IBM z/VSE

IBM

System Upgrade and Service

Version 3 Release 1

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> **Note!**
>
> Before using this information and the product it supports, be sure to read the general information under "Notices" on page ix.

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About This Book

> z/VSE is the successor to IBM's VSE/ESA product. Many products and functions supported on z/VSE may continue to use VSE/ESA in their names.
>
> z/VSE can execute in 31-bit mode only. It does not implement z/Architecture, and specifically does not implement 64-bit mode capabilities.
>
> z/VSE is designed to exploit select features of IBM eServer zSeries hardware.

This manual describes how to apply service to z/VSE.

Applying service means, for example, using the Fast Service Upgrade (FSU) process to install a new service refresh, or installing Program Temporary Fixes (PTFs) and Authorized Program Analysis Reports (APARs) to a z/VSE system.

Who Should Use This Book

This manual is intended for people who:
- Apply service to the z/VSE system.
- Install refreshes via FSU for z/VSE 3.1.
- Upgrade a VSE/ESA 2.6 or VSE/ESA 2.7 system to z/VSE 3.1.

Such persons should be familiar with basic VSE functions and some hardware operations.

How to Use This Book

Please follow the instructions given in this book to apply service to your system. z/VSE dialogs help you apply service effectively and efficiently. This manual references dialogs available with the Interactive Interface.

Accessing Dialogs

To help you access a dialog, this book uses *sequences* which show the selection panel name and selection number you must enter to reach the Interactive Interface dialog. If you want to access IBM service, for example, start with the *z/VSE Function Selection* panel and select:

    1 (Installation)
    4 (IBM Service)

```
Administrator       Synonym
Fast Path: 14       Default: service
```

Using Fast Path

As shown above, the left box under a dialog sequence contains the *Fast Path* for a selection. This facility allows you to go directly to a dialog without working

through the entire panel hierarchy. To use fast path, you enter all the numbers you would enter on the individual panels in the hierarchy on a single selection panel.

Using Synonyms

In addition to fast path, you can use a synonym for a certain dialog selection. The right box, as shown in the above example, contains the synonym for a selection.

Instead of entering the fast path 14, you could enter *service*. This invokes the dialog *IBM Service*. Instead of using the default synonyms, you also can use your own synonyms which you may remember better. To create your own synonyms, use the *Maintain Synonym* dialog.

For more information on the fast path and synonym functions, refer to the IBM manual *z/VSE Administration*.

Where to Find More Information

Details about z/VSE 3.1, its programs and functions are provided in the *z/VSE Release Guide* and *z/VSE Planning*.

---

z/VSE Home Page

z/VSE has a home page on the World Wide Web, which offers up-to-date information about VSE-related products and services, new z/VSE functions, and other items of interest to VSE users.

You can find the z/VSE home page at:

```
http://www.ibm.com/servers/eserver/zseries/zvse/
```

Summary of Changes

This manual has been updated to reflect enhancements and changes that are implemented with z/VSE Version 3 Release 1. It also includes terminology, maintenance, and editorial changes.

- The name VSE/ESA has changed to z/VSE. However, the names of many features and programs related to z/VSE remain unchanged (such as, for example, IBM COBOL for VSE/ESA, or TCP/IP for VSE/ESA).

- You can use the FSU (Fast Service Upgrade) process to upgrade VSE/ESA 2.6.x or VSE/ESA 2.7.x, to z/VSE 3.1, but not from earlier releases. This is reflected in the corresponding FSU sections of this manual.

- You can use ShopzSeries to order PTFs and service over the Internet. For details, go to the ShopzSeries Web site at: `http://www.ibm.com/software/ShopzSeries`

Chapter 1. General Service Concept for z/VSE

Applying service means that you apply a fix for an actual problem in your z/VSE system, or you install a service refresh to upgrade your system to the most current z/VSE maintenance level.

IBM recommends that you apply service to your z/VSE system if:

- You encounter a problem that needs to be corrected. That is, you fix an actual problem that has occurred in your system. You can do this by applying a *Program Temporary Fix* (PTF). If you have found several problems, you can correct these problems either by installing several PTFs or by installing a service refresh (if available).
- You want to have your system at the most current maintenance level of z/VSE. This way you can avoid problems which have been found by IBM or other customers. You can apply this type of service by installing a service refresh.

Table 1 summarizes when you should install PTFs or a service refresh.

Table 1. Service Overview

Situation	Program Temporary Fix	Service refresh
Initial Installation	–	X
Small service volume required	X[1]	–
Large service volume required	–	X
Service in a changed environment	–	X[2]

[1] See "Receiving a PTF from IBM" on page 6 for details.
[2] Pending investigation of refresh benefits.

Note: For the latest service and PTF information see the Program Directory and the z/VSE home page at:

`http://www.ibm.com/servers/eserver/zseries/zvse/`

Program Temporary Fixes (PTFs)

If you detect a problem with your installed IBM software, contact your IBM Support Center. If you have a known problem, the Support Center can order a Program Temporary Fix (PTF) for you. The PTF is shipped to you on a distribution tape. It is also possible to order a PTF via an online database directly from your IBM Support Center, or you can use ShopzSeries to order a PTF over the Internet. For details, go to the ShopzSeries Web site at `http://www.ibm.com/software/ShopzSeries`.

When ordering a PTF, you get a fix for your actual problem without upgrading your total system to the most current z/VSE maintenance level. Usually, you will receive the prerequisite and corequisite PTFs shipped with the PTF you have ordered to ensure proper installability. To upgrade your z/VSE system to the latest level of maintenance, it is recommended to install the latest service refresh rather than successively install the PTFs that may be integrated into that refresh.

"Applying Service through PTFs" on page 6 has more information on applying PTFs.

Service Refreshes

IBM periodically upgrades the z/VSE system libraries with the latest level of maintenance. This is known as a *service refresh*. Refreshes are primarily intended as service mechanisms for z/VSE systems.

When you initially order z/VSE, you automatically receive distribution tapes or cartridge(s) which reflect the latest service refresh. The content of the z/VSE distribution tapes or cartridge(s) is shown in Table 3 on page 3. To ensure that your new system has the most recent level of complete system service, you should order and install a refresh as soon as possible after it becomes available. This refreshed system has been thoroughly tested. In general, a service refresh contains only corrections to the existing z/VSE system. In rare cases, it also may provide additional functions. These functions are implemented in a way that they do not influence your system if you do not use or need them.

As required, IBM will provide refreshes at identical service levels for the z/VSE base programs, extended base products and VSE optional programs.

As indicated previously, you may want to install a refresh to avoid possible problems. Thus a service refresh may be an option for you, even if your system and its environment are stable. In addition, a refresh may be best when you want to make major changes to your system (add hardware devices or IBM licensed programs, for example). The maintenance requirements for these changes may make installing a service refresh the most efficient way to meet them.

Your IBM System Engineer can help you decide whether a refresh should be installed before making major changes. Your IBM Support Center will have information about a z/VSE refresh in a PSP (Preventive Service Planning) bucket. This contains the latest system information, such as:
- Corrections to installation instructions
- Updates to published documentation
- Recommendations for application of specific PTFs.

How to install a service refresh is described in "Selection 3 – Fast Service Upgrade" on page 40.

Release Upgrade

If you are a VSE/ESA 2.6.x or 2.7.x user and your system meets specific requirements (as described in *z/VSE Planning*), you may consider installing z/VSE 3.1 using the Fast Service Upgrade (FSU) process.

Note: There are different requirements for file sizing depending on the source version. Such differences will be noted when they apply.

Unlike an initial installation, the FSU does not replace user data and hardware configuration tables. It only replaces system data. This results in a faster migration to z/VSE 3.1. See Chapter 5, "Performing a Fast Service Upgrade," on page 35 for more information.

Content of the z/VSE Distribution Media

z/VSE is distributed on the following media:

- three IBM 3480 compressed tapes (compacted with IDRC)
- three IBM 3590 tapes
- 2 CD-ROMs
- electronic delivery over the Internet (ShopzSeries).

Table 2. Media and Volumes

Distribution Medium	External Label Identifcation	Content	Filenames
IBM 3480 or 3590 tapes, Volume 1	z/VSE3.1.x–yy	z/VSE Base	n/a
IBM 3480 or 3590 tapes, Volume 2	z/VSE3.1.xXBASE	z/VSE Extended Base	n/a
IBM 3480 or 3590 tapes, Volume 3	DB2 VSE Help Text	DB2 Server for VSE Help	n/a
CD-ROM, Volume 1 (in virtual tape format)	VSE_BASE_CDR_YYY	z/VSE Base, z/VSE Extended Base, DB2 Server for VSE Help, Readme	VSE31xYY.aws, VSE31xXB.aws, DB2HELP.aws
CD-ROM, Volume 2 (in virtual tape format)	VSEOPT31_YYY_CDR	Optional Products, Readme	VSE31xOP.aws, READM31x.txt
Electronic delivery via ShopzSeries (in virtual tape format)	-	z/VSE Base, z/VSE Extended Base, DB2 Server for VSE Help, Readme	See ShopzSeries Web site.

The third distribution tape containing DB2 Server for VSE Help is also shipped, but is not used during FSU.

The contents of the distribution tapes and CD-ROMs are listed in Table 3. For more details and the latest information, refer to the *Program Directory for z/VSE Version 3*.

Note that you receive additional tapes or CDs if you have ordered z/VSE optional programs.

Note: The "x" in the tape ID or file name shows the latest modification level of the current release. IBM provides National Language Support (NLS) for z/VSE. "YY" is the language indicator for the language used. "YY" can be:

```
EN or ENU  for English
GE or DEU  for German
SP or ESP  for Spanish
KA         for Kanji (Japanese)
```

Table 3. Content of z/VSE Distribution Tapes

File	z/VSE Base Tape	z/VSE Extended Base Tape
1	Header and SA Supervisor Facilities	Stacked Header
2	VSE Standalone Utilities	Null File
3	MSHP History File - SYSRES Products	Header File
4	SYSRES Library Backup	MSHP History File CICS/VSE 2.3 - Production

Table 3. Content of z/VSE Distribution Tapes (continued)

File	z/VSE Base Tape	z/VSE Extended Base Tape
5	Null File	CICS/VSE 2.3 - Production Sublibrary
6	End of Backup Record	Null File
7	DTSFILE Header	End of Backup Record
8	DTSFILE Non-NLS	Null File
9	DTSFILE Trailer	Header File
10	Header File	MSHP History File CICS/VSE 2.3 - RCF
11	MSHP History File - PRD1.MACLIB Products	CICS/VSE 2.3 - RCF Sublibrary
12	PRD1.MACLIB Sublibrary	Null File
13	Header File	End of Backup Record
14	MSHP History File - PRD2.SCEEBASE Products	Null File
15	PRD2.SCEEBASE Sublibrary	Header File
16	Header File	MSHP History File CICS/VSE 2.3 - GENeration
17	MSHP History File - NLS Products	CICS/VSE 2.3 - Generation Sublibrary
18	NLS Library	Null File
19	Null File	End of Backup Record
20	End of Backup Record	Null File
21	DTSFILE - Header	Header File
22	DTSFILE - NLS	MSHP History File OS/390 API
23	DTSFILE Trailer	OS/390 API Sublibrary
24	Header File	Null File
25	MSHP History File - Generation Features	End of Backup Record
26	Generation Library	Null File
27	Null File	Header File
28	End of Tape Record	MSHP History File LE/VSE DBCS Locales
29	Header File	LE/VSE DBCS Locales Sublibrary
30	MSHP History File - PRD1.BASE Products	Null File
31	PRD1.BASE Sublibrary	End of Backup Record
32	Null File	Null File
33	End of Backup Record	Header File
34	Online-Message-File	MSHP History File DB2/VSE Server
35	Null File	DB2/VSE Server Sublibrary
36	End of Tape Record	Null File
37		End of Backup Record
38		Null File
39		Header File

Table 3. Content of z/VSE Distribution Tapes (continued)

File	z/VSE Base Tape	z/VSE Extended Base Tape
40		MSHP History File ASN/VSE Data Propagator
41		ASN/VSE Data Propagator Sublibrary
42		Null File
43		End of Backup Record
44		Null File
45		Null File
46		Stacked Trailer

The extended base tape for z/VSE 3.1 includes the following base programs:
- DB2 Server for VSE
- DB2 DataPropagator Relational Capture
- CICS/VSE
- LE/VSE DBCS Locales

Performing Problem Analysis

If you detect a problem in your z/VSE system, you have several possibilities to analyze and solve error situations:
- Your IBM Support Center assists you in all phases of problem handling.
- Go to the z/VSE home page at:
  `http://www.ibm.com/servers/eserver/zseries/zvse/`
- The manual *z/VSE Guide for Solving Problems* provides information about analyzing error situations and recovering from them.
- The manual *z/VSE Planning* provides a list with skeletons for debugging.
- The *Hints and Tips for z/VSE* book discusses the different types of software errors which may occur in a z/VSE system, and it describes the procedures available for error detection, error recording and error resolution. You can download this manual from the z/VSE Web site.
- The Online Problem Determination (OLPD) file contains information about CICS transaction abends.
- The CICS/VSE Problem Determination Guide provides information about diagnosing and resolving problems in a running CICS/VSE system.

Reporting a Problem to IBM

Before you call your IBM Support Center, find out:
- if the problem is hardware- or software-related,
- if the problem occurred in IBM shipped code or in other code. To identify this, use all the appropriate tools and resources such as traces and dumps.
- which component is failing, if the problem is a z/VSE problem.

Receiving a PTF from IBM

Corrective service for VSE can either be received over the Internet or on physical media, depending on the size of the service package. If corrective service is received on physical media, the PTFs can be installed using the VSE Interactive Interface dialogs.

If you want to request and receive service from the Internet, refer to Appendix C, "Downloading PTFs from the Internet," on page 83 for details about preparing your VSE system.

Your IBM Support Center will advise you on when to install which type of service. When a problem is detected, contact the IBM Support Center with a description and the symptoms of the problem.

The IBM Support Center will use the information to perform a search of the IBM databases. If the problem is known to IBM and a PTF is available, IBM sends the PTF to you. It contains fixes for the problem in your system libraries. If the problem is known to IBM but no PTF is available yet, you can request to be notified as soon as the PTF is available. If the problem is not known, IBM creates an APAR and sends it to the IBM Change Team. The Change Team writes an APAR fix and creates a PTF. In some cases an APAR fix might also be created by the Change Team as a temporary solution for your problem before the PTF is generally available.

Applying Service through PTFs

Note that there are several aspects of service application via PTF:
- Direct service application.
- Indirect service application.
- Service for VSE/ICCF members.
- Service for the Generation Feature.
- Special considerations for SVA phases.

Deciding Whether to Apply Direct or Indirect Service

Some of the *Service* dialogs described in the next chapter allow you to specify **direct** or **indirect** service. Direct service is the most common way of PTF application. It means that PTFs are merged directly into the *running system*.

"Job Sequence for PTF Application (Direct Service)" on page 28 describes in detail the job sequence used when you apply service through dialogs of the Interactive Interface.

Service will be applied indirectly if you decide to apply indirectly.

If you decide for direct application, any PTF for products residing in the system library (IJSYSRS.SYSLIB) that is flagged for indirect application cause **all** PTFs to be applied indirectly. This is done by MSHP control statements without your intervention.

However, you also can force indirect service application for system libraries, even if the PTF(s) do not require indirect service. This gives you the possibility to test the applied service before you finally merge it into your system.

When deciding whether or not to force indirect service, you should remember that indirect service application:

* Creates a "work" system library (IJSYSR1.SYSLIB) and copies both members from the service tape and unserviced members from the current system library to it.

  For all other system sublibraries the service is applied to the delta sublibraries. See "Job Sequence for PTF Application (Indirect Service)" on page 30 for more information.
* Requires you to shutdown your system and then IPL from the second system volume (SYSWK1).
* Requires you to run a procedure (DTRMRG) to move the contents of the work system library and the delta sublibraries to the system library, and IPL from the system library.

Thus you may only want to use indirect service when a PTF requires it or when you first want to test the service that you apply to your system.

If you do not want the applied service to be activated in your system due to bad test results, you may remove the preliminary installed service by running the procedure DTRNOMRG.

Note: Do not use BASIC startup on either DOSRES (or SYSWK1) until service application is finished by running the DTRMRG or DTRNOMRG procedure.

Applying Service for VSE/ICCF Members

When service affects a VSE/ICCF member provided by z/VSE, the member is replaced. If you modify any system-provided members (such as the SUBMIT procedure), you should rename them or copy them to another VSE/ICCF library. For servicing VSE/ICCF members, do **not** delete the internally defined VSE/ICCF user "AAAA".

If you plan to modify a z/VSE skeleton, you should copy it to another library before you make your changes. Otherwise, the member will be replaced if it is affected by service.

Table 4 shows VSE/ICCF libraries and their use. Note the libraries that are reserved for z/VSE.

Table 4. Contents of VSE/ICCF Libraries

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 z/VSE code members.	system
3 - 6	Public	Empty	user
7	Private	Empty	user
8	Private	Default primary library for operator profile.	user
9	Private	Default primary library for programmer profile.	user
10	Private	Default primary library for administrator profile.	user
11 - 49	Private	Empty	user
50 - 58	Public	Reserved for z/VSE.	system
59	Public	z/VSE job streams, skeletons, CICS tables, and sample programs.	system
60 - 67	Public	Reserved for z/VSE.	system
68	Public	z/VSE members for Personal Computer tasks.	system
69	Public	Reserved for z/VSE.	system
70 - 199	Private	Empty	user

Applying Service that Affects the z/VSE Generation Feature

In general, service to supervisor generation macros consists of two PTFs. If you have the Generation Feature installed, both PTFs for the pregenerated supervisor and the Generation Feature are applied automatically.

- PTF1 applies service to the pregenerated supervisor.
- PTF2 applies service to the Generation Feature.

If you installed the Generation Feature but you keep it offline, you must restore it before you apply service which affects supervisor generation macros. Doing this ensures that all required service is applied to your system.

If you **do not** have the Generation Feature installed, only service for the pregenerated supervisor is installed.

Please note that your generated supervisor and the Generation Feature must be at the same service level. If the Generation Feature is updated, you have to re-assemble the supervisor. This means that you have to do one of the following:

- If a service refresh of z/VSE is available that is at a service level higher than your present system:
  1. Order the refresh. The Generation Feature is automatically included.
  2. Use the *Fast Service Upgrade (FSU)* dialogs to install the refresh, and select *Upgrade of Generation Feature* in the FSU dialog.
  3. In case you do not use FSU, use the *Install Generation Feature* dialog to install the Generation Feature from the refresh tapes or cartridge(s) after installing the refresh.
- If no refresh at a higher service level is available:
  1. Use the *Install Generation Feature* dialog to install the Generation Feature with your system.
  2. Reinstall any service applied to the standard supervisor. By specifying the reapplication of these PTFs, you force MSHP to apply also the related Generation Feature PTFs. We recommend to reinstall the missing service for the Generation Feature using the PSP bucket for the current refresh.

Note: If you have the Generation Feature installed and use your own supervisor and if this supervisor is affected by indirect service, reassemble your supervisor into the system work library (IJSYSR1.SYSLIB on SYSWK1) **before** you shut down your system.

Special Considerations for SVA Phases

When service affects VTAM, CICS, LE, or REXX, you must be aware of the following:

In z/VSE, some phases of products residing in PRD1.BASE are loaded into the Shared Virtual Area (SVA), for example, VTAM or REXX/VSE. If a PTF for such a phase is to be installed, this phase is **not** automatically reloaded into the SVA, because the product does not reside in the IJSYSRS.SYSLIB system library. In this case, you have to IPL your system to activate the PTF. This applies to direct application; in case of indirect application, no further action is necessary.

Chapter 2. Overview of the Service Dialogs

The following section gives you an overview of the service dialogs available with the Interactive Interface dialogs of z/VSE 3.1. The dialogs are explained in the same sequence as the selections of the main panel (Figure 1).

IBM **recommends you use the dialogs** provided by the Interactive Interface to apply service. If for any reason you do not want to use the dialogs, refer to Chapter 7, "Installing Service Changes (without Dialogs)," on page 63.

The Maintain System History Program (MSHP) refers to every program that it maintains as a *product*. Thus, both terms **program** and **product** appear in the following chapters.

To access the service dialogs, start with the *Function Selection* panel and select:
   1 (Installation)
   4 (Service)

```
Administrator        Synonym
Fast Path: 14        Default: service    Yours:
```

The following panel is displayed:

```
IESADMSL.IESESERV          IBM SERVICE
                                                    APPLID: DBDCCICS


   Enter the number of your selection and press the ENTER key:

        1  Verify Location of Involved Serviced Files
        2  PTF Handling
        3  Fast Service Upgrade
        4  Retrace History File
        5  Personalize History File
        6  Change Nicknames



PF1=HELP           3=END       4=RETURN              6=ESCAPE(U)
                   9=ESCAPE(m)

==> _                                        PATH: 14
```

Figure 1. Panel - IBM Service

Selections of the IBM Service Dialog

To continue with service application, select the task that you want to perform and continue as described in the applicable chapter.

1. *Verify Location of Involved Serviced Files*

   This selection allows you to change the values of some EXTENT parameters and volume serial numbers of system files involved during the service application (FSU, PTF). The dialog allows you to change the location *information* of the files affected by service application. Using the dialog, you **cannot change the location itself.** (See "Selection 1 – Verify Location of Involved Serviced Files" on page 13.)

2. *PTF Handling*

   This applies PTFs from one or more service tapes or from the disk file. You also can print different types of service documentation from a service tape. In addition, you can remove a PTF using this dialog. (See "Selection 2 – PTF Handling" on page 17.)

3. *Fast Service Upgrade (FSU)*

   Traditionally, an FSU is used to install a service refresh. If you are a VSE/ESA 2.6.x or VSE/ESA 2.7.x user, you can use the FSU to install z/VSE 3.1. See Chapter 5, "Performing a Fast Service Upgrade," on page 35.

4. *Retrace History File*

   This prints information from the system history file. (See "Selection 4 – Retrace History File" on page 57.)

5. *Personalize History File*

   This allows you to update personalized information in the system history file. (See "Selection 5 – Personalize History File" on page 60.)

6. *Change Nicknames*

   This allows you to change nicknames of products and components. (See "Selection 6 – Change Nicknames" on page 61.)

MSHP Requirements

Most of the dialogs create jobs which use MSHP to maintain service on your system. For more information about using MSHP functions, refer to Chapter 7, "Installing Service Changes (without Dialogs)," on page 63, or to the IBM manual *z/VSE System Control Statements*.

Note that the **minimum** partition size to run MSHP is 1024K, plus a 256K partition GETVIS area. In certain cases, this minimum size may not be enough. The size of the partition needed for MSHP depends on the number of records in the system history file, and on storage needed by involved subfunctions like LIBR or LNKEDT. The allocation of the partition should be at least 2 MB, the size should be at least 1280 K.

For information on the default partition sizes specified for predefined environments, refer to the topic "System Organization and Concepts" in the IBM manual *z/VSE Planning*.

Chapter 3. Changing the Location Information of Serviced Files

This chapter describes the Interactive Interface dialog *Verify Location of Involved Serviced Files*. You only have to use this dialog when you have changed the location of any system files. **Do not use it if you have not changed the location or size of the files**.

Selection 1 – Verify Location of Involved Serviced Files

This dialog allows you to change the location **information** of the files affected by service application. Using this dialog, **you cannot change the location itself**. Note, however, that the system needs accurate location information for all other IBM service dialogs. **Therefore, you must use this dialog if you have changed the location or size of any of the following files**.

Descriptive File Name	File ID	Technical File Name	VSAM catalog
System residence file	VSE.SYSRES.LIBRARY	IJSYSRS[1]	
System residence work file	SYS.NEW.RES	IJSYSR1[1]	
System history file	VSE.SYSTEM.HISTORY.FILE	IJSYSHF	
System work history file	WORK.HIST.FILE	IJSYSHF	
Job Manager file	VSESP.JOB.MANAGER.FILE	VSEJMGR	
Text repository file	VSE.TEXT.REPSTORY.FILE	IESTRFL	VSESPUC
Text repository work file	TEXT.REPSTORY.WORKFILE	IESTRWF	VSESPUC
Service File on Disk	PTF.FILE	IJSYSPF	VSESPUC

Note: Do not put these files on virtual disks.

[1] IJSYSRS and IJSYSR1 must start at the beginning of the disk device.

To access the dialog, start with the *Function Selection* panel and select:
    1 (Installation)
    4 (IBM Service)
    1 (Verify Location of Involved Serviced Files)

```
Administrator      Synonym
Fast Path: 141     Default:  _____   Yours:
```

The system then displays the panel shown in Figure 2 on page 14. The example shown in this figure refers to a disk device of type 3390. The layout on your system may look different, depending on the type of disk device you use.

Verifying Location of Files

```
SRV$LOC1              FILE LOCATION FOR SERVICE DIALOGS

 LIST OF AFFECTED FILES
                                                              PAGE 1 OF 2


    FILENAME           VOLUME SERIAL      START          NUMBER OF
                         NUMBER          TRK/BLK           TRK/BLK

    IJSYSRS            DOSRES            _____1          __899___
    IJSYSR1            SYSWK1            _____1          __899___
    IJSYSHF (SYSTEM)   DOSRES           ___5895          ___75___
    IJSYSHF (WORK)     SYSWK1           ___900           ___75___
    VSEJMGR            SYSWK1           ___8340          ___15___




    PF1=HELP       2=REDISPLAY  3=END                   5=PROCESS
                   8=FORWARD
```

Figure 2. Panel 1 - Verify Location of Involved Serviced Files

The above panel applies to the following files:
- System residence file
- System residence work file
- System history file
- System work history file
- Job Manager file.

In the panel, you can change the
- Volume serial number,
- Start track/block, and
- Number of tracks/blocks

for these files.

The system issues a message telling you to do this with caution.

Notes:

1. IJSYSHF (system history file) and VSEJMGR (Job Manager file) are used by other programs. This means that if you change their locations, you also should change the standard labels.

2. When you move VSEJMGR to another location within SYSWK1, you must initialize VSEJMGR at the new location. Change the standard labels and then run the following job (skeleton SKJMGRIN in VSE/ICCF library 59):

```
// JOB INITJMGR
// EXEC DTRIJMGR,PARM='/.FORMAT FORCE'
/*
/&
```

On a subsequent panel (press **PF8**), you can change the location of the text repository file and the service file on disk (see the panel shown in Figure 3 on page 15). Type the desired parameters over the existing ones and then press **PF5** to process the changes.

You can change the catalog name and catalog ID for the text repository file. To do this, type the device name over the one shown. For the service file, you can change the catalog name.

Note that if you have already pressed PF5 on the first page, you will not get the subsequent page. Press **PF5** only after you have changed the information you want on both pages. This will store your changes in internally-used tables.

If you have typed in wrong information or if you want to quit the dialog for whatever reason, press **PF3**. None of the information you have entered so far will be saved.

```
SRV$LOC2              FILE LOCATION FOR SERVICE DIALOGS

LIST OF AFFECTED FILES

                                                    PAGE 2 OF 2
FILENAME: IESTRFL    FILE-ID: VSE.TEXT.REPSTORY.FILE

      CATALOG NAME:          VSESPUC

FILENAME: IESTRWF    FILE-ID: VSE.TEXT.REPSTORY.WORKFILE

      CATALOG ID:            VSESP.USER.CATALOG
      CATALOG NAME:          VSESPUC
      VOLUME SERIAL NUMBER:  DOSRES     SYSWK1

FILENAME: IJSYSPF    FILE-ID: PTF.FILE

      CATALOG NAME:          VSESPUC


PF1=HELP      2=REDISPLAY  3=END                 5=PROCESS
PF7=BACKWARD
```

Figure 3. Panel 2 - File Location for Service Dialogs

Note: Keep in mind that the dialog *Verify Location of Involved Serviced Files* does not move the files. Instead, the information gathered during this dialog is used later during the service application. If you have changed the position of any of the files affected, the service dialogs need to know the new position.

Only the Text Repository workfile is newly defined and need not be moved.

Verifying Location of Files

Chapter 4. Applying PTFs

This chapter describes the *PTF Handling* dialog available for applying PTFs to your current z/VSE system. PTFs (Program Temporary Fixes) are supplied by IBM on one or more service tapes (or cartridges), or electronically via the Internet.

Selection 2 – PTF Handling

The *PTF Handling* dialog applies PTFs from a service file residing on one or more distribution tapes or cartridges, or from the service file on disk. You will also find the term **service unit** in the dialog and in the following text. A service unit consists of one or more PTFs, either on disk or on tape (cartridge). Details about the tape layout are provided on page 63. Refer also to "Selection 3: Apply PTFs" on page 25.

You can apply PTFs in two ways:
- Apply **all** PTFs from a service file.
- Apply **selected** PTFs from a service file. If you choose this method, product and component are offered as further selection criteria.

z/VSE provides a dialog to apply PTFs for your z/VSE base system (and for a number of optional programs) which may be on **different** PTF tapes, or which reside in the service file on disk.

To access the dialog, start with the *Function Selection* panel and select:

1   (Installation)
4   (IBM Service)
2   (PTF Handling)

```
Administrator          Synonym
Fast Path: 142         Default: _____   Yours:
```

The following panel is displayed:

```
 IESADMSL.IESEPTF              PTF HANDLING
                                                       APPLID: DBDCCICS
    Enter the number of your selection and press the ENTER key:

          1  Print Service Document
          2  Analyze and Apply PTFs
          3  Apply PTFs
          4  Remove PTF Records from History File




 PF1=HELP                  3=END       4=RETURN                6=ESCAPE(U)
                           9=Escape(m)                   PATH: 142
 ==>
```

Figure 4. Panel - Selection for PTF Handling

The following pages describe the four selections in detail.

Selection 1: Print Service Document

This dialog allows you to print service documentation on SYSLST from a service tape, or from a file. Such information can be service tape documents, cross reference lists, and PTF cover letters. It may also contain actions that are required for PTF application.

```
 SRV$LST1                    PRINT SERVICE DOCUMENTS

 Enter the required data and press ENTER.

SERVICE MEDIUM.............. 1            Is the service file on tape?
                                          (Enter 2 if on disk)


TAPE UNIT ADDRESS........... ___         For a list of valid addresses see
                                         HELP

Enter 2 for NO and 1 for YES to the following questions.

PRINT DOCUMENT.............. 1           Do you want to print the service tape
                                         document?
PRINT CROSS-REF LIST........ 1           Do you want to print the PTF cross-
                                         reference list?
PRINT COVER LETTERS......... 1           Do you want to print PTF cover let-
                                         ters?


 PF1=HELP      2=REDISPLAY  3=END
```

Figure 5. Panel - Print Service Documents

The dialog requests the following information:

SERVICE MEDIUM

> As the service file including the PTFs can reside on tape or disk, specify the service medium. Enter 1 for tape, and 2 for disk.

TAPE UNIT ADDRESS

> If the service file is on tape, specify the address (cuu) of the tape unit used for the service tape.
>
> In addition, you must specify whether or not you want the following three types of documentation printed. For each type, specify:
> **1**   - YES (print documentation)
> **2**   - NO (do not print documentation)

PRINT DOCUMENT

> Print information about installing service from the tape. Most PTF tapes do not include information for this selection. This option is not valid for the PTF file.

PRINT CROSS-REF LIST

> Print a cross-reference list of all PTFs on the tape or file.

PRINT COVER LETTERS

> Print all or selected PTF cover letters with information about the errors or comments and hints.
>
> You can start the printing of each cover letter on a new page. You need the following information:

- **ALL PTFs** Specify one of the following:

  1 - Print all cover letters

  If you decide to print the cover letters of all PTFs on the tape or file, the *Job Disposition* panel is shown after you have pressed **ENTER**.

  2 - Select the cover letters you want printed

  If you decide to print selected cover letters, another panel is shown after you have pressed **ENTER**. Type in the numbers of the PTFs whose cover letters you want to print. The dialog redisplays the panel until the last field on the panel is left blank.

- **CONTINUOUS** Specify one of the following:

  1   - Do not start at a new page for each cover letter

  2   - Start at a new page for each cover letter

The dialog creates a job with the default name DOCPRINT. From the *Job Disposition* panel, you can submit the job to batch, file it in your default primary library, or both.

If you use the service file from tape, mount the service tape before you submit the job. Use the **same** tape address as specified in the dialog.

If the PTFs have been distributed electronically, application from disk is recommended.

Selection 2: Analyze and Apply PTFs

Use selection 2 if you want to apply one or several PTFs.

The dialog displays a list of the PTFs stored on the service tape or file. From the list, you can choose the required PTF(s) by marking each with an **X**. The dialog allows you to choose PTFs from a hierarchical order of products, components and PTFs.

Before job submission, the dialog shows you:

- Whether the PTF you need is on the service tape or file.
- Which pre-requisites are necessary for the application of a PTF.

When you select *Analyze and Apply PTFs*, the system displays a list of all the service tapes known to it, or it lists the service file on disk. An example is shown in Figure 6 on page 20.

If you have not used the dialog before and no service tapes are known to your system, you first have to **add** a tape or the file to the list. Press **PF6** (Add Info) to do so. The same applies if you want to add another tape to the existing list.

If the service file is on tape, you are asked for the address of the tape drive where the tape is mounted and the service unit name. The system then creates a job that analyzes the contents of the service unit and stores that information in internal tables.

Note: If you want to use this dialog, you must enter this information for each tape that you received from IBM.

```
SRV$PH01              ANALYZE AND APPLY PTF
                                                        PAGE 1 of 1

LIST OF ALL PROCESSED SERVICE UNITS

OPTIONS: 5 = DELETE  7 = LIST PROD/COMP/PTF   8 = LIST PTFS


       OPT        UNIT-NAME        DATE-ADDED


       _          PTFCICS          10/06/04
       _          SZENST11         11/04/04
       _          SZENALL          11/04/04
       _
       _
       _
       _
       _
       _
       _

PF1=HELP     2=REDISPLAY   3=END                      6=ADD INFO
                           9=FORGET    10=ALL PTFS
```
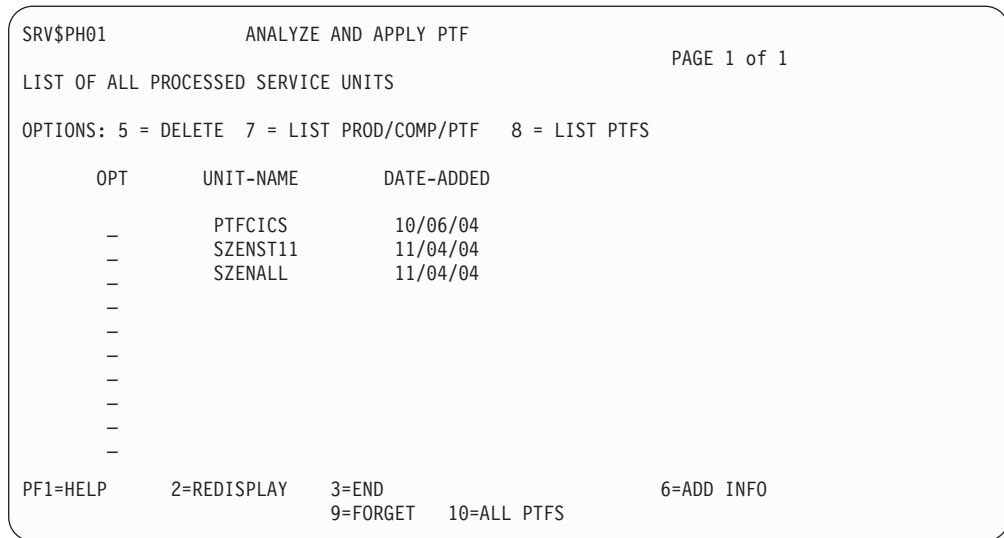
Figure 6. Panel - List of All Processed Service Units

The options offered in Figure 6 are discussed in detail on the following pages.

Description of PF Keys

PF3 (End)

>   If you press this PF key, the system goes one level back in the hierarchy, and the action you want to perform is completed.

PF6 (Add info)

>   On the *List of All Processed Service Units* panel, press **PF6** if you want to add a new service unit for service processing. The panel SRV$PH09 is displayed and you are asked for the service medium, for a unique service unit name and, if it is a tape, for the tape unit address on which you have mounted the tape. Enter the required information and press ENTER. The *Job Submission* panel appears.

>   If you press PF3, the information you have entered is lost and no job will be submitted. No additional service unit is shown on panel SRV$PH01.

>   If you have built a job and have pressed ENTER, an additional service unit is shown (with the name you have specified) on panel SRV$PH01, showing eight asterisks in the DATE ADDED field. After you have submitted this job, you have to leave panel SRV$PH01 (by pressing PF3). Enter the panel again to get the information about the new service unit, which then shows the correct information.

>   Then the system scans the tape or file and stores all relevant information in a table for further processing. Note that you must perform this step to have all information about the PTF(s) on tape available.

PF9 (Forget)

>   If you have deleted a service unit by mistake, you can press **PF9**. You will go one level back in the hierarchy. When you enter the panel again, the PTF tape will be shown again on the list.

PF10 (All PTFs)

>   If you press **PF10** on the *List Service Units* panel, all PTFs from all service units are displayed in one single fulist. The panels displayed provide the same functions as *List Prod/Comp/PTF (option 7)* described below, or *List PTFs (option 8)* described on page 23. The only difference is that the three possibilities start from a different level.

Description of Options

Delete a Service Unit (Option 5)

All internal tables which keep the information related to the specified service unit are deleted. Type **5** in the option column next to the service unit you want to delete and then press **ENTER**. The service unit name disappears from the list, but information is not deleted until you press **PF3=END**. If you have deleted a unit by mistake, press **PF9=FORGET**. This keeps the original tables. In the next session, the service unit name again appears on the list.

List Prod/Comp/PTF (Option 7)

This option allows you to choose the PTFs you want to apply from the hierarchical order of:

1. Products
2. Components
3. PTFs

You may decide whether you want to apply all or selected PTFs of a product/component. If you decide to apply service on the product level, the lower levels (components, PTFs) will be automatically included in the final job stream.

The dialog does not allow you to select a product that is not installed in the system.

First, the system displays a list of the products among which you may choose. An example of this list is shown in Figure 7.

```
SRV$PH02                    ANALYZE AND APPLY PTF


LIST OF PRODUCTS

SERVICE UNIT: SZENST11                                    PAGE 1 OF 1
OPTIONS:   1 = INCLUDE PRODUCT  2 = COMPONENTS/PTF 3 = SUBLIBRARIES
           4 = AFFECTED MEMBERS 5 = REQUIREMENTS   6 = APARS    7 = EXCLUDE


OPT      NICKNAME  INCLUDED    PRODUCT-ID     RESIDENCE-LIBRARY
                                            FIRST             ADDITIONAL
 _       DSF                   DS21G0     IJSYSRS.SYSLIB
 _
 _
 _
 _
 _
 _
 _
 _
 _

PF1=HELP       2=REDISPLAY  3=END                 5=PROCESS    6=NOCHECK
```

Figure 7. Panel - Analyze and Apply PTF (List of Products)

The options for the list that is created are:

Include Product (Option 1)

This option allows you to select from the listed products those which you want to include for processing. After you type **1** in the option column and press **ENTER**, the system displays an "X" in the INCLUDED column. At

the end of the session, a job stream is built which causes MSHP to apply the corresponding PTFs for these products.

Components/PTF (Option 2)

This option leads you to the next level, which shows a list of all components for a selected product. **This level is skipped** if the product has only one component or if only one of the components receives service. The third level follows the list of components or, if the product is composed by only one component, the list of products. It lists all PTFs for a selected component/product. Select option 2 to reach both the second and the third level.

Sublibraries (Option 3)

This option appears for both the first level (list of products) and the second level (list of components). If you select this option, the system displays the sublibrary or sublibraries affected by the PTF(s). For example, the affected sublibrary for component ID '5658-992-01' of program ICKDSF/VSE is IJSYSRS.SYSLIB.

Affected Members (Option 4)

This option appears for all three levels (products, components and PTFs). Depending on the level from which you selected this option (which is option 4 on all three levels), the system displays the affected members by product, component or PTF. For example, if you selected option 4 from the list of PTFs, the system may display $LNKEDT.PHASE as the affected member for PTF *AB11111* (where AB11111 is a dummy name).

Requirements (Option 5)

This option appears for all three levels (products, components and PTFs). Depending on the level from which you selected this option (which is option 5 on all three levels), the system displays the requirements for a product, component or PTF. These requirements may be prerequisites and/or corequisites. A prerequisite, for example, may be that you have to apply PTF *AB11111* before you can apply PTF *BB22222*.

> **PF10 (Status)**The panel that you get when you have selected option 5 (Requirements), lists all requirements for the selected PTF. On this panel, PF10 (Status) shows the actual status of selected PTF(s).

APARs (Option 6)

This option appears for all three levels (products, components and PTFs). Depending on the level from which you selected this option (which is option 6 on all three levels), the system displays the APARs fixed by product, component or PTF.

Exclude (Option 7)

This option appears for all three levels (products, components and PTFs). By using the EXCLUDE option, you reset the INCLUDE option that you have used before. After you type in **7** in the option column and then press **ENTER**, all PTFs that were flagged to be included are excluded again. The "X" in the INCLUDE column disappears. You may use this option if:
- You selected option 1 (include product/component/PTF) accidentally.
- You want to apply all PTFs except for the one(s) you specified.

  Example: Assume you have one product with 6 PTFs. You want to include all PTFs except for PTF number 5. Proceed as follows:

  1. On the list of products shown (Figure 7 on page 21), type in **1** (include product) next to the desired product. Press **ENTER**.

  2. On the same panel, type in **2** (component/PTF) next to the desired product. Press **ENTER**.

3. The 6 PTFs will be listed. Type in **7** (exclude) next to PTF number 5. Press **ENTER**.

List PTFs (Option 8)

This selection, from the initial *List of All Processed Service Units* panel (see Figure 6 on page 20) lists all PTFs that are stored on a service unit.

You do not have to go through the hierarchy of products, components and PTFs if you want to apply single PTFs. You also can locate a PTF by typing in the PTF number in the Locate PTF line, shown in Figure 8.

You may choose from the following panel options:

```
 SRV$PH08                      ANALYZE AND APPLY PTF


 LIST PTFS ON PROCESSED SERVICE UNIT

 SERVICE UNIT: OGNLOCK                                      PAGE 1 OF 2
 OPTIONS:   1 = INCLUDE PTF    3 = COMPONENT/LIBRARY  4 = AFFECTED MEMBERS
            5 = REQUIREMENTS    6 = APARS FIXED        7 = EXCLUDE PTF
 OPT           PTF-NUMBER     INCLUDED

  _            UN40067           X
  *            UN40068           X
  _            UD48399
  _            UD48398
  _            UD48403
  _            UD48402
  _            UD48395
  _            UD48559

 LOCATE PTF.....   _____

 PF1=HELP      2=REDISPLAY  3=END                 5=PROCESS    6=NOCHECK
               8=FORWARD
```

Figure 8. List PTFs on Processed Service Tape

Include PTF (Option 1)

This option allows you to select from the listed PTFs the ones that you want to include for processing. After you have typed in **1** in the option column and then pressed **ENTER**, the system displays an "X" in the INCLUDED column. At the end of the session, a job stream is built which causes MSHP to apply the PTF(s).

Component/Library (Option 3)

This option lists the affected sublibrary/sublibraries for a component (for example, PRD1.BASE).

Affected Members (Option 4)

This option lists the affected members for a specified PTF (for example, $LNKEDT.PHASE).

Requirements (Option 5)

This option shows you a list of all requirements which must be satisfied to apply this PTF. You may ask for the actual status of the requirements by pressing PF10. The system then tells you whether the PTF already is applied. See the note for PF6 (NOCHECK).

> **PF10 (Status)** On the panel that you get when you have selected option 5 (Requirements), all requirements for the PTF selected are listed. On this panel, PF10 (Status) shows the actual status of the PTF (whether all prerequisite and corequisite PTFs are installed).

APARs Fixed (Option 6)
> This option lists the APARs fixed by the PTF that you specified.

Exclude PTF (Option 7)
> You may use this option if you selected option 1 (include PTF) accidentally for a PTF.

Description of PF Keys

The following additional **PF keys** are used in the panel shown in Figure 7 on page 21 and in subsequent panels:

PF3 (End)
> If you press this PF key, all data that you have entered on the panel up to now is saved. The system goes one level back in the hierarchy. If you are on the highest level in the hierarchy and you press **PF3**, a message informs you that all your input will be lost if you press PF3 again. If you do not want to loose your data, press **PF5=PROCESS**. This creates a job stream.

PF5 (Process)
> This PF key is only offered on the highest level in the hierarchy, when all necessary data is available for processing.
>
> Use **PF5** to check whether the PTF(s) selected for application are already applied. (This is similar to the PF10=STATUS key in the requirements option.)
>
> This process does **not** check all requirements defining whether a PTF can be applied or not. When you use PF5, only the current status of the selected PTF(s) is checked (applied or not applied). Depending on the amount of service on your tape(s) this may take a while.

PF6 (NOCHECK)
> When lists of products, components, or PTFs are displayed, you can use **PF6** if you do **not want to check** whether the PTF(s) are already applied.

The following is valid for PF5 (PROCESS) and PF6 (NOCHECK): The system creates the *PTF Apply* job stream. The following information panels are displayed:

*   List of PTFs already applied (if you used PF5=PROCESS).

    The panel shows all selected PTFs that are already installed in the system, if there are any.

*   List of PTFs to be applied (if you used either PF5 or PF6).

    The panel shows the final list of PTFs that are applied when the job stream is run.

> **Note**
>
> The reapply option lets you force a new installation of these PTFs. Be careful when you use it, because you can downlevel your code with it.

In the final step in creating the job stream, the system asks you for:

*   The tape unit (if the service file is on tape), you want to use for mounting your PTF tapes.
*   The number of service tapes you want to have processed by this PTF application.
*   Whether you want to have a backup of all libraries used for the base and optional programs listed in the system history file.

- The type of application for each PTF on a service unit is predefined. PTFs for programs **not** residing in the system sublibraries IJSYSRS.SYSLIB, PRD1.BASE, PRD1.MACLIB, PRD2.SCEEBASE or PRD2.GEN1 (if available) are always applied directly. PTFs for the programs in the system libraries may specify direct or indirect application.

    You should accept the predefined application by entering **2 (NO)**. You can, however, force indirect application of all PTFs for programs residing in the above listed system sublibraries by entering **1 (YES)**.

The dialog creates a job sequence that is managed by the Job Manager with the default VSE/ICCF member name APPLYSRV. The included VSE/POWER jobs start with prefix DTRPTF. On the *Job Disposition* panel, you can submit the job to batch, file it in your default library, or both.

"Job Sequence for PTF Application" on page 27 describes how to proceed, when you want to apply PTFs.

Selection 3: Apply PTFs

This dialog creates a job sequence that is managed by the Job Manager. "Job Sequence for PTF Application" on page 27 has information about Job Manager processing and other considerations for this dialog.

If you chose selection 3 from the *PTF Handling* panel, a service unit (on tape or file) is used to correct one or more **specific** problems. In this case, the service unit is not analyzed as in selection 2. You can decide whether you want one or more tapes to be processed.

The dialog asks you for the following:

SERVICE MEDIUM
As the service file including the PTFs can reside on tape (or cartridge), or on disk, specify the service medium. If the PTFs have been distributed electronically, application from disk is recommended. Enter 1 for tape, and 2 for disk.

TAPE UNIT ADDRESS
If the service file is on tape, specify the address (**cuu**) of the tape drive.

TAPE QUANTITY
If the service file is on tape, specify the number of service tapes you have for the PTFs. If all requirements are met for the PTFs you wish to apply, you are not asked for the number of tape mounts during job execution. Perform the following steps for mounting the tapes:

1. Mount **all** tapes at the beginning, as the system first scans all mounted tapes.
2. Mount the tapes again in sequence for the PTF application.
3. If you have mounted two tapes and are prompted the third time, mount tape 1 again. At the fourth prompt mount tape 2. If you have to process three or more PTF tapes, refer to the *z/VSE System Control Statements* for instructions on how to do so.

TYPE Specify whether you want to apply all or selected PTFs of a particular tape. You can choose among the following:

1=ALL
All PTFs of the corresponding tape are applied.

> **2=INCLUDE**
>> Another panel will be displayed on which you can specify all the PTFs you want to apply.
>
> **3=EXCLUDE**
>> A panel is displayed on which you can specify all the PTFs you want to exclude. All remaining PTFs are applied.

BACKUP

> Specify whether you want to backup **all** the libraries used for base and optional programs listed in the system history file. If you specify **1** (YES, backup) **all** sublibraries which were installed by installation dialogs are backed up. Enter one of the following:
>
> **1**   - YES (Backup taken)
>
> **2**   - NO (Backup is not taken)

FORCE INDIRECT

> With this option, you can force indirect application of all PTFs for programs residing in the system libraries IJSYSRS.SYSLIB, PRD1.BASE, PRD1.MACLIB, PRD2.SCEEBASE, and PRD2.GEN1 (if available).
>
> In most cases, however, you should enter **2 (NO)** to accept predefined defaults.

ADD INFO TO THE LIST

> Note that this option is only available for one tape, that is, if you specified TAPE QUANTITY = 1. If you specify **1**=YES, the system asks you for a unique service unit name. If it is a tape, the system asks also for the tape drive on which you have mounted the tape. Then the system scans the service unit and stores all relevant information in a table for further processing. Note that for the dialog *Analyze and Apply PTFs*, you must perform this step to have all information about the PTF(s) on tape available. Specify one of the following:
>
> **1**   - YES (Add new service unit for service processing)
>
> **2**   - NO (Do not add new service unit)

The dialog creates a job with the default name APPLYALL, consisting of VSE/POWER jobs starting with the prefix DTRPTF. From the *Job Disposition* panel, you can submit the job to batch, file it in your default library, or both.

"Job Sequence for PTF Application" on page 27 describes how to proceed, when you want to apply PTFs.

Selection 4: Remove PTF Records from History File

This dialog allows you to remove PTF records for one or more components from the system history file. **The fix itself, however, remains in the system** after the job stream is executed.

Note: This is an exceptional case and only should be done on IBM's advice. You may have to use this function, for example, if a PTF is in error and you need to reapply the (correct) PTF with the **same** PTF number.

This selection of the *PTF Handling* panel displays a list of all components installed in the system. You now specify the components that are related to the PTFs which

you want to remove from the system history file. Type **1** in the option column next to these component(s). The next panel allows you to specify the PTF you want to remove.

Optionally, you can decide whether you want to verify immediately that the specified PTF(s) actually is/are applied. If you want the system to check in the system history file before generating a job which removes the PTF(s), enter **1** in the *Verify PTF* field. Then press **ENTER**. If you are sure that the PTF number is correct and you want to bypass the verification, enter **2** in the same field. The job which removes the PTF(s) is then generated without verification.

Once you have specified all PTFs you want to remove, press **PF5** to create a job which removes the history record(s) of the specified PTF(s) from the system history file.

Job Sequence for PTF Application

The following information refers to the *PTF Handling* dialog and its selections:
- Analyze and Apply PTFs
- Apply PTFs
1. The dialogs create a job sequence which runs under the control of Job Manager. If a problem occurs and you **cannot** resume or reset, delete the following jobs in the VSE/POWER reader queue:
   - DTRCLPTF
   - All jobs beginning with the prefix DTRPTF (DTRPTF01, DTRPTF02 and so on).

   If you do not do this, the Job Manager may not work correctly at a later time. More information on the Job Manager is in "Appendix A. Overview of the Job Manager" of the IBM manual *z/VSE Installation*.
2. The job sequence runs in the background partition (BG). This is the default. You should start BG with **CLASS=0**. If you prefer to use a different class, you can specify this in the *Job Disposition* panel, as long as you select a class that was started in VSE/POWER. The partition size should be at least 1280 K.
3. Only one job sequence from the dialogs must be in the reader queue at one time.
4. If you use the automatic startup facility, do **not request a BASIC start** during IPL from IJSYSR1 (part of indirect PTF application). This is not possible because the VSE/POWER queue files and the VSE/POWER data file reside on the same location as IJSYSR**1**.SYSLIB. For a detailed description of the different startup modes, refer to the IBM manual *z/VSE Operation*.
5. If service affects a Generation library, the library must be online. If it is not online, the job fails. In this case, do the following to stop the job sequence temporarily and exit from Job Manager:
   a. Enter **x EXIT** (where *x* is the reply ID)
   b. Restore the Generation library using the *Install Generation Feature* dialog (fast path: 13)
   c. Enter **R RDR,DTRPTFAB** to restart apply service and to proceed with service application:
   d. Enter **x RESUME** (where *x* is the reply ID)
6. You should have a current backup of your system available, in case service application is not successful. If you do not have one, specify **1** (YES) in the BACKUP field of the *Apply PTFs from Service Unit* panel.

Job Sequence for PTF Application (Direct Service)

This is the method for applying service for products not residing in the system libraries IJSYSRS.SYSLIB, PRD1.BASE, PRD1.MACLIB, PRD2.SCEEBASE and PRD2.GEN1. You also can use direct service application for products residing in the system libraries, if you want to merge the service directly into the running system. You cannot test or verify the service before final application, when you apply it directly.

When you use the dialogs, the following jobs are created:

DTRPTF01

This job ensures that any previous application of indirect service was completed. It is especially important for users who applied indirect service and did not merge this service. "Job DTRPTF01 – Dialog Problem Checking" on page 33 has more information.

DTRPTF02

If requested, this job performs a backup of all libraries. The system library IJSYSRS is backed up with the option RESTORE=STANDALONE and is the first one on the backup tape.

DTRPTF03

This job copies the system history file to the work history file.

IJSYSR**1**.SYSLIB is created to prepare special treatment of service for products residing in IJSYSRS.SYSLIB. This is done to avoid possible space problems in the system library.

The MSHP residence information of the work history file for products residing in the following libraries is changed to a new name:

IJSYSRS.SYSLIB – IJSYSR**1**.SYSLIB
PRD1.BASE – PRD1.BASE**D**
PRD2.GEN1 – PRD2.GEN1**D** (if available)
PRD1.MACLIB – PRD1.MACLIB**D**
PRD2.SCEEBASE – PRD2.SCEEBAS**D**

These libraries are later on referred to as **delta sublibraries**.

MSHP is executed to test for PTF requirements and to have the PTFs integrated into the appropriate product sublibraries. Due to the changed residence information, service applied to one of the four system sublibraries mentioned above is cataloged into the corresponding delta sublibraries.

All changes are recorded by updating the work history file.

DTRPTF04

After MSHP has successfully applied all PTFs, all members in the delta sublibraries are moved into their corresponding base sublibraries. Existing members are replaced. This means direct update of the system sublibraries of a running system.

Service is merged directly into the system. The MSHP residence information of the work history file is reset.

DTRPTF05

For VSE/ICCF members the job will disconnect the DTSFILE. There is a PAUSE statement to check if disconnecting was successful.

Create a backup of your VSE/ICCF DTSFILE. For servicing VSE/ICCF members, do not delete the internally defined VSE/ICCF user "AAAA".

DTRPTF06 and DTRPTF07

Further processing for the text repository file.

DTRPTF08

The work history file is copied back to the system history file.

Direct Service application is complete

Please note:

- PTFs applied directly to z/VSE components (such as CICS, VTAM, or VSE/POWER) may require a restart of that component or – in the case of VSE/POWER – an IPL.
- If the PTF requires a VSE/POWER COLD start, you have to POFFLOAD your VSE/POWER queues prior to IPL (POFFLOAD BACKUP,ALL,cuu). Generally, such PTFs are flagged for indirect service application.

Further Processing (Direct Service)

1. After applying service to user-modified or CICS generated programs and tables, regenerate startup procedures and VTAM books.

   To do so, start with the *Function Selection* panel and select:

   2   (Resource Definition)

   4   (Hardware Configuration and IPL)

   1   (Configure Hardware)

   ```
   Administrator      Synonym
   Fast Path: 241     Default:  _____   Yours:
   ```

   On the *Configure Hardware* panel, press **PF5**. Select the startup procedures you want to regenerate. The dialog then generates a job which assembles the required books. The dialog is described in the IBM manual *z/VSE Networking Support*.

   Note that you should review the output of the job to make sure everything is correct. Error messages in the job output may indicate difficulties for a subsequent IPL.

2. After PTF application, the updated text repository file must be activated. See the instructions for updating default selection panels and application profiles under "Post-Stage 2 Processing" on page 49.

3. If the output of the *Print Service Documents* dialog indicates any action items, you should perform these action items now. An action item may be, for example:
   - updating the CSD file
   - updating the transaction security definition
   - updating the Application Profiles and Selection Panels.

Job Sequence for PTF Application (Indirect Service)

This is the method for applying critical service for products residing in the system sublibraries IJSYSRS.SYSLIB, PRD1.BASE, PRD2.SCEEBASE, PRD2.GEN1 (if available), and PRD1.MACLIB. It allows to test the serviced system and to remove this service in case of failure.

Depending on the type of service we recommend to backup the DTSFILE and the text repository file, in order to make sure you can switch back to the level before the service application. See also job DTRPTF05 and DTRPTF06 on page 31.

This method is used automatically if at least one PTF for IJSYSRS.SYSLIB is flagged for indirect service application.

When you use the dialogs, the following jobs are created:

DTRPTF01

This job is important for users who applied indirect service before and did not merge this service. If this applies to you, please refer to "Job DTRPTF01 – Dialog Problem Checking" on page 33 for more information.

DTRPTF02

If requested, this job performs a backup of all libraries. The system library IJSYSRS is backed up with the option RESTORE=STANDALONE and is the first one on the backup tape.

DTRPTF03

This job copies the system history file to the work history file.

IJSYSR**1**.SYSLIB is created to prepare special treatment of service for products residing in IJSYSRS.SYSLIB. This is done to avoid possible space problems in the system library. It is also necessary to prepare for indirect service application.

The MSHP residence information of the work history file for products residing in the following libraries is changed to a new name:
    IJSYSRS.SYSLIB – IJSYSR**1**.SYSLIB
    PRD1.BASE – PRD1.BASE**D**
    PRD2.GEN1 – PRD2.GEN1**D** (if available)
    PRD1.MACLIB – PRD1.MACLIB**D**
    PRD2.SCEEBASE – PRD2.SCEEBAS**D**

These libraries are later on referred to as **delta sublibraries**.

MSHP is executed to test for PTF requirements and to have the PTFs integrated into the appropriate product sublibraries. Due to the changed residence information, service applied to one of the four system sublibraries mentioned above is cataloged into the corresponding delta sublibraries.

All changes are recorded by updating the work history file.

DTRPTF04

After MSHP has successfully applied all PTFs to IJSYSR1.SYSLIB, all unchanged members are copied from IJSYSRS.SYSLIB to IJSYSR**1**.SYSLIB. Thus a new system sublibrary is created, usually on volume SYSWK1, containing the new service. The system sublibraries of the running system are not changed yet. The MSHP residence information of the work history file is reset.

DTRPTF05

For VSE/ICCF members the job will disconnect the DTSFILE. There is a PAUSE statement to check if disconnecting was successful.

Create a backup of your VSE/ICCF DTSFILE. For servicing VSE/ICCF members, do not delete the internally defined VSE/ICCF user "AAAA".

DTRPTF06 and DTRPTF07

Backup your text repository file so that you can restore it if you do not merge service later.

This job further processes the text repository file.

DTRPTF08

This job catalogs a procedure to merge service, and it instructs you to shut down your system. A new set of LIBDEF and LIBSDL procedures is used for the startup on SYSWK1. The new set is LIBDEF**S** and LIBSDL**S** which contains the so-called delta sublibraries PRD1.BASED, PRD2.SCEEBASD, PRD2.GEN1D, and PRD1.MACLIBD.

DTRPTF09 and DTRCLPTF

These jobs are cleanup jobs for PTF application.

Note:
- If the PTF requires a VSE/POWER COLD start, you have to POFFLOAD your VSE/POWER queues prior to IPL (POFFLOAD BACKUP,ALL,cuu).
- If you have the Generation Feature installed and use your own supervisor **and** the supervisor is affected by this service application, reassemble your own supervisor into IJSYSR1.SYSLIB **before** shutting down your system. Insert PRD1.MACLIBD and PRD2.GEN1D in the LIBDEF chain sequence **before** PRD2.GEN1.

Further Processing (Indirect Service)

1. After applying service to user-modified or CICS generated programs and tables, regenerate startup procedures and VTAM books.

   To do so, start with the *Function Selection* panel and select:

   2   (Resource Definition)

   4   (Hardware Configuration and IPL)

   1   (Configure Hardware)

```
Administrator        Synonym
Fast Path: 241       Default:  _____    Yours:
```

   On the *Configure Hardware* panel, press **PF5**. Select the startup procedures you want to regenerate. The dialog then generates a job which assembles the required books. The dialog is described in the IBM manual *z/VSE Networking Support*.

   Note that you should review the output of the job to make sure everything is correct. Error messages in the job output may indicate difficulties for a subsequent IPL.

2. After PTF application, the updated text repository file must be activated. See the instructions for updating default selection panels and application profiles under "Post-Stage 2 Processing" on page 49.

3. If the output of the *Print Service Documents* dialog indicates any action items, you should perform these action items now. An action item may be, for example:
   - updating the CSD file
   - updating the transaction security definition before you merge
   - updating the Application Profiles and Selection Panels.
4. IPL from the disk device on which IJSYSR1 resides (default is SYSWK1).

Testing and Merging Service

You should now test the service application. If your test completes successfully, you can merge the service into your system. This is described in "Merge Service into Your System."

If your test is not successful, you do not have to merge the service contained in the delta sublibraries. You then continue as described in "Do not Merge Service into Your System," and you can return to your original system.

If the DTSFILE or the text repository file have been updated, you have to restore the previously made backup, as this is not done by the system automatically.

Merge Service into Your System: If testing was successful, do the following to finish PTF application (if started from SYSWK1):

- Run the DTRMRG procedure by entering:
  R RDR, PAUSEBG
  0 EXEC PROC=DTRMRG

  The DTRMRG procedure changes the system sublibraries permanently. The work history file is copied into the system history file.

  All members in delta sublibraries are moved into their corresponding base sublibraries. Existing members are replaced.

  Sublibraries PRD1.BASED, PRD1.MACLIBD, and PRD1.SCEEBASD are excluded from the LIBDEF chains, contained in members LIBDEF.PROC and LIBSDL.PROC of IJSYSRS.SYSLIB.

  The original set of procedures LIBDEF and LIBSDL is established in the startup without the delta sublibraries.
- Shut down your system.
- IPL from DOSRES.

Note: You must not do any kind of service application as long as you are IPLed to IJSYSR**1**.SYSLIB. For example, you should not apply local fixes.

Do not Merge Service into Your System: If testing was not successful, you should not merge the service. Do the following instead (if started from SYSWK1):

- Run the DTRNOMRG procedure by entering:
  R RDR, PAUSEBG
  0 EXEC PROC=DTRNOMRG

  Sublibraries PRD1.BASED, PRD1.MACLIBD, PRD1.SCEEBASD and PRD2.GEN1D (if available) are cleared. Products residing in one of the delta sublibraries are removed from the work history file. For non-base programs, the work history file is merged into the system history file.
- Shut down your system.
- IPL from DOSRES (your old system resident volume).

- Restore the VSE/ICCF DTSFILE from the backup if its members were affected by the service application.
- Restore the text repository file from the backup if it was affected by the service application.

Notes:

1. You do **not** have to restore the **system history file** which has not yet been changed by service application. The final update for the system history file also is done with the job DTRPTF01.

   As far as the system sublibraries are concerned, your system is at its original service level. This is the level before you started the PTF application.

2. If you do not merge your delta sublibraries, but service applied to any non-base program sublibrary depends on an updated system sublibrary (due to a corequisite or prerequisite situation), you have to restore the related sublibrary, too.

Job DTRPTF01 – Dialog Problem Checking

This job is especially important for users, who:

- Applied indirect service to their previous z/VSE system and
- Did not merge this service into the system.

The job sequence checks that indirect PTFs from a previous PTF application have been merged before it installs new PTFs. You may be asked to interfere.

If you did not apply indirect service before, this job also runs, but you do not have to interfere.

If indirect service has not been merged, the job stops and displays the following message:

```
PREVIOUS INDIRECT SERVICE APPLICATION HAS NOT BEEN MERGED TO THE SYSTEM
```

This message is to:

- Inform you that indirect service application was not finished successfully.
- Ask you to do one of the following:
  - Cancel the job.
  - Continue with the job.

The message **does not** necessarily mean there is a problem. It indicates that the DTRMRG procedure was **not** run after a **previous** PTF application.

You may not have run DTRMRG for two reasons:

1. **Prior PTF testing was not successful, and you did not want to merge the service**.

   In this case, you did not want service applied, so you did not run DTRMRG (nor DTRNOMRG). You can continue with the current (new) PTF application. The system makes sure that the previously applied services are deleted.

   Before you reply to the message, make sure you restored the VSE/ICCF DTSFILE and the text repository file to the status they had before the **previous** PTF application.

   Continue as follows:

   a. VSE/ICCF DTSFILE (if affected) and text repository file (if affected) are restored.

Type in:

x

where *x* is the reply ID

Then press **ENTER**.

Sublibraries PRD1.BASED, PRD1.MACLIBD, PRD2.SCEEBASD, and PRD2.GEN1D (if available) are cleared. Products residing in one of the delta sublibraries are removed from the work history file. For non-base programs, the work history file is merged into the system history file.

The current PTF application continues.

b. If affected VSE/ICCF DTSFILE and text repository file are not restored, do the following:

- Cancel the current PTF job and exit from the Job Manager.
- Restore VSE/ICCF DTSFILE and text repository file.
- Release the job **DTRPTF01** from the reader queue.

    The new PTF application continues.

    Note: If you do not follow the above instructions, you may have mixed service levels in the different libraries on your system.

2. **Prior PTF testing was successful, but you did not run DTRMRG to complete PTF application**.

Perhaps you overlooked the information about running DTRMRG. Service has been installed, but it has not been merged.

In this case, you should do the following:

- Cancel the current PTF job and exit from the Job Manager.
- Shutdown the system (if you did not IPL from the disk device where IJSYSR1 resides, which normally is SYSWK1).
- IPL from the disk device with IJSYSR1 (which normally is SYSWK1).
- Run the DTRMRG procedure:

      R RDR,PAUSEBG
      0 EXEC PROC=DTRMRG

Previous service is merged into your system.

- Shutdown the system.
- IPL from DOSRES.
- Release the job **DTRPTF01** from the reader queue.

    The new PTF application continues.

Note: If you omit doing this, you may have mixed service levels in the different libraries on the system.

Chapter 5. Performing a Fast Service Upgrade

The traditional use for the Fast Service Upgrade (FSU) process is to upgrade your z/VSE system to the current maintenance level. This means that you perform an FSU to install a new **modification level** of z/VSE – referred to as **performing a service refresh**.

If you are currently a VSE/ESA 2.6.x or VSE/ESA 2.7.x user and you want to install z/VSE 3.1, you can use the FSU process for installation as well. Installing a new version/release of z/VSE through FSU is generally referred to as **performing a release upgrade**. Make sure that you have read the chapter *Installing z/VSE* in the IBM manual *z/VSE Planning*. It describes planning tasks and prerequisites required for performing a release upgrade through FSU.

The FSU consists of a dialog sequence that you follow. Please proceed as described in the following table, depending on whether you want to perform a release upgrade or do a service refresh.

Table 5. Release Upgrade or Service Refresh

Release Upgrade	Service Refresh
Do not perform a down-level check	**Perform a down-level check** Your current system status is checked and compared with the refresh level. This step does not change your system.
Perform an FSU preparation A job stream is created which restores the latest level of the FSU function from tape. In this case, it is the FSU function from the new z/VSE 3.1 system.	**Perform an FSU preparation** A job stream is created which restores the latest level of the FSU function from tape.
Perform an FSU installation Your system is replaced by the new z/VSE version. The installation of a release upgrade is mainly the same as the one for a service refresh. FSU installation consists of two stages. See "What You Must Know Before You Start with the Fast Service Upgrade" on page 36 and "FSU Processing and Space Requirements" on page 38 for more information.	**Perform an FSU installation** Your system is replaced by the new service refresh. FSU installation consists of two stages. See "What You Must Know Before You Start with the Fast Service Upgrade" on page 36 and "FSU Processing and Space Requirements" on page 38 for more information.

What You Must Know Before You Start with the Fast Service Upgrade

Before you use the Fast Service Upgrade dialogs, be aware of the following:

Modifying or Adding Members

- You should not add your own members to the VSE/ICCF system libraries. Also, you should not modify system-provided members in the VSE/ICCF system libraries. These libraries are reserved for general use of z/VSE. For more information about the VSE/ICCF system libraries, refer to the manual *z/VSE Planning*, under "VSE/ICCF libraries".

  If you modify any VSE/ICCF members supplied by IBM, such as the SUBMIT procedure, you should save them in a user library. For servicing VSE/ICCF members, do not delete the internally defined VSE/ICCF user "AAAA".

- IBM supplied members which you modify by using specific IBM supplied skeletons or dialogs may automatically be saved in PRD2.SAVE (for example, skeletons for system startup tailoring). PRD2.SAVE is for FSU only.

  The following members are automatically stored in the system sublibrary PRD2.SAVE:

DTSECTXN.PHASE	$8JCL.PROC
DTSECTXS.A	$8JCLBSX.PROC
DTSECTAB.PHASE (in a secured system)	$9JCL.PROC
$AJCL.PROC	$9JCLBSX.PROC
$AJCLBSX.PROC	ALLOC.PROC
$BJCL.PROC	CPUVAR1.PROC
$BJCLBSX.PROC	DTRCICST.PROC
$IPLESA.PROC	DTRICCF.PROC
$0JCL.PROC	DTRINFOA.PROC
$1JCL.PROC	DTRPOWR.PROC
$1JCLBSX.PROC	LIBDEF.PROC
$2JCL.PROC	LIBSDL.PROC
$2JCLBSX.PROC	PWBSXL.PROC
$3JCL.PROC	PWSPROF.PROC
$3JCLBSX.PROC	STDLABEL.PROC
$4JCL.PROC	STDPROF.PROC
$4JCLBSX.PROC	USERBG.PROC
$5JCL.PROC	...
$5JCLBSX.PROC$6JCL.PROC	plus all user modifications in startup procedures, for example, VSE/POWER startup, if the skeletons were used.
$6JCLBSX.PROC	...
$7JCL.PROC	plus printer FCBs and UCBs.
$7JCLBSX.PROC	

  If you modify other IBM supplied members of IJSYSRS, **do not save** a copy of the original member **or** your changed version in **PRD2.SAVE**. If you want to save copies of the original member and your changed version, you should create another VSE sublibrary and catalog them there.

- You should not add your own members to the system libraries IJSYSRS, PRD1 and PRD2.SCEEBASE. These libraries are completely replaced (except for procedures).

- If for certain reasons installation information (such as user generated phases, private VSE/ICCF phases, your own VSE/POWER phases, own VSE/POWER startup procedures, FCBs, UCBs, ASI procedures, and standard labels) must be

cataloged in IJSYSRS, these members must also be cataloged in PRD2.SAVE. They have to be cataloged under a name other than any IBM supplied member name in IJSYSRS and PRD2.SAVE, otherwise your changes are lost during installation of a service refresh or version upgrade.

- If you do not use IBM's default security manager BSM, it is possible that the new system, especially CICS TS, cannot be started unless the security server is upgraded to the latest level. It is recommended to upgrade the security server before the FSU is started. It might also be helpful if the external security manager is switched off for the first IPL from DOSRES after FSU.

Note: If you generate your own POWER phase, it should not be stored into PRD2.SAVE but into PRD2.CONFIG.

It is **your responsibility** to check whether service has been applied to the IBM supplied members that you have modified. Also, you must ensure that the members work correctly when you have modified them.

Release Upgrade

- You should not have any phases in sub-library PRD2.SAVE (especially VSE/POWER phases).

Having Backups Available

In general, it is recommended to have a backup of the system disks DOSRES and SYSWK1 available. You can create such a backup by using the VSE/Fast Copy program, as described in the IBM manual *z/VSE System Utilities*.

- It may be useful to have a backup of the VSE/ICCF DTSFILE and the libraries IJSYSRS and PRD1. If you use the *Fast Service Upgrade* dialog to create these backups, a backup of the system history file is included.
- Furthermore, it may be useful to have a backup of the following files (or libraries), which are changed during FSU and which may also contain user-specific data:
  - VSE/VSAM file CSD (CICS System Definition file DFHCSD)
  - VSE/VSAM file VSE.TEXT.REPSTORY.FILE
  - PRD2.GEN1 (if the Generation Feature is installed)

  Do not restore any of these after FSU has completed successfully.

  Other files, like the VSE.MESSAGE.ONLINE VSE/VSAM file can be restored (if necessary) from the old installation tape. This is only possible if you do **not** have messages from vendor programs stored in the online message file. If you do, please make a backup of the online message file.
- You may want to create a LISTLOG of your hardcopy file.

Performing Optional Tasks

- You cannot install the Generation Feature through a service refresh if it was not installed before.

  If the Generation Feature is installed, it must reside in library PRD2.GEN1. You are asked during the FSU whether you want to refresh it. If you select to refresh it, the Generation Feature will be replaced. If you choose not to refresh it, the entry for the Generation Feature is removed from the system history file. All members in the related sublibrary will be deleted.

- An FSU is not intended for optional programs, or for programs residing on the extended base tape.

  An exception is the **DB2 Server for VSE**. It is possible to refresh DB2, but when performing a release upgrade, the DB2 release refreshed or installed with FSU might be different than the existing one. If you select the related option in the FSU dialog, the current version of DB2 will be installed. If you order a z/VSE refresh, you should also reorder any updated VSE optional programs or other VSE licensed programs that you have installed. If you also want to refresh your VSE optional programs, you must **reinstall** them after having gone through the FSU process. Reinstalling these programs after refreshing z/VSE ensures that all IBM licensed programs on your system are at the same level.

FSU Processing and Space Requirements

1. The z/VSE library structure must exist. This means that the FSU depends on having IJSYSRS.SYSLIB, PRD1, PRD2.CONFIG, PRD2.SCEEBASE, and PRD2.SAVE available. Note that if you have combined or renamed these libraries and sublibraries, the FSU job stream will not work without modification.

   System volumes must be DOSRES and SYSWK1. Also, the VSE/VSAM user catalog VSESPUC must be available.

2. Do not run FSU stage 1 if you performed a BASIC startup. It will overlay your VSE/POWER files.

3. The FSU runs per default in the background partition (BG). You can, however, run the job stream in any partition as long as the partition leaves enough space for MSHP (at least 1280KB, plus 256KB partition GETVIS area). However, in stage 2 you only have the partitions BG, F1, F2, F3, F4, F5 and FB started.

   A release upgrade must run in the background partition (BG), since it executes the standard label procedure.

4. The FSU job sequence is managed by the Job Manager. Only one job sequence from the stage 1 dialogs should be in the reader queue at one time.

5. In stage 2, the FSU defines a work file for the text repository file. The work file is defined in VSAM space. You should make sure that your system has sufficient VSAM space on the disk device you have specified in the dialog *Verify Location of Involved Serviced Files* for the definition of this work file. To check this:

   - Verify if you have changed the location of the VSAM catalog in the dialog *Verify Location of Involved Serviced Files*.

   - Estimate the required space for the work file by looking at the space your current text repository file uses. Access the *File and Catalog Management* catalog, enter VSESPUC (or the catalog name you want to use) for CATALOG NAME, choose selection 1 and use option 1.

   - Check how much VSAM space is free in the VSESPUC catalog you have specified in the *Verify Location of Involved Serviced Files* dialog (fastpath 141) on the specified disk device. The default is VSESPUC. Choose selection 5 of the *File and Catalog Management* dialog and use option 1. If there is not sufficient space left, use option 4 to define new space.

     For the Text Repository workfile, you do not need to define or move any clusters. FSU uses the data specified for it to do so.

     Continue with "**Release Upgrade from VSE/ESA 2.6.x**", or with "**Release Upgrade from VSE/ESA 2.7.x**".

> **Release Upgrade from VSE/ESA 2.6.x**
>
> For a Release Upgrade from VSE/ESA 2.6.x the following steps apply:

1. Allocation for the VSE/POWER partition in Environment A has been increased. In addition, the allocation for the security server partition FB has been increased for all environments. The default size of the VSE/POWER partition has been increased as well.

2. Space needed for the PRD1 library is about 3000 library blocks less than for VSE/ESA 2.6. The space required for PRD2 is about 10 000 blocks more than for VSE/ESA 2.6.

3. Additional space is needed for the BSTCNTL file, about 2 cylinders on a 3390 in catalog VSESPUC.

4. In case the DB2 Server is selected to be refreshed (installed), additional space is required in PRD2 for the installation of the DB2 Server for VSE. It is recommended not to install DB2 during the Release Upgrade but later after FSU completion using the dialog for optional program installation.

> **Release Upgrade from VSE/ESA 2.7.x**
>
> For a Release Upgrade from 2.7.x the following steps apply:

Space needed for the PRD1 library is about 2000 library blocks less more than for VSE/ESA 2.7. The space required for PRD2 is about 4000 blocks more than for VSE/ESA 2.7.

Preparing FSU from a Virtual Tape

If you plan to install a service refresh and you received it on CD or electronically, you can use the virtual tape that has been loaded into VSAM. For a description about how to load the base tape file into VSAM, see Appendix D, "Preparing for Initial Installation or FSU from Virtual Tape," on page 87. The z/VSE Extended Base Tape and Optional Products can be installed directly from the PC using the virtual tape format on a remote server (workstation). These can also be loaded into VSAM and installed from there.

Selection 3 – Fast Service Upgrade

To perform a service refresh, you use the *Fast Service Upgrade* dialogs. These dialogs create job sequences to install the service refresh. A job sequence is managed by the Job Manager.

To access the dialogs, start with the *Function Selection* panel and select:

1   (Installation)

4   (IBM Service)

3   (Fast Service Upgrade)

```
┌─────────────────┐ ┌──────────────────────────────────────────┐
│ Administrator   │ │ Synonym                                  │
│ Fast Path: 143  │ │ Default:   _____    Yours:               │
└─────────────────┘ └──────────────────────────────────────────┘
```

The following panel is displayed:

```
IESADMSL.IESEFSU          FAST SERVICE UPGRADE
                                                     APPLID: DBDCCICS
  Enter the number of your selection and press the ENTER key:


      1  Down-Level Check

      2  FSU Preparation

      3  FSU Installation



PF1=HELP            3=END        4=RETURN              6=ESCAPE(U)
                    9=ESCAPE(m)

==> _                                          PATH: 143
```

Figure 9. Panel - Selection for Fast Service Upgrade

Option 1 – Down-level Check for a Service Refresh

The selection *Down-Level Check* creates a job stream which performs a down-level check **without installing** the service refresh. **This step does not change your system**. Down-level check can help you decide or plan for an FSU. Note that this check can be done independent of the FSU itself.

Down-level check can also be made from a virtual tape.

After selecting option 1, you have to specify the **address (cuu) of the tape unit** used for the FSU.

During down-level check, the current system level is checked and compared with the refresh level. Then the system provides one or more list outputs containing all PTFs and APARs that **are not** included in the refresh level but which **are** already installed in your current system.

Note that these PTFs and APARs must be reapplied after FSU installation because the FSU removes the PTFs. Down-level check is performed against the base products residing in the following sublibraries:

- IJSYSRS.SYSLIB
- PRD1.BASE
- PRD1.MACLIB
- PRD2.SCEEBASE
- PRD2.GEN1 (if the Generation Feature is installed).

You should not perform a down-level check when you do a Release Upgrade.

Option 2 – FSU Preparation for a Service Refresh

FSU Preparation **is performed on the old system.**

For a release upgrade, you must select *FSU Preparation*.

You must select *FSU Preparation* (see Figure 9 on page 40) immediately before the *FSU Installation* option and run the resulting job.

On the panel that appears, specify the **address (cuu) of the tape unit** used for the FSU.

This selection creates a job stream which restores the latest level of the FSU functions from the refresh tapes. Thus you can always be sure that only the latest FSU version is used for a refresh.

The following jobs run (VSE/POWER job names are shown in parenthesis):

Step 01 (DTRSTFSU)
>   Builds the Job Manager environment.

Step 02 (DTRFSU02)
>   Loads the FSU program into IJSYSRS.SYSLIB.

Step 03 (DTRFSU03)
>   Loads FSU skeletons into VSE/ICCF library.

Step 04 (DTRFSU04)
>   Does a clean up of the preparation.

Do not run the *FSU Installation dialog* **until these jobs have completed**. FSU preparation must have finished before you can run the FSU installation job.

Option 3 – FSU Installation

Note that FSU installation (stage 1) must immediately follow FSU preparation.

You can run stage 1 of the installation while the system is up and running. There is no need to shut down any partitions.

When you select option 3 *FSU Installation,* the following panel is displayed:

```
SRV$FS03                     FAST SERVICE UPGRADE

 Enter the required data and press ENTER.

TAPE UNIT ADDRESS............ ___          For valid addresses see HELP
Enter 1 if FSU is to be done from virtual tape, else enter 2 for real
tape.
VIRTUAL TAPE................. 2            FSU from virtual (VSAM) tape?
If virtual tape is selected, enter:
VSAM FILE NAME.............. _____        Unique name of the VSAM file
Enter 1 for YES and 2 for NO to the following questions.
GEN-LIB REFRESH............. 1            Do you want to refresh Generation
                                          part?
REFRESH DB2................. 2            Do you want to refresh DB2?
REORGANIZE DTSFILE.......... 2            Do you want to reorganize DTSFILE ?
BACKUP LIBRARIES............ 1            Do you want to backup base libraries?
BACKUP DTSFILE.............. 1            Do you want to backup the DTSFILE ?
OWN POWER PARAMETERS........ 2            Do you have your own POWER parameters
                                          (Phase, Partition allocs, Partition
                                          size, or PFIX value) ?


 PF1=HELP      2=REDISPLAY  3=END
```

Figure 10. Panel - FSU Installation

TAPE UNIT ADDRESS
> Specify the address (cuu) of the tape unit used for the FSU.

VIRTUAL TAPE
> Enter 1 if you want to do an FSU from virtual tape. If you select virtual tape, you must enter the VSAM file name of the file holding the tape image.
>
> With a virtual tape, for backup and DTSFILE reorganization, a real tape is used. The real tape is used on the same address as the virtual tape.

GEN-LIB REFRESH
> **This selection appears only for those users who have installed the Generation Feature**.
>
> Specify whether you want to upgrade the generation library during FSU. If you enter **2** (NO), the entry for the generation library is removed from the system history file. The sublibrary (PRD2.GEN1) where the Generation Feature resides is not upgraded. Consequently, no service for the Generation Feature (supervisor generation macros) will be applied in future.

REFRESH DB2
> In case of a release upgrade from VSE/ESA 2.6, the DB2 Server for VSE 7.4 can be installed in addition to an existing DB2 Server (which is not recommended).
>
> If you are performing a service refresh, you might decide to refresh the DB2 Server during this FSU. If you specify **1** (YES), the DB2 Server code

will be replaced with the service level code. If you specify **2** (NO), the DB2 Server code will be kept as it is currently.

Notes:

1. Be careful when using this option, since the configuration data that is specific to your DB2 installation might be overwritten. If you do an FSU from virtual tape, do not refresh DB2.

2. Note that in case of a release upgrade the DB2 server code could be on a higher release.

REORGANIZE VSE/ICCF DTSFILE
Specify whether you want to reorganize the *refreshed* VSE/ICCF DTSFILE. Reorganization of the VSE/ICCF DTSFILE helps improve system performance.

BACKUP LIBRARIES
Specify whether you want to back up the VSE system libraries IJSYSRS, PRD1, and PRD2.SCEEBASE. If you do not have a backup available, specify **1** (YES) in the BACKUP field for the libraries. (Job DTRFSU12 is created.)

BACKUP VSE/ICCF DTSFILE
Specify whether you want to back up the *existing* VSE/ICCF DTSFILE. If you do not have a backup available, specify **1** (YES) in the BACKUP field for the VSE/ICCF DTSFILE. (Job DTRFSU13 is created.)

In case of an error situation, you should have a job in your VSE/POWER reader queue to restore your original VSE/ICCF DTSFILE.

OWN POWER PARAMETERS
Specify whether you want to use a VSE/POWER phase that you have generated yourself. If you specify "YES", another panel appears and prompts you for the name of the VSE/POWER phase and allocation values, such as the allocation size and the SET PFIX value for the VSE/POWER partition. You also have to enter the name of the library where your VSE/POWER phase is stored. It is recommended to make a copy of your own VSE/POWER phase.

This dialog creates a job with the default name DTRFSU. From the *Job Disposition* **panel, you can submit the job to batch, file it in your default primary VSE/ICCF library, or both.**

After you have entered all data, the *Job Disposition* panel is displayed, and you can submit the job. You can change the class on the *Job Disposition* panel. Please note that the startup for stage 2 of FSU activates seven partitions only (BG, F1 to F5 and FB). It is recommended that you select the default partition BG in stage 2 of FSU.

Continue with "FSU Installation – Stage 1," independent of whether you install a service refresh or perform a version upgrade.

FSU Installation – Stage 1

Stage 1 has the following job sequence. Note that the step numbers consist of a *1* (from stage *1*) and a job number (from *1* to *A*). The VSE/POWER job names are shown in parentheses:

Step 11 (DTRSTFSU)
Builds the Job Manager environment.

Step 12 (DTRFSU12) – this step is optional

Backup is made with the following specifications:

- BACKUP L=IJSYSRS R=S I=HIST
- BACKUP L=PRD1 ID=PRDBAS
- BACKUP S=PRD2.SCEEBASE ID=PRDLE

Step 13 (DTRFSU13) – this step is optional

Backs up VSE/ICCF DTSFILE, if specified. The job asks you to disconnect the VSE/ICCF DTSFILE.

Before you continue, check the list output to make sure the backup is complete.

You need a scratch tape for this purpose.

Step 14 (DTRFSU14)

Copies the system history file to a work history file.

Step 15 (DTRFSU15)

Following are the steps for a service refresh; the steps for a release upgrade are shown in the box below.

1. Installs the system library of the refresh into a system work library (IJSYSR1).
2. Refreshes PRD1.MACLIB.
3. Restores the language-dependent parts of z/VSE into IJSYSR1.SYSLIB.

Depending on your software levels, MSHP lists down-level service information. You must reapply this list of PTFs after you have finished with the FSU.

Release Upgrade from VSE/ESA 2.6.x or VSE/ESA 2.7.x

1. Removes the old products residing in IJSYSRS.SYSLIB.
2. Refreshes IJSYSR1 (installs the system library of the refresh into a system work library IJSYSR1).
3. Refreshes PRD1.MACLIB
4. Refreshes NLS (restores the language-dependent parts of z/VSE into IJSYSR1.SYSLIB).

Step 16 (DTRFSU16) – this step is performed if the Generation Feature is installed

Refreshes the Generation Feature, if specified. This is done only if you installed the Generation Feature and answered **YES** when you were asked about a Gen-Lib refresh.

If you installed the Generation Feature and answered **NO** to the question about a Gen-Lib refresh, the Generation Feature will be removed. This is true both in case of an FSU and of a Release Upgrade.

Release Upgrade from VSE/ESA 2.6.x or VSE/ESA 2.7.x

If **NO**, the old Generation Feature is removed from the History File, and PRD2.GEN1 is cleared.

Step 17 (DTRFSU17)

Copies members from PRD2.SAVE and user procedures from IJSYSRS.SYSLIB to IJSYSR**1**.SYSLIB. Furthermore, the members shown on the next page are copied from IJSYSRS to IJSYSR**1**.
- STDLABEL.PROC
- STDLABUP.PROC
- STDLABUS.PROC
- DTRPOWR.PROC
- DTR$DYNn.Z

DTSECTAB.PHASE is **not** copied from IJSYSRS.SYSLIB to IJSYSR1 in order to make sure stage 2 runs without security.

Step 18 (DTRFSU18)

Following are the steps for a service refresh; what to observe for a release upgrade is shown in the box below.

Catalogs jobs which have to run in stage 2. Also, the VSE/POWER startup job that later is used in stage 2 is cataloged. It uses your own POWER phase and your allocation values, if specified.

> ┌─ **Release Upgrade from VSE/ESA 2.6.x or VSE/ESA 2.7.x** ─────
> Do NOT specify your own POWER phase. The Release Upgrade
> ignores it and uses the system's default POWER phase.

Step 19 (DTRFSU19)

Does a cleanup for stage 1 and deletes all FSU jobs from stage 1. In case of problems, refer to "Tips and Hints If Errors Should Occur" on page 53.

Step 1A (DTRCLFSU)

Following are the steps for a service refresh; the steps for a release upgrade are shown in the box below

If you have generated your own supervisor, you must reassemble it and catalog it into the IJSYSR1 library at this point.

If you have your own POWER phase, you may assemble it now if stored in IJSYSRS.SYSLIB on DOSRES. The phase should also be cataloged into IJSYSR1.SYSLIB.

> ┌─ **Release Upgrade from VSE/ESA 2.6.x or VSE/ESA 2.7.x** ─────
> If you have your own supervisor, you may assemble it now (and
> catalog it into IJSYSR1.SYSLIB) or use the IBM provided supervisor
> during stage 2.
>
> If you have your own POWER phase, FSU will use the IBM-provided
> phase IPWPOWER during FSU stage 2. You should reassemble the
> POWER phase and catalog it into PRD2.CONFIG (which is
> recommended) now, or after stage 2 has finished. If your private
> POWER phase is cataloged into IJSYSRS, you must copy it into
> IJSYSR2.SYSLIB (on DOSRES) while IPLed from SYSWK1 (stage 2), or
> into IJSYSR1.SYSLIB if assembled at the end of stage 1.

Now you should do the following:
- Shut down all partitions except for the VSE/POWER partition.
- In case you are running VSE/ESA 2.6, a cold start will be performed and POFFLOAD is required. In all other cases, POFFLOAD is not necessary anymore. Save your VSE/POWER queues on a scratch tape. To do so, issue the following command:

  POFFLOAD BACKUP,ALL,cuu

  where cuu is the address of the tape drive you want to use. You need to backup the VSE/POWER queues because they are formatted in stage 2.
- If you want to save your VSE/POWER account file, you must save it using the command:

  PACCOUNT cuu,,ACCTFILE

  Use the PACCOUNT command with these parameters. For example, using command `PACCOUNT 180,,ACCTFILE` writes the account file to tape address 180 as a standard-label file.
- End the current job.
- Shut down the VSE/POWER partition

Stage 1 of the FSU is successfully finished.

FSU Installation (Stage 2)

Note that the IPL procedure of stage 2 brings up a system that can only be used for FSU installation. **Stage 2 runs without security (even in a secured system)**. This is achieved by not copying DTSECTAB.PHASE into IJSYSR1.SYSLIB. The system issues an informational message that the security phase could not be loaded, which is expected.

IPL from the refreshed SYS.NEW.RES (which is normally on SYSWK1). To begin stage 2, you must use a JCL procedure that has been tailored especially for FSU. To use this JCL procedure, do the following:

- IPL your system by using the load parameter on the load panel. For a detailed description of this panel, refer to the chapter that describes automatic installation for native and VM users in the manual *z/VSE Installation*.

> **VM Users**
>
> If your system is running under VM, you must specify LOADPARM L.P on either the LOAD panel or by using the IPL command in VM.
>
> 1. **IPL cuu** (SYSWK1) **LOADPARM L.P**
> 2. Press **ENTER**
> 3. Enter **IPL=$IPLESA,JCL=$$JCLFSU**
> 4. Press **ENTER**
>
> In case of SCSI disk devices, you must enter the definitions required to access the SCSI disk by using the SET LOADDEV command. For more details, refer to the chapter that describes how to perform an automatic installation in the manual *z/VSE Installation*.

Notes:
1. Consult the IBM manual *z/VSE Guide to System Functions* for more information about the LOAD parameter (LOADPARM).

2. You use your normal IPL procedure, but you **must** use the $$JCLFSU procedures. The VSIZE value in your IPL procedure must have at least 150 MB.

After IPL, the following tasks are performed:

- In case of a release upgrade from VSE/ESA 2.6, the VSE/POWER queues are formatted. Answer all messages beginning with:

  ```
  F1 001 4733D EQUAL FILE ID IN VTOC .....
  ```

  by entering: **1 DELETE**
- Load all FSU stage 2 jobs.
- Execute all FSU stage 2 jobs.
- Start up a mini system, which allows you to perform the necessary steps in stage 2 of FSU.

If you run VSE/POWER in a shared spooling environment and you are upgrading from VSE/ESA 2.6, you may receive the following message during cold start:

```
1QB2D  IS ANY OTHER VSE/POWER SYSTEM ALREADY INITIALIZED?
```

Enter **1 YES** or **1 NO**.

Stage 2 has the following job sequence. Note that the step numbers consist of a *2* (from stage *2*) and the job numbers (*1* to *8*). In case of problems, refer to "Tips and Hints If Errors Should Occur" on page 53.

The VSE/POWER job names are shown in parentheses:

Step 21 (DTRSTFSU)
   Builds the Job Manager environment.

Step 22 (DTRFSU22)
   Following are the steps for a service refresh; the steps for a release upgrade are shown in the box below.

   1. Selectively restores the VSE/ICCF DTSFILE. (Only the members **serviced** by IBM since the last refresh are replaced in this step.)
   2. Selectively restores the language-dependent members in the VSE/ICCF DTSFILE. (Only the members **serviced** by IBM since the last refresh are replaced in this step.)

   ┌─ **Release Upgrade from VSE/ESA 2.6.x and VSE/ESA 2.7.x** ─┐
   │
   │ 1. Selectively restores the VSE/ICCF DTSFILE (all non-language-dependent members are restored).
   │ 2. Selectively restores all language-dependent members of the VSE/ICCF DTSFILE.
   └──┘

Step 23 (DTRFSU23)
Following is the step for a service refresh; the steps for a release upgrade are shown in the boxes below.

Refreshes the Language Environment (LE) code into PRD2.SCEEBASE (step 23A).

Step 24A (DTRFSU4A)
Refreshes the base programs in PRD1.BASE.

Step 24B (DTRFSU4B)
Restores the online message explanation file.

Step 24C (DTRFSU4C)
Following are the steps for a service refresh; the steps for a release upgrade are shown in the boxes below.
1. Refreshes the text repository file.
2. Updates the CICS CSD (CICS System Definition File). Groups VSETYPE, VSETERM, VSEAI62, CEE, FCPSP, VSETERM1, VSESPG, and TCPIP are upgraded. In addition, CICS Transaction Server related definitions are updated using the UPGRADE command of the DFHCSDUP utility. All updated groups remain appended to the list VSELIST. User defined groups are not affected.

> **Release Upgrade from VSE/ESA 2.6.x and VSE/ESA 2.7.x**
> The new file BSTCNTL is defined.

Step 24D (DTRFSU4D) – this step is optional
Refreshes DB2 Server code.

Step 25 (DTRFSU25) – this step is optional
Backs up and restores the entire VSE/ICCF DTSFILE. This reorganizes the DTSFILE for better VSE/ICCF performance. In case of a virtual tape is used for backup, the same address is used. But it is recommended to use a real tape.

Step 26 (DTRFSU26)
Following is the step for a service refresh; the step for a release upgrade is shown in the box below.

Copies the system work library IJSYSR1 to the system library IJSYSRS and renames system procedures.

> **Release Upgrade from VSE/ESA 2.6.x and VSE/ESA 2.7.x**
> Personal history part is updated with new refresh level.

Step 27 (DTRFSU27)
Updates work history file locations and copies the work history file to the system history file.

Note: Code replacement is completed. The job sequence now processes startup information.

Step 28 (DTRCLFSU)

Following are the steps for a service refresh; the steps for a release upgrade are shown in the boxes below.

Starts cleanup job. DTSECTAB.PHASE is recataloged into IJSYSRS.SYSLIB (if appropriate).Starts cleanup job. DTSECTAB.PHASE is recataloged into IJSYSRS.SYSLIB (if appropriate).

> **Release Upgrade from VSE/ESA 2.6.x**
> Special user CNSL for CICS console is added. Server jobs for virtual tape server are loaded into the VSE/POWER reader queue.

When the last step completes, the following message appears on the screen:

Stage 2 of FSU is successfully finished.

After the completion message, a job step for **teleprocessing preparation** follows. The job to process the startup information does the following:

1. **It generates a** *basic startup* **for CICS**.

   Note: You can regenerate your own CICS tables and options later.

   During this step, you have to respond to certain messages. You need to define the following:

   - Specify whether the local control unit is an SNA control unit (**YES**/**NO**).

     If you reply **YES**, define:
     – Control unit address (cuu)
     – Terminal type (for example, 24x80)
     – Up to three local VTAM terminals (port number).

     If you reply **NO**, define up to three local VTAM terminals (*cuu*).

2. **It starts CICS/ICCF and VTAM (for VTAM users)** in basic startup mode for test purposes.

Post-Stage 2 Processing

Once CICS/ICCF and VTAM are started, you can customize your system (such as VSE/ICCF, VSE/POWER, CICS tables, options and all other tables stored in PRD2.CONFIG).

Note: Any update of sublibrary IJSYSRS.SYSLIB will be lost, because the update is done on volume SYSWK1, which was already copied back to DOSRES.

Do not forget to update your default selection panels and your default application profiles.

Installing a Service Refresh Through FSU

To update your selection panels, proceed as follows:

1. Sign on to the z/VSE Interactive Interface using the user ID **SYSA**.
2. On the *Function Selection* panel, select

   2 (Resource Definition)
3. On the *Resource Definition* panel, select

   1 (User Interface Tailoring)
4. On the *User Interface Tailoring* panel, select

   2 (Maintain Selection Panels)

```
Administrator        Synonym
Fast Path: 212       Default: SPM      Yours:
```

5. A filter panel is shown, where you can press ENTER to get a list of all default selection panels, or enter the name or the first characters of a specific selection panel you want to list.
6. Press PF6 (Update).

Release Upgrade from VSE/ESA 2.6.x or VSE/ESA 2.7.x

In case of a Release Upgrade, you must add the volume serial number SYSWK1 in addition to DOSRES, by using the dialog 141 (File Location for Service Dialogs).

To update your application profiles, proceed as follows:

1. If not already done, sign on to the z/VSE Interactive Interface using the user ID **SYSA**.
2. On the *Function Selection* panel, select

   2 (Resource Definition)
3. On the *Resource Definition* panel, select

   1 (User Interface Tailoring)
4. On the *User Interface Tailoring* panel, select

   3 (Maintain Application Profiles)

```
Administrator        Synonym
Fast Path: 213       Default: APM      Yours:
```

5. A filter panel is shown, where you can press ENTER to get a list of all default application profiles, or enter the name or the first characters of a specific application profile you want to list.
6. Press PF6 (Update).

Release Upgrade from VSE/ESA 2.6.x or VSE/ESA 2.7.x

Perform the following tasks in case of a Release Upgrade:

1. Reassemble your CICS tables.
2. Reload the CICS startup job(s). Be aware of the changes in the DFHSIT; especially the parameter SVA=YES and the usage of exclude list IESVAEXC.
3. Change the LIBDEF procedure LIBSDL to include PRD1.SCEEBASE (refer to procedure LIBSDLN).
4. Change allocations according to skeletons SKALLOCA or SKALLOCB.
5. Change startup jobs for the BSM server partition (FB), using skeletons SKJCLX and SKUSERBG.

When you have finished the preceding tasks, perform the following steps:

- Shut down all partitions except for the VSE/POWER partition. Shut down CICS with **CEMT P SHUT I** to force a CICS cold start after IPL.
- In case of a release upgrade from VSE/ESA 2.6, restore your VSE/POWER queues from your backup tape. To do so, issue the following command:

  POFFLOAD LOAD,ALL,cuu

  where cuu is the address of the tape drive you want to use.
- Shut down the VSE/POWER partition.
- **Important!** *Now IPL from DOSRES.*

Starting with this IPL, every change that you do (affecting IJSYSRS.SYSLIB) goes into IJSYSRS.SYSLIB (and no longer into IJSYSR**1**.SYSLIB). The following section describes such changes.

VM Users

You have to reinstall the VM/VSE Interface routines using skeleton SKVMVSE as described in the *z/VSE Installation* manual.

Recataloging Procedures, Books, and Tables

Recatalog the following, using the new skeletons:

- IPL procedures (especially SKJCLB, SKALLOCx and SKUSERBG)
- Enlarge PASIZE for environment A and B to 70 MB
- VTAM books
- CICS CSD groups
- Updated CICS transaction security definitions
- User modified tables

For the first three items of this list, start with the *Function Selection* panel and select:

2   (Resource Definition)

4   (Hardware Configuration and IPL)

1   (Configure Hardware)

```
Administrator      Synonym
Fast Path: 241     Default: _____   Yours:
```

On the *Configure Hardware* panel, press **PF5**. Select the objects you want to regenerate. The dialog then generates a job for this purpose. The dialog is described in the IBM manual *z/VSE Networking Support*.

In order to make sure all system provided CICS transactions are defined, use the *Define Transaction Security* dialog to update the CICS transaction security definitions. For a detailed description, refer to "Using the Define Transaction Security Dialog" in the manual *z/VSE Administration*. From the *Function Selection* panel, select:

2   (Resource Definition)

8   (Define Transaction Security)

```
Administrator      Synonym
Fast Path: 28      Default: _____   Yours:
```

For user modified tables, submit your own jobs for any tables you use as you already did in your system before FSU. Note that you should review the output of the job to make sure everything is correct. Error messages in the job output may result in problems during IPL.

Press PF6 (Merge) to complete the recataloging operation.

Secondary CICS TS

If a secondary CICS TS partition is defined and used, the CICS TS local and global catalogs must be redefined. Either skeleton SKPREPC2 in library 59 must be executed once more, or the related catalogs must be redefined and a CSD upgrade must be done by using SKCSDFC2.

CICS VSE Coexistence

If CICS/VSE is activated in a coexistence environment, the CSD file needs to be updated for the new LE Release.

Release Upgrade from VSE/ESA 2.6.x or VSE/ESA 2.7.x

If you use the CICS coexistence environment, do the following:

1. Reinstall CICS/VSE to upgrade the service level.

2. In case of a shared CSD file, submit skeleton SKPREPSO to redefine the CSD file for CICS/VSE. This is necessary to upgrade the LE group CEE. Also, in case of a separate CSD file, it is recommended to submit skeleton SKPREPCO.

Further Considerations

• Users who install a service refresh should consider reinstalling the VSE extended base programs and VSE optional programs after FSU is completed. This ensures that there are matching service levels for all licensed programs.

• Reapply those PTFs that you may have found during down-level check.

Tips and Hints If Errors Should Occur

The FSU dialog creates a job sequence which runs under control of Job Manager (described in the IBM manual *z/VSE Installation*).

If a problem occurs and you cannot resume, delete the following jobs in the VSE/POWER reader queue before resubmitting the original job from the VSE/ICCF library:
- DTRSTFSU
- DTRCLFSU
- All jobs beginning with the prefix DTRFSU.

If you do not do this, the Job Manager may not work correctly at a later time.

To temporarily stop the FSU job sequence and exit from the Job Manager you have to proceed as follows:
- Enter **x EXIT** (where *x* is the reply ID)
- Restore the generation library using the *Install Generation Feature* dialog (fast path: 13)
- Enter **R RDR,DTRFSUAB** to release the FSU stage 1 job again.
- Enter **x RESUME** (where *x* is the reply ID) to restart processing.

For more information on Job Manager, refer to "Appendix A, Overview of the Job Manager", in the IBM manual *z/VSE Installation*. If you cannot resume, you also should consider the following items, depending on whether you exit during stage 1 or stage 2 of the FSU process:

An easy way to return the complete system to a pre-FSU level is to save the two system disks DOSRES and SYSWK1 before you start performing an FSU. The IBM manual *z/VSE System Utilities* describes how to do a backup of the system disks.

The following describes some general examples of problems that **may** occur during FSU. Remember: sometimes you may prefer to simply reset your whole system, rather than to repair it during FSU, especially if problems occur during stage 2 of FSU.

Problems During Stage 1

Your system has not been changed up to the refresh of PRD1.MACLIB and the Generation Feature (for Generation Feature users only). If you exit either during or after job step DTRFSU15, you must restore the old PRD1.MACLIB. If you exit either during or after job step DTRFSU16 you must restore the old Generation library PRD2.GEN1.

Since your current system is still up and running, you may solve the problem, for example, by defining space that is necessary for restoring the Generation Feature. Retry FSU again by entering RESUME if the job DTRFSUAB is still active. If it is not active, release the job to continue processing.

Problems During Stage 2

Depending on the failing job and on the kind of problem, the following list can be used as hints to overcome an error situation.
- If the IPL fails due to wrong specifications in the startup procedure, switch back to the pre-FSU system on DOSRES. Be especially aware of changed allocation

values, which have resulted in a larger VSIZE for Environments A and B. Change the related startup procedure or job. Run stage 1 of FSU again.

Alternatively, you can copy the modified members to IJSYSR1.SYSLIB and start stage 2 of FSU again.

- If the VSE/POWER files have been formatted already, load the original contents using the POFFLOAD command.

    Note: In case of a Release Upgrade, VSE/POWER needs a COLD start if IPL is done from DOSRES (modify startup). After COLD start, VSE/POWER queues may be reloaded using the POFFLOAD command.

- If VSE/POWER is not started, check the VSE/POWER phase and parameters. If necessary, adjust the VSE/POWER parameters via the dialog and re-run stage 1.

- If job **DTRFSU22** fails, the DTSFILE has been changed already. In this case, you must restore the original DTSFILE to reset. This is true for both steps of the job.

    You may also consider to reset to the next step (DTRFSU23) to restore the DTSFILE later on using skeleton SKICFRST available in VSE/ICCF library 59.

- If job **DTRFSU23** fails and the reason is not enough VSAM space for PRD2, some of the following actions may help to solve the problem:

    – Define VSE/VSAM space for the master catalog and RESUME later.

    The new facility IDCONS allows you to enter IDCAMS commands especially to define VSAM space interactively on the console.

    ```
    // EXEC IDCONS
    ```

    IDCONS then prompts you to define space. For example, enter the following statements:

    ```
    DEFINE SPACE ( TRACKS (xxxx) -
    ORIGIN (yyyy )           -
    VOLUME(DOSRES))         -
    CATALOG(VSAM.MASTER.CATALOG)
    ```

    > **Important**
    >
    > In case you only have space on other volumes than DOSRES or SYSWK1, you additionally need to alter the related library to allow extension on the new volume (in IDCONS):
    >
    > ```
    > ALTER VSE.PRD2.LIBRARY.DATA ADDVOLUMES(SYSWK2) -
    > CATALOG(VSAM.MASTER.CATALOG)
    > ```

    – For other reasons than space, and if a resume is not possible, restore the system sublibrary PRD2.SCEEBASE to reestablish the current level of z/VSE's base programs and LE code.

- If job **DTRFSU4A** fails due to lack of VSAM storage, proceed as described for job DTRFSU23. For other reasons, restore system sublibrary PRD1.BASE to reestablish the current level of z/VSE's base programs. Do not try to startup VTAM or CICS from DOSRES with the new code in PRD1.BASE installed.

- If job **DTRFSU4B** fails, you may not have specified enough space for the online message file. In this case, you must define additional space for the VSE/VSAM master catalog (IJSYSCT) and proceed as described for job DTRFSU23.

- If job **DTRFSU4C** fails, the Text Repository file may not have been loaded completely. You may have to define additional space for the VSE/VSAM user catalog VSESPUC. Check the job output and try to RESUME.

> **Important**
>
> A general problem of job DTRFSU4C may be space for the Text Repository workfile. Space must be defined as specified in the dialog *Verify Location of Serviced Files* (Fastpath 141). If no space is available on the volume specified, resetting to the next step is the only way out.

> **Release Upgrade from VSE/ESA 2.6.x and VSE/ESA 2.7.x**
>
> Space for the BSTCNTL file may not be available. Add space to the user catalog and continue.

If the CSD file migration fails, you may reset the job sequence to the next job which depends upon your specification running the FSU dialog:
– DTRFSU4D, if DB2 should be refreshed.
– DTRFSU25, if DB2 should not be refreshed and the DTSFILE is to be reorganized.
– DTRFSU26, if the above two optional jobs should not be executed.

The CSD file can be migrated later. A possible reason for a job failure could be an old level (CICS TS 1.1.0) of the compiled phase DFHFCTSP in PRD2.CONFIG.

- If job **DTRFSU4D** fails due to insufficient VSAM space, you should carry out the actions as described for job DTRFSU23 and try to RESUME. For other reasons, reset to the next job and install DB2 later. The next job is either DTRFSU25 if reorganization of DTSFILE is specified, or DTRFSU26.

- If job **DTRFSU25** fails, you may reset to DTRFSU26 (in case the backup failed) or try to restore the DTSFILE once more after analyzing and repairing the problem.

- If job **DTRFSU26** fails, check the job output and try to RESUME.

- If job **DTRFSU27** fails, check the job output and try to RESUME. If any product information is missing in the work history file, analyze the problem and restart with stage 1 of FSU.

- If job **DTRFSU28** fails, check the job output and try to RESUME. If only the basic startup of VTAM and CICS fails, perform an IPL from DOSRES. You may repair the basic startup later. The tasks described before the heading "Post-Stage 2 Processing" on page 49 need to be performed immediately after CICS is up.

Chapter 6. Using System History File and Nickname Dialogs

This chapter provides information on service dialogs that help you organize your system before or after you have applied service to it.

Selection 4 – Retrace History File

The *Retrace History File* dialog prints selected information from the system history file. To access the dialog, start with the *Function Selection* panel and select:

1   (Installation)

4   (IBM Service)

4   (Retrace History File)

```
Administrator          Synonym
Fast Path: 144         Default: _____    Yours:
```

This displays a panel with eight options. Select the type of information you want printed. Note that the header of each retrace list shows the z/VSE refresh level.

```
IESADMSL.IESERHFS          RETRACE HISTORY FILE
                                             APPLID: DBDCCICS
  Enter the number of your selection and press the ENTER key:

      1  Retrace
      2  Retrace Products
      3  Retrace Components
      4  Retrace PTFs
      5  Retrace APARs
      6  Retrace Members
      7  Retrace Component ID
      8  Lookup PTF/APAR




PF1=HELP          3=END        4=RETURN              6=ESCAPE(U)
                  9=ESCAPE(m)

==> _                                        PATH: 144
```

Figure 11. Panel - Retrace History File

1. Retrace

Further Service Dialogs

```
┌─────────────────┐  ┌──────────────────────────────────┐
│ Administrator   │  │ Synonym                          │
│ Fast Path: 1441 │  │ Default: ─────    Yours:         │
└─────────────────┘  └──────────────────────────────────┘
```

This dialog creates a job to print the following information from the system history file:
- A list of all products and components installed
- A sorted list of all local fixes and applied PTFs
- An APAR cross-reference list
- A member cross-reference list
- Comments from any RESOLVES statements

2. Retrace Products

```
┌─────────────────┐  ┌──────────────────────────────────┐
│ Administrator   │  │ Synonym                          │
│ Fast Path: 1442 │  │ Default: ─────    Yours:         │
└─────────────────┘  └──────────────────────────────────┘
```

The dialog creates a job to print the following information for each product installed in the system:
- Installation date
- Components within the product
- Comments, if any
- Residence of the product

3. Retrace Components

```
┌─────────────────┐  ┌──────────────────────────────────┐
│ Administrator   │  │ Synonym                          │
│ Fast Path: 1443 │  │ Default: ─────    Yours:         │
└─────────────────┘  └──────────────────────────────────┘
```

This dialog creates a job to print information for all installed components:
- Component ID
- Release level
- Installation date
- List of PTFs and APARs applied
- All generated members
- Residence of the components

4. Retrace PTFs

```
┌─────────────────┐  ┌──────────────────────────────────┐
│ Administrator   │  │ Synonym                          │
│ Fast Path: 1444 │  │ Default: ─────    Yours:         │
└─────────────────┘  └──────────────────────────────────┘
```

This dialog creates a job to print all applied PTFs by sequence number. For each PTF number, the list output provides the following information:
- PTF number
- Indication if PTF was revoked
- Component to which PTF applies
- Affected modules
- Resolved APARs
- Prerequisites and corequisites
- Negative prerequisites
- PTFs which supersede the PTF
- PTFs which are superseded by the PTF

5. Retrace APARs

```
┌─────────────────┐  ┌──────────────────────────────────────┐
│ Administrator   │  │ Synonym                              │
│ Fast Path: 1445 │  │ Default: ─────    Yours:             │
└─────────────────┘  └──────────────────────────────────────┘
```

This dialog creates a job to print all APARs which have been fixed by either a PTF or APAR fix. For each APAR number, the list output provides the following information:
- APAR number
- Affected component
- PTF number (for PTF fix)
- Application date
- Affected modules (for APAR fix)

6. Retrace Members

```
┌─────────────────┐  ┌──────────────────────────────────────┐
│ Administrator   │  │ Synonym                              │
│ Fast Path: 1446 │  │ Default: ─────    Yours:             │
└─────────────────┘  └──────────────────────────────────────┘
```

This dialog creates a job to print all phases, relocatable modules, and macros which are affected by a PTF or an APAR fix. The list output provides the following information:
- Module name
- Component to which a module belongs
- Application date of PTF/APAR fix
- PTF/APAR number affecting a module

7. Retrace Component ID

```
┌─────────────────┐  ┌──────────────────────────────────────┐
│ Administrator   │  │ Synonym                              │
│ Fast Path: 1447 │  │ Default: ─────    Yours:             │
└─────────────────┘  └──────────────────────────────────────┘
```

This dialog creates a job to print information about selected components. You can print information about one or more components by entering

1 (Retrace Component)

in the option column next to the component you want to retrace.

The list output provides the following information for each selected component:
- Component ID
- Release level
- Installation date
- List of PTFs and APARs applied
- All generated members

8. Lookup PTF/APAR

```
Administrator        Synonym
Fast Path:1448       Default: _____   Yours:
```

This dialog allows you to find out interactively whether a PTF or APAR is installed. In the following panel (*Retrace History File* - List of Components) you must enter
    1 (Lookup PTF/APAR)

in the option column next to the component for which you wish to retrace the PTFs/APARs.

The next panel lets you enter up to 10 PTF/APAR numbers. Type in the PTF/APAR number(s) in the provided fields and then press ENTER.

Possible results may be, for example

```
PTF/APAR   |--  RESULT  -----------------------------|

UD12345     NOT APPLIED FOR THIS COMPONENT
UD23456     LOCAL FIX
DY34567     FIXED IN PTF UP12345
DY12345     APPLIED
```

Note that you have two choices:

1. If you enter:

   1 (YES)
           in the *EXTENDED SEARCH* field on the panel on which you specify the PTFs/APARs,

   the system scans the whole system history file and not only the history of the component you specified. If the system retraces the specified PTF/APAR in a component other than the one you specified, the component ID displays on the result panel.

2. If you enter

   2 (NO)
           in the *EXTENDED SEARCH* field,

   the system restricts the scope of the retrace to only one component.

Selection 5 – Personalize History File

The *Personalize History File* dialog updates personalized information for the system history file. You first entered MSHP information when you completed the initial installation of z/VSE. You should use this dialog whenever you want to update the information.

To access the dialog, start with the *Function Selection* panel and select:

1   (Installation)

4   (IBM Service)

5   (Personalize History File)

```
Administrator        Synonym
Fast Path: 145       Default: _____   Yours:
```

The dialog now asks you to enter data unique to your installation in the panel shown in Figure 12.

Type in your name, address and telephone number in the required fields. In the last field, type in the name of the person who is responsible for maintaining the system. This is usually the system administrator. After entering all required information, press **ENTER**.

```
ADM$LB1                     PERSONALIZE HISTORY FILE

Enter the required data and press ENTER.

This panel accepts information for your system history file.
This information is placed in the general header record of the
history file.


CUSTOMER NAME..... _____

ADDRESS.......... _____

PHONE NUMBER...... _____

PROGRAMMER NAME... _____



PF1=HELP      2=REDISPLAY  3=END
```

Figure 12. Panel - Personalize system history file

Selection 6 – Change Nicknames

This function allows you to change the nicknames displayed on the panels related to products and components.

To access the dialog, start with the *Function Selection* panel and select:

1   (Installation)

4   (IBM Service)

6   (Change Nicknames)

```
Administrator        Synonym
Fast Path: 146       Default: _____   Yours:
```

You will now get a panel of all products that are in the system. This list includes:
* The nickname of the product, for example *EREP*
* The product ID (for example, *260E00*)

Changing Nicknames

Note that the system is shipped with an initial setting for the nicknames. Table 6 shows you a list of the predefined nicknames that z/VSE offers. The service dialogs use these nicknames for the licensed programs included in z/VSE.

Now you can do one of the following:

- Select **option 2** for a particular product.

   This option displays another FULIST panel, showing a component or a list of components of one product with the nickname(s) of the component(s) and component ID(s).

   – Type **3** in the option column if you want to change a component nickname.

   – In the *Change Component Nickname* panel, enter the new nickname that identifies the component in the future. The nickname may have 1 to 8 characters.

- Select **option 3** for a particular product.

   This option lets you change the nickname of a product.

   – In the *Change Product Nickname* panel, enter the new nickname that identifies the product in the future. The nickname may have 1 to 8 characters.

Table 6. System Nicknames Used by Service Dialogs

Product/Component	NICKNAME
Device Support Facilities	DSF/VSE
CICS TS	CICS/TS
DITTO/ESA for VSE	DITTO
VTAM	VTAM
VSE Central Functions	VSE/CF
High Level Assembler for VSE	HLASM
EREP	EREP
TCP/IP	TCP/IP
OSA/SF	OSA/SF
LE Runtime Base Code	LE/BASE
LE Cobol Runtime	LE/COB
LE PL/I Runtime	LE/PLI
LE C Base	LE/C

Chapter 7. Installing Service Changes (without Dialogs)

It is recommended to use the dialogs provided by the Interactive Interface for installing service changes to z/VSE. When you are a workstation user, use the VSE Workdesk windows to install service changes to z/VSE. If you cannot use the dialogs for some reason, this chapter shows selected example jobs for installing the service changes without them.

Note: The product IDs, phase and macro names used in the following examples do **not reflect a system environment**. They are used for demonstration purposes only.

Since the z/VSE Interactive Interface dialogs keep their own information, the changes that you make using MSHP may not be reflected in the dialogs.

IBM distributes service changes for z/VSE either of the following:
- One or a number of Program Temporary Fixes (PTFs) on tape (or cartridge).
- An Authorized Program Analysis Report (APAR) fix.

A PTF contains one or more phases, modules, or macros, which replace a corresponding existing phase, module, or macro. An APAR is an update to a phase, a module, or a macro. How to handle PTFs and APARs is summarized below.

- **Handling PTFs**

  PTFs are shipped on a distribution tape or can be downloaded from the Internet (ShopzSeries).

  The electronic shipment contains the following:
  1. Readme file
  2. PTF cover letter
  3. PTFs

  The cover letter is in text format. The PTF files are in binary format. Refer to Appendix C, "Downloading PTFs from the Internet," on page 83 for details.

  The tape (also called service tape) contains the following, in the sequence listed:
  1. A tape history file or a null file
  2. A null file
  3. A null file
  4. An EXCLUDE list or a null file
  5. PTF cover letters or a null file
  6. PTFs
  7. A null file.

  Note: MSHP can install PTFs from a service tape only if the PTFs are stored on the tape as the sixth file with a block size of 10320 bytes.

  When you receive a service tape:

  1. Have MSHP produce a listing of the PTF cover letter file, and read this printout carefully. This helps you in planning and performing the task of installing required PTFs.
  2. Install those PTFs which correct system problems. For preventive service, you may install all PTFs supplied by IBM if this is desirable.

The service tape as shipped by IBM may not include PTFs whose installation on your system is a **prerequisite** for one or more of the PTFs you want to install. In this case, MSHP does not install the affected PTF and informs you by a message.

If you know that prerequisite PTFs exist on another service tape and that these PTFs are not yet installed, have MSHP INCLUDE the additional tape(s) for the prerequisite PTFs in the installation step.

You may also receive from IBM a single PTF. You get this PTF in the form of an executable job which invokes MSHP.

- **Handling APARs or Local Fixes**

Normally, such fixes are not distributed in machine readable form. You install them using the CORRECT function of MSHP.

- **Revokable or Irrevocable Installation**

The REVOKABLE option of MSHP produces so called **backout jobs** of PTFs that you install. Use the option only if you install just one or a few PTFs for the purpose of solving a specific problem.

MSHP writes backout jobs onto the tape mounted on the drive to which SYS004 is assigned. You can use this tape as input to MSHP should you need to back out a PTF. Installing a backout PTF amounts to a re-installation of the library member(s) replaced by installation of the PTF.

Note: Do not install the backout job for a PTF that is a pre- or corequisite for other PTFs or has comparable APAR/Local Fix dependencies.

This chapter gives sample jobs for both the installation of PTFs and the installation of backout jobs.

- **Preparing the System**

Before the installation of service changes, you should produce a backup on tape of the sublibrary (or program) on which you want to install a service change. Perform a Librarian BACKUP run to get a backup of the system library. When you have one program stored in one sublibrary, perform an MSHP BACKUP run to get a backup of an individual program. If several programs are in one sublibrary, you get a backup of the sublibrary.

There is no need to define the libraries or sublibraries that hold the products which are to be serviced. MSHP establishes required search chains based on the information recorded in the history file. It uses the services of the Librarian to actually delete replaced members and to catalog new, replacement members.

Service-Related Activities

This chapter includes a discussion of activities that IBM recommends after successful completion of a service run. It gives sample jobs for history-related activities for which there occasionally may be a need at your location.

Sample Jobs

Where applicable, the sample jobs in this chapter include statements for running the installation jobs under VSE/POWER. If your service partition is not under VSE/POWER control when you run these jobs, the system ignores those statements.

Handling PTFs

This activity includes the installation of PTFs and the backout of installed PTFs, if this is necessary.

Installing PTFs from a Service Tape

For the installation of PTFs, IBM recommends that you use the z/VSE dialogs. If you do not want to use the dialogs for some reason, you may proceed as follows:

1. **List the PTF cover letter(s) from tape or from disk**

   Submit a job similar to the ones shown in Figure 13 and Figure 14. The jobs produce, on the device assigned to SYSLST, a printout of the content of the PTF files requested by the MSHP LIST statement.

```
      * $$ JOB JNM=LSTSVCE,CLASS=0
      // JOB   LIST SERVICE INFORMATION
(a)   // ASSGN SYS006,cuu
      // EXEC  MSHP
(b)   LIST SERVICETAPE -
          NODOCUMENT COVER SEPARATE
(c)   PTF=(UD12345,UD45678,...)
      /*
      /&
      * $$ EOJ
```

Figure 13. Sample Job for Listing the PTF Cover Letter(s) from Tape

```
      * $$ JOB JNM=DOCPRINT,DISP=D,PRI=3,                              C
      * $$ NTFY=YES,                                                   C
      * $$ LDEST=*,                                                    C
      * $$ CLASS=0
      // JOB DOCPRINT  PRINT SERVICE FILE DOCUMENTATION
                  .
                  .
                  .
      // EXEC MSHP
(d)   LIST SERVICETAPE FROMDISK XREF,COVER,CONT
      /*
      /&
      * $$ EOJ
```

Figure 14. Sample Job for Listing the PTF Cover Letter(s) from Disk

Notes:

a. Assign SYS006 to the tape drive on which you mounted the service tape.

b. The meanings of the command parameters are:
   NODOCUMENT
   　　Suppresses a printout of the service document.
   COVER
   　　Produces a printout of PTF cover letters
   SEPARATE
   　　Causes a new page to be started for each PTF cover letter that is to be printed.

c. This detail control statement causes MSHP to print only the cover letters of those PTFs that are specified. If you omit this statement, MSHP prints all PTF cover letters.

    d. If the LIST function is used from disk, file IJSYSPF is used. XREF means the cross references should be printed, CONT means printing should be contiguous.

2. **Examine the PTF cover letter(s)**

   The information contained in the printed list helps you decide which of the PTFs on the tape are to be installed.

3. **Set up the installation job**

   You may want to install only those PTFs which correct a problem or prevent a potential problem. In that case, you should prepare a list of the PTFs you want to be included (by way of INCLUDE statements) or excluded (by way of EXCLUDE statements).

   Write INCLUDE statements in the form

   ```
   INCLUDE PTF=(UDnnnnn,UDnnnnn,...)
   ```

   Write EXCLUDE statements in the form

   ```
   EXCLUDE PTF=(UDnnnnn,UDnnnnn,...)
   ```

   To install **all** PTFs on the service tape, do not supply any INCLUDE or EXCLUDE statements.

4. **Run the installation job**

   To install the required PTFs, set up and submit a job similar to the ones shown in Figure 15 and Figure 16. The samples assume that the product sublibrary must be available and accessible.

   ```
        * $$ JOB JNM=INSTSVE,CLASS=0
        // JOB   INSTALL SERVICE
   (1)  // ASSGN SYS006,cuu
        // EXEC  MSHP
   (2)  INSTALL SERVICE TAPES=2
   (3)  INCLUDE PTF=(UD12345,UD45678,...)
        /*
        /&
        * $$ EOJ
   ```

   Figure 15. Sample Job for Installing PTFs from Tape

   ```
   // DLBL IJSYSHF,'WORK.HIST.FILE'
   // EXTENT SYS018,SYSWK1,1,0,960,75
   // ASSGN SYS018,DISK,VOL=SYSWK1,SHR
   // DLBL IJSYSPF,'PTF.FILE',,VSAM,CAT=VSESPUC
   *         ---- APPLY SERVICE ----
   // EXEC MSHP
   INSTALL SERVICE FROMDISK
   /*
   ```

   Figure 16. Sample Job for Installing PTFs from Disk

   Notes:

   1. Assign SYS006 to the tape drive on which you mounted the service tape.

   2. You may supply the statement with REVOKABLE specified (for example, INSTALL SERVICE REVOKABLE). Do this only if you install just one or a few PTFs and you are sure that none of the PTFs being installed is a requirement for other PTFs or has APAR/Local Fix dependencies. An attempt to revoke a PTF with such dependencies may result in a downleveled (inoperative) system.

      Specifying REVOKABLE requires that you mount an extra tape to which MSHP can write the created backout job(s). Assign SYS004 to the tape drive you use.

TAPES=2 indicates to MSHP that it is to scan and process two service tapes. You can specify up to nine service tapes. The tapes are mounted one after the other, in response to MSHP's mount request, on the tape drive assigned to SYS006. For more than three PTF tapes, refer to the *z/VSE System Control Statements* manual for instructions on how you should mount these tapes.

3. PTFs defined here are installed by MSHP. All other PTFs stored on the service tape are not installed. If you were using an EXCLUDE statement, MSHP would install all PTFs not defined in the statement.

Restarting a PTF Installation Run

The installation of PTFs may require modules to be link-edited into phases. Before this link-editing under MSHP control starts, MSHP takes a checkpoint. Should this link-editing fail, then MSHP terminates PTF installation, but allows you to set up the installation job again at the recorded checkpoint. To restart the installation process at this checkpoint, submit a job similar to the one shown below:

```
* $$ JOB JNM=RSTRTSV,CLASS=0
// JOB   INSTALL SERVICE
// EXEC  MSHP
INSTALL SERVICE RESTART
/*
/&
* $$ EOJ
```

For a restart, MSHP needs no input other than the INSTALL statement as shown in the above sample job.

Installing a Backout PTF

When a PTF is applied with the REVOKABLE option, a backout PTF is generated on tape. This backout PTF may be used to reestablish the original code by recataloging the phases were replaced by the former PTF. When the backout PTF is written to tape, one PTF per component is created.

To install a backout PTF, you proceed in nearly the same way as for the installation of a PTF from service tape:

1. Mount the MSHP created backout tape.
2. Submit a job similar to the one shown in Figure 17.

For the MSHP job to complete successfully, it is necessary that:

• The product sublibrary must be available and accessible.

```
      * $$ JOB JNM=INSTBKO,CLASS=0
      // JOB    INSTALL BACKOUT PTF
(1)   // ASSGN  SYS006,cuu
      // EXEC   MSHP
      INSTALL BACKOUT
(2)   INCLUDE PTF=UD12345
      /*
      /&
      * $$ EOJ
```

Figure 17. Sample Job for Installing a Backout PTF

Notes:

1. Assign SYS006 to the tape drive on which you mounted the backout tape.

2. MSHP installs the backout PTF that corresponds to the PTF whose number you specify. Any other backout PTF stored on the backout tape is not installed. If you use an EXCLUDE statement, MSHP installs any backout PTF whose number is not specified in the statement.

Handling APARs and Local Fixes

An **APAR** is provided by IBM with an **official APAR number**.

A **local fix** can be provided by IBM or it has been developed locally. The local fix number can be **chosen freely** according to the APAR naming conventions. MSHP records the installation of any fix in the system history file. Later on, you may want to install a PTF that resolves an APAR fix. In this case, the PTF installs correctly.

If you have installed a locally developed fix or if you install a PTF that does not resolve an applied APAR fix, remove the fix by using MSHP's UNDO function **before** you install the PTF. You can do this if you installed the fix with REVOKABLE specified either explicitly or by default. Reinstall and adapt the fix after having installed the PTF, should this be necessary.

If you install a fix revokable, MSHP also does the following in addition:
- For phases and modules, it records the old and the new data.
- For macros, it writes the affected macros to SYSPCH before actually altering them.

When CORRECT request is specified for a macro, also specify the TYPE operand in the AFFECTS statement. The default of TYPE=E only may apply to some products still containing E-type macros, handled by the former basic Assembler language, which is not available anymore since VSE/ESA 2.1. CORRECT for E-type macros will therefore not work, changes can only be made by first de-editing the macros using ESERV, catalog as A-macro and then changing the A-macro.

For further information about applying APARs and local fixes, refer to Appendix B, "Applying APARs/Local Fixes," on page 77.

Service-Run Complete Activities

When you have finished installing a PTF or an APAR/Local Fix, then:
1. Create a new backup tape for each of the sublibraries that have been changed.
2. Obtain a listing of the system history file. Submit a job similar to this sample job:

```
* $$ JOB JNM=LSTHIST, CLASS=0
// JOB RETRACE
// EXEC MSHP
RETRACE
/*
/&
* $$ EOJ
```

History-File Related Service Activities

This section describes how to:
- Archive the update of a library member in the system history file.
- Handle a history-file-full situation.
- Record the (new) residence of a previously installed system component.

Archiving an Update in the History File

The need for this may arise if, because of unusual circumstances, you change a member in the system sublibrary without using MSHP. At a later point in time, this change may have become an APAR fix which MSHP requires for the installation of a PTF. MSHP cannot install this PTF until you have recorded your change as the installation of the required APAR fix.

To record the change in your system's history file, run a job similar to this one:

```
* $$ JOB JNM=ARCHUPD,CLASS=0
// JOB   ARCHIVE UPDATE
// EXEC  MSHP
ARCHIVE  1111-222-33-444 APAR=DY12345
AFFECTS  MODULE=IJWCCDZ
/*
/&
* $$ EOJ
```

The above sample job records, in the system history file, a change by APAR DY12345. It records this change for module IJWCCDZ of the component 1111-222-33 on level 444.

Handling a History-File-Full Situation

It may happen that your system's history file becomes full during installation of service changes; MSHP indicates this by a message. To recover, run a job like the one in Figure 18. Run the job in your system's background partition.

```
    * $$ JOB JNM=CRTEHST,CLASS=0
    // JOB CREATE NEW HISTORY FILE
    // EXEC  MSHP
    CREATE HISTORY AUXILIARY
(1) DEFINE HISTORY AUX EXT=xx:yy
    COPY HISTORY SYSTEM AUXILIARY
    /*
(2) ***** Making the New History File Accessible *****
    // OPTION STDLABEL=DELETE
    IJSYSHF
    /*
    // OPTION STDLABEL=ADD
    // DLBL IJSYSHF,'VSE.SYSTEM.HISTORY.FILE',99/365
    // EXTENT ,vol-id,,,xx,yy
    /*
    /&
    * $$ EOJ
```

Figure 18. Sample Job for Handling a History-File-Full Situation

Notes:

1. With this command, you define an area, on the same volume, where MSHP is to copy the contents of the full history file.

Replace xx with the begin of the extent. Replace yy with the size of blocks/tracks. Make sure you define the area yy significantly larger than the history file that has become full.

2. The remaining statements up to (but not including) /& make the new history file accessible by MSHP. Omit these statements if at your location you do not have permanently stored label information for the system history file. You may then have to change cataloged procedures instead.

To make the new information available for the Interactive Interface: Run the dialog *Verifying Location of Involved Serviced Files* (fastpath 141) with the new extents. (Refer also to "Selection 1 – Verify Location of Involved Serviced Files" on page 13). To make the new information available after the next IPL, you must update the STDLABEL.PROC.

Changing the Residence of a Program

If you move a program (or a system component) to another sublibrary, this change must be recorded in the system history file. To have MSHP record the changed residence, use a job similar to this one:

```
* $$ JOB JNM=RECRES,CLASS=0
// JOB     RECORD NEW RESIDENCE
// EXEC    MSHP
RESIDENCE PRODUCT=222444 -
          PRODUCTION=DSFSLIB.PROD -
          GENERATION=DSFSLIB.GENE
/*
/&
* $$ EOJ
```

The above sample job assumes that the program has been moved to a different sublibrary.

Note that most products do not have a GENERATION part. The RESIDENCE statement for such a product only has a PRODUCTION=xxx part.

Applying Service to VSE Programs that Were Installed Without Using Dialogs

You can install VSE programs without using the Interactive Interface dialogs. But to **use the dialogs later** to apply maintenance to these products, you first need to run program **DTRIPST**.

DTRIPST reads the system history file and updates member **DTRIHIST.Z** in **IJSYSRS.SYSLIB.**

DTRIHIST.Z refreshes member **ADM$SHIP** in VSE/ICCF library 50 whenever a dialog that needs this table is used. ADM$SHIP must contain entries for all the components or products that have been installed. If this is not the case, the maintenance dialogs issue the message:

`'PRODUCT NOT INSTALLED'`

DTRIPST is a phase. All you have to do to run this program is to release a pause job and start the DTRIPST program:

R RDR,PAUSEBG

(press **END/ENTER**)

0   EXEC DTRIPST

When the program is ready, enter

0

to continue.

Installation - Service Run Complete

Appendix A. Fixing Programs Not Built in MSHP Format

Some programs (products) are not built in MSHP format. Most of these programs come from software manufacturers other than IBM.

Programs that are not in MSHP format do not have any history file information delivered with the program code. In the following text, such programs generally are referred to as *non-IBM programs.*

There are two ways to fix such programs:

- By using the skeleton SKARCHIV provided in VSE/ICCF library 59 to archive a dummy entry in the system history file, and then applying the local fix.
- By using the PATCH function of MSHP, interactively from the system console or via input from SYSIPT. For details, refer to "Using the PATCH Function" on page 74 and to the example in "The PATCH Statement" on page 75.

Using Skeleton SKARCHIV

To correct a non-IBM program using the skeleton, do the following:

1. In the history file, archive a dummy entry for each library where you have installed a non-IBM program in the history file. After the product is defined to MSHP using SKARCHIV, you may service it using MSHP type fixes like PTFs or local fixes as described in Appendix B, "Applying APARs/Local Fixes," on page 77.

The skeleton shown in Figure 19 shows SKARCHIV, the skeleton you use to archive the dummy entry.

```
* $$ JOB JNM=ARCHIVE,CLASS=0,DISP=D,PRI=8,LDEST=*
// JOB ARCHIVE
*
* THIS JOB CREATES AN USER PRODUCT-ID AND COMPONENT-ID ENTRY
* INTO SYSTEM HISTORY FILE
*
// EXEC MSHP
ARCHIVE zapuse[1]
/*  USER PRODUCT-ID ENTRY  */
COMPRISES 9999-zap-it[1]
RESOLVE 'ENTRY FOR USER/OEM PROGRAM CORRECTIONS'
ARCHIVE 9999-zap-it-use[1]
/*  USER COMPONENT-ID ENTRY  */
RESIDENCE PRODUCT=zapuse[1]
PRODUCTION=prd2.user1[1]
/*
// EXEC DTRIPST,SIZE=500K
/&
* $$ EOJ
```

Figure 19. z/VSE Skeleton SKARCHIV

ARCHIVE
> This statement is used to create entries in the system history file.

---

1. 'zapuse', '9999-zap-it', '9999-zap-it-use' and 'prd2.user1' are values which you must change.

> **COMPRISES**
>> This statement is used to specify the component(s) comprised in the shipped product and the library members that make up the component(s). The information is entered in the system history file. A separate COMPRISES statement must be entered for each component contained in the shipped product.
>
> **RESOLVE**
>> This statement associates a comment with a product, a PTF, an APAR/Local Fix, or a generated member. It is also used to indicate which APARs are fixed by a PTF.
>
> **RESIDENCE**
>> This statement defines the names of the production and generation sublibraries in which the named product reside. This information is recorded in the history file for the service application.

In Figure 19 on page 73, '9999-zap-it' is the complete component ID. It always has the form xxxx-yyy-zz. Note that the first ARCHIVE statement always uses yyy plus the component level code (CLC), which is in this case *use*. The COMPRISES statement uses the complete component ID xxxx-yyy-zz. The second ARCHIVE statement uses the complete component ID xxxx-yyy-zz, plus the component level code. The RESIDENCE statement uses yyy, plus the component level code.

Note: You must run the ARCHIVE job once for **every** non-IBM program for which you want to apply a fix. Use the CORRECT and AFFECTS PHASE commands. Change the product ID each time.

Using the PATCH Function

This function may be useful if your task involves *application programming* and you want to do hands-on debugging. The function allows you to change (patch) a phase stored in a sublibrary. You can use the function from the system console or via input from SYSIPT.

A phase that you patch may or may not be under control of MSHP. In either case, MSHP does not record the change in your system's history. However, MSHP writes a warning message to the system console for MSHP-controlled phases.

Note: It is not recommended to use the PATCH function for MSHP-controlled members.

Using the Function from the Console

An example of using the PATCH function from the console is below. Assume that:
1. A phase named PAYPRNT is to be changed at location X'0404' (relative to the beginning of the phase).
2. The phase is stored in sublibrary PAYAPPL of library WEEKLY.

Figure 20 on page 75 shows how the patch operation is started and controlled from the system's console. Note that this is **just an example. You may get some other messages**. In Figure 20:
- Operator-submitted data is indicated by an arrow ($\Rightarrow$) to the left of that data.
- Numbers within parentheses in the left hand margin refer to explanations in the lower half of Figure 20.
- Pressing **END/ENTER** is indicated by a square bullet (▪).

The PATCH Statement

To patch a phase, you use the function control statement **PATCH**. The IBM manual *z/VSE System Control Statements* describes this statement in detail.

The following related detail control statements are:

Required:

AFFECTS (the member to be changed)

The AFFECTS statement must precede the other optional detail control statements.

Optional:

ALTER (identifies the change to be made) SCAN (used to view portion of the members)

In the following example, pressing END/ENTER is indicated by a square bullet (▪).

```
        ⇒ 0 // job patch a phase  ▪
        ⇒ 0 // exec mshp  ▪
          BG 000 M005D ENTER CONTROL STATEMENT, OR PRESS END/ENTER TO QUIT
        ⇒ 0 patch sublib=weekly.payappl  ▪
          BG 000 M015D ENTER DETAIL STATEMENT OR "?"
        ⇒ 0 affects phase=payprnt  ▪
          BG 000 M105I UPDATE OF PHASE   PAYPRNT   IN PROGRESS
          BG 000 M015D ENTER DETAIL STATEMENTS OR "?"
  (1) ⇒ 0 ?  ▪
  (2)     BG 000 M017I LIST OF ALLOWED DETAIL STATEMENTS:
                    ALTER (AL)       - IDENTIFIES MODIFICATION TO BE MADE
                    SCAN (SC)        - IDENTIFIES SCANNING TO BE PERFORMED
                    CANCEL (CANCEL)  - TO QUIT
          BG 000 M015D ENTER DETAIL STATEMENTS OR "?"
  (3) ⇒ 0 scan 03fc  ▪
          BG 000 M145I 2034D20110003002FFFF40C18B5040C1   '..K...... A.. A+'
          BG 000 M015D ENTER DETAIL STATEMENTS OR "?"
  (4) ⇒ 0 scan arg=ffff  ▪
          BG 000 M144I SCAN CONTINUES FROM OFFSET 0003FC
          BG 000 M147I SCAN DATA:  FOUND AT OFFSET = 000404
          BG 000 M145I FFFF40C18B5040C14E58F0C1624110C1   '.. A.. A+.0A...A'
  (5) ⇒ 0 alter 0404 ffff:05ef  ▪
  (6)     BG 000 M138I CHANGE ADDRESS: 000404
  (6)     BG 000 M139I OLD DATA: FFFF
  (6)     BG 000 M140I NEW DATA: 05EF
          BG 000 M015D ENTER DETAIL STATEMENTS OR "?"
          BG 000 M017I LIST OF ALLOWED DETAIL STATEMENTS:
                    ALTER (AL)       - IDENTIFIES MODIFICATION TO BE MADE
                    SCAN (SC)        - IDENTIFIES SCANNING TO BE PERFORMED
  (7)               CANCEL (CANCEL)  - TO QUIT
                    PRESS END/ENTER TO FINISH THE CORRECTION
          BG 000 M015D ENTER DETAIL STATEMENTS OR "?"
        ⇒ 0  ▪
          BG 000 M106I UPDATE OF PHASE   PAYPRNT   SUCCESSFULLY FINISHED
          BG 000 M041I FUNCTION COMPLETED
          BG 000 M005D ENTER CONTROL STATEMENT, OR PRESS END/ENTER TO QUIT
        ⇒ 0  ▪
          BG 000 M009I MSHP EXECUTION COMPLETED
```

Figure 20. Example of an MSHP Patch Operation

Notes:

1. Requests MSHP to display help information. MSHP responds by an information message as shown.

2. This is the heading line for a list of allowed detail control statements. For a listed control statement, MSHP shows the allowed abbreviation in parentheses. AFF is the allowed abbreviation for AFFECTS.

3. Requests MSHP to display 16 bytes of data beginning at the address 03FC. In this example, the scan begins at location 03FC (and not at location 0404) to give you some information on the environment of location 0404.

4. Requests MSHP to scan for a string of two bytes containing X'FFFF'.

5. Requests 'FFFF' at the location 0404 to be checked and replaced by a branch and link register instruction.

6. Messages M138I, M139I, and M140I are MSHP's confirmation of the requested change.

7. A response of CANCEL (to quit) at this point causes the function to end, leaving the phase unchanged. If this were done in the above example, the two bytes at location 0404 would still contain 'FFFF'.

Using the Function via Input from SYSIPT

To have MSHP do the same change in phase PAYPRNT as shown in Figure 20, submit a job as follows:

```
// JOB PATCH A PHASE
// EXEC MSHP
   PATCH SUBLIB=WEEKLY.PAYAPPL
   AFFECTS PHASE=PAYPRNT
   ALTER 0404 FFFF:05EF
/*
/&
```

Appendix B. Applying APARs/Local Fixes

Skeletons for Installing APARs/Local Fixes

z/VSE provides skeletons that help you apply APARs or local fixes. The skeletons are provided in VSE/ICCF library 59.

Note: Before you change a skeleton, copy it to your primary VSE/ICCF library. Make your changes to that copy, not to the original.

The skeletons:
- SKSRVSRC
- SKSRVPHS
- SKSRVMOD

can be used to apply a local fix for phases, object modules and source type code.

Skeleton SKUNDO removes any fix.

In addition, for scanning for a certain hexcode within a phase, skeleton SKSRVSCN may be used.

Handling a Fix for a Phase

This section gives sample jobs for the installation of fixes to the various types of library members. These jobs assume that permanently stored label information exists for the affected libraries. For a list of component names – IBM assigned numbers such as 1111-222-33-444, which are used in the first sample jobs – refer to your MSHP RETRACE COMPONENTS listing. In this listing, the component names would be printed, for example, as *1111-22233*.

MSHP can be requested to *expand* a *phase* or a *module* if this phase or module consists of only one CSECT.

The first sample job shown in Figure 21 corrects phase IPW$$OT. The job causes MSHP to expand the phase by 100 bytes. The second sample job shown in Figure 24 on page 79 removes this fix.

Installing the Fix:

```
     * $$ JOB JNM=CORPHASE,CLASS=0
     // JOB CORRECT PHASE
     // EXEC MSHP
(1)  CORRECT 1111-222-33-444  :  DY21001
     AFFECTS PHASES=IPW$$OT EXPAND=100
(2)  ALTER F0 9200B0F8:92F180F8
(3)  ALTER 6FA 00000000:4700C426
     RESOLVES 'ERROR ON TAPE OPEN'
     /*
     /&
     * $$ EOJ
```

Figure 21. Sample Job for Installing an APAR/Local Fix to a Phase

Applying APARs/Local Fixes

This allows you to add code to the end of the affected phase or module. You do this by specifying, in the AFFECTS statement, the number of bytes by which the phase or module is to be expanded. Figure 21 on page 77 shows an AFFECTS statement used to expand a phase by 100 bytes.

Notes:

1. *1111-222-33* is the component identifier and *444* the component level code; *DY21001* is the APAR number assigned to the fix.

2. *F0* is the (hexadecimal) displacement into the phase of the data that is to be altered. This example alters the operands of an MVI (92) instruction from 00B0F8 to F180F8.

3. The statement inserts the specified BC (47) instruction into the expansion area.

Additional Sample Jobs:

```
* $$ JOB JNM=SRVPHAS,DISP=D,PRI=3,
* $$ NTFY=YES,
* $$ CLASS=0
* $$ LST DISP=H
// JOB SRVPHAS   APPLY APAR/LOCAL FIX TO A PHASE
* PHASE IESFPIP WILL BE EXPANDED BY 14 BYTES AS AN EXAMPLE, THE
* PATCH AREA HOWEVER WILL NOT BE USED.
// EXEC MSHP
 CORRECT 5686-066-01-75C : AM00001 IRR
 AFF PHASES = IESFPIP EXP = 14
 ALTER 13A0 4770 : 4780
 RESOLVES -
UPPERCASE TRANSLATION AFTER PF4
/*
/&
* $$ EOJ
```

Figure 22. Sample Job for Installing an APAR/Local Fix to a Phase

```
* $$ JOB JNM=SRVPHAS2,DISP=D,PRI=3,
* $$ NTFY=YES,
* $$ CLASS=0
* $$ LST DISP=H
// JOB SRVPHAS2   APPLY APAR/LOCAL FIX TO A PHASE
* APPLY THE PATCH REVOKABLE
// EXEC MSHP
 CORRECT 5686-066-01-75C : AM00002 REV
 AFF PHASES = IESIES01
 ALTER 35C 4870 : 4770
 RESOLVES -
TEST PATCH
/*
/&
* $$ EOJ
```

Figure 23. Sample Job for Installing an APAR/Local Fix to a Phase

Removing the Fix:

```
        * $$ JOB JNM=UNDO,CLASS=0
        // JOB UNDO FIX
        // OPTION CATAL
        // EXEC MSHP
  (1)   UNDO 1111-222-33-444  :  DY21001
        /*
        /&
        * $$ EOJ
```

Figure 24. Sample Job for Removing an APAR/Local Fix

Note: This job causes MSHP to restore the original instruction and to record the APAR (in the history file) as having been revoked.

Handling a Fix for an Object Deck

Figure 25 shows a sample job for fixing an object deck.

The fix affects the module IESFPIP and is applied irrevocable.

```
* $$ JOB JNM=SRVOBJ,DISP=D,PRI=3,
* $$ NTFY=YES,
* $$ CLASS=0
* $$ LST DISP=H
// JOB SRVOBJ  APPLY APAR/LOCAL FIX TO AN OBJECT DECK
* CSECT 02 SHOULD BE CHANGED LINKBOOK IS IESFPIPL
* FIX IS APPLIED IRREVOCABLE
// EXEC MSHP
 CORRECT 5686-066-01-75C : AM00003 IRR
 AFF MODULE = IESFPIP ESDID = 02
 ALTER 23C 4770 : 4780
 INVOLVES  LINK = IESFPIPL
 RESOLVES -
SAMPLE FIX FOR OBJ
/*
/&
* $$ EOJ
```

Figure 25. Sample Job for Installing a Fix for an Object Deck

Handling a Fix for a Macro or Source Code

Figure 26 on page 80 shows a sample job for fixing a macro in the system source statement library.

MSHP does the fix with the REVOKABLE option effective **(by default)**. Therefore, before it alters this macro, MSHP writes a revoke job for the macro to the device assigned to SYSPCH.

The sample job assumes that permanent assignments exist for the required system work files on disk (SYS001 through SYS004) and to a tape drive (SYSPCH).

```
         * $$ JOB JNM=CORSORCA,CLASS=0
         // JOB CORRECT SOURCE MACRO
    (1) // PAUSE ASSGN SYSPCH TO TAPE FOR BACKOUT CREATION
         // EXEC MSHP
         CORRECT 1111-222-33-444 :  PP73336
         AFFECTS MACROS=DLZCKOPT TYPE=A
         DELETE : 000400
         INSERT 450
                LCLB@B(9),@NGP
         @B(9)  SETB  (@PIO(@P))
         /$
         /*
         /&
         * $$ EOJ
```

Figure 26. Sample Job for Installing a Fix for a Macro

Note: (1) Gives the operator a chance to enter an ASSGN command for SYSPCH.

The following job applies a fix to a source type member. The fix is applied revocable. The original source code is written to tape 181. The statement 200 until 250 is replaced by three new lines.

```
* $$ JOB JNM=SRVSOURC,DISP=D,PRI=2,
* $$ NTFY=YES,
* $$ CLASS=0
* $$ LST DISP=H
// JOB SRVSOURC  APPLY APAR/LOCAL FIX TO A SOURCE TYPE MEMBER
* APPLICATION IS DONE REVOKABLE, THE SAVE VERSION IS WRITTEN TO
* TAPE
// PAUSE  MOUNT A TAPE ON 181 FOR THE REVOKABLE FIX FOR AM00004.
// ASSGN SYSPCH,181
// EXEC MSHP
 CORRECT 5686-066-06-75J : AM00004 REV
 AFF MACRO = SGINF TYPE = A
 REPLACE 000200 : 000250
SCRIONA  DS    0H                  SCREEN I/O START ADDRESS
         STM   R14,R1,CICSREGS     SAVE CICS REGISTERS
         EXEC CICS ADDRESS CSA(CSABAR) , GET ADDRESS CSA
/$
 RESOLVES -
SAMPLE APAR FOR A SOURCE
/*
// MTC WTM,SYSPCH
* 181 NOW HAS THE OUTPUT FOR THE REVOKABLE APPLICATION OF
* AM00004 AND A TAPE MARK.  181 IS LEFT POSITIONED AFTER THE
* TAPE MARK FOR FURTHER OUTPUT.  EITHER UNLOAD 181 OR
* RUN YOUR NEXT CORRECTIVE SERVICE JOB.
// PAUSE
/*
/&
* $$ EOJ
```

Figure 27. Sample Job for Installing a Fix for a Source Type Member

Removing a Fix for a Macro or Source Code

To remove a fix for a macro:

- Create a job with the VSE/POWER JECL statements as shown in Figure 28 on page 81, if this is possible.
- Start the revoke run with the MSHP produced job on the device assigned to SYSIN (if on tape) or SYSRDR and SYSIPT (if in card image).

```
* $$ JOB JNM=UNDO,CLASS=0,DISP=H
```

```
┌─ MSHP generated jobs ─────────────────────────────────────────────────┐
│ // JOB DY17291  (UNDO) xx/xx/xx                                        │
│ // EXEC MSHP                                                           │
│ UNDO 1111-222-33-444 : DY17291                                        │
│ DATA                                                                   │
│  ...  ...  ...                                                         │
│ /$                                                                     │
│ /*                                                                     │
│ /&                                                                     │
│ // JOB DY18456  (UNDO) xx/xx/xx                                        │
│ // EXEC MSHP                                                           │
│ UNDO 1111-222-33-444 : DY18456                                        │
│ DATA                                                                   │
│  ...  ...  ...                                                         │
│ /$                                                                     │
│ /*                                                                     │
│ /&                                                                     │
│ * $$ EOJ                                                               │
└───────────────────────────────────────────────────────────────────────┘
```

Figure 28. Sample Job for Removing a Fix from an Edited Macro

Appendix C. Downloading PTFs from the Internet

This chapter describes the steps that are required to prepare the system, if you downloaded the PTFs from the Internet. The shipment you received consists of the following files:

- a readme file
- the PTF cover letter
- the PTF file

The readme and cover letter files are plain text and you can read them without transferring the files to the VSE system first. The PTF file includes all the PTFs ordered, and it must be transferred to the VSE system in binary mode. The PTF file might be compressed by the ZIP facility, and therefore you must first decompress it before you transfer it to your VSE system.

Transferring the PTF file to the VSE system can be done in different ways. It is recommended to transfer it to a VSAM file called IJSYSPF, which is defined on the VSE system and used by the PTF application dialog (in VSE/ESA 2.4.0 or later). For older VSE systems, a tape is required as application medium. In this case, you need a VSE library as intermediate storage.

Note: PTF files should not be transferred directly to the VSE system. Read "Restrictions" on page 85 for details.

The following section describes the various possibilities to transfer the PTF file to the VSE system.

Transferring the PTF by using TCP/IP

You can use TCP/IP to transfer the PTF file directly to disk in the VSAM file IJSYSPF. IJSYSPF is defined in the VSAM user catalog. Note that depending on the amount of PTFs to be applied, the size of the file could be too small or VSAM is running out of space. The file must be defined in TCP/IP as follows:

```
DEFINE FILE,TYPE=ESDS,DLBL=IJSYSPF,PUBLIC='PTF.FILE'
```

You must specify the parameter binary and a logical record length of 80 (quote site lrecl 80). The following shows a sample protocol of such a transfer:

```
C:\Temp>ftp 9.164.170.30                    <-- IP address or hostname of VSE system
Connected to 9.164.170.30
220-TCP/IP for VSE -- Version 01.04.00 -- FTP Daemon
Copyright (c) 1995,2001 Connectivity Systems Incorporated
220 Service ready for new user.
User (9.164.155.2:(none)): SYSA            <-- enter your user id here
331 User name okay, need password.
Password:                                  <-- enter your password here
230 User logged in, proceed.
ftp> binary                                <-- switch to binary mode
200 Command okay.
ftp> quote site lrecl 80                    <-- record size of your file
200 Command okay.
ftp> quote site recfm f                     <-- record format of your file
200 Command okay.
ftp> put ptffile.bin PTF.FILE               <-- enter your filenames
```

Apply the PTF by using the z/VSE dialog. The service medium is disk.

Transferring the PTF File to Disk

If you transfer the PTF file to disk, an intermediate medium is required, which can be a VSE library member, or the Host Transfer File (HTF).

Transfer the PTF file to a library member or into the HTF using IND$FILE transfer. The following send command transfers the PTF file to the PRIMARY library:

```
SEND PTFFILE.BIN PTFFILE Z (FILE=LIB L=PRIMARY S=SUF LRECL=80
```

The following send command transfers the PTF file to the HTF:

```
SEND PTFFILE.BIN PTFFILE Z (FILE=HTF LRECL=80
```

From the intermediate medium, the PTF file can be transferred to disk. This is done using a DITTO job, as shown in the following sample job, in case the intermediate medium is the VSE library:

```
* $$ JOB JNM=TEST,CLASS=0,DISP=D
// JOB TEST
* PTF MEMBER OF LIBRARY IS COPIED (AND REBLOCKED) TO VSAM FILE
* IJSYSPF
*
// UPSI 1
// EXEC DITTO
$$DITTO LV   LIBIN=PRIMARY.SUF
                ,MEMBERIN=PTFFILE.Z
                ,FILEOUT=IJSYSPF
                ,REUSE=REUSE

/*
/&
* $$ EOJ
```

In case the intermediate medium is the HTF, you can use the Move Utility (fast path 383) to move the PTF from HTF to VSAM. If the HTF is used, you must define the IJSYSPF file to CICS. After the move to VSAM, you must close IJSYSPF:

```
CEMT SET FILE(IJSYSPF) CLOSE
```

Apply the PTF by using the z/VSE dialog. The service medium is disk.

Transferring the PTF File to Tape

If you transfer the PTF file to tape, an intermediate medium is required, which must be a library member.

Transfer the PTF file to a library member as described in the previous section. The following send command transfers the PTF file to the PRIMARY library:

```
SEND PTFFILE.BIN PTFFILE Z (FILE=LIB L=PRIMARY S=SUF LRECL=80
```

From this library, the DITTO job copies the PTF file on the tape with the address 181 as shown in the following sample:

```
* $$ JOB JNM=TEST,CLASS=0,DISP=D
// JOB TEST
* PTF FILE MUST BE COPIED TO SUBLIBRARY PRIMARY.SUF
* AS MEMBER PTFFILE.Z, FILE TRANSFER MUST BE BINARY LRECL 80
*
// UPSI 1
// PAUSE - PLEASE MOUNT SCRATCH TAPE ON 181
// EXEC DITTO
$$DITTO REW OUTPUT=181
$$DITTO WTM OUTPUT=181,NTMKS=5
$$DITTO LT LIBIN=PRIMARY.SUF,MEMBERIN=PTFFILE.Z,OUTPUT=181,
$$DITTO    RECFMOUT=FB
$$DITTO WTM OUTPUT=181,NTMKS=2
$$DITTO RUN OUTPUT=181
/*
/&
* $$ EOJ
```

Apply the PTF by using the z/VSE dialog. The service medium is disk.

For VM Users

If you are running z/VSE under z/VM, you can transfer the PTF to VM (binary, lrecl 80), and use the exec showed below to move it to a tape. To apply the PTF, use the z/VSE dialog.

```
* THIS EXEC CREATES A SERVICE TAPE
CP REW 181
TAPE WTM 5
FILEDEF * CLEAR
FILEDEF IN DISK &1 &2 &3
FILEDEF OUT TAP1 ( RECFM FB LRECL 80 BLOCK 10320 DEN 38K
MOVEFILE IN OUT
TAPE WTM 2
CP REW 181
```

Figure 29. Creating a Service Tape Under VM

Restrictions

PTF files should not be transferred directly to the VSE system (POWER reader), because the following restrictions apply:

1. PRE- and CO-requirements may not be fulfilled due to wrong order of PTFs, CO-requirements will not work at all.

2. POWER JECL included in the data part of the PTFs will be processed while running the job. This results in modified contents of the PTF and also might cause incompleteness of code.

3. Missing POWER JECL in the PTF file causes POWER to extract VSE JOB cards, this results in modified contents of the PTF and to incompleteness due to job termination.

4. Indirect application is not supported.

Appendix D. Preparing for Initial Installation or FSU from Virtual Tape

In addition to ordering z/VSE on tapes, you can order it on CD-ROM or download from the internet. Both methods are based on virtual tape format (AWSTape format). The installation is similar for both methods. With electronic delivery, you must first download the files from the IBM Web site (ShopzSeries) to your workstation and unzip the files. If z/VSE is distributed on CD-ROM, the data can be used directly on your workstation.

The following table lists the file names that are used for the z/VSE tape images:

Table 7. File Names of Tape Images

Tape Image	CD-ROM	Electronic Delivery (downloaded from internet and unzipped)
Base Tape	VSE31xYY.aws	VSE31xYY.aws
Extended Base Tape	VSE31xXB.aws	VSE31xXB.aws
DB2 Help Tape	DB2HELP.aws	DB2HELP.aws
Optional Products Tape	VSE31xOP.aws	VSE31xOP.aws

The first CD contains the files for the z/VSE Base, Extended Base, and DB2 Help tape images. The optional products are on the second CD. For electronic delivery, the Download Director creates a directory called `DownloadDirector` and downloads the zipped virtual tape image files (AWSTape image files) to this directory (for example, `C:\DownloadDirector`).

Preparing the Installation

Before you can start to install z/VSE 3.1, you have to perform the following steps:
1. Prepare the virtual tape file for the base tape.
2. Depending on whether you want to perform an initial installation or an FSU,
   - copy the file containing the base tape to a real tape (see "Preparing the Virtual Tape Files on the Workstation"), or
   - transfer the file to VSAM for an FSU via virtual tape.
3. Install the extended base products and the optional products to complete the installation.

Preparing the Virtual Tape Files on the Workstation

Unzip the downloaded files by using a compression utility (for example, PKUNZIP). The zipped files contain one virtual tape image file each. If you received z/VSE on CD, the virtual tape files are already in virtual tape format (aws) and ready to use.

The following sections describe the steps that are required to install or upgrade z/VSE from CD.

Preparing for Initial Installation or FSU

If you are running VSE/ESA 2.7, you can start the FSU from the virtual tape. In case you have VSE/ESA 2.6 installed, or in case you want to perform an initial installation, you should copy the base tape, which is in AWSTape format, to a real tape. If you plan to install z/VSE 3.1 on a system that is capable to read tape images in virtual tape format (for example, an IBM S/390 Multiprise 3000), you do not need to copy the image to a real tape or VSAM, you can directly continue with the initial installation or FSU, by using the distribution file on an emulated tape device.

In order to copy the files to a real tape, the cartridge must be capable to hold at least 250 MB. If you use a 3480 cartridge, IDRC compression is required for the data to fit on a regular cartridge.

To be able to use the virtual tape function with VSE/ESA 2.6 and VSE/ESA 2.7, certain APARs must be installed. Refer to the Program Directory, or to the installation instructions available on the z/VSE Web site

```
http://www.ibm.com/servers/eserver/zseries/zvse/
```

for the latest information about the required APARs.

To copy the virtual tape to a real tape, use the VSE Virtual Tape Support. This can be done either from the remote site (workstation) or via VSAM and FTP and subsequent DITTO tape-to-tape copy.

A document with operation considerations of the VSE Virtual Tape Support is available on the following VSE Web site:

```
http://www.ibm.com/servers/eserver/zseries/zvse/support/vtape.html
```

Using a Remote Tape Image on a Workstation to Copy the Base Tape to Real Tape

Perform the following steps to copy the tape image. Run the VSE job, as shown below, to copy the base tape image in virtual tape format residing on a workstation to a real tape (at least 3480 IDRC - only one cartridge). The job uses a virtual tape at address cuu1 and performs a DITTO tape-to-tape copy to a real tape at cuu2. See the example below for the parameters you must specify. Make sure that the VSE Virtual Tape Server is started on your workstation.

```
* $$ JOB JNM=COPYTAPE,CLASS=0,DISP=D
// JOB COPYTAPE
// PAUSE PLEASE MOUNT A TAPE ON <cuu2>
// UPSI 1
DVCDN <cuu1>
// PAUSE - DEVICE DOWN OK
// VTAPE START,UNIT=<cuu1>,LOC=<ip-address>,FILE='<tape image file>',READ
DVCUP <cuu1>
// ASSGN SYS010,<cuu2>,08 * OUTPUT MEDIA, 3480 COMPRESSED
// ASSGN SYS011,<cuu1>      * INPUT   MEDIA
// EXEC DITTO
$$DITTO REW OUTPUT=SYS010
$$DITTO REW OUTPUT=SYS011
$$DITTO TT INPUT=SYS011,OUTPUT=SYS010,NFILES=<36>
/*
DVCDN <cuu1>
// VTAPE STOP,UNIT=<cuu1>
DVCUP <cuu1>
/&
* $$ EOJ
```

Before submitting the job, you must enter the following parameters:

<cuu1>
> Device address of the input tape (virtual)

<cuu2>
> Device address of the output tape (real)

<ip-address>
> IP address of the workstation where the VSE Virtual Tape Server is running (in the format 10.3.4.56).

<tape image file>
> File name and path of the remote virtual tape image containing the z/VSE base tape. (For example, `C:\DownloadDirector\VSEBA310.AWS`)

Notes:

1. `NFILES=<36>` is only valid for the base tape. In case of the extended base tape, the value is 46.
2. FSU can also be done by using a real tape.

After you copied the tape image to a real tape, continue with the installation or FSU of the z/VSE 3.1 base tape.

Using a VSAM Tape Image on a z/VSE System
Perform the following steps to use the VSAM tape image on your z/VSE system:

- Define a virtual tape file in VSAM using skeleton SKVTAPE (ICCF library 59). You need about 250 MB of VSAM space to copy the base tape.
- Transfer the base tape in virtual tape format (type aws) to VSAM using FTP. For more details, see "Uploading the Base Tape to VSAM for FSU via Virtual Tape."
- Copy the VSAM base virtual tape to a real tape with a DITTO job as described in "Using a Remote Tape Image on a Workstation to Copy the Base Tape to Real Tape" on page 88 with the following VTAPE command:

   ```
   // VTAPE START,UNIT=<cuu1>,LOC=VSAM,FILE='<tape image file>',READ
   ```

   `<tape image file>` is the label name of the VSAM file containing the tape image (for example, VTAPE1).

After copying the tape image to a real tape, continue with the installation or FSU of the z/VSE 3.1 base tape.

Uploading the Base Tape to VSAM for FSU via Virtual Tape

In case you are installing a service refresh on z/VSE 3.1, use the skeleton SKVTAPE, provided in ICCF library 59, to define a VSAM ESDS cluster. The catalog should have about 250 MB free space.

Upload the tape image into a VSAM data set. The base tape is loaded into the VSAM data set using TCP/IP FTP. To do this you need to have an FTP daemon defined in the TCP/IP for VSE/ESA partition. Use the following commands for the upload:

```
C:\DownloadDirector>ftp 10.2.3.45          <-- IP address or hostname of VSE system
Connected to 10.2.3.45.
220-TCP/IP for VSE -- Version 01.05.00 -- FTP Daemon
Copyright (c) 1995,2001 Connectivity Systems Incorporated
220 Service ready for new user.
User (10.2.3.45:(none)): sysa              <-- enter your user id here
331 User name okay, need password.
Password:                                   <-- enter your password
```

Installing from Virtual Tape

```
                  230 User logged in, proceed.
                  ftp> bin                              <-- switch to binary mode
                  200 Command okay.
                  ftp> quote site lrecl 32758           <-- record size of your file
                  200 Command okay.
                  ftp> quote site recfm v               <-- set record format to variable
                  200 Command okay.
                  ftp> put VSEBA310.AWS VSE.VTAPE.FILE   <-- enter your filenames
```

After loading the base tape you can start the FSU from virtual tape.

Installing Additional Products

Products from the extended base tape as well as optional products can be installed from the remote server (workstation) using the Interactive Interface dialog. The related virtual tape files can also be transferred to VSAM by using FTP. Installation from a VSAM virtual tape is also done using the Interactive Interface dialog. If required, the virtual tape can also be copied to a real tape, the number of files to be copied depends on the amount of products on the tape. The DITTO tape-to-tape copy job can specify 999 files, but this will generate an error message on the virtual input tape.

To install the DB2 Help feature, either specify a virtual tape address referring to the remote virtual tape file during the DB2 installation, or copy the virtual DB2 Help tape to a real tape.

Additional Information for Receiving z/VSE from the Internet

Depending on your order, it can contain items that are packaged in zipped format. In this case, perform the following:

1. Download the xxxxxxx.zip file to your workstation.
2. Extract the files using an unzip function.
3. Browse the extracted material for files like readme.txt, index.htm, or index.html to get started.

Most of the extracted files can be used directly. In some cases your order may contain ADDITIONAL MATERIAL or ADDITIONAL PUBLICATIONS that were originally packaged on CDs. These may be provided as ISO 9660 images with a file extension of .iso. An ISO 9660 CD-ROM image is a single large file that is an exact representation of the data and programs as they appear on a CD, reflecting both the content and logical format.

To use .iso files, you have two options:

1. Create a physical CD. This requires that your workstation has a CD-write capability and software that supports ISO 9660 format. When you create the physical CD, this is an exact copy of the original CD and has all of the characteristics of the original image (for example, special file names, and - if applicable - it is a bootable CD).
2. Use virtual CD software. Virtual CD software emulates your computer's CD-ROM drive, enabling you to execute programs, view and use data provided in the CD image directories and files. This is an alternative to creating a physical CD. This software must support .iso files.

Read the license agreements and follow the procedures that are specific to any software that you use to process these packages.

Glossary

If you do not find the term you are looking for, refer to the index of this book or view the *IBM Glossary of Computing Terms* at

`http://www.ibm.com/ibm/terminology`

. The glossary includes definitions with:

- Symbol *, which denote entries from the *IBM Glossary of Computing Terms*.
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The following cross-references are used:

- Contrast with. This refers to a term that has an opposed or substantively different meaning.
- Synonym for. This indicates that the term has the same meaning as a preferred term, which is defined in its proper place in the dictionary.
- Synonymous with. This is a backward reference from a defined term to all other terms that have the same meaning.
- See. This refers the reader to multiple-word terms that have the same last word.
- See also. This refers the reader to related terms that have a related, but not synonymous, meaning.

access control.   A function of VSE that ensures that the system and the data and programs stored in it can be accessed only by authorized users in authorized ways.

access method.   A program, that is, a set of commands (macros), to define files or addresses and to move data to and from them; for example VSE/VSAM or VTAM.

* account file.   A direct access file maintained by VSE/POWER to hold the accounting information it generates and the programs that it controls.

* assembler.   A computer program that converts assembly language instructions into object code.

* authorized program analysis report (APAR).   A request for a correction of a problem caused by a defect in a current unaltered release of a program.

background partition.   An area of virtual storage in which programs are executed under control of the system. By default, the partition has a processing priority lower than any of the existing foreground partitions.

block.   Usually, a block consists of several records of a file that are transmitted as a unit. But if records are very large, a block can also be part of a record only. On an FBA disk, a block is a string of 512 bytes of data. See also *control block*.

* catalog.   1. A directory of files and libraries, with reference to their locations. A catalog may contain other information such as the types of devices in which the files are stored, passwords, blocking factors. (I) (A) 2. To store a library member such as a phase, module, or book in a sublibrary.

See also *VSAM master catalog, VSAM user catalog*.

* cataloged procedure.   A set of control statements placed in a library and retrievable by name.

* checkpoint.   1. A point at which information about the status of a job and the system can be recorded so that the job step can be restarted later. 2. To record such information.

CICS Transaction Server for VSE/ESA.   This is the successor system to CICS/VSE.

* CICS/VSE.   Customer Information Control System/VSE.

* cluster controller.   A device that can control the input/output operations of more than one device connected to it. A cluster controller may be run by a program stored and executed in the unit; for example, the IBM 3601 Finance Communication Controller. Or it may be entirely controlled by hardware; for example, the IBM 3272 Control Unit.

* common library. An interactively accessible library that can be accessed by any user of the system or subsystem that owns the library.

* communication controller. 1. A device that directs the transmission of data over the data links of a network; its operation may be controlled by a program executed in a processor to which the controller is connected or it may be controlled by a program executed within the device. (T) 2. A type of communication control unit whose operations are controlled by one or more programs stored and executed in the unit. It manages the details of line control and the routing of data through a network.

component. 1. Hardware or software that is part of a computer system. 2. A functional part of a product, identified by a component identifier. 3. In VSE/VSAM, a named, cataloged group of stored records, such as the data component or index component of a key-sequenced file or alternate index.

computer system. A functional unit of one or more computers and their associated software.

* configuration. The devices and programs that make up a system, subsystem, or network.

control block. An area within a program or a routine defined for the purpose of storing and maintaining control information.

control unit. See *communication controller* and *cluster controller*. Synonymous with *controller*.

* corrective service. The installation of a PTF or an APAR fix that corrects a specific problem.

Customer Information Control System/VSE (CICS/VSE). A VSE/ESA base program that controls online communication between terminal users and a database. Transactions entered at remote terminals are processed concurrently by user-written application programs. The product includes facilities for building, using, and servicing databases.

Its successor system is called CICS Transaction Server for VSE/ESA.

database. A set of data available online that is organized by a common system and used for a common purpose.

* dialog. 1. In an interactive system, a series of related inquiries and responses similar to a conversation between two people. 2. For VSE/ESA, a set of panels that can be used to complete a specific task; for example, defining a file.

disk operating system residence volume (DOSRES). The disk volume on which the system sublibrary IJSYSRS.SYSLIB is located including the programs and procedures required for system startup.

disposition. A means of indicating to VSE/POWER how job input and output is to be handled. A job may, for example, be deleted or kept after processing.

* distribution tape. A magnetic tape that contains, for example, a preconfigured operating system like VSE/ESA. This tape is shipped to the customer for program installation.

DOSRES. Disk operating system residence volume.

dynamic partition. A partition created and activated on an 'as needed' basis that does not use fixed static allocations. After processing, the occupied space is released. Contrast with *static partition*.

Enterprise Systems Architecture (ESA). See *ESA/390*.

ESA mode. The operation mode of the supervisor of a z/VSE system. Such a supervisor will run on Enterprise Systems Architecture processors (ESA/390) and provides support for multiple virtual address spaces, the channel subsystem, and more than 16 MB of real storage.

ESA/390. IBM Enterprise Systems Architecture/390. The latest extension to the IBM System/370 architecture which includes the advanced addressability feature and advanced channel architecture.

* escape. To return to the original level of a user interface.

extent. Continuous space on a disk or diskette occupied by or reserved for a particular file or VSAM data space.

Fast Service Upgrade (FSU). A service function of VSE/ESA for the installation of a refresh release without regenerating control information such as library control tables.

FULIST (FUnction LIST). A type of selection panel that displays a set of files and/or functions for the choice of the user.

* generate. To produce a computer program by selecting subsets of skeletal code under the control of parameters. (A)

* hardware. All or part of the physical components of an information processing system, such as computers or peripheral devices. (T) (A) Contrast with *software*.

interface. A shared boundary between two hardware or software units, defined by common functional or physical characteristics. It might be a hardware component or a portion of storage or registers accessed by several computer programs.

job step. One of a group of related programs complete with the JCL statements necessary for a particular run.

Every job step is identified in the job stream by an EXEC statement under one JOB statement for the whole job.

job stream. The sequence of jobs as submitted to an operating system.

label information area. An area on a disk to store label information read from job control statements or commands. Synonymous with *label area*.

* librarian. The set of programs that maintains, services, and organizes the system and private libraries.

library. See *VSE library* and *VSE/ICCF library*.

* library member. The smallest unit of data that can be stored in and retrieved from a sublibrary.

* licensed program. A separately priced program and its associated materials that bear an IBM copyright and are offered to customers under the terms and conditions of the IBM Customer Agreement (ICA).

link-edit. To create a loadable computer program by having the linkage editor process compiled (assembled) source programs.

logical record. A user record, normally pertaining to a single subject and processed by data management as a unit. Contrast with *physical record* which may be larger or smaller.

* maintain system history program (MSHP). A program used for automating and controlling various installation, tailoring, and service activities for a VSE system.

* member. The smallest unit of data that can be stored in and retrieved from a sublibrary. See also *library member*.

message. 1. In VSE, a communication sent from a program to the operator or user. It can appear on a console, a display terminal or on a printout. 2. In telecommunication, a logical set of data being transmitted from one node to another.

* module. A program unit that is discrete and identifiable with respect to compiling, combining with other units, and loading; for example, the input to, or output from an assembler, compiler, linkage editor, or executive routine. (A)

object module (program). A program unit that is the output of an assembler or compiler and is input to a linkage editor.

partition. A division of the virtual address area available for running programs. See also *dynamic partition, static partition*.

personal computer (PC). A microcomputer for individuals or small businesses.

* physical record. The amount of data transferred to or from auxiliary storage. Synonymous with *block*.

* preventive service. The installation of one or more PTFs on a VSE system to avoid the occurrence of anticipated problems.

* primary library. A VSE library owned and directly accessible by a certain terminal user.

procedure. See *cataloged procedure*.

* processing. The performance of logical operations and calculations on data, including the temporary retention of data in processor storage while this data is being operated upon.

* processor. In a computer, a functional unit that interprets and executes instructions. A processor consists of at least an instruction control unit and an arithmetic and logic unit. (T)

profile. A description of the characteristics of a user or a computer resource.

program temporary fix (PTF). A solution or by-pass of one or more problems documented in APARs. PTFs are distributed to IBM customers for preventive service to a current release of a program.

record. A set of related data or words, treated as a unit. See *logical record*, *physical record*.

release upgrade. Use of the FSU function to install a new release of z/VSE.

security. See *access control*.

* selection panel. A displayed list of items from which a user can make a selection. Synonymous with *menu*.

service node. Within the VSE unattended node support, a processor used to install and test a master VSE system which is copied for distribution to the unattended nodes. Also, program fixes are first applied at the service node and then sent to the unattended nodes.

service unit. One or more PTFs on disk or tape (cartridge).

service refresh. A form of service containing the current version of all software. Also referred to as a *system refresh*.

* shared spooling. A function that permits the VSE/POWER account file, data file, and queue file to be shared among several computer systems with VSE/POWER.

* shared virtual area (SVA). A high address area that contains a system directory list (SDL) of frequently

used phases, resident programs that can be shared between partitions, and an area for system support.

* skeleton. A set of control statements, instructions, or both, that requires user-specific information to be inserted before it can be submitted for processing.

* software. All or part of the programs, procedures, rules, and associated documentation of a data processing system. Software is an intellectual creation that is independent of the medium on which it is recorded. (T)

source member. A library member containing source statements in any of the programming languages supported by VSE.

* source statement. A statement written in symbols of a programming language.

* spooling. The use of disk storage as buffer storage to reduce processing delays when transferring data between peripheral equipment and the processors of a computer. In VSE, this is done under the control of VSE/POWER.

* standard label. A fixed-format record that identifies a volume of data such as a tape reel or a file that is part of a volume of data.

startup. The process of performing IPL of the operating system and of getting all subsystems and application programs ready for operation.

static partition. A partition, defined at IPL time and occupying a defined amount of virtual storage that remains constant. Contrast with *dynamic partition*.

* subarea. A portion of the SNA network consisting of a subarea node, attached peripheral nodes, and associated resources. Within a subarea node, all NAUs, 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.

sublibrary. A subdivision of a library. Members can only be accessed in a sublibrary.

submit. A VSE/POWER function that passes a job to the system for processing.

* supervisor. The part of a control program that coordinates the use of resources and maintains the flow of processor operations.

supervisor mode. See *ESA mode*.

SYSRES. System residence file.

system refresh. See *service refresh*.

system residence file (SYSRES). The system sublibrary IJSYSRS.SYSLIB that contains the operating system. It is stored on the system residence volume DOSRES.

system sublibrary. The sublibrary that contains the operating system. It is stored on the system residence volume (DOSRES).

* telecommunication. Transmission of data between computer systems over telecommunication lines and between a computer system and remote devices.

* terminal. A point in a system or network at which data can either enter or leave. (A) Usually a display screen with a keyboard.

virtual disk. A range of up to two gigabytes of contiguous virtual storage addresses that a program can use as workspace. Although the virtual disk exists in storage, it appears as a real FBA disk device to the user program. All I/O operations directed to a virtual disk are intercepted and the data to be written to, or read from, the disk is moved to or from a data space.

Like a data space, a virtual disk can hold only user data; it does not contain shared areas, system data or programs. Unlike an address space or a data space, data is not directly addressable on a virtual disk. To manipulate data on a virtual disk, the program has to perform I/O operations.

Virtual Machine/Enterprise Systems Architecture (VM/ESA). The most advanced VM system currently available.

virtual storage. Addressable space image for the user from which instructions and data are mapped into processor (real) storage locations.

virtual tape. A disk file logically structured like a tape and transparently accessible to programs expecting to read or write a tape.

VM/ESA. Virtual Machine/Enterprise Systems Architecture.

volume. A data carrier that is mounted and demounted as a unit, for example, a reel of tape or a disk pack. (I) Some disk units have no demountable packs. In that case, a volume is the portion available to one read/write mechanism.

VSE (Virtual Storage Extended). A system that consists of a basic operating system and any IBM supplied and user-written programs required to meet the data processing needs of a user. VSE and the hardware it controls form a complete computing system. Its current version is called VSE/ESA.

VSE/Advanced Functions. Part of VSE Central Functions, a base program of z/VSE.

VSE/ESA (Virtual Storage Extended/Enterprise Systems Architecture). The predecessor system of z/VSE.

* VSE/Fast Copy (VSE/Fast Copy Data Set program). A program for fast copy data operations from disk to disk and dump/restore operations via an intermediate dump file on magnetic tape or disk. It is part of VSE Central Functions, a base program of z/VSE.

VSE/ICCF library. A file composed of smaller files (libraries) including system and user data which can be accessed under the control of VSE/ICCF.

VSE library. A collection of programs in various forms and storage dumps stored on disk. The form of a program is indicated by its member type such as source code, object module, phase, or procedure. A VSE library consists of at least one sublibrary which can contain any type of member.

* VSE/OLTEP (VSE/Online Test Executive Program). Part of the z/VSE base program VSE Central Functions, for managing the online tests that are available for preventive service for I/O devices. Normally, only IBM service representatives use this program.

* VSE/POWER. Part of the z/VSE base program VSE Central Functions. Primarily used to spool input and output. The program's networking functions enable a VSE system to exchange files with or run jobs on another remote processor.

VSE/SP Unique Code. Part of the z/VSE base program VSE Central Functions.

z/VSE. The most advanced VSE system currently available.

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Readers' Comments — We'd Like to Hear from You

IBM z/VSE
System Upgrade and Service
Version 3 Release 1

Publication No. SC33-8223-00

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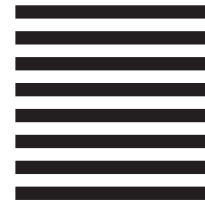Fold and Tape　　　　　　　**Please do not staple**　　　　　　　Fold and Tape

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z/VSE System Upgrade and Service

Version 3 Release 1

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