ida Xerox File Conversion Installation Guide

Preface

First Edition (February 1998)

This document describes the installation and customization procedures for:

- *idaXFC* Version 1.00 or higher under the following environments:

  * OS/390
  * MVS/ESA
  * JES2
  * JES3

- *idaXFC batch* under the following operating systems:

  * OS/390
  * MVS/ESA

- *idaXFC Exit for idaPSS* Version 7.05 or higher under the following environments:

  * OS/390
  * MVS/ESA
  * JES2
  * JES3

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Revisions with this Edition

This section of this document is used to describe modifications that have been made with updates to this document.

Organization of this Publication

- "ida XFC Product Highlights" describes the *idaXFC* product highlights.

- "System Requirements" describes the system requirements for installation of the *idaXFC* and *idaXFC batch* ("batch").

- "General Installation Procedure" explains how to load the product tape.

- "ida XFC Spool File Converter Installation Procedure" explains how to install the *idaXFC*.

- "idaXFC Spool File Converter Operator Commands" explains the *idaXFC* Console Operator control commands.

- "idaPSS XES Exit Installation and Modification" describes the installation of the *idaXFC* as an idaPSS User Exit.

- "idaXFC batch Software Installation and Modification" describes the idaXFC batch installation procedures.

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ida XFC Product Highlights

- Converts Xerox Escape Sequence printer (XES) datastream to AFP output

- Print legacy XES application output on AFP printers

- Wide range of install options for flexibility to match existing print environment.

- Customization available for tailoring to installation specific requirements

- Three separate installation options

  * Stand Alone XES to AFP Spool file conversion

    - Functional Subsystem Interface to JES spool system

    - Emulates a printer device to perform XES to AFP spool conversion

    - Generates spool file output for further processing

    - Can use JES defined Sysout class for output to *idaXFC*

    - Accepts IEBGENER or other standard input

    - Reads directly from spool via Cross Memory Services

    - Operator interface using MVS Modify command

    - Operator controls via JES2/SDSF commands

  * idaPSS Exit Installation

    - Provide XES to AFP conversion using existing idaPSS.

    - Permits printing on printers supported by idaPSS.

    - Enhances idaPSS as a total print solution for AFP, Line and XES data.

    - Wide range of connectivity options

  * Batch Program

    - Provide XES to AFP conversion using batch job step.

    - Generates Spool output to existing AFP printer driver(s).

Year 2000 Support

When the *idaXFC* product is used on IBM Operating Systems that conform to Year 2000, program functions that affect date/time processing will function correctly. Further information on IBM products level of Year 2000 conformance can be found at the following internet location http://www.ibm.s390.com/stories/year2000.

The following information further describes the use of date and time fields in the *idaXFC*. *idaXFC* does not contain any time based sort functions, and is therefore unaffected by year 2000 date sort considerations. The system date is used in conjunction with the following program functions:

• Log Information

   idaXFC can write information to the SYSLOG or program log file. Date and time information used to generate log information uses the TIME macro to write the Julian date and time information in the format YY:JJJ: HH:MM

System Requirements

This section describes the prerequisites for operation of the three different product installation options:

- Functional Subsystem Spool File Converter

- idaPSS Program Exit

- Batch program

Common print resource requirements are listed in the last chapter in this section.

Functional Subsystem Spool Converter Requirements

The IDAXFC operates as a functional subsystem initiated as a started task (using a JES, CA-Spool or start printer command).

The load library used by the program requires a minimum of 1 MB. DASD space.

The remainder of the libraries supplied with the *idaXFC* require approximately 1 MB. DASD space.

The IDAXFC requires a minimum region size of 4MB.

The following products are prerequisites for installing of *idaXFC*.[1]

- Operating System

   One of the following *IBM* MVS products is required:

   *   OS/390

   *   MVS/ESA

   *   MVS/XA

- Spool Subsystem.

   One of the following spool subsystems is required:

   *   JES2/JES3 Spool system

   *   CA-Spool Spool system

idaPSS XES Conversion Exit Requirements

The idaPSS XES Exit requires that idaPSS has already been installed on the system. Only the OS/390 or MVS version of idaPSS may be used to install the idaPSS XES Exit.

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[1]

For details regarding support of specific product versions, refer to related *i-data* documentation.

Refer to *ida Print Subsystem/MVS Product Installation Guide*, D63-052 for additional details. Support of the idaPSS XES Exit requires that idaPSS has been installed at version 7.05 or higher. There is no support of the idaPSS Exit with versions of idaPSS prior to this version level.

XES to AFP Batch Invocation Prerequisites

The following prerequisite products are required to use the XES to AFP batch program.

The *idaXFC batch* does not require the use of a Started Task and can be invoked via batch or TSO and uses reentrant and reusable codes. If required for performance reasons, the *idaXFC batch* program can be placed in the system Linklist or LPA. The minimum recommended batch or TSO region size is 4MB.

The *idaXFC batch* program operates as a batch job and requires approximately 1 MB. of storage in a load library.

- *MVS/ESA Operating Systems* in conjunction with *TSO/ISPF*

- JES2 or JES3 Spool system

Printer Prerequisites

The *idaXFC* Spool File Converter and *idaXFC batch* program version generate JES spool output in AFP format. A suitable AFP printer or print conversion system is required to process the generated output. The characteristics of the AFP output is that it uses 300 pel resource references. The *idaXFC Exit for idaPSS* can be used to generate output to appropriate printers presently supported by *idaPSS*.

Print Resource Requirements

Use of the AFP output generated from the idaXFC conversion program requires access to AFP resources that are required to perform print formatting/and or conversion to print datastreams. It is assumed that the appropriate print resources that match the input datastream are available for subsequent print processing. Assistance with the conversion of print resources can be obtained by contacting the product distributor.

AFP Resources of the following types may be used in print processing:

- 300 pel AFP Bounded box fonts.

- Associated code pages and coded fonts.

- Forms definitions

- Page overlays

- Page segments

- Page definitions

A minimal number of fonts and codepages are provided with the product for installation verification.

Functional Subsystem Spool File Converter Installation Overview

The following steps should be followed during the installation process. Prior to starting installation, please use the check list below and read through this entire procedure to ensure that you understand the actions that are required.

- System preparation check list.

The installation process will require that the following items can be created / implemented prior to the operation of *idaXFC*;

1. APF authorized load library

   An APF authorized load library is required to execute the IDAXFC program.

2. PROC library

   A system-accessible procedure library should be available to be used for the startup procedure.

3. MVS PPT modifications.

   Modifications to the Program Properties Table will be required to permit operation of the IDAXFC.

4. System security rules (e.g. RACF/ACF) for the IDAXFC.

   Rule definitions will be required for the IDAXFC PROC to permit read access to AFP resources. Write access for the control information dataset will also be required based on a high-level qualifier.

5. Spool System FSS and Printer Definitions

   Customization of either JES2, JES3 or CA-Spool will be required

   * JES PARM deck modification

     Definitions of the FSS and appropriate printer definitions will be required in the JES PARM deck. Both FSS and printer definitions can be dynamically added during normal JES processing, however for permanent FSS and printer definitions, a JES warm start will be required.

   * CA-Spool modifications

     Modifications to the startup procedure and customization of initialization values will be required. A CA-Spool warm start will be required to implement these changes.

- Installation checklist

  The following sequence can be used;

  1. Load Files from product tape using IEBGENER

  2. Allocate / select an APF authorized load library for the IDAXFC module

  3. Generate the IDAXFC load module using the BLDXFC JCL.

  4. Create IDAXFC PROC member

  5. Install the supplied codepages and fonts

  6. Create/update installation security access for IDAXFC module

  7. Perform JES2/JES3 or CA-Spool customization

  8. Perform PPT table modifications

  9. Activate system modifications (IPL) - JES warm start

  10. Perform installation verification procedure

idaPSS XES Exit Installation Checklist

This checklist describes the sequence of activities required to perform installation of the idaXFC XES exits when idaPSS has already been installed on the system.

1. Installation of ida PSS Version 7.05 or higher

This installation process requires that idaPSS has already been installed on the system according to the idaPSS installation manual.

2. Install the product tape files using the LOADXES JCL

3. Install the supplied codepages and fonts

4. Modify the PSS Exit 1 assembler source and CHANEXIT code (optional)

5. Perform XES transform modifications (XESTRANS)

6. Relink idaPSS program module (LNKPSSX)

7. Implement idaPSS Proclib updates

8. Implement idaPSS Profile updates

9. Implement JCL modifications for XES selection (PRTXES)

Batch Installation Checklist

This checklist describes the sequence of activities required to perform batch installation. Items are listed in the sequence that they are required. The entire list should be reviewed prior to starting the installation procedure:

1. Download the load JCL from the installation tape

2. Modify the load JCL for installation defaults

3. Install the supplied codepages and fonts

4. Perform customization of the XESTRANS source if required

5. Modify the "LNKXESR" JCL to installation defaults

6. Execute the "LNKXESR" JCL to create the program Load Module

7. Perform the installation verification procedure

General Installation Procedure

The product tape contains a number of tape files that can be loaded using the IEBGENER utility.

Load the datasets supplied on the product tape

The first file on the tape contains an IEBGENER JCL that can be used to load the required files and create the installation libraries. A sample JCL is indicated here to assist in obtaining the IEBGENER load JCL:

```
//S1 EXEC PGM=IEBGENER
//SYSUT1 DD DISP=OLD,DSN=IDATA.SL1,LABEL=(1,SL),UNIT=TAPE,
//      VOL=(PRIVATE,RETAIN,SER=IDATA)
//*
//SYSUT2 DD DISP=(NEW,CATLG,DELETE),DSN=IDAXFC.JCLLIB(LOADXES),
//      SPACE=(TRK,(20,20,28)),UNIT=DISK,VOL=SER=XXXXXX
//*
//SYSIN  DD DUMMY
//SYSPRINT DD SYSOUT=*
/*
```

Figure 1. Sample JCL to load the LOADXES JCL from the Product Tape

The LOADXES JCL contained in tape file one should be customized according to your installation standards, and can subsequently be executed to read all necessary files from the product tape.

Upon execution of the LOADXES JCL, the following data sets are created:

Data set name	Data set type	Organization	Description
JCL	JCL Library	User specified	Program JCL Library
MEMO	1403 output	PS, VBM, LRECL 132, BLKSIZE 4096	Installation memo and documentation
XES.MACLIB	Macro Library	PO, FB, LRECL 80, BLKSIZE 3120	Macro control statements
ASM	Assembler Source Library	PO, FB, LRECL 80, BLKSIZE 3120	Assembler Source Code
OBJ	Program Object Library	PO, FB, LRECL 80, BLKSIZE 3120	Object Code Library for program modules
FONT300	Font Library	PO, VBM, LRECL 8205, BLKSIZE 15000	Font Library for supplied 300 pel fonts and codepages.

Table 1. List of Data sets Created by the Installation Procedure

ida XFC Spool File Converter Installation Procedure

Install the supplied fonts and codepages

A minimal of sample AFP fonts in the CG Courier typeface are provided on the installation tape in 300 pel.

These fonts have been provided as samples only, to allow for installation validation, and can be used in conjunction with AFP generator programs, and for printing with *idaXFC* and IBM AFP printers.

If required, these fonts (and associated code pages) can be installed in an existing 300 pel font libraries.

Create an APF authorized Library (or use an existing authlib)

Creation of an authorized APF library can be performed by modifying the SYS1.PARMLIB member IEAAPF00. Supply the name and volume of the new APF authorized library, e.g.

```
xxxx.IDAXFC.APF.LINKLIB    VOLxxx
```

Alternately, a dynamic update of the APF library can be facilitated using a PROGxx member containing an entry similar to the following:

```
APF ADD
    DSNAME(xxxxx.IDAXFC.APF.LINKLIB)
    VOLUME(volser)
```

The MVS SETPROG can be subsequently used to activate the revised PROGXX member, e.g. (T PROG=xx, where xx is the PROGxx SYS1.PARMLIB member).

Generate the idaXFC program load module

The following JCL indicates the JCL used to generate the program load module. Modify the supplied BLDXFC linkage editor JCL to match your installation standards.

Note: The IDAXFC module must be linked using authorization code 1 (as shown).

```
//* INSERT YOUR OWN JOB HEADER HERE
//*
//LNKPSS   EXEC PGM=IEWL,
//         PARM='AC=1,LIST,LET,XREF,MAP,RENT'
//SYSLMOD  DD  DISP=SHR,DSN=YYYYY.IDAXFC.APF.LINKLIB
//OBJLIB   DD  DISP=SHR,DSN=YYYYY.IDAXFC.OBJ
//SYSUT1   DD  SPACE=(1024,(120,120),,,ROUND),UNIT=VIO
//SYSPRINT DD  SYSOUT=*
//SYSLIN   DD  *
  INCLUDE OBJLIB(IDAXFC)
  NAME IDAXFC(R)
/*

Figure  2.   JCL Sample for IDAXFC Linkage
```

Authorize the IDAXFC PROC

Permit the IDAXFC program module to run in KEY=1 by adding an entry to the Program Properties Table (PPT) found in the SYS1.PARMLIB SCHEDXX member. The following example indicates the attributes required for the PPT:

```
PPT  PGMNAME(IDAXFC)            /* PROGRAM MODULE         */
     CANCEL                     /* CAN BE CANCELLED       */
     KEY(1)                     /* PROTECTION KEY         */
     AFF(NONE)                  /* NO PROCESSOR AFFINITY  */
```

Dynamic activation of PPT table entries can be performed on newer MVS and OS/390 systems using the authorized MVS Operator SET SCH command, e.g. to activate member SCHED04, use the following command sequence:

```
T SCH=04,L
```

Authorize the IDAXFC program module

Permit the idaXFC PROC/program read access to fonts, XES forms and overlays from the system libraries in RACF or other security system(s). Where user libraries will be used, the security rules of the job submitter and the idaXFC will be in effect for these datasets.

Create/Modify IDAXFC Program Security Rules

A number of datasets are dynamically allocated during the operation of the IDAXFC which are used for logging. Permit the IDAXFC program to write on a non-temporary volume by creating/modifying system access security rules (if required). The high level dataset qualifier used during dataset creation is supplied in the IDAXFC profile DDNAME parameter.

JES2 Installation

The following modifications must be included in the JES2 parameter deck to define an FSS system and any associated printers.

The recommended JES printer definitions keywords are listed below:

Keyword	Description
MODE=FSS	FSS printer definition
PRMODE=(LINE,PAGE)	Printer mode, accepts both line and page data
UCS=0	Universal Character Set
ROUTECDE=dest	Recommended route code destination used to direct output to this printer.
DRAIN	Keyword indicates printer should be started by operator START command.
CLASS=x	Output class to be initially processed.
WS=	Work selection criteria.

Note: Up to 2200 printers can be controlled by a single FSS. The actual number of printers that can be active simultaneously will depend on the processor size and print workload. Multiple FSS definitions could therefore be required.

1. Generate the FSS definition(s)

    The FSSNAME and PROC name in the following example are both assumed to be IDAXFC.

    The following example indicates a JES2 FSS definition for JES2 versions prior to 4.1.

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```
            FSSDEF FSSNAME=IDAXFC,PROC=IDAXFC,HASPFSSM=HASPFSSM
```

The following example indicates a JES2 FSS definition for JES2 versions after 4.1.

```
            FSS(IDAXFC) PROC=IDAXFC,
                        HASPFSSM=HASPFSSM
```

Note: When more than one FSS is defined, a **unique PROC name is required for each definition**

2.   Generate the JES2 printer definition

The following example indicates a JES2 printer definition for JES2 versions prior to 4.1.

```
     PRT1    FSS=IDAXFC,
             MODE=FSS,PRMODE=(LINE,PAGE),
             CLASS=J,DRAIN,
             UCS=0,
             WS=(W,R,Q,PRM,LIM/F,UCS,FCB,P)
```

The following example indicates a JES2 printer definition for JES2 versions 4.1 or higher.

```
                              /*                                        */
     PRT(1)   FSS=IDAXFC,     /* FUNCTIONAL SUBSYSTEM NAME              */
              MODE=FSS,       /* Started by FSS                         */
              CLASS=J,        /* Class                                  */
              CKPTPAGE=20,    /* Max page before a checkpoint           */
              DRAIN,          /* Drained at initialization              */
              ROUTECDE=U7,    /* Routecode                              */
              UCS=0,          /* Ucs                                    */
              PRMODE=(PAGE,LINE), /* Printer mode                       */
              WS=(W,R,Q,PRM,LIM/F,UCS,FCB,P)

     PRT(2)   FSS=IDAXFC,
              MODE=FSS,PRMODE=(LINE,PAGE),
              CLASS=J,DRAIN,
              UCS=0,
              WS=(W,R,Q,PRM,LIM/F,UCS,FCB,P)
```

Consult the relevant JES publications for further information on the above parameters.

To permit the distribution of print to a specific printer unit, a route code definition should be supplied with the printer definition. This can be performed using the ROUTCDE= statement.

When a JES2 DESTID statement is also added as shown following, it is possible to directly address a specific printer with the use of the DEST parameter on the SYSOUT or OUTPUT statements.

```
     PRT(1)      FSS=IDAXFC,
                 MODE=FSS,
                 PRMODE=(LINE,PAGE),
                 CLASS=J,DRAIN,
                 UCS=0,
                 WS=(W,R,Q,PRM,LIM/F,UCS,FCB,P),
                 ROUTECDE=U1111

     DESTID(PCPRT1)   DEST=U1111
```

Both FSS and printer definitions can also be dynamically added to JES2 during normal operation. Define the FSS proc first prior to defining any specific printers. The following JES2 commands are indicated as examples only, and will require modifications to meet your installation requirements. These examples of JES2 operator commands assume the availability of a PROCLIB member IDAXFC.

```
     ADD FSS(FSS1),PROC=IDAXFC
     ADD PRT20,MODE=FSS,FSS=FSS1,MODE=FSS,PRM=(LINE,PAGE),UCS=0,WS=(....
```

Consult the relevant JES publications for further information on the above parameters.

JES3 Installation

Note: JES3 3.1.3 supports control of up to 32 printers by a single FSS. The actual number of printers that can be active simultaneously will depend on the processor size and print workload. Multiple FSS definitions could therefore be required.

The following modifications are required to be included in the JES3 initialization deck to define an FSS system and any associated printers.

1. Generate the JES3 FSS definitions

    The FSSNAME and PROC name in the following example are both assumed to be IDAXFC.

    ```
    FSSDEF,PNAME=IDAXFC,FSSNAME=IDAXFC,TYPE=WTR,SYSTEM=SYS1
    ```

    Note: When more than one FSS is defined, a **unique PROC name is required on each definition**

2. Generate the JES3 printer definition

    ```
    DEVICE,DTYPE=PRT3820,JNAME=PRT1,JUNIT=(,SYS1,,ON),
          FSSNAME=IDAXFC,MODE=FSS,PM=(LINE,PAGE)
    ```

    Consult the relevant JES publications for further information on the above parameters.

    To permit the distribution of print to a specific printer unit, a route code definition should be supplied with the printer definition. This can be performed using the ROUTCDE= statement. When a DESTID statement is also added as shown following, it is possible to directly address a specific printer with the use of the DEST parameter:

    ```
    DEVICE,DTYPE=PRT3820,JNAME=PRT1,JUNIT=(,SYS1,,ON),
          FSSNAME=IDAXFC,MODE=FSS,PM=(LINE,PAGE),ROUTECDE=U1111

    DESTID(PCPRT1)   DEST=U1111
    ```

CA-Spool Customization

This procedure should only be used where the IDAXFC is to be installed under control of CA-Spool.

1. Customize the CA-Spool initialization statements to include the IDAXFC

    Modification of the CA-Spool initialization statements will be required to define the *idaXFC* and all printers that will be defined to the *idaXFC*. The following example defines a Functional Subsystem called IDAXFC, and adds two printer definitions, for NODE printer 1 and Node printer 2.

    ```
    **************************************************************
    *                  E S F X   PARAMETER LIST                 *
    **************************************************************

    FSSDEF IDAXFC,PROC=IDAXFC

    **************************************************************
    *                  DEFNODE   DEFINITION                     *
    **************************************************************

    NODE     PRT1,3812,CLASS=AQ,GROUP=2,PURGE=NO,
                   ACQUIRE=NO,REST=YES,RELEASE=NO,
                   AUTO=YES,SETUP=FORM,RDQUERY=NO,
                   FORM=STD,INITFF=NO,FSS=IDAXFC

    NODE     PRT2,3812,CLASS=AQ,GROUP=2,PURGE=NO,
                   ACQUIRE=NO,REST=YES,RELEASE=NO,
                   AUTO=YES,SETUP=FORM,RDQUERY=NO,
                   FORM=STD,INITFF=NO,FSS=IDAXFC
    ```

A more detailed description regarding the installation of an FSS can be found in Chapter 3.24 of the *CA-Spool Initialization and Customization Guide*, Version 10.0.

The remainder of the installation procedure is identical to the installation required in conjunction with the JES2 or JES3 spool systems. Refer to "Sample IDAXFC Procedure" for a listing of a sample CA-Spool startup Proc.

Reinitialize The System

It should be possible to dynamically add all necessary system definitions using MVS operator console commands (authorized) to start idaXFC, e.g.

- APF member changes (T PROG=xx, for SYS1.PARMLIB member PROGxx)

- PPT member changes (T SCH=xx, for SYS1.PARMLIB member SCHxx)

- JES FSS and printer definitions

- Security modifications (as required)

For earlier versions of MVS, an IPL may be required to implement the PPT changes. A JES COLD start will be required to permanently add FSS and Printer definition changes.

Consult relevant IBM publications for further information.

Install idaXFC PROCLIB Member

A proclib definition is required that will be referenced when the *idaXFC* is started using the JES printer start command. The proclib selected must be defined in the JES2 startup PROC. The used member name must match the name supplied in the JES2/JES3 or CA-Spool PROC printer definition. A sample initialization PROC with accompanying parameters is defined in "IDAXFC Control Profile Description" on page 23. Refer to this chapter regarding relevant customization options supplied in IDAXFC profile control statements.

Once the startup PROC is placed in the appropriate startup library, you will be able to initialize the *idaXFC*.

Sample IDAXFC Procedure

The following example indicates a sample IDAXFC procedure:

```
//****************************************************************
//**                                                          **
//**            IDA XFC (C) I-DATA INTERNATIONAL A/S 1998     **
//**                                                          **
//**  STARTUP PROCEDURE                                       **
//**                                                          **
//****************************************************************
//IDAXFC     PROC
//IDAXFC     EXEC PGM=IDAXFC,TIME=1440
//STEPLIB    DD DISP=SHR,DSN=YYYYY.IDAXFC.APF.LINKLIB
//SYSPROF    DD DISP=SHR,DSN=YYYYY.IDAXFC.JCLLIB(IDAPROF)
//SYSUDUMP   DD SYSOUT=E
//PRT1LOG    DD SYSOUT=E
//PRT3LOG    DD SYSOUT=E
//*
//FONT300    DD DISP=SHR,DSN=YYYYY.IDAPSS.FONT300
//           DD DISP=SHR,DSN=SYS1.FONTLIB
//           DD DISP=SHR,DSN=SYS11.FONTLIBB
//OVLY38PP   DD DISP=SHR,DSN=YYYYY.IDAXFC.AFPLIB
//XESLIB     DD DISP=SHR,DSN=YYYYY.IDAXFC.XESLIB
//*
```

Figure 3.   IDAXFC PROCLIB Invocation Procedure

Note: The library names in this sample should be tailored to your installation specifications. The YYYYY.IDAXFC.AFPLIB and XESLIB are included as sample dataset names only and are **not** generated during installation.

IDAXFC Control Profile Description

The IDAXFC profile is used to supply idaXFC configuration options, e.g. general customization and printer definitions. The profile must be located in a separate member or dataset (not instream) with a maximum width of 80 characters). The profile is divided into two sections, general definitions related to the entire subsystem and individual printer definitions. Printer related information consists of two components, a default printer profile and specific printer definitions.

The default printer definition is used to specify the default values that will be used for successive printer definitions. Multiple default statements can be included to permit for generation of default attributes for each printer type. Values specified in the default definition will be used where a specific value is **not** specified in the printer definition.

The printer definition defines each printer available to the *idaXFC*. Remember that a corresponding JES or CA-Spool definition will be required before the printer can be activated. Printer specific information can be included within this definition,

A sample profile is indicated in Figure 4 on page 24.

Profile Keyword Syntax

The IDAXFC profile can be up to 80 characters, and consists of keyword and sub-parameter values. Keyword values must be placed in column one, followed by one or more sub-parameters (as appropriate) separated by a space. The comma is used as a continuation character after the last keyword, and the following sub-parameters can be placed on consecutive lines after column one.

Lines that do not contain a keyword, or are not continuation lines are interpreted as comment statements.

The following profile keywords can be defined:

- DEFAULT (default printer definitions)

  The default statement must always be placed prior to the first PRINTER statement within each FSS system. Multiple DEFAULT statements can be defined (e.g. after printer statements to enable the definition of printer options by printer type).

- FSSNAME (FSS name) - used to define multiple FSS's within a single profile. This keyword is not applicable when only a single FSS is defined.

- PRINTER (1 to 2200 printer definitions)

  Up to 2200 printers can be defined in each FSS subsystem. Multiple subsystems can be defined to address additional printers.

  A sample idaXFC profile definition is illustrated on the following page that can be used to control multiple printers from a single functional subsystem:

```
SMF      TYPE=234                      SMF RECORD TYPES TO BE CREATED
*
* THE DEFAULT KEYWORD DEFINES COMMON OPTIONS FOR SUBSEQUENT PRINTER
* STATEMENTS. DEFAULT CAN BE REDEFINED LATER IN THE PROFILE, OR
* OVERRIDDEN.
*
DEFAULT
*
*
* SAMPLE PRINTER DEFINITIONS
*
PRINTER  PRTID=PRTN,
         LOGDD=PRT1LOG,                LOG ERROR MESSAGES TO DDNAME PRT1LOG
         DEST=PSSPRT1,
         NODE=IDATA,
         CLASS=E,
         OUTPUT=VLU0OUT,
         FCB=DEF,
         FORMS=STD
```

Figure 4.   Sample ida XFC Profile

Refer to the following table for further explanation of the *idaXFC* control profile statements.

General idaXFC control profile statements

The following statements can be defined for each idaPSS subsystem, or multiple subsystems:

DEFAULT

Description	Defines default Printer Configuration for all printers within a XFC subsystem. Values can be overridden using the individual PRINTER statements. The default statement must be placed prior to individual PRINTER statements.
Subparameter(s)	**All printer related keywords.**
Notes	Refer to the idaXFC PRINTER table for a description of the additional keywords.
	Multiple DEFAULT statements can be specified, to establish printer defaults for individual printer types.

FSSNAME

Description	Member name that includes the procedure containing the FSS startup PROC. Each FSS system may contain optional DEFAULT and PRINTER statements.
Subparameter(s)	**1-8 character FSS name.**
Notes	Use this keyword to define multiple FSS systems within a single IDAXFC profile. The SYSPROF statement for all FSS systems contained within the profile should point to the same member name.

PRINTER

Description	Defines printer attributes/characteristics. Options can be supplied to override the default configuration.
Subparameter(s)	**Any PRINTER subparameter keywords.**
Notes	Refer to the PRINTER keyword options for more description of the sub-parameters.

*

Description	Comment statement
Subparameter(s)	**None**
Notes	Comment statement used to format/document profile information.

idaPSS Profile Printer Subparameter Keywords

Printer definition and customization is performed using the PRINTER and DEFAULT keywords. The types of customization are spool file output destination, output formatting options, printer resource definitions and error processing options. The DEFAULT keyword can be used to reduce the number of definitions required for individual printers, and to select your installation specific default values. Unless stated, all values are optional.

The following keywords can be used with the idaXFC profile PRINTER and DEFAULT statements. The first keyword that must always be specified for each PRINTER statement is the PRTID keyword, which identifies the printer's JES name. The remainder of the keywords can be specified in any sequence (comma separated). If more than one keyword is specified that affects the same configuration values, the keyword specified last will be used.

PRTID=

Description	JES Printer definition/name.
Range/Options	**1-8 character name**
Notes	This keyword must be placed as the first keyword on the profile PRINTER statement.

FONTLIB=

Description	The DDname used to select fonts for the idaPSS Procedure.
Range/Options	**FONT300B	1-8 character DDname reference.**
Notes	None.

LOGDD=

Description	Supplies the destination to be used for printer related error information. The CONSOLE (default) option indicates that operator WTO messages will be generated. PRINTER indicates that error pages are sent to printer. DDNAME indicates file recording of to supplied DDNAME that must be specified in startup PROC.
Range/Options	**CONSOLE	PRINTER	DDNAME**
Notes	If LOGDD is omitted, CONSOLE error logging will be used. If the DDNAME option is used, a separate DDNAME is required for **each** printer, except when directing output to SYSOUT.
	Using the PRINTER option, the MPDEF statement is used to specify the page definition used to format error messages.
	A Julian date and timestamp is added to output messages when the PRINTER or DDNAME options are used. WTO messages sent to the MCS Console do not include date/timestamp information. When dataset output is selected (DDNAME), in the event that the dataset becomes full, logging will be wrapped.

OVLYLIB=

Description	The DDname used to select Forms overlay definitions
Range/Options	**OVLY38PP	1-8 character DDname reference.**
Notes	This library reference is only used in conjunction with XES forms.

PAPER=

Description	This keyword defines the paper size available in the target printer. The supplied paper size selection is used to indicate the paper size, and is used for formatting data, page rotation (when specified). Incorrect specifications of paper size may produce incorrectly formatted output. size.
Range/Options	**A4	LETTER	A3	LEGAL	EXECUTIVE	MONARCH	COM10	DL	C5**
Notes	The supplied paper size is used to format the print data. If this value does not match the installed paper in the printer, incorrect output may be produced.

PRMODE=

Description	This keyword defines the which JCL PRMODE will be used to indicate that XES to AFP conversion is required, size.
Range/Options	**XES**	1-8 character name.
Notes	If this keyword is omitted, the default value of PRMODE=XES will be used to (for output selection).

TRACE=

Description	Activates a program trace (using the supplied trace option). Trace output is directed to the target specified in the LOGDD keyword. Multiple trace options may be supplied.
Range/Options	**OFF	IO	FLOW	HEX	JOB	ALLOCATE	FSI	WTO	ALL**
Notes	Care should be taken that sufficient DASD space is allocated when writing to a file (otherwise a wrap condition will occur). Multiple trace options can be specified with successive TRACE keywords.
	The JOB option records print job stop/start actions. The OFF option disables tracing. IO traces program input/output. FLOW traces program flow. ALLOCATE traces memory utilization and allocations/deallocations. HEX traces all input data in hexadecimal. FSI traces JES FSI calls and return codes. WTO includes operator WTO's in the trace data. TRANS traces the input and output datastream to and from the XES to AFP transform.

XESLIB=

Description	The DDname used to select XES Forms
Range/Options	**XESLIB	1-8 character DDname reference.**
Notes	This library reference is only used in conjunction with XES forms.

JES Output Configuration Parameters

CLASS=

Description	JES output class used for output directed to JES spool. The output class used (default A) must be defined in JES.
Range/Options	**A	JES defined output class**
Notes	Only valid JES parameter values should be used. Invalid parameters will result in DYNALLOC OPEN errors when attempting to print.

DEST=

Description	JES output destination name for output directed to JES. If this value is omitted, the PRTID value will be used for DEST(i.e. default).
Range/Options	1-8 character JES DEST name
Notes	The default value of PRTID will be used if this parameter is omitted. This keyword is only used for JES output. Keyword overrides the OUTPUT statement. Only valid JES parameter values should be used. Invalid parameters will result in DYNALLOC OPEN errors when attempting to print.

FCB=

Description	FCB statement for output directed to JES (optional). Permits definition of FCB options for JES output.
Range/Options	1-4 character FCB name
Notes	No default value applies. Only valid JES parameter values should be used. Invalid parameters will result in DYNALLOC OPEN errors when attempting to print.

FORMS=

Description	JES output forms name for output directed to JES. This parameter is used for the JES Work Selection criteria.
Range/Options	1-4 character JES FORMS name
Notes	No default value applies. Only valid JES parameter values should be used. Invalid parameters will result in DYNALLOC OPEN errors when attempting to print.

NODE=

Description	JES node to be used for output routed via JES. No default value applies. Where only one JES system is in use, this definition can be omitted.
Range/Options	1-8 character JES NODE name
Notes	This keyword can be used to direct output to another JES complex, or a remote system defined to the local JES complex. This keyword is only used for JES output. Only valid JES parameter values should be used. Invalid parameters will result in DYNALLOC OPEN errors when attempting to print.

OUTPUT=

Description	Output statement reference for output directed to JES. The corresponding OUTPUT statement must be supplied in the *idaXFC* PROC. The output statement can be used to specify output formatting options, e.g. Page, Form definition, and other output controls.
Range/Options	1-8 character OUTPUT statement name
Notes	No default value applies. Only valid JES parameter values should be used. Invalid parameters will result in DYNALLOC OPEN errors when attempting to print.

ida XFC Profile Defaults

The following ida XFC profile default values are used.

Keyword	Description
DEFAULT	Refer to the following table.
PRINTER	Refer to the following table.

ida XFC Printer Defaults

The following PRINTER and DEFAULT keyword profile parameters are used as default when a parameter is omitted.

The following defaults apply to resource location:

Sub-parameter	Description
FONTLIB	DD name FONT300B
OVLYLIB	DD name OVLY38PP
XESLIB	DD name XESLIB

The following defaults apply for print formatting and printer configuration:

Sub-parameter	Description
PAPER=	A4 paper size will be selected.
LOGDD=	The CONSOLE option will be used (which generates output to the console MCS log).

idaPSS XES Exit Installation and Modification

This section describes the procedure required to install the idaPSS Exit component supplied with this product. The supplied XES Exit software can be installed together with existing program Exits, and does not alter their functionality. The XES input datastream can be printed on the same output devices presently driven by idaPSS (for AFP data). The supplied XES exit software requires installation of User Exit's 1 and 8.

Note: Please ensure that the idaPSS subsystem has previously been successfully installed prior to installing the idaPSS XES conversion Exit.

The following steps are required to install the idaXFC exit for idaPSS:

1.   Install the product tape files

2.   Install the supplied fonts and codepages

3.   Modify the PSS Exit 1 invocation source (optional)

4.   Perform XES transform modifications

5.   Relink idaPSS program module

6.   Implement idaPSS Proclib updates

7.   Implement idaPSS Profile updates

8.   Implement JCL modifications for XES selection

Install the product tape files

Installation of the product tape is described in "Load the datasets supplied on the product tape" on page 17. The product libraries created do not conflict or modify the current idaPSS installation libraries.

Install the supplied Fonts and Codepages

A minimal of sample AFP fonts in the CG Courier typeface are provided on the installation tape in 300 pel.

These fonts have been provided as samples only, to allow for installation validation, and can be used in conjunction with AFP generator programs, and for printing with *idaXFC* and IBM AFP printers.

If required, these fonts (and associated code pages) can be installed in an existing 300 pel font libraries.

Modify the PSS Exit 1 invocation source (optional)

Selection of the XES to AFP exit is performed using a modification to Exit 1 that selects XES output based on the value of the JCL OUTPUT DD statement PRMODE option (i.e. PRMODE=XES). If your installation plans on using another PRMODE value to identify the print datastream type, modify the CHANEXIT source appropriately. If you wish to use another JCL option to indicate that XES to AFP conversion is required, other you may select

idaPSS XES Exit Installation and Modification   29

any of the JCL keywords mapped in the supplied User Exit Dataset control block. Multiple validations can be performed as required. Without modifications to the CHANEXIT source, the PRMODE=XES will be used as the selection criteria.

In addition, if you are already using the Logical Record Processing Exit PSSUX1: Exit 1, you will need to modify the CHANEXIT assembler source.

Perform XES transform modifications

The supplied XES translation source, XESTRANS can be modified to alter:

- XES to AFP font selection (including codepage)

- XES Lead-in and Lead-out strings

- Page length and margins

- External DD name for FORMS references

- Default User Defined Key (UDK)

- Modifying the sixel decoding table

- Default EBCDIC language translation (codepage)

If any modifications are required to these values, refer to the steps described in "XES Transform modifications" on page 36for additional information. TheXESTRANS module will need to be relinked prior to proceeding (as described in this section).

Relink idaPSS program module

The supplied LNKPSSX JCL indicates a sample JCL that relinks the idaPSS load module. Modifications will be required to this JCL to match your installation defaults, and if user exits have already been installed.

The sample LNKPSSX JCL is illustrated following:

```
//* INSERT YOUR OWN JOB HEADER HERE
//*
//* SAMPLE JCL TO LKED XESEXIT INTO IDAPSS
//*
//LNKPSSX  EXEC PGM=IEWL,
//         PARM='AC=1,LIST,LET,XREF,MAP,RENT'
//SYSLMOD  DD  DISP=SHR,DSN=YYYYY.IDAPSS.APF.LINKLIB   PSS LINKLIB
//OBJLIB   DD  DISP=SHR,DSN=YYYYY.IDAPSS.OBJ           PSS OBJECT
//         DD  DISP=SHR,DSN=YYYYY.XES.OBJ              XES OBJECT
//SYSUT1   DD  SPACE=(1024,(120,120),,,ROUND),UNIT=VIO
//SYSPRINT DD  SYSOUT=*
//SYSLIN   DD  *
  INCLUDE OBJLIB(IDAFSS)           GET A PSS
  INCLUDE OBJLIB(XESEXIT)          INCLUDE EXIT ITSELF
  INCLUDE OBJLIB(CHANEXIT)         INCLUDE EXIT GLUE
  INCLUDE OBJLIB(XESTRANS)         INCLUDE USER TRANSLATE TABLES
  NAME IDAPSS(R)
/*
```

Figure 5.   JCL Sample for IDAPSS XES Exit Linkage

Implement idaPSS Proclib updates

When using the XES exit, the following idaPSS PROCLIB updates are required:

- Additional XESLIB DD Statement (for XES forms)

    A new DD statement is required to access XES forms that can be referenced in the input datastream.

- Font library concatenation (XES fonts)

- Overlay library concatenation (XES overlays)

Implement idaPSS Profile updates

Selection of XES processing requires that the EXIT1 and EXIT8 options are inlcuded on the PRINTER (or DEFAULT statements). Both of these exits are used to process XES input datastream.

There are no additional idaPSS profile keywords that are required for control of XES to AFP processing.

Implement JCL modifications for XES selection

As supplied on the product tape, user selection of XES output is performed by using the OUTPUT DD PRMODE=XES. A sample invocation JCL is illustrated following:

```
//* INSERT YOUR OWN JOB HEADER HERE
//*
//OUT      OUTPUT PRMODE=XES,       <- TELL PSS IT IS XES
//         NOTIFY=('??????'),       <- NOTIFY MYSELF WHEN PRINTED
//         DEST=PRT110              <- PRINTER
//*
//PRINT1   EXEC PGM=IEBGENER
//SYSUT1   DD DISP=SHR,DSN=YYYYY.XES.TESTA(XES)
//SYSUT2   DD SYSOUT=A,OUTPUT=*.OUT
//SYSIN    DD DUMMY
//SYSPRINT DD SYSOUT=*
//*
```

Figure 6.   JCL Sample to print XES via idaPSS

idaXFC batch Software Installation and Modification

idaXFC batch Installation Procedure

Generation of the Load Library

Creation of a load library will be required for the program modules supplied in object code. The BLDXFC JCL invokes the *IBM* **IEWL** utility to generate the *idaXFC batch* program load modules. Modify the data set name and volser information on the Load Module DCB statement to match your installation defaults.

Note: The *idaXFC batch* load module is reentrant and reusable.

The steps described below should be performed prior to using the *idaXFC batch*.

Install the supplied Fonts and Codepages

A minimal of sample AFP fonts in the CG Courier typeface are provided on the installation tape in 300 pel.

These fonts have been provided as samples only, to allow for installation validation, and can be used in conjunction with AFP generator programs, and for printing with *idaXFC* and IBM AFP printers.

If required, these fonts (and associated code pages) can be installed in an existing 300 pel font libraries.

Customize the XES Translation

The supplied XES translation source, XESTRANS can be modified to alter:

- XES to AFP font selection (including codepage)
- XES Lead-in and Lead-out strings
- Page length and margins
- External DD name for FORMS references
- Default User Defined Key (UDK)
- Modifying the sixel decoding table
- Default EBCDIC language translation (codepage)

If any modifications are required to these values, refer to the steps described in "XES Transform modifications" on page 36 for additional information. The XESTRANS module will need to be relinked prior to proceeding.

Generate the idaXFC program load module

The following JCL indicates the JCL used to generate the program load module. Modify the supplied LNKXESR linkage editor JCL to match your installation standards.

```
//LNKXESR  JOB (ACCT#),'HF',CLASS=A,MSGCLASS=X,MSGLEVEL=(1,1),
//         TIME=1440
//*
//* SAMPLE JCL TO LKED XESREAD BATCH CONVERTER
//*
//LNKXESR  EXEC PGM=IEWL,
//         PARM='LIST,LET,XREF,MAP,RENT'
//SYSLMOD  DD  DISP=SHR,DSN=YYYYY.XES.LOADLIB
//OBJLIB   DD  DISP=SHR,DSN=YYYYY.XES.OBJ
//SYSUT1   DD  SPACE=(1024,(120,120),,,ROUND),UNIT=VIO
//SYSPRINT DD  SYSOUT=*
//SYSLIN   DD  *
  INCLUDE OBJLIB(XESREAD)
  INCLUDE OBJLIB(XESEXIT)
  INCLUDE OBJLIB(CHANEXIT)
  INCLUDE OBJLIB(XESTRANS)
  NAME XESREAD(R)
/*
```

Figure 7. JCL Sample for IDAXFC Linkage

idaXFC batch Installation Verification Procedure

Verification of the correct function of the *idaXFC batch* can be performed using the verification data sets supplied on the distribution tape.

```
//XESREAD  JOB (ACCT#),'  ',CLASS=A,MSGCLASS=X,MSGLEVEL=(1,1),
//         TIME=1440
//*
//* SAMPLE JCL TO RUN XESREAD BATCH CONVERSION
//*
//XESREAD  EXEC PGM=XESREAD,REGION=3500K
//STEPLIB  DD DISP=SHR,DSN=YYYYY.XES.LOADLIB
//*
//OUTA     OUTPUT DEST=PRT111,PRMODE=PAGE
//*
//SYSUT1   DD DISP=SHR,DSN=XES.DATASET(XES)
//SYSUT2   DD SYSOUT=A,OUTPUT=(*.OUTA),
//         DCB=(RECFM=VBM,LRECL=8205,BLKSIZE=32000)
//*
//SYSPRINT DD SYSOUT=*
//*
//FONT300  DD DISP=SHR,DSN=YYYYY.XES.FONT300  FONTS
//         DD DISP=SHR,DSN=SYS1.FONT300
//XESLIB   DD DISP=SHR,DSN=YYYYY.XES.XESLIB   FORMS
//*
```

Figure 8. JCL Sample Invocation of the XESREAD Program

idaXFC Spool File Converter Operator Commands

The idaXFC utilizes an operator interface. This interface permits the modification of configuration values without requiring that idaXFC is shutdown and restarted. Operator commands can be entered at the Master console or using a program that supports this interface (e.g. SDSF). The commands supported by the operator interface are indicated in the following figures:

```
P procname | jobname
F procname | jobname,ADD,prt,
F procname | jobname,ADD,prt
F procname | jobname,Disp, [ option...]
     Options:
        Default
        PRinter
        Level
     STOP
     START
     FORCE
     DUMP

Figure 9.  Syntax of the Operator Interface - Operator Commands
```

```
F procname | jobname,default, | prt, [ option...]
  Options:

  TRACE= OFF | ALL | IO | HEX | OUTPUT | WTO | ALL
  CLASS=output class
  DEST=destination
  FCB=fcb name
  FORMS=forms name
  LOGDD=ddname
  NODE=JES output node
  OUTPUT=JES output ddname
  PAPER=A4 | A3 | LETTER | LEGAL | MONARCH | C5 | COM10 | EXECUTIVE
  PRMODE=Printer selection mode
  START= YES | NO

Figure 10.   Syntax of the Operator Interface - Printer configuration
```

The operator interface provides four basic types of operation:

- Start/Stop/Force

  Performs normal printer startup, and normal system termination.

- Display

  Provides a display of printer and default configuration display information.

- Add

  Dynamic addition of new printer devices

- Modify printer/default

  Modify printer and default settings

- Stop (P)

  This command performs an orderly shutdown of the entire idaXFC system. This command is intended to be used during termination of the system (e.g. prior to an IPL). The shutdown command will take affect when all printing presently in progress is terminated. When more than one Stop command is entered, an orderly "forced" termination of idaXFC system is performed, which will interrupt any printing/conversion presently in progress.

- Stop Printer

  This command performs an orderly shutdown of the printer.

- Force Printer

  This command performs a forced shutdown of the printer. A VTAM UNBIND request is issued to the printer. This command should be used to terminate printer communication in the event of a error situation

- Dump Printer

  This command is used only for diagnostic purposes, and causes a display of internal control blocks. Processing is not affected with the use of this command.

- DISPLAY

  This command can be used to display the printer status and configuration (using optional keywords). Optional keywords that can be supplied are:

  * Printers

    Displays a summary status of all printers

  * Default

    Displays the default profile configuration keywords

  * Single printer

    Displays status and configuration information for a single printer

  * Level

    Displays the product software level

- ADD

  This command allows the addition of a new printer definition without requiring termination of the idaXFC. Prior to using this command, the printer to be defined must be defined to the VTAM application. The prt parameter refers to the printer name that will be used.

  When printers are defined, only the printer name and printer related configuration values are supplied. All other values are set to the configuration supplied on the default statement or actual keyword defaults (where no default value has been requested). Keyword values can be altered using the modify operation.

  Note: Printer add and set commands first take effect when the printer is stopped and restarted, and are in effect until the print system is terminated, or the next add or modify command is entered.

- MODIFY

  Any printer configuration value can be altered dynamically using the set command. Values will first be used when the printer is stopped and restarted. In addition, the Set default keyword can be used to alter the configuration values supplied for the default statement.

XES Transform modifications

This section describes how the supplied XES translation source, XESTRANS can be modified to alter the following transform attributes:

- XES to AFP font selection (including codepage)

- Lead-in and Lead-out strings

- Page length and margins

- External DD name for FORMS references

- Default User Defined Key (UDK)

- Modifying the sixel decoding table

- Default EBCDIC language translation (codepage)

Customization of the XESTRANS assembler source is required to tailor the operation of this transform. The default operation is designed to permit processing of datastreams that have been encoded using i-data FSL Escape or Escape Escape notation.

The format of the assembler source file requires that the notation used for Assembler source files is maintained, e.g.

- The keyword macros are placed in column one.

- Keyword macro operands are placed in column 10, together with other data definitions.

- Line continuation (if required) requires an "X" in column 72, and the subsequent line must start before position 10.

- Comments statements on an empty line are indicated using an asterisk in column one. Comment statements can be placed on other lines after a single space from the last command operand.

The supplied XESTRANS assembler source indicates the standard configuration supplied with the product, and can be used as a reference example for modifications. The assembler source uses entry points to identify the various options that can be customized.

Note: Certain entries in this file are case sensitive.

Modification of XES to AFP Font selection

The FONTTAB entry point is used to indicate (via the FONTENT macro) which AFP fonts will be used for XES font references. The first FONTENT statement describes which AFP font will be the default font. The syntax of the FONTENT macro subparameters are as follows.

- AFP Font name

  The six character font member name (excluding C0) that describes the AFP font name.

- Codepage name

The six character codepage name (excluding T0) that describes the AFP codepage name.

- Xerox Font Name

  The name of the Xerox XES source font. The supplied names are case sensitive. Do not specify the trailing -l and -p identifiers (landscape & portrait).

Termination of the FONTTAB definition is performed using the X'00' terminator (DC X'00'). Up to 63 fonts can be specified in the FONTTAB definition (for a total of 126 font references, for both landscape/portrait orientation).

Modifications to the Lead-in and Lead-out strings

The default MPI lead-in and lead-out strings can be modified to match your installation requirements. Default settings are designed for operation in conjunction with MPI escape sequences. The MPILI, MPILO, MPILIL, MPILOL entries describe the lead-in and lead-out sequences (and their corresponding lengths). The two to five character lead-in and lead-out sequences should be specified in the MPILI and MPILO statements respectively. MPI lead-in and lead-out strings can be disabled by indicating a null length value in the MPLIL and MPILOL constants.

Modification of Page Length and Margins

The IMARGINS entry can be used to modify the page margin values, for printing in both portrait and landscape directions. The IMARGINS entry is used to identify the start of page margin definitions. Two sets of values are supplied, for both portrait and landscape values respectively. All values are supplied in 1/7200ths of an inch. For each set of values, a page length, top, bottom, left and right margin values are required. The format of this entry is similar to the XES margins command.

Height	Page height, (distance between the top edge and the bottom edge of the page).
Top Margin	Distance from the top edge of the page to the baseline of the characters in the first line of text.
Bottom Margin	Distance from the bottom edge of the page to the baseline of the characters in the last line of text.
Left Margin	Distance from the left edge of the page to the leftmost point of the first character in each line.
Right Margin	Distance from the left edge of the page to the right side of the last character in each line.

Modifying the XES FORMS Data Definition Reference

If the default DDNAME reference to the location of XES forms is not suitable, it can be modified using the DDNAME Entry. The DDNAME label contains the DDNAME reference that will be used by the XES transform when XES forms are requested.

Note: Use of XES forms may not apply to your installation.

Modifying the Default User Defined Key

The Default UDK (User Defined Key) is used within XES print jobs to override the standard escape sequence. The specified value may vary from installation to installation. The DEFUDK entry is used to alter the default value used by the program. If no UDK will be used, the default value (X'1B') should be replaced with a space.

Modifying the Sixel Decoding Table

The XES datastream can contain non-printable text fields used to represent font and picture data in sixel format. Sixel encoding is used to eliminate the problem of font/image data being interpreted as characters or commands. Fonts are typically provided in sixel format, however you installation may use their own code routines to reconvert font or image data to other sixel encoding. If this is the case, you may need to modify the default supplied sixel to binary decoding tables.

The TRTAB Entry point is used to start the definition of translate table from sixel format to binary encoding. All codepoints from 00 to FF are supplied in this table.

Changing the Character Mapping and Language

The *idaXFC* converts the XES datastream input to a common ISO codepage 500 based format. This applies to XES datastreams in ASCII (e.g. ESC ESC format) and EBCDIC format. From the ISO codepage, selection of the language specific character selection is performed using the default language or XES language commands.

The default EBCDIC language or codepage can be selected by modifying the DEFLANG entry to include the appropriate language number as required.

Appendix A. idaXFC Messages and Codes

Error messages produced by the idaXFC.. use the following syntax:

```
XESXXXY
  │  │  │
  │  │  │  Indicates the message severity. I = Information
  │  │                                     E = Eventual action required
  │  │                                     W = Warning
  │  │
  │  XXX indicates the unique decimal message number
  │
XES - is the identifier type for ida XFC messages
      XES = Printer driver messages
```

General messages are routed to the MCS console. The SYSLOG julian date and time are used for journaling purposes (i.e. no additional date/timestamp identifier is used). Printer trace messages are routed to the destination specified in the LOGDD statement.

The following information is described for each message;

• Messages descriptor

• Description

• Message severity

• Required action (where appropriate)

- **XES001W IDA XFC IS NOT APF AUTHORIZED**

Description	The idaXFC is not APF Authorized.
Severity	Program execution is halted immediately.
Action	Ensure that the idaXFC is located in an APF authorized load library prior to attempting a restart.

- **XES002I INVALID INPUT text**

Description	The supplied idaXFC profile statement is invalid.
Severity	Processing will continue and this statement is ignored.
Action	Correct the incorrect idaXFC profile statement(s).

- **XES003I STATEMENT IS TOO LONG statement**

Description	The supplied idaXFC profile statement exceeds the valid length.
Severity	Processing will continue and this statement is ignored.
Action	Correct the incorrect idaXFC profile statement(s).

- **XES004I NEW KEYWORD FOLLOWING COMMA, COMMA IGNORED**

Description	An idaXFC profile keyword statement was supplied however, a continuation of the previous keyword was expected.
Severity	Processing will continue and this statement is ignored. The new keyword will take effect.
Action	Correct the incorrect idaXFC profile statement, by removing the misplaced comma (as required).

- **XES005I INVALID KEYWORD nnnnnnnnn**

Description	An idaXFC profile keyword statement is invalid.
Severity	Processing will continue and this statement is ignored.
Action	Review the documentation for a list of valid keywords.

- **XES006I SUB PARAMETERS IGNORED value**

Description	The value of a idaXFC profile sub parameter keyword is invalid
Severity	The idaXFC terminates.
Action	Correct the incorrect idaXFC profile sub parameter keyword, and restart the idaXFC.

- **XES007I INVALID NON NUMERIC KEY key**

Description	The idaXFC profile KEY statement does not contain a valid decimal value.
Severity	The idaXFC terminates.
Action	Correct the KEY statement by supplying a valid KEY value. Record the CPUID if you have not yet obtained a key.

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- **XES008I INVALID SUB PARAMETER value**
- **XES018I INVALID SUB PARAMETER value**
- **XES031I INVALID SUB PARAMETER value**

Description	The value of a idaXFC profile sub parameter keyword is invalid
Severity	The idaXFC terminates.
Action	Correct the incorrect idaXFC profile sub parameter keyword keyword and restart the idaXFC.

- **XES009I INVALID DECIMAL NUMBER argument**
- **XES019I INVALID DECIMAL NUMBER argument**

Description	The idaXFC subparameter does not contain a valid decimal value.
Severity	The idaXFC continues using the default for the named value.
Action	Correct the idaXFC subparameter to include a valid decimal value.

- **XES010I SMF RECORD TYPE IS TOO LARGE**

Description	The idaXFC profile SMF keyword value exceeds the allowable range.
Severity	SMF recording will not be performed.
Action	Correct the SMF keyword to reflect a valid value.

- **XES011I IDA XFC PRODUCT IS NOT LICENSED FOR THIS CPUID nnnn**

Description	The idaXFC program is not licensed for this CPU complex, or the specified key is invalid.
Severity	The idaXFC terminates.
Action	Obtain the required product key using the procedures described in the installation manual. The CPUID number supplied on this message should be recorded.

- **XES012I NO KEY SUPPLIED IN IDA XFC PROFILE**

Description	A KEY statement is missing in the idaXFC PROFILE specified key is invalid.
Severity	The idaXFC terminates.
Action	Code the idaXFC PROFILE KEY statement using the product KEY supplied.

- **XES013I MORE THAN ONE PRINTER DEFINED IN TEST MODE**

Description	An *idaXFC* KEY PROFILE statement was not detected, and more than one PRINTER statement is detected.
Severity	The idaXFC terminates.
Action	Operation of one printer is possible without the product key (i.e. TEST MODE) If additional printers are required to be tested, obtain a product key from the product distributor.

- **XES014I IDA XFC RUNNING IN TEST MODE**

Description	The product is running in TEST MODE, where only one printer can be defined.
Severity	Information only message.
Action	Operation of one ICDS printer is possible without the *idaXFC* KEY PROFILE statement (i.e. TEST MODE). If additional printers are required to be tested, obtain a product key from the product distributor.

- **XES015I NO PRINTERS DEFINED**

Description	An operator operation has been attempted when no printers are defined in the idaXFC profile.
Severity	No action will be performed (printing is not possible).
Action	Respecify the idaXFC profile to reference one or more printers.

- **XES016I IDA XFC LICENSED FOR nnnn PRINTERS**

Description	Operation of the product has terminated as the number of licensed printers has been exceeded.
Severity	Processing for the named subsystem is terminate.
Action	A maximum of stated number of printers may be defined for print operation to **all** instances of IDAXFC operational on the same system image. Support of additional printers will require use of another product key.

- **XES017I nnnn PRINTERS DEFINED**

Description	The *idaXFC* has located nnnn PRINTER definitions in the *idaXFC* PROFILE.
Severity	Information only message.
Action	None.

- **XES019I INVALID DECIMAL NUMBER nnnnn**

Description	A non-decimal numeric value has been specified in the IDAXFC profile.
Severity	The value specified will not be used for the named printer.
Action	Correct the IDAXFC profile entry for the target printer.

- **XES020I OUT OF RANGE nnnnn**

Description	An IDAXFC profile value contains a value that is outside of the acceptable range.
Severity	The value specified will not be used for the named printer.
Action	Correct the IDAXFC profile entry for the target printer.

- **XES021I YOU HAVE REACHED MAX NUMBER OF PAPERS**

Description	The maximum number of paper types that can be defined has been exceeded.
Severity	The idaXFC continues processing using the first valid paper types definitions.
Action	Remove additional paper type statements to conform to the maximum allowable value of 50 paper types.

- **XES022I VIRTUAL STORAGE DISPLAY FOR TCB nnnn**
- **XES023I SUBPOOL nnn KEY nnn TCB nnnn**
- **XES024I ADDRESS nnnn LENGTH nnnn**

Description	Diagnostic messages.
Severity	Information only message.

- **XES025I IDA XFC PRODUCT WILL EXPIRE WITHIN nnn DAYS**

Description	The idaXFC KEY used is a temporary key that can be used for the following nnn days.
Severity	The idaXFC processing continues.
Action	None. The KEY used is a temporary key that contains an expiration date.

- **XES026I IDA XFC IS RUNNING ON CPUID nnnnnn**

Description	The idaXFC is running on CPU ID nnnnnn.
Severity	Information only message.
Action	None. This information can be used to obtain a product key. Refer to the installation section for further information.

- **XES027I INVALID KEY key**

Description	The idaXFC profile KEY statement does not contain a valid value.
Severity	The idaXFC terminates.
Action	Correct the KEY statement by supplying a valid KEY value. Record the CPUID if you have not yet obtained a key.

- **XES028I ERROR FOUND ON LINE nnn IN PROFILE**

Description	An error was encountered during processing of the *idaXFC* PROFILE.
Severity	The keyword(s) specified on the named line will not be processed.
Action	Correct the *idaXFC* PROFILE, and restart the IDAXFC subsystem.

- **XES029I DUPLICATE PRINTER NAME prtname**

Description	An attempt to dynamically add additional printers failed due to a duplicate printer name.
Severity	The IDAXFC ADD PRINTER command was not performed.
Action	Ensure that the additional printer name does not conflict with and existing printer name and reenter the IDAXFC Add Printer command.

- **XES030I YOU HAVE REACHED MAX NUMBER OF PRINTERS**

Description	The maximum number of printers that can be defined has been exceeded.
Severity	The idaXFC continues processing using the first 2200 printer (MVS) or 128 (VM) definitions.
Action	Remove additional printer definitions to the allowable maximum. For MVS, define additional FSS subsystems if more than 2200 printers are required. For VM, define additional GCS subsystems if more than 128 printers are required.

- **XES032I INVALID TRACE OPTION tracetype**

Description	The idaXFC profile TRACE option is invalid.
Severity	The idaXFC continues.
Action	Correct the idaXFC TRACE subparameter option.

- **XES033I INVALID PAPER SELECT command**

Description	The idaXFC profile PAPER keyword contained an invalid numeric value.
Severity	The idaXFC continues using the default for the named value.
Action	Correct the idaXFC subparameter to include a valid numeric value.

- **XES034I BLANK NOT ALLOWED IN text**

Description	The supplied idaXFC profile keyword cannot be defaulted.
Severity	Processing will continue and this statement is ignored.
Action	Correct the incorrect idaXFC profile keyword, by supplying a value or omitting this keyword (use of default).

- **XES050I IDA XFC IS NOT IN PPT. KEY = nn**

Description	The idaXFC has not been defined in the MVS Program Properties Table.
Severity	Program execution is halted immediately.
Action	Ensure that a correct PPT entry exists prior to restarting the idaXFC.

- **XES051I IDENTIFY RC =**

Description	A severe error has been encountered processing the identify macro.
Severity	The Functional Subsystem is terminated.
Action	This error can be caused by duplicate file entries in the LPA (PSSFSA00). For all other error conditions, contact the product distributor indicating the named error message.

- **XES052W name, MISSING IN CIB DATA**

Description	A severe program error has occurred.
Severity	Program execution is halted immediately.
Action	Restart the idaXFC specifying an FSI trace option on the failing printer and contact the product distributor.

- **XES053W WRONG INVOCATION OF IDA XFC**

Description	The idaXFC has been initiated using an MVS START command.
Severity	Program execution is halted immediately.
Action	The JES or CA-Spool printer start command should be used.

- **XES054W NO FSID IN CIB**

Description	A severe program error has occurred.
Severity	Program execution is halted immediately.
Action	Restart the idaXFC specifying an FSI trace option on the failing printer and contact the product distributor.

- **XES055I prtid LOGMODE = logmod PORT = port**
- **XES055I prtid FDEFLIB = ddname PDEFLIB = ddname**
- **XES055I prtid FONTLIB = ddname RESOURCE= ddname**
- **XES055I prtid OVLYLIB = ddname PSEGLIB = ddname**
- **XES055I prtid DEFAULT   FORMDEF= member PAGEDEF= member**
- **XES055I prtid HEADER   FORMDEF= member PAGEDEF= member**
- **XES055I prtid TRALER   FORMDEF= member PAGEDEF= member**
- **XES055I prtid SEPARATOR FORMDEF= member PAGEDEF= member**
- **XES055I prtid MESSAGE   FORMDEF= member PAGEDEF= member**
- **XES055I prtid DEFAULT   FCB = member FCBLIB= member**

Description	Response to a operator printer display command. The printer attributes, and certain profile options are displayed.
Severity	Information only message.
Action	None.

- **XES060I IDA PRINT SUBSYSTEM VERSION version IS ACTIVE**

Description	The idaXFC has been initiated using a printer start command.
Severity	Information only message.
Action	None.

- **XES061I INVALID OPERATOR COMMAND command**

Description	An invalid idaXFC operator command was received.
Severity	The command entered is ignored.
Action	Refer to the Operator Controls section in this document for a list of valid operator commands.

- **XES062W INVALID ORDER RECEIVED IN FSS fssorder**

Description	The idaXFC FSI interface received the FSS order "fssorder" that is not supported.
Severity	idaXFC order is ignored. Processing continues.
Action	Restart the idaXFC specifying an FSI trace option on the failing printer and contact the product distributor.

- **XES063I keyword TOKEN TOO LONG**

Description	An idaXFC modify keyword exceeded 16 characters.
Severity	Command token is ignored.
Action	Refer to the Operator Controls section in this document for a list of valid operator commands and reenter the command if required.

- **XES064I TOO MANY MODIFIED, REMAINDER SKIPPED**

Description	An excessive number of modify commands could not be accepted.
Severity	The additional modify commands will not be processed.
Action	Refer to the Operator Controls section in this document for a list of valid operator commands and reenter the command if required. Up to eight modify commands can be entered simultaneously.

- **XES066I BLANK MODIFY command**

Description	An idaXFC invalid modify command "command" was attempted.
Severity	The operator command is ignored.
Action	Refer to the *ida Print Subsystem Product Installation Guide* Operator Controls section for a list of valid modify commands and reenter the command if required.

- **XES067I MODIFY COMMAND COMPLETED**

Description	The operator entered modify command has been accepted and is in effect for the subsequent print job(s).
Severity	Information only message.
Action	None.

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- **XES068I PRINTER prtid IS NOT DEFINED**
- **XES074I PRINTER prtid IS NOT DEFINED**
- **XES081I PRINTER prtid IS NOT DEFINED**
- **XES083I PRINTER prtid IS NOT DEFINED**

Description	An attempt was made to perform an operator command on a printer that is not defined to this idaXFC.
Severity	Processing continues, the command is not performed.
Action	Verify that the printer id or idaXFC service machine is correct and re-specify the command if required.

- **XES069I DUPLICATE PRINTER NAME printer**

Description	The idaXFC PRINTER name has previously been defined.
Severity	The first definition of the PRINTER name will be used.
Action	Remove the duplicate printer definition, or modify the printer name to the correct value.

- **XES070I NO PRINTER SPECIFIED IN ADD COMMAND**

Description	A dynamic printer addition has not been performed due to an error in the ADD command (printer not specified).
Severity	The additional printer is not added.
Action	Respecify the ADD printer command.

- **XES071I IDA XFC NOT LICENSED FOR MORE PRINTERS**

Description	The total number of printers defined in the *idaXFC* PROFILE exceeds the maximum allowed by the defined KEY.
Severity	The idaXFC terminates.
Action	You have attempted to define more printers (that exceed the number permitted by your key license). If you wish to add additional printers, an upgraded product key will be required. Operation of *idaXFC* can be performed by reducing the number of PRINTER statements in the *idaXFC* PROFILE.

- **XES073W FSS CONNECT REJECTED,RC = rc**

Description	Attachment of the idaXFC FSS to the spool subsystem failed.
Severity	idaXFC processing is terminated.
Action	Restart the idaXFC specifying an FSI trace option on the failing printer and contact the product distributor. Return code information can be found in the appropriate documentation for the FSI macro.

- **XES076I IDA PRINT SUBSYSTEM VERSION version**

Description	Response to the operator Q SYS LEVEL command.
Severity	Information only message.
Action	None.

- **XES077I IDAXFC IS RUNNING TEST MODE WITH 2 PRINTERS**

Description	The product is operational with the named printers in TEST mode.
Severity	Information only message.
Action	The product is operational in TEST mode (without a product KEY). If you wish to use the product with additional printers, a product KEY will be required.

- **XES078I IDAXFC IS LICENSED FOR nnnn PRINTERS**

Description	The product is operational with a license key that permits operation of up to nnnn printers.
Severity	Information only message.
Action	None

- **XES079I PROC procname PRINTERS nnnn**

Description	Informational message describing the product characteristics, (Proc name, and product license key information).
Severity	Information only message.
Action	None

- **XES080I ACTIVATING PRINTER printerid type id**

Description	The idaXFC has been initiated using a printer start command for the named printer printerid using the connection type specified.
Severity	Information only message.
Action	None.

- **XES081I printer IS ALREADY STARTED**

Description	An attempt was made to start printer "printerid" that has previously been started.
Severity	Processing continues.
Action	None.

- **XES084I PRINTER printerid DEACTIVATED**

Description	The PRINTER called printerid is terminated.
Severity	Information only message.
Action	None.

- **XES085I IDA XFC SHUTDOWN IN PROCESS**
- **XES086I IDA XFC SHUTDOWN FORCE IN PROCESS**

Description	Termination is in progress for idaXFC in response to a shutdown command, MVS STOP or VTAM deactivation of APPLID.
Severity	Information only message.
Action	None.

- **XES087W FSS DISCONNECT, RC = rc**

Description	An internal processing error has occurred.
Severity	A severe program error has occurred.
Action	Restart the idaXFC specifying an FSI trace option on the failing printer and contact the product distributor. Return code information can be found in the appropriate documentation for the FSI macro.

- **XES088I IDA XFC SHUTDOWN COMPLETED**

Description	Termination is complete for idaXFC.
Severity	Information only message.
Action	None.

- **XES090I printer SIZE xxxx,yyyy ORIGO xxxx,yyyy PRINTAREA xxxx,yyyy**

Description	Information message generated as a result of an operator Display command.
Severity	Information only message.
Action	None.

- **XES091I FSA STATUS xxxx xxxx xxxx xxxx**
- **XES091I DATA ECB xxxx**
- **XES091I RELEASED ECB xxxx**
- **XES091I RECEIVE ECB xxxx**
- **XES091I RESPONSE ECB xxxx**
- **XES091I MESSAGE ECB xxxx**
- **XES091I COM   ECB xxxx**

Description	Response to a display printer, dump command.
Severity	Information only messages, processing continues.
Action	None.

- **XES099W MORE THAN 100 PSS STARTED**

Description	The total number of IDAXFC functional subsystems that have been started exceeds 99 subsystems.
Severity	The attempt to start subesquent IDAXFC FSS has failed.
Action	Reduce the total number of FSS subsystems defined or simuletanously operational.

- **XES092I PAPER type NOT DEFINED for printer A4 USED**

Description	A attempt to select an undefined paper size failed. The A4 default paper size will be used instead.
Severity	A4 paper size is selected for print formatting.
Action	Verify that the specified PROFILE PAPER value is correct.

- **XES100I command UNKNOWN AFPDS COMMAND IN MAIN**

Description	An unrecognized AFPDS (CPDS) command was found during processing in the MAIN module.
Severity	Processing will continue after this message.
Action	Ensure that the input ddname is correct, and that the input has not been corrupted.

- **XES101W INVALID ORDER RECEIVED IN FSA**

Description	An error in the JES to IDAXFC FSA interface has occurred.
Severity	Processing for the named printer is terminated.
Action	Restart the idaXFC specifying an FSI trace option on the failing printer and contact the product distributor.

- **XES102I SYNC ORDER RECEIVED**
- **XES103I ORDSYR1 = n ORDSYR2 = n ORDSYR3 =n**
- **XES103I ORDSYR4 = n ORDSYR5 = n ORDSYR6 =n**
- **XES103I ORDSYNP = n ORDSYKI = n ORDSYCP =n**
- **XES104I ORDSYMSG = nnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnn**

Description	Trace information message.
Notes	Information-only message.

- **XES106I RESPONSE SEND. TYPE= xx**
- **XES110I RESPONSE SEND. TYPE= xx**
- **XES107I RECNO = xxxx DSNAME = xxxxx**
- **XES111I RECNO = xxxx DSNAME = xxxxx**
- **XES108I PAGE = xxxx COPIES = xx FLAG= xx**
- **XES112I PAGE = xxxx COPIES = xx FLAG= xx**

Description	Trace information message.
Severity	Information only message.
Action	None.

- **XES120I SMF RECORD WRITE ENTERED**

Description	Trace message.
Severity	TRACE message.
Action	none.

- **XES121W SMF WRITE FAILED RC = xx**

Description	Generation of an SMF record was not possible,
Severity	SMF recording will not be performed.
Action	Determine the cause of the error and evaluate if printer operation can continue without SMF record generation.

- **XES122I SMF RECORD WRITE TERMINATED**

Description	Trace message.
Severity	TRACE message.
Action	none.

- **XES131I CHECK POINT WRITTEN FOR PAGE nnnn**

Description	Trace information message indicating checkpoint activity.
Notes	Information-only message.

- **XES200W SHORT RECORD FOUND. LENGTH = lllll**

Description	An error was encountered processing AFPDS data. An AFPDS command was processed that was less than 9 bytes.
Severity	The output job producing the error is held and processing continues.
Action	Validate that the print output containing AFPDS (X'5A') records has not been corrupted, and that records are minimum 9 bytes in length (X'5A' plus 8 bytes).

- **XES201I CC =**

Description	Structured field command indicator.
Notes	Information-only message identifying the structured field being processed.

- **XES202I CMD=command LENGTH= lllll**

Description	Structured field command indicator.
Notes	Information-only message identifying the structured field being processed.

- **XES210W Dataset member MEMBER NOT FOUND**

Description	An expected data member could not be located.
Severity	The output job producing the error is held and processing continues.
Action	Validate that all input data and resources have been supplied.

- **XES213W dataset member INVALID RECORD FORMAT**

Description	The named dataset member contained an invalid record format.
Severity	The output job producing the error is held and processing continues.
Action	Correct the invalid input member. Ensure that the member attributes (RECFM) are set correctly. Allowable record formats are: V or VB with optional Machine or ANSI control characters.

- **XES214W Dataset member INPUT FILE NOT FOUND**

Description	An expected data member could not be located.
Severity	The output job producing the error is held and processing continues.
Action	Validate that all input data and resources have been supplied.

- **XES215I member ddname CLOSED**
- **XES216I member ddname CLOSED**

Description	Information-only message.
Notes	Information-only message identifying that member ddname has been closed after processing.

- **XES217I NOTE CALLED**

Description	The note macro has been encountered. Recording for a dataset has been started.
Notes	Information-only message.

- **XES218I POSITION IS xxxx,xxxx**

Description	Trace information message.
Severity	Processing continues.
Action	None.

- **XES219I POINT CALLED**

Description	The point macro has been encountered. Repositioning for an input dataset has occurred.
Notes	Information-only message.

- **XES230I POSITION TO xxxx,xxxx**

Description	Trace information message.
Severity	Processing continues.
Action	None.

- **XES230W CHKPT REJECTED RC = xx**

Description	Generation of a checkpoint record was not possible,
Severity	Checkpointing will not be performed.
Action	Determine the cause of the error and evaluate if printer operation can continue without checkpointing.

- **XES231W GETREC FAILED, RC=**

Description	An internal idaXFC error occurred.
Severity	Processing for the named printer is terminated.
Action	Restart the idaXFC specifying an FSI trace option on the failing printer and contact the product distributor. Return code information can be found in the appropriate documentation for the FSI macro.

- **XES232I GETREC, FLAGS1=**

Description	Information message.
Severity	Processing continues.
Action	None.

- **XES233W GETREC FAILED, FLAGS1=**

Description	The idaXFC was unable to read the spool volume. A spool IO error has occurred.
Severity	Processing for the named printer is terminated.
Action	Verify the integrity of the spool volume, and take any necessary installation defined recovery actions.

- **XES234I RECORD READ xxxx,xxxx**

Description	Trace information message.
Severity	Processing continues.
Action	None.

- **XES235I IDXFLAG1 =**

Description	Trace information message.
Severity	Information only message.
Action	None.

- **XES236W FREEREC FAILED, RC=**

Description	An internal idaXFC error occurred.
Severity	Processing for the named printer is terminated.
Action	Restart the idaXFC specifying an FSI trace option on the failing printer and contact the product distributor. Return code information can be found in the appropriate documentation for the FSI macro.

- **XES237W dataset member READ FAILED**

Description	The named dataset member contained an invalid record format.
Severity	The output job producing the error is held and processing continues.
Action	Validate that the input data record format is acceptable and that the input data has not been corrupted.

- **XES250I LOGMSG FOR user JOBID= number JOBNAME name**

Description	Trace information message indicating User, filename, type and printer.
Severity	Information only message.
Action	None.

- **XES251W LOG DATASET FAILED ON printer**
- **XES252W LOG DATASET FAILED ON printer**

Description	An error has occurred with the LOG dataset associated with the named printer.
Severity	Use of the specified log dataset is terminated. Error logging will be directed to the target printer.
Action	Ensure that the dataset attributes and size of the log dataset are acceptable, and restart the printer in order to reaccess the log dataset.

- **XES260W DYNALLOC RETURN rrrr ON PRINTER printer**
- **XES260W INFO CODE rrrr ON PRINTER printer**

Description	An error occurred for the named printer during a dynamic allocation operation. The named printer uses dataset file output.
Severity	Generation of the file output is terminated.
Action	Examine the return code supplied in the INFO CODE using the appropriate IBM Authorized Assembler Programming Guide for an explanation regarding this error. Perform the described corrective actions to resolve this problem.

- **XES500W FSA CONNECT REJECTED ON printer, RC =rc**

Description	Connection of the named printer was not possible.
Severity	Processing for the named printer is terminated.
Action	Restart the idaXFC specifying an FSI trace option on the failing printer and contact the product distributor. Return code information can be found in the appropriate documentation for the FSA macro.

- **XES501W INTERNAL ERROR DEQ PENDING FOR printer**

Description	A internal error has been encountered for the named printer.
Severity	Processing for the printer FSA is terminated.
Action	Restart the printer if required. If this problem persists, contact the product distributor.

- **XES502I IDA XFC PROGRAM VERSION= x.x**
- **XES503I SYSTEM ID = xxxxxx LEVEL = xxxxxxxxxxxxxx**
- **XES504I CPU TYPE tttt CPUID nnnn**
- **XES505I USER EXIT x IS INSTALLED**

Description	Indicates the version number of the program installed and the operating system version, level. Interface specific message indicates microcode level and printer support and other features.
Notes	Information-only message. Interface version information should be recorded if required.

- **XES506I RC FROM CPDSMAIN = rc VTAM SENSE = ssss ON PRINTER prtid**

Description	An non zero return code was received during processing from the CPDSMAIN module, with an optional VTAM sense code.
Severity	Processing of the current file is terminated and the file is held. Printing can subsequently continue.
Action	Review related idaXFC messages, and examine the output generated for the failing printer (in the CONSOLE, SYSOUT or other LOGDD output).

- **XES507W INVALID ORDER RECEIVED IN FSA**

Description	An error in the JES to IDAXFC FSA interface has occurred.
Severity	Processing for the named printer is terminated.
Action	Restart the idaXFC specifying an FSI trace option on the failing printer and contact the product distributor.

- **XES508I SET ORDER RECEIVED**

Description	Trace information message indicating operator SET command is being processed.
Notes	Information-only message.

- **XES509I SYNC ORDER RECEIVED**
- **XES509I ORDSYR1 = n ORDSYR2 = n ORDSYR3 =n**
- **XES509I ORDSYR4 = n ORDSYR5 = n ORDSYR6 =n**
- **XES509I ORDSYNP = n ORDSYKI = n ORDSYCP =n**
- **XES509I ORDSYMSG = nnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnn**

Description	Trace information message.
Notes	Information-only message.

- **XES511I INTERVENTION ORDER RECEIVED**

Description	Trace information message.
Notes	Information-only message.

- **XES512I FONTS   = font**
- **XES512I COPIES = copies**
- **XES512I FORM   = form**
- **XES512I CLASS   = class**
- **XES512I CHAR1   = trc1**
- **XES512I CHAR2   = trc2**
- **XES512I CHAR3   = trc3**
- **XES512I CHAR4   = trc4**
- **XES512I JOB ID = job id**
- **XES512I JOBNAME = jname**
- **XES512I USERID = user**
- **XES512I DEST   = dest**
- **XES512I ROOM NR = room number**
- **XES512I PROC   = proc**
- **XES512I DSN   = dataset name**
- **XES512I CLASS   = class**
- **XES512I ADDRESS = address1**
- **XES512I ADDRESS = address2**
- **XES512I ADDRESS = address3**
- **XES512I ADDRESS = address4**
- **XES512I USERLIB = user library 1**
- **XES512I USERLIB = user library 2**
- **XES512I USERLIB = user library 3**
- **XES512I USERLIB = user library 4**
- **XES512I USERLIB = user library 5**
- **XES512I USERLIB = user library 6**
- **XES512I USERLIB = user library 7**
- **XES512I USERLIB = user library 8**
- **XES512I NOTIFY = notify1**
- **XES512I NOTIFY = notify2**
- **XES512I NOTIFY = notify3**
- **XES512I NOTIFY = notify4**
- **XES512I DEPT   = department**
- **XES512I BUILD   = building**
- **XES512I TITLE   = title**
- **XES512I FCB   = fcb**
- **XES512I FLASH   = flash**
- **XES512I PIMSG   = pimsg**
- **XES512I PRIO   = priority**
- **XES512I DATACK = data check**
- **XES512I PRMODE = print mode**
- **XES512I KEY = nn, NUMBER OF KEYS = nn**

Description	Trace information record indicating all print job details.
Severity.	Information only message.
Action	None.

- **XES513I START DEVICE CALLED**

Description	Trace information message indicating start printer command is being processed.
Notes	Information-only message.

- **XES514I STOP DEVICE CALLED**
- **XES515I STOP FSA CALLED**

Description	Trace information message indicating stop printer command is being processed.
Notes	Information-only message.

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- **XES516W FSA DISCONNECT REJECTED ON PRINTER printer, RC = rc**

Description	An error in the JES to IDAXFC FSA interface has occurred.
Severity	Processing for the named printer is terminated.
Action	Restart the idaXFC specifying an FSI trace option on the failing printer and contact the product distributor. Return code information can be found in the appropriate documentation for the FSA macro.

- **XES517W GETDS REJECTED,RC =**

Description	An error in the JES to IDAXFC FSA interface has occurred.
Severity	Processing for the named printer is terminated.
Action	Restart the idaXFC specifying an FSI trace option on the failing printer and contact the product distributor. Return code information can be found in the appropriate documentation for the FSI macro.

- **XES518I GETDS : , GDSFLGS1 =**

Description	Trace information message.
Severity	Information only message.
Action	None.

- **XES519W WRONG FLAG : GDSFLGS1 = xx**

Description	An error in the JES to IDAXFC FSA interface has occurred.
Severity	Processing for the named printer is terminated.
Action	Restart the idaXFC specifying an FSI trace option on the failing printer and contact the product distributor.

- **XES520I VALID CHECKPOINT RETURNED**

Description	Trace information message.
Notes	Information-only message.

- **XES521W SJFREQ REJECTED,RC = xx**
- **XES521W SJFREQ REASON CODE = xx**

Description	An error in the JES to IDAXFC SJF interface has occurred.
Severity	Processing for the named printer is terminated.
Action	Restart the idaXFC specifying an FSI trace option on the failing printer and contact the product distributor.

- **XES522I JESNEWS DATASET ACTIVE**

Description	Trace information record indicating all print job details.
Severity.	Information only message.
Action	None.

- **XES523I GDSFLAG = xx**

Description	Trace information message.
Severity	Information only message.
Action	None.

- **XES524I ffff ACTIVE ON PRINTER prtid FOR userid**

Description	File number or MVS jobname is active on the printer prtid. Indicates print processing is active on the named printer.
Severity	Information only message.
Action	None.

- **XES525I jobname REQUEUED NO CHK ON printer**

Description	Due to a previous error, the named job has been requeued for printing from the start of the print job.
Severity	When a connection to the printer is reestablished, printing of the job will be performed from the start of the job.
Action	Trace JOB information. See the previous message for additional information.

- **XES526I jobname REQUEUED ON printer**

Description	Due to a previous error, the named job has been requeued for printing from the last checkpoint in the print job.
Severity	When a connection to the printer is reestablished, printing of the job will be performed from the last checkpoint prior to job failure.
Action	Trace JOB information. See the previous message for additional information.

- **XES527I jobname MADE UNPRINTABLE ON printer**

Description	Due to a previous error, the named job cannot be printed.
Severity	The named job will be placed in unprintable status.
Action	Trace JOB information. See the previous message for additional information.

- **XES528I jobname PRINTED ON printer**

Description	The job name jobid has completed printing on printer prtid. Message is produced as a result of the JCL NOTIFY option.
Severity	Information only message.
Action	Trace JOB information message.

- **XES530W RELDS REJECTED,RC = xx**

Description	An error in the JES to IDAXFC FSA interface has occurred.
Severity	Processing for the named printer is terminated.
Action	Restart the idaXFC specifying an FSI trace option on the failing printer and contact the product distributor. Return code information can be found in the appropriate documentation for the FSI macro.

- **XES531I DATASET FREE CALLED WITH FLAG xx**

Description	Trace information record indicating dataset being released.
Severity	Information only message.
Action	None.

- **XES532I KEY = nn, NUMBER OF KEYS = nn**
- **XES532I nnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnn**

Description	Trace information record indicating all print job details.
Severity.	Information only message.
Action	None.

- **XES533I NOTIFY USER ENTERED**

Description	Trace message.
Severity	TRACE message.
Action	none.

- **XES534I jobid COMPLETED ON prtid**

Description	The job name jobid has completed printing on printer prtid. Message is produced as a result of the JCL NOTIFY option.
Severity	Information only message.
Action	None.

- **XES535I jobid PLACED ON HOLD BY prtid REASON CODE = rc**

Description	The job name jobid has not printed and is placed on hold for printer prtid. Message is produced as a result of the JCL NOTIFY option.
Severity	Printing of job did not complete.
Action	Examine accompanying messages and error logs to determine the cause of failure. Release the job from hold if required, when the problem is corrected (or resubmit the job correctly).

- **XES536W RC FROM SSIREQ = rr**

Description	An internal processing error has occurred during a sub system interface request.
Severity	A severe program error has occurred.
Action	Contact the product distributor with a description of the problem.

- **XES537I NOTIFY USER TERMINATED**

Description	Trace message.
Severity	TRACE message.
Action	none.

- **XES540I HIGH MEMORY REQUESTED BY xxxxxx**

Description	A request for memory was received from location xxxxxx.
Notes	Information-only message.

- **XES541W INSUFFICIENT REGION FOR JOB**

Description	Insufficient region is available for processing.
Severity	Processing on the named printer is terminated.
Action	Increase the region size for the idaXFC PROC, and restart the failing printer.

- **XES542I STORAGE ALLOCATED AT address LENGTH size CALLED BY xxxx**

Description	Information-only message that defines the location of the virtual storage allocated during processing. The 8-byte hexadecimal field address indicates the allocated storage location, and the range of storage allocated is indicated in the length field, and the caller address location.
Notes	Information-only message.

- **XES543I HIGH MEMORY REQUESTED BY xxxxxx**

Description	A request for memory was received from location xxxxxx.
Notes	Information-only message.

- **XES544I LONG STORAGE ALLOCATED AT address LENGTH size CALLED BY xxxx**

Description	Information-only message that defines the location of the virtual storage allocated during processing. The 8-byte hexadecimal field address indicates the allocated storage location, and the range of storage allocated is indicated in the length field, and the caller address location.
Notes	Information-only message.

- **XES545W WRONG FREEMAIN AT ADDR XXXXXXX CALLED BY module**

Description	An internal idaXFC error occurred.
Severity	Processing of jobs continues.
Action	Retry the print job. If this error persists, perform a idaXFC trace (ALL), and report this error to the product distributor.

- **XES546I STORAGE RELEASED AT address LENGTH size CALLED FROM xxxxxx**

Description	Information-only message that defines the location of the virtual storage released during processing. The 8-byte hexadecimal field address indicates the released storage location, and the length field shows the storage range released, and the caller address location.
Notes	Information-only message.

- **XES547I LONG STORAGE RELEASED AT address LENGTH size BY FREEMAIN**

Description	Information-only message that defines the location of the virtual storage released during processing. The 8-byte hexadecimal field address indicates the released storage location, and the length field shows the storage range released, and the caller address location.
Notes	Information-only message.

- **XES700I ONLY nn MARGINS RECEIVED**

Description	A non-match set of margin values has been received.
Severity	The margin values received will be ignored, and default values will be used.
Action	Correct the XES margins command, and ensure that all margin values are specified (i.e. height, top, bottom, left and right margins).

- **XES701I FONT fontname NOT FOUND**

Description	An expected XES font could not be mapped to an AFP font, as no definition was supplied.
Severity	The default font value will be used for the named XES font.
Action	Ensure that the named XES font has been mapped to an AFP font, and resubmit the print job.

- **XES702I MAP CODED FONT FAILED WITH RETURN CODE rc**

Description	The named font described in accompanying messages has been not been found, or is corrupted.
Severity	Processing continues with the default font.
Notes	Verify that the named AFP font is available, and is accessible to the idaXFC program.

- **XES703I BEGIN MERGE PAGE ENTERED**

Description	Trace information message.
Notes	Information-only message, produced when trace option is requested.

- **XES704I FORM READ = formname**

Description	Trace information message.
Notes	Information-only message, produced when trace option is requested.

- **XES705I START GRAPHIC ENTERED**

  Description   Trace information message.

  Notes   Information-only message, produced when trace option is requested.

- **XES706I GRAFX SIZE = value**

  Description   Trace information message.

  Notes   Information-only message, produced when trace option is requested.

- **XES707I GRAFY SIZE = value**

  Description   Trace information message.

  Notes   Information-only message, produced when trace option is requested.

- **XES708I GSIZEX SIZE = value**

  Description   Trace information message.

  Notes   Information-only message, produced when trace option is requested.

- **XES709I GSIZEY SIZE = value**

  Description   Trace information message.

  Notes   Information-only message, produced when trace option is requested.

- **XES710I START LINE ENTERED**

  Description   Trace information message.

  Notes   Information-only message, produced when trace option is requested.

- **XES711I START LINE TERMINATED**

  Description   Trace information message.

  Notes   Information-only message, produced when trace option is requested.

- **XES712I PRINT LINE ENTERED**

  Description   Trace information message.

  Notes   Information-only message, produced when trace option is requested.

- **XES713I PRINT LINE TERMINATED**

  Description   Trace information message.

  Notes   Information-only message, produced when trace option is requested.

- **XES714I MERGE PAGE TERMINATED**

  Description   Trace information message.

  Notes   Information-only message, produced when trace option is requested.

- **XES715I MAP CODED FONT FAILED WITH RETURN CODE rc**

Description	An attempt to access the default AFP font failed.
Severity	Output continues to be generated, however invalid output will be generated.
Action	Correct the invalid AFP font reference, and resubmit the print job.

- **XES716I END PAGE ENTERED**

Description	Trace information message.
Notes	Information-only message, produced when trace option is requested.

- **XES717I END PAGE TERMINATED**

Description	Trace information message.
Notes	Information-only message, produced when trace option is requested.

- **XES718I BEGIN PAGE ENTERED**

Description	Trace information message.
Notes	Information-only message, produced when trace option is requested.

- **XES719I BEGIN PAGE TERMINATED**

Description	Trace information message.
Notes	Information-only message, produced when trace option is requested.

- **XES720I XES INPUT RECORD**

Description	Trace information message.
Notes	Information-only message, produced when trace option is requested.

- **XES721I hexadecimal data**

Description	Trace information message.
Notes	Information-only message, produced when trace option is requested.

- **XES722I FILE formname, xes library INCLUDED**

Description	Trace information message.
Notes	Information-only message, produced when trace option is requested.

- **XES723I HIGH MEMORY REQUESTED BY value**

Description	Trace information message.
Notes	Information-only message, produced when trace option is requested.

- **XES724I INSUFFICIENT REGION FOR JOB**

Description	Insufficient region is available for processing.
Severity	Processing is terminated.
Action	Increase the region size for the idaXFC PROC, and restart the print job.

- **XES725I STORAGE ALLOCATED AT storage LENGTH length CALLED BY name**

Description	Information-only message that defines the location of the virtual storage allocated during processing. The 8-byte hexadecimal field address indicates the allocated storage location, and the range of storage allocated is indicated in the length field, and the caller address location.
Notes	Information-only message.

- **XES726I WRONG FREEMAIN AT ADDR location CALLED BY name**

Description	A severe internal program error has occured.
Severity	Processing is terminated.
Action	Contact the the product distributor and report this message.

- **XES727I STORAGE RELEASED AT location LENGTH length CALLED BY name**

Description	Information-only message that defines the location of the virtual storage released during processing. The 8-byte hexadecimal field address indicates the released storage location, and the length field shows the storage range released, and the caller address location.
Notes	Information-only message.

- **XES728I STORAGE RELEASED AT location LENGTH length BY FREEMAIN**

Description	Information-only message that defines the location of the virtual storage released during processing. The 8-byte hexadecimal field address indicates the released storage location, and the length field shows the storage range released, and the caller address location.
Notes	Information-only message.

- **XES729I UNPACKED XES INPUT RECORD**

Description	Trace information message.
Notes	Information-only message, produced when trace option is requested.

- **XES730I hexadecimal data**

Description	Trace information message.
Notes	Information-only message, produced when trace option is requested.

- **XES750I MCF ENTERED FONT = font codepage AS nnn**

Description	The Map Coded Font processing routine has been invoked for the FONT font, using the code page. The number nnn indicates the sequence number assigned to this font.
Notes	Information-only message.

- **XES751I INVALID FONT CONTROL FOUND IN FONT font**

Description	An AFPDS font control command in the input data stream contains an invalid command or length field.
Severity	Processing for the present print job is terminated.
Action	Correct the invalid font reference. Verify that the font named exists.

- **XES752I RELATIVE FONT CONTROL TO SMALL IN FONT font**

Description	Expected data is missing in the relative font FNC record.
Severity	Processing for the present print job is terminated.
Action	Correct the error in the font, and resubmit the print job.

- **XES753I command UNKNOWN AFPDS COMMAND IN FONT fffff**

Description	An unknown AFPDS command was detected within the font named. This command cannot be recognized.
Severity	Processing continues.
Action	Verify that the font resource is not corrupted and that it is the correct type for use with idaXFC.

- **XES754I command UNKNOWN AFPDS COMMAND IN CODE PAGE**

Description	An unknown AFPDS command was detected within the code page named. This command cannot be recognized.
Severity	Processing continues.
Action	Verify that the code page resource is not corrupted and that code page generation was performed correctly.

- **XES756I CHARACTER character NOT FOUND IN FONT font WITH codepage**

Description	The character id named was not present in the specified font.
Severity	Printing of the character using the supplied code point will not be possible, processing continues.
Action	Verify that the font and code page combination is valid and all required characters are present in the font.

- **XES757I FONT codepage charset AS nn ACTIVE**

Description	The named font codepage and character set has been generated as internal font number nn.
Notes	Information-only message.

- **XES758I MCF TERMINATED RC= rc**

Description	The subroutine module MCF has completed processing.
Notes	Information-only message.

- **XES759I ORIENTATION xx NOT FOUND IN FONT fffffff**

Description	An request to use a font fffffff with orientation xx failed, because the font does not contain this orientation.
Severity	Printing of the job indicated is terminated.
Action	Verify the specified font resource is available in the requested orientation.

- **XES780I CMD=command LENGTH= llll**

Description	Structured field command indicator.
Notes	Information-only message identifying the structured field being processed.

- **XES782I Dataset member MEMBER NOT FOUND**
- **XES786I Dataset member MEMBER NOT FOUND**

Description	An expected data member could not be located.
Severity	The output job producing the error is held and processing continues.
Action	Validate that all input data and resources have been supplied.

- **XES783I member ddname OPENED FOR READ**

Description	Information-only message.
Notes	Information-only message identifying the member ddname being opened for a read processing.

- **XES784I dataset member INVALID RECORD FORMAT**
- **XES790W dataset member INVALID RECORD FORMAT**

Description	The named dataset member contained an invalid record format.
Severity	The output job producing the error is held and processing continues.
Action	Correct the invalid input member. Ensure that the member attributes (RECFM) are set correctly. Allowable record formats are: V or VB with optional Machine or ANSI control characters.

- **XES785I Dataset member INPUT FILE NOT FOUND**
- **XES791W Dataset member INPUT FILE NOT FOUND**

Description	An expected data member could not be located.
Severity	The output job producing the error is held and processing continues.
Action	Validate that all input data and resources have been supplied.

- **XES787I member ddname CLOSED**

Description	Information-only message.
Notes	Information-only message identifying that member ddname has been closed after processing.

- **XES788I dataset member READ FAILED**
- **XES792W dataset member READ FAILED**

Description	The named dataset member contained an invalid record format.
Severity	The output job producing the error is held and processing continues.
Action	Validate that the input data record format is acceptable and that the input data has not been corrupted.

- **XES791W dataset member INVALID RECORD FORMAT**

Description	The named dataset member contained an invalid record format.
Severity	The output job producing the error is held and processing continues.
Action	Correct the invalid input member. Ensure that the member attributes (RECFM) are set correctly. Allowable record formats are: V or VB with optional Machine or ANSI control characters.

- **XES791W Dataset member INPUT FILE NOT FOUND**

Description	An expected data member could not be located.
Severity	The output job producing the error is held and processing continues.
Action	Validate that all input data and resources have been supplied.

- **XES900I hexadecimal data**
- **XES900I FSI CONNECT**
- **XES900I FSI DISCONNECT**
- **XES900I FSI GET DATASET**
- **XES900I FSI GET DATASET JSPA**
- **XES900I FSI GET DATASET CHECK POINT**
- **XES900I FSI GET RECORD**
- **XES900I FSI GET RECORD INDEX**
- **XES900I FSI RELEASE DATASET**
- **XES900I FSI GET RECORD INDEX RETURNED**
- **XES900I FSI FREE RECORD**
- **XES900I FSI WRITE CHECK POINT**
- **XES900I CHECK POINT AREA**
- **XES900I FSI SEND**
- **XES900I FSI POST**

Description	FSI trace information messages.
Severity	Information only message.
Action	None.

- **XES990I USER EXIT 8 ENTERED**
- **XES990I USER EXIT 8 TERMINATED**

Description	Trace information message.
Severity	Processing continues.
Action	None.

- **XES991I USER EXIT 1 ENTERED**
- **XES991I USER EXIT 1 TERMINATED**

Description	Trace information message.
Severity	Processing continues.
Action	None.

- **XES992I USER EXIT 2 ENTERED**
- **XES992I USER EXIT 2 TERMINATED**

Description	Trace information message.
Severity	Processing continues.
Action	None.

- **PSS998W MODULE = xxxxxx ABEND CODE = xxxx ON xxxxxxxxx**
- **XES998W IDA XFC PROGRAM VERSION = vvvvv FSASTAT= nnnn**
- **XES998W PSW= xxxxxxxx xxxxxxxx START = xxxxxxxx OFFSET= xxxxxxx**
- **XES998W GENERAL REGISTERS R0..R15**
- **XES998W REG 0 - 3 xxxxxxxx xxxxxxxx xxxxxxxx xxxxxxxx**
- **XES998W REG 4 - 7 xxxxxxxx xxxxxxxx xxxxxxxx xxxxxxxx**
- **XES998W REG 8 - 11 xxxxxxxx xxxxxxxx xxxxxxxx xxxxxxxx**
- **XES998W REG 12 - 15 xxxxxxxx xxxxxxxx xxxxxxxx xxxxxxxx**
- **XES998W ABEND OCCURRED BEFORE PSS CODE**
- **XES998W ABEND OCCURRED AFTER PSS CODE**
- **XES998W ABEND OCCURRED IN module OFFSET nnnnnn**

Description	A program abend has occurred for *idaXFC*.
Severity	The FSA has been terminated.
Action	Analyze the SYSLOG and relevant printer logs / error information to determine the cause of the failure. Contact the product distributor in the event that a program error is identified.

Appendix B. Data Stream Description

Input Datastream Description

This section describes the format of the input data supported by the product. XES input datastream can bee encoded in a variety of formats. The following formats are supported by the *idaXFC*:

- EBCDIC XES

   XES data that has been generated in XES format using EBCDIC encoding.

- Escape or Escape Escape Coding

   XES data that has been generated in ASCII format, and contains i-data single or double escape notation to enable data transfer. A variety of escape notations can be utilized.

i-data Function Selection via the Line (FSL) commands are not supported by the product, except for the Escape and Escape Escape notation. FSL commands will however be removed from the datastream, and will not be printed.

The Carriage control channel command Skip to Channel One is supported. All other carriage control commands will be ignored.

XES Datastream

In general, the *idaXFC* provides Xerox 4045 XES emulation. Details regarding the commands supported as contained in this section.

Further information regarding the XES datastream can be obtained from *Xerox 4045 Laser CP User Manual, January 1986, number 600P88455* In the following table, the <LE> indicates a line-ending character, e.g. Carriage Return or Line Feed.

Font ID Assignment	+n<Fontname><LE>
Font Change	*n (n=0-9)
Print	*+P<LE>
Reset	*+X<LE>
Margins (whole page)	*m<S,T,B,L,R><LE>
Top Margin	*zn<N><LE>
Bottom Margin	*zq<N><LE>
Left Margin	*zk<N><LE>
Right Margin	*zm<N><LE>
Start Justification	*j
Stop Justification	*k
Start Underline	*u

Stop Underline	*w
Line Spacing	*l<n>
Start Bolding	*b
Stop Bolding	*p
Centering	*q
Horizontal Tab Clear	*d
Horizontal Tab	*t<n1...n160><LE>
Units -1/60" inch	*zg
Units -1/300" inch	*zf
Landscape Draw Lines Horizontal	*y<X,Y,L,T><LE>
Landscape Draw Lines Vertical	*x<X,Y,L,T><LE>
Portrait Draw Lines Horizontal	*x<X,Y,L,T><LE>
Portrait Draw Lines Vertical	*y<X,Y,L,T><LE>
Absolute Text Placement	*a<X.Y><LE>
Relative Text Placement	*r<D><n><c>
Start Superscript	*h
Stop Superscript	*s
Start Subscript	*l
Stop Subscript	*s
Start Overstrike	*zo<x>
Stop Overstrike	*zp
Merge Page Load	+M<LE>
Merge Start	*ze
Merge Stop	*zd
Merge Page Unload	+V<LE>
Language	*zl<c>
Graphic Window	*gw<E>;<X,Y,A,B><LE>
Vertical Tab Clear	*e
Vertical Tab Set	*v<n1...n125><LE>

XES Datastream Limitations

This section describes limitations regarding the XES support.

- Printable Page size

  The actual printable page size produced will be dependant on the AFP output device being used, together with the formatting information supplied in the XES datastream.

- Downloaded Translate Table

  This functionality cannot be directly supported (Character Table, (+T<LE>), however translate table modifications can be supported by customizing the supplied XESTRANS XES to AFP conversion program.

- Downloaded XES fonts

  Fonts downloaded in the XES datastream are ignored. (Font Load (+F<LE>), Font Unload (+U<LE>), Font Add Selected (+A<LE>), Font Delete Selected (+B<LE>)). XES downloaded fonts can however be supported by supplying the font references qas customization options, which requires prior font conversion to AFP format.

- Portrait/Landscape Fonts

  Changes in the font orientation are supported by rotating the output font.

- XES Data Monitor Command

  The Data monitor command (+D) is not supported.

- XES VFU commands

  The XES VFU commands (VFU, VFU Stops Clear, VFU Stops set) are not supported, and will be printed.

- Printer Status Sheet Information

  The printer status sheet generated by the printer is not supported.

Glossary

ABEND: Abnormal End refers to the abnormal termination of a (problem) program.

AFP: Advanced Function Printing is a term that refers to the collection of printing functions for APA printers for printing text and graphics.

AFPDS: Advanced Function Printing Data stream is a data stream format used for creating output to an AFP printer.

APA: All Points Addressable refers to the printer capability to write text, overlay and image information at any point (pel) of a page.

APL: A Programming Language is an *IBM*-licensed programming language.

Bounded box characters: A system of character design that excludes character positioning information from the raster character image.

CDPDS: Composed Document Presentation Data stream is a data stream consisting of merged text and graphics that can be printed on a APA printer.

CMS: Conversational Monitor System is a system that provides time sharing capabilities under the VM operating system.

cm: Centimetre

code page: A file that associates code points, and graphic character identifiers that can be used to group a variety of characters and symbols.

control word: An instruction within a document that informs SCRIPT/VS how to process the document.

CP: Control Program is a program that schedules and supervises the execution of programs.

CPDS: Composed Print Data stream. See AFPDS.

DASD: A Direct Access Storage Device is a storage device that permits access of data independent of location.

data stream: A data stream is a collection of data in a continuous stream that can be used to transmit information.

DD: Data Definition is a term used in conjunction with JCL to provide information regarding a data set to a program.

data set: In the MVS operating environment, this refers to a collection of related records.

dot: Dot used in this manual is synonymous with pel.

dpi: Dots Per Inch defines the resolution of a page printer (see pel).

duplex printing: The ability to print on both sides of a sheet of paper.

file: In the VM operating environment, this refers to a collection of related records.

font: A collection of characters in a specific typeface and size.

FSL: Function Selection via the Line is an acronym that refers to a set of commands used for directing setup commands to an *ida* interface.

GDDM: Graphical Data Display Manager is an *IBM*-licensed program used to create page segments consisting of graphics, image and text.

host system: A data processing system that is used to prepare and run programs and to which a network is connected (for communication with other systems).

ICU: Interactive Chart Utility is an *IBM*-licensed *GDDM* program used for the processing of graphic data.

ICDS: i-data Compressed Data Stream refers to the printable output datastream generated by the *idaXFC* for use with attached *i-data* products.

IEWL: The IEWL is an *IBM*-licensed program used for performing linkage editing and loading of assembler object code.

image: A term used to describe a pattern of toned and untoned pels that form a picture.

interface: Within the context of this publication an interface is a hardware component used to link two devices.

IRQ: Intervention Required timeout value is a setting on a *ida* interface that permits printer intervention to be reported to the 3x74 controller.

IVU: Image View Utility is an *IBM*-licensed *GDDM* program used for processing of image data.

Glossary C-1

JCL: Job Control Language is an *IBM*-licensed language used for defining data and program resources for job submission to JES under the MVS Operating System.

JES: Job Execution and Submission system is an *IBM*-licensed program used to schedule and spool input and output under the MVS Operating system.

laser (light amplification by stimulated emission of radiation): A device that emits a coherent beam of light, used in electrophotographic printing.

line data: Data that has been prepared for printing on a line printer.

LU0: Logical Unit type 0 is a reference to an SNA protocol used to communicate with a specific class of device.

LU1: Logical Unit type 1 is a reference to an SNA protocol used to communicate with a specific class of device that accepts SCS commands.

LU3: Logical Unit type 3 is a reference to an SNA protocol used to communicate with a specific class of device that does not accept SCS commands.

MIH: The Missing Interrupt Handler is a component used in the host operating and subsystems for specifying actions to be taken on missing interrupts

MVS: Multiple Virtual System and MVS/XA (extended architecture) are licensed *IBM* operating systems.

OGL: Overlay Generation Language is an *IBM*-licensed produced used for generation of electronic overlays for printing in AFP printers.

page printer: A class of printer that accepts presentation text and images on a page basis.

Page segment: An *IBM* term that refers to a collection of resources, typically graphics and text that can be included for printing.

PCL: Printer Command Language is a command language used for communicating with the *PCL 4/5* printer.

pel: A pel refers to the smallest area that can be toned on a printer.

raster: A series of pels in a scan line is called a raster image. A digitized pattern of toned/untoned pels is referred to as a raster pattern.

RSCS: Remote Spooling and Communications Subsystem is an *IBM*-licensed program used with the VM Operating System for spooling and communication of data.

SCRIPT/VS: an *IBM*-licensed program that formats DCF text.

simplex printing: Printing on one side of the paper (compare with duplex printing).

SMP: System Modification Program is an *IBM*-licensed program used for maintaining components in the MVS Operating System.

SNA: System Network Architecture refers to an *IBM* network architecture that is used to connect host and communication and device resources.

structured field: A self-identifying string of bytes and data or parameters, used in the AFPDS, CPDS data streams.

TCP/IP: Transmission Control Protocol / Internet Protocol refers to the collection of public protocols used to connect host and communications systems.

TSO: Time Sharing Option is an *IBM*-licensed program that runs under the MVS Operating System to provide time sharing capability.

tumble printing: Tumble duplex printing refers to printing in duplex mode for binding on the shorter edge of the page.

typographic font: A typographic font is a set of proportionally spaced characters that are similar in appearance to characters generated by typeset printing.

VTAM: Virtual Telecommunications Access Method is an *IBM*-licensed program that can be used with the MVS and VM Operating Systems to connect host and communication devices.

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