



# **Program Directory for DFSORT/VSE**

Version 3 Release 4, Modification Level 0

Program Number 5746-SM3

for Use with  
VSE/ESA

Document Date: May 29, 1998

GI10-4513-00

**Note!**

Before using this information and the product it supports, be sure to read the general information under "Notices" on page v.

This program directory, dated May 29, 1998, applies to DFSORT/VSE Version 3 Release 4 Modification 0, Program Number 5746-SM3 for the following:

<b>COMPIDs</b>	<b>Feature Numbers</b>	<b>System Name</b>
5746SM310	5801 5802 5700	VSE/ESA

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## 1.0 Introduction

This program directory is intended for the system programmer responsible for program installation and maintenance. It contains information concerning the material and procedures associated with the installation of DFSORT/VSE. You should read all of this program directory before installing the program and then keep it for future reference.

The program directory contains the following sections:

- 2.0, “Program Materials” on page 2 identifies the basic and optional program materials and documentation for DFSORT/VSE.
- 3.0, “Program Support” on page 5 describes the IBM support available for DFSORT/VSE.
- 4.0, “Program and Service Level Information” on page 6 lists the APARs (program level) and PTFs (service level) incorporated into DFSORT/VSE.
- 5.0, “Installation Requirements and Considerations” on page 7 identifies the resources and considerations for installing and using DFSORT/VSE.
- 6.0, “Installation Instructions” on page 9 provides detailed installation instructions for DFSORT/VSE.
- 7.0, “Verification of Installation” on page 21 provides detailed information on verifying the correct installation of DFSORT/VSE.
- Appendix A, “Linkage Editor Control Statements for DFSORT/VSE V3R4” on page 23 provides the Linkage Editor information for DFSORT/VSE.

Before installing DFSORT/VSE, read 3.1, “Preventive Service Planning” on page 5. This section tells you how to find any updates to the information and procedures in this program directory.

---

## 2.0 Program Materials

An IBM program is identified by a program number and a feature code. The program number for DFSORT/VSE is 5746-SM3.

The program announcement material describes the features supported by DFSORT/VSE. Ask your IBM marketing representative for this information if you have not already received a copy.

The following sections identify the basic and optional program materials available with this program.

---

### 2.1 Basic Machine-Readable Material

The distribution medium for this program is 9-track magnetic tape (written at 6250 BPI), 3480 or 3490 cartridge, or 4mm Digital Audio Tape (DAT) cartridge. The tape or cartridge contains all the programs and data needed for installation. DFSORT/VSE is installed using MSHP. See 6.0, "Installation Instructions" on page 9 for more information about how to install the program. Figure 1 describes the tape or cartridge. Figure 2 describes the file content of the program tape or cartridge.

*Figure 1. Basic Material: Program Tape*

Medium	Feature Number	Physical Volume	External Label Identification	VOLSER
6250 Tape	5801	1	DFSORT/VSE V3R4M0	none
3480/3490 Cart.	5802	1	DFSORT/VSE V3R4M0	none
4mm DAT Cart.	5700	1	DFSORT/VSE V3R4M0	none

*Figure 2. Program Tape: File Content*

File No.	File Content Description
1	Header File
2	DFSORT/VSE History File
3	DFSORT/VSE Library File, Production Sublibrary
4	Null file (tapemark)
5	EOB (end of BACKUP information)
6	Null file (tapemark)

---

### 2.2 Optional Machine-Readable Material

There are no optional machine-readable materials for DFSORT/VSE.



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## 2.3 Program Publications

The following sections identify the basic and optional publications for DFSORT/VSE.

### 2.3.1 Basic Program Publications

Figure 3 identifies the basic program publications for DFSORT/VSE. One copy of each of these publications is included when you order the basic materials for DFSORT/VSE. For additional copies, contact your IBM representative.

*Figure 3. Basic Material: Unlicensed Publications*

<b>Publication Title</b>	<b>Form Number</b>
DFSORT/VSE Installation and Tuning Guide	SC26-7041
DFSORT/VSE Application Programming Guide	SC26-7040
DFSORT/VSE Messages, Codes and Diagnosis Guide	SC26-7132
DFSORT/VSE Licensed Program Specifications	GC26-7038
DFSORT/VSE General Information	GC26-7039
DFSORT/VSE Reference Summary	SX26-6008
Getting Started with DFSORT/VSE	SC26-7101

### 2.3.2 Optional Program Publications

There are no optional program publications for DFSORT/VSE.

---

## 2.4 Program Source Materials

Microfiche program listings are not provided with DFSORT/VSE. Customers with access to View Program Listings (VPL), such as through SoftwareXcel Extended, can access program listings formerly provided through microfiche.

There are no source materials available for DFSORT/VSE.

---

## 2.5 Publications Useful During Installation

The publications listed in Figure 4 may be useful during the installation of DFSORT/VSE. To order copies, contact your IBM representative.

*Figure 4. Publications Useful During Installation*

<b>Publication Title</b>	<b>Form Number</b>
DFSORT/VSE Installation and Tuning Guide	SC26-7041

---

## 3.0 Program Support

This section describes the IBM support available for DFSORT/VSE.

---

### 3.1 Preventive Service Planning

Before installing DFSORT/VSE, check with your IBM Support Center or use either Information/Access or SoftwareXcel Extended to see whether there is additional Preventive Service Planning (PSP) information that you should know. To obtain this information, specify the following UPGRADE and SUBSET values:

*Figure 5. PSP Upgrade and Subset ID*

<b>UPGRADE</b>	<b>SUBSET</b>	<b>RETAIN Release</b>
SORT340	SORTV34A	34A

If you have received DFSORT/VSE from IBM Software Distribution, then before installing DFSORT/VSE, you should also check with your IBM Support Center or use either Information/Access or SoftwareXcel Extended to see if there is additional PSP information that you should know.

---

### 3.2 Statement of Support Procedures

Report any difficulties you have using this program to your IBM Support Center. If an APAR is required, the Support Center will provide the address to which any needed documentation can be sent.

Figure 6 identifies the component IDs (COMPID) for DFSORT/VSE.

*Figure 6. Component IDs*

<b>COMP ID</b>	<b>Component Name</b>	<b>REL</b>
5746SM310	DFSORT/VSE	34A

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## 4.0 Program and Service Level Information

This section identifies the program and any relevant service levels of DFSORT/VSE. The program level refers to the APAR fixes incorporated into the program. The service level refers to the PTFs integrated. Information about the cumulative service tape is also provided.

---

### 4.1 Program Level Information

The following APAR fixes against previous releases of DFSORT/VSE have been incorporated into this release:

PQ03454  
PQ03830  
PQ10048  
PQ10140  
PQ12667

---

### 4.2 Cumulative Service Tape

A cumulative service tape, containing PTFs not incorporated into this release, might be included with this program.

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## 5.0 Installation Requirements and Considerations

The following sections identify the system requirements for installing and activating DFSORT/VSE. See the *DFSORT/VSE Installation and Tuning Guide* (SC26-7041) for further information.

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### 5.1 Operating System Requirements

DFSORT/VSE will execute under any currently supported, or subsequent level of the VSE/ESA release or modification level of the operating system.

DFSORT/VSE can be installed under all currently supported versions of the following operating systems:

- VSE/ESA Version 1.3 and above
- VSE/ESA Version 2

**Note:** We recommend that you use VSE/ESA Version 1 Release 4 as the minimum level of operating system. Service was discontinued for CICS/VSE Version 2 Release 2, a major component of VSE/ESA Version 1 Release 3, in November, 1997. Service will be discontinued for VSE/ESA Version 1 Release 3 in December, 1998.

VSE/ESA Version 1.4 and above is required to support locale processing with DFSORT/VSE.

You can install DFSORT/VSE any time after your operating system has been installed.

To install DFSORT/VSE, you must use the Maintain System History Program (MSHP).

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### 5.2 Machine Requirements

You can install and run DFSORT/VSE on any processor that supports the VSE/ESA releases listed above.

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### 5.3 Programming Requirements

If you require the locale processing function of DFSORT/VSE, then you must install one of the following:

- VSE/ESA 1.4 through 2.1 and the Language Environment for VSE/ESA 1.4.0 (with the C-language run-time support installed), or
- VSE/ESA 2.2 (with the C-language run-time support installed from the VSE/ESA Extended Base Products tape), or
- VSE/ESA 2.3 or subsequent release

---

## 5.4 DASD Storage Requirements

Figure 7. DASD Storage Requirements

Device	Space Requirements	Library Blocks
3375	78 tracks	1934
3380	63 tracks	1934
3390	59 tracks	1934
9345	70 tracks	1934
All FBA disks	3888 blocks	1934

---

## 5.5 Storage Requirements

The minimum available partition program area requirement for DFSORT/VSE is 32 KB. DFSORT/VSE requires a minimum of 370 KB in the Shared Virtual Area (SVA). 16 KB is required in the 24-bit SVA and 354 KB may reside in the 31-bit SVA. Depending on the application, DFSORT/VSE might require more storage (in addition to any space needed for other programs). Therefore, although DFSORT/VSE requires a minimum of 32 KB, it is strongly recommended that you use more than the minimum amount of storage.

Auxiliary storage space is required for:

- System History file (if not already allocated)
- Library space

---

## 5.6 Required Storage Devices

To install DFSORT/VSE, you need:

- At least one tape or cartridge device for loading the DFSORT/VSE distribution tape.
- Direct-access storage for DFSORT/VSE library. You can choose any of the devices supported by your operating system for program residence.

To use DFSORT/VSE, you need:

- Devices supported by SAM or VSAM for input/output
- Direct-access devices supported by SAM or VSAM for work storage

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## 6.0 Installation Instructions

DFSORT/VSE is installed using the VSE/Advanced Functions Maintain System History Program (MSHP).

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### 6.1 Installing DFSORT/VSE

There are two ways of installing DFSORT/VSE:

1. Using batch jobs (See 6.3.1, "SAMPLE JCL to Install Basic Material Tape" on page 10.)
2. Using the VSE/ESA Interactive Interface (Unique Code dialogs)

See the *DFSORT/VSE Installation and Tuning Guide* (SC26-7041) and the appropriate VSE/ESA Installation Manuals listed below for further information on installation procedures:

- VSE/ESA V1: SC33-6504, *VSE/ESA Installation and Service*
- VSE/ESA V2: SC33-6604, *VSE/ESA Installation*

The basic machine-readable material, which consists of a history file and the production sublibrary, is built in a format for installation with MSHP. The user should be familiar with the MSHP information in *VSE/ESA System Control Statements* (SC33-6513 for VSE/ESA V1; SC33-6613 for VSE/ESA V2).

This program must be installed using the INSTALL PRODUCT function of MSHP. MSHP will invoke the appropriate system utilities to catalog the affected modules in the appropriate production sublibrary.

---

### 6.2 Installing DFSORT/VSE with Previous Release

If you have the Sort/Merge 5746-SM2 product or a previous release of DFSORT/VSE installed in the default production sublibrary (PRD2.PROD), and want to install DFSORT/VSE V3R4 in the default production sublibrary, you will need to make changes in order to keep both products available on your system. If you do not make changes, you will receive the M231D message indicating that installation of the new product will overwrite the existing product. Refer to *IBM VSE/ESA Messages and Codes Volume 2* for further information.

DFSORT/VSE normally replaces the previous product when default installations are performed. In order to keep both products available, you need to install DFSORT/VSE V3R4 in a library other than the default library.

---

## 6.3 Installing the Basic Material

Install DFSORT/VSE by performing the following:

- Execute the MSHP program to install the product into the system **Production** sublibrary.

Refer to 6.3.1, “SAMPLE JCL to Install Basic Material Tape” on page 10 for the steps required to install DFSORT/VSE. The installation will install DFSORT/VSE into the system production sublibrary, PRD2.PROD.

### 6.3.1 SAMPLE JCL to Install Basic Material Tape

The following sample job is used to install DFSORT/VSE when using the system production default sublibrary.

```
// JOB SORTINST INSTALL DFSORT/VSE
// OPTION LOG
// ASSGN SYS006,181
// MTC REW,SYS006
// EXEC MSHP,PARM='PIDSTACKED'
  INSTALL PRODUCT FROMTAPE ID='DFSORT/VSE.3.4.0'  -
    PROD INTO=PRD2.PROD
/*
// EXEC LIBR
  LISTDIR SUBLIB=PRD2.PROD  -
    OUTPUT=NORMAL  -
    UNIT=SYSLST
/*
// MTC RUN,SYS006
/&
```

Figure 8. Job to Install DFSORT/VSE

- The ASSGN job control statement assigns a logical unit SYS006 to the distribution tape unit. Replace '181' with the address of your tape unit. Alternatively, you can use the generic tape assignment  

```
    // ASSGN SYS006,TAPE
```
- The MSHP statements to install DFSORT/VSE into a sublibrary are identified on the INTO operand of the INSTALL statement. If you are installing DFSORT/VSE into a sublibrary other than PRD2.PROD, then the name of the sublibrary on the INTO operand must be changed to reflect your chosen sublibrary. For more information about the install options, see the *VSE/ESA System Control Statements*.
- The next step lists the directory entries of the library where DFSORT/VSE was installed. The directory list can be used to check that all DFSORT/VSE phases have been installed. Remove this step if a directory list is not required. If you are installing DFSORT/VSE into a sublibrary other than the installation default (PRD2.PROD), then the SUBLIB operand must be changed to reflect your chosen sublibrary.



Entries for DFSORT/VSE have a four character prefix of ILUS to distinguish them from other products. Exceptions to this naming convention are:

- ILMUTL.A
- ILUINST.A
- ILMMSG.A
- ILMMSG.S.A
- ILMSET.A
- ILUDMSG.A
- ILMMSGJ.A
- ILUDATA.Z
- ILUTOOL.Z
- ILUCULT.Z
- ILULOGEN.Z
- ICETOOL.OBJ
- ILMUTL.OBJ
- ILMCDU.OBJ
- ILU35DU.OBJ
- ILMMSG.A.OBJ
- ICETOOL.PHASE
- \$SVASORT.PHASE
- SORT.PHASE
- ILMCDU.PHASE
- ILU35DU.PHASE
- ILMMSG.A.PHASE

See the *DFSORT/VSE Installation and Tuning Guide* (SC26-7041) for further information.

### Loading SVA Phases

Figure 9 shows how the DFSORT/VSE phases can be loaded into the SVA through a load list.

```
// JOB LSORTSVA  LOAD SVA-ELIGIBLE PHASES INTO SVA
// LIBDEF PHASE,SEARCH=PRD2.PROD
SET SDL
LIST=$SVASORT
/*
/&
```

*Figure 9. Loading SVA Phases Through a Load List*

**Note:** The above LSORTSVA Job should only be run in the BG partition.

See the *DFSORT/VSE Installation and Tuning Guide* (SC26-7041) for further information.

There are 65 SVA entries for DFSORT/VSE V3R4, requiring a minimum of 370 KB in the Shared Virtual Area (SVA). 16 KB is required in the 24-bit SVA (2 entries) and 354 KB may reside in the 31-bit SVA (63 entries). See the list below for further information on phases loaded in SVA.

24-bit SVA

ILUSMANR  
ILUSMANS

31-bit SVA

ILUMSGA  
ILUSBM  
ILUSBUG  
ILUSCRE  
ILUSCREI  
ILUSDEFR  
ILUSDEFS  
ILUSDEF1  
ILUSDEF2  
ILUSDEF3  
ILUSDI  
ILUSDM  
ILUSDO  
ILUSEND  
ILUSERR  
ILUSE32I  
ILUSFI  
ILUSFO  
ILUSGEN  
ILUSGEN1  
ILUSGEN2  
ILUSGEN3  
ILUSINCG  
ILUSINCL  
ILUSINDI  
ILUSINDO  
ILUSINFI  
ILUSINFO  
ILUSINSI  
ILUSINSO  
ILUSINTI  
ILUSINTO  
ILUSINXO  
ILUSLCS  
ILUSLIM  
ILUSLIMI

ILUSMO  
ILUSMRIN  
ILUSMRIR  
ILUSMVIN  
ILUSOPT  
ILUSOUTR  
ILUSPAR  
ILUSPARI  
ILUSRED  
ILUSREDI  
ILUSRTIN  
ILUSRTOU  
ILUSSI  
ILUSSO  
ILUSSUMG  
ILUSTI  
ILUSTO  
ILUSVED  
ILUSVEDI  
ILUSVIM  
ILUSVIMI  
ILUSVRE  
ILUSVREI  
ILUSVSIN  
ILUSVSOU  
ILUSXO  
ILU35DU

---

## 6.4 Enabling DFSORT/VSE Cultural Environment Support

To provide cultural environment support, DFSORT/VSE must have access to one of the following:

- VSE/ESA 1.4 through 2.1 and the Language Environment for VSE/ESA 1.4.0 (with the C-language run-time support installed), or
- VSE/ESA 2.2 (with the C-language run-time support installed from the VSE/ESA Extended Base Products tape), or
- VSE/ESA 2.3 or a subsequent release

To enable DFSORT/VSE's cultural environment support, the following post-install job must to be run after DFSORT/VSE is installed. The post-install job is shipped on the product tape as ILULOCEN.Z and can be found in the sublibrary where DFSORT/VSE is installed. Use the LIBRP macro to punch the post-install job to your VSE/ICCF sublibrary and edit it as needed for your environment. After you edit the post-install

job, submit it from the VSE/ICCF sublibrary. The job will link-edit DFSORT/VSE's ILUSLOC phase with LE/VSE.

The output from the post-install job will list the Language Environment for VSE/ESA parts that are link-edited with DFSORT/VSE. You may want to save the output from this post-install job because you will need to run the post-install job again if maintenance is applied to any of the Language Environment for VSE/ESA parts listed in the output.

```

// JOB ILULOCEN  ENABLE CULTURAL ENVIRONMENT SUPPORT    01
// LIBDEF *,SEARCH=(PRD2.PROD,PRD2.SCEEBASE)           02
// LIBDEF PHASE,CATALOG=PRD2.PROD                     03
// OPTION CATAL,NODECK,NOXREF                          04
  PHASE  ILUSLOC,S,SVA                                 05
  MODE   AMODE(31),RMODE(ANY)                          06
  INCLUDE ILUSLOC                                       07
/*                                                    08
// EXEC LNKEDT,PARM='MSHP'                             09
/&                                                    10

```

Figure 10. Job to Enable the Cultural Environment Support

#### LINE      EXPLANATION

- |       |   |
|-------|---|
| 01    | JOB control statement. Introduces this application to the operating system.   |
| 02    | Specifies sublibraries, where DFSORT/VSE and the C-language feature of either LE/VSE or VSE/ESA have been installed. Change this line, if either DFSORT/VSE has been installed in a sublibrary other than PRD2.PROD, or the C-language feature has been installed in a sublibrary other than PRD2.SCEEBASE. |
| 03    | Specifies the DFSORT/VSE installation sublibrary. Change this line, if DFSORT/VSE has been installed in a sublibrary other than PRD2.PROD.  |
| 04-09 | Job control and Linkage Editor control statements to link-edit DFSORT/VSE module ILUSLOC with the C-language subroutines.   |

You will need to rerun the post-install job if any of the following occur:

- If you reinstall Language Environment for VSE/ESA 1.4.0 or a subsequent release
- If you reinstall DFSORT/VSE Version 3 Release 4
- If you apply maintenance to any of the Language Environment for VSE/ESA parts that are link-edited with DFSORT/VSE
- If you apply maintenance to DFSORT/VSE part ILUSLOC and the PTF description contains an explicit request to rerun the post-install job

---

## 6.5 Modifying ILUMSGS Macro Message Text

If you want to issue DFSORT/VSE messages in a language other than English or to change the wording of some messages, you can modify the message text in the ILUMSGS macro.

The format of the ILUMSGS macro is:

```
MACRO
ILUMSGS
ILUMSET 1,'text1...'
ILUMSET 2,'text2...'
      .
      .
      .
END
```

Each message macro consists of a macro call name (ILUMSET), a message number, and a text string. The text string consists of fixed characters and insert fields.

### 6.5.1 Making the Change to the Message Text

To change the message text in the ILUMSGS macro, you can use Interactive Interface to do the following:

1. Punch the ILUMSGS macro from the sublibrary where DFSORT/VSE V3R4 is installed to your VSE/ICCF library, using the LIBRP macro.
2. Edit the messages provided in ILUMSGS as needed using the editor available under the Interactive Interface.
3. Use the LIBRC macro to catalog your changed ILUMSGS macro in a VSE sublibrary. If you want to save the IBM-supplied ILUMSGS macro shipped with the product tape, you have to catalog the changed ILUMSGS macro in your own sublibrary (for example, SORT.SM4), otherwise you can catalog the changed ILUMSGS macro in the sublibrary where DFSORT/VSE V3R4 is installed (for example, PRD2.PROD).

To apply the changes made to the ILUMSGS macro you must reassemble and relink-edit the ILUMSGA module for modifying DFSORT/VSE messages and the ILUMUTL module for modifying ICETOOL messages.

Figure 11 on page 16 shows a sample of the job to assemble and link-edit the ILUMSGA and ILUMUTL modules.

```

// JOB APPLYMSG                                01
// LIBDEF *,SEARCH=(SORT.SM4,PRD2.PROD)        02
// LIBDEF PHASE,CATALOG=PRD2.PROD              03
// OPTION CATAL,NODECK,NOXREF                  04
// PHASE ILUMSGA,S,SVA                          05
// MODE AMODE(31),RMODE(ANY)                   06
// EXEC ASMA90,SIZE=ASMA90                      07
* $$ SLI MEM=ILUMSGA.A,S=PRD2.PROD            08
/*                                              09
// EXEC LNKEDT,PARAM='MSHP'                    10
// PHASE ICETOOL,S                              11
// MODE AMODE(31),RMODE(24)                    12
// INCLUDE ICETOOL                              13
// INCLUDE ,(ILUMUTL0)                          14
/*                                              15
// EXEC ASMA90,SIZE=ASMA90                      16
* $$ SLI MEM=ILUMUTL.A,S=PRD2.PROD            17
/*                                              18
// EXEC LNKEDT,PARAM='MSHP'                    19
/&                                              20

```

Figure 11. Job to Assemble and Link-edit the ILUMSGA and ILUMUTL Modules

#### Line Explanation

- 01 JOB job control statement. Introduces this application to the operating system.
- 02 Specifies the sublibrary (SORT.SM4) that contains the ILUMSGS macro, and the sublibrary (PRD2.PROD) where DFSORT/VSE was installed. What you specify in this line depends upon where you placed your copy of the ILUMSGS macro, and where you installed DFSORT/VSE.
- 03 Specifies the sublibrary (PRD2.PROD) in which the ILUMSGS and ICETOOL phases will be stored.
- 05-06 Linkage Editor control statements for ILUMSGA.
- 08 Specifies that the sublibrary member ILUMSGA.A is to be included in the input stream.
- 11-14 Linkage Editor control statements for ICETOOL.
- 17 Specifies that sublibrary member ILUMUTL.A is to be included in the input stream.
- 19 Exec job control statement. Specifies Linkage Editor invocation.

If you use double-byte data in message text, the DBCS assembler option PARM='DBCS' must be specified on the EXEC statement that invoked the assembly program.

If you violate any of the rules for modifying a message, you will invalidate that message, and an appropriate MNOTE message will be issued when you reassemble the message module. See the

*DFSORT/VSE Installation and Tuning Guide (SC26-7041)* for more detailed information on modifying the ILUMSGS macro message text.

## 6.5.2 Replacing ILUMSGS with ILUMSGSJ for Japanese Messages

DFSORT/VSE is shipped with English message text (in ILUMSGS) and Japanese message text (in ILUMSGSJ). If you want DFSORT/VSE to use the Japanese message text instead of the English message text, run the post-install job described in Figure 12. This post-install job does the following:

1. Renames ILUMSGS (English messages) to ILUMSGSE (English messages).
2. Renames ILUMSGSJ (Japanese messages) to ILUMSGS (Japanese messages).
3. Reassembles and link-edits the ILUMSGA and ILUMUTL modules using ILUMSGS (Japanese messages).

Figure 12 contains a sample of this post-install job.

```
// JOB ILUJMSG                                01
// EXEC LIBR,PARM='MSHP'                      02
// AC S=PRD2.PROD                             03
// RENAME ILUMSGS.A : ILUMSGSE.A             04
// RENAME ILUMSGSJ.A : ILUMSGS.A            05
/*                                             06
// LIBDEF *,SEARCH=PRD2.PROD                 07
// LIBDEF PHASE,CATALOG=PRD2.PROD           08
// OPTION CATAL,NODECK,NOXREF               09
// PHASE ILUMSGA,S,SVA                       10
// MODE AMODE(31),RMODE(ANY)                11
// EXEC ASMA90,SIZE=ASMA90,PARM='DBCS'      12
* $$ SLI MEM=ILUMSGA.A,S=PRD2.PROD         13
/*                                             14
// EXEC LNKEDT,PARM='MSHP'                   15
// PHASE ICETOOL,S                           16
// MODE AMODE(31),RMODE(24)                 17
// INCLUDE ICETOOL                           18
// INCLUDE ,(ILUMUTL0)                       19
/*                                             20
// EXEC ASMA90,SIZE=ASMA90,PARM='DBCS'      21
* $$ SLI MEM=ILUMUTL.A,S=PRD2.PROD         22
/*                                             23
// EXEC LNKEDT,PARM='MSHP'                   24
/&                                           25
```

Figure 12. Job to Change English Message Text to Japanese Message Text

Line	Explanation
01	JOB job control statement. Specifies post-install job for Japanese message text.
02	EXEC job control statement. Specifies Librarian program invocation.
03	ACCESS Librarian control statement. Specifies the sublibrary (PRD2.PROD) where DFSORT/VSE was installed.
04	RENAME Librarian control statement. Saves ILUMSGS (current message text) as ILUMSGSE.
05	RENAME Librarian control statement. Renames ILUMSGSJ (Japanese message text) to ILUMSGS (current message text).
06	End-of-data control statement.
07-08	Specifies the sublibrary (PRD2.PROD) where DFSORT/VSE was installed.
09	OPTION JCL statement. Specifies a PHASE is to be cataloged at completion of a link-edit run, no punched object deck is produced, and the assembler symbol cross reference list on SYSLST is suppressed.
10-11	Linkage Editor control statements for ILUMSGA.
12-13	Statements to assembly ILUMSGA.
14	End-of-data job control statement.
15	EXEC job control statement. Specifies Linkage Editor invocation.
16-19	Linkage Editor control statements for ICETOOL.
22	Specifies that sublibrary member ILUMUTL.A is be included in the input stream.
24	EXEC job control statement. Specifies Linkage Editor invocation.

See the *DFSORT/VSE Installation and Tuning Guide* (SC26-7041) for more detailed information on modifying the ILUMSGS macro message text.

---

## 6.6 Establishing DFSORT/VSE Online Message Explanations

If you want to be able to display DFSORT/VSE messages on the console, load the DFSORT/VSE message explanations into the online message file using the VSE/ESA IESMSGSG utility. This utility is available with VSE/ESA V2.

Figure 13 on page 19 contains a sample job that shows how to invoke the IESMSGSG utility.



---

```
// JOB ILUSOME
// OPTION PARTDUMP,NOSYSDDMP
// DLBL NEWMSGs,'VSE.MESSAGES.ONLINE',,VSAM,CAT=IJSYSCT
// EXEC IESMSGs,SIZE=60K,PARM='EU'
* $$ SLI MEM=ILUSOME.Z S=PRD2.PROD
/*
/ &
```

---

Figure 13. Load the DFSORT/VSE English Message Explanations into the Online Message File.

Be sure to turn EXPLAIN OFF before you invoke the IESMSGs utility. Otherwise the file will be in use and will not be updated. When IESMSGs completes, turn EXPLAIN ON and the DFSORT/VSE explanations will be available.

### 6.6.1 Displaying Japanese Message Explanations

DFSORT/VSE is shipped with English message explanations (ILUSOME.Z) and Japanese message explanations (ILUSOMJ.Z). If you want Japanese message explanations you need to load the DFSORT/VSE Japanese message explanations into the online message file. Use the LIBRP command to punch the ILUSOMJ.Z (from the sublibrary containing DFSORT/VSE) to the ICCF library. Edit this new member and add the necessary JCL to the job and submit the job. Use the JCL in Figure 14 as a guideline.

---

```
// JOB ILUSOMJ
// OPTION PARTDUMP,NOSYSDDMP
// DLBL NEWMSGs,'VSE.MESSAGES.ONLINE',,VSAM,CAT=IJSYSCT
// EXEC IESMSGs,SIZE=60K,PARM='JU'
      (input data from ILUSOMJ.Z)
/*
/ &
```

---

Figure 14. Load the DFSORT/VSE Japanese Message Explanations into the Online Message File.

#### Notes:

1. PARM=JU is only valid for a Japanese VSE/ESA V2 system.
2. To view the Japanese message explanations, you must have a console that is capable of displaying Japanese characters.

### 6.6.2 Displaying English Message Explanations on a German Console

DFSORT/VSE is shipped with English message explanations that will display all characters correctly on a German console (ILUSOMG.Z). To use this version of the English message explanations, run the job in Figure 15 on page 20 to load the DFSORT/VSE English message explanations for a German console into the online message file.

---

```
// JOB ILUSOMG
// OPTION PARTDUMP,NOSYSDMP
// DLBL NEWMSGs,'VSE.MESSAGES.ONLINE',,VSAM,CAT=IJSYSCT
// EXEC IESMSGs,SIZE=60K,PARM='GU'
* $$ SLI MEM=ILUSOMG.Z S=PRD2.PROD
/*
/ &
```

---

*Figure 15. Load the DFSORT/VSE English Message Explanations for German console into the Online Message File.*

**Note:** PARM=GU is only valid for a German VSE/ESA system.

---

## 7.0 Verification of Installation

The following sections include information on how to verify the correct installation of DFSORT/VSE.

---

### 7.1 DFSORT/VSE Verification Procedure

The sample programs supplied with DFSORT/VSE provide minimal tests which show that the program has been successfully installed.

```
ILUSAMPL
ILUDATA
ILUTOOL
ILUCULT
```

ILUSAMPL is included in the DFSORT/VSE installation sublibrary in macro format with the name ILUSAMPL.A. The following is an sample of a job you can use to assemble the ILUSAMPL job.

```
// JOB  SAMPLPRB
// OPTION  DECK
// EXEC  ASSEMBLY
      COPY  ILUSAMPL
      ILUSAMPL  DEVTYPE=3380,EXTENT=100,ADDR=236
      END
/*
/ &
```

Figure 16. Job to Assemble ILUSAMPL Macro

This sample specifies a work file on a 3380, unit address X'236' , starting at track 100. Change the ADDR and EXTENT values to match your installation. See the *DFSORT/VSE Installation and Tuning Guide* (SC26-7041) for further information.

**Note:** ASMA90 Program could be used instead of the Assembly Program.

Output from this macro assembly is a job stream on the SYSPCH system logical unit (Punch Queue).

---

### 7.2 Execute the Sample Program

Copy the job stream you created on SYSPCH to a primary library and submit it for execution using ICCF. The job stream containing the following four steps is then executed:

1. An assembly step for a data generation program
2. Link-editing of the data generation program
3. Execution of the data generation program
4. Sorting the file generated in step 3

- ILUDATA, ILUTOOL, and ILUCULT jobs reside in the DFSORT/VSE installation sublibrary with names ILUDATA.Z, ILUTOOL.Z, and ILUCULT.Z.
- Job ILUDATA, to invoke DFSORT/VSE from an assembler program. It generates three sample input files SORT.SAMPIN, SORT.SAMPADD, and SORT.BRANCH. For additional information on the sample data sets, see *Getting Started with DFSORT/VSE*.
- Job ILUTOOL, to invoke ICETOOL directly. Performs multiple operations, which include listing your installation defaults, copying and sorting files, displaying statistics and printing reports.
- Job ILUCULT, to invoke cultural sort directly.

See the *DFSORT/VSE Installation and Tuning Guide* (SC26-7041) for further information.

---

## Appendix A. Linkage Editor Control Statements for DFSORT/VSE V3R4

The following ILUSSORT.OBJ linkbook (members) is shipped on the product tape:

```
PHASE $SVASORT,*,NOAUTO
INCLUDE ILUSSVA
PHASE ILMMSG, S, SVA
MODE AMODE(31), RMODE(ANY)
INCLUDE ILMMSG
PHASE ILUSBM, S, SVA
MODE AMODE(31), RMODE(ANY)
INCLUDE ILUSBM
PHASE ILUSBUG, S, SVA
MODE AMODE(31), RMODE(ANY)
INCLUDE ILUSBUG
PHASE ILUSCKPT, S
MODE AMODE(31), RMODE(24)
INCLUDE ILUSCKPT
PHASE ILUSCRE, S, SVA
MODE AMODE(31), RMODE(ANY)
INCLUDE ILUSCRE
PHASE ILUSCREI, S, SVA
MODE AMODE(31), RMODE(ANY)
INCLUDE ILUSCREI
PHASE ILUSDEFR, S, SVA
MODE AMODE(31), RMODE(ANY)
INCLUDE ILUSDEFR
PHASE ILUSDEFS, S, SVA
MODE AMODE(31), RMODE(ANY)
INCLUDE ILUSDEFS
PHASE ILUSDEF1, S, SVA
MODE AMODE(31), RMODE(ANY)
INCLUDE ILUSDEF1
PHASE ILUSDEF2, S, SVA
MODE AMODE(31), RMODE(ANY)
INCLUDE ILUSDEF2
PHASE ILUSDEF3, S, SVA
MODE AMODE(31), RMODE(ANY)
INCLUDE ILUSDEF3
PHASE ILUSDI, S, SVA
MODE AMODE(31), RMODE(ANY)
INCLUDE ILUSDI
PHASE ILUSDM, S, SVA
```

```

MODE  AMODE(31),RMODE(ANY)
INCLUDE ILUSDM
PHASE  ILUSDO,S,SVA
MODE  AMODE(31),RMODE(ANY)
INCLUDE ILUSDO
PHASE  ILUSEND,S,SVA
MODE  AMODE(31),RMODE(ANY)
INCLUDE ILUSEND
PHASE  ILUSERR,S,SVA
MODE  AMODE(31),RMODE(ANY)
INCLUDE ILUSERR
PHASE  ILUSE32I,S,SVA
MODE  AMODE(31),RMODE(ANY)
INCLUDE ILUSE32I
PHASE  ILUSFI,S,SVA
MODE  AMODE(31),RMODE(ANY)
INCLUDE ILUSFI
PHASE  ILUSFO,S,SVA
MODE  AMODE(31),RMODE(ANY)
INCLUDE ILUSFO
PHASE  ILUSGEN,S,SVA
MODE  AMODE(31),RMODE(ANY)
INCLUDE ILUSGEN
PHASE  ILUSGEN1,S,SVA
MODE  AMODE(31),RMODE(ANY)
INCLUDE ILUSGEN1
PHASE  ILUSGEN2,S,SVA
MODE  AMODE(31),RMODE(ANY)
INCLUDE ILUSGEN2
PHASE  ILUSGEN3,S,SVA
MODE  AMODE(31),RMODE(ANY)
INCLUDE ILUSGEN3
PHASE  ILUSINCG,S,SVA
MODE  AMODE(31),RMODE(ANY)
INCLUDE ILUSINCG
PHASE  ILUSINCL,S,SVA
MODE  AMODE(31),RMODE(ANY)
INCLUDE ILUSINCL
PHASE  ILUSINDI,S,SVA
MODE  AMODE(31),RMODE(ANY)
INCLUDE ILUSINDI
PHASE  ILUSINDO,S,SVA
MODE  AMODE(31),RMODE(ANY)
INCLUDE ILUSINDO
PHASE  ILUSINFI,S,SVA
MODE  AMODE(31),RMODE(ANY)

```

```

INCLUDE ILUSINFI
PHASE ILUSINFO,S,SVA
MODE AMODE(31),RMODE(ANY)
INCLUDE ILUSINFO
PHASE ILUSINSI,S,SVA
MODE AMODE(31),RMODE(ANY)
INCLUDE ILUSINSI
PHASE ILUSINSO,S,SVA
MODE AMODE(31),RMODE(ANY)
INCLUDE ILUSINSO
PHASE ILUSINTI,S,SVA
MODE AMODE(31),RMODE(ANY)
INCLUDE ILUSINTI
PHASE ILUSINTO,S,SVA
MODE AMODE(31),RMODE(ANY)
INCLUDE ILUSINTO
PHASE ILUSINXO,S,SVA
MODE AMODE(31),RMODE(ANY)
INCLUDE ILUSINXO
PHASE ILUSLCS,S,SVA
MODE AMODE(31),RMODE(ANY)
INCLUDE ILUSLCS
PHASE ILUSLIM,S,SVA
MODE AMODE(31),RMODE(ANY)
INCLUDE ILUSLIM
PHASE ILUSLIMI,S,SVA
MODE AMODE(31),RMODE(ANY)
INCLUDE ILUSLIMI
PHASE ILUSMANR,S,SVA
MODE AMODE(ANY),RMODE(24)
INCLUDE ILUSMANR,(ILUCTCHR)
INCLUDE ILUSMANR,(ILUSMANR)
INCLUDE ILUSMANR,(IJCOD1N)
INCLUDE ILUSMANR,(ILULOADR)
INCLUDE ILUSMANR,(ILUINST)
PHASE ILUSMANS,S,SVA
MODE AMODE(ANY),RMODE(24)
INCLUDE ILUSMANS,(ILUCTCHS)
INCLUDE ILUSMANS,(ILUSMANS)
INCLUDE ILUSMANS,(ILULOADS)
PHASE ILUSMO,S,SVA
MODE AMODE(31),RMODE(ANY)
INCLUDE ILUSMO
PHASE ILUSMRIN,S,SVA
MODE AMODE(31),RMODE(ANY)
INCLUDE ILUSMRIN

```

```

PHASE  ILUSMRIR,S,SVA
MODE  AMODE(31),RMODE(ANY)
INCLUDE ILUSMRIR
PHASE  ILUSMVIN,S,SVA
MODE  AMODE(31),RMODE(ANY)
INCLUDE ILUSMVIN
PHASE  ILUSOPT,S,SVA
MODE  AMODE(31),RMODE(ANY)
INCLUDE ILUSOPT,(ILUSOPT)
INCLUDE ILUSOPTS,(ILUSOPTS)
INCLUDE ILUSOPTI
PHASE  ILUSOUTR,S,SVA
MODE  AMODE(31),RMODE(ANY)
INCLUDE ILUSOUTR
PHASE  ILUSPAR,S,SVA
MODE  AMODE(31),RMODE(ANY)
INCLUDE ILUSPAR
PHASE  ILUSPARI,S,SVA
MODE  AMODE(31),RMODE(ANY)
INCLUDE ILUSPARI
PHASE  ILUSRED,S,SVA
MODE  AMODE(31),RMODE(ANY)
INCLUDE ILUSRED
PHASE  ILUSREDI,S,SVA
MODE  AMODE(31),RMODE(ANY)
INCLUDE ILUSREDI
PHASE  ILUSRTIN,S,SVA
MODE  AMODE(31),RMODE(ANY)
INCLUDE ILUSRTIN
PHASE  ILUSRTOU,S,SVA
MODE  AMODE(31),RMODE(ANY)
INCLUDE ILUSRTOU
PHASE  ILUSSI,S,SVA
MODE  AMODE(31),RMODE(ANY)
INCLUDE ILUSSI
PHASE  ILUSSO,S,SVA
MODE  AMODE(31),RMODE(ANY)
INCLUDE ILUSSO
PHASE  ILUSSUMG,S,SVA
MODE  AMODE(31),RMODE(ANY)
INCLUDE ILUSSUMG
PHASE  ILUSTI,S,SVA
MODE  AMODE(31),RMODE(ANY)
INCLUDE ILUSTI
PHASE  ILUSTO,S,SVA
MODE  AMODE(31),RMODE(ANY)

```



```

INCLUDE ILUSTO
PHASE ILUSVED,S,SVA
MODE AMODE(31),RMODE(ANY)
INCLUDE ILUSVED
PHASE ILUSVEDI,S,SVA
MODE AMODE(31),RMODE(ANY)
INCLUDE ILUSVEDI
PHASE ILUSVIM,S,SVA
MODE AMODE(31),RMODE(ANY)
INCLUDE ILUSVIM
PHASE ILUSVIMI,S,SVA
MODE AMODE(31),RMODE(ANY)
INCLUDE ILUSVIMI
PHASE ILUSVRE,S,SVA
MODE AMODE(31),RMODE(ANY)
INCLUDE ILUSVRE
PHASE ILUSVREI,S,SVA
MODE AMODE(31),RMODE(ANY)
INCLUDE ILUSVREI
PHASE ILUSVSIN,S,SVA
MODE AMODE(31),RMODE(ANY)
INCLUDE ILUSVSIN
PHASE ILUSVSOU,S,SVA
MODE AMODE(31),RMODE(ANY)
INCLUDE ILUSVSOU
PHASE ILUSXO,S,SVA
MODE AMODE(31),RMODE(ANY)
INCLUDE ILUSXO
PHASE SORT,S
MODE AMODE(ANY),RMODE(24)
INCLUDE ILUSMAN,(ILUSCOPY)
INCLUDE ILUSMAN,(ILUSLOG)
INCLUDE ILUSMAN,(ILUSMAN)
PHASE ICETOOL,S
MODE AMODE(31),RMODE(24)
INCLUDE ICETOOL
INCLUDE ILUMUTL
PHASE ILU35DU,S,SVA
MODE AMODE(31),RMODE(ANY)
INCLUDE ILU35DU
PHASE ILUMCDU,S
MODE AMODE(31),RMODE(ANY)
INCLUDE ILUMCDU

```

# Reader's Comments

## Program Directory for DFSORT/VSE Version 3 Release 4 Modification 0

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	Satisfaction					
	1	2	3	4	5	N
Ease of product installation						
Contents of program directory						
Installation Verification Programs						
Time to install the product						
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Necessity of all installation tasks						
Accuracy of the definition of the installation tasks						
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