OS/390

Open Systems Adapter Support Facility User's Guide For OSA-2

SC28-1855-06

OS/390

Open Systems Adapter Support Facility User's Guide For OSA-2

SC28-1855-06

Note

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

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This is a major revision of SC28-1855-05.

This edition applies to Version 2 Release 7 of OS/390 (5647-A01) and to all subsequent releases and modifications until otherwise indicated in new editions.

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Year 2000 Support for OSA/SF

OSA/SF is an element of OS/390. Beginning with OS/390 Version 1 Release 2, OS/390 is certified as a Year 2000–ready operating system by the Information Technology Association of America (ITAA). Follow-on releases are also Year 2000 ready. No changes were required to OSA/SF for year 2000.

Programming Interface Information

This publication primarily documents information that is NOT intended to be used as a Programming Interface of Open Systems Adapter Support Facility.

This publication also documents intended Programming Interfaces that allow the customer to write programs to obtain the services of Open Systems Adapter Support Facility. This information is identified where it occurs by an introductory statement in the chapter.

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About This Book

This book provides information for *doing OSA/SF tasks*, not for learning about OSA or planning for OSA. If you want an overview of OSA and how it functions, see *Planning for the System/390 Open Systems Adapter Feature*, GC23-3870. Our goal was to provide you with easy-to-follow task-oriented information that you can quickly access to get your job done.

Who Should Use This Book

This book is for anyone who uses OSA/SF to customize and manage OSAs.

How This Publication Is Organized

This publication was organized according to the tasks you need to do.

Chapter 1 on page 1-1 includes a list of S/390 OSA modes and a high-level list of the tasks that you need to perform.

Chapter 2 on page 2-1 includes instructions for setting up OSA/SF, downloading and installing the OSA/SF GUI for OS/2 or Windows.

Chapter 3 on page 3-1 includes instructions for you to become familiar with the OSA/SF interface, referred to as the OSA/SF GUI.

Chapter 4 on page 4-1 includes install, verify, and problem determination instructions for each of the following OSA modes:

- TCP/IP Passthru
- SNA
- HPDT ATM Native
- ATM IP Forwarding
- HPDT MPC
- LANRES/MVS

Chapter 5 on page 5-1 includes instructions to customize OSAs using TSO with REXX EXECs and OSA/SF commands.

Chapter 6 on page 6-1 includes information and examples on sharing an OSA between LPs and/or TCP/IP stacks.

Chapter 7 on page 7-1 includes instructions for setting up an SNA 3270 emulation connection between OS/2 and MVS, then using OSA/SF GUI to communicate with OSA/SF.

Chapter 8 on page 8-1 includes problem determination aids.

Chapter 9 on page 9-1 PROVIDES information for entering OSA/SF commands from TSO and calling OSA/SF at the API.

The appendices includes details about using an OAT, OSA/SF messages, commands, and control blocks.

Where to Find More Information

System/390 Open Systems Adapter Support Facility (OSA/SF) for MVS/ESA

- *System/390 Open Systems Adapter Support Facility for MVS/ESA Licensed Program Specifications*, GC23-3871
- *Planning for the System/390 Open Systems Adapter Feature*, GC23-3870
- Online help is available to TSO/E and OS/2 user's accessing an OSA/SF

OSA Modes of Operation

- *TCP/IP Version 2 Release 2.1 for MVS: Planning and Customization*, SC31-6085
- *TCP/IP for MVS Customization and Administration Guide, Version 3 Release 1*, SC31-7134
- *TCP/IP for MVS: User's Guide Version 3 Release 1*, SC31-7136
- *TCP/IP for VM: Planning and Customization Version 2 Release 3*, SC31-6082
- *TCP/IP Version 2 Release 2 for VM*, SC31-6081
- *VTAM V4R1 for MVS/ESA, VM/ESA, VSE/ESA Resource Definition Reference,* SC31-6427
- *VTAM V4R1 Resource Definition Samples,* SC31-6428
- *VTAM V3R4 Resource Definition Reference,* SC31-6438
- *LAN Resource and Extension Services/MVS Guide and Reference*, SC24-5623

Related Information

- *MVS/ESA Hardware Configuration Definition: User's Guide*, SC33-6468
- *MVS/DFP System Programming Reference*, SC26-4567
- *MVS/ESA SP 5 Planning: APPC Management*, GC28-1503
- *Using the Enterprise Systems Connection Manager Version 1 Release 3*, SC23-0425
- *IBM Local Area Network Administrator's Guide*, GA27-3748
- *RACF General Information*, GC28-0722

- *SAA: Common Programming*, SC26-4399
- *Application Development: Writing Servers for APPC/MVS*, GC28-1070
- *Communications Manager/2 V1.1 Network Administration and Subsystem Management Guide*, SC31-6168
- *Communications Manager/2 V1.1 Host Connect Reference*, SC31-6170
- *Communications Manager/2 V1.1 Scenarios*, SC31-6174
- *Communications Manager/2 V1.1 Information and Planning Guide*, SC31-7007
- *Communications Manager/2 V1.1 Workstation Installation and Configuration Guide*, SC31-7169

Softcopy and Hardcopy for OSA and OSA/SF

A number of the books provided with the hardware and software system platforms that OSA supports discuss OSA and OSA/SF in the context of their platforms. Only the planning guide and user's guide discuss OSA and OSA/SF from the perspective of the OSA feature and its support facility.

- The OSA planning guide and OSA/SF user's guide are available in hardcopy. Subsequent editions, if any, will be published to document a significant change in OSA or OSA/SF. Such editions are not published periodically.
- The OSA planning guide and OSA/SF user's guide are also available in softcopy on the CDROM collection kits. The softcopy book files are updated periodically according to the chronological cycle of the system softcopy collection kit.
- OSA/SF also provides online help information for the panels that are presented by the OSA/SF OS/2 or GUI interface. These help panels include a set of “How To” instructions located within the Help pull-down.
- *Program Directory for IBM Open Systems Adapter Support Facility for MVS*, which is not included in the following charts, is distributed on the OSA/SF for MVS/ESA product tape.
- OSA/SF is a licensed program (program number 5655-104) on MVS/ESA. It is a base, non-exclusive element on OS/390. The same OSA/SF product tape is provided for MVS/ESA and OS/390 user's.

For OS/390 Users

Book Title	Book Hardcopy Order #	Book Softcopy File Name	In OS/390 Collection Kit #	Bookshelf File Name (Note)	Bookshelf Index File Name
Planning for the System/390 Open Systems Adapter Feature	GC23-3870	IOA1PG*xx*	SK2T-6700	IOA39000	IOA39000
OS/390 Open Systems Adapter Support Facility User's Guide	SC28-1855	IOASUG*xx*	SK2T-6700	IOA39000	IOA39000

Note: The OSA planning guide and the OSA/SF user's guide are available online on the OSA/SF bookshelf, whose file name is IOA39000.

Summary of Changes

Summary of Changes
for SC28-1855-06
as updated June, 1999
OS/390 Version 2 Release 7

This major revision includes:

- The Query Command is now available through the GUI interface. Instructions have been added to "Query Command Using the GUI" on page 8-5.
- The GUI interface is now supported on the Microsoft Windows platforms, including Windows 95 and Windows NT. Changes have been made throughout this publication including, most notably, the following sections:
  - "Downloading and Installing the OSA/SF GUI for OS/2 or Windows" on page 2-14.
  - "For Windows" on page 2-20.
  - The third introductory paragraph in Chapter 3 on page 3-1 has been rewritten to include the addition of Windows capability.
  - "Starting the OSA/SF GUI" on page 3-1.
  - Instructions for accessing the GUI via Windows have been added to the beginning of Chapter 4 on page 4-1.
- Defining PVCs can now be done through the HPDT ATM Native configuration panel. Instructions for this have been added to "Installing OSA HPDT ATM Native Mode" on page 4-18.
- A new chapter, Chapter 6 on page 6-1, has been added.
- A new section, "Additional SNA Information" on page 4-11, has been added.

This book includes terminology, maintenance, and editorial changes. Technical changes or additions to text and illustrations are indicated by a vertical line to the left of the change.

This publication can be used in place of:

Using the System/390 Open Systems Adapter Support Facility for MVS/ESA, SC23-3872.

The OSA/SF Program Directory and other publications might reference the above title and form number, but use this publication. The title and form number were changed for consistency within OS/390.

Summary of Changes
for SC28-1855-05
OS/390 Version 2 Release 6

This major revision includes:

- TCP/IP Passthru mode customization enhancements:
  - You can now define a maximum of 8 IP addresses per OAT entry (UA pair) and a maximum of 16 IP addresses per port. Defining multiple IP addresses to a port provides enhanced availability. See "4) Sharing OSA Ports Between Logical Partitions" on page 4-5.
  - When the S/390 is being used as a router, you can now specify a secondary default entry in addition to a primary default entry. This allows the secondary logical partition unit address pair to accept IP packets when the primary unit address pair is not available.

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- Multicast Support (OS/390 V2R6 or above) on all OSA-2s when being run in the TCP/IP Passthru Mode. This support requires that the OSA be capable of accepting LAN packets based upon multicast addresses specific for these protocols and will allow displaying of this information through OSA/SF. See “IP Multicast Support” on page 4-7 for OSA/SF GUI.
- IPX support for NDS Server. See “HPDT MPC with IPX Traffic” on page A-19 and “Corresponding Summary View” on page A-20 for examples of the OAT.
- HPDT MPC Mode (OS/390 R3 or above) will display more detailed information to the user about the configuration of a FDDI or FENET OSA-2 when it is being run in the HPDT MPC mode. See “HPDT MPC Mode” on page 4-25 for the GUI. See “HPDT MPC with IP Traffic” on page A-17 for an example of the OAT.
- A new OSA/SF command, Configure OSA CHPID contains the functions of two existing EXECs, IOAINATM and IOAINSNA. See “CONFIG_OSA” on page B-4 for a description of the command. See Chapter 5 on page 5-1 for instructions on using the command to customize the OSA.
- New parameters (ATM_INFO) and (IPX_INFO) for Query command. See “QUERY” on page B-23.
- Updated messages and commands.

Chapter 1. Introduction

Welcome to the OSA/SF user's guide. Our goal is to provide you with easy-to-follow instructions that enable you to do OSA tasks as easy and as quick as possible.

The Open Systems Adapter Support Facility (OSA/SF) is an MVS application (OS/390 Element) for customizing and managing OSAs. You communicate with OSA/SF through the OSA/SF Graphical User Interface (GUI) or a REXX EXEC entered on TSO.

S/390 OSA Modes of Operation

The S/390 OSAs can be customized for different Server-to-LAN services. The following are the *OSA Modes of Operation* for the S/390 server:

- TCP/IP Passthru—Providing communications between the server TCP/IP applications and TCP/IP clients on the LAN
- SNA—Systems Network Architecture
- HPDT ATM Native—High Performance Data Transfer Asynchronous Transfer Mode
- ATM IP Forwarding
- HPDT MPC—High Performance Data Transfer Multi Path Channel
- LANRES/MVS—LAN Resource Extension and Services/MVS

OSA/SF provides a way to customize and manage the OSA modes of operation for your server. For example: If LANRES/MVS is installed on your S/390, you customize OSA for LANRES mode. Chapter 4 on page 4-1 describes how to customize for each OSA mode of operation.

A Perspective of Your Tasks

This user's guide was designed with you in mind. Our focus was on providing clear instructions for *doing* OSA/SF tasks. Overview information and theory of operation is only included when you need it.

We've organized the information according to the following tasks you need to do:

__ 1. **Install** OSA/SF using the program directory

__ 2. **Set up** OSA/SF, **Download and Install** the OSA/SF GUI on OS/2 or Windows, Chapter 2

__ 3. **Become familar** with the OSA/SF GUI if you are going to use it, Chapter 3

__ 4. **Customize** OSAs using either the GUI or TSO
   - OSA/SF GUI (OS/2 or Windows), Chapter 4
   - TSO (IOACMD) Chapter 5

__ 5. **Become familar** with the details of sharing an OSA between LPs and/or TCP/IP stacks, if necessary Chapter 6

__ 6. **Set up** OSA as the Communications Controller, Chapter 7 (if required)

__ 7. **Handle OSA/SF problems**, Chapter 8

__ 8. **Use** TSO for OSA/SF commands, Chapter 9

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Chapter 2. Getting Started with OSA/SF

This chapter provides instructions for setting up OSA/SF on the server (host), downloading and installing the OSA/SF GUI to OS/2 or Microsoft Windows, and for doing service updates.

Setting Up OSA/SF

Use these instructions to set up the following for OSA/SF:

1. Started Procedure (task) for OS/390 (MVS)
2. Startup Profile
3. Configuration and Master Index Files
4. REXX Command EXECs for TSO
5. APPC Communications (**OSA/SF will not work without it**)
6. Disk Server Function (only for LANRES)

Note: The numbers in the above list correspond to the steps in the instructions.

When to Use These Instructions

- After the OSA/SF install is complete using the Program Directory.
- After the OSA Planning Checklists are complete using the *Planning for the OSA Feature*.

__ 1. Do the following to set up an OSA/SF Started Procedure (task) for OS/390 (MVS):

__ a. Copy the sample procedure from the **IOA.SIOASAMP** library member **IOAOSASF** into SYS1.PROCLIB or another system procedure library.

__ b. Edit the sample procedure you just copied. See Figure 2-1.

OSASF1 is the name of the EXEC used in the sample, but you can change the name.

OSA/SF Started Procedure Name _____

Note: OSA/SF must be APF-authorized or it will not function. You must have SIOALMOD in either the progxx or IEAAPFxx library.

```
//*   START OSA SUPPORT FACILITY
//*
//OSASF1   EXEC PGM=IOAMAIN,TIME=1440,REGION=6000K,DYNAMNBR=5,
//STEPLIB  DD  DSN=ADLE370.V1R3M0.SCEERUN,DISP=SHR
//*** The following 2 lines that are commented out should be used for C/370
//*** runtime library. If you include them, comment out the previous STEPLIB
//*STEPLIB  DD  DSN=C370.SEDCLINK,DISP=SHR
//*         DD  DSN=C370.SIBMLINK,DISP=SHR
//         DD  DSN=SYS1.SIOALMOD,DISP=SHR
//IOALIB   DD  DSN=SYS1.SIOALMOD,DISP=SHR
//IOAPROF  DD  DSN=IOA.STARTUP.PROFILE,DISP=SHR
//SYSPRINT DD  SYSOUT=A,DCB=(RECFM=FBA,LRECL=121,BLKSIZE=121)
//SYSUDUMP DD  SYSOUT=H
```

Figure 2-1. Sample Started Procedure (IOA.SIOASAMP Member IOAOSASF)

__ c. Ensure that the data set names in the **STEPLIB** and **IOALIB** statements match the names used for the C runtime libraries and the OSASF code loadlib of your MVS system. The

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Program Directory provides instructions for including the SIOALMOD data set in the link list. The C/370 or LE/370 runtime libraries must be in an APF library.

__ d. Change the IOAPROF DD statement, **STARTUP.PROFILE**, to a unique name for each OSA/SF system image. You will copy the sample Startup Profile into this data set in the next step.

OSA/SF Startup Profile Name _____

Attention

If you use dynamic allocation for SYSPRINT or SYSUDUMP, you will not be warned when an existing copy of OSA/SF is already running.

__ 2. Do the following to set up an OSA/SF Startup Profile as shown in Figure 2-2 on page 2-3:

__ a. Allocate a data set for the Startup Profile name you selected. Request primary space of 2 tracks, secondary space of 2 tracks, and sequential directory blocks=0. The attributes of this data set should be RECFM=FB, LRECL=80, and BLKSIZE=5120.

__ b. Copy the sample Startup Profile from the **IOA.SIOASAMP** library member **IOASPROF** into the Startup Profile data set you just allocated.

__ c. Edit the Startup Profile that you just copied.

Note: Before editing the Startup Profile, see 2-3 for Startup Profile Guidelines and descriptions of the data set names.

__ 1) Change the SYSNAME to identify the OSA/SF logical partition and change the CECNAME to identify the CEC. Write them down for later use:

SYSNAME = _____
CECNAME = _____

__ 2) Change the VOLSER and UNIT to identify the disk pack you want the files on. If you don't want to specify a unit type for each data set, replace UNIT 3390 with UNIT SYSALLDA. If VOLSER is specified, you must specify UNIT.

__ d. If you do not want to use the default **IOASERV** for the APPC LU name, include the statement **SET APPC NAME *luname***. Replacing ***luname*** with an eight-character name that starts with an alpha character. If the statement is not included in the profile, the LU name defaults to IOASERV.

LU name for APPC = _____

Note: This APPC LU name must agree with the LU name specified for MVS and VTAM in step 5a2 on page 2-6.

```
 *  See the OSA/SF User's Guide for setting up the Startup Profile
 *
 *  The following SET ALIAS statements are required even if you do
 *  not use them in the dataset names that follow.
 *
 SET ALIAS SYSNAME SYS1
 SET ALIAS CECNAME CEC1
 *
 *  Defines the OSA configuration file that is used by OSA/SF.
 *
 SET NAME IOACFG
     DATASET 'IOA.&CECNAME.OSAS.CONFIG'
     UNIT 3390
     VOLSER 339008
 *
 *  Defines the OSA master index file that is used by OSA/SF.
 *
 SET NAME IOAINX
     DATASET 'IOA.&CECNAME.MASTER.INDEX'
     UNIT 3390
         VOLSER  339005
 *
 *  The OSA/SF started task has changed to now add on '.LPnn' to the
 *  dataset name for the message log where the nn is the LP number
 *  that OSA/SF is running on.  Because OSA/SF appends this LP number
 *  to the file, you may want to use the &CECNAME instead of &SYSNAME
 *
SET NAME IOAMSG
    DATASET 'IOA.&SYSNAME.MESSAGE.LOG'
    UNIT 3390
    VOLSER 33900C
 *
 *  Use the following statement to define the high level qu  alifier
 *  to be used for all data sets that are created by OSA/SF.
 *
SET NAME IOADSN
    DATASET 'IOA.&CECNAME.OSASF'
    UNIT 3390
    VOLSER  33900C
 *
 *  The following SET APPC statement is used to specify the LU
 *  name that OSA/SF should use.
 *
SET APPC NAME IOASERV
 *
 *  The SET SYSINFO statements can be used to remap existing CHPID
 *  and DEVICE numbers.  See the OSA/SF User's Guide for details.
 *
```

Figure 2-2. Sample Startup Profile (IOA.SIOASAMP Member IOASPROF)

Startup Profile Guidelines:

- SET ALIAS must occur before SET NAME. The SET ALIAS names are required, even if you do not use them. Specify names with a maximum of eight characters.
- The SET command defines the data set name identifiers: IOACFG, IOAINX, IOAMSG, and IOADSN.
- Data set names must be unique and contained within single quotes.

- Data set names for IOACFG, and IOAINX can contain a maximum of 44 characters. IOAMSG can contain a maximum of 30 characters, and IOADSN can contain a maximum of 26 characters.
  - Periods are counted as part of the allowed number of characters.
  - Qualifiers cannot exceed eight characters.
  - The first character of all qualifiers must be a letter.
- If &CECNAME or &SYSNAME are used, they must be preceded and/or followed immediately by a period, unless they are the first or last item in the dataset name.
- The SET APPC NAME command defines the LU name for APPC. If the command is not included, the LU name defaults to IOASERV.
- VOLSER can have a maximum of six characters and UNIT a maximum of eight characters. When VOLSER is used there must be a UNIT specified.
- No blank lines.
- Comment lines are indicated with the first non-blank character set to an asterisk "*". Everything after the asterisk is omitted until the next line in the dataset.
- Comments between the SET command and the other keywords (DATASET, VOLSER, and UNIT) can be used within the command.
- Data must be in columns 1 to 70.
- No wrapping is supported.
- File is not case sensitive, as all characters are translated to upper case.

Descriptions of the dataset names:

- **IOACFG** is the OSA configuration file, it defines what code should be installed for each OSA. Since the same OSA CHPID can be shared by multiple systems (LPs), it should be defined as shared between the logical partitions within the System/390. You will set up this file in step 3.
- **IOAINX** is the OSA master index file that defines all the available OSA mode code. It should be defined as shared between logical partitions within the System/390. You will set up this file in step 3 on page 2-5.
- **IOAMSG** is used by OSA/SF to store information and status for this LP where OSA/SF is running. Should not be shared across systems. OSA/SF will allocate and use the data set as needed. You do not have to do anything with this file. ***Should not be shared across systems***. OSA/SF will allocate and use the data set as needed. *You do not have to do anything with this file*.
- **IOADSN** is the starting high level qualifier for all data sets that are created for use by OSA/SF. These data sets are created for three purposes:
  a. During configuration using the OSA/SF GUI, files are created that contain user input in a compact format for later use in activating the configuration.
  b. During activation, these internal data sets are used by OSA/SF to complete the activation process.
  c. Files are created for each OSA CHPID known to OSA/SF to hold various values and attributes about each CHPID. These are built and updated dynamically by OSA/SF.

  In order to allow an OSA/SF on any LPAR to get to the same data as another LPAR or perform activation on previously defined configurations, these data sets should be defined as shared across all partitions. The files that use this high-level qualifier will be allocated by OSA/SF as needed.

If OS/390 or MVS is Running as a Guest of VM/ESA:

Continue with this section only if OS/390 or MVS is running as a guest of VM/ESA and you have a need to identify virtual CHPID numbers and device numbers. In the Startup Profile, you can associate a virtual number with a real number for CHPIDs and device numbers.

Specifying a real and virtual device number for the OSAD device (OSA/SF) allows OSA/SF to start from MVS or OS/390 when running as a guest of VM. Specifying real and virtual CHPID numbers allows the use of CHPIDs by MVS when running as a guest of VM.

Include the SET SYSINFO command shown below. Specify the real and virtual CHPID numbers and device numbers that you want to associate:

SET SYSINFO CHPID
(REAL xx VIRTUAL yy) DEVICE (REAL aaaa VIRTUAL bbbb)

- The maximum length of the command string is 70 characters.
- The command is not case sensitive.
- Replace the variables with hexadecimal numbers.
- All command parameters must be separated by spaces.
- If you include more than one SYSINFO statement, they do not have to be next to each other.
- Do not include this command if OS/390 or MVS is not running as a guest of VM/ESA.

This information will not be shared between multiple partitions on the same system and will not be saved between invocations of OSA/SF. It must be present in the STARTUP.PROFILE on each invocation of OAS/SF for which the remapping is required.

__ 3. Do the following to set up the OSA Configuration and Master Index files:

__ a. Allocate the following two new sequential data sets and then copy the members shown in **IOA.SIOASAMP** into the new data sets. Replace *&CECNAME.* with the name used in step 2c1 on page 2-2.

```
Members in IOA.SIOASAMP        New Sequential Data Set Names

    IOACFG                       IOA.&CECNAME.OSAS.CONFIG
    IOAINX                       IOA.&CECNAME.MASTER.INDEX
```

__ 1) Set the initial allocation of OSAS.CONFIG to request primary space of 1 track, secondary space of 2 tracks, and the attributes of RECFM=FB, LRECL=80, and BLKSIZE=5120.

__ 2) Set the initial allocation of the Master.Index file to request primary space of 2 tracks, secondary space of 2 tracks, and the attributes of RECFM=FB, LRECL=80, and BLKSIZE=5120.

__ 3) Edit the MASTER.INDEX file that you just copied and update the host destination names that start in column 1 to match your specific environment. The names in the file must all start in the same column. Do *not* change the disk-serving destination names that start in column 56.

__ 4. Do the following to set up the REXX EXECs that are used from TSO.

Before Starting

- If the PTF is installed for APAR # OW33393, skip steps C, D, E, and F. This APAR merged REXX EXECs IOAINSNA and IOAINATM into the IOACMD EXEC as the Configure OSA command.
- You can copy the EXECs into a local CLIST or EXEC data set that is allocated to //SYSPROC DD of a TSO logon proc.
- During installation of OSA/SF, the program directory gave the installer the option of making the OSA/SF program library accessible either by the LNKLSTxx, or by including the OSA/SF program library (SIOALMOD) in a STEPLIB of the OSA/SF startup proc. If the SIOALMOD library was not put in LNKLSTxx and a STEPLIB was used instead, you must also place the SIOALMOD library in a STEPLIB within the users TSO logon proc in order for the TSO user to have access to the OSA/SF code.

__ a. Allocate a data set named **IOACMD.EXEC**, requesting primary space of 14 tracks with secondary space of 35 tracks. The attributes of this data set should be: RECFM=FB, LRECL=80, and BLKSIZE=5120.

__ b. Copy the EXEC from **IOA.SIOASAMP** library member **IOACMD** and write down the data set name of where you store the EXEC.

Fully qualified name of IOACMD.EXEC _____

IOACMD is used to enter OSA/SF commands from TSO. Two data sets are written each time the command is entered. The data sets are used for problem determination. See “Data Sets Created by IOACMD” on page 9-2 for a description of the data sets, and for changing the high level qualifier of the data sets. The header at the beginning of the EXEC contains information for changing the high level qualifier of the data sets.

__ c. Allocate a data set named **IOAINSNA.EXEC**, requesting primary space of 14 tracks with secondary space of 35 tracks. The attributes for this data set should be: RECFM=FB, LRECL=80, and BLKSIZE=5120.

__ d. Copy the EXEC from the **IOA.SIOASAMP** library member **IOAINSNA**.

Fully qualified name of IOAINSNA.EXEC _____

The IOAINSNA EXEC is used to install the SNA mode (image) on the OSA from TSO and not from the OSA/SF GUI.

__ e. Allocate a data set named **IOAINATM.EXEC**, requesting primary space of 14 tracks with secondary space of 35 tracks. The attributes for this data set should be: RECFM=FB, LRECL=80, and BLKSIZE=5120.

__ f. Copy the EXEC from the **IOA.SIOASAMP** library member **IOAINATM**.

Fully qualified name of IOAINATM.EXEC _____

__ 5. Set up APPC/MVS and VTAM for OSA/SF.

If APPC/MVS is not already set up on the host, see Chapters 5 and 6 in *OS/390 MVS Planning: APPC/MVS Management* or *MVS/ESA SP Version 5 Planning: APPC Management.*

__ a. After APPC/MVS is set up on the host, do the following for OSA/SF to define the APPC local LU, no scheduling, and provide the TPDATA cataloged data set name:

Note: OSA/SF is an APPC server and there is no dependency on the APPC scheduler for OSA/SF.

1) Determine which APPCPM member you are using for initialization.
2) Edit member APPCPMxx in SYS1.PARMLIB and add the following statements:

```
LUADD ACBNAME(luname)
NOSCHED,
TPDATA(SYS1.APPCTP)
```

Notes:

a) Change luname to the same name defined in the Startup Profile (see step 2d on page 2-2). If SET APPC NAME is not included in the profile, luname defaults to IOASERV. In that case replace luname in the APPCPMxx member with IOASERV. At least one LU name must be specified here.

b) The data set name specified by SYS1.APPCTP may be the same as an existing TP data set.

3) APPC/MVS must be stopped and restarted to include the changes. **APPC** is the procedure name in the following commands, use the APPC procedure name for your installation.

Enter: **C APPC** to stop APPC/MVS

Enter: **S APPC,SUB=MSTR** to start APPC/MVS

If the required APPC parm is not hard-coded in the APPC procedure or it doesn't default to 00, start APPC as follows:

Enter: **S APPC,SUB=MSTR,APPC=xx**

To determine if APPC is running:

Enter: **D A,L or D A,APPC**

To determine if OSA/SF APPC LU is active:

Enter: **D APPC,LU,ALL**

__ b. Set up VTAM for OSA/SF

__ 1) Define the VTAM APPL statement for OSA/SF.

Copy member **IOAAPPL** from **IOA.SIOASAMP** into SYS1.VTAMLST, renaming it from IOAAPPL to APPCOSA. For OS/390 V1R3 and newer releases, make sure SECACPT=ALREADYV. For V1R2 and prior releases, either SECACPT=CONV or SECACPT=ALREADYV is supported.

__ 2) Place the new APPL member name (APPCOSA) in the APPLxx member list *or* in the ATCCONxx member.

SYS1.VTAMLST member APPLXX (include the APPCOSA name)

SYS1.VTAMLST member ATCCONxx (include the APPCOSA name)

__ 3) Vary active the new OSA/SF application to VTAM.

Enter: **V NET,ID=APPCOSA,ACT**

__ 4) Build a logmodes file and place it in the system VTAMLIB data set. You can use the sample job in SYS1.SAMPLIB member ATBLJOB to build the LOGMODES file and place in the VTAMLIB. There is also a sample LOGMODES source input file in SYS1.SAMPLIB member ATBLMODE.

SYS1.SAMPLIB member ATBLJOB (example logmodes job)

SYS1.SAMPLIB member ATBLMODE (example logmode source)

SYS1.VTAMLIB member LOGMODES (logmode assembled program)

__ 6. Do the following steps to set up a disk server for OSA-1 being customized for LANRES mode. The other OSA modes do not require a disk server, go to step 9 on page 2-10.

__ a. Allocate a new data set to copy the sample JCL that will create a VSAM linear data set for the OSA disk server.

Set the initial allocation of the data set to request primary space of 1 track, secondary space of 2 tracks. The attributes for this data set should be RECFM=FB, LRECL=80, and BLKSIZE=5120.

Data set name that contains the JCL to create the VSAM linear data set:

_____

__ b. Copy the following member from the **IOA.SIOASAMP** library into the new data set you just created:

- LANRES—copy member **IOAIM100**

Note: See Figure 2-3 on page 2-9 for the sample JCL to create a 100 MB VSAM linear data set.

__ c. Edit the data set that you just copied and change the following, where *uuuu* is the unit and *vvvvvv* is the volume where your OSA/SF disk server will reside:

//VSAM DD UNIT=*uuuu*,VOL=SER=*vvvvvv*,DISP=OLD

VOL(*vvvvvv*) FILE(VSAM)) -

__ d. Run the job. A VSAM linear data set is created with the following name, indicating the size of the disk server:

- **IOA.SYS100M.DISK**- 100 MB disk server

If you are going to use this JCL to create disk servers for other OSAs, you have to rename the data set after running the job for each OSA.

OSA # ____ VSAM Linear Data Set Name _____

The data set name you choose will be used as parm1 in the JCL to start the disk server in step 8 on page 2-10.

```
//IOAIM100  JOB MSGLEVEL=(1,1)                                          0001000
//*                                                                     0002000
//*************************************************************         0003000
//* Open Systems Adapter Support Facility                               0005000
//*      Version 1 Release 1 Modification 0                             0006000
//*                                                                     0007000
//* Sample JCL to allocate and import the empty OSA/SF disk             0008000
//* server volume using IDCAMS IMPORT.                                  0009000
//* This job will create a 100 Meg data set.                            0011000
//* This program uses IOADEXPD to expand the compressed empty           0013000
//* OSA/SF disk server before importing it.                             0014000
//*************************************************************         0016000
//* Before running this job:                                            0018000
//*  1. Update the job card as required for your installation           0020000
//*                                                                     0021000
//*  2. On the ALCDSRV step, change:                                    0022000
//*     - "uuuu" to make it the unit where your OSA/SF                  0024000
//*       disk server will reside                                       0025000
//*     - "vvvvvv" to make it the volume where your OSA/SF              0027000
//*       disk server will reside                                       0028000
//*************************************************************         0030000
//***      ALLOCATE THE DISK SERVING VOLUME                             0033000
//*                                                                     0034000
//ALCDSRV  EXEC PGM=IDCAMS                                              0035000
//SYSPRINT DD SYSOUT=*                                                  0036000
//VSAM    DD UNIT=uuuu,VOL=SER=vvvvvv,DISP=OLD                          0037000
//SYSIN    DD *                                                         0038000
   DELETE 'IOA.SYSVOL.M100'                                             0039000
   SET MAXCC=0                                                          0040000
   DEFINE CLUSTER(NAME('IOA.SYSVOL.M100') -                             0041000
                  CONTROLINTERVALSIZE(4096) -                           0042000
                  LINEAR RECOVERY UNIQUE UNORDERED -                    0043000
                  SHR(1,3) CYL(100,10) -                                0044000
                  VOL(vvvvvv) FILE(VSAM)) -                             0045000
          DATA(NAME('IOA.SYSVOL.M100.DATA'))                            0046000
//*                                                                     0048000
//***      EXPAND THE COMPRESSED DISK SERVING IMPORT DATA SET           0049000
//*                                                                     0050000
//EXPAND   EXEC PGM=IOADEXPD,COND=(4,LT)                                0051000
//STEPLIB  DD DSN=SYS1.SIOALMOD,DISP=SHR                                0052000
//COMPRESS DD DSN=IOA.SIOADIMG(IOAVOL1C),DISP=SHR                       0053000
//EXPORT   DD DSN=&&EXPORT,UNIT=SYSALLDA,DISP=(,PASS),                  0054000
//            SPACE=(CYL,(125,10),RLSE)                                 0055000
//*                                                                     0056000
//***      IMPORT THE EMPTY DISK SERVING VOLUME                         0057000
//*                                                                     0058000
//IMPDISK  EXEC PGM=IDCAMS,COND=(4,LT)                                  0059000
//SYSPRINT DD SYSOUT=*                                                  0060000
//SEQ      DD DSN=&&EXPORT,DISP=(OLD,DELETE)                            0061000
//DISKSERV DD DSN=IOA.SYSVOL.M100,DISP=SHR                              0062000
//SYSIN    DD *                                                         0063000
   IMPORT OUTFILE(DISKSERV) INFILE(SEQ) -                               0064000
        OBJECTS(('IOA.SYS100M.DISK' -                                   0065000
                NEWNAME('IOA.SYSVOL.M100'))) INTOEMPTY                  0066000
```

Figure 2-3. Sample JCL to Create a 100 MB VSAM Data Set for the Disk Server

__ 7. If not already done, use HCD to define in the IOCDS the device numbers and unit addresses of the disk serving function. See the planning guide for details.

- Device numbers with unit addresses of FC and FD

- Device type of OSA

__ 8. Do the following to create the JCL that starts the OSA disk server:

__ a. Create a new member of **SYS1.PROCLIB** with the name **IOAV***nnnn*, where *nnnn* is the device number of the OSAD device of the associated OSA.

SYS1.PROCLIB Member **IOAV__ __ __ __**

__ b. Copy the sample JCL from the **IOA.SIOASAMP** library member **IOAVNNNN** into the **SYS1.PROCLIB** member you created.

__ c. Change the values in the data set according to the comments in the sample JCL.

__ d. If necessary, change the STEPLIB data set names. If the libraries listed in the STEPLIB are in the link list, then no STEPLIB DD is required.

Notes:

a. As noted in step 6 on page 2-8, each OSA that has a disk server requires a JCL procedure to start the disk server.

b. OSA/SF will automatically start and stop the OSA disk server as required.

```
//*
//*   START OSASF DISK SERVER
//*
//*   nnnn = device number. same as the last 4 characters of this
//*          dataset name.
//*   parm1 = MVS linear data set for the OSA disk server.
//*           parm1 is also used with the //DISK01$$ DD statement.
//*   parm2 = This is the even device number for unit address FC of
//*           the disk server.
//*
//*   steplib - if the libraries listed in STEPLIB are in the link list
//*           then the STEPLIB DD is not required.
//*           The library names may have to be changed to match the
//*           naming conventions used on the system.
//*
//IOAVnnnn  EXEC PGM=IOADISK,TIME=1440,REGION=4096K,DYNAMNBR=5,
//             PARM='SYS parm1 parm2'
//STEPLIB  DD  DSN=SYS1.SIOALMOD,DISP=SHR
//         DD  DSN=ADLE370.V1R3M0.SCEERUN,DISP=SHR
//*** The following 2 lines that are commented out should be used for
//*** C/370 runtime library. If you include them comment out the
//*** previous line containing ADLE370.V1R3M0.SCEERUN
//*        DD  DSN=SYS1.PLI.SIBMLINK,DISP=SHR
//*        DD  DSN=SYS1.EDC.SEDCLINK,DISP=SHR
//IOAMSGS  DD  DSN=IOA.SIOAMSGS(IOAALL),DISP=SHR
//DISK01$$ DD  DSN=parm1,DISP=SHR
//SYSPRINT DD  SYSOUT=*,DCB=(RECFM=FBA,LRECL=121,BLKSIZE=121)
//*
```

Figure 2-4. Sample JCL to Start the Disk Server (IOA.SIOASAMP Member IOAVNNNN)

__ 9. RACF definitions

To use RACF protection for the commands issued through the OSA/SF API, the RACF administrator must define the OSA/SF profile-names and permit OSA/SF users to those profiles with the correct authority levels.

For details, see *Planning for the OSA Feature*.

__ 10. Use the following instructions to start OSA/SF and verify that it started.

- If you are not planning to use OS/2, see Chapter 5 on page 5-1.
- If you are planning to use OS/2 or Microsoft Windows, see "Setting Up a Communications Protocol for OSA/SF GUI" in Chapter 3 of the *OSA Planning Guide,* GC23-3870. After you are complete, return to these instructions.
- If your OS/2 workstation is connected to the host and Communications Manager/2 is installed, see “Downloading and Installing the OSA/SF GUI for OS/2 or Windows” on page 2-14.
- If your OS/2 workstation is connected to the host, but Communications Manager/2 is *not* installed, see “Installing the GUI Without a Supported 3270 Emulator” on page 2-22.
- If your OS/2 workstation is not connected to the host, and you want to use an OSA as the communications controller between OS/2 and the host, see Chapter 7 on page 7-1.
- If you are not using OS/2, see Chapter 5 on page 5-1.

Starting OSA/SF

From the MVS system console, enter the OSA/SF Started Procedure name that you selected in step 1b on page 2-1.

S <*procedure name*>

The following figure is an example of a typical message log from starting OSA/SF.

```
IOAC101I OSA Support Facility initialization started 08/01/1998 20:06:58
IOAC153I Processing of startup file started
IOAC152I Finished startup command file processing
IOAK326I CHPID 40 is currently managed by partition 0A
IOAK326I CHPID 9C is currently managed by partition 0A
IOAK326I CHPID C8 is currently managed by partition 0A
IOAC102I OSA Support Facility initialization completed 08/01/1998 20:07:02
IOAC100I OSA Support Facility version V1R2M0
```

Figure 2-5. Example Messages Log Created While Starting OSA/SF

Verifying That OSA/SF Started

To verify that OSA/SF has been started on the primary host, enter the following:

D A,<*procedure name*>

The Started *procedure name* was established in step 1b on page 2-1.

Stopping OSA/SF

Enter the following to stop OSA/SF:

P <*procedure name*>

The Started *procedure name* was established in step 1b on page 2-1 to stop OSA/SF.

Note: If a step name was given with the start command, then the step name must be used with the stop command.

What to Do After OSA/SF is Started

After OSA/SF is started, your next task will be one of the following:

- If you are not planning to use OS/2, see Chapter 5 on page 5-1.
- If you are planning to use OS/2 or Microsoft Windows, see "Setting Up a Communications Protocol for OSA/SF GUI" in Chapter 3 of the *OSA Planning Guide, OSA Planning Guide,* GC23-3870. After you are complete, return to these instructions.
- If your OS/2 workstation is connected to the host (server) and a 3270 emulator (CM/2 or other) is installed, see “Downloading and Installing the OSA/SF GUI for OS/2 or Windows” on page 2-14.
- If your OS/2 workstation is connected to the host, but a 3270 emulator is *not* installed, see “Installing the GUI Without a Supported 3270 Emulator” on page 2-22.
- If the OS/2 workstation is not connected to the host, and you want to use an OSA as the communications controller between OS/2 and the host, see Chapter 7 on page 7-1.

Installing a PTF For OSA/SF

If the PTF effects an OSA mode, see “Software Update (PTF) For OSA Modes (Images)” on page 4-39. If the PTF effects the OSA/SF GUI for OS/2, see “Applying a New Service Level” on page 2-19.

If the PTF effects OSA/SF, install the PTF using SMP/E, stop OSA/SF and then start OSA/SF.

Note: The description for the PTF will identify what is effected.

Migrating to a new release of OSA/SF

Do the following when installing a new release of OSA/SF.

__ 1. Follow the program directory instructions.

__ 2. Ensure that all PTFs are installed for the prior release of OSA/SF.

__ 3. Use the same Startup Profile from the previous release, but follow these instructions:

Note: The Startup Profile was set up in “Setting Up OSA/SF” on page 2-1.

a. IOAMSG should not be shared across systems (logical partitions). If OSA/SF is installed in different logical partitions, use unique data set names for IOAMSG in the Startup Profiles.

b. Use the same data set name for IOADSN in the Startup Profile. Do not specify different names for different OSA/SF images.

c. Use the same (existing) master index (IOAINX), but copy the following statements from **IOA.SIOASAMP** member **IOAINX** into your existing master index that is pointed to by the Startup Profile. Make sure you keep the alignment of the data set the same.

```
**************************************************
*        PRODUCT(70:ATM V1R1M0)
**************************************************
IOA.SIOAIBIN(IOAATMLE)              IOA_ATMLE_IMAGE
IOA.SIOAIBIN(IOAACDSF)              IOA_ATM_VALFILE
```

__ 4. Copy the OSA/SF Command EXEC from **IOA.SIOASAMP** member **IOACMD**. If you need additional instructions, see *Setting up OSA/SF* on page “Setting Up OSA/SF” on page 2-1.

| __ 5. Update the OSA/SF GUI. See the instructions in “Applying a New Service Level” on page 2-19.

Note: The OSA/SF release 2 product does not ship new OSA mode images for OSA-2 features. Therefore, you do not have to re-install the modes on existing OSA features.

Downloading and Installing the OSA/SF GUI for OS/2 or Windows

For Windows

When to Use These Instructions

Use these instuctions after you have:

- Installed OSA/SF using the Program Directory.
- Set up OSA/SF.

__ 1. At the server, transfer in binary the installation program, IOAWINST from IOA.SIOAWIN to a temporary directory of your choice. Use any server to workstation transfer program. The file should be IOAWINST.EXE on the workstation.

__ 2. Start IOAWINST.EXE, either by double-clicking the IOAWINST object in Windows Explorer, or by entering `IOAWINST` at a command prompt. Follow the prompts.

When the EXEC completes, click **Start** on the taskbar and select **Programs.** Look for an entry named **IBM OSA Support Facility**.

For OS/2

If you do not have 3270 emulator support (Communications Manager/2 or Personal Communications Manager), go to “Installing the GUI Without a Supported 3270 Emulator” on page 2-22.

Use the following instructions to download and install the OSA/SF GUI files from the host to an OS/2 workstation. The instructions include steps to:

- Download an installation tool referred to as the *Software Installer* (SI/2)
- Use Software Installer to download and install the OSA/SF GUI.

Note: Although install times can vary for downloading and installing the OSA/SF GUI, tests have shown that for one workstation or server the process takes approximately a half hour.

When to Use These Instructions

Use these instruction after you have:

- Installed OSA/SF using the Program Directory
- Set up OSA/SF using previous instructions in this chapter
- Established an SNA 3270 emulation session for OS/2.

If you do not have a 3270 emulation session and you want to use the OSA as the communications controller between the host and workstation, See Chapter 7 on page 7-1.

__ 1. Establish a host session on the OS/2 workstation. You may have to start Communications Manager/2 if no host sessions are started.

__ 2. Log on to a TSO User ID that can access the **IOA.SIOAWEUI** data set that contains the OSA/SF files. If you are using an OS/2-J workstation, copy the contents of IOAPKGBJ into IOAPKGB, replacing the contents of IOAPKGB.

Note: IOA.SIOAWEUI was supplied by IBM, if your host personnel changed the name, you will need to obtain the new name and use it in place of IOA.SIOAWEUI in the following instructions.

__ 3. Position your TSO session at the READY prompt, *or* select **COMMAND** from the ISPF Primary Option Menu.

__ 4. To download the Software Installer bootstrap file, do the following from an OS/2 command line:

__ a. Enter: **RECEIVE IOAINENU.EXE *a*: 'IOA.SIOAWEUI(IOAINENU)'** replacing ***a*** with the host session identifier that you established in step 1 on page 2-14. If you are using an OS/2-J workstation, enter the command exactly as shown but add a space and left bracket [at the end.

Note: If the download is successful, you will see the message, *File transfer complete*.

__ b. Enter: **IOAINENU** to install Software Installer.

__ 5. Select **Continue** to start the installation.

__ 6. Select the TSO session you established.

A window is displayed with the drive, subdirectory, and file name. We recommend you use these defaults for service updates.

Software Installer Drive, Directory, Filename _____

__ 7. Select **OK** to start software installer installation. The **Install - progress** window is displayed.

__ 8. When you see the **Instructions** window, select **Continue** to proceed with installing the OSA/SF GUI.

__ 9. The **Install** window is displayed.

__ 10. If you are installing or servicing on a LAN server *or* if you do not want SI to update your CONFIG.SYS file on your machine, do the following. Otherwise select **OK** and go to the next step.

__ a. Deselect the **Update CONFIG.SYS** option.
__ b. Select **OK**.
__ c. Reply to the warning message that tells you SI will not update your CONFIG.SYS file.
__ d. Select **Yes**.

__ 11. When the **Install - Directories** window is displayed, either accept the defaults or enter your own.

OSA/SF Drive and Subdirectory _____

Note: If you want to check your disk space, select **Disk Space**.

__ 12. Select **Install...** to start downloading OSA/SF GUI files.

__ 13. Select **OK** when you see the message that indicates successful completion.

__ 14. To exit SI, double-click on the system icon or select **File** and then select **Exit**

Choose one of the following for your installation:

1. If you installed OSA/SF GUI on a LAN server, each requester on the LAN that accesses OSA/SF must now be updated. Continue at “Updating a Requester Machine” on page 2-16.
2. If you did not install OSA/SF GUI on a LAN server *and* if you deselected the ***Update CONFIG.SYS*** option in step 10, you must update your CONFIG.SYS file. Continue at “Updating the CONFIG.SYS File on a Non-Requester Machine” on page 2-16.
3. If you did not install OSA/SF GUI on a LAN server and you allowed software installer to update the CONFIG.SYS file, you will have to shut down your workstation and reboot it. The OSA/SF GUI install is complete. Continue at Chapter 3 on page 3-1.

Updating the CONFIG.SYS File on a Non-Requester Machine

You must update your CONFIG.SYS file if you deselected the **Update CONFIG.SYS** option when you installed OSA/SF GUI on your machine *or* after you applied a service level to OSA/SF GUI that affects the values in the CONFIG.SYS file.

__ 1. Back up your current **CONFIG.SYS** file.

__ 2. View the **CONFIG.ADD** file that was created during downloading and installing the OSA/SF GUI with software installer.

The CONFIG.ADD file is a copy of your current CONFIG.SYS file with changes for OSA/SF.

__ 3. Verify or change the drive and directory for OSA/SF in the following statements:

- **SET PATH**
- **SET HELP**
- **LIBPATH**

__ 4. Verify or change the drive and directory for the following statements that were added:

- **SET IOAERR**=*drive*:*dir* (IOAERR is for trace logs and error logs)
- **SET IOAWORK**=*drive*:*dir* (The drive you choose for IOAWORK should have at least 7MB of free space. IOAWORK is the subdirectory from which the OSA/SF GUI creates other subdirectories and files.)
- **SET IOAESIZE=2** (2 represents 2 KB of error log before wrapping.)
- **SET HOSTPAGE**= *037* for English

__ 5. After you verified or made the necessary changes in the CONFIG.ADD file, rename it to **CONFIG.SYS**.

__ 6. Reboot your workstation.

__ 7. Continue at Chapter 3 on page 3-1.

Updating a Requester Machine

Requester machines are other workstations that will access the OSA/SF GUI files on the LAN server workstation.

When to update the requester machines

Update each requester machine after:

- OSA/SF GUI is installed on a LAN server and the CONFIG.SYS file was updated *and*
- After a service level has been applied to OSA/SF GUI on the LAN server that affects the values in the CONFIG.SYS file.

You can perform these tasks manually as described in "Updating a CONFIG.SYS File on a Requester Machine" on page 2-18 *or* using SI/2 as described in "Updating a Requester Machine Using SI/2."

Updating a Requester Machine Using SI/2

First, verify that the following are complete:

OSA/SF GUI must be installed on the LAN server. To check:

__ 1. Switch to (or create and switch to) another OS/2 window.
__ 2. Change to the drive that contains OSA/SF
__ 3. Enter **DIR** and note the OSA/SF subdirectory. (You will need it in step 7 or step 8 on page 2-18.)

SI must already have been installed on the LAN server. The default subdirectory was IBMIOA for the Software Installer. (Check with your LAN administrator.)

The requester machine must have SI accessed from the LAN server.

The requester machine must have OSA/SF GUI accessed from the LAN server.

Note: The drive mapping that is used to access OSA/SF GUI must be the same drive for every access. The designated drive is the one that the CONFIG.SYS file will be updated with.

Then, follow these instructions:

__ 1. Change to the directory in which SI resides. The default was **C:\IBMIOA**; if it was changed, see step 6 on page 2-15.

__ 2. To start SI, enter:

IOAINST /S:IBMIOA

Note: The default directory for OSA/SF was IBMIOA. If the default directory was not used during the install, see step 11 on page 2-15.

*IOA***INSTS**, where *IOA* is the prefix of the product used to install SI.
Follow with a blank and then **/S:**
Conclude with the name of the OSA/SF subdirectory.

For example, if you are using the OSA/SF subdirectory, enter **IOAINSTS /S:IBMIOA**

__ 3. Select the **File** menu bar choice.

__ 4. Select **Open catalog.**

__ 5. Select **Drive...** to display the ***Open drive catalog*** window.

__ 6. Select the drive to use. (It must have access to the OSA/SF GUI directory structure.)

__ 7. If the OSA/SF subdirectory is IBMIOA, enter **\IBMIOA\USR\IOACATE.ICF** in the ***Filename*** field under the Catalog section.

__ 8. If the OSA/SF subdirectory is *not* IBMIOA, enter `\xxx\USR\IOACATE.ICF` in the ***Filename*** field under the Catalog section, where *xxx* is the value of the OSA/SF subdirectory.

__ 9. Select the **Open** pushbutton to get the selected catalog file from the LAN server to display the ***Installation and Maintenance*** window.

__ 10. Select **OSA/SF LAN Requester Install.**

__ 11. Select the **Action** menu bar choice.

__ 12. Select **Install...** to display the **Install** window.

__ 13. If you do not want SI to update the CONFIG.SYS on your machine:

__ a. Deselect the **Update CONFIG.SYS** option.
__ b. Select the **OK** pushbutton.
__ c. Reply to the warning message that tells you SI will not update your CONFIG.SYS file.
__ d. Select the **Yes** pushbutton.

__ 14. Select the **OK** pushbutton to display the ***Install - directories*** window.

__ 15. Accept the defaults or enter your own.

- The `LAN REQUESTER` label must identify the drive and directory on the requester machine that will contain the files generated by OSA/SF GUI.
- The `LAN SERVER` label must identify the drive and OSA/SF subdirectory that were used by the requester machine to access OSA/SF GUI from the server.

__ 16. Select **Install...** to initiate processing.
(A message is displayed when processing completes successfully.)

__ 17. Select the **OK** pushbutton.

__ 18. To exit SI, do one of the following:

- Double-click on the system icon.
- *Or* select ***File*** and then select **Exit.**

__ 19. If you choose to not have your CONFIG.SYS file updated, do the instructions in “Updating a CONFIG.SYS File on a Requester Machine,” or if the CONFIG.SYS file was updated, reboot the requester machine before you start OSA/SF GUI. Continue at Chapter 3 on page 3-1. An OSA/SF folder has now been added to your OS/2 workplace (desktop) to give you access to OSA/SF GUI.

Updating a CONFIG.SYS File on a Requester Machine

__ 1. Back up your current **CONFIG.SYS** file.

__ 2. View the **CONFIG.ADD** file that was created during downloading and installing the OSA/SF GUI with software installer.

The CONFIG.ADD file is a copy of your current CONFIG.SYS file with changes for OSA/SF.

__ 3. Verify or change the drive and directory for OSA/SF in the following statements:

- **SET PATH**
- **SET HELP**
- **LIBPATH**

__ 4. Verify or change the drive and directory for the following statements that were added:

- **SET IOAERR**=*drive*:*dir* (IOAERR is for trace logs and error logs)
- **SET IOAWORK**=*drive*:*dir* (The drive you choose for IOAWORK should have at least 7MB of free space. IOAWORK is the subdirectory from which the OSA/SF GUI creates other subdirectories and files.)

- **SET IOAESIZE=2** (2 represents 2 KB of error log before wrapping.)
- **SET HOSTPAGE**= *037* for English

__ 5. After you verified or made the necessary changes in the CONFIG.ADD file, rename it to **CONFIG.SYS**.

__ 6. Reboot your workstation.

__ 7. Continue at Chapter 3 on page 3-1.

Servicing the OSA/SF GUI

Finding Out What the Current Level Is

__ 1. Change directories to the directory in which SI resides. SI is installed in OSA/SF's subdirectory. The default is **C:\IBMIOA**.

__ 2. To start SI, enter *IOA***INSTS**, where *IOA* is the prefix of the product used to install SI.

__ 3. Select **OSA Support Facility** on the **Installation and Maintenance** window.

__ 4. Select the **Details** menu bar choice.

__ 5. Select **Product Status...**to display the data on the **Product Status** window.

__ 6. Select the **Service Level...** pushbutton to display the data on the **Service Level** window.

__ 7. Select the **Cancel** pushbutton to display the data on the **Product Status** window.

__ 8. Select the **Cancel** pushbutton to display the data on the **Installation and Maintenance** window.

__ 9. To exit SI, do one of the following:

- Double-click on the system icon.
- *Or* select **File** and then select **Exit.**

Applying a New Service Level

For OS/2: Follow these instructions after installing a new release of OSA/SF or whenever the OS/2 OSA/SF GUI requires service updates.

__ 1. Verify that the current OSA/SF GUI is *not started*. All OSA/SF GUI windows should be closed.

__ 2. Establish a host session on the OS/2 workstation. You may have to start Communications Manager/2 if no host sessions are started.

__ 3. Logon to a TSO User ID that can access the **IOA.SIOAWEUI** data set containing the OSA/SF files. If you are using an OS/2-J workstation, copy the contents of IOAPKGBJ into IOAPKGB.

Note: IOA.SIOAWEUI was supplied by IBM. If your host personnel changed the name, you will need to obtain the new name and use it in place of IOA.SIOAWEUI in the following instructions.

__ 4. Position your TSO session at the READY prompt, *or* select **COMMAND** from the ISPF Primary Option Menu.

__ 5. If you are not accessing the directory in which SI resides, change to it. SI is installed in OSA/SF's subdirectory. The default is **C:\IBMIOA**.

__ 6. To start SI, enter:

__ a. *IOA***INSTS**, where *IOA* is the prefix of the product used to install SI.
__ b. Follow with a blank and then **/S:**
__ c. Conclude with the name of the MVS data set.

For example, if the MVS data set name is **IOA.SIOAWEUI**, enter
`IOAINSTS /S:IOA.SIOAWEUI`

__ 7. Select **OSA Support Facility** on the **Installation and Maintenance** window.

__ 8. Select the **Action** menu bar choice.

__ 9. Select **Update...** to display the **Update** window.

__ 10. If you are updating on a LAN server or if you want to update the CONFIG.SYS file manually on your machine:

   __ a. Deselect the **Update CONFIG.SYS** option.
   __ b. Select the **Update** pushbutton.
   __ c. Reply to the warning message that tells you SI will not update your CONFIG.SYS file.
   __ d. Select the **Update** pushbutton on the Update window to begin the update process.

__ 11. Select the **OK** pushbutton after you see a message that indicates downloading has completed successfully.

__ 12. To exit SI, take one of the following:

- Double click on the system icon.
- *Or* select **File** and then select **Exit**

For Windows: Do the following to update the OSA/SF GUI on a Windows workstation:

__ 1. At the server, transfer in binary the installation program from **IOA.SIOAWIN** library member **IOAWINST.EXE** to a temporary directory of your choice on the workstation. Use any server-to-workstation file transfer program available.

__ 2. Start the EXEC, either by double-clicking the IOAWINST object in Windows Explorer, or by entering `IOAWINST` at a command prompt. Follow the prompts.

When the EXEC completes, look in the Programs view of the desktop for an entry named **IBM OSA Support Facility.** The first time you start the program, you will be prompted for a User Data Path. Enter the name of a temporary directory for the User Data Path.

You can erase IOAWINST.EXE to save disk space. It was only used to install the program.

Restoring the Preceding Level

__ 1. If you are not accessing the directory in which SI resides, change to it. SI is installed in OSA/SF's subdirectory. The default is **C:\IBMIOA**.

__ 2. To start SI, enter *IOA*INSTS, where *IOA* is the prefix of the product used to install SI/2.

__ 3. Select **OSA Support Facility** on the **Installation and Maintenance** window.

__ 4. Select the **Action** menu bar choice.

__ 5. Select **Restore...** to display the **Restore** window and start processing.

__ 6. Select the **OK** pushbutton when you see the message indicating that the Restore process has completed successfully.

__ 7. To exit SI, do one of the following:

- Double-click on the system icon.
- *Or* select **File** and then select **Exit.**

Deleting the OSA/SF GUI Files

__ 1. If you are not accessing the directory in which SI resides, change to it. SI is installed in OSA/SF's subdirectory. The default is **C:\IBMIOA**.

__ 2. To start SI, enter *IOA***INSTS**, where *IOA* is the prefix of the product used to install SI.

__ 3. Select **OSA Support Facility** on the **Installation and Maintenance** window.

__ 4. Select the **Action** menu bar choice.

__ 5. Select **Delete...** to display the **Delete** window.

__ 6. Select the **Delete** pushbutton to start the delete process.

__ 7. Select the **OK** pushbutton when you see the message indicating that the Delete process has completed successfully.

__ 8. To exit SI, do one of the following:

- Double click on the system icon.
- *Or* select **File** and then select **Exit.**

Note: SI does not remove updates to the CONFIG.SYS, nor does it remove any files from the directory structure that were generated by OSA/SF GUI.

Installing the GUI Without a Supported 3270 Emulator

Use these instructions if you do not have 3270 emulator support (CM/2 or PCOM) installed on OS/2. If you do have a supported 3270 emulator installed, see “Downloading and Installing the OSA/SF GUI for OS/2 or Windows” on page 2-14 for instructions.

Software installer (SI/2) will be set up and then the OSA/SF GUI for OS/2.

__ 1. Transfer the following files from the host to the workstation using the names and details shown in the list. Put all the files in the same directory. The files will require approximately 5 Meg of disk space. If you are using an OS/2-J workstation, first copy the contents of IOAPKGBJ into IOAPKGB, replacing the contents of IOAPKGB. Use any tranfer method (FTP, Almcopy, etc..) that can transfer in both ASCII and Binary.

Note: All members are located in data set IOA.SIOAWEUI.

Drive and Path = _____

```
   MVS           OS/2         Host to OS/2
  Member         Name         Transfer Mode        Description
------------   -------------   -------------   ------------------------
 IOACATE       IOACATE.ICF        ASCII        OSA/SF catalog for SI/2
 IOAPKGB       IOAPKGB.PKG        ASCII        OSA/SF pkg file for SI/2
    or ---------------------------------------->See the note that follows this figure
 IOAPKGBJ      IOAPKGB.PKG                     OSA/SF pkg file for OS/2-J
 IOADESUS      IOADESUS.DSC       ASCII        OSA/SF description file

 IOAINSTS      IOAINSTS.EXE        BIN         Front-end/main SI/2
 IOAIPII       IOAIPII.DLL         BIN         more SI/2
 IOAIPRCS      IOAIPRCS.EXE        BIN         more SI/2
 IOAIUPCK      IOAIUPCK.EXE        BIN         more SI/2
 IOAINENU      IOAINENU.EXE        BIN         more SI/2
 IOAIEXTS      IOAIEXTS.DLL        BIN         more SI/2
 IOAIHPLB      IOAIHPLB.HLP        BIN         more SI/2
 IOAIMSG       IOAIMSG.MSG         BIN         more SI/2

 IOAGCMD       IOAGCMD.BIN         BIN         OSA/SF .cmd files
 IOAGDLL       IOAGDLL.BIN         BIN         OSA/SF .dll files
 IOAGEXE       IOAGEXE.BIN         BIN         OSA/SF .exe files
 IOAGHLP       IOAGHLP.BIN         BIN         OSA/SF .hlp file
```

Note: If you are using an OS/2-J workstation, transfer IOABPKGBJ in place of IOABPKGB, but transfer it as IOABPKGB.PKG on the workstation.

__ 2. From an OS/2 window or full screen:

Enter: **IOAINSTS**

The Installation and Maintenance window is displayed.

__ 3. Select **File** from the action bar, then select **Open catalog**, and then select **Drive**.

The Open drive catalog window is displayed.

__ 4. Enter the drive (letter) of where you installed the files in step 1

__ 5. Under Catalog (filename:) Enter the path used in step 1 and specify a filename of **IOACATE.ICF**. (For example: \temp\IOACATE.ICF)

__ 6. Select **Open** to return to the Maintenance and Installation window.

__ 7. Select **Action** from the action bar.

__ 8. Select **Install** to begin the OSA/SF GUI installation.

When the installation is complete, continue at step 13 on page 2-15.

Chapter 3. Using the OSA/SF GUI on OS/2 or Windows

This chapter will help you become familiar with the OSA/SF GUI so you can communicate with OSA/SF on the host or hosts.

The OSA/SF graphical user interface (GUI) provides user-friendly windows that enable you to easily do all tasks for one or many OSAs. You can shift your attention away from command names and data files to more important things.

If you are familiar with IBM OS/2 or Microsoft Windows applications, you'll find that OSA/SF objects, pull-downs, notebooks, and help functions are similarly designed. If you are not experienced with OS/2 or Windows, then you should use the appropriate tutorial to become familiar with the interface. The tutorial for OS/2 is located within the information icon on the desktop. For Windows, click on the Start icon and select help. If you are willing to read help panels, you may be able to operate the OSA/SF GUI with very little OS/2 or Windows experience because help is included with the GUI. For details on the type of help available, see “Getting Help” on page 3-7.

Starting the OSA/SF GUI

Before Starting

Before you can use the OSA/SF GUI on OS/2 or Windows, one of the following must be completed:

- “Downloading and Installing the OSA/SF GUI for OS/2 or Windows” on page 2-14
- “Installing the GUI Without a Supported 3270 Emulator” on page 2-22.

If you are using 3270 emulation as the host-to-workstation communications, make sure the host session is at the TSO Ready prompt and not the ISPF Ready prompt.

__ 1. **To start on Windows,** click on **Start** in the lower left corner of the window and select Programs. Then click on **OSA/SF.**

__ 2. **To Start on OS/2,** double-click on the **OSASF** folder on the OS/2 desktop. (The folder is created during “Downloading and Installing the OSA/SF GUI for OS/2 or Windows” on page 2-14.)

__ 3. Double-click on the **OSASF** icon in the folder.

The first time the OSA/SF GUI is started a message will be displayed. Enter a valid drive and directory to store user data in.

The **OSA/SF Hosts** window is displayed with a sample host icon when the GUI is first started.

__ 4. To create a host icon for communications between the GUI and OSA/SF:

a. Select **Help** from the menu bar at the top of the **OSA/SF Hosts** window. See Figure 3-1 on page 3-2.
b. Select **How to** and then double-click on **Create another host icon**. Follow the instructions.

If you need planning information for GUI to host communications, see “OSA/SF OS/2 Interface (GUI) Setup Checklists” in Chapter 2 of *Planning for the S/390 Open Systems Adapter Feature*.

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Attention

The remainder of this chapter provides you an overview of the OSA/SF GUI, how to navigate, customize, and get help. We recommend you read it, but if you're already familiar with the OSA/SF GUI, go to Chapter 4 on page 4-1. If you leave this section, at a minimum, look at “OSA/SF GUI Flow Quick Reference” on page 3-9 and keep it nearby to help you navigate through the GUI while customizing the OSA.

Notes:

a. If you are not familiar with operating an OS/2 or Windows interface, select **General Help** from the pull-down list, but don't forget to come back here when you're done exploring.

b. Help is available for all the windows and objects within the windows. To get help for an object within a window, select the object and press **F1** on the keyboard, or select the help pushbutton. If you need help for a pull-down item from the menu bar, use the arrow keys on the keyboard to highlight the item, then press F1.

c. When you're done reading a help window, press **Esc** on the keyboard to close the help window.

The OSA/SF Hosts Window Is Displayed When You Start the GUI

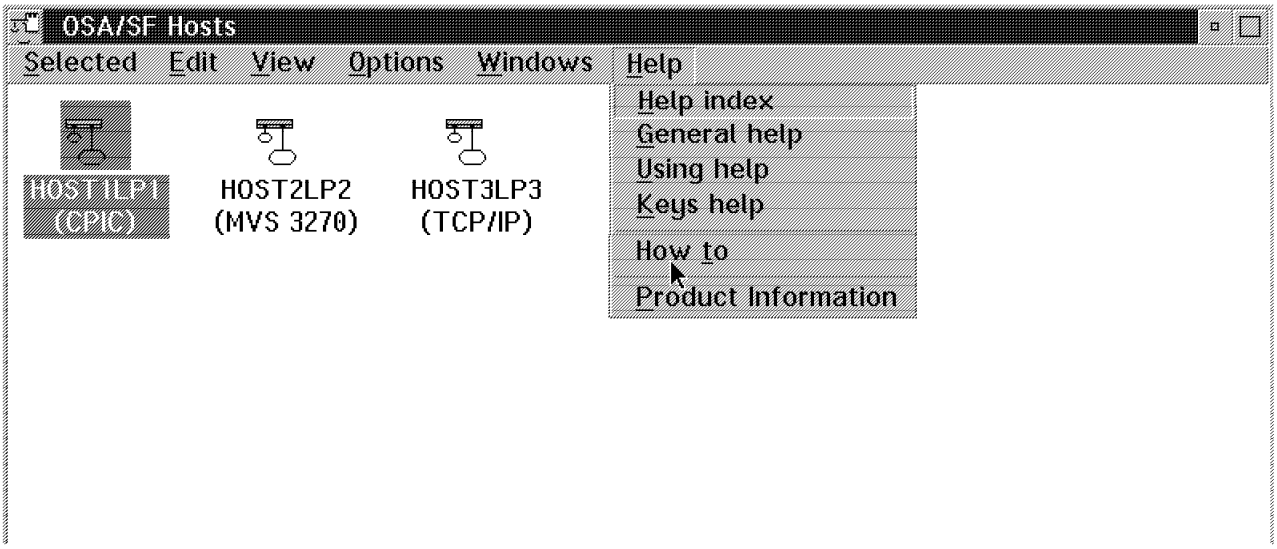

Figure 3-1. Example of an OSA/SF Hosts Window with Three Host Icons. When the OSA/SF GUI is first started, there is only one sample host icon. The sample disappears when you create another host icon. You can use the How To instructions to create another host icon.

Each host icon in the example represents a host system running OSA/SF. For this example, an OSA/SF image is running in HOST1LP1, HOST2LP2, and HOST3LP3. The OSAs can be configured, monitored, and managed from any of these System/390 hosts. HOST1LP1 is selected (highlighted) in the above example; therefore any tasks done for the OSAs would be managed by the OSA/SF image running in HOST1LP1.

Note: All OSA/SF GUI tasks start from this window, the **OSA/SF Hosts** window.

This publication does not describe the purpose or function of every window because online help is available for all windows, and OSA How To instructions are provided for frequently done tasks.

Using the How To Instructions to Display the OSA Channels

To give you a better idea of how easy it is to use the GUI, do the following to display a view of the OSA channels:

__ 1. Click on **Help** at the menu bar.

__ 2. Click on **How to** from the pull-down list to see the panel shown in Figure 3-2 on page 3-3.

__ 3. Double-click on **Display the OSA channels**.

__ 4. Follow the instructions until the **OSA Channels View** is displayed See Figure 3-3 on page 3-4.

There are two views of the OSA channels, **Tree View** and **Details View**. The default settings determine which of the views is displayed. See “How to Display the Other Channels View” on page 3-10 to display the other channels view. See “How to Change the Default Settings for the Channels View” on page 3-10 to change the default settings.

If you can't display a channels view window

If the **Sample** host is the only icon displayed on your **OSA/SF Hosts** window, use **Create another host icon** in the **How to** instructions from the **Help** selection on the menu bar.

See the OSA Planning Checklists in *Planning for the OSA Feature* for more information.

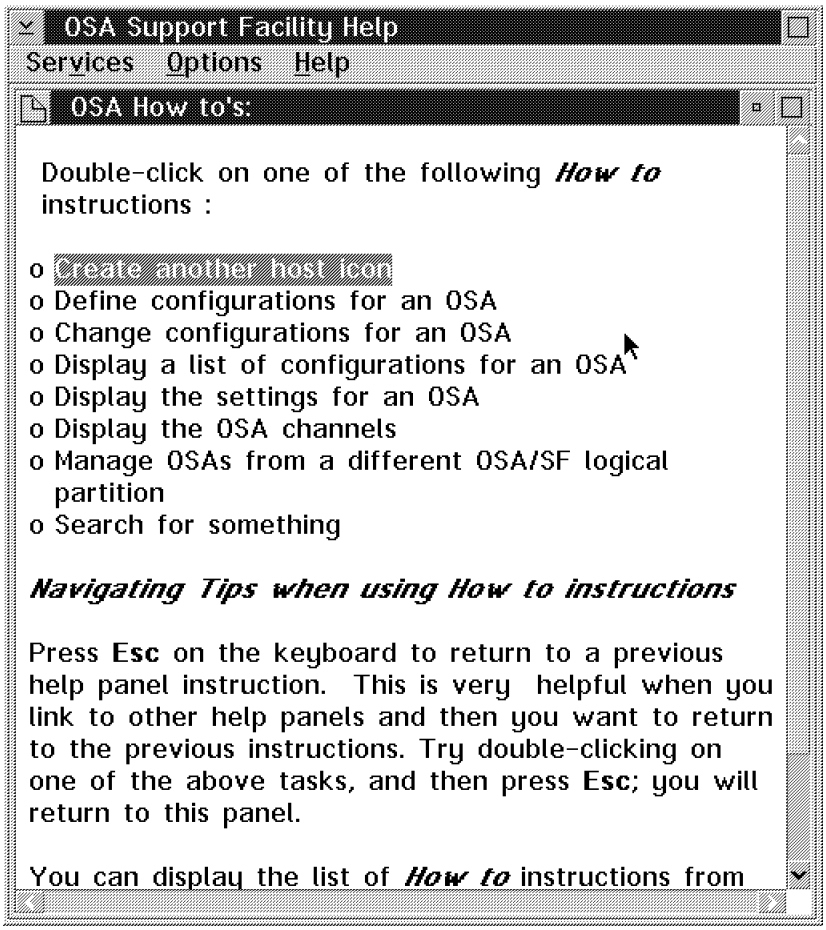

Figure 3-2. OSA How To Instructions. Double-click on any selection to display the instructions.

OSA Channels View from HOST1LP1

The **OSA Channels - Tree View** shows the OSAs installed on the System/390. A plus sign next to the OSA number indicates that there is more to see about the OSA. Click on the plus sign next to the OSA number to see more information about the OSA.

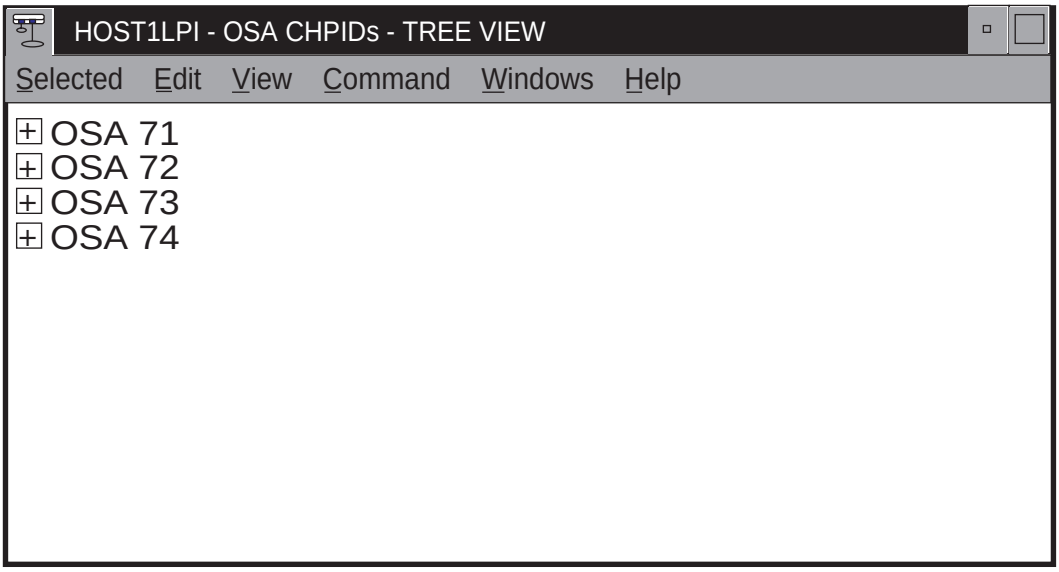

Figure 3-3. OSA Channels for HOST1LP1

OSA 73 Expanded after Clicking on the Plus Sign Next to OSA 73

You can expand any entry in the tree view by clicking on the plus sign next to an entry. Once you expand an entry, you can look at the settings of an object by double-clicking on the object.

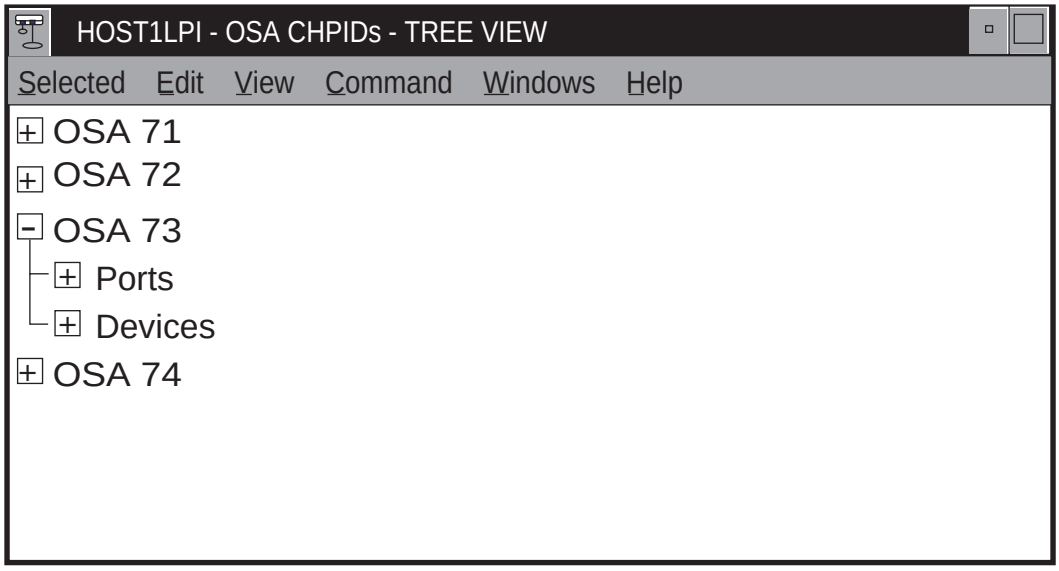

Figure 3-4. OSA Channels-Tree View with OSA 73 Expanded

Ports Expanded after Clicking on the Plus Sign Next to Ports

To see the ports for an OSA, click on the plus next to Ports. To see the settings for a port, double-click on the port number.

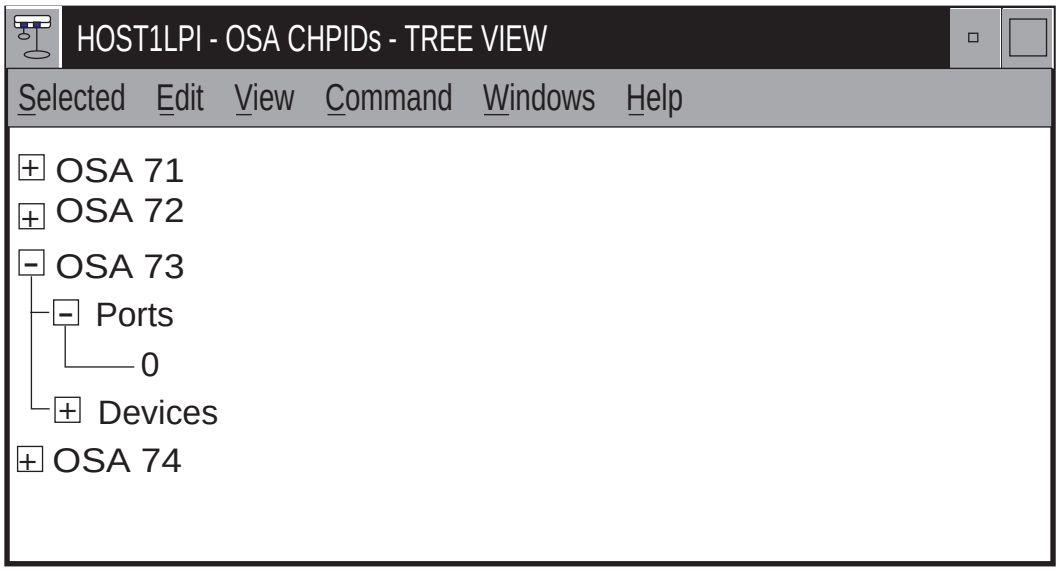

Figure 3-5. OSA Channels-Tree View with OSA 73 and Ports Expanded

LAN Settings Displayed after Double-Clicking on Port 4

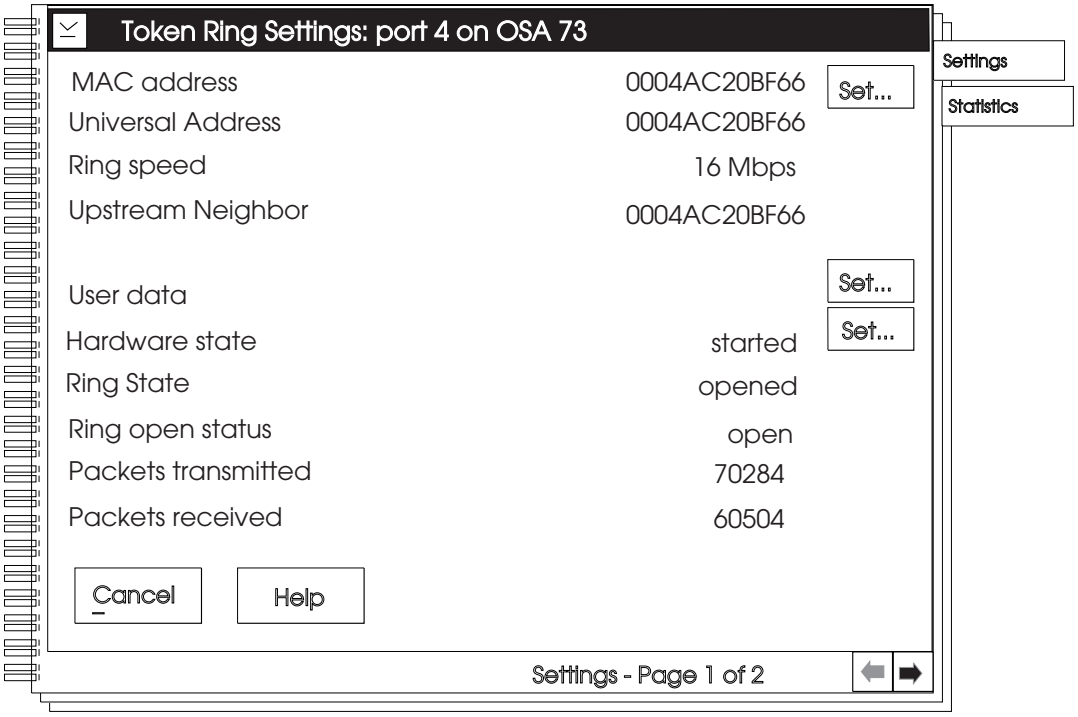

Figure 3-6. Token Ring Settings for Port 04 on OSA 73

Opening the Four Main OSA/SF Windows

The OSA/SF GUI has four main windows that contain all other panels, notebooks, settings, and descriptions. The main windows are the:

- **OSA/SF Hosts**
- **Command Output**
- **OSA Channels View** (Tree or Detail)
- **Configuration for OSA**

To open the four windows do the following steps:

1. From the **OSA/SF Hosts** window, select **Help**.
2. Select **How to**.
3. Double-click on **Define configurations for an OSA**.
4. Follow the instructions until all windows are opened.

OSA/SF GUI windows are displayed by the OS/2 Presentation Manager. This means you can manage the OSA/SF GUI windows the same as other OS/2 windows. You can change their size, move them around on the desktop, and minimize or maximize them. When you're working with several OSA/SF windows, a window can be hidden behind other window. The OSA/SF GUI has a window list similar to the OS/2 window list to let you quickly select and see all open windows.

Using the OSA/SF Window List

Sometimes a window is hidden behind another window and you may want to determine which OSA/SF windows are open. Use the OSA/SF Window List.

1. Select **Windows** from any window's menu bar.
2. Select **Window List**.
3. Double-click on any window title in the list to activate the window.

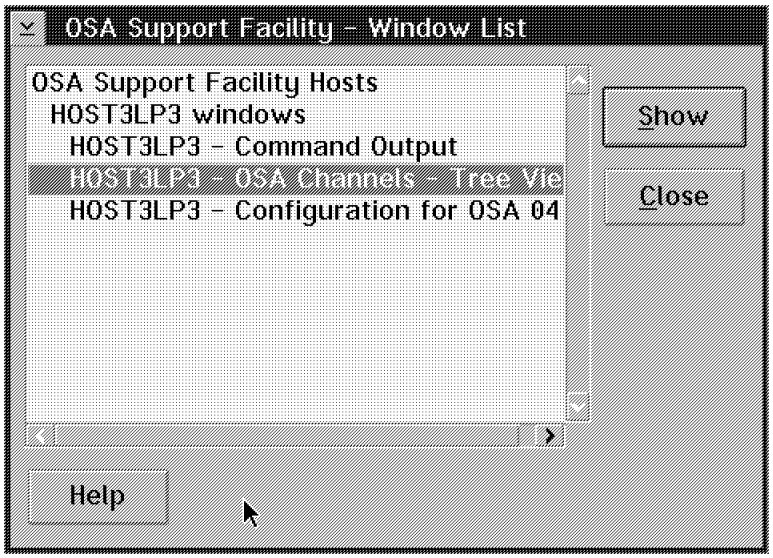

Figure 3-7. OSA/SF Window List. The window list shows the open windows for each host.

Note: The OSA/SF window list is not the same as the OS2 window list that you see when pressing **Ctrl** and **Esc** on the keyboard. The OS/2 window list contains one entry for the OSA/SF GUI; it is listed as **OSA/SF Hosts**.

Opening OSA/SF Windows from Different OSA/SF Hosts

Your installation may have more than one host icon on the **OSA/SF Hosts** window for any of the following reasons:

- A second OSA/SF image for backup
- Different physical S/390s
- Nonshared logical partitions and OSAs for security reasons

Regardless of the number of OSA/SF host icons, you will only have one **OSA/SF Hosts** window, but you can open other windows for each OSA/SF host at the same time. For example: you can open a channels view window for each host icon. If you open the same window from different host icons, it's a good idea to use the Window List to make sure you're looking at the correct host.

If you have more than one host icon, do the following to open two **Command Output** windows and two **Channel View** windows:

1. Select a host icon on the **OSA/SF Hosts** window.
2. Open an **OSA Channels View** window; use the How to instructions if necessary.
3. Select a different host icon and open an **OSA Channels View** window for this host.
4. Select **Windows** and **Window list** from the menu bar on any window.

A **Command Output** window and an **OSA Channels View** window is listed on the window list for each host.

Getting Help

You can get help for all windows, menu bar selections, and entry fields. To get help for an object or entry field within a window, select the object and press **F1** on the keyboard.

There is also a **Help** selection on all menu bars that contains **General Help** and a **Help Index**.

How to Get Help for Menu Bar Choices on a Window:

You will do most tasks by selecting an object from the menu bar of a window.

To get help for any menu bar choice on a window, do the following with the window displayed in the foreground:

__ 1. Press F10 on the keyboard, notice that **Selected** is highlighted on the menu bar at the top of the window.

__ 2. Use the right and left arrow keys on the keyboard to highlight different choices on the menu bar. Use the up and down arrow keys to expand the choice and select other choices.

__ 3. Press F1 to get help for a highlighted choice.

Note: If you select a menu bar choice with the mouse and press F1, help is displayed for the first item in the pull-down list. If you need help for one of the items on the menu bar or within the pull-down list, use F10 and the arrow keys to highlight the item and then press F1.

Finding It on the GUI

If you have to find something on the OSA/SF GUI, but don't have a clue where to look or how to get there, do any of the following:

- See “OSA/SF GUI Flow Quick Reference” on page 3-9 for a visual flow of the GUI.
- Use the search option on the GUI.
  1. Select **Services** from the top of any *Help* window.
  2. Select **Search**.
  3. Enter the search string, select **All sections** and then **Search**.

     All the help information is searched for your request and a list of topics shown that matched your search string. Double-click on the topic you want to display. Most help information for an object also describes how to display the object.
- Use the index on the GUI.
  1. Select **Help** from the menu bar of any window.
  2. Select **Help index**.
  3. Page up and down or use the scroll bar to locate the object and then double-click on the object.

Determining Which OSA/SF Image is Managing the OSA

Do the following to determine which OSA/SF image and LP number is managing an OSA:

From the OSA Channels Tree View

1. Double-click on the OSA number.
2. Select the **Statistics** notebook tab.

From the OSA Channels Details View

1. Select the OSA number.
2. Select **Selected** from the menu bar.
3. Select **Open as** and then **Channel settings**.
4. Select the **Statistics** notebook tab.

OSA/SF GUI Flow Quick Reference

The following flow shows the main OSA/SF GUI windows. Each **X** represents a required selection you choose from the window to advance to the next selection or window.

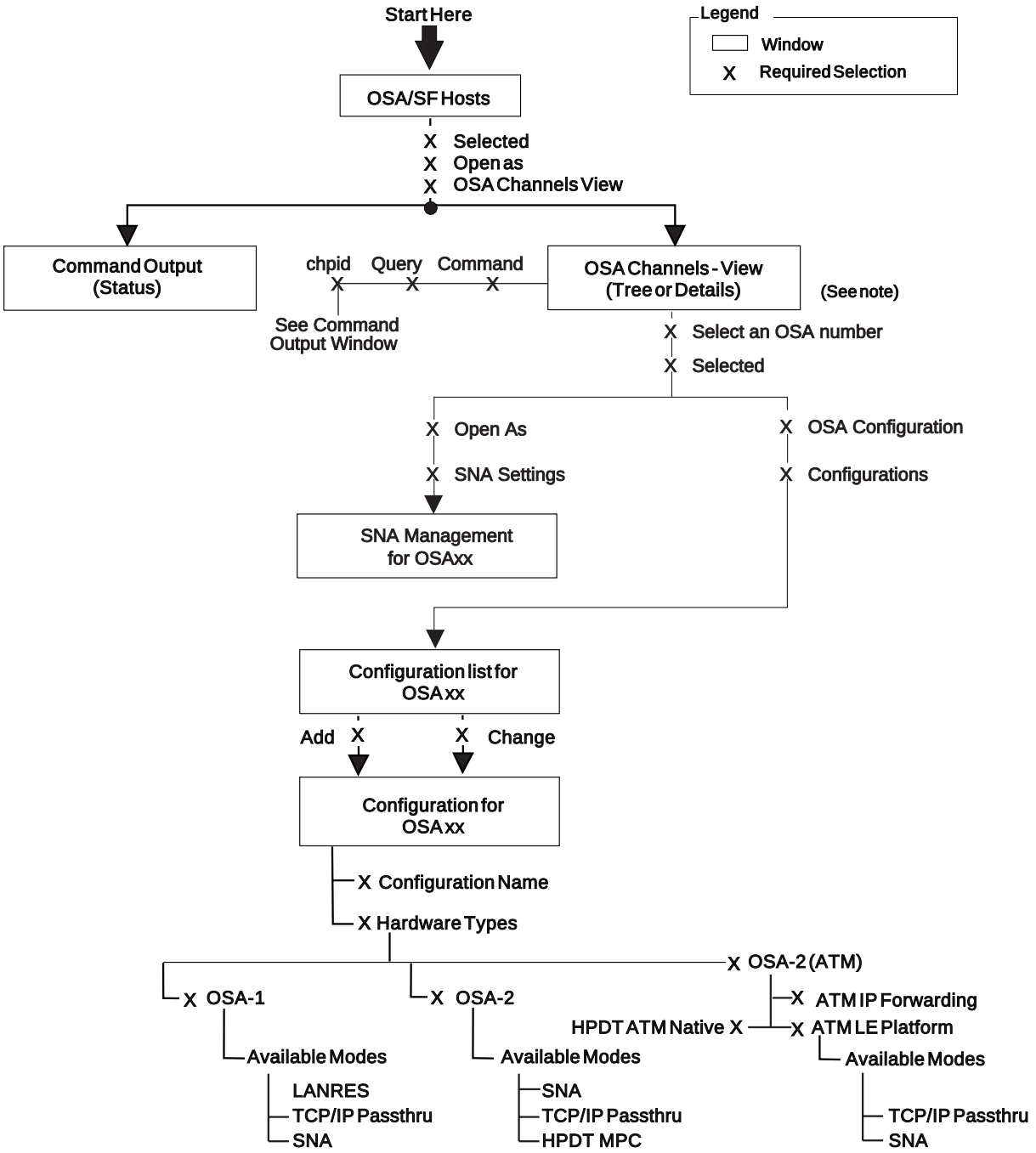

Figure 3-8. OSA/SF GUI Main Window Flow and Required Selections

Note: There are two views of the OSA channels, **Tree View** and **Details View**. The default settings determine which of the views is displayed. See “How to Display the Other Channels View” on page 3-10 to display the other channels view. See “How to Change the Default Settings for the Channels View” on page 3-10 to change the default settings.

How to Change the Default Settings for the Channels View

1. Display the **OSA/SF Hosts** window.
2. Select **Options**.
3. Select **Channels view window defaults**.

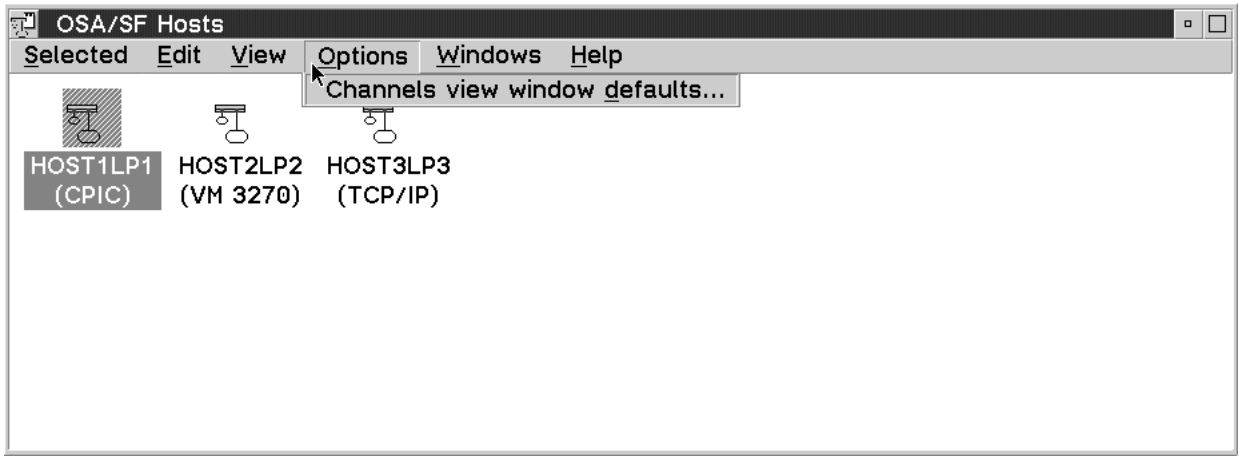

Figure 3-9. How to Display the Channels View Window Defaults

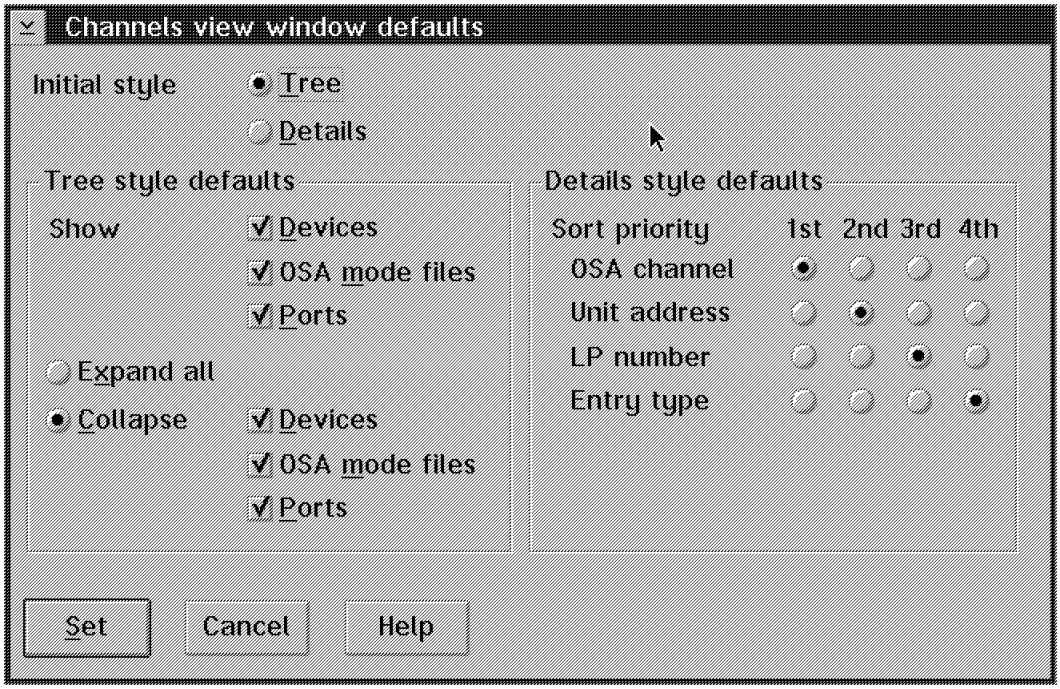

Figure 3-10. Channels View Window Defaults

How to Display the Other Channels View

1. Select **View** from the **Tree View** or **Details View**.
2. Select **Style**.
3. Select **Tree** or **Details**.

How to Use the OSA Channels - Tree View: Use the following flow to display OSA settings (characteristics).

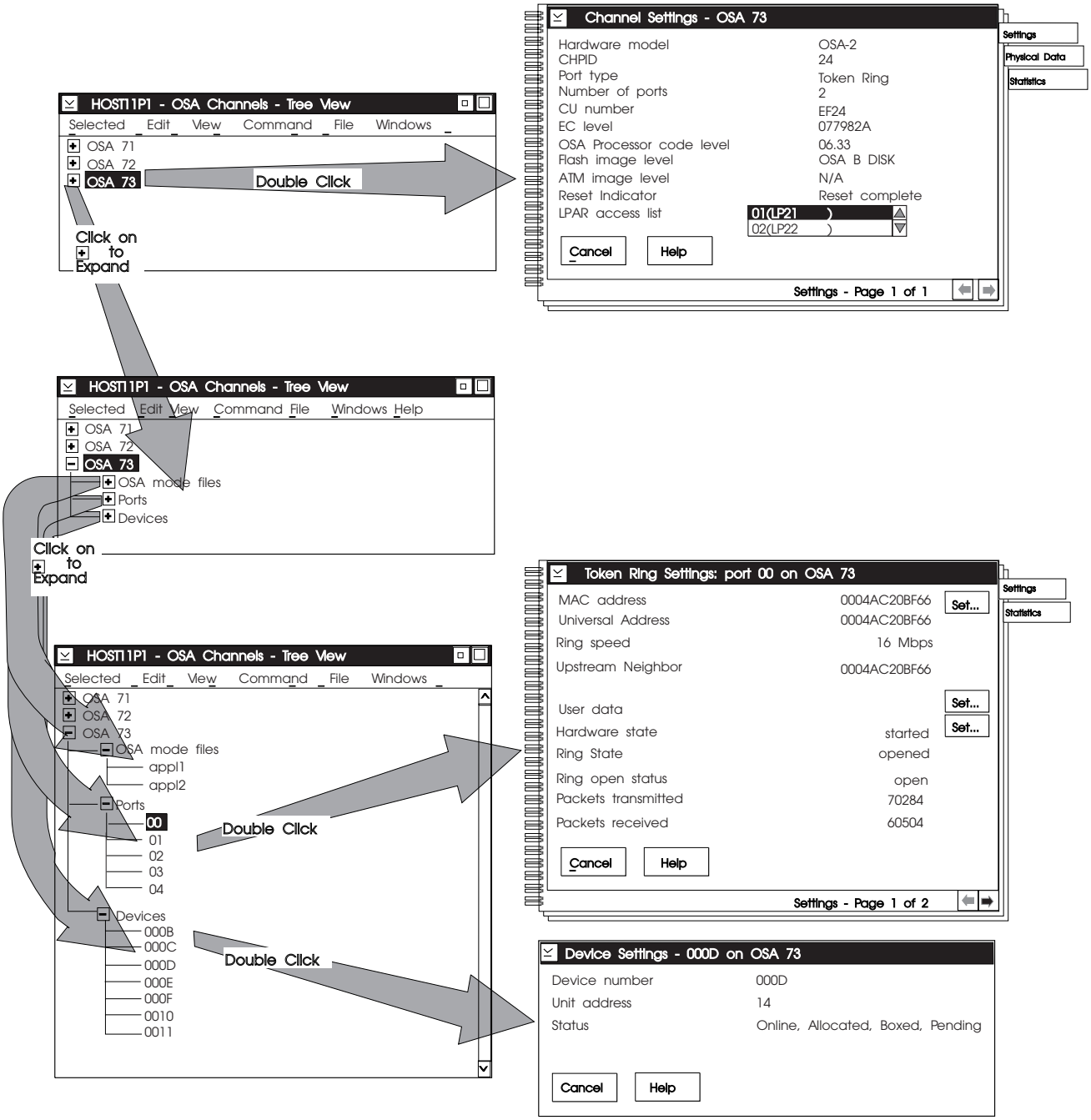

Figure 3-11. OSA Channels Tree View

Notes:

1. Each OSA can be expanded by clicking on the plus to see OSA mode files, ports, and devices for the OSA.
2. Double-click on any object to display that objects settings (characteristics).
3. Some settings are displayed in a notebook. To see other pages in the notebook, select one of the tabs on the right of the page.

Use the How To's to Start Configuring OSA Modes

Before starting

Before you define configurations for an OSA, see Chapter 4 on page 4-1 for a complete list of instructions to customize the OSA. Creating the configuration is only one task within customizing an OSA.

The How To's provide instructions for you to display windows within the GUI.

__ 1. Select **Help** from the **OSA/SF Hosts** window.

__ 2. Select **How to**.

__ 3. Double-click on **Define configurations for an OSA** as shown below.

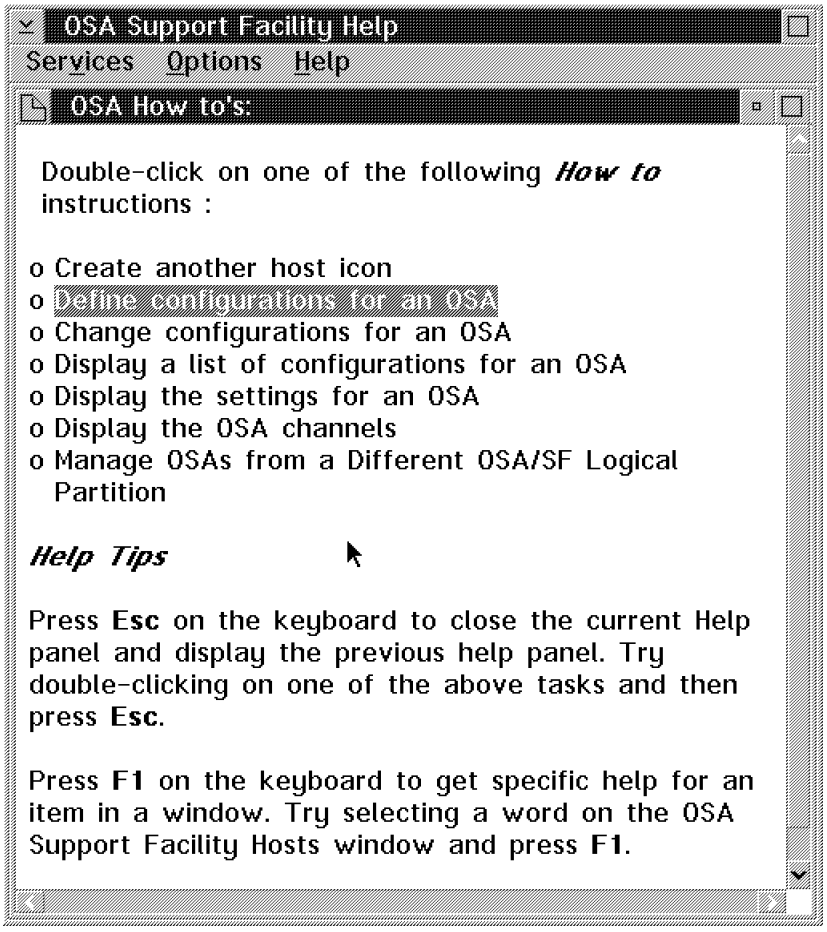

Figure 3-12. OSA How To Instructions. Double-click on any selection to display the instructions.

Chapter 4. Customizing OSAs Using the GUI

Use this chapter to customize OSAs with the GUI. If you require instructions to customize OSAs from TSO, see Chapter 5 on page 5-1.

For each OSA mode, there is an overview, installation instructions, verification instructions, and problem determination aids.

Because you can configure an OSA for different modes of operation, the OSA/SF GUI provides a way for you to define and save configurations by name so that you can change or activate different OSA modes of operation.

Each configuration can be saved and activated separately for the same OSA.

The Activate and Install tasks are disruptive to all devices using the OSA (CHPID). You can create a configuration, save it, and then do an Activate (no install) to defer the install to a more appropriate time. See “Deferring an OSA Mode Install” on page 4-40 for more information.

The GUI makes it easy to define OSA configurations that in turn define an OSA's mode of operation. If you want a quick look at how to define configurations from the GUI, do the following, but use Table 4-1 on page 4-2 to locate the complete instructions for customizing OSAs for modes of operation.

1. For Windows, click on **Start** in the lower left corner of the window and select **Programs.** Then click on **OSA/SF.**
2. For OS/2, Double-click on the OSASF icon in the OSASF folder on the OS/2 desktop.
3. Select **Help** from the menu bar.
4. Select **How to**.
5. Double-click on **Define configurations for an OSA**.

Attention

- Defining configurations with the OSA/SF GUI is one step within the overall task of customizing an OSA mode. Use the following table to see the complete list of instructions.
- Instructions for configuring ATM LAN Emulation are included within TCP/IP Passthru and SNA.

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Table 4-1. Where to Find Instructions for Customizing OSA Modes

OSA Mode	Hardware Type	See:
TCP/IP Passthru	Any OSA	“Installing OSA TCP/IP Passthru Mode” on page 4-2
SNA	Any OSA	“Installing OSA SNA Mode” on page 4-8
HPDT ATM Native	OSA-2 (ATM) Only	“Installing OSA HPDT ATM Native Mode” on page 4-18
ATM IP Forwarding	OSA-2 (ATM) Only	“Installing OSA ATM IP Forwarding” on page 4-22
HPDT MPC	OSA-2 FDDI and FENET Only	“Installing OSA HPDT MPC Mode” on page 4-25
LANRES/MVS	OSA-1 Only	“Installing OSA LANRES Mode” on page 4-30
Changing from one mode to another mode (such as Passthru to SNA)	Any OSA	“Changing an OSA's Mode of Operation” on page 4-37

Installing OSA TCP/IP Passthru Mode

TCP/IP Passthru mode provides connectivity between TCP/IP hosts (MVS, VM, or VSE) to TCP/IP clients on the LAN. Data packets pass through the OSA to TCP/IP running in the host.

If you are going to use the default unit addresses, no ATM, no port sharing, and no additional OSA modes, the OSA will operate in TCP/IP passthru mode only; no customization is necessary. Define the I/O hardware configuration and only do step 1).

Use these instructions to set up passthru mode for an OSA-2 and OSA-2 (ATM). These instructions include the following tasks for the OSA:

__ 1. Disabling the missing interrupt handler for TCP/IP passthru devices

__ 2. Creating a configuration

__ 3. Assigning or changing unit addresses

__ 4. Sharing OSA ports between logical partitions

__ 5. Saving and activating the configuration

__ 6. Starting the new configuration.

Before Starting

If the OSA is already customized for SNA mode and is being used as the communications controller between the workstation and host, do one of the following:

- Use an alternative communications controller (another OSA) to install TCP/IP.
- Use the ACTIVATE (no install) command in step 3 on page 4-6 and then issue the OSA/SF INSTALL command (see Appendix B on page B-1) from TSO and continue with the instructions.

  These alternatives are required because the GUI is communicating through the OSA and you are installing another OSA mode that interrupts the GUI to host communications. You will have to restart the GUI.
- Verify that the hardware I/O configuration was updated. See *Planning for the OSA Feature*.
- Verify that OSA/SF is started and the GUI (OS/2 or Windows) is set up. See Chapter 2 on page 2-1.

1) Disabling the Missing Interrupt Handler

From an MVS console, do the following to disable the missing interrupt handler for all TCP/IP passthru devices.

__ 1. Enter: **SETIOS MIH,DEV=(*devnum*),TIME=00:00**
Where ***devnum*** can be a three or four digit device number. Use a comma to separate more than one device number and use a hyphen to specify a range of device numbers.

The SETIOS MIH command disables the missing interrupt handler until the next system IPL. Doing the next step will permanently disable it after the the next system IPL.

__ 2. Edit the IECIOSxx member of SYS1.PARMLIB and add the following for the TCP/IP passthru devices:

MIH TIME=00:00,DEV=*devnum*

or

MIH TIME=00:00,DEV=(*lowdevnum-highdevnum*)

Enter: **SET IOS=*xx*** where ***xx*** is the last two characters in IECIOS***xx***. The next IPL will use these values if the ***xx*** value matches the IOS= parameter in IEASYS***yy*** member.

2) Creating a Configuration for the OSA

__ 1. If you are using EHLLAPI as the host-to-workstation communications, make sure the host session is at the TSO ready prompt and not the ISPF menu.

__ 2. Write down the logical partition name of where OSA/SF is running and the associated icon name shown on the OSA/SF GUI **Hosts** window:

OSA/SF Logical Partition Name _____

OSA/SF GUI Host Icon Name _____

If more than one OSA/SF image is installed, you will see corresponding host icons on the **OSA/SF Hosts** window.

__ 3. From the OSA/SF GUI, do the following to start managing the OSA:

Note: If the OSA feature hardware is not yet installed, do *not* do this step. You will have to do the Start Managing after the OSA feature is installed.

a. From the **OSA/SF Hosts** window, select the host icon (OSA/SF image) that you want to use to manage the OSA.

b. Display the **OSA Channels - Tree View** or **Details View** window. If you need instructions, select **Help** from the menu bar, then select **How to**, and then double-click on **Display the OSA channels**.

c. Select the OSA number on the channels view window.

d. Select **Command** from the menu bar.

e. Select **Manage channel** from the pull-down.

f. Select **Start**, **No force**, and **Ok**. If another LP was managing the OSA, use **force**.

__ 4. Do the following to display the **Configuration for OSA** window; if you know how to display the configuration window, go to step 5.

a. Select **Help** on the menu bar.

b. Select **How to** from the pull-down.

c. Double-click on **Define Configurations for an OSA**.

The **How to** instructions will assist you with displaying the configuration window; when the **Configuration for OSA** window is displayed, continue with the next step.

__ 5. From the **Configuration for OSA** window, verify the **Hardware type** and **Port type** are correct.

Note: The hardware type and port type are read from the OSA hardware feature if the OSA device is installed in the system, the I/O hardware configuration is complete, and the OSA CHPID is online to at least one LP. If you are defining a configuration prior to these conditions, select the hardware type and port type.

__ 6. Enter a **Configuration name** of your choice for this OSA.

__ 7. If the OSA hardware type is OSA-2 (ATM) and you want to configure LAN emulation, do these substeps; otherwise go to step 8.

a. Select **ATM LAN Emulation Client(LEC)** from the **Available modes** listbox.

b. Enter the required input for logical port 0, or logical port 0 and logical port 1. There are three pages in the notebook for each port. Click on the arrows at the bottom right of the notebook to display the other pages. Use **Set** after entering the values and then continue with the next step to add Passthru to the configuration.

__ 8. From the **Configuration for OSA** window, select **TCP/IP Passthru** from the **Available modes** listbox, select **Add**, and then select **Add** again to see the **Passthru OAT record definition** window. This is where the OSA Address Table (OAT) definitions are entered.

Use this window to change the default unit addresses and to share ports between logical partitions. The following instructions are separate for Assigning the default unit addresses and sharing ports among logical partitions, but you can enter all the information at the same time on the same window.

3) Assigning or Changing the Default Unit Addresses

If you were following the previous instructions, the **Passthru OAT record definition** window was displayed in step 8. Enter the **LP**, **Unit address**, and **Port** to assign or change the OSA Address Table (OAT). If you are adding more than one entry, select **Add** after each entry and then type over the previous information. When you are done adding entries, select **Cancel** and then select **Set**. Please read the following important notes.

Notes:

1. If the OSA CHPID is not shared between LPs or the system is in basic mode, enter **0** for the LP number.
2. IBM supplies default values for the OAT with OSA-2. OSA-2 ATM does not have default values. Default values are referred to as the Default OAT. See *Planning for the OSA Feature*.
3. If you want to reinstall the default OAT, select the **Default OAT** pushbutton from the **TCP/IP Passthru Settings** window which is displayed when you add or change a configuration from the **Configuration for OSA** window. Any previously defined entries will be lost if you select the default OAT.
4. The default OAT contains the maximum entries to accommodate the maximum number of LPs with port sharing. If you are not sharing ports between LPs, do not enter an associated IP address. Unused entries in the default OAT will not cause a problem. A message may be displayed indicating that entries exist for port sharing without an IP address, but this is ok if you are not sharing ports between LPs.

4) Sharing OSA Ports Between Logical Partitions

If you were following the previous instructions, the **Passthru OAT record definition** window was displayed in step 8 on page 4-4. Do the following to share ports between logical partitions.

1. Enter the **LP**, **Unit address**, and **Port** number to be shared.
2. Enter the **S/390 home IP Address** for this entry.
3. Select if you want this entry to be the primary or secondary default entry (path) for forwarding unknown IP packets.
   - You do not have to specify a primary or secondary default entry. Unknown IP packets will be ignored.
   - You only can specify a secondary default entry if a primary default entry is specified.
   - Specify default entries on a port basis. You can have one primary, or one primary and one secondary, default entry for each port on the OSA feature.
4. Do the previous three steps again for the other LPs that will share the port.

   Note: Be sure to select **Add** after each entry.

Adding Another Mode with Passthru

If you are not adding another mode with Passthru, continue with the next step.

If you are going to add another OSA mode with Passthru, see Table 4-1 on page 4-2 for the instructions to follow for the other mode. Some of the steps for the other mode can be skipped if you already did them in these instructions. For example: You already did the start managing and displayed the configuration window.

5) Saving and Activating the Configuration

Do these instructions to save the configuration and then activate it on the OSA.

__ 1. After you have defined the configuration and added the changes, return to the **Configuration for OSA** window.

__ 2. Select **Configuration** from the menu bar at the top of the window and then select **Save**.

Attention

The Activate task is disruptive to all devices using the OSA (CHPID). You can defer the install to a more appropriate time by selecting ACTIVATE (no install), then see “Deferring an OSA Mode Install” on page 4-40 to complete the install.

__ 3. Once the configuration is saved successfully, select **Configuration** again from the menu bar and then select **Activate**.

__ 4. After activating the configuration, be sure to read the following labeled boxes and continue with these instructions. The activation takes a few minutes; monitor the command output window and the MVS console.

Important Message

A message will be displayed on the GUI indicating that activation completed successfully. You will be instructed to configure the CHPID offline, then online. Continue following these instructions.

6) Starting the New OSA Configuration

__ 1. Vary off the OSA devices and then configure the OSA CHPID offline from *every* logical partition that can use or share the CHPID.

Attention

The OSA base code will not be installed unless the CHPID is configured offline from every logical partition.

__ 2. Configure the CHPID back online to appropriate logical partitions. This starts the base code just loaded onto the OSA.

__ 3. The devices that were defined in the configuration should now be online. Use the appropriate TCP/IP commands to start using the devices.

Verifying that TCP/IP Passthru Mode Is Operational

Do the following to verify a communication path between the passthru OSA and TCP/IP running on the host. If you cannot verify successful passthru operations, see “TCP/IP Passthru Problem Determination Aids” on page 4-7.

__ 1. If TCP/IP is running, enter the TCP/IP for MVS command **NETSTAT DEVLINKS**. This verifies that the passthru OSA device is defined in PROFILE.TCPIP and shows you the status of the device. See the TCP/IP publications for details on reading the output.

__ 2. Use the PING Command from a client.

The PING command sends an echo request to a host to determine if the host is accessible over the network. For more information about the TCP/IP for MVS PING command on the MVS system, see *TCP/IP for MVS: User's Guide*.

If the NETSTAT DEVLINKS was successful and the PING was successful, the OSA Passthru mode is installed and running.

IP Multicast Support

OSA/SF supports IP multicast by displaying the multicast addresses and their associated MAC group addresses. These addresses are set up by the application and not OSA/SF. To see the multicast addresses, display the port settings notebook by doing the following:

__ 1. Display the **OSA Channels-Tree View** window.

__ 2. If not already expanded, expand the OSA view by clicking on the plus sign (+) so that the ports are displayed.

__ 3. Double-click on the port number and then look through the port settings notebook for multicast information.

TCP/IP Passthru Problem Determination Aids

If you suspect a problem with TCP/IP for MVS, see *TCP/IP for MVS: User's Guide* .

If you suspect a hardware problem with OSA, contact the IBM service personnel.

Traces, error logs, and dumps are available from the processor controller (PCE) or hardware master console (SE).

Do the following to identify problems with OSA Passthru mode:

__ 1. Verify that the OSA CHPID is defined to the logical partition which contains the TCP/IP address space.

__ 2. Verify that the OSA CHPID is varied on.

__ 3. Verify that the device address and IP address configured in PROFILE.TCPIP corresponds to the one you entered.

> **Attention**
>
> If the system is in basic mode, or the OSA (CHPID) is defined as not shared, a zero must be specified for the logical partition number in the OSA address table (OAT).

__ 4. Check the TCP/IP for MVS address space console log.

__ 5. Verify the IOCP definitions. Refer to *Planning for the OSA Feature*.

__ 6. View the OAT record for appropriate information.

a. From the OSA/SF GUI, display the **OSA Channels-Details View.**

Notes:

1) If you need help, select **Help** from the menu bar, select **How to**, and then **OSA Channels**.

2) If the **OSA Channels-Tree View** is displayed, select **View Style** and **Details View** from the Channels-Tree View window to display the **OSA Channels-Details View**.

b. Verify that the **Entry type** is **Passthru** for the OSA CHPID number and Unit address (device number) configured for Passthru mode. The LP number and Unit address associates the OSA to TCP/IP running on the host.

If the system is in basic mode, or the OSA (CHPID) is defined as not shared, a zero must be specified for the logical partition number in the OSA address table (OAT).

c. Double-click on the device number that you want to verify.

d. Verify that the **LAN port ID**, **S/390 Home IP address**, and the **Default OAT entry** are correct.

If the previous steps do not solve your host-to-OSA connectivity problem, you might have malfunctioning hardware. Check the Hardware Master Console or Processor Controller for hardware errors.

SNA Mode

SNA Overview

OSA provides the connectivity to support clients on LANs that use the Systems Network Architecture (SNA) and Advanced Peer-to-Peer Networking (APPN).

In SNA mode, LAN clients can access the Advanced Communications Function/Virtual Telecommunications Access Method (ACF/VTAM) running on an MVS/ESA system. This connectivity to ACF/VTAM provides:

- The interface between host application programs and other resources in an SNA network.
- The link between peer users of a network.

VTAM establishes and terminates sessions between users of the network, forwarding session data to and from each session partner. VTAM also:

- Activates and deactivates resources under its control including devices to which VTAM is directly attached
- Keeps information on the network configuration, active sessions, and network conditions.

Installing OSA SNA Mode

Before Starting

These instructions require the OSA/SF GUI. If you are not using the GUI, or you want to use APPC and the OSA as the communications controller between the workstation and host, see “ENTR, FENET, and FDDI OSA-2 Features” on page 5-6 to install the SNA code on the OSA device.

If the OSA is already customized for TCP/IP mode and is being used as the communications controller between the workstation and host, do one of the following:

- Use an alternate communications controller (another OSA) to install the SNA image.
- Use the ACTIVATE (no install) command for step 8b on page 4-10 and then issue the OSA/SF INSTALL command (see Appendix B on page B-1) from TSO and continue with the instructions.

  These alternatives are required because the GUI is communicating through the OSA and you are installing another OSA mode that interrupts the GUI to host communications. You will have to restart the GUI.

If not already done, do the following:

- Use the OSA planning checklist and configuration worksheets in the Planning Guide.
- Verify that VTAM and OSA/SF are installed on the host.

Note: If the OSA was already set up previously for a different mode and you are changing the mode, use the instructions in “Changing an OSA's Mode of Operation” on page 4-37 to quiesce the current mode, then continue with these instructions.

Do the following instructions for *each* OSA planned for SNA mode:

__ 1. Write down the logical partition name of where OSA/SF is running and the associated icon name shown on the OSA/SF GUI **Hosts** window:

OSA/SF Logical Partition Name _____

OSA/SF GUI Host Icon Name _____

If more than one OSA/SF image is installed, you will see corresponding host icons on the **OSA/SF Hosts** window.

__ 2. From the OSA/SF GUI, do the following to start managing the OSA:

Note: If the OSA feature (hardware) is not yet installed, do *not* do this step. You will have to do the Start Mangaging after the OSA feature is installed.

a. From the **OSA/SF Hosts** window, select the host icon (OSA/SF image) that you want to use to manage the OSA.

b. Display the **OSA Channels - Tree View** or **Details View** window. If you need instructions, select **How to** from the menu bar and double-click on **Display the OSA channels**.

c. Select the OSA number on the channels view window.

d. Select **Command** from the menu bar.

e. Select **Manage channel** from the pull-down.

f. Select **Start**, **No force**, and **Ok**. If another LP was managing the OSA, use **force**.

__ 3. Do the following to display the **Configuration for OSA** window. If you know how to display the configuration window, go to step 4.

a. Select **Help** on the menu bar.

b. Select **How to** from the pull-down.

c. Double-click on **Define Configurations for an OSA**.

The **How to** instructions will assist you with displaying the configuration window, when the **Configuration for OSA** window is displayed, continue with the next step.

__ 4. From the **Configuration for OSA** window, verify the **Hardware type** and **Port type** are correct.

Note: The hardware type and port type are read from the OSA feature (hardware) if the OSA feature is installed in the system, the I/O hardware configuration is complete, and the OSA CHPID is online to at least one LP. If you are defining a configuration prior to these conditions, select the hardware type and port type.

__ 5. Enter a **Configuration name** of your choice for this OSA.

__ 6. If the OSA hardware type is OSA-2 (ATM) and you want to configure LAN emulation, do these substeps, otherwise go to step 7.

a. Select **ATM LAN Emulation (LE)** from the **Available modes** listbox.

b. Enter the required input for logical port 0, or logical port 0 and logical port 1. There are three pages in the notebook for each port. Click on the arrows at the bottom right of the notebook to display the other pages. When complete, continue with the next step to add SNA to the configuration.

__ 7. From the **Configuration for OSA** window, select **SNA** from the **Available modes** listbox, select **Add**, and then select **Add** again to see the **SNA OAT record definition** window. Enter the required information. If you are adding more than one entry, select **Add** after each entry and then type over the previous information. When you are done adding entries, select **Cancel** and then select **Set**.

__ 8. Do the following to save the configuration and then activate it:

a. Select **Configuration** from the menu bar and then select **Save**.

> **Attention**
>
> The Activate task is disruptive to all devices using the OSA (CHPID). You can defer the install to a more appropriate time by selecting ACTIVATE (no install), then see “Deferring an OSA Mode Install” on page 4-40 to complete the install.

b. Select **Configuration** and then select **Activate**. The activation takes a few minutes; monitor the command output window and the MVS console.

> **Important Message**
>
> A message will be displayed on the GUI indicating that activation completed successfully. You will be instructed to configure the CHPID offline, then online. Do step 9 first and then in step 10 you will configure the CHPID offline.

__ 9. Vary off the OSA devices and then configure the OSA CHPID offline from *every* logical partition that can use or share the CHPID.

> **Attention**
>
> The OSA base code will not be installed unless the CHPID is configured offline from every logical partition.

__ 10. Configure the CHPID back online to the appropriate logical partitions. This activates the base code just loaded onto the OSA.

__ 11. If you want to enhance the availablitiy of SNA sessions (Enhanced SNA Availability Support), do the following:

a. Display the **OSA Channels - Tree View** window.

b. Double-click on the OSA port number.

c. Select **Set** for Enhanced SNA Availability. Enter the required information. See *Enhanced SNA Session Availability* in the OSA Planning Guide for detailed information about this support.

Note: You can tune the SNA parameters from the settings window that is displayed when you double-click on a port number from the OSA Channels - Tree View.

__ 12. If required, vary on the device with unit address of FE.

__ 13. If required, vary on the SNA devices to the appropriate host.

__ 14. Start the connection using the VTAM host program.

Installing Service Updates for SNA Mode

Doing an Install is disruptive to all devices using the OSA.

__ 1. Do the installation steps in the OSA/SF Program Directory to get the OSA SNA files off the SMP/E tape and into MVS data sets.

__ 2. Do the following from the OSA/SF GUI to install and download the SNA code to the OSA:

a. Select the OSA number on a **Channels View** window.

b. Select **Command**, **Install**, **No force**, and then **Ok**.

__ 3. Vary off the OSA devices and then configure the OSA CHPID offline from *every* logical partition that can use or share the CHPID.

Attention

The OSA base code will not be installed unless the CHPID is configured offline from every logical partition.

__ 4. Configure the CHPID back online to the appropriate logical partitions. This activates the base code just loaded onto the OSA.

__ 5. If required, vary on the device with unit address of FE.

__ 6. If required, vary on the SNA devices to the appropriate host.

__ 7. Start the SNA connection using the SNA host program.

Verifying SNA Operations

__ 1. Use VTAM commands to verify that the connection is active.

__ 2. Verify the IOCP definitions. Refer to *Planning for the OSA Feature*.

__ 3. Verify that the OSA CHPID is varied on.

__ 4. Verify that the OSA is defined to the logical partition containing the SNA address space.

__ 5. View the OAT record for appropriate information.

a. From the OSA/SF GUI, display the **OSA Channels-Details View.**

If the **OSA Channels-Tree View** displays, select **View Style** and **Details view** from the Channels-Tree View window to display the **OSA Channels-Details** View.

b. Verify that the **Entry type** is **SNA** for the OSA CHPID number and Unit address (device number) configured for SNA mode. The LP number and Unit address associates the OSA to SNA running on the host.

If the system is in basic mode, or the OSA (CHPID) is defined as not shared, a zero must be specified for the logical partition number in the OSA address table (OAT).

c. Double-click on the device number that you want to verify.

d. Verify that the **LAN Port ID** and the **Record type** is SNA.

If any of these are not correct, the configuration was not done properly.

Netview Alerts: The OSA can surface information through netview alerts. For details on the alerts, see *Planning for the OSA Feature*.

Additional SNA Information: For OSA-2 ATM and OSA-2 Fenet CHPIDs, there are improvements in SNA network management to allow you to acquire detailed information at the port, SAP, and connection level. The type of information you can view is:

1. Station level statistics: the number of each type of frame that has been transmitted and received.
2. Link station state.
3. Whether a particular connection is congesting and determine whether OSA or the remote client is causing the congestion.
4. The route being taken through the customer's network. Most customers have many bridges and LAN segments.
5. All pertinent connection and SAP level configuration information displayed in one place.
6. A dynamic view of the SNA load on the OSA at the port, SAP, and connection level.

a. Number of SAPs currently open on a given port.
b. Number of stations currently open on a given port.
c. Number of stations currently open under a given SAP.
d. Various frame types sent/received on a particular SAP.
e. Various frame types sent/received on a particular connection.

This data is available as a version of the Query command (SNA_INFO) if using REXX or from the **Selected**, **Open As**, **SNA settings** on GUI. This information does not require a SNA OAT entry with UA of 'FF'x.

The following describes the information returned for each type of query issued:

Port view

- Port number
- Source MAC address
- LAN type

Port details

- LAN type
- Source MAC address
- Stations open
- SAPs open

SAP view

- Source SAP
- LP number
- Unit Address (UA)

SAP details

- LAN type
- LP number
- UA
- Stations open
- Stations available
- UI frames sent/received
- XID frames sent/received
- Test frames sent/received
- RR frames sent/received
- RNR frames sent/received
- REJ frames sent/received
- I frames sent/received

NULL SAP details

- Source MAC address
- XID frames sent/received
- Test frames sent/received

Connection view

- Destination MAC
- Destination SAP

Connection details

- LP number
- UA
- LAN type
- Inactivity timer (ti)
- Response timer (t1)
- Acknowledgment (t2)
- Station state
- XID frames sent/received
- Test frames sent/received
- SABME frames sent/received
- UA frames sent/received
- RR frames sent/received
- RNR frames sent/received
- REJ frames sent/received
- I frames sent/received
- UI frames sent/received
- Routing information
- Max I field (N1)
- Max retransmissions (N2)
- Maximum transmit window (TW)
- Max I frames before ack (N3)
- Working window increment (Nw)
- Send state (Vs)
- Acknowledgment state (Va)

In addition, you can clear the SAP details, NULL SAP, and connection details.

For details of how to issue this command using REXX, see “QUERY” on page B-23.

Sample output for each of the above queries (in output provided by the REXX interface) are shown in the following examples. The port types shown in any of the examples can be any of:

- FDDI
- Token ring
- 10 Mbs Ethernet
- 100 Mbs Ethernet
- LAN emulated Ethernet
- LAN emulated token ring

The following shows the REXX output for a port view

```
**********************************
* SNA port list for OSA CHPID cc *
**********************************
Port   Source MAC Address    LAN Type

  0       4D9834ED9988       LAN emulated token ring
  1       029834ED9989       100 Mbs Ethernet
```

The following shows the REXX output for a port details view

```
| ********************************************
| * SNA Port details for OSA CHPID cc Port pp *
| ********************************************
| LAN type ------------> 10 Mbs Ethernet
| Source MAC Address --> 1234567890AB
| Stations Open -------> 982
| SAPs open -----------> 97
```

| ***The following shows the REXX output for a SAP view***

```
| ************************
| * SAP List for port p *
| ************************
| Source    LP      Unit
|  SAP    Number   Address

|   4        5       82
|   8        6       90
|   C        4       72
```

| ***The following shows the REXX output for a SAP details view***

```
| ************************************************
| * SNA SAP details for OSA CHPID nn Port p SAP s *
| ************************************************
| LAN type ----------------->
| LP ----------------------->
| UA ----------------------->
| Stations Open ------------>
| Stations available ------->

| UI frames sent ----------->
| UI frames received ------->
| XID frames sent ---------->
| XID frames received ------>

| Test frames sent --------->
| Test frames received ----->
| RR frames sent ----------->
| RR frames received ------->

| RNR frames sent ---------->
| RNR frames received ------>
| REJ frames sent ---------->
| REJ frames received ------>
| I frames sent ------------>
| I frames received -------->
```

| ***The following shows the REXX output for a connection view***

```
| *******************************************
| * Connection list for source SAP ss Port p *
| *******************************************
| Destination MAC   Destination SAP
|   112233445566           0C
|   FFEECCDDCCBB           1F
```

| ***The following shows the REXX output for a connection details view***

```
| ***********************************************
| * SNA Connection details for OSA cc  Port pp  *
| * DMAC 423456789012 DSAP dd                   *
| * SMAC 499999333333 SSAP ss                   *
| ***********************************************
| LP -------------------------->
| UA -------------------------->
| LAN type -------------------->
| Inactivity timer (ti) ------->
| Response timer (t1) --------->
| Acknowledgment timer (t2) -->
| Station state ---------------> Connected or Not connected
| XID frames sent ------------->
| XID frames received --------->
| Test frames sent ------------>
| Test frames received -------->
| SABME frames sent ----------->
| SABME frames received ------->

| UA frames sent -------------->
| UA frames received ---------->
| RR frames sent -------------->
| RR frames received ---------->
| RNR frames sent ------------->
| RNR frames received --------->

| REJ frames sent ------------->
| REJ frames received --------->
| I frames sent --------------->
| I frames received ----------->
| Routing information --------->
| (There are 2 examples of routing that follow)
```

| There are four route designators to process. The following output will be produced:

```
| Routing information ---------> Maximum information field 4472
|                                Ring 005 to ring 003 via bridge 1
|                                Ring 003 to ring 006 via bridge 2
|                                Ring 006 to ring 008 via bridge 7
```

| No bridge designators returned. The following output will be produced:

```
| Routing information ---------> Destination is locally attached.
```

```
| Max I field (N1) ------------>
| Max retransmissions (N2) ---->
| Transmit window (TW) -------->
| Max I frames before ack(N3) ->
| Working window increment (Nw)>
| Send state (Vs) ------------->
| Acknowledgment state (Va) -->
```

The following shows the REXX output for a NULL SAP view

```
**************************************************
* SNA NULL SAP details for OSA CHPID cc Port pp *
**************************************************
Source MAC ---------------> ABCD99887766
XID frames sent ----------> 286331153
XID frames received ------> 572662306
Test frames sent ---------> 858993459
Test frames received -----> 1145324612
```

HPDT ATM Native Mode

Overview

OSA/SF provides support for High Performance Data Transfer (HPDT) Asynchronous Transfer Mode (ATM). The instructions in this section are for customizing an OSA for HPDT ATM Native mode. An OSA customized for HPDT ATM Native cannot run any other OSA mode concurrently.

If you want to customize an OSA for ATM LAN Emulation (ATM LE), see the TCP/IP Passthru and SNA instructions because Passthru or SNA must be configured on the OSA with ATM LAN emulation.

The HPDT ATM Native support for an OSA is shipped with the OSA/SF product. By using the instructions in this section you can quickly customize an OSA for HPDT ATM Native mode. The OSA/SF GUI enables you to customize your OSA ATM communications. For example, you can define the ATM connection as a permanent virtual circuit (PVC) or a switched virtual circuit (SVC). All entry fields on the GUI provide online help to assist you with defining the ATM settings for the OSA.

In addition to customizing the OSA, you will be able to easily view ATM physical port parameters from the OSA Channels View windows on the GUI by double-clicking on the ATM OSA port number.

Attention

The Activate and Install tasks are disruptive to all devices using the OSA (CHPID). You can defer the install to a more appropriate time by selecting ACTIVATE (no install), then see “Deferring an OSA Mode Install” on page 4-40 to complete the install. The instructions will inform you at the point the activation is disruptive.

If the ATM connection is a PVC, you can dynamically change PVC settings from the GUI.

Installing OSA HPDT ATM Native Mode

Before Starting

These instructions require the OSA/SF GUI to customize an ATM OSA-2. You cannot configure ATM Native mode on the same OSA with TCP/IP or SNA mode. This includes if the OSA is being used as the communications controller between the workstation and host.

Do the following for *each* OSA planned for HPDT ATM Native mode:

__ 1. Write down the logical partition name of where OSA/SF is running and the associated icon name shown on the OSA/SF GUI **Hosts** window:

OSA/SF Logical Partition Name _____

OSA/SF GUI Host Icon Name _____

If more than one OSA/SF image is installed, you will see corresponding host icons on the **OSA/SF Hosts** window.

__ 2. From the OSA/SF GUI, do the following to start managing the OSA:

Note: If the OSA feature (hardware) is not yet installed, do *not* do this step. You will have to do the Start Mangaging after the OSA feature is installed.

a. From the **OSA/SF Hosts** window, select the host icon (OSA/SF image) that you want to use to manage the OSA.

b. Display the **OSA Channels - Tree View** or **Details View** window. If you need instructions, select **How to** from the menu bar and double-click on **Display the OSA channels**.

c. Select the OSA number on the channels view window.

d. Select **Command** from the menu bar.

e. Select **Manage channel** from the pull-down.

f. Select **Start**, **No force**, and **Ok**. If another LP was managing the OSA, use **force**.

__ 3. Do the following to display the **Configuration for OSA** window. If you know how to display the configuration window, go to step 4.

a. Select **Help** on the menu bar.

b. Select **How to** from the pull-down.

c. Double-click on **Define Configurations for an OSA**.

The **How to** instructions will assist you with displaying the configuration window, when the **Configuration for OSA** window is displayed, continue with the next step.

__ 4. From the **Configuration for OSA** window, verify the **Hardware type** and **Port type** are correct.

Note: The hardware type and port type are read from the OSA hardware if the OSA feature is installed in the system, the I/O hardware configuration is complete, and the OSA CHPID is online to at least one LP. If you are defining a configuration prior to these conditions, select the hardware type and port type.

__ 5. Enter a **Configuration name** of your choice for this OSA.

__ 6. From the **Configuration for OSA** window, select **HPDT ATM Native** from the **Available modes** listbox, select **Add**.

a. Enter a **Port name**. An eight character name that defines the ATM port. The name must be identical for all logical partitions sharing the OSA.

b. Enter the number of VPI and VCI bits supported by this adapter.

c. Select the UNI version or select AUTO to have the UNI version automatically set by the OSA.

d. Select **Add** to see the **MPC OAT record definition** window. Enter the logical partition, even unit address, and OSA name. When you are done entering the information on the OAT definition window, select **Add**, a confirmation message should displayed, select **Ok**. If you want to include additional OAT definitions, type over the previous information and select **Add** for each entry. When you are done, select **cancel** and then be sure to select **Set**.

Attention

The Port name must be defined in the appropriate VTAM definitions (XCA and TRL). The OSA name must also be defined in the appropriate VTAM definitions (XCA).

If the system is in basic mode, or the OSA (CHPID) is defined as not shared, a zero must be specified for the logical partition number in the OSA address table (OAT).

Place the cursor on any entry field within the windows and press Help for details about that entry.

| __ 7. To enter the PVC definitions at this time, use the following directions. If you wish to define the PVCs at a later time, you may use the instructions in “Defining PVCs” on page 4-20 at that time and continue with step 8 now.

| a. Click on the **PVC** tab on the **HPDT ATM Native settings** window.

| b. Click **Add** to create a PVC definition.

| c. Enter the required information for each PVC and select **Add** to add the configuration. Repeat this step for each PVC to be added.

| d. When done, click **Cancel.**

| e. Click **Create** to create the PVC entries.

__ 8. Do the following to save the configuration and then activate it:

a. Select **Configuration** from the menu bar and then select **Save**.

Attention

The Activate task is disruptive to all devices using the OSA (CHPID). You can defer the install to a more appropriate time by selecting ACTIVATE (no install), then see “Deferring an OSA Mode Install” on page 4-40 to complete the install.

b. Select **Configuration** and then select **Activate**. The activation takes a few minutes; monitor the command output window and the MVS console.

Important Message

A message will be displayed on the GUI indicating that activation completed successfully. You will be instructed to configure the CHPID offline, then online. Continue with these instructions.

__ 9. Vary off the OSA devices and then configure the OSA CHPID offline from *every* logical partition that can use or share the CHPID.

Attention

The OSA base code will not be installed unless the CHPID is configured offline from every logical partition.

__ 10. Configure the CHPID back online to the appropriate logical partitions. This activates the base code just loaded onto the OSA.

__ 11. If required, vary on the device with unit address of FE.

__ 12. If you are defining a Switched Virtual Circuit (SVC), you are done customizing the OSA. If you are defining permanent virtual circuits (PVC), continue with “Defining PVCs.”

Note: Verify that the ATM switch is properly setup and that the OSA-2 ATM ports are connected and enabled.

Defining PVCs

There are two ways to access the PVC definitions. To create or view the PVC definitions while installing an OSA in the HPDT ATM Native mode, follow the instructions on step 7 on page 4-19. To view the PVC definitions from the **OSA Channels-Tree View** panel, you may use the following instructions:

__ 1. Display the **OSA Channels-Tree View** and double-click on the port number for the OSA configured for ATM Native mode.

An ATM Native notebook is displayed for the OSA settings. The first page of the notebook is for PVC information.

__ 2. Select **Set** to see the **Set PVC Table** window.

Note: Verify the ATM switch is properly setup and that the OSA-2 ATM ports are connected and enabled.

Installing Service Updates for HPDT ATM Native Mode

__ 1. Do the installation steps in the OSA/SF Program Directory to get the OSA ATM files off the SMP/E tape and into MVS data sets.

__ 2. Do the following from the OSA/SF GUI to install and download the ATM image to the OSA:

Attention

The Install task is disruptive to all devices using the OSA (CHPID). Stop the use of any devices using the OSA.

a. Select the OSA number on a **Channels View** window.

b. Select **Command**, **Install**, **No force**, and then **Ok**.

__ 3. Vary off the OSA devices and then configure the OSA CHPID offline from *every* logical partition that can use or share the CHPID.

Attention

The OSA base code will not be installed unless the CHPID is configured offline from every logical partition.

__ 4. Configure the CHPID back online to the appropriate logical partitions. This activates the base code just loaded onto the OSA.

__ 5. If required, vary on the device with unit address of FE.

Verifying HPDT ATM Native Mode

__ 1. View the OAT record for appropriate information.

a. From the OSA/SF GUI, display the **OSA Channels-Details View.**

If the **OSA Channels-Tree View** displays, select **View Style** and **Details view** from the Channels-Tree View window to display the **OSA Channels-Details** View.

b. Verify that the **Entry type** is **MPC** for the OSA CHPID number and Unit address (device number) configured for ATM mode. The LP number and Unit address associates the OSA for ATM.

If the system is in basic mode, or the OSA (CHPID) is defined as not shared, a zero must be specified for the logical partition number in the OSA address table (OAT).

Installing OSA ATM IP Forwarding

Overview

Customize an OSA-2 for ATM IP Forwarding when the OSA is connected to an ATM IP switching network. The mode allows IP packets to flow between TCP/IP on the S/390 server and an ATM IP switch using RFC 1483 protocols. This mode is ideal for large wide-area internets or intranets.

ATM IP Forwarding can not be customized on the OSA with any other mode.

The OSA/SF GUI is required to customize the OSA for ATM IP Forwarding. Use the following instructions.

Attention

The Activate and Install tasks are disruptive to all devices using the OSA (CHPID). You can defer the install to a more appropriate time by selecting ACTIVATE (no install), then see “Deferring an OSA Mode Install” on page 4-40 to complete the install. The instructions will inform you at the point the activation is disruptive.

Installing OSA ATM IP Forwarding Mode

Before Starting

- These instructions require the OSA/SF GUI to customize an ATM OSA-2 for IP Forwarding.
- You cannot configure IP Forwarding on the same OSA with any other mode.

Do the following for *each* OSA planned for ATM IP Forwarding mode:

__ 1. Write down the logical partition name of where OSA/SF is running and the associated icon name shown on the OSA/SF GUI **Hosts** window:

OSA/SF Logical Partition Name _____

OSA/SF GUI Host Icon Name _____

If more than one OSA/SF image is installed, you will see corresponding host icons on the **OSA/SF Hosts** window.

__ 2. From the OSA/SF GUI, do the following to start managing the OSA:

Note: If the OSA feature (hardware) is not yet installed, do *not* do this step. You will have to do the Start Mangaging after the OSA feature is installed.

a. From the **OSA/SF Hosts** window, select the host icon (OSA/SF image) that you want to use to manage the OSA.

b. Display the **OSA Channels - Tree View** or **Details View** window. If you need instructions, select **How to** from the menu bar and double-click on **Display the OSA channels**.

c. Select the OSA number on the channels view window.

d. Select **Command** from the menu bar.

e. Select **Manage channel** from the pull-down.

f. Select **Start**, **No force**, and **Ok**. If another LP was managing the OSA, use **force**.

__ 3. Do the following to display the **Configuration for OSA** window. If you know how to display the configuration window, go to step 4 on page 4-23.

   a. Select **Help** on the menu bar.

   b. Select **How to** from the pull-down.

   c. Double-click on **Define Configurations for an OSA**.

   The **How to** instructions will assist you with displaying the configuration window, when the **Configuration for OSA** window is displayed, continue with the next step.

__ 4. From the **Configuration for OSA** window, verify the **Hardware type** is OSA-2 (ATM) and the **Port type** is ATM.

   Note: The hardware type and port type are read from the OSA hardware if the OSA feature is installed in the system, the I/O hardware configuration is complete, and the OSA CHPID is online to at least one LP. If you are defining a configuration prior to these conditions, select the hardware type and port type.

__ 5. Enter a **Configuration name** of your choice for this OSA.

__ 6. Select **ATM IP Forwarding** from the **Available modes** listbox and then select **Add**. The **ATM IP Forwarding Settings** window is displayed.

__ 7. Enter the number of VPI and VCI bits supported by this adapter. Select the Transmit clock source, OSA or network. Press F1 with the cursor in the entry field for online help.

__ 8. Select **Add** to see the **ATM IP Forwarding OAT record definition** window.

   Attention

   If the system is in basic mode, or the OSA (CHPID) is defined as not shared, a zero must be specified for the logical partition number.

   Place the cursor on any entry field within the windows and press Help for details about that entry.

__ 9. Enter the required information. When you are done, select **Add**, a confirmation message should displayed, select **Ok**. If you want to include additional OAT definitions, type over the previous information and select **Add** for each entry. When you are done select **cancel**. The ATM IP Forwarding Settings window should be displayed. Select the PVC tab on the notebook and complete the entries using the online help if required. When you are done, be sure to select **Set** on the ATM IP Forwarding window. This sets both the Base (OAT) and PVC definitions that you entered.

__ 10. Do the following to save the configuration and then activate it:

   a. Select **Configuration** from the menu bar and then select **Save**.

   Attention

   The Activate task is disruptive to all devices using the OSA (CHPID). You can defer the install to a more appropriate time by selecting ACTIVATE (no install), then see “Deferring an OSA Mode Install” on page 4-40 to complete the install.

   b. Select **Configuration** and then select **Activate**. The activation takes a few minutes; monitor the command output window and the MVS console.

Important Message

A message will be displayed on the GUI indicating that activation completed successfully. You will be instructed to configure the CHPID offline, then online. Continue with these instructions.

__ 11. Vary off the OSA devices and then configure the OSA CHPID offline from *every* logical partition that can use or share the CHPID.

Attention

The OSA base code will not be installed unless the CHPID is configured offline from every logical partition.

__ 12. Configure the CHPID back online to the appropriate logical partitions. This activates the base code just loaded onto the OSA.

__ 13. If required, vary on the device with unit address of FE.

Note: Verify that the ATM switch is properly setup and that the OSA-2 ATM ports are connected and enabled.

Installing Service Updates for ATM IP Forwarding

__ 1. Do the installation steps in the OSA/SF Program Directory to get the OSA ATM files off the SMP/E tape and into MVS data sets.

__ 2. Do the following from the OSA/SF GUI to install and download the ATM image to the OSA:

Attention

The Install task is disruptive to all devices using the OSA (CHPID). Stop the use of any devices using the OSA.

a. Select the OSA number on a **Channels View** window.

b. Select **Command**, **Install**, **No force**, and then **Ok**.

__ 3. Vary off the OSA devices and then configure the OSA CHPID offline from *every* logical partition that can use or share the CHPID.

Attention

The OSA base code will not be installed unless the CHPID is configured offline from every logical partition.

__ 4. Configure the CHPID back online to the appropriate logical partitions. This activates the base code just loaded onto the OSA.

__ 5. If required, vary on the device with unit address of FE.

Verifying ATM IP Forwarding

__ 1. View the OAT record for appropriate information.

a. From the OSA/SF GUI, display the **OSA Channels-Details View.**

If the **OSA Channels-Tree View** displays, select **View Style** and **Details view** from the Channels-Tree View window to display the **OSA Channels-Details** View.

b. Verify that the **Entry type** is **Passthru** for the OSA CHPID number and Unit address (device number) configured for ATM IP Forwarding. The LP number and Unit address associates the OSA for ATM IP Forwarding.

c. Double-click on the OSA port number to display the port settings. Verify that the S/390 Home IP Address and S/390 Home IP Subnet Mask are correct.

   If the system is in basic mode, or the OSA (CHPID) is defined as not shared, a zero must be specified for the logical partition number in the OSA address table (OAT).

HPDT MPC Mode

Overview

Use these instructions to customize an OSA-2 FDDI or FENET feature for HPDT MPC mode. This OSA mode supports IP and IPX data types. Only a FENET feature supports IPX.

HPDT MPC mode can be installed with TCP/IP Passthru and or SNA modes.

The HPDT MPC support for an OSA is shipped with the OSA/SF product. If you want to use REXX from TSO to customize the OSA, see Chapter 5 on page 5-1.

After customizing the OSA and it is in use, you can double-click on an OAT entry in the Channels Detail View window to see the following:

- A list of S/390 home IP addresses if TCP/IP is using the OSA.
- A list of frame types if NDS/IPX is using the OSA.

Attention

The Activate and Install tasks are disruptive to all devices using the OSA (CHPID). You can defer the install to a more appropriate time by selecting ACTIVATE (no install), then see “Deferring an OSA Mode Install” on page 4-40 to complete the install. The instructions will inform you at the point the activation is disruptive.

Installing OSA HPDT MPC Mode

Do the following for *each* OSA planned for HPDT MPC mode:

__ 1. Write down the logical partition name of where OSA/SF is running and the associated icon name shown on the OSA/SF GUI **Hosts** window:

   OSA/SF Logical Partition Name _____

   OSA/SF GUI Host Icon Name _____

   If more than one OSA/SF image is installed, you will see corresponding host icons on the **OSA/SF Hosts** window.

__ 2. From the OSA/SF GUI, do the following to start managing the OSA:

   Note: If the OSA feature (hardware) is not yet installed, do *not* do this step. You will have to do the Start Mangaging after the OSA feature is installed.

   a. From the **OSA/SF Hosts** window, select the host icon (OSA/SF image) that you want to use to manage the OSA.

b. Display the **OSA Channels - Tree View** or **Details View** window. If you need instructions, select **How to** from the menu bar and double-click on **Display the OSA channels**.

c. Select the OSA number on the channels view window.

d. Select **Command** from the menu bar.

e. Select **Manage channel** from the pull-down.

f. Select **Start**, **No force**, and **Ok**. If another LP was managing the OSA, use **force**.

__ 3. Do the following to display the **Configuration for OSA** window. If you know how to display the configuration window, go to step 4.

a. Select **Help** on the menu bar.

b. Select **How to** from the pull-down.

c. Double-click on **Define Configurations for an OSA**.

The **How to** instructions will assist you with displaying the configuration window, when the **Configuration for OSA** window is displayed, continue with the next step.

__ 4. From the **Configuration for OSA** window, verify the **Hardware type** is OSA-2 and the **Port type** FDDI.

Note: The hardware type and port type are read from the OSA hardware if the OSA feature is installed in the system, the I/O hardware configuration is complete, and the OSA CHPID is online to at least one LP. If you are defining a configuration prior to these conditions, select the hardware type and port type.

__ 5. Enter a **Configuration name** of your choice for this OSA.

__ 6. From the **Configuration for OSA** window, select **HPDT MPC** from the **Available Modes** listbox, select **Add** and then select the desired code level if a choice is shown.

__ 7. On the **HPDT MPC Settings** window, select **Add** and then enter the required information to create an entry in the OSA address table (OAT). When you are done select **Add**. If you want to create additional entries, type over the information you just added and select **Add** for each entry. When you are done, select **Cancel** and then be sure to select **Set** from the HPDT MPC Settings window.

Attention

The OSA name must also be defined in the appropriate VTAM definitions (XCA).

If the system is in basic mode, or the OSA (CHPID) is defined as not shared, a zero must be specified for the logical partition number in the OSA address table (OAT).

Place the cursor on any entry field within the windows and press Help for details about that entry.

__ 8. Do the following to save the configuration and then activate it:

a. Select **Configuration** from the menu bar and then select **Save**.

Attention

The Activate task is disruptive to all devices using the OSA (CHPID). You can defer the install to a more appropriate time by selecting ACTIVATE (no install), then see “Deferring an OSA Mode Install” on page 4-40 to complete the install.

b. Select **Configuration** and then select **Activate**. The activation takes a few minutes; monitor the command output window and the MVS console.

Important Message

A message will be displayed on the GUI indicating that activation completed successfully. You will be instructed to configure the CHPID offline, then online. Continue with these instructions.

__ 9. Vary off the OSA devices and then configure the OSA CHPID offline from *every* logical partition that can use or share the CHPID.

Attention

The OSA base code will not be installed unless the CHPID is configured offline from every logical partition.

__ 10. Configure the CHPID back online to the appropriate logical partitions. This activates the base code just loaded onto the OSA.

__ 11. If required, vary on the device with unit address of FE.

Verifying HPDT MPC Mode

__ 1. View the OAT record for appropriate information.

a. From the OSA/SF GUI, display the **OSA Channels-Details View**

If the **OSA Channels-Tree View** displays, select **View Style** and **Details view** from the Channels-Tree View window to display the **OSA Channels-Details** View.

b. Verify that the **Entry type** is **MPC** for the OSA CHPID number and Unit address (device number) configured for MPC mode. The LP number and Unit address associates the OSA for MPC.

If the system is in basic mode, or the OSA (CHPID) is defined as not shared, a zero must be specified for the logical partition number in the OSA address table (OAT).

c. If the OSA is in use, you can view NDS/IPX information or IP information by double-clicking on an entry in the **OSA Channels-Details** view.

LANRES Mode

LANRES Overview

OSA LANRES mode is only available with the OSA-1 hardware.

LAN Resource Extension and Services/MVS (LANRES/MVS) makes your S/390 a resource of the NetWare LAN. NetWare users can run applications that take advantage of the following services:

- **Disk serving**. From MVS, you can:
  - Create or delete a *disk image* on which NetWare volumes can be created. To NetWare clients, a volume on an MVS disk image looks like any other NetWare volume.
  - Start and stop the LANRES/MVS disk server on the MVS system. The LANRES/MVS disk server makes the disk images available to NetWare servers.
  - Work with data sets on MVS that contain information about the disk images.
- **Distribution**. From MVS, you can use this function to:
  - Copy MVS data to NetWare servers
  - Copy NetWare data to an MVS system
  - Create, delete, rename, and display NetWare files and directories
  - Display NetWare server volumes, directories, and file information
  - Send messages to NetWare server clients
  - Load NetWare loadable modules (NLMs) on NetWare servers
  - Change the data translation defaults used when data is sent between NetWare and the MVS system

  You can also write programs that process combinations of commands, simplifying the distribution of data.
- **Administration**. From MVS, you can perform NetWare administration tasks for NetWare:
  - Print servers
  - Print queues
  - Users
  - Groups
  - Passwords
  - Full names
  - Trustee rights
  - Volume usage
  - Login script files
  - NFS user mappings
  - Bindery
- **LAN-to-host print**. This function lets NetWare clients print LAN data on printers attached to an MVS system.
- **Host-to-LAN print**. This function lets you print MVS data through JES local or VTAM attached printers to NetWare attached printers.

Each function can be made available independently. In the process of configuring LANRES/MVS mode, you can choose, for example, to make administration, distribution, and disk serving available, but not host-to-LAN or LAN-to-host print.

Installing OSA LANRES Mode

Before Starting

OSA LANRES mode is only available with the OSA-1 hardware.

If the OSA is already customized for another mode and is being used as the communications controller between the workstation and host, do one of the following:

- Use an alternative communications controller (another OSA) to install LANRES.
- Use the ACTIVATE (no install) command in step 8b on page 4-31 and then issue the OSA/SF INSTALL command (see Appendix B on page B-1) from TSO and continue with the instructions.

  These alternatives are required because the GUI is communicating through the OSA and you are installing another OSA mode that interrupts the GUI to host communications. You will have to restart the GUI.

If not already done, do the following:

- Use the OSA planning checklist and configuration worksheets in *Planning for the OSA Feature*.
- Install LANRES on MVS using the Program Directory.
- Install OSA/SF on the host using the Program Directory.

Note: If the OSA was already set up previously for a different mode and you are changing the mode, use the instructions in “Changing an OSA's Mode of Operation” on page 4-37.

Do the following to install LANRES on OSA. NetWare 3.12 will be installed on the OSA:

__ 1. Verify that an OSA disk server was created for LANRES mode in step 6 on page 2-8.

__ 2. Append the LANRES Master Index data set from **LANRES.EWX131.SEWXINDX** member **EWXINDEX** to the **IOA.*&cecname*.MASTER.INDEX** data set that is used for this OSA/SF.

__ 3. Edit the MASTER.INDEX file that you just appended and update the MVS data set names in the left column to match your specific environment. The names in the file must all start at the same column. MVS destination names start in column 1 and the disk serving destination in column 56. Do not change the disk serving destination.

__ 4. Write down the logical partition name of where OSA/SF is running and the associated icon name shown on the OSA/SF GUI **Hosts** window:

   OSA/SF Logical Partition Name _____

   OSA/SF GUI Host Icon Name _____

   If more than one OSA/SF image is installed, you will see corresponding host icons on the **OSA/SF Hosts** window.

__ 5. From the OSA/SF GUI, do the following to start managing the OSA:

   Note: If the OSA feature (hardware) is not yet installed, do *not* do this step. You will have to do the Start Managing after the OSA feature is installed.

   a. From the **OSA/SF Hosts** window, select the host icon (OSA/SF image) that you want to use to manage the OSA.

   b. Display the **OSA Channels - Tree View** or **Details View** window. If you need instructions, select **How to** from the menu bar and double-click on **Display the OSA channels**.

   c. Select the OSA number on the channels view window.

d. Select **Command** from the menu bar.

e. Select **Manage channel** from the pull-down.

f. Select **Start**, **No force**, and **Ok**.

__ 6. Create a code image that contains the version of server.exe file for NetWare 3.12.

a. Using the OSA/SF GUI, display the **OSA Channels** window (Tree or Details View). If you need instructions, see **How To Display the OSA Channels** under **Help** choice on the menu bar.

b. From the OSA Channels window, select the OSA number that is being customized for LANRES mode.

c. Choose **Selected** from the menu bar.

d. Choose **OSA Configurations** and then **Code images**.

e. Choose **Create** and the image to use as the source.

f. Choose **Ok**.

g. Enter the required information, you will be prompted for the license diskette containing the server.exe file that is shipped with your NetWare license.

h. Write down the name you enter for the User Name for Code Image:

User Name for Code Image _____

i. Select **Cancel** to return to the Channels View window.

__ 7. Customize the OSA for LANRES Mode using the OSA/SF GUI:

a. Select **How to** from the **Help** pull-down on the menu bar.

b. Double-click on **Define configurations for an OSA** and follow the instructions.

There are configuration worksheets in the OSA planning guide that describe the required parameters.

__ 8. Do the following to save the configuration and then activate it.

a. Select **Configuration** from the menu bar and then select **Save**.

Attention

The Activate task is disruptive to all devices using the OSA (CHPID). You can defer the install to a more appropriate time by selecting ACTIVATE (no install), then see “Deferring an OSA Mode Install” on page 4-40 to complete the install.

b. Select **Configuration** again and then select **Activate**. The activation takes a few minutes, monitor the command output window.

Important Message

If you see a C37 abend of the disk server, there is not a problem, continue.

A message will be displayed on the GUI indicating that activation completed successfully. You will be instructed to configure the CHPID offline, then online. Do step 9 first and then in step 10 you will configure the CHPID offline.

__ 9. From the OSA/SF GUI, do the following to stop the OSA disk server:

a. Select the OSA number on the **OSA Channels - Tree View** or **Details View**.

b. Select **Command**.

c. Select **Manage channel** and then **Stop**.

d. Select **Stop OSA disk server**, and then **Ok**.

__ 10. Vary off the OSA devices and then configure the OSA CHPID offline from *every* logical partition that can use or share the CHPID.

> **Attention**
>
> The OSA base code will not be installed unless the CHPID is configured offline from every logical partition.

__ 11. Configure the CHPID back online to only the OSA/SF image (logical partition) that you used in step 4 on page 4-30. This will save time because you will configure the CHPID offline again in step 16. This activates the base code just loaded onto the OSA.

__ 12. If required, vary on the devices with unit addresses FC, FD, and FE. You may have to use Vary Path to vary on the devices.

__ 13. Do the following to start the OSA disk server:

a. Select the OSA number on the **OSA Channels - Tree View** or Details view.

b. Select **Command**.

c. Select **Manage channel** and then **Start**.

d. Select **Create OSA Disk server**, **Force** and then **Ok**.

If a message is displayed on the Command Output window about the configuration data being changed, or a GUI message is displayed indicating that it is unable to start managing, do step 13 again.

__ 14. Do the following to install and download the LANRES code to the OSA:

a. Select the OSA number on a **Channels View** window.

b. Select **Command**, **Install**, **No force**, and then **Ok**.

__ 15. Do the following to stop managing the OSA and stop the disk server:

a. Select the OSA number on a Channels View window.

b. Select **Command**.

c. Select **Manage channel**, **Stop**. **Stop OSA disk server**, and then **Ok**.

__ 16. Vary off the devices and then configure the OSA CHPID offline from the OSA/SF logical partition.

__ 17. Configure the CHPID online to all partitions that were previously using it before starting these instructions. This activate the LANRES mode on the OSA.

__ 18. If required, vary on the devices with unit addresses FC, FD, and FE. You may have to use Vary Path to vary on the devices.

__ 19. Do the following to start the OSA disk server:

a. Select the OSA number on the **OSA Channels - Tree View** or Details view.

b. Select **Command**.

c. Select **Manage channel** and then **Start**.

d. Select **Create OSA Disk server**, **Force** and then **Ok**.

If a message is displayed on the Command Output window about the configuration data being changed, or a GUI message displayed indicating that it is unable to start managing, do step 19 again.

__ 20. If required, vary on the LANRES devices to the appropriate hosts after making sure the disk serving address space is operating.

__ 21. If this step has was done previously for another LANRES install, you can skip this step. Install the rest of the NetWare operating system by using a client workstation running NetWare requester by doing the following:

- Login as the supervisor from the NetWare client that has access.
- Create an INSTALL subdirectory in the SYS: volume and copy filedata.dat off DISK1 to the subdirectory.
- Use RCONSOLE utility to get a session with the server.
- Press * on the number pad.
- Select “Copy System and Public Files” and follow the directions to complete the NetWare install.
- Edit the AUTOUSER.NCF appropriately to handle the NetWare server.

  The statements you normally put in the AUTOEXEC.NCF should go into the AUTOUSER.NCF.

__ 22. Start the LANRES host product which will connect to OSA.

Installing Service Updates for OSA LANRES Mode

Determine which of the following conditions apply to the update.

- If the service update is being done because of the OSA/SF product, do the installation steps in the OSA/SF Program Directory, and then do steps 6 through 13 of “Installing OSA LANRES Mode” on page 4-30.
- If the service update is being done because of the LANRES product, do the installation steps in the LANRES Program Directory and then do steps 14 through 20 of “Installing OSA LANRES Mode” on page 4-30.
- If the service update is being done because of both OSA/SF and LANRES, do steps 6 through 20 of “Installing OSA LANRES Mode” on page 4-30.

NetWare SAA Channel Driver Overview (LANRES/MVS SAA mode)

The NetWare for SAA channel driver is used for communications with your NetWare server:

- Clients using 3270 emulators that use NetWare for SAA for APPC connections to MVS.
- Applications that use NetWare for SAA APPC or CPI Communications with MVS, such as IBM LAN Server for MVS.

When NetWare is installed on OSA and running in LANRES mode, it can act as a channel-attached SNA gateway.

This channel driver requires that VTAM be attached to OSA with NetWare for SAA which supports LU 2 and LU 6.2 dependent and independent connections.

Installing LANRES SNA (NetWare for SAA)

This section describes how to install a copy of NetWare for SAA on an OSA device to provide SNA connectivity. You must make sure that the base NetWare system has already been installed.

__ 1. Logon to a client of the OSA device and copy the contents of the commexec and NW for SAA disks to separate directories of the SYS: volume. You must also copy the contents of the NW for SAA license diskette to the NW for SAA subdirectory.

Subdirectory names: _____ _____

__ 2. Logon to the server using RCONSOLE.

__ 3. LOAD the INSTALL NLM.

__ 4. Select the option to install a new product, specify the directory that was created during the first step to add the commexec product and then repeat the process to add NW for SAA.

__ 5. OSA/SF - update the AUTOUSER.NCF file appropriately.

__ 6. For Instructions on the following tasks, use *LAN Resource Extension and Services/MVS User's Guide*, SC28-1577.

- Customizing VTAM and the DLU for LANRES.
- Customizing NetWare for SAA on the NetWare server for LANRES.
  - Varying on the subchannels on MVS
- Customizing VTAM on MVS for 3270 terminal emulation
- Customizing NetWare for SAA on the NetWare server for 3270 terminal emulation
  - Varying on the subchannels on MVS

Loading LANRES NLMs on a NetWare Server on OSA

When LANRES is installed on a NetWare server, files are created in a directory named SYS:\EWXNLM. Some of the files in this directory are NetWare loadable modules, or NLMs. An NLM is a program that you can load and unload from NetWare server memory while the server is running.

After you decide which LANRES functions will be available through which NetWare servers, OSA/SF will create an EWXSTART.LST file that will start other LANRES NLMs from a list stored in the file. EWXSTART itself is loaded automatically in the AUTOOSA.NCF file.

One of the NLMs provided with LANRES is a communication driver. The name of the communication driver is EWXCOMM.NLM.

When EWXCOMM is loaded, it reads a file that contains initialization information. You must create the initialization file before loading EWXCOMM. By default, EWXCOMM looks for a file named EWXCOMM.INI. EWXCOMM looks for the file in the directory from which EWXCOMM itself was loaded.

This file is created as part of defining the LANRES mode for OSA based on your input.

Verifying the Accessibility of the Disk Image: Before loading the INSTALL utility, verify that the MVS disk images are accessible:

__ 1. Load the NetWare MONITOR NLM at the NetWare console.

__ 2. Select Disk Information

The names of the disk images that you created on MVS should match some of these disks. If they do not match, restart the MVS disk server with the required disks. Verify that you have updated the disk image definitions data set correctly.

Verifying LANRES Operations

See the LANRES and NetWare publications.

__ 1. Verify that the OSA CHPID is varied on.

__ 2. Verify that the OSA is defined to the logical partition which contains the LANRES address space.

__ 3. Verify that the IOCP definitions. Refer to *Planning for the OSA Feature*.

__ 4. Do the following to view the OAT record for appropriate information:

a. From the OSA/SF GUI, display the **OSA Channels-Details View.**

If the **OSA Channels-Tree View** displayed, select **View Style** and **Details View** from the Channels-Tree View window to display the **OSA Channels-Details View**.

b. Verify that the **Entry type** is **Subchannel** for the OSA CHPID number and Unit address (device number) configured for LANRES mode. The LP number and Unit address associates the OSA to LANRES running on the host.

c. Double-click on the device number that you want to verify.

d. Verify the **Subchannel ID** is correct.

If any of these are not correct, the configuration was not done properly.

__ 5. Do the following to verify that the LANRES code is active and the IPX addresses are correct:

a. Select the OSA number on a **Channels View** window.

b. Select **COMMAND** and then **OSA Screens**.

c. Select **System Console**.

d. Select **Send Command**.

e. Enter **CONFIG NO FORCE** option and then select **Send**.

f. Look at the results on the **Command Output** window.

There will be one entry for each port if this is an Ethernet or Token Ring OSA, and one entry if the OSA is a FDDI. The slot number is one greater than the port number.

Do the following to verify that the ports have the proper IPX address and Frame Type.

1) From the **Configuration** window, select the configured mode that you want to verify.

2) Select **Change** and verify that all the information is correct.

If the IP Address is Missing or Wrong, do the following:

1) Verify that the hardware port is ***enabled*** by double-clicking on the port number from the **OSA Channels-Tree View** window. The **Hardware State** should be enabled on the Settings window.

2) If the hardware state is enabled, do the following from a **Channels View** window:
   a) Select the OSA number and then select **Command** from the menu bar.
   b) Select **OSA Screens**.
   c) Select **System Console** and then press **Send Command**.
   d) Select **No force**.
   e) Enter: **LOAD IOBEXCMD AUTOOSA**.
   f) Do step 5 on page 4-35 again to verify that the IP address is now there.

__ 6. Do the following to verify that the disk serving address space is active:
   a. Select the OSA number on a **Channels View** window.
   b. Select **File** from the menu bar and then **List OSA files**.
   c. Enter: **SYS:\SYSTEM** in the **OSA volume and path** entry and then select **List**.
   d. Review the results on the **Command Output** window.

      The disk serving address space is active if file names are returned.

      The following example indicates that the disk server is active.

```
List files for OSA 2A in volume/path SYS:\SYSTEM
TIME: 15:02:03    DATE:08/08/1995
IOAG400I OSA SF command completed successfully at the host.
12/31/1255  18:59:58       14920  SYS$LOG.ERR
12/31/1255  18:59:58         256  NET$OBJ.SYS
12/31/1255  18:59:58         442  NET$PROP.SYS
12/31/1255  18:59:58        1420  NET$VAL.SYS
```

Figure 4-1. Results of Listing OSA Files to Verify the Disk Server

If the disk serving address space is not acitve, do the following:

a. Display the **OSA Channels-Tree View** window.
b. Double-click on the OSA number.
c. Select the **Statistics** notebook tab.
d. Verify the **Disk server LP number(name)** is correct.

If the previous steps do not solve your host-to-OSA connectivity problem, you might have malfunctioning hardware. Check the Hardware Master Console or Processor Controller for hardware errors.

Once LANRES is Installed

AUTOUSER.NCF should be used to specify the required commands.

For example, to bind a port, use the following LAN ODI driver on OSA.

```
LOAD IOBLODI SLOT=<w>  PORT=<x>  FRAME=<yyyy>  NAME=<zzzzzzz>

       where  SLOT and PORT refer to the Slot/Adapter number to be
                loaded
              <w>, <x> are the adapter number, values 1 thru 5 are valid

              FRAME refers to the frame type supported on the adapter
              <yyyy> - is one of the following:

                ETHERNET_II  (Ethernet using DEC Ethernet II Envelope)
                ETHERNET_802.2 (Ethernet (802.3) using 802.2 Envelope)
                ETHERNET_802.3 (IPX 802.3 raw encapsulation)
                TOKEN-RING (Token-Ring (802.5) using 802.2 envelope)
                FDDI_802.2 (FDDI using an 802.2 envelope)
                ETHERNET_SNAP (Ethernet (802.3) using an 802.2 envelope
                                with SNAP)
                TOKEN-RING_SNAP (Token-Ring (802.5) using an 802.2
                                  envelope with SNAP)
                FDDI_SNAP (FDDI using 802.2 SNAP envelope)

              NAME refers to the logical name assigned to this board.
              <zzzzzzz> is the actual name.  This name will be used
              on the BIND statement.
```

Changing an OSA's Mode of Operation

Use the following instructions to quiesce the current OSA mode before activating another mode.

Quiescing TCP/IP Passthru Mode

To quiesce passthru mode, stop the TCP/IP devices from being used by TCP/IP for MVS. Use the appropriate commands as described in the TCP/IP documentation.

Quiescing LANRES Mode

__ 1. Stop the use of the devices being used for communication between the host and LANRES by stopping the jobs that are currently executing. See the appropriate LANRES documentation.

__ 2. Make sure that the EWXCOMM and EWXLSA NLMs are unload by issuing commands to the NetWare system console screen. This can be done from the client running the RCONSOLE utility logged into the OSA device.

__ 3. From the OSA/SF GUI **Channels View** window (tree view or details view), do the following to stop the disk server function:

   a. Select the OSA number.

   b. Select **Command** from the menu bar.

   c. Select **OSA Screens**.

   d. Select **System Console** and then select **Send Command**.

   e. Enter: **DISMOUNT SYS:** select **Force**, and then **Send**.

   f. Enter: **UNLOAD IOBDISK**, select **Force**, and then **Send**.

   g. Enter: **UNLOAD IOBCOMM**, select **Force**, and then **Send**.

   h. Look at the **Command Output** window to verify the commands worked.

__ 4. Do the following to end the disk serving function:

   a. Select **Command** from the channels view menu bar.

   b. Select **Manage channel** and then **Stop**.

   c. Select **Stop OSA disk server** and then **Ok**.

__ 5. Before continuing to activate the new configuration, make sure the OAT entries are not *in use*.

Quiescing SNA Mode

Stop the use of the devices being used by VTAM at the host using the appropriate commands. See the VTAM documentation for more information.

Quiescing HPDT ATM Native Mode

| Stop the use of the devices being used by VTAM or TCP/IP at the host using the appropriate commands. See the VTAM documentation for more information.

Quiescing ATM IP Forwarding

To quiesce ATM IP Forwarding mode, stop the TCP/IP devices from being used by TCP/IP for MVS. Use the appropriate commands as described in the TCP/IP documentation.

Quiescing HPDT MPC Mode

Stop the use of the devices being used by OpenEdition and VTAM. See VTAM and OpenEdition publications.

Service Updates

Use these instructions after an OSA device is replaced or when a PTF is installed for OSA/SF.

Service for an OSA Hardware Replacement

Do the following whenever an OSA device must be replaced and the new card will operate in the same OSA mode as the previous card. If you want to change the OSA mode of the new card, you must customize the OSA mode from the beginning, see Table 4-1 on page 4-2.

Instructions are provided for using REXX from TSO, the operator console, or the OSA/SF GUI.

__ 1. Stop the affected host products for the OSA modes installed on the OSA.

   To determine the current OSA modes from the OSA/SF GUI, close the **Configuration for OSA** window and then reopen it. Before the configuration window is opened, a configuration list is displayed for the OSA. The last activated OSA mode is displayed below the bottom of the list. Select the last activated mode from the listbox and then select Change. You can then see the current configured OSA modes.

   If you need details to open the configuration window, select **Help** from the menu bar and then select **How to**.

   - If the OSA is configured for SNA mode, stop the use of OSA with VTAM.
   - If the OSA is configured for TCP/IP mode, stop the use of OSA with TCP/IP on the host.

- If the OSA is configured for HPDT ATM Native mode, stop the use of OSA with VTAM.
- If the OSA is configured for HPDT MPC mode, stop the use of OSA with OE and VTAM.
- If the OSA is configured for ATM IP Forwarding mode, stop the use of OSA with TCP/IP for MVS.
- If the OSA is configured for LANRES, stop the use of OSA with LANRES/MVS.

__ 2. Vary off the OSA devices and then configure the OSA (CHPID) offline from all logical partitions that can use or share the CHPID.

__ 3. Service personnel installs the new OSA device.

__ 4. Configure the OSA (CHPID) online verifying the OSAD device can be brought online.

__ 5. Do *one* of the following to install the OSA mode files on the new card:

> **Attention**
>
> - The Install command is disruptive to all devices using the OSA (CHPID). Stop the use of all devices using the OSA before doing one of the following.
> - If the previous OSA device was customized using TSO and OSA/SF commands (not the GUI), you must first put the OSA address table on the new card using IOACMD and the Put OAT command. Use the original file name of the OAT. If the original OAT file is not available, you will have to make a new OAT with the correct configuration. See the Put OAT command in the appendix.

__ a. From the operator's console:
Enter: **F OSASF, INSTALL *xx***
Where ***xx*** is the OSA number (CHPID).

__ b. From TSO:
Enter: **EX 'IOACMD.EXEC' 'INSTALL *xx* FORCE' EXEC**
Where ***xx*** is the OSA number (CHPID). See step 4 on page 2-5 for the fully qulified name of the OSA/SF EXEC.

__ c. From the OSA/SF GUI **OSA Channels-Tree View** window:
Select the OSA number, then select **Command** from the menu bar, select **Install**, **force** and then **Ok**.

__ 6. After the install has completed successfully, vary off the OSA devices and then configure the OSA CHPID offline from *every* logical partition that can use or share the CHPID.

> **Attention**
>
> The OSA base code will not be installed unless the CHPID is configured offline from every logical partition.

__ 7. Configure the CHPID back online to the appropriate logical partitions. This starts the base code just loaded onto the OSA. The devices that were defined in the configuration should now be online.

Software Update (PTF) For OSA Modes (Images)

Use the following instructions for any PTFs that affect an OSA mode (image).

__ 1. Follow the PTF install steps to get the data from the SMP/E tape and into MVS data sets.

__ 2. If the PTF does not affect an OSA mode (image), see “Installing a PTF For OSA/SF” on page 2-13. If the PTF affects the OSA/SF GUI, see “Applying a New Service Level” on page 2-19.

If the PTF affects an OSA mode (image), stop the affected host products for the OSA modes being updated by the PTF. If you do not know an OSA's current mode, do the following:

To determine the current OSA modes from the OSA/SF GUI, close the **Configuration for OSA** window and then reopen it. Before the configuration window is opened, a configuration list is displayed for the OSA. The last activated OSA mode is displayed below the bottom of the list. Select the last activated mode from the listbox and then select Change. You can then see the current configured OSA modes.

If you need details to open the configuration window, select **Help** from the menu bar and then select **How to**.

- If the OSA is configured for SNA mode, stop the use of OSA with VTAM.
- If the OSA is configured for TCP/IP mode, stop the use of OSA with MVS TCP/IP.
- If the OSA is configured for HPDT ATM Native mode, stop the use of OSA with VTAM.
- If the OSA is configured for LANRES, stop the use of OSA with MVS LANRES.

__ 3. Do *one* of the following to install the OSA mode files on the card for the PTF:

a. From the operator's console:
Enter: **F OSASF, INSTALL *xx***
Where ***xx*** is the OSA number (CHPID).

b. From TSO:
Enter: **EX 'IOACMD.EXEC' 'INSTALL *xx* FORCE' EXEC**
Where ***xx*** is the OSA number (CHPID). See step 4 on page 2-5 for the fully qulified name of the OSA/SF EXEC.

c. From the OSA/SF GUI **OSA Channels-Tree View** window:
Select the OSA number, then select **Command** from the menu bar, select **Install**, **force** and then **Ok**.

Deferring an OSA Mode Install

From the OSA/SF GUI, you can create an OSA configuration, save it, and select **Activate (no Install)** from the **Configuration** pull-down of the OSA's configuration window. This prevents disrupting an OSA that is already running with a different configuration. You can defer the install to a more appropriate time, then use any one of the following three methods to complete the install.

Methods for Completing a Deferred Install

Attention

The Install command is disruptive to all devices using the OSA (CHPID). Stop the use of all devices using the CHPID before doing any of the following.

The OSA mode install can be completed using these instructions.

__ 1. Enter the INSTALL command from one of the following places:

- *The operator's console*
  Enter: **F OSASF,INSTALL *xx*,FORCE**
  Where ***xx*** is the OSA number (CHPID).
- *TSO*
  Enter: **EX 'IOACMD.EXEC' 'INSTALL *xx* FORCE' EXEC**

Where ***xx*** is the OSA number (CHPID). See 2 on page 2-2 for the fully qualified name of the OSA/SF EXEC.

- From the OSA/SF GUI **OSA Channels-Tree View** window:
  Select the OSA number, then select **Command** from the menu bar, select **Install**, **force** and then **Ok**.

__ 2. Do the following instructions for the OSA mode to complete and start the OSA mode:

TCP/IP Step “6) Starting the New OSA Configuration” on page 4-6

SNA Step 9 on page 4-10

HPDT ATM Native
Step 9 on page 4-19

LANRES
Completing from the GUI, see step 9 on page 4-31.

LANRES
Completing from TSO, do the following steps.

__ 3. For LANRES mode, do the following:

a. From TSO, stop the disk server for OSA XX:

Enter: **EX 'IOACMD.EXEC' 'STOP_MANAGING XX STOP_DISK_SERVING' EXEC**

b. Vary off the OSA devices and then configure the OSA CHPID offline from *every* logical partition that can use or share the CHPID.

Attention

The OSA base code will not be installed unless the CHPID is configured offline from every logical partition.

c. Configure the CHPID back online to only the OSA/SF image (logical partition) that you used in step 4 on page 4-30. This will save time because you will configure the CHPID offline again in the following steps. This activates the base code just loaded onto the OSA.

d. If required, vary on the devices with unit addresses FC, FD, and FE. You may have to use Vary Path to vary on the devices.

e. From TSO, start the OSA disk server:

Enter: **EX 'IOACMD.EXEC' 'START_MANAGING XX START_DISK_SERVING' EXEC**

f. From TSO, install and download the LANRES code to the OSA:

Enter: **EX 'IOACMD.EXEC' INSTALL XX' EXEC**

g. From TSO, stop the disk server:

Enter: **EX 'IOACMD.EXEC' 'STOP_MANAGING XX STOP_DISK_SERVING' EXEC**

h. Vary off the devices and then configure the OSA CHPID offline from the OSA/SF logical partition.

i. Configure the CHPID online to all partitions that were previously using it before starting these instructions. This activate the LANRES mode on the OSA.

j. If required, vary on the devices with unit addresses FC, FD, and FE. You may have to use Vary Path to vary on the devices.

k. From TSO, start the OSA disk server:

Enter: **EX 'IOACMD.EXEC' 'START_MANAGING XX START_DISK_SERVING' EXEC**

l. If required, vary on the LANRES devices to the appropriate hosts after making sure the disk serving address space is operating.

m. If this step has was done previously for another LANRES install, you can skip this step. Install the rest of the NetWare operating system by using a client workstation running NetWare requester by doing the following:

- Login as the supervisor from the NetWare client that has access.
- Create an INSTALL subdirectory in the SYS: volume and copy filedata.dat off DISK1 to the subdirectory.
- Use RCONSOLE utility to get a session with the server.
- Press * on the number pad.
- Select “Copy System and Public Files” and follow the directions to complete the NetWare install.
- Edit the AUTOUSER.NCF appropriately to handle the NetWare server.

  The statements you normally put in the AUTOEXEC.NCF should go into the AUTOUSER.NCF.

n. Start the LANRES host product which will connect to OSA.

Chapter 5. Customizing OSAs Using REXX from TSO

Use these instructions to customize OSAs without the use of an OSA/SF GUI. References to more detailed information are included when necessary.

ATM OSA-2 Feature

Use these instructions to customize ATM OSA-2 features. You will install an OSA Address Table (OAT) and the necessary ATM configuration parameters on the OSA. Make sure you are working with an ATM OSA-2, if not see “ENTR, FENET, and FDDI OSA-2 Features” on page 5-6.

__ 1. Make sure the hardware configuration (IOCDS) is complete. See *OSA in an OS/390 or MVS Environment* in the OSA Planning Guide for setting up the hardware configuration.

__ 2. Make sure OSA/SF (job IOAMAIN) is running on the server (host).

__ 3. Make sure the OSA (CHPID) is configured online and that the OSAD device is online.

__ 4. Copy one of the following templates from IOA.SIOASAMP based on the OSA mode and type of OAT you want to install on the OSA:

Note: The following templates are samples and there is not a sample for every situation. Most configurations are shown in IOAOSHRA. Use the instructions in the template to add and delete information as required.

`New data set name of the copied OAT template` _____

Table 5-1. Summary OAT Templates

OSA Mode	Member in IOA.SIOASAMP	To See The Template	Type of Template
TCP/IP Only	IOAOSHRT	Figure 5-2 on page 5-9	Ports Shared Between LPs
SNA Only	IOAOSHRS	Figure 5-3 on page 5-10	Ports Shared Between LPs
ATM IP Forwarding	IOAOIPF	Figure 5-5 on page 5-12	IP Forwarding with Ports Shared Between LPs
HPDT ATM Native	IOAOMPC	Figure 5-6 on page 5-12	Setting up HPDT ATM Native on an OSA-2 ATM CHPID

__ 5. Modify the template that you just copied according to the instructions in the template.

Attention: If you are not familar with the OSA address table (OAT) and you need more information than what is in the template, see Appendix A on page A-1.

__ 6. Copy member IOAATM2 from IOA.SIOASAMP. This member contains the ATM input parameters and instructions for modifying the data set.

Write down the name of the data set that you use for member IOAATM2. It will be used as input with the IOAINATM EXEC or IOACMD.

`New data set name of the copied IOAATM2` _____

__ 7. Modify the copy of IOAATM2 for your installation. The instructions that are contained in the header of IOAATM2 are shown in Figure 5-1 on page 5-3.

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__ 8. At this point, you should have a data set with the ATM parameters and a data set with the OAT for your installation. Enter one of the following to install these data sets on the OSA.

Note: The PTF for APAR OW33393 merged the IOAINATM EXEC into the IOACMD EXEC.

They both install the OAT and ATM parameters.

```
EX 'IOACMD.EXEC' EXEC
```

A list of commands will be displayed. Select **CONFIGURE OSA CHPID**. If the command is not in the list, press the Enter key on the keyboard to quit the EXEC and then enter the following:

```
EX 'IOAINATM.EXEC' EXEC
```

__ 9. **Follow the prompts for either of the EXECs.**

__ 10. Configure the CHPID (OSA) offline and then online to all logical partitions to activate the OSA mode.

Attention

The OSA will not be properly set up unless the CHPID is configured offline and then online from every logical partition using the CHPID, regardless of the operating system in the logical partition.

The OSA-2 ATM feature is now customized and ready for use.

IOAATM2 Data Set

```
/* Config file for installing OSA2-ATM modes     OW33393 PQ16071 OW33394
/*
/* This file contains the required input parameters to customize an
/* OSA-2 ATM feature.  Follow the instructions to modify the file and
/* then execute job IOACMD, specifying the 'Configure OSA CHPID
/* (CONFIG_OSA)' command, to put the parameters on the OSA (CHPID).
/*
/* An OSA Address Table (OAT) is required as input with the
/* Configure OSA command.  To make an OAT, use the Get OAT command or
/* the OAT templates. See the OSA/SF User's Guide for instructions.
/* Notes: 1) This should be a copy of the sample file (IOAATM2).
/*        2) Lines that start with a slash asterisk (/*) are comments.
/*        3) The file is not case sensitive.
/*        4) See the OSA Planning Guide for help with the parameters.
/* Instructions:
/* 1) Change the first line (mode=LE) to the mode you want to customize.
/* 2) Modify the ATM physical parameters, atmphy.1 through atmphy.8.
/*    These are required for all modes.
/* 3) Follow the instructions for the mode you are customizing:
/*
/* ATM LAN emulation (Valid for OS/390, MVS, VM and VSE)
/*      1) Delete all the ATM Native and PVC sections
/*         (nat.1 and pvc.1.1 through pvc.1.12).
/*      2) Modify the LE parameters, le.1 through le.19.
/*      3) To add a second emulated port (port 1), copy all the le
/*         fields (le.1 through le.19) and place them after le.19.
/*         CONFIG_OSA identifies the first section as port 0 and the
/*         second section as port 1.
/*         NOTE: You should now have 2 copies of le.1 through le.19
/*
/* ATM Native (Valid for OS/390 and MVS only)
/*      1) Delete all of the LAN emulation section (le.1 through le.19)
/*      2) Modify the ATM Native entry (nat.1)
/*      3) Modify the PVC fields pvc.1.1 through pvc.1.12 if needed
/*      4) To add additional PVC entries, do the following:
/*         a) Copy all the pvc fields (pvc.1.1 through pvc.1.12) of the
/*            first entry and place them after pvc.1.12 as pvc.2.1
/*            through pvc.2.12. Modify these new fields as necessary.
/*         b) Continue this naming scheme for all subsequent PVC entries
/*            NOTE: The entry number must be sequentially
/*                  incremented by 1 and cannot exceed 256
/*                  (only 256 PVC entries are allowed).
/*            NOTE: CONFIG_OSA identifies the first entry as pvc 1, the
/*                  second entry as pvc 2, the next as pvc 3, and so on.
/*         c) Modify subsequent PVC entry fields as necessary.
/*
/* IP Forwarding (Valid for OS/390 and MVS only)
/*      1) Delete all of the LAN emulation and ATM Native sections
/*         (le.1 through le.19 and nat.1)
/*      2) Modify the PVC fields pvc.1.1 through pvc.1.12 if necessary.
/*              NOTE: There can only be one PVC entry.
```

Figure 5-1 (Part 1 of 4). IOAATM2 Dataset

```
mode = LE                              /* config type. one of
                                       /* LE  - ATM LAN emulation
                                       /* NAT - ATM Native
                                       /* IP  - IP forwarding
/*=====================================================================
atmphy.1 = ATM2 config name            /* Config name (34 char max)
atmphy.2 = AUTO                        /* UNI version (AUTO, 30 or 31)
                                       /*  Ignored for IP forwarding
                                       /*  Ignored if control plane = 3
atmphy.3 = 0                           /* Max VPI bits (0-5)
atmphy.4 = 11                          /* Max VCI bits (6-11)
                                       /*  VPI + VCI must be 6-11
atmphy.5 = 3                           /* Control plane use
                                       /*  0 - ILMI/SVC enable
                                       /*  3 - ILMI/SVC disable
                                       /*  Ignored for LE & IP forwarding
atmphy.6 = 0                           /* Transmit clock source
                                       /*  0 - OSA generated
                                       /*  1 - Network generated
atmphy.7 = 1                           /* Physical layer type
                                       /*  0 - Sonet
                                       /*  1 - SDH
atmphy.8 = portname                    /* Port name (max 8 chars)
/*-------------------------------------------------------------------
/* LAN emulation section starts here
/*-------------------------------------------------------------------
le.1 = 155.0                           /* Best effort peak rate
                                       /*  1-155 in .1 increments
le.2 = 0                               /* IBM enhanced mode
                                       /*  0 - drop direct connect
                                       /*  Not 0 - keep connections
le.3 = 3                               /* LEC traffic type
                                       /*  1 - TCPIP traffic only
                                       /*  2 - SNA traffic only
                                       /*  3 - Combined TCPIP & SNA
le.4 = 2                               /* Emulated port type
                                       /*  1 - Ethernet
                                       /*  2 - Token ring
le.5 = 000000000000                    /* Local MAC address (12 digits)
                                       /*  specify 0 to use burned in
                                       /*  MAC address
le.6 = ELAN name                       /* ELAN name (32 chars max)
le.7 = 0                               /* LEC auto configure
                                       /*  0 - disable auto config
                                       /*    parms 8-19 are valid
                                       /*  Not 0 - enable auto config
                                       /*    parms 8 & 10-19 are ignored
le.8 = 120                             /* Control timeout (10-300)
le.9 = 4544                            /* Max LAN frame size
                                       /*  1516, 4544, 9234 or 18190
le.10 = 1200                           /* VCC timeout
le.11 = 300                            /* Aging time (10-300)
```

Figure 5-1 (Part 2 of 4). IOAATM2 Dataset

```
                                      /* LES ATM addr (40 digits)
le.12 = 1122334455667788990011223344556677889900
le.13 = 5                             /* Max unknown frame count (1-10)
le.14 = 2                             /* Max retry count (0-2)
le.15 = 15                            /* Forward delay time (4-30)
le.16 = 1                             /* LE arp timeout (1-30)
le.17 = 1                             /* Flush timeout (1-4)
le.18 = 6                             /* Path switching delay (1-8)
le.19 = 4                             /* Connect complete timeout (1-10)
/*-----------------------------------------------------------------------
/* ATM Native logical information start
/*-----------------------------------------------------------------------
nat.1 = 2                             /* Bandwidth allocation
                                      /*  1 - Best Effort only
                                      /*  2 - Reserve bandwidth
                                      /*      & best effort
                                      /*  3 - Reserved bandwidth
/*=======================================================================
/* This portion of the file contains the required input parameters
/* to configure the PVC entries for IP forwarding or ATM Native.
/* All lines (or partial lines) starting with '/*' are comments.
/*
/* The fields starting with pvc.n are there to specify the needed PVC
/* entries.  Use the digit after the letters 'pvc.' to indicate which
/* PVC entry to send to OSA/SF.
/*
/* For IP forwarding, the PVC name MUST be WANPVC00, therefore it
/* will always be set to that regardless of what is specified.
/*
/* To specify a reserved bandwidth PVC, set field pvc.n.8 to 1.
/* To use the defaults, set pvc.n.8 to 0.  You MUST leave fields 9-12
/* in the file, even though they will be ignored.
/*=======================================================================
/* PVC entry 1 starts here
/*=======================================================================
pvc.1.1 = PVC name                /* PVC name (max 8 char)
                                  /*  always WANPVC00 for IP forwarding
pvc.1.2 = 353207                  /* Forward peak cell rate (0-353207)
pvc.1.3 = 353207                  /* Backward peak cell rate(0-353207)
/*=======================================================================
/* The VPI and VCI settings are calculated using the values in parms
/* atmphy.3 and atmphy.4 above. These will be called max_vpi and max_vci
/* VPI ranges from 0 to (2 ** max_vpi) - 1
/*  max_vpi set to 3 above allows VPI values of 0-7 for this PVC entry
/* VCI ranges from 32 to (2 ** max_vci) - 1
/*  max_vci set to 8 above allows VCI values of 32-255 for this PVC entry
/*=======================================================================
pvc.1.4 = 0                       /* VPI for this PVC entry
pvc.1.5 = 35                      /* VCI for this PVC entry
/*=======================================================================
```

Figure 5-1 (Part 3 of 4). IOAATM2 Dataset

```
/* The recommended PDU sizes are 9188 for IP and 8448 for NAT modes.
/* The forward and backward PDU value should be the same for both
/* pvc.n.6 and pvc.n.7.  Do not set them with different values.
/*=====================================================================
pvc.1.6 = 8448                    /* Forward Max AAL5 PDU size (64-9188)
pvc.1.7 = 8448                    /* Backward Max AAL5 PDU size(64-9188)
pvc.1.8 = 0                       /* Traffic shaping (mode = IP) -OR-
                                  /* Reserved bandwidth (mode = NAT)
                                  /*  0 - Use defaults
                                  /*  1 - Specify parms 9-12
/*=====================================================================
/* If pvc.n.8 is 1, then the values in pvc.n.9-pvc.n.12 are used
/* If pvc.n.8 is 0, then the parms must still be here, but are ignored
/*=====================================================================
pvc.1.9 = 353207                  /* Forward sustain cell rate (0-353207)
pvc.1.10= 353207                  /* Backward sustain cell rate(0-353207)
pvc.1.11= 353207                  /* Forward cell burst rate (0-353207)
pvc.1.12= 353207                  /* Backward cell burst rate(0-353207)
/* Start additional PVC entries after this line, which can be deleted
```

Figure 5-1 (Part 4 of 4). IOAATM2 Dataset

ENTR, FENET, and FDDI OSA-2 Features

Use these instructions to customize ENTR (EtherNet and Token Ring), FENET (Fast Ethernet), and FDDI OSA features.

Attention: Before Starting

__ 1. If you are not familar with the OSA address table (OAT) and you need more information than what is provided, see Appendix A on page A-1.

__ 2. Make sure the hardware configuration (IOCDS) is complete. See "OSA in an OS/390 or MVS Environment" in the *OSA Planning Guide for setting up the hardware configuration.*

__ 3. Make sure OSA/SF (job IOAMAIN) is running on the server.

__ 4. Make sure the OSA (CHPID) is configured online and that the OSAD device has come online.

The numbers correspond to the numbers in the following instructions.

__ 1. Get an OAT template. See “1) Getting an OAT Template.”

__ 2. Modify the template. See “2) Modifying the OAT Template” on page 5-7.

__ 3. Install the OSA mode and the OAT. See “3) Installing the OSA Mode and the OAT” on page 5-8.

__ 4. Configure the OSA (CHPID) offline and online. See “4) Activating the OSA Mode” on page 5-8.

1) Getting an OAT Template

You have two choices to get a template for making an OAT:

- Use the sample templates that are in IOA.SIOASAMP. See Table 5-2 on page 5-7.
- Use the Get OAT command to get the OAT that is currently on the OSA. A new OSA ships with a default OAT.

The default OAT contains entries for all logical partitions and ports. Because of the many entries in a default OAT, you might find it easier to use the samples in IOA.SIOASAMP. The samples have only a few

entries to show you the format and then you can use them as templates for making your own OAT. The instructions that follow show both methods of getting a template. If you choose to use the Get OAT command, we recommend that you use the Summary option so that you will not get all the OAT detail.

Using Templates From IOA.SIOASAMP: The following templates are samples and there is not a sample for every situation. Most configurations are shown in IOAOSHRA. Use the instructions in the template to add and delete information as required.

__ 1. Copy one of the following templates from IOA.SIOASAMP based on the OSA mode and type of OAT you want to install on the OSA:

```
New data set name of
the copied OAT template  ____________________________________
```

Table 5-2. Summary OAT Templates for FDDI, ENTR, and FENET Features

OSA Mode	Member in IOA.SIOASAMP	To See The Template	Type of Template
TCP/IP Only	IOAOSHRT	Figure 5-2 on page 5-9	Ports Shared Between LPs
SNA Only	IOAOSHRS	Figure 5-3 on page 5-10	Ports Shared Between LPs
TCP/IP, SNA, and HPDT MPC	IOAOSHRA	Figure 5-4 on page 5-10	All Three Modes With Ports Shared Between LPs

__ 2. Continue at “2) Modifying the OAT Template.”

Using the Get OAT Command Instead of Templates: If you are going to use the Get OAT command, be sure to specify the Summary option when prompted.

__ 1. Enter the following to get a summary view of the OAT.

EX 'IOACMD.EXEC' 'GET_OAT' EXEC

When prompted, enter the CHPID (OSA number), Summary option, and the data set name of where you want to store the OAT.

__ 2. Continue at “2) Modifying the OAT Template.”

2) Modifying the OAT Template

The format of the OAT varies according to how you got the OAT.

- If you used the templates from IOA.SIOASAMP, follow the instructions included in the template.
- If you did a Get OAT with the Summary option, use the legend at the bottom of the OAT. See “The Legend Included in a Summary OAT” on page A-10.

  Note: Within the summary OAT, the Entry and Valid columns fields are ignored on input.
- If you did a Get OAT command and did not include the Summary option, the entire detailed OAT was returned. See “Detailed OAT Format” on page A-1.

3) Installing the OSA Mode and the OAT

1. Enter one the following to install the proper image and to put the OAT on the OSA.

   Note: The PTF for APAR OW33393 merged the IOAINSNA EXEC into the IOACMD EXEC.

   EX 'IOACMD.EXEC' EXEC

   A list of commands will be displayed. Select **CONFIGURE OSA CHPID**. If the command is not in the list, press the Enter key on the keyboard to quit the EXEC and then enter:

   EX 'IOAINSNA.EXEC' EXEC

2. **Follow the prompts for either of the EXECs**. They both install the OAT and the correct SNA or TCP/IP image on the OSA.
3. When you are done with the prompts, continue at “4) Activating the OSA Mode.”

| For OSA-2 ATM and OSA-2 Fenet CHPIDs, detailed information can now be obtained at the port, SAP,
| and connection level. For details on the type of information available, see “Additional SNA Information” on
| page 4-11.

4) Activating the OSA Mode

__ 1. Configure the CHPID (OSA) offline and then online to all logical partitions to activate the OSA mode.

Attention

The OSA will not be properly set up unless the CHPID is configured offline and then online from every logical partition. This includes any logical partition using the CHPID, regardless of the operating system.

The OSA is customized and ready for use.

OAT Templates From IOA.SIOASAMP

```
* This OAT template is a sample for setting up TCP/IP passthru mode
*   with port sharing between LPs.
* LP 5 and LP 7 are sharing ports 0 and 1.
* Each OAT entry has more than one IP address associated with it.
* To use this template, do the following:
*
* 1) Change the LP numbers to match your installation.
*    The LP number must precede all entries for that LP.
* 2) Change the unit addresses. UAs must be even numbers for passthru.
*    The odd entries will automatically be added by the CHPID.
* 3) Passthru is required in the mode field.
* 4) Change the port number of the OSA if necessary.
* 5) Specify if the LP should be the default entry (No, PRI, or SEC).
*    Only one entry per port can be the PRImary default entry.
*    Only one entry per port can be the SECondary default entry.
* 6) Change the IP addresses. They are required for TCP/IP when
*    sharing a port.  You can have up to 8 IP addresses per entry
*      and up to 16 IP addresses per port.
* 7) Add additional entries as required.
*****************************************************
 *UA  Mode     Port   Default      IP Address
*****************************************************
                      LP 5
00  passthru   00       PRI      105.000.005.005
                                 105.000.005.015
02  passthru   01       SEC      105.001.006.006
                                 105.001.006.016
                                 105.001.006.026

                      LP 7
00  passthru   00       no       107.000.075.075
                                 107.000.075.085
02  passthru   01       PRI      107.001.076.076
                                 107.001.086.086
```

Figure 5-2. OAT Template For TCP/IP With Ports Shared Between LPs (member IOAOSHRT in IOA.SIOASAMP)

```
* This OAT template is a sample for setting up SNA mode with port
 * sharing between LPs.
 * LP 5 and LP 7 are sharing port 0.
 * To use this template, do the following:
 *
 * 1) Change the LP numbers to match your installation.
 *    The LP number must precede all entries for that LP.
 * 2) Change the unit addresses. UAs can be odd or even for SNA.
 * 3) SNA is required in the mode field.
 * 4) Change the port number of the OSA if necessary.
 * 5) Add additional entries as required.
 ***********************************************
 *UA  Mode  Port     Entry specific information
 ***********************************************
                 LP 5
0A   sna    00

                LP 7
0A   sna    00
```

Figure 5-3. OAT Template For SNA With Ports Shared Between LPs (member IOAOSHRS in IOA.SIOASAMP)

```
* This OAT template is a sample for setting up TCP/IP, SNA, and MPC on
* two partitions (LPs) as well as sharing one port by 2 TCP/IP stacks
* on the same LP.
*
* It can also be used for other combinations of modes by following
* the instructions below. There are four cases where you MUST
* have an IP address on your passthru entries to allow all the
* defined modes to operate properly.
* 1) There is TCP/IP traffice to different LPs
* 2) TCP/IP and SNA traffic are sharing a port
* 3) TCP/IP and MPC traffic are in use on the CHPID
* 4) There is more than 1 TCP/IP stack using a port
*
* In this example, LP 5 and LP 7 are sharing port 0 & 1.
* Port 1 is also being shared by 2 TCP/IP stacks on the same partition.
* To use this template, do the following:
*
* 1) Change the LP numbers to match your installation.
*    The LP number must precede all entries for that LP.
* 2) Change the unit addresses. UAs must be even numbers for passthru
*    and MPC. The odd entries are automatically added by the CHPID.
* 3) The mode must be passthru, sna, or mpc (for this example).
* 4) The port number must be 00 for all single-port CHPIDs.
*    For multiple phusical port CHPIDs, use the physical port number.
*    For ATM LAN Emulation, use the logical port number.
```

Figure 5-4 (Part 1 of 2). OAT Template for TCP/IP, SNA, and MPC With Ports Shared Between LPs (member IOAOSHRA in IOA.SIOASAMP)

```
* 5) If you are not using MPC, delete all MPC OAT entries and continue
*      at (6) below.
*    Otherwise, specify the OSA name for all MPC entries. It is a
*      required field. The following rules for OSA name apply:
*    a) a-z, 0-9, @, #, $ are valid
*    b) 0-9 not valid 1st character
*    c) 0 not valid last character
* 6) If you are not using TCP/IP, delete all passthru OAT entries and
*      continue at (7) below.
*    Otherwise, change the IP addresses. They are required for TCP/IP
*      when sharing a port.
*    You can have up to 8 IP addresses per entry and up to 16 IP
*      addresses per port spread over multiple OAT entries.
*    An IP address of 0.0.0.0 indicates no port sharing.
*    You CANNOT have a mixture of zero and non-zero IP addresses in
*      the same OAT.
*    Specify if the LP is the default entry (No, PRI, or SEC).
*    Only one entry per port can be the PRImary default entry.
*    Only one entry per port can be the SECondary default entry.
* 7) If you are not using SNA, delete all SNA OAT entries and continue
*      at (8) below.
*    If you are not using the SNA network management, delete all SNA
*      OAT entries having a port number of FF.
*    Otherwise, specify the VTAM IDNUM and a port number of FF for the
*      SNA network management entry.
*    SNA network management is only valid for OSA-2 FDDI and ENTR CHPIDs.
* 8) Add additional entries as required for each mode you are
*    configuring.
***************************************************************
*UA  Mode      Port  Default LP      OSA Name  IP Address
***************************************************************
                                LP 5
00  passthru   00     PRI                       105.000.005.005
                                                105.000.005.015
                                                105.000.005.025
                                                105.000.005.035
02  passthru   01     no                        100.100.100.100
12  passthru   01     no                        200.200.200.200
0A  sna        00
0B  sna        FF     123FD
08  mpc        00                    OSANAME1 (IP traffic)
***************************************************************
                                LP 7
00  passthru   01     no                        107.100.075.075
                                                107.100.075.085
02  passthru   00     SEC                       105.000.005.044
0A  sna        00
08  mpc        01                    OSANAME2 (IP traffic)
```

Figure 5-4 (Part 2 of 2). OAT Template for TCP/IP, SNA, and MPC With Ports Shared Between LPs (member IOAOSHRA in IOA.SIOASAMP). This first part of the template contains the instructions to modify the template shown in the next figure.

```
* This OAT template is a sample for setting up 2 entries for
* ATM IP Forwarding mode.  LP 1 and LP 6 are sharing port 0.
* To use this template, do the following:
*
* 1) Change the LP numbers to match your installation.
*    The LP number must precede all entries for that LP.
* 2) Change the UA. It must be an even number.
*    The odd entries will automatically be added by the CHPID.
* 3) The mode must be passthru and the port must be 00.
* 4) Specify if the LP should be the default entry (Yes or No).
*    Only one entry per port can be the default entry.
* 5) Change the IP Address. It is required when sharing a port
*    between LPs
* 6) Change the IP Netmask. It is required.
* 7) Add additional entries as required.
*********************************************************************
*UA  Mode     Port  Default        IP Address       IP Netmask
*********************************************************************
                              LP 1
00  passthru   00      no          101.011.005.005    255.255.0.0
02  passthru   00      no          101.011.006.006    255.255.0.0
                              LP 6
00  passthru   00      no          106.066.075.075    255.255.0.0
02  passthru   00      no          106.066.076.076    255.255.0.0
```

Figure 5-5. OAT Template For ATM IP Forwarding (member IOAOIPF in IOA.SIOASAMP)

```
* This OAT template is a sample for setting up HPDT ATM Native on an
* OSA-2 ATM CHPID.
*
* 1) Change the LP numbers to match your installation.
*    The LP number must precede all entries for that LP.
* 2) Change the unit addresses. UAs must be even numbers for MPC entries.
*    The odd entries are automatically added by the CHPID.
* 3) The mode must be mpc (for this example).
* 4) The port number must be 00 for the HPDT ATM Native.
* 5) Specify the OSA name for all MPC entries.  It is a
*      required field. The following rules for OSA name apply:
*    a) a-z, 0-9, @, #, $ are valid
*    b) 0-9 not valid 1st character
*    c) 0 not valid last character
* 8) Add additional MPC entries as required for each LP you are
*     configuring.
*****************************************************************
*UA  Mode     Port        OSA Name
*****************************************************************
                              LP 5
00  mpc       00          OSANAME1
*****************************************************************
                              LP 7
00  mpc       00          OSANAME2
02  mpc       00          NAMEOSA3
```

Figure 5-6. OAT Template For HPDT ATM Native (IOAOMPC on the E (200) disk)

Chapter 6. Sharing an OSA between LPs and/or TCP/IP Stacks

An OSA that comes with a default OAT can be used without OSA/SF to transfer data between one LP and one TCP/IP stack on each port. By using OSA Support Facility (OSA/SF) to configure the OSA (a process that tailors the OSA and replaces the default OAT), you can have one OSA support any or all of the following:

1. Two or more logical partitions (LP).
2. Two or more applications (TCP/IP, SNA) on different LPs.
3. Two or more applications (TCP/IP, SNA) on the same LP.
4. Two or more TCP/IP stacks on the same LP.
5. Two or more VM guests on the same LP (see “Example 2” on page 6-3 for details).

The key to allowing these variations is based on the OSA Address Table (OAT). The OAT is described in more detail in Appendix A on page A-1.

An OSA has storage for 223 OAT entries. When an OSA comes with a default OAT (FDDI, Token Ring/Ethernet (ENTR), or Fast Ethernet (FENET)), it contains a pair of OAT passthru (TCP/IP) entries (but no SNA entries) for each LP that can be defined (16) and for each port on the OSA. An OSA-2 FDDI or FENET which has 1 physical port, contains 32 OAT entries in the default OAT. An OSA-2 ENTR which has 2 physical ports, contains 64 OAT entries.

OSA routes traffic from the LAN to the Host using:

1. For TCPIP: The IP address plus the LP number plus the unit address pair as defined in the OAT.
2. For SNA: The LP number plus the SAP as defined in the VTAM XCA major note. (The unit address is matched to the SAP by VTAM in the XCA major node).

When OSA transfers data, a single path from one port to one LP is used. When a default OAT is used, the OSA does not know which LP is supposed to get the data since there are no IP addresses defined. Without knowing which IP addresses are assigned to which host application on which LP, the OSA does not know where to send this traffic. OSA is programmed to send all traffic on a port to the first LP that configures the OSA on-line when the default OAT is being used. This may not be the application or LP you desire. This also slows down your host processing, as each packet must be looked at by your host application (for example, there is no IP filtering when a default OAT is used).

Using OSA/SF, you can:

1. Replace the default OAT entries, thereby freeing up OAT storage for other OAT entry definitions.
2. Add OAT entries to run more applications on a single port, such as TCP/IP and SNA at the same time on the same port.
3. Add IP addresses to an OAT entry which enables the "sharing" of a port and permits the OSA to exercise IP filtering.

Notes:

1. In all the above instances, you must define these additional addresses in your system hardware definitions, and also make the corresponding changes in your TCP/IP profiles, VTAM setup, TRLE statements, etc. These changes are not addressed in this document.
2. You must be sure the IOCDS has unit address definitions to match the OAT entries (either previously defined, or you must add additional entries).

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Example 1

Let's say you wish to run the following on port 1 of CHPID 80, which is an OSA-2 ENTR.

1. A TCP/IP stack using address 10.10.10.10 on LP 5.
2. Another TCP/IP stack using address 11.11.11.11 on LP5.
3. SNA on LP 5.
4. A TCP/IP stack using address 30.30.30.30 on LP 7.
5. SNA on LP 7.
6. Another SNA on LP 7.

An OSA-2 ENTR comes with a default OAT. If you issue Get OAT, you will see the following OAT entries for LP 5 and LP 7. Notice that if the same devices are defined for the same UA ranges on each LP, the data returned looks the same since each LP has its own UA/device combinations defined.

Note: In this example, we will ignore the other 56 entries that are returned for the other LPs as well as the "entry" and "valid" fields. These fields are not used on input to Put OAT or Configure OSA commands.

```
US(Dev)   Mode      Port   Entry specific information
                                LP 5 (host5   )
00(0400)  passthru    00   no  000.000.000.000
01(0401)  passthru    00   no  000.000.000.000
02(0402)  passthru    01   no  000.000.000.000
03(0403)  passthru    01   no  000.000.000.000

                                LP 7 (host7   )
00(0400)  passthru    00   no  000.000.000.000
01(0401)  passthru    00   no  000.000.000.000
02(0402)  passthru    01   no  000.000.000.000
03(0403)  passthru    01   no  000.000.000.000
```

Using the default definitions will not allow the traffic you wish to have running work properly. Without knowing where traffic from 10.10.10.10 or 11.11.11.11 goes, the OSA has no idea where to send this data. To have the OSA properly send the packets to the correct host applications, the following OAT entries are needed (they are shown in the format used with IOACMD.EXEC):

```
US(Dev)   Mode      Port   Entry specific information
                                LP 5 (host5   )
00(0400)  passthru    01   no  010.010.010.010
02(0402)  passthru    01   no  011.011.011.011
0A(040A)  sna         01
                                LP 7 (host7   )
00(0400)  passthru    01   no  030.030.030.030
0A(040A)  sna         01
0B(040B)  sna         01
```

Note: Keep in mind that all "odd" OAT entries for TCP/IP mode are added automatically by the OSA.

When you configure the OSA using Configure OSA from IOACMD, each of the passthru entries will become a pair of entries, thereby giving you 4 OAT entries for passthru on LP 5 and 2 OAT entries for passthru on LP 7. Unit addresses 00 and 01 on LP 5 are used for IP address 10.10.10.10; unit addresses 02 and 03 on LP 5 are used for IP address 11.11.11.11; and unit addresses 00 and 01 on LP 7 are used for IP address 30.30.30.30.

After you have completed the Configure OSA and reset the OSA from all logical partitions, the following OAT entries will be on the OSA:

```
US(Dev)   Mode      Port   Entry specific information
                              LP 5 (host5   )
00(0400)  passthru    01   no  010.010.010.010
01(0401)  passthru    01   no  010.010.010.010
02(0402)  passthru    01   no  011.011.011.011
03(0403)  passthru    01   no  011.011.011.011
0A(040A)  sna         01

                              LP 7 (host7   )
00(0400)  passthru    01   no  030.030.030.030
01(0401)  passthru    01   no  030.030.030.030
0A(040A)  sna         01
0B(040B)  sna         01
```

Using this example, port 0 could also be configured to LP 5 and LP 7 at the same time if desired, using different IP addresses for each definition of course. The limiting factor is that all OSA-2 CHPIDs have storage for only 223 OAT entries spread over all logical partitions.

Example 2

Let's say you wish to run 2 VM guests on LP 6. Each of the guests uses port 1 of CHPID F8, which is an OSA-2 ENTR. The gues could be running OS/390, VM, or VSE.

1. A TCP/IP stack using address 60.60.60.60 on guest 1.
2. Another TCP/IP stack using address 61.61.61.61 on guest 2.
3. SNA on guest 1.
4. Another SNA on guest 2.

The difference in this example from the previous one is that each guest needs a different UA defined in the "host" VM system. This is due to the fact that the OSA "sees" only the original VM system that is supporting the other guests.

In the IOCDS, you would need definitions for 4 UAs for the 2 different IP addresses needed, as well as an additional 2 UAs for the SNA entries. If you define UAs of 00–03 for the passthru entries, and 0A-0B for the SNA entries, the following OAT entries are needed: (They ae shown in the format used with IOACMD.EXEC):

```
US(Dev)   Mode      Port   Entry specific information
                              LP 6 (host6   )
00(0400)  passthru    01   no  060.060.060.060
02(0402)  passthru    01   no  061.061.061.061
0A(040A)  sna         01
0B(040B)  sna         01
```

Note: Keep in mind that all "odd" OAT entries for TCP/IP mode are added automatically by the OSA.

When you configure the OSA using Configure OSA from IOACMD, each of the passthru entries will become a pair of entries, thereby giving you 4 OAT entries for passthru and 2 OAT entries for SNA. Unit addresses 00 & 01 on LP 6 are used for IP address 60.60.60.60. Unit addresses 02 & 03 on LP 6 are used for IP address 61.61.61.61. The TCP/IP profiles on each of the 2 guests should be defined so guest 1 uses IP address 60.60.60.60 and guest 2 uses 61.61.61.61.

After you have completed the Configure OSA nad reset the OSA from all logical partitions, the following OAT entries will be on the OSA:

```
| US(Dev)   Mode      Port   Entry specific information
|                                 LP 6 (host6   )
| 00(0400)  passthru    01   no  060.060.060.060
| 01(0401)  passthru    01   no  060.060.060.060
| 02(0402)  passthru    01   no  061.061.061.061
| 03(0403)  passthru    01   no  061.061.061.061
| 0A(040A)  sna         01
| 0B(040B)  sna         01
```

| You can repeat this process for each additional application or VM guest you wish to run on a single OSA.
| You can add as many passthru, SNA, and/or MPC entries that are valid for your installation and the
| modes you have configured. This applies for every logical partition. It also applies for each port on the
| OSA.

Chapter 7. Using OSA as the Communications Controller

Use these instructions if *no* communications controller exists between the OS/2 workstation and host.

These instructions establish an SNA 3270 emulation connection between OS/2 and MVS for downloading the OSA/SF GUI files through OSA to OS/2 on the workstation. After OSA/SF GUI is installed on OS/2, you can use the GUI to establish the connection with OSA/SF on the host. The OSA/SF GUI and OSA/SF connection is an Advanced Program to Program Communications (APPC) with a control point to control point (CP-to-CP) LU 6.2 independent logical unit (LU) protocol.

Before Starting

- APPC/MVS, VTAM, and OSA/SF are required on the host.
- Communications Manager (CM/2) is required on the workstation.

For each of the following tasks, see the referenced topic for more information:

__ 1. Customizing the OSA for SNA mode using TSO and OSA/SF. See “ENTR, FENET, and FDDI OSA-2 Features” on page 5-6.

__ 2. Adding an APPC/MVS TP profile for the OSA/SF GUI. See “Example of Adding a TP Profile for OSA/SF GUI to APPC/MVS” on page 7-2.

__ 3. Adding entries in SYS1.PARMLIB for APPC/MVS. See “Example of Adding Entries in SYS1.PARMLIB for APPC/MVS Scheduler” on page 7-3 and “Example of Adding Entries in SYS1.PARMLIB for APPC/MVS Interface” on page 7-3.

__ 4. Adding entries in SYS1.VTAMLST for the application ID, external communications adapter (OSA), and SNA 3270 emulation. See “Example of Adding Entries in SYS1.VTAMLST (APPLOSAM)” on page 7-3, “Example of Adding Entries in SYS1.VTAMLST (OSA11XCA) for OSA as an XCA” on page 7-4, and “Example of Adding Entries in SYS1.VTAMLST (OSA11SWN) for 3270 Emulation” on page 7-5.

__ 5. Configuring communications manager to be an APPC Network Node Server with CP-CP session support and SNA 3270 emulation. See “Sample of CM/2 Network Definition File (NDF) to support CP-to-CP” on page 7-6.

__ 6. Downloading the OSA/SF GUI files to OS/2. See “Downloading and Installing the OSA/SF GUI for OS/2 or Windows” on page 2-14.

__ 7. Establishing an APPC (CPIC) connection between OS/2 and OSA/SF at the host.

__ 8. Verifying the connection between OS/2 and OSA/SF. See “Verifying OSA/SF GUI is Connected to OSA/SF at the Host” on page 7-8.

About These Instructions

An example of the input for steps 1-6 and the ".NDF" output file from a CM/2 configuration follow. The examples shown with these instructions are for a PS/2 with OSA/SF GUI attached to a Token Ring. The Token Ring is connected to port 2 of a Token Ring OSA device. The address of this port is CCUA. A Token Ring OSA in this configuration is configured as an external communication adapter to VTAM.

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Example of Adding a TP Profile for OSA/SF GUI to APPC/MVS

```
//YOURNAME JOB  MSGCLASS=F,CLASS=A,MSGLEVEL=(1,1),NOTIFY=YOURNAME
//*************************************************************
//*
//*  THIS JOB ADDS A TP PROFILE FOR OSA/SF GUI TO APPC/MVS FILE
//*
//*************************************************************
//STEP1    EXEC PGM=ATBSDFMU
//SYSPRINT DD   SYSOUT=*
//SYSSDLIB DD   DSN=SYS1.APPCTP,DISP=SHR
//SYSSDOUT DD   SYSOUT=*
//SYSIN    DD   DATA,DLM=$$
  TPDELETE
     TPNAME(OSAMTP)    ---|
  TPADD                   | - OSAMTP is the TP-NAME specified in the
       TPNAME(OSAMTP)  ---|          CM/2 Side Information.  On the
       SYSTEM                        CM/2 configuration panels, this
       ACTIVE(YES)                   is the Partner TP Name from the
       TPSCHED_DELIMITER(##)         CPI Communication Side Information
        TAILOR_SYSOUT(NO)            panel of the SNA Feature List.
        TAILOR_ACCOUNT(NO)
        CLASS(OSAM)              | - Specified in APPC/MVS Scheduler.
        TPSCHED_TYPE(STANDARD)
        JCL_DELIMITER(END_OF_JCL)
//S1CONV2 JOB ,,REGION=4096K,MSGCLASS=F,TIME=1440,MSGLEVEL=(1,1)
//STEP1   EXEC PGM=IOAXCSRV
//STEPLIB DD  DSN=IOA400.SYS1.SIOALMOD,DISP=SHR   | - Add STEPLIB stmts
//        DD  DSN=ADLE370.V1R3M0.SCEERUN,DISP=SHR | if not in normal
//SYSPRINT DD SYSOUT=*                              search string.  Note
END_OF_JCL                                          that IOAXCSRV has a
        KEEP_MESSAGE_LOG(ERROR)                     LE/C370 dependency.
        DATASET_STATUS(NEW)
        MESSAGE_DATA_SET(OSASF.APPCCONN.&TPDATE.&TPTIME.JOBLOG)
##
$$
/*
```

Example of Adding Entries in SYS1.PARMLIB for APPC/MVS Scheduler

```
/*  FOR OSA/SF APPC          */
/*                           */
 CLASSADD CLASSNAME(OSAM),         | - OSAM is a name selected
    MAX(6),                          | by user for APPC/MVS and
    MIN(2),                          | has no CM/2 nor APPC/MVS
    RESPGOAL(0.02),                  | dependency.
    MSGLIMIT(500)                    |
 OPTIONS DEFAULT(OSAM),            --
    SUBSYS(JES2)
 TPDEFAULT REGION(4M),
    TIME(1440),
    MSGLEVEL(1,1),
    OUTCLASS(F)
/*                           */
```

Example of Adding Entries in SYS1.PARMLIB for APPC/MVS Interface

```
/* ---------------------------- */
/*  FOR OSA/SF APPC             */
/*                              */
LUADD  ACBNAME(OSAMACB),           | - Maps to VTAM TYPE=APPL
  SCHED(ASCH),                         ACBNAME and to the CM/2
  TPDATA(SYS1.APPCTP),                 Symbolic Destination Name
  TPLEVEL(USER),                       in the CPI Communication
  SIDEINFO DATASET(SYS1.APPCSI)        Side Information.
/*                              */
```

Example of Adding Entries in SYS1.VTAMLST (APPLOSAM)

```
*****************************************************************
* APPLICATION MAJOR NODE FOR OSA/SF APPC GUI INTERFACE
* APPC/MVS WILL EXEC PGM=IOAXCSRV WHICH WILL OPEN ACB OSAMACB
* FOR THE OSA/SF APPC CP-to-CP INTERFACE.
*****************************************************************
*
APPLOSAM VBUILD  TYPE=APPL
OSAMACB  APPL  ACBNAME=OSAMACB,  | - The VTAM ACB maps to the APPC/MVS X
               APPC=YES,           LUADD statement and the CM/2 CPI  X
               AUTOSES=1,          Communications Side Information   X
               DDRAINL=NALLOW,     Symbolic Destination Name         X
               DMINWNL=1,                                            X
               DMINWNR=1,DRESPL=ALLOW,                               X
               DSESLIM=2,EAS=509,DLOGMOD=#INTER,                     X
               MODETAB=ISTINCLM,SECACPT=CONV,                        X
               SRBEXIT=YES,VERIFY=NONE,VPACING=0
```

Example of Adding Entries in SYS1.VTAMLST (OSA11XCA) for OSA as an XCA

```
**********************************************************************
*  EXTERNAL COMMUNICATION ADAPTER MAJOR NODE FOR OSA CARD            *
*  CONFIGURED IN SNA MODE TO BE USED AS APPC (CP-TO-CP) LINK         *
*  FOR GUI-TO-OSA/SF.  SEE VTAM V4.2 NETWORK IMPLEMENTATION GUIDE.   *
*  NOTE: THERE IS NO CDRSC THAT MAPS TO THIS OSA CARD                *
*        MAJOR NODE.  WITH THE DYNPU=YES, THE PU WILL BE BUILT       *
*        WHEN THE GUI CALLS-IN TO THE HOST VTAM.  THIS MEANS THE     *
*        GUI MUST INITIATE THE SESSION AND THAT THE HOST CAN NOT     *
*        INITIATE THE SESSION.                                       *
*                                                                    *
*        ALTHOUGH DYNPU=YES, EITHER AUTOGEN OR A LINE/PU             *
*        COMBINATION IS REQUIRED.  WITHOUT EITHER THE AUTOGEN        *
*        OR LINE/PU, THE SAP ADDRESS CAN NOT BE RESOLVED FOR THE     *
*        MAJOR NODE.                                                 *
*                                                                    *
**********************************************************************
** NOTE:  CHANGE THE ADAPNO=X WHEN MOVING FROM ONE OSA ADAPTER TO    *
*         ANOTHER; e.g. ADAPNO+CUADDR+SAPADDR=UNIQUE IDENTIFICATION  *
*         OF THE OSA TO VTAM.                                        *
*                                                                    *
OSA11XCA VBUILD TYPE=XCA
PRTOSA11 PORT  ADAPNO=n,            PORT NUMBER ON OSA CARD            X
               CUADDR=ccua,         ADDRESS FROM IOCDS/IODF FOR PORT   X
               MEDIUM=RING,         TOKEN RING TO GUI ON PC            X
               SAPADDR=4,           MAPS TO CM/2 REMOTE SAP ADDRESS    X
               TIMER=60
GRPOSA11 GROUP ANSWER=ON,           ACCEPT PU DIAL-INS                 X
               CALL=INOUT,          SIFTED TO LINE                     X
               DIAL=YES,            USING SWITCHED LINE CTL PROTOCOLS  X
               DYNPU=YES,           BUILD PU WHEN GUI CALLS-IN         X
               DYNPUPFX=OS,         PREFIX OF DYNAMIC PU NAME          X
               ISTATUS=ACTIVE       SIFTED TO LINE AND PU
* * *                                                                 *
* * *          AUTOGEN=(1,L,P),     GENERATE LINE/PU (USE IN PLACE OF *
* * *                               LINE/PU DEFINITIONS IF DESIRED)   *
LNOSA11  LINE
PUOSA11  PU
```

Example of Adding Entries in SYS1.VTAMLST (OSA11SWN) for 3270 Emulation

```
************************************************************
* OSA GUI SWITCHED MAJOR NODE FOR GUI TO HOST APPC INTERFACE
* FOR OSA SNA CARD CHP nn
************************************************************
OSAnnSWN VBUILD  TYPE=SWNET,MAXGRP=1,MAXNO=1
PUOSAnn  PU    ADDR=02,ANS=CONTINUE,CAPACITY=16M,CONNTYPE=APPN,        X
               CPCP=YES,DATMODE=HALF,DYNADJCP=YES,DYNLU=YES,           X
               IDBLK=05D,IDNUM=00001,                                  X
               ISTATUS=ACTIVE,MAXDATA=1929,                            X
               MAXOUT=4,MAXPATH=1,PACING=20,PASSLIM=1,PUTYPE=2,        X
               MODETAB=ISTINCLM,SSCPFM=FSS,DLOGMOD=CPSVCMG,            X
               USSTAB=USSOSA,VPACING=20
*              USSTAB=USSSNA,VPACING=20
PAOSA11  PATH  DIALNO=010408005A8B0432,  01/SAP ADDR/OSA MAC ADDR      X
               GRPNM=GRPOSA11,           GROUP NAME IN XCA MAJOR NODE  X
               CALL=INOUT
*                                          LU TYPE 2 (NON-APPC) FOR
OSAGUIA  LU    LOCADDR=1,DLOGMOD=SNX32702  3270 EU WITH EXTENDED
OSAGUIB  LU    LOCADDR=2,DLOGMOD=SNX32702       DATA STEAMING SUPPORT
OSAGUIC  LU    LOCADDR=3,DLOGMOD=SNX32702
OSAGUID  LU    LOCADDR=3,DLOGMOD=SNX32702
OSAGUIE  LU    LOCADDR=5,DLOGMOD=SNX32702
OSAGUIF  LU    LOCADDR=6,DLOGMOD=SNX32702
OSAGUIG  LU    LOCADDR=7,DLOGMOD=SNX32702
OSAGUIH  LU    LOCADDR=8,DLOGMOD=SNX32702
*
```

VTAM Startup Parameters

The VTAM Start-Up parameters (ATCSTRxx member of SYS1.VTAMLST) that relate to supporting the GUI CM/2 CP-to-CP connection are:

```
NETID=NETA         Maps to APPC API through Token Ring Network Id
SSCPNAME=VTAM03    Maps to CM/2 Adjacent CP Name (partner node name)
NODETYPE=NN        Support APPC Topology as Network Node Server
CPCP=YES           CP-to-CP session support with adjacent nodes
DYNADJCP=YES       Dynamically build ADJCP nodes into ISTADJCP
DYNLU=YES          Dynamically define Independent LUs
CONNTYPE=APPN      Establish APPN PU (type 2.1) Connection
```

Sample of CM/2 Network Definition File (NDF) to support CP-to-CP

This NDF file sample represents the NDF parameters generated by CM/2 as a result of configuring an APPC-to-Host connection with additional support for SNA 3270 Emulation. The other CM/2 files which are generated by CM/2, such as the files configuring the window definitions, are not shown. Your CM/2 NDF file may differ.

See “Related Information” on page xiii for a list of the Communications Manager/2 publications to assist you.

```
** Note that the CM/2 Control Point is also the Local CM/2 LU.
** No LOCAL LUs are defined from the CM/2 SNA FEATURES LIST panel.

  DEFINE_LOCAL_CP  FQ_CP_NAME(NETA.OSAGUI11)          Local LU Node Name
                   DESCRIPTION(Network Node Server)
                   CP_ALIAS(OSAGUI)
                   NAU_ADDRESS(INDEPENDENT_LU)        Support CP-to-CP
                   NODE_TYPE(NN)                      Network Node Server
                   NODE_ID(X'05D00001') <------------ Local Node ID maps
                   NW_FP_SUPPORT(NONE)               |to the SWNET statement
                   HOST_FP_SUPPORT(NO)               |IDBLK=05D and IDNUM=00001
                   HOST_FP_LINK_NAME(LP8)
                   MAX_COMP_LEVEL(NONE)
                   MAX_COMP_TOKENS(0);

  DEFINE_LOGICAL_LINK  LINK_NAME(LP8     )           Host Link Name
                       DESCRIPTION(LP8 APPC to MVS)
                       FQ_ADJACENT_CP_NAME(NETA.VTAM03)       | Indepen-
                       ADJACENT_NODE_TYPE(LEARN)              | dent LU
                       DLC_NAME(IBMTRNET)
                       ADAPTER_NUMBER(0) Token Ring - Not OSA  | MAC addr
                       DESTINATION_ADDRESS(X'08005A8B043204') -| of OSA
                       ETHERNET_FORMAT(NO)                     | port
                       CP_CP_SESSION_SUPPORT(YES)
                       SOLICIT_SSCP_SESSION(YES)
                       NODE_ID(X'05D00001') <----------- Local Node ID maps
                       ACTIVATE_AT_STARTUP(YES)         |to the SWNET statement
                       USE_PUNAME_AS_CPNAME(NO)         |IDBLK=05D and IDNUM=00001
                       LIMITED_RESOURCE(USE_ADAPTER_DEFINITION)
                       LINK_STATION_ROLE(USE_ADAPTER_DEFINITION)
                       MAX_ACTIVATION_ATTEMPTS(USE_ADAPTER_DEFINITION)
                       EFFECTIVE_CAPACITY(USE_ADAPTER_DEFINITION)
                       COST_PER_CONNECT_TIME(USE_ADAPTER_DEFINITION)
                       COST_PER_BYTE(USE_ADAPTER_DEFINITION)
                       SECURITY(USE_ADAPTER_DEFINITION)
                       PROPAGATION_DELAY(USE_ADAPTER_DEFINITION)
                       USER_DEFINED_1(USE_ADAPTER_DEFINITION)
                       USER_DEFINED_2(USE_ADAPTER_DEFINITION)
                       USER_DEFINED_3(USE_ADAPTER_DEFINITION);

** This "Partner LU" is actually the Control Point definition.  Do not
** define a PARTNER LU using the CM/2 "DEFINE PARTNER LU" button on the
** "CONNECTION TO HOST" window.
** A "REMOTE SAP ADDRESS" of 4 was defined on the CONNECTION TO HOST
** CM/2 Window.  The OSA card LAN (Target) Destination address
** (OSA port's MAC address) is also defined on the CONNECTION TO HOST
** CM/2 Window.
```

```
DEFINE_PARTNER_LU  FQ_PARTNER_LU_NAME(NETA.OSAMACB ) VTAM Destination
                   PARTNER_LU_ALIAS(OSAMACB)
                   PARTNER_LU_UNINTERPRETED_NAME(OSAMACB )|VTAM ACBNAME
                   MAX_MC_LL_SEND_SIZE(32767)             |and APPC/MVS
                   CONV_SECURITY_VERIFICATION(NO)         |LUADD name
                   PARALLEL_SESSION_SUPPORT(YES);

DEFINE_MODE  MODE_NAME(#INTER  )  | CPI Communications Side Information
             COS_NAME(#INTER  )   | Mode Name (see below)
             DEFAULT_RU_SIZE(YES)
             RECEIVE_PACING_WINDOW(7)
             MAX_NEGOTIABLE_SESSION_LIMIT(8)
             PLU_MODE_SESSION_LIMIT(8)
             MIN_CONWINNERS_SOURCE(4)
             COMPRESSION_NEED(PROHIBITED)
             PLU_SLU_COMPRESSION(NONE)
             SLU_PLU_COMPRESSION(NONE);

DEFINE_DEFAULTS  IMPLICIT_INBOUND_PLU_SUPPORT(YES)
                 DEFAULT_MODE_NAME(BLANK)
                 MAX_MC_LL_SEND_SIZE(32767)
                 DIRECTORY_FOR_INBOUND_ATTACHES(*)
                 DEFAULT_TP_OPERATION(NONQUEUED_AM_STARTED)
                 DEFAULT_TP_PROGRAM_TYPE(BACKGROUND)
                 DEFAULT_TP_CONV_SECURITY_RQD(NO)
                 MAX_HELD_ALERTS(10);

                                                        |VTAM ACBNAME
DEFINE_CPIC_SIDE_INFO  SYMBOLIC_DESTINATION_NAME(OSAMACB )|APPC/MVS NAME
                       FQ_PARTNER_LU_NAME(NETA.OSAMACB     ) VTAM APPL
                       MODE_NAME(#INTER  )         COS Name in Host VTAM
                       TP_NAME(OSAMTP);            APPC/MVS TPNAME

START_ATTACH_MANAGER;
```

Establishing an APPC (CPIC) Connection Between the Workstation and OSA/SF

__ 1. From the OSA/SF GUI **OSA/SF Hosts** window, select **Help** from the menu bar at the top of the window.

__ 2. Select **How to**.

__ 3. Double-click on **Create another host icon** and follow the instructions to create a CPIC host icon.

Note: CPIC is synonymous with APPC in this case.

The Symbolic Destination Name in the icon must match the CM/2 Symbolic Destination Name, the APPC/MVS LUADD name, and the VTAM TYPE=APPL ACB name. You can choose any name for these, but they must match.

Verifying OSA/SF GUI is Connected to OSA/SF at the Host

Start or verify the following:

__ 1. OSA/SF is started on the host

__ 2. APPC/MVS LUNAME

__ 3. APPC/MVS Scheduler

__ 4. VTAM APPLID major node

__ 5. VTAM XCA major node

__ 6. OSA SNA devices are online to MVS

__ 7. CM/2 can activate the CP-to-CP session with the Host

See CM/2 Subsystem Management, SNA Subsystem details, Logical Links. The logical link name specified to CM/2 must be active before attempting to start the OSA/SF Host link.

__ 8. From the **OSA/SF Host** window, double-click on the CPIC ICON you created, enter the required information and verify the connection between the OSA/SF GUI and host OSA/SF is active.

Chapter 8. Handling OSA/SF Problems

Use this chapter to help determine the cause of a problem and to report problems to IBM.

There are two major areas of problem determination.

__ 1. Using what OSA/SF provides; messages, logs, and dumps

__ 2. Using aids that are unique to the customized OSA mode of operation.

This chapter describes OSA/SF problem determination aids. When this chapter does not help or you need problem determination aids specific to the OSA mode, use the following table for a quick reference to locate the problem determination aids for each OSA mode:

Table 8-1. Locating Problem Determination Aids for Specific OSA Modes

OSA Mode	See:
TCP/IP Passthru	“TCP/IP Passthru Problem Determination Aids” on page 4-7
SNA	“Verifying SNA Operations” on page 4-11
HPDT ATM Native	“Verifying HPDT ATM Native Mode” on page 4-21
HPDT MPC	“Verifying HPDT MPC Mode” on page 4-27
ATM IP Forwarding	“Verifying ATM IP Forwarding” on page 4-24
LANRES/MVS	“Verifying LANRES Operations” on page 4-35

Using OSA/SF Problem Determination Aids

OSA/SF provides the following aids for problem determination:

- Messages from OSA/SF
- Messages from OSA/SF GUI (IOAGxxxx)
- Message Log
- Trace Log
- Query Command using the GUI

OSA/SF Messages

The messages displayed by OSA/SF are listed in the appendix. Locate the message you are looking for by the last 4 characters in the message.

IOAGxxxx Messages

Messages that start with IOAG are *not* listed in this book. IOAGxxxx messages are displayed by the GUI and provide a description with the message displayed. These are usually displayed when you forget to enter a parameter or do a task out of sequence. Think of them as reminders or immediate help.

OSA/SF messages have a message ID in the following format:

Example: **IOA***xnnns*

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IOA The first three characters are the product identifier.

If you are looking at the OSA/SF message log, you may see a message without a message ID or with a message ID in the format IOB*xnnns*. Take the action that is stated explicitly or implicitly by the message text. If the severity level of an IOB message is E or S, report the message to IBM.

x Component that detected the condition. In some cases, more than one component can cause OSA/SF to issue the same message; therefore messages are listed in the book with the variable x. If you search for a message and the message is shown with an x, it is the correct description. The component identifier will be used by IBM to identify the problem.

nnn 3 digit message sequence number. The messages in this book are listed numerically according to these three digits.

s The message severity, denoted by one of the following characters:

- **I** Informational, no action required
- **W** Warning, action is not required, but an error can occur later
- **A** Action, which is a severity level used only in some OSA/SF GUI messages
- **E** Error that requires action eventually
- **S** Severe or serious error that requires immediate action

See Appendix C for explanations and how you should respond (User Response) to OSA/SF messages.

OSA/SF GUI Messages (IOAGxxxx)

All GUI messages begin with IOAG. The GUI displays messages with a description of the problem. There is no reason to use an appendix to look up what the message means. If you do need more information after reading a message, use the help information for the window you received the message from.

Most OSA/SF GUI messages are issued because of invalid user input. For example: invalid text string, missing information, and doing tasks out of order. Think of the GUI messages as your safeguard when using the interface. The messages are similar to help information; they help you with the task at hand.

OSA/SF Reason Codes

Reason codes that are issued as part of OSA/SF messages are for IBM use only. It is for this reason that explanations of reason codes are not documented. Reason codes may be encountered in messages found in the OSA/SF message log.

In the event that a message contains a reason code, note the message number, the reason code, and refer to “Reporting Problems to IBM” on page 8-6.

OSA/SF Message Log

OSA/SF has a message log that contains a record of all OSA/SF commands issued, responses, and error messages. All error messages are logged, even when multiple failures occur that cause only one message to be displayed.

You can look at the message log and send the log to the IBM support center. Each OSA/SF image has a message log.

What happens when the OSA/SF message log becomes full?

If the OSA/SF message log becomes full, a new message log is started and the log that is full is stored for your reference. A message is displayed indicating that the log is full and then another message displays the name of where the message log is stored. Both of these messages are put in the new message log.

The name of the message log is specified in the Startup Profile. The message log that becomes full is stored with the name specified in the Startup Profile with the Julian date appended to the end of the name.

If there are more than one OSA/SF running, to determine what OSA/SF was managing the OSAs, see “Determining which OSA/SF Image Is Managing an OSA” on page 8-6.

If you know which OSA/SF message log you want, you can get the log by using the OSA/SF GUI or an OSA/SF command. See the following:

Using OSA/SF GUI to Get the Message Log

1. Double-click on the host icon from the **OSA/SF Hosts** window and **Open** a channels view window.
2. Select **Command** from the menu bar at the top.
3. Select **OSA SF**.
4. Select **Get debug**.
5. Select **Message log**.
6. Select **All**.
7. Enter the **File name** for the host or workstation.

   Note: If a file name is not entered the message log will only be sent to the Command Output window.

8. Select the **Send** pushbutton.

Entering an OSA/SF command to Get the Message Log: See “GET_DEBUG” on page B-9.

OSA/SF Trace Log

The trace log has hex data that contains the 8000 most recent trace records generated during program execution. When the trace log is full, the oldest entries are overwritten.

You may be requested by the IBM support center to provide a trace log for OSA/SF. Each OSA/SF image has its own trace log.

To determine what OSA/SF image was managing the OSAs, see “Determining which OSA/SF Image Is Managing an OSA” on page 8-6.

If you know which OSA/SF trace log you want, you can get the trace log by using the OSA/SF GUI or an OSA/SF command. See the following:

How to Get the OSA/SF Trace Log Using the GUI

1. Double-click on the host icon from the **OSA/SF Hosts** window and **Open** a channels view window.
2. Select **Command** from the menu bar at the top.
3. Select **OSA SF**.
4. Select **Get debug**.
5. Select **Trace log**.
6. Select **All**.
7. Enter the **File name** of where you want the file stored on the host.

```
IOAC101I OSA Support Facility initialization started 02/04/1999 20:06:58
IOAC153I Processing of startup file started
IOAC152I Finished startup command file processing
IOAA002E Device 90a is offline
IOAA002E Device 91a is offline
IOAA002E Device 92a is offline
IOAA002E Device 93a is offline
IOAC150I 20:07:46 Interrupt Handler component started
IOAK999I Configuration Mode for CHPID 28 is 0
IOAK326I CHPID 28 is currently managed by partition 05
IOAA002E Device 99a is offline
IOAA002E Device 9aa is offline
IOAA002E Device 9ba is offline
IOAC145W 20:08:08 Only 1 of 16 OSA devices initialized
IOAC141I 20:08:08 API APPC component started
IOAC102I OSA Support Facility initialization completed 02/04/1999 20:08:08
IOAC100I OSA Support Facility version V1R2M0
```

Figure 8-1. Example of a Message Log

8. Select the **Send** pushbutton.

Getting the OSA/SF Trace Log Using OSA/SF Command (GET_DEBUG): See "GET_DEBUG" on page B-9.

SNA Memory Dump

The SNA OSA memory dump contains the image of storage on the OSA device. Specify the CHPID (OSA) number with this parameter.

SNA Management Information

Enhancements to OSA/SF allow you to get more detailed SNA information from the network. You can use the OSA/SF GUI on OS/2 or the Query command to display SNA details for active SNA-configured OSA devices. (If an SNA-configured OSA device is not in use, SNA information will not be available.)

- For the OSA/SF GUI windows, see "OSA/SF GUI Flow Quick Reference" on page 3-9. Look for the SNA Management for OSAxx window.
- For non-GUI, see "QUERY" on page B-23.

ATM Memory Dump

The ATM memory dump is read from an OSA, approximately 2 Mb when the OSA is configured for SNA with ATM. Specify the CHPID (OSA) number with this parameter.

SNA Trace

The SNA trace buffer is read from the OSA device when the OSA is configured for SNA mode. Specify the CHPID (OSA) number with this parameter.

SNA Message Log

The SNA message log is read from the OSA device when the OSA is configured for SNA mode. Specify the CHPID (OSA) number with this parameter.

ATM Trace

The ATM trace buffer is read from the OSA device when the OSA is configured for SNA with ATM LAN emulation. Specify the CHPID (OSA) number with this parameter. The buffer number is not required and will default to zero. There are eight buffers, 0-7.

OSA/SF Dump

If OSA/SF abends, the OSA/SF dump is sent to an MVS dump data set SYS1.DUMPxx. OSA/SF has a unique dump title that contains the abend code for the failure, the failing module, and the recovery routine that sent the dump:

```
ABEND aaa IN bbbbbbbb, COMPID=5688-008, ISSUER=cccccccc
```

where:

aaa
Is the abend code.

bbbbbbbb
Is the failing control section (CSECT) name.

cccccccc
Is the recovery routine that sent the dump.

OSA Channel Memory Dump

Use the following to get a memory dump of the OSA device:

1. Double-click on the host icon from the **OSA/SF Hosts** window and **Open** a channels view window.
2. Select the OSA number for the dump you want.
3. Select **Command** from the menu bar at the top.
4. Select **Get Memory dump**.
5. Enter the **File name** to receive the dump.

Query Command Using the GUI: The Query command is available through the GUI for problem determination. The results of the Query command are displayed in the Command Output window. To access the Query command, perform the following steps:

1. From either the **Tree view** or the **OSA Channels - Details view**, choose **Command** from the menu bar at the top.
2. Select **Query**.
3. Select **CHPID Information**.

Determining which OSA/SF Image Is Managing an OSA: If more than one OSA/SF image is running on the S/390 and you want to determine which image is managing an OSA, do the following:

1. Double-click on one of the host icons from the **OSA/SF Hosts** window to **Open** a channel view window.

   If the **OSA Channels - Details view** is displayed, select **View** from the menu bar, select **style** and then **Tree view**.
2. Double-click on the OSA number you want to see.
3. Select **Statistics** from the notebook tab.
4. Look for **Managing OSA SF LP number (name)**.

Problems with User-Written Calls to the API

If a problem occurs when a user-written program calls the OSA/SF API, check the following information:

- Return code from the call
- Reason code in the returned IOAECB control structure
- Reason message returned starting at offset 176 of the IOAECB structure

You can find an explanation of these values in the Control Block section of the appendix.

By checking the return code, reason code, and response message, you can determine the cause of the problem. Once you know the reason for the problem, you must decide if the application program took the appropriate action.

If you cannot determine the cause of the problem from OSA/SF codes or responses, you should check other possible sources for the error, such as: REXX, VTAM, APPC, or hardware failures.

If none of these seem to be the cause of the problem, then contact IBM service.

Reporting Problems to IBM

If you cannot correct a problem using the problem determination information provided, report the problem to the IBM support center. Use the following checklist for the call:

__ 1. Have your account name, license number, and other customer identification available.

__ 2. Have the following product-related information available:

   __ a. Product Name: **OSA/SF**

   __ b. Release Level: **Release 1** or **Release 2**

   __ c. FMID:

   H0GI100 for Release 1 base program
   H0GI200 for Release 2 base program

   __ d. PUT Level: ID of the latest program update tape installed

   __ e. Service Level:

   See report headings and output data sets of the OSA/SF Main Menu for the OSA/SF service level.

__ 3. Have information available on any recent system definitions, or installed products that could be relevant.

__ 4. Have your record of service and updates to OSA/SF available.

__ 5. Report any OSA/SF service that has been bypassed.

__ 6. Have information available relevant to the type of problem.

In general, you will need to provide:

__ a. A description of the problem

__ b. The sequence of events leading to the problem; for example, the command being processed and the operands specified

__ c. A list of the relevant messages, including both their identifiers and text

__ d. An indication of how many times the error occurred and any other symptoms that appear relevant.

Chapter 9. Using TSO and the API

This section provides information for using a General-use programming interface. Many of the tasks that can be done from the OS/2 OSA/SF GUI can also be done by entering OSA/SF commands from TSO.

How to Enter OSA/SF Commands from MVS and TSO

Use the REXX EXEC named **IOACMD.EXEC** with OSA/SF commands to communicate from an MVS Ready prompt or a TSO command line to OSA/SF.

Attention

- See step 4b on page 2-6 for the fully qualified name that was used to set up the IOACMD.EXEC.
- See Appendix B on page B-1 for a description of the OSA/SF commands that can be used with IOACMD.EXEC.

IOACMD.EXEC runs the same as other EXECs in the the users' address space. The user ID that starts the EXEC must have the proper authority to perform the command. See the RACF publications for details of how to set up the proper security levels.

There are three ways to run the EXEC:

- Full prompting
- Command prompting by the EXEC
- Typing in parameters
- Starting the EXEC and asking for help

Full Prompting

If you enter the following, the EXEC will show you a list of the OSA/SF commands and prompt you for the command and parameters.

```
EX 'IOACMD.EXEC' EXEC
```

Prompting by the EXEC

Enter the name of the EXEC and the OSA/SF command with no parameters. The EXEC then prompts for all the parameters needed. Help messages, when available for some of the parameters, are displayed.

After you enter the parameters, the EXEC processes the command and parameters. The data is used to generate the proper input needed by OSA/SF. The results are then either displayed or if requested, put in the specified data set.

```
EX 'IOACMD.EXEC' 'GET_OSA_ADDRESS_TABLE' EXEC
```

In this example you are requesting the OAT from an OSA. You then are prompted for the CHPID, MVS dataset name, summary option, and replace indicator if needed.

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Typing In the Parameters

Enter the name of the exec followed by the OSA/SF command and parameters. The results are either displayed or when requested, put in the specified data set. Some commands require a data set name to be specified.

```
EX 'IOACMD.EXEC' 'GET_OSA_ADDRESS_TABLE 4b userid.getaddr.file' EXEC
```

where:

GET_OSA_ADDRESS_TABLE is the command
4b is the CHPID parameter
userid.getaddr.file is the dataset name parameter

Starting the EXEC and Asking for Help

Enter the name of the EXEC followed by **HELP**. This displays a list of all the OSA/SF commands. You can then enter the name of the EXEC with the command name and the EXEC will prompt you for parameters.

You can also get help for a specific command by entering the command name.

```
EX 'IOACMD.EXEC' 'HELP QUERY' EXEC
```

This example would show you the parameters for the Query command.

Data Sets Created by IOACMD

Each time you run IOACMD, two data sets are created for debugging problems. One data set contains the INPUT sent to the main OSA/SF address space, and the other data set contains the OUTPUT returned from the OSA/SF address space, regardless if the command completes successfully or not.

The datasets created by IOACMD are:

```
'USERID.IOACMD.INPUT.command_name'
'USERID.IOACMD.OUTPUT.command_name'
```

The following variable (hlq) in the IOACMD EXEC is used to give you flexibility in naming the input and output datasets.

```
hlq = ""          /* see below for useage of this variable
```

To have the high level qualifier (HLQ) be the USERID issuing the command, do not change the hlq line. This leaves IOACMD.EXEC working the way it did before APAR OW21887.

To have the HLQ be something other than the USERID, add your specific high level qualifier between the double quotes ("") in the HLQ statement at the beginning of the EXEC. Up to 8 valid MVS characters are allowed.

Example of Changing the hlq Statement

```
hlq="SYS1"
```

This high level qualifier (SYS1) would result in the debug datasets being cataloged as:

```
"SYS1.USERID.IOACMD.INPUT.command_name"
```

The variable, command_name would be replaced with the actual name of the command.

Calling OSA/SF at the API

The OSA/SF API supports two methods of invocation:

- Calling the EXEC from another EXEC and interpreting the results
- Direct calling to the OSA/SF API C code with the same structured control block that the IOACMD.EXEC would use.

When using another EXEC, you issue statements the same as those issued directly from the command line. Refer to “Typing In the Parameters” on page 9-2 for a description of how to directly input OSA/SF command parameters. When a command completes, you can look at the data in its raw state and determine what to do next. This eliminates the need to first build the control block and determine all the data conversions. Based on the results from one operation, another operation can then be started until the entire task is complete. A more detailed explanation is given in “Using IOACMD.EXEC for Automation” on page 9-4.

When calling the API using “C” the following must be done:

- Build a control block based on the descriptions shown in Appendix D on page D-1.
- Allocate the following data areas to pass to IOAEPROC:
  - Address of a pointer to output location (this is where the returned IOAECB will be placed)
  - Address to put the length of the data returned (this is used for the interface to determine how much data to send back).
- “Fetch” the module IOAEPROC (this should be located in the same LOAD PDS that the main OSA/SF is in).

- Call IOAEPROC which calls the OSA/SF. The function call and supporting code should look like:

```
void          (* fetch_ptr) ();
struct ioaecb   *in_cb_ptr;             /* pointer to input ioaecb  */
struct ioaecb  **out_cb_ptr_loc; /* addr of pointer to return ioaecb*/
int             *out_len_loc;    /* addr of returned length         */
   .
   .
   .
   .
fetch_ptr = fetch("ioaeproc");

rc = ((int (*) ()) fetch_ptr)
      (in_cb_ptr, out_cb_ptr_loc, out_len_loc);

where
   struct ioaecb  - structure mapping to IOAECB that caller wants
                    performed by OSA/SF
   fetch_ptr      - pointer to IOAEPROC routine
   ioaeproc       - function to be called to call OSA/SF
   in_cb_ptr      - pointer to input ioaecb built by caller
   out_cb_ptr_loc - address of pointer to returned IOAECB
   out_len_loc    - address of length of returned IOAECB
```

Response Area

There is no dedicated response area for OSA/SF. For commands issued through the IOACMD.EXEC automation technique, the results can be placed on the stack, where they can then be retrieved and examined. The return code received from calling OSA/SF is returned to the caller of IOACMD.EXEC.

The data returned consists of a single contiguous control block that can be parsed using the structures shown in the ***Control Block Examples*** in Appendix B on page B-1.

For all commands, OSA/SF returns at least one message explaining the success or failure of the command. Each control block has a dedicated area starting at offset 177, which contains this message for the overall command result. The messages, an explanation, and the user responses are shown in Appendix C on page C-1.

Using IOACMD.EXEC for Automation

When calling the IOACMD EXEC, all parameters must be separated by blanks. This is what the EXEC uses to parse the variables used in processing the command. The data/parameters used should be the same as if you were issuing the command using the “direct method of input.” The only change to the direct input method is including the word **STACK** in the input data. This informs the EXEC to put the results on the stack. If parsing of the results is **not** required, then omit this keyword.

```
EXEC 'IOACMD.EXEC' 'command "STACK" parm1 parm2 parm3....'
 <Command now gets processed by OSA/SF>
 PARSE PULL ioaecb   /* puts returned IOAECB control block in a variable called ioaecb */
```

Examples of REXX EXEC Calls

To have the OSA/SF perform a QUERY command, use the following:

```
cmd = "QUERY HOST STACK  ''IOA LPARNUM MSGTEST''"
"EXEC IOACMD.EXEC '"cmd"' exec"
If RC ¬= 8 & RC ¬= 4 & RC ¬= 0 then TCRC = RC
else parse pull ioaecb
```

In the example, the command code is “query”. The type of query requested is “host” which is all the data known to OSA/SF. For this type of query, the only additional parameter needed is the dataset used to store the results. This is specified as "IOA.LPARNUM.MSGTEST". The data returned from OSA/SF is translated into English and stored in this dataset before returning to the caller.

The keyword STACK tells the IOACMD.EXEC to put the raw data returned from the query onto the stack for the users use.

Attention

Because the data is put onto the stack, the user should **always** execute a "PARSE PULL variable_name" to remove all data from the stack upon return from the call. Failure to do this may result in the data that was placed on the stack being interpreted by MVS as a command after the user's REXX EXEC finishes.

Appendix A. About the OSA Address Table (OAT)

An OSA Address Table (OAT) is used as the tracking tool to manage data transfer through an OSA.

Each OSA has its own OAT. The OAT is stored in the OSA in non-volatile storage. There are two sources that can change the OAT:

- The OSA/SF GUI during an activate
- The IOACMD EXEC with a Put OAT command.

The hardware configuration (IOCDS) has input to the OAT and must be defined before an OSA can transfer data. See *OSA in an OS/390 or MVS Environment* in the OSA Planning Guide for setting up the hardware configuration.

If you are using the OSA/SF GUI on OS/2 to customize OSAs, there are configuration windows that organize the OAT and provide you an easy method for creating and changing the OAT; therefore, you do not have to know the details of the OAT format as described in this section.

If you are not using the OSA/SF GUI on OS/2, this section is for you.

Different Views of an OAT

The following options are available that provide a starting point for creating an OAT:

- The Get OAT Command
- Sample Templates in IOA.SIOASAMP.

Recent enhancements allow you to get an OAT in a simplified summary format. There is a new Summary option that you can specify with the Get OAT command. The data set can then be changed and used as input with the Put OAT command. In addition, sample templates were put in IOA.SIOASAMP for you to use. The templates are very similar to the format of the data set returned when the Get Oat command is used with the summary option.

The next section describes the OAT format previous to the Summary option. Consider it the detailed view of the OAT. If you choose not to learn about the details, see “Summary OAT Format” on page A-9 for a description of the summary OAT format.

Detailed OAT Format

This section is provided for your awareness and to support users who used the detailed OAT prior to the release of the Get OAT Summary option and the OAT templates in IOA.SIOASAMP. These new usability enhancements provide a better alternative for working with the OAT.

See Chapter 5 on page 5-1 for all instructions to customize an OSA, including making an OAT.

When you use the Get OAT command and do not specify the Summary option, the data returned from the command will be in the following format:

- Header
- Entries
- Extensions

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Header: All OATs start with a header consisting of three lines (fields) that define the information that follows the header. Here is an example of an OAT Header:

```
/*******************************************************************/
/*                   Start of OSA Address Table                    */
/*******************************************************************/
oathdr.1 = IOA_OAT_HDR                /*   Eyecatcher-Do not change */
oathdr.2 = xx                         /*   CHPID (OSA)              */
oathdr.3 = nnn                        /* s-Number of entries in OAT */
/*******************************************************************/
```

Figure A-1. Example of OAT Header

The fields on the left define the beginning of the OAT (IOA_OAT_HDR), which OSA (xx) the OAT pertains to, and the number of entries (nnn) in the OAT. The comments on the right help to identify the fields.

When an OSA-2 is first installed, there is a default OAT on the OSA. The amount of information (***entries***) on the default OAT depends on the type of OSA.

- FDDI OSA-2 contains 32 entries
- ENTR OSA-2 contains 64 entries
- FENET OSA-2 contains 32 entries
- ATM OSA-2 does not have a default OAT. Any data returned from a Get OAT command comes from the hardware configuration (IOCDS).

On a default OAT, there are two entries per port multiplied by 16 possible logical partitions.

Entries: An entry in the OAT is a collection of fields grouped together to identify information about one data path through an OSA. There are usually more entries in the OAT than you will use because the OSA ships with default entries for each possible logical partition when the S/390 is in LPAR mode. These can be modified so that you do not have to create new entries.

Each entry in the OAT consists of 13 fields and an extension of one, two, or three fields. The 13 fields for the first entry are labeled oat.1.1 through oat.1.13. A-2 shows an example of the beginning of a default OAT with ***one entry***.

Extensions: Each OAT entry has an extension. There are various possible types of extensions based on the entry type (OSA mode). To see examples of the six types of extensions, see “Examples of OAT Extensions For All OSA Modes” on page A-6

```
/*************************************************************************/
/*                    Start of OSA Address Table                         */
/*************************************************************************/
/*  All entries below that are preceded by 's' indicate that the        */
/*  field is settable during Put_OAT processing                          */
/*************************************************************************/
oathdr.1 = IOA_OAT_HDR        /*  Eyecatcher-Do not change  */
oathdr.2 = C4                 /*  CHPID (OSA)               */
oathdr.3 = 64                 /* s-Number of entries        */
/*************************************************************************
```

Header

```
/*************************************************************************
/*  Start of OAT for entry 1                                             */
/*************************************************************************/
oat.1.1 = IOA_OATENTRY        /*  Eyecatcher - Do not delete */
oat.1.2 = OSA data valid      /*  Valid data indicator       */
oat.1.3 = N/A                 /*  Partition name             */
oat.1.4 = 0                   /* s-Partition number          */
oat.1.5 = 00                  /* s-Unit address              */
oat.1.6 = N/A                 /*  Device number              */
oat.1.7 = C4                  /*  Chpid                      */
oat.1.8 = N/A                 /*  Control unit number        */
oat.1.9 = N/A                 /*  Channel state              */
oat.1.10 = N/A                /*  Device accessible          */
oat.1.11 = 02                 /*  Group size                 */
oat.1.12 = passthru           /* s-Entry type.  One of:      */
                              /*    subchannel               */
                              /*    passthru                 */
                              /*    SNA                      */
                              /*    MPC                      */
                              /*    Unassigned               */
oat.1.13 = started            /*  Entry descriptor           */
/*************************************************************************/
```

Entry

```
/*************************************************************************/
/*  Start of Extended OAT for entry 1                                    */
/*************************************************************************/
passthru.1.1 = 0              /* s-Port number                */
passthru 1.2 = no             /* s-Default entry (no/pri/sec) */
passthru.1.3 = 0.0.0.0        /* s-Home IP address            */
/*************************************************************************/
```

Extension

Notice the following about this OAT entry:

- This OAT is for OSA C4. See field oathdr.2.
- There are 64 total entries in this OAT. See field oathdr.3. Only entry 1 of the 64 entries is shown in the figure.
- There are three parts that make up the OAT:
  - The OAT header (oathdr.1, oathdr.2, and oathdr.3),
  - Entry 1 (oat.1.1 through oat.1.13),
  - Extension for entry 1 (passthru.1.1 through passthru.1.3)

There will be 63 other entries and extensions in this OAT because field oathdr.3=64. The second entry will have a comment line labeled Start of OAT entry 2. Entry one is identified by oat.1.x, entry two is oat.2.x, entry three oat.3.x, continuing through to oat.64.x. All unused entries and extensions are ignored.

The fields that you can modify have an **s** (settable) in front of their corresponding comment at the right.

The entry shown in this OAT is for TCP/IP passthru. See oat1.12. All entries in a default OAT are passthru entries; therefore, entries will have to be modified for other modes. The number of entries that you modify or add to the OAT depends on how many data paths are required through the OSA. If the S/390 is running in native mode (non-LPAR), you might only have to modify two entries in the OAT to match the hardware configuration.

The format of fields oat.1.1 through oat.1.13 are the same for a TCP/IP Passthru entry and an SNA entry. The differences are in the contents of each field and the extensions. Figure A-2 shows an OAT entry for SNA along with all the field definitions.

The following OAT entry is an example of one entry for SNA traffic through the OSA. All fields are described after the figure.

```
/*******************************************************************/
/* Start of OAT entry header                                       */
/*******************************************************************/
oathdr.1 = IOA_OAT_HDR                /*   Eyecatcher-Do not change */
oathdr.2 = 7C                         /*   CHPID                    */
oathdr.3 = 64                         /* s-number of entries        */
/*******************************************************************/
/* Start of OAT entry 1                                            */
/*******************************************************************/
oat.1.1 = IOA_OATENTRY                /*   Eyecatcher- Do not change*/
oat.1.2 = All data valid              /*   Valid Entry              */
oat.1.3 = LPLEFT                      /*   Partition name           */
oat.1.4 = 1                           /* s-Partition number         */
oat.1.5 = 00                          /* s-Unit address             */
oat.1.6 = 0100                        /*   Device number            */
oat.1.7 = 7C                          /*   CHPID                    */
oat.1.8  = 0100                       /*   Control unit number      */
oat.1.9  = configured                 /*   Channel state            */
oat.1.10 = yes                        /*   Device accessible(yes/no)*/
oat.1.11 = 1                          /*   Group size               */
oat.1.12 = SNA                        /* s-Entry type               */
                                      /*    subchannel              */
                                      /*    passthru                */
                                      /*    SNA                     */
                                      /*    MPC                     */
                                      /*    unassigned              */
oat.1.13 = started and in use         /*   entry descriptor         */
/*******************************************************************/
/* Start of OAT entry 1 extension                                  */
/*******************************************************************/
sna.1.1 = 0                           /* s-Port number              */
```

Figure A-2. One SNA Entry of an OAT

Field Definitions: Refer to Figure A-2.

oathdr.1 = IOA_OAT_HDR Identifies the beginning of the OSA Address Table (OAT).

oathdr.2 = 7C CHPID (OSA) that this OAT corresponds to.

oathdr.3 = 64 The number of entries in the OAT. There will be 63 other entries similar to the entry shown in Figure A-2. After sna.1.1, there will be another entry labeled Start of OAT entry 2, and the OAT will contain all 64 entries.

oat.1.1 = IOA_OATENTRY Identifies the beginning of each entry in the OAT.

oat.1.2 = All data valid

This field shows the validity for each entry in the OAT. When you use the Get OAT command, information comes from the hardware configuration definitions and the OSA. It is important to realize that some information in the OAT entry might have come from the hardware configuration definitions (IOCDS).

The following shows which fields are valid depending on what is specified in oat.1.2:

- **Channel subsystem valid** (oat.n.3 through oat.n.10 are valid) - The logical partition (LP) and unit address (UA) specified in this entry were found in the hardware configuration definition but *not* on the OSA. If this LP/UA is required for data transfer, the other fields for this entry should be modified and then the OAT can be put back on the OSA. The next time you get the OAT, the LP/UA in the OAT entry will match the hardware configuration definition and field 1.2 will show **All data valid**.
- **OSA data valid** (oat.n.4, n.5, n.7, n.11, n.12, and n.13 are valid) - There is not a corresponding LP/UA in the hardware configuration that matches the LP/UA found on the OSA for this entry. If this LP/UA is required for data transfer, update the hardware configuration definitions.
- **All data valid** (all fields are valid) - The LP/UA on the OSA for this entry matches a LP/UA in the hardware configuration definition.

oat.1.3 - LPLEFT

Logical Partition name assigned by the user in the hardware configuration for the OSA.

oat.1.4 = 1

Logical Partition number from either the hardware configuration or the OSA, or both. See field oat.1.2 to determine where the LP number was found.

oat.1.5 = 00

Unit address from either the hardware configuration or the OSA, or both. See field oat.1.2 to determine where the LP number was found.

oat.1.6 = 100

Device number defined in the hardware configuration.

oat.1.7 = 7C

CHPID (OSA) that this entry is for. This should match the CHPID returned in oathdr.2.

oat.1.8 = 0100

Control unit number defined in the hardware configuration.

oat.1.9 = configured

The state of the CHPID. (configured, not configured, or not installed).

oat.1.10 = yes

Shows if the device is accessible to the logical partition.

oat.1.11 = 1

Group size is always one for SNA. Indicates that each entry in the OAT corresponds to a path through the OSA.

oat.1.12 = SNA

The OAT entry type is for SNA.

oat.1.13 = Started and in use

Can be one of the following:

Not started	The SNA image on the OSA for this device is not initialized.
Started	The SNA image on the OSA for this device has successfully initialized, but has not made a connection with the host.
Started and in use	The path between the CHPID and the host has been established.

sna.1.1 = 0 This is the port number that this OAT entry corresponds to.

Note: This field (sna.1.1) is the beginning of the extension.

- ATM LE= 0 or 1
- ATM NATIVE= 0
- ATM IP Fowarding= 0
- ENTR= 0 or 1
- FDDI= 0
- FENET= 0

Examples of OAT Extensions For All OSA Modes: Based on the entry type (n.1.12) specified in the base OAT, one of the following extensions must be included.

TCP/IP Passthru OAT Extension

```
/*************************************************************************/
passthru.n.1 = PORT_NUMBER                  /* s-Port number (1 digit)     */
passthru.n.2 = pri                          /* s-Default entry (no/pri/sec)*/
                                            /*    value of yes = primary   */
passthru.n.3 = IP address 1                 /* s-home IP address1(w.x.y.z) */
passthru.n.5 = IP address 2                 /* s-home IP address2(w.x.y.z) */
passthru.n.7 = IP address 3                 /* s-home IP address3(w.x.y.z) */
passthru.n.9 = IP address 4                 /* s-home IP address4(w.x.y.z) */
passthru.n.11= IP address 5                 /* s-home IP address5(w.x.y.z) */
passthru.n.13= IP address 6                 /* s-home IP address6(w.x.y.z) */
passthru.n.15= IP address 7                 /* s-home IP address7(w.x.y.z) */
passthru.n.17= IP address 8                 /* s-home IP address8(w.x.y.z) */
/*************************************************************************/
```

Guidelines:

- Only one LP/UA entry per port can be the primary (pri) default entry.
- Only one LP/UA entry per port can be the secondary (sec) default entry.
- A default entry value of yes will be treated as the primary default entry.
- You cannot have a secondary (sec) default entry without a primary (pri) default entry.
- All IP addresses must have an odd index, for example: pass.n.3, pass.n.5, pass.n.7. Even entry field are ignored.
- Delete all IP addresses not assigned.

Note: The OSA/SF message log and the operator console receive an indication whenever a primary or secondary default entry is active, however, this only appears on the system that has the OSA/SF managing the CHPID. If a change in the default entry occurs and there is no OSA/SF managing the CHPID, this information is not logged anywhere.

SNA OAT Extension For Native SNA Connection

```
/*******************************************************************/
/*SNA extended entry WITHOUT Network management example            */
/*******************************************************************/
sna.n.1 = PORT_NUMBER                  /* s-Port number (1 digit)    */
/*******************************************************************/
```

SNA OAT Extension For SNA Network Management

```
/*******************************************************************/
/* SNA extended entry WITH Network management example              */
/* --change VTAM IDNUM to match value on XCA node definition        */
/*******************************************************************/
sna.n.1 = FF                          /* s-Port number (must be FF) */
sna.n.2 = VTAM IDNUM                  /* s-VTAM IDNUM (5 hex chars) */
/*******************************************************************/
```

HPDT ATM Native and HPDT MPC OAT Extension

```
/*******************************************************************/
/* MPC extended entry example                                       */
/* - Change OSANAME to match value on TRLE node definition          */
/*******************************************************************/
mpc.n.1 = PORT_NUMBER                 /* s-Port number (1 digit)    */
mpc.n.2 = osaname                     /* s-OSA name (up to 8 chars) */
/*                                    /*    a-z, 0-9, @, #, $ valid */
/*                                    /*    0-9 not valid 1st char  */
/*                                    /*    0 not valid last char   */
/*******************************************************************
```

MPC with IP Traffic OAT Extension

```
/*******************************************************************/
/* MPC with IP traffic extended entry example                       */
/*******************************************************************/
mpc.2.1 = PORT_NUMBER                 /* s-Port number (1 Hex digit)*/
mpc.2.2 = osaname1                    /* s-OSA name (up to 8 chars) */
                                      /*    a-z, 0-9, @, #, $ valid */
                                      /*    0-9 not valid 1st char  */
                                      /*    0 not valid last char   */
mpc.2.3 = 4.4.3.3                     /*   home IP address1(w.x.y.z)*/
/*******************************************************************/
```

MPC with IPX Traffic OAT Extension

```
/*******************************************************************/
/* MPC with IPX traffic extended entry example                      */
/*******************************************************************/
mpc.3.1 = PORT_NUMBER                 /* s-Port number (1 digit)    */
mpc.3.2 = osaname2                    /* s-OSA name (up to 8 chars) */
                                      /*    a-z, 0-9, @, #, $ valid */
                                      /*    0-9 not valid 1st char  */
                                      /*    0 not valid last char   */
mpc.3.3 = Ethernet 802.2              /*   IPX frame type 1         */
mpc.3.4 = Ethernet II                 /*   IPX frame type 2         */
mpc.3.5 = Ethernet SNAP               /*   IPX frame type 3         */
/*******************************************************************
```

ATM IP Forwarding OAT Extension

```
/*********************************************************************/
pass.n.1 = PORT_NUMBER                /* s-Port number (1 digit)     */
pass.n.2 = pri                        /* s-Default entry (no/pri/sec)*/
                                      /*    value of yes = primary   */
pass.n.3 = IP address 1               /* s-home IP address1(w.x.y.z) */
pass.n.4 = netmask 1                  /* s-home IP netmask1(a.b.c.d) */
pass.n.5 = IP address 2               /* s-home IP address2(w.x.y.z) */
pass.n.6 = netmask 2                  /* s-home IP netmask2(a.b.c.d) */
pass.n.7 = IP address 3               /* s-home IP address3(w.x.y.z) */
pass.n.8 = netmask 3                  /* s-home IP netmask3(a.b.c.d) */
pass.n.9 = IP address 4               /* s-home IP address4(w.x.y.z) */
pass.n.10= netmask 4                  /* s-home IP netmask4(a.b.c.d) */
pass.n.11= IP address 5               /* s-home IP address5(w.x.y.z) */
pass.n.12= netmask 5                  /* s-home IP netmask5(a.b.c.d) */
pass.n.13= IP address 6               /* s-home IP address6(w.x.y.z) */
pass.n.14= netmask 6                  /* s-home IP netmask6(a.b.c.d) */
pass.n.15= IP address 7               /* s-home IP address7(w.x.y.z) */
pass.n.16= netmask 7                  /* s-home IP netmask7(a.b.c.d) */
pass.n.17= IP address 8               /* s-home IP address8(w.x.y.z) */
pass.n.18= netmask 8                  /* s-home IP netmask8(a.b.c.d) */
/*********************************************************************/
```

Guidelines:

- Only one LP/UA entry per port can be the primary (pri) default entry. See field pass.n.2
- Only one LP/UA entry per port can be the secondary (sec) default entry.
- A default entry value of yes will be treated as the primary default entry.
- You cannot have a secondary (sec) default entry without a primary (pri) default entry.
- All IP addresses must have an odd index, for example: pass.n.3, pass.n.5, pass.n.7.
- All netmask addresses must have an even index. for example: pass.n.4, pass.n.6.
- Delete all IP addresses and netmasks not assigned.

LANRES (subchannel) OAT Extension: For specifying the subchannel extension on the OAT, the following extension is used. This field is not settable. It is shown as an example of what is returned from a Get OSA Address Table command.

```
/*********************************************************************/
/*LANRES (subchannel) OAT Extension                                  */
/*********************************************************************/
subchan.n.1         /* This is the subchannel ID: it is not settable.*/
/*********************************************************************/
```

Guidelines for Changing an OAT

- If a port is not shared between logical partitions, one OAT entry defines the data path with a logical partition and unit address. Multiple partition number/unit address pairs can be associated with a single port only if the IP addresses are unique.
- If the port is not shared between logical partitions, all IP addresses should be set to a value of 0.0.0.0.
- When changing an existing entry, any operation currently executing may be interrupted if you use the FORCE option. See “PUT_OSA_ADDRESS_TABLE | PUT_OAT | PUT_OSA | PUT_TABLE” on page B-21 for details.
- Make sure that an entry for each partition is defined when sharing a specific port.
- Specified OSA port and IP address of the passthru extended data must be in a valid range.

Using Sample Default OATs for OSA-2 ENTR, FENET, or FDDI Features

Note: If you changed the default OAT that came with the OSA and you require the default OAT reinstalled, samples of these OATs are located in SIOASAMP.

The samples are the same as the OAT entries that are on a factory shipped OSA-2 FDDI, OSA-2 FENET, or OSA-2 ENTR feature. Look for the following members in SIOASAMP:

IOAOFDDI — FDDI or FENET feature
IOAOENTR— ENTR feature (Token Ring or Ethernet or FENET)

You can use the sample OATs without any changes if you require a default OAT, or you can modify the sample for your installation. Use the PUT_OAT command to install the OAT on the OSA.“PUT_OSA_ADDRESS_TABLE | PUT_OAT | PUT_OSA | PUT_TABLE” on page B-21

Summary OAT Format: You can get a summary OAT from the templates in IOA.SIOASAMP or by including the Summary option with the Get OAT command.

The summary format is slightly different for the templates than the results of the Get OAT command with the summary option. Some of the unused data was removed from the templates so that they would be easier to modify when making an OAT.

Instructions for changing the templates are included within each template. See Table 5-1 on page 5-1 or Table 5-2 on page 5-7.

Attention: templates vs Summary Get OAT

You have the choice of using the templates in IOA.SIOASAMP or doing the Get OAT command with the Summary option. There are advantages to both methods of getting a summary OAT. If you already have the OAT completed and installed on the OSA and you want to make a change, the Get OAT command with the summary option would be best. If you are making an OAT for the first time, the templates in IOA.SIOASAMP would be easier to use.

The following section shows the legend that is appended to the summary OAT when you do a Get OAT command with the Summary option.

Because the legend must describe the summary format for all possibilities of an OAT, it might have more details than you want. If you become confused or frustrated, please see the OAT examples that follow this section or see the OAT templates. Each template shows a sample of one OAT possibility with instructions for modifying the template.

The Legend Included in a Summary OAT: The following legend is appended to the bottom of a summary OAT when you issue the Get OAT command and include the Summary option. The legend describes the layout and information in the OAT.

```
*********************************************************************
*                     Legend for abbreviations                      *
*********************************************************************
* Entry column              Valid column
* ------------              ------------
* S   - Started             OSA - Does not exist in IOCDS, but is on OSA
* NS  - Not started         CSS - Exists only in Channel Subsystem(IOCDS)
* SIU - Started & in use    ALL - Exists on the OSA and in IOCDS
* N/A - Not Applicable
*
* Entry Specific Information
* --------------------------
* Passthru entry   - Default entry, Home IP address & Netmask
* SNA entry        - VTAM IDNUM if port number is FF
* Subchannel entry - none
* MPC entry        - OSA name
*********************************************************************
*          Guidelines to updating this file for input               *
*********************************************************************
* All comment lines must start with either '*' or '/*'
* All comments and blank lines are ignored
* Parameters are not column specific, but must be separated by
*   at least 1 blank space
* A statement containing the LP number must precede any valid OAT lines
*
* There are 2 valid types of entry lines:
* 1. Specify the LP which the following lines pertain to
*
*  LP n (hostname)
*     LP is the keyword
*     n is the 1 hex digit partition number (0-F)
*     hostname is optional, and is ignored
*
```

Figure A-3 (Part 1 of 2). Legend Included in a Summary OAT

```
* 2. The actual OAT entries for each LP, which must be one of:
*
*  ua  passthru    port_number   default_lp     Home_IP     Net_mask
*  ua  sna         port_number   VTAM_idnum
*  ua  mpc         port_number   osaname
*  ua  subchannel  port_number
*  ua  N/A or unassigned
*  where
*  -'ua' can be either a 1 or 2 digit unit address alone or with the
*    device address concatenated to it.  e.g. - 0A(023A) or 0A
*    The device address is always ignored on input.
*  -'passthru', 'sna', 'mpc', subchannel', 'N/A', or 'unassigned'
*    indicates the type of entry this is. Specify unassigned
*    to eliminate an entry that already exists on the OSA
*  -port_number specifies the port number
*  -default_entry is set to one of the following
*    - NO  Not a default entry
*    - PRI Primary default entry
*    - SEC Secondary default entry (when primary is not available)
*  -Home_IP is the home IP address in standard w.x.y.z format with
*    values ranging from 0 to 255 in each position. It can be left
*    blank if you do not wish to have port sharing or an IP address
*    assigned to this entry. You CANNOT have a mixture of zero and
*    non-zero IP addresses in the same OAT.
*  -Net_mask is the netmask to be used with the Home IP address ONLY for
*    ATM IP forwarding.  This can be left blank for no IP forwarding.
*    It is also in the format of w.x.y.z where each one has a range
*    of 0 to 255.  If you specify a net_mask, you must specify the
*    home IP address. (This field is only valid for MVS or OS/390).
*    To specify more than 1 IP address for a passthru OAT entry, add a
*    line following the initial 'passthru line'.  This line must start
*    with  the home IP address.  For IP forwarding, you must also
*    include the netmask.  All other parameters are ignored.
*
*  -VTAM_idnum is the 5 digit VTAM idnum used for network management.
*    Specify this parameter if the port number is FF.  Otherwise you
*    can omit it, or if specified it is ignored.
*    You can only have 1 SNA network management entry per OAT.
*
*  -osaname is used for HPDT MPC or HPDT ATM Native and is a maximum
*    of 8 characters. The following rules for OSA name apply:
*    a) a-z, 0-9, @, #, $ are valid
*    b) 0-9 not valid 1st char
*    c) 0 not valid last char
*
*    -MPC can also have additional lines returned if you are running
*      IPX or IP traffic.
*      For IPX traffic, a frame type is shown.
*      For IP traffic, a home IP address is shown.
*      These lines are repeated for as many valid entries are on the OSA.
*      These values are not settable through OSA/SF.  If they occur in
*      the input file, they are ignored.
**********************************************************************
*                        End of OAT entries                          *
```

Figure A-3 (Part 2 of 2). Legend Included in a Summary OAT

Examples of OATs: The following examples show a detailed OAT entry and then what the corresponding summary OAT would be.

TCP/IP Passthru—Detail View of One Entry

```
/*******************************************************************/
/* Start of OAT entry header                                       */
/*******************************************************************/
oathdr.1 = IOA_OAT_HDR                /*   Eyecatcher-Do not change */
oathdr.2 = 4C                         /*   CHPID                    */
oathdr.3 = n                          /* s-number of OAT entries    */
/*******************************************************************/
/* Start of base OAT entry 1                                       */
/*******************************************************************/
oat.1.1 = IOA_OATENTRY                /*   Eyecatcher- Do not change*/
oat.1.2 = all data valid              /*   Valid Entry              */
oat.1.3 = PARTNAME                    /*   Partition name           */
oat.1.4 = 1                           /* s-Partition number         */
oat.1.5 = 02                          /* s-unit address             */
oat.1.6 = 0402                        /*   device number            */
oat.1.7 = 4C                          /*   CHPID                    */
oat.1.8  = 003E                       /*   control unit number      */
oat.1.9  = configured                 /*   channel state            */
oat.1.10 = yes                        /*   device accessible(yes/no)*/
oat.1.11 = 2                          /*   group size               */
oat.1.12 = passthru                   /* s-entry type               */
                                      /* entry type can be one of:  */
                                      /*   subchannel               */
                                      /*   passthru                 */
                                      /*   SNA                      */
                                      /*   MPC                      */
                                      /*   unassigned               */
oat.1.13 = started and in use         /*   entry descriptor         */
/*******************************************************************/
/* Start of OAT entry 1 extension                                  */
/*******************************************************************/
passthru.1.1 = 0                     /* s-Port number               */
passthru.1.2 = no                    /* s-Default entry (no/pri/sec)*/
passthru.1.3 = 0.0.0.0               /* s-Home IP address           */
```

Figure A-4. TCP/IP Passthru with no port sharing

Corresponding Summary View

```
*********************************************************************
* UA(Dev) Mode     Port     Entry specific information      Entry  Valid
*********************************************************************
                              LP 1 (PARTNAME)
02(0402) passthru   00  no  000.000.000.000                  SIU    ALL
```

Figure A-5. Summary OAT for TCP/IP Passthru with No Port Sharing

TCP/IP with Port Sharing Between LPs

```
/*********************************************************************/
/* Start of Base OAT entry                                           */
/*********************************************************************/
oathdr.1 = IOA_OAT_HDR                /*   Eyecatcher-Do not change  */
oathdr.2 = 7A                         /*   CHPID                     */
oathdr.3 = 2                          /* s-number of entries         */
/*********************************************************************/
/* Start of OAT entry 1                                              */
/*********************************************************************/
oat.1.1 = IOA_OATENTRY                /*   Eyecatcher- Do not change */
oat.1.2 = All data valid              /*   Valid Entry-Do not change */
oat.1.3 = LPLEFT                      /*   Partition name            */
oat.1.4 = 1                           /* s-Partition number          */
oat.1.5 = 00                          /* s-unit address              */
oat.1.6 = 0400                        /*   device number             */
oat.1.7 = 7A                          /*   CHPID                     */
oat.1.8  = 0100                       /*   control unit number       */
oat.1.10 = yes                        /*   device accessible(yes/no) */
oat.1.11 = 2                          /*   group size                */
oat.1.12 = passthru                   /* s-entry type                */
                                      /* entry type can be one of:   */
                                      /*   subchannel                */
                                      /*   passthru                  */
                                      /*   SNA                       */
                                      /*   MPC                       */
                                      /*   unassigned                */
oat.1.13 = started and in use         /*   entry descriptor          */
/*********************************************************************/
/* Start of OAT entry 1 extension                                    */
/*********************************************************************/
passthru.1.1 = 1                      /* s-Port number               */
passthru.1.2 = pri                    /* s-Default entry (no/pri/sec)*/
passthru.1.3 = 9.112.18.17            /* s-IP address                */
/*********************************************************************/
```

Figure A-6. Even OAT Entry for Device 0400. This is the even entry for device 0400. An odd entry would also be returned because the entry type is passthru. Another entry is shown in Figure A-7 on page A-14; both entries are sharing port 1.

```
/*********************************************************************/
/* Start of OAT entry 2                                              */
/*********************************************************************/
oat.2.1 = IOA_OATENTRY                /*   Eyecatcher- Do not change */
oat.2.2 = All data valid              /*   Valid Entry-Do not change */
oat.2.3 = LPRIGHT                     /*   Partition name            */
oat.2.4 = 2                           /* s-Partition number          */
oat.2.5 = 04                          /* s-unit address              */
oat.2.6 = 0404                        /*   device number             */
oat.2.7 = 7A                          /*   CHPID                     */
oat.2.8  = 0100                       /*   control unit number       */
oat.2.9  = configured                 /*   channel state             */
oat.2.10 = yes                        /*   device accessible(yes/no) */
oat.2.11 = 2                          /*   group size                */
oat.2.12 = passthru                   /* s-entry type                */
                                      /* entry type can be one of:   */
                                      /*   subchannel                */
                                      /*   passthru                  */
                                      /*   SNA                       */
                                      /*   MPC                       */
                                      /*   unassigned                */
oat.2.13 = started and in use         /*   entry descriptor          */
/*********************************************************************/
/* Start of OAT entry 2 extension                                    */
/*********************************************************************/
passthru.2.1 = 1                      /* s-Port number               */
passthru.2.2 = pri                    /* s-Default entry (no/pri/sec)*/
passthru.2.3 = 9.112.12.16            /* s-Home IP address           */
```

Figure A-7. Even OAT Entry for Device 0404. This is the even entry for device 0404. An odd entry would also be returned because the entry type is passthru.

Corresponding Summary View

```
************************************************************************
* UA(Dev) Mode     Port     Entry specific information      Entry  Valid
************************************************************************
                                LP 1 (LPLEFT)
00(0400) passthru   01  pri 009.112.018.017                   SIU    ALL
                                LP 2 (LPRIGHT)
04(0404) passthru   01  no  009.112.012.016                   SIU    ALL
```

Figure A-8. Summary OAT TCP/IP with Port Sharing

SNA

```
/*******************************************************************/
/* Start of OAT entry header                                       */
/*******************************************************************/
oathdr.1 = IOA_OAT_HDR                 /*   Eyecatcher-Do not change */
oathdr.2 = 7C                          /*   CHPID                    */
oathdr.3 = 64                          /* s-number of entries        */
/*******************************************************************/
/* Start of OAT entry 1                                            */
/*******************************************************************/
oat.1.1 = IOA_OATENTRY                 /*   Eyecatcher- Do not change*/
oat.1.2 = All data valid               /*   Valid Entry              */
oat.1.3 = LPLEFT                       /*   Partition name           */
oat.1.4 = 1                            /* s-Partition number         */
oat.1.5 = 00                           /* s-Unit address             */
oat.1.6 = 0100                         /*   Device number            */
oat.1.7 = 7C                           /*   CHPID                    */
oat.1.8  = 0100                        /*   Control unit number      */
oat.1.9  = configured                  /*   Channel state            */
oat.1.10 = yes                         /*   Device accessible(yes/no)*/
oat.1.11 = 1                           /*   Group size               */
oat.1.12 = SNA                         /* s-Entry type               */
                                       /*   passthru                 */
                                       /*   SNA                      */
                                       /*   unassigned               */
oat.1.13 = started and in use          /*   entry descriptor         */
/*******************************************************************/
/* Start of OAT entry 1 extension                                  */
/*******************************************************************/
sna.1.1 = 0                            /* s-Port number              */
```

Figure A-9. One SNA Entry for an OAT

Corresponding Summary View

```
************************************************************************
* UA(Dev) Mode     Port     Entry specific information      Entry  Valid
************************************************************************
                              LP 1 (LPLEFT)
00(0100) sna        0                                         SIU    ALL
```

Figure A-10. Summary OAT for One SNA Entry

ATM IP Forwarding

```
/*******************************************************************/
/*               Start of OSA Address Table for CHPID 78            */
/*******************************************************************/
/* All entries below that are preceded by 's-' indicate that the     */
/* field is settable during Put_OAT processing                       */
/*******************************************************************/
oathdr.1 = IOA_OAT_HDR                /*   Eyecatcher-Do not change */
oathdr.2 = 78                         /*   CHPID                    */
oathdr.3 = 3                          /* s-Number of entries        */
/*******************************************************************/
/* Start of OAT entry 1                                              */
/*******************************************************************/
oat.1.1 = IOA_OATENTRY                /*   Eyecatcher- Do not delete*/
oat.1.2 = All data valid              /*   Valid data indicator     */
oat.1.3 = HOSTNAME                    /*   Partition name           */
oat.1.4 = 1                           /* s-Partition number         */
oat.1.5 = 78                          /* s-Unit address             */
oat.1.6 = 0278                        /*   Device number            */
oat.1.7 = 78                          /*   Chpid                    */
oat.1.8 = 0078                        /*   Control unit number      */
oat.1.9 = configured                  /*   Channel state            */
oat.1.10 = yes                        /*   Device accessible        */
oat.1.11 = 2                          /*   Group size               */
oat.1.12 = passthru                   /* s-Entry type. One of:      */
                                      /*     Passthru               */
                                      /*     SNA                    */
                                      /*     subchannel             */
                                      /*     MPC                    */
                                      /*     Unassigned             */
oat.1.13 = started and in use         /*   Entry descriptor         */
/*******************************************************************/
pass.1.1 = 0                          /* s-Port number (1 digit)    */
pass.1.2 = no                         /*s-Default entry (no/pri/sec)*/
                                      /*    value of yes = primary  */
pass.1.3 = 2.2.2.2                    /* s-home IP address1(w.x.y.z)*/
pass.1.4 = 255.255.0.0                /* s-home IP netmask1(a.b.c.d)*/
pass.1.5 = 2.2.2.3                    /* s-home IP address2(w.x.y.z)*/
pass.1.6 = 255.255.0.0                /* s-home IP netmask2(a.b.c.d)*/
pass.1.7 = 2.2.2.4                    /* s-home IP address3(w.x.y.z)*/
pass.1.8 = 123.123.123.123            /* s-home IP netmask3(a.b.c.d)*/
/*******************************************************************/
```

Figure A-11. One ATM IP Forwarding Entry for an OAT

Corresponding Summary View

```
/*********************************************************************
/* UA(Dev) Mode     Port     Entry specific information      Entry  Valid
/*********************************************************************
                            LP 1 (HOSTNAME)
78(0278) passthru   0  no   2.2.2.2  255.255.0.0             SIU    ALL
                            2.2.2.3 255.255.0.0
                            2.2.2.4 123.123.123.123
```

Figure A-12. Summary OAT for One ATM IP Forwarding Entry

HPDT MPC with IP Traffic

```
/*******************************************************************/
/*               Start of OSA Address Table for CHPID 78           */
/*******************************************************************/
/* All entries below that are preceded by 's-' indicate that the    */
/* field is settable during Put_OAT processing                      */
/*******************************************************************/
oathdr.1 = IOA_OAT_HDR                /*   Eyecatcher-Do not change */
oathdr.2 = 78                         /*   CHPID                    */
oathdr.3 = 3                          /* s-Number of entries        */
/*******************************************************************/
/* Start of OAT entry 1                                             */
/*******************************************************************/
oat.1.1 = IOA_OATENTRY                /*   Eyecatcher- Do not delete*/
oat.1.2 = All data valid              /*   Valid data indicator     */
oat.1.3 = HOSTNAME                    /*   Partition name           */
oat.1.4 = 1                           /* s-Partition number         */
oat.1.5 = 78                          /* s-Unit address             */
oat.1.6 = 0278                        /*   Device number            */
oat.1.7 = 78                          /*   Chpid                    */
oat.1.8 = 0078                        /*   Control unit number      */
oat.1.9 = configured                  /*   Channel state            */
oat.1.10 = yes                        /*   Device accessible        */
oat.1.11 = 2                          /*   Group size               */
oat.1.12 = MPC                        /* s-Entry type. One of:      */
                                      /*     Passthru               */
                                      /*     SNA                    */
                                      /*     subchannel             */
                                      /*     MPC                    */
                                      /*     Unassigned             */
oat.1.13 = started and in use         /*   Entry descriptor         */
/*******************************************************************/
/* MPC with IP traffic extended entry example                       */
/*******************************************************************/
mpc.n.1 = 0                           /* s-Port number (1 digit)    */
mpc.n.2 = osaname1                    /* s-OSA name (up to 8 chars) */
                                      /*    a-z, 0-9, @, #, $ valid */
                                      /*    0-9 not valid 1st char  */
                                      /*    0 not valid last char   */
mpc.n.3 = 4.4.3.3                     /*   home IP address1(w.x.y.z)*/
/*******************************************************************/
```

Figure A-13. One HPDT MPC with IP Traffic Entry for an OAT

Corresponding Summary View

```
/*********************************************************************
/* UA(Dev) Mode     Port     Entry specific information      Entry  Valid
/*********************************************************************
                              LP 1 (HOSTNAME)
78(0278) MPC      0           osaname1  (IP traffic)         SIU    ALL
                              4.4.3.3
```

Figure A-14. Summary OAT for One HPDT MPC with IP Traffic Entry

HPDT MPC with IPX Traffic

```
/*******************************************************************/
/*               Start of OSA Address Table for CHPID 78            */
/*******************************************************************/
/* All entries below that are preceded by 's-' indicate that the     */
/* field is settable during Put_OAT processing                       */
/*******************************************************************/
oathdr.1 = IOA_OAT_HDR                /*   Eyecatcher-Do not change */
oathdr.2 = 78                         /*   CHPID                    */
oathdr.3 = 3                          /* s-Number of entries        */
/*******************************************************************/
/* Start of OAT entry 1                                              */
/*******************************************************************/
oat.1.1 = IOA_OATENTRY                /*   Eyecatcher- Do not delete*/
oat.1.2 = All data valid              /*   Valid data indicator     */
oat.1.3 = HOSTNAME                    /*   Partition name           */
oat.1.4 = 1                           /* s-Partition number         */
oat.1.5 = 78                          /* s-Unit address             */
oat.1.6 = 0278                        /*   Device number            */
oat.1.7 = 78                          /*   Chpid                    */
oat.1.8 = 0078                        /*   Control unit number      */
oat.1.9 = configured                  /*   Channel state            */
oat.1.10 = yes                        /*   Device accessible        */
oat.1.11 = 2                          /*   Group size               */
oat.1.12 = MPC                        /* s-Entry type. One of:      */
                                      /*     Passthru               */
                                      /*     SNA                    */
                                      /*     subchannel             */
                                      /*     MPC                    */
                                      /*     Unassigned             */
oat.1.13 = started and in use         /*  Entry descriptor          */
/*******************************************************************/
/* MPC with IPX traffic extended entry example                       */
/*******************************************************************/
mpc.1.1 = PORT_NUMBER                 /* s-Port number (1 digit)    */
mpc.1.2 = osaname2                    /* s-OSA name (up to 8 chars) */
                                      /*    a-z, 0-9, @, #, $ valid */
                                      /*    0-9 not valid 1st char  */
                                      /*    0 not valid last char   */
mpc.1.3 = Ethernet 802.2              /*   IPX frame type 1         */
mpc.1.4 = Ethernet II                 /*   IPX frame type 2         */
mpc.1.5 = Ethernet SNAP               /*   IPX frame type 3         */
/*******************************************************************
```

Figure A-15. One OAT entry for HPDT MPC mode with IPX Traffic

Corresponding Summary View

```
/*********************************************************************
* UA(Dev) Mode     Port     Entry specific information      Entry  Valid
*********************************************************************
                              LP 1 (HOSTNAME)
78(0278) MPC         0        osaname2  (IPX traffic)       SIU     ALL
                              Ethernet 802.2
                              Ethernet II
                              Ethernet SNAP
```

Figure A-16. Summary OAT For One HPDT MPC with IPX Traffic Entry

HPDT ATM Native

```
* This OAT template is a sample for setting up HPDT ATM Native on an
* OSA-2 ATM CHPID.
*
* 1) Change the LP numbers to match your installation.
*    The LP number must precede all entries for that LP.
* 2) Change the unit addresses. UAs must be even numbers for MPC entries.
*    The odd entries are automatically added by the CHPID.
* 3) The mode must be mpc (for this example).
* 4) The port number must be 00 for HPDT ATM Native.
* 5) Specify the OSA name for all MPC entries.  It is a
*      required field.  The following rules for OSA name apply:
*    a) a-z, 0-9, @, #, $ are valid
*    b) 0-9 not valid 1st character
*    c) 0 not valid last character
* 8) Add additional MPC entries as required for each LP you are
*      configuring.
*************************************************************
*UA  Mode      Port       OSA Name
*************************************************************
                                LP 5
00  mpc        00         OSANAME1
*************************************************************
                                LP 7
00  mpc        00         OSANAME2
02  mpc        00         NAMEOSA3
```

Figure A-17. Summary OAT for Setting up HPDT ATM Native on an OSA-2 ATM CHPID

Appendix B. OSA/SF Commands For OS/390 and TSO

This section provides information for using a General-use programming interface.

Enter OSA/SF commands from an MVS Ready prompt or TSO command line. All OSA/SF commands are also available from the the OS/2 OSA/SF GUI.

Attention

Enter **IOACMD.EXEC** with all OSA/SF commands. See step 4 on page 2-5 for the fully qualified name that was used to set up IOACMD.EXEC.

Example:

EX 'IOACMD.EXEC' 'CLEAR_DEBUG' EXEC

To have the EXEC prompt you for the commands, just enter: **EX 'IOACMD.EXEC' EXEC**

General OSA/SF Commands

The following commands are used for all OSA modes.

- CLEAR_DEBUG
- CONFIG_OSA
- GET_CONFIG
- GET_DEBUG
- GET_OAT
- INSTALL
- PUT_OAT
- QUERY
- SET_PARM
- START_MANAGING
- STOP_MANAGING
- SYNCHRONIZE

LANRES or API OSA/SF Commands

The following commands are only used with LANRES or the API.

- DELETE_FILE
- GET_CONSOLE_SCREEN
- GET_FILE
- LIST_FILE
- PUT_FILE

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- REMOVE_DIRECTORY
- SEND_COMMAND

CLEAR_DEBUG | CLR | CLR_DEBUG | CLEAR

The Clear Debug command clears the contents of the current message log maintained by the OSA/SF. The message log contains a history of all commands issued, responses generated, informational messages, and any errors that have occurred since the Clear Debug command was last issued.

Note: IBM Service may require the contents of the message log to perform problem isolation; therefore, do not use this command unless you are sure you want to clear the current contents of the message log.

Syntax

```
►►──CLEAR_DEBUG──────────────────────────────────────────────────────────►◄
```

Operands

None
This command requires no parameters.

Results

None
No response is displayed from the command.

Limitations

If RACF is installed, Clear Debug requires a minimum of CONTROL authority. The RACF authority you specify pertains to the appropriate RACF facility as defined in the OSA Planning Guide.

This command does not require an OSA (CHPID) number to be entered; therefore it does not matter what OSA/SF image is managing the OSAs.

Example

EX 'IOACMD.EXEC' 'CLEAR_DEBUG' EXEC

Clears the message log.

CONFIG_OSA

This command will only work if the PTF for APAR #OW33393 is installed. Use the Configure OSA command to customize any OSA-2 feature. The command will prompt you for the required input. See Chapter 5 on page 5-1 for a complete list of instructions that are used with the command.

Syntax

```
►►──CONFIG_OSA──────────────────────────────────────────────────────────►◄
```

Operands

None
This command requires no parameters. It will prompt you for input.

Results

Prompting
The command prompts you for input based on the task you want to do.

Limitations

If RACF is installed, Configure OSA requires a minimum of CONTROL authority. The RACF authority you specify pertains to the appropriate RACF facility as defined in the OSA Planning Guide.

You must enter this command from the OSA/SF image managing the OSA.

The Configure OSA command will only work if the PTF for APAR #OW33393 is installed.

Example

EX 'IOACMD.EXEC' 'CONFIG_OSA' EXEC

The command will prompt you for the required input based on the OSA-2 feature and what mode of operation you want to install.

DELETE_FILE | DELETE

Attention

This command is only valid for LANRES mode.

Delete File removes the specified file from the disk serving function volume. Any file on the disk serving function volume can be deleted.

OSA/SF does not check for valid volumes, paths, or file names; if this data is invalid, it will be rejected by the OSA. Delete File deletes the file from the disk serving function volume but does ***not*** delete the actual data set.

When the command completes, the specified file is unavailable for use by OSA/SF. Any references to the deleted file in any configuration file must be updated. If the deleted file must be replaced, use the Install or Put File commands.

Syntax

```
►►──DELETE──chpid──OSA_path_filename──────────────────────────────────────►◄
```

Operands

CHPID
Value that indicates the hexadecimal CHPID for the command. The value is **not** entered with single quotes around it. For example, CHPID 4B should be entered as 4B, not `X'4B'`. The CHPID ***must*** be online and accessible.

OSA_path_filename
The fully qualified volume, path, and filename of the file to be deleted from the disk serving function volume.

Results

The Delete File command removes the specified file from the disk serving function volume if the command completes successfully. If the command fails, OSA/SF displays a reason message.

Limitations

If RACF is installed, Delete File requires CONTROL authority. The RACF authority you specify pertains to the appropriate RACF facility as defined in the OSA Planning Guide.

You must enter this command from the OSA/SF image managing the OSA.

Example

EX 'IOACMD.EXEC' 'DELETE_FILE 4a sys1:/abc/defg.dat' EXEC

Deletes the file “defg.dat” in volume “sys1” in subdirectory “abc” associated with CHPID “4a”.

GET_CONFIG

This command works only for an OSA-2 ATM feature. Use the Get Config command to get the configuration file (ATM parameters) in a format that can be used as the IOAATM2 input with job IOAINATM. This is helpful when you have an existing OSA and you want to copy that configuration to the new OSA.

Syntax

```
►►──GET_CONFIG──chpid──fully_qualified_MVS_dataset_name──────────────────────────►◄
```

Operands

chpid
Value that indicates the hexadecimal OSA number for the command. The value is **not** entered with single quotes around it. For example, CHPID 4B should be entered as 4B, not `X'4B'`.

This field is required.

fully_qualified_MVS_dataset_name
The data set name of the MVS data set used to store the command's results.

Results

The current configuration file is stored into the specified library for the OSA (CHPID) you specify.

Limitations

If RACF is installed, Get Config requires READ authority. The RACF authority you specify pertains to the appropriate RACF facility as defined in the OSA Planning Guide.

You must enter this command from the OSA/SF image managing the OSA.

Example

If the IOACMD job was set up as recommended, submit the job and you will be prompted to enter a command.

Including the following line in the JCL will also work.

```
EX 'IOACMD.EXEC' 'GET_CONFIG dataset1.config' EXEC
```

GET_CONSOLE_SCREEN

Attention

This command is only valid for LANRES mode.

Get Console Screen returns the contents of the screen image from the *virtual* console associated with the OSA mode running on the OSA device. There are no virtual console screens on the OSA device for Passthru or SNA modes.

Use the Query command to find the screen number associated with the OSA.

Syntax

```
►►──GET_CONSole_screen──chpid──┬──────────┬──Screen_number──────────────────────►
                               └─REPLACE──┘
►──fully_qualified_MVS_dataset_name──────────────────────────────────────────────►◄
```

Operands

CHPID

Value that indicates the hexadecimal CHPID for the command. The value is **not** entered with single quotes around it. For example, CHPID 4B should be entered as 4B, not `X'4B'`. ONE_CHANNEL must be entered with the CHPID. The CHPID ***must*** be online and accessible.

Replace

Used when the target MVS data set already exists and must be overwritten with the command results.

Screen_number

The hexadecimal value of the screen to which the command is issued.

Use the Query command to find the screen number associated with the OSA.

fully_qualified_MVS_dataset_name

The data set name of the MVS data set used to store the command's results.

Results

The Get Console Screen command returns the screen image as an 80 by 25 character array into the MVS data set specified by MVS data set.

Limitations

If RACF is installed, Get Console Screen requires READ authority. The RACF authority you specify pertains to the appropriate RACF facility as defined in the OSA Planning Guide.

Example

EX 'IOACMD.EXEC' 'GET_CONS 4a replace 3ab42963 dataset1.screen' EXEC

Gets the screen for the virtual console numbered 3AB42963 associated with CHPID 4A and puts it into a data set named “dataset1.screen”. If the data set exists, it will be replaced.

GET_DEBUG

Use this command to gather information to help IBM debug any problems that are reported. You will be directed to issue this command by IBM support personnel when appropriate. Most of the information returned is not in a readable format.

A MVS data set name must be specified. If the data set already exists, specify the Replace parameter. Only sequential data sets can be used but they do not need to be pre-allocated.

To request the newest, most recent portion of the OSA/SF message log, set the optional *number of entries* field to a value from 1 to *n*, where *n* can be a maximum of 65,535. A value of 65,535 is the same as ALL. If no value is specified for the *number of entries*, the entire message log will be read because ALL is the default.

If you specify a number for the *number of entries* field, the data is returned starting from the most recent timed stamped entry and going back the number of entries you specify. The trace table option does not use a *number of entries* field; if one is specified, it is ignored.

If an error occurs, no data is returned and a failing message is displayed.

Syntax

```
►►──GET_DEBUG──┬─MESSAGE_LOG──┬──────────────┬──┬──────────────┬──►
               │              └─number of entries─┘  │  └─REPLACE─┘
               ├─TRACE_TABLE──────────────────────┤
               └─┬─SNA_MEMORY_DUMP──────────────┬─chpid─┘
                 ├─SNA_TRACE────────────────────┤
                 ├─SNA_MESSAGE_LOG──────────────┤
                 ├─ATM_TRACE──┬──────────────┬─┤
                 │            └─buffer number─┘ │
                 ├─ATM_MEMORY_DUMP──────────────┤
                 └─CONFIG_INFO──────────────────┘
►──fully_qualified_MVS_dataset_name──────────────────────────────────►◄
```

Operands

MESSAGE_LOG
The OSA/SF message log contains information on every command issued, command returned, informational messages, and any errors that occurred since the last Clear Debug command was issued that cleared the message log.

TRACE_TABLE
The OSA/SF trace table contains up to the last 8000 trace points that the OSA/SF code executed. When the table is full the oldest entries are overwritten.

SNA_MEMORY_DUMP
The OSA memory dump contains the image of storage on the OSA device. Specify the CHPID (OSA) number with this parameter.

SNA_TRACE
The SNA trace buffer is read from the OSA device when the OSA is configured for SNA mode. Specify the CHPID (OSA) number with this parameter.

SNA_MESSAGE_LOG
The SNA message log is read from the OSA device when the OSA is configured for SNA mode. Specify the CHPID (OSA) number with this parameter.

ATM_TRACE
The ATM trace buffer is read from the OSA device when the OSA is configured for Passthru or SNA with ATM. Specify the CHPID (OSA) number with this parameter. The buffer number is not required and will default to zero. There are eight buffers, 0-7.

ATM_Memory_Dump
The ATM memory dump is read from an OSA, approximately 2 Mb when the OSA is configured for passthru or SNA with ATM. Specify the CHPID (OSA) number with this parameter.

CONFIG_INFO
The output will be the entire configuration file read from the OSA. This can be used by IBM for failure analysis.

CHPID
Represents the OSA number.

REPLACE
Use REPLACE to overwrite an existing MVS data set. If the data set you specify already exists and you do not specify replace, the data set will not be written and a message is displayed indicating to use the REPLACE option.

number of entries
Specifies the number of entries that should be returned for the OSA/SF message log. Omitting this field causes the entire message log to be returned.

Note: This parameter is only valid when requesting the message log. If used for any others, it is ignored.

fully_qualified_MVS_dataset_name
The name of the MVS data set where you want to store the returned data.

File mode is optional.

Results

The Get Debug command returns either the contents of the OSA/SF message log or trace table, the OSA SNA trace or message log, or the OSA ATM trace or memory dump. These commands are also available on the OS2 OSA/SF GUI.

Limitations

If RACF is installed, Get Debug requires READ authority. The RACF authority you specify pertains to the appropriate RACF facility as defined in the OSA Planning Guide.

You must enter this command from the OSA/SF image managing the OSA. If the REPLACE option is specified, UPDATE authority is required.

Examples

EX 'IOACMD.EXEC' 'GET_DEBUG TRACE_TABLE REPLACE dataset1.trace' EXEC

Gets the trace table and puts it into a data set called “dataset1.trace”. If the data set already exists, it is overwritten.

EX 'IOACMD.EXEC' 'GET_DEBUG MESSAGE_LOG 20 DATASET2.LOG' EXEC

Gets the 20 most current entries from the message log and puts them in a dataset called DATASET2.LOG.

Gets the 20 most current entries from the message log and puts them in the file called OSASFMSG LOG.

GET_FILE

Attention

This command is only valid for LANRES mode and the API.

The GET_FILE command can be used for either of the following:

- To get a file from an OSA disk serving function and place the data into an MVS data set. This is valid only for OSAs configured for LANRES mode.
- To get data from an MVS data set and send it to the API.

Use the GET_FILE command with either of the following syntax diagrams:

Syntax

```
►►─GET_FILE─chpid──┬──────────┬──┬──────────────────────────────┬──────────────►
                   └─REPLACE──┘  └─fully_qualified_MVS_dataset_name─┘
►─OSA_path_filename──────────────────────────────────────────────────────────►◄
```

Syntax

```
►►─GET_FILE─MVS_TO_API──┬──────────────────────────────┬──────────────────────►◄
                        └─fully_qualified_MVS_dataset_name─┘
```

Operands

CHPID
Value that indicates the hexadecimal CHPID for the command. The value is **not** entered with single quotes around it. For example, CHPID 4B should be entered as 4B, not `X'4B'`. The CHPID ***must*** be online and accessible.

REPLACE
Used when the destination is an MVS data set that already exists and should be overwritten by this command.

fully_qualified_MVS_dataset_name
The name of the MVS data set of where the file will be stored when retrieved from the disk serving function *or* the name of the MVS data set that will be retrieved and sent to the API. If the data set name is not specified the output is returned to the display.

OSA_path_filename
The fully qualified volume, path and filename of the file to be retrieved from the disk serving function volume.

MVS_TO_API
This operand is only required when getting data from MVS to the API. You cannot enter this command from the TSO command line. The data from MVS is appended to the control block. See the Get File control block structure in the Appendix C. When the operand is not included, the command defaults to getting a file from the OSA disk server and sending it to an MVS data set.

Results

The Get File command gets the specified file from the disk serving function and writes it to the specified data set.

Limitations

If RACF is installed, Get File requires UPDATE authority. If the REPLACE option is specified, CONTROL authority is required. The RACF authority you specify pertains to the appropriate RACF facility as defined in the OSA planning guide.

You must enter this command from the OSA/SF image managing the OSA.

Example

EX 'IOACMD.EXEC' 'GET_FILE 4a getfile.data sys1:abc/defg.dat' EXEC

Gets the data in file defg.dat in volume “sys1” in directory “abc” and places it into MVS data set “getfile.data”.

GET_OSA_ADDRESS_TABLE | GET_OAT | GET_OSA | GET_TABLE

Use the Get OSA Address Table command to obtain the OSA address table for the specified CHPID (OSA) number. The output returned can be modified and used as input for the Put OAT Address Table command. See Appendix A on page A-1 for examples of the OAT entries. The Summary option is provided to make it easier for you to work with the OAT.

Syntax

```
►►─GET_OAT─chpid──┬──────────┬──┬──────────┬─fully_qualified_MVS_dataset_name──────►◄
                  └─REPLACE──┘  └─SUMMARY──┘
```

Operands

chpid
Value that indicates the hexadecimal OSA number for the command. The value is **not** entered with single quotes around it. For example, CHPID 4B should be entered as 4B, not `X'4B'`.

This field is required.

REPLACE
This indicator is used to overwrite the MVS data set if the data set exists.

SUMMARY
This option will return the OAT in a summary format. You can use the summary format with the PUT OAT command.

fully_qualified_MVS_dataset_name
This specifies the data set name where the OSA address table is to be stored. File mode is optional.

Note: Only sequential data sets can be used but they do not need to be preallocated by the user.

This field is required.

Results

The **GET_OAT** command gets the OSA address table for the CHPID specified. A data set **must** be specified. The address table returned is placed into this data set The data set created, along with an explanation of all the fields, is shown in Appendix A on page A-1.

Limitations

If RACF is installed, this command requires READ authority. The RACF authority you specify pertains to the appropriate RACF facility as defined in the OSA Planning Guide.

The copy of OSA/SF issuing this command does NOT need to be managing the CHPID specified.

Example

EX 'IOACMD.EXEC' 'GET_OAT 4C REPLACE CHAN4C.DAT' EXEC

Gets the OSA address table for CHPID 4C and puts it into data set “CHAN4C.DAT”. If the data set already exists, it is overwritten.

Attention

When using the Get OSA Address Table command, entries in the OAT will always be returned as an even and odd pair for passthru devices or MPC. One entry is returned for SNA or subchannel (LANRES) devices. Figure A-4 on page A-12 shows only the even entry for passthru device 402. Another OAT entry would be returned for device 403.

INSTALL

The install command installs the proper files, OAT, OSA mode (image), and port parameters on the specified OSA (CHPID).

The Install task is disruptive to all devices using the OSA (CHPID). The names of the files to be installed are contained in the IOACFG data set specified in the STARTUP.PROFILE. See step 3 on page 2-5 for the setup and name of the configuration data set.

The install command is used for initially customizing the OSA and after an OSA device is replaced to install the existing configuration from OSA/SF on to the new card. See “Service for an OSA Hardware Replacement” on page 4-38 for instructions when an OSA device is replaced.

Syntax

```
►►──INSTALL──chpid──┬──────────┬──────────────────────────────────────►◄
                    └──FORCE───┘
```

Operands

CHPID
Value that indicates the hexadecimal CHPID for the command. The value is **not** entered with single quotes around it. For example, CHPID 4B should be entered as 4B, not X'4B'. The CHPID ***must*** be online and accessible.

FORCE
Causes the OSA mode (image) to be loaded, even if it already exists on the card.

Results

The Install command returns a successful completion status if all the data sets were installed properly, the OAT was successfully set, and the CHPID is operational.

If any of the data sets listed in the configuration data set could not be installed properly or if any of the OAT entries fails, a list of failures is returned.

Limitations

If RACF is installed, this command requires CONTROL authority. The RACF authority you specify pertains to the appropriate RACF facility as defined in the OSA Planning Guide.

This command must be entered from the OSA/SF image managing the OSA.

Example

EX 'IOACMD.EXEC' 'INSTALL 7C' EXEC

Installs the specified files adn OSA mode (image) onto CHPID 7C. If the OSA mode (image) is already on the OSA, it is not reloaded.

LIST_FILE

Attention

This command is only valid for LANRES mode.

The List File command returns information about all the files in the OSA OS volume/pathname specified. The format of the data returned is similar to a DOS “dir” command showing the filename, extension size, and date last changed. The volume and path information is specified in the command and is not repeated in the command's output.

Syntax

```
►►──LIST_FILE──chpid──┬──────────┬──┬──────────────────────────────┬──────────────────►
                      └─REPLACE──┘  └─fully_qualified_MVS_dataset_name─┘
►──OSA_path_filename──────────────────────────────────────────────────────────────────►◄
```

Operands

CHPID
Value that indicates the hexadecimal CHPID for the command. The value is **not** entered with single quotes around it. For example, CHPID 4B should be entered as 4B, not `X'4B'`. The CHPID ***must*** be online and accessible.

REPLACE
Used when the MVS data set already exists and must be overwritten with the command results.

fully_qualified_MVS_dataset_name
The name of the MVS data set used to store the data obtained. This value is optional. If not specified, the data is returned to the screen.

OSA_path_filename
The fully qualified volume and path of the list of files to be retrieved from the disk serving function volume.

This is a required field.

Results

The List File command returns the contents of the OSA volume/pathname specified.

Limitations

If RACF is installed, List File requires UPDATE authority. The RACF authority you specify pertains to the appropriate RACF facility as defined in the OSA Planning Guide.

This command must be entered from the OSA/SF image managing the OSA.

Example

EX 'IOACMD.EXEC' 'LIST_FILE 3e REPLACE listfile.output sys:abc/efg' EXEC

Lists all the files in the “sys” volume, that are in directory “abc/efg” for CHPID “3e”. The results are placed in the MVS data set “listfile.output”. If the data set already exists, it is replaced.

PUT_FILE

Attention

This command is only valid for LANRES mode or the API.

The PUT_FILE command can be used for either of the following:

- To put a file into the OSA disk serving function volume from an MVS data set. Only LANRES mode uses a disk serving function.
- To put a file into an MVS data set from the API.

Note: When using the PUT_FILE command to put data into the disk serving function volume and the data is for an OSA mode, the OSA CHPID must be varied on and off to activate the OSA.

Use the PUT_FILE command with either of the following syntax diagrams:

Syntax

```
►►──PUT_FILE──chpid──fully_qualified_MVS_dataset_name──OSA/volume/path/filename──────►◄
```

Syntax

```
►►──PUT_FILE──API_TO_MVS──┬──────────┬──fully_qualified_MVS_dataset_name──data──────►◄
                          └─REPLACE──┘
```

Operands

CHPID
Value that indicates the hexadecimal CHPID for the command. The value is **not** entered with single quotes around it. For example, CHPID 4B should be entered as 4B, not `X'4B'`. The CHPID ***must*** be online and accessible.

fully_qualified_MVS_dataset_name
The name of the MVS data set used for this command.

OSA/volume/path/filename
The fully qualified volume, path and filename of the file to be created using data in the specified data set.

API_TO_MVS
Required parameter to put data into the MVS data set from the API. If not specified, this command defaults to MVS_to_OSA.

REPLACE
This operand is only used when putting data from the API to MVS. When included, the data sent from the API replaces the existing MVS data set.

data
User data. OSA/SF does not check the data format.

Results

The Put File command takes the data from the specified MVS data set and places it in the file specified for the OSA OS file. Or it takes data from the API and puts it into the specified MVS data set.

Limitations

If RACF is installed, Put File requires CONTROL authority. The RACF authority you specify pertains to the appropriate RACF facility as defined in the OSA Planning Guide.

You must enter this command from the OSA/SF image managing the OSA.

Example

EX 'IOACMD.EXEC' 'PUT_FILE 4b trace.table sys1:abc\efg.hjk' EXEC

Takes the data in the data set named “trace.table” and puts it onto the OSA for CHPID “4b” in volume “sys1” in path “abc” into file “efg.hjk”.

PUT_OSA_ADDRESS_TABLE | PUT_OAT | PUT_OSA | PUT_TABLE

Use the Put OAT Address Table command to change the current OAT settings on the specified OSA (CHPID). The input data set should be in the same format that was returned from the Get OSA Address Table command. See Appendix A on page A-1 for examples of the OAT entries.

When you issue the Put OAT command, you will be asked if the input data should replace all the current entries. Use the following as a guideline to determine how to answer the question:

- No — If you are adding only a few entries and your input data set contains only these new entries. The current configuration remains on the OSA plus the new entries in the input data set will be added to this configuration (current and updates).
- Yes — If your input data set contains all the entries (current, new, or some were deleted) that are required for your configuration for this OSA. The configuration on the OSA will be completely replaced with the entries from the input data set (full replace).

Attention

To activate a new OAT, you must configure the OSA (CHPID) offline and then online to all logical partitions regardless of the operating system running int the logical partition.

Syntax

```
►►──PUT_OAT──chpid──fully_qualified_MVS_dataset_name──┬──────────┬──┬──────────────┬──►◄
                                                      └─FORCE────┘  └─NEW_TABLE────┘
```

Operands

CHPID

Value that indicates the hexadecimal CHPID (OSA) for the command. The value is **not** entered with single quotes around it. For example, CHPID 4B should be entered as 4B, not `X'4B'`.

This is a required field.

fully_qualified_MVS_dataset_name

Name of the data set containing the new address table entries. This data set must be available to the user ID issuing the command. Any entries that match those already on the card are ignored, only new entries are written.

This is a required field.

FORCE

This indicator is used in Passthru mode when all the changes to the address table **must** be done. This means that if an entry is in use when this command is issued, the entry will be updated even if it stops data transfer.

Notes:

1. Use the FORCE option with caution because unpredictable results may occur.
2. In all modes except Passthru, this indicator is ignored if the CHPID is in use.

This is an optional field.

NEW_TABLE
This causes *all* the current entries to be replaced on the OSA.

Attention

Use this option only if your input data set contains all the entries (current, new, or some were deleted) that are required for your configuration for this OSA. The configuration on the OSA will be completely replaced with the entries from the input data set (full replace).

Results

When the **Put OAT ADDRESS TABLE** command completes successfully, all the address table entries contained in the input file have been successfully set up on the OSA.

Attention

The OSA (CHPID) must be configured offline and online to activate the new OSA.

When the command is not successful, a display showing the results (success or failure) for each address table entry attempted is shown.

Limitations

If RACF is installed, this command requires UPDATE authority. If the FORCE indicator is set, this command requires CONTROL authority. The RACF authority you specify pertains to the appropriate RACF facility as defined in the OSA Planning Guide.

You must enter this command from the OSA/SF image managing the OSA.

Examples

EX 'IOACMD.EXEC' 'PUT_OAT 4A CHAN4A.DAT' EXEC

Puts the address table entries specified in the input data set CHAN4A.DAT to OSA CHPID 4A. Any entries that are found in data set CHAN4A.DAT and are active on the OSA are not replaced.

EX 'IOACMD.EXEC' 'PUT_OAT 24 CHAN24.DAT FORCE' EXEC

Puts the address table entries specified in the input file CHAN24.DAT to the OSA for CHPID 24. Any Passthru entries that are found to be active on the OSA are stopped and the address table entry is updated. You should then re-start any applications that were running on the changed address table entries.

EX 'IOACMD.EXEC' 'PUT_OAT 74 CHPID74.OAT NEW_TABLE' EXEC

All entries in CHPID74.OAT replace all entries in the OAT for OSA 74.

QUERY

Use the query command to obtain information about all or parts of the OSA, OSA/SF, and OSA modes running on the OSA.

Syntax

Attention: The following abbreviations are used in the syntax diagram:

- port - port number
- sce - source
- dst - destination

```
►►──QUERY──┬─HOST──────────────────────────────────────────────────────────────────────►
           ├─ONE_CHANNEL chpid──┬──────────────────────────┬──────────────────────────┤
           │                    │─One_port──port_number────│                          │
           │                    │─All_ports────────────────│                          │
           │                    └─No_ports─────────────────┘                          │
           ├─All_CHANNELS──────────────────────────────────────────────────────────────┤
           ├─OSA_SF────────────────────────────────────────────────────────────────────┤
           ├─ATM_INFO chpid────────────────────────────────────────────────────────────┤
           ├─IPX_INFO chpid────────────────────────────────────────────────────────────┤
           └─SNA_INFO chpid──┬─Port_View──────────────────────────────────────────────┐
                             ├─Port_ Details──port────────────────────────────────────┤
                             ├─SAP_View──port─────────────────────────────────────────┤
                             ├─SAP_Details──port──sce_SAP─────────────────────────────┤
                             ├─NULL_SAP_Details──port─────────────────────────────────┤
                             ├─Connection_View──port──sce_SAP─────────────────────────┤
                             ├─Connection_Details──port──sce_SAP──dst_SAP──dst_MAC────┤
                             ├─Clear_SAP_Details──port──sce_SAP───────────────────────┤
                             ├─Clear_NULL_SAP_Details──port───────────────────────────┤
                             └─Clear_Connection_Details──port──sce_SAP──dst_SAP──dst_MAC┘

►──┬──────────┬──┬──────────┬──┬──────────────────────────┬──────────────────────────►
   └─REPLACE──┘  └─VOLSER───┘  └─device_information_requested─┘
►──fully_qualified_MVS_dataset_name──────────────────────────────────────────────────►◄
```

Operands

Host
Returns all information about OSA/SF, CHPIDs, ports, OSA modes, and devices.

One_channel
Returns information related to one CHPID (OSA). You must enter **ONE_CHANNEL** with the CHPID number. If the OSA CHPID is configured for LANRES mode the screen number of the virtual console will also be returned.

All_CHANNELS
Returns information related to all CHPIDs including OSA mode information. Port information is returned if the appropriate port target data is specified; device information is returned if device_information_requested is specified. If the OSA CHPID is configured for LANRES mode, the screen number of the virtual console will also be returned.

OSA_SF
Returns only information related to OSA/SF.

SNA_Info
Used for SNA network management information. See the examples at the end of this section.

ATM_Info
Use this option to query the ATM connection data. Specify a CHPID and a data set name with this option.

IPX_Info
Use this option to query the IPX connection data. Specify a CHPID and a data set name with this option.

CHPID
This value indicates the hexadecimal CHPID for the command. The value is **not** entered with single quotes around it. For example, CHPID 4B should be entered as 4B, not `X'4B'`.

One_port
Returns information related to the port specified by **port-number**.

All_ports
Returns information related to all ports on the CHPID specified by **CHPID**.

No_ports
Causes no port information to be returned.

Port_number
Specifies a specific port number on the CHPID specified by **CHPID**. Ports are numbered from 0 to (n-1), where *n* is the number of physical ports on the CHPID.

REPLACE
Specify to replace the existing MVS data set.

Device_information_requested
Returns information about all the devices on the specified CHPID including the entire OAT.

VOLSER
You can specify the volume serial number. If nothing is specified, the system default is used. If the data set already exists, the VOLSER is ignored.

fully_qualified_MVS_dataset_name
The name of the MVS data set used to store the requested information. This is required.

File mode is optional.

Limitations

If RACF is installed, Query requires READ authority. The RACF authority you specify pertains to the appropriate RACF facility as defined in the OSA Planning Guide.

SNA_INFO Example

EX 'IOACMD.EXEC' 'QUERY ONE_CHANNEL 44 ONE_PORT 1 USER4.QUERY.OUTPUT' EXEC

Returns all the information for port 1 on CHPID 44 and puts it in dataset “USER4.QUERY.OUTPUT”.

Query the port view for CHPID 64 and put it in dataset "USER4.QUERY.OUTPUT".

```
EX 'IOACMD.EXEC' 'QUERY SNA_INFO 64 PORT_VIEW USER4.QUERY.OUTPUT' EXEC
```

Query the port details for CHPID 7C and show the data on the display.

```
EX 'IOACMD.EXEC' 'QUERY SNA_INFO 7C PORT_DETAIL 0' EXEC
```

Query the SAP view for CHPID 7C, port 1 and put the dataset in "USER4.QUERY.OUTPUT".

```
EX 'IOACMD.EXEC' 'QUERY SNA_INFO 7C SAP_VIEW 1 USER4.QUERY.OUTPUT' EXEC
```

Query the SAP details for CHPID 7C, port 1, SAP C and show the data on the display.

```
EX 'IOACMD.EXEC' 'QUERY SNA_INFO 7C SAP_DETAIL 1 C'
```

Query the NULL SAP details for CHPID 38, port 1 and show the data on the display.

```
EX 'IOACMD.EXEC' 'QUERY SNA_INFO 38 NULL_SAP_DETAIL 1'
```

Query the connection view for CHPID 7C, port 1, SAP 8 and show the data on the display.

```
EX 'IOACMD.EXEC' 'QUERY SNA_INFO 7C CONNECT_VIEW 1 8'
```

Query the connection details for CHPID 7C, port 1, source SAP 8, destination SAP 14, destination MAC 123456789012 and show the data on the display.

```
EX 'IOACMD.EXEC' 'QUERY SNA_INFO 7C CONNECT_DETAIL 1 8 14 123456789012'
```

Clear the SAP details for CHPID 68, port 1, SAP 4.

```
EX 'IOACMD.EXEC' 'QUERY SNA_INFO 68 CLEAR_SAP_DETAIL 1 4'
```

Clear the connection details for CHPID 20, port 0, source SAP 4, destination SAP 1C, destination MAC 123456789012 and show the data on the display.

```
EX 'IOACMD.EXEC' 'QUERY SNA_INFO 20 CLEAR_ CONNECT_DETAIL 0 4 1C 123456789012'
```

REMOVE_DIRECTORY

Attention

This command is only valid for LANRES mode.

The Remove Directory command is used to remove an empty directory from the disk serving function volume. The directory removed ***must*** be completely empty.

Syntax

```
►►──REMOVE_DIRectory──chpid──OSA_volume/path/directory──────────────────────►◄
```

Operands

CHPID
Value that indicates the hexadecimal CHPID for the command. The value is **not** entered with single quotes around it. For example, CHPID 4B should be entered as 4B, not X'4B'. The CHPID ***must*** be online and accessible.

OSA_volume/path/directory
This is the fully qualified volume, path and directory name to be removed from the disk serving function volume. This directory ***must*** be empty.

Results

The Remove Directory command removes the directory specified.

Limitations

If RACF is installed, Remove Directory requires CONTROL authority. The RACF authority you specify pertains to the appropriate RACF facility as defined in the OSA Planning Guide.

You must enter this command from the OSA/SF image managing the OSA.

Example

EX 'IOACMD.EXEC' 'REMOVE_DIRECTORY 44 sys:path1\path2\dirname' EXEC

Removes the directory “dirname” from volume “sys” on path “path1\path2” on CHPID 44.

SEND_COMMAND

Attention

This command is only valid for LANRES mode.

The SEND_COMMAND enables the user to issue a command to the OSA mode running on the OSA device.

The Down, Unload, and Unbind commands stop any operations in progress on the OSA device and require that the **Force** indicator be set. OSA/SF waits 10 seconds after issuing the command and then returns the contents of the screen where the command was issued. If the command required more than 10 seconds to complete, use the Get Console Screen command to check for command completion. See B-7 for the Get Console command description.

Note: The **FORCE** option is also required for the **DISMOUNT** command.

Syntax

```
►►─SEND_COMMAND─chpid─screen_number─┬──────┬─┬─────────┬──────────────────────►
                                    └FORCE─┘ └REPLACE─┘
►─fully_qualified_MVS_dataset_name─command_to_issue──────────────────────────►◄
```

Operands

CHPID
Value that indicates the hexadecimal CHPID for the command. The value is **not** entered with single quotes around it. For example, CHPID 4B should be entered as 4B, not `X'4B'`. The CHPID ***must*** be online and accessible.

screen_number
The screen number of the screen where the command is to be issued. The screen number can be obtained using the Query command.

FORCE
An optional indicator used when the Command_to_issue is either Down, Unload, Unbind, or Dismount. This causes the command to be issued regardless of the state of the OSA mode.

REPLACE
Use this indicator to overwrite the MVS data set specified by MVS data set if the data set already exists.

Command_to_issue
The following commands are valid:

- Bind - Links the OSA LAN drivers to a communication protocol.
- Unbind - Removes a communication protocol from the OSA LAN driver.
- Load - Links modules to the operating system.
- Unload - Unloads a loadable module that was previously loaded with the LOAD command. When the module is unloaded, all resources are returned to the operating system.
- Down - Ensures data integrity by writing all cache buffers to disk, closing all files, and updating the appropriate Directory and File Allocation Tables.

- Mount - Makes a volume available to your users. You can mount and dismount one or all volumes while the file server is running.
- Dismount - Makes a volume unavailable to users. This allows you to maintain or repair the volume and to upgrade disk drivers while the file server is up.
- Config - Can be used to display the following:
  - The file server name
  - The internal network number of the file server
  - The loaded LAN drivers
  - The hardware settings on the OSA
  - The node (station) addresses of the OSA
  - The communication protocol bound to the OSA
  - The network number of the cabling scheme for OSA
  - The frame type assigned to OSA
  - The board name assigned
- Modules - Lists all the running NLMs for the OSA
- Sendkey - Used to respond to any application screen requests; the valid entries are:
  - A single character
  - Blank
  - Enter
  - Escape

Results

The SEND_COMMAND issues the command specified, and returns a full screen in the specified data set.

Limitations

If RACF is installed, Send Command requires UPDATE authority. If the FORCE option is specified, CONTROL authority is required. The RACF authority you specify pertains to the appropriate RACF facility as defined in the OSA planning guide.

You must enter this command from the OSA/SF image managing the OSA.

Example

EX 'IOACMD.EXEC' 'SEND_COMMAND 4B 3DF61028 MVS.ds.name LOAD' EXEC

Issues the Load command to the OSA mode running on the OSA. If the command completes successfully, the contents of the OSA mode screen is returned in the data set (MVS.ds.name).

SET_PARAMETERS | SET_PARM | SET_PARMS Command

Use the Set Parameters command to set information for one of the ports on an OSA (CHPID). One parameter is set each time the command is entered. Multiple parameters cannot be set with one Set Parameters command.

Syntax

```
►►──SET_PARMS──chpid──port_number──item_to_set──value_to_set──────────────────────►◄
```

Operands

chpid

Value that indicates the hexadecimal CHPID (OSA) for the command. The value is **not** entered with single quotes around it. For example, CHPID 4B should be entered as 4B, not X'4B'. The CHPID ***must*** be online and accessible.

port_number

Port on the specified OSA (chpid) that is to be changed.

item_to_set

Enter the number on the left, or the name on the right for the following parameters. For example: enter: 1011 or FDDI_USER_DATA.

```
FDDI parameters

   1011 -OR- FDDI_USER_data
   101A -OR- FDDI_CONFIGuration_policy
   101B -OR- FDDI_CONNECTion_policy
   101D -OR- FDDI_NOTIFication_timer
   103C -OR- FDDI_STATION_action
   2020 -OR- FDDI_REQUESTED_PATHS
   2029 -OR- FDDI_MAC_ADDRESS (local MAC address)


   205F -OR- FDDI_FRAME_error_threshold
   2076 -OR- FDDI_ENABLE_unit_data
   0190 -OR- FDDI_HARDWARE_state

   n202C -OR- FDDI_GROUPn_addresses (where n specifies which of 32 addr (1-32)

  (Replace 'n' with '1' or '2' in the following parameters)
   n320D -OR- FDDI_PATHn_RING_LATENCY
   n3213 -OR- FDDI_PATHn_RESTRICTED_dialog_time_limit
   n3215 -OR- FDDI_PATHn_TVX_LOWER_bound
   n3216 -OR- FDDI_PATHn_T_MAX_LOWER_bound
   n3217 -OR- FDDI_PATHn_T_REQ_MAX_TIME_value

   (Replace 'n' with 'A' or 'B' in the following parameters)
   n400E -OR- FDDI_PORTn_DESIRED_CONNECT_policy
   n4011 -OR- FDDI_PORTn_PATHS_REQUESTED
   n4015 -OR- FDDI_PORTn_MAC_LOOP_TIME
   n401F -OR- FDDI_PORTn_XMIT_LINE_STATE
   n403A -OR- FDDI_PORTn_LINE_ERROR_RATE_CUTOFF
```

```
   n403B -OR- FDDI_PORTn_LINE_ERROR_RATE_ALARM
   n4046 -OR- FDDI_PORTn_PORT_ACTION


   6191 -OR- FDDI_INACTIVITY_timer
   6192 -OR- FDDI_RESPONSE_timer
   6193 -OR- FDDI_ACKNOWLedge_timer
   66991 -OR- FDDI_LOAD_balancing

Token Ring parameters

  0257  -OR- TR_FUNCTIONAL_ADDRess
  0258  -OR- TR_MAC_ADDRess (local MAC address)
  025F  -OR- TR_EARLY_TOKEN_RELease
  0260  -OR- TR_USER_DATA
  0290  -OR- TR_HARDWARE_state
  n025A -OR- TR_GROUPn_addresses(where n specifies which of 32 addresses)
  6291  -OR- TR_INACTIVITY_timer
  6292  -OR- TR_RESPONSE_timer
  6293  -OR- TR_ACKNOWLedge_timer
  6991  -OR- SNA_LOAD balancing


Ethernet or Fast Ethernet parameters

  n035A -OR- ETH_GROUPn_addresses(where n specifies which of 32 addresses)
  0358   -OR- ETH_MAC_Address (local MAC address)
  3383   -OR- ETH_DUPLEX control (ethernet only)
  0360  -OR- ETH_USER_DATA
  0390  -OR- ETH_HARDWARE_state
  6391  -OR- ETH_INACTIVITY_timer -OR- FETH_INACTIVITY
  6392  -OR- ETH_RESPONSE_timer -OR- FETH_RESPONCE_timer
  6393  -OR- ETH_ACKNOWLedge_timer -OR- FETH_ACKNOWledge

  4383  -OR- FETH_SPEED_mode (fast ethernet only)
  6394  -OR- FETH_MAX_I_frames_before_ack
  6395  -OR- ETH_ACKNOWLedge_timer -OR- FETH_ACKNOWledge

ATM Token ring parameters
  n0601 -OR- ATM_TR_GROUPn_addresses (where n specifies which of 32 addresses)
   0603 -OR- ATM_TR_USER_DATA
   6291 -OR- ATM_TR_INACTIVITY_timer
   6292 -OR- ATM_TR_RESPONCE_timer
   6293 -OR- ATM_TR_ACKNOWledge_timer
   6294 -OR- ATM_TR_MAX_I_frames_before_ack
   6295 -OR- ATM_TR_TRANSMIT_window
   6991 -OR- ATM_TR_SNA_LOAD_balancing

ATM Ethernet parameters
  n0701 -OR- ATM_ETH_GROUPn_addresses (where n specifies which of 32 addresses)
   0703 -OR- ATM_ETH_USER_DATA
   6391 -OR- ATM_ETH_INACTIVITY_timer
   6392 -OR- ATM_ETH_RESPONCE_timer
   6393 -OR- ATM_ETH_ACKNOWledge_timer
   6294 -OR- ATM_ETH_MAX_I_frames_before_ack
   6295 -OR- ATM_ETH_TRANSMIT_window

ATM Physical Port Parameters
```

```
    457 -OR- ATM_MAC_address (local MAC address)
    461 -OR- ATM_MANAGING_ip_addr
    463 -OR- ATM_PORT_description
ATM PVC entries
   710 -OR- ATM_PVC_entry
ATM port parameters
  573 -OR- ATM_LE_CLIENT_enable_disable
  590 -OR- ATM_ENABLE_port
  591 -OR- ATM_DISABLE_port
```

Value_to_set
The value to be set.

Results

The Set Parameter command sets the value for the item specified on the port specified.

Limitations

If RACF is installed, Set Parameter requires CONTROL authority. The RACF authority you specify pertains to the appropriate RACF facility as defined in the OSA Planning Guide.

You must enter this command from the OSA/SF image managing the OSA.

Example

EX 'IOACMD.EXEC' 'SET_PARMS 54 0 fddi_group2_addr 534259474351' EXEC

Sets the parameter second group address on FDDI CHPID 54, Port 0 to “534259474351”.

START_MANAGING

The Start Managing command results in the copy of OSA/SF running in the logical partition (LP) where this command is issued to take over management of the specified CHPID (OSA). If the CHPID is currently managed by a copy of OSA/SF running in another LP, the Force indicator must be set. When this command completes, another copy of OSA/SF running on another LP is limited to executing commands to this CHPID that do not change the CHPID's environment. To determine if a command can be used from another LP, see that command's “Limitations” section.

Note: If the OSA is configured for LANRES mode and the Force indicator is used, the disk serving function for the CHPID will continue running on the original LP. If the original LPAR is stopped, the OSA Mode operating on the CHPID will stop.

Syntax

```
►►──START_MANaging──chpid──┬──────┬──┬──────────────────┬──────────────────────►◄
                           └─FORCE─┘  └─start_disk_serving─┘
```

Operands

chpid
Value that indicates the hexadecimal CHPID for the command. The value is **not** entered with single quotes around it. For example, CHPID 4B should be entered as 4B, not X'4B'. The CHPID ***must*** be online and accessible.

FORCE
If the channel is being managed by a different copy of OSA/SF on another logical partition, this indicator must be set to “force” this copy of OSA/SF to take over the management of the specified CHPID.

start_disk_serving
This parameter is valid only for OSA LANRES mode. See step 6 on page 2-8 for more information about setting up a disk server. If start_disk_serving is specified, OSA/SF will create a disk serving function for the CHPID. If another disk server is running in another partition, this portion of the command fails. To move the disk server to the new partition, issue a Stop Managing with the Stop Disk Serving parameter. Then retry the Start Managing with the Start Disk Server parameter.

Results

The Start Managing command causes the copy of OSA/SF currently running in this partition to take over management of the specified CHPID.

Limitations

If RACF is installed, Start Managing requires UPDATE authority. If the Force option is specified, CONTROL authority is required. The RACF authority you specify pertains to the appropriate RACF facility as defined in the OSA Planning Guide.

Examples

EX 'IOACMD.EXEC' 'START_MANAGING 58 FORCE' EXEC

Starts managing CHPID 58.

EX 'IOACMD.EXEC' 'START_MANAGING 64 start_disk_serving' EXEC

Starts managing CHPID 64 and also creates a disk serving function in the partition in which this copy of OSA/SF is running, assuming that no other running copy of OSA/SF is managing this OSA.

STOP_MANAGING

The Stop Managing command stops the current OSA/SF image from managing the OSA CHPID. The command must be issued from the same LP that is currently managing the CHPID. To have another copy of OSA/SF running on another LP manage the CHPID, issue the Start Managing command to that copy of OSA/SF, using the force indicator if needed.

To stop managing a CHPID and **also** stop the OSA Mode operating on it, set the **stop_disk_serving** indicator. This terminates the disk serving function portion of the OSA device. If the disk serving function for the CHPID was running on another LP, the disk serving function for the CHPID is not stopped.

Syntax

```
►►──STOP_MANAging──chpid──┬──────────────────┬──────────────────────────────►◄
                          └─stop_disk_serving─┘
```

Operands

chpid
Value that indicates the hexadecimal CHPID for the command. The value is **not** entered with single quotes around it. For example, CHPID 4B should be entered as 4B, not X'4B'. The CHPID ***must*** be online and accessible.

stop_disk_serving
This parameter is valid only for OSA LANRES mode. See step 6 on page 2-8 for more information about setting up a disk server. Use this indicator to stop managing a CHPID and **also** terminate the disk serving function portion of the OSA device.

Results

The Stop Managing command stops management of the specified CHPID.

Limitations

If RACF is installed, Stop Managing requires UPDATE authority. The RACF authority you specify pertains to the appropriate RACF facility as defined in the OSA Planning Guide.

This command must be entered from the OSA/SF image managing the OSA. If the stop_disk_serving indicator is specified, CONTROL authority is required.

Example

EX 'IOACMD.EXEC' 'STOP_MANAGING 22 stop_disk_serving' EXEC

Stops managing CHPID 22 from this copy of OSA/SF. The disk serving function is also stopped.

Stops managing CHPID 22 from this copy of OSA/SF. If an OSA mode is running, it continues to run.

SYNCHRONIZE | SYNC

Use the synchronize command to update OSA/SF when port parameters are changed for the OSA from a source other than OSA/SF.

Attention

If an OSA device is replaced, the synchronize command is *not* required. See “Service for an OSA Hardware Replacement” on page 4-38 for instructions when an OSA device is replaced.

Syntax

```
►►──SYNCHRONIZE──chpid──────────────────────────────────────────────────────►◄
```

Operands

chpid
Hexadecimal value that indicates the OSA number. The value is not entered with single quotes around it. For example, CHPID 4B should be entered as 4B, not `X'4B'`. The CHPID must be online and accessible.

Results

Failures show which values could not be made to match and why.

Limitations

If RACF is installed, Synchronize requires UPDATE authority. The RACF authority you specify pertains to the appropriate RACF facility as defined in the OSA Planning Guide.

This command must be entered from the OSA/SF image managing the OSA.

Example

EX 'IOACMD.EXEC' 'SYNCHRONIZE 98' EXEC

Appendix C. OSA/SF Messages and Codes

Attention

- Messages that start with **IOB** are not listed in this book. Take the action that is stated explicitly or implicitly by the message text. If the severity level of an IOB message is E or S, report the message to IBM.
- Message numbers contain an *x* in this book because the character is a variable. The variable is assigned when a component detects the condition.

  Example:

  ```
  Message number:  IOAA954E
  Documented as:   IOAx954E
  ```

OSA/SF Messages

OSA/SF messages have the following format:

Example: **IOA***xnnns*

IOA The first three characters are the product identifier.

If you are looking at the OSA/SF message log, you may see a message without a message ID or with a message ID in the format IOB*xnnns*. Take the action that is stated explicitly or implicitly by the message text. If the severity level of an IOB message is E or S, report the message to IBM.

x Component that detected the condition. In some cases, more than one component can cause OSA/SF to issue the same message; therefore messages are listed in the book with the variable x. If you search for a message and the message is shown with an x, it is the correct description.

nnn 3 digit message sequence number. The messages in this book are listed numerically according to these three digits.

s The message severity, denoted by one of the following characters:

- **I** Informational, no action required
- **W** Warning, action is not required, but an error can occur later
- **A** Action, which is a severity level used only in some OSA/SF GUI messages
- **E** Error that requires action eventually
- **S** Severe or serious error that requires immediate action

- Appendix A in *Using the System/390 Open Systems Adapter Support Facility for MVS/ESA,* SC23-3872
- Appendix A in *OS/390 Open Systems Adapter Support Facility User's Guide,* SC28-1855
- A standalone softcopy book with the title *OS/390 Open Systems Adapter Support Facility Messages and Codes,* SC28-1923, which is available on the OS/390 collection kit, SK2T-6700.

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OSA/SF Reason Codes

Reason codes that are issued as part of OSA/SF messages are for IBM use only. It is for this reason that explanations of reason codes are not documented. Reason codes may be encountered in messages found in the OSA/SF message log.

In the event that a message contains a reason code, note the message number, the reason code, refer to “Reporting Problems to IBM” on page 8-6.

IOAx000I Command completed successfully

Explanation: The last command completed successfully or was sent successfully.

User Response: Look at the Command Output window on the OSA/SF OS/2 GUI for additional information.

IOAx001E Device *nnnn* incorrectly defined

Explanation: The device number *nnnn* is not defined in the hardware I/O configuration (IODF/IOCDS) with unit type=OSAD.

User Response: Verify the hardware I/O configuration to ensure the unit type of this device number is OSAD.

IOAx002E Device *nnnn* is offline

Explanation: Device *nnnn* is offline to the MVS operating system.

User Response: Vary device *nnnn* online to MVS and then retry the task you were performing.

IOAx003E Device *nnnn* incorrectly defined and is offline

Explanation: The OSAD device (UNITADD=FE) is not defined correctly in the hardware I/O configuration (IODF/IOCDS), and the device is offline.

User Response: Check the I/O configuration to ensure device *nnnn* is specified with a unit type = OSAD. Then vary the device online to MVS. Retry the task.

IOAx004E Cannot establish non-swappable environment for device *nnnn*

Explanation: An internal OSA/SF error has occurred.

User Response: Check the IODF/IOCDS for proper OSA device definitions. Refer to the planning guide for OSA IODF/IOCDS requirements. If the condition continues, see “Reporting Problems to IBM” on page 8-6.

IOAx005E Unit control block not found for device *nnnn*

Explanation: OSA/SF attempted to find device *nnnn* and could not locate the unit control block (UCB).

User Response: Verify that the device is correctly defined in the hardware I/O configuration (IODF/IOCDS). Refer to the planning guide for OSA IODF/IOCDS requirements. If the condition continues, see “Reporting Problems to IBM” on page 8-6.

IOAx006E Status Modifier received when accessing device *nnnn*

Explanation: An error occurred while trying to perform an action to the OSA device. This is probably a hardware error.

User Response: Review the MVS console log for hardware related messages. Also check the SYS1.LOGREC (EREP) data set. Attempt a retry of the last task that was being performed. If problems continue, see “Reporting Problems to IBM” on page 8-6.

IOAx007E Unable to pagefix/pagefree storage for device *nnnn*

Explanation: OSA/SF was unable to manage storage for OSA device *nnnn*. This could also be an OSA/SF internal error.

User Response: Verify that the OSA/SF region size is correct. Also check for MVS system storage constraints. If the problem persists, see "Reporting Problems to IBM" on page 8-6.

IOAx008E Unable to build CCW chain for device *nnnn*

Explanation: An internal OSA/SF error has occurred.

User Response: Verify that OSA device *nnnn* is properly defined in the hardware I/O configuration (IODF/IOCDS). If the problem persists, see "Reporting Problems to IBM" on page 8-6.

IOAx009E Failed to get the OSA lock for device *nnnn*

Explanation: An internal software lock could not be obtained in order to communicate with OSA device *nnnn*.

User Response: Verify that another OSA/SF image, the hardware system console (PCE), or the hardware management console (HMC) is not currently accessing this CHPID, then retry the command. If problem persists, see "Reporting Problems to IBM" on page 8-6.

IOAx010E Failed when testing the OSA lock for device *nnnn*

Explanation: While in the process of performing a task on the OSA, changes to the state of the OSA were detected for device number *nnnn*.

User Response: Verify that another OSA/SF image, the hardware system console (PCE), or the hardware management console (HMC) is not currently performing a task on this OSA at the same time, then retry the command.

IOAx011E Failed when freeing the OSA lock for device *nnnn*

Explanation: An internal OSA/SF error has occurred.

User Response: Stop OSA/SF. Then vary device *nnnn* offline to MVS and then online to MVS. Restart OSA/SF. If the problem persists, see "Reporting Problems to IBM" on page 8-6.

IOAx013E Failed when retrieving the screen data for device *nnnn*

Explanation: The virtual console screen for device *nnnn* could not be retrieved from the OSA device.

User Response: Look for I/O errors on the MVS system console for this OSA. If using the OSA/SF GUI, refresh the view from the Channels Tree view or Channels Detail view window. Retry the task.

IOAx014E Failed writing the keyboard buffer data for device *nnnn*

Explanation: There is a virtual console running for this OSA mode and the command input could not be written. The virtual console screen number is either not valid or was entered incorrectly.

User Response: Look for I/O errors on the MVS system console. If you are using the OSA/SF GUI, do a Refresh from the OSA Channels Tree view or Details view. If you are using TSO, enter the QUERY command with either the ONE CHANNEL or ALL CHANNEL parameter to obtain the screen number. Retry the task. If the problem persists, see "Reporting Problems to IBM" on page 8-6.

IOAx015E Communication with OSA device *nnnn* **failed (cond code=3)**

Explanation: Communication failed with the OSA device.

User Response: Look for I/O errors on the MVS system console. If using the API, check control block definitions for the OAT and the OSA mode. If you are using the OSA/SF GUI, do a Refresh from the OSA Channels Tree view or Details view. Ensure the OAT definitions and OSA mode feature are correctly defined by reviewing the configuration panels. Retry the task. If the problem persists, see "Reporting Problems to IBM" on page 8-6.

IOAx016E Communication with OSA device *nn* timed out

Explanation: Internal error

User Response: See “Reporting Problems to IBM” on page 8-6.

IOAx017E Incorrect drive specified on file I/O command for device *nnnn*

Explanation: The volume in the fully qualified OSA file name used in the command specified is incorrect or the OSA master index data set has been corrupted. Valid drive (volume) identifiers are: A:, B:, and SYS:.

User Response: Specify a valid drive in the command and retry the command. If a command was not issued, check the OSA master index data set for corruption of the SYS: parameter on each of the OSA files. The master index data set is pointed to by the IOAINX entry of the OSA/SF startup profile. The OSA/SF Startup Profile is a data set that is pointed to from the DD card IOAPROF within the OSA/SF Started Procedure (task). See Chapter 2 on page 2-1 for more information about the OSA/SF startup profile.

If the problem persists, see “Reporting Problems to IBM” on page 8-6.

IOAx018E Cannot install/initialize the interrupt handler for device *nn*

Explanation: The OSA/SF interrupt handler could not be started.

User Response: Check for I/O errors on the MVS system console. Stop OSA/SF if it is running, and then restart it. If the problem persists, see “Reporting Problems to IBM” on page 8-6.

IOAx019E Cannot start or stop managing device *nnnn*

Explanation: The OSA CHPID is currently being managed by a different OSA/SF image in another logical partition. The action that was requested can not be performed from this logical partition.

User Response: Submit the action from the logical partition running the OSA/SF image that is managing the OSA. If you don't know what image is managing the OSA, from the GUI double-click on the OSA number from the Channels Tree view and select the Statistics page.

If you want to manage the OSA from this logical partition, from the GUI select Help from the menu bar of any window, select How To, and then double-click on "Manage OSAs from a different OSA/SF logical partition". Warning: If the Disk Serving Function is running in the other LP and the Start Disk Serving option is selected with the Start Managing Force option, all I/O in process through the OSA disk serving component will be halted. Once this logical partition is managing the OSA, resubmit the action.

IOAx020E Device *nnnn* is already managed by another partition

Explanation: The OSA device *nnnn* is currently being managed by a different OSA/SF image in another logical partition.

User Response: The OSA/SF image that is managing the OSA must be used to perform the action that received this message. To locate which logical partition is managing the OSA, from the GUI double-click on this OSA number from the Channels Tree view and select the Statistics window.

If you want to manage the OSA from this partition, use the Start Managing with Force option. Warning: If the Disk Serving Function is running in the other LP and the Start Disk Serving option is selected with the Start Managing Force option, all I/O in process through the OSA disk serving component will be halted.

IOAx021E OSA TCP/IP Platform not loaded for device *nnnn*

Explanation: An attempt was made by OSA/SF to write information to the OSA. The OSA TCP/IP Platform was not initialized.

User Response: The install process is not complete as the OSA is not initialized. Ensure the install process completed successfully. Initialize the TCP/IP platform on the OSA; that is, configure the OSA CHPID offline to MVS (CF CHP(nn),OFFLINE) in all logical partitions and then back online to MVS (CF CHP(nn),ONLINE). It might be necessary to customize the OSA again.

IOAx022E I/O Error for device *nnnn* with an MVS return code *nnnn*

Explanation: OSA/SF issued the MVS EXCP macro to start an I/O operation to the OSA. Communications failed between OSA/SF and the specified device. The MVS return code may be one of the following hexadecimal expressions. The MVS return codes are:

X'0041': permanent I/O error
X'0042': extent error (DASD only)
X'0044': an error occurred after the previous I/O request to the device was posted complete
X'0045': program check or machine check occurred in IOS while the I/O request was being processed
X'0048': channel program was purged
X'0074': simulated error status, which is set for the following conditions:

- A start I/O operation was attempted to a device that is in a permanent error state, boxed, or not connected.
- A missing interrupt was detected and the I/O operation was terminated as a result of recovery operations by the MVS missing interrupt handler.

User Response: Check the MVS console for additional messages pertaining to this failure. For more information, refer to the EXCP macro description in *MVS/DFP System Programming Reference,* SC26-4567. Contact IBM Support if a hardware error occurred.

IOAx023E Unit check on device *dddd* with sense byte 10 value *xx*

Explanation: The command that was sent to the OSA returned a unit check.

User Response: Locate the value in the message and follow the instructions.

01 - 16 Internal OSA error occurred. See “Reporting Problems to IBM” on page 8-6.

17 The OSA mode installed on the OSA is not active. Configure the OSA (CHPID) offline to MVS in all logical partitions and then back online to MVS to activate the OSA mode.

18 The OSA mode loaded on the OSA has ABENDed. Configure the OSA (CHPID) offline to MVS in all logical partitions and then back online to MVS to activate the OSA mode.

19 - AF Internal OSA error occurred. See “Reporting Problems to IBM” on page 8-6.

B0 The drive (A:, B:, SYS:) specified is not valid. Make sure the directory exists using the List File command.

B1 The directory specified does not exist. Make sure the directory exists using the List File command.

B2 An attempt was made to remove the current directory. Switch out of the current directory and reissue the command.

B3 An attempt to remove the specified directory failed. Ensure the directory is empty and retry the command.

B4 An attempt was made to create a directory, and the path does not exist. Check that the drive and sub-directories are correct. Retry the command.

B5 The file name or extension is incorrect. Check the spelling and retry the command.

B6 or BA The file you are attempting to write to the disk serving function is marked read only and cannot be overwritten as is. Check if the file you are writing was put on the disk serving function by the NetWare client install. If so, NetWare marks the file Read Only. If you want to leave the file as the permanent ones, ignore this message and the next time you reset the CHPID, the file will remain active. If you want the IBM supplied file that you were attempting to write when this message occurred, log on through the NetWare client and use the ATTRIB command to make all the files non-Read Only, then retry the failing install command.

B7, B8, or B9 The file does not exist on the directory. An internal OSA error occurred. If the problem persists, see “Reporting Problems to IBM” on page 8-6.

BB - FF The file does not exist on the directory. An internal OSA error occurred. If the problem persists, see “Reporting Problems to IBM” on page 8-6.

Note: The disk server must be started to use the List File command.

IOAx024E Parameter value is too large for device *nn*

Explanation: An attempt was made to access an OSA device for application area that does not exist.

User Response: See “Reporting Problems to IBM” on page 8-6.

IOAx025E Missing value in parameter table for device *nn*

Explanation: Internal error

User Response: See “Reporting Problems to IBM” on page 8-6.

IOAx026E Requested function is unsupported for device *nn*

Explanation: Internal error

User Response: See “Reporting Problems to IBM” on page 8-6.

IOAx028E x code = *xx* **for device** *nn*

Explanation: Internal error

User Response: See “Reporting Problems to IBM” on page 8-6.

IOAx03nE API failed attempting to make the connection with OSA/SF

Explanation: An APPC connection between the user address space and the OSA/SF address space failed.

User Response: Verify the APPC/MVS and VTAM definitions are correct. Then restart APPC/MVS, followed by the VTAM OSA/SF major nodes. Then restart OSA/SF.

Note: APPC/MVS and VTAM must be started before starting OSA/SF.

IOAx051E Memory allocation error

Explanation: Memory allocation failed in the OSA/SF address space.

System Programmer Response: The request was for storage in the OSA/SF address space. Check the region size allocated for OSA/SF, it may have to be increased. Stop OSA/SF if required, correct the condition, and restart OSA/SF. If the problem persists, see “Reporting Problems to IBM” on page 8-6.

IOAx052E Memory free error

Explanation: There has been a FREEMAIN failure in the OSA/SF address space.

User Response: See “Reporting Problems to IBM” on page 8-6.

IOAx053E File I/O error

Explanation: The file that was being accessed has encountered an I/O error.

User Response: Verify the file name is correct and that no hardware errors have been encountered. Retry the command. If the problem persists, see “Reporting Problems to IBM” on page 8-6.

IOAx054E Command code is unknown or not valid

Explanation: An incorrect command code in the API control block was detected by OSA/SF.

User Response: If you are not calling OSA/SF at the API or using your own EXEC, see “Reporting Problems to IBM” on page 8-6.

If you are calling the API or using your own EXEC to call IOACMD.EXEC, then verify that the command code in the API control block structure is correct, and then retry the command. If the condition persists, see “Reporting Problems to IBM” on page 8-6.

IOAx055E Incorrect parameter

Explanation: An incorrect parameter was detected by OSA/SF on the command received.

User Response: If you are not calling OSA/SF at the API and not using your own EXEC, verify that you entered the parameters correctly, if the problem persists, contact the IBM Support Center.

If you are calling the API or using your own EXEC to call IOACMD.EXEC then verify that the command target in the API control block structure is correct and then retry the command.

IOAx056E *ffffff

IOAx060E File read failed from *ffffffffffffffffffffffffffffffffffffffffffffffff*

Explanation: An attempt to read file *fff...fff* failed.

User Response: Verify that:

- the data set descriptors are correct
- the data set exists
- the data set is catalogued to the MVS system
- no I/O errors occurred
- the integrity of the data set by using another approach: for example; try to browse the data set with TSO.

Then retry the command. If the problem persists, see “Reporting Problems to IBM” on page 8-6.

IOAx061E Delete of file failed

Explanation: An attempt to delete a data set failed. A command was issued to replace an MVS data set. Before the MVS data set can be replaced, the existing data set must be deleted.

User Response: Verify that the data set exists and is cataloged. Verify that no other user or function has the data set allocated, including from another logical partition. Retry the command. If the problem persists, see “Reporting Problems to IBM” on page 8-6.

IOAx062E Empty Directory

Explanation: An empty directory was found during a Get File or Delete File command.

User Response: Do a List File command from the GUI or use the IOACMD.EXEC to see if the directory name is valid and if the file is in the directory.

IOAx063E Cannot do a PUT to OSA/SF file *sss...sss*

Explanation: A Put File operation was attempted to the OSA/SF message log file. This is a protected OSA/SF MVS file. It can not be over-written.

User Response: Information in the message log data set can not be altered by the user. If you want a copy of the message log file, and then modify the copy, enter the OSA/SF Get Debug command to get a copy of the message log. The new MVS data set name for the copy can not match the message log data set name.

IOAx064E Dataset specified for STARTUP PROFILE not found

Explanation: During the start up of OSA/SF the data set name IOAPROF, which was allocated during OSA/SF set up, was not found or could not be opened.

User Response: Verify that the data set ID specified for filename IOAPROF in the OSA/SF startup procedure has been previously allocated and cataloged. See **Setting Up OSA/SF** in Chapter 2 on page 2-1. If all set up instructions were completed properly and the problem persists, see “Reporting Problems to IBM” on page 8-6.

IOAx065E Filename specified *xxxxx* **is incorrect**

Explanation: Too many characters or characters that are not valid were entered in the file name *xxxxx* or its extension.

User Response: Use a valid file name and extension.

IOAx081E Cannot allocate working storage

Explanation: OSA/SF cannot obtain the necessary working storage.

User Response: Stop OSA/SF, check the region size and increase the region size if necessary. Restart OSA/SF. If the problem persists, see “Reporting Problems to IBM” on page 8-6.

IOAx084E Unknown op code in caller's request

Explanation: An internal error has occurred in the OSA/SF program.

User Response: See “Reporting Problems to IBM” on page 8-6.

IOAx085E Incorrect length in caller's request

Explanation: An internal OSA/SF error has occurred.

User Response: Verify that all API control block length fields are valid. If everything is correct and the problem persists, see “Reporting Problems to IBM” on page 8-6.

IOAx086E Initialization of OSA/SF attention handler failed

Explanation: A system level name token created during initialization of the OSA/SF was not found by the attention handler code. The attention handler for this OSA/SF was not started.

User Response: Shut OSA/SF down for this LP and restart it. If the problem persists, see “Reporting Problems to IBM” on page 8-6.

IOAx087I Terminating attention handler attached processor.

Explanation: The attention handler code for this OSA/SF is being shut down.

User Response: None. Normal OSA/SF exit processing continues.

IOAx088I Unexpected attention handler postcode of *dddd* received

Explanation: The OSA/SF attention handler code received an unexpected post code. The attention is handled and processing continues.

User Response: None. OSA/SF operation continues. If the problem continues to reoccur, then see “Reporting Problems to IBM” on page 8-6.

IOAx089I Attention handler attached processor terminated

Explanation: The attention handler code for this OSA/SF has completed its shut down processing.

User Response: None. Normal OSA/SF exit processing continues.

IOAx090W Loading of the OSA/SF attention handler code failed.

Explanation: The attention handler code for this OSA/SF failed to load during initialization of OSA/SF. Attention interrupts from the OSA device will not be processed for this OSA/SF.

User Response: OSA/SF will continue to run, but to display interrupts for an OSA, issue the Start Managing command. To resolve the problem, stop OSA/SF in this logical partition and restart it. If the problem persists, see “Reporting Problems to IBM” on page 8-6.

IOAx100I OSA Support Facility version V*x*R*y*M*z*

Explanation: Self-explanatory. V=version; R=release; M=modification level.

User Response: None.

IOAx101I OSA Support Facility initialization started at *hh:mm:ss*

Explanation: Self-explanatory.

User Response: None. OSA/SF is in the process of starting. Wait for message IOAx102I to be issued.

IOAx102I OSA Support Facility initialization completed at *hh:mm:ss*

Explanation: Self-explanatory.

User Response: None. OSA/SF operations and commands can now be processed. The GUI interfaces can now be established.

IOAx103I OSA Support Facility terminated at *hh:mm:ss*

Explanation: The OSA/SF successfully stopped at the specified time. Before you can issue another OSA/SF command, you must re-start OSA/SF.

User Response: None.

IOAx104E OSA/SF internal error. Could not spawn task *tttttttt*

Explanation: An attempt to start the OSA/SF task, *tttttttt*, failed. An internal OSA/SF error has occurred.

User Response: See “Reporting Problems to IBM” on page 8-6..

IOAx105E *hh:mm:ss* **Unrecognized command** *cc* **was entered**

Explanation: An unknown command, *cc*, was sent to OSA/SF by the API interface.

User Response: If you are not calling OSA/SF at the API or using your own EXEC, see “Reporting Problems to IBM” on page 8-6.

If you are calling the API or using your own EXEC to call IOACMD.EXEC, then verify that the command code in the API control block structure is correct, and then retry the command. If the condition persists, see “Reporting Problems to IBM” on page 8-6.

IOAx106E Improper syntax was used in command

Explanation: An API interface command, the Put File command, and the Get Debug command are all possible sources of a command that is not in the required format (syntax). The command was not executed.

User Response: The following are some common reasons for this message:

- Verify the command syntax in the API control block if the API interface was used. Especially check the command target and the command identifier.
- If the Put File command was used, check that an MVS data set name was passed as part of the command, that it is valid, and that the data set name is catalogued to the MVS system.
- If the Get Debug command was used, especially for the SNA message file, the SNA trace file, or an SNA member, double check that the MVS data set name was passed as part of the command, that it is valid, and that the data set name is catalogued to the MVS system.

Then retry the command that cause the message to be issued.

IOAx107E Incorrect block length passed on the command

Explanation: The command was issued from the API interface. The command requires more parameters than OSA/SF received.

User Response: Check the amount of data passed on input along with the length indication given. Verify the API command control block structure. (Refer to the control block section for the command control block structure.) Then retry the command that received the message.

IOAx108E *hh:mm:ss userid* **on** *system* **not authorized to use** *command*

Explanation: *userid* has attempted to issue a command (*command*) and does not have the proper user access authority. See "Planning to Control OSA/SF User Access (RACF)" in the planning guide.

User Response: Check with your system administrator to coordinate the user access authority for this *userid* with this command.

IOAx109E File allocation error. Error code *eeee* info code *iii*

Explanation: OSA/SF internal code attempted to allocate an MVS data set using the DYNALLOC macro. The allocation failed.

- *eeee* - Error code from the DYNALLOC macro
- *iii* - Information code from the DYNALLOC macro

User Response: For information on the two codes, refer to the DYNALLOC macro in *MVS/ESA Programming: Authorized Assembler Services Guide System Product: JES2 Version 5 JES3 Version 5, GC28-1467*.

IOAx110I Notice - Shut down complete

Explanation: The sub-components of OSA/SF have all successfully ended.

User Response: None.

IOAx111I OSA/SF task *tttttttt* not terminated

Explanation: An OSA/SF sub-task (*tttttttt*) has not terminated within the time limit. OSA/SF will still terminate.

User Response: OSA/SF has issued this warning message for self-documentation and an audit trail. No action is required unless other messages indicate that a call to the IBM Support Center is necessary in which case this message should be reported.

IOAx112W OSA/SF is shutting down. You will be disconnected

Explanation: This message is sent to any *user_ID* that is currently waiting for a response while OSA/SF is terminating.

User Response: Check with your system administrator as to why OSA/SF on this host was shut down.

IOAx113I Waiting for *tttttttt* to terminate

Explanation: OSA/SF is waiting for internal task *tttttttt* to terminate. This message is part of normal OSA/SF shutdown.

User Response: None. Normal OSA/SF shutdown will resume shortly.

IOAx114I *tttttttt* has terminated

Explanation: As part of OSA/SF shutdown, task *tttttttt* has ended. This message is part of a normal OSA/SF shutdown.

User Response: None. Normal OSA/SF shutdown continues.

IOAx115E This OSA/SF level does not support the configuration for CHPID *cc*

Explanation: The installed mode on OSA CHPID *cc* is at a different level than is supported by this version of OSA/SF.

User Response: Ensure that the version of OSA/SF that has been started on this system is at the required level for the mode installed on the OSA. See the planning guide for detailed information about needed version-release levels for OSA mode support.

IOAx116E A copy of OSA/SF is already running. Start OSA/SF not completed

Explanation: An attempt was made to start a second copy of OSA/SF in this logical partition; a copy of OSA/SF is already running. The second copy of OSA/SF was not started.

User Response: Verify that a copy of OSA/SF is running. Only one copy of OSA/SF can be running on an LP at a time. See Chapter 2 on page 2-1 for more information on OSA/SF start-up.

IOAx118I Inx Comp Type ID Address Time

Explanation: This is the header information for the OSA/SF trace table dump. The information from the trace table dump is used by IBM for problem determination. The field headings are:

- Inx - The Trace entry number
- Comp - Component that inserted the trace entry
- Type - A reference indicator to point to the location in the source code
- ID - Identifies which task was active when the entry was put into the trace table
- Address - The address in memory where the entry resides
- Time - Time stamp in hours, minutes, and micro-seconds.

User Response: Save the trace table dump output, see “Reporting Problems to IBM” on page 8-6.

IOAx119E No trace table available

Explanation: A Get_Debug operation was attempted and no trace table was found. A trace table should always be available. An internal OSA/SF error has occurred.

User Response: See “Reporting Problems to IBM” on page 8-6.

IOAx120I OSA Support Facility terminated

Explanation: OSA/SF has completed its shutdown sequence.

User Response: None. Normal OSA/SF termination is complete.

IOAx121E The Message Log processing has ended due to an error

Explanation: This error indicates that the Message Log function had an error and is no longer active. No message logging is currently being done.

User Response: To reactivate message logging, OSA/SF must be stopped and restarted. Also, check to see if message IOAx143W was displayed. If so, this problem may have occurred due to a user viewing the message log data set while OSA/SF was trying to write to it.

IOAx123E OSA/SF load module is not installed in an APF authorized library

Explanation: In order for OSA/SF to execute, the OSA/SF module must be installed in an authorized partition data set (APF authorized). Also, the LE/370 or C/370 run time libraries that are used by the OSA/SF module must also be in APF authorized libraries.

User Response: Ensure that all the libraries used by OSA/SF are APF authorized. This includes the partition data set that contains the OSA/SF module, and either the C/370 or LE/370 run time libraries, whichever is being used.

IOAx124I domain port *nn* **internet address** *nn*

Explanation: Internal error

User Response: See “Reporting Problems to IBM” on page 8-6.

IOAx125I *hh:mm:ss user_ID* **on** *ssssssss* **issued command** *ccc...ccc*

Explanation: The user ID *user_ID* on system *ssssssss* issued the command *ccc...ccc* at time *hh:mm:ss*

User Response: This message is part of OSA/SF's audit trail. No user action is required.

IOAx126I *hh:mm:ss user_ID* **cmd** *cccccccccccccccccccccccc* **RC=***cc* **Reason=***rrrr*

Explanation: The specified *user_ID* on the system entered the specified command with the resulting return code and reason code.

User Response: Look in the OSA/SF message log for subsequent messages with additional information regarding this condition.

IOAx127I *hh:mm:ss* **API connection** *x* **number** *y*

Explanation: An APPC connection of type *x* was made to OSA/SF, thus bringing the total of currently active connections to *y.*

User Response: None. Normal APPC operation continues.

IOAx128W *hh:mm:ss* **Reading of device** *nnnn* **information failed with RC=***cc***, reason** *rrr*

Explanation: Device *nnnn* has had changes made since the last command was issued.

User Response: Make sure no other instance of OSA/SF, the hardware system console (PCE), or hardware management console (HMC) is attempting to communicate with this device. Review the message log for additional messages that will accompany this message. Retry the command. If it fails again, see “Reporting Problems to IBM” on page 8-6.

IOAx130E *hh:mm:ss* **APPC call ATBRFA2 RC:** *aaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaa*
Reason:*bbbbbbbbbbbbbbbbbbbbbbbbbbbbbbbb*

Explanation: An error occurred from APPC for a call to ATBRFA2. Look at the APPC manuals for more information on the return code and reason code.

aaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaa = return code
bbbbbbbbbbbbbbbbbbbbbbbbbbbbbbbb = reason code

User Response: Refer to the manuals *SAA: Common Programming*, SC26-4399, and *Application Development: Writing Servers for APPC/MVS*, GC28-1070, for return code, reason code, and more information. If the condition can not be corrected after reviewing the APPC manuals, then see “Reporting Problems to IBM” on page 8-6.

IOAx131E *hh:mm:ss* **APPC call ATBRAL2 RC=***aaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaa*
Reason:*bbbbbbbbbbbbbbbbbbbbbbbbbbbbbbbb*

Explanation: This indicates an error from APPC for a call to ATBRAL2. Look at the APPC manuals for further explanation of the return code and reason code.

aaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaa = return code
bbbbbbbbbbbbbbbbbbbbbbbbbbbbbbbb = reason code

User Response: Refer to the manuals *SAA: Common Programming*, SC26-4399, and *Application Development: Writing Servers for APPC/MVS*, GC28-1070, for return code, reason code, and more information. If the condition can not be corrected after reviewing the APPC manuals, then see “Reporting Problems to IBM” on page 8-6.

IOAx132E *hh:mm:ss* **APPC call ATBRAL2 RC=***aaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaa*
Reason:*bbbbbbbbbbbbbbbbbbbbbbbbbbbbbbbb*

Explanation: This indicates an error from APPC for a call to ATBRAL2. Look at the APPC manuals for explanation of the return code and reason code.

aaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaa = return code
bbbbbbbbbbbbbbbbbbbbbbbbbbbbbbbb = reason code

User Response: Refer to the manuals *SAA: Common Programming*, SC26-4399, and *Application Development: Writing Servers for APPC/MVS*, GC28-1070, for return code, reason code, and more information. If the condition can not be corrected after reviewing the APPC manuals, then see “Reporting Problems to IBM” on page 8-6.

IOAx133E *hh:mm:ss* **APPC call ATBURA2 RC=***aaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaa*
Reason:*bbbbbbbbbbbbbbbbbbbbbbbbbbbbbbbb*

Explanation: This indicates an error from APPC for a call to ATBURA2. Look at the APPC manuals for explanation of the return code and reason code.

aaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaa = return code
bbbbbbbbbbbbbbbbbbbbbbbbbbbbbbbb = reason code

User Response: Refer to the manuals *SAA: Common Programming*, SC26-4399, and *Application Development:*

Writing Servers for APPC/MVS, GC28-1070, for return code, reason code, and more information. If the condition can not be corrected after reviewing the APPC manuals, then see “Reporting Problems to IBM” on page 8-6.

IOAx134E *hh:mm:dd* **cmrcv return code error**

Explanation: An APPC **CMRCV** function call error has occurred. The data displayed after this message will show the reason for the failure.

User Response: Refer to the manuals *SAA: Common Programming*, SC26-4399, and *Application Development: Writing Servers for APPC/MVS*, GC28-1070, for return code, reason code, and more information. If the condition can not be corrected after reviewing the APPC manuals, then see “Reporting Problems to IBM” on page 8-6.

IOAx135E *hh:mm:ss* **cmsend return code error**

Explanation: An APPC **CMSEND** function call error has occurred. The data displayed after this message will show the reason for the failure.

User Response: Refer to the manuals *SAA: Common Programming*, SC26-4399, and *Application Development: Writing Servers for APPC/MVS*, GC28-1070, for return code, reason code, and more information. If the condition can not be corrected after reviewing the APPC manuals, then see “Reporting Problems to IBM” on page 8-6.

IOAx136E *hh:mm:ss* **cmsdt return code error**

Explanation: An APPC **CMSDT** function call error has occurred. The data displayed after this will show the reason for the failure.

User Response: Refer to the manuals *SAA: Common Programming*, SC26-4399, and *Application Development: Writing Servers for APPC/MVS*, GC28-1070, for return code, reason code, and more information. If the condition can not be corrected after reviewing the APPC manuals, then see “Reporting Problems to IBM” on page 8-6.

IOAx137E *hh:mm:ss* **cmptr return code error**

Explanation: An APPC **CMPTR** function call error has occurred. The data displayed after this will show the reason for the failure.

User Response: Refer to the manuals *SAA: Common Programming*, SC26-4399, and *Application Development: Writing Servers for APPC/MVS*, GC28-1070, for return code, reason code, and more information. If the condition can not be corrected after reviewing the APPC manuals, then see “Reporting Problems to IBM” on page 8-6.

IOAx138I APPC call to *aaaaaaaa* **failed with** *sssssssssssssssssssssssssssssssssss*

Explanation: This displays the return code text for the failure that occurred in the function indicated.

aaaaaaaa = APPC function
sssssssssssssssssssssssssssssssssss = return code text

User Response: Refer to the manuals *SAA: Common Programming*, SC26-4399, and *Application Development: Writing Servers for APPC/MVS*, GC28-1070, for return code, reason code, and more information. If the condition can not be corrected after reviewing the APPC manuals, then see “Reporting Problems to IBM” on page 8-6.

IOAx139E *mm/dd/yy hh:mm:ss* **OSA/SF failed to start due to error** *nn*

Explanation: The OSA Support Facility failed to start for the reason listed below.

- *mm/dd/yy hh:mm:ss* are the date and time stamp
- *nn* is the value that represents what area of OSA/SF had the error.

All Errors after error 4 are also recorded in the message log. Error numbers 6, 8, and 9 have additional information in the message log.

The following is a list of possible error numbers and their meaning:

- -1 - SVM error
- 0 - Reserved
- 1 - Trace table initialization
- 2 - File command error

- 3 - Startup profile parser
- 4 - Startup profile parser open log file
- 5 - System console error
- 6 - SCC error (see message log)
- 7 - Data manager failure
- 8 - OSA/SF interrupt handler error (see message log)
- 9 - APPC error (see message log)
- 10 - Missing startup profile data sets
- 11 - Startup profile data set name error
- 12 - Startup profile data set UNIT/VOLSER error
- 13 - Missing Message Log data set name
- 14 - Message Log data set allocation failed

If any of the failures occur before the Message log is created, all the messages that were intended for the message log will be displayed on the system console.

User Response: Use the above list of error numbers to isolate the failure. Correct the problem, if possible. Stop and restart OSA/SF. If the nature of the problem is unknown or persists, see “Reporting Problems to IBM” on page 8-6.

IOAx140I *hh:mm:ss* **API APPC component ended**

Explanation: Informational message to track that the API of the APPC component terminated.

User Response: None. Normal APPC termination continues.

IOAx141I *hh:mm:ss* **API APPC component started**

Explanation: Informational message to track that the API of the APPC component has activated.

User Response: None. Normal APPC activation continues.

IOAx142E Message log file *ffffffffffffff* **open error** *nn*

Explanation: An error occurred attempting to open the message log data set.

- *ffffffffffffff* - Message log MVS data set name
- *nn* - The value is used by IBM service.

User Response: This message will occur after a predetermined amount of opens were attempted. If the value of *nn* is 45 or 61, check to see if this data set is open by a user or another program, including users and programs in other logical partitions. If the data set is open, it must be closed before the message log data set can be opened by OSA/SF.

If the value of *nn* is neither 45 nor 61, then see “Reporting Problems to IBM” on page 8-6.

IOAx143I *hh:mm:ss* **API COMM component ended**

Explanation: The COMM component is the APPC component which handles the individual API connection. This message is issued as part of the normal system shutdown sequence.

User Response: None. The API COMM component has ended normally. The shutdown sequence continues.

IOAx144I *hh:mm:ss* **ALL OSA devices initialized**

Explanation: This is an OSA/SF startup message. OSA/SF has made the internal connection with all OSA CHPIDs and OSAD (`X'FE'`) unit addresses.

User Response: None. Normal OSA/SF initialization continues.

IOAx145W *hh:mm:ss* **Only** *x* **of** *y* **OSA devices initialized**

Explanation: Of the total number of OSAs, *y*, known to the channel subsystem only *x* were successfully initialized.

User Response: Check the preceding entries in the message log to determine why the remaining device numbers could not be initialized.

The following items should be checked:

- Check OSA definitions in the IODF/IOCDS
- Verify channel and diagnostic devices (`X'FE'`) are online to MVS
- Verify that the OSA device addresses are online to MVS.

Stop OSA/SF, correct any problems, then restart OSA/SF. If the remaining OSA devices still do not initialize, see "Reporting Problems to IBM" on page 8-6.

IOAx146E *hh:mm:ss* **No OSA devices were initialized**

Explanation: None of the OSA devices found in the channel subsystem could be initialized. Additional messages in the message log explain why the devices were not initialized.

User Response: Check the message log to determine why the OSA devices could not be initialized.

Check the following items:

- Check OSA definitions in the IODF/IOCDS
- Verify channel and diagnostic devices (`X'FE'`) are online to MVS
- Verify that the OSA device addresses are online to MVS.

Stop OSA/SF, correct any problems, then restart OSA/SF. If the OSA devices still do not initialize, see "Reporting Problems to IBM" on page 8-6.

IOAx147E Bind socket error in port *nn*

Explanation: Internal error

User Response: See "Reporting Problems to IBM" on page 8-6.

IOAx149I *hh:mm:ss* **Interrupt handler component ended**

Explanation: This message is issued as part of OSA/SF shutdown. The interrupt handler component has ended normally.

User Response: None. Normal OSA/SF shutdown continues.

IOAx150I *hh:mm:ss* **Interrupt handler component started**

Explanation: This message is issued as part of normal OSA/SF initialization. The interrupt handler component has started.

User Response: None. Normal OSA/SF initialization continues.

IOAx151E SVM return code received was not valid

Explanation: An internal OSA/SF error has occurred.

User Response: See "Reporting Problems to IBM" on page 8-6.

IOAx152I Finished OSA/SF startup profile processing

Explanation: This message is a part of normal OSA/SF initialization. The OSA/SF Startup Profile is a data set that is pointed to from the DD card IOAPROF within the OSA/SF Started Procedure (task). See Chapter 2 on page 2-1 for more information about the OSA/SF startup profile.

User Response: None. Normal OSA/SF initialization continues.

IOAx153I Processing of OSA/SF startup profile started

Explanation: This message is a part of normal OSA/SF initialization. The OSA/SF Startup Profile is a data set that is pointed to from the DD card IOAPROF within the OSA/SF Started Procedure (task). See Chapter 2 on page 2-1 for more information about the OSA/SF startup profile.

User Response: None. Normal OSA/SF initialization continues.

IOAx154E STARTUP.PROFILE SET NAME *ssssss* has duplicate *uuuuuu* parm

Explanation: A duplicate UNIT or VOLSER keyword was found after the SET NAME command *ssssss* in the OSA/SF startup profile. OSA/SF initialization has terminated.

- *ssssss* - One of the SET NAME entries in the OSA/SF startup profile; for example, IOAINX, IOACFG, IOAMSG, IOADSN, and so on.
- *uuuuuu* - Will be either UNIT or VOLSER

User Response: Delete one of the duplicate UNIT or VOLSER entries in the *ssssss* SET NAME entry.

The OSA/SF Startup Profile is a data set that is pointed to from the DD card IOAPROF within the OSA/SF Started Procedure (task). See Chapter 2 on page 2-1 for more information about the OSA/SF startup profile.

IOAx155I *hh:mm:ss* **Startup profile command** *ssss*

Explanation: This message is issued as part of the OSA/SF start-up message series.

ssss = the OSA/SF startup profile command that is going to be processed.

User Response: None. Normal OSA/SF start-up continues.

IOAx156E Unknown command in dataset STARTUP.PROFILE at line *dd*

Explanation: This message is a part of OSA/SF initialization. In the OSA/SF startup profile, a command at line *dd* is not valid. OSA/SF initialization did not complete.

User Response: In the OSA/SF startup profile, a member in the IOAPROF data set of the OSA/SF started procedure, check the specified line and correct it. Refer to Chapter 2 on page 2-1 for more information about the OSA/SF startup profile and for what commands are valid. Then restart OSA/SF.

IOAx157E Incorrect number of parameters on 'SET' command in STARTUP.PROFILE

Explanation: The SET command was found in the OSA/SF startup profile but the number of parameters to support the SET command is not correct. OSA/SF initialization did not complete.

User Response: Check the parameters on each of the SET commands in the OSA/SF startup profile. The OSA/SF Startup Profile is a data set that is pointed to from the DD card IOAPROF within the OSA/SF Started Procedure (task). Refer to Chapter 2 on page 2-1 for more information about the OSA/SF startup profile and the SET commands. Correct the OSA/SF startup profile then restart OSA/SF.

IOAx158E Incorrect parameter *ssss* on 'SET' command in STARTUP.PROFILE

Explanation: Parameter *ssss* on one of the SET commands in the OSA/SF startup profile is not correct. OSA/SF initialization terminates.

- ssss - Parameter keyword in SET command that is not valid

User Response: Locate the incorrect parameter in the OSA/SF startup profile and correct it. Restart OSA/SF. The OSA/SF Startup Profile is a data set that is pointed to from the DD card IOAPROF within the OSA/SF Started Procedure (task). See Chapter 2 on page 2-1 for more information about the OSA/SF startup profile.

IOAx159E SET ALIAS in STARTUP.PROFILE has incorrect number of parameters

Explanation: In the startup profile for OSA/SF, the SET ALIAS keyword has an incorrect number of parameters. OSA/SF initialization has terminated.

User Response: Check the OSA/SF startup profile and locate the Set Alias command. It must contain 2 parameters. Any other number of parameters will cause this error. For example: "SET ALIAS CECNAME SYS1" contains the correct number of parameters; in this example, CECNAME and SYS1. Correct the OSA/SF startup profile and restart OSA/SF. The OSA/SF Startup Profile is a data set that is pointed to from the DD card IOAPROF within the OSA/SF Started Procedure (task). See Chapter 2 on page 2-1 for more information about the OSA/SF startup profile.

IOAx160E STARTUP.PROFILE requires *cecname/sysname* before SET NAME command

Explanation: In the OSA/SF startup profile, the OSA/SF Set Alias command, either the *cecname* or the *sysname* parameter was missing or was in the wrong location. It must be specified before the OSA/SF Set Name command. OSA/SF initialization has terminated.

User Response: Locate the Set Alias command in the OSA/SF startup profile. Make sure it proceeds all the Set Name commands. The OSA/SF Startup Profile is a data set that is pointed to from the DD card IOAPROF within the OSA/SF Started Procedure (task). Refer to Chapter 2 on page 2-1 for more information about the startup profile.

Correct the startup profile, then restart OSA/SF.

IOAx161E Incorrect parm *ssss* after SET NAME *IOAxxx* command in STARTUP.PROFILE

Explanation: The specified parameter, *ssss*, in the Set Name command of the OSA/SF startup profile, is not valid.

- *ssss* - Parameter that is in error
- *IOAxxx* - The Set Name command containing the incorrect parameter, where *IOAxxx* can be any of the IOA-group sets such as IOAINX, IOADSN, IOACFG, and so on in the OSA/SF startup profile.

User Response: Check the startup profile for OSA/SF. Locate the Set Name command. Make sure all the parameters are correct. Correct the startup profile then restart OSA/SF. The OSA/SF Startup Profile is a data set that is pointed to from the DD card IOAPROF within the OSA/SF Started Procedure (task). See Chapter 2 on page 2-1 for more information about the OSA/SF startup profile.

IOAx162E STARTUP.PROFILE unknown ALIAS in DATASET *ssssssss*

Explanation: The only aliases allowed in the OSA/SF startup profile are &cecname and &sysname. An unknown alias (a variable beginning with an ampersand) has been found. OSA/SF startup has terminated.

- ssssssss - Startup profile SET NAME qualifier with error

User Response: Locate *ssssssss* in the OSA/SF startup profile. Ensure that only &cecname and &sysname are used in the profile. Correct the OSA/SF startup profile, then restart OSA/SF. The OSA/SF Startup Profile is a data set that is pointed to from the DD card IOAPROF within the OSA/SF Started Procedure (task). See Chapter 2 on page 2-1 for more information about the OSA/SF startup profile.

IOAx163E STARTUP.PROFILE missing '&' in ALIAS name in DATASET *ssssssss*

Explanation: In the startup profile, in the SET NAME command's DATASET keyword, the value following DATASET is missing either the &CECNAME, the &SYSNAME, or the '&'. OSA/SF startup has terminated.

- ssssssss - Startup profile SET NAME qualifier with error

User Response: In the OSA/SF startup profile, check the alias name in DATASET *ssssssss* for a correct '&'. Ensure that only &cecname and &sysname are used in the data set. Correct the startup profile, then restart OSA/SF. The OSA/SF Startup Profile is a data set that is pointed to from the DD card IOAPROF within the OSA/SF Started Procedure (task). See Chapter 2 on page 2-1 for more information about the OSA/SF startup profile.

IOAx164E Missing quote mark detected after SET NAME *ssssssss* in STARTUP.PROFILE

Explanation: The name after the DATASET keyword of the SET NAME command is missing a single quote. OSA/SF initialization has terminated.

- ssssssss - Startup profile SET NAME qualifier with error

User Response: In the OSA/SF startup profile, locate the SET NAME command with *ssssssss*. Following the DATASET keyword, add the missing single quote. Then restart OSA/SF.

The OSA/SF Startup Profile is a data set that is pointed to from the DD card IOAPROF within the OSA/SF Started Procedure (task). See Chapter 2 on page 2-1 for more information about the OSA/SF Startup Profile.

IOAx165E Incorrect qualifier after SET NAME *ssssssss* DATASET in STARTUP.PROFILE

Explanation: A qualifier in the OSA/SF startup profile DATASET value is not valid. OSA/SF startup has terminated.

- ssssssss - Startup profile SET NAME command with error in supplied value

User Response: Locate the data set name specified after the DATASET keyword in the OSA/SF startup profile. Some of the rules for DATASET qualifiers are:

- The first character of any qualifier cannot begin with a numeric character
- All DATASET values can have any number of qualifiers but each qualifier can not exceed 8 characters in length. (The maximum number of characters, however, including periods, can not exceed 44, except in the IOADSN value where the maximum number of characters can not exceed 26, including periods.)
- DATASET values only need one qualifier (but more are permitted)

Make needed corrections, then restart OSA/SF.

The OSA/SF Startup Profile is a data set that is pointed to from the DD card IOAPROF within the OSA/SF Started Procedure (task). See Chapter 2 on page 2-1 for more information about the OSA/SF Startup Profile.

IOAx166E STARTUP.PROFILE DATASET *ssssssss* has VOLSER but no UNIT

Explanation: When specifying a VOLSER keyword in the SET NAME command in the OSA/SF startup profile, the UNIT keyword must be specified. The UNIT keyword must proceed the VOLSER keyword. OSA/SF startup has terminated.

- ssssssss - Startup profile SET NAME qualifier with error

User Response: In the OSA/SF startup profile, locate the SET NAME command that specified the VOLSER keyword and NOT the UNIT keyword. Correct the condition. Then restart OSA/SF. The OSA/SF Startup Profile is a data set that is pointed to from the DD card IOAPROF within the OSA/SF Started Procedure (task). See Chapter 2 on page 2-1 for more information about the OSA/SF startup profile.

IOAx167E Incorrect *ssssss* name *ffffffff* after SET command in STARTUP.PROFILE

Explanation: The OSA/SF startup profile is not valid. The values specified for either the UNIT or VOLSER keywords are not correct.

- ssssss - will be either keyword *UNIT* or *VOLSER*
- ffffffff - the incorrect value that follows the *ssssss* keyword

User Response: Check the OSA/SF startup profile and correct the value after either keyword VOLSER or UNIT. The value must be specified; blanks are not permitted. Then restart OSA/SF. See Chapter 2 on page 2-1 for more details about the OSA/SF Startup Profile UNIT and VOLSER keywords. The OSA/SF Startup Profile is a data set that is pointed to from the DD card IOAPROF within the OSA/SF Started Procedure (task).

IOAx168E STARTUP.PROFILE command has incorrect length at line *dd*

Explanation: In the OSA/SF startup profile, the maximum length of the command is 64 characters. The command at line *dd* is too long. In this context, the OSA/SF startup profile, a "command" is one line in the OSA/SF profile. Only 64 characters are allowed on each line of the OSA/SF startup profile. Blanks do not count in the total character count. Quote marks and periods do count in the total character count per line. OSA/SF initialization has terminated.

User Response: Shorten the command length on line *dd* to 64 or less characters. Then restart OSA/SF.

The OSA/SF Startup Profile is a data set that is pointed to from the DD card IOAPROF within the OSA/SF Started Procedure (task). See Chapter 2 on page 2-1 of the user's guide for for more information about the OSA/SF startup profile.

IOAx169E STARTUP.PROFILE has same DSN names for *ssssssss* **and** *dddddddd*

Explanation: The data set names in two of the SET NAME statements in the OSA/SF startup profile are the same. This is not permitted. OSA/SF initialization is terminated.

- *ssssssss* - The first SET NAME entry
- *dddddddd* - The second SET NAME entry

User Response: Change the two entries in the OSA/SF startup profile so that they no longer match. Then restart OSA/SF.

The OSA/SF Startup Profile is a data set that is pointed to from the DD card IOAPROF within the OSA/SF Started Procedure (task). See Chapter 2 on page 2-1 of the user's guide for more information about the OSA/SF startup profile.

IOAx170E SET ALIAS *aaaaaa* **in STARTUP.PROFILE has already been set**

Explanation: The SET ALIAS value for *aaaaaa* has already been declared. Only one SET ALIAS *aaaaaa* value is allowed in the OSA/SF start profile. OSA/SF initialization is terminated.

User Response: In the OSA/SF startup profile, remove one of the SET ALIAS *aaaaaa* entries. Then restart OSA/SF.

The OSA/SF Startup Profile is a data set that is pointed to from the DD card IOAPROF within the OSA/SF Started Procedure (task). See Chapter 2 on page 2-1 for more information about the OSA/SF startup profile.

IOAx171E STARTUP.PROFILE DSN name for *ssssssss* **is too long**

Explanation: In the OSA/SF startup profile, the MVS data set name following the DATASET keyword for SET NAME entry *ssssssss* contains too many characters. If the MVS data set name is part of the SET NAME IOADSN entry, the maximum number of characters permitted is 26, including periods. For all other entries, the maximum number of characters is 44, including periods. OSA/SF initialization is terminated.

- *ssssssss* - One of the SET NAME entries in the OSA/SF startup profile; for example, IOAINX, IOACFG, IOAMSG, IOADSN, and so on.

User Response: Check the MVS data set name that follows the DATASET keyword in the OSA/SF startup profile for too many characters. Make corrections, then restart OSA/SF. The OSA/SF Startup Profile is a data set that is pointed to from the DD card IOAPROF within the OSA/SF Started Procedure (task). See Chapter 2 for more information about the OSA/SF startup profile.

IOAx172I OSA Support Facility *mm/dd/yy hh:mm:ss*

Explanation: This message is used as a date and time stamp in the message log. It is automatically written to the message log at midnight each day. The message serves as a delimiter when looking through the message log to see what day entries where placed in the message log.

User Response: None. Normal OSA/SF operation continues.

IOAx173I *mm/dd/yy hh:mm:ss* **AutoLog component ended**

Explanation: This message indicates the AutoLog component has completed. This should only occur when OSA/SF is stopped.

User Response: During normal OSA/SF termination, no user action is required and OSA/SF termination continues. If this message is issued at a time other than normal OSA/SF termination, see “Reporting Problems to IBM” on page 8-6.

IOAx174I *mm/dd/yy hh:mm:ss* **AutoLog component started**

Explanation: When OSA/SF is being initialized, this message indicates that the AutoLog component is running.

User Response: None. Normal OSA/SF initialization continues.

IOAx175I OSA S/F Communication module SOCKET START

Explanation: Internal error

User Response: See “Reporting Problems to IBM” on page 8-6.

IOAx176I OSA S/F Communication module SOCKET ENDED

Explanation: Internal error

User Response: See “Reporting Problems to IBM” on page 8-6.

IOAx177I Listen socket error

Explanation: Internal error

User Response: See “Reporting Problems to IBM” on page 8-6.

IOAx178I Read socket error

Explanation: Internal error

User Response: See “Reporting Problems to IBM” on page 8-6.

IOAx179I Select socket error

Explanation: Internal error

User Response: See “Reporting Problems to IBM” on page 8-6.

IOAx181E The message log is FULL. A new one will be created

Explanation: The message log has reached its maximum size and a new message log will be created. The log that is full will be named to the name specified in IOAC182I and the new empty message log will be created.

User Response: Decide what to do with the renamed message log.

IOAx182I Backup message log named *ffffffffffffffffffffffff.LPnn.Dyyyddd*

Explanation: The message log has reached its maximum size and was renamed as follows:

- ffffffffffffffffffffffff — The name specified in IOAMSG NAME in the startup profile.
- LPnn — The logical partition number.
- Dyyyyddd — The 'D' is hardcoded; 'ddd' is today's date; 'yyyy' is the current year.

User Response: Decide what to do with the renamed message log. See Chapter 2 on page 2-1 for more information about the OSA/SF startup profile.

IOAx183E Error renaming file *ffffffffffffffffffffff*

Explanation: A file rename error has occured for file *ffffffffffffffffffffff*.

User Response: Check the file name for proper naming convention or see the startup profile for the proper IOAMSG name. See Chapter 2 on page 2-1 for more information about the OSA/SF startup profile.

IOAx184E STARTUP.PROFILE error reported at line *dd*

Explanation: You specified an invalid parameter in the set statement in the startup profile at line number *dd*. The previous message for the startup profile will explain the error.

User Response: Check for the message prior to this one for the exact error and fix the problem.

IOAx201I *hh:mm:ss* **CHPID** *cc* **reports a logical port state change**

Explanation: A logical port state has changed other than the OSA/SF host program which triggered an alert to OSA/SF which issued this message. The change could have been from an external network manager, a cable pull, a LAN Emulation Server, etc...

User Response: Refresh the GUI Tree or Detail channel view to reflect the change and view the current state of the logical ports for the given OSA.

IOAx202I *hh:mm:ss* **CHPID** *cc* **reports OSA ready**

Explanation: OSA/SF has been signaled that OSA CHPID *cc* has entered the "ready" state. This could occur if the OSA CHPID had been in the "not ready" state and the condition was corrected.

User Response: None. Normal OSA/SF operation continues with CHPID *cc*.

IOAx203I *hh:mm:ss* **CHPID** *cc* **reports OSA TCP/IP platform not loaded**

Explanation: A licensed internal code load to the OSA has not taken place or the internal code that has been loaded to the OSA can not be executed.

User Response: See “Reporting Problems to IBM” on page 8-6.

IOAx204I *hh:mm:ss* **CHPID** *cc* **reports Application area dump alert**

Explanation: An error has occurred in the application code that was installed on the OSA by OSA/SF. A dump was taken by OSA/SF. The OSA and OSA/SF continue to run. The dump is stored in the data set specified by the SET NAME IOADSN statement in the Startup Profile. See Chapter 2 on page 2-1 for the Startup Profile. The sample name was IOA.&CECNAME;OSASF.

User Response: See “Reporting Problems to IBM” on page 8-6.

IOAx205I *hh:mm:ss* **CHPID** *cc* **reports OSA mode screen alert**

Explanation: An OSA LANRES mode received an alert that a virtual screen has changed. This message is only written to the message log.

User Response: Issue the Get Console command from TSO or use the GUI Get Screen option to view the new data on the virtual screen.

IOAx206I *hh:mm:ss* **CHPID** *cc* **reports OSA mode console alert 1**

Explanation: An internal alert has been received that an application virtual console has been established. This is not an error.

User Response: None. Normal OSA/SF operation continues.

IOAx207I *hh:mm:ss* **CHPID** *cc* **reports OSA mode console Alert 2**

Explanation: An internal alert has been received that an application virtual console has been removed. This is not an error.

User Response: None. Normal OSA/SF operation continues.

IOAx210I *hh:mm:ss* **CHPID** *cc* **reports Error Log Alert**

Explanation: This is a result of an interrupt from the OSA device. This indicates that an unusual condition requiring immediate host attention has occurred. This message is only issued for an OSA running in SNA mode.

As a result of this condition an error event record has been written to an MVS data set constructed from the SET NAME DATASET IOADSN keyword entry in the OSA/SF startup profile. The data set name is constructed using the IOADSN data set suffixed with "SNA_chpid" and "ERRORLOG". (See Chapter 2 on page 2-1 for more information.)

For example, if the DATASET name for the SET NAME IOADSN was 'IOA.VOL1.OSASF' and the chpid was 2D, the data set would be 'IOA.VOL1.OSASF.SNA2D.ERRORLOG'.

User Response: Save the error log described above, see “Reporting Problems to IBM” on page 8-6.

IOAx211I *hh:mm:ss* **CHPID** *cc* **reports Abend Alert**

Explanation: This indicates that the OSA device reported an alert indicating that a non-recoverable error has occurred within an application running on the OSA device. As a result the application has abended. Message IOAC233E will indicate the application and the error code.

User Response: The CHPID must be reset for the operation to be resumed. To recover operations, configure the CHPID Offline to MVS in all logical partitions (CF CHP(nn),OFFLINE) and then back ONLINE to MVS (CF CHP(nn),ONLINE).

If using TSO, issue the Get Debug command to save the OSA/SF SNA memory dump. From the GUI, using the Command window, get the SNA memory dump. See “Reporting Problems to IBM” on page 8-6.

IOAx212E hh:mm:ss CHPID cc reports Application Area Startup Failure

Explanation: The OSA mode failed during initialization.

hh:mm:ss = time of entry
cc = CHPID

User Response: From the OSA/SF GUI, do the following to issue the ACTIVATE command.

1. Display the **Configuration** window for the OSA (CHPID).
2. Enter or select the configuration name for the OSA.
3. Select **Configuration** from the menu bar and then select **Activate**.

   Note: After the activate you will have to reset the CHPID.

If the problem persists, contact the IBM support center.

IOAx213I hh:mm:ss CHPID cc reports Application Area Config. Rejection

Explanation: A mismatch exists between the OSA mode files and the OSA/SF GUI on OS/2. Message IOAC234E should also be displayed with more information.

hh:mm:ss = time of entry
cc = CHPID

User Response: Make sure the latest level of the OSA/SF GUI for OS/2 is installed. See *Servicing the OSA/SF GUI* in Chapter 2 on page 2-1.

IOAx214I hh:mm:ss CHPID cc reports Diagnostic Completion Report

Explanation: A port diagnostic subcommand has completed. This message is only for information. There is not a problem.

hh:mm:ss = time of entry
cc = CHPID

User Response: No response required.

IOAx215I hh:mm:ss OSA mode on CHPID cc is now functional

Explanation: The OSA mode has completed initialization and is ready.

hh:mm:ss = time of entry
cc = CHPID

User Response: No response required. Message is for information only.

IOAx216I hh:mm:ss CHPID cc reports Application Area Config. Mod.

Explanation: The OSA's ATM logical, or LAN emulation client (LEC), parameters for configuration were changed during initialization from the ATM network to allow the OSA mode to run. For example, the LAN Emulation Configuration Server (LECS) could have changed the parameters if **Allow LEC automatic configuration** was specified for the logical port in the configuration.

hh:mm:ss = time of entry
cc = CHPID (OSA)

User Response: This message is for your awareness. If you want to see the OSA's ATM logical port parameters, do the following from the OSA/SF GUI:

1. Refresh the OSA/SF GUI by selecting **View** and then **Refresh now** from an OSA Channels window.
2. Double-click on the port number from the **OSA Channels - Tree View** window.

IOAx217I hh:mm:ss CHPID cc reports Device Offline Alert

Explanation: A device has failed or has been stopped.

hh:mm:ss = time of entry
cc = CHPID

User Response: Display the **OSA Channels - Details View** on the OSA/SF GUI and look at the **Entry state** for the entries to determine what the current values are.

If one of the entries is **Not Started**, this device is the problem. The device will also go offline to the operating system and will no longer be available for use by the host program.

IOAx218I hh:mm:ss CHPID cc reports a Physical port state change

Explanation: The state of the physical port on the OSA has changed.

hh:mm:ss = time of entry
cc = CHPID

User Response: Message IOAC242I will display the state of the physical port.

IOAx219I (timestamp) CHPID *nn* reports an asynchronous event

Explanation: Internal error

User Response: See “Reporting Problems to IBM” on page 8-6.

IOAx2yyI *hh:mm:ss* **CHPID** *cc* **reports an Undefined Register Bit** *n*

Explanation: *yy*=19 through 32 to indicate messages **IOAC219I** through **IOAC232**. Bit *n* is one digit less than the last two digits (xx) in the message ID. Each of these messages reports this internal OSA/SF error at *hh:mm:ss* time for CHPID *cc*.

User Response: See “Reporting Problems to IBM” on page 8-6.

IOAx233E CHPID *cc* **OSA mode** *xxxxxxxx* **failed with a code of** *xxxxxxxx*

Explanation: After an application area abend alert is posted from the OSA, this message indicates which CHPID *cc*, OSA mode, and failure code *xxxxxxxx* were associated with the application area abend alert. Message IOAC211I should accompany this message.

User Response: The CHPID must be reset for the operation to be resumed. To recover operations, configure the CHPID offline in all logical partitions (for MVS, CF CHP(xx),OFFLINE), then back online (for MVS, CF CHP(xx),ONLINE). See “Reporting Problems to IBM” on page 8-6.

IOAx234E CHPID *cc* **configuration reject code of xx**

Explanation: The OSA mode configuration created for this OSA was found to be in error.

cc = CHPID
xx = Hex value of the reject code.

User Response: Try to reactivate the configuration from the Configuration window on the OSA/SF GUI. If the problem persists contact the IBM support center.

IOAx235I Created Appl. Area Dump file ssssssss

Explanation: This message is displayed with message 211. When the alert took place the dump area was read and placed into file ssssssss

User Response: OSA/SF automatically gathers problem determination information. In an event of a service need, IBM support will direct you to send this file for detailed analyst.

IOAx236E Dump file ssssssss already exist.

Explanation: The file that was to be used to read the dump area into already exist and needs to be renamed or deleted so another dump area can be read.

User Response: Rename or erase the filename ssssssss.

IOAx237E Empty Appl. Area Dump Alert request code for CHPID *cc*

Explanation: The Alert data for the dump area was empty so no dump could be taken.

User Response: Call the IBM support center.

IOAx238I hh:mm:ss CHPID *cc* **reports Logical port n is sssss**

Explanation: The OSA ATM logical port (LAN Emulation Client) parameter, **Client enabled state** changed. This parameter indicates the status of the OSA's logical port for LAN emulation.

hh:mm:ss = time of entry
cc = CHPID (OSA)
n = Port number
sssss = Disabled by Internal Failure, Disabled by Physical Port, Disabled by OSA/SF, Disabled Externally, Not Defined, LEC Activating, Enabled, or Unknown.

User Response: Use this status to determine the state of the logical ATM port (LAN Emulation Client). You can display the port's ATM LAN Emulation Settings by double-clicking on the OSA port number from the OSA Channels - Tree view.

IOAx239I hh:mm:ss CHPID cc reports logical port p changed, REASON=rr

Explanation: This reason code is displayed when the status changes for an OSA ATM port. The state of the port is displayed in message IOAC238I.

hh:mm:ss = time of entry
cc = CHPID
p = Port number
rr = Reason Code

User Response: No response required. The reason code is information for IBM support.

IOAx240I hh:mm:ss CHPID cc reports port parameter changed for logical port p

Explanation: An OSA ATM logical port (LAN Emulation Client) parameter changed. This parameter indicates the status of the OSA's logical port for LAN emulation. Message IOAC238I indicates the the state of the logical port.

hh:mm:ss = time of entry
cc = CHPID (OSA)
p = Port number

User Response:

To display the parameter from the OSA/SF GUI, do the following:

1. Refresh the OSA/SF GUI by selecting **View** and then **Refresh now** from an OSA Channels window.
2. Double-click on the port number from the **OSA Channels - Tree View** window.
3. Select the **Emulation** notebook tab and look for **Client enabled state**.

You can view the port parameters by double-clicking on the OSA port number from the **OSA Channels - Tree View** window.

IOAx241I hh:mm:ss CHPID cc had port value v, bytes 4/5 as y are not valid

Explanation: The OSA ATM port parameters were changed, but the data is not valid.

hh:mm:ss = time of entry
cc = CHPID
v = Port value
y = invalid data

User Response: Record the information in this message and report the problem to the IBM support center.

IOAx242I hh:mm:ss CHPID cc reports physical port p is sssss

Explanation: The state of the physical port has changed to enabled, disabled or unknown.

hh:mm:ss = time of entry
cc = CHPID
p = Port number
sssss = Enabled, Disabled, or unknown.

User Response: Use the status in the message to determine what to do next. You can display the OSA's physical port parameters by double-clicking on the port number from the **OSA Channels - Tree View** window, and then selecting the Physical notebook tab.

IOAx261I An alert condition has occurred for CHPID *nn*

Explanation: This message is to inform you that an alert has occurred on the given CHPID.

User Response: Message **IOAC262I** contains the detailed information about this alert.

IOAx262I CHPID *nn* **port** *pp* **error code=***eeee* **severity=***ss*

Explanation: This message provides the details of the alert condition that occurred for the CHPID.

User Response: See the following table for a detailed explanation and to determine the action you should take for the error code and severity.

Error Code	Severity	Explanation	User Response
1400	2	LLC reported that the LAN header is not valid. Alert Category: 2	Contact IBM Support.
1401	2	Unsupported routing information length received from VTAM. Alert Category: 2	Contact IBM Support.

Error Code	Severity	Explanation	User Response
1402	2	User LLC station or service access point (SAP) undefined. Alert Category: 2	Contact IBM Support.
1403	1	VTAM commands received before initialization. Alert Category: 2	Re-activate the XCA Major node. If the problem persists, contact IBM Support.
1404	1	VTAM commands received before LAN adapter enabled. Alert Category: 2	Contact IBM Support.
1405	2	Unsupported VTAM interface header length. Alert Category: 2	Contact IBM Support.
1406	2	Parameter data length not valid. Alert Category: 2	Contact IBM Support.
1407	2	Network layer identifier not supported. Alert Category: 2	Contact IBM Support.
1408	2	Identifier type not valid. Alert Category: 2	Contact IBM Support.
1409	2	Unsupported VTAM interface version. Alert Category: 2	Contact IBM Support.
140A	2	Padding length not valid in data from VTAM. Alert Category: 2	Contact IBM Support.
140C	2	Command or response bits not valid for LAN data. Alert Category: 2	Contact IBM Support.
140D	1	Unsupported function for network management SAP. Alert Category: 2	Verify that the host is configured for NetView on the SAP. If the problem persists, contact IBM Support.
140E	1	LLC connection not opened by VTAM. Alert Category: 2	Contact IBM Support.
140F	2	Unsupported LLC options received from VTAM. Alert Category: 2	Contact IBM Support.
1410	2	Unsupported LLC flow control options received from VTAM. Alert Category: 2	Contact IBM Support.
1411	2	Unsupported function request received from VTAM.	Contact IBM Support.

		Alert Category: 2	
1412	1	Received connect request or response before LLC station opened.	Contact IBM Support.
		Alert Category: 2	
1413	2	Unsupported connection confirmation options received from VTAM.	Contact IBM Support.
		Alert Category: 2	

Error Code	Severity	Explanation	User Response
1414	1	Received close LLC station response with no request outstanding. Alert Category: 2	Contact IBM Support.
1803	3	Normal indication if token-ring cable is not connected to access unit or appropriate wall outlet; if token-ring cable is connected, status code might indicate lobe wire fault or defective access unit. Alert Category: 3	Make sure the Token-Ring port is attached to the network. If it is, Contact IBM Support.
191D	3	An unspecified network error has occurred. Alert Category: 10	Verify the cable connection to the network. Verify that the correct transceiver type is configured. The adapter device driver will periodically attempt to recover; it will clear the error if recovery was successful. If the problem persists, contact IBM Support.

IOAx276E A copy of the attention server already exists

Explanation: A copy of the attention server (IOANMAIN) is already attached.

User Response: Determine if the other attention server (IOANMAIN) is running.

IOAx277E An incorrect command target was entered

Explanation: Incorrect parameters were passed to OSA/SF on the command from the API interface.

User Response: Verify the data in the API input control block and retry the command. Refer to appendix C for API control block information.

IOAx278E SNA image for port *pp* does not support this command.

Explanation: The current level of the SNA mode running on the OSA does not support this command.

User Response: Apply a new version of the SNA image that supports this command. To help you determine which image to install, do one or more of the following:

- Check RETAIN.
- Review applicable PTFs.
- Contact IBM Support Center.

IOAx279E Error opening message log data set

Explanation: An error has occurred while processing the Clear Debug command. The message log data set could not be opened.

User Response: Verify that the message log data set exists, is catalogued to the MVS in this logical partition, and is not in use in another logical partition. The message log data set is pointed to by the OSA/SF startup profile entry IOAMSG. Retry the Clear Debug command.

The OSA/SF Startup Profile is a data set that is pointed to from the DD card IOAPROF within the OSA/SF Started Procedure (task). See Chapter 2 on page 2-1 for more information about the OSA/SF startup profile.

If the condition continues, see “Reporting Problems to IBM” on page 8-6.

IOAx280E Error closing file

Explanation: Internal error

User Response: See “Reporting Problems to IBM” on page 8-6.

IOAx281E File already exists

Explanation: A command has been issued against an OSA/SF data set that requires that the OSA/SF data set be rewritten. The data set already exists but the Replace option was not specified on the command.

User Response: Reissue the command that received this message specifying the Replace option.

IOAx282E OSAD device does not exist for CHPID *cc*

Explanation: The OSAD device with unit address *X'FE'* associated with the specified CHPID (*cc*) has not been defined.

User Response: Perform the following checks and steps:

- Check the I/O definitions in the IODF/IOCDS to ensure an OSAD device (X'FE') has been defined for this CHPID.
- Update and activate the IODF if necessary
- Display the CHPID and unit status information for CHPID *cc*
- Verify the OSAD device is ONLINE to MVS
- Then restart operations on CHPID *cc*

IOAx283W ND mismatch occurred on CHPID *cc*

Explanation: A node descriptor (ND) mismatch occurred on the indicated CHPID. This occurs if there has been a change in the hardware associated with the specified CHPID or if the data currently known by OSA/SF has been altered.

User Response: Verify that the system is operating correctly and issue the Synchronize command. Refer to the user's guide for information about the Synchronize command.

IOAx284W OSA/SF internal data has been updated with new ND value

Explanation: The ND value found on the card has been stored internally.

User Response: None

IOAx285E File name is same as path name.

Explanation: The file name that was passed to OSA/SF, to be used on OSA, has the same name as an existing path name in the file target. This is an OSA-1 TCP/IP platform restriction. The direct name can not be the same as the file name.

User Response: Retry the Put File command using a different file name.

IOAx286E MVS Dataset name was not specified

Explanation: An MVS data set name was not included when the command was issued. The command to be executed requires an MVS data set name. The command did not execute.

User Response: Retry the command that received this message specifying an MVS data set name.

IOAx290E Internal SNA command error for port *pp*

Explanation: Internal processing error occurred during SNA command

User Response: See “Reporting Problems to IBM” on page 8-6.

IOAx291E *cccccccc* **is not a valid Send OSA command**

Explanation: A command was issued against the virtual system screen but it is not a valid command.

cccccccc = command string that was entered.

User Response: Check the command string that was issued. Refer to the commands section for assistance. Then retry the command that received this message.

IOAx292E Force indicator is required for the specified command

Explanation: The FORCE option is needed to execute the command but was not specified.

User Response: Reissue the command specifying the FORCE option.

IOAx293E Create of address space for IOAV*nnnn* **completed with RC=***cc***, reason=***rr*

Explanation: The attempt to create an address space IOAV*nnnn* completed with return code *cc* and reason *rr*. Reason codes X'00' and X'04' are normal (no error).

nnnn = device number
cc = return code from the ASCRE macro
rr = reason code from the ASCRE macro

User Response: If the return code is greater than X'04', look up the ASCRE macro return and reason codes in *Programming: Authorized Assembler Services Reference, Volume 1*, GC28-1475, and make corrections if possible. Reissue the Start Managing command to restart the disk serving function. If problem persists, see “Reporting Problems to IBM” on page 8-6.

IOAx294E OSA configuration data has changed

Explanation: Changes have been made to OSA configuration information since the last command was entered. This can be caused by another OSA/SF in another logical partition with controlling access.

User Response: Refresh the GUI or use the Query command to obtain the new configuration information, then retry the command that received this message.

IOAx295E Cannot complete command since CHPID *cc* is in use

Explanation: Another command is currently being processed by this OSA/SF. The command that received this message could not be executed.

User Response: Wait a short period of time then retry the command that received the message. If contention continues, check OSA/SF status in each partition. Stop and restart OSA/SF if necessary.

IOAx296W Unable to start managing CHPID *cc* for this OSA/SF

Explanation: OSA/SF was unable to start managing this OSA CHPID.

User Response: See the command output window, if using the GUI, for more details and additional messages. If using the TSO interface, additional messages will be presented to the TSO screen.

IOAx297E *pppp* is an incorrect parameter for Send OSA *cccc* command

Explanation: A command was sent to the OSA mode running on the OSA and the command contains a parameter that is not valid.

pppp parameter that is not valid
cccc command that was sent to the OSA mode

User Response: Check the command string, then retry the command.

IOAx298W Unable to stop managing CHPID *cc* for this OSA/SF

Explanation: OSA/SF was unable to stop managing this OSA CHPID.

User Response: See the command output window, if using the GUI, for more details and additional messages. If using the TSO interface, additional messages will be presented to the TSO screen.

IOAx299I VTAM is not using port *pp*.

Explanation: There is no VTAM currently using port *pp*.

User Response: Refresh the port view on the GUI.

IOAx300E Not authorized to Issue Send OSA command *cccccccc*

Explanation: The user ID that entered command *cccccccc* did not have the proper security access authority to issue the command. OSA/SF commands can be given different access levels to control user access. Refer to "Planning to Control OSA/SF User Access (RACF)" in the planning guide.

User Response: Contact your system administrator to learn what access level this user Id has been granted.

IOAx301W Unable to synchronize this CHPID for this OSA/SF

Explanation: Synchronization between the OSA/SF internally stored data and OSA device data failed.

User Response: Refer to the message log and the command output window for additional messages. If the cause of the problem can not be located or the problem persists, see “Reporting Problems to IBM” on page 8-6.

IOAx303E *cccc* is only permitted on a single CHPID

Explanation: The command *cccc* that was issued is restricted to just one channel at a time; that is, multiple channels or ALL are not allowed.

User Response: Specify ONE CHANNEL as the command target and retry the command.

IOAx304E CHPID *cc* is not managed by this copy of OSA/SF

Explanation: An OSA/SF command was entered to a copy of OSA/SF that is not managing the OSA channel that was specified in the command.

User Response: Try this command from the partition in which the managing OSA/SF is running, or enter the command after this OSA/SF becomes the managing facility. Refer to the Start Managing command for more information.

IOAx305E Input value for *ssss* is out of range

Explanation: The input value for a load balancing parameter is out of range. *ssss* is one of the following:

- Session Delay (0-375)
- Load Balancing (0-25)
- Load Balancing Enable (0 or 1)

User Response: Enter a value witin the specified range.

IOAx306E OSA port type does not match the OSA/SF internal data record

Explanation: Synchronization was attempted to update the card with the OSA/SF internal port data but the port type was not the same as found on the OSA device. This situation can occur if a new OSA was installed that contains different port parameters than the OSA that was originally installed (for example, ports were token ring and are now FDDI).

User Response: Check that the correct OSA device was installed. If so, then issue the Synchronize command to store the OSA data into the OSA/SF internally maintained data records.

If an OSA device with different port parameters has been installed, refer to “Service for an OSA Hardware Replacement” on page 4-38 . Also, refer to the planning guide for a description of mode and port parameters.

IOAx307W Channel offline, only data from OSA/SF returned

Explanation: The channel that the command was directed to is offline to the operating system. The only valid information that OSA/SF could determine was from the OSA/SF internally maintained data. No data from the OSA device is available.

User Response: The command requires that the OSA CHPID be online to the operating system. Determine why the channel is offline by issuing the MVS "D M=CHP(nn)" command. Remedy the problem and then retry the command.

IOAx308I CHPID *cc* Port *pp ssssssss* was found to have different values

Explanation: For the port on OSA *cc*, a mismatch was detected between the data maintained by OSA/SF on the host system and the value on the OSA device.

- *pp* - Port number
- *cc* - OSA CHPID number
- *ssssssss* - Description of the port parameter that does not match between OSA/SF and OSA device

User Response: Review the message log for additional information regarding the mismatch. If the OSA is determined to be correct, issue the Synchronize command to realign the OSA/SF data sets. If the OSA/SF data sets are determined to be correct, issue the Install command to put the parameters on the OSA. Refer to the Synchronize and Install commands as well as “Service for an OSA Hardware Replacement” on page 4-38 .

Then retry the command that received the message.

IOAx309I CHPID *cc* LP *p* UA *uu ssssssss* was found to have different values

Explanation: The item indicated was found to have a mismatch between OSA/SF internally maintained data and the value on the OSA.

cc = OSA CHPID
p = Logical partition number
uu = Unit Address
ssssssss = Description of item in conflict

User Response: Review the message log for additional information regarding the mismatch. The data from the message log should provide help in determining whether the OSA device or the OSA/SF host data sets contain the correct information. If the card is determined to be correct, issue the Synchronize command to realign the OSA/SF data sets. If the OSA/SF data sets are determined to be correct, issue the Install command to put the parameters on the OSA. Refer to the Synchronize and Install commands as well as “Service for an OSA Hardware Replacement” on page 4-38 .

Then retry the command that received the message.

IOAx310W Unable to set parameter for a port on this CHPID

Explanation: The Set Parameters command that was issued contained a parameter that is not valid or that was unable to be set.

User Response: See the command output response in the message log for more information.

IOAx312I Station doesn't exist on port *pp* **(SSAP** *nn***, DSAP** *nn***, DMAC** *mm***)**

Explanation: A station on port *pp* with a source SAP *nn*, destination SAP*nn*, and destination MAC address *mmmmmmmmmmmm* does not exist.

User Response: Refresh the connection view on the GUI.

IOAx313I SAP *nn* **is not open on port** *nn*

Explanation: The SAP that was open has changed since the last operation.

User Response: Refresh the SAP view on the GUI.

IOAx314E Incorrect LAN port parameter ID *iiiiiiii*

Explanation: An incorrect LAN port parameter has been specified or the LAN port parameter is not valid for this OSA mode of operation.

iiiiiiii = port parameter ID that is not valid

User Response: Check the Parameter ID specified with the SET PARM command. If using the GUI, verify that the configuration is valid for this OSA mode and OSA device type. Then retry the command that received this message.

IOAx315I OSA/SF internal data has value *dddddddd*

Explanation: This message corresponds to a previous message, IOAK308I, which describes which item OSA/SF found to be mismatched with the channel hardware. A following message, IOAK316I shows the value obtained from the channel.

dddddddd = hexadecimal value OSA/SF has in its internal record

User Response: Using the values from messages IOAx308I, IOAx315I, and IOAx316I, determine which data value is correct. The data from the messages should provide help in determining whether the OSA device or the OSA/SF host data sets contain the correct information. If the card is determined to be correct, issue the Synchronize command to realign the OSA/SF data sets. If the OSA/SF data sets are determined to be correct, issue the Install command to put the parameters on the OSA. Refer to the Synchronize and Install commands as well as“Service for an OSA Hardware Replacement” on page 4-38 .

IOAx316I OSA hardware has data value *dddddddd*

Explanation: This message corresponds to a previous message, IOAK308I, which describes which item OSA/SF found to be mismatched with the channel hardware. A previous message, IOAK315I shows the value obtained from the internal OSA/SF data.

dddddddd = hexadecimal value received from the channel

User Response: Using the values from messages IOAx308I, IOAx315I, and IOAx316I, determine which data value is correct. The data from the messages should provide help in determining whether the OSA device or the OSA/SF host data sets contain the correct information. If the card is determined to be correct, issue the Synchronize command to realign the OSA/SF data sets. If the OSA/SF data sets are determined to be correct, issue the Install command to put

the parameters on the OSA. Refer to the Synchronize and Install commands as well as“Service for an OSA Hardware Replacement” on page 4-38 .

IOAx317E Unable to set the managing partition for CHPID *cc*

Explanation: A Start Managing command was issued to OSA/SF. OSA/SF was unable to set the "managing partition" indicator in the specified OSA CHPID. An internal OSA/SF error has occurred.

User Response: See “Reporting Problems to IBM” on page 8-6.

IOAx318E Update to OAT failed due to in use OAT entries

Explanation: An attempt to unassign an OAT entry that is associated with the subchannel was attempted. The unassign attempt was not successful.

User Response: OAT entries that are currently in use can not be unassigned. The currently executing applications for those entries that are in use must be UNLOADed from the OSA. Refer to the LANRES mode section for more information. Once the applications have been UNLOADed, then update the OAT.

IOAx319E Update to OAT failed due to in use passthru entries

Explanation: An attempt was made to unassign an OAT entry that is associated with an active device address in the OSA/SF TCP/IP Passthru mode. The device address was in use and cannot be unassigned without the Force parameter.

User Response: Retry this command with the Force parameter. USE CAUTION! This is an active TCP/IP Passthru port. The FORCE option will terminate active connections through the port. An alternative action is to stop the use of entries by terminating devices from TCP/IP for MVS at the host.

IOAx320E Prime of database did not complete successfully

Explanation: An operation was attempted to copy database records from the OSA and it failed. This indicates that an OSA channel file data set could not be created.

User Response: The OSA channel file data sets are pointed to by the IOADSN keyword in the OSA/SF startup profile. Ensure that the OSA/SF startup profile IOADSN keyword is correct and that there is sufficient space on the MVS DASD for the OSA channel file data sets. The OSA/SF Startup Profile is a data set that is pointed to from the DD card IOAPROF within the OSA/SF Started Procedure (task). See Chapter 2 on page 2-1 for more information about the OSA/SF startup profile. If the condition continues, see “Reporting Problems to IBM” on page 8-6.

IOAx321I OSA/SF internal data has value *dddddddd*

Explanation: This message corresponds to a previous message, IOAK308I, which describes which item OSA/SF found to be mismatched with the channel hardware. A following message, IOAK322I shows the character string value obtained from the OSA.

dddddddd = character string OSA/SF has in its internal record

User Response: Using the values from messages IOAx308I, IOAx321I, and IOAx322I, determine which data value is correct. The data from the messages should provide help in determining whether the OSA device or the OSA/SF host data sets contain the correct information. If the card is determined to be correct, issue the Synchronize command to realign the OSA/SF data sets. If the OSA/SF data sets are determined to be correct, issue the Install command to put the parameters on the OSA. Refer to the Synchronize and Install commands as well as“Service for an OSA Hardware Replacement” on page 4-38 .

IOAx322I OSA hardware has data value *dddddddd*

Explanation: This message corresponds to a previous message, IOAK308I, which describes which item OSA/SF found to be mismatched with the channel hardware. A previous message, IOAK321I shows the character string value obtained from the internal OSA/SF data.

dddddddd = character string received from the OSA

User Response: Using the values from messages IOAx308I, IOAx321I, and IOAx322I, determine which data value is correct. The data from the messages should provide help in determining whether the OSA device or the OSA/SF host

data sets contain the correct information. If the card is determined to be correct, issue the Synchronize command to realign the OSA/SF data sets. If the OSA/SF data sets are determined to be correct, issue the Install command to put the parameters on the OSA. Refer to the Synchronize and Install commands as well as“Service for an OSA Hardware Replacement” on page 4-38 .

IOAx323W CHPID *cc* OSA OAT and OSA/SF internal OAT data are out of sync

Explanation: The OSA address table (OAT) data and the data maintained by OSA/SF in host MVS data sets for the specified OSA CHPID do not match.

- *cc* - OSA CHPID that is no longer synchronized

User Response: Review the message log for additional information regarding the mismatch. The data from the messages should provide help in determining whether the OSA device or the OSA/SF host data sets contain the correct information. If the card is determined to be correct, issue the Synchronize command to realign the OSA/SF data sets. If the OSA/SF data sets are determined to be correct, issue the Install command to put the parameters on the OSA. Refer to the Synchronize and Install commands as well as “Service for an OSA Hardware Replacement” on page 4-38 .

Then retry the command that received the message.

IOAx324W CHPID *cc* OSA PORT OSA/SF internal PORT data is out of sync

Explanation: The port data maintained by the OSA hardware (CHPID *cc*) no longer matches the internal port data maintained by OSA/SF on the host system. This condition can occur, for example, if a network management program that has access to the OSA has altered the PORT data.

User Response: Review the message log for additional information regarding the mismatch. The data from the messages should provide help in determining whether the OSA device or the OSA/SF host data sets contain the correct information. If the card is determined to be correct, issue the Synchronize command to realign the OSA/SF data sets. If the OSA/SF data sets are determined to be correct, issue the Install command to put the parameters on the OSA. Refer to the Synchronize and Install commands as well as “Service for an OSA Hardware Replacement” on page 4-38 .

Then retry the command that received the message.

IOAx325I CHPID *cc* is no longer managed by partition *pp*

Explanation: CHPID *cc* is no longer managed by partition *pp* because a Stop Managing command was entered from this partition.

cc = CHPID
pp = LP number

User Response: No action is required. The Stop Managing command has completed successfully.

IOAx326I CHPID *cc* is currently managed by partition *pp*

Explanation: This message was issued during initialization or a Start Managing command.

cc = CHPID
pp = LP number

User Response: None. Normal OSA/SF initialization or the Start Managing command continue.

IOAx327W ND mismatch occurred on CHPID *cc*

Explanation: An OSA device has been replaced and the physical information from the old card does not match the physical information on the new card. The current and previous physical information are listed in the message log.

cc = CHPID
ND = Node Descriptor

User Response: Review the data in the message log. Refer to “Service for an OSA Hardware Replacement” on page 4-38 for additional information on OSA device replacement.

IOAx328W No saved configuration file for CHPID *cc*

Explanation: No information about the specified channel was saved while OSA/SF was being refreshed or initialized; that is, the channel file information for CHPID *cc* does not exist or the channel file data set for CHPID *cc* can not be located.

User Response: The channel file data sets are pointed to by the IOADSN entry of the OSA/SF start-up procedure. (See Chapter 2 on page 2-1) Ensure that the pointer has not changed and that the DASD volume, pointed to by the volume keyword, is operational. The channel file data set for CHPID *cc* must also be catalogued on the MVS system.

If the channel file data set does not exist, use the MVS VARY command to vary the OSAD device (`X'FE'`) offline to MVS, then vary the OSAD device back online to MVS. When the OSAD device is brought back online to MVS, the channel file data set will be rebuilt. Then stop and start OSA/SF.

IOAx329W Could not write OSA information to file for CHPID *cc*

Explanation: An MVS write error occurred while trying to save information about the specified channel in an OSA/SF data set.

User Response: Check the MVS system console for error messages. Verify that the OSA/SF startup profile is valid. Check for other MVS users accessing the data set at the same time. The OSA/SF channel information data sets are pointed to by the SET NAME IOADSN entry in the OSA/SF startup profile. The OSA/SF Startup Profile is a data set that is pointed to from the DD card IOAPROF within the OSA/SF Started Procedure (task). See Chapter 2 on page 2-1 for more information about the OSA/SF startup profile.

If problems continue, see “Reporting Problems to IBM” on page 8-6.

IOAx331E Incorrect base directory information received from OSAD

Explanation: The licensed internal code installed on the OSA keeps a directory of the information installed on the OSA. The internal code has determined that the directory is no longer valid.

User Response: See “Reporting Problems to IBM” on page 8-6.

IOAx332E Incorrect file information received from OSAD

Explanation: The licensed internal code installed on the OSA keeps a directory of the information installed on the OSA. The internal code has located the directory but as least some of the information it contains is not valid.

User Response: See “Reporting Problems to IBM” on page 8-6.

IOAx333E Port *pp* does not exist on OSA

Explanation: A Set Parameters command has been issued specifying a PORT number as part of the command. The OSA targeted by the command does not contain the specified PORT number.

- *pp* - The port number on the OSA that does not exist

User Response: Check that the OSA targeted by the command is correct. Verify the number of PORTs on the OSA. From the OSA GUI, the PORT information can be checked from the Channel View window. Reissue the Set Parameters command.

IOAx334E Port is in service processor control mode. Enable/disable not allowed.

Explanation: An attempt was made to enable or disable a port on an OSA. The action can not be completed because the port on the OSA is in hardware service processor control mode.

User Response: Using the HMC or the PCE, depending on the hardware configuration, remove service processor control mode from the port. Then retry the Set Parameters command.

IOAx335E Unable to store the current data key in OSA/SF internal data

Explanation: An internal OSA/SF error has occurred during the condition described in the message text.

User Response: Stop and restart OSA/SF. If the condition reoccurs, see “Reporting Problems to IBM” on page 8-6.

IOAx336E Enable of port failed

Explanation: OSA/SF was unable to enable the port specified in the Set Parameters command because the port was disabled externally or the port is not operational.

User Response: Check the hardware master console (HMC) or processor control (PCE) for OSA port status and hardware errors. Re-attempt to enable the port if the port is disabled. Contact IBM Service if required.

IOAx337E A sub-directory specified already exists

Explanation: An attempt was made to create a sub-directory that already exists. This is an OSA/SF internal error.

User Response: See “Reporting Problems to IBM” on page 8-6.

IOAx338E Sub-directory name specified not valid

Explanation: The sub-directory name specified in the command contained a character string that is not valid. OSA/SF has attempted to write information to the disk serving data set but was not successful.

User Response: Check the OSA/SF master index data set for corruption. The master index data set is located on the volume specified in the IOAINX member of the OSA/SF startup profile (see Chapter 2 on page 2-1 for more information). If the DASD volume and master index data set are operational, see “Reporting Problems to IBM” on page 8-6.

IOAx339E The system cannot find the sub-directory specified

Explanation: A change directory or a get file from a sub-directory was attempted and the sub-directory that was specified on the Get File command does not exist.

User Response: Correct the sub-directory name and retry the Get File command.

IOAx340E Incorrect group size *n* specified

Explanation: An incorrect group size was specified in the OSA/SF Put Table command. Passthru device types should each have a group size of 2. Subchannel and SNA device types should each have a group size of 1.

n = group size that was specified

User Response: Correct the group size and retry the command that received this message.

IOAx341W Not all OAT entries stored successfully for CHPID *cc*

Explanation: During a Put OAT ADDRESS TABLE or INSTALL operation, some of the OAT entries were not written to OSA.

cc = OSA CHPID number

User Response: Review the message log for further messages. Each OAT entry that is not valid should have an explanation. If some messages have reason codes associated with them, this could be the result of an internal OSA/SF error; reason codes are reserved for IBM use only. For further assistance, see “Reporting Problems to IBM” on page 8-6.

IOAx342E No OAT entries stored successfully for CHPID *cc*

Explanation: During a Put OAT ADDRESS TABLE or INSTALL operation, none of the OAT entries were written to the OSA.

cc = OSA CHPID number

User Response: Review the message log for further messages. Each OAT entry that is not valid should have an explanation. If some messages have reason codes associated with them, this could be the result of an internal OSA/SF error; reason codes are reserved for IBM use only. For further assistance, see “Reporting Problems to IBM” on page 8-6.

IOAx343E No OAT slot for this group of input is available

Explanation: This group of OAT entries was not written to the card because there are no free slots on the OSA for the entries specified.

User Response: Using the GUI, OSA Configurations, delete some of the defined entries. If using the Put OAT command, delete even-odd pairs of entries that are not in use or set them to UNASSIGNED. Retry the command that resulted in this message.

IOAx344E No CLAW entry slots available

Explanation: Internal error

User Response: See “Reporting Problems to IBM” on page 8-6.

IOAx345E PVC entry *n* has incorrect format

Explanation: The PVC data entry specified as *n* does not have the correct eyecather or the correct control block ID.

User Response: An internal OSA/SF error occurred. Report the problem to the IBM Support Center.

IOAx346E *ffff* for PVC name *nnnn* is out of range

Explanation: One of the following fields as specified by *ffff* has a value that is not within the allowed range.

- Forward Peak Cell Rate (0-353207)
- Backward Peak Cell Rate (0-353207)
- Forward Max PDU size (64-9188)
- Backward Max PDU size (64-9188)

User Response: Enter a value in the range shown for the field in error. The OSA/SF GUI checks these values on input, if you are using the Set Parameters command, correct the value.

IOAx347E Incorrect LP *p* with UA *uu*

Explanation: The logical partition (LP) number, *p*, for the unit address (UA) *uu* is not valid.

User Response: Check the OSA unit address and logical partition numbers in the IODF (or IOCDS). Correct the partition number and retry the command.

IOAx348E Must set LP number to zero for this OAT entry

Explanation: This channel is not a shared channel; that is, it is not a EMIF channel. For a channel that is not shared, only LP number 0 can be used for this channel in the command.

User Response: Change the LP number to 0 and retry the command.

IOAx349E CHPID *cc* is not online

Explanation: The CHPID *cc* was found to be offline to MVS.

User Response: Issue the *D M=CHP(cc)* MVS command to verify the status of the CHPID. If the CHPID is offline, issue the *CF CHP(cc),ONLINE* MVS command to configure the OSA channel online and retry the command.

IOAx350E IP Address *iiiiiiiiiiiiiii* already used by LP *p uu*

Explanation: The IP Address (*iiiiiiiiiiiiiii*) specified in a Put OAT operation is already in use by another logical partition.

iiiiiiiiiiiiiii = IP Address
p = LP number
uu = Unit address

User Response: If TCP/IP port sharing is desired, the IP addresses must be unique to each logical partition (refer to the planning guide for more information). Provide a unique IP address for each logical partition and retry the command.

IOAx351W Portions of the Query command failed

Explanation: The Query command completed but not all of the data that was requested was returned.

User Response: Explanations of why portions of the data were not returned are interspersed in the output data set from the Query command. Refer to messages in the command output for further information.

IOAx352E Query command failed, no data was returned

Explanation: The Query command did not complete successfully. No output data from the command was returned.

User Response: If using the GUI, refer to the command output window for additional messages. If using the TSO interface, additional messages will be displayed in the query command output data set specified on the TSO command input. If the problem persists, see “Reporting Problems to IBM” on page 8-6.

IOAx353E Incorrect *ccccccc* **target** *tttt*

Explanation: The command target or port target for a Query command has an incorrect value.

ccccccc = either command or port
tttt = specified target in hexadecimal notation

User Response: This message is issued from the API interface. The target is a field that is passed through the API; that is the target of the command being issued. This field indicates if the command is for: ONE (channel), ALL CHANNELS, or OSA/SF. Refer to the API interface documentation and control block section. Correct the command target or port target and retry the command used with the API interface.

IOAx354W OSA TCP/IP platform not loaded-no screen information available

Explanation: Virtual screen information is only available if the TCP/IP platform is operational on the OSA.

User Response: Verify that the LANRES mode is activated on the OSA. Refer to the LANRES installation instructions for a description of the activate sequence.

IOAx355E CLAW resource name *rr* **specified already exists for system name** *ss*

Explanation: Internal error

User Response: See “Reporting Problems to IBM” on page 8-6.

IOAx356E Duplicate CLAW resource name *rr* **specified on the command**

Explanation: Internal error

User Response: See “Reporting Problems to IBM” on page 8-6.

IOAx357W Start Managing completed but failed to create disk address space

Explanation: Management of the OSA is now possible but the automatic start of the disk serving function failed as OSA/SF was not able to create an address space for the OSA disk serving started task. This failure could be the result of:

__ 1. A disk serving task is already active

__ 2. The disk serving JCL was not set-up properly or not found

__ 3. An MVS system constraint was reached (no more started tasks permitted for example).

User Response: Check the following:

__ 1. Verify that no disk serving task (IOAVnnnn) is running in the logical partition (To check, issue the "D A,IOAVnnnn" MVS command, where "nnnn" is the OSAD device address.)

__ 2. Review the OSA GUI message log and command output windows if Start Managing issued from the GUI

__ 3. Review the TSO screen for additional messages if Start Managing issued from TSO

__ 4. Check the MVS console for error messages.

Retry the command. If the problem continues, see “Reporting Problems to IBM” on page 8-6.

IOAx358W Stop Managing completed but failed to remove disk address space

Explanation: Stop managing completed successfully but failed to remove an address space that was used for the OSA disk serving function.

User Response: Check that the disk serving function, MVS job name IOAVnnnn, where "nnnn" is the OSAD device address, is not running in another logical partition. If the disk serving function is running in another logical partition, issue the Start Managing command in that logical partition. If the disk serving function is running in this logical partition, it must be canceled with the MVS CANCEL command (C IOAVnnnn).

IOAx359E LP *p* and UA *uu* has a zero IP address for the default entry

Explanation: The OAT entry specified by LP *p* and unit address *uu* was specified as either a primary or secondary default entry. The default entry cannot have an IP address of all zeros.

p = logical partition (LP) number
uu = unit address (UA)

User Response: A non-zero IP address must be specified. Correct the IP address for the default entry. Reissue the Put OAT or Install command, whichever was used.

IOAx360E *nnn* entries were specified as default entry for port *pp*

Explanation:

nnn number of entries
pp port number

A Put OAT command was issued and more than one OAT entry was specified as the primary or secondary default path for unknown IP packets.

A port can only have one of the following:

- No default entries
- One primary default entry
- Both a primary default entry and a secondary default entry.

User Response: Correct the data being used for the Put OAT command. Reissue the Put OAT or Install command, whichever was used.

IOAx361E Current *ddd* default entry (LP *p* and UA *uu*) missing from input

Explanation: A Put OAT or Install command was issued to add or change OAT entries. The IOACMD EXEC determined that the primary or secondary default entry was missing on the input.

ddd = primary or secondary
p = logical partition (LP) number of default router
uu = unit address (UA) of the default router

A port can have one of the following:

- No default entries
- One primary default entry
- Both a primary default entry and a secondary default entry.

User Response: Do either of the following:

- Include the missing primary or secondary default indicator to the OAT entry and then reissue the Put OAT or Install command.
- If you want to replace all OAT entries, reissue the Put OAT or Install command and answer Yes when asked if all entries should be replaced.

IOAx362E All *nnn* OAT entries for port *pp* must be specified with port sharing

Explanation: To use TCP/IP port sharing mode, all OAT entries with port *pp* must be specified in the OAT, and all entries must have non-zero Internet Protocol (IP) addresses.

nnn = number of entries
pp = port number

User Response: Do the following:

___ 1. Include all the OAT entries associated with this port and verify that all entries are non-zero. Change zero IP addresses to valid non-zero IP addresses or delete the entries that contain zero IP addresses.

___ 2. If you are using the GUI, follow the instructions in Chapter 4 on page 4-1 for TCP/IP Passthru mode and sharing OSA Ports.

___ 3. If you are using the REXX interface, issue the Put OAT command to rewrite the OAT.

___ 4. Configure the OSA offline and then online to all logical partitions.

IOAx363E Null CLAW system name was specified for LP *p*

Explanation: Internal error

User Response: See “Reporting Problems to IBM” on page 8-6.

IOAx364E Incorrect drive specification on file I/O command

Explanation: An incorrect drive specification was used for a OSA/SF File command. The only valid drive specifications are:

LIST command - **A:**, **B:**, or **SYS:**
PUT command - **SYS:**

User Response: Check which command was used, reissue the command using a valid drive specification.

IOAx365E Unable to clear the OAT table for CHPID *cc*

Explanation: During an Install command or during a Put Table command with the New Table option, OSA/SF attempted to clear the previous OAT table entries. A problem was encountered during the attempt to clear existing OAT table entries for CHPID *cc*.

User Response: Check the following:

___ 1. Review the OSA GUI message log and command output windows for related messages

___ 2. Review the TSO screen for additional messages if using the TSO interface

___ 3. If using the API interface, examine the reason code data structure from this operation

___ 4. Check the MVS console for error messages.

Retry the command. If the problem continues, see “Reporting Problems to IBM” on page 8-6.

IOAx366I Disk image loaded, config CHPID *cc* off/on before reissuing INSTALL

Explanation: The code image specified in the IOACFG data set was successfully written to the specified CHPID. The message is now prompting that the CHPID be configured online to MVS to activate the code image.

User Response: The installation of an OSA mode has successfully progressed to this point. Configure the CHPID offline to MVS (CF CHP(nn),OFFLINE) in all logical partitions and then back online to MVS (CF CHP(nn),ONLINE) to activate the image just written. If the disk serving function is needed for this OSA mode, verify that the disk serving devices are ONLINE to MVS following the configure ONLINE command. Then, issue the **INSTALL** command again to write the OSA mode files to the OSA.

Refer to the user's guide for more information on the install and activation processes.

IOAx367E *hh:mm:ss uuuuuuuu* **on** *ssssssss* **not authorized to use FORCE option**

Explanation: At the specified time, user ID *uuuuuuuu* on system *ssssssss* entered a command with the Force option, which this user ID is not authorized to use.

User Response: Reissue the command without the Force option or contact your system administrator to obtain authorization to use the Force option.

IOAx368E Partition *x* **cannot destroy Address Space in partition** *y*

Explanation: The Force option was specified in the Stop Managing command to stop managing an OSA device and terminate the disk serving address space. The disk serving address space, however, is running in another logical partition, where:

x = partition from which Stop Managing command was issued
y = the partition in which the disk serving address space is running.

User Response: To stop the OSA disk serving address space, issue the Stop Managing command from the logical partition in which the disk serving address space is running.

IOAx369E Disk Serving partition *dd* **must be used for UA** *uu*

Explanation: Internal error

User Response: See “Reporting Problems to IBM” on page 8-6.

IOAx370E Unload disk server application for partition *dd* **UA** *uu*

Explanation: Internal error

User Response: See “Reporting Problems to IBM” on page 8-6.

IOAx371E FORCE option must be specified to create disk serving address space

Explanation: The Force option must be specified with the Start Managing command when the Start_Disk_Serving option is selected.

User Response: Specify **Force** option and retry the command.

IOAx372E Install command failed

Explanation: The Install command failed, or installation procedure failed during initialization of the OSA mode.

User Response: Check the following:

___ 1. Review the OSA GUI message log and command output windows

___ 2. Review the TSO screen for additional messages if using the TSO interface

___ 3. If using the API interface, examine the reason code data structure from this operation and take the appropriate action.

___ 4. Check the MVS console for error messages.

Retry the command. If the problem continues, see “Reporting Problems to IBM” on page 8-6.

IOAx373E Trace mask *tt* **is out of range. Must be less than** *nn*

Explanation: Internal error

User Response: See “Reporting Problems to IBM” on page 8-6.

IOAx374I Last known disk serving address space for CHPID *cc* **is in LP** *pp*

Explanation: This message is issued during initialization or when the OSA comes online to the operating system. It identifies the last location of the disk serving function for this OSA.

User Response: None. OSA mode initialization continues.

IOAx375E Sub-directory name specified cannot be removed

Explanation: This indicates that the sub-directory against which the command was issued contains file information; that is, the sub-directory is not empty.

User Response: If the sub-directory is to be removed, all files and any sub-directories within the targeted sub-directory must be deleted first. Do a list file to determine what needs to be removed. Delete the files and any sub-directories within the targeted sub-directory.

IOAx376W Unable to allocate file for channel data for CHPID *cc*

Explanation: An error occurred when OSA/SF attempted to dynamically allocate an MVS data set to store the OSA channel file information for CHPID *cc*.

User Response: The channel file data sets are built on the DASD volume pointed to by the IOADSN entry of the OSA/SF startup procedure. The OSA/SF Startup Profile is a data set that is pointed to from the DD card IOAPROF within the OSA/SF Started Procedure (task). See Chapter 2 on page 2-1 for more information about the OSA/SF startup profile.) Ensure that the pointer has not changed and that the DASD volume, pointed to by the VOLUME keyword, is operational. The channel file data sets must also be catalogued on the MVS system.

If the channel file data set does not exist, use the MVS VARY command to vary the OSAD device (X'FE') offline to MVS, then vary the OSAD device back online to MVS. When the OSAD device is brought back online to MVS, the channel file data set will be rebuilt. Then stop and start OSA/SF.

IOAx377E Input Value *dddd* **for parameter ID** *pppppppp* **is out of range**

Explanation: The decimal input data *dddd* for a Set Parameter command with hexadecimal parameter ID *pppppppp* is not in the valid range.

User Response: Check the parameter and input data and retry this command.

IOAx378I OSA hardware has data value *sss...sss*

Explanation: This message is issued with a previous message, **IOAK308I**, that describes which item OSA/SF found to be mismatched with the channel hardware. Another message, **IOAK379I**, shows the value obtained from the internal OSA/SF data.

sss...sss = hexadecimal value received from the channel

User Response: Using the values from messages IOAx308I, IOAx378I, and IOAx379I, determine which data value is correct. The data from the messages should provide help in determining whether the OSA device or the OSA/SF host data sets contain the correct information. If the card is determined to be correct, issue the Synchronize command to realign the OSA/SF data sets. If the OSA/SF data sets are determined to be correct, issue the Install command to put the parameters on the OSA. Refer to the Synchronize and Install commands as well as“Service for an OSA Hardware Replacement” on page 4-38 .

IOAx379I OSA/SF internal data has value *sss...sss*

Explanation: This message is issued with a previous message, **IOAK308I**, that describes which item OSA/SF found to be mismatched with the internal data. Another message, **IOAK378I**, shows the value obtained from the OSA hardware data.

sss...sss = hexadecimal value received from the channel

User Response: Using the values from messages IOAx308I, IOAx378I, and IOAx379I, determine which data value is correct. The data from the messages should provide help in determining whether the OSA device or the OSA/SF host data sets contain the correct information. If the card is determined to be correct, issue the Synchronize command to realign the OSA/SF data sets. If the OSA/SF data sets are determined to be correct, issue the Install command to put the parameters on the OSA. Refer to the Synchronize and Install commands as well as“Service for an OSA Hardware Replacement” on page 4-38 .

IOAx380E Host CLAW name *hh* already used by LP *pp* and UA *uu*

Explanation: The CLAW name specified is already used in this logical partition on this unit address.

User Response: Change the CLAW name and retry command.

IOAx381I OSA/SF has an OAT entry for CHPID *cc* LP *pp* UA *uu*, but not the OSA.

Explanation: The OAT entry exists as specified, but the corresponding OSA hardware is not installed. This message is issued as the result of the synchronize command. As the synchronize command processes the OAT, each time an entry in the OAT does not correspond to the OSA CHPID *cc*, this informational message is issued.

- *cc* - OSA CHPID in OAT
- *pp* - Logical partition identified in the OAT
- *uu* - Unit address that does not match the OSA

User Response: The synchronize command continues to re-align the internal files with the OSA hardware information. Normal operation continues.

IOAx389E Incorrect buffer number *nn* for GET ATM TRACE

Explanation: You entered an incorrect value for the ATM trace buffer.

User Response: Valid values are 1–16. See “Reporting Problems to IBM” on page 8-6.

IOAx390E Not a valid command for CHPID *cc*

Explanation: The command issued cannot be issued against this CHPID because the command is only valid for OSAs running in a different mode.

User Response: Check the command in the user's guide to see what OSA mode types are valid. Issue the Query command against the OSA to see what mode the OSA is running.

IOAx391W Empty trace buffer was found for CHPID *cc*

Explanation: This error occurred because of an OSA SNA image error such that the SNA trace buffer was not created.

User Response: Perform a single reinstall of the SNA image on the OSA. If the problem reoccurs after a reinstall, see “Reporting Problems to IBM” on page 8-6.

IOAx392W Empty message log buffer was found for CHPID *cc*

Explanation: This error occurred because of an OSA SNA image error such that the SNA message log buffer was not created.

User Response: Perform a single reinstall of the SNA image on the OSA. If the problem reoccurs after a reinstall, see “Reporting Problems to IBM” on page 8-6.

IOAx393E OSA card for CHPID *cc* not set up for SNA

Explanation: A Set Parameter command specifying an SNA option was issued to OSA CHPID *cc* but the licensed internal code installed on this OSA does not support SNA mode.

User Response: Install SNA mode on the OSA or correct the Set Parameter command so that SNA options are not specified.

IOAx394E Unknown device type *dd* found in OAT for CHPID *cc*

Explanation: A control block from an API interface contains an unknown device type.

dd - Unknown device type that was encountered

User Response: Examine the API input control block. Refer to the control block section for information. Correct the device type entry and reissue the API.

IOAx395I CHPID *nn* date and time cannot be autoset by OSA/SF to match system

Explanation: This message is part of the LANRES mode. The OSA running LANRES was not able to set the date and time.

User Response: If you take no action, the time stamp on the OSA/SF logs for CHPID *nn* will not be synchronized with the host logs. However, you can set the OSA/SF time to match the system clock by issuing the Install command to OSA CHPID *nn*.

IOAx396W Port data is set in OSA hardware but OSA/SF has different port type

Explanation: The port data specified in the **Set Parameter** command is set in the OSA hardware successfully but OSA/SF internal data shows this port has a different port type.

User Response: Issue the Synchronize command to update the OSA/SF internal data. Refer to the Synchronize command for further information. If unable to resolve condition, see “Reporting Problems to IBM” on page 8-6.

IOAx397W Set command completed but LAN port is in disabled state

Explanation: This message indicates no query data for this port is shown because the LAN port is in a disabled state.

User Response: The LAN port data for this port can be obtained by:

___ 1. Enable the port by one of the following methods

- with a Set Parameter command from TSO
- from the hardware master console or processor controller

___ 2. Issue a Query command to the OSA specifying this port or refresh the GUI.

IOAx398E Input value for group address entry *nn* is incorrect

Explanation: The group address field is not correct for entry *nn*. This message follows a SET PARM command that has submitted data in which the group address is not valid.

User Response: Retry the command specifying the group address according to the following rules.

- For a FDDI LAN attachment, set bits 0 and 1 of each group address to 1.
- For a token-ring LAN and token-ring ATM LAN emulation attachments, set bits 0 and 1 to 1; set bits 2–15 to 0; set bit 16 to 1.
- For an Ethernet LAN and Ethernet ATM LAN emulation attachments, set bits 0–5 to 0; set bits 6 and 7 to 1; set bits 8–15 to 0; set bit 23 to 1.
- For FENET bits 6 and 7 must be 1.

IOAx399I SNA image loaded, config CHPID *cc* off/on to activate loaded image

Explanation: The code image specified in the IOACFG data set was successfully written to the specified CHPID.

cc = CHPID

User Response: Configure the CHPID offline to MVS in all logical partitions and then online to MVS to activate the image just written.

IOAx400E Subchannel UA *uu* for partition *p* is not available

Explanation: The identified OAT entry for type equal SUBCHANNEL cannot be written to the OSA because either

- An OAT entry with the same UA but different partition number already exists
- There is more than one subchannel entry with the same unit address (UA) in the OAT
- The subchannel entry with the same unit address (UA) is occupied in the OAT and no acceptable free entries are available
- The OAT is full.

uu = Unit Address
p = Partition Number

User Response: Unassign OAT entries that are not used. If using the TSO interface, set field "OAT.n.12" to "UNASSIGNED", where "n" is the OAT entry number. If using the GUI interface, delete unused entries from the configuration. Reissue the command that resulted in this message.

IOAx401E UA *uu* specified for partition *p* is out of range

Explanation: The specified UA in the OAT entry is out of range. The valid ranges for LANRES configuration is 0 thru 210(X'00" - X'DB'). The valid range for HPDT MPC, HPDT ATM native, SNA and TCP/IP Passthru configurations is 0 thru 253(X'00' - X'FD') where

uu = Unit Address
p = Partition Number

User Response: Correct the unit address in the input data and reissue the command.

IOAx402E Write SNA Control Command failed. Return code *nn*

Explanation: Internal error

User Response: See “Reporting Problems to IBM” on page 8-6.

IOAx403E Input value for functional address is incorrect

Explanation: The input data for a Set Parameter command with parameter TR_FUNCTIONAL_ADDRESS is not valid.

User Response: Correct the input data and reissue the Set Parameter command. Contact the IBM Support Center for assistance.

IOAx404E There is no corresponding data found in OSA/SF for this port

Explanation: When executing the Install command, OSA/SF host based data does not have data to correspond to a port on the OSA device. The Install command has found a mismatch between the number of ports on the OSA device and the number of ports for this OSA device as found in the host information data base. The Install command terminates.

User Response: This message can be issued if OSA was replaced and now the Install command is being used to update the information on the new OSA. Refer to “Service for an OSA Hardware Replacement” on page 4-38 .

If the condition can not be corrected, see “Reporting Problems to IBM” on page 8-6.

IOAx405W CHPID *cc* is shared, but partition number is zero

Explanation: In a shared channel (port sharing) EMIF (ESCON Multiple Image Facility) environment, the LP number cannot be zero. For OSA CHPID *cc* the LP number is zero for one of the port shared entries in the OAT. This message can be issued by either the Put OAT or Install command.

cc = channel path id

User Response: Correct any LP values in the OAT that are specified as zero for all devices on shared CHPID *cc*. Reissue the Put OAT or Install command, whichever was used.

IOAx406W CHPID *cc* is dedicated, but partition number is not zero

Explanation: If a channel is dedicated to a logical partition (LP), that is, the channel is not shared, then the LP number for the devices associated with the channel in the OAT must be specified as zero. This message can be issued by either the Put OAT or Install command.

cc = channel path id

User Response: Specify zero as the LP number for all device addresses in the OAT for CHPID *cc*. Reissue the Put OAT or Install command, whichever was used.

IOAx407E A copy of Disk Serving for device *xxxx* is already active in this LP

Explanation: Only one copy of the Disk Serving function for an OSA can be active at a time. An attempt was made to start a second copy of the Disk Serving function, but the OSA has a copy active in this partition. This could be the result of a previously issued Start Managing command with the Start Disk Serving option.

User Response: Issue the Start Managing command without the Start Disk Serving option. If trying to Start Managing without the Disk Serving, then the Stop Managing with the Stop Disk Serving option must be issued first. WARNING: If the Stop Managing command with the Stop Disk Serving option is issued, it will halt all I/O to the disk serving volume that is active across the OSA.

IOAx408E UA *0xFC* for CHPID *cc* not found in OSA/SF device information block

Explanation: The Disk Serving function requires that unit address *FC* be specified in the IODF/IOCDS for an OSA. No *FC* unit address was found for OSA CHPID *cc*.

User Response: Check that device address *FC*, as well as device address *FD*, are both defined in the IODF/IOCDS for OSA CHPID *cc*. If not, add the address pair to the IODF/IOCDS and retry the command.

IOAx409I OAT updated. Config CHPID *cc* off/on to activate the changes

Explanation: The OAT in the IOACFG data set of the OSA/SF startup profile was successfully written to the OSA located on CHPID *cc*.

User Response: Configure CHPID *cc* offline to MVS in all logical partitions, then back online to MVS to activate the OAT. Refer to Chapter 2 on page 2-1 for more information about the OSA/SF startup profile and the IOACFG data set.

IOAx410E timerX value(tttt msec specified) must be ccccccc than timerY value (tttt msec specified)

Explanation: When setting the SNA timer values, timerX was found to have an incorrect value because of setting of timerY value.

timerX,timerY = Ti(SNA LLC Inactivity Timer), T1(SNA LLC Response Timer), or T2(SNA LLC Acknowledgement Timer).
ccccccc = greater or less
tttt = time unit in msec

User Response: Correct the timerX value and re-issue the command.

IOAx411E OSA/SF does not support OSA processor code level of CHPID cc

Explanation: The OSA processor for CHPID cc is not at the correct level. OSA/SF will not be able to communicate with the OSA device correctly.

cc = CHPID

User Response: Upgrade the code level for the OSA processor.

IOAx412E There is no known address Space for CHPID cc in LP pp

Explanation: There is no Disk Serving Address Space found for CHPID cc in partition pp.

cc = CHPID
pp = partition number

User Response: None.

IOAx413E CHPID *cc* is not configured as HPDT ATM Native mode

Explanation: PVC entries are only for OSAs configured for ATM Native mode. This message should not be displayed if you are using the GUI.

User Response: If you are using the OSA/SF commands, either delete the PVC entries for this OSA using the Set Parameter command or customize the OSA for HPDT ATM Native mode using Put OAT.

IOAx414E No PVC data was found in input for CHPID *cc*

Explanation: You attempted to use the set PVC command without supplying the associated PVC data.

User Response: Retry the command using the approriate input PVC data. If the problem persists, see “Reporting Problems to IBM” on page 8-6.

IOAx415E CHPID *cc* has *n* PVC entries and has reached the limit

Explanation: The maximum number of PVC entries for an OSA is 256.

User Response: Delete PVC entries that are not needed.

IOAx416E LP *x* UA *y* is already used by LP *x* UA *z*

Explanation: The unit address specified by *y* is already being used. The second LP and unit address specified in the message has a group size of 2. This means that it is a TCP/IP Passthru entry which uses an even odd pair.

User Response: Change the UA for one of the OAT entries.

IOAx417E File ssss completed with reason code rrrrrrrr

Explanation: In the process of an INSTALL/ACTIVATE command, image file ssss specified in the configuration completed with reason code rrrrrrrr.

ssss = specified image file
rrrrrrrr = reason code

User Response: See the message that follows immediately for details and action needed.

If you are using the GUI, go to the Command Output Window.
If you are using the TSO REXX interface, go to the message log.

IOAx418E LP p UA uu completed with reason code rrrrrrrr

Explanation: In the process of an INSTALL/ACTIVATE command, an OAT entry specified in the configuration with partition p and unit address uu completed with reason code rrrrrrrr.

p = partition number
uu = Unit Address
rrrrrrrr = reason code

User Response: See the message that follows immediately for details and action.

If you are using the GUI, go to the Command Output Window.
If you are using the TSO REXX interface, go to the message log.

IOAx419E Query for CHPID cc completed with reason code rrrrrrrr

Explanation: In the process of doing the QUERY command for CHPID cc, it completed with reason code rrrrrrrr.

cc = CHPID
rrrrrrrr = reason code

User Response: See the message that follows immediately for details and action.

If you are using the GUI, go to the Command Output Window.
If you are using the TSO REXX interface, go to the message log.

IOAx420E Query for CHPID cc Device dd completed with reason code rrrrrrrr

Explanation: In the process of doing the QUERY command for CHPID cc, it completed with reason code rrrrrrrr when trying to obtain device information.

cc = CHPID
dd = Device number
rrrrrrrr = reason code

User Response: See the message that follows immediately for details and action.

IOAx421E Current LP x(LP_NAMEx), managing LP y(LP_NAMEy) CHPID cc rrrrrrrr

Explanation: In the process of a START/STOP MANAGING command for CHPID cc, it completed with reason code rrrrrrrr.

x = current partition number
LP_NAMEx = name of current partition
y = managing partition number
LP_NAMEy = name of managing partition
cc = CHPID
rrrrrrrr = reason code

User Response: See the message that follows immediately for details and action.

IOAx422E Operation on port p completed with reason code rrrrrrrr

Explanation: In the process of a command associated with port p it completed with reason code rrrrrrrr.

p = port number
rrrrrrrr = reason code

User Response: See the message that follows immediately for details and action.

IOAx423E Screen query completed with reason code rrrrrrrr

Explanation: In the process of doing the QUERY command, it completed with reason code rrrrrrrr when trying to obtain screen information.

rrrrrrrr = reason code

User Response: See the message that follows immediately for details and action.

IOAx424E PVC operation for CHPID *cc* failed with reason code *rrrr*

Explanation: The Add, Modify, or Delete of a PVC entry failed.

User Response: Look in the message log for more information. There should be a message following this one that contains more information. The reason code is for use by IBM in problem determination.

IOAx426E OAT entry nn has incorrect format

Explanation: When processing the OAT entries, OAT entry number *nn* has an incorrect format.

nn = OAT entry number

User Response:

- If this failure occurs during a PUT_TABLE command, check the input OAT entry number.
- If this failure occurs during a QUERY or GET_TABLE command, an internal OSA/SF error has occurred. Rename the OSA CHPID command file data set specified in the OSA/SF startup profile IOADSN statement. (Refer to Chapter 2 on page 2-1 for more information on the OSA/SF startup profile and IOADSN entry.) The IOADSN command file data set will be dynamically rebuilt after it is renamed. Call the IBM Support Center to arrange to send a copy of the renamed IOADSN data set to IBM for analysis.

IOAx427E CHPID *nn* is not OSA2– ATM

Explanation: The specified CHPID *nn* is not of type OSA-2 ATM.

User Response: The function you requested is only valid on an OSA-2 ATM CHPID.

IOAx428E CHPID cc is not configured as mmm mode

Explanation: The specified CHPID cc is not configured as mmm mode for the SET_PARM command to complete successfully.

cc = CHPID number
mmm = SNA or ATM

User Response: Configure the CHPID with the mmm mode and retry the command.

IOAx429E Hardware model for CHPID cc does not support Disk Serving

Explanation: The specified CHPID cc does not support Disk Serving. Only OSA features with a hardware type of OSA1 support Disk Serving.

cc = CHPID number

User Response: Use an OSA1 chpid if you wish to run disk serving.

IOAx430I ATM image loaded, config CHPID cc off/on to activate loaded image

Explanation: The code image specified in the IOACFG data set was successfully written to the specified CHPID.

cc = CHPID

User Response: Configure the CHPID offline to MVS in all logical partitions and then online to MVS to activate the image just written.

IOAx431W LP p and UA uu defines sharing of port x without an IP address

Explanation: The OAT entry for logical partition p and unit address uu is specified as a passthru type entry for port x. There is also an SNA type entry that shares the same port. This means that an IP address must be specified with the passthru entry type to allow port sharing.

p = Logical partition number
uu = Unit address
x = Port number

User Response: Do the following to specify an IP address from the OSA/SF GUI.

1. Display the Configuration window for the OSA.
2. Select **TCP/IP Passthru** from the **Configured Modes** listbox and then select **Change**.
3. Select the entry you want to change in the listbox and then select **Change**.
4. Enter the IP address for this logical partition and unit address entry.
5. Select **Change** and then select **Set**.
6. Select **Configuration** from the menu bar of the Configuration window and then Save the configuration.
7. Select **Configuration** from the menu bar and then select **Activate**.

IOAx432I *ssssss* type LP *n* UA *uu* defines sharing of port *n*

Explanation: The entry specified defines port sharing. Another message follows indicating what is the problem. The *ssssss* can be 'Passthru, 'SNA', or 'MPC' (for MVS only).

User Response: See the message that follows this one in the message log for more information.

IOAx433W LP p UA uu voids passthru entries for port x with no IP address

Explanation: The OAT entry for logical partition p and unit address uu is specified as an SNA type entry for port x. However, there are existing passthru OAT entries with no IP address. By configuring this SNA entry, all the passthru devices that share this port without an IP address will not be functional.

p = LPAR number
uu = unit address
x = port number

User Response: Do the following to specify an IP address from the OSA/SF GUI.

1. Display the Configuration window for the OSA.
2. Select **TCP/IP Passthru** from the **Configured Modes** listbox and then select **Change**.
3. Select the entry you want to change in the listbox and then select **Change**.
4. Enter the IP address for this logical partition and unit address entry. Select **Change** and the select **Set**.
5. Select **Configuration** from the menu bar of the Configuration window and then Save the configuration.
6. Select **Configuration**from the menu bar and then select **Activate**.

IOAx434I PT type LP *n* UA *xx* defines sharing port *y* without IP address

Explanation: You specified a port for port sharing but the IP address is all zeroes. An IP address of zero indicates no port sharing.

User Response: You cannot share a port without a specific IP address on each OAT entry that wishes to use the port.

IOAx435E VPI *x* and VCI *y* already used by PVC name *ssss*

Explanation: The VPI and VCI combination specified for the PVC is already being used by another PVC. The combination of these two parameters must be unique for each PVC entry.

User Response: Change the VPI or VCI so that it is unique for this PVC.

IOAx436E Invalid *tttt* name *nnnn*

Explanation: *tttt* is either PVC or OSA. *nnnn* is either the PVC name or OSA name. The PVC name or OSA name is not valid.

User Response: Enter a name of 1 through 8 characters in the following format:

First Character - Any capital letter A through Z, @ # $.

Remaining Characters - Capital letters A through Z, 0 through 9, @ # $.

IOAx437E ATM OSA mode *ssssssss* is corrupted. Reason = *nnnnnnnn*

Explanation: The ATM image, *ssssssss* loaded on the card has been corrupted.

User Response: Re-configure the card.

IOAx439E PVC name *ssssssss* not found

Explanation: Specified PVC name *ssssssss* cannot be found on this ATM card. .

User Response: Correct the name and retry the command. If the problem persists, see “Reporting Problems to IBM” on page 8-6.

IOAx449W OSA/SF was not able to access channel file information for CHPID *cc*

Explanation: OSA/SF had a channel error during OSA/SF initializaion. It is necessary to correct this error in order for OSA/SF to function properly. Messages IOAD499W and IOAD505W detail the error.

User Response: Make sure a 70xx minidisk has been created and is available as described in the planning guide. If this is not a VM guest, then a channel file is missing or unable to be accessed. Processing can continue, but certain commands will not work.

IOAx450E Task not supported by SNA image level *xx* on CHPID *cc*

Explanation: The SNA firmware level to support the input command is not installed on the specified CHPID.

User Response: Upgrade the SNA firmware level on the specified CHPID. If the error persists, call IBM service.

IOAx451I Indicators have been set in one or more channel blocks

Explanation: One of the following conditions was detected by the OSA/SF:

- Physical card mismatch
- No file information found for card
- The port type has not been set for this card
- Could not write file information for this card

User Response: This is an internal OSA/SF error. See “Reporting Problems to IBM” on page 8-6.

IOAx455E The specified OSA mode file already known to OSA/SF

Explanation: During a Put File command, the file name specified was already known by OSA/SF and the Replace option was not selected.

User Response: Retry the Put File command and specify the Replace option. If the problem persists, issue the Delete File command to first remove the file and then reissue the Put File command.

IOAx456E The specified OSA mode file not known by this copy of OSA/SF

Explanation: The OSA mode file specified on a Delete File command is not known by this copy of OSA/SF.

User Response: Verify that the fully-qualified name in the Delete File command is correct. Use the List File command to display the files on the OSA to check proper filename specifications.

IOAx457E The specified CHPID is managed by another partition

Explanation: An OSA channel number, which was to be part of a set of OSA channels to be managed by a Start Managing operation, is already managed by another logical partition.

User Response: Either retry the command using the Force option or issue the Stop Managing command from the managing partition currently managing the OSA. Warning: If the Disk Serving function is also stopped when the Stop Managing command is issued, all I/O to the disk serving device on MVS will be halted. Then reissue the Start Managing command.

IOAx459E The specified CHPID is not known by this copy of OSA/SF

Explanation: The CHPID number specified on the current command is not known by this copy of OSA/SF.

User Response: Verify that the CHPID number specified is defined as an OSA channel in the IODF/IOCDS. Reissue the API or command that resulted in this message.

IOAx460E The specified port is not known by this copy of OSA/SF

Explanation: The port number specified does not match the allowed OSA port number range. For a FDDI port, only port number 00 is valid. On an OSA-1, port numbers 00 through 04 are valid for a token-ring or Ethernet port. On an OSA-2, port numbers 00 and 01 are valid for a token-ring or Ethernet port.

User Response: Verify the OSA type. Check the port number range. Reissue the command. If problems continue, see “Reporting Problems to IBM” on page 8-6.

IOAx464W The system is currently in configuration mode

Explanation: While refreshing the OSA/SF GUI information about the system, it was determined that there are hardware (IODF) configuration changes currently being made. The data that is returned may not be current.

User Response: Check with your system programmer to ensure that configuration changes are complete and then refresh the OSA/SF GUI once more.

IOAx466E The system is not running in EMIF mode

Explanation: The system on which OSA/SF is to run and on which an OSA is installed must support the ESCON Multiple Image Facility mode (EMIF mode). An attempt has been made to start OSA/SF on a system without EMIF firmware support.

User Response: See the planning guide for the hardware requirements for OSA. Multiple image facility mode support is a prerequisite requirement for OSA hardware devices and the OSA Support Facility software.

IOAx467E Incorrect code returned to OSA/SF

Explanation: OSA/SF has attempted to communicate with the channel subsystem and the communication has failed. An internal OSA/SF error has occurred.

User Response: See “Reporting Problems to IBM” on page 8-6.

IOAx468E Service not available for this request

Explanation: OSA/SF has attempted to communicate with the channel subsystem and the communication has failed. An internal OSA/SF error has occurred.

User Response:

- For the OSA CHPID that was the target of the command that received this message, configure the OSA CHPID offline in all logical partitions (CF CHP(nn),OFFLINE), then back online (CF CHP(nn),ONLINE).
- Stop and restart OSA/SF

If the problem persists, see “Reporting Problems to IBM” on page 8-6.

IOAx469E The specified CHPID in use - cannot complete command

Explanation: The OSA CHPID to which the last command was directed is in use either by another user or another partition. The command that was issued did not execute.

User Response: Wait a short period of time for the OSA CHPID to complete its current task. Then resubmit the command that received this message. If the condition continues, see “Reporting Problems to IBM” on page 8-6.

IOAx470E Channel is unlocked (query) or it must be locked (set)

Explanation: The OSA CHPID to which the last command was directed is in use either by another user or another partition. The command that was issued did not execute.

User Response: Wait a short period of time for the OSA CHPID to complete its current task. Then resubmit the command that received this message. If the condition continues, see “Reporting Problems to IBM” on page 8-6.

IOAx472E Could not access Channel Subsystem information

Explanation: OSA/SF could not access Channel Subsystem information.

User Response: If you are running as a VM guest , you must specify the RMCHINFO in the VM directory entry for this guest. See “Reporting Problems to IBM” on page 8-6.

IOAx473E A parameter for a internal OSA/SF request is incorrect

Explanation: An internal OSA/SF error has occurred.

User Response: See “Reporting Problems to IBM” on page 8-6.

IOAx474E The requested Channel Subsystem Command is not supported

Explanation: The Channel Subsystem Command (CHSC) is not supported on this processor. This support is a requirement for OSA and OSA/SF.

User Response: Refer to the planning guide for information on hardware requirements to attach OSA and to run OSA/SF. If all requirements are met, see “Reporting Problems to IBM” on page 8-6.

IOAx475I No channel subsystem physical information is available

Explanation: The Channel Subsystem Command (CHSC) attempted to obtain information from the channel subsystem and could not.

User Response: Refer to the planning guide for information on hardware requirements to attach OSA and run OSA/SF. If all requirements are met, see “Reporting Problems to IBM” on page 8-6.

IOAx476I Requested CHPID is not defined in the I/O configuration

Explanation: A command attempted to access a CHPID that is not defined in the IODF/IOCDS.

User Response: Verify that the IODF/IOCDS has an entry for each OSA. Refer to the planning guide for hardware and IODF/IOCDS requirements. Check that the command was issued to a valid OSA CHPID. If using the API, check the control block structure in the user's guide.

IOAx477I No device information available for this type CHPID

Explanation: An OSA CHPID in the IODF/IOCDS has no device information associated with it. Device and unit address values are required in the IODF/IOCDS for the OSA CHPID.

User Response: Verify that the IODF/IOCDS has CNTLUNIT and IODEVICE information associated with each OSA CHPID. Refer to the planning guide for hardware and IODF/IOCDS requirements.

IOAx478I No devices associated with this CHPID are applicable

Explanation: An OSA CHPID in the IODF/IOCDS has device information associated with it, but the device information is not valid for an OSA CHPID.

User Response: Verify that the IODF/IOCDS CNTLUNIT and IODEVICE information associated with each OSA CHPID has valid OSA device information. Refer to the planning guide for hardware and IODF/IOCDS requirements.

IOAx479I The requested partition is not described in the I/O configuration

Explanation: The specified LP is not defined in your IOCDS.

User Response: Return to HCD and define LP to system.

IOAx480W No LP reconfig access for the requested CHPID

Explanation: OSA/SF attempted to access the internal logical partition reconfiguration information for an OSA CHPID. The attempt failed.

User Response: Refer to the planning guide for information on hardware requirements to attach OSA and run OSA/SF. If all requirements are met, see “Reporting Problems to IBM” on page 8-6.

IOAx481E No reconfig access to LP executing command

Explanation: OSA/SF attempted to access the internal logical partition reconfiguration information for an OSA CHPID. The attempt failed.

User Response: Refer to the planning guide for information on hardware requirements to attach OSA and run OSA/SF. If all requirements are met, see “Reporting Problems to IBM” on page 8-6.

IOAx482E LP requesting information not authorized to get it

Explanation: OSA/SF attempted to access the internal logical partition reconfiguration information for an OSA CHPID. The attempt failed.

User Response: Refer to the planning guide for information on hardware requirements to attach OSA and run OSA/SF. If all requirements are met, see “Reporting Problems to IBM” on page 8-6.

IOAx483E The field being set is not known by this copy of OSA/SF

Explanation: A Set Parm command was issued for a field which does not support the set function.

User Response: Check the user's guide for the fields supported by the Set Parameters command. If using the API, refer to the control block section in the user's guide for the proper fields.

IOAx484E Lock handles do not match for a set or unlock operation

Explanation: An internal OSA/SF error has occurred.

User Response: See “Reporting Problems to IBM” on page 8-6.

IOAx485I An OSA has been replaced. Physical information follows.

Explanation: An OSA device has been removed and a new OSA device has been installed in the same OSA cage card position. Message IOAx486 that follows will detail the current and previous physical information associated with each of the OSA devices. It will be necessary to update the hardware information from the new OSA device to the OSA/SF file information about the OSA installed at this CHPID location.

User Response: An Install sequence should be performed. Refer to “Service for an OSA Hardware Replacement” on page 4-38 for more information.

If the condition can not be corrected, see “Reporting Problems to IBM” on page 8-6.

IOAx486I *vvvvvvvvvvvvvvvvvvvvvvvvvvvv dddddddddddddddddddddddddddddddddddddddd*

Explanation: Displays the data in the format below :

- *vvvvvvvvvvvvvvvvvvvvvvvvvvvv* = replaceable header containing either
  Current physical information:
  or
  Previous physical information:
- *dddddddddddddddddddddddddddddddddddddddd* = actual physical information

User Response: This message is paired with message IOAx485I. Refer to message IOAx485I for instructions.

IOAx487E Cannot put file to OSA without the associated MVS name

Explanation: During a Put File command from the API, the fully qualified MVS input data set name was not specified.

User Response: If this message was issued following a Put File command, or from the API, then ensure the fully qualified MVS input data set name was specified. If this message is issued during any other command, then an internal OSA/SF error has occurred; see “Reporting Problems to IBM” on page 8-6.

IOAx488W File processing error for CHPID *cc* **last ID:** *aa* **current ID:** *bb*

Explanation: An internal OSA/SF error has occurred relating to the channel file data sets.

cc = CHPID
aa = last ID
bb = current ID

User Response: The channel file data sets are built on the DASD volume pointed to by the IOADSN entry of the OSA/SF started procedure. (See Chapter 2 on page 2-1) Ensure that the pointer has not changed and that the DASD volume, pointed to by the VOLUME keyword, is operational. The channel file data sets must also be catalogued on the MVS system.

If the channel file data set does not exist, use the MVS VARY command to vary the OSAD device (X'FE') offline to MVS, then vary the OSAD device back online to MVS. When the OSAD device is brought back online to MVS, the channel file data set will be rebuilt. Then stop and start OSA/SF.

If all OSA channel file data sets appear normal, see “Reporting Problems to IBM” on page 8-6.

IOAx489W Tried to add a duplicate *aaaaaa* to cache

Explanation: OSA/SF tried to add item *aaaaaa* to the OSA/SF internal cache, but the item already exists in cache and it was not added.

aaaaaa = Channel, device, or file

User Response: See “Reporting Problems to IBM” on page 8-6.

IOAx490E OSA/SF must be migrated to the current release

Explanation: This message is issued if a newer version of OSA/SF had been executed on the MVS system, the newer version stopped, and now an older, down-level version of OSA/SF has been started.

User Response: Cancel the older version of OSA/SF that was started and resume running with the latest version of OSA/SF.

IOAx491E Cannot access channel file for command. See message log for name

Explanation: The message log will contain message IOAx492E which will specify the channel file data set name that could not be accessed.

User Response: Refer to the message log and locate message IOAx492E. Cross-check the channel file data set name with a VTOC list of the DASD volume. The DASD volume is specified in the IOADSN entry of the OSA/SF startup profile. The OSA/SF Startup Profile is a data set that is pointed to from the DD card IOAPROF within the OSA/SF Started Procedure (task). See Chapter 2 on page 2-1 for more information about the OSA/SF startup profile. Ensure that the pointer has not changed and that the DASD volume, pointed to by the volume keyword, is operational. The channel file data set must also be catalogued on the MVS system. Restart OSA/SF if the channel file data set name is verified.

If the channel file data set does not exist, use the MVS VARY command to vary the OSAD device (`X'FE'`) offline to MVS, then vary the OSAD device back online to MVS. When the OSAD device is brought back online to MVS, the channel file data set will be rebuilt. Then stop and start OSA/SF.

If all OSA channel file data sets appear normal, see “Reporting Problems to IBM” on page 8-6.

IOAx492E Could not access the following file: *ssssssss*

Explanation: This message is in response to message IOAx491E. It indicates which channel file data set could not be accessed.

User Response: Refer to message IOAx491E for further information and corrective action.

IOAx493E Input or output block pointer not correct on command

Explanation: An OSA/SF internal error occurred.

User Response: See “Reporting Problems to IBM” on page 8-6.

IOAx494E ALL specified for command which is directed to one channel

Explanation: The "ALL" option was specified for a command that does not support the "ALL" option.

User Response: If this message is issued as the result of using the API, refer to the command structure and control block structure in the user's guide. If this message is issued for a TSO issued command, remove the "ALL" option. If the message is issued for another reason, see “Reporting Problems to IBM” on page 8-6.

IOAx495E Unknown field ID used on command. See message log for details

Explanation: An OSA/SF internal error occurred.

User Response: Check the ID listed in message IOAD496E in the message log. If it is not a valid ID, correct it and reenter the command. ID values must be in the form of `X'0000nnnn'`. Check the API control block section in the user's guide. If it is a valid ID, see “Reporting Problems to IBM” on page 8-6.

IOAx496E Incorrect ID *xxxxxxxx* **is being set for** *ssssssss* **field**

Explanation: *xxxxxxxx* is the ID being set. *ssssssss* is replaced by one of the following: non-port type, FDDI, Token Ring, or Ethernet.

User Response: See message ID IOAx495E for more information and instructions.

IOAx497E Channel file open error*xx* **on** *sss...sss*

Explanation: The OSA channel file data set *sss...sss* could not be opened because of error *xx*. The value of *xx* could be any of the following:

07 - I/O buffer could not be allocated
08 - LRECL or BLKSIZE exceeds maximum allowable value
40 - Attempt was made to open a non-partitioned data set as a PDS
41 - System level open failed
45 - Data set is already open
47 - Invalid input for data set name
49 - Cannot locate data set specified
50 - Cannot catalog new data set name used in rename routine
57 - Open mode string is invalid
61 - Error trying to define data set to system
63 - Error in control block
67 - Trying to open non-existent data set for READ
74 - Open parameters require "type=record" specified
79 - Data set was not opened as: "type=record"
86 - Open mode specified invalid for PDS member
87 - Data set characteristics specified do not match those of the existing data set
88 - Open mode specified invalid for device
91 - Unable to perform function due to failure of a system utility
92 - An I/O abend has been trapped
95 - Requested disk not accessed or data set not found
98 - Invalid RECFM for opening PDS member
113 - Bad data set descriptor
117 - Data set exists
121 - Invalid argument

These error numbers are found in the *IBM C/370 Programming Guide Version 2 Release 1, SC09-1384*.

User Response: Because this condition relates to the OSA channel file data set, retry the command one more time. The OSA channel file data sets are pointed to by the IOADSN keyword in the OSA/SF startup profile.

Also, ensure that the OSA/SF startup profile IOADSN keyword is correct and that there is sufficient space on the MVS DASD for the OSA channel file data sets. The channel file data set must also be catalogued on the MVS system.

If the channel file data set does not exist, use the MVS VARY command to vary the OSAD device (X'FE') offline to MVS, then vary the OSAD device back online to MVS. When the OSAD device is brought back online to MVS, the channel file data set will be rebuilt. Then stop and start OSA/SF. The OSA/SF Startup Profile is a data set that is pointed to from the DD card IOAPROF within the OSA/SF Started Procedure (task). See Chapter 2 on page 2-1 for more information about the OSA/SF startup profile.

If the condition continues, see “Reporting Problems to IBM” on page 8-6.

IOAx498W Channel file error. View message log for error

Explanation: An error has occurred during a file operation for a channel file data set. Additional information about the error can be found in the OSA/SF message log.

User Response: Issue the Get Debug command to get a copy of the message log. (Refer to the command section for information about the Get Debug command.) Locate message IOAx498W in the message log. Then look back a few lines in the message log for addition channel file data set error messages. These messages will provide additional information.

IOAx499E Channel File Error. UNKNOWN RETURN CODE. Do get_debug TRACE

Explanation: An internal OSA/SF error has occurred. The error relates to the channel file data sets.

User Response: Do the following:

___ 1. Issue the Get Debug command to obtain a copy of the OSA/SF trace table.

___ 2. Reissue the Get Debug command to get a copy of the OSA/SF message log.

___ 3. See “Reporting Problems to IBM” on page 8-6.

IOAx500E CHPID in PVC and input block mismatch

Explanation: The CHPID number does not match on the OSA/SF data cache operation.

User Response: Report the problem to the IBM Support Center.

IOAx501E Empty PVC block passed

Explanation: No data is passed to OSA/SF data cache component for the PVC operation.

Report the problem to the IBM Support Center.

IOAx505E Bad return code *nn*. Get debug trace from OSA/SF

Explanation: The return code *nn* was received trying to do the requested function.

User Response: Do the following:

___ 1. Issue the GET_DEBUG command, specifying TRACE_table.

___ 2. Forward this data to IBM service.

___ 3. See “Reporting Problems to IBM” on page 8-6.

IOAx508E Size mismatch for *ssssss*. ID is *xx*, size is *yy*

Explanation: This is an internal error.

User Response: None

IOAx511W Number of ports not specified when setting port type

Explanation: Internal OSA/SF component did not set up parameters correctly.

User Response: See “Reporting Problems to IBM” on page 8-6.

IOAx512I CHPID *cc*, specified in the STARTUP.PROFILE, does not exist

Explanation: You specified the CHPID number in the SYSINFO statement in the STARTUP.PROFILE, but the CHPID does not exist in the current system configuration.

User Response: Check your system configuration to see if you specified an incorrect CHPID number, and make the necessary corrections and restart OSA/SF.

IOAx513I Device *nn* from the STARTUP.PROFILE, does not exist on CHPID *cc*

Explanation: You specified the device number in the SYSINFO statement in the STARTUP.PROFILE but the device is not associated with the listed CHPID in the current system configuration.

User Response: Check your system configuration to see if you specified an incorrect VM guest device number, make the necessary corrections and restart OSA/SF.

IOAx514E Virtual CHPID *nn* has been used multiple times in STARTUP.PROFILE

Explanation: You specified the same virtual CHPID for multiple real CHPIDS in the STARTUP.PROFILE. See 2-4.

User Response: Update the STARTUP.PROFILE and restart OSA/SF.

IOAx515E Multiple real CHPIDs using the same virtual one in STARTUP.PROFILE

Explanation: You specified the same virtual CHPID for multiple real CHPIDS in STARTUP.PROFILE.

User Response: Update the STARTUP.PROFILE and restart OSA/SF. See 2-4

IOAx516E Virtual device *nn* has been used multiple times in STARTUP.PROFILE

Explanation: You specified the same virtual device for multiple real devices in the STARTUP.PROFILE.

User Response: Update the STARTUP.PROFILE and restart OSA/SF.

IOAx517E Multiple real device using the same virtual one in STARTUP.PROFILE

Explanation: You specified the same virtual device for multiple real devices in the STARTUP.PROFILE.

User Response: Update the STARTUP.PROFILE and restart OSA/SF.

IOAx518E CHIPID *cc* represented multiple times in OSA/SF internal info

Explanation: One of two situations may have occurred:

___ 1. The real CHPID specified in the message text is associated with multiple virtual CHPIDs in STARTUP.PROFILE.

___ 2. The virtual CHPID associated in the STARTUP.PROFILE to the real CHPID specified in the message text already exists as a real CHPID, as determined from CSS information.

User Response: Update STARTUP.PROFILE to correct errors and restart OSA/SF.

IOAx519E Multiple CHPIDs associated to the same real one in OSA/SF internal info

Explanation: One of two situations may have occurred:

___ 1. The real CHPID specified in the message text is associated with multiple virtual CHPIDs in STARTUP.PROFILE.

___ 2. The virtual CHPID associated in the STARTUP.PROFILE to the real CHPID specified in the message text already exists as a real CHPID, as determined from CSS information.

User Response: Update STARTUP.PROFILE to correct errors and restart OSA/SF.

IOAx520E Device *nn* represented multiple times in OSA/SF internal info

Explanation: One of two situations may have occurred:

___ 1. The real device specified in the message text is associated with multiple virtual devices in STARTUP.PROFILE.

___ 2. The virtual device associated in the STARTUP.PROFILE to the real device specified in the message text already exists as a real device, as determined from CSS information.

User Response: Update STARTUP.PROFILE to correct errors and restart OSA/SF.

IOAx521E Multiple devices assoc to the same real device in OSA/SF internal info

Explanation: One of two situations may have occurred:

___ 1. The real device specified in the message text is associated with multiple virtual devices in STARTUP.PROFILE.

___ 2. The virtual device associated in the STARTUP.PROFILE to the real device specified in the message text already exists as a real device, as determined from IOCDS information.

User Response: Update STARTUP.PROFILE to correct errors and restart OSA/SF.

IOAx522E OSA/SF was not able to access channel file information for CHPID *cc*

Explanation: OSA/SF had a channel file error after initialization was completed. Messages IOAD499W and IOAD505W detail the error. You must resolve this error before issuing any other OSA/SF commands.

User Response: Make sure a 70xx minidisk has been created and is available as described in the OSA/SF planning guide. If this is not a VM guest, then a channel file is missing or unable to be accessed. Processing can continue, but certain commands will not work.

IOAx523E OSA/SF was not able to access channel file information for CHPID

Explanation: OSA/SF had a channel file error after initialization was completed. Messages IOAD499W and IOAD505W detail the error. The actual CHPID number is in message log in message IOAD522E. You must resolve this error before issuing any other OSA/SF commands.

User Response: Make sure a 70xx minidisk has been created and is available as described in the OSA/SF planning guide. If this is not a VM guest, then a channel file is missing or unable to be accessed. Processing can continue, but certain commands will not work.

IOAx524W Virtual CHPID *cc* **replaces real CHPID** *cc* **in OSA/SF internal info**

Explanation: In the STARTUP.PROFILE, you specified a virtual CHPID that also exists as a real CHPID. The virtual CHPID is used and the real CHPID is not available.

User Response: If you want to use this particular real CHPID number, change the STARTUP.PROFILE.

IOAx601I Minidisk I/O problem DevNum=xxxx, RC=yyyy

Explanation: The OSA/SF server machine attempted a link to a minidisk and the link was unsuccessful.

- *xxx* = the CHPID specific minidisk
- *yyy* = return code

Description of the return codes:

- 1yyy - A MR link was attempted, but failed. yyy is the CP return code of the failing command. CP return codes are described in the *VM CP Command Reference Guide* A failure to obtain a MR link is usually because the disk is already linked in write mode by another OSA/SF image, or the minidisk was not properly defined in the CP directory during installation.
- 2yyy - a Read Only (RR) link was attempted, but failed. xxx is the CP return code. CP return codes are described in the *VM CP Command Reference Guide*. Verify that the minidisk is properly defined in the CP directory.
- 3yyy - an internal OSA/SF error occurred. Contact the IBM Support Center.

User Response: Use the explanations to determine more information. Verify the minidisks are properly defined in the CP directory and that another OSA/SF image does not have the disk linked in write mode. If you cannot correct the problem, contact the IBM Support Center.

IOAx641E Netview PPI failed to send alert, PPI rc=xx.

Explanation: OSA/SF uses the NETVIEW program—to—program (PPI) interface to report alerts (messages describing a problem) to a Netview focal point. An attempt to use PPI failed. Return code xx was issued by the Netview program—to—program interface.

User Response: Refer to the Netview Application Programming Guide to determine the cause of the PPI failure and perform corrective actions as indicated.

IOAx643E Unknown adapter type reported by OSA/SF.

Explanation: OSA/SF identified an unknown adapter. OSA/SF can only forward alerts (messages describing a problem) to Netview for Token Ring, Ethernet, FDDI, and Fast Ethernet.

User Response: See “Reporting Problems to IBM” on page 8-6.

IOAx644E OAT entry LP *pp* UA *uu* was specified more than once in the input

Explanation: Logical Partition number and Unit Address number was specified more than once in the Put OAT input data set.

User Response: Correct the input data and reissue the command.

IOAx645E SNA Network Management device was specified more than once in the input

Explanation: For each OSA device operating in SNA mode, there can only be one SNA network management device.

User Response: Correct the input data and reissue the command.

IOAx646I Specified SNA Network Management device will replace LP *pp* UA *uu*

Explanation: The existing SNA network management device with Logical Partition number and Unit Address number is replaced by the new SNA Network Management associated with this OAT entry

User Response: None.

IOAx647W No OAT entries specified in input for CHPID *cc*

Explanation: There are no OAT entries in the input file for Put OAT command. *cc* is the CHPID.

User Response: Specify OAT entries in the input file for Put OAT command.

IOAx648I Command completed successfully. Config CHPID *cc* off/on to activate

Explanation: The requested action completed. A CHPID reset is required to activate the changes.

User Response: Quiesce all traffic on the LAN ports on the associated OSA CHPID. Configure the CHPID offline and then online from all logical partitions.

IOAx649E LAN port parameter ID *xx* is not supported by port *nn*

Explanation: The input parameter is not valid for the specified port type.

User Response: Re-enter the correct parameter or specify the correct port type or port number. If the error persists, call IBM service.

IOAx650E Input not supported by firmware level *ll* of CHPID *cc*

Explanation: The minimum firmware level to support the input is not installed on the specified CHPID.

User Response: Upgrade the firmware level of the specified CHPID. If the error persists, call IBM service.

IOAx651I Create of address space for IOAV*nnnn* completed with RC=*cc*, reason=*rr*

Explanation: The attempt to create an address space IOAVaaaa completed with the specified return code and reason code.

nnnn = device number of the OSAD device for disk serving
cc = return code from the ASCRE macro
rr = reason code from the ASCRE macro

User Response: If the return code is 00 or 04, no action is required. Normal OSA/SF operation continues.

If the return code is greater than 04, look up the ASCRE macro return code and reason in *Programming: Authorized Assembler Services Reference, Volume 1, GC28-1475*. Make corrections. Then stop and restart OSA/SF.

IOAx652E OSA configuration data has changed

Explanation: Changes have been made to OSA configuration information since the last command was entered. OSA/SF is responding to an alert status from the OSA. A SNMP may have accessed the OSA.

User Response: Use the Query command to obtain the updated information on the OSA. Then resume the command sequence in progress when this message was issued.

IOAx653E Image sssssssss is not compatible with OSA processor code level x

Explanation: A mismatch exists between the OSA mode image and the OSA processor code that is currently on the OSA features.

sssssssssss = label of the OSA mode image
x = high-level qualifier of the OSA processor code

User Response: Make sure the machine is at the appropriate MCL level to support the OSA ATM feature.

IOAx661E Unable to open OSA configuration file

Explanation: An error has occurred while trying to open the OSA/SF configuration data set.

User Response: Ensure the OSA configuration data set is cataloged to this partition, is not in use by another user or another user in another logical partition, and is properly pointed to by the IOADSN entry in the OSA/SF startup profile. The OSA/SF Startup Profile is a data set that is pointed to from the DD card IOAPROF within the OSA/SF Started Procedure (task). See Chapter 2 on page 2-1 for more information about the OSA/SF startup profile.

If OSA/SF is still running, it must be stopped. Then restart OSA/SF.

IOAx662E Incorrect parameter pointer passed to Install

Explanation: An internal OSA/SF error has occurred.

User Response: See “Reporting Problems to IBM” on page 8-6.

IOAx663E Incorrect operation code passed

Explanation: An internal OSA/SF error has occurred.

User Response: See “Reporting Problems to IBM” on page 8-6.

IOAx664E Incorrect parameter length passed to Install

Explanation: An internal OSA/SF error has occurred.

User Response: See “Reporting Problems to IBM” on page 8-6.

IOAx665W Incorrect dataset name found in OSA configuration file

Explanation: A data set name, in a format which is not valid, was found in the OSA configuration data set (IOACFG).

User Response: Examine the list of MVS data set names found in the OSA configuration data set to find the data set name which is not valid. The OSA configuration data set is defined in the IOACFG entry of the OSA/SF startup profile. The OSA/SF Startup Profile is a data set that is pointed to from the DD card IOAPROF within the OSA/SF Started Procedure (task). See Chapter 2 on page 2-1 for more information about the OSA/SF startup profile.

IOAx666E Install output table overflow

Explanation: An internal OSA/SF error has occurred.

User Response: See “Reporting Problems to IBM” on page 8-6.

IOAx667E No OSA mode file for CHPID *cc* in OSA configuration file

Explanation: An Install of an OSA mode to an OSA was attempted. The OSA mode file and/or the OSA image and/or the OAT was (were) not loaded to the OSA device.

User Response: If using the GUI, check the command output window and message log output window for further messages and information. If using the TSO interface, additional information should be displayed on the TSO screen. After corrections, retry the Install command. If problems persist, see “Reporting Problems to IBM” on page 8-6.

IOAx668W Incorrect data set name length

Explanation: A data set specified in the OSA/SF master index data set has an incorrect logical record length (LRECL) or an incorrect block size (BLKSIZE).

User Response: The OSA/SF master index data set contains a list of OSA/SF data set names. One of the data sets in the list has a logical record length (LRECL) or a block size (BLKSIZE) that does not match the MVS data sets in the list ***of the same OSA/SF configuration type***. The OSA/SF master index data set is pointed to by the IOACFG parameter in the OSA/SF startup profile. The OSA/SF Startup Profile is a data set that is pointed to from the DD card IOAPROF within the OSA/SF Started Procedure (task). See Chapter 2 on page 2-1 for more information about the OSA/SF startup profile.

IOAx669W Incorrect member name length

Explanation: A member name associated with an MVS data set name in the OSA/SF configuration data set has an incorrect length. Members in the configuration data set are referenced in the format:

MVSDATASETNAME(membername)

One of the member names is less than one character or greater than eight characters in length.

User Response: Examine the OSA configuration data set to locate the member name that has the incorrect length. The incorrect member name can be located by browsing the MVS data set itself. The OSA configuration data set is defined by the IOACFG entry in the OSA/SF startup profile. The OSA/SF Startup Profile is a data set that is pointed to from the DD card IOAPROF within the OSA/SF Started Procedure (task). See Chapter 2 on page 2-1 for more information about the OSA/SF startup profile.

IOAx670W Dynamic allocation failed with RC=*aaaa*, reason=*bbbb*

Explanation: Dynamic allocation failed for a data set specified in the OSA/SF configuration data set (IOACFG).

aaaa = return code from DYNALLOC macro
bbbb = reason code from DYNALLOC macro

User Response: The OSA/SF configuration data set contains a list of MVS data set names used by OSA/SF. These MVS data sets are dynamically allocated. One of the MVS data sets in the list could not be dynamically allocated. The OSA/SF configuration data set is pointed to by the IOACFG entry in the OSA/SF startup profile. The OSA/SF Startup Profile is a data set that is pointed to from the DD card IOAPROF within the OSA/SF Started Procedure (task). See Chapter 2 on page 2-1 for more information about the OSA/SF startup profile.

Check the return code from the DYNALLOC macro and take appropriate action. For return code and reason code information see the DYNALLOC macro in *Programming: Authorized Assembler Services Reference, Volume 1, GC28-1475*.

If problem persists, see “Reporting Problems to IBM” on page 8-6.

IOAx671W GETMAIN failure

Explanation: Unable to allocate storage for an OSA/SF operation. This could be the result of an MVS storage constraint or an OSA/SF region size that is inadequate.

User Response: Free up system storage resources. Also check the MVS system console for error messages. Increase the OSA/SF region size. Stop then restart OSA/SF.

IOAx672W Dynamic de-allocation failed with RC=*aaaa*, reason=*bbbb*

Explanation: Dynamic de-allocation failed for a data set specified in the OSA configuration data set.

aaaa = return code from DYNALLOC macro
bbbb = reason code from DYNALLOC macro

User Response: Check return code from DYNALLOC macro. The DYNALLOC macro documentation can be found in *Programming: Authorized Assembler Services Reference, Volume 1, GC28-1475*. Make corrections. Stop and restart OSA/SF.

IOAx673W Install did not complete successfully

Explanation: Unable to load application and/or OAT and/or image for this OSA CHPID. This message is frequently issued if an Install command is issued without the Force option. The application and/or OAT and/or image already installed on the OSA match what is being Installed.

User Response: Additional messages should be displayed in the command output window if using the GUI or on the TSO screen if using TSO. Check these additional messages for further information and instructions. Reissue the Install command with the Force option if appropriate.

If problems persist, see “Reporting Problems to IBM” on page 8-6.

IOAx674W CHPID number found in OSA configuration data set is not valid

Explanation: A CHPID number in the OSA configuration data set was found to have an incorrect format. The correct format is:

OSAnn ...where "nn" is the OSA CHPID number.

User Response: Examine the OSA configuration data set and look for an incorrectly formatted OSAnn CHPID number. The OSA configuration data set is pointed to by the IOACFG entry in the OSA/SF startup profile. The OSA/SF Startup Profile is a data set that is pointed to from the DD card IOAPROF within the OSA/SF Started Procedure (task). See Chapter 2 on page 2-1 for more information about the OSA/SF startup profile.

Make corrections. Then reissue the Install command.

IOAx675E Unable to access directory

Explanation: OSA/SF was unable to access a path or directory that was specified in the Master Index file for a corresponding OSA mode file.

User Response: Use the LISTFILE command to see if the path/directory exists. If it exists, retry the previous command. If the path/directory does not exist, a reinstall of the OSA mode on the OSA is required. If the problem continues, see “Reporting Problems to IBM” on page 8-6.

IOAx677E Unable to open Master Index dataset

Explanation: OSA/SF was unable to open the master index data set specified in the IOAINX entry of the OSA/SF startup profile.

User Response: Check that the data set name specified in the IOAINX entry of the OSA/SF startup profile exists and that it is cataloged to the MVS system in this logical partition. Also ensure that the data set is not in use by another user in this logical partition or in any other logical partition (such as an MVS browse or edit function). Redo the Install procedure for this OSA mode to ensure the Install steps were all performed correctly (such as the copy from IOA.SIOASAMP). Refer to Chapter 2 on page 2-1 for more information on the IOAINX data set of the OSA/SF startup profile and the OSA mode install procedures.

IOAx678E OSA status register read failed

Explanation: An OSA/SF internal error occurred.

User Response: See “Reporting Problems to IBM” on page 8-6.

IOAx679E Download data set open failed

Explanation: OSA/SF was unable to open one of MVS data sets listed in the IOACFG or IOAINX data set. Possible causes include:

- MVS has the data set open
- Another user, even in another logical partition, may have the data set open
- The data set has been deleted.

User Response: Check that the data set names specified in the IOACFG and IOAINX entries of the OSA/SF startup profile exist and are all catalogued to the MVS system in this logical partition. Verify the data sets are not currently open by this MVS system nor an MVS system in any LP. If a data set has been deleted, then an SMP/E reinstall of OSA/SF is required. After the data sets have been replaced, an OSA/SF Install must be performed to the OSAs.

If the problem persists, see “Reporting Problems to IBM” on page 8-6.

IOAx680E OSA/SF release V*x*R*x*M*x* doesn't support hardware level of CHPID *cc*

Explanation: There is a co-dependency between the OSA hardware and the OSA/SF software level. For CHPID *cc* the co-dependency is not met.

User Response: Refer to the planning guide for a list of OSA device and OSA/SF mode co-dependencies. Obtain the correct level of OSA/SF that supports the OSA CHPID.

IOAx681W Code image *xxxx* wasn't written because it's already loaded on the card

Explanation: The code image *xxxx* was not written to the OSA. The name of the image that was requested to be written (installed) matches the name of the OSA mode image that is currently installed on the OSA device.

User Response: To write (re-write) the same named OSA mode image *xxxx*, reissue the OSA/SF Install command with the Force option.

IOAx682E Unable to open data set *fff...fff*

Explanation: The MVS data set could not be opened during the Install process.

fff...fff = name of the MVS data set that could not be opened by OSA/SF

User Response: The MVS data set is either an OSA/SF image data set or a OSA/SF NLM data set. These data sets are restored by SMP/E when OSA/SF is installed. Check that:

- OSA/SF SMP/E installation completed successfully
- The data set exists on the volume where SMP/E installed it
- This MVS logical partition has the data set catalogued
- The data set is not used by another user, including another user in another logical partition

Retry the Install command. If problem cannot be resolved, see “Reporting Problems to IBM” on page 8-6.

IOAx683E Unable to read data set (*fff...fff*)

Explanation: The MVS data set could not be read during the Install process.

fff...fff = name of the MVS data set that could not be read by OSA/SF

User Response: Check that the OSA image data set name or NLM data set name as specified in the list of data set names contained in the IOACFG data set or the IOAINX data set:

- Exists and is catalogued to the MVS in this logical partition
- Is not currently open by an MVS system task or another user in this or another logical partition

The IOACFG and IOAINX data sets are pointed to by the OSA/SF startup profile. The OSA/SF Startup Profile is a data set that is pointed to from the DD card IOAPROF within the OSA/SF Started Procedure (task). See Chapter 2 on page 2-1 for more information about the OSA/SF startup profile.

If the file has been deleted, then an SMP/E reinstall of OSA/SF must be performed to reload the data set.

If the problem persists, see “Reporting Problems to IBM” on page 8-6.

IOAx684E Configuration set up error

Explanation: The file type (image type) specified in the configuration data set (IOACFG entry of OSA/SF startup profile) is not valid for this OSA device.

User Response: Check the configuration for this OSA. Then check the file type (column two) in the configuration data set (IOACFG). The configuration data set is specified by the IOACFG entry in the OSA/SF startup profile. Correct the configuration file, stop OSA/SF if it is still running, then restart OSA/SF. Refer to Chapter 2 on page 2-1 for more information regarding the IOACFG data set.

IOAx686W This file not loaded because an Image file is not active

Explanation: Following an Activate or an Install sequence, the OSA must be configured offline to MVS in all logical partitions then configured back online to MVS. This message is issued because the I-files were not found on the OSA or the activation step (configure CHPID offline/online to MVS) did not complete. If you are using the GUI, the command output window will contain the name of the data set. If you are using the REXX interface, the data set name will be sent to the TSO screen.

User Response: The Image files (I-files) are installed as part of the OSA/SF SMP/E installation sequence. Ensure that the SMP/E install of OSA/SF completed successfully. Configure the OSA CHPID offline to MVS in all logical partitions (CF CHP(nn),OFFLINE) and then back online to MVS (CF CHP(nn),ONLINE). This loads the configured image file to the OSA. Then rerun the OSA mode Install sequence.

IOAx687E Incorrect Image type is specified for this OSA hardware type

Explanation: The image data set (I-file) that is identified in the configuration data set (pointed to by the IOACFG entry in the OSA/SF startup profile) for this OSA, contains an image that is not valid for this OSA.

User Response: Verify the OSA type installed. Then verify the configuration matches the OSA hardware (for example FDDI, Token Ring, ATM, or Ethernet). See the planning guide for more information on configurations and OSA hardware types. Double check that the OSA/SF SMP/E install completed successfully. If message issued as the result of using the API, or the configuration data sets have been altered, check the API control blocks and/or correct alterations.

If problem continues, see “Reporting Problems to IBM” on page 8-6.

IOAx688E Specified configuration is not supported by this OSA hardware type

Explanation: The image data set (I-file) that is identified in the OSA/SF configuration data set contains an image that is not valid for this OSA-1 device type.

User Response: Verify the OSA type installed. Then verify the configuration matches the OSA-1 hardware (for example FDDI, Token Ring, or Ethernet). See the planning guide for more information on configurations and OSA hardware types. Use the Activate sequence to load the configuration to the OSA. The OSA/SF configuration data set is pointed to by the IOACFG entry in the OSA/SF startup profile. The OSA/SF Startup Profile is a data set that is

pointed to from the DD card IOAPROF within the OSA/SF Started Procedure (task). See Chapter 2 on page 2-1 for more information about the OSA/SF startup profile.

If problems continue, see “Reporting Problems to IBM” on page 8-6.

IOAx689E Specified configuration is not supported by this OSA hardware type

Explanation: The image data set (I-file) that is identified in the configuration data set (IOACFG) contains an image that is not valid for this OSA-2 hardware type.

User Response: Verify the OSA type installed. Then verify the configuration matches the OSA-2 hardware (for example Token Ring or Ethernet). See the planning guide for more information on configurations and OSA hardware types. Use the Activate sequence to load the configuration to the OSA. The configuration data set is pointed to by the IOACFG entry in the OSA/SF startup profile. The OSA/SF Startup Profile is a data set that is pointed to from the DD card IOAPROF within the OSA/SF Started Procedure (task). See Chapter 2 on page 2-1 for more information about the OSA/SF startup profile.

If problems continue, see “Reporting Problems to IBM” on page 8-6.

IOAx690E Specified configuration is not supported by this OSA hardware type

Explanation: The image data set (I-file) that is identified in the configuration data set (IOACFG) contains an image that is not valid for this OSA-2 hardware type.

User Response: Verify the OSA type installed. Then verify the configuration matches the OSA2-ATM hardware (for example Token Ring or Ethernet). See the planning guide for more information on configurations and OSA hardware types. Use the Activate sequence to load the configuration to the OSA. The configuration data set is pointed to by the IOACFG entry in the OSA/SF startup profile. The OSA/SF Startup Profile is a data set that is pointed to from the DD card IOAPROF within the OSA/SF Started Procedure (task). See Chapter 2 on page 2-1 for more information about the OSA/SF startup profile.

If problems continue, see “Reporting Problems to IBM” on page 8-6.

IOAx691E Unknown hardware model passed to install

Explanation: This is a internal OSA/SF error.

User Response: See “Reporting Problems to IBM” on page 8-6.

IOAx692E Unable to read label for ssss

Explanation: In the process of an INSTALL/ACTIVATE command, OSA/SF is unable to read the label for the specified image file ssss. The possible cause could be a corrupted image file.

ssss = specified image file in the IOACFG

User Response: Report to IBM service.

IOAx693E Install for CHPID cc not complete. See message log for details

Explanation: The INSTALL sequence for this CHPID (OSA) did not complete successfully. See the message log for more information.

cc = CHPID

User Response: Read the message log. It may be necessary to do an ACTIVATE or INSTALL again.

IOAx694I Install CHPID *nn* completed successfully

Explanation: The Install command was issued from either the GUI or REXX interface or from the operator Modify command. The installation operation was successful for OSA CHPID *nn*.

User Response: Continue with the installation process as documented in the OSA/SF user's guide.

IOAx695I Install CHPID *nn* started

Explanation: An install operation was issued from the operator Modify command. The installation process has successfully started.

User Response: Monitor the system and message log for additional messages that will state the success or failure of the installation. Processing continues.

IOAx696E Install for CHPID cc not complete. See command output for details

Explanation: The INSTALL sequence for this CHPID (OSA) did not complete successfully. See the command output window for more information if using GUI. If REXX, messages should be in user console that issued command.

cc = CHPID

User Response: Read the command output window. It may be necessary to do an ACTIVATE or INSTALL again.

IOAx697E Incorrect CHPID cc was specified

Explanation: Incorrect CHPID (OSA) was specified with the MVS modify command.

cc = CHPID - must be alphanumeric from 00 through FF

User Response: Correct the CHPID and retry the command

IOAx698E Busy installing CHPID cc. Retry command later

Explanation: OSA/SF is busy trying to install CHPID cc. This could be because OSA/SF is currently doing an install to another CHPID.

cc = CHPID - must be alphanumeric ranged from 00 through FF

User Response: Retry the command when the INSTALL for CHPID cc is complete.

IOAx699E Incorrect option specified for CHPID cc

Explanation: An incorrect option was entered with the MVS modify command for an OSA install. Valid options are FORCE and NOFORCE. The default is NOFORCE.

NOFORCE installs the OSA mode only when an image does not already exist, or when the images are different.

FORCE installs the OSA mode regardless of any image already on the OSA feature.

Command Syntax: **F OSASF,INSTALL cc,FORCE** or **NOFORCE**

User Response: Retry the command with the correct option.

IOAx700E Incorrect parameter ssssss specified

Explanation: An incorrect parameter was specified with the MVS modify command for an OSA install. The only valid command is INSTALL. The only required parameter is the CHPID number. Optional parameters are FORCE or NOFORCE. The default is NOFORCE.

The syntax is **F OSASF,INSTALL cc,FORCE**; where OSASF is the started task name, and cc is the CHPID (OSA).

User Response: Retry the command with the correct parameter or syntax.

IOAx701E An attempt was made to free a not valid internal region

Explanation: This is a internal OSA/SF error.

User Response: See “Reporting Problems to IBM” on page 8-6.

IOAx702I Delete the unknown region at line *d* of *s*

Explanation: This is an internal OSA/SF error. OSA/SF will continue to run. An OSA/SF component attempted to free an internal storage area that was already free.

User Response: OSA/SF will continue to run, but please contact IBM service if this message is displayed.

IOAx751E START not entered as the first operator command

Explanation: The OSA/SF task was not started by an MVS Start command. OSA/SF can not be started though JCL submission. OSA/SF initialization has terminated.

User Response: Start OSA/SF with an MVS Start command. Batch job JCL submission or the use of the TSO SUBMIT command can not be used to start OSA/SF. OSA/SF must run as an MVS started task.

IOAx752W ESTAE macro load failed with rc=*rrrrrrrr*

Explanation: Unable to execute ESTAE macro successfully. No OSA/SF recovery action will be taken upon any exception.

rrrrrrrr = return code from the ESTAE macro

User Response: Investigate the return code from the ESTAE macro found in *Programming: Authorized Assembler Services Reference, Volume 2, GC28-1476*. Make corrections. Then stop and restart OSA/SF. If unable to correct condition, see “Reporting Problems to IBM” on page 8-6.

IOAx756W IOASTADM load failed with rc=*rrrrrrrr*

Explanation: OSA/SF uses a recovery routine, IOASTADM, to handle errors. The recovery routine is LOADed when OSA/SF is started. OSA/SF was unable to load the OSA/SF recovery routine successfully. Therefore, no OSA/SF recovery action will take place for any exception conditions.

rrrrrrrr = return code from LOAD macro.

User Response: Investigate the return code from the LOAD macro found in *Programming: Authorized Assembler Services Reference, Volume 3, GC28-1477*. Make corrections. Then stop and restart OSA/SF. If unable to correct condition, see “Reporting Problems to IBM” on page 8-6.

IOAx801E Region service failed with RC=*rrrrrrrr*

Explanation: An internal error has occurred in an OSA/SF memory allocation service routine.

rrrrrrrr = return code for IBM diagnostic use

User Response: Additional MVS storage resources are needed by OSA/SF. Check the OSA/SF region size and increase if required. Also check the MVS system console for addition MVS storage resource constraint messages. Free up system storage resource and retry the command that received this message.

If allocating additional storage for OSA/SF does not correct the situation, see “Reporting Problems to IBM” on page 8-6.

IOAx802E SCC name/token create failed with RC=*rrrrrrrr*

Explanation: Unable to create a Name/Token pair for an OSA/SF component. This is probably the result of an internal MVS or OSA/SF error.

rrrrrrrr = return code from IEANTCR

User Response: Check the IEANTCR return code in *Programming: Authorized Assembler Services Reference, Volume 2, form number GC28-1476* for possible actions. If the condition can not be corrected, see “Reporting Problems to IBM” on page 8-6.

IOAx803E SCC name/token retrieve failed with RC=*rrrrrrrr*

Explanation: Unable to retrieve a Name/Token pair for an OSA/SF component. This is probably the result of an internal MVS or OSA/SF error.

rrrrrrrr = return code from IEANTRT

User Response: Check the IEANTRT return code in *Programming: Authorized Assembler Services Reference, Volume 2, form number GC28-1476* for possible actions. If the condition can not be corrected, see "Reporting Problems to IBM" on page 8-6.

IOAx804I SCC name/token delete failed with rc=*rrrrrrrr*

Explanation: Unable to delete a Name/Token pair for an OSA/SF component. This is probably the result of an internal MVS or OSA/SF error.

rrrrrrrr = return code from IEANTDL

User Response: Check the IEANTDL return code in *Programming: Authorized Assembler Services Reference, Volume 2, form number GC28-1476* for possible actions. If the condition can not be corrected, see "Reporting Problems to IBM" on page 8-6.

IOAx805E Register for ENF online event failed with rc=*rrrrrrrr*

Explanation: OSA/SF attempted to register with the MVS Event Notification Facility for an online event. The register attempt failed.

rrrrrrrr = return code from ENF register attempt

User Response: Ensure that the MVS Event Notification Facility for the MVS operating system is at the current maintenance level. If problems continue, see "Reporting Problems to IBM" on page 8-6.

IOAx806E Register for ENF offline event failed with RC=*rrrrrrrr*

Explanation: OSA/SF attempted to register with the MVS Event Notification Facility for an offline event. The register attempt failed.

rrrrrrrr = return code from ENF register attempt

User Response: Ensure that the MVS Event Notification Facility for the MVS operating system is at the current maintenance level. If problems continue, see "Reporting Problems to IBM" on page 8-6.

IOAx807I Delete of ENF online event failed with RC=*rrrrrrrr*

Explanation: OSA/SF attempted to delete (unregister) with the MVS Event Notification Facility for an online event. The delete attempt failed.

rrrrrrrr = return code from ENF delete attempt

User Response: Ensure that the MVS Event Notification Facility for the MVS operating system is at the current maintenance level. If problems continue, see "Reporting Problems to IBM" on page 8-6.

IOAx808I Delete of ENF offline event failed with RC=*rrrrrrrr*

Explanation: OSA/SF attempted to delete (unregister) with the MVS Event Notification Facility for an offline event. The delete attempt failed.

rrrrrrrr = return code from ENF delete attempt

User Response: Ensure that the MVS Event Notification Facility for the MVS operating system is at the current maintenance level. If problems continue, see "Reporting Problems to IBM" on page 8-6.

IOAx809E Load of ENF listen module failed with RC=*rrrrrrrr*

Explanation: Unable to load the MVS ENF (Event Notification Facility) event handler.

rrrrrrrr = return code from LOAD macro

User Response: Investigate the return code from the LOAD macro found in *Programming: Authorized Assembler Services Reference, Volume 3, GC28-1477*. Make corrections. Then stop and restart OSA/SF. If unable to correct condition, see "Reporting Problems to IBM" on page 8-6.

IOAx820I CHPID *cc* **is no longer managed by this partition**

Explanation: The OSAD device number with unit address `X'FE'` was varied offline, so OSA CHPID *cc* cannot be managed by OSA/SF in this partition.

cc = CHPID

User Response: No user action is needed if the OSAD device was knowingly varied offline to the MVS system. Vary the OSAD device back online to the MVS system. Message IOAx821I should then follow.

IOAx821I CHPID *cc* **is now managed by this partition**

Explanation: The OSAD device for the CHPID was varied online and is now being managed by the OSA/SF in this partition.

cc = CHPID

User Response: When an OSAD device comes online to the system, OSA/SF will assume management control of the CHPID (if no other OSA/SF is currently managing the OSA). This informational message notifies the user; no user action is required.

IOAx823E GETMAIN failed with rc = *dddd.*

Explanation: Unable to allocate storage successfully. Failing return code is indicated by *dddd.*

dddd = GETMAIN return code

User Response: Investigate the return code from the GETMAIN macro found in *Programming: Authorized Assembler Services Reference, Volume 2, GC28-1476*. Make corrections. Then stop and restart OSA/SF. If unable to correct condition, see "Reporting Problems to IBM" on page 8-6.

IOAx824E BLDL macro failed with rc = *dddd***.**

Explanation: Unable to execute BLDL macro successfully. Failing return code is indicated by *dddd*.

dddd = BLDL return code

User Response: Investigate the return code from the BLDL macro found in *Programming: Authorized Assembler Services Reference, Volume 1, number GC28-1475*. Make corrections. Then stop and restart OSA/SF. If unable to correct condition, see "Reporting Problems to IBM" on page 8-6.

IOAx851I Disk Serving has been stopped on device *xxxx*

Explanation: A Stop Managing command with the Stop Disk Serving function was issued to the OSA CHPID related to device *xxxx*.

User Response: Verify that the Stop Managing command with the Stop Disk Serving parameter was issued. No action is required if it was. If the Stop Managing command was not issued, review the message log for further information. If the cause can not be determined, see "Reporting Problems to IBM" on page 8-6.

IOAx852I Disk Serving is up on device *xxxx*

Explanation: This message is issued when Disk Serving initialization completes successfully.

User Response: None, if message is the result of Start Managing command, or if a disk serving device (`X'FC'` or `X'FD'`) was varied online. If problem persists, see "Reporting Problems to IBM" on page 8-6.

IOAx853I Disk Serving is down on device *xxxx*

Explanation: This message is issued if ***device not ready*** is received for a disk command. After a time delay, the device is tested again.

User Response: No user response is required, if message is the result of Stop Managing command, or the device (*FC*/*FD*) was varied offline to MVS. To restart disk serving, vary the device (*FC*/*FD*) online to MVS; disk serving will automatically restart.

IOAx854I Starting Disk Serving on device *xxxx*

Explanation: This message is issued following a Start Managing command that specified the disk serving option. The IOAVnnnn job will be started by OSA/SF where "nnnn" is the device number of the OSA X'FC' address.

User Response: None. Normal disk serving functions begin.

IOAx861E Specified PVC name *ssssssss* **is not valid for ATM IP forwarding mode**

Explanation: When running in ATM IP Forwarding mode, only PVC name WANPVC00 is allowed.

User Response: Correct the PVC name in the input and retry the command.

IOAx862E Only one PVC is allowed when configuring ATM IP fowarding mode

Explanation: You specified more than one (1) PVC entry while configuring ATM IP forwarding.

User Response: Fix the input file (GUI or REXX) and retry command.

IOAx863E More than 16 passthru entries with IP addresses specified for port 0

Explanation: There are more than 16 TCP/IP entries with IP addresses defined in the OAT. You can only define a maximum of 16 IP addresses per port.

User Response: Define only a maximum of 16 OAT entries with IP addresses for the specified port.

IOAx864E Primary default entry not removed; secondary LP (LP *p* **UA** *uu***) exists**

Explanation: A port can have one of the following:

- No default entries
- One primary default entry
- Both a primary default entry and a secondary default entry

This OAT entry was previously defined as the primary default entry for the associated port. Replacing this entry would cause the port to have a secondary default entry without a primary default entry. This is not valid. The secondary default entry currently defined has unit address *uu* for logical partition *p*.

p = logical partition (LP) number
uu = unit address

User Response: Specify a replacement primary default entry or remove both the primary and secondary default entry.

IOAx865E Multi IP addresses not supported by OSA processor code level *x.yy*

Explanation: The multible IP addresses protocol is not supported by the OSA processor code level *x.yy*. The minimum OSA processor code that supports this enhancement is as follows:

OSA2–6.2x
OSA2–ATM–5.9
OSA2–FENET–1.3

User Response: Obtain the specified or higher level of OSA processor code and reissue the Put OAT command.

IOAx866E Secondary default entry (LP *p* UA *uu*) specified without a primary LP

Explanation: A secondary default entry was specified without a primary default entry being on the port.

User Response: Add a primary default entry to the input and reissue the Put OAT command.

IOAx868E Duplicate IP addresses found for LP *p* UA *uu*

Explanation: The specified OAT entry for LP *p* UA *uu* has multiple IP addresses and more than one IP address was found to have the same value.

p = logical partition (LP) number
uu = unit address

User Response: Fix the data being used for the OAT input. Reissue the Put OAT or Install command, whichever was used.

IOAx869E Data not consistent for LP *p* UA *uu* & LP *p* UA *vv* (Group of 2)

Explanation: OAT entries LP *p* UA *uu* and LP *p* UA *vv* combine to make one valid OAT entry with a group size of 2. The settable data for both entries (if specified in the input) must match.

p = logical partition (LP) number
uu = unit address(even)
vv = unit address(odd)

For Passthru Type, check

port number
IP address(es)
NetMask(s) if applicable

For HPDT MPC Type

port number
OSA name

User Response: Fix the data being used for the OAT input. Reissue the Put OAT or Install command, whichever was used.

IOAx870E Device type *dd* is not supported for CHPID *cc*

Explanation: The specified device type *dd* is not supported on this OSA platform/configuration.

Where *dd* can be:

MPC
Passthru
SNA
SNA Network Management
Subchannel

User Response: Fix the data being used for the OAT input. Reissue the Put OAT or Install command, whichever was used.

IOAx872E Entry type *dd* is not supported in *ssss* mode for CHPID *cc*

Explanation: The specified entry type ssss is not supported when the OSA is configured in mmmm mode.

Where *ssss* can be:

Passthru
SNA
SNA Network Management

Where *mmmm* can be:

HPDT Native
ATM(LE)

User Response: Fix the data being used for the Put OAT command. Only MPC entry types are valid when the OSA is in HPDT Native mode. Only passthru and SNA entry types are valid in ATM (LE) mode.

IOAx873I CHPID *cc* **port** *pp* **default entry is LP** *nn* **UA** *uu*

Explanation: All unknown IP packets received by port *pp* in CHPID (OSA) *cc* will be forwarded to LP *nn* UA *uu* per default OAT entry. This situation can occur under these conditions:

You reset the specified CHPID, and either the primary or secondary default OAT entry is now active.
No primary or secondary default OAT entry was originally defined, but now you have defined one and activated the new configuration.
Both primary and secondary default OAT entries were defined. Because of either an overt action on your part or because of an error on the primary, unknown packets are now being forwarded to LP n UA uu as defined for the secondary default.

Where

cc = CHPID number
pp = port number
nn = Logical partition number
uu = unit address number

The specified port on the CHPID (OSA) was previously identified as the default entry for forwarding IP packets and is no longer forwarding the packets.

User Response: No action is necessary if you want unknown IP packets to be forwarded to the LP/UA specified in the message text. If you do not want unknown packets forwarded to this LP/UA combination, do the following:

- Check that the OAT entries you specified as being the primary or secondary default OAT entries are on the CHPID.
- After this check, if you determine it is not what you want, remove the default OAT entry indicator from this LP/UA OAT entry.
- After this check, if the LP/UA specified is for the secondary default OAT entry and you want unknown packets going to the primary default OAT entry, then verify that TCP/IP is active on this combination. This may require problem determination as to why the primary default originally failed.

IOAx874W CHPID *cc* **port** *pp* **is no longer forwarding unknown packets**

Explanation: The specified port on the CHPID (OSA) was previously identified as the default entry for forwarding IP packets and is no longer forwarding the packets.

Where

cc = CHPID number
pp = port number

User Response: This message may require you to take action.

If there was a primary or secondary default OAT entry on the specified CHPID/port forwarding unknown packets, one or both of these entries are no longer available.

Check that TCP/IP is active on the specified LP/UA designated as the primary and/or secondary default OAT entry.

IOAx875E Empty Application Dump area for CHPID *cc* **packets**

Explanation: The CHPID you issued the GET_DEBUG command to does not have an active SNA application. For OSA2-ATM, there can be two application segments, one for the SNA application and one for the ATM application.

This message can be issued if:

The OSA2-ATM CHPID is not configured for any mode.
The OSA2-ATM CHPID is configured in HPDT ATM Native or IP forwarding mode. In either of these modes, the SNA application is not active.

User Response: To configure the OSA mode, refer to Chapter 4 on page 4-1 or Chapter 5 on page 5-1.

IOAx876E Incorrect data returned from CHPID *cc*

Explanation: The data returned from CHPID cc is not valid. This is an internal error probably in the OSA firmware.

User Response: See “Reporting Problems to IBM” on page 8-6.

IOAx950E No file ID for file *nn*

Explanation: This is an internal OSA/SF error.

User Response: See “Reporting Problems to IBM” on page 8-6.

IOAx951W Not valid or closed pipe

Explanation: This is an internal OSA/SF error.

User Response: Stop and restart OSA/SF to attempt a recovery. If the condition continues, see “Reporting Problems to IBM” on page 8-6.

IOAx952W Failed to open pipe communications

Explanation: This is an internal OSA/SF error.

User Response: Stop and restart OSA/SF to attempt a recovery. If the condition continues, see “Reporting Problems to IBM” on page 8-6.

IOAC956E Pipe communication error *dd*

Explanation: An internal communication error occurred within OSA/SF.

User Response: Stop and restart the Attention Server (IOANMAIN). If the problem persists, contact the IBM support center.

IOAx999I Configuration mode for CHPID*cc* **is** *mmmmmmmm*

Explanation: This is an informational message to indicate what configuration mode the specified CHPID is running with.

mmmmmmmm is one of the following or a valid combination of the following.

- HPDT MPC
- HPDT ATM
- ATM(LE)
- TCP/IP Passthru
- SNA
- LANRES

User Response: None

OSA Return Codes

Any of the following OSA return codes can be included in a message displayed by an application other than OSA/SF. The message description for the other application directs you to this section.

E002 A maximum transmission unit (MTU) size was received by the OSA port and it is not a valid MTU size for that port.

Correct the MTU size and retry the task.

E005 An IP address was received by the OSA port that duplicates an IP address already in use by another MPC (HPDT MPC mode) or LCS (TCP/IP Passthru mode) session attached to the port.

Change one of the IP addresses.

Refer to the issuing message documentation for information on any other appropriate action to take.

E007 The OSA port is in the error state because the OSA is customized for TCP/IP Passthru mode, but that mode configuration does not allow access to the port to be shared with another S/390 program that is attempting to access the port.

If you want to customize the OSA port for port sharing in the TCP/IP Passthru mode, enter the S/390 Home IP address to each applicable Passthru entry in the OSA's OAT. See step 8 on page 4-4 for the TCP/IP Passthru mode set up instructions, use the GUI online Help panels, and refer to *Planning for the System 390 Open Systems Adapter Feature.*

Refer to the issuing message documentation for information on any other appropriate action to take.

E00A An IP address was received by the OSA port that duplicates an IP address being used by another IP connection in the IP network.

Change one of the IP addresses in the network.

E*xxx* Where *xxx* is any hexadecimal integer other than one of the other RCs in this list. This condition is not correctable by the user. Report the OSA RC, issuing message ID, and the message text to the IBM Support Center.

The following return codes are provided by OSA/SF:

0 indicates that the command completed successfully.

4 indicates the command completed and any data that is returned is valid. However, a warning message is issued.

8 The command failed. Any data that is returned is not valid. A message with an E-severity level is issued.

12 The command failed. No data is returned. A message with an S-severity level is issued.

Appendix D. Control Blocks

This section provides information for using a General-use programming interface.

If you plan to automate OSA/SF, you will communicate with the API through the use of Control Blocks.

Control Blocks are used to send data to OSA/SF and receive data from OSA/SF. The input control block is assembled and sent to the OSA/SF and OSA/SF returns an output control block. This appendix shows examples and definitions for an input and output control block, and for each OSA/SF command.

Table D-1. INPUT Control block for OSA/SF Commands

field type	Contents
char(8)	"IOAECB"
char(8)	SYSPLEX name
char(8)	Host name
char(8)	USERID
u_short	Command code
u_short	Return code
u_long	Reason code
char(8)	OSA/SF version
char(9)	Time on host (hh:mm:ss NULL terminated)
char(11)	Date on host (mm/dd/yyyy NULL terminated)
integer	Control block length
u_short	Command Target
u_short	Channel number
u_short	Port target
u_short	Port number
integer	Sub-command identifier
data specific	Command specific data
char(12)	reserved
256-->	command specific return data, command specific data for input, or reason code tables and/or messages for failures.

The above table is defined as follows:

Contents	Meaning
"IOAECB"	Eyecatcher to identify this control block as belonging to OSA/SF.
SYSPLEX name	Name of the sysplex that this host/UserID is running on. (filled in by OSA/SF)
Host Name	Name of host system issuing the command (filled in by OSA/SF)
USERID	UserID issuing command (filled in by OSA/SF)
Command code	command to be executed by the OSA/SF host code. The hex values are shown in the following control block examples.
Return code	Overall return code sent back by OSA/SF. Valid values are:

Value	Meaning
0	Successful completion

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4 Warning. Command completed, but something the user should be aware of prevented successful completion.

8 Error - Command did not complete successfully.

12 Severe Error - Command did not complete successfully.

20 Catastrophic error - The command failed, and the error prevented any reason code or further explanation from being returned.

40 Memory allocation error occurred while trying to get storage to send the command back to the API. No data could be displayed.

41 Control block sent to the API was too small. It must always be a minimum of a base control block.

Reason code This field contains a detailed reason as to why the command failed. It is for IBM use only. For those commands where a table is returned, this field contains the highest reason code represented in the table. There is a reason code for each operation attempted. e.g. - Install 8 OSA mode files, which fails on OSA mode files 5, but all other OSA mode filesare successful. The command would return a table that has 8 sections, the first 4 showing successful completion, the 5th OSA mode files with the reason code and message of why it couldn't be installed, and finally 3 more successful completion statuses.

OSA/SF version Identifies the version of OSA/SF that returned this control block, so the proper template can be used to determine the results (filled in by OSA/SF when the control block is returned).

Time on host This is the time on the host system when the command is first received by OSA/SF. The format of the time is hh:mm:ss, and is NULL terminated.

Date This is the date the command was received by OSA/SF. The format is mm/dd/yyyy, and is NULL terminated.

Control block length

This field contains the number of bytes that follow the mandatory 256 byte base control block. For most commands, the control block sent to OSA/SF will have this field set to 0. For control blocks returned to the user, this field shows the length of any data returned. All returned data starts after the mandatory 256 byte base control block.

Command target

This field indicates the component that the command is directed to. The valid values for this field depend on the actual command code and possibly sub-command field. Not all values are valid for all commands. The valid values are:

value	Meaning
'0020'x (One Channel)	Command is directed at a specific OSA channel.
'0021'x (ALL channels)	Command is directed at all known, operational OSA channels.
'0022'x (OSA/SF)	Command is directed at OSA/SF only.
'0023'x (Host)	OSA/SF information and ALL channels known to OSA/SF.
'0024'x (OSA/SF & One channel)	Command is directed at OSA/SF and One channel. This is currently used for Put File command.
'0028'x (SNA_INFO)	Command is directed at 1 channel with the sub-command identifier indicating which particular information to return.

Channel number This field is only valid when "one channel" is set in the command target field. Otherwise, it is not checked by OSA/SF. This field indicates the channel number to direct the command towards.

Port target This field is valid only if "One channel" is set in the command target field. It indicates the port the command is directed at. The valid values are: One port -OR- No ports -OR- ALL ports. If "One port" is specified, the command is directed at the port specified in the port number field. If "No ports" is specified, only channel information is returned. (This value is only valid for the "Query" command). Otherwise the command is directed to all the known ports on the specified channel.

```
'0030'  One port
'0031'  All ports
'0032'  No ports
```

Port number This field is valid only if "One port" is set in the port target field. Otherwise this field is not checked by OSA/SF.

Sub-command identifier
This command is used when the command must have an additional information as to what to perform. e.g. - On the "Set Parameter" command, this field would indicate which parameter to set.

Command specific data
This field is only valid when the command needs additional data such as an MVS dataset name, parameter value, etc. The length of this field depends upon the command being issued. In some cases, the data will extend past the 256 byte base control block.

Command specific return data, Command specific data, or reason code on failure
The fields after the mandatory 256 byte base control block contain either command specific return values if the command completed successfully, or a table showing each of the entities that was attempted, and their corresponding reason code for success or failure. Along with each reason code, is a corresponding 80 character text message describing the reason code presented. e.g.-For the install command containing 5 OSA mode files, if any of the 5 failed, a table showing each OSA mode file followed by a success or failure message is returned. This is shown following the individual commands.

The output control block mimics the input control block, except the return code, reason code, OSA/SF version, length, reason code message, and returned data are included. All except the returned data overwrite some of the original contents of the input control block. Any returned data, follows the mandatory 256 byte base control block.

Table D-2. OUTPUT Control block for OSA/SF Commands

field type	Contents
char(8)	"IOAECB"
char(8)	SYSPLEX name
char(8)	Host name
char(8)	USERID
u_short	Command code
u_short	Return code (filled in when returned)
u_long	Reason code (filled in when returned)
char(8)	OSA/SF version (filled in when returned)
char(9)	Time on host (hh:mm:ss NULL terminated) (filled in when returned)
char(11)	Date on host (mm/dd/yyyy NULL terminated) (filled in when returned)
integer	Control block length (filled in when returned)
u_short	Command Target
u_short	Channel number
u_short	Port target
u_short	Port number
integer	Sub-command identifier
char(12)	reserved
data specific	Command specific data (overlayed starting at byte 177 with the reason message)
char(80)	Message corresponding to reason code returned. Data starts at byte 177 and fills the remainder of the base control block.
data specific	command specific return data, command specific data for input, or reason code tables/messages for failures. Starts after the base 256 byte control block.

Clear Debug Input Control Block Example

Table D-3. Clear Debug Input Control Block

Field type	Sample values	Field definitions
char(8)	IOAECB	Eyecatcher. filled in by user
char(8)	Filled in by API	SYSPLEX name
char(8)	Filled in by API	Host name
char(8)	Filled in by API	USERID
u_short	Clear Debug ('0001'x)	Command code
u_short	N/A on input	Return code
u_long	N/A on input	Reason code
char(8)	N/A on input	OSA/SFversion
char(9)	N/A on input	Time NULL terminated
char(11)	N/A on input	Date NULL terminated
integer	0	Control block length
u_short	OSA/SF ('0022'x)	Command Target
u_short	N/A	Channel number
u_short	N/A	Port target
u_short	N/A	Port number
integer	message log ('00000040'x)	Sub-command identifier
char(12)	reserved	Reserved
N/A	N/A	Command specific data

Clear Debug Output Control Block Example

The control block returned is the same as input. Only the filled in OSA/SF fields are different.

Delete File Input Control Block Example

Table D-4. Delete File Input Control Block

Field type	Sample values	Field definitions	
char(8)	IOAECB	Eyecatcher. filled in by user	
char(8)	Filled in by API	SYSPLEX name	
char(8)	Filled in by API	Host name	
char(8)	Filled in by API	USERID	
u_short	Delete File ('0002'x)	Command code	
u_short	N/A on input	Return code	
u_long	N/A on input	Reason code	
char(8)	N/A on input	OSA/SFversion	
char(9)	N/A on input	Time NULL terminated	
char(11)	N/A on input	Date NULL terminated	
integer	length > 256	Control block length	
u_short	One Channel ('0020'x)	Command Target	
		'0020'x One channel	indicates the file should be deleted from the OSA mode fully qualified filename
		'0022'x OSA/SF	indicates the MVS file specified should be deleted. This option is available only through the API.
u_short	channel number	Channel number	
u_short	N/A	Port target	
u_short	N/A	Port number	
integer	N/A	Sub-command identifier	
char(12)	reserved	Reserved	
char(64)	MVS dataset name NULL terminated	Command specific data	
char(128/12)	OSA mode fully qualified filename (e.g. - VOLUME/path/subpath/filename.ext) NULL terminated	Command specific data	

Delete File Output Control Block Example

The control block returned is the same as input. Only the filled in OSA/SF fields are different.

Get Config Control Block Examples

Table D-5. Get Config Screen Input Control Block

Field type	Sample values	Field definitions
char(8)	IOAECB	Eyecatcher. filled in by user
char(8)	Filled in by API	SYSPLEX name
char(8)	Filled in by API	Host name
char(8)	Filled in by API	USERID
u_short	Get Config Info ('0021'x)	Command code
u_short	N/A on input	Return code
u_long	N/A on input	Reason code
char(8)	N/A on input	OSA/SF version
char(9)	N/A on input	Time NULL terminated
char(11)	N/A on input	Date NULL terminated
integer	0	Control block length
u_short	One channel ('0020'x)	Command Target
u_short	channel number	Channel number
u_short	N/A	Port target
u_short	N/A	Port number
integer	N/A	Sub-command identifier
char(12)	reserved	Reserved

Table D-6. Get Config Screen Output Control Block

Field type	Sample values	Field definitions
char(8)	IOAECB	Eyecatcher. filled in by user
char(8)	Filled in by API	SYSPLEX name
char(8)	Filled in by API	Host name
char(8)	Filled in by API	USERID
u_short	Get Config Info ('0021'x)	Command code
u_short	filled in by OSA/SF	Return code
u_long	filled in by OSA/SF	Reason code
char(8)	filled in by OSA/SF	OSA/SF version
char(9)	13:12:43	Time NULL terminated
char(11)	12/02/1997	Date NULL terminated
integer	number	Control block length
u_short	One Channel ('0020'x)	Command Target
u_short	channel number	Channel number
u_short	N/A	Port target
u_short	N/A	Port number
integer	N/A	Sub-command identifier
char(92)	reserved	Reserved
char(80)	reason message	explains the reason code returned. The data starts 80 bytes from the end of the base control block.
char(nnnn)	congifuration information	Actual configuration information returned from the CHPID. The length is specified in the control block length field above.

Get Console Screen Control Block Examples

Table D-7. Get Console Screen Input Control Block

Field type	Sample values	Field definitions
char(8)	IOAECB	Eyecatcher. filled in by user
char(8)	Filled in by API	SYSPLEX name
char(8)	Filled in by API	Host name
char(8)	Filled in by API	USERID
u_short	Get Console Screen ('0006'x)	Command code
u_short	N/A on input	Return code
u_long	N/A on input	Reason code
char(8)	N/A on input	OSA/SF version
char(9)	N/A on input	Time NULL terminated
char(11)	N/A on input	Date NULL terminated
integer	0	Control block length
u_short	One channel ('0020'x)	Command Target
u_short	channel number	Channel number
u_short	N/A	Port target
u_short	N/A	Port number
integer	N/A	Sub-command identifier
char(12)	reserved	Reserved
integer	screen number	Command specific data

Table D-8. Get Console Screen Output Control Block

Field type	Sample values	Field definitions
char(8)	IOAECB	Eyecatcher. filled in by user
char(8)	Filled in by API	SYSPLEX name
char(8)	Filled in by API	Host name
char(8)	Filled in by API	USERID
u_short	Get Console Screen ('0006'x)	Command code
u_short	filled in by OSA/SF	Return code
u_long	filled in by OSA/SF	Reason code
char(8)	filled in by OSA/SF	OSA/SF version
char(9)	13:12:43	Time NULL terminated
char(11)	01/26/1995	Date NULL terminated
integer	2000 ('7D0'x)	Control block length
u_short	One Channel ('0020'x)	Command Target
u_short	channel number	Channel number
u_short	N/A	Port target
u_short	N/A	Port number
integer	N/A	Sub-command identifier
char(12)	reserved	Reserved
integer	screen number	Command specific data
char(80)	reason message	explains the reason code returned. The data starts 80 bytes from the end of the base control block.
char(2000)	screen data	Actual 80 (wide) x 25 (rows) of screen data. This data starts at byte 256 of the control block.

Get OSA Support Facility Debug Control Block Examples

Table D-9. Get OSA Support Facility Debug Input Control Block

Field type	Sample values	Field definitions
char(8)	IOAECB	Eyecatcher. filled in by user
char(8)	Filled in by API	SYSPLEX name
char(8)	Filled in by API	Partition name
char(8)	Filled in by API	USERID
u_short	Get Debug Information ('0007'x)	Command code
u_short	N/A on input	Return code
u_long	N/A on input	Reason code
char(8)	N/A on input	OSA/SF version
char(9)	N/A on input	Time NULL terminated
char(11)	N/A on input	Date NULL terminated
integer	0	Control block length
u_short	number	Command Target **'0020'x** One channel **'0022'x** OSA/SF
u_short	number	CHPID number
u_short	N/A	Port target
u_short	N/A	Port number
integer	number	Sub-command identifier **'00000041'x** Trace table **'00000040'x** message log **'0000004A'x** SNA Memory dump **'0000004B'x** SNA Trace table **'0000004C'x** SNA Message log **'0000004D'x** ATM trace **'0000004E'x** ATM Memory dump **'00000050'x** Configuration information
char(12)	reserved	Reserved
integer	replace indicator ('00000053'x)	Command specific data
integer	number of entries to return	Command specific data This field is only valid when 'message log' is specified.
char(64)	MVS dataset name	Command specific data

Get Debug Output Control Block Example

The control block returned is the same as input, with the normally returned OSA/SF specified fields filled in, and the actual data requested starting at byte 257 of the returned data.

Note: All the data is in a format for IBM use and is therefore not documented.

Get File Control Block Examples

Table D-10. Get File Input Control Block

Field type	Sample values	Field definitions
char(8)	IOAECB	Eyecatcher. filled in by user
char(8)	Filled in by API	SYSPLEX name
char(8)	Filled in by API	Host name
char(8)	Filled in by API	USERID
u_short	Get File ('0009'x)	Command code
u_short	N/A on input	Return code
u_long	N/A on input	Reason code
char(8)	N/A on input	OSA/SFversion
char(9)	N/A on input	Time NULL terminated
char(11)	N/A on input	Date NULL terminated
integer	length > 256	Control block length
u_short	One Channel ('0020'x)	Command Target **'0020'x** One Channel **'0022'x** OSA/SF **'0024'x** OSA/SF AND One channel
u_short	channel number	Channel number
u_short	N/A	Port target
u_short	N/A	Port number
integer		Sub-command identifier **'00000042'x** Copy from OSA OS to MVS **'00000043'x** Copy from OSA OS to API Only available from API **'00000044'x** Copy from OSA OS to API and an MVS dataset Only available from API **'00000045'x** Copy from MVS to API
char(12)	reserved	Reserved
integer	replace indicator ('00000053'x)	Command specific data
char(64)	MVS dataset name NULL terminated	Command specific data
char(128/12)	OSA OS file name NULL terminated	Command specific data

Table D-11. Get File Output Control Block

Field type	Sample values	Field definitions
char(nn)	file data	Command specific data which starts at byte 256 of the returned control block. The length field indicates the length of the actual file. The data contained is 'free form'. It can be whatever the user puts into the data residing in the area specified.

Get OSA Address Table Control Block Examples

Table D-12. Get OSA Address Table Input Control Block

Field type	Sample values	Field definitions
char(8)	IOAECB	Eyecatcher. filled in by user
char(8)	Filled in by API	SYSPLEX name
char(8)	Filled in by API	Partition name
char(8)	Filled in by API	USERID
u_short	Get OSA Address Table ('0008'x)	Command code
u_short	N/A on input	Return code
u_long	N/A on input	Reason code
char(8)	N/A on input	OSA/SF version
char(9)	N/A on input	Time NULL terminated
char(11)	N/A on input	Date NULL terminated
integer	0	Control block length
u_short	One Channel ('0020'x)	Command Target
u_short	chpid number	Chpid number
u_short	N/A	Port target
u_short	N/A	Port number
integer	N/A	Sub-command identifier
char(12)	reserved	Reserved

The actual OSA address table entry(ies) are returned preceded by a count of the number of entries and an eyecatcher. This data starts after the mandatory 256 byte base control block. The format of the eyecatcher portion is shown in Table D-13. Table D-14 shows the actual layout of an OSA address table entry.

Table D-13. Get OSA Address Table Output Control Block

Field type	Sample values	Field definitions
char(12)	IOA_OAT_HDR	eyecatcher
u_short	ID = 12	identifier of IOA_OAT_HDR
u_short	number = 40	length of "eyecatcher" section
u_short	number	associated chpid number
u_short	number	number of OSA address table entries returned

Table D-14 (Page 1 of 2). OSA Address Table Format

Settable	Field type	Field definition
	char(12)	eyecatcher = IOA_OATENTRY
	ushort	identifier of IOA_OATENTRY = 13
	u_short	length of the entire OAT entry, base + extension
	int = 88	length of just the base portion of the OAT entry
	int	Valid Entry **'80000000'x** channel subsystem information valid **'40000000'x** OSA information valid **'C0000000'x** Channel subsystem and OSA information valid

Table D-14 (Page 2 of 2). OSA Address Table Format

Settable	Field type	Field definition
		Channel subsystem obtained data
	char(8)	Partition name
X	u_short	Partition number
X	u_short	Unit Address
	u_short	Device number
	u_short	Chpid number
	u_short	control unit number
	byte	Channel state **'80'x** Configured **'40'x** Not Configured **'20'x** Not Installed
	byte	device shareable **'00'x** No **'80'x** Yes
		Base DAT - card obtained data
	byte	group size
	byte	reserved
X	u_short	entry type **'0000'x** unassigned **'0100'x** unassigned(no extended data for this entry type) **'0003'x** subchannel **'0005'x** passthru **'0105'x** passthru with multi-IP Addr **'000D'x** SNA **'0010'x** MPC **'0110'x** MPC for IP traffic **'0210'x** MPC for IPX traffic
	u_short	device state descriptor **'0000'x** Not started **'8000'x** Started **'4000'x** In use **'C000'x** Started & In use
	char(38)	reserved

Table D-15 and Table D-16 on page D-14 show the extensions to the base OSA address table. Each row is associated with a particular entry type. Only one of the tables follows the base entry. Each extension has a length field so the location of the entry following it is readily known.

Table D-15 (Page 1 of 2). Extended OAT for Passthru (0005) entry type

Settable	Field type	Field definition
	int = 64	length of this extended entry
	short = 1	number of ports (currently always 1)
	u_short	reserved
X	byte	OSA PORT number

Table D-15 (Page 2 of 2). Extended OAT for Passthru (0005) entry type

Settable	Field type	Field definition
X	byte	default entry • '80'x = use this port as the default entry • all other values indicate this port is NOT the default entry
	short	reserved
X	u_long	home IP address
X	u_long	home IP subnet mask
	char(44)	reserved

Table D-16. Extended DAT for subchannel (0003) entry type

Settable	Field type	Field definition
	int = 60	length of this extended entry
	byte	unit address
	char(55)	reserved

Table D-17. Extended OAT for SNA (000D) entry type

Settable	Field type	Field definition
	int = 52	length of this extended entry
	short	Number of ports
	char(1)	Reserved
X	byte	Port Number
	char(44)	reserved

Table D-18. Extended OAT for SNA Management

Settable	Field type	Field definition
	int = 52	length of this extended entry
	short	Number of ports
	char(1)	Reserved
X	byte	Port Number = FF
X	Char(5)	
	Char(39)	Reserved

Table D-19. Extended OAT for MPC (0010) (HPDT ATM Native)

Settable	Field type	Field definition
	int = 112	length of this extended entry
	short	Number of ports
	char(1)	reserved
X	byte	Port Number
X	char (8)	OSA Name
	char(96)	Unused

Table D-20. Extended OAT for Passthru Version 2 entry type (0x105)

Settable	Field type	Field definition
	int = 96(0x60)	length of this extended entry
	short = 1	Number of ports (currently always 1)
	char(1)	reserved
X	byte	Port Number
X	byte	default entry (no, pri or sec) • 00-no • 80-pri • 40-sec
	short	reserved
X	u_long	home IP address1
X	u_long	netmask1
X	u_long	home IP address2
X	u_long	netmask2
X	u_long	home IP address3
X	u_long	netmask3
X	u_long	home IP address4
X	u_long	netmask4
X	u_long	home IP address5
X	u_long	netmask5
X	u_long	home IP address6
X	u_long	netmask6
X	u_long	home IP address7
X	u_long	netmask7
X	u_long	home IP address8
X	u_long	netmask8
	char(20)	reserved

Table D-21. Extended OAT for MPC entry type(0x0110) for IP traffic

Settable	Field type	Field definition
	int = 176	length of this extended entry
	short = 1	Number of ports (currently always 1)
	u_byte	Count of valid IP addresses returned
X	byte	Port Number
X	char(8)	OSA Name
	u_long	home IP address1
	u_long	netmask1
	u_long	home IP address2
	u_long	netmask2
	u_long	home IP address3
	u_long	netmask3
	u_long	home IP address4
	u_long	netmask4
	u_long	home IP address5
	u_long	netmask5
	u_long	home IP address6
	u_long	netmask6
	u_long	home IP address7
	u_long	netmask7
	u_long	home IP address8
	u_long	netmask8
	u_long	home IP address9
	u_long	netmask9
	u_long	home IP address10
	u_long	netmask10
	u_long	home IP address11
	u_long	netmask11
	u_long	home IP address12
	u_long	netmask12
	u_long	home IP address13
	u_long	netmask13
	u_long	home IP address14
	u_long	netmask14
	u_long	home IP address15
	u_long	netmask15
	u_long	home IP address16
	u_long	netmask16
	char(32)	reserved

Table D-22. Extended OAT for MPC entry type (0x0210) for IPX traffic

Settable	Field type	Field definition
	int = 48 ('0030'x)	length of this extended entry
	short = 1	Number of ports (currently always 1)
	u_byte	Count of valid IPX addresses returned
X	byte	Port Number
X	char(8)	OSA Name
	u_long	IPX frame type1 **'0000 00E0'x** Ethernet 802.2 **'0000 8137'x** Ethernet II **'0000 00AA'x** Ethernet SNAP
	u_long	IPX frame type2
	u_long	IPX frame type3
	char(20)	reserved

Install Control Block Examples

Table D-23. Install Input Control Block

Field type	Sample values	Field definitions
char(8)	IOAECB	Eyecatcher. filled in by user
char(8)	Filled in by API	SYSPLEX name
char(8)	Filled in by API	Host name
char(8)	Filled in by API	USERID
u_short	Install ('000A'x)	Command code
u_short	N/A on input	Return code
u_long	N/A on input	Reason code
char(8)	N/A on input	OSA/SF version
char(9)	N/A on input	Time NULL terminated
char(11)	N/A on input	Date NULL terminated
integer	0	Control block length
u_short	One Channel ('0020'x)	Command Target
u_short	channel number	Channel number
u_short	N/A	Port target
u_short	N/A	Port number
integer	N/A	sub-command identifier
char(12)	reserved	Reserved
integer	Force indicator ('00000051'x)	Command specific data

Table D-24. Install Control Block Failing Reason Code

Field type	Sample values	Field definitions
char(12)	IOA_APPL_HDR	eyecatcher
u_short	ID = 6	identifier of IOA_APPL_HDR
u_short	number = 24	length of "eyecatcher" section
u_short	channel number	associated channel
u_short	number	number of OSA mode files on this channel
u_long	N/A	reserved
char(12)	IOA_APPLREAS	reason code eyecatcher
u_short	ID = 8	identifier of IOA_APPL_REAS
u_short	number =108	length of "eyecatcher" section
u_long	reason code	reason code for OSA mode files
char(80)	message	message corresponding to reason code
integer	number	length of OSA mode file name
u_long	N/A	reserved
char(xx)	string	OSA mode file name (must be a multiple of 4 bytes, padded on the right with Null characters)

The IOA_APPL_HDR portion shows how many different IOA_APPLREAS control blocks follow. When this command does not complete successfully, there is always 1 IOA_APPL_HDR returned, along with as many IOA_APPLREAS as defined. They are contiguous in the storage returned.

List File Control Block Examples

Table D-25. List File Input Control Block

Field type	Sample values	Field definitions
char(8)	IOAECB	Eyecatcher. filled in by user
char(8)	Filled in by API	SYSPLEX name
char(8)	Filled in by API	Host name
char(8)	Filled in by API	USERID
u_short	List File ('000B'x)	Command code
u_short	N/A on input	Return code
u_long	N/A on input	Reason code
char(8)	N/A on input	OSA/SFversion
char(9)	N/A on input	Time NULL terminated
char(11)	N/A on input	Date NULL terminated
integer	length > 256	Control block length
u_short	One Channel ('0020'x)	Command Target
u_short	channel number	Channel number
u_short	N/A	Port target
u_short	N/A	Port number
integer	N/A	Sub-command identifier
char(12)	reserved	Reserved
char(128/12)	Volume and path to list files for (NULL terminated)	Command specific data

Table D-26. List File Output Entry Format

Field type	Sample values	Field definitions
integer	number	number of files being returned
char(12)	filename/extension	filename concatenated with "." concatenated with the extension
char(10)	size	size of file/directory shown
char(10)	date	date of last modification (mm/dd/yyyy)
char(8)	time	time of last modification (hh:mm:ss)
REPEAT	filename, extension, size, date & time	for each file on OSAOS

The following example shows a sample output that might result from issuing this command.

```
/*********************************************************************/
/*      Dataset created 20:45:25 on 26 Apr 1996                      */
/*********************************************************************/
filename ext      size       date       time

autoexec bat    12345678  12/03/1995  11:03:23
noextnam          034984  01/05/1995  23:12:01
hidden   fil        9843  03/23/1995  23:59:59
```

Put File Input Control Block Example

Table D-27. Put File Input Control Block

Field type	Sample values	Field definitions
char(8)	IOAECB	Eyecatcher. filled in by user
char(8)	Filled in by API	SYSPLEX name
char(8)	Filled in by API	Partition name
char(8)	Filled in by API	USERID
u_short	Put File ('000D'x)	Command code
u_short	N/A on input	Return code
u_long	N/A on input	Reason code
char(8)	N/A on input	OSA/SFversion
char(9)	N/A on input	Time NULL terminated
char(11)	N/A on input	Date NULL terminated
integer	length > 256	Control block length
u_short	One channel ('0020'x)	Command Target **'0020'x** One Channel **'0022'x** OSA/SF **'0024'x** OSA/SF AND One channel
u_short	channel number	Channel number
u_short	N/A	Port target
u_short	N/A	Port number
integer	number	Sub-command identifier **'00000046'x** API to MVS **'00000047'x** API to OSA This option is only available from the API and causes the data sent as the "command specific data shown below, to be put into a file on the target OSA disk serving function path/filename. **'00000048'x** API to OSA and MVS This option is only available from the API and causes the data sent as the "command specific data shown below, to be put into a file on the target OSA disk serving function path/filename and also into the MVS dataset specified below. **'00000049'x** MVS to OSA
char(12)	reserved	Reserved
integer	Replace indicator ('00000053'x)	Command specific data
integer	Binary file indicator ('00000058'x)	Command specific data
integer	length of actual file data	Command specific data
char(64)	MVS dataset name NULL terminated	Command specific data
char(128/12)	OSA disk serving function path/filename NULL terminated	Command specific data
data specific	data corresponding to the actual file	Command specific data

Put File Output Control Block Example

The output for put file is a base control block with the normally filled in OSA/SF fields completed.

Put OSA Address Table Control Block Examples

Table D-28. Put OSA Address Table Input Control Block

Field type	Sample values	Field definitions
char(8)	IOAECB	Eyecatcher. filled in by user
char(8)	Filled in by API	SYSPLEX name
char(8)	Filled in by API	Partition name
char(8)	Filled in by API	USERID
u_short	Put OSA Address Table ('000C'x)	Command code
u_short	N/A on input	Return code
u_long	N/A on input	Reason code
char(8)	N/A on input	OSA/SF version
char(9)	N/A on input	Time NULL terminated
char(11)	N/A on input	Date NULL terminated
integer	length > 256	Control block length
u_short	One Channel ('0020'x)	Command Target
u_short	chpid number	Chpid number
u_short	N/A	Port target
u_short	N/A	Port number
integer	N/A	Sub-command identifier
char(12)	reserved	Reserved
integer	number of OSA address table entries	Command specific data
integer	Force indicator ('00000051'x)	Command specific data
integer	New table indicator ('00000055'x)	Command specific data
data specific	Actual OSA address table entry is shown in Table D-14 on page D-12	Command specific data
data specific	REPEAT	an OAT entry for each table entry to be changed or added

Any failures that occur return a table showing the failing extended device address along with a reason code and reason message for the failure. If more than 1 entry was "put", then there is 1 IOA_OAT_REAS returned for every entry attempted. The format of the table is shown in Table D-29 on page D-22. This table would follow the returned base control block, and start at byte 257.

Note: The partition number and unit address make up what is called the 'extended device address'.

If the command was never attempted due to an initial failure of some type, only the base control block is returned, along with the imbedded reason message.

Table D-29. Put OSA Address Table Failing Control Block

Field type	Sample values	Field definitions
char(12)	IOA_OAT_HDR	eyecatcher
u_short	ID = 12	identifier of IOA_OAT_HDR
u_short	number = 24	length of "eyecatcher" section
u_short	number	associated chpid number
u_short	number	number of OAT address table entries
u_long	N/A	Reserved
char(12)	IOA_OAT_REAS	eyecatcher
u_short	ID = 14	identifier of IOA_OAT_REAS
u_short	number = 108	length of "eyecatcher" section
u_short	number	Partition number
u_short	number	Unit address
u_long	number	failing reason code
char(80)	message	message corresponding to reason code
u_long	N/A	reserved

Note: If the number of OAT address table entries is greater than one, then an IOA_OAT_REAS structure is returned for each one.

Query Control Block Examples

Table D-30. Query Input Control Block

Field type	Sample values	Field definitions
char(8)	IOAECB	Eyecatcher. filled in by user
char(8)	Filled in by API	SYSPLEX name
char(8)	Filled in by API	Host name
char(8)	Filled in by API	USERID
u_short	Query ('000E'x)	Command code
u_short	N/A on input	Return code
u_long	N/A on input	Reason code
char(8)	N/A on input	OSA/SF version
char(9)	N/A on input	Time NULL terminated
char(11)	N/A on input	Date NULL terminated
integer	0	Control block length
u_short	number	Command Target **'0023'x** Host **'0022'x** OSA/SF **'0028'x** SNA-INFO **'0029'x** ATM-INFO **'002A'x** IPX-INFO **'0020'x** One Channel **'0021'x** All channels
u_short	channel number	Channel number
u_short	number	Port target **'0030'x** One port - only valid when 'one channel' is specified as the command target **'0031'x** All ports **'0032'x** No ports
u_short	port number	Port number
integer	N/A	Sub-command identifier
char(12)	reserved	Reserved
integer	'00000056'x	device information needed (when requested, otherwise ignored)

The following tables show the various formats of data that can be returned to the API user based on the input to the Query command. The tables are broken down into the various pieces that can be returned.

Table D-31. Query Input Control Block for OSA/SF Information

Field type	Sample values	Field definitions
char(8)	IOAECB	Eyecatcher. filled in by user
char(8)	Filled in by API	SYSPLEX name
char(8)	Filled in by API	Host name
char(8)	Filled in by API	USERID
u_short	Query ('000E'x)	Command code
u_short	N/A on input	Return code
u_long	N/A on input	Reason code
char(8)	N/A on input	OSA/SFversion
char(9)	N/A on input	Time NULL terminated
char(11)	N/A on input	Date NULL terminated
integer	0	Control block length
u_short	OSA/SF('0022'x)	Command Target
u_short	N/A	Channel number
u_short	N/A	Port target
u_short	N/A	Port number
integer	N/A	Sub-command identifier
char(12)	reserved	Reserved
integer	N/A	Ignored for OSA/SF Query

The tables on the following pages show the various formats of data that can be returned by OSA/SF The data can come back in any order, except that there is always a corresponding 'IOAnnnnnHDR' preceeding the similarly named 'IOAnnnnnINFO' or 'IOAnnnnnREAS'. These eyecatchers are always 12 characters, padded with blanks if needed. As an example, if there is OSA/SF information requested, the user will see an IOAOSASFHDR followed by one IOAOSASFINFO.

All the data returned starts at byte 257 following the normally returned (and filled in) base control block.

Table D-32. Query Output Control Block for OSA/SF Header Information

Field type	Sample values	Field definitions
char(12)	IOA_OSASFHDR	eyecatcher
u_short	ID = 1	identifier of IOA_OSASFHDR
u_short	number = 40	length of this 'eyecatcher' section (up to IOAOSASFINFO)
u_short	number	number of OSA/SF(ies)
u_short	reserved	reserved
char(16)	MVS/ESA	operating system OSA/SF is running on. This can be MVS/ESA, MVS/370, etc. This field is NULL terminated.
u_long	N/A	reserved

Table D-33. Query Output Control Block for OSA/SF Body Information

Field type	Sample values	Field definitions
char(12)	IOAOSASFINFO	eyecatcher
u_short	ID = 2	identifier of IOAOSASFINFO
u_short	number = 308	length of this 'eyecatcher' section
integer	reserved	reserved
u_short	number	Highest mode supported **0** passthru **2** SNA **4** ATM-LE, passthru, LANRES, SNA **8** HPDT ATM Native, ATM-LE passthru, LANRES SNA **9** HPDT MPC, HPDT ATM native, ATM(LE), TCP/IP Passthru, LANRES, SNA **10** ATM IP forwarding, HPDT MPC, HPDT ATM native, ATM(LE), TCPIP, LANRES, SNA
u_short	N/A	Reserved
integer	number	Number of channels known to this copy of OSA/SF
integer	number	Number of channels managed by this copy of OSA/SF
char(8)	name	Host name
char(8)	sysplex name	Sysplex this copy of OSA/SFrunning on
char(64)	IOA.OSAS.CONFIG	User supplied name of OSA/SF configuration dataset (padded on right with NULLs)
char(64)	IOA.MASTR.INDEX	User supplied name of OSA/SF Master index dataset (padded on right with NULLs)
char(64)	IOA.MESSAGE.LOG	User supplied name of OSA/SF message log dataset (padded on right with NULLs)
char(64)	IOA.SYS	User supplied name of OSA/SF high level qualifier for all other datasets (padded on right with NULLs)
u_long	N/A	reserved

Table D-34. Query Input Control Block for Channel Information

Field type	Sample values	Field definitions
char(8)	IOAECB	Eyecatcher. filled in by user
char(8)	Filled in by API	SYSPLEX name
char(8)	Filled in by API	Host name
char(8)	Filled in by API	USERID
u_short	Query ('000E'x)	Command code
u_short	N/A on input	Return code
u_long	N/A on input	Reason code
char(8)	N/A on input	OSA/SFversion
char(9)	N/A on input	Time NULL terminated
char(11)	N/A on input	Date NULL terminated
integer	0	Control block length
u_short	One Channel ('0020'x)	Command Target
u_short	number	Channel number
u_short	No Ports ('0032'x)	Port target
u_short	N/A	Port number
integer	N/A	Sub-command identifier
char(12)	reserved	Reserved
integer	Device information requested ('00000056'x)	Command specific data

Table D-35. Query Output Control Block for Channel Header Information

Field type	Sample values	Field definitions
char(12)	IOA_CHAN_HDR	Eyecatcher
u_short	ID = 3	identifier of IOA_CHAN_HDR
u_short	number = 40	length of this 'eyecatcher' section
char(2)	reserved	Reserved
u_short	number	number of channels that follow (see note)
char(20)	N/A	reserved

Note: In addition to the above being returned for the query, some number of IOA_CHANINFOs or IOA_CHANREASs or a combination of the two are returned. The total number returned equals the *number of channels that follow* field. See Table D-36 for the IOA_CHANINFO and Table D-49 on page D-32 for the IOA_CHANREAS.

Table D-36 (Page 1 of 3). Query Output Control Block for Channel Information

Field type	Sample values	Field definitions
char(12)	IOA_CHANINFO	Eyecatcher
u_short	ID = 4	identifier of IOA_CHANINFO
u_short	224	length of this 'eyecatcher' section
u_short	number	associated channel number
u_short	OSA = '0012'x	channel type

Table D-36 (Page 2 of 3). Query Output Control Block for Channel Information

Field type	Sample values	Field definitions
u_short	number	channel sub-type **'00F0'x** unknown **'0007'x** FDDI **'0009'x** No ports defined yet **'0920'x** One log **'9000'x** ATM native **'0002'x** Token Ring **'0001'x** Ethernet **'0031'x** Fast_Ethernet **'0022'x or '0922'x** Two Token Ring ports **'0021'x or '0921'x** Token Ring and Ethernet ports **'0011'x or '0911'x** Two Ethernet ports **'0012'x or '0912'x** Ethernet and Token Ring ports **'0910'x** One logical Ethernet port
u_short	number	OSA Modes Configured **Bit** Mode Configured **15** TCP/IP Passthru **14** LANRES **13** SNA **12** ATM-LE **11** HPDT MPC **10** HPDT ATM Native **9** ATM IP forwarding
u_short	number	OSA Hardware Model **'0000'x** invalid **'0001'x** OSA 1 **'0002'x** OSA 2 **'0003'x** OSA2 ATM **'0005'x** OSA2 Fast Ethernet
u_short	number	Flags: **'0001'x** Online **'0003'x** Not installed **'0005'x** Offline
u_short	number	shared ('0001'x) -OR- Not shared ('0000'x)
u_short	number	number of ports on this channel
char(32)	string	Channel Node Descriptor (ND)
u_short	number	Control Unit number
byte(2)	number	OSA Processor Code Level **byte 1** Version **byte 2** Release
char(8)	string	EC level (left justified and NULL terminated)
char(8)	Name	LP name this copy of OSA/SF is running on
u_short	number	LP number this copy of OSA/SF is running on
char(8)	Name	Disk Server LP name

Table D-36 (Page 3 of 3). Query Output Control Block for Channel Information

Field type	Sample values	Field definitions
short	N/A	reserved (alignment)
u_short	number	Disk Server LP number (set to 'FFFF'X if not valid)
short	N/A	reserved (alignment)
char(8)	Name	LP name of OSA/SF managing this channel
u_short	number	LP number of OSA/SF managing this channel (set to 'FFFF'x if not valid)
short	N/A	reserved (alignment)
char(12)	string	date on this channel (set to "NOTVALID" if there is no disk serving function active)
char(8)	string	time on this channel (set to "NOTVALID" if there is no disk serving function active)
char(11)	string	Flash image level
char(5)	N/A	reserved
char(11)	string	ATM Flash image level
char(5)	N/A	reserved
char(81)	N/A	reserved

APPL Header and APPL Info Control Block Examples

Table D-37. Query Output Control Block for OSA Mode File Header information

Field type	Sample values	Field definitions
char(12)	IOA_APPL_HDR	Eyecatcher
u_short	ID = 6	identifier of IOA_APPL_HDR
u_short	number = 40	length of this 'eyecatcher' section
u_short	number	associated channel
u_short	number	number of OSA mode files on this channel
char(20)	N/A	reserved

Table D-38. Query Output Control Block for OSA Mode File Information

Field type	Sample values	Field definitions
char(12)	IOA_APPLINFO	Eyecatcher
u_short	ID = 7	identifier of IOA_APPLINFO
u_short	number	length of this 'eyecatcher' section
char(8)	VxRxMx	version/release
integer	number	length of associated MVS dataset name
integer	number	length of OSA mode fully qualified filename
char(20)	N/A	reserved
char(nn)	fully qualified DS name	associated MVS dataset name of length "nn" "nn" must be a multiple of 4 padded on right with NULLs
char(yy)	fully qualified OSA disk serving function name	OSA mode fully qualified filename of length "yy" "yy" must be a multiple of 4 padded on right with NULLs

Screen Header and Screen Info Control Block Examples

Table D-39. Query Output Control Block for Screen Header

Field type	Sample values	Field definitions
char(12)	IOA_SCRN_HDR	Eyecatcher
short	ID = 28	ID for this eyecatcher
short	number = 24	length of this 'eyecatcher' section
short	number	associated channel number
short	number	number of screens that follow
u_long	N/A	reserved

Table D-40. Query Output Control Block for Screen Information

Field type	Sample values	Field definitions
char(12)	IOA_SCRNINFO	Eyecatcher
short	ID = 27	ID for this eyecatcher
short	number = 100	length of this 'eyecatcher' section
char(72)	text	screen name
u_long	number	screen ID
u_long	yes/no	new output indication (1=yes/0=no)
u_long	N/A	reserved

Table D-41. Query Output Control Block for Failing Screen Information

Field type	Sample values	Field definitions
char(12)	IOA_SCRNREAS	Eyecatcher
short	ID = 29	ID for this eyecatcher
short	number = 104	length of this 'eyecatcher' section
u_long	number	failing reason code
char(80)	text	failing reason message
u_long	N/A	reserved

Device Header and Device Info Control Block Examples

Table D-42. Query Output Control Block for Device Header Information

Field type	Sample values	Field definitions
char(12)	IOA_DEV_HDR	Eyecatcher
u_short	ID = 9	identifier of IOA_DEV_HDR
u_short	number = 24	length of this 'eyecatcher' section
u_short	number	associated channel
u_short	number	number of devices that follow
u_long	N/A	reserved

Table D-43. Query Output Control Block for Device Information

Field type	Sample values	Field definitions
char(12)	IOA_DEV_INFO	Eyecatcher
u_short	ID = 10	identifier of IOA_DEV_INFO
u_short	number	length of this 'eyecatcher' section
u_short	number	device number
u_short	number	unit address
u_short	number	device status **'1000'x** offline **'5000'x** offline & boxed **'2000'x** online **'A000'x** online & allocated **'E000'x** online, allocated & boxed **'E800'x** online, allocated, boxed & pending offline **'6000'x** online and boxed **'6800'x** online, boxed & pending offline **'2800'x** online, pending offline
char(6)	N/A	reserved

LPAR Header and LPAR Info Control Block Examples

Table D-44. Query Output Control Block for Logical partition Header Info

Field type	Sample values	Field definitions
char(12)	IOA_LPAR_HDR	Eyecatcher
u_short	'1D'x	IOA_LPAR_HDR
u_short	'28'x	length of this eyecatcher section
u_short	CHPID	Associated CHPID number
u_short	number	number of IOA_LPARINFO blocks that follow
char(20)	N/A	unused

Table D-45. Query Output Control Block for Logical partition information

Field type	Sample values	Field definitions
char(12)	IOA_LPARINFO	Eyecatcher
u_short	'1E'x	identifier of IOA_LPARINFO
u_short	36	Length of this 'eyecatcher section
u_byte	number	LP number
u_byte	N/A	Unused
char(8)	LPAR name	LP name
char(10)	N/A	unused

Query Output Control Block for Port Information

Table D-46. Query Output Control Block for Port Header Information

Field type	Sample values	Field definitions
char(12)	IOA_PORT_HDR	Eyecatcher
u_short	ID = 15	identifier of IOA_PORT_HDR
u_short	number = 40	length of this 'eyecatcher' section
u_short	number	associated channel number
u_short	number	number of ports that follow
char(20)	N/A	reserved

For each type of port that is present, the particular information that is returned is shown in either IOA_FDDIPORT (see Table D-63 on page D-44), IOATOKENRING (see Table D-64 on page D-55), IOA_ETHERNET, IOA_FAST_ETH (see Table D-65 on page D-59), or IOA_ATMTOKEN, IOA_ATMETHER and IOAATMNATIVE (see Table D-66 on page D-62).

The following tables show various examples of different structures that can be returned based on what input is requested.

Table D-47. Query Output Control Block for Channel, Port & Device Information

Field type	Sample values	Field definitions
	IOA_CHAN_HDR	see Table D-35 on page D-26
	IOA_CHANINFO	see Table D-36 on page D-26
	IOA_APPL_HDR	see Table D-37 on page D-28
	IOA_APPLINFO	see Table D-38 on page D-28
	IOA_SCRN_HDR	see Table D-39 on page D-29
	IOA_SCRNINFO	see Table D-40 on page D-29
	IOA_PORT_HDR	see Table D-46
data specific	one of---> based on 'type of port'	• IOA_FDDIPORT (see Table D-63 on page D-44), • IOATOKENRING (see Table D-64 on page D-55), • IOA_ETHERNET (see Table D-65 on page D-59) • IOA_FAST_ETH (see Table D-65 on page D-59) • IOA_ATMTOKEN (see Table D-66 on page D-62) • IOA_ATMETHER (see Table D-66 on page D-62) • IOAATMNATIVE (see Table D-66 on page D-62)
	IOAMULTICAST	see “Query Output Control Block for Port Multicast Information” on page D-34
	IOA_DEV_HDR	see Table D-42 on page D-29
	IOA_DEV_INFO	see Table D-43 on page D-30
	IOA_OAT_HDR	see Table D-13 on page D-12
	IOA_OATENTRY	see Table D-14 on page D-12
REPEAT	IOA_CHANINFO, IOA_APPL_HDR, IOAAPPLINFO, IOA_SCRN_HDR, IOA_SCRNINFO, IOA_PORT_HDR, & one of: IOA_FDDIPORT, IOATOKENRING, IOA_ATMTOKEN, IOAATMNATIVE, IOA_ATMETHER, IOA_EHTERNET or IOA_FAST_ETH and IOA_MULTICAST. IOA_DEV_HDR, IOA_DEV_INFO, IOA_OAT_HDR, IOA_OATENTRY.	for as many channels as are being reported

The following output control block shows what is returned when "host' is specified as the command target. No other input fields relating to channels, port, devices are examined. This request returns "everything".

Table D-48 on page D-32 shows the sections contained using only the "eyecatchers". The actual data that follows them is omitted in the interest of brevity. For details of an individual section, see the appropriate section discussed previously.

Table D-48. Query Output Control Block for HOST Information

Field type	Sample values	Field definitions
	OSA/SF header	IOA_OSASFHDR (see Table D-32 on page D-25)
	OSA/SF information	IOAOSASFINFO (see Table D-33 on page D-25)
	channel header	IOA_CHAN_HDR (see Table D-35 on page D-26)
	channel information	IOA_CHANINFO (see Table D-36 on page D-26)
	OSA mode files header	IOA_APPL_HDR (see Table D-37 on page D-28)
	OSA mode files information	IOA_APPLINFO (see Table D-38 on page D-28)
	screen header	IOA_SCRN_HDR (see Table D-39 on page D-29)
	screen information	IOA_SCRNINFO (see Table D-40 on page D-29)
	device header	IOA_DEV_HDR (see Table D-42 on page D-29)
	device information	IOA_DEV_INFO (see Table D-43 on page D-30)
	OAT header	IOA_OAT_HDR (see Table D-13 on page D-12)
	OAT information	IOA_OATENTRY (see Table D-14 on page D-12)
	Port header	IOA_PORT_HDR (see Table D-46 on page D-31)
	Port information (one of-->)	IOA_FDDIPORT (see Table D-63 on page D-44), IOATOKENRING (see Table D-64 on page D-55), IOA_ETHERNET, IOA_FAST_ETH (see Table D-65 on page D-59) IOA_ATMETHER IOA_ATMTOKEN IOAATMNATIVE (see Table D-66 on page D-62)
REPEAT	IOA_CHANINFO, IOA_APPL_HDR, IOAAPPLINFO, IOA_DEVHDR, IOA_DEVINFO, IOA_OAT_HDR, IOA_OATENTRY, IOAPORT_HDR, & one of IOA_FDDIPORT, IOATOKENRING, IOA_EHTERNET, IOA_ATMTOKEN, IOA_ATMETHER or IOAATMNATIVE.	for as many channels as are being reported

Failing info control Block Examples

Table D-49. Query Output Control Block for Failing Channel Information

Field type	Sample values	Field definitions
char(12)	IOA_CHANREAS	Eyecatcher
short	ID = 5	ID for this eyecatcher
short	number	length of this 'eyecatcher' section
u_short	number	associated channel number
u_short	N/A	reserved
long	number	failing reason code
char(80)	text	failing reason message
u_long	N/A	reserved

The following tables show the failing reason codes that are unique to the query command when a 'block' cannot be returned as shown above:

Table D-50. Query Output Control Block for Failing Device Information

Field type	Sample values	Field definitions
char(12)	IOA_DEV_REAS	Eyecatcher
short	ID = 11	ID for this eyecatcher
short	number	length of this 'eyecatcher' section
u_short	number	associated channel number
u_short	number	failing device number
long	number	failing reason code
char(80)	text	failing reason message
u_long	N/A	reserved

Table D-51. Query Output Control Block for Failing PORTREAS Information

Field type	Sample values	Field definitions
char(12)	IOA_PORTREAS	reason code eyecatcher
u_short	ID = 16	identifier of IOA_PORTREAS
u_short	number = 104	length of this 'eyecatcher' section
u_short	number	port number
u_short	reserved	reserved
u_long	reason code	reason code for port number above
char(80)	message	message corresponding to reason code
u_long	N/A	reserved

If a portion of the OSA Address Table fails, the failed structure, IOA_OAT_REAS is returned. See Table D-29 on page D-22 for details.

Query Output Control Block for Port Multicast Information

Table D-52. Multicast Information portion of Query Port Output

Field type	Sample values	Field definitions
char(12)	IOAMULTICAST	Eyecatcher
u_short	ID = '0144'x	identifier of IOAMULTICAST
u_short	'nnnn'x	length of entire IOAMULTICAST section. Set this equal to 'number of multis' multiplied by 'size of each piece' plus 20 (decimal) for the eyecatcher piece.
u_short	number	number of 'multis' that follow. This can be 0 to 64. 0 indicates that none are on the card or multicast is not valid for this CHPID.
u_short	'20'x	size of each 'piece' that follows
u_long	number	Multicast IP address
u_short	nnnn	LP number
u_short	nnnn	Even unit address
u_short	nnnn	Odd unit address
char(6)	number	Associated group address(12 hex digits)
u_short	'0000'x	Reserved
u_short	nnnn	Even device number
u_short	nnnn	Odd device number
char(9)	Name	LP name of OSA/SF using this multicast address (This is now a NULL terminated field) If the LP name is not known, the field is filled with binary 0s.
u_byte	number	Validity of device numbers **'00'x** Device numbers are NOT valid **'01'x** Even device number is valid **'02'x** Odd device number is valid **'03'x** All device numbers are valid
		Repeat from 'Multicast IP number' to 'Validity of device numbers' for 'number of multis' shown in top section

Remove Directory Input Control Block Example

Table D-53. Remove Directory Input Control Block

Field type	Sample values	Field definitions
char(8)	IOAECB	Eyecatcher. filled in by user
char(8)	Filled in by API	SYSPLEX name
char(8)	Filled in by API	Host name
char(8)	Filled in by API	USERID
u_short	Remove Directory ('0015'x)	Command code
u_short	N/A on input	Return code
u_long	N/A on input	Reason code
char(8)	N/A on input	OSA/SF version
char(9)	N/A on input	Time NULL terminated
char(11)	N/A on input	Date NULL terminated
integer	length > 256	Control block length
u_short	One Channel ('0020'x)	Command Target
u_short	channel number	Channel number
u_short	N/A	Port target
u_short	N/A	Port number
integer	N/A	Sub-command identifier
char(12)	reserved	Reserved
char(128/12)	Volume and path to remove	Command specific data

Remove Directory Output Control Block Example

The control block returned for Remove Directory is a base control block with the normally filled in OSA/SF data completed.

Send Command Input Control Block Example

Table D-54. Send Command Input Command Control Block

Field type	Sample values	Field definitions
char(8)	IOAECB	Eyecatcher. filled in by user
char(8)	Filled in by API	SYSPLEX name
char(8)	Filled in by API	Host name
char(8)	Filled in by API	USERID
u_short	Send Command ('0005'x)	Command code
u_short	N/A on input	Return code
u_long	N/A on input	Reason code
char(8)	N/A on input	OSA/SF version
char(11)	N/A on input	Time NULL terminated
char(9)	N/A on input	Date NULL terminated
integer	length > 256	Control block length
u_short	One Channel ('0020'x)	Command Target
u_short	channel number	Channel number
u_short	N/A	Port target
u_short	N/A	Port number
integer	N/A	Sub-command identifier
char(12)	reserved	Reserved
integer	screen "n"	Command specific data (screen number)
integer	Force indicator ('00000051'x)	Command specific data
char(nn)	unload abc.nlm	Command specific data

Send Command Output Control Block Example

Table D-55. Send Command Return Format

Field type	Sample values	Field definitions
char(8)	IOAECB	Eyecatcher. filled in by user
char(8)	Filled in by API	SYSPLEX name
char(8)	Filled in by API	Host name
char(8)	Filled in by API	USERID
u_short	Send Command ('0005'x)	Command code
u_short	filled in by OSA/SF	Return code
u_long	filled in by OSA/SF	Reason code
char(8)	filled in by OSA/SF	OSA/SF version
char(9)	13:12:43	Time NULL terminated
char(11)	01/26/1995	Date NULL terminated
integer	2000 ('000007D0'x)	Control block length
u_short	One Channel ('0020'x)	Command Target
u_short	channel number	Channel number
u_short	N/A	Port target
u_short	N/A	Port number
integer	N/A	Sub-command identifier
char(12)	reserved	Reserved
integer	screen number ('3DF91280'x)	Command specific data
integer	Force indicator ('00000051'x)	Command specific data
char(nn)	unload abc.nlm	Command specific data
char(80)	reason message	explains the reason code returned. The data starts 80 bytes from the end of the base control block.
char(2000)	ABC.NLM(CR) delivered 12/95 (CR)copyright IBM Corp 1995	command specific return data One screen of data is returned. The data shown is an example of a typical portion of screen data that might be returned.

Set Parameter Control Block Examples

Table D-56. Set Parameter Input Control Block

Field type	Sample values	Field definitions
char(8)	IOAECB	Eyecatcher. filled in by user
char(8)	Filled in by API	SYSPLEX name
char(8)	Filled in by API	Host name
char(8)	Filled in by API	USERID
u_short	Set Parameter ('000F'x)	Command code
u_short	N/A on input	Return code
u_long	N/A on input	Reason code
char(8)	N/A on input	OSA/SFversion
char(9)	N/A on input	Time NULL terminated
char(11)	N/A on input	Date NULL terminated
integer	0	Control block length
u_short	One channel ('0020'x)	Command Target
u_short	channel number	Channel number
u_short	number	Port target **'0030'x** One port
u_short	port number	Port number
integer	item to set	Sub-command identifier See Table D-67 on page D-67, Table D-68 on page D-71 or Table D-69 on page D-71 for the parameters values, and also the required data.
char(12)	reserved	Reserved
data specific	actual data	Command specific data

Table D-57. Set Parameter Input Control Block Example

Field type	Sample values	Field definitions
char(8)	IOAECB	Eyecatcher. filled in by user
char(8)	Filled in by API	SYSPLEX name
char(8)	Filled in by API	Host name
char(8)	Filled in by API	USERID
u_short	Set Parameter ('000F'x)	Command code
u_short	N/A on input	Return code
u_long	N/A on input	Reason code
char(8)	N/A on input	OSA/SFversion
char(9)	N/A on input	Time NULL terminated
char(11)	N/A on input	Date NULL terminated
integer	0	Control block length
u_short	One Channel ('0020'x)	Command Target
u_short	channel number	Channel number
u_short	One port ('0030'x)	Port target
u_short	'0002'x	Port number
integer	FDDI_group3_address('00032023'x)	Sub-command identifier
char(12)	reserved	Reserved
integer	'C03426879498'x	Command specific data

Set Parameter Output Control Block

The output from Set Parameter is only a base control block with the normally filled in OSA/SF fields returned.

Start Managing Channel Control Block Examples

Table D-58. Start Managing Channel Input Control Block

Field type	Sample values	Field definitions
char(8)	IOAECB	Eyecatcher. filled in by user
char(8)	Filled in by API	SYSPLEX name
char(8)	Filled in by API	Host name
char(8)	Filled in by API	USERID
u_short	Start managing channel ('0011'x)	Command code
u_short	N/A on input	Return code
u_long	N/A on input	Reason code
char(8)	N/A on input	OSA/SF version
char(9)	N/A on input	Time NULL terminated
char(11)	N/A on input	Date NULL terminated
integer	0	Control block length
u_short	One Channel ('0020'x)	Command Target
u_short	channel number	Channel number
u_short	N/A	Port target
u_short	N/A	Port number
integer	N/A	Sub-command identifier
char(12)	reserved	Reserved
integer	Force indicator ('00000051'x)	Command specific data
integer	Create New Disk Serving ('00000057'x)	Command specific data

The returned data starts at byte 257, following the normally returned base control block with the OSA/SF data filled in.

Table D-59. Start Managing Channel Failing Output Control Block

Field type	Sample values	Field definitions
char(12)	IOA_STARTHDR	eyecatcher
u_short	ID = 20	identifier of IOA_STARTHDR
u_short	number = 24	length of this 'eyecatcher' section
short	N/A	reserved
short	number = 1	number of channels that follow
u_long	N/A	reserved
char(12)	IOASTARTREAS	eyecatcher
u_short	ID = 21	identifier of IOASTARTREAS
u_long	reason code	reason code for this channel
u_short	number = 132	length of this 'eyecatcher' section
char(80)	message	message corresponding to reason code
u_short	number	channel associated with this reason code
short	N/A	Reserved
integer	number	LP number of this copy of OSA/SF
char(8)	name	LP name of this copy of OSA/SF
integer	number	LP number of managing OSA/SF A value of '0000FFFF'x indicates that no LP is currently managing this chpid.
char(8)	name	LP host name of managing OSA/SF
u_long	N/A	reserved

Stop Managing Channel Control Block Examples

Table D-60. Stop Managing Channel Input Control Block

Field type	Sample values	Field definitions
char(8)	IOAECB	Eyecatcher. filled in by user
char(8)	Filled in by API	SYSPLEX name
char(8)	Filled in by API	Host name
char(8)	Filled in by API	USERID
u_short	Stop managing channel ('0012'x)	Command code
u_short	N/A on input	Return code
u_long	N/A on input	Reason code
char(8)	N/A on input	OSA/SF version
char(9)	N/A on input	Time NULL terminated
char(11)	N/A on input	Date NULL terminated
integer	0	Control block length
u_short	One Channel ('0020'x)	Command Target
u_short	channel number	Channel number
u_short	N/A	Port target
u_short	N/A	Port number
integer	N/A	Sub-command identifier
char(12)	reserved	Reserved
integer	Stop disk serving ('00000051'x)	Command specific data

The returned data starts at byte 257, following the normally returned base control block with the OSA/SF data filled in.

Table D-61. Stop Managing Channel Failing Output Control Block

Field type	Sample values	Field definitions
char(12)	IOA_STOP_HDR	eyecatcher
u_short	ID = 22	identifier of IOA_STOP_HDR
u_short	number = 24	length of this 'eyecatcher' section
short	N/A	reserved
short	number = 1	number of channels that follow
u_long	N/A	reserved
char(12)	IOA_STOPREAS	eyecatcher
u_short	ID = 23	identifier of IOA_STOPREAS
u_short	number = 132	length of this 'eyecatcher' section
u_long	reason code	reason code for this channel
char(80)	message	message corresponding to reason code
u_short	number	channel associated with this reason code
short	N/A	Reserved
integer	number	LP number of this copy of OSA/SF A value of '0000FFFF'x indicates that no LP is currently managing this chpid.
char(8)	name	LP name of this copy of OSA/SF
integer	number	LP number of managing OSA/SF
char(8)	name	LP host name of managing OSA/SF
u_long	N/A	reserved

Synchronize Control Block Example

Table D-62. Synchronize Input Control Block

Field type	Sample values	Field definitions
char(8)	IOAECB	Eyecatcher. filled in by user
char(8)	Filled in by API	SYSPLEX name
char(8)	Filled in by API	Host name
char(8)	Filled in by API	USERID
u_short	Synchronize ('0013'x)	Command code
u_short	N/A on input	Return code
u_long	N/A on input	Reason code
char(8)	N/A on input	OSA/SFversion
char(9)	N/A on input	Time NULL terminated
char(11)	N/A on input	Date NULL terminated
integer	0	Control block length
u_short	One channel ('0020'x)	Command Target
u_short	channel number	Channel number
u_short	N/A	Port target
u_short	N/A	Port number
char(20)	reserved	Reserved

When an error is detected, OSA/SF returns information to allow the user to determine what happened on which ports. Failures that occur before any attempt is made to initiate communication between the ports and OSA/SF return only the reason message in the base control block.

Once OSA/SF attempts to synchronize data from the channel/port(s), any failures that occur return tables indicating the success or failure of each operation. These can be either port information and/or the OSA address table.

Port failures are returned first, comprising a IOA_PORT_HDR followed by an IOA_PORTREAS for each port on the channel. These are shown in Table D-51 on page D-33.

Following the port failures (if any) would be the device address table failures. These are returned as IOA_OAT_HDR followed by an IOA_OAT_REAS for each row in the OSA address table. These tables are shown in Table D-29 on page D-22

Available Parameters for a Query Port Command for FDDI

The following tables describes the parameters that are available on a Query Port command, when the port target is a FDDI adapter.

Table D-63 (Page 1 of 12). Query of FDDI parameters

FDDI LAN Adapter Parameters		
Size	**Field**	**Description**
char(12)	IOA_FDDIPORT	eyecatcher for FDDI port information
u_short	ID = 17	identifier of IOA_FDDIPORT
u_short	length	length of this IOA_FDDIPORT piece of the query output control block
u_short	number	port number of this FDDI port

Table D-63 (Page 2 of 12). Query of FDDI parameters

FDDI LAN Adapter Parameters		
Size	**Field**	**Description**
u_short	number	port type (FDDI) ('0007'x)
INTEGER	N/A	reserved
Char(29)	FDDI Manufacture's data ('1010'x)	The ManufacturerData, is the manufacturer's data."
Char(3)	reserved	reserved
Char(32)	FDDI User data ('1011'x)	This variable contains 32 octets of user defined information. The information shall be an EBCDIC string.
INTEGER	FDDI Config Capabilities ('1019'x) { none (0), hold (1), CF-wrapAB (2), hold_wrapAB (3) }	A value that indicates the configuration capabilities of a node. The 'Hold Available' bit indicates the support of the optional Hold Function, which is controlled by fddiSMTConfigPolicy. The 'CF-Wrap-AB' bit indicates that the station has the capability of performing a wrap_ab (refer to ANSI SMT 9.7.2.2). The value is a sum. This value initially takes the value zero, then for each of the configuration policies currently enforced on the node, 2 raised to a power is added to the sum. The powers are according to the following table: Policy Power holdAvailable 0 CF-Wrap-AB 1
INTEGER	FDDI Configuration Policy ('101A'x) { none (0), hold (1) }	A value that indicates the configuration policies currently desired in a node. 'Hold' is one of the terms used for the Hold Flag, an optional ECM flag used to enable the optional Hold policy. The value is a sum. This value initially takes the value zero, then for each of the configuration policies currently enforced on the node, 2 raised to a power is added to the sum. The powers are according to the following table: Policy Power configurationhold 0
INTEGER (32768..65535)	FDDI Connection Policy ('101B'x)	A value representing the connection policies in effect in a node. A station sets the corresponding bit for each of the connection types that it rejects. The letter designations, X and Y, in the 'rejectX-Y' names have the following significance: X represents the PC-Type of the local PORT and Y represents the PC_Type of the adjacent PORT (PC_Neighbor). The evaluation of Connection- Policy (PC-Type, PC-Neighbor) is done to determine the setting of T- Val(3) in the PC-Signalling sequence (refer to ANSI 9.6.3). Note that Bit 15, (rejectM-M), is always set and cannot be cleared. The value is a sum. This value initially takes the value zero, then for each of the connection policies currently enforced on the node, 2 raised to a power is added to the sum. The powers are according to the following table: Policy Power rejectA-A 0 rejectA-B 1 rejectA-S 2 rejectA-M 3 rejectB-A 4 rejectB-B 5 rejectB-S 6 rejectB-M 7 rejectS-A 8 rejectS-B 9 rejectS-S 10 rejectS-M 11 rejectM-A 12 rejectM-B 13 rejectM-S 14 rejectM-M 15
INTEGER (2..30)	FDDI Notification Timer ('101D'x)	The timer, expressed in seconds, used in the Neighbor Notification protocol. It has a range of 2 seconds to 30 seconds, and its default value is 30 seconds (refer to ANSI SMT 8.2).
INTEGER	FDDI Bypass Present ('1022'x) { false(0) true(1), }	A flag indicating if the station has a bypass on its AB port pair.
INTEGER	FDDI Entity Conf Mgmt State ('1029'x) { ec0(0), -- Out ec1(1), -- In ec2(2), -- Trace ec3(3), -- Leave ec4(4), -- Path_Test ec5(5), -- Insert ec6(6), -- Check ec7(7) -- Deinsert }	Indicates the current state of the ECM state machine (refer to ANSI SMT 9.5.2).

Table D-63 (Page 3 of 12). Query of FDDI parameters

FDDI LAN Adapter Parameters		
Size	**Field**	**Description**
INTEGER	FDDI Configuration State ('102A'x) { cf0(0), -- isolated cf1(1), -- local_a cf2(2), -- local_b cf3(3), -- local_ab cf4(4), -- local_s cf5(5), -- wrap_a cf6(6), -- wrap_b cf7(7), -- wrap_ab cf8(8), -- wrap_s cf9(9), -- c_wrap_a cf10(10), -- c_wrap_b cf11(11), -- c_wrap_s cf12(12) -- thru }	The attachment configuration for the station or concentrator (refer to ANSI SMT 9.7.2.2).
INTEGER	FDDI Hold State ('102B'x) { not-holding(0), holding primary(1), holding-secondary(2) }	This attribute indicates the current state of the Hold function. The value 'not-holding' is the default and initial value. The value must be set to 'not-holding' as part of the Active_Actions and when the conditions causing 'holding-prm' or 'holding-sec' are no longer true. The value 'holdin g-prm' must be set when the condition (notTR_Flag & not RE_Flag & (PC_LS=QLS | LEM_Fail | TNE>NS_Max | (not LS_Flag & TPC>T_Out))) is satisfied in state PC8-ACTIVE for the A port. The value 'holding-sec' must be set when the codition (not TR_Flag & not RE_Flag & (PC_LS=QLS | LEM_Fail | TNE>NS_Max | (not LS_Flag & TPC>Out))) is satisfied in state PC8-ACTIVE for the B port.
INTEGER	FDDI Remote Disconnect Flag ('102C'x) { true(1), false(0) }	A flag indicating that the station was remotely disconnected from the network as a result of receiving an fddiSMTAction, disconnect (refer to ANSI SMT 6.4.5.3) in a Parameter Management Frame. A station requires a Connect Action to rejoin and clear the flag (refer to ANSI SMT 6.4.5.2).
INTEGER	FDDI Station Status ('102D'x) { concatenated(0), separated(1), thru(2) }	The current status of the primary and secondary paths within this station.
INTEGER	FDDI Peer Wrap Flag ('102E'x) { true(1), false(0) }	This variable assumes the value of the PeerWrapFlag in CFM (refer to ANSI SMT 9.7.2.4.4).
INTEGER	FDDI Station Action ('103C'x) { connect(0), disconnect(1), path-Test(2), self-Test(3), disable-a(4), disable-b(5), disable-m(6) }	This object, when read, always returns a value of other(1).
u_byte(6)	FDDI Station ID	This is the universal address.
char(2)	Reserved	Reserved
The MAC group		
INTEGER (0..7)	FDDI MAC Frame Status Capabilities ('200B'x) { 0 - none 1 - fs-repeating 2 - fs-setting 3 - fs-setting & fs-repeating 4 - fs-clearing 5 - fs-clearing & fs-repeating 6 - fs-clearing & fs-setting 7 - fs-clearing & fs-setting & fs-repeating }	Indicates the MAC's optional Frame Status processing functions. The value is a sum. This value initially takes the value zero, then for each function present, 2 raised to a power is added to the sum. The powers are according to the following table: function Power fs-repeating 0 fs-setting 1 fs-clearing 2
INTEGER (0..2147483647)	FDDI T-Max Maximum Time Value ('200D'x)	Indicates the maximum time value of fddiMACTMax that this MAC can support. This field will be returned in 2's complement form.
INTEGER (0..2147483647)	FDDI TVX Maximum Time Value ('200E'x)	Indicates the maximum time value of fddiMACTvxValue that this MAC can support. This field will be returned in 2's complement form.
INTEGER	FDDI Paths Available ('2016'x) { none(0), primary(1), secondary(2), pri_sec(3), local(4), pri_loc(5), sec_loc(6), pri_sec_loc(7) }	Indicates the paths available for this MAC (refer to ANSI SMT 9.7.7). The value is a sum. This value initially takes the value zero, then for each type of PATH that this MAC has available, 2 raised to a power is added to the sum. The powers are according to the following table: Path Power Primary 0 Secondary 1 Local 2

Table D-63 (Page 4 of 12). Query of FDDI parameters

FDDI LAN Adapter Parameters		
Size	**Field**	**Description**
INTEGER	FDDI Current Path ('2017'x) { isolated(0), local(1), secondary(2), primary(3), concatenated(4), thru(5) }	Indicates the Path into which this MAC is currently inserted (refer to ANSI 9.7.7).
OCTET STRING (SIZE (6)) padded on right to OCTET(8)	FDDI Upstream Neighbor ('2018'x)	The MAC's upstream neighbor's long individual MAC address. It has an initial value of the SMT- Unknown-MAC Address and is only modified as specified by the Neighbor Information Frame protocol (refer to ANSI SMT 7.2.1 and 8.2).
OCTET STRING (SIZE (6)) padded on right to OCTET(8)	FDDI Downstream Neighbor ('2019'x)	The MAC's downstream neighbor's long individual MAC address. It has an initial value of the SMT- Unknown-MAC Address and is only modified as specified by the Neighbor Information Frame protocol (refer to ANSI SMT 7.2.1 and 8.2).
INTEGER	FDDI Duplicate Address Test Flag ('201D'x) { none(0), pass(1), fail(2) }	The Duplicate Address Test flag, Dup_Addr_Test (refer to ANSI 8.2).

INTEGER (0..255)	FDDI Requested Paths ('2020'x)	List of permitted Paths which specifies the Path(s) into which the MAC may be inserted (refer to ansi SMT 9.7).
		The value is a sum which represents the individual paths that are desired. This value initially takes the value zero, then for each type of PATH that this node is, 2 raised to a power is added to the sum. The powers are according to the following table:
		`Path  Power`
		`local  0`
		`secondary-alternate  1`
		`primary-alternate  2`
		`concatenated-alternate  3`
		`secondary-preferred  4`
		`primary-preferred  5`
		`concatenated-preferred  6`
		`thru  7`

INTEGER	FDDI Downstream Port Type ('2021'x) { a(0), b(1), s(2), m(3), none(4) }	Indicates the PC-Type of the first port that is downstream of this MAC (the exit port).
OCTET STRING (SIZE (6)) padded on right to OCTET(8)	FDDI MAC Address ('2029'x)	The 48-bit individual address of the MAC used for SMT frames.
OCTET STRING (SIZE (256))	FDDI Group Addresses ('202C'x)	Indicates the group addresses enabled on the adapter, if any. This is actually an array that will contain 32 addresses. Each address is actually OCTET STRING (SIZE(6)) + 2 for padding Therefore, the size will be 32 x OCTET STRING (SIZE(8)).
INTEGER (0..2147483647)	FDDI T-Req ('2033'x)	This variable is the T_Req_value passed to the MAC. Without having detected a duplicate, the time value of this variable shall assume the maximum supported time value which is less than or equal to the time value of fddiPATHMaxT-Req. When a MAC has an address detected as a duplicate, it may use a time value for this variable greater than the time value of fddiPATHTMaxLowerBound. A station shall cause claim when the new T_Req may cause the value of T_Neg to change in the claim process, (i.e., time value new T_Req < T_Neg, or get T_Req = T_Neg). This field will be returned in 2's complement form.
INTEGER (0..2147483647)	FDDI T-Neg ('2034'x)	It is reported as a FddiTimeNano number. This field will be returned in 2's complement form.

Table D-63 (Page 5 of 12). Query of FDDI parameters

FDDI LAN Adapter Parameters		
Size	**Field**	**Description**
INTEGER (0..2147483647)	FDDI T-Max ('2035'x)	This variable is the T_Max_value passed to the MAC. The time value of this variable shall assume the minimum suported time value which is greater than or equal to the time value of fddiPATHTMaxLowerBound This field will be returned in 2's complement form.
INTEGER (0..2147483647)	FDDI Tvx ('2036'x)	This variable is the TVX_value passed to the MAC. The time value of this variable shall assume the minimum suported time value which is greater than or equal to the time value of fddiPATHTVXLowerBound. This field will be returned in 2's complement form.
INTEGER (0..4294967295)	FDDI Received Frames ('2047'x)	A count of the number of frames received by this MAC (refer to ANSI MAC 7.5.1).
INTEGER (0..4294967295)	FDDI Copied Frames ('2048'x)	A count that should as closely as possible match the number of frames addressed to (A bit set) and successfully copied into the station's receive buffers (C bit set) by this MAC (refer to ANSI MAC 7.5). Note that this count does not include MAC frames.
INTEGER (0..4294967295)	FDDI Transmitted Frames ('2049'x)	A count that should as closely as possible match the number of frames transmitted by this MAC (refer to ANSI MAC 7.5). Note that this count does not include MAC frames.
INTEGER (0..4294967295)	FDDI Error Counter ('2051'x)	A count of the number of frames that were detected in error by this MAC that had not been detected in error by another MAC (refer to ANSI MAC 7.5.2).
INTEGER (0..4294967295)	FDDI Lost Counter ('2052'x)	A count of the number of instances that this MAC detected a format error during frame reception such that the frame was stripped (refer to ANSI MAC 7.5.3).
INTEGER (0..65535)	FDDI Frame Error Threshold ('205F'x)	A threshold for determining when a MAC Condition report (see ANSI 8.3.1.1) shall be generated. Stations not supporting variable thresholds shall have a value of 0 and a range of (0..0).
INTEGER (0..65535)	FDDI Frame Error Ratio ('2060'x) This field is no longer used after 4/4/95. It is still in the structure for ease of coordination of code levels.	This variable is the value of the ratio, ((delta fddiMACLostCts + delta fddiMACErrorCts) / (delta fddiMACFrameCts + delta fddiMACLostCts)) * 2**16
INTEGER	FDDI Ring Management State ('206F'x) { rm0(0), -- Isolated rm1(1), -- Non_Op rm2(2), -- Ring_Op rm3(3), -- Detect rm4(4), -- Non_Op_Dup rm5(5), -- Ring_Op_Dup rm6(6), -- Directed rm7(7) -- Trace }	Indicates the current state of the RMT State Machine (refer to ANSI 10.3.2).
INTEGER	FDDI Duplicate Address Test ('2070'x) { true(1), false(0) }	The RMT flag Duplicate Address Flag, DA_Flag (refer to ANSI 10.2.1.2).
INTEGER	FDDI Upstream Neighbor Dup Address ('2071'x) { true(1), false(0) }	A flag, UNDA_Flag (refer to ANSI 8.2.2.1), set when the upstream neighbor reports a duplicate address condition. Cleared when the condition clears.
INTEGER	FDDI Frame Error Condition ('2072'x) { true(1), false(0) }	Indicates the MAC Frame Error Condition is present when set. Cleared when the condition clears and on station initialization.
INTEGER	FDDI Unit Data Available ('2074'x) { true(1), false(0) }	This variable shall take on the value of the MAC_Avail flag defined in RMT.
INTEGER	FDDI Enable Unit Data ('2076'x) { true(1), false(0) }	This variable determines the value of the MA_UNITDATA_Enable flag in RMT. The default and initial value of this flag is true(1).
The Enhanced MAC Counters group		

Table D-63 (Page 6 of 12). Query of FDDI parameters

FDDI LAN Adapter Parameters		
Size	**Field**	**Description**
INTEGER (0..4294967295)	FDDI Tokens Received ('204A'x)	A count that should as closely as possible match the number of times the station has received a token (total of non-restricted and restricted) on this MAC (see ANSI MAC 7.4). This count is valuable for determination of network load.
INTEGER (0..4294967295)	FDDI Tvx Expired Counter ('2053'x)	A count that should as closely as possible match the number of times that TVX has expired.
INTEGER (0..4294967295)	FDDI Copy Failure Counter ('2054'x)	A count that should as closely as possible match the number of frames that were addressed to this MAC but were not copied into its receive buffers (see ANSI MAC 7.5). For example, this might occur due to local buffer congestion. Because of implementation considerations, this count may not match the actual number of frames not copied. It is not a requirement that this count be exact. Note that this count does not include MAC frames.
INTEGER (0..4294967295)	FDDI Late Counter ('2055'x)	A count that should as closely as possible match the number of TRT expirations since this MAC was reset or a token was received (refer to ANSI MAC 7.4.5).
INTEGER (0..4294967295)	FDDI Ring Operation Counter ('2056'x)	The count of the number of times the ring has entered the 'Ring_Operational' state from the 'Ring Not Operational' state. This count is updated when a SM_MA_STATUS.Indication of a change in the Ring_Operational status occurs (refer to ANSI 6.1.4). Because of implementation considerations, this count may be less than the actual RingOp_Ct. It is not a requirement that this count be exact.
INTEGER (0..65535)	FDDI Not Copied Ratio ('2069'x) This field is no longer used after 4/4/95. It is still in the structure.	Reserved
The PATH group		
There are 2 sets of Path information. Data is returned as a complete set for Path 1, followed by a complete set for Path 2.		
INTEGER (0..4294967295)	FDDI PATH1 Ring Latency ('0000 320D'x)	Gives the total accumulated latency of the ring associated with this path. May be measured directly by the station or calculated by a management station.
INTEGER	FDDI PATH1 Trace Status ('0000 320E'x) { none (0), initiated (1), propagated (2), init_prop (3), terminated (4), term_init (5), term_prop (6), term_init_prop (7), timeout (8), to_init (9), to_prop (10), to_init_prop (11), to_term (12), to_term_init (13), to_term_prop (14), to_term_init_prop (15) }	Gives the current trace status of the path. This value is a sum which represents the different trace statuses. For each status, 2 is raised to a power and added to the sum. The powers are as follows : Status — Power initiated — 0 propagated — 1 terminated — 2 timeout — 3
INTEGER (0..2147483647)	FDDI PATH1 Restricted Dialog Time Limit ('0000 3213'x)	Used by RMT to limit the duration of restricted dialogs on a path.
INTEGER (0..2147483647)	FDDI PATH1 Tvx Lower Bound ('0000 3215'x)	Specifies the minimum time value of fddiMACTvxValue that shall be used by any MAC that is configured in this path. The operational value of fddiMACTvxValue is managed by settting this variable. This variable has the time value range of: 0 < fddimibPATHTVXLowerBound < fddimibPATHMaxTReq Changes to this variable shall either satisfy the time value relationship: fddimibPATHTVXLowerBound <= fddimibMACTVXCapability of each of the MACs currently on the path, or be considered out of range. The initial value of fddimibPATHTVXLowerBound shall be 2500 nsec (2.5 ms). This field will be returned in 2's complement form.

Table D-63 (Page 7 of 12). Query of FDDI parameters

FDDI LAN Adapter Parameters		
Size	**Field**	**Description**
INTEGER (0..2147483647)	FDDI PATH1 T-Max Lower Bound ('0000 3216'x)	Specifies the minimum time value of fddiMACTMax that shall be used by any MAC that is configured in this path. The operational value of fddiMACTMax is managed by setting this variable. This variable has the time value range of: fddimibPATHMaxTReq <= fddimibPATHTMaxLowerBound and an absolute time value range of: 10000nsec (10 msec) <= fddimibPATHTMaxLowerBound Changes to this variable shall either satisfy the time value relationship: fddimibPATHTMaxLowerBound < fddimibMACTMaxCapability of each of the MACs currently on the path, or be considered out of range. The initial value of fddimibPATHTMaxLowerBound shall be 165000 nsec (165 msec). This field will be returned in 2's complement form.
INTEGER (0..2147483647)	FDDI PATH1 T-Req Maximum Time Value ('0000 3217'x)	Specifies the maximum time value of fddiMACT-Req that shall be used by any MAC that is configured in this path. The operational value of fddiMACT- Req is managed by setting this variable. This variable has the time value range of: fddimibPATHTVXLowerBound < fddimibPATHMaxTReq <= fddimibPATHTMaxLowerBound. The default value of fddimibPATHMaxTReq is 165000 nsec (165 msec). This field will be returned in 2's complement form.
INTEGER	FDDI PATH1 Path Status ('0000 3212'x) { isolated(0), local(1), secondary(2), primary(3), concatenated(4), thru(5) }	The current insertion status for this resource on this Path.
INTEGER (0..4294967295)	FDDI PATH2 Ring Latency ('1000 320D'x)	Gives the total accumulated latency of the ring associated with this path. May be measured directly by the station or calculated by a management station.
INTEGER	FDDI PATH2 Trace Status ('1000 320E'x) { none (0), initiated (1), propagated (2), init_prop (3), terminated (4), term_init (5), term_prop (6), term_init_prop (7), timeout (8), to_init (9), to_prop (10), to_init_prop (11), to_term (12), to_term_init (13), to_term_prop (14), to_term_init_prop (15) }	Gives the current trace status of the path. This value is a sum which represents the different trace statuses. For each status, 2 is raised to a power and added to the sum. The powers are as follows : Status — Power initiated — 0 propagated — 1 terminated — 2 timeout — 3
INTEGER (0..2147483647)	FDDI PATH2 Restricted Dialog Time Limit ('1000 3213'x)	Used by RMT to limit the duration of restricted dialogs on a path.
INTEGER (0..2147483647)	FDDI PATH2 Tvx Lower Bound ('1000 3215'x)	Specifies the minimum time value of fddiMACTvxValue that shall be used by any MAC that is configured in this path. The operational value of fddiMACTvxValue is managed by settting this variable. This variable has the time value range of: 0 < fddimibPATHTVXLowerBound < fddimibPATHMaxTReq Changes to this variable shall either satisfy the time value relationship: fddimibPATHTVXLowerBound <= fddimibMACTVXCapability of each of the MACs currently on the path, or be considered out of range. The initial value of fddimibPATHTVXLowerBound shall be 2500 nsec (2.5 ms). This field will be returned in 2's complement form.

Table D-63 (Page 8 of 12). Query of FDDI parameters

FDDI LAN Adapter Parameters		
Size	**Field**	**Description**
INTEGER (0..2147483647)	FDDI PATH2 T-Max Lower Bound ('1000 3216'x)	Specifies the minimum time value of fddiMACTMax that shall be used by any MAC that is configured in this path. The operational value of fddiMACTMax is managed by setting this variable. This variable has the time value range of: fddimibPATHMaxTReq <= fddimibPATHTMaxLowerBound and an absolute time value range of: 10000nsec (10 msec) <= fddimibPATHTMaxLowerBound Changes to this variable shall either satisfy the time value relationship: fddimibPATHTMaxLowerBound < fddimibMACTMaxCapability of each of the MACs currently on the path, or be considered out of range. The initial value of fddimibPATHTMaxLowerBound shall be 165000 nsec (165 msec). This field will be returned in 2's complement form.
INTEGER (0..2147483647)	FDDI PATH2 T-Req Maximum Time Value ('1000 3217'x)	Specifies the maximum time value of fddiMACT-Req that shall be used by any MAC that is configured in this path. The operational value of fddiMACT- Req is managed by setting this variable. This variable has the time value range of: fddimibPATHTVXLowerBound < fddimibPATHMaxTReq <= fddimibPATHTMaxLowerBound. The default value of fddimibPATHMaxTReq is 165000 nsec (165 msec). This field will be returned in 2's complement form.
INTEGER	FDDI PATH2 Path Status ('1000 3212'x) { isolated(0), local(1), secondary(2), primary(3), concatenated(4), thru(5) }	The current insertion status for this resource on this Path.
The PORT group		
There are 2 sets of Port information. Data is returned as a complete set for Port A, followed by a complete set for Port B.		
INTEGER	FDDI PORTA Port type ('0000 400C'x) { a(0), b(1), s(2), m(3), none(4) }	The value of the PORT's PC_Type (refer to ANSI 9.4.1, and 9.6.3.2).
INTEGER	FDDI PORTA Desired Port Connection Policy ('0000 400E'x) { none(0), pc_mac_lct(1), pc_mac_loop(2), pc_mac_lct_and_loop(3) }	A value representing the PORT's connection policies desired in the node. The value of pc- mac-lct is a term used in the PC_MAC_LCT Flag (see 9.4.3.2). The value of pc-mac-loop is a term used in the PC_MAC_Loop Flag. The value is a sum. This value initially takes the value zero, then for each PORT policy, 2 raised to a power is added to the sum. The powers are according to the following table: Policy Power pc-mac-lct 0 pc-mac-loop 1
INTEGER	FDDI PORTA Current Path ('0000 4010'x) { ce0(0), -- isolated ce1(1), -- local ce2(2), -- secondary ce3(3), -- primary ce4(4), -- concatenated ce5(5) -- thru }	Indicates the Path(s) into which this PORT is currently inserted.
OCTET STRING (SIZE (3)) padded on right to OCTET(4)	FDDI PORTA Paths Requested ('0000 4011'x)	This variable is a list of permitted Paths where each list element defines the Port's permitted Paths. The first octet corresponds to 'none', the second octet to 'tree', and the third octet to 'peer'. For each octet the following bits are defined : local 0 secondary-alternate 1 primary-alternate 2 concatenated-alternate 3 secondary-preferred 4 primary-preferred 5 concatenated-preferred 6 thru 7
INTEGER (0..65535)	FDDI PORTA MAC Placement ('0000 4012'x)	Indicates the MAC, if any, whose transmit path exits the station via this PORT. The value shall be zero if there is no MAC associated with the PORT. Otherwise, the MACIndex of the MAC will be the value of the variable.

Table D-63 (Page 9 of 12). Query of FDDI parameters

FDDI LAN Adapter Parameters		
Size	**Field**	**Description**
INTEGER	FDDI PORTA Paths Available ('0000 4013'x) { none(0), primary(1), secondary(2), pri_sec(3), local(4), pri_loc(5), sec_loc(6), pri_sec_loc(7) }	Indicates the Paths which are available to this Port. In the absence of faults, the A and B Ports will always have both the Primary and Secondary Paths available. The value is a sum. This value initially takes the value zero, then for each type of PATH that this port has available, 2 raised to a power is added to the sum. The powers are according to the following table: Path Power Primary 0 Secondary 1 Local 2
INTEGER (0..4294967295)	FDDI PORTA MAC Loop Time ('0000 4015'x)	This object controls the value used by the FDDI attribute T_Next(9) to prevent deadlock. This allows sufficient time for MAC recovery process completion and the exchange of neighbor information frames. Default: 200 milleseconds. This field actually represents the time in 80 nanosecond intervals.
INTEGER	FDDI PORTA PMD Class ('0000 4016'x) { multimode(0), single-mode1(1), single-mode2(2), sonet(3), low-cost-fiber(4), twisted-pair(5), unknown(6), unspecified(7) }	This variable indicates the type of PMD entity associated with this port.
INTEGER	FDDI PORTA Port Connection Policy ('0000 4017'x) none(0), pc_mac_lct(1), pc_mac_loop(2), pc_mac_lct_and_loop(3)	A value that indicates the connection capabilities of the port. The pc-mac-lct bit indicates that the station has the capability of setting the PC_MAC_LCT Flag. The pc-mac-loop bit indicates that the station has the capability of setting the PC_MAC_Loop Flag (refer to ANSI 9.4.3.2). The value is a sum. This value initially takes the value zero, then for each capability that this port has, 2 raised to a power is added to the sum. The powers are according to the following table: capability Power pc-mac-lct 0 pc-mac-loop 1
INTEGER	FDDI PORTA Transmitted Line State ('0000 401F'x) { qls-quiet (0), ils-idle (1), mls-master (2), hls-halt (3), pdr-active (4), lsu-unknown(5), nls-noise (6) }	Line state to be transmitted when the PCM state machine for the port is in state PC9 Maint.
INTEGER	FDDI PORTA Line State Received ('0000 4022'x) { qls-quiet (0), ils-idle (1), mls-master (2), hls-halt (3), pdr-active (4), lsu-unknown(5), nls-noise (6) }	This attribute indicates the line state received by the port.
INTEGER (0..4294967295)	FDDI PORTA Elasticity Buf Errors ('0000 4029'x)	The count of the times an Elasticity Buffer Error has occurred.
INTEGER (0..4294967295)	FDDI PORTA Confidence Test Errors ('0000 402A'x)	The count of the consecutive times the link confidence test (LCT) has failed during connection management (refer to ANSI 9.4.1).
INTEGER (4..15)	FDDI PORTA Link Error Rate ('0000 4033'x)	A long term average link error rate. It ranges from 10**-4 to 10**-15 and is reported as the absolute value of the base 10 logarithm (refer to ANSI SMT 9.4.7.5.).
INTEGER (0..4294967295)	FDDI PORTA LEM Reject Counts ('0000 4034'x)	A link error monitoring count of the times that a link has been rejected.
INTEGER (0..4294967295)	FDDI PORTA LEM Error Counts ('0000 4035'x)	The aggregate link error monitor error count, set to zero only on station initialization.
INTEGER (4..15)	FDDI PORTA Link Error Rate Cutoff ('0000 403A'x)	The link error rate estimate at which a link connection will be broken. It ranges from 10**-4 to 10**-15 and is reported as the absolute value of the base 10 logarithm (default of 7).
INTEGER (4..15)	FDDI PORTA Link Error Rate Alarm ('0000 403B'x)	The link error rate estimate at which a link connection will generate an alarm. It ranges from 10**-4 to 10**-15 and is reported as the absolute value of the base 10 logarithm of the estimate (default of 8).

Table D-63 (Page 10 of 12). Query of FDDI parameters

FDDI LAN Adapter Parameters		
Size	**Field**	**Description**
INTEGER	FDDI PORTA Connect State ('0000 403D'x) { disabled(0), connecting(1), standby(2), active(3) }	An indication of the connect state of this PORT and is equal to the value of Connect_State (refer to ANSI 9.4.1)
INTEGER	FDDI PORTA PCM State ('0000 403E'x) { pc0(0), -- off pc1(1), -- break pc2(2), -- trace pc3(3), -- connect pc4(4), -- next pc5(5), -- signal pc6(6), -- join pc7(7), -- verify pc8(8), -- active pc9(9) -- maint }	The state of this Port's PCM state machine refer to ANSI SMT 9.6.2).
INTEGER	FDDI PORTA PC Withhold ('0000 403F'x) { none(0), m-m(1), otherincompatible(2), pathnotavailable(3) }	The value of PC_Withhold (refer to ANSI SMT 9.4.1).
INTEGER	FDDI PORTA Link Error Condition ('0000 4040'x) { true(1), false(0) }	The condition becomes active when the value of fddiPORTLerEstimate is less than or equal to fddiPORTLerAlarm. This will be reported with the Status Report Frames (SRF) (refer to ANSI SMT 7.2.7 and 8.3).
INTEGER	FDDI PORTA Port Action ('0000 4046'x) { maintPORT (0), enablePORT (1), disablePORT(2), startPORT (3), stopPORT (4) }	Causes a Control signal to be generated with a control_action of 'Signal' and the 'variable' parameter set with the appropriate value (i.e., PC_Maint, PC_Enable, PC_Disable, PC_Start, or PC_Stop) (refer to ANSI 9.4.2).
INTEGER	FDDI PORTB Port type ('1000 400C'x) { a(0), b(1), s(2), m(3), none(4) }	The value of the PORT's PC_Type (refer to ANSI 9.4.1, and 9.6.3.2).
INTEGER	FDDI PORTB Desired Port Connection Policy ('1000 400E'x) { none(0), pc_mac_lct(1), pc_mac_loop(2), pc_mac_lct_and_loop(3) }	A value representing the PORT's connection policies desired in the node. The value of pc- mac-lct is a term used in the PC_MAC_LCT Flag (see 9.4.3.2). The value of pc-mac-loop is a term used in the PC_MAC_Loop Flag. The value is a sum. This value initially takes the value zero, then for each PORT policy, 2 raised to a power is added to the sum. The powers are according to the following table: Policy Power pc-mac-lct 0 pc-mac-loop 1
INTEGER	FDDI PORTB Current Path ('1000 4010'x) { ce0(0), -- isolated ce1(1), -- local ce2(2), -- secondary ce3(3), -- primary ce4(4), -- concatenated ce5(5) -- thru }	Indicates the Path(s) into which this PORT is currently inserted.
OCTET STRING (SIZE (3)) padded on right to OCTET(4)	FDDI PORTB Paths Requested ('1000 4011'x)	This variable is a list of permitted Paths where each list element defines the Port's permitted Paths. The first octet corresponds to 'none', the second octet to 'tree', and the third octet to 'peer'. For each octet the following bits are defined : local 0 secondary-alternate 1 primary-alternate 2 concatenated-alternate 3 secondary-preferred 4 primary-preferred 5 concatenated-preferred 6 thru 7
INTEGER (0..65535)	FDDI PORTB MAC Placement ('1000 4012'x)	Indicates the MAC, if any, whose transmit path exits the station via this PORT. The value shall be zero if there is no MAC associated with the PORT. Otherwise, the MACIndex of the MAC will be the value of the variable.

Table D-63 (Page 11 of 12). Query of FDDI parameters

FDDI LAN Adapter Parameters		
Size	**Field**	**Description**
INTEGER	FDDI PORTB Paths Available ('1000 4013'x) none(0), primary(1), secondary(2), pri_sec(3), local(4), pri_loc(5), sec_loc(6), pri_sec_loc(7)	Indicates the Paths which are available to this Port. In the absence of faults, the A and B Ports will always have both the Primary and Secondary Paths available. The value is a sum. This value initially takes the value zero, then for each type of PATH that this port has available, 2 raised to a power is added to the sum. The powers are according to the following table: Path Power Primary 0 Secondary 1 Local 2
INTEGER (0..4294967295)	FDDI PORTB MAC Loop Time ('1000 4015'x)	This object controls the value used by the FDDI attribute T_Next(9) to prevent deadlock. This allows sufficient time for MAC recovery process completion and the exchange of neighbor information frames. Default: 200 mileseconds. This field actually represents the time in 80 nanosecond intervals.
INTEGER	FDDI PORTB PMD Class ('1000 4016'x) { multimode(0), single-mode1(1), single-mode2(2), sonet(3), low-cost-fiber(4), twisted-pair(5), unknown(6), unspecified(7) }	This variable indicates the type of PMD entity associated with this port.
INTEGER	FDDI PORTB Port Connection Policy ('1000 4017'x) none(0), pc_mac_lct(1), pc_mac_loop(2), pc_mac_lct_and_loop(3)	A value that indicates the connection capabilities of the port. The pc-mac-lct bit indicates that the station has the capability of setting the PC_MAC_LCT Flag. The pc-mac-loop bit indicates that the station has the capability of setting the PC_MAC_Loop Flag (refer to ANSI 9.4.3.2). The value is a sum. This value initially takes the value zero, then for each capability that this port has, 2 raised to a power is added to the sum. The powers are according to the following table: capability Power pc-mac-lct 0 pc-mac-loop 1
INTEGER	FDDI PORTB Transmitted Line State ('1000 401F'x) { qls-quiet (0), ils-idle (1), mls-master (2), hls-halt (3), pdr-active (4), lsu-unknown(5), nls-noise (6) }	Line state to be transmitted when the PCM state machine for the port is in state PC9 Maint.
INTEGER	FDDI PORTB Line State Received ('1000 4022'x) { qls-quiet (0), ils-idle (1), mls-master (2), hls-halt (3), pdr-active (4), lsu-unknown(5), nls-noise (6) }	This attribute indicates the line state received by the port.
INTEGER (0..4294967295)	FDDI PORTB Elasticity Buf Errors ('1000 4029'x)	The count of the times an Elasticity Buffer Error has occurred.
INTEGER (0..4294967295)	FDDI PORTB Confidence Test Errors ('1000 402A'x)	The count of the consecutive times the link confidence test (LCT) has failed during connection management (refer to ANSI 9.4.1).
INTEGER (4..15)	FDDI PORTB Link Error Rate ('1000 4033'x)	A long term average link error rate. It ranges from 10**-4 to 10**-15 and is reported as the absolute value of the base 10 logarithm (refer to ANSI SMT 9.4.7.5.).
INTEGER (0..4294967295)	FDDI PORTB LEM Reject Counts ('1000 4034'x)	A link error monitoring count of the times that a link has been rejected.
INTEGER (0..4294967295)	FDDI PORTB LEM Error Counts ('1000 4035'x)	The aggregate link error monitor error count, set to zero only on station initialization.
INTEGER (4..15)	FDDI PORTB Link Error Rate Cutoff ('1000 403A'x)	The link error rate estimate at which a link connection will be broken. It ranges from 10**-4 to 10**-15 and is reported as the absolute value of the base 10 logarithm (default of 7).
INTEGER (4..15)	FDDI PORTB Link Error Rate Alarm ('1000 403B'x)	The link error rate estimate at which a link connection will generate an alarm. It ranges from 10**-4 to 10**-15 and is reported as the absolute value of the base 10 logarithm of the estimate (default of 8).

Table D-63 (Page 12 of 12). Query of FDDI parameters

FDDI LAN Adapter Parameters		
Size	**Field**	**Description**
INTEGER	FDDI PORTB Connect State ('1000 403D'x) { disabled(0), connecting(1), standby(2), active(3) }	An indication of the connect state of this PORT and is equal to the value of Connect_State (refer to ANSI 9.4.1)
INTEGER	FDDI PORTB PCM State ('1000 403E'x) { pc0(0), -- off pc1(1), -- break pc2(2), -- trace pc3(3), -- connect pc4(4), -- next pc5(5), -- signal pc6(6), -- join pc7(7), -- verify pc8(8), -- active pc9(9) -- maint }	The state of this Port's PCM state machine refer to ANSI SMT 9.6.2).
INTEGER	FDDI PORTB PC Withhold ('1000 403F'x) { none(0), m-m(1), otherincompatible(2), pathnotavailable(3) }	The value of PC_Withhold (refer to ANSI SMT 9.4.1).
INTEGER	FDDI PORTB Link Error Condition ('1000 4040'x) { true(1), false(0) }	The condition becomes active when the value of fddiPORTLerEstimate is less than or equal to fddiPORTLerAlarm. This will be reported with the Status Report Frames (SRF) (refer to ANSI SMT 7.2.7 and 8.3).
INTEGER	FDDI PORTB Port Action ('1000 4046'x) { maintPORT(0), enablePORT(1), disablePORT(2), startPORT(3), stopPORT(4) }	Causes a Control signal to be generated with a control_action of 'Signal' and the 'variable' parameter set with the appropriate value (i.e., PC_Maint, PC_Enable, PC_Disable, PC_Start, or PC_Stop) (refer to ANSI 9.4.2).
OCTET STRING (SIZE (6)) padded on right to 8	FDDI Rec Beacon Address ('0000 0080'x)	The 48-bit individual address that was received when the ring is beaconing.
INTEGER	FDDI Hardware state ('0190'x) { 0 - enabled 1 - Disbaled from host 2 - Disabled from external source 3 - Disbaled from internal error 4 - Service mode/disabled from host 5 - Service mode/Disabled from external source 6 - Service mode/Disabled from internal source }	This field shows the state of the hardware ports.
Integer	Inactivity Timer	
Integer	Response Timer	
Integer	Acknowledgement Timer	
Integer	Maximum Stations	
Integer	Maximum Service Active Points	
Integer	MaxIn	
Integer	MaxOut	
byte	enable load balancing	**0** Enable (parameters load balance factor and session delay are valid) **1** Disabled
byte	load balance factor	
short	session delay	
char(44)	reserved	reserved

The following shows all the Token Ring parameters available through OSA/SF.

Table D-64 (Page 1 of 5). Query of Token ring parameters

Token Ring LAN Adapter Parameters		
Size	**Field**	**Description**
char(12)	IOATOKENRING	eyecatcher for token ring information

Table D-64 (Page 2 of 5). Query of Token ring parameters

Token Ring LAN Adapter Parameters		
Size	**Field**	**Description**
u_short	ID = 18	identifier of IOATOKENRING
u_short	length	length of this IOATOKENRING piece of the query output control block
u_short	number	port number of this token ring port
u_short	number	port type (Token ring) ('0002'x)
INTEGER	N/A	reserved
	The Interface Table	
INTEGER (1..4)	TR Commands ('0250'x) { no-op(1), open(2), reset(3), close(4) }	When this object is set to the value of open(2), the station should go into the open state. The progress and success of the open is given by the values of the objects dot5RingState and dot5RingOpenStatus. When this object is set to the value of reset(3), then the station should do a reset. On a reset, all MIB counters should retain their values, if possible. Other side affects are dependent on the hardware chip set. When this object is set to the value of close(4), the station should go into the stopped state by removing itself from the ring. Setting this object to a value of no-op(1) has no effect. When read, this object always has a value of no-op(1).
INTEGER	TR Ring Status ('0251'x)	The current interface status which can be used to diagnose fluctuating problems that can occur on token rings, after a station has successfully been added to the ring. Before an open is completed, this object has the value for the 'no status' condition. The dot5RingState and dot5RingOpenStatus objects provide for debugging problems when the station can not even enter the ring. The object's value is a sum of values, one for each currently applicable condition. The following values are defined for various conditions: 0 = None 4 = Open in FDX mode 16 = SR Counter Overflow 32 = Ring Recovery 64 = Single Station 128 = Counter Overflow 256 = Remove Received 512 = FDX Protocol Error 1024 = Auto-Removal Error 2048 = Lobe Wire Fault 4096 = Transmit Beacon 8192 = Soft Error 16384 = Hard Error 32768 = Signal Loss 131072 = no status, open not completed.
INTEGER (1..6)	TR Ring State ('0252'x) { opened(1), closed(2), opening(3), closing(4), }	The current interface state with respect to entering or leaving the ring.
INTEGER (1..26)	TR Ring Open Status ('0253'x) { noOpen(1), badParam(2), lobeFailed(3), signalLoss(4), insertionTimeout(5), ringFailed(6), beaconing(7), duplicateMAC(8), requestFailed(9), removeReceived(10), open(11),SARecFrameNot EqualNAUNs(12), claimTokenRec(13),ringPurgeFramRec(14),activeMonPresRec(15), standbyMonPresRec(16),accessProtocolDenied(17),FDXInsDenied-DACfailOnOpen(18), FDXInsDenied-DACfailOnBeaconTest(19),beaconBeforeOpen(20), insertTimerExpDuringDAC(21),insertTimerExpDuringBeaconTest(22), lobeMedizestFailure(23),heartbeatFailBeforeOpenCompleted(24), heartbeatFailDuringBeaconTest(25),recBeaconFrameWithInvalidSA(26)}	This object indicates the success, or the reason for failure, of the station's most recent attempt to enter the ring.
INTEGER (1..4)	TR Ring Speed ('0254'x) { unknown(1), fourMbit(3), sixteenMbit(4) }	The ring's bandwidth.

Table D-64 (Page 3 of 5). Query of Token ring parameters

Size	Field	Description
Token Ring LAN Adapter Parameters		
OCTET STRING (SIZE(6))	TR Upstream Neighbor ('0255'x)	The MAC-address of the up stream neighbor station in the ring (NAUN).
OCTET STRING (SIZE(2))	N/A	Reserved
OCTET STRING (SIZE (4))	TR Functional Addresses ('0257'x)	The bit mask of all Token Ring functional addresses for which this interface will accept frames.
The CRS Group		
The CRS group is formed by the CRS status table, the CRS Ring Station table, and the CRS Trap table. The status table provides information as to how many NAUN changes have occurred and how many active monitor selections have been made.		
Ring Station table provides information regarding a ring station. The variables defined in this table model the responses that a station provides to queries made by the agent through CRS. The agent in turns passes this data to the Network Manager station.		
The CRS Trap table contains the variables that are used to build and send the NAUN change, new active monitor, and the report transmit forward traps.		
OCTET STRING SIZE(6)	TR MAC Address ('0258'x)	This object contains the active MAC address of the ring station defined by this entry in the table. If the value in the object is the same as the value in the object crsMfgAdapterAdd, then the active MAC address for this ring station is the adapter's burned in address. If these two objects contain different values, then a locally administered address is in use and this object contains the LAA and the object crsMfgAdapterAdd contains the adapter's burned in address.
OCTET STRING SIZE(6)	TR Universal Address ('0259'x)	The object contains the burned-in adapter address, issued by the manufacturer. This object has a value of x'000000000000' if the burned-in address is not available.
OCTET STRING (SIZE(256))	TR Group Addresses ('025A'x)	This field contains the Group Address active in the associated ring station. An individual Group Address is 6 bytes long. Therefore, this field will really be 32 times (OCTET STRING(SIZE(6)) + 2 bytes of padding) long.
OCTET STRING (SIZE(10))	TR Microcode Level ('025B'x)	This field contains the Microcode Level of the ring station in EBCDIC defined by this entry in the table.
OCTET STRING (SIZE(2))	TR Allow Access Priority ('025E'x)	This field contains the maximum token priority the ring station defined by this entry in the table is permitted to transmit.
INTEGER	TR Early Token Release ('025F'x) { false (0), true (1) }	Indicates if the ring station supports early token release. This field is only valid when port is running in 16M/bit speed.
OCTET STRING (SIZE(32))	TR User Data ('0260'x)	This field contains a character string of user data that can be used to further describe this port.
INTEGER (0..4294967295)	TR Packets Transmitted ('0261'x)	This field contains the count of the total number of packets transmitted from this port.
INTEGER (0..4294967295)	TR Packets Received ('0262'x)	This field contains the count of the total number of packets received by this port.
OCTET STRING (SIZE(6)) padded on right to 8	TR Beaconing Address ('0263'x)	This field contains the node address of the NAUN as reported in the most recently received Beacon MAC frame. Only valid when the ring is beaconing.
The Statistics Table		
INTEGER (0..4294967295)	TR Line Error Count ('0270'x)	This counter is incremented when a frame or token is copied or repeated by a station, the E bit is zero in the frame or token and one of the following conditions exists: 1) there is a non-data bit (J or K bit) between the SD and the ED of the frame or token, or 2) there is an FCS error in the frame.
INTEGER (0..4294967295)	TR Burst Error Count ('0271'x)	This counter is incremented when a station detects the absence of transitions for five half-bit timers (burst-five error).

Table D-64 (Page 4 of 5). Query of Token ring parameters

Token Ring LAN Adapter Parameters		
Size	**Field**	**Description**
INTEGER (0..4294967295)	TR AC Error Count ('0272'x)	This counter is incremented when a station receives an AMP or SMP frame in which A is equal to C is equal to 0, and then receives another SMP frame with A is equal to C is equal to 0 without first receiving an AMP frame. It denotes a station that cannot set the AC bits properly.
INTEGER (0..4294967295)	TR Abort Trans Error Count ('0273'x)	This counter is incremented when a station transmits an abort delimiter while transmitting.
INTEGER (0..4294967295)	TR Internal Error Count ('0274'x)	This counter is incremented when a station recognizes an internal error.
INTEGER (0..4294967295)	TR Lost Frame Error Count ('0275'x)	This counter is incremented when a station is transmitting and its TRR timer expires. This condition denotes a condition where a transmitting station in strip mode does not receive the trailer of the frame before the TRR timer goes off.
INTEGER (0..4294967295)	TR Rec Congestions Count ('0276'x)	This counter is incremented when a station recognizes a frame addressed to its specific address, but has no available buffer space indicating that the station is congested.
INTEGER (0..4294967295)	TR Frame Copy Error Count ('0277'x)	This counter is incremented when a station recognizes a frame addressed to its specific address and detects that the FS field A bits are set to 1 indicating a possible line hit or duplicate address.
INTEGER (0..4294967295)	TR Token Error Count ('0278'x)	This counter is incremented when a station acting as the active monitor recognizes an error condition that needs a token transmitted.
INTEGER (0..4294967295)	TR Soft Error Count ('0279'x)	The number of Soft Errors the interface has detected. It directly corresponds to the number of Report Error MAC frames that this interface has transmitted. Soft Errors are those which are recoverable by the MAC layer protocols.
INTEGER (0..4294967295)	TR Hard Error Count ('027A'x)	The number of times this interface has detected an immediately recoverable fatal error. It denotes the number of times this interface is either transmitting or receiving beacon MAC frames.
INTEGER (0..4294967295)	TR Signal Loss Error Count ('027B'x)	The number of times this interface has detected the loss of signal condition from the ring.
INTEGER (0..4294967295)	TR Transmit Beacon Count ('027C'x)	The number of times this interface has transmitted a beacon frame.
INTEGER (0..4294967295)	TR Recovery Counter ('027D'x)	The number of Claim Token MAC frames received or transmitted after the interface has received a Ring Purge MAC frame. This counter signifies the number of times the ring has been purged and is being recovered back into a normal operating state.
INTEGER (0..4294967295)	TR Lobe Wire Fault Count ('027E'x)	The number of times the interface has detected an open or short circuit in the lobe data path. The adapter will be closed and dot5RingState will signify this condition.
INTEGER (0..4294967295)	TR Remove Received Count ('027F'x)	The number of times the interface has received a Remove Ring Station MAC frame request. When this frame is received the interface will enter the close state and dot5RingState will signify this condition.
INTEGER (0..4294967295)	TR Single Station Count ('0280'x)	The number of times the interface has sensed that it is the only station on the ring. This will happen if the interface is the first one up on a ring, or if there is a hardware problem.
INTEGER	Full duplex error count	

Table D-64 (Page 5 of 5). Query of Token ring parameters

Token Ring LAN Adapter Parameters		
Size	**Field**	**Description**
INTEGER (0..6)	TR Hardware state ('0290'x) { 0 - enabled 1 - Disabled from host 2 - Disabled from external source 3 - Disabled from internal error 4 - Service mode/disabled from host 5 - Service mode/Disabled from external source 6 - Service mode/Disabled from internal source }	This field shows the state of the hardware ports.
INTEGER	Inactivity timer	
INTEGER	Response Timer	See the OSA Planning Guide
INTEGER	Acknowledgement Timer	See the OSA Planning Guide
INTEGER	Max Stations	See the OSA Planning Guide
INTEGER	Max SAPs	See the OSA Planning Guide
INTEGER	Max In	See the OSA Planning Guide
INTEGER	Max Out	See the OSA Planning Guide
byte	enable load balancing	See the OSA Planning Guide **0** Enable (parameters load balance factor and session delay are valid) **1** Disabled
byte	load balance factor	
short	session delay	

The following shows all the Ethernet and Fast Ethernet parameters available through OSA/SF.

Table D-65 (Page 1 of 3). Query of Ethernet parameters

Ethernet LAN Adapter Parameters		
Size	**Field**	**Description**
char(12)	IOA_FAST_ETH or IOA_ETHERNET	eyecatcher for fast ethernet information
u_short	ID = '2A'x or '19'x	identifier of IOA_FAST_ETH or IOA_ETHERNET
u_short	length	length of this IOA_FAST_ETH piece of the query output control block
u_short	number	port number of this ethernet port
u_short	number	port type (Fast Ethernet) '0031'x or (Ethernet) '0001'x
INTEGER	N/A	reserved
INTEGER	N/A	reserved
INTEGER	N/A	reserved
INTEGER	number	LAN status (Ethernet only) **0 or 4** Open **128 or 132** Counter overflow **8192 or 8196** Soft error **8320 or 8324** Soft error and counter overflow
INTEGER (1..2)	Port Speed ('0354'x) { unknown(1), 10 Megabits(5) 100 Megabits(6) }	The port's bandwidth.

Table D-65 (Page 2 of 3). Query of Ethernet parameters

Ethernet LAN Adapter Parameters		
Size	**Field**	**Description**
OCTET STRING (SIZE (6))	MAC Address ('0358'x)	This object contains the active MAC address of the ring station defined by this entry in the table. If the value in the object is the same as the value in the object crsMfgAdapterAdd, then the active MAC address for this ring station is the adapter's burned in address. If these two objects contain different values, then a locally administered address is in use and this object contains the LAA and the object crsMfgAdapterAdd contains the adapter's burned in address.
OCTET STRING (SIZE (6))	Universal Address ('0359'x)	The object contains the burned-in adapter address, issued by the manufacturer. This object has a value of x'000000000000' if the burned-in address is not available.
OCTET STRING (SIZE(256))	Group Addresses ('035A'x)	This field contains the Group Address active in the port. For OSA, we will support 32 group addresses each with a length of 6 (+ 2 for padding). Therefore, the total length of this field is 32 times 8.
OCTET STRING (SIZE(12))	N/A	Reserved
OCTET STRING (SIZE(32))	User Data ('0360'x)	This field contains a character string of user data that can be used to further describe this port.
INTEGER (0..4294967295)	Packets Transmitted ('0361'x)	This field contains the count of the total number of packets transmitted from this port.
INTEGER (0..4294967295)	Packets Received ('0362'x)	This field contains the count of the total number of packets received by this port.
The Ethernet-like Statistics Group		
INTEGER (0..4294967295)	Alignment Rec Errors ('0370'x)	A count of frames received on a particular interface that are not an integral number of octets in length and do not pass the FCS check. The count represented by an instance of this object is incremented when the alignmentError status is returned by the MAC service to the LLC (or other MAC user). Received frames for which multiple error conditions obtain are, according to the conventions of IEEE 802.2 Layer Management, counted exclusively according to the error status presented to the LLC.
INTEGER (0..4294967295)	CRC Receive Errors ('0371'x)	A count of frames received on a particular interface that are an integral number of octets in length but do not pass the FCS check. The count represented by an instance of this object is incremented when the frameCheckError status is returned by the MAC service to the LLC (or other MAC user). Received frames for which multiple error conditions obtain are, according to the conventions of IEEE 802.2 Layer Management, counted exclusively according to the error status presented to the LLC."
INTEGER (0..4294967295)	Single Collisions ('0372'x)	A count of successfully transmitted frames on a particular interface for which transmission is inhibited by exactly one collision. A frame that is counted by an instance of this object is also counted by the corresponding instance of either the ifOutUcastPkts or ifOutNUcastPkts object and is not counted by the corresponding instance of the dot3StatsMultipleCollisionFrames object.

Table D-65 (Page 3 of 3). Query of Ethernet parameters

Ethernet LAN Adapter Parameters		
Size	**Field**	**Description**
INTEGER (0..4294967295)	Multiple Collisions ('0373'x)	A count of successfully transmitted frames on a particular interface for which transmission is inhibited by more than one collision. A frame that is counted by an instance of this object is also counted by the corresponding instance of either the ifOutUcastPkts or if OutNUcastPkts object and is not counted by the corresponding instance of the dot3StatsSingleCollisionFrames object.
INTEGER (0..4294967295)	Deferred Transmissions ('0374'x)	A count of frames for which the first transmission attempt on a particular interface is delayed because the medium is busy. The count represented by an instance of this object does not include frames involved in collisions.
INTEGER (0..4294967295)	Late Collisions ('0375'x)	The number of times that a collision is detected on a particular interface later than 512 bit-times into the transmission of a packet. Five hundred and twelve bit-times corresponds to 51.2 microseconds on a 10 Mbit/s system. A (late) collision included in a count represented by an instance of this object is also considered as a (generic) collision for purposes of other collision-related statistics.
INTEGER (0..4294967295)	Excessive Collisions ('0376'x)	A count of frames for which transmission on a particular interface failed due to excessive collisions.
INTEGER (0..4294967295)	Carrier Sense Errors ('0377'x)	The number of times that the carrier sense condition was lost or never asserted when attempting to transmit a frame on a particular interface. The count represented by an instance of this object is incremented at most once per transmission attempt, even if the carrier sense condition fluctuates during a transmission attempt.
INTEGER	N/A	Reserved
INTEGER	N/A	Reserved
INTEGER (0..6)	Hardware state ('0390'x) { 0 - enabled 1 - Disabled from host 2 - Disabled from external source 3 - Disabled from internal error 4 - Service mode/disabled from host 5 - Service mode/Disabled from external source 6 - Service mode/Disabled from internal source }	This field shows the state of the hardware port
INTEGER	Inactivity timer (Ti)	See the OSA Planning Guide
Integer	Response Timer (T1)	See the OSA Planning Guide
Integer	Acknowledgement Timer (T2)	See the OSA Planning Guide
Integer	SAPs available	See the OSA Planning Guide
Integer	SAPs open	See the OSA Planning Guide
Integer	Max I frames before Ack	See the OSA Planning Guide
Integer	Transmit window	See the OSA Planning Guide
char(8)	N/A	Reserved
Integer	Receive group counter	????????
Integer	Receive broadcast counter	????????
Integer	Duplex mode	**01** station is in an unknown state **02** station is in half duplex mode **03** station is in full duplex mode
char(28)	N/A	Reserved

The following shows all the HPDT ATM Native and Lan Emulation parameters available through OSA/SF.

Table D-66 (Page 1 of 5). Query of ATM parameters

Size	Parameter	Field Description
char(12)	IOAATMNATIVE -or- IOA_ATMTOKEN -or- IOA_ATMETHER	eyecatcher for ATM information
u_short	ID = number	identifier of eyecatcher **'0030'x** IOA_ATMTOKEN **'0031'x** IOA_ATMETHER **'0032'x** IOAATMNATIVE
u_short	number	port number
u_short	number	port type **'0002'x** Token Ring (ATM LAN emulation) **'0001'x** Ethernet (ATM LAN emulation) **'0009'x** ATM, No logical ports configured **'9000'x** ATM Native
Integer	N/A	reserved
OCTET STRING (SIZE(256))	Group Addresses	This field contains the Group Address active in the port. For OSA, we will support 32 group addresses each with a length of 6 (+ 2 for padding). Therefore, the total length of this field is 32 times 8.
Char(32)	User Data	user defined data
Char(48)	Reserved	Reserved
	LAN Emulation group (Data valid when eyecatcher is IOA_ATMTOKEN -or- IOA_ATMETHER)	
u_byte(8)	LE PDU Octets Inbound	
Integer	NonError LE Discards Inbound	
Integer	Errored LE PDU Discards Inbound	
Integer	Unknown Protocol LE PDU Discards Inbound	
Integer	LE PDU Octets Outbound	
Integer	NonError LE PDU Discards Outbound	
Integer	Errored LE PDU Discards Outbound	
Integer	Configuration Mode	**1** Automatic **2** Manual
Integer	Configured LAN Type	**1** Unspecified **2** Ethernet **3** Token Ring
Integer	Configured Max Data Frame Size	**1** Unspecified **2** 1516 **3** 4544 **4** 9234 **5** 18190
Char (32)	Configured ELAN Name	
u_byte (20)	Configuration LE Server ATM Address	
Integer	Control Timeout	

Table D-66 (Page 2 of 5). Query of ATM parameters

Size	Parameter	Field Description	
Integer	Max Unknown Frame Count		
Integer	Max Unknown Frame Time (seconds)		
Integer	VCC Timeout Period (seconds)		
Integer	Max Retry Count		
Integer	LE_ARP Cache Aging Time		
Integer	Forward Delay Time (seconds)		
Integer	Expected LE ARP Response Time (seconds)		
Integer	Flush Timeout (seconds)		
Integer	Path Switching Delay (seconds)		
Integer	Local Segment ID		
Integer	Multicast send VCC type	**1**	Best Effort
		2	Variable Bit Rate
		3	Constant Bit Rate
Integer	Multicast Send VCC Avg Rate		
Integer	Multicast Send VCC Peak Rate		
Integer	Connection Complete Timer (seconds)		
u_byte (20)	LE Client ATM Address		
Integer	LE Client Identifier		
Integer	LE Client Current State	**1**	Initial State
		2	LECS Connect
		3	Configure
		4	Join
		5	Initial Registration
		6	BUS Connect
		7	Operational
Integer	Last Failure Response Code	**1**	None
		2	Timeout
		3	Undefined Error
		4	Version Not Supported
		5	Not Valid Request Parameters
		6	Duplicate Lan Destination
		7	Duplicate Atm Address
		8	Insufficient Resources
		9	Access Denied
		10	Not Valid Requester ID
		11	Not Valid Lan Destination
		12	Not Valid ATM Address
		13	No Configuration
		14	LE Configure Error
		15	Insufficient Information
Integer	Last Failure State	**1**	Initial State
		2	LECS Connect
		3	Configure
		4	Join
		5	Initial Registration
		6	Bus Connect
		7	Operational
Integer	Protocol		
Integer	LE Protocol Version		
Integer	Topology Change	**0**	False
		1	True
u_byte (20)	Configuration Server ATM Address		

Table D-66 (Page 3 of 5). Query of ATM parameters

Size	Parameter	Field Description	
Integer	Configuration Source	**1**	Got Address via ILMI
		2	Used WellKnown Address
		3	Used LECS PVC
		4	Did Not Use LECS
Integer	Actual LAN type	**1**	Unspecified
		2	Ethernet
		3	TokenRing
Integer	Actual Max Data Frame Size	**1**	Unspecified
		2	1516
		3	4544
		4	9234
		5	18190
Char(32)	Actual ELAN Name		
U_Char (20)	Actual LE Server ATM Address		
Integer	Proxy	**1**	True
		2	False
Integer	LE ARP Requests Outbound		
Integer	LE ARP Requests Inbound		
Integer	LE ARP Replies Outbound		
Integer	LE ARP Replies Inbound		
Integer	Control Frames Outbound		
Integer	Control Frames Inbound		
Integer	SVC Failures		
Integer	Configuration Direct Interface		
Integer	Configuration Direct VPI		
Integer	Configuration Direct VCI		
Integer	Control Direct Interface		
Integer	Control Direct VPI		
Integer	Control Direct VCI		
Integer	Control Distribute Interface		
Integer	Control Distribute VPI		
Integer	Control Distribute VCI		
Integer	Multicast Send Interface		
Integer	Multicast Send VPI		
Integer	Multicast Send VCI		
Integer	Multicast Forward Interface		
Integer	Multicast Forward VPI		
Integer	Multicast Forward VCI		
u_byte (6)	MAC Address		
Char(2)	Reserved	Reserved	
Integer	LE Client Enabled State	**1**	Not Defined
		2	LEC Activating
		3	Enabled
		4	Internal Failure Disabled
		5	Physical Port Disabled
		6	OSA/SF Disabled
		7	External Disabled
		8	Unknown
Integer	Best Effort Peak Rate (Mb/sec)		

Table D-66 (Page 4 of 5). Query of ATM parameters

Size	Parameter	Field Description	
Integer	Max LEC Connections		
Char(64)	Reserved	Reserved	
	Physical Information		
Integer	Transmission Type	**1** **2**	155 Mbps 100 Mbps
Integer	Media Type	**1** **2** **3** **4** **5**	Coax Cable SingleMode Fiber MultiMode Fiber Shielded Twisted Pair Unshielded Twisted Pair
Integer	UNI Type	**1** **2**	Public Private
Integer	Highest UNI Version Supported	**1** **2** **3**	Version 2.0 Version 3.0 Version 3.1
u_byte(8)	Received ATM Cells		
u_byte(8)	Transmitted ATM Cells		
Integer	Network Prefix Port		
u_byte(13)	ATM Address Network Prefix		
Char(3)	Reserved	Reserved	
Integer	Network Prefix Status	**1** **2**	Valid Non Valid
Integer	Maximum VPCs supported		
Integer	Maximum VCCs supported		
Integer	Number of Active VPCs		
Integer	Number of Active VCCs		
Integer	Maximum VPI Bits		
Integer	Maximum VCI Bits		
Integer	ILMI VPI		
Integer	ILMI VCI		
Integer	ATM Address Type	**1** **2** **3** **4**	Private NSAP E164 Native E164 Other
u_byte(20)	ATM Physical Address		
integer	NonError ATM Cell Discards Inbound		
Integer	HEC Error ATM Cells Discards Inbound		
Integer	Header Validation ATM Cell Discards Inbound		
Integer	Maximum AAL5 PDU Size		
Integer	Received AAL5 PDUs		
Integer	NonError AAL5 PDU Discards Inbound		
Integer	Errored AAL5 PDUs Inbound		
Integer	Transmitted AAL5 PDUs		
Integer	NonError AAL5 PDU Discards Outbound		

Table D-66 (Page 5 of 5). Query of ATM parameters

Size	Parameter	Field Description
Integer	ATM Code Operational Status	**1** Operational **2** Not-operational **3** Config Rejected **4** Out-of-Sync
u_byte(6)	Universal MAC Address	
char(2)	Reserved	Reserved
u_byte(6)	Active MAC Address	
char(2)	Reserved	Reserved
Integer	Max PCM Connections	
Integer	length of port name	
char(16)	Port Name	
char(16)	Port Description	
Integer	Managing IP Address	
u_byte(9)	Object ID	
char(3)	Reserved	Reserved
Integer	Active UNI version	This represents the UNI version that is currently active on the card. **0** Not Used **1** Unknown **2** Version 3.0 **3** Version 3.1
char(2)	Reserved	Reserved
U_short	Number of Selector bytes	Indicates how many bytes of the following field are valid
u_byte(256)	selector bytes	each of the 256 bytes is a selector bytes which is put on the ATM physical address
char(256)	Reserved	Reserved
Integer	Inactivity Timer	
Integer	Response Timer	
Integer	Acknowledgement Timer	
Integer	Maximum Stations	
Integer	Maximum Service Active Points	
Integer	MaxIn	
Integer	MaxOut	
Integer	Hardware state	**0** enabled **1** disabled from host **2** disabled from external source **3** disabled from internal error **4** service mode/disabled from host **5** service mode/disabled from external source **6** service mode/disabled from internal source **7** disabled

Settable FDDI Port LAN Parameters

The following table shows all the settable PORT FDDI values and their associated types and valid data.

Table D-67 (Page 1 of 5). Settable FDDI Port LAN Adapter Parameters

Settable FDDI Port LAN Adapter Parameters		
Size	**Field**	**Description**
OCTET STRING (SIZE (32))	FDDI SMT User Data ('1011'x)	32 octets of user information
Integer (0..1)	FDDI Configuration Policy ('101A'x) { none (0), hold (1) }	A value that indicates the configuration policies currently desired in a node. 'Hold' is one of the terms used for the Hold Flag, an optional ECM flag used to enable the optional Hold policy. The value is a sum. This value initially takes the value zero, then for each of the configuration policies currently enforced on the node, 2 raised to a power is added to the sum. The powers are according to the following table: Policy Power configurationhold 0
Integer (32768..65535)	FDDI Connection Policy ('101B'x)	A value representing the connection policies in effect in a node. A station sets the corresponding bit for each of the connection types that it rejects. The letter designations, X and Y, in the 'rejectX-Y' names have the following significance: X represents the PC-Type of the local PORT and Y represents the PC_Type of the adjacent PORT (PC_Neighbor). The evaluation of Connection- Policy (PC-Type, PC-Neighbor) is done to determine the setting of T- Val(3) in the PC-Signalling sequence (refer to ANSI 9.6.3). Note that Bit 15, (rejectM-M), is always set and cannot be cleared. The value is a sum. This value initially takes the value zero, then for each of the connection policies currently enforced on the node, 2 raised to a power is added to the sum. The powers are according to the following table: Policy Power rejectA-A 0 rejectA-B 1 rejectA-S 2 rejectA-M 3 rejectB-A 4 rejectB-B 5 rejectB-S 6 rejectB-M 7 rejectS-A 8 rejectS-B 9 rejectS-S 10 rejectS-M 11 rejectM-A 12 rejectM-B 13 rejectM-S 14 rejectM-M 15
Integer (2..30)	FDDI Notification Timer ('101D'x)	The timer, expressed in seconds, used in the Neighbor Notification protocol. It has a range of 2 seconds to 30 seconds, and its default value is 30 seconds (refer to ANSI SMT 8.2).
Integer (1..8)	FDDI Station Action ('103C'x) { connect(0), disconnect(1), path-Test(2), self-Test(3), disable-a(4), disable-b(5), disable-m(6) }	The behavior of setting this variable to each of the acceptable values is as follows: • connect(0): Generates a Connect signal to ECM to begin a connection sequence. See ANSI Ref 9.4.2. • disconnect(1): Generates a Disconnect signal to ECM. see ANSI Ref 9.4.2. • path-Test(2): Initiates a station Path_Test. The Path_Test variable (see ANSI Ref 9.4.1) is set to 'Testing'. The results of this action are not specified in this standard. • self-Test(3): Initiates a station Self_Test. The results of this action are not specified in this standard. • disable-a(4): Causes a PC_Disable on the A port if the A port mode is peer. • disable-b(5): Causes a PC_Disable on the B port if the B port mode is peer. • disable-m(6): Causes a PC_Disable on all M ports. Attempts to set this object to all other values results in an appropriate error. The result of setting this variable to path-Test or self-Test is implementation-specific.

Table D-67 (Page 2 of 5). Settable FDDI Port LAN Adapter Parameters

Settable FDDI Port LAN Adapter Parameters		
Size	**Field**	**Description**

Integer (0..255)	FDDI Requested Paths ('2020'x)	List of permitted Paths which specifies the Path(s) into which the MAC may be inserted (refer to ansi SMT 9.7).
		The value is a sum which represents the individual paths that are desired. This value initially takes the value zero, then for each type of PATH that this node is, 2 raised to a power is added to the sum. The powers are according to the following table:
		`Path Power`
		`local 0`
		`secondary-alternate 1`
		`primary-alternate 2`
		`concatenated-alternate 3`
		`secondary-preferred 4`
		`primary-preferred 5`
		`concatenated-preferred 6`
		`thru 7`

OCTET STRING (SIZE(256))	FDDI Group Addresses ('202C'x)	Indicates the group addresses enabled on the adapter, if any. This is actually an array that will contain 32 addresses. Each address is actually OCTET STRING (SIZE(6)) + 2 for padding Therefore, the size will be 32 x OCTET STRING (SIZE(8)).
Integer (0..65535)	FDDI Frame Error Threshold ('205F'x)	A threshold for determining when a MAC Condition report (see ANSI 8.3.1.1) shall be generated. Stations not supporting variable thresholds shall have a value of 0 and a range of (0..0).
Integer (1..2)	FDDI Enable Unit Data ('2076'x) { true(1), false(0) }	This variable determines the value of the MA_UNITDATA_Enable flag in RMT. The default and initial value of this flag is true(1).
The PATH group		
Integer (0..4294967295)	FDDI PATH1 Ring Latency ('0000 320D'x)	Gives the total accumulated latency of the ring associated with this path. May be measured directly by the station or calculated by a management station.
Integer (0..4294967295)	FDDI PATH1 Restricted Dialog Time Limit ('0000 3213'x)	Used by RMT to limit the duration of restricted dialogs on a path.
Integer (0..2147483647)	FDDI PATH1 Tvx Lower Bound ('0000 3215'x)	Specifies the minimum time value of fddiMACTvxValue that shall be used by any MAC that is configured in this path. The operational value of fddiMACTvxValue is managed by setting this variable. This variable has the time value range of: 0 < fddimibPATHTVXLowerBound < fddimibPATHMaxTReq Changes to this variable shall either satisfy the time value relationship: fddimibPATHTVXLowerBound <= fddimibMACTVXCapability of each of the MACs currently on the path, or be considered out of range. The initial value of fddimibPATHTVXLowerBound shall be 2500 nsec (2.5 ms).
Integer (0..2147483647)	FDDI PATH1 T-Max Lower Bound ('0000 3216'x)	Specifies the minimum time value of fddiMACTMax that shall be used by any MAC that is configured in this path. The operational value of fddiMACTMax is managed by setting this variable. This variable has the time value range of: fddimibPATHMaxTReq <= fddimibPATHTMaxLowerBound and an absolute time value range of: 10000nsec (10 msec) <= fddimibPATHTMaxLowerBound Changes to this variable shall either satisfy the time value relationship: fddimibPATHTMaxLowerBound < fddimibMACTMaxCapability of each of the MACs currently on the path, or be considered out of range. The initial value of fddimibPATHTMaxLowerBound shall be 165000 nsec (165 msec).

Table D-67 (Page 3 of 5). Settable FDDI Port LAN Adapter Parameters

Settable FDDI Port LAN Adapter Parameters		
Size	**Field**	**Description**
Integer (0..2147483647)	FDDI PATH1 T-Req Maximum Time Value ('0000 3217'x)	Specifies the maximum time value of fddiMACT-Req that shall be used by any MAC that is configured in this path. The operational value of fddiMACT- Req is managed by setting this variable. This variable has the time value range of: fddimibPATHTVXLowerBound < fddimibPATHMaxTReq <= fddimibPATHTMaxLowerBound. The default value of fddimibPATHMaxTReq is 165000 nsec (165 msec).
Integer (0..2147483647)	FDDI PATH2 Ring Latency ('1000 320D'x)	Gives the total accumulated latency of the ring associated with this path. May be measured directly by the station or calculated by a management station.
Integer (0..2147483647)	FDDI PATH2 Restricted Dialog Time Limit ('1000 3213'x)	Used by RMT to limit the duration of restricted dialogs on a path.
Integer (0..2147483647)	FDDI PATH2 Tvx Lower Bound ('1000 3215'x)	Specifies the minimum time value of fddiMACTvxValue that shall be used by any MAC that is configured in this path. The operational value of fddiMACTvxValue is managed by setting this variable. This variable has the time value range of: 0 < fddimibPATHTVXLowerBound < fddimibPATHMaxTReq Changes to this variable shall either satisfy the time value relationship: fddimibPATHTVXLowerBound <= fddimibMACTVXCapability of each of the MACs currently on the path, or be considered out of range. The initial value of fddimibPATHTVXLowerBound shall be 2500 nsec (2.5 ms).
Integer (0..2147483647)	FDDI PATH2 T-Max Lower Bound ('1000 3216'x)	Specifies the minimum time value of fddiMACTMax that shall be used by any MAC that is configured in this path. The operational value of fddiMACTMax is managed by setting this variable. This variable has the time value range of: fddimibPATHMaxTReq <= fddimibPATHTMaxLowerBound and an absolute time value range of: 10000nsec (10 msec) <= fddimibPATHTMaxLowerBound Changes to this variable shall either satisfy the time value relationship: fddimibPATHTMaxLowerBound < fddimibMACTMaxCapability of each of the MACs currently on the path, or be considered out of range. The initial value of fddimibPATHTMaxLowerBound shall be 165000 nsec (165 msec).
Integer (0..2147483647)	FDDI PATH2 T-Req Maximum Time Value ('1000 3217'x)	Specifies the maximum time value of fddiMACT-Req that shall be used by any MAC that is configured in this path. The operational value of fddiMACT- Req is managed by setting this variable. This variable has the time value range of: fddimibPATHTVXLowerBound < fddimibPATHMaxTReq <= fddimibPATHTMaxLowerBound. The default value of fddimibPATHMaxTReq is 165000 nsec (165 msec).
The PORT group		
Integer (0..3)	FDDI PORTA Desired Connection Policy ('0000 400E'x) { none(0), pc_mac_lct(1), pc_mac_loop(2), pc_mac_lct_and_loop(3) }	A value representing the PORT's connection policies desired in the node. The value of pc- mac-lct is a term used in the PC_MAC_LCT Flag (see 9.4.3.2). The value of pc-mac-loop is a term used in the PC_MAC_Loop Flag. The value is a sum. This value initially takes the value zero, then for each PORT policy, 2 raised to a power is added to the sum. The powers are according to the following table: Policy Power pc-mac-lct 0 pc-mac-loop 1

Table D-67 (Page 4 of 5). Settable FDDI Port LAN Adapter Parameters

Settable FDDI Port LAN Adapter Parameters		
Size	**Field**	**Description**
OCTET STRING (SIZE (3))	FDDI PORTA Paths Requested ('0000 4011'x)	This variable is a list of permitted Paths where each list element defines the Port's permitted Paths. The first octet corresponds to 'none', the second octet to 'tree', and the third octet to 'peer'. For each octet the following bits are defined : local 0 secondary-alternate 1 primary-alternate 2 concatenated-alternate 3 secondary-preferred 4 primary-preferred 5 concatenated-preferred 6 thru 7
Integer (0..2147483647)	FDDI PORTA MAC Loop Time ('0000 4015'x)	This object controls the value used by the FDDI attribute T_Next(9) to prevent deadlock. This allows sufficient time for MAC recovery process completion and the exchange of neighbor information frames. Default: 200 milliseconds. This field actually represents the time in 80 nanosecond intervals.
Integer (1..7)	FDDI PORTA Transmitted Line State ('0000 401F'x) { qls-quiet (0), ils-idle (1), mls-master (2), hls-halt (3), pdr-active (4), lsu-unknown(5), nls-noise (6) }	Line state to be transmitted when the PCM state machine for the port is in state PC9 Maint.
Integer (4..15)	FDDI PORTA Link Error Rate Cutoff ('0000 403A'x)	The link error rate estimate at which a link connection will be broken. It ranges from 10**-4 to 10**-15 and is reported as the absolute value of the base 10 logarithm (default of 7).
Integer (4..15)	FDDI PORTA Link Error Rate Alarm ('0000 403B'x)	The link error rate estimate at which a link connection will generate an alarm. It ranges from 10**-4 to 10**-15 and is reported as the absolute value of the base 10 logarithm of the estimate (default of 8).
Integer (1..6)	FDDI PORTA Port Action ('0000 4046'x) { maintPORT (0), enablePORT (1), disablePORT (2), startPORT (3), stopPORT (4) }	Causes a Control signal to be generated with a control_action of 'Signal' and the 'variable' parameter set with the appropriate value (i.e., PC_Maint, PC_Enable, PC_Disable, PC_Start, or PC_Stop) (refer to ANSI 9.4.2).
Integer (0..3)	FDDI PORTB Desired Connection Policy ('1000 400E'x) { none(0), pc_mac_lct(1), pc_mac_loop(2), pc_mac_lct_and_loop(3) }	A value representing the PORT's connection policies desired in the node. The value of pc- mac-lct is a term used in the PC_MAC_LCT Flag (see 9.4.3.2). The value of pc-mac-loop is a term used in the PC_MAC_Loop Flag. The value is a sum. This value initially takes the value zero, then for each PORT policy, 2 raised to a power is added to the sum. The powers are according to the following table: Policy Power pc-mac-lct 0 pc-mac-loop 1
OCTET STRING (SIZE (3))	FDDI PORTB Paths Requested ('1000 4011'x)	This variable is a list of permitted Paths where each list element defines the Port's permitted Paths. The first octet corresponds to 'none', the second octet to 'tree', and the third octet to 'peer'. For each octet the following bits are defined : local 0 secondary-alternate 1 primary-alternate 2 concatenated-alternate 3 secondary-preferred 4 primary-preferred 5 concatenated-preferred 6 thru 7
Integer (0..2147483647)	FDDI PORTB MAC Loop Time ('1000 4015'x)	This object controls the value used by the FDDI attribute T_Next(9) to prevent deadlock. This allows sufficient time for MAC recovery process completion and the exchange of neighbor information frames. Default: 200 milliseconds. This field actually represents the time in 80 nanosecond intervals.

Table D-67 (Page 5 of 5). Settable FDDI Port LAN Adapter Parameters

Settable FDDI Port LAN Adapter Parameters		
Size	**Field**	**Description**
Integer (1..7)	FDDI PORTB Transmitted Line State ('1000 401F'x) { qls-quiet (0), ils-idle (1), mls-master (2), hls-halt (3), pdr-active (4), lsu-unknown(5), nls-noise (6) }	Line state to be transmitted when the PCM state machine for the port is in state PC9 Maint.
Integer (4..15)	FDDI PORTB Line Error Rate Cutoff ('1000 403A'x)	The link error rate estimate at which a link connection will be broken. It ranges from 10**-4 to 10**-15 and is reported as the absolute value of the base 10 logarithm (default of 7).
Integer (4..15)	FDDI PORTB Line Error Rate Alarm ('1000 403B'x)	The link error rate estimate at which a link connection will generate an alarm. It ranges from 10**-4 to 10**-15 and is reported as the absolute value of the base 10 logarithm of the estimate (default of 8).
Integer (1..6)	FDDI PORTB Port Action ('1000 4046'x) { maintPORT (0), enablePORT (1), disablePORT (2), startPORT (3), stopPORT (4) }	Causes a Control signal to be generated with a control_action of 'Signal' and the 'variable' parameter set with the appropriate value (i.e., PC_Maint, PC_Enable, PC_Disable, PC_Start, or PC_Stop) (refer to ANSI 9.4.2).
Integer (0..1)	FDDI Hardware state ('0190'x) { 0 - enable 1 - Disable }	This field sets the state of the hardware ports.

Table D-68. Settable Token Ring Port LAN Adapter Parameters

Settable Token Ring Port LAN Adapter Parameters		
Size	**Field**	**Description**
	The Interface Table	
OCTET STRING (SIZE (4))	TR Functional Addresses ('0257'x)	The bit mask of all Token Ring functional addresses for which this interface will accept frames.
OCTET STRING (SIZE(256))	TR Group Addresses ('025A'x)	This field contains the Group Address active in the associated ring station. An individual Group Address is 6 bytes long. (padded to 8) Therefore, this field will really be 32 times OCTET STRING(SIZE(8)) long.
Integer (0..1)	TR Early Token Release ('025F'x) { false(0), true(1) }	Indicates if the ring station supports early token release.
OCTET STRING (SIZE(32))	TR User Data ('0260'x)	This field contains a character string of user data that can be used to further describe this port.
Integer (0..1)	TR Hardware state ('0290'x) { 0 - enable 1 - Disable }	This field sets the state of the hardware ports.

Table D-69. Settable Ethernet Port LAN Adapter Parameters

Settable Ethernet Port LAN Adapter Parameters		
Size	**Field**	**Description**
	The Ethernet Settings Group	
OCTET STRING (SIZE(256))	ETH Group Addresses ('035A'x)	This field contains the Group Address active in the port. For OSA, we will support 32 group addresses each with a length of 6. Each is padded to 8. Therefore, the total length of this field is 32 times 8.
OCTET STRING (SIZE(32))	ETH User Data ('0360'x)	This field contains a character string of user data that can be used to further describe this port.
Integer (0..1)	ETH Hardware state ('0390'x) { 0 - enabled 1 - Disabled from host }	This field sets the state of the hardware ports.

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