGER.FILE
8610	30	VSE.HARDCOPY.FILE
8640	45	VSE.RECORDER.FILE
8685	75	VSE.SYSTEM.HISTORY.FILE
8760	10	INFO.ANALYSIS.DUMP.MGNT.FILE
8770	5	INFO.ANALYSIS.EXT.RTNS.FILE
8775	15	VTAM.TRACE.FILE
8790	45	CU370X.LOAD.FILE
8835	45	CU370X.DIAG.FILE
8880	30	CICS.MSGUSR
8910	17625	UNUSED.SPACE
26535	15	VTOC

Figure 50. SYSWK1 Layout for a 3380-E Disk

9332 Disks

DOSRES -------- 9332 (200MB Layout)

Start Block	Number of Blocks	File ID
2	55186	VSE.SYSRES.LIBRARY
55188	584	DOS.LABEL.FILE.CPUID.AREA1
55772	365	VSE.POWER.QUEUE.FILE
56137	2190	VSAM.MASTER.CATALOG
58327	62342	VSAM.DATA.SPACE.DOSRES
		%DOS.WORKFILE.SYSLNK
		VSE.CONTROL.FILE
		VSE.TEXT.REPSTORY.FILE
		VSE.MESSAGES.ONLINE
		VSE.ONLINE.PROB.DET.FILE
		VSE.MESSAGE.ROUTING.FILE
		%DOS.WORKFILE.SYS001.RECOVER
		CICS.AUTO.STATS.A
		CICS.AUTO.STATS.B
		CICS.TD.INTRA
		DFHTEMP
		CICS.CSD
		CICS.RSD
120669	16863	PAGING.DATA.SET.ONE
137532	54750	VSE.PRD1.LIBRARY
192282	90520	LIBR.DATA.SPACE.DOSRES
		VSE.PRD2.LIBRARY
282802	77161	UNUSED.SPACE
359963	73	VTOC

Figure 51. DOSRES Layout for a 9332 Disk (200 MB Layout)

SYSWK1 -------- 9332 (200MB Layout)

Start Block	Number of Blocks	File ID
2	55186	SYS.NEW.RES
55188	3460	WORK.HIST.FILE
58692	32777	VSE.DUMP.LIBRARY
91469	2920	VSESP.USER.CATALOG
94389	45260	VSAM.DATA.SPACE.SYSWK1 %DOS.WORKFILE.SYS001 to %DOS.WORKFILE.SYS004 %DOS.WORKFILE.SYS002.RECOVER %DOS.WORKFILE.SYS001.SORT %WORK.FILE.N11 to %WORK.FILE.N54 CICS.DUMPA CICS.DUMPB CICS.AUXTRACE
139649	40150	ICCF.LIBRARY
179799	17009	PAGING.DATA.SET.TWO
196808	40150	VSE.POWER.DATA.FILE
236958	2190	VSE.POWER.ACCOUNT.FILE
239148	100	VSESP.JOB.MANAGER.FILE
239248	4994	VSE.HARDCOPY.FILE
244242	752	VSE.RECORDER.FILE
244994	3460	VSE.SYSTEM.HISTORY.FILE
248454	186	INFO.ANALYSIS.DUMP.MGNT.FILE
248640	73	INFO.ANALYSIS.EXT.RTNS.FILE
248713	500	VTAM.TRACE.FILE
249213	340	CICS.MSGUSR
249553	110410	UNUSED.SPACE
359963	73	VTOC

Figure 52. SYSWK1 Layout for a 9332 Disk (200 MB Layout)

DOSRES -------- 9332 (Standard Layout)

Start Block	Number of Blocks	File ID
2	55186	VSE.SYSRES.LIBRARY
55188	584	DOS.LABEL.FILE.CPUID.AREA1
55772	365	VSE.POWER.QUEUE.FILE
56137	219	UNUSED.SPACE
56356	2190	VSAM.MASTER.CATALOG
58546	62342	VSAM.DATA.SPACE.DOSRES
		%DOS.WORKFILE.SYSLNK
		VSE.CONTROL.FILE
		VSE.TEXT.REPSTORY.FILE
		VSE.MESSAGES.ONLINE
		VSE.ONLINE.PROB.DET.FILE
		VSE.MESSAGE.ROUTING.FILE
		%DOS.WORKFILE.SYS001.RECOVER
		CICS.AUTO.STATS.A
		CICS.AUTO.STATS.B
		CICS.TD.INTRA
		DFHTEMP
		CICS.CSD
		CICS.RSD
120888	73	ALTERNAT.VTOC.LOCATION
120961	16863	PAGING.DATA.SET.ONE
137824	63145	VSE.PRD1.LIBRARY
200969	90520	LIBR.DATA.SPACE.DOSRES
		VSE.PRD2.LIBRARY
291489	2920	CICS.SYSTEM.LOG.A
294409	2920	CICS.SYSTEM.LOG.B
297329	2920	CICS.USER.JOURNAL.A
300249	2920	CICS.USER.JOURNAL.B
303169	16863	PAGING.DATA.SET.THREE
320032	32000	PAGING.DATA.SET.FOUR
352032	7931	UNUSED.SPACE
359963	73	VTOC

Figure 53. DOSRES Layout for a 9332 Disk (Standard Layout)

SYSWK1 -------- 9332 (Standard Layout)

Start Block	Number of Blocks	File ID
2	55186	SYS.NEW.RES
55188	5208	WORK.HIST.FILE
60444	37084	VSE.DUMP.LIBRARY
97528	2920	VSESP.USER.CATALOG
100448	45260	VSAM.DATA.SPACE.SYSWK1
		%DOS.WORKFILE.SYS001
		to
		%DOS.WORKFILE.SYS004
		%DOS.WORKFILE.SYS002.RECOVER
		%DOS.WORKFILE.SYS001.SORT
		%WORK.FILE.N11
		to
		%WORK.FILE.N54
		CICS.DUMPA
		CICS.DUMPB
		CICS.AUXTRACE
145708	73	ALTERNAT.VTOC.LOCATION
145781	75044	ICCF.LIBRARY
220825	17009	PAGING.DATA.SET.TWO
237834	73584	VSE.POWER.DATA.FILE
311418	2190	VSE.POWER.ACCOUNT.FILE
313608	100	VSESP.JOB.MANAGER.FILE
313708	4994	VSE.HARDCOPY.FILE
318702	752	VSE.RECORDER.FILE
319454	5208	VSE.SYSTEM.HISTORY.FILE
324662	186	INFO.ANALYSIS.DUMP.MGNT.FILE
324848	62	INFO.ANALYSIS.EXT.RTNS.FILE
324910	500	VTAM.TRACE.FILE
325410	1600	CU370X.LOAD.FILE
327010	1000	CU370X.DIAG.FILE
328010	340	CICS.MSGUSR
328350	31613	UNUSED.SPACE
359963	73	VTOC

Figure 54. SYSWK1 Layout for a 9332 Disk (Standard Layout)

9335 Disks

DOSRES -------- 9335

Start Block	Number of Blocks	File ID
2	55165	VSE.SYSRES.LIBRARY
55167	639	DOS.LABEL.FILE.CPUID.AREA1
55806	355	VSE.POWER.QUEUE.FILE
56161	284	UNUSED.SPACE
56445	2130	VSAM.MASTER.CATALOG
58575	62196	VSAM.DATA.SPACE.DOSRES
		%DOS.WORKFILE.SYSLNK
		VSE.CONTROL.FILE
		VSE.TEXT.REPSTORY.FILE
		VSE.MESSAGES.ONLINE
		VSE.ONLINE.PROB.DET.FILE
		VSE.MESSAGE.ROUTING.FILE
		%DOS.WORKFILE.SYS001.RECOVER
		CICS.AUTO.STATS.A
		CICS.AUTO.STATS.B
		CICS.TD.INTRA
		DFHTEMP
		CICS.CSD
		CICS.RSD
120771	71	ALTERNAT.VTOC.LOCATION
120842	16864	PAGING.DATA.SET.ONE
137740	63048	VSE.PRD1.LIBRARY
200788	90738	LIBR.DATA.SPACE.DOSRES
		VSE.PRD2.LIBRARY
291526	2840	CICS.SYSTEM.LOG.A
294366	2840	CICS.SYSTEM.LOG.B
297206	2840	CICS.USER.JOURNAL.A
300046	2840	CICS.USER.JOURNAL.B
302886	16864	PAGING.DATA.SET.THREE
319750	31920	PAGING.DATA.SET.FOUR
351670	452973	UNUSED.SPACE
804643	71	VTOC

Figure 55. DOSRES Layout for a 9335 Disk

SYSWK1 -------- 9335

Start Block	Number of Blocks	File ID
2	55165	SYS.NEW.RES
55167	5208	WORK.HIST.FILE
60421	136107	LIBR.DATA.SPACE.SYSWK1
196528	37062	VSE.DUMP.LIBRARY
233590	2769	VSESP.USER.CATALOG
236359	67521	VSAM.DATA.SPACE.SYSWK1
		%DOS.WORKFILE.SYS001
		to
		%DOS.WORKFILE.SYS004
		%DOS.WORKFILE.SYS002.RECOVER
		%DOS.WORKFILE.SYS001.SORT
		%WORK.FILE.N11
		to
		%WORK.FILE.N54
		CICS.DUMPA
		CICS.DUMPB
		CICS.AUXTRACE
303880	71	ALTERNAT.VTOC.LOCATION
303951	74976	ICCF.LIBRARY
378927	17040	PAGING.DATA.SET.TWO
395967	73485	VSE.POWER.DATA.FILE
469452	2130	VSE.POWER.ACCOUNT.FILE
471582	100	VSESP.JOB.MANAGER.FILE
471682	4994	VSE.HARDCOPY.FILE
476676	752	VSE.RECORDER.FILE
477428	5208	VSE.SYSTEM.HISTORY.FILE
482636	186	INFO.ANALYSIS.DUMP.MGNT.FILE
482822	62	INFO.ANALYSIS.EXT.RTNS.FILE
482884	500	VTAM.TRACE.FILE
483384	1600	CU370X.LOAD.FILE
484984	1000	CU370X.DIAG.FILE
485984	340	CICS.MSGUSR
486324	318319	UNUSED.SPACE
804643	71	VTOC

Figure 56. SYSWK1 Layout for a 9335 Disk

Related IBM Publications

This appendix lists some, not all, of the publications written for the IBM programs included in VSE/SP 3.1. For complete listings, refer to a specific program's general information publications or library guide (when available).

Advanced Communications Function for VTAM Version 3, Release 1 (ACF/VTAM)

Network Program Products General Information, GC23-0108

Advanced Communications Function for VTAM Reference Summary, SC23-0135

Advanced Communications Function for VTAM Installation and Resource Definition, SC23-0111

Advanced Communications Function for VTAM Customization, SC23-0112

Advanced Communications Function for VTAM Programming, SC23-0115

Advanced Communications Function for VTAM Operation, SC23-0113

Advanced Communications Function for VTAM Diagnosis Guide, SC23-0116

Advanced Communications Function for VTAM Data Areas for VSE, LY30-5579

Advanced Communications Function for VTAM Messages and Codes, SC23-0114

Basic Telecommunications Access Method Extended Support Version 1, Release 1 (BTAM-ES)

Basic Telecommunications Access Method Extended Support General Information, GC38-0292

Basic Telecommunications Access Method Extended Support Installation, SC38-0294

Basic Telecommunications Access Method Extended Support Programming, SC38-0293

Basic Telecommunications Access Method Extended Support Messages, SC38-0295

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Glossary

This glossary defines terms as they are used in the VSE/SP library.
If you do not find the term you are looking for, refer to the index or to the manual *Vocabulary for Data Processing, Telecommunications, and Office Systems, GC20-1699.*

The glossary includes definitions published in the:

- *American National Dictionary for Information Processing*, copyright 1977 by the Computer and Business Equipment Manufacturers Association. Copies may be purchased from the American National Standards Institute, 1430 Broadway, New York, New York, 10018.
- *ISO Vocabulary of Data Processing*, developed by the International Standards Organization, Technical Committee 97, Subcommittee 1.

Definitions from draft proposals and working papers under development by the ISO subcommittee also have been used.

A definition included from one of the above sources is marked by an asterisk.

abend. Short for abnormal end of task. Termination of a CICS/DOS/VS task before its completion because of an error condition that cannot be handled by automatic recovery facilities.

access method. A program for moving data between virtual storage and input/output devices.

ACF. See Advanced Communications Function.

ACF/NCP. Advanced Communications Function for the Network Control Program. Synonym for *NCP*.

ACF/SSP. Advanced Communications Function for the System Support Programs. Synonym for *SSP*.

ACF/VTAM. (Advanced Communication Function for Virtual Telecommunications Access Method) An IBM licensed program that controls communication and the flow of data in an SNA network. It provides single-domain, multiple-domain, and interconnected network capability.

activate. To make a resource of a node ready to perform the functions for which it was designed. Contrast with *deactivate.*

active. (1) The state a resource is in when it has been activated and is operational. Contrast with *inactive, pending,* and *inoperative.* (2) Pertaining to a major or minor node that has been activated by VTAM. Most resources are activated as part of VTAM start processing or as the result of a VARY ACT command.

Advanced Communications Function (ACF). A group of IBM licensed programs (principally VTAM, TCAM, NCP, and SSP) that use the concepts of Systems Network Architecture (SNA), including distribution of function and resource sharing.

*** address.** See device address.

alternate index. In systems with VSE/VSAM, a collection of index entries related to a given base cluster and organized by an alternate key, that is, a key other than the prime key of the associated base cluster data records. Its function is to provide an alternate directory of locating records in the data component of a base cluster.

application program. A program written for or by a user; a program that applies to the user's own work. Often shortened in this manual to just application.

See also batch application and online application.

application program major node. A group of application program minor nodes. In the VTAM definition library, it is a member, book, or file that contains one or more APPL statements, which represent application programs. In MVS, it is a member of the library; in VSE, it is a book; and in VM, it is a CMS file of filetype VTAMLST.

ASCII. American National Standard Code for Information Interchange. The standard code, using a coded character set consisting of 7-bit coded characters, used for information interchange among data processing systems, data communication systems, and associated equipment. The ASCII set consists of control characters and graphic characters.

backup copy. A copy of a file or set of files that is kept for reference for the case that the original file or set of files is destroyed. In a VSE-based system, backup copies normally are done from disk to tape devices.

base file. In systems with VSE/VSAM, a key-sequenced or entry-sequenced file containing data. It can be accessed directly or via alternate indexes.

batch application. A set of programs that normally processes data without user interaction (an application to print a company payroll, for example). Such an application

uses a device, a data file, or the processor intensively for a longer time than online applications.

*** batch processing.** (1) Loosely, the processing of computer programs serially. (2) Pertaining to the technique of processing a set of computer programs such that each is completed before the next program of the set is started. (3) In real-time systems, the processing of related transactions that have been grouped together.

binary synchronous communication (BSC). (1) Communication using binary synchronous line discipline. (2) A uniform procedure, using a standardized set of control characters and control character sequences, for synchronous transmission of binary-coded data between stations. using binary synchronous line discipline. (3) A uniform procedure, using a standardized set of control characters and control character sequences, for synchronous transmission of binary-coded data between stations.

bps. (bits per second) In serial transmission, the instantaneous bit speed with which a device or channel transmits a character.

BSC. see binary synchronous communication

BTAM-ES. (Basic Telecommunication Access Method Extended Storage) An IBM-supplied telecommunication access method. It permits read and write communication with remote devices.

B-transient. A phase with a name beginning with $$B and running in the Logical Transient Area (LTA). Such a phase is activated by special Supervisor calls.

CDRM. See cross-domain resource manager.

CDRSC. See cross-domain resource.

channel. A functional unit, controlled by the processor, that handles the transfer of data between processor storage and local peripheral equipment.

channel adapter. A communication controller hardware unit used to attach the controller to a System/360 or a System/370 channel.

channel-attached. Pertaining to the attachment of devices directly by data channels (I/O channels) to a host processor. Contrast with *link-attached.* Synonymous with *local-attached.*

channel-attachment major node. (1) A major node that includes an NCP that is channel-attached to a data host. (2) A major node that may include minor nodes that are the line groups and lines that represent a channel attachment to an adjacent (channel-attached) host. (3) In VM or VSE operating systems, a major node that may include minor nodes that are resources (host processors, NCPs, line groups, lines, SNA physical units and logical units, cluster controllers, and terminals) attached through a communication adapter.

character-coded. Synonym for *unformatted.*

CICS/DOS/VS. (Customer Information Control System/Disk Operating System/Virtual Storage) A general-purpose licensed program that controls online communication between terminal users and a data base.

CKD disk device. (Count-Key-Data disk device) A disk storage device on which storage is allocated by tracks and cylinders. Contrast with FBA disk device.

cluster controller. A device that can control the input/output operations of more than one device connected to it. A cluster controller may be controlled by a program stored and executed in the unit; for example, the IBM 3601 Finance Communication Controller. Or it may be controlled entirely by hardware; for example, the IBM 3272 Control Unit.

CNM. See communication network management.

communication adapter. An optional hardware feature, available on certain processors, that permits communication lines to be attached to the processors.

communication controller. A type of communication control unit whose operations are controlled by one or more programs stored and executed in the unit; for example, the IBM 3725 Communication Controller. It manages the details of line control and the routing of data through a network.

communication control unit. A communication device that controls the transmission of data over lines in a network. Communication control units include transmission control units such as the IBM 2702 Transmission Control Unit and communication controllers such as the IBM 3705 Communications Controller.

communication identifier (CID). In VTAM, a key for locating the control blocks that represent a session. The key is created during the session-establishment procedure and deleted when the session ends.

communication line. Deprecated term for *telecommunication line* and *transmission line.*

communication network management (CNM). The process of designing, installing, operating, and managing the distribution of information and controls among end users of communication systems.

configuration. (1) The arrangement of a computer system or network as defined by the nature, number, and the chief characteristics of its functional units. More specifically, the term may refer to a hardware configuration or a software configuration. (2) The devices and programs that make up a system, subsystem, or network.

connection. Synonym for *physical connection.*

*** control program.** A computer program designed to schedule and to supervise the processing of programs of a computer system.

control unit. A device that controls input/output operations at one or more devices.

Control Unit Mode. See CUT mode.

converted command. An intermediate form of a character-coded command produced by VTAM through use of an unformatted system services definition table. The

format of a converted command is fixed; the unformatted system services definition table must be constructed in such a manner that the character-coded command (as entered by a logical unit) is converted into the predefined, converted command format. See also *unformatted*.

CR/LF (carriage return/line feed). CR/LF characters (X'0D0A') are used to delimit logical records in a PC file.

cross-domain. In SNA, pertaining to control of resources involving more than one domain.

cross-domain resource (CDRSC). A resource owned by a cross-domain resource manager (CDRM) in another domain but known by the CDRM in this domain by network name and associated CDRM.

cross-domain resource manager (CDRM). In VTAM, the function in the system services control point (SSCP) that controls initiation and termination of cross-domain sessions.

CUT (Control Unit Terminal) mode. IBM PCs operating in CUT mode are defined to VSE/SP like a 3278-2 or 3279-2A display station. No special features are required for the CICS/DOS/VS Terminal Control Table (DFHTCT).

Data Conversion Descriptor File. See DCDF.

data entry panel. A panel in which the user communicates with the system by filling in one or more fields. See also panel and selection panel.

data link. In SNA, synonym for *link*.

data management. A major function of the operating system. It involves organizing, storing, locating, and retrieving data.

data processing system. A set of hardware and software that performs five functions: input, processing, storage, output, and control.

For a local data processing system, all five functions are done at the same location. For a remote data processing system, certain portions of the input and output functions are at different places and are connected by transmission facilities.

DBCS (Double Byte Character Set). The DBCS is a character set which allows Korean, Japanese and Chinese languages to be internally represented by two bytes per character.

DCDF (Data Conversion Descriptor File). With your PC you can send data to or receive data from the host. When issuing a SEND/RECEIVE command you can specify the name of the DCDF. With a DCDF you can convert individual fields within a record during data transfer. A DCDF defines the record layout (fields) of a particular file for both, the PC and the host environment. It consists of a header record and one or more field records.

deactivate. To take a resource of a node out of service, rendering it inoperable, or to place it in a state in which it cannot perform the functions for which it was designed. Contrast with *activate*.

definition statement. (1) In VTAM, the statement that describes an element of the network. (2) In NCP, a type of instruction that defines a resource to the NCP. See also *macro instruction*.

device address. The identification of an input/output device by its channel and unit number.

Device Support Facilities. A utility program for performing operations on disk volumes so that they can be accessed by programs running under VSE. Examples of these operations are initializing a disk volume and assigning an alternate track.

DFT. See distributed function terminal

dialog. For VSE/SP, a set of panels that can be used to complete a specific data processing task (defining a file, for example).

*** direct access.** The facility to obtain data from a storage device, or to enter data into a storage device in such a way that the process depends only on the location of that data and not on a reference to data previously accessed.

See also sequential access.

disk device. A storage device in which the access time is effectively independent of the location of the data. Direct Access Storage Device (DASD) is often used synonymously for disk device.

display station. See terminal.

distributed function terminal mode. A mode which offers several host sessions simultaneously using windows.

distribution tape. A magnetic tape that contains an IBM licensed program like VSE/SP. This tape is shipped to the customer for program installation.

DITTO. (Data Interfile Transfer, Testing, and Operations Utility) An IBM licensed program that provides file-to-file services for card I/O, magnetic tape, and disk devices.

domain. (1) An access method, its application programs, communication controllers, connecting lines, modems, and attached terminals. (2) In SNA, a system services control point (SSCP) and the physical units (PUs), logical units (LUs), links, link stations, and all the associated resources that the SSCP has the ability to control by means of activation requests and deactivation requests. See also *single-domain network* and *multiple-domain network*.

DOS/VS. (Disk Operating System/Virtual Storage) See VSE.

Double Byte Character Set. See DBCS.

*** dump.** (1) Data that has been dumped. (2) To write the contents of a storage, or of part of a storage, usually from an internal storage to an external medium, for a specific purpose, such as to allow other use of the storage, as a safeguard against faults or errors, or in connection with debugging.

*** duplex.** In data communication, pertaining to a simultaneous two-way independent transmission in both directions. Synonymous with *full duplex*. Contrast with *half duplex*.

EBCDIC. Extended binary-coded decimal interchange code. A coded character set consisting of 8-bit coded characters.

Emulation Program (EP). An IBM control program that allows a channel-attached 3705 or 3725 communication controller to emulate the functions of an IBM 2701 Data Adapter Unit, an IBM 2702 Transmission Control, or an IBM 2703 Transmission Control. See also *network control program.*

end user. In SNA, the ultimate source or destination of application data flowing through an SNA network. An end user may be an application program or a terminal operator.

EP. See Emulation Program.

ER. (1) See explicit route. (2) Exception response.

EREP. (Environmental Recording, Editing and Printing Program) A service aid of VSE/Advanced Functions.

Whenever a hardware error occurs, VSE/SP writes information about the error into a system recorder file. Through EREP, both summarized and detailed reports about this file's contents can be printed.

ESDS. (Entry Sequenced Data Set) A VSE/VSAM file whose records are loaded without respect to their contents, and whose relative byte addresses cannot change. Records are retrieved and stored by addressed access, and new records are added at the end of the data set.

explicit route (ER). In SNA, the path control network elements, including a specific set of one or more transmission groups, that connect two subarea nodes. An explicit route is identified by an origin subarea address, a destination subarea address, an explicit route number, and a reverse explicit route number. Contrast with *virtual route (VR).* See also *path* and *route extension.*

external storage. Storage that is not part of the processing unit (storage on disk, for example).

FBA disk device. (Fixed Block Architecture disk device) A disk storage device on which storage is allocated by blocks of fixed size. Contrast with CKD disk device.

FCOPY. See VSE/FCOPY.

field-formatted. Pertaining to a request or response that is encoded into fields, each having a specified format such as binary codes, bit-significant flags, and symbolic names. Contrast with *character-coded.*

*** file.** (1) A set of related records that are treated as a unit. (2) Also known as a data set.

formatted system services. A portion of VTAM that provides certain system services as a result of receiving a field-formatted command, such as an Initiate or Terminate command. Contrast with *unformatted system services (USS).* See also *field-formatted.*

FULIST (FUnction LIST). A FULIST displays a list of items which you can process, for example, VSE/ICCF library members, VSE/VSAM files, VSE/POWER queue entries, or files in the host transfer file.

full duplex (FDX). Synonym for *duplex.*

generation. The process of assembling and link editing definition statements so that resources can be identified to all the necessary programs in a network.

generation definition. The definition statement of a resource used in generating a program.

global command. A global command must be typed into the global command area which is usually located at the top of the screen. It allows the user to change or delete the same word or character string throughout a library member.

*** half-duplex.** In data communication, pertaining to an alternate, one way at a time, independent transmission. Contrast with *duplex.*

*** hardware.** (1) Physical equipment used in data processing, as opposed to computer programs, procedures, rules, and associated documentation. Contrast with software.

help panel. An online display that tells you how to use a command or another aspect of a product. See *task panel.*

host (operating) mode. When working at your PC in this mode, you can access the VSE/SP Interactive Interface in the same way as a 3270 user. For Intelligent Work Station (IWS) functions, you can use the *Move Utilities* of VSE/SP.

host processor. (1) In a network, the processor in which the access method for the network resides. (2) In an SNA network, the processor that contains a system services control point (SSCP).

Host Transfer File. See HTF.

HTF. (Host Transfer File) Used by the IWS support of VSE/SP as holding area for files that are sent to and from IBM Personal Computers.

ICA. (Integrated Communication Adapter) A hardware feature of IBM 4300 processors that permits telecommunication lines to be attached to these processors.

ICCF. See VSE/ICCF.

inactive. In VTAM, describes the state of a resource that has not been activated or for which the VARY INACT command has been issued. Contrast with *active.* See also *inoperative.*

initial program load. See IPL.

inoperative. The condition of a resource that has been active, but is not. The resource may have failed, received an INOP request, or is suspended while a reactivate command is being processed. See also *inactive.*

Intelligent Workstation Support. See IWS.

interactive. Pertaining to an application in which each entry causes a response from a system or program, as in an inquiry system or an airline reservation system. An interactive system may be conversational, implying a continuous dialog between the user and the system.

Interactive Interface. The Interactive Interface controls how different people see and work with the system by means of *user profiles*. When signing on, the Interactive Interface makes available those parts of the system authorized by the profile. The Interactive Interface has an extensive set of selection and data entry panels that acts as a buffer between users and system components. Through these panels, users communicate with the system and supply it with information to do something for them.

IWS. (Intelligent Workstation Support) Enables the exchange of data between IBM Personal Computers. The data is first stored in the VSE/SP host system. Users can retrieve that data and work with it independent of VSE/SP.

*** I/O.** (Input/Output) (1) Pertaining to a device or to a channel that may be involved in an input process, and, at a different time, in an output process. (2) Pertaining to a device whose parts can be performing an input process and an output process at the same time. (3) Pertaining to either input or output, or both.

*** I/O device.** A device in a data processing system by which data may be entered into the system, received from the system, or both.

IPL. (Initial Program Load) (1) The initialization procedure that causes an operating system to begin operation. (2) The process by which a configuration image is loaded into storage at the beginning of a work day or after a system malfunction.

IUCV. (Interactive User Communication Vehicle) The IUCV support allows you to communicate with other users or CP in the same way you would with a nonpreferred guest.

IWS PC dialog. The IWS PC dialog is shipped with the host system (VSE/SP) and has to be downloaded to an IBM Personal Computer before it can be invoked. It then allows you to issue SEND/RECEIVE commands, thus transferring data to/from your IBM Personal Computer.

JCL. (Job Control Language) A control language that can be used to: (a) identify a job to an operating system and (b) describe that job's requirements.

JECL. (Job Entry Control Language) A control language that allows the programmer to specify how VSE/POWER handles a certain job.

JES. (Job Entry Subsystem) A subsystem for use under OS/VS1 or MVS/SP.

job. (1) A set of data that completely defines a unit of work for a computer. A job usually includes all necessary computer programs, linkages, files, and instructions to the operating system. (2) The actual processing of a unit of work by a computer.

*** job stream.** The sequence of representations of jobs to be submitted to an operating system. Synonymous with input stream and run stream.

KSDS. (Key Sequenced Data Set). A VSE/VSAM file whose records are loaded in key sequence and controlled by an index. Records are retrieved and stored by keyed access or by addressed access, and new records are inserted in key sequence by means of distributed free space. Relative byte address of records can change, because of control interval or control area splits.

library. A collection of data elements on disk to which the system has quick access. These elements (programs or dumps, for example) are maintained by system services. VSE/SP has two main types of libraries, VSE libraries and VSE/ICCF libraries (= program development libraries).

licensed program. Any separately priced program that bears an IBM copyright and is offered to customers under the terms and conditions of the Agreement for IBM Licensed Programs. Includes Program Products (PPs), Industry Application Programs (IAPs), Field-Developed Programs (FDPs), Installed User Programs (IUPs), and Programming RPQs (PRPQs).

line. See *communication line.*

line commands. VSE/ICCF has special line commands that let you change individual lines on your screen. Line commands you type into the 'line command area' associated with the line you want to add/move/copy/delete.

link. In SNA, the combination of the link connection and the link stations joining network nodes; for example: (1) a System/370 channel and its associated protocols, (2) a serial-by-bit connection under the control of Synchronous Data Link Control (SDLC). A link connection is the physical medium of transmission. A link, however, is both logical and physical. Synonymous with *data link.*

link connection. A communication line is the physical medium of transmission (a telephone line, for example). A link connection includes the physical medium of transmission, the protocol, and associated devices and programming. It is both physical and logical.

link-attached. In VTAM, pertaining to devices that are physically connected by a telecommunication line. Synonymous with *remote.* Contrast with *channel-attached.*

local address. In SNA, an address used in a peripheral node in place of an SNA network address and transformed to or from an SNA network address by the boundary function in a subarea node.

local-attached. Deprecated term for *channel-attached.*

local SNA major node. In VTAM, a major node whose minor nodes are channel-attached peripheral nodes.

logical unit (LU). In SNA, a port through which an end user accesses the SNA network in order to communicate with another end user and through which the end user accesses the functions provided by system services control points (SSCPs). An LU can support at least two sessions—one with an SSCP and one with another LU—and may be capable of supporting many sessions with other logical units. See also *network addressable unit (NAU), peripheral LU, physical unit (PU), system services control point (SSCP), primary logical unit (PLU),* and *secondary logical unit (SLU).* Contrast with *physical unit (PU).*

logo. A trademark or other art work that is associated with a firm or product. Related to the terms *logotype* and *logogram.*

logon mode. In VTAM, a subset of session parameters specified in a logon mode table for communication with a logical unit. See also *session parameters.*

logon mode table. In VTAM, a set of entries for one or more logon modes. Each logon mode is identified by a logon mode name.

logon-interpret routine. In VTAM, an installation exit routine, associated with an interpret table entry, that translates logon information. It may also verify the logon.

LU. See logical unit.

LU-LU session. In SNA, a session between two logical units (LUs) in an SNA network. It provides communication between two end users, or between an end user and an LU services component.

macro instruction. (1) * (ISO) An instruction in a source language that is to be replaced by a defined sequence of instructions in the same source language. The macro instruction may also specify values for parameters in the instructions that are to replace it. (2) In assembler programming, an assembler language statement that causes the assembler to process a predefined set of statements called a macro definition. The statements normally produced from the macro definition replace the macro instruction in the program. See also *definition statement.*

major node. In VTAM, a set of resources that can be activated and deactivated as a group. See *node* and *minor node.*

megabyte. Roughly equal to 1 million bytes. A byte is the space required to represent one character.

member. A named set of one or more records in a library.

minor node. In VTAM, a uniquely-defined resource within a major node. See *node* and *major node.*

modem. A device that modulates and demodulates signals transmitted over data communication facilities. The term is a contraction for modulator-demodulator.

MSHP. (Maintain System History Program) A program used for automating and controlling various installation, tailoring, and service activities for a VSE system.

multiple-domain network. In SNA, a network with more than one system services control point (SSCP). Contrast with *single-domain network.*

MVS/SP. (Multiple Virtual Storage/System Product) A licensed program that is an extension of OS/VS2.

native (PC operating) mode. In this mode you are using the native functions and facilities of your PC. For example, you are editing or changing a file on your disk.

NAU. See network addressable unit.

NCCF. See Network Communications Control Facility.

NCP. (1) Network Control Program (IBM licensed program). Its full name is Advanced Communications Function for the Network Control Program. (2) Network control program (general term).

NCP major node. In VTAM, a set of minor nodes representing resources, such as lines and peripheral nodes, controlled by a network control program. See *major node.*

NetView. An IBM licensed program used to monitor a network, manage it, and diagnose its problems.

network. (1) * An interconnected group of nodes. (2) The assembly of equipment through which connections are made between data stations.

network address. In SNA, an address, consisting of subarea and element fields, that identifies a link, a link station, or a network addressable unit. Subarea nodes use network addresses; peripheral nodes use local addresses. The boundary function in the subarea node to which a peripheral node is attached transforms local addresses to network addresses and vice versa. See *local address.* See also *network name.*

network addressable unit (NAU). In SNA, a logical unit, a physical unit, or a system services control point. It is the origin or the destination of information transmitted by the path control network. Each NAU has a network address that represents it to the path control network. See also *network name, network address,* and *path control network.*

Network Communications Control Facility (NCCF). (1) An IBM licensed program that is a base for command processors that can monitor, control, and improve the operations of a network. Its function is included and enhanced in NetView's command facility. (2) A traditional, alternative name for the command facility of NetView.

Network Control Program (NCP). An IBM licensed program that provides communication controller support for single-domain, multiple-domain, and interconnected network capability. Its full name is Advanced Communications Function for the Network Control Program.

network control program. A program, generated by the user from a library of IBM-supplied modules, that controls the operation of a communication controller.

networking. In a multiple-domain network, communication among domains.

Network Logical Data Manager (NLDM). (1) An IBM licensed program that collects and correlates session-related data and provides online access to this information. It runs as an NCCF communication network management (CNM) application program. Its function is included and enhanced in NetView's session monitor. (2) A traditional, alternative name for the session monitor of NetView.

network name. (1) In SNA, the symbolic identifier by which end users refer to a network addressable unit (NAU), a link, or a link station. See also *network address.* (2) In a multiple-domain network, the name of the APPL statement defining a VTAM application program is its network name and it must be unique across domains. Contrast with *ACB name.* See *uninterpreted name.*

network node. Synonym for *node.*

network operator. (1) A person or program responsible for controlling the operation of all or part of a network. (2) The person or program that controls all the domains in a multiple-domain network. Contrast with *domain operator.*

Network Terminal Option (NTO). An IBM licensed program that allows certain non-SNA devices to participate in sessions with SNA application programs in the host processor. NTO converts non-SNA protocol to SNA protocol when data is sent to the host from a non-SNA device and reconverts SNA protocol to non-SNA protocol when data is sent back to the device.

NLDM. See Network Logical Data Manager.

node. (1) In SNA, an endpoint of a link or junction common to two or more links in a network. Nodes can be distributed to host processors, communication controllers, cluster controllers, or terminals. Nodes can vary in routing and other functional capabilities. (2) In VTAM, a point in a network defined by a symbolic name. Synonymous with *network node.* See *major node* and *minor node.*

node name. In VTAM, the symbolic name assigned to a specific major or minor node during network definition.

node type. In SNA, a designation of a node according to the protocols it supports and the network addressable units (NAUs) that it can contain. Four types are defined: 1, 2, 4, and 5. Type 1 and type 2 nodes are also referred to as peripheral nodes and type 4 and type 5 nodes are also referred to as subarea nodes. See also *physical unit type.*

nonswitched line. A telecommunication line on which connections do not have to be established by dialing. Contrast with *switched line.*

NTO. See Network Terminal Option.

object module. A program unit that is the output of an assembler or a compiler and is suitable for input to the linkage editor. Contrast with source program.

OLTEP. See VSE/OLTEP.

online. (1) Pertaining to a user's ability to interact with a computer. (2) Pertaining to a user's access to a computer via a display station. (3) * Pertaining to the operation of a functional unit that is under the continual control of a computer. The term is also used to describe a user's access to a computer via a display station.

online application. A set of programs that normally is used by people at display stations (an application that processes airline reservations, for example).

When an online application is active, it waits for data to be sent to it. Once input arrives, it processes it and sends a response to the display station or to another device.

online processing. Processing by which the input data enters the computer directly from a display station and the output data is transmitted directly to the display station.

*** operating system.** (1) Software that controls the processing of computer programs and that may provide scheduling, debugging, input/output control, accounting, compilation, storage assignment, data management, and related services.

operator console. See system console.

*** output.** (1) Pertaining to a device, process, or channel involved in an output process, or to the data or states involved in an output process. (2) See I/O.

packet. A sequence of binary digits including data and call control signals that is sent as a composite whole. The data, call control signals, and possibly error control information, are arranged in a specific format.

*** packet switching.** The processing of routing and transferring data by means of addressed packets so that a channel is occupied only during the transmission of a packet. Upon completion of the transmission, the channel is made available for the transfer of other packets.

packet-switched data network (PSDN). A public data network established and operated by network common carriers or telecommunication administrations for providing packet switched data transmission.

panel. In VSE/SP, the complete set of information that currently is shown on a display station screen. Each panel of the VSE/SP Interactive Interface is like a different page in a manual; that is, you go backward and forward through panels, just like you do when turning a manual's pages. See also selection panel and data entry panel.

partition. A division of the address space that is available for program execution. The supervisor control program, however, does not run in this space.

partitioned emulation programming (PEP) extension. A function of a network control program that enables a communication controller to operate some telecommunication lines in network control mode while simultaneously operating others in emulation mode.

password. (1) A unique string of characters that a program, computer operator, or user must supply to meet security requirements before gaining access to data. (2) In systems with time sharing, a one-character to eight-character symbol that the user may be required to supply at the time he logs on to the system. The password is confidential, as opposed to the user identification.

path. (1) In SNA, the series of path control network components (path control and data link control) that are traversed by the information exchanged between two network addressable units (NAUs). A path consists of a virtual route and its route extension, if any. See also *explicit route.* (2) In defining a switched major node, a potential dial-out port that can be used to reach a physical unit.

pending active session. In VTAM, the state of an LU-LU session recorded by the system services control point (SSCP) when it finds both logical units (LUs) available and has sent a CINIT request to the primary logical unit (PLU) of the requested session.

PEP. See partitioned emulation programming.

peripheral LU. In SNA, a logical unit representing a peripheral node.

peripheral node. In SNA, a node that uses local addresses for routing and therefore is not affected by changes in network addresses. A peripheral node requires boundary function assistance from an adjacent subarea node. A peripheral node is a type 1 or type 2 node connected to a subarea node.

peripheral PU. In SNA, a physical unit representing a peripheral node.

phase. The smallest unit of executable code that can be referred to in a program library.

physical unit (PU). In SNA, one of three types of network addressable units (NAUs). Each node of an SNA network contains a physical unit (PU) that manages and monitors the resources (such as attached links) of a node, as requested by a system services control point (SSCP) via an SSCP-PU session. An SSCP activates a session with the physical unit in order to indirectly manage, through the PU, resources of the node such as attached links. See also *peripheral PU*, *physical unit (PU) type*, and *subarea PU*.

physical unit (PU) type. In SNA, the classification of a physical unit (PU) according to the type of node in which it resides. The PU type is the same as its node type; that is, a type 1 PU resides in a type 1 node, and so forth.

PLU. See primary logical unit.

POWER. See VSE/POWER.

pregenerated operating system. An operating system like VSE/SP which is shipped by IBM mainly in object code. In such a system, definitions for key functions such as:

- Size of the main control program,
- Organization and size of libraries, and
- Required system areas on disk

are done by IBM, not the customer. Because of this, the customer does not need the source code necessary to generate an operating system.

primary logical unit (PLU). In SNA, the logical unit (LU) that contains the primary half-session for a particular LU-LU session. Each session must have a PLU and secondary logical unit (SLU). The PLU is the unit responsible for the bind and is the controlling LU for the session. A particular LU may contain both primary and secondary half-sessions for different active LU-LU sessions. Contrast with *secondary logical unit (SLU)*.

printer. A device that writes output data from a system on paper or similar media.

processing. The performance of logical operations and calculations on data, including the temporary retention of data in processor storage while the data is being operated upon.

processor storage. The storage contained in a processing unit. Synonymous with real storage.

program. (1) * To design, write, and test programs. (2) A set of instructions that a machine can interpret and execute.

program development library. See library.

protocol. (1) (CCITT/ITU) A specification for the format and relative timing of information exchanged between communicating parties. (2) * (TC97) The set of rules governing the operation of functional units of a communication system that must be followed if communication is to be achieved. (3) In SNA, the meanings of, and the sequencing rules for, requests and responses used for managing the network, transferring data, and synchronizing the states of network components. See also *bracket protocol*. Synonymous with *line control discipline* and *line discipline*. See also *link protocol*.

PSDN. See packet-switched data network.

PTF. (Program Temporary Fix) A temporary solution or by-pass of a problem caused by a defect in a current, unaltered release of an IBM program.

PU. See physical unit.

PU type. See physical unit type.

public network. A network established and operated by communication common carriers or telecommunication Administrations for the specific purpose of providing circuit-switched, packet-switched, and leased-circuit services to the public. Contrast with *user-application network*.

queue. (1) A line or list formed by items in a system that are waiting for service (for example, tasks to be performed or messages to be transmitted in a message-switching system). (2) To arrange in, or form, a queue.

*** read.** To acquire or interpret data from a storage device, from a data medium, or from another source.

real storage. See processor storage.

Recommendation X.25 (Geneva 1980). A Consultative Committee on International Telegraph and Telephone (CCITT) recommendation for the interface between data terminal equipment and packet-switched data networks. See also *packet switching*.

*** record.** A collection of related data or words, treated as a unit (for example, in stock control, each invoice could constitute one record).

record formatted maintenance statistics (RECFMS). In NetView, a statistical record built by an SNA controller and usually solicited by the host.

refresh. In VSE/SP, this refers to an upgraded VSE/SP system with the latest level of maintenance.

remote. Synonym for *link-attached*.

Remote Job Entry. See RJE.

restore. To load a copy of: (a) an operating system or (b) user data into storage. The copy can be a backup copy that replaces destroyed data, or it can be a newly acquired copy that replaces outdated data.

RJE. (Remote Job Entry) Submission of jobs through an input unit that has access to a computer through a data link.

RJE work station. An IBM PC that has an SDL Communication Adapter and the SNA 3270 Emulation and RJE Support Program installed can operate either as a 3270 display station or as a 3770 RJE work station.

RRDS. (Relative Record Data Set) A VSAM file whose records are loaded into fixed-length slots and represented by the relative-record numbers of the slots they occupy.

RSCS. (Remote Spooling Communications Subsystem) The component of VM/SP that transfers spool files between users, remote stations, and local and remote batch systems.

*** run.** (1) A single performance of one or more jobs. (2) A single, continuous performance of a computer program or routine.

SAM. Sequential Access Method. See sequential access.

SDLC. See sychronous data link control.

secondary logical unit (SLU). In SNA, the logical unit (LU) that contains the secondary half-session for a particular LU-LU session. An LU may contain secondary and primary half-sessions for different active LU-LU sessions. Contrast with *primary logical unit (PLU).*

selection panel. A displayed list of functions (options) that are available for doing work. A display station user can select an option from a selection panel do a specific task. See also panel and data entry panel.

sequential access. An access mode in which records are read from or written into a file in such a way that each successive access to the file refers to the next record in the file.

session parameters. In SNA, the parameters that specify or constrain the protocols (such as bracket protocol and pacing) for a session between two network addressable units. See also *logon mode.*

shared spooling. A function of VSE/POWER that permits sharing of the POWER account file, data file, and queue file among several systems with VSE/POWER.

single-domain network. In SNA, a network with one system services control point (SSCP). Contrast with *multiple-domain network.*

skeleton. In VSE/SP, an incomplete job for a specific task provided in a VSE/ICCF library. The user completes the job by changing variables and parameters.

SNA. See Systems Network Architecture

SNA network. The part of a user-application network that conforms to the formats and protocols of Systems Network Architecture. It enables reliable transfer of data among end users and provides protocols for controlling the resources of various network configurations. The SNA network consists of network addressable units (NAUs), boundary function components, and the path control network.

*** software.** (1) Programs, procedures, rules, and associated documentation for the operation of a computer system. Contrast with hardware.

*** source program.** A computer program expressed in a source language. Contrast with object module.

spooling. (1) * The use of external storage as buffer storage to reduce processing delays when transferring data between peripheral equipment and a processor. (2) The reading of input data streams and the writing of output data streams on external storage devices (concurrently with job processing) in a format convenient for later processing or output operations.

SS. Start-stop. See start-stop system.

SSCP. See system services control point.

SSCP-LU session. In SNA, a session between a system services control point (SSCP) and a logical unit (LU); the session enables the LU to request the SSCP to help initiate LU-LU sessions.

SSCP-PU session. In SNA, a session between a system services control point (SSCP) and a physical unit (PU); SSCP-PU sessions allow SSCPs to send requests to and receive status information from individual nodes in order to control the network configuration.

SSCP-SSCP session. In SNA, a session between the system services control point (SSCP) in one domain and the SSCP in another domain. An SSCP-SSCP session is used to initiate and terminate cross-domain LU-LU sessions.

SSP. System Support Programs (IBM licensed program). Its full name is Advanced Communications Function for System Support Programs.

start option. In VTAM, a user-specified or IBM-supplied option that determines certain conditions that are to exist during the time a VTAM system is operating. Start options can be predefined or specified when VTAM is started.

start-stop system. * (TC97) A data transmission system in which each character id preceded by a start signal and is followed by a stop signal.

station. (1) One of the input or output points of a network that uses communication facilities; for example, the telephone set in the telephone system or the point where the business machine interfaces with the channel on a leased private line. (2) One or more computers, terminals, or devices at a particular location.

*** storage.** (1) The retention of data in a storage device. (2) A device, or part of a device, that can retain data. (3) A storage device.

*** storage device.** A functional unit into which data can be entered, in which it can be retained, and from which it can be retrieved.

subarea (SA). A portion of the SNA network consisting of a subarea node, any attached peripheral nodes, and their associated resources. Within a subarea node, all network addressable units, links, and adjacent link stations (in attached peripheral or subarea nodes) that are addressable within the subarea share a common subarea address and have distinct element addresses.

subarea address. In SNA, a value in the subarea field of the network address that identifies a particular subarea. See also *element address.*

subarea link. In SNA, a link that connects two subarea nodes.

subarea PU. In SNA, a physical unit (PU) in a subarea node.

subsystem. A secondary or subordinate system or programming support, usually capable of operating either independently of or together with the operating system.

supervisor control program. In a VSE-based system, the program that coordinates the use of resources and maintains the flow of processor operations.

SVA. (Shared Virtual Area) An area located in the high address range of virtual storage. It contains, primarily, phases that can be shared between partitions.

switched line. A communication line in which the connection between the communication controller and a remote link station is established by dialing.

switched major node. In VTAM, a major node whose minor nodes are physical units and logical units attached by switched SDLC links.

switched virtual circuit (SVC). An X.25 NPSI circuit that is dynamically established when needed. The X.25 equivalent of a switched line.

Synchronous Data Link Control. A discipline for managing synchronous, code-transparent, serial-by-bit information transfer over a link connection. Transmission exchanges may be duplex or half-duplex over switched or non-switched links. The configuration of the link connection may be point-to-point, multipoint, or loop.

*** system console.** A functional unit containing devices that are used for communication between a computer operator and a data processing system.

system library. In VSE/SP, the library IJSYSRS is often referred to as the *system library.* IJSYSRS is a VSE library allocated on the disk volume DOSRES. It is the only library necessary to IPL the system.

system refresh. In VSE/SP, this refers to an upgraded VSE/SP system with the latest level of maintenance.

system services control point (SSCP). In SNA, a focal point within an SNA network for managing the configuration, coordinating network operator and problem determination requests, and providing directory support and other session services for end users of the network. Multiple SSCPs, cooperating as peers, can divide the network into domains of control, with each SSCP having a hierarchical control relationship to the physical units and logical units within its domain.

Systems Network Architecture (SNA). The description of the logical structure, formats, protocols, and operational sequences for transmitting information units through and controlling the configuration and operation of networks.

System Support Programs (SSP). An IBM licensed program, made up of a collection of utilities and small programs, that supports the operation of the NCP.

task panel. Online display from which you communicate with the program in order to accomplish the program's function, either by selecting an option provided on the panel or by entering an explicit command. See *help panel.*

telecommunication. The transmission of data between computer systems and between such a system and remote devices.

telecommunication line. Any physical medium such as a wire or microwave beam, that is used to transmit data. Synonymous with *transmission line.*

teletypewriter exchange service (TWX). Teletypewriter service in which suitably arranged teletypewriter stations are provided with lines to a central office for access to other such stations throughout the U.S. and Canada. Both baudot and ASCII-coded machines are used. Business machines may also be used with certain restrictions.

terminal. (1) * A point in a system or communication network at which data can either enter or leave. (2) A device, usually equipped with a keyboard and a screen, capable of sending and receiving information over a communication channel.

Display stations and display terminals are terminals with a keyboard and screen.

token. A sequence of bits passed from one device to another along the network.

token-ring. A network configuration where a series of attaching devices are connected by unidirectional transmission links to form a closed path. Tokens are passed from adapter to adapter.

transaction. In CICS/DOS/VS, an application program (or programs) that can be used by a display station operator. A given transaction can be used concurrently by one or more operators.

A task is the execution of a transaction for a particular operator. A given task can relate only to one operator.

transmission group (TG). In SNA, a group of links between adjacent subarea nodes, appearing as a single logical link for routing of messages. A transmission group may consist of one or more SDLC links (parallel links) or of a single System/370 channel.

transmission line. Synonym for *telecommunication line.*

TWX. See teletypewriter exchange service

unformatted. In VTAM, pertaining to commands (such as LOGON or LOGOFF) entered by an end user and sent by a logical unit in character form. The character-coded command must be in the syntax defined in the user's unformatted system services definition table. Synonymous with *character-coded.* Contrast with *field-formatted.*

unformatted system services (USS). In SNA products, a system services control point (SSCP) facility that translates

a character-coded request, such as a logon or logoff request into a field-formatted request for processing by formatted system services and translates field-formatted replies and responses into character-coded requests for processing by a logical unit. Contrast with *formatted system services.* See also *converted command.*

USS. See unformatted system services.

utility program. (1) A program that assists in the use of a computing system without contributing directly to the control of the system or the production of results. (2) A program that performs an everyday task such as copying data from one storage device to another. (3) * Synonym for service program.

V1 (version 1) format. If VSE licensed programs are shipped in V1 format, they are distributed in the librarian format of pre-Version 2 VSE/Advanced Functions. One licensed program resides on a single tape.

V2 (version 2) format. If VSE licensed programs are shipped in V2 format, they are distributed in the librarian format of VSE/Advanced Functions Version 2. Optional Licensed programs are stacked on tape; other VSE licensed programs are not. If there are optional licensed programs on the tape, the tape can be scanned to determine the space needed by each licensed program on tape.

virtual address. An address that refers to a location in virtual storage. It is translated by the system to a processor storage address when the information stored at the virtual address is to be used.

virtual route (VR). In SNA, a logical connection (1) between two subarea nodes that is physically realized as a particular explicit route, or (2) that is contained wholly within a subarea node for intra-node sessions. A virtual route between distinct subarea nodes imposes a transmission priority on the underlying explicit route, provides flow control through virtual-route pacing, and provides data integrity through sequence numbering of path information units (PIUs).

*** virtual storage.** The notation of storage space that may be regarded as addressable main storage by the user of a computer system in which virtual addresses are mapped into real addresses. The size of virtual storage is limited by the addressing scheme of the computer system and by the amount of available external storage, not by the actual size of processor storage.

Virtual Telecommunications Access Method (VTAM). See ACF/VTAM.

VMCF. Virtual Machine Communication Facility

VM/SP. (Virtual Machine/System Product) A licensed program that manages the resources of a single computer so that multiple computing systems appear to exist. Each virtual machine is the functional equivalent of a "real" machine.

volatility. The percentage of records on a file that are added or deleted in a run.

volume. A disk pack, tape reel, or diskette (pack).

volume identifier (VOLID). This is the volume serial number which is a number in a volume label that is assigned when a volume is prepared for use in the system.

VR. See virtual route.

VSAM. See VSE/VSAM.

VSE. (Virtual Storage Extended) An operating system that is an extension of Disk Operating System/Virtual Storage.

A VSE system consists of: (a) licensed VSE/Advanced Functions support and (b) any IBM-supplied and user-written programs that are required to meet an installation's data processing needs. VSE and the hardware controlled by it form a complete computing facility.

VSE/Advanced Functions. The basic operating system support needed at a VSE-controlled installation.

VSE/DITTO. (VSE/Data Interfile Transfer, Testing and Operations Utility) An IBM licensed program that provides file-to-file services for card I/O, magnetic tape, and disk devices.

VSE/Fast Copy. (VSE/Fast Copy Data Set Program) This program is designed for: (a) fast copy data operations from disk to disk and (b) dump/restore operations via an intermediate dump file on magnetic tape or disk.

VSE/ICCF. (VSE/Interactive Computing and Control Facility) An IBM program product that makes the services of a VSE-controlled computing system available to authorized display station users. Availability of services is on a time-shared basis, and display stations must be linked to the system's central processor.

VSE/ICCF library. See library.

VSE/OLTEP. (VSE/Online Test Executive Program) An IBM program for managing the online tests that are available for device preventive maintenance and service. Normally, only IBM service personnel use this program.

VSE/POWER. (VSE/Priority Output Writers, Execution Processors, and Input Readers) An IBM licensed program primarily used for the spooling of input and output. VSE/POWER's networking functions enable a VSE/SP system to exchange files with or run jobs on another remote processor.

VSE/VSAM. (VSE/Virtual Storage Access Method) An access method for indexed or sequential processing of fixed and variable length records on direct access devices.

VTAM. See ACF/VTAM.

VTAM application program. A program that has opened an ACB to identify itself to VTAM and can now issue VTAM macro instructions.

X.25. See *Recommendation X.25 (Geneva 1980).*

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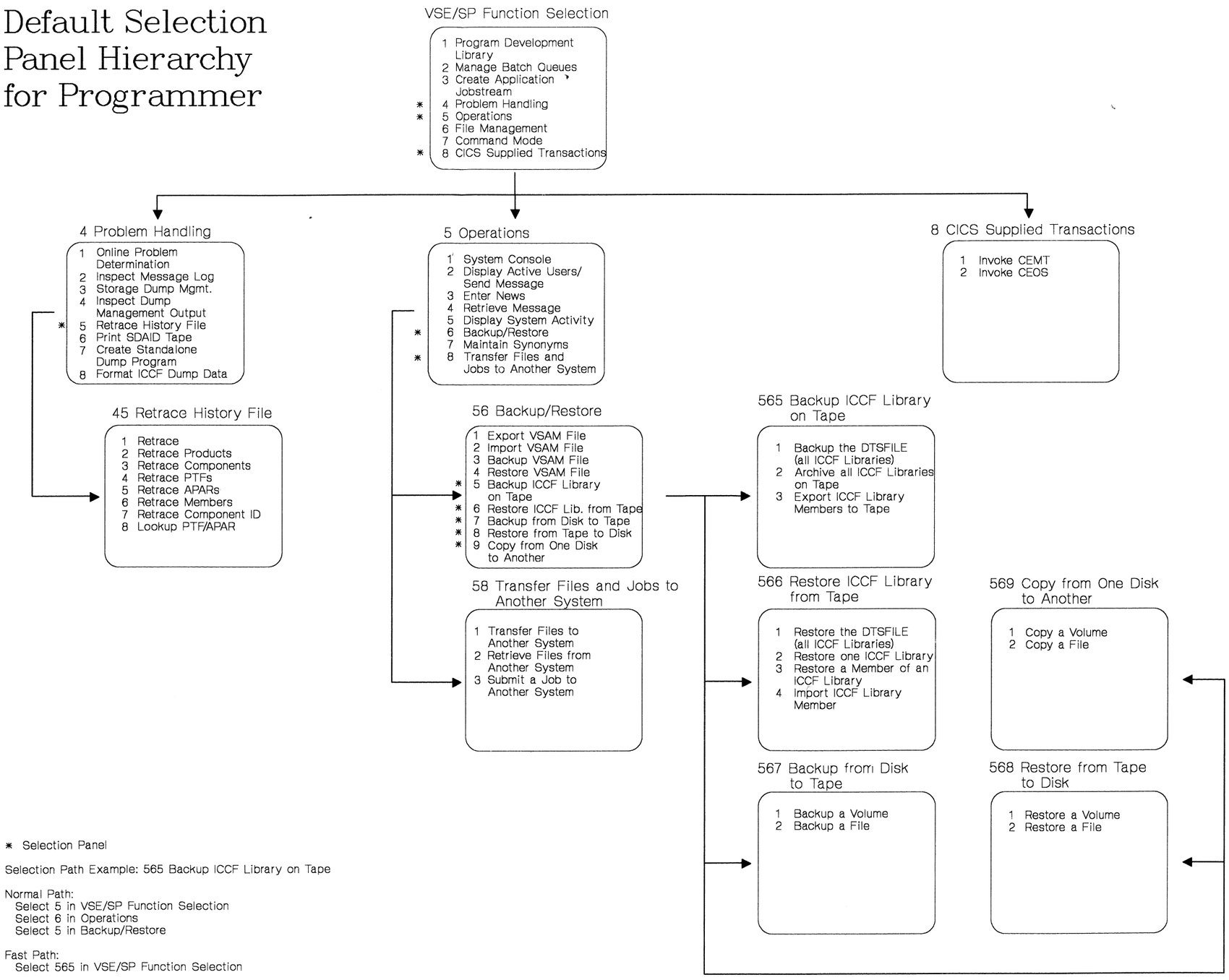

* Selection Panel

Selection Path Example: 565 Backup ICCF Library on Tape

Normal Path:
Select 5 in VSE/SP Function Selection
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Select 5 in Backup/Restore

Fast Path:
Select 565 in VSE/SP Function Selection

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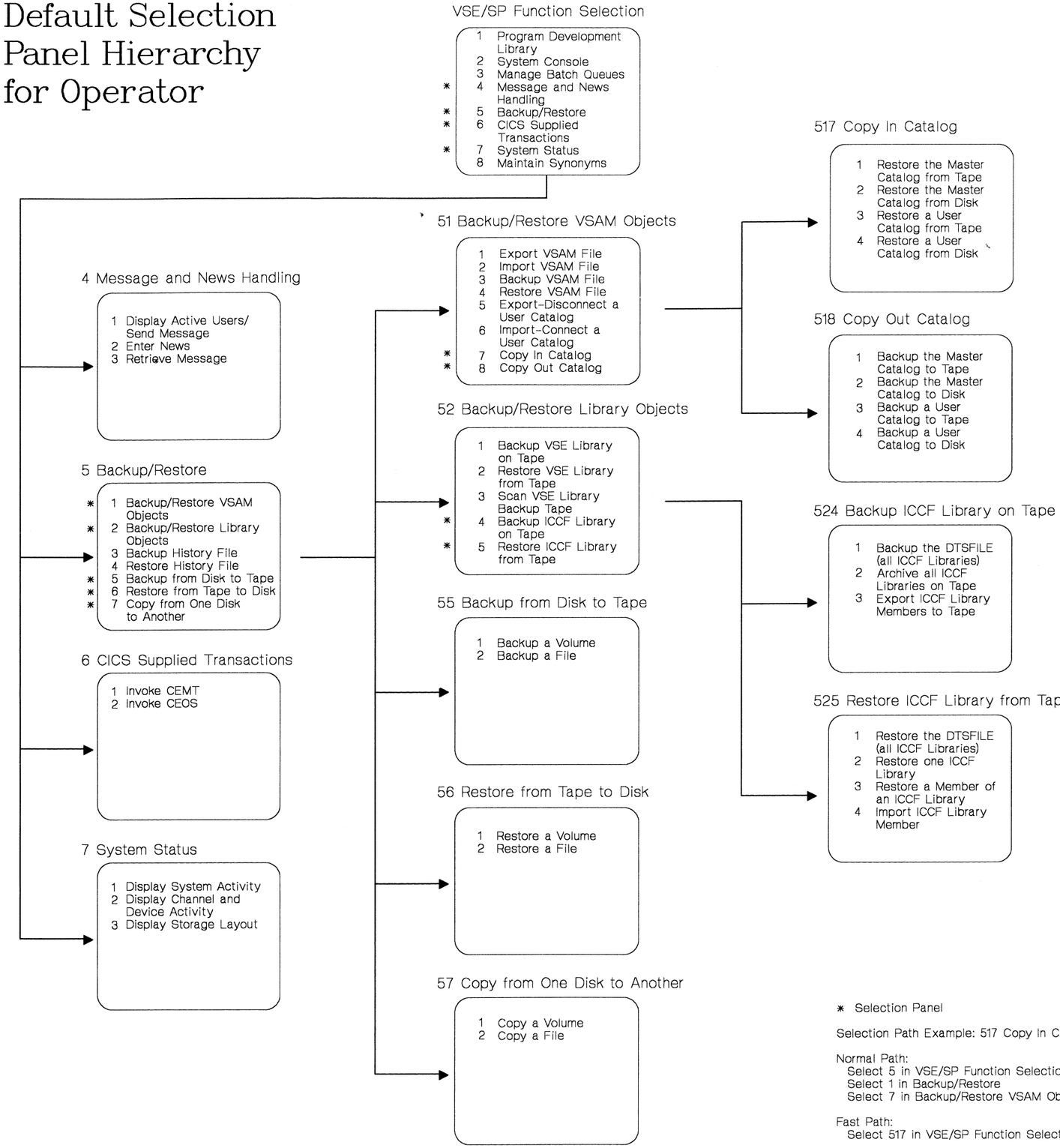

* Selection Panel

Selection Path Example: 517 Copy In Catalog

Normal Path:
Select 5 in VSE/SP Function Selection
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Fast Path:
Select 517 in VSE/SP Function Selection

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Order No. SC33-6303-00

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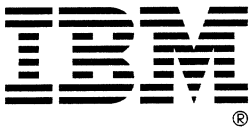

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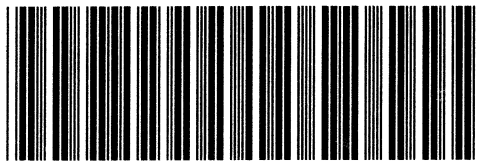

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