

IBM IMS Network Compression Facility for z/OS
Version 1 Release 2

User's Guide



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Note:

Before using this information and the product it supports, read the information in "Notices" on page 59.

First Edition (August 2013)

This edition applies to Version 1 Release 2 of IBM IMS Network Compression Facility for z/OS (product number 5655-E41) and to all subsequent releases and modifications until otherwise indicated in new editions.

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About this information

These topics provide instructions for configuring and using IBM® IMS Network Compression Facility for z/OS® (IMS Network Compression Facility).

This information is designed to help database administrators, system programmers, application programmers, and system operators perform the following tasks:

- Plan for the installation of IMS Network Compression Facility
- Configure IMS Network Compression Facility
- Diagnose and recover from IMS Network Compression Facility problems

To use these topics, you should have a working knowledge of:

- The z/OS operating system
- SMP/E

Always check the IMS™ Tools Product publications page for the most current version of product publications:

<https://www-304.ibm.com/support/docview.wss?uid=swg27020942>

Service updates and support information

To find service updates and support information, including software fix packs, PTFs, Frequently Asked Question (FAQs), technical notes, troubleshooting information, and downloads, refer to the following Web page:

http://www.ibm.com/support/entry/portal/Overview/Software/Information_Management/IMS_Tools

Highlighting conventions

This information uses the following highlighting conventions:

- **Boldface type** indicates commands or user interface controls such as names of fields, folder, icons, or menu choices.
- Monospace type indicates examples of text that you enter exactly as shown.
- *Italic type* indicates variables that you should replace with a value. It is also used to indicate book titles and to emphasize significant words.

How to look up message explanations

You can use any of the following methods to search for messages and codes:

Searching an information center

In the search box that is located in the top left toolbar of any Eclipse help system, such as the IBM Information Management Software for z/OS Solutions Information Center, enter the number of the message that you want to locate. For example, you can enter DFS1065A in the search field.

Use the following tips to help you improve your message searches:

- You can search for information on codes by entering the code; for example, enter -327.
- Enter the complete or partial message number. You can use wild cards (* or ?) in the message number to broaden your search; for example, DFS20??I.

The information center contains the latest message information for all of the information management products that are included in the information center.

Searching for messages on the web

You can use any of the popular search engines that are available on the Web to search for message explanations. When you type the specific message number or code into the search engine, you will be presented with links to the message information in IBM information centers.

How to send your comments

Your feedback is important in helping to provide the most accurate and high-quality information. If you have any comments about this book or any other Administration Console documentation, use either of the following options:

- Use the online reader comment form, which is located at:
www.ibm.com/software/data/rcf/
- Send your comments by e-mail to comments@us.ibm.com. Be sure to include the name of the book, the part number of the book, the version of Administration Console, and, if applicable, the specific location of the text you are commenting on (for example, a page number or table number).

Chapter 1. Introduction

The IMS Network Compression Facility for z/OS (IMS Network CF) reduces the size of data streams sent to 3270 terminals logged on to IMS; IMS Network CF reduces data stream size using standard 3270 data stream commands and conventions.

Reduction in data stream size decreases use of teleprocessing facilities (including FEPs, lines, and control units), which can potentially reduce hardware and TP costs.

IMS Network CF reduces data stream sizes for any devices generated in IMS as VTAM* 3275, 3277, or SLU2 terminals. (This also applies to any devices created using ETO.) TN3270 sessions with IMS that appear as 3270 VTAM® devices also benefit from reduction in data stream sizes.

An ISPF interface lets you display:

- The status of IMS Network CF
- What options are in use
- Information about specific terminals

The ISPF interface also lets you dynamically change the IMS Network CF options in use for each IMS system. The ISPF interface can be used to query and update options and statistics on any IMS system in the enterprise.

Features

Features of IMS Network CF include:

- No IMS application program changes need to be made.
- IMS Network CF is composed of the following components, each of which is separately controllable:
 - Basic Compression. This component eliminates repeating characters in a data stream using the 3270 Repeat to Address order (instead of sending a long string of characters). Basic compression is required for the field merge, blank elimination, or non-display fields components to be active. If basic compression is disabled for a data stream, the other components are also disabled.
 - Field Merge. This component identifies 3270 field definitions, and eliminates redundant field definition orders from the data stream.
 - Blank Elimination. This component completely eliminates strings of blank characters from the data stream. If this component is not active for a specific data stream, streams of blanks are treated as any other repeating character in basic compression, and are reduced in size using the 3270 Repeat to Address order.
 - Non-Display Fields. This component eliminates from the data stream any fields that cannot be modified or displayed.
- Each compression component can be enabled or disabled. You can specify exception information for each component based on node name, LTERM name, userid, IMS user name, transaction code, or MFS format name. For example, you can do basic compression for all messages except those for node name ABC.

- 3270 data streams sent to 3270 terminals can be traced and displayed.
- A TSO/ISPF interface lets you:
 - Secure features using the OS/390* Security Server (or equivalent)
 - From any ISPF session, query information on any IMS system in the enterprise
 - Display product status, status for a specific node, options in use, and exception lists
 - Dynamically update product options and exception lists
 - Start, stop, display, and print 3270 data stream traces

Software requirements

IMS Network CF runs on any supported version of IMS.

Storage requirements

Each data stream IMS sends to VTAM requires work area storage. The amount of storage is 16 times the data stream length, plus 256 bytes. This storage is obtained from the HIOP pool and is freed when the data stream completes compression. Note that the HIOP pool is designed to dynamically expand, so there should be no requirement to change the size of the HIOP pool.

In addition, approximately 30K of IMS control region extended private area is used for code and control blocks, and about 8K of IMS control region private area (below the 16M line) is used.

Active traces require an additional 100K of extended private area storage per traced session. This storage is allocated the first time a data stream is traced, and is retained until the trace data is deleted through the ISPF screens.

Chapter 2. Customization

This chapter contains diagnosis, modification, or tuning information. Do not use this information as a programming interface.

The process of installation and customization consists of:

Preparing

IMS Network CF requires APPC/MVS for the ISPF interface. IMS Network CF does not require APPC/IMS. If APPC/MVS is not active, it must be activated to use the ISPF monitoring and dynamic update facilities.

The IMS Network CF load library must be APF authorized on each MVS™ system where IMS executes. APF authorization is not required for the ISPF interface.

IMS Network CF requires no started tasks, subsystems, or other SYS1.PARMLIB changes. Also, no VTAM definition changes are required.

Installing

The software must be installed from the tape based on the installation instructions in the Custom-Built Product Delivery Offering (CBPDO*) documentation that came with your order.

Customizing

Customization consists of:

- Setting up the parameter options member in each IMS PROCLIB data set
- Preparing APPC for IMS Network CF
- Installing the IMS Network CF ISPF interface
- Implementing security for the ISPF interface

Implementing

Implementation consists of:

1. Adding the IMS Network CF software to the IMS STEPLIB
2. If your installation currently uses the Partner Product exit (DFSPPUE0), renaming your current member and taking special note of the PPUE0= parameter in the parameter options member
3. Restarting IMS

The rest of this chapter describes the tasks involved in customizing IMS Network CF.

Specifying parameter options

IMS Network CF parameter specifications are stored in PDS member CFNP $imid$ (where $imid$ is the IMSID of the online IMS subsystem). This member must be located in the PDS referred to in the IMS control region JCL for DDNAME PROCLIB.

Parameter specifications are coded in control statements present in the CFNP $imid$ member. When specifying parameters, the following rules apply:

- An asterisk (*) in column one of a control statement indicates a comment card.
- Parameters are specified in **KEYWORD=VALUE** syntax.

- Keywords must be the first nonblank characters on a line, although they need not start in column 1.
- An equal sign (=) separates a keyword from its associated value.
- Any number of blanks may separate multiword keywords, the equal sign, and the assigned value.
- Any number of blanks may separate multiword keywords, the equal sign, and the assigned value.
- Blanks are not required on either side of the equal sign.

For example, the following control statements are valid:

```
*This is a comment line.
FIELD MERGE = NO 1/1/98 MAA
Field Merge=No Lower case is permitted
```

The following control statements are NOT valid:

```
THIS IS NOT A COMMENT LINE UNLESS IT STARTS WITH AN ASTERISK
FIELDMERGE = NO Must have blanks between keywords
FIELD MERGE = YES-Keyword values must be followed by a blank
```

Exception list specifications allow definition of exceptions to each compression component. When specifying exceptions, the following rules apply:

- Exception lists use the same syntax as for the parameter specifications, except that values must be separated only by a comma, and must not have any embedded blanks.
- A blank space signifies the end-of-list specification for that line.
- Names specified in the list must be eight (8) characters or less.
- All exception lists are specified with the EXCEPT keyword.

The following exclude list control statements are valid:

```
EXCEPT NODE = NODE1,NODE2,NODE3 1/1/1998 MAA
EXCEPT USERID=USER1
```

The following exclude list control statements are NOT valid:

```
EXCEPT NODE = NODE1 NODE2 Names must be separated by a comma
EXCEPT NODE=NODE1, NODE2 The blank after the comma ends the list
```

Generic specification of exception list names is permitted. There are two ways to specify a generic list entry:

- Using the MATCH ONE character
- Using the MATCH ALL character

The MATCH ONE character substitutes for exactly one character in the entry name. The MATCH ALL character matches the entire remaining portion of the entry name. The MATCH ALL character must be the last character of a list entry name.

The default values for these characters are the percent sign (%) for the MATCH ONE character and the asterisk (*) for the MATCH ALL character.

If you use the default values for MATCH ONE (%) and MATCH ALL (*), a list entry coded as TR%N00* will match TRAN00 and TRON00AZ but not TRN001 (since the MATCH ONE character must substitute for a character in the name).

The MATCH ONE and MATCH ALL characters are specified in the IMS Network CF parameters, which are described in “Keywords”.

Sample parameter file

| A sample parameter file is distributed with the product in member CFNPIMSA in
| the SCFNDDATA data set. The sample is shown in the Sample parameter file
| (member CFNPIMSA) figure.

```

*
*IMS NETWORK COMPRESSION FACILITY PARAMETER SPECIFICATIONS
*
*-----
* ACTION FOLLOWING AN INITIALIZATION FAILURE (ABEND OR BACKOUT)
INIT ERROR = BACKOUT          DEFAULT BACKOUT
*
* ACTION FOLLOWING A PARAMETER ERROR (BACKOUT, CONTINUE, OR ABEND)
PARM ERROR = BACKOUT DEFAULT BACKOUT
*
* USER DFSPPUE0 EXIT ROUTINES TO INVOKE AT STARTUP (1 EXIT PER LINE)
* PPUE0=DFSPPUE1 DUMMY EXIT
* PPUE0=XXXPPUE0 DUMMY EXIT
*
*-----
*COMPRESSION CONTROL STATEMENTS. EXCEPTION LISTS FOR EACH COMPRESSION
COMPONENT (COMPRESS=, FIELD MERGE=) MUST FOLLOW THE COMPRESSION
COMPONENT SPECIFICATION.
*
* EXCEPTION LISTS MAY SPECIFY MULTIPLE VALUES ON EACH LINE, BUT THE
VALUES MUST BE SEPARATED BY ONLY A COMMA (NO BLANKS).
*
*-----
*ENABLE DATA COMPRESSION FOR CRT (DISPLAY) DEVICES? (YES OR NO)
COMPRESS=YES DEFAULT YES
EXCEPT NODE = NODE1
EXCEPT NODE = NODE2
* EXCEPT TRAN = IOPMPP
* EXCEPT LTERM = MASTER
* EXCEPT USERID = USERID1
* EXCEPT USER = USERNAME
* EXCEPT FORMAT = MODNAME
*
* MERGE FIELDS? (YES OR NO)
FIELD MERGE = YES          DEFAULT YES
* EXCEPT NODE = NODE1
* EXCEPT TRAN = IOPMPP
* EXCEPT LTERM = MASTER
* EXCEPT USERID = USERID1
* EXCEPT USER = USERNAME
* EXCEPT FORMAT = MODNAME
*
* ELIMINATE BLANKS? (YES OR NO)
BLANK ELIMINATION =YES DEFAULT YES
* EXCEPT NODE = NODE1
* EXCEPT TRAN = IOPMPP
* EXCEPT LTERM = MASTER
* EXCEPT USERID = USERID1
* EXCEPT USER = USERNAME
* EXCEPT FORMAT = MODNAME
*
* SUPPRESS SENDING NON-DISPLAY FIELDS? (YES OR NO)
NON-DISPLAY FIELDS=YES DEFAULT YES
* EXCEPT NODE = NODE1
* EXCEPT TRAN = IOPMPP
* EXCEPT LTERM = MASTER
* EXCEPT USERID = USERID1
* EXCEPT USER = USERNAME
* EXCEPT FORMAT = MODNAME
*
*-----
*TRACE SPECIFICATIONS. TRACE SPECIFICATIONS SHOULD NORMALLY BE DONE
* ONLINE SO THEY CAN BE DISABLED. THE OPTION TO INCLUDE TRACE
* SPECIFICATIONS HERE IS INCLUDED IN THE EVENT IT IS REQUIRED.
*
*-----
*TRACE INFO
* TRACE NODE=NODE1

```

Figure 1. Sample parameter file (member CFNPIMSA)

Enabling compatibility with IMS Tools Generic Exits

If your installation uses IMS Tools Generic Exits, you must use it to drive the IMS Network Compression Facility version of the IMS Partner Product exit routine DFSPPUE0.

About this task

IMS Network Compression Facility uses its own version of the IMS Partner Product exit routine, DFSPPUE0, which enables IMS Network Compression Facility to initialize and run with IMS. This exit routine is named CFNPPUE0, but it uses the name DFSPPUE0 as an alias.

The exit routine CFNPPUE0 conflicts with the versions of DFSPPUE0 that are driven by the Generic Partner exit that comes with IMS Tools Generic Exits, which is a module that is part of IBM Tools Base IMS Tools Common Services for z/OS.

Consequently, if IMS Tools Generic Exits are used in your environment, the exit routines that are specified with the **PPUE0=** keyword for IMS Network Compression Facility are bypassed and IMS Network Compression Facility fails to initialize.

Therefore to use IMS Network Compression Facility with IMS Tools Generic Exits, you must define CFNPPUE0 to IMS Tools Generic Exits, and you must remove the conflicting DFSPPE0 alias definition in IMS Network Compression Facility.

Procedure

1. Determine whether IMS Tools Generic Exits are active in your system. When the IMS Tools Generic Exits are active, the following message is issued during the IMS control region initialization:

```
GPR2926I IMS TOOLS GENERIC PARTNER EXIT INITIALIZATION IN PROGRESS
```

 If your IMS system does not write this message during IMS initialization, IMS Tools Generic Exits are not active in your environment, and you do not need to complete this procedure.
2. If IMS Tools Generic Exits are active in your environment, define CFNPPUE0 to IMS Tools Generic Exits by updating the IMS Tools Generic Exits Partner exit PROCLIB member (either GPREXIT0 or GPR*iiii*0) by adding a statement like the following example:

```
EXITDEF(TYPE(PARTNER)
EXITNAME(CFNPPUE0)
LOADLIB(h1q.SCFNLOAD)
)
```
3. Remove the DFSPPE0 alias for CFNPPUE0 by running the sample jobs that are listed in the following table. These sample jobs are in the SCFNSAMP library. These sample jobs install usermod CFNUM01, which is in the SCFNSAMP library. All jobs must receive condition code 0000.

Table 1. Members in the SCFNSAMP library for installing usermod CFNUM01

Member name	Purpose
CFN1RECV	Receives usermod CFNUM01.
CFN1APLY	Applies usermod CFNUM01 to the target zone.
CFN1ACPT	Accepts usermod CFNUM01 to the distribution zone.*

* Normally, usermods are not accepted. This usermod does not update any code. It removes only the DFSPPE0 alias from the SCFNLOAD library and updates JCLIN to remove the alias from any updates that can relink CFNPPUE0 in future PTFs.

If you apply usermod CFNUM01 but then decide to restore it, use the SMP **RESTORE** command. However, this command does not re-create the DFSPPE0 alias that was deleted when the usermod was applied. You can re-create the DFSPPE0 alias by installing usermod CFNUM02. After this usermod is installed, the DFSPPE0 alias is placed back in the JCLIN.

You can install usermod CFNUM02 by running the sample jobs that are listed in the following table. These sample jobs are in the SCFNSAMP library. These sample jobs install usermod CFNUM02, which is in the SCFNSAMP library.

Table 2. Members in the SCFNSAMP library for installing usermod CFNUM02

Member name	Purpose
CFN2RECV	Receive usermod CFNUM02.
CFN2APLY	Applies usermod CFNUM02 to the target zone.

Table 2. Members in the SCFNSAMP library for installing usermod CFNUM02 (continued)

Member name	Purpose
CFN2ACPT	Accepts usermod CFNUM02 to the target zone.

Related reference:

“Keywords”

Related information:

 IMS Tools Generic Exits

Keywords

Keyword specifications and their use are as follows:

INIT ERROR={ABEND | BACKOUT}

If an initialization error occurs, specifies whether IMS should ABEND or whether IMS Network CF should BACKOUT and leave IMS running without data stream compression.

Default: BACKOUT

PARM ERROR={CONTINUE | BACKOUT | ABEND}

User parameter specifications are read immediately after restart. If syntax errors are found in the user specifications, PARM ERROR specifies the action to be taken as follows:

- IMS can ignore the errors and continue with compression active (CONTINUE)
- The software can be shut down (BACKOUT)
- The IMS control region can abend (ABEND)

Default: BACKOUT

PPUE0=name

Specifies module names to be invoked following IMS Network CF initialization. This specification is required if your installation has other vendor products that require DFSPUE0 exit routines to be activated. Specify only one module name per line. If more than one exit routine is required, include multiple lines with the PPUE0= keyword on each line.

If IMS Tools Generic Exits are used in your IMS system, IMS Network Compression Facility ignores any PPUE0= statements and writes a warning message to the MVS system log. Use IMS Tools Generic Exits instead of the PPUE0= keyword to drive other Partner Product Initialization exit routines.

For more information, see “Enabling compatibility with IMS Tools Generic Exits” on page 6.

Default: The default is that no exit routine is to be invoked.

MATCH ONE=x

Specifies the character used in exception list entries that matches exactly one character. MATCH ONE must be specified as a single character. If this parameter is not specified, it defaults to a percent sign (%).

MATCH ALL=x

Specifies the character used in exception list entries that matches the entire remaining portion of the name. It must be specified as a single character. If this parameter is not specified, it defaults to an asterisk (*).

COMPRESS={ENABLED | DISABLED | ON | OFF | YES | NO}

Specifies whether outbound 3270 data compression is to be done for 3270 VTAM display terminals (CRTs) sysgened as 3270, 3270 local, and SLU type 2 terminals.

The values of ENABLED and DISABLED set the default for each data stream, and exception lists are checked to see whether each data stream should be processed. Values of ON and OFF set the value for every data stream. Exception lists are not checked. Values of YES and NO are still permitted for compatibility and are the same as ENABLED and DISABLED (exception list processing is active).

Default: ENABLED

FIELD MERGE={ENABLED | DISABLED | ON | OFF | YES | NO}

Specifies whether 3270 data compression is to eliminate field definitions in the 3270 data stream where they are not required.

The values of ENABLED and DISABLED set the default for each data stream, and exception lists are checked to see whether each data stream should be processed. Values of ON and OFF set the value for every data stream. Exception lists are not checked. Values of YES and NO are still permitted for compatibility and are the same as ENABLED and DISABLED (exception list processing is active).

Default: ENABLED

BLANK ELIMINATION={ENABLED | DISABLED | ON | OFF | YES | NO}

Specifies whether data streams are to have strings of blanks removed from the data stream where they occur in protected fields.

The values of ENABLED and DISABLED set the default for each data stream, and exception lists are checked to see whether each data stream should be processed. Values of ON and OFF set the value for every data stream. Exception lists are not checked. Values of YES and NO are still permitted for compatibility and are the same as ENABLED and DISABLED (exception list processing is active).

Default: ENABLED

NON-DISPLAY FIELDS={ENABLED | DISABLED | ON | OFF | YES | NO}

Specifies whether protected non-display fields are to be removed from the 3270 data stream sent to the terminal.

The values of ENABLED and DISABLED set the default for each data stream, and exception lists are checked to see whether each data stream should be processed. Values of ON and OFF set the value for every data stream. Exception lists are not checked. Values of YES and NO are still permitted for compatibility and are the same as ENABLED and DISABLED (exception list processing is active).

Default: ENABLED

EXCEPT parm=name{,name}

Specifies exceptions to whichever compression component control statement precedes it. Note that if the preceding control statement specifies a value of ON or OFF, an EXCEPT statement is read and names are saved. However, the names are not checked during the processing of data streams. Exception list processing only occurs when the component status is ENABLED or DISABLED.

The parm field indicates the criteria for the exception. The following values can be specified for parm:

NODE

Specifies node names that are an exception to the prior compression component control specification.

LTERM

Specifies TERM names that are an exception to the prior compression component control specification

USERID

Specifies userids that are an exception to the prior compression component control specification. The userid is the security user identification used in the IMS /SIGN command. If sign on security is not used, the USERID parameter should not be used.

USER Specifies user names that are an exception to the prior compression component control specification. The user name is the name that appears as the USER in a /DIS ASMT NODE nodename command.

TRAN Specifies transaction names that are an exception to the prior compression component control specification. The TRAN name is obtained from the CTBDEST field, which typically contains the last tranocode executed. For conversational transactions, the tranocode in this field does not change from the first conversational transaction; instead it keeps the initial conversational transaction name until the conversation ends. For some command output, the CTBDEST field will contain the LTERM name associated with the terminal.

FORMAT

Specifies MFS Message Output Descriptor (MOD) names that are an exception to the prior compression component control specification.

Example 1

To compress only nodes named NODE1, NODE2, NODE3, and NODE4, include the following statements:

```
COMPRESS=NO
EXCEPT NODE=NODE1
EXCEPT NODE=NODE2
EXCEPT NODE=NODE3,NODE4
```

Generic names are permitted in exception lists. By default, a percent sign (%) substitutes for a single character, although the percent sign can be changed by using the MATCH ONE keyword. Also, an asterisk (*) substitutes for the rest of a name, although the asterisk sign can be changed by using the MATCH ALL keyword.

Any number of names can be included on a single line, and multiple lines are permitted. Note that to specify multiple names on a single line, the names must be separated by only one comma (no blanks can be included).

Example 2

To compress all messages except those from transaction codes that begin with ABCD:

```
COMPRESS=YES  
EXCEPT TRAN=ABCD*
```

TRACE parm=name

Specifies that an NCF trace is to be enabled for the requested session. Allowable values for the parm keyword are NODE, LTERM, USER, or USERID. The description of these keywords is the same as for the preceding EXCEPT statement. TRACE does not let you specify a TRAN or FORMAT name. In addition, for the TRACE statement generic values are not permitted; fully qualified names must be specified.

Attention: Each active trace uses 100KB of extended private storage.

Preparing APPC for IMS Network CF

APPC is Advanced Program to Program Communication. APPC uses a VTAM SNA network and LU 6.2 protocol to communicate between two application programs on the same or two different hosts (z/OS, OS/390®, MVS/ESA, VM/ESA, AS/400®, work stations running OS/2, and others).

The manual MVS Planning: APPC Management describes how to define and manage APPC/MVS and defines terms used in APPC/MVS. MVS Planning: APPC Management also defines the parameters specified in the TPADD and Side Information Add (SIADD) processes.

Preparing APPC for IMS Network CF requires:

- Setting up APPC/MVS
- Defining APPC resources for IMS Network CF
- Setting IMS Network CF options

The rest of this section describes these tasks.

Implementing APPC/MVS

If your installation has not yet implemented APPC/MVS, the book MVS Planning: APPC Management describes the required definitions.

If your installation has not yet implemented APPC/MVS, the book MVS Planning: APPC Management describes the required definitions.

The activities required to set up APPC/MVS include:

- Setting up the APPC and ASCH started tasks (tasks started by an operator command). The APPC address space controls APPC/MVS communication functions. The ASCH address space is where APPC transaction programs are scheduled. Sample APPC and ASCH procedures are shown in the Sample APPC PROC figure and the Sample ASCH PROC figure.

```
//APPC PROC APPC=00  
//APPC EXEC PGM=ATBINITM,PARM='APPC=&APPC',REGION=0K
```

Figure 2. Sample APPC PROC

```
//ASCH PROC ASCH=00
//ASCH EXEC PGM=ASBSCHIN,PARM='ASCH=&ASCH',REGION=0K
```

Figure 3. Sample ASCH PROC

- Setting up member APPCPMxx in SYS1.PARMLIB. This member defines the APPC/MVS local logical unit names (LU names) and the data set names of the APPCTP and SIDEINFO data sets. A sample APPCPMxx member is shown in the Sample APPCMxx member figure.

```
LUADD ACBNAME(MVSLU01) BASE TPDATA(SYS1.APPCTP)
SIDEINFO DATASET(SYS1.APPCSI)
```

Figure 4. Sample APPCPMxx member

- Setting up member ASCHPMxx in SYS1.PARMLIB. This member defines classes and scheduling characteristics for transaction programs scheduled in the ASCH address space(s). A sample ASCHPMxx member is shown in the Sample ASCHPMxx member figure.

```
CLASSADD CLASSNAME(A) MSGLIMIT(1000) MAX(10) MIN(1) RESPGOAL(1)
CLASSADD CLASSNAME(OPENMVS) MAX(300) MIN(15) RESPGOAL(1)
CLASSADD CLASSNAME(FAST) MAX(10) MIN(2) RESPGOAL(.01)
```

Figure 5. Sample ASCHPMxx member

- Defining the APPC/MVS LU name to VTAM. The ACBNAME defined to VTAM must match the ACBNAME specified in the APPCPMxx member of PARMLIB. A sample APPC/MVS APPL definition is shown in the Sample VTAM APPC/MVS APPL definition figure.

Note that the VTAM LU name (and ACB name) should be unique within your installation. There is one LU name required for each MVS system (OS/390 or z/OS) on which an IMS system is running. The LU name can be any name. The name must be specified not only in the VTAM definition, but also in the LUADD statement (see Sample APPCPMxx member figure) and in the statements that define the side info entry (see the Job to define side information figure).

In this example, note that the value ALREADYV for SECAPT= is required for IMS Network CF.

MVSLU01 APPL ACBNAME=MVSLU01	C
APPC=YES,	C
AUTOSES=0,	C
DDRAINL=NALLOW,	C
MODETAB=LOGMODES,	C
DLOGMOD=APPCHOST,	C
DMINWNL=5,	C
DMINWNR=5,	C
DRESPL=NALLOW,	C
DSESLIM=10,	C
LMDENT=19,	C
PARSESS=YES,	C
SECACPT=ALREADYV,	C
SRBEXIT=YES,	C
VPACING=1	

Figure 6. Sample VTAM APPC/MVS APPL definition

When you create definitions for a multi-LPAR environment, the following resource definitions are required on the TSO LPAR (where the IMS Network CF ISPF interface is used) and the IMS LPAR (where IMS actually executes).

Table 3. Resource definitions on the TSO and IMS LPARs

Resource Definitions	TSO	TSO
APPC started task	X	X
ASCH started task		X
SYS1.PARMLIB (in APPCPMxx member)	X	X
LUADD (in APPCPMxx member)		X
SYS1.PARMLIB(ASCHPMxx)		X
APPC/MVS LU definition (SYS1.VTAMLST)		X

Defining APPC resources for IMS Network CF

Each APPC transaction program (TP) has a TP profile defined to APPC/MVS. These definitions are stored in the APPC TP profile data set. The default name of this data set is SYS1.APPCTP, but the name can be customized by the installation. The APPCTP data set contains information about transaction programs that are scheduled in response to an inbound allocate request. APPCTP contains the scheduling and security information required to initiate the transaction program.

The side information data set (typically named SYS1.SIDEINFO) contains information about symbolic name translation. When an outbound allocate call is done, the side information data set provides the translation and routing definitions required to establish the APPC conversation.

The definition of a TP profile can be done using an ISPF interface or a batch interface. IMS Network CF uses one transaction program; a batch job to define the required transaction profile is included in the sample jobs. Note that the job contains JCL used to run the batch utility and contains JCL in the SYSIN DD DATA input stream. The data set names included in the SYSIN stream (such as the SCFNLOAD library and the dump output data set name) must be customized for your installation. The sample job to define the TP profile is in the SCFNSAMP member CFNTPADD.

The data set names specified in the TPADD command in the MESSAGE_DATA_SET and the SYSUDUMP DD in the CFNAPPC job must be allocated before using the ISPF interface. The message data set contains the JES messages associated with execution of the ISPF interface. DCB parameters are unimportant, and the space required is minimal (for example, 1 track). The data set associated with the SYSUDUMP DD must also be allocated. The DCB information can be omitted, but the space required must be sufficient to hold a dump (in the event of an abend); ten cylinders should be sufficient to hold a dump. When allocating these data sets in an SMS environment, be careful: these data sets should not be allowed to migrate nor to release space. If the data sets are migrated, the TSO user's ISPF session will wait for the recall of the data sets.

The definition of side information can also be done using a batch job or using the APPC ISPF panels. The side information specifies:

- The symbolic destination name (DESTNAME)
- The transaction program name (TPNAME), which must be IMS_LINE_OPTIMIZER
- An appropriate VTAM LOGMODE entry name
- The partner LU name (PARTNER_LU)

The Job to define side information figure shows a sample job to define a side information entry.

```
//CFNSIADD JOB (TECH), 'SIADD'
//*
//STEP1 EXEC PGM=ATBSDFMU
//SYSPRINT DD SYSOUT=*
//SYSSDLIB DD DSN=SYS1.APPCSI,DISP=SHR
//SYSSDOUT DD SYSOUT=*
//SYSIN DD *
SIDELETE
DESTNAME(MVS1)
SIADD
DESTNAME(MVS1)
TPNAME(*)
MODENAME(LU6NEGPS)
PARTNER_LU(MVSLU01)
//
```

Figure 7. Job to define side information

Note that in addition to customizing the DESTNAME and PARTNER_LU name, the MODENAME must be a valid mode table entry name for LU6.2.

Also note that this APPC definition can be shared by other applications using APPC, as the TPNAME must be supplied by the application. This same definition can be shared with, for example, IMS ETO Support (product number 5655-E12).

Also note that this APPC definition can be shared by other applications using APPC, as the TPNAME must be supplied by the application. This same definition can be shared with, for example, IMS ETO Support (product number 5655-E12).

Table 4. Resource definitions

Resource Definition	TSO	IMS
IMS Network CF APPC side information definition	X	

Table 4. Resource definitions (continued)

Resource Definition	TSO	IMS
IMS Network CF APPC TP definition		X
IMS Network CF ISPF installation	X	
IMS Network CF RACF® profiles		X
IMS Network CF CFNPimid member of IMS PROCLIB		X

Setting IMS Network CF options

Use the ISPF interface of IMS Network CF to define the symbolic destination (SYMDEST) of the APPC/MVS LU name for each IMS subsystem you wish to access. This is done in option 0 of the ISPF interface. When you initially enter option 0, you will see a list (if any) of IMSIDs and their associated APPC symbolic destinations, as shown in the figure.

APPC		
CMD	IMSID	SYMDEST

	imid	symdest

The *imid* is a unique IMSID, and *symdest* is the APPC/MVS symbolic destination for the APPC/MVS LU name on the MVS LPAR where IMS executes.

You can add or delete entries in this table, as required, to access any IMS systems on any LPARs in your environment – as long as the IMS systems are network connected and have symbolic destinations defined on the LPAR where the ISPF interface is executed.

Installing the ISPF interface

When the product libraries are downloaded from the distribution tape, installation of the ISPF interface can be completed.

Procedure

1. To start the product enter command **EX 'hlq.SCFNEXEC(CFNXISPF)' 'hlq'** where *hlq* is the SMPE data set name high-level qualifier for the installed product.
2. Optional: Provide an ISPF panel interface to IMS Network CF. For example, you can update your ISPF Primary Options Menu to include an option CFN, which starts **CMD(EXEC 'hlq.SCFNEXEC(CFNXISPF)' 'hlq')**.
3. Define the APPC TPNAME. Use the sample batch job CFNTPADD in the SCFNAMP library.

Implementing security for the ISPF interface

IMS Network CF uses OS/390 Security Server facilities to restrict access to functions available in the ISPF interface. The security profiles are checked only on the MVS system where the IMS resides.

Specifically, the resource name used for IMS Network CF access verification is:

```
CLASS=FACILITY  
RESOURCE=CFN.IMS.imsid (where imsid is the IMSID specified on the ISPF panel)
```

For OS/390 Security Server (RACF), the following command can be used to define the required resource. In the example that follows, a single generic resource is defined that will protect access to any IMS system.

```
RDEFINE FACILITY CFN.IMS.* UACC(NONE)
```

Since APPC is used to send requests from the TSO user session to the appropriate MVS system, APPC security must be defined to propagate the RACF userid from the entering TSO session to the APPC transaction. In addition, the same RACF userid should exist on both the MVS system where the user is logged on to TSO and the MVS system where the IMS subsystem resides.

Functions present in the ISPF interface require different levels of access to the OS/390 Security Server profile. The levels of access are as follows:

READ The user can select display type options, except for user trace information that could contain proprietary data.

UPDATE

The user can select display type options, including trace data that could contain proprietary data.

CONTROL

The user can select any functions, including those available with READ and UPDATE; in addition, the user can update IMS Network CF options and start or stop traces.

For OS/390 Security Server (RACF), the following command can be used to permit group name IMSSYS access to all functions in the IMS Network CF.

```
PERMIT CFN.IMS.* CLASS(FACILITY) ID(IMSSYS) ACCESS(CONTROL)
```

Chapter 3. Before using IMS Network CF

This chapter describes:

- How data streams are reduced
- How data streams are intercepted
- Storage requirements
- Efficiency recommendations

How 3270 data streams are reduced

Data streams sent to 3270 devices have a very specific format that includes orders and data. IMS MFS does not optimize data streams; it simply generates data streams based on user MFS source. IMS Network CF examines each outbound data stream and uses standard 3270 data stream orders and conventions to reduce the amount of data sent over the teleprocessing line to the end terminal.

Specifically, IMS Network CF examines each data stream for strings of repeated characters and substitutes the 3270 Repeat to Address order to send a repeating string while sending only a single occurrence of the character.

When data streams contain repeating strings of blanks, IMS Network CF does not send a Repeat to Address order if BLANK ELIMINATION is enabled. Instead, the data stream is updated to simply skip the blanks and move to the next non-blank character.

Data stream fields are sorted to identify any adjacent protected (output) fields that have the same field characteristics (such as color, intensity). Such redundant field definitions are eliminated when the FIELD MERGE option for that data stream is enabled.

IMS Network CF also examines each field definition. For fields that are protected (output) and non-display, the field is skipped if the NON-DISPLAY FIELDS option is enabled for the data stream. Note that if the data stream is being interpreted by an intelligent device (not just a 3270 or 3270 emulator), programs in the intelligent device might make use of these non-display protected fields. In this case, the options should be updated to either disable NON-DISPLAY FIELDS or create an exception list for such intelligent devices.

How 3270 data streams are intercepted

IMS Network CF is initialized by including an IMS Partner Product Initialization exit routine (DFSPUE0). During initialization, the options are read from the parameter options member in PROCLIB, written to the JES job log of the IMS control region, and saved in storage. IMS Network CF positions itself to intercept data any time the IMS APPLID is opened so that each IMS data stream being sent from IMS to VTAM can be examined and compressed.

Performance recommendations

IMS Network CF exception lists should be kept to the minimum required. Also, FORMAT and TRAN type exception lists must be processed for each output message, so avoiding these types of exclusions improves efficiency. In addition, non-generic format exception list entries are processed with a single instruction, while generic format entries (those containing a percent sign or an asterisk, or the characters specified in the MATCH ONE or MATCH ALL control statements) are scanned character by character. Thus, use of non-generic entries is more efficient.

The size of the 3270 OUTBUF specification is important in reducing both the IMS time to process an output message and the efficiency of IMS Network CF. The OUTBUF size specifies the maximum amount of data that can be sent by IMS in each buffer being passed to VTAM. When output messages cannot fit in a single buffer, IMS has to set up and call VTAM twice to send a single output message.

Of course, there may be device requirements that limit the size of a single output message delivered from VTAM. This may include the buffer space available in the 3270 control unit. Care should be taken when increasing the size.

Note that the OUTBUF default for IMS 3270 terminals included in the sysgen is 2000 bytes, and the OUTBUF default for SLU2 terminals is 1500 bytes (although SLU2 OUTBUF is only used for MFS bypass). A specification of 4000 bytes appears fairly reasonable for a model 2 (24x80) device. If you regularly use 3270 type devices with larger screens or SLU2 devices with MFS bypass, consider increasing the respective OUTBUF values. Also note the restriction of 1536 bytes for 3790 devices defined as SLU2.

Chapter 4. Using the ISPF interface

Access the IMS Network CF ISPF Primary Options Menu screen using your installation-defined options. Access could be via:

- An option on your ISPF primary option panel
- Command EX 'hlq.SCFNSAMP(CFNXISPF)'

The Primary Options Menu screen is returned.

```
----- IMS Network Compression Facility Primary Options Menu -----
Option ==>

      Set Up                               Date: 01.113
0 -   IMS Systems                          Time: 16:33
                                           Sysid: S390
                                           Node: N1
                                           Plex: LOCAL

      Statistics
1 -   Display Compression Statistics for an IMS System
2 -   Display Compression Statistics for a Node

      Options
3 -   Display Options Currently in Use
4 -   Dynamic Options Update
5 -   Edit Permanent Options Definitions

      Traces
6 -   Work with Network Compression Traces

      Messages
M -   IMS Network Compression Facility Messages

      Exit
X -   Exit IMS Network Compression Facility
```

Figure 8. Primary Options Menu screen

0 - IMS SYSTEMS

Use this option to set up available IMS systems. For additional information, see the screens associated with this option (“Defining IMS system names to the ISPF interface (option 0)”).

1 - DISPLAY COMPRESSION STATISTICS FOR AN IMS SYSTEM

Use this option to display IMS system compression statistics. For additional information, see the screens associated with this option (“Displaying IMS system compression statistics (option 1)”).

2 - DISPLAY COMPRESSION STATISTICS FOR A NODE

Use this option to display compression statistics for terminals connected to IMS. For additional information, see the screens associated with this option (“Displaying terminal compression statistics (option 2)”).

3 - DISPLAY OPTIONS CURRENTLY IN USE

Use this option to display information about the options currently in use. For additional information, see the screens associated with this option (“Displaying IMS Network CF options (option 3)”).

4 - DYNAMIC OPTIONS UPDATE

Use this option to change the options currently in use. For additional information, see the screens associated with this option (“Updating IMS Network CF options (option 4)”).

5 - EDIT PERMANENT OPTIONS DEFINITIONS

Use this option to make permanent changes to the options. To make permanent changes, the IMS PROCLIB member must be updated. This option places you in ISPF edit mode so you can update the PROCLIB member.

6 - WORK WITH NETWORK COMPRESSION TRACES

This option lets you display and update traces. For additional information, see the screens associated with this option ("Displaying and updating traces (option 6)").

M - IMS NETWORK COMPRESSION FACILITY MESSAGES

Use this option to display a list of the messages for the product and then select the message for which you want more information.

X - EXIT IMS NETWORK COMPRESSION FACILITY

Use this option to exit from the product.

Defining IMS system names to the ISPF interface (option 0)

Before you use the ISPF interface the first time, the product installer must have defined IMS systems. Enter option 0 on the main menu screen to set up available IMS systems.

If IMS systems have not yet been defined, the following warning screen appears:

```
----- IMS Network Compression Facility IMSID Table -----  
Command ==>  
  
                W A R N I N G  
  
The IMS Network Compression Facility IMSID table was not found.  
  
If this is the initial setup of your installation's IMSID table, this is a  
normal condition.  
  
Otherwise, there may be a problem with the IMS Network Compression Facility  
table library or the IMSID table member (CFNIMSID).  
  
To Proceed - Press the Enter Key  
To Cancel - Press the End Key
```

Figure 9. IMSID Table screen (Warning)

To set up a new IMS system name table, press the enter key to display the IMSID table, which at this point will be empty:

```

----- IMS Network Compression Facility IMSID Table -----
Command ==>                               Scroll ==> CUR

Primary Commands:
  ADD - Add a New IMSID
Line Commands:
  D - Delete an IMSID
  A - Add an IMSID
  S - Edit an IMSID's APPC Symdest

          APPC
CMD IMSID SYMDEST
-----
***** Bottom of data *****

```

Figure 10. IMSID Table screen (Display Table)

To add IMSIDs to the table, type ADD on the command line and press enter. The Add IMSID Screen is returned (see the IMSID Table screen (ADD IMSID) figure).

```

----- IMS Network Compression Facility IMSID Table -----
Command ==>

Specify IMSID and associated APPC symbolic destination:

IMSID ==>
SYMDEST ==>

To Add - Press the Enter Key
To Cancel - Press the End Key

```

Figure 11. IMSID Table screen (Add IMSID)

Enter an IMSID and the APPC symbolic destination for the MVS system where that IMS system runs on the screen. Press the enter key to add that IMSID, and continue entering IMSIDs and symbolic destinations until all IMS systems have been defined. Then press the end key to list the IMSID table.

```

----- IMS Network Compression Facility IMSID Table Row 1 to 3 of 3
Command ==>                               Scroll ==> CUR

Primary Commands:
  ADD - Add a New IMSID
Line Commands:
  D - Delete an IMSID
  A - Add an IMSID
  S - Edit an IMSID's APPC Symdest

          APPC
CMD IMSID SYMDEST
-----
  IMS5  MVP0
  IMS6  MVP0
  IMS7  MVP0
***** Bottom of data *****

```

Figure 12. IMSID Table screen (List Table)

From this screen, you can also delete IMS system names in the table (type D next to the IMS system). Also, the symbolic destination associated with an IMS system can be updated by selecting the IMSID and entering the updated symbolic destination on the IMSID update screen that is presented.

Note: The IMS Network CF ISPF interface can interact with IMS systems anywhere in the enterprise (not just on one MVS image). To do this, all IMS systems must be defined in the IMSID table. The IMSID table is stored in the table library (CFNTLIB) and could be populated on one MVS system and copied to other MVS systems.

Displaying IMS system compression statistics (option 1)

Compression statistics can be displayed for an entire IMS system or by node name. See “Displaying terminal compression statistics (option 2)” for statistics by node name.

Option 1 on the main menu screen provides access to the following information about an IMS system (see the IMS System Status screen figure):

```

----- IMS Network Compression Facility IMS System Status -----
Command ==>

IMSID ==> IMS5          (Specify the IMSID of an active IMS system)

    IMS Restart Date: 2001.112          IMS Active for 000 Days and 21:20:21
    IMS Restart Time: 20:43:45          Dynamic PARM Version:          1

Number of 3270 Sessions - Current:          1          Max Concurrent:          2

                                Original   Compressed   Percentage
Number of Messages                    17           16           94.1%
Number of Output Characters (Total)    8,641        6,435        25.5%
Compressed Messages                    8,591        6,385        25.6%
Uncompressed Messages                  50           50           0.0%
Average Output Message Size            508          378          25.5%

Reasons for Messages Being Excluded from Compression:
Compression Not Enabled:          0 Data Stream Length 0:          0
Data Stream Commands Not Supported:
  Read:          0 WSF:          0 EAU:          0
Data Stream Characters Not Supported:
  PT:          1 Unknown Character(s):          0

```

Figure 13. IMS System Status screen

IMS RESTART DATE/TIME

Shows the Julian date and time that IMS was last restarted (local time on the system where IMS is executing).

IMS ACTIVE

Shows the number of days and the elapsed hours, minutes, and seconds since IMS was restarted.

DYNAMIC PARM VERSION

Starting with 1, shows the version number of the IMS Network CF options in use. Each update to the options done using the ISPF interface increments this number.

NUMBER OF 3270 SESSIONS

Shows the current number and maximum number (since IMS restart) of terminal-related control blocks.

Note: Control blocks are deleted only when users log off normally (using an /RCL or /CLS command). A terminal that is logged off by powering down the device does not clean up terminal control blocks; these control blocks are reused when the terminal reconnects.

NUMBER OF MESSAGES

Shows the number of messages sent to 3270 terminals since IMS restart, the number of these messages that were compressed, and the percentage of messages compressed.

NUMBER OF OUTPUT CHARACTERS (TOTAL)

Shows the total number of characters IMS sent to 3270 VTAM terminals before compression, the number of characters sent after the messages were compressed, and the percentage reduction in number of characters.

COMPRESSED MESSAGES

Shows, for messages that were compressed, the number of characters that were to be sent before compression, the number of characters that were actually sent after the messages were compressed, and the percentage reduction in number of characters.

UNCOMPRESSED MESSAGES

Shows the number of characters in messages that were not compressed.

AVERAGE OUTPUT MESSAGE SIZE**REASON FOR MESSAGES BEING EXCLUDED FROM COMPRESSION**

Shows the number of messages that were not compressed for each of the following reasons:

COMPRESSION NOT ENABLED

Compression was not done due to an exception list entry or because compression was disabled.

DATA STREAM LENGTH 0

The 3270 data stream had a length of 0.

DATA STREAM COMMANDS NOT SUPPORTED

Data streams that are READ, WSF (Write Structured Fields), or EAU (Erase All Unprotected) commands are not compressed.

DATA STREAM CHARACTERS NOT SUPPORTED

Data streams are not compressed when they contain characters that are not supported. This includes PT (Program Tab) and any unknown characters.

Displaying terminal compression statistics (option 2)

To display compression statistics for terminals connected to IMS, use option 2 on the main menu screen. The screen that is returned (see Figure 14) prompts you to enter an IMSID and an optional node name mask (which can include plus signs and asterisks).

```

----- IMS Network Compression Facility IMS Terminal Status List -----
Command ==>

      IMSID ==>          (The IMSID of an active IMS system)
Node Name ==>          (Optional Node Name Mask)

Enter the IMSID and an optional node name or node name mask. A blank node
name will retrieve a list of every terminal currently connected to that
IMS system.

The Node Name Mask can include an asterisk as the last character of the
name to match any name that starts with the characters before the asterisk.
A plus sign can be used as a single character wildcard anywhere within
the Node Name field.

```

Figure 14. Terminal Status List screen (Enter IMSID and Node Name Mask)

Entering IMSID and node name mask

After entering an IMSID and optional node name mask, a list of 3270 terminals connected to IMS will appear, along with information about each terminal.

```

----- IMS Network Compression Facility IMS Terminal Statu Row 1 to 7 of 7
Command ==>                               Scroll ==> PAGE

      IMSID ==> IMS5          (The IMSID of an active IMS system)
Node Name ==>          (Optional Node Name Mask)
Refresh ==>          (Select to Update Values Below)

S
E Node          Number      Original      Compressed      Percent
L Name  LTERM   Userid      Messages      Bytes         Bytes          Reduced
SC0TCP02 P390N000 P390N          14         8,999         6,516         27.5
SC0TCP04 P390J000 P390J           3          2,139         1,410         34.0
SC0TCP05 P390H000 P390H           4          3,390         1,993         41.2
SC0TCP06 P390G000 P390G           7          3,079         1,955         36.5
SC0TCP07 P390F000 P390F           6          4,660         3,307         29.0
SC0TCP08 P390E000 P390E           3           924           662         28.3
SC0TCP09 P390D000 P390D           4          1,404           947         32.5
***** Bottom of data *****

```

Figure 15. Terminal Status List screen (Display 3270 Terminals Connected to IMS)

The SORT command can be used to sort the list of node names. Enter SORT NODE, SORT LTERM, or SORT USERID on the command line to do the sort. The LOCATE command scrolls through the list to the name entered. LOCATE may be abbreviated as L. To scroll to name xyz, type L XYZ on the command line. The locate command searches whatever column is currently the sort column (which is initially the node name).

Selecting a specific line in the list provides additional information about that node (see Figure 16).

```

----- IMS Network Compression Facility IMS Terminal Status List -----
Command ==>

      IMSID ==> IMS5      (The IMSID of an active IMS system)
      Node Name ==> SC0TCP02 (Node Name)

      Number of Messages                Original   Compressed   Percentage
      Number of Output Characters (Total) 8,999      6,516       27.5
      Compressed Messages                8,999      6,516       27.5
      Uncompressed Messages              0          0           0.0%
      Average Output Message Size        642        465         27.5

      Reasons for Messages Being Excluded from Compression:
      Compression Not Enabled:           0 Data Stream Length 0:           0
      Data Stream Commands Not Supported:
      Read:                               0 WSF:           0 EAU:           0
      Data Stream Characters Not Supported:
      PT:                                 0 Unknown Character(s):           0

      Trancode   Format      Userid   User Name   Node Name   LTERM Name
      P390N000   DFSDSP01 P390N   P390N000   SC0TCP02   P390N000

```

Figure 16. Terminal Status List screen (Node Detail)

The fields on the preceding screen have the same meanings as those on the system status screen (see the IMS System Status screen figure), except that the fields apply only to the selected terminal. The only additional fields on the terminal status screen are the fields on the last two lines.

Note: If there is a question about what values to specify in an exception list, the terminal status screen provides a way to see what values were checked by IMS Network CF during the processing of the last output message. The trace facility also provides this information for each data stream traced.

Displaying IMS Network CF options (option 3)

Option 3 on the main menu screen lets you display the options currently in use. The first screen lets you enter the IMSID for the options you want displayed.

```

----- IMS Network Compression Facility IMS Options -----
Command ==>

      IMSID ==> IMS7      (Specify the IMSID of an active IMS system)

      Enter an IMSID above to display system options defined for that IMS system.

```

Figure 17. IMS Options screen (Enter IMSID for Options to Display)

Once an IMSID is entered, the options currently in use for the specified IMSID are displayed (see Figure 18).

```

----- IMS Network Compression Facility IMS Options Row 1 to 4 of 4
Command ==>                               Scroll ==> PAGE

IMSID ==> IMS7          (Specify the IMSID of an active IMS system)

  INIT Error: BACKOUT          PARM Error: BACKOUT

  DFSPUE0 Exit Routines -      0 Defined - Select Here to View Names ==>
  Trace for Data Streams -      1 Defined - Select Here to View Nodes ==>

Select an Exception List entry below to view the exception entry names

----- Number of Entries In -----
----- Exception Lists -----
Option      Status Node   Tran  LTERM  Userid  User  Format
-----
COMPRESSION      ENABLED   1     0     1     1     0     1
FIELD MERGE      ENABLED   0     0     0     0     0     0
NON-DISPLAY FIELDS  ENABLED   0     0     0     0     0     0
BLANK ELIMINATION  ENABLED   0     0     0     0     0     0
***** Bottom of data *****

```

Figure 18. IMS Options screen (Display Options)

INIT ERROR

Shows the value specified in the parameter options member of PROCLIB for the action to be taken when there is an initialization error.

PARM ERROR

Shows the value specified in the parameter options member of PROCLIB for the action to be taken when there is a parameter error.

DFSPUE0 EXIT ROUTINES

Shows the number of exit routines specified in the parameter options member of PROCLIB. Placing a nonblank character at the end of the line shows the names of any specified exit routines.

TRACE FOR DATA STREAMS

Shows the number of node names currently defined for the trace. Placing a nonblank character at the end of the line shows the node names currently enabled for the trace facility.

NUMBER OF ENTRIES IN EXCEPTION LISTS

Shows each compression feature's current status in the Status column, which may be ENABLED, DISABLED, ON, or OFF (ENABLED and DISABLED process exception lists, while ON/OFF do not). Also shown is the number of entries in each possible exception list. To display the entry names in any list, place a nonbank character to the left of the number, and a table showing all exceptions to the component's status will be displayed.

Figure 19 is displayed when the DFSPUE0 exit list is requested.

```

----- IMS Network Compression Facility IMS Options -----
Command ==>

IMSID ==> IMS5

      There are 2 DFSPUE0 Exit Routine Names Defined.

IEFBR14  IEFBR14

```

Figure 19. IMS Options screen (Display DFSPUE0 Exit List)

Figure 20 is returned when a list of traced node names is requested.

```

----- IMS Network Compression Facility IMS Options Row 1 to 1 of 1
Command ==>

IMSID ==> IMS7

      There are 1 Nodes Names with Trace Enabled:

Node Name  Status
-----
SC0TCP02  UNUSED
***** Bottom of data *****

```

Figure 20. IMS Options screen (Display Traced Node Names)

NODE NAME

Shows the nodes defined for tracing.

STATUS

Shows the status of each traced node, which can be one of the following:

UNUSED

The node name was not used during this IMS control region start up.

USED The node name was or is in use.

DELETED

The node name was deleted from the trace node name list (using the trace option on the main menu), but the trace storage has not yet been freed.

Figure 21 is an example of a display of an exception list.

```

----- IMS Network Compression Facility IMS Options Row 1 to 1 of 1
====>
IMSID ==> IMS7
                                Scroll ==> PAGE

Exception List for COMPRESSION by NODE Name
Default Setting for COMPRESSION - Active=YES

      Entry   Status
      -----
      NODE1   UNUSED
***** Bottom of data *****

```

Figure 21. IMS Options screen (Display Exception List)

ENTRY

Shows the exception list entries.

STATUS

Shows the status of each exception list entry, which can be one of the following:

UNUSED

The entry name was not used during this IMS control region start up.

USED The entry name was used during data stream option checking during this IMS control region start up.

DELETED

The entry name was marked as deleted.

Updating IMS Network CF options (option 4)

Option 4 on the main menu screen lets you change the options currently in use.

Note that any changes made to options using these screens are only temporary. When IMS is brought down, all changes are lost, and the permanent options in the parameter options member of PROCLIB are read and used. To make permanent changes in the options, use option 5 on the main menu.

In addition, changes to options are not made until all updates are completed. When you leave the Options Update screen, a confirmation screen is shown if any changes have been made, and changes to the options used by the IMS system are then made.

When you select option 4 on the main menu screen, Figure 22 is returned. On this screen you can enter the IMSID for which you want options to be displayed.

```

----- IMS Network Compression Facility Options Update -----
Command ==>

IMSID ==> IMS7      (Specify the IMSID of an active IMS system)

Enter an IMSID above to Update system options defined for that IMS system.

```

Figure 22. Options Update screen (Enter IMSID)

When an IMSID is entered, Figure 23 is returned. The fields on this screen are the same as those in Figure 18. Note that some options cannot be updated using this screen. This includes trace options (since these are updated using the trace option on the main menu) as well as parameters that are only used during initialization (INIT Error, PARM Error, and DFSPUE0 Exit Routines).

```

----- IMS Network Compression Facility IMS Options Row 1 to 4 of 4
Command ==>                                     Scroll ==> PAGE

IMSID ==> IMS7

The following entries cannot be dynamically updated. They must be updated in
the IMS Network Compression Facility options member.

      INIT Error: BACKOUT          PARM Error: BACKOUT

DFSPUE0 Exit Routines -          0 Defined - Select Here to View Names ==>
Trace for Data Streams -        1 Defined - Select Here to View Nodes ==>

Update the Active column or select an exception list to update the list entries

----- Number of Entries In -----
----- Exception Lists -----
Option      Status Node   Tran  LTERM  Userid  User   Format
-----
      COMPRESSION ENABLED      1     0     1     1     0     1
      FIELD MERGE ENABLED      0     0     0     0     0     0
NON-DISPLAY FIELDS ENABLED    0     0     0     0     0     0
      BLANK ELIMINATION ENABLED 0     0     0     0     0     0
***** Bottom of data *****

```

Figure 23. IMS Options screen (Display Options)

The fields that can be updated are in the table at the bottom of the screen. To change an option, simply overwrite the status column value with the new desired value. The valid values for the status are:

- ENABLED - Enable the option (disabling data streams that match a specification in the exception lists for this option)
- DISABLED - Disable the option (enabling data streams that match a specification in the exception lists for this option)
- ON - Enable the option for every data stream and ignore any exception list entries
- OFF - Disable the option for every data stream and ignore any exception list entries

To change an option, simply overtype the current value with the desired value as shown in Figure 24.

```

----- IMS Network Compression Facility IMS Options Row 1 to 4 of 4
Command ==>                               Scroll ==> PAGE

IMSID ==> IMS7

The following entries cannot be dynamically updated. They must be updated in
the IMS Network Compression Facility options member.

      INIT Error: BACKOUT          PARM Error: BACKOUT

DFSPPE0 Exit Routines -    0 Defined - Select Here to View Names ==>
Trace for Data Streams -    1 Defined - Select Here to View Nodes ==>

Update the Active column of select an exception list to update the list entries

                                ----- Number of Entries In -----
                                ----- Exception Lists -----
-----
Option      Status Node   Tran  LTERM  Userid  User  Format
-----
      COMPRESSION DISABLED      1    0    1    1    0    1
      FIELD MERGE ENABLED       0    0    0    0    0    0
NON-DISPLAY FIELDS ENABLED     0    0    0    0    0    0
BLANK ELIMINATION ENABLED      0    0    0    0    0    0
***** Bottom of data *****

```

Figure 24. IMS Options screen (Change an Option)

To make changes to an exception list, select the proper list by placing a nonblank character to the left of the number of entries currently in the list. Figure 25, which shows the current list entries and their status, is returned.

```

----- IMS Network Compression Facility Options Updat Row 1 to 1 of 1
==> Scroll                               ==> PAGE

IMSID ==> IMS7

Exception List for COMPRESSION by NODE Name
Default Setting for COMPRESSION - Active=NO

Primary Commands: ADD
Line Commands: D to Delete, S to Edit

S Entry      Status
-----
      NODE1    UNUSED
***** Bottom of data *****

```

Figure 25. Options Update screen (Status of Current List Entries)

ENTRY

Entry name.

STATUS

Status of the current list entries, which can be one of the following:

UNUSED

The entry name was not used during this IMS control region start up.

USED

The entry name was used during data stream option checking during this IMS control region start up.

DELETED

The entry name was marked as deleted.

ADDED

The entry name was added during this options update session.

UPDATED

The entry name was updated during this options update session.

Typing ADD on the command line in Figure 25 returns the Add Exception List screen shown in Figure 26. The component name and exception list name are shown when the screen appears. To add a new entry name to this exception list, simply enter the name and press enter. Multiple names can be added by overtyping the previous name and pressing enter again. When you are finished adding new entry names, press the end key to leave the add entry screen.

```
----- IMS Network Compression Facility Options Update -----
Command ==>

Add a new Exception List Entry:

      Component ==> COMPRESSION
Exception List ==> NODE
          Name ==>

Press the Enter Key to Add this Entry
Press the End Key to Cancel
```

Figure 26. Options Update screen (Add Entry List)

The list of exception entry names also allows line commands, including D to delete and S to edit. Entering one of these characters next to an entry name displays a delete confirmation screen or an edit screen; these screens let you change the entry name. The following three screens show a line command entry, the delete confirmation screen, and the edit entry name screen.

```
----- IMS Network Compression Facility Options Updat Row 1 to 2 of 2
==>                                     Scroll ==> PAGE

IMSID ==> IMS7

Exception List for COMPRESSION by NODE Name
Default Setting for COMPRESSION - Active=YES

Primary Commands: ADD
Line Commands: D to Delete, S to Edit

S  Entry  Status
-  - - - -
d  NODE2  ADDED
   NODE1  UNUSED
***** Bottom of data *****
```

Figure 27. Options Update screen (Line Command Entry)

```
----- IMS Network Compression Facility Options Update -----
Command ==>

Confirm Delete for Entry Name:

    Component ==> COMPRESSION
    Exception List ==> NODE
        Name ==> NODE2
        Status ==> ADDED

Press the Enter Key to Delete the Entry
Press the End Key to Cancel
```

Figure 28. Options Update screen (Delete Confirmation)

To update the entry name in Figure 29, enter the S line command.

```
----- IMS Network Compression Facility Options Update -----
Command ==>

Confirm Delete for Entry Name:

    Component ==> COMPRESSION
    Exception List ==> NODE
        Name ==> NODE1
        Status ==> UNUSED

Press the Enter Key to Update this Entry Name
Press the End Key to Cancel
```

Figure 29. Options Update screen (Edit Entry Name)

Once all option updates are completed, press PF3 to display the Options Update confirmation screen. To implement all changes made since entering option 4 on the main menu, press the enter key. To cancel all updates, press the end key.

Displaying and updating traces (option 6)

Option 6 on the main menu screen lets you display and update traces. Note that any trace requests are lost when IMS is brought down. To have a trace enabled when IMS is restarted, use the TRACE statement in the options member CFNPimid in IMS PROCLIB.

Also note that the trace facility acquires 100K of extended private area storage in the IMS control region for each active trace. This storage is not freed until the trace data is deleted through the ISPF interface.

Generic names are not permitted in the list of nodes to be traced.

When you enter option 6 on the main menu screen, Figure 30 is returned. Enter the IMSID on this screen.

```

----- IMS Network Compression Facility Trace -----
Command ==>

IMSID ==> IMS5      (Specify the IMSID of an active IMS system)

Enter an IMSID above to display trace information for that IMS system.

```

Figure 30. Options Update screen (Enter IMSID)

Once the IMSID is entered, the list of node names that have trace either enabled or still present is shown (see Figure 31).

```

----- IMS Network Compression Facility Trace -- Row 1 to 2 of 2
Command ==>                                     Scroll ==> PAGE

IMSID ==> IMS6      (Specify the IMSID of an active IMS system)

Primary Commands: STRACE (to start a new trace)
Line Commands: S to Select, P to Stop, or D to Delete

S   Name      Type      Status
-----
SCOTCP03     NODE     ACTIVE
P390M        USERID   WAITING
***** Bottom of data *****

```

Figure 31. Trace screen (Node Name with Trace Enabled)

Existing traces can be selected (displayed), stopped, or deleted. In order to delete a trace, it must first be stopped. Note that the process of actually deleting a trace occurs when IMS processes the next data stream. Because of this, deleting a trace and then starting another trace for the same resource name may fail (due to a duplicate trace) if IMS has not processed a data stream between the delete and the add.

To enable a new trace, enter the STRACE command on the command line, and press enter. Figure 32 will be displayed. Specify the requested data (type of resource and name of the resource to be traced) and press enter to initiate a new trace.

```

----- IMS Network Compression Facility Trace -----
Command ==>

Enable Trace for a New Entry Name and Type:

  Name ==> SC0TCP03
  Type ==> USERID (Node, LTERM, User, Userid)

Press the Enter Key to Enable the Trace
Press the End Key to Cancel

```

Figure 32. Trace screen (Start Trace)

Once a specific trace entry (for a specified node, LTERM, user, or userid) is selected, a list of captured data streams is displayed. See Figure 33 for an example of this screen. From this screen, enter an S in the pre-compression or post-compression column to see the actual data stream content in hex dump format. Enter an F to write the data stream to the ISPF user's screen, which will then display the screen content that was sent to the IMS user's screen. To return to the selection list in Figure 33, press the enter or PF3 key.

The data stream, in hex dump format, can be printed to a data set. To do this, enter a P in either the pre- or post- compression column. After the print completes, press PF1 for the name of the data set where the printed output was written.

```

----- IMS Network Compression Facility Trace -- Row 1 to 4 of 4
Command ==>                               Scroll ==> PAGE

IMSID ==> IMS6

Select a Pre-Comp or Post-Comp Data Stream with an S to view the data stream
in dump format, F for a Fullscreen display, or P to Print output.

  Node
  Name   LTERM   Userid  Trancode  Format  Chain  WCC   Pre-Comp Post-Comp
  -----
  SC0TCP03          DFSGNP  ONLY  EW       357   291
  SC0TCP03 P390M   P390M          DFSM05  ONLY  EW       346   313
  SC0TCP03 P390M   P390M   P390M  DFSDSP01 FIRST EW     1500   971
  SC0TCP03 P390M   P390M   P390M  DFSDSP01 LAST  205   143
  ***** Bottom of data *****

```

Figure 33. Trace screen (Trace Entries that Can Be Selected)

Figure 34 shows a data stream in hex dump format, provided by using the S option.

```
----- IMS Network Compression Facility Trace Row 1 to 15 of 22
Command ==>                               Scroll ==> PAGE
```

```
Node: SC0TCP03   Userid: P390M   Trancode:   Chain: ONLY
LTERM: P390M    User: P390M     Format: DF5M05   WCC: EW
```

```
Before Compression Length: 346 (x'015A')   Data Stream Shown Below
After  Compression Length: 313 (x'0139')
```

00000000	F5C311C2	601DF0C4	C6E2F3F6	F5F0C940	5C.B-.0DFS3650I
00000010	E2C5E2E2	C9D6D540	E2E3C1E3	E4E240C6	SESSION STATUS F
00000020	D6D940C9	D4E240C9	D4E2F611	C3F01DF0	OR IMS IMS6.C0.0
00000030	404011C5	401DF0C4	C1E3C57A	40F0F961	.E .0DATE: 09.
00000040	F0F261F0	F1404040	4040E3C9	D4C57A40	02.01 TIME:
00000050	F2F37AF0	F97AF4F7	4011C650	1DF0D5D6	23:09:47 .F..0NO
00000060	C4C540D5	C1D4C57A	40404040	40404040	DE NAME:
00000070	404040E2	C3F0E3C3	D7F0F340	11C7601D	SC0TCP03 .G-
00000080	F0E4E2C5	D97A4040	40404040	40404040	0USER:
00000090	40404040	4040D7F3	F9F0D440	40404011	P390M .
000000A0	C8F01DF0	D7D9C5E2	C5E340C4	C5E2E3C9	H0.0PRESET DESTI
000000B0	D5C1E3C9	D6D57A40	40404040	40404040	NATION:
000000C0	4040114A	401DF040	40114B50	1DF0C3E4	.¢ .0 ...0CU
000000D0	D9D9C5D5	E340E2C5	E2E2C9D6	D540E2E3	RRENT SESSION ST
000000E0	C1E3E4E2	7A40114C	601DF040	40114DF0	ATUS: .<-.0 .(0

Figure 34. Trace screen (Display Data Stream)

Chapter 5. Abend codes

U4002

All IMS Network CF abends are U4002 abend codes. The abend codes may occur in the IMS address space, the APPC address space, or the TSO address space.

For errors in either the IMS control region or the APPC address space, abends are preceded by messages in the MVS syslog.

When occurring in the TSO address space, the abend is caused by an ISPF SETMSG call failure.

Chapter 6. Messages

Two types of messages are associated with IMS Network CF:

- ISPF messages
- Non-ISPF messages

Both types of messages begin with CFN.

ISPF messages

Error messages received when using the ISPF interface are designed to be self-documenting. Pressing PF1 (or the help PF key) when an error message occurs provides a description of the error as well as information on what to do to resolve the problem.

ISPF error message identifiers have the format CFNAnnn or CFNBnnn, where nnn is a three-digit message number. ISPF message identifiers are only present in the long version of an ISPF message. To retrieve the long version of an IMS Network CF message, press the help key (PF1) when a short error message is displayed.

Please provide this error message identifier when contacting the IBM support center about an ISPF error.

APPC and IMS address space messages

Messages issued to the MVS syslog from either APPC address spaces or the IMS control region address space are documented in the ISPF interface. Option M on the Primary Options Menu screen (Figure 8) provides access to descriptions of all such error messages.

Using the ISPF message facility

To obtain more information about a message, display a list of the messages and then select the one for which more information is desired.

Enter option M on the Primary Options Menu screen (Figure 8) to obtain a list of product messages. An example of the resulting message display is shown in Figure 35.

```
----- IMS Network Compression Facility Message Ta Row 1 to 17 of 64
Command ==>                               Scroll ==> CSR
```

Select a message to display additional information about that message.

```
CMD Message ID Message Text
-----
CFN1001E  ERROR ENCOUNTERED ON xxxxxxxx RC=yyyyyyyy
CFN1020E  GETMAIN FAILED IN IMS NETWORK COMPRESSION FACILITY APPC PROGRA
CFN1021I  FREEMAIN FAILED IN IMS NETWORK COMPRESSION FACILITY APPC PROGR
CFN1022E  ERROR ENCOUNTERED ON xxxxxxxx RC=yyyyyyyy
CFN1042I  IMS NETWORK COMPRESSION FACILITY INITIALIZATION SUCCESSFUL
CFN1043I  IMS CTL RGN U4002 ABEND DUE TO INIT ERROR=ABEND
CFN1044I  IMS NETWORK COMPRESSION FACILITY INITIALIZATION FAILED-RESTART
CFN1045I  INVOKING USER SPECIFIED DFSPPE0 EXIT ROUTINE xxxxxxxx
CFN1046E  IMODULE LOAD FOR USER SPECIFIED DFSPPE0 EXIT ROUTINE xxxxxxxx
CFN1061E  CFNINRTN RECEIVED INVALID DIRECTORY ADDRESS
CFN1062W  CFNINRTN RECEIVED AN INVALID RPL
CFN1063W  CFNINRTN RPL REQUEST BYTE OF 00 FOUND
CFN1064W  OPNDST ERROR: RPL DID NOT HAVE A NIB
CFN1065W  OPNDST ERROR: RPL HAD AN INVALID NIB
CFN1066E  CFNINRTN HAD NO IMS CFN SAVE SETS AVAILABLE
CFN1067W  CFNINRTN RPLREQ xx UNKNOWN
CFN1080E  GETMAIN FAILED FOR LU BLOCK
```

Figure 35. Message Table screen (List Messages)

Selecting a specific message number provides additional information about that message. Entering an S in the **CMD** column selects a message and provides the following example message description:

```
----- IMS Network Compression Facility Messages -----
Command ==>

Message ID: CFN1001E
Message Text: ERROR ENCOUNTERED ON xxxxxxxx RC=yyyyyyyy

Explanation: This is an APPC communication error. The "xxxxxxx" field
identifies the APPC command being processed, and the "yyyyyyy" field
identifies the return code received from APPC. This error occurred on the
local side (where the TSO user is logged on).
Module: CFNAPPC0
System Action: The request is aborted.

Programmer Response: Determine if APPC is available on both the local MVS
system as well as the remote MVS system (where the target IMSID is brought up).
If there are no indications of APPC problems, contact the IBM support center for
assistance.
```

Figure 36. Messages screen (Sample Message Description)

List of ISPF messages

For each message, the following accompanying information is provided where applicable:

CFNAnnn Variable Text

The message prefix CFNA or CFNB followed by a three-digit number represents the message identifier. The variable text appearing next to the message identifier is the short message text.

System Action

This explains what the system will do next.

Programmer Response

This describes whether a response is necessary, what the appropriate response should be, and what the resulting effect is on the system or program.

Explanation

This is the full message text, also called the long message.

CFNA000 APPC ERROR

Explanation: Error encountered in CFNAPPC0 RC=nn. This could be an APPC error. Verify that APPC is available and connectivity to the required MVS system is available.

System action: The requested function fails.

Programmer response: The detailed APPC error message text should be displayed. Use this information to determine the cause of the APPC error.

CFNA001 INVALID COMMAND

Explanation: The primary command entered is not valid on this screen.

System action: The command is ignored.

Programmer response: Correct the information entered on the command line. If the command is valid, contact the IBM support center for assistance in determining the cause of the problem.

CFNA002 APPC ERROR

Explanation: APPC Response Message had Return Code rr but no MSGID. This is a software problem and should be reported to the support center.

System action: The requested function fails.

Programmer response: An error occurred in APPC or the remote APPC application. A message ID that should have been returned was not present. Contact the IBM support center for assistance in determining the cause of the problem.

CFNA003 CFN DIRECTORY INVALID

Explanation: The CFN directory format was invalid. This is a software problem and should be reported to the IBM support center.

System action: The requested function fails.

Programmer response: Verification of the main IMS Network CF control block within the IMS address space failed. Contact the IBM support center for assistance.

CFNA004 COMPUTATION ERROR

Explanation: An error occurred computing the number of messages. This is a software problem and

should be reported to the support center.

System action: The function completes, but some data on the screen may not be valid.

Programmer response: One or more of the fields on the screen may not have been calculated correctly. The displayed screen contents may not be valid. Contact the IBM support center for assistance in resolving this problem.

CFNA005 COMPUTATION ERROR

Explanation: An error occurred computing a percentage. This is a software problem and should be reported to the IBM support center.

System action: The function completes, but some data on the screen may not be valid.

Programmer response: One or more of the fields on the screen may be calculated incorrectly. The displayed screen contents may not be valid. Contact the IBM support center for assistance in resolving this problem.

CFNA006 TRACE ENTRY ADDED

Explanation: The specified node name has been added to the trace list.

System action: A new entry has been added to the trace table.

Programmer response: None

CFNA007 TRACE ENTRY DELETED

Explanation: The specified node name has been removed from the trace list.

System action: An entry was deleted from the trace table.

Programmer response: None

CFNA008 TRACE ENTRY STOPPED

Explanation: The trace for this node name has been stopped.

System action: Tracing for an entry has been stopped, although the data from the trace is still available for viewing.

Programmer response: None

CFNA009 IMS *imid* NOT FOUND

Explanation: The requested IMSID is not currently running on the MVS system specified in the IMSID table.

System action: The request fails.

Programmer response: Check 1) whether IMS is currently started and 2) whether the IMS Network CF IMSID table specifies the correct MVS system (symbolic destination) for the IMSID.

CFNA010 UNSUPPORTED IMS VERSION

Explanation: The release of IMS *imid* is not supported by this level of IMS Network CF. If this message is received in error, contact the IBM support center.

System action: The request fails.

Programmer response: Check for the availability of a PTF or of a new release of IMS Network CF that supports the release of IMS being used.

CFNA011 MODULE NOT FOUND

Explanation: A requested load module name was not found. This could be caused by IMS Network CF not being installed, or by a parameter or initialization error that occurred during IMS initialization. Check for prior errors and contact the support center if no errors are found.

System action: The request fails.

Programmer response: Verify that IMS Network CF is installed on the requested IMS system, and that initialization errors were not encountered at the last IMS startup. If the function being performed was a request to dump storage for a module, ensure that the module name was entered correctly.

CFNA012 NO EXCEPTION LIST

Explanation: The requested exception list is empty.

System action: The request is ignored.

Programmer response: Select a field that contains exception list entries.

CFNA013 CFN NOT ACTIVE

Explanation: The IMS Network CF directory was not the Specified IMS system. This could be caused by IMS Network CF not being installed, or by a parameter or initialization error that occurred during IMS initialization. Check for prior errors and contact the IBM support center if no errors are found.

System action: The request fails.

Programmer response: Verify that IMS Network CF is installed on the requested IMS system, and that

initialization errors were not encountered at the last IMS startup. If the function being performed was a request to dump storage for a module, ensure that the module name was entered correctly.

CFNA014 TOO MANY SESSIONS

Explanation: There were more sessions active than were able to be displayed. Contact the IBM support center to determine the reason for this unexpected condition.

System action: The request fails.

Programmer response: Contact the IBM support center.

CFNA015 NODE NOT FOUND

Explanation: The selected node name is no longer logged on to this IMS.

System action: The request fails.

Programmer response: Select a device name that is currently logged on to IMS.

CFNA016 UPDATES CANCELLED

Explanation: Updates to IMS Network CF options were cancelled by a user request.

System action: Any IMS Network CF updates that have been entered are not transmitted to the IMS system. Any changes to the options entered are ignored.

Programmer response: If the updates were intended to be implemented, press the enter key instead of PF3 when asked if the updates should be implemented.

CFNA017 PARTIAL TRACE INFO

Explanation: Some trace information is missing because there was not enough storage for all trace information. Contact the support center for this unexpected condition.

System action: Partial trace information is displayed.

Programmer response: Contact the IBM support center for assistance.

CFNA018 NODE NOT FOUND

Explanation: The requested node is no longer logged on to this IMS.

System action: The requested node is no longer logged on to this IMS.

Programmer response: The requested node is no longer logged on to this IMS.

CFNA019 TRACE NOT ACTIVE

Explanation: Trace information for the requested node is no longer available.

System action: TRACE NOT ACTIVE

Programmer response: Either the selected terminal logged off, or the trace information was deleted. Trace information is only available while the terminal is logged on to IMS. Select a terminal name that is currently connected to IMS to display trace information.

CFNA020 TOO MANY TRACES

Explanation: The trace request failed because the maximum number of active trace node names is already present.

System action: The request fails.

Programmer response: Delete a trace that is currently defined to allow a new trace entry to be added.

CFNA021 INVALID LENGTH

Explanation: Specified length is invalid.

System action: The request is ignored.

Programmer response: Specify a valid storage length to dump.

CFNA022 REGION ID INVALID

Explanation: Specified region ID is invalid.

System action: The request is ignored.

Programmer response: Specify a valid region ID (IMS, DLI, DBRC, or * for your TSO session).

CFNA023 REQUEST FIELD BLANK

Explanation: The request field contained no data.

System action: The request is ignored.

Programmer response: Specify a request for the storage address to be dumped.

CFNA024 APPC COMM ERROR

Explanation: APPC receive failed with RC=rr. This is a software problem and should be reported to the IBM support center.

System action: The request fails.

Programmer response: Contact the IBM support center for assistance.

CFNA025 MISSING FUNCTION CODE

Explanation: Missing function code from internal control block. This is a software problem and should be reported to the support center.

System action: The request fails.

Programmer response: Contact the IBM support center. This is a software error.

CFNA026 TRACE NOT STOPPED

Explanation: A trace must be stopped before being deleted. Stop the trace first, and then delete the trace information.

System action: The request is ignored.

Programmer response: Before deleting a trace, issue the stop command to stop the trace. After it has been stopped, delete the trace.

CFNA027 MULTIPLE SELECTS

Explanation: More than one field was selected. Select only 1 field.

System action: The request is ignored.

Programmer response: Select only one of the fields

CFNA028 MODULE ERROR

Explanation: An error occurred processing the selected module. This is a software problem and should be reported to the support center.

System action: The request fails.

Programmer response: Contact the IBM support center for assistance.

CFNA029 INVALID SELECT CHARACTER

Explanation: Use a valid line/field selection character.

System action: The request is ignored.

Programmer response: Specify a valid line selection character.

CFNA030 MISSING ERROR ID

Explanation: An APPC task returned with RC=rr but no error message ID. This is a software problem and should be reported to the IBM support center.

System action: The request fails.

Programmer response: Contact the IBM support center for assistance.

CFNA031 IMSID INVALID

Explanation: The IMSID passed to CFNAPPC0 was invalid (blank or hex zeros). This is a software problem and should be reported to the support center.

System action: The request fails.

Programmer response: Contact the IBM support center for assistance.

CFNA032

Explanation: IMSID was not found in the IMSID setup table. Either specify a valid IMSID, or use the setup option to add this IMSID to the IMSID table.

System action: The request fails.

Programmer response: Either specify a valid IMSID, or use the setup option to add this IMSID to the IMSID table.

CFNA033 SYMDEST INVALID

Explanation: The SYMDEST value found in the IMSID table was invalid. Use the setup option to correct the SYMDEST value for this IMSID. Contact the IBM support center if the SYMDEST is valid.

System action: The request is ignored.

Programmer response: Check the IMS Network CF IMSID table to verify that a valid SYMDEST name was specified in the IMSID table for the requested IMS name.

CFNA034 INVALID SEND LENGTH

Explanation: The APPC header contains a send length of zero. This is a software problem and should be reported to the support center.

System action: The request fails.

Programmer response: Contact the IBM support center for assistance.

CFNA035 INVALID RECV LENGTH

Explanation: The APPC header contains a receive length of zero. This is a software problem and should be reported to the support center.

System action: The request fails.

Programmer response: Contact the IBM support center for assistance.

CFNA036 INVALID APPCERR ADDR

Explanation: The APPC header contains an APPC error address of zero. This is a software problem and should be reported to the support center.

System action: The request fails.

Programmer response: Contact the IBM support center for assistance.

CFNA037 APPC MSG TOO SMALL

Explanation: The APPC message area was too small. This is a software problem and should be reported to the IBM support center.

System action: The request fails.

Programmer response: Contact the IBM support center for assistance.

CFNA038 APPC APPL ERROR

Explanation: A CFN APPC application error occurred - no DEALLOC. Check for error messages in the MVS syslog on the system where the IMS system is located.

System action: The request fails.

Programmer response: This error was probably caused by an IMS Network CF APPC module error. Check the MVS syslog on the MVS image where the requested IMS system executes for errors associated with the APPC initiator - possibly security errors or an abend in a module name starting with CFN.

CFNA039 APPC MSG INVALID

Explanation: Validation of an APPC message failed. This is a software problem and should be reported to the IBM support center.

System action: The request fails.

Programmer response: Contact the IBM support center for assistance.

CFNA040 IMSID NOT FOUND

Explanation: The specified IMSID was not found on the defined MVS system.

System action: The request fails.

Programmer response: Ensure that IMS is started on the MVS system associated with the SYMDEST specified in the IMS Network CF IMSID table.

CFNA041 IMS RELEASE INVALID

Explanation: The release of the specified IMS system is not supported.

System action: The request fails.

Programmer response: Check for availability of a PTF or new release of IMS Network CF that supports the release of IMS being used.

CFNA042 CFNA042

Explanation: An invalid region ID was requested.

System action: The request is ignored.

Programmer response: Specify a valid region ID (IMS, DLI, DBRC, or * for your TSO session).

CFNA043

Explanation: A job name instead of IMSID was specified with IMS storage.

System action: The request is ignored.

Programmer response: Specify a 4-character job name for IMS storage.

CFNA044 INVALID ADDRESS

Explanation: An invalid address was specified.

System action: The request is ignored.

Programmer response: Specify a valid request address for storage.

CFNA045 INVALID MODULE NAME

Explanation: The specified module name was too long.

System action: The request is ignored.

Programmer response: Specify a module name with 8 or fewer characters.

CFNA046 MODULE NOT FOUND

Explanation: The requested module name was not found.

System action: The request fails.

Programmer response: Ensure that the correct module name and address space are specified in the request.

CFNA047 INVALID DUMP ADDRESS

Explanation: A syntax error was found in the requested dump address.

System action: The request is ignored.

Programmer response: Check the syntax of the request field.

CFNA048 TOO MANY MODULES

Explanation: There were too many modules found - some are not listed.

System action: A partial list of modules is displayed.

Programmer response: Contact the IBM support center for assistance.

CFNA049 STORAGE REQ FAILED

Explanation: A storage request did not include both address and length.

System action: The request fails.

Programmer response: Specify all the required fields on the screen.

CFNA050 INVALID FUNCTION ID

Explanation: An internal error occurred during interpretation of the function ID. This is a software problem and should be reported to the IBM support center.

System action: The request fails.

Programmer response: Contact the IBM support center for assistance.

CFNA051 ADD SUCCESSFUL

Explanation: The exception list entry name was added.

System action: The entry was added to the table.

Programmer response: None

CFNA052 DELETE SUCCESSFUL

Explanation: The exception list entry was deleted.

System action: The entry was deleted from the exception list.

Programmer response: None

CFNA053 EDIT SUCCESSFUL

Explanation: The exception list entry was changed.

System action: An exception list entry was successfully updated.

Programmer response: None

CFNA054 DELETE CANCELLED

Explanation: The delete operation was cancelled.

System action: None

Programmer response: The delete operation that had been entered was cancelled by the user.

CFNA055 EDIT CANCELLED

Explanation: The edit operation was cancelled.

System action: None

Programmer response: The update operation that had been entered was cancelled by the user.

CFNA056 OPTIONS UPDATED

Explanation: The options have been successfully implemented.

System action: Updated options were successfully installed.

Programmer response: None

CFNA057 LOGIC ERROR

Explanation: Unable to determine component of table entry. This is a software problem and should be reported to the IBM support center.

System action: The request fails.

Programmer response: Contact the IBM support center for assistance.

CFNA058 APPC SEND LENGTH 0

Explanation: An APPC remote program set a send length of 0. This is a software problem and should be reported to the IBM support center.

System action: The request fails.

Programmer response: Contact the IBM support center for assistance.

CFNA059 APPC RECEIVE ERROR

Explanation: An APPC receive failed because the receive area is too small. This is a software problem and should be reported to the IBM support center.

System action: The request fails.

Programmer response: Contact the IBM support center for assistance.

CFNA060 IMSID *imid* ADDED

Explanation: The requested IMSID (*imid*) has been added.

System action: An IMSID and associated SYMDEST was added to the IMSID table.

Programmer response: None

CFNA061 IMSID *imid* DELETED

Explanation: The requested IMSID (*imid*) has been deleted.

System action: An IMSID was deleted from the IMSID table.

Programmer response: None

CFNA062 IMSID *imid* UPDATED

Explanation: The requested IMSID (*imid*) has been updated.

System action: The IMSID table was updated to include a new SYMDEST.

Programmer response: None

CFNA063 GETMAIN ERROR

Explanation: Getmain failed RC=*rr*.

System action: The request fails.

Programmer response: Contact the IBM support center for assistance.

CFNA064 FREEMAIN ERROR

Explanation: Freemain failed RC=*rr*.

System action: The request fails.

Programmer response: Contact the IBM support center for assistance.

CFNA065 ALESERV FAILED

Explanation: An ALESERV macro failed with RC=*rr*. This is a software problem and should be reported to the IBM support center.

System action: The request fails.

Programmer response: Contact the IBM support center for assistance.

CFNA066 NOT AUTHORIZED

Explanation: Your userid is not authorized to perform this function on the system where this IMS is running.

System action: The request fails.

Programmer response: Review the authorization section of the installation instructions in this manual for assistance in the permissions required for appropriate authorization.

CFNA067 MESSAGE TABLE IN USE

Explanation: An ISPF TBOPEN for the message table failed - ENQ failure.

System action: The request fails.

Programmer response: Ensure that no one is updating the message table.

CFNA068 MESSAGE *mmmmmmmmmm* ADDED

Explanation: The requested message has been added.

System action: A message was added to the message table.

Programmer response: None

CFNA069 Message *mmmmmmmmmm* DELETED

Explanation: The requested message has been deleted.

System action: A message was deleted from the message table.

Programmer response: None

CFNA070 Message *mmmmmmmmmm* UPDATED

Explanation: The requested message has been updated.

System action: A message was updated.

Programmer response: None

CFNA071 FULLSCREEN FAILED

Explanation: The fullscreen request failed to locate all RPLs of the data stream.

System action: The full screen display request fails.

Programmer response: Contact the IBM support center for assistance. Provide a screen print of the list of traced data streams, and the line that was selected when the failure occurred.

CFNA072 ERROR - FUNCTION FAILED

Explanation: An internal error occurred processing the request - the exception list type passed to CFNZTRAC was invalid or missing.

System action: The requested function fails.

Programmer response: Contact the IBM support center for assistance. Provide a screen print of the list of traced data streams and the function you requested.

CFNA073 ADD FAILED - DUPLICATE

Explanation: The add request specified the same resource name and type as an already existing entry.

System action: The request is ignored.

Programmer response: Review the current traces for one with the same trace type and name. If the trace is stopped or full, stop and delete the trace before starting a new trace.

CFNA074 ADD FAILED - TABLE FULL

Explanation: The number of trace table entries is limited to 25. This request would have exceeded the limit. Delete a trace to free a slot in the table.

System action: The request is ignored.

Programmer response: Stop and delete one of the existing traces.

CFNA075 NO TRACE DATA

Explanation: The requested trace has no information to display at this time.

System action: The request is ignored.

Programmer response: Select a trace that contains data.

CFNA076 PRESS PF1 FOR PRINT DSN

Explanation: The requested trace output has been placed in data set dsn.

System action: None

Programmer response: The output of a print trace request has completed. The output is contained in the data set name specified in the message text.

CFNA077 SECURITY ERROR

| **Explanation:** A security request was rejected. The long
| version of this message provides additional
| information, including the RACF return code and
| reason code, and the function being performed. The
| function indicates INITUSER (attempt to establish the
| TSO user ID in the APPC initiator), AUTH (verify
| access to the class FACILITY NCF resource profile), or
| DELUSER (delete the TSO user control blocks in the
| APPC initiator).

| **System action:** The request is rejected.

| **User response:** Review the MVS SYSLOG for an
| ICH408I or other RACF message that might indicate
| the reason for the RACF error or security problem.

CFNA078 SECURITY CHECK FAILED

| **Explanation:** A security request was rejected. The long
| version of this message provides additional
| information, including the RACF return code and
| reason code.

| **System action:** The request is rejected.

| **User response:** Review the MVS SYSLOG for an
| ICH408I or other RACF message that indicates the
| reason RACF denied the authorization request

CFNA079 SECURITY ERROR

Explanation: The attempt to establish the TSO user's security environment in the APPC initiator address space failed because the user's password was expired or the user ID was not defined on the system where IMS is running. The long version of this message provides additional information, including the RACF return code and reason code, and the reason for the error.

System action: The request is rejected.

User response: Review the MVS SYSLOG for an ICH408I or other RACF message that indicates the reason RACF was unable to establish the TSO user ID in the APPC initiator address space.

CFNB000 ISPF VDEFINE FAILED

Explanation: An ISPF VDEFINE service call failed RC=*rr*.

System action: The request fails.

Programmer response: Contact the support center for assistance. The return code for the ISPF service failure is documented in the *ISPF Services Guide*.

CFNB001 ISPF DISPLAY FAILED

Explanation: An ISPF DISPLAY call for panel name failed RC=*rr*.

System action:

Programmer response: Contact the IBM support center for assistance. The return code for the ISPF service failure is documented in the *ISPF Services Guide*.

CFNB002 ISPF SETMSG FAILED

Explanation: An ISPF SETMSG call for message msgid failed RC=*rr*.

System action: The function fails.

Programmer response: Contact the IBM support center for assistance. The return code for the ISPF service failure is documented in the *ISPF Services Guide*.

CFNB003 ISPF TBEND FAILED

Explanation: An ISPF TBEND call failed with RC=*rr*.

System action: The request fails.

Programmer response: Contact the IBM support center for assistance. The return code for the ISPF service failure is documented in the *ISPF Services Guide*.

CFNB004 ISPF TBCREATE FAILED

Explanation: An ISPF TBCREATE call failed with RC=*rr*.

System action: The request fails.

Programmer response: Contact the IBM support center for assistance. The return code for the ISPF service failure is documented in the *ISPF Services Guide*.

CFNB005 ISPF TBADD FAILED

Explanation: An ISPF TBADD call failed with RC=*rr*.

System action: The request fails.

Programmer response: Contact the IBM support center for assistance. The return code for the ISPF service failure is documented in the *ISPF Services Guide*.

CFNB006 ISPF TBTOP FAILED

Explanation: An ISPF TBTOP call failed with RC=*rr*.

System action: The request fails.

Programmer response: Contact the IBM support center for assistance. The return code for the ISPF service failure is documented in the *ISPF Services Guide*.

CFNB007 ISPF TBDISPL FAILED

Explanation: An ISPF TBDISPL call failed with RC=*rr*.

System action: The request fails.

Programmer response: Contact the IBM support center for assistance. The return code for the ISPF service failure is documented in the *ISPF Services Guide*.

CFNB008 ISPF TBDELETE FAILED

Explanation: An ISPF TBDELETE call failed with RC=*rr*.

System action: The request fails.

Programmer response: Contact the IBM support center for assistance. The return code for the ISPF service failure is documented in the *ISPF Services Guide*.

CFNB009 ISPF TBMOD FAILED

Explanation: An ISPF TBMOD call failed with RC=*rr*.

System action: The request fails.

Programmer response: Contact the IBM support center for assistance. The return code for the ISPF service failure is documented in the *ISPF Services Guide*.

CFNB010 ISPF TBSORT FAILED

Explanation: An ISPF TBSORT call failed RC=rr.

System action: The request fails.

Programmer response: Contact the IBM support center for assistance. The return code for the ISPF service failure is documented in the *ISPF Services Guide*.

CFNB011

Explanation: An ISPF TBOPEN for the IMSID table failed - ENQ Failure.

System action: The request fails.

Programmer response: A user updating the IMSID table will lock out any other users trying to use IMS Network CF screens. Contact the user updating the table and request that he exit the IMSID table maintenance function.

CFNB012 CFNTLIB NOT ALLOC

Explanation: The CFNTLIB table library is not allocated.

System action: The request fails.

Programmer response: DDNAME CFNTLIB may have been freed after entering IMS Network CF screens, or an allocation failure may have occurred when first entering IMS Network CF screens.

CFNB013

Explanation: An ISPF TBOPEN call failed with RC=rr.

System action: The request fails.

Programmer response: Contact the IBM support center for assistance. The return code for the ISPF service failure is documented in the *ISPF Services Guide*.

CFNB014 IMSID TABLE MISSING

Explanation: The IMSID table (CFNIMSID) was not found in DDNAME CFNTLIB.

System action: The request fails.

Programmer response: Use the IMSID table maintenance option of the ISPF panels to create an IMSID table before trying to access other IMS Network CF functions.

CFNB015

Explanation: An ISPF TBCLOSE call failed with RC=rr.

System action: The request fails.

Programmer response: Contact the IBM support center for assistance. The return code for the ISPF

service failure is documented in the *ISPF Services Guide*.

CFNB016 ISPF TBGET FAILED

Explanation: An ISPF TBGET call failed with RC=rr.

System action: The request fails.

Programmer response: Contact the IBM support center for assistance. The return code for the ISPF service failure is documented in the *ISPF Services Guide*.

CFNB017 ISPF CONTROL FAILED

Explanation: An ISPF CONTROL call failed with RC=rr.

System action: The request fails.

Programmer response: Contact the IBM support center for assistance. The return code for the ISPF service failure is documented in the *ISPF Services Guide*.

CFNB018 ISPF TBBOTTOM FAILED

Explanation: An ISPF TBBOTTOM call failed with RC=rr.

System action: The request fails.

Programmer response: Contact the IBM support center for assistance. The return code for the ISPF service failure is documented in the *ISPF Services Guide*.

CFNB019 ISPF TBSCAN FAILED

Explanation: An ISPF TBSCAN call failed with RC=rr.

System action: The request fails.

Programmer response: Contact the IBM support center for assistance. The return code for the ISPF service failure is documented in the *ISPF Services Guide*.

CFNB020 ISPF TBPUT FAILED

Explanation: An ISPF TBPUT call failed with RC=rr.

System action: The request fails.

Programmer response: Contact the IBM support center for assistance. The return code for the ISPF service failure is documented in the *ISPF Services Guide*.

CFNB021

Explanation: An ISPF TBSKIP call failed with RC=rr.

System action: The request fails.

Programmer response: Contact the IBM support center for assistance. The return code for the ISPF service failure is documented in the *ISPF Services Guide*.

CFNB022 ISPF FTOPEN FAILED

Explanation: An ISPF FTOPEN call failed with RC=rc.

System action: The Print trace request fails.

Programmer response: An error occurred opening the ISPF temporary output data set. Exit from ISPF, and try the operation again.

Programmer response: Contact the IBM support center for assistance.

CFNB023

Explanation: An ISPF FTINCL call failed with RC=rc.

System action: The Print trace request fails.

CFNB024

Explanation: An ISPF FTCLOSE call failed with RC=rc.

System action: The Print trace request fails.

Programmer response: Contact the IBM support center for assistance.

Non-ISPF messages

This section describes the non-ISPF messages issued by IMS Network CF. The messages are listed in sequential order.

Each message number has a suffix of E, I, or W:

- E means that the job step encountered a severe error and will terminate unsuccessfully.
- W means that the message is a warning to alert you to a possible error condition.
- I means that the message is for your information only.

For each message, the following accompanying information is provided where applicable:

System Action

This explains what the system will do next.

Programmer Response

This describes whether a response is necessary, what the appropriate response should be, and what the resulting effect is on the system or program.

Module

This is the module that issued the message.

Explanation

This explains what the message text means, what caused the message to be issued, and what its variable entry fields are (if any).

**CFN1001E ERROR ENCOUNTERED ON xxxxxxxx
RC=yyyyyyyy**

Explanation: This is an APPC communication error. The xxxxxxxx field identifies the APPC command being processed, and the yyyyyyyy field identifies the return code received from APPC. This error occurred on the local side (where the TSO user is logged on).

System action: The request is aborted.

Programmer response: Determine if APPC is available on both the local MVS system and the remote MVS system (where the target IMSID is brought up). If there are no indications of APPC problems, contact the IBM support center for assistance.

Module: CFNAPPC0

**CFN1020E GETMAIN FAILED IN IMS NETWORK
COMPRESSION FACILITY APPC
PROGRAM**

Explanation: A GETMAIN attempted in the APPC address space on the remote MVS system failed. Review SYSLOG on the MVS system where the target IMS system runs for associated errors.

System action: The request is aborted.

Programmer response: Review any GETMAIN error messages on the MVS system where the error occurred, and contact the IBM support center for assistance.

Module: CFNAPPC1

CFN1021I

Explanation: A FREEMAIN attempted in the APPC address space on the remote MVS system failed. Review SYSLOG on the MVS system where the target IMS system runs for associated errors.

System action: The request completes successfully. This is a warning message.

Programmer response: Review any FREEMAIN error messages on the MVS system where the error occurred, and contact the IBM support center for assistance.

Module: CFNAPPC1

CFN1022E ERROR ENCOUNTERED ON *xxxxxxx*
RC=*yyyyyyyyy*

Explanation: This is an APPC communication error. The *xxxxxxx* field identifies the APPC command being processed, and the *yyyyyyyyy* field identifies the return code received from APPC. This error occurred on the remote side (where IMS executes).

System action: The request is aborted.

Programmer response: Determine if APPC is available on both the local MVS system and the remote MVS system (where the target IMSID is brought up). If there are no indications of APPC problems, contact the IBM support center for assistance.

Module: CFNAPPC1

CFN1042I IMS NETWORK COMPRESSION
FACILITY INITIALIZATION
SUCCESSFUL

Explanation: This informational message is produced when IMS Network CF has successfully initialized.

Programmer response: None

Module: CFNINITn

CFN1043I IMS CTL RGN U4002 ABEND DUE TO
INIT ERROR=ABEND

Explanation: A previously-identified error occurred during IMS Network CF initialization. The INIT FAILURE parameter option was specified as ABEND, so an IMS control region abend follows this message.

System action: The IMS control region abends with a U4002 abend code.

Programmer response: Identify the cause of the initialization error based on prior error messages.

Module: CFNINITn

CFN1044I IMS NETWORK COMPRESSION
FACILITY INITIALIZATION FAILED -
RESTART CONTINUES

Explanation: A previously-identified error occurred during IMS Network CF initialization. The INIT FAILURE parameter option was specified as BACKOUT, so IMS restart continues with IMS Network CF disabled.

System action: IMS continues without IMS Network CF.

Programmer response: Identify the cause of the initialization error based on prior error messages. To enable IMS Network CF, correct the error and restart IMS.

Module: CFNINITn

CFN1045I

Explanation: A DFSPPE0 exit routine is about to be called.

System action: The specified user DFSPPE0 exit routine is called.

Programmer response: None

Module: CFNINITn

CFN1046E IMODULE LOAD FOR USER
SPECIFIED DFSPPE0 EXIT ROUTINE
xxxxxxx FAILED RC=*rr*

Explanation: An IMODULE LOAD for the user specified exit routine *xxxxxxx* failed with the indicated return code.

System action: The specified DFSPPE0 exit routine is not invoked.

Programmer response: Investigate the reason for the module load failure.

Module: CFNINITn

CFN1047W IMS NCF DETECTED GENERIC
EXITS-BYPASSING EXIT *exitname*

| **Explanation:** IMS Network CF detected that the
| Generic Partner Exit was in use. Because Generic
| Partner Exit provides the facility to call all required
| Partner exits (DFSPPE0 exits), IMS Network CF does
| not call the named module, even though the module
| was requested in a PPUE0= statement in the CFNPimid
| member. For additional information on the Generic
| Partner Exit, see IMS Tools Common Services
| Reference, SC19-2546.

| **System action:** The specified DFSPPE0 exit routine is
| not invoked.

| **User response:** If you must call the exit routine, add
| the exit name to the Generic Partner exit member of the

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| IMS PROCLIB, either GPREDIT0 or GPRimid0 (where
| "imid" is the 4 character IMSID).

| **Module:** CFNINITn

CFN1061E CFNINRTN RECEIVED INVALID DIRECTORY ADDRESS

Explanation: During IMS Network CF initialization,
verification of the directory address failed.

System action: The IMS control region abends with a
U4002 abend code.

Programmer response: Contact the IBM support
center.

Module: CFNINRTn

CFN1062W

Explanation: An invalid RPL was passed from IMS.

System action: IMS Network CF ignores the RPL and
passes it to VTAM.

Programmer response: An IMS node trace will assist
in identifying the cause of the problem. Contact the
IBM support center for assistance.

Module: CFNINRTn

CFN1063W CFNINRTN RPL REQUEST BYTE OF 00 FOUND

Explanation: An RPL was passed from IMS that
contains an RPL request byte of 00.

System action: IMS Network CF ignores the RPL and
passes it to VTAM.

Programmer response: An IMS node trace will assist
in identifying the cause of the problem. Contact the
IBM support center for assistance.

Module: CFNINRTn

CFN1064W OPNDST ERROR: RPL DID NOT HAVE A NIB

Explanation: During OPNDST processing, an RPL was
encountered without a NIB. Internal control blocks will
not be created for this node.

System action: IMS Network CF ignores the RPL and
passes it to VTAM.

Programmer response: An IMS node trace will assist
in identifying the cause of the problem. Contact the
IBM support center for assistance.

Module: CFNINRTn

CFN1065W OPNDST ERROR: RPL HAD AN INVALID NIB

Explanation: During OPNDST processing, an RPL was
encountered with an invalid NIB pointer. Internal
control blocks will not be created for this node.

System action: IMS Network CF ignores the RPL and
passes it to VTAM.

Programmer response: An IMS node trace will assist
in identifying the cause of the problem. Contact the
IBM support center for assistance.

Module: CFNINRTn

CFN1066E CFNINRTN HAD NO IMS CFN SAVE SETS AVAILABLE

Explanation: A product save set could not be obtained
because there were no free save sets available.

System action: IMS Network CF bypasses this
message.

Programmer response: Obtain a dump of the IMS
control region, and contact the IBM support center.

Module: CFNINRTn

CFN1067W CFNINRTN RPLREQ xx UNKNOWN

Explanation: The RPL request byte specified in the
message is unknown.

System action: IMS Network CF bypasses this
message.

Programmer response: An IMS node trace will assist
in identifying the cause of the problem. Contact the
IBM support center for assistance.

Module: CFNINRTn

CFN1080E GETMAIN FAILED FOR LU BLOCK

Explanation: A GETMAIN for storage for node-related
control blocks failed. The storage failure occurred for
extended private area storage in the IMS control region
address space.

System action: The IMS control region abends.

Programmer response: Investigate private area
extended storage limits and utilization. Increase the
amount of storage available.

Module: CFNLUBMG

CFN1081E CFNLUBMG ATTEMPT TO FIND LUB FAILED

Explanation: An attempt to find the IMS Network CF
control block associated with a node failed. This
occurred during an attempt to free the storage. The
storage is not freed.

System action: IMS continues without freeing the control block or storage.

Programmer response: Contact the IBM support center.

Module: CFNLUBMG

CFN1082E

Explanation: An invalid parm was passed to the locate LUB processor.

System action: The request fails. Depending on the reason for the request, other errors could occur.

Programmer response: Contact the IBM support center.

Module: CFNLUBMG

CFN1100I VTAM ACB INTERCEPT INSTALLED

Explanation: IMS Network CF is intercepting communication between IMS and VTAM and compressing messages.

System action: None

Programmer response: None

Module: CFNOPEN

CFN1120E OPEN FAILED FOR PROCLIB DD

Explanation: IMS Network CF's attempt to open the PROCLIB DD to read the options failed.

System action: IMS restart continues without IMS Network CF.

Programmer response: Contact the IBM support center.

Module: CFNPARM1

CFN1121E FIND FAILED FOR PROCLIB MEMBER CFNPxxxx

Explanation: The member name was not found in the PROCLIB DDNAME. The member name required is CFNPxxxx, where xxxx is the IMSID of the IMS subsystem.

System action: IMS restart continues without IMS Network CF.

Programmer response: Ensure that member CFNPxxxx is in the data set referenced by the PROCLIB DD in the IMS control region.

Module: CFNPARM1

CFN1122E xxxxxxxx FAILED FOR MODULE xxxxxxx RC=nn

Explanation: This message indicates a getmain or freemain failure for storage to be used for the identified module. RC is the return code from the getmain or freemain request.

System action: The IMS control region abends with a U4002 abend code.

Programmer response: Contact the IBM support center.

Module: CFNPARM1

CFN1123W

Explanation: There was a syntax error in the following statement near the area shown at the end of this message.

System action: Parameter analysis continues. The remainder of the statement is ignored.

Programmer response: Correct the syntax error.

Module: CFNPARM1

CFN1124W card image

Explanation: This message shows the statement that experienced the syntax error.

System action: Parameter analysis continues. The statement is ignored.

Programmer response: Correct the syntax error.

Module: CFNPARM1

CFN1125E LIST PROCESSING ERROR - RC=xx

Explanation: An error occurred during parameter analysis while processing an exception list.

System action: Parameter analysis continues after skipping the statement.

Programmer response: Contact the IBM support center. Provide the CFNPM000 member contents to the IBM support center.

Module: CFNPARM1

CFN1126W MULTIPLE SPECIFICATIONS OF PARM xxxxxxxxxxxxxxxx

Explanation: The identified keyword was specified more than once in the parameter member.

System action: Parameter analysis continues after skipping the statement.

Programmer response: Remove the multiple specifications of the indicated keyword.

Module: CFNPARM1

CFN1127W LIST ENTRY EXCEEDS 8 BYTES -
xxxxxxxxxxxxxxxxxxxx

Explanation: A request for an exception list entry contained a name that exceeded 8 bytes in length.

System action: Parameter analysis continues after skipping the statement.

Programmer response: Correct the parameter control statement.

Module: CFNPARM1

CFN1128W xxxxxx LIST EXCEEDS 256 ENTRIES
FOR PARM xxxxx

Explanation: More than 256 entries were requested for a single exception list. The component type and exception type are indicated in the message.

System action: Parameter analysis continues after skipping the statement.

Programmer response: Remove some entries from the parameter specifications.

Module: CFNPARM1

CFN1129I IMS NETWORK COMPRESSION
FACILITY USER SPECIFICATIONS

Explanation: Messages that follow indicate the options interpreted from the parameter specifications.

System action: None.

Programmer response: None

Module: CFNPARM1

CFN1131I xxxxxx EXCEPTION LIST FOR
xxxxxxxxxxxxxxxx

Explanation: Messages that follow indicate the exception list entries read from the parameter control statements. The compression component and the exception type are indicated in the message text.

System action: None

Programmer response: None

Module: CFNPARM1

CFN1132W EXCEPT IGNORED - NOT VALID FOR
KEYWORD xxxxxx

Explanation: An EXCEPT control statement was encountered following a control statement that does not support exceptions.

System action: The control statement is ignored.

Programmer response: Remove the control statement, or place it in the proper location in the control statements.

Module: CFNPARM1

CFN1133E EXCEPTION LIST STORAGE WAS
NOT PREALLOCATED

Explanation: Storage for exception lists was not preallocated. The parameter analysis module expects storage for these lists to be preallocated.

System action: IMS Network CF initialization fails.

Programmer response: Contact the IBM support center.

Module: CFNPARM1

CFN1134E ABEND DUE TO PARM ERROR
(PARM ERROR = ABEND)

Explanation: Parameter analysis encountered a prior syntax error. Since the parameter option PARM ERROR was set to ABEND, the IMS control region abends.

System action: The IMS control region abends with a U402 abend code.

Programmer response: Correct the syntax error.

Module: CFNPARM1

CFN1135W EXCEPT IGNORED DUE TO
xxxxxxxxxxxxxxxxxxxx

Explanation: An exception request was ignored for the reason stated. The reason may be a prior keyword error, a value error in the prior keyword, a duplicate occurrence of the prior keyword, or no prior keyword.

System action: The exception request is ignored.

Programmer response: Correct the syntax error.

Module: CFNPARM1

CFN1136E ABEND DUE TO INIT ERROR (INIT
ERROR = ABEND)

Explanation: A prior initialization error caused the IMS control region to abend because the INIT ERROR parameter was specified as ABEND.

System action: The IMS control region abends with a U4002 abend code.

Programmer response: Investigate the reason for the prior initialization error.

Module: CFNPARM1

CFN1137E PPUE0 MODULE NAME LENGTH
EXCEEDS 8 CHARS

Explanation: A PPEU0= control statement specified a module name that exceeded 8 bytes in length.

System action: The request is ignored.

Programmer response: Correct the module name.

Module: CFNPARM1

**CFN1138E NUMBER OF PPUE0 MODULES
REQUESTED EXCEEDS MAXIMUM**

Explanation: More than 10 DFSPUE0 module names were specified.

System action: DFSPUE0 exit names after the tenth are ignored.

Programmer response: Reduce the number of DFSPUE0 exit routines.

Module: CFNPARM1

**CFN1150E IMS NETWORK COMPRESSION
FACILITY INIT FAILED - IMODULE
LOCATE RC=xx**

Explanation: An IMODULE LOCATE call to find module DFSIDC00 failed with the indicated return code.

System action: IMS Network CF initialization fails.

Programmer response: Contact the IBM support center.

Module: CFNPINTh

**CFN1151E IMS NETWORK COMPRESSION
FACILITY INIT FAILED - INTERCEPT
FAILED**

Explanation: IMS Network CF's attempt to plant an intercept for ACB open failed.

System action: IMS Network CF initialization fails.

Programmer response: Contact the IBM support center.

Module: CFNPARM1

**CFN1160E IMS NETWORK COMPRESSION
FACILITY DOES NOT SUPPORT THIS
RELEASE OF IMS**

Explanation: The base release of IMS Network CF supports IMS releases 5.1, 6.1 and 7.1. Additional maintenance or an updated release of the product may be required to support subsequent releases of IMS.

System action: IMS Network CF initialization fails.

Programmer response: Contact the IBM support center.

Module: CFNPPUE0

**CFN1161E LOAD FAILED FOR MODULE xxxxxxxx
RC=xx**

Explanation: An attempt to load the specified module failed with the indicated return code.

System action: IMS Network CF initialization fails.

Programmer response: Verify that the identified module name is present in the IMS control region STEPLIB.

Module: CFNPPUE0

CFN1162E FIND SCD FAILED IN CFNPPUE0 xxxx

Explanation: IMS Network CF was unable to find the SCD for this subsystem (the last four bytes of the message identify the IMSID).

System action: IMS Network CF initialization fails.

Programmer response: Contact the IBM support center.

Module: CFNPPUE0

**CFN1164E UNEXPECTED RETURN CODE
RECEIVED FROM CSVQUERY-RC**

| **Explanation:** The attempt to establish the TSO user's
| security environment in the APPC initiator address
| space failed because the user's password was expired
| or the user ID was not defined on the system where
| IMS is running. The long version of this message
| provides additional information, including the RACF
| return code and reason code, and the reason for the
| error.

| **System action:** IMS continues initialization without
| Network Compression Facility.

| **User response:** Review the MVS SYSLOG for an
| ICH408I or other RACF message that indicates the
| reason RACF was unable to establish the TSO user ID
| in the APPC initiator address space.

**CFN1165W SECOND INVOCATION OF NCF
IGNORED**

| **Explanation:** CFNPPUE0 (or it's alias DFSPUE0) was
| called more than once during the IMS initialization
| process. NCF ignores the second (and any subsequent)
| calls.

| **System action:** Multiple calls to initialize NCF are
| ignored.

| **User response:** Review your environment to
| determine the reason why CFNPPUE0 (or it's alias
| DFSPUE0) was called more than once during the IMS
| initialization process.

CFN1180E CFNSEND ATTEMPT TO FIND LUB FAILED

Explanation: An attempt to locate an existing control block for the node name associated with a data stream failed.

System action: The data stream is not compressed. The message is passed to VTAM without any changes.

Programmer response: Contact the IBM support center.

Module: CFNSENDn

CFN1181E IMODULE GETSTOR FAILED FOR xxxxxxxx RETURN CODE=xx

Explanation: An attempt to getmain storage for the indicated resource failed. The storage was requested from above extended private area storage in the IMS control region address space.

System action: The IMS control region abends with a U4002 abend code unless the request was for trace buffers (TRACEBUF), in which case the trace fails.

Programmer response: Contact the IBM support center.

Module: CFNSENDn

CFN1182E CLB/LUB MISMATCH - xxx

Explanation: Information in the IMS node control block disagrees with similar information in the IMS Network CF control block. The source of the mismatch is indicated by xxx.

System action: The IMS control region abends with a U4002 abend code.

Programmer response: Contact the IBM support center.

Module: CFNSENDn

CFN1183W DFSPPOOL XXXXXXXX FAILED RC=XX

Explanation: A DFSPPOOL storage request failed. The GET or RELEASE function failed. The return code appears in the message text.

System action: For a GET request, the 3270 message is passed to VTAM without compression. For a RELEASE request, the compressed message is passed to VTAM.

Programmer response: For a GET request, check allocation and utilization of the HIOP pool. For a RELEASE request, contact the IBM support center for assistance.

Module: CFNSENDn

CFN1200E INTERNAL ERROR IN SOURCE TIMESTAMP TYPE SPECIFICATION

Explanation: Parameters passed to the time conversion routine were not valid.

System action: The APPC address space abends with a U4002 abend code.

Programmer response: Contact the IBM support center.

Module: CFNTIME

CFN1201E SOURCE IMS TIMESTAMP INDICATES AN OFFSET ERROR

Explanation: Parameters passed to the time conversion routine were not valid.

System action: The APPC address space abends with a U4002 abend code.

Programmer response: Contact the IBM support center.

Module: CFNTIME

CFN1202E INTERNAL ERROR ADJUSTING MINUTES IN OFFSET

Explanation: The time conversion routine experienced an error converting the offset to a local time.

System action: The APPC address space abends with a U4002 abend code.

Programmer response: Contact the IBM support center.

Module: CFNTIME

CFN1203E INTERNAL ERROR ADJUSTING HOURS IN OFFSET

Explanation: The time conversion routine experienced an error converting the offset to a local time.

System action: The APPC address space abends with a U4002 abend code.

Programmer response: Contact the IBM support center.

Module: CFNTIME

CFN1204E INTERNAL ERROR IN DESTINATION TIMESTAMP TYPE SPECIFICATION

Explanation: A parameter error was found in the input to the time conversion routine.

System action: The APPC address space abends with a U4002 abend code.

Programmer response: Contact the IBM support center.

Module: CFNTIME

**CFN1205E REQUEST TO CONVERT A
TIMESTAMP AFTER 2059 TO IMS 5.1
FORMAT**

Explanation: A timestamp conversion error was encountered.

System action: The APPC address space abends with a U4002 abend code.

Programmer response: Contact the IBM support center.

Module: CFNTIME

CFN1206E

Explanation: A TIME macro service request failed with the indicated return code.

System action: The APPC address space abends with a U4002 abend code.

Programmer response: Contact the IBM support center.

Module: CFNTIME

**CFN1220E APPC ERROR - APPC RECEIVE
FAILED RC=xx**

Explanation: An APPC receive verb failed with the indicated return code.

System action: The APPC address space abends with a U4002 abend code.

Programmer response: Contact the IBM support center.

Module: CFNZMAIN

**CFN1221E APPC ERROR - APPC SEND FAILED
RC=xx**

Explanation: An APPC send verb failed with the indicated return code.

System action: The APPC address space abends with a U4002 abend code.

Programmer response: Contact the IBM support center.

Module: CFNZMAIN

**CFN1240E VALIDATION OF APPC HEADER
FAILED**

Explanation: The APPC header received in the APPC address space failed validation.

System action: The APPC address space abends with a U4002 abend code.

Programmer response: Contact the IBM support center.

Module: CFNZSTOR

**CFN1261W UNKNOWN COMMAND CODE -
DATA NOT COMPRESSED**

Explanation: The data stream being compressed had an invalid 3270 character.

System action: The data stream is not compressed. It is passed to VTAM without any compression.

Programmer response: This is only a warning that a data stream was unable to be compressed. Tracing the data stream can provide information about the invalid character(s) present in the data stream.

Module: CFNCOMP1

CFN1262E

Explanation: The address of the IMS Network CF directory passed to CFNCOMP at IMS initialization was not valid.

System action: The IMS control region abends with a U4002 abend.

Programmer response: Contact the IBM support center.

Module: CFNCOMP1

CFN1263E

Explanation: The RPL address passed from IMS does not contain a valid RPL.

System action: The data stream is not compressed. The RPL is passed to VTAM without any changes.

Programmer response: IMS will receive an error return code from VTAM, and will process the error without interference from IMS Network CF.

Module: CFNCOMP1

**CFN1264E INVALID LU CB ADDRESS - DATA
NOT COMPRESSED**

Explanation: The internal control block address associated with the node to which this data stream is to be sent is not valid. The data stream will not be compressed.

System action: The data stream is not compressed. The message is passed to VTAM without any changes.

Programmer response: Contact the IBM support center.

Module: CFNCOMP1

CFN1265W UNKNOWN EXTENDED ATTRIBUTE TYPE FOUND

Explanation: During the scan of a data stream, an unknown extended attribute identifier was encountered.

System action: The data stream is not compressed. The message is passed to VTAM without any changes.

Programmer response: Contact the IBM support center.

Module: CFNCOMP1

CFN1266W ERROR PROCESSING CHAINED RPL CMD xx x

Explanation: A data stream order was split among multiple RPLs. IMS Network CF experienced an error processing the split order. The hex order and type of error are shown at the end of the message.

System action: IMS Network CF ignores the RPL and passes it to VTAM.

Programmer response: An IMS node trace will assist in identifying the cause of the problem. Contact the IBM support center for assistance.

Module: CFNCOMP1

CFN1280W ERROR PROCESSING A DATA STREAM ORDER SPLIT ACROSS RPLS x

Explanation: A data stream order was split among multiple RPLs. IMS Network CF experienced an error processing the split order. The type of error is shown at the end of the message.

System action: IMS Network CF ignores the RPL and passes it to VTAM.

Programmer response: An IMS node trace will assist in identifying the cause of the problem. Contact the IBM support center for assistance.

Module: CFNCOMP2

CFN1300E UNABLE TO LOCATE TIOT ENTRY FOR DDNAME PROCLIB

Explanation: During IMS initialization, the IMS control region TIOT is scanned for the PROCLIB DD. IMS Network CF was unable to locate the PROCLIB TIOT entry.

System action: IMS initialization proceeds. The ISPF Edit Options feature will not be available.

Programmer response: Contact the IBM support center.

Module: CFNPROCN

CFN1301E SWAREQ FAILED RC=xx

Explanation: During IMS initialization, a SWAREQ macro request to locate a JFCB failed with the indicated return code.

System action: IMS initialization proceeds. The ISPF Edit Options feature will not be available.

Programmer response: Contact the IBM support center.

Module: CFNPROCN

CFN1302E IMODULE GETMAIN FAILED FOR CFN#PROC RC=xx

Explanation: During IMS initialization, an IMODULE GETMAIN request failed with the indicated return code.

System action: IMS initialization proceeds. The ISPF Edit Options feature will not be available.

Programmer response: Contact the IBM support center.

Module: CFNPROCN

| CFN1320E xxxxxxxx ERROR-SAF RC=xx RACF RC=xx RACF REASON=xx

| Explanation: When a RACF error occurs, NCF writes
| this message to the MVS SYSLOG to help identify the
| function that was being performed. A similar message
| is presented to the TSO user that requested the
| function.

| System action: A user request was rejected.

| User response: A RACF error was encountered. There
| should be a RACF message such as an ICH408I before
| this message that identifies the RACF error
| encountered.

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