

Host Forms Description Language 3.2 for IBM MVS Installation Guide

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This guide presents the procedures and reference material you need to successfully install and customize the Host Forms Description Language (HFDL) 3.2 installation and maintenance software in an IBM MVS operating system environment.

About this guide



The procedures in this guide are written for experienced MVS systems programmers. If you are installing HFDL for the first time, follow the procedures in the order they appear in this guide.

Before using this guide, become familiar with its contents and conventions.

Contents

	This guide contains the following chapters and appendices:
Chapter 1	“Overview” describes the features, basic concepts, and utilities of HFDL.
Chapter 2	“Operating requirements” describes the host system, printer, and communications requirements for HFDL.
Chapter 3	“Installation checklists” provides checklists you can use during the HFDL installation.
Chapter 4	“Installing HFDL software” lists the contents of the HFDL product tape and provides detailed procedures for installing HFDL.
Chapter 5	“Verifying the installation” explains how to ensure that you have installed HFDL successfully.
Chapter 6	“Installing maintenance software” provides detailed procedures for installing HFDL maintenance software.
Appendix A	“File space requirements” describes the storage required to install HFDL.
Appendix B	“Migrating font width tables” describes the procedure you use to migrate HFDL 2.1D font width tables to XPRM format.
Appendix C	“Sample IVP output” contains sample installation verification procedure output.
Appendix D	“Conversion from .FRM to metacode” provides operating instructions on how to create a metacode file from a .FRM input file in the on-line mode and the batch mode.

Conventions

<p>"Sample IVP output" appendix</p> <p><i>Host Forms Description Language 3.2 for IBM MVS Installation Guide</i></p> <p>COLUMN</p> <p>INSTLIB</p> <p></p> <p></p>	<p>This guide uses the following documentation conventions:</p> <p>References to chapters, sections, and appendices appear in quotation marks.</p> <p>Document names, library names, variable information, and user-defined data you enter appears in italic.</p> <p>Commands, operands, and parameters that you enter appear in bold.</p> <p>System commands and parameters appear in uppercase letters.</p> <p>Notes are hints that help you perform a task or understand the text.</p> <p>CAUTION: Cautions appear immediately before any action that may destroy the data stored on your network or damage your equipment. Make sure you understand the potential impact of the action before you perform it.</p>
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Related publications

You can find additional information related to the HFDL in the following publications.

Xerox publications

Xerox publications related to the HFDL include the following:

Publication	Number
<i>Xerox 871 Communications Module System Guide</i>	600P86733
<i>Xerox 9790/8790 Laser Printing System Reference Manual</i>	720P90000
<i>Xerox Host Forms Description Language 3.2 for IBM MVS Creating Forms</i>	720P30610
<i>Xerox Host Forms Description Language 3.2 for IBM Reference Card</i>	720P30620
<i>Xerox LPS Forms Creation Guide</i>	720P90080
<i>Xerox LPS Operation Reference</i>	720P90040
<i>Xerox LPS PDL/DJDE Reference</i>	720P90050
<i>Xerox LPS Print Description Language Quick Reference Card</i>	720P60681
<i>Xerox LPS Standard Font Library Font User Guide</i>	720P86174
<i>Xerox LPS Tape Formats Manual</i>	720P86175
<i>Xerox Print Resources Manager/ Host Forms Description Language 3.2 for IBM MVS Installation Guide</i>	720P30550

Publication	Number
<i>Xerox Print Resources Manager/ Host Forms Description Language 3.2 for IBM MVS Managing Resources</i>	720P30560
<i>Xerox Print Resources Manager/ Host Forms Description Language 3.2 for IBM Reference Card</i>	720P30570

IBM publications

IBM publications related to the HFDL include the following:

IBM CDPF Data Stream Interface

IBM Font Library Service Facility Installation and Operation

IBM MVS Data Management Service Guide

IBM MVS Data Management System Program Library

IBM MVS/ESA JCL Reference

IBM MVS/ESA User's Guide

IBM MVS/XA JCL

IBM MVS/ESA Planning: Global Resource Serialization

*IBM System Modification Program Extended
(SMP/E) Messages and Codes*

IBM System Modification Program Extended (SMP/E) Reference

*IBM System Modification Program/Extended
(SMP/E) User's Guide*

IBM OS/VS2 TSO Command Language Reference

IBM TSO Extensions Command Language Reference

MVS/XA JCL Reference

MVS/XA User's Guide

This chapter provides an overview of the Host Forms Description Language (HFDL) 3.2 and describes how to install HFDL in an MVS operating system environment.

HFDL features

HFDL is a set of host-resident functions that provide the interface between a compiled form, other printer resources, and a printer. HFDL allows you to store compiled printer resources in a host database with the XPRM utility and download those resources to printers or other devices as needed.

HFDL provides the following features:

- Automatic backup copy. HFDL forms are stored on the host database when they are compiled.
- Faster compilation time. The host system processor operates at a much faster speed than the processor of your printer.
- More online printer time. It is not necessary to take a printer offline when you compile a form. This results in more available printer time.

Prerequisites

Before you can install HFDL, you must first install the Xerox Print Resources Manager/Host Forms Description Language 3.2 (XPRM) software. HFDL does not run without it. You may want to keep your XPRM installation checklists handy for reference.

To install HFDL, you must have MVS systems programming experience and a working knowledge of the following:

- MVS/XA or MVS/ESA
- JES2 or JES3
- SMP/E release 5.1 or higher.

If you are not familiar with these systems, review the applicable documentation before you install HFDL. For more information, refer to the "Related publications" section in the "Introduction" chapter.

Installing HFDL

You perform the HFDL installation in three parts:

- Installing HFDL software
- Customizing HFDL
- Installing maintenance software.

If you are reinstalling HFDL, skip to the “Installing HFDL software” chapter.

During the installation process, you make modifications to stage 1 jobs only. Stage 2 jobs execute without modifications if you have entered the correct site-specific parameters in the stage 1 jobs.

The following is a summary of the installation process:

1. Off-load the installation library from the tape to your system.
2. Complete the installation checklists.
3. Set up and execute stage 1 jobs. Stage 1 consists of setting up the installation parameters, submitting JCL to allocate a stage 2 library, and submitting JCL to generate site-specific stage 2 jobs.
4. Execute stage 2 jobs. Stage 2 consists of eight site-specific installation jobs that, when submitted and successfully completed, perform the HFDL software installation. Submit the stage 2 jobs in the specified order to make sure HFDL is installed properly.
5. Verify the installation. Follow the procedures in the “Verifying the installation” chapter.
6. Install maintenance software. If you received HFDL software maintenance tapes with your base release tape, install the software maintenance tapes as part of the installation procedure.

2. Operating requirements

This chapter describes the host system, printer, and communications requirements to install the Host Forms Description Language (HFDL) 3.2 software in an MVS/XA or MVS/ESA environment.

Host system requirements

This section describes the storage and software requirements to install and run the HFDL software.

Storage requirements

You must have at least 18 cylinders of storage on a 3380 (or equivalent) Direct Access Storage Device (DASD). The total is approximately 20 MB of nonvolatile storage.

HFDL uses 18 cylinders of DASD storage as follows:

- HFDL TARGET 9
- HFDL DLIB 9.

For a detailed description of the HFDL resource space requirements, refer to the “File space requirements” appendix.

Software requirements

To install and use the HFDL software successfully, you must meet the following requirements:

- Install the Xerox Print Resources Manager/Host Forms Description Language 3.2 (XPRM) software.
- Use the SASC 550 run-time library with your logon procedures.
- Use SMP/E Release 5 or higher.
- Use the MVS/XA or MVS/ESA operating environment.
- Use JES2 or JES3.

Operating environments and JES levels

HFDL is designed to operate in any currently supported version of the IBM MVS operating system, including MVS/XA and MVS/ESA. HFDL has been developed and tested under MVS/ESA Version 4, Release 2; and JES2, Version 4.2.0.

Global Resource Serialization

If you are sharing the HFDL resource database across a loosely coupled processor complex, you must install Global Resource Serialization (GRS). Make sure that GRS is not set to local-only mode. For more information, refer to the *IBM MVS/ESA Planning: Global Resource Serialization* manual.

Printing requirements

HFDL supports Xerox centralized and Xerox decentralized printers.

Centralized printers

Centralized printers are high-speed and high-volume printers generally used in central locations for printing data processing output from mainframe computers. They may be attached to the host computer by a S/370 channel or attached remotely by an 871 Communications Module (871 CM).

Table 2-1 lists the centralized printers that HFDL supports and the associated operating system software (OSS).

Table 2-1. **Supported centralized printers**

Centralized printers	OSS version
4050	V2.1, V3.5 or V3.8
4090	V2.1, V3.5 or V3.8
4135	V3.6
4650	V3.5 or V3.8
4850	V3.7, V3.8 or V5.0
4890	V4.0 or V5.0
8790	V2.1 or V3.9
9790	V2.1 or V3.9

Decentralized printers

HFDL supports some Xerox decentralized printers. These printers are generally in remote locations from the mainframe. They are attached to the host using an SNA/RJE communications link, a BSC/RJE communications link, or through a Xerox Flex Box protocol converter, or an Agile 6287 Ultra protocol converter.

If your printer is attached through a Xerox Flex protocol converter, ensure that the firmware is version S11 62031*08 or later.

If your printer is attached through an Agile protocol converter, ensure that the firmware is version 40.7 or later. You must enable option #62 of the Agile protocol converter if you are downloading fonts to a printer which has ASCII or ISO selected

as the character set. You must disable option #62 of the Agile protocol converter, if the printer has EBCDIC selected as the character set.

Table 2-2 lists the decentralized printers that HFDL supports and the associated operating system software (OSS).

Table 2-2. **Supported decentralized printers**

Decentralized printers	OSS version
3700	5.2
4235	1.2 or 1.5 (XPPM and XDPM modes)
4700	1.0 (XES mode)

Font requirements

Table 2-3 lists fonts required during the installation verification process.

Table 2-3. **Fonts required by the installation process**

A03 (U.S.)	R03 (Rank Xerox)
L01BOB	RK1ABL
L0112B	RK1ABP
P1012B*	RK16BL
P1112A**	RK16BP
PR110D	RK161P
PR118A	RK2ABL
PR124A	RK2FBL
UN106D	RK2FBP
UN106E*	RK28BL
UN110D	R212BL
UN110E	
UN208D	
UN224A	
UN224B	

*centralized and decentralized

**decentralized only



All fonts support centralized printers only, except where indicated.

Preinstallation checklist

Before you perform the procedures in the “Installing HFDL software” chapter of this guide to install HFDL software, you must perform the following:

- Install the Xerox Print Resources Manager/Host Forms Description Language 3.2 (XPRM) software. Refer to the *Xerox Print Resources Manager/Host Forms Description Language 3.2 for IBM MVS Installation Guide*.
- Verify that your system is running the correct software versions. Refer to this “Operating requirements” chapter for detailed information about the supported software levels.
- Backup previous versions of HFDL.
- Copy the checklists provided in the “Installation checklists” chapter to use during the installation process.

When Xerox–assigned DSNs are referred to throughout this guide, substitute the DSN you assigned for the DSN in the text.

3.

Installation checklists

This chapter provides checklists you use during the installation process. You may want to copy these pages and make notes in the spaces provided. Use these checklists as you complete the procedures in the following chapters:

- “Installing HFDL software”
- “Installing maintenance software.”

HFDL product installation checklists

Use Table 3–1 to record site-specific values for the HFDL stage 1 product procedures.

Table 3–1. HFDL product stage 1 checklist

Task	Job/member name	Parameters	Selected values
Create and submit OFFLOAD JCL.	OFFLOAD	DSN VOLSER	
Edit GEN#HFDL to include site-specific values.	GEN#HFDL	N/A	
Modify the #GENDFLT macro. (Use the values you specified in your XPRM #GENDFLT macro.)	GEN#HFDL	ESOTERIC LOADSIZE HLO XPRMHLQ SYSOUT TAPEUNIT PAPERSIZE	SYSDA 6144 HFDL.V3R2M00 XPRM.V1R3M00 * TAPE USLETTER
Modify the #GENJBCD macro.	GEN#HFDL	JOBNAME JOB CD1 JOB CD2 JOB CD3 JOB PARM JOB VARY JOB OPT	LINECT=60 NO
Modify the #GENSMP macro. (Use the values you specified in your XPRM #GENSMP macro.)	GEN#HFDL	SMPESO SMPHLQ SMPHLQVS SMPREL SMPTLIB SMPUDSOPT SMPUNIT SMPVOL SMPWORK	5 1

Table 3-1. HFDL product stage 1 checklist (continued)

Task	Job/member name	Parameters	Selected values
Modify the #GENXHF macro. (For XHFDZONE and XHFTZONE, use the values you specified in your XPRM XPMDZONE and XPMTZONE.)GEN#HFDL	GEN#HFDL	XHFESO XHFDZONE XHFHLO XHFMCHLO XHFTPVOL XHFTZONE XHFUNIT XHFVOL	XEPSDLB XEPSTGT
Modify the #GENEND macro.	GEN#HFDL	STAGE2 TYPE	YES INSTALL
Modify and submit ALOCSTG2 JCL to allocate the stage 2 library.	ALOCSTG2	JOB card HLO STAGE2	STAGE2
Modify and submit ASMSTGE1 to generate stage 2 jobs.	ASMSTGE1	JOB card XPRMHLO HLO STAGE2 GEN	STAGE2 GEN

Use Table 3-2 to verify condition codes for the HFDL stage 2 product procedures.

Table 3-2. HFDL product stage 2 checklist

Task	Job/member name	Maximum condition code
Submit IJFG101 to allocate target libraries.	IJFG101	00
Submit IJFG103 to initialize SMP/E CSI.	IJFG103	00
Submit IJFG104 to perform a RECEIVE.	IJFG104	00
Submit IJFG105 to perform an APPLY CHECK.	IJFG105	00
Submit IJFG106 to perform an APPLY.	IJFG106	00
Submit IJFG107 to perform an ACCEPT CHECK.	IJFG107	00
Submit IJFG108 to perform an ACCEPT.	IJFG108	04
Submit GENCUST to generate customized JCLs to run HFDL	GENCUST	00



Use the SASC 550 run-time library with your logon procedures.

HFDL PTF maintenance installation checklists

Use Table 3–3 to record site-specific values for the HFDL stage 1 PTF maintenance procedures.

Table 3–3. HFDL PTF maintenance stage 1 checklist

Task	Job/member name	Parameters	Selected values
Modify the #MNTXHF macro.	MNT#HFDL	APAR BYPASS HOLDFILE PTFLABEL PTFSRCID PTFUNIT PTFVOL	NO NO SL
Modify the #GENEND macro.	MNT#HFDL	TYPE	MNT
Modify and submit ASMSTGE1 to generate stage 2 jobs.	ASMSTGE1	HLO STAGE2 GEN	

Use Table 3–4 to verify condition codes for the HFDL stage 2 PTF maintenance procedures.

Table 3–4. HFDL PTF maintenance stage 2 checklist

Task	Job/member name	Maximum condition code
Submit MPJOB101 to perform a RECEIVE of PTF maintenance for functions XHF3200 and YIF1103.	MPJOB101	00
Submit MPJOB102 to perform an APPLY CHECK of PTF maintenance on functions XHF3200 and YIF1103.	MPJOB102	00
Submit MPJOB103 to perform an APPLY of PTF maintenance on functions XHF3200 and YIF1103.	MPJOB103	00
Submit MPJOB104 to perform an ACCEPT CHECK of PTF maintenance on functions XHF3200 and YIF1103.	MPJOB104	00
Submit MPJOB105 to perform an ACCEPT of PTF maintenance on functions XHF3200 and YIF1103.	MPJOB105	00

HFDL APAR maintenance installation checklists

Use Table 3–5 to record site-specific values for the HFDL stage 1 APAR maintenance procedures.

Table 3–5. HFDL APAR maintenance stage 1 checklist

Task	Job/member name	Parameters	Selected values
Modify the #MNTXHF macro.	MNT#HFDL	APAR BYPASS HOLDFILE PTFLABEL PTFSRCID PTFUNIT PTFVOL	YES
Modify the #GENEND macro.	MNT#HFDL	TYPE	MNT
Modify and submit ASMSTGE1 to generate stage 2 jobs.	ASMSTGE1	HLO STAGE2 GEN	

Use Table 3–6 to verify condition codes for the HFDL stage 2 APAR maintenance procedures.

Table 3–6. HFDL APAR maintenance stage 2 checklist

Task	Job/member name	Maximum condition code
Submit MAJOB101 to perform a RECEIVE of APAR maintenance on functions XHF3200 and YIF1103.	MAJOB101	00
Submit MAJOB102 to perform an APPLY CHECK of APAR maintenance on functions XHF3200 and YIF1103.	MAJOB102	00
Submit MAJOB103 to perform an APPLY of APAR maintenance on functions XHF3200 and YIF1103.	MAJOB103	00

4. Installing HFDL software

This chapter contains the procedures and reference information you need to install the Host Forms Description Language (HFDL) software. Systems programmers who have software installation experience should perform the software installation procedures.

Installation tape contents

The HFDL installation package includes an HFDL product tape. Refer to the *HFDL Release Notes* accompanying the tape for additional and updated information.

Xerox distributes HFDL software in object form on a labeled, 6250 bits per inch tape or 3480 cartridge. The HFDL 3.2 software tape contains five files. Each file is a separate partitioned data set (PDS) in SMP/E-compatible format.

Table 4-1 lists the installation tape file contents.

Table 4-1. **Installation tape file contents**

File	File contents
File 1	System Modification Program Extended (SMP/E) Modification Control Statements (MCS) for functions XHF3200, ZHF3200, and YIF1103
File 2	SMP/E relative file containing HFDL object code
File 3	Unloaded PDS containing modules for the HFDL installation process
File 4	IVP FSLs for US customers
File 5	IVP FSL for RX customers

Installation procedures

This section shows you how to install the HFDL software. Complete the procedures in this section and subsequent chapters in sequential order.

Use the Selected values column provided in the checklists of the "Installation checklists" chapter to record the values for the JCLs and for each macro you are using at your site. Enter the same values into the JCLs and macros as described in the following procedures.

Off-loading the installation library

Use this procedure to off-load the installation library from the installation tape to your system. File 4 on the tape is the HFDL installation library, INSTLIB. INSTLIB contains everything you need to install the HFDL software.

Figure 4-1 shows a sample JCL you can use to off-load INSTLIB from the HFDL software tape to your system. A lowercase "x" indicates a site-specific value.

Figure 4-1. **Sample JCL**

```
//OFFLOAD JOB user defined job parameters
//*
/* THIS JOB LOADS HFDL INSTLIB TO DISK
/*
//LOAD EXEC PGM=IEBCOPY
//SYSPRINT DD SYSOUT=*
//INDD DD DSN=INSTLIB,UNIT=xxxx,DISP=OLD,
// VOL=SER=XHF320,LABEL=(3,SL,EXPDT=98000)
//OUTDD DD DSN=<YOUR.HLQ>.INSTLIB,DISP=(,CATLG),
// UNIT=3380,SPACE=(TRK,(30,5,20)),VOL=SER=xxxxxxx
//SYSIN DD *
COPY I=INDD,O=OUTDD
/*
```

Use the high-level qualifiers you choose for installing HFDL and change DSNs and VOLSERs to conform to your site requirements.

To off-load INSTLIB, complete the following steps:

1. Develop a site-specific JCL using the JCL shown in Figure 4-1 as a guideline.
2. Save and submit the JCL to off-load INSTLIB.

After you load INSTLIB, you can display all of the library members. This library contains the files you need to install the HFDL software, including the installation service macros in GEN#HFDL.

Setting up and executing stage 1 jobs

You modify installation macros for your site to generate site-specific stage 1 jobs. These macros provide site-specific values for stage 2 jobs.

You use the installation service macro values you enter in GEN#HFDL to set up your data set naming conventions, operating system parameters, and data set placements for stage 2 jobs.

Make sure you perform normal backup procedures for any previous versions of HFDL before you begin this part of the installation.

Editing GEN#HFDL

Use this procedure to edit GEN#HFDL. Descriptions of the installation service macros and the parameters you must define within GEN#HFDL follow this section.

1. Edit the member GEN#HFDL in INSTLIB.
2. Define the site-specific values for each of the installation service macros in GEN#HFDL.

For each macro, use the "Selected values" column provided in the checklists in the "Installation checklists" chapter to record the values you are using at your site, and enter the same values into GEN#HFDL.

When using quotes internally in job cards, you must adhere to the rules of assembler language coding and use a pair of single quotes.

3. Save and exit GEN#HFDL after you define all macro parameters.

Modifying #GENDFLT

The #GENDFLT macro allows you to specify default values and other information you use for the parameters of other installation service macros. The values you enter for the parameters in this macro become the default values when you leave the parameters blank in other macros.

#GENDFLT parameters

ESOTERIC	Specifies a default esoteric unit name for allocating non-VSAM target and distribution library data sets when an esoteric name is not defined for the #GENXHF and #GENSMP macros. This parameter is optional. Default: SYSDA
LOADSIZE	Specifies the block size you use to allocate your HFDL LOAD data set. This parameter is optional. Default: DCB of SYS1.LINKLIB
HLO	Specifies a high-level qualifier you use as a default value for parameters of other macros you use to specify a data set prefix. Default: HFDL.V3R2M00
XPRMHLQ	Specifies the default HFDL/XPRM 3.2 data set prefix. This parameter is required. Default: XPRM.VIR3M00
SYSOUT	Specifies the print output class that is generated on all stage 2 sysout DD statements. This parameter is required. Default: *
TAPEUNIT	Specifies the default tape unit name for installation jobs that require a tape drive. This parameter is required. Default: TAPE

PAPERSIZE Specifies the default paper size, USLETTER or A4. This parameter is used to unload appropriate IVP FSLs from the installation tape and setup the default PAPERSIZE parameter for the customized JCLs. This parameter is required.

Default: USLETTER



You must specify PAPERSIZE=A4 if the default paper size in your printer environment is A4.

#GENDFLT example

Figure 4–2 shows an example of the #GENDFLT macro.

Figure 4–2. **#GENDFLT example**

```

ESOTERIC=SYSDA,           * Default esoteric unit (opt)
LOADSIZE=6144,           * User specified RECFM=U blksize
HLQ=HFDL.V3R2M00,       * Default high level qualifier
XPRMHLQ=XPRM.V1R3M00,   * Default XPRM HLQ
SYSOUT=*,                * Default SYSOUT class
TAPEUNIT=TAPE,          * Default tape unit-tape jobs
PAPERSIZE=USLETTER      * Default paper size
    
```

Modifying #GENJBCD

The #GENJBCD macro specifies job card parameters and the optional JES2 JOBPARM card for all stage 2 jobs generated. This macro is optional. There are three #GENJBCD macro source options:

- Complete the required and optional #GENJBCD parameters. This source option generates job cards for each stage 2 job containing the parameter information you enter.
- Supply the JCL you want to generate at the beginning of all stage 2 jobs by editing the @JOB CARD macro in INSTLIB, and creating the prototype JCL exactly as it is required with a REPRO statement before each JCL card. Refer to the @JOB CARD macro for an example. To invoke this action, code the #GENJBCD macro with the parameter JOBOPT=REPRO. This source option causes the system to ignore all other parameters for this macro.
- Specify that no job card is generated for stage 2 jobs. Code the #GENJBCD macro with the parameter JOBOPT=NOJBCD to omit the job card. This source option causes the system to ignore all other parameters for this macro.

#GENJBCD parameters

JOBNAME	<p>Specifies the JOB name to place on all job cards generated during stage 1. The maximum job name length is eight characters. If you use the JOBVARY option, you must specify a name that is less than eight characters. This parameter is required when JOBOPT= has no assigned values (for example, JOBOPT=,).</p> <p>Default: None</p>
JOBCD1	<p>Specifies that the job card parameters to place on the first job card. If the job parameters are continued on another card, you must place a comma at the end of the last parameter on the card. The installation macros supply the // and JOB statement. This parameter is required when JOBOPT= has no assigned values (for example, JOBOPT=,).</p> <p>Default: None</p>
JOBCD2	<p>Specifies job card parameters continued from JOBCD1. This parameter is optional.</p> <p>Default: None</p>
JOBCD3	<p>Specifies job card parameters continued from JOBCD2. This parameter is optional.</p> <p>Default: None</p>
JOBPARM	<p>Specifies the JOBPARM card parameters you supply for the system to place on the installation /*JOBPARM card. If you omit this parameter or leave it blank, no /*JOBPARM is generated. The installation macros supply the /*JOBPARM. This parameter is optional.</p> <p>Default: None</p>
JOBVARY	<p>Varies the JOBNAME on each job of the stage 2 JCL generated by the stage 1 macros. JOBVARY is ignored if JOBOPT is coded. This parameter is optional.</p> <p>Value options are as follows:</p> <p>YES Each JOBNAME is given a unique suffix in the stage 2 JCL. If the job name supplied by the JOBNAME parameter is eight characters, no name suffix is used.</p> <p>NO The job name you supply in the JOBNAME parameter is used for all stage 2 jobs.</p> <p>Default: NO</p>

- JOBOPT** Specifies options to the stage 1 macros that control the generation of the JCL on stage 2 jobs. This parameter is optional.
- Value options are as follows:
- NOJBCD:** Use this value to suppress all job card JCL generation on stage 2 jobs.
- REPRO:** When this option is selected, the job cards generated for the installation jobs are copied from the @JOB CARD member of INSTLIB. Make sure you modify the @JOB CARD member to reflect your needs before using this option.
- Default:** If no job options are specified, all JCL is generated from the #GENJBCD parameters.

#GENJBCD example

Figure 4–3 shows an example of the #GENJBCD macro and the resulting JCL.

Figure 4–3. **#GENJBCD example**

```
#GENJBCD JOBNAME=USERJB,  
        JOB CD1=(E475,9901),'INSTALL',CLASS=X,  
        JOB CD2='MSGCLASS=X,NOTIFY=user',  
        JOBPARM='LINECT=60'
```

The #GENJBCD parameters result in the following JCL:

```
//USERJB JOB (E475,9901),'INSTALL',CLASS=X,  
//      MSGCLASS=X,NOTIFY=user  
/*JOBPARM LINECT=60,
```

Modifying #GENSMP

The #GENSMP macro supplies stage 2 SMP/E jobs with the necessary information for the successful installation of HFDL. HFDL supports SMP/E Release 5.1 and higher releases only.

The #GENSMP macro supplies the stage 1 SMP/E processing with user-specified values. These values are needed to define and initialize the SMP/E structure and to maintain HFDL and its associated functions. Use the values you specified in your XPRM #GENSMP macro.

#GENSMP parameters

- SMPESO** Specifies the ESOTERIC unit name used for allocation of non-VSAM SMP/E data sets. This parameter is optional.
- Default:** The value of the ESOTERIC parameter in the #GENDFLT macro, if specified; otherwise, no esoteric unit name is used.

SMPHLQ	<p>Specifies the prefix (leading qualifier) for all SMP/E non-VSAM data sets allocated during HFDL installation. This parameter is optional.</p> <p>Default: The value specified for the HLQ parameter in the #GENDFLT macro</p>
SMPHLQVS	<p>Specifies the prefix for all SMP/E VSAM data sets allocated during HFDL installation. This is an optional parameter that is used to specify a distinct high-level qualifier for SMP/E VSAM data sets.</p> <p>Default: The value you specified for the SMPHLQ parameter in this macro or the value specified for the HLQ parameter in the #GENDFLT macro (if SMPHLQ is not specified).</p>
SMPREL	<p>Specifies the current release of SMP/E your system is using to install HFDL. HFDL supports SMP/E Release 5 level only. This parameter is optional.</p> <p>Default: 5</p>
SMPTLIB	<p>Specifies the volume or volumes used for SMPTLIB storage. If you specify multiple volumes, code and enclose the parameter value as shown:</p> <p style="text-align: center;">SMPTLIB=(VOLSR1,VOLSR2,VOLSR3)</p> <p>This value is required for the definition of the SMPTLIB data set. If you omit this parameter, the value in the SMPVOL parameter is the default.</p> <p>Default: Value specified for the SMPVOL parameter</p>
SMPUDSOPT	<p>Position parameter reserved for future use. Specify 1 as a selected value.</p> <p>Default: None</p>
SMPUNIT	<p>Specifies the UNIT value used for allocating non-VSAM SMP/E data sets and the SMPTLIB during installation. If you use an ESOTERIC value, the system overrides this parameter or determines it is unnecessary for non-VSAM allocations. If you omit this parameter, the system assigns a value of SYSALLDA to facilitate allocation of the SMPTLIB. The system also issues an MNOTE with a condition code of 1 as a reminder that the default value SYSALLDA was used. This parameter is optional.</p> <p>Default: SYSALLDA</p>
SMPVOL	<p>Specifies the volume serial number (VOLSER) of the DASD device used for allocating the HFDL SMP/E files. This parameter is required.</p> <p>Default: None</p>
SMPWORK	<p>Specifies the UNIT value used for SMPWORK file allocation during SMP/E execution. This parameter is optional.</p> <p>Default: The value specified by the ESOTERIC parameter in the #GENDFLT macro.</p>

Modifying #GENXHF

The #GENXHF macro assigns values to parameters required for HFDL installation. The values you enter for the #GENXHF macro parameters are used to generate SMP/E jobs, HFDL sample parameters, and sample JCL.

#GENXHF parameters

XHFESO	Specifies the ESOTERIC unit name for allocation of non-VSAM target and distribution library data sets. This parameter is optional. Default: The value of the ESOTERIC parameter in the #GENDFLT macro, if specified; otherwise, no esoteric unit name is used.
XHFDZONE	Specifies the DLIB (distribution library) zone name for HFDL in SMP/E CSI. Use the value you specified in your XPRM XPMDZONE. This parameter is required. Default: None
XHFHLQ	Specifies the prefix (leading qualifier) for all HFDL program data sets allocated during HFDL installation. This parameter is optional. Default: The value specified for the HLQ parameter in the GENDFLT macro.
XHFMCHLQ	Specifies the high-level qualifier for the HFDL LOAD data set in the MASTER CATALOG. This parameter is optional and is reserved for future use. Default: 'Blank'
XHFTPVOL	Specifies the volume serial number (VOLSER) of the HFDL base tape you are installing. Use the volume serial number printed on the external label of the tape, or published in the accompanying <i>HFDL Release Notes</i> . This parameter is required. Default: None
XHFTZONE	Specifies the TARGET zone name of the HFDL product in the SMP/E CSI. Use the values you specified in your XPRM XPMTZONE. This parameter is required. Default: None
XHFUNIT	Specifies the UNIT value for allocating non-VSAM HFDL data sets during installation. This parameter is required unless you use an esoteric name for allocating data sets. Default: None
XHFVOL	Specifies the volume serial number (VOLSER) of the DASD device used for allocating HFDL target and distribution libraries. This parameter is required unless you use an esoteric name for allocating data sets. Default: None

Modifying #GENEND

The #GENEND macro specifies stage 2 generation variables used for HFDL installation.

#GENEND parameters

STAGE2	Specifies whether or not the stage 2 jobs and control statements will be placed by stage 1 into a library other than INSTLIB. The recommended value for this parameter is YES. Default: None
---------------	---

Generating stage 2 jobs

In this procedure, you modify the JCL that uses GEN#XHF to generate site-specific stage 2 jobs. You can also modify the JCL that allocates the stage 2 library.

Allocating the stage 2 library

The stage 2 library must have the same high-level qualifier or prefix as the INSTLIB. You can create this library using the TSO allocation or you can edit and submit the ALOCSTG2 member in INSTLIB. If you use TSO, you must create the file with the specifications listed in Table 4-2.

Table 4-2. TSO file specifications

File specifications	Value
Record format	Fixed block
Record size	80 bytes
Block size	Any multiple of 80
Directory blocks	10
Space	15 tracks of 3380 space

To use the member ALOCSTG2 of INSTLIB to allocate a stage 2 library, complete the following steps:

1. Edit the member ALOCSTG2 in INSTLIB.
2. Add a valid job card to the beginning of the job.
3. Change the HLO parameter to reflect your high-level qualifier for HFDL INSTLIB. The HLO parameter is at the end of the job.
4. Save and submit the ALOCSTG2 job. The valid condition code is 4 or less.

Modifying ASMSTGE1

To generate stage 2 jobs, complete the following steps:

1. Edit the member ASMSTGE1 in INSTLIB.
2. Add a valid job card to the beginning of the job.
3. Change the HLO parameter on the EXEC parameter of the BLDJCL procedure to reflect your high-level qualifier for the HFDL INSTLIB (the HLO parameter is at the end of the job). XPRMHLQ should be coded as the high-level qualifier of your XPRM installation data sets.
4. Make sure that GEN=GEN is specified in the EXEC parameter of the BLDJCL procedure.

5. If you changed the low-level qualifier of INSTLIB, you must change the ASMSTGE1 member in the following places:
 - a. SYSLIB statement in the ASM step
 - b. SYSIN statement in the ASM step
 - c. SYSUT2 statement in the UPDATE step.
6. Save and submit ASMSTGE1 to generate stage 2 jobs.
7. Verify the job completed with condition codes of 0004 or less.

Submitting stage 2 jobs

The JCL for each job listed below is in the stage 2 library after stage 1 is complete. Submit the jobs in the specified order to make sure HFDL is properly installed. Jobs IJFG101 through IJFG108 and GENCUST require no JCL modifications for proper execution and you can submit them without changes.

If you have to reinstall HFDL from the beginning, first use job DJFG101 (supplied in the stage 2 library) to delete all the data sets allocated by HFDL installation. The valid condition code for successful completion of DJFG101 is 8 or less.

To complete the HFDL SMP/E installation, submit the following stage 2 jobs. When each job has completed, check the job condition codes (COND CODE) to determine if the job ran successfully. Follow these steps to submit the stage 2 jobs:

1. Submit IJFG101 to allocate HFDL target libraries required by SMP/E to install and maintain HFDL.
2. Verify the condition code. The valid condition code is 00.
3. Submit IJFG102. IJFG102 is a dummy job included for compatibility only.
4. Verify the condition code. The valid condition code is 00.
5. Submit IJFG103 to perform the following:
 - a. Initialize a target and distribution library zone for HFDL and its associated FUNCTIONS.
 - b. Add the OPTION member to the global zone to be used when installing or maintaining HFDL and its associated FUNCTIONS.
 - c. Add DD definitions to the SMP/E zones.
 - d. Add installation FMID and macro definitions to CSI.
6. Verify the condition code. The valid condition code is 00.
7. Submit IJFG104 to perform a RECEIVE on functions XHF3200, ZHF3200, and YIF1103 from the base product distribution tape. You may have to remount the tape.
8. Verify the condition code. The maximum acceptable condition code is 00.
9. Submit IJFG105 to perform an APPLY CHECK on function XHF3200.
10. Verify the condition code. The maximum acceptable condition code is 00.
11. Submit IJFG106 to perform an APPLY on function XHF3200.

12. Verify the condition code. The maximum acceptable condition code is 00.
13. Submit IJFG107 to perform an ACCEPT CHECK on functions XHF3200, ZHF3200, and YIF1103.
14. Verify the condition code. The maximum acceptable condition code is 00.
15. Submit IJFG108 to perform an ACCEPT on functions XHF3200, ZHF3200, and YIF1103.
16. Verify the condition code. The maximum acceptable condition code is 04.
17. Submit GENCUST to generate customized JCLs to run HFDL, XFUID and XICSUTIL. These JCLs will be placed in the <your.hlq>.JCL data set.
18. Verify the condition code. The maximum acceptable condition code is 00.
19. Have your System Administrator include the SASC 550 run-time library to your logon procedures, if not already done.

5. Verifying the installation

This chapter provides the procedures to verify that you have successfully installed the HFDL software. The tape you received contains the programs you use to perform an HFDL installation verification procedure (IVP). The procedure consists of a series of jobs designed to validate your installation.

Installation verification procedure

The IVP executes major HFDL functions to verify that you have correctly installed HFDL. Refer to the "Sample IVP output" appendix in this guide for samples of IVP output.

HFDL testing

The IVP prints documents to centralized printers using the resources prepared during HFDL installation. The IVP may use a variety of fonts and graphics in each document.

The IVP is not a full functionality test. It only verifies that the HFDL components were installed and that they communicate properly.

IVP requirements

The following requirements must be met before you perform the IVP tests:

- Printers must be correctly defined to JES and the XPRM database.
- All necessary hardware and software must be installed on your system. Refer to the "Operating requirements" chapter in this guide for more information.
- Modify the JCL to meet your installation requirements. For example, if you are going to use the old database from HFDL 3.1, then modify the database DD cards to print to those data sets.

Executing the IVP

All the IVP jobs are placed in the stage 2 library data set. To execute the IVP, you must complete the following steps for all configurations:

1. Submit IVPJCL1 to perform the IVP for XES and centralized printers.

2. Verify the condition code. The acceptable condition code is 4 or less.
3. Compare your output with the sample IVP outputs shown in the "Sample IVP output" appendix.
4. Submit IVPJCL2 to perform the IVP for highlight color printers.
5. Verify the condition code. The acceptable condition code is 4 or less.
6. Compare your output with the sample IVP outputs shown in the "Sample IVP output" appendix.

If you have a 4700 color printer, perform steps 7 through 9.

7. Submit the job IVP4700 to perform the IVP for the 4700 color printer.
8. Verify the condition code. The acceptable condition code is 4 or less.
9. Compare your output with the sample IVP outputs shown in the "Sample IVP output" appendix.

If you have all the fonts listed in Table 2-3 of the "Operating requirements" chapter, perform steps 10 through 13.

10. Submit IVPJCL3 to perform the IVP for multiple-form file compilation for the decentralized printers. No output will be sent and sampled on the printer.
11. Verify the condition code. The acceptable condition code is 4 or less.
12. Submit IVPJCL4 to perform the IVP for multiple-member compilation for the centralized printer. No output will be sent and sampled on the printer.
13. Verify the condition code. The acceptable condition code is 4 or less.

6. Installing maintenance software

Periodically, Xerox distributes maintenance software for the Host Forms Description Language (HFDL) system. Maintenance software is distributed in the form of Program Temporary Fix (PTF), Program Update Tape (PUT), or Authorized Program Analysis Report (APAR) tapes. The software tapes provide enhancements and correct software problems reported between releases of the product.

This chapter contains the procedures and reference information you use to install maintenance software. You must repeat these procedures each time you receive a maintenance tape. Specific information for installing and using a PTF, PUT, or APAR tape is in the *HFDL Maintenance Bulletin* that accompanies the tape.

Setting up and executing stage 1 jobs for maintenance

You generate the jobs to install HFDL maintenance software and its associated functions in the same manner you generated the original installation jobs.

The stage 1 procedure requires you to modify the #MNTXHF macro before you can generate the stage 2 jobs for maintenance software processing. You also need to change the TYPE parameter of the #GENEND macro.

Some fields in the maintenance software jobs are generated using information supplied by the installation macros. If you change the values in any of these macros or leave them incomplete, errors may occur in the stage 2 jobs you use to install the maintenance software.

Complete the following procedures to execute the stage 1 jobs and generate the stage 2 maintenance jobs. Refer to the *HFDL Maintenance Bulletin* that accompanies the maintenance tape for more tape installation instructions and an example of the #MNTXHF macro.

Make sure you complete the product base tape installation before you install any maintenance tapes.

Verifying previous maintenance

Complete the following steps to verify previous maintenance.

1. Determine whether RECEIVE and APPLY processing has been performed on previous maintenance (PTFs or PUTs).
2. Verify that all previous maintenance (except APARs) has been accepted by SMP/E with MPJOB105.

Editing MNT#HFDL

You must edit the MNT#HFDL member of the INSTLIB data set and define the #MNTXHF macro to set up the stage 1 jobs. The #MNTXHF macro supplies stage 2 maintenance jobs with the information necessary to successfully install maintenance to HFDL and its associated functions.

All stage 2 jobs created by this macro begin with the prefix, MAJOB or MPJOB. If you specify APAR=YES, the job name begins with MAJOB; otherwise, the prefix is MPJOB (for PTF or PUT).

Complete the following steps to define the macro values for the stage 1 jobs:

1. Determine the parameter values for your site and record them in the "Selected values" column of the checklists in the "Installation checklists" chapter.
2. Edit MNT#HFDL in INSTLIB.
3. Modify the #MNTXHF parameter values to meet your site requirements.
4. Verify that TYPE=MNT is in the #GENEND macro. Specifying TYPE=MNT generates stage 2 jobs that use the HFDL maintenance tape.
5. Save and exit MNT#HFDL. Make sure you save MNT#HFDL to keep the macro parameter values you defined.

Modifying #MNTXHF

The #MNTXHF macro generates SMP/E jobs to install product maintenance, which is performed only when you receive a PTF, PUT, or APAR tape. Information from other macros is also used for installing maintenance software.

#MNTXHF parameters

APAR Specifies that the maintenance tape stage 2 jobs are generated for an APAR tape. This parameter is optional.

Value options are as follows:

YES Stage 2 jobs are generated to process an APAR maintenance tape.

NO Stage 2 jobs are generated to process a PTF or PUT tape.

Default: None

BYPASS	Reserved for future use. Default: None
HOLDFILE	Indicates that a HOLDDATA file is supplied on the maintenance tape. Refer to the <i>HFDL Maintenance Bulletin</i> that accompanies the maintenance tape for instructions on using this parameter with the tape. This parameter is optional. Value options are as follows: YES An SMPHOLD DD statement and the HOLDDATA SMP keyword is generated in the stage 2 maintenance tape RECEIVE job. NO No SMPHOLD controls are generated on the stage 2 RECEIVE job. Default: NO
PTFLABEL	Defines the type of label processing you want to use on the corrective service tape. Valid options are SL or NL. Refer to the <i>HFDL Maintenance Bulletin</i> for the value you should use. This parameter is optional. Default: SL
PTFSRCID	Represents the SMP SOURCEID you want to assign to all PTFs or APARs and to use with SMP/E for maintenance selection. The software maintenance tape contains the PTFs and APARs. This parameter is optional. Default: The value assigned to the PTFVOL parameter.
PTFUNIT	Specifies the tape unit name from which the maintenance tape is input. This parameter is optional. Default: Installation default TAPEUNIT parameter in the #GENDFLT macro.
PTFVOL	Specifies the volume serial number of the maintenance tape (PTF or APAR) supplied by Xerox. Obtain this number from the <i>HFDL Maintenance Bulletin</i> that accompanies the maintenance tape. This parameter is required. Default: None

#MNTXHF example

Figure 6–1 shows an example of the #MNTXHF macro.

Figure 6–1. #MNTXHF example

```

MNT#HFDL APAR=YES,      * Distributed maintenance is APAR tape
HOLDFILE=NO,           * No hold files on the tape
PTFLABEL=SL            * PTF tape label type (SL or NL)
PTFSRCID=AX1030,      * SMP SOURCEID value
PTFUNIT=,              * Use default tape unit
PTFVOL=AX1030         * External VOLSER of APAR tape

```

Editing ASMSTGE1

Complete the following steps to execute the stage 1 jobs.

1. Edit the JCL member ASMSTGE1 in INSTLIB to meet your site-specific JCL requirements. Change the GEN parameter in the EXEC card to GEN=MNT.
2. SAVE and submit the ASMSTGE1 job to generate stage 2 jobs.
3. Verify that ASMSTGE1 completed with a condition code of 0004 or less. After ASMSTGE1 successfully completes, all stage 2 installation jobs with your parameter definitions are stored in the stage 2 library.
4. Edit the stage 2 library to display the member list.

Setting up and executing stage 2 jobs for maintenance

After you complete stage 1, the jobs to RECEIVE, APPLY, and ACCEPT maintenance are located in the stage 2 library and can be submitted for execution without modifications.



CAUTION: No ACCEPT jobs are created for APAR maintenance. Do not perform an ACCEPT on APAR maintenance.

If the maintenance tape is a PTF or PUT tape, the jobs are located in member names MPJOB101 through MPJOB105. If the maintenance tape is an APAR tape, the jobs are located in member names MAJOB101 through MAJOB103.

PTF and PUT maintenance

To complete the PTF and PUT maintenance, submit the following stage 2 jobs:

1. Submit MPJOB101. This job performs a RECEIVE of PTF maintenance on the XHF3200, ZHF3200, and YIF1103 functions from the maintenance tape. This job also copies non-SMP/E files as required.
2. Verify the condition code. The valid condition code is 00.
3. Submit MPJOB102. This job runs an APPLY CHECK on maintenance software for functions received by MPJOB101.
4. Verify the condition code. For valid condition codes, refer to the accompanying *HFDL Maintenance Bulletin*.
5. Submit MPJOB103. This job performs an APPLY of the maintenance software for which a RECEIVE was performed by MPJOB101.
6. Verify the condition code. For valid condition codes, refer to the accompanying *HFDL Maintenance Bulletin*.
7. Submit MPJOB104. This job performs an ACCEPT CHECK on maintenance software for which a RECEIVE was performed by MPJOB101.

8. Verify the condition code. For valid condition codes, refer to the accompanying *HFDL Maintenance Bulletin*.
9. Submit MPJOB105. This job performs an ACCEPT of the maintenance software for which a RECEIVE was performed by MPJOB101.
10. Verify the condition code. For valid condition codes, refer to the accompanying *HFDL Maintenance Bulletin*.
11. Submit the IVP jobs. Refer to the "Verifying the installation" chapter in this guide for more information.
12. Compare the results with the IVP samples provided in the "Sample IVP output" appendix to verify successful installation of the maintenance software.

APAR maintenance

To complete the APAR maintenance, submit the following stage 2 jobs:

1. Submit MAJOB101. This job performs a RECEIVE of APAR maintenance on the XHF3200, ZHF3200, and YIF1103 functions from the maintenance tape.
2. Verify the condition code. The valid condition code is 00.
3. Submit MAJOB102. This job performs an APPLY CHECK of maintenance software for the functions received by MAJOB101.
4. Verify the condition code. For valid condition codes, refer to the accompanying *HFDL Maintenance Bulletin*.
5. Submit MAJOB103. This job performs an APPLY of the maintenance software to the functions for which a RECEIVE was performed by MAJOB101.
6. Verify the condition code. For valid condition codes, refer to the accompanying *HFDL Maintenance Bulletin*.



CAUTION: No ACCEPT jobs are created for APAR maintenance. Do not perform an ACCEPT on APAR maintenance.

7. Submit the IVP jobs. Refer to the "Verifying the installation" chapter in this guide for more information.
8. Compare the results with the IVP samples provided in the "Sample IVP output" appendix to verify successful installation of the maintenance software.

A. File space requirements

This appendix shows the approximate space requirements for all files created and used during HFDL installation. The space requirements reflect installation on single-density 3380 direct access storage devices. They may vary according to your DASD type.



The size (approximate number of blocks) is variable for SMPLOG and SMPLOGA.

Table A-1 lists the target and operational library requirements.

Table A-1. **HFDL target and operational library requirements**

Filename	DSORG	Approx. number of tracks	RECFM	LRECL	BLKSIZE
<your.hiq>.FSL	PO	15	FB	80	9040
<your.hiq>.JCL	PO	15	FB	80	9040
<your.hiq>.LOAD	PO	75	U	0	6144
<your.hiq>.INSTLIB	PO	15	FB	80	9040
<your.hiq>.STAGE2	PO	15	FB	80	3120

In addition to these requirements, the 3380 requires 100 cylinders to accommodate the A03 fonts (U.S.) and 400 cylinders to accommodate the R03 fonts (Rank Xerox).

B. Migrating font width tables

This appendix contains the necessary information to migrate HFDL 2.1D font width tables or HFDL 3.1 font attributes to the XPRM/HFDL 3.2 format.

You can reference the 9700 centralized format fonts in your HFDL 3.1 database directly with HFDL 3.2. If you want to use 2700 decentralized format fonts with HFDL 3.2 you must add these fonts to the 3.2 database.

Copying font width information to the new font attribute database

Refer to the following information and Tables B-1 and B-2 to copy HFDL 2.1D font width information from an HFDL 2.1D widths file or HFDL 3.1 font attributes to the XPRM/HFDL 3.2 font attribute data set.

The XFUWID JCL executes the XFUWID utility. The XFUWID utility copies font width information to the XPRM/HFDL 3.2 font attribute database only when width information for a particular font does not already exist in the data set.

Tables B-1 and B-2 list the fields copied from the HFDL 2.1D widths file or HFDL 3.1 font attributes to the XPRM/HFDL 3.2 font attribute data sets.

Table B-1. **Fields copied to XPRM/HFDL 3.2 font attribute data set**

Field	Description
Name	Font physical name
Type	Font type (LPS)
Res	Font resolution (300, 600)
Size	Font size in bytes
Charwid	Average character width in dots
Basetop	Maximum distance baseline to character cell top in dots
Basebot	Maximum distance baseline to character cell bottom in dots
Charspac	Character spacing (fixed, proportional)
Charwids	Character width array
Highchar	Highest character code
Linespac	Line spacing in dots
Leftkern	Maximum left kern value in dots
Rightkern	Maximum right kern value in dots
Orient	Font orientation (portrait, landscape, inverse portrait, inverse landscape)
Pointsiz	Maximum character cell height in dots
Source	XFWID (source of the record)

Table B-2. **Fields copied to XPRM/HFDL 3.2 font attribute data set (logo attribute)**

Field	Description
Name	Logo physical name
Type	Logo type (LPS)
Res	Logo resolution (300, 600)
Color	Logo color (Yes or No)
Size	Logo size in bytes
Width	Logo width in dots
Height	Logo height in dots
Orient	Logo orientation (portrait, landscape, inverse portrait, inverse landscape)
Tidot	Dot skip before printing current character
Tiscan	Scan lines skip before printing current character
Dioffset	Offset to DL data of each character
Ditable	Logo DL table
Colorsub	Color substitution (Yes or No)

The XFUWID JCL is located in the <your.hlj>.JCL dataset. If you want to migrate fonts and logos from the HFDL 2.1D database, modify the XFWID DD statement to reflect the name of the HFDL 2.1D font widths data set and run procedure F21. If you want to migrate them from HFDL 3.1, modify the first instance of XSFNTATT DD to reflect the name of the HFDL 3.1 font attribute dataset, and run procedure F31.

Figure B-1 shows a sample JCL to run XFUWID.

Figure B-1. Sample JCL to run XFUWID

```

//jobcard
//*
//F21      PROC
//STEP1   EXEC PGM=XFUWID,REGION=8M,
//        PARM='VER=21'
//STEPLIB DD DISP=SHR,DSN=HFDL.V3R2M00.LOAD
//        DD DISP=SHR,DSN=XPRM.V1R3M00.LOAD
//        DD DISP=SHR,DSN=XPRM.V1R3M00.SASCRDLB.C550
//XFUID   DD DISP=SHR,DSN=HFDL.V2R1M00.HFDLWIDS
//XSFNTATT DD DISP=SHR,DSN=XPRM.V1R3M00.XSFNTATT
//SYSPRINT DD SYSOUT=*
//SYSTEM  DD SYSOUT=*
//        PEND
//*
//F31      PROC
//STEP1   EXEC PGM=XFUWID,REGION=8M,
//        PARM='VER=31'
//STEPLIB DD DISP=SHR,DSN=HFDL.V3R2M00.LOAD
//        DD DISP=SHR,DSN=XPRM.V1R3M00.LOAD
//        DD DISP=SHR,DSN=XPRM.V1R3M00.SASCRDLB.C550
//XSFNTATT DD DISP=SHR,DSN=HFDL.V3R1M00.XSFNTATT
//FONTOUT DD DSN=&FONTOUT,DISP=(NEW,PASS),UNIT=SYSDA,
//          DCB=(RECFM=FB,LRECL=1204,BLKSIZE=1204),
//          SPACE=(TRK,(10,10))
//LOGOOUT DD DSN=&LOGOOUT,DISP=(NEW,PASS),UNIT=SYSDA,
//          DCB=(RECFM=FB,LRECL=948,BLKSIZE=948),
//          SPACE=(TRK,(10,10))
//SYSPRINT DD SYSOUT=*
//SYSTEM  DD SYSOUT=*
//*
//STEP2   EXEC PGM=XFUWID,REGION=8M,
//        PARM='VER=13'
//STEPLIB DD DISP=SHR,DSN=HFDL.V3R2M00.LOAD
//        DD DISP=SHR,DSN=XPRM.V1R3M00.LOAD
//        DD DISP=SHR,DSN=XPRM.V1R3M00.SASCRDLB.C550
//XSFNTATT DD DISP=SHR,DSN=XPRM.V1R3M00.XSFNTATT
//FONTIN  DD DSN=&FONTOUT,DISP=(OLD,DELETE)

//LOGOIN  DD DSN=&LOGOOUT,DISP=(OLD,DELETE)
//SYSPRINT DD SYSOUT=*
//SYSTEM  DD SYSOUT=*
//        PEND
//*
//F21      EXEC PROC=F21
//F31      EXEC PROC=F31

```

C.**Sample IVP output**

This appendix contains sample output for the installation verification procedure (IVP). IVP jobs test HFDL for various site configurations. After you execute the IVP, compare your output to the sample output provided in this appendix.

D. Conversion from .FRM to metacode

This appendix contains instructions for converting a .FRM file to a metacode file, in the online mode and the batch mode.

Conversion process

HFDL 3.2 provides a XICSUTIL utility that converts a .FRM to metacode. This utility can be executed in the online TSO mode or run in the batch mode.

Online mode

1. From the TSO command processor, enter:

```
CALL '<yourHFDL.h1q>.LOAD(XICSUTIL)' '=WARNING'
```

You can press PA1(ATTN) to terminate the program. The Warning parameter is optional and may be used to obtain full diagnostic messages from the SAS/C library if problems occur.

2. When prompted for an output file specification, enter the metafile data set name, fully qualified within quotes as shown:

```
Enter Output Specification:'metafile'
```

The output file can be preallocated with the following attributes:

```
RECFM:VB  
LRECL:256  
BLKSIZE:27998
```

The dataset can either be a sequential file or a partitioned dataset. If it is a PDS, then the output file specification has to include a member name.

You can also allow the XICSUTIL utility to create a sequential output file using TSO/MVS naming conventions.

3. When prompted for the input file specification, enter your form file name by using TSO/MVS naming conventions as shown:

```
Enter Input Specification:cformlib(imgtst)
```

cformlib is a PDS that contains .FRM files, and imgtst is the member in the dataset you want to convert. If both the PDS and the member are present, XICSUTIL will create a metacode data stream on the output file.

An example of the attributes of the input file is as follows:

```
DSORG:PO
RECFM:FB
LRECL:128
BLOCKING FACTOR:10752
```

After completion, the utility cycles through prompts for the next output and input file specifications.

4. Enter the options when prompted if desired or proceed to the next step to use the defaults. An option parser for XICSUTIL allows you to modify the generated output stream with an IDEN, SKIP=, OFFSET =, INSET=, JDL=, JDE= , and RSTACK of your choice.

```
Enter options, END after last option
:JDL=DEFAULT,JDE=PGMODE
:INSET=0, RSTACK=X'1313131313131313'
:IDEN='@@@DJDE',SKIP=8,OFFSET=0
:END
```



The order of the fields is not important and as many lines as necessary may be used to enter the data. The syntax is very stringent and allows for no spaces outside the quoted string. Spaces may be used to separate the different options as shown in the example.

5. Type 'END' to end the option dialog and start processing.

The following is an example of the default values that are used if you enter END at the options prompt without changing the options:

```
Processing options are:
IDEN='@@@DJDE'
SKIP=8
OFFSET=0
INSET=0
JDL=DEFAULT
JDE=PGMODE
RSTACK=X'1313131313131313'
```

The option names have previously defined values, except for INSET that specifies the RSTACK offset amount.

The values do not need to be re-entered for subsequent usage of XICSUTIL. A new session requires that the options be re-entered since they are not saved from previous sessions.

6. You may browse the output file at this time. The utility uses a default IDEN value of '@@@DJDE' beginning in column 2 of the output file. Column 1 is reserved for the PCC byte that is expected by XICS. The file is terminated with a fixed RSTACK of hexadecimal 13s beginning in column 2.

Batch mode

XICSUTIL may be run in batch mode. Figure D–1 shows a sample of the JCL necessary to run the XICSUTIL in <yourHFDDL.hlq>.JCL.

Figure D–1. **Sample JCL to run XICSUTIL**

```
//jobcard
//*
//XICSUTIL EXEC PGM=XICSUTIL,PARM='WARNING'
//STEPLIB DD DSN=HFDDL.V3R2M00.LOAD,DISP=SHR
          DD DSN=XPRM.V1R3M00.SASCRDLB.C550,DISP=SHR
//SYSPRINT DD SYSOUT=*
//SYSTEM DD SYSOUT=*
//OUTPUT DD DSN=HFDDL.V3R2M00.MET(member),DISP=SHR
//SYSIN DD *
DDN:OUTPUT
DSN=HFDDL.V3R2M00.FRM(member)
JDE=METAPG,END
END
/*
```



CAUTION: Failure to follow the proper order of the **SYSIN** data may cause the erasure of your input data.

XICSUTIL that is run in batch mode expects the **SYSIN** data in the following order:

- output data set
- input data set
- processing options.

A DSN specification may be used to specify a fully qualified dataset. This format is illustrated by the input specification.

A DDN specification may be used to specify a JCL Data Description (DD) that references a dataset that was previously defined. This format is illustrated by the output specification.

The PARM statement turns on the SAS/C library error message facility and may be of value when attempting to first run XICSUTIL.

A .FRM can support logo references but there is no current metacode equivalent. When a logo is encountered in the .FRM, an error message is given and the processing of that .FRM is aborted.

871 CM	Xerox 871 Communications Module. Provides a low-cost, remote communication interface to Xerox printers.
APAR	Authorized Program Analysis Report. Tape on which maintenance software can be distributed.
centralized printer	Class of Xerox printers that includes the 4050, 4090, 4135, 4650, 4800, 8790, and 9790 printers. Centralized printers are frequently placed in a central location to handle a large volume of output.
channel	1. In data communications, a path or line that allows two or more devices to communicate. 2. In computers, a path for communication between the central processing unit (CPU) and peripheral devices.
condition code	Code returned by a job that is used to verify successful execution of the job.
configuration	One or more computers and related devices (terminals, printers, and so forth) interconnected and programmed to operate as a system.
DASD	Direct access storage device. Storage device that provides direct access to its stored data, regardless of the location of the data.
database	Information to meet specific processing and retrieval needs. Generally applies to integrated files of data, arranged for access by many subsystems.
data set	Collection of logically related records stored in a database. See also <i>file</i> .
decentralized printer	Class of Xerox printers that includes the 3700, 4045, and 4235 printers. Decentralized printers are frequently placed in a remote location to handle a lower volume of output.
default	Value assigned to a field by the system. Default fields may be used for such items as document formats, menu selections, input fields, font selection, and paper or image size. You can change the default value of a field.
DJDE	Dynamic job descriptor entry. Command within an input data stream used to modify the printing environment dynamically.
document types	Three document types are available: <ul style="list-style-type: none">• Simple contains only text or graphics.• Compound contains text and graphics together.• Complex contains text and graphics with forms.
dot	Unit of measurement representing a fraction of an inch; for example, 300 dots per inch (dpi). Dot may also refer to a picture element (pixel) or spot.
dpi	Dots per inch. Indicates the number of dots per inch displayed on a terminal screen or printed to form a character or graphic. Dots may also be referred to as picture elements (pixels) or spots.

file	Set of records or text that can be stored and retrieved. An organized, named collection of records treated as a unit. For offline, it is the data between the two tape marks. For online, it is the data between banner pages.
font	<p>Data file for a particular electronic printer that prints a character set of a specific typestyle (letter, form, and shape). Each font has its own unique characteristics, including the following:</p> <ul style="list-style-type: none">• Size—expressed in points• Weight—light, medium, or bold• Stress—Roman or italic• Width—regular, condensed, or expanded• Orientation—the print direction of the characters relative to the page. <p>In addition to alphanumeric characters, a font can contain various symbols or logos.</p>
HFDL	Host Forms Description Language. Xerox host implementation of forms description language.
host	Computer accessed by users that serves as a source of high speed data processing for workstations with less computer power. Commonly referred to as a mainframe.
IBM-compatible font libraries	Used to make Xerox high quality typographic fonts available to IBM applications for printing on Xerox printers.
JCL	Job control language. High-level language used with the MVS or DOS operating systems to identify job requirements such as user name, program name, CPU processing time, input/output devices, and files needed for batch processing.
JDE	Job descriptor entry. Set of definitions of centralized printer processing features and formats. See also <i>job</i> .
JDL	Job descriptor library. Collection of compiled job descriptions. See also <i>job source library (JSL)</i> .
job	Set of instructions (JDEs) defining a unit of work for the system.
jobcard	First JCL statement in a job identifying the beginning of the job, the user, the job name, and similar information.
JSL	Job source library. Collection of uncompiled job descriptions. See also <i>JDE, JDL</i> .
keyword	Reserved word that is essential to the meaning and structure of a statement. Required part of a command that must be entered in the command language syntax exactly as it is written. In HFDL, keywords can be written in uppercase or lowercase letters.
library	In data storage, a collection of related files or programs.
load	To enter data into storage or working registers.
logo	Small illustration, signature, or design, typically used to identify a company.
LPS format tape	Tape generated by a Xerox printer tape drive or to be used with a Xerox printer tape drive.
macro	Programming instruction that expands into multiple commands. Macros can be interpreted individually or they can contain other macro commands that expand into more individual commands.

migration	Process of moving data from one storage location to another.
MVS	Multiple Virtual Storage. Operating system that supports the IBM System 370 hardware. MVS is designed to handle large scale production batch applications.
offload	Process of moving files from tape to the host system storage or vice versa. Sometimes referred to as download, upload, or load.
Off-load	JCL that allows you to move your files from tape to the host system storage.
orientation	Direction in which text or images are positioned on a page. When text and images are positioned with the lines of text parallel to the shorter sides of the paper, the orientation is portrait. When text and images are positioned with the lines of text parallel to the longer sides of the paper, the orientation is landscape.
parameter	Part of a command other than the keyword. See also <i>keyword</i> .
PARM	Keyword parameter in the JCL that is coded on the EXEC statement of the JCL after the program or procedure name. It applies only to the step being executed.
PDS	Partitioned data set. Data set in direct storage that is divided into partitions, called members. Each member can contain data, a program, or part of a program.
printer fonts	Fonts that are permanently installed on the printer, as opposed to fonts that are downloaded and held in memory, or stored in the disk memory of the printer. Printer fonts can be used to enhance the appearance of graphic images by replacing the vector fonts that are generated by pen plotter graphics packages.
pseudo device driver	Interfaces with an application as if it were a device driver.
PTF	Program temporary fix. Tape on which maintenance software can be distributed.
PUT	Program update tape. Tape on which maintenance software can be distributed.
record	Collection of data or words treated as a unit.
remote access	Access to a central computer by terminals or devices geographically separated from the computer.
resource	File that is stored in a library (in machine-readable format) and used during the printing of a document. Each file holds a different type of resource; for example, forms or fonts.
tape	Recording media for data or computer programs. Tape can be in a permanent form such as perforated paper tape or a reusable magnetic form. The magnetic form has a higher storage capacity than disk storage, but it takes longer to write or recover data from tape than from disk.
VSAM	Virtual Storage Access Method. Access method for indexed or sequential processing of fixed and variable-length records on direct access devices.

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in the columns of this page.
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If there is NOT a blank line at the top
of this 2nd column . . . put one in.

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(Don't delete the fields or change their properties. Edit only their content.)

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Entry - Notice that this line wraps at the same point as other levels.

Subentry - This line also wraps at the same point as other levels.

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IVP	IVP(1)			AN
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stage 2	stage 2(1)			AN
verifying	verifying(1)			AN

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installation verification procedure, see <i>IVP</i>				AN
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Program Update Tape, see <i>PUT</i>				AN
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01 IT Overview(Install Guide)

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	nclud			
publications, related	ed publi			OV
	M public			

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process, summary	ary of the in	installation(1)		OV
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ASCII character set	as ASC			OV
	er se			
backup	kup pre			OV
BSC/RJE communications link	C/RJE co			OV
character sets	cter s			OV
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communications link	cations lin			OV
DASD	ct Access Sto			OV
DSNs	SNs are r			OV
EBCDIC character set	DIC selec			OV
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host system, requirements	ost sy			OV

ITEM	VARIATIONS (Optional)	LIST UNDER (Optional)	SORT AS (Optional)	CODES (Optional)
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	e chara			
JES levels	ES3			OV
logon procedures	ur lo			OV
MVS operating system	VS/ESA op			OV
nonvolatile storage	olatile sto			OV
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	eme			
	red duri			
	ore you per			
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	are (O			
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	ecentra			
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	ters tha			
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	ocol conv			
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	ported d			
software	oftw	requirements(1)		OV
	pled proce			
storage	orage	requirements(1)		OV
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SASC 550 run-time library	C 550 ru			OV
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	haring the H			
SNA/RJE communications link	NA/R			OV
storage, requirements	ders of sto			OV
Xerox Flex Box	rox Fle			OV
XPRM	erox Prin			OV

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product installation	odu	checklists(1)		OV
	oduc			
PTF maintenance installation	L PTF m	checklists(1)		OV
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PTF maintenance	ition cod	condition codes, stage 2(1)		OV
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product	ct instal	installation checklists(1)		OV
	2 to ver			
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installation checklists	ation chec	PTF maintenance(1)		OV
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product, installing	on checklis	stage 1(1)		OV
	roduct stage 1 c			
PTF maintenance, installing	TF maintenance p	stage 1(1)		OV

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product procedure, installing	oce	stage 2(1)		OV
PTF maintenance, installing	ge 2 P	stage 2(1)		OV

04 IT Installing HFDL software

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#GENDFLT, modifying	g #GEND			OV
	le of the #GEND			
#GENEND, modifying	g #GENE			OV
#GENJBCD, modifying	g #GENJ			OV
	me length is e			
	tions are sp			
#GENSMP, modifying	g #GENS			OV
	ue specifi			
#GENXHF, modifying	g #GENX			OV
	ed unless yo			
ALOCSTG2, using	CSTG2 me			OV
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	mit ASMSTG			
DSNs	ange DS			OV
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GEN#HFDL, editing	ng GEN#H			OV

ITEM	VARIATIONS (Optional)	LIST UNDER (Optional)	SORT AS (Optional)	CODES (Optional)
HLO parameter	vel qua			OV
library, off-loading	f-loa	installation(1)		OV
tape, contents	ape con	installation(1)		OV
JCL, modifying	y the JC			OV
	CL modif			
card parameters	s param	job(1)		OV
	CD par			
off-loading	ding the i	library(1)		OV
LOADSIZE parameter	ate your HFDL LO			OV
PAPERSIZE parameter	IZE param			OV
#GENDFLT	FLT paramet	parameters(1)		OV
	lt pape			
#GENEND	END paramet	parameters(1)		OV
#GENJBCD	BCD paramet	parameters(1)		OV
	ARD mem			
#GENSMP	SMP paramet	parameters(1)		OV
	ring SMP			
#GENXHF	XHF paramet	parameters(1)		OV
partitioned data set (PDS)	rtitioned da			OV
ALOCSTG2, using	ber ALOCS	procedures(1)		OV

ITEM	VARIATIONS (Optional)	LIST UNDER (Optional)	SORT AS (Optional)	CODES (Optional)
ASMSTGE1, modifying	ifyi	procedures(1)		OV
	ob compl			
GEN#HFDL, editing	dit	procedures(1)		OV
installation library, off-loading	n libra	procedures(1)		OV
stage 2 jobs, submitting	ge 2 jo	procedures(1)		OV
	ator inc			
parameters, macro	SMP mac	SMP/E(1)		OV
	E execu			
installation tape format	P/E-compa	SMP/E(1)		OV
jobs, executing	uting stage 1 j	stage 1(1)		OV
#GENEND parameter	eter is Y	stage 2(1)		OV
jobs	tage 2 jo	stage 2(1)		OV
	tti			
	ve your Sy			
library, allocating	ating the st	stage 2(1)		OV
SMP/E, job parameters	his par	stage 2(1)		OV
	RIC para			
SYSOUT parameter	sout DD s			OV
TAPEUNIT parameter	pe unit nam			OV
TSO file specifications	sing the TS			OV

ITEM	VARIATIONS (Optional)	LIST UNDER (Optional)	SORT AS (Optional)	CODES (Optional)
user-specified values	ser-spec			OV
	NIT value use			
XHF parameters	brary dat			OV
XPRMHLQ parameter	ult HFDL/XP			OV

05 IT Verifying the installation

Hint: To begin filling in a blank Index Table, press <NEXT>.

ITEM	VARIATIONS (Optional)	LIST UNDER (Optional)	SORT AS (Optional)	CODES (Optional)
verifying	erifi	installation(1)		OV
	ble con			
procedure	te the IV	IVP(1)		OV
	he acce			
IVP, executing	uting the IV	procedures(1)		OV
	nt and samp			
IVP	VP requireme	requirements(1)		OV
testing, HF DL	FDL testin			OV

06 IT Installing maintenance software

Hint: To begin filling in a blank Index Table, press <NEXT>.

ITEM	VARIATIONS (Optional)	LIST UNDER (Optional)	SORT AS (Optional)	CODES (Optional)
#GENEND, modifying	NEND mac			OV
#MNTXHF macro	e #MN			OV
	XHF macr			
	TXHF mac			
description	alysis Report (A	APAR(1)		OV
parameter	n APAR t	APAR(1)		OV
submitting stage 2 jobs	mit the follo	APAR(1)		OV
editing	ditin	ASMSTGE1(1)		OV
#MNTXHF	TXHF exam	examples(1)		OV
maintenance software	ll maintenance so	installation(1)		OV
	AJOB or MPJ			
	plied by Xe			
	ugh MPJO			
	m an ACC			

ITEM	VARIATIONS (Optional)	LIST UNDER (Optional)	SORT AS (Optional)	CODES (Optional)
maintenance software, installing	d refere			OV
	ssfully i			
	ype of lab			
	bs are loca			
	PT jobs a			
MNT#HFDL, editing	editing MNT#H			OV
#MNTXHF	HF paramete	parameters(1)		OV
	ameter is requ			
#MNTXHF, modifying	g #MNTX	procedures(1)		OV
	he maintenance t			
APAR maintenance, submitting jobs	ete the APA	procedures(1)		OV
ASMSTGE1, editing	MSTGE	procedures(1)		OV
MNT#HFDL, editing	ust edit the MN	procedures(1)		OV
previous maintenance, verifying	erify previous m	procedures(1)		OV
PTF/PUT maintenance, submitting jobs	ete the PTF and P	procedures(1)		OV
	uide for m			
description	ogram Tempo	PTF maintenance(1)		OV
parameters	all PTFs	PTF maintenance(1)		OV
submitting stage 2 jobs	e 2 jobs for main	PTF maintenance(1)		OV
	ults with th			

ITEM	VARIATIONS (Optional)	LIST UNDER (Optional)	SORT AS (Optional)	CODES (Optional)
description	am Upda	PUT maintenance(1)		OV
submitting stage 2 jobs	UT maintena	PUT maintenance(1)		OV
	ompare th			
maintenance software	etting u	stage 1(1)		OV
	ter values to m			
	EUNIT pa			
	004 or le			
maintenance	n the stage 2 l	stage 2(1)		OV
	mples prov			
TYPE parameter,	ge the TY			OV
previous maintenance	evious maint	verifying(1)		OV

Appendix A. IT File space requirements

Hint: To begin filling in a blank Index Table, press <NEXT>.

ITEM	VARIATIONS (Optional)	LIST UNDER (Optional)	SORT AS (Optional)	CODES (Optional)
A03 fonts	he A0			OV
file space requirements	le spa			OV
A03	3 fo	font(1)		OV
R03	ate the R0	font(1)		OV
requirements	ibrary requireme	library(1)		OV
R03 fonts	3 fon			OV
file space	pace require	requirements(1)		OV

Appendix B. IT Migrating font width tables

Hint: To begin filling in a blank Index Table, press <NEXT>.

ITEM	VARIATIONS (Optional)	LIST UNDER (Optional)	SORT AS (Optional)	CODES (Optional)
database, font attribute	nt attr			OV
	2 font at			
width tables, migrating	grating fon	font(1)		OV
	elds c			
	D statement to ref			
	o run X			
XFUWID utility	DL 3.2 fo			OV
	data se			
	nstance of XSF			
	UWI			

Appendix C. Sample IVP output

Hint: To begin filling in a blank Index Table, press <NEXT>.

ITEM	VARIATIONS (Optional)	LIST UNDER (Optional)	SORT AS (Optional)	CODES (Optional)
verifying	ation proced	installation(1)		OV
sample output	mple IV	IVP(1)		OV

Appendix D. IT Conversion from .FRM to metacode

Hint: To begin filling in a blank Index Table, press <NEXT>.

ITEM	VARIATIONS (Optional)	LIST UNDER (Optional)	SORT AS (Optional)	CODES (Optional)
.FRM conversion	nversio			OV
	CSUTIL allow			
	use the erasu			
batch mode	atch mo	converting .FRM(1)		OV
online	nline m	converting .FRM(1)		OV
	ngent an			
DSNs	SN specif			OV
logo references, .FRM	t logo refere			OV
metacode, .FRM conversion	etac			OV
	eparate the d			
	ects the YSI			
.FRM, converting	O command pro	procedures(1)		OV
	ND at the opti			
XICSUTIL utility	ICSUTIL util			OV

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What specific things can we do to make the documentation better?	
Please write any other comments or suggestions. Please be specific and give page and paragraph references where applicable.	

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