

Installing and Administering HP FTAM/9000

Edition 4



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HP 9000 Networking
E0597**

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Preface

Purpose

This manual contains installation, configuration, and verification steps for HP FTAM/9000, Hewlett-Packard's File Transfer, Access, and Management product which enables you to manipulate local and remote data files.

- Installation is the process of copying the software from the product tape (magnetic or cartridge) to your system's disk. The installation steps are in chapter 1, "Installing HP FTAM/9000."
- Configuration is the process of customizing the product to reflect the correct addresses and parameters that are required for your system. The configuration information is in chapter 2, "Configuring HP FTAM/9000."
- Verification is the process of verifying that all of the configuration information has been entered successfully. The verification information is in chapter 3, "Verifying HP FTAM/9000."

Audience

You should be the person who is responsible for installing product software, configuring local and remote nodes, and verifying configurations. You need to be able to issue node names, addresses, and parameters that are unique to your network, or be able to obtain that information.

Related Tasks

Before starting the tasks in this manual, you need to have installed, configured, and verified the other parts of your "OSI stack" (OTS/9000 and the LAN/9000 link, the X.25/9000 link, and/or the FDDI/9000 link, as applicable). "The HP OSI Series" section in the *OSI Troubleshooting Guide* specifies what manuals you need to perform these tasks.

After you have completed the tasks in this manual, you will need to perform interoperability testing as described in the *OSI Troubleshooting Guide*. Troubleshooting information is also included in that manual.

Related Documents

For More Information

Read

Using HP FTAM/9000

HP FTAM/9000 User's Guide (B1033-90024)

Troubleshooting HP
FTAM/9000

OSI Troubleshooting Guide (32070-90020)

FTAM Programming

HP FTAM/9000 Programmer's Guide (B1033-90014)

FTAM Protocol Specifications

*ISO 8571, Information Processing Systems – Open
Systems Interconnection – File Transfer, Access and
Management*

Conventions

The table below explains the typographic conventions used in this manual.

Notation	Description
<code>computertext</code> or computertext	Computer font is used for on-screen prompts and messages, for responses to user commands, and what you type in.
<i>italics</i>	Italic type is used for emphasis and titles of manuals and publications, and to represent a variable in a syntax statement, such as <i>target_file</i> .
Key	This font is used to indicate a key on the computer's keyboard. When two or more keys appear together with a dash between them, such as CTRL-C , press those keys simultaneously to execute the command. Note that most user commands end with an implied Enter or Return keystroke. If there is no user entry at a prompt, the Enter or Return key indicates that no other keys are pressed.

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1 Installing HP FTAM/9000

Installation Overview

Before installing HP FTAM/9000, you need to have installed the other parts of your “OSI stack” (OTS/9000 and the LAN/9000 link, the X.25/9000 link, and/or the FDDI/9000 link, as applicable).

Each of the products in the OSI stack requires a specific amount of root partition space. When the amounts of root partition space for the different products you have installed are added together, the total must not exceed the total space on your system. Verify that there is sufficient remaining space in the root partition of your HP 9000 computer before installing HP FTAM/9000. The root partition may need to be increased to accommodate all of the OSI stack products together. If you attempt the installation and do not have sufficient space, the update program will let you know how much space you need.

Complete the steps on the following pages to install HP FTAM/9000. The screens and messages that you see may be different from those shown, depending upon the type of computer that you are using.

Complete all installation steps before beginning the configuration steps in chapter 2.

Before You Begin the Installation

Your HP-UX software includes various utilities that allow you to manipulate the menus and form screens. This section describes those utilities and also the HELP function.

Menus

You can select items within a screen menu in any of the following three ways:

- By entering the first letter of the item (if the first letter is unique). For example, if you want to select the Country parameter on a screen, you would type the letter c.
- By using the arrow keys to highlight the item and then pressing Return or SELECT ITEM f4. (This is called “selecting” the item.)
- By using Tab to scroll down or Shift-Tab to scroll up, and then pressing Return or SELECT ITEM f4.

The menu labels include indicators. An arrow indicator (->) indicates a branch to another menu. A series of dots (...) indicates that there is an associated form for the menu item.

On the form screens, you will see fields that display default parameters that you can modify by entering new parameters. Some of these fields may scroll vertically, indicated by a row of down arrows (V) or a row of up arrows (^). The fields may also scroll horizontally, which is indicated by a greater-than symbol (>) or a less-than symbol (<). The scroll function is executed with the arrow keys.

Function Keys

The f1 through f8 keys are multiple-function keys that can be used for a variety of functions depending on the program and menu combination. The three main function keys are the following:

- f8, which is used to exit a screen or to move back through previous menus
- f4, which is used to select items and perform tasks
- f1, which is used to access the HELP function

The HELP Function

The HELP function, which you access by pressing f1, provides information about menu items and fields. It describes the parameters that you need to add to the configuration menus and indicates possible responses that you can use in the fields of a form screen.

To Install HP FTAM/9000

The swinstall Procedure

The HP-UX swinstall procedure installs the HP FTAM/9000 software on the disk. Follow the swinstall procedure to install HP FTAM/9000:

1. At the system prompt, log onto the system by typing root.
2. Run swinstall. Please refer to the swinstall manual for more information on swinstall. Refer to chapter 6 in the *HP FTAM/9000 Reference Manual* for a list of the filesets installed.
3. Run swverify to confirm that the HP FTAM/9000 software was installed correctly.

Next you will configure HP FTAM/9000 using the information and steps in chapter 2.

2 Configuring HP FTAM/9000

Configuration Overview

This chapter contains the following three sections:

- **Configuration Worksheets** — This section provides the five configuration worksheets you will fill out before beginning the configuration process.
- **Configuration Parameters** — This section describes each of the configuration parameters and explains which ones are required or optional and which are default parameters.
- **HP FTAM/9000 Configuration** — This section provides the specific configuration steps and shows the configuration screens.

Each of the three chapter sections is further divided into three subsections related to either the FTAM Initiator, FTAM Responder, or FTAM Remote Responder. So, for example, if you are configuring the FTAM Initiator, the worksheet is under the “FTAM Initiator Worksheet” heading, the parameter information is under the “FTAM Initiator Parameters” heading, and the configuration steps are under the “To configure the FTAM Initiator” heading.

To configure HP FTAM/9000, you need to copy the configuration worksheets, complete them using the parameter information, and transfer the worksheet information to the FTAM configuration screens. You will also need to provide copies of two of the worksheets to the person who is responsible for configuring the FTAM Remote Responder.

The FTAM configuration is done in three parts: the FTAM Initiator and FTAM Responder, which apply to the local node, and the Remote FTAM Responders (remote FTAM Responder addresses configured in the local node).

After you complete the configuration, complete the verification steps in chapter 3.

Configuration Worksheets

There are three HP FTAM/9000 configuration worksheets: the FTAM Initiator worksheet, the FTAM Responder worksheet, and the FTAM Remote Responder worksheet.

The FTAM software that was installed on the local node has default parameters for the FTAM Initiator and FTAM Responder. The FTAM program can function normally with these default parameters. If you choose to change the parameters for local node customization, or to differentiate between multiple installations of FTAM within the same subnetwork system, write the new parameters on the FTAM Initiator and FTAM Responder worksheets.

There are no default parameters for the FTAM Remote Responder.

FTAM Initiator Worksheet

This worksheet contains the identification information supplied to remote nodes when this node initiates an FTAM connection, as well as the number of simultaneous FTAM connections that may be open at one time (using ftam, fcp, and the like).

You do not need to fill in this worksheet if (1) peer FTAM implementations (such as HP FTAM/9000) do not check the authentication information or (2) the default FTAM Initiator parameter values are acceptable. Refer to the “FTAM Initiator Parameters” section in this chapter for the default values.

If you do not need to complete this worksheet, turn to the next worksheet, the FTAM Responder worksheet.

If you choose to change the default FTAM Initiator parameter values, write the changes in the appropriate areas below, noting the restrictions at the beginning of the “FTAM Initiator Parameters” section. Then turn to the next worksheet, the FTAM Responder worksheet.

Country	
Locality	
Organization	
Organizational unit	
Application process	
Application entity	
Maximum number of invocations	
Maximum number of associations per invocation	

FTAM Responder Worksheet

This worksheet contains the FTAM Responder address name and connection limit, which is information the local node sends to a Remote Responder when the Remote Responder initiates an FTAM connection.

There are default parameters for this worksheet. If you choose to use the default FTAM Responder parameter values, which are shown in the “FTAM Responder Parameters” section in this chapter, write the values in the appropriate areas below, and provide a copy to the person who is responsible for configuring the FTAM Remote Responder. Then turn to the next worksheet, the FTAM Remote Responder worksheet.

If you choose to change the default FTAM Responder parameter values, write the changes in the appropriate areas below, referring to the “FTAM Responder Parameters” section for information about the parameters, and provide a copy to the person who is responsible for configuring the FTAM Remote Responder. Then turn to the next worksheet, the FTAM Remote Responder worksheet.

Responder's alias	
Presentation selector (hex string)	
Session selector (hex string)	
Transport selector (hex string)	
Maximum number of associations	

FTAM Remote Responder Worksheet

This worksheet is used to configure all FTAM Remote Responders. You need to make one copy of the worksheet for every FTAM Remote Responder with which you will want to communicate. If you do not have the information shown below about the FTAM Remote Responder or Responders, you need to obtain that information.

There are no default parameters for this worksheet. Write parameter values in the appropriate areas below, referring to the “FTAM Remote Responder Parameters” section for information about the parameters.

Remote responder's alias	
Presentation selector (hex string)	
Session selector (hex string)	
Transport selector (hex string)	
Network address (hex string)	

Configuration Parameters

FTAM Initiator Parameters

The following are restrictions for the HP FTAM/9000 Initiator Application Entity title entries:

- The Application Process and Application Entity are required entries.
- There must be an Organization entry or an Organizational Unit entry.
- There may be both an Organization entry and an Organizational Unit entry.
- If there is an Organizational Unit entry but no Organization entry, there must also be a Locality entry.
- Multiple Locality entries and Organizational Unit entries are permitted, but no other multiple entries are permitted.

The FTAM Initiator parameters are as follows:

Country

Description	This parameter is optional and must be the first entry to be entered of the six entries for the View/Modify FTAM Initiator screen.
Example	us
Format	character
Valid value	two-character country code from the defined ISO country code list
Default value	none

Locality

Description	This parameter may occur zero, one, or more times in a name.
Example	ca
Format	alphanumeric characters
Valid value	any string of ASCII characters
Default value	none

Organization

org_unit

Description	This parameter is the associated company or organization.
Format	alphanumeric characters
Valid value	any string of ASCII characters
Default value	org_name

Organizational unit

org_unit or myhostname

Description	This optional parameter is a subunit of the Organization entry.
Format	alphanumeric characters
Valid value	any string of ASCII characters
Default values	There are two defaults: org_unit and myhostname (myhostname is replaced by the actual hostname assigned to your system)

Application process		ftam
	Description	This required parameter defines the application process to be used. Hewlett-Packard recommends that you do not change this parameter value.
	Format	alphanumeric characters
	Valid value	any string of ASCII characters
	Default value	ftam
Application entity		init
	Description	This required parameter defines the Application Entity to be used. Hewlett-Packard recommends that you do not change this parameter value.
	Format	alphanumeric characters
	Valid value	any string of ASCII characters
	Default value	init
Maximum number of invocations		10
	Description	This required parameter sets the number of times this Application Entity title may be used by an FTAM application. This is important when an FTAM application (such as ftam, fcp, and the like) is being used simultaneously by multiple users.
	Format	decimal number
	Valid value	1 to 300
	Default value	10

Maximum number of associations per invocations	20
Description	This required parameter sets the number of connections an FTAM application is allowed to have established at any one time. This parameter is important for FTAM applications that use low-level context-sensitive functions and maintain multiple connections at any one time.
Format	decimal number
Valid value	1 to 50
Default value	20

FTAM Responder Parameters

Responder's alias	myhostname
Description	This parameter will be initialized to whatever the system's hostname is. myhostname is then inserted into a Directory Distinguished Name (DDN), as shown in the following example.
Example	With an alias value of myhostname, the DDN of the local responder becomes the following:/O=org_name/OU=org_unit/OU=myhostname/AP=ftam/AE=resp
Format	alphanumeric character string
Valid value	any string of ASCII characters
Default value	myhostname (myhostname is replaced by the actual hostname assigned to your system)

NOTE	The Presentation, Session, and Transport selector values are combined to make the Responder Presentation Address. The NSAP portion of the Presentation Address is the NSAP configured for the local node, which is added automatically by the configuration program.
-------------	--

Presentation selector (hex string)		0001
Description		This parameter is the Presentation selector portion of the Responder's Presentation Address.
Format		hexadecimal string
Valid value		2 to 40 digits (must be an even number of digits)
Default value		0001
Session selector (hex string)		0001
Description		This parameter is the Session selector portion of the Responder's Presentation Address.
Format		hexadecimal string
Valid value		2 to 40 digits (must be an even number of digits)
Default value		0001
Transport selector (hex string)		0001
Description		This parameter is the Transport selector portion of the Responder's Presentation Address.
Format		hexadecimal string
Valid value		2 to 64digits (must be an even number of digits)
Default value		0001

Maximum number of associations	50
Description	This required parameter sets the number of connections that the local FTAM Responder can service at any one time.
Format	decimal number
Valid value	1 to 100
Default value	50

FTAM Remote Responder Parameters

Remote responder's alias	
Description	This parameter is the hostname of the remote node. It is used by ftam, fcp, and other FTAM applications to identify the system that a file is to be copied from or to. This parameter is then inserted into a Directory Distinguished Name (DDN), as shown in the following example.
Example	With an alias value of myhostname, the DDN of the local responder becomes the following:/O=org_name/OU=org_unit/OU=myhostname/AP=ftam/AE=resp
Format	alphanumeric character string
Valid value	any string of ASCII characters
Default value	none

NOTE	The Presentation, Session, and Transport selectors, along with the list of remote systems NSAPs, are combined to form the Remote Responder's Presentation Address.
------	--

Presentation
selector (hex
string)

Description	This parameter is the Presentation selector portion of the Remote Responder's Presentation Address. The Presentation Address is used to distinguish between messages for different OSI applications.
Format	hexadecimal string
Valid value	2 to 40 digits (must be an even number of digits)
Default value	none

Session selector
(hex string)

Description	This parameter is the Session selector portion of the Remote Responder's Presentation Address. The Presentation Address is used to distinguish between messages for different OSI applications.
Format	hexadecimal string
Valid value	2 to 40 digits (must be an even number of digits)
Default value	none

Transport
selector (hex
string)

Description	This parameter is the Transport selector portion of the Remote Responder's Presentation Address. The Presentation Address is used to distinguish between messages for different OSI applications.
Format	hexadecimal string
Valid value	2 to 64digits (must be an even number of digits)
Default value	none

Network address
(hex string)

Description	These are the NSAPs of a remote node on which a remote application resides. They are used with the Presentation, Session, and Transport parameters entered on this screen to create the remote Presentation Address for the remote application.
Format	hexadecimal string
Valid value	2 to 40 digits (must be an even number of digits)
Default value	none

HP FTAM/9000 Configuration

The FTAM Initiator, FTAM Responder, and FTAM Remote Responder each have one configuration screen. You will need to display the FTAM Initiator and FTAM Responder screens only if you want to change their default parameters.

To begin FTAM configuration

1. If you are in the osiadmin program, press **f8** until the osiadmin Main menu is displayed.

If you exited the osiadmin program after you finished installing FTAM, you instead need to enter `/usr/sbin/osiadmin` at the system prompt.

2. Select FTAM.

The FTAM menu is displayed.

3. Select Configure FTAM.

When you select Configure FTAM, osiadmin invokes the osiconf program to perform the configuration. The FTAM Configuration screen is displayed.

Figure 2-1 FTAM Configuration Screen

C.05.00		FTAM Configuration					
Highlight an item and then press "Return" or "Select Item".							
FTAM Initiator:							
View/Modify ...							
FTAM Responder:							
View/Modify ...							
Remote Responders:							
Add ...							
View/Modify ...							
Delete ...							
Help		Shell	Select Item	hpindxl	Reset Mode		Back To OSIADMIN

Proceed to the next section for the steps to configure the FTAM Initiator.

To configure the FTAM Initiator

1. Select FTAM Initiator: View/Modify.

The View/Modify FTAM Initiator screen shown below is displayed. It shows the default parameters for the FTAM Initiator.

2. Change the default values shown on the screen to match the values you added to the FTAM Initiator worksheet.
3. Press Perform Task f4.

A pop-up screen is displayed which states Task completed.

Figure 2-2 View/Modify FTAM Initiator Screen

```

C.05.00          View/Modify FTAM Initiator

  Fill in or modify the desired fields and then press "Perform Task".

Country . . . . .  _____ (optional)

Locality . . . . .  _____

Organization . . .  org_name

Organizational unit org_unit
                   myhostname

Application process ftam (mandatory)

Application entity  ftam_init (mandatory)

Maximum number of invocations . . . . . 10

Maximum number of associations per invocation 20

  Help  Main  Shell  Perform  hpindx1  _____  _____  _____  Exit
   Menu      Task
  
```

4. Press the space bar to return to the FTAM Configuration screen.

To configure the FTAM Responder

1. Select FTAM Responder: View/Modify.

The View/Modify FTAM Responder screen shown below is displayed. It shows the default parameter values for the FTAM Responder.

2. Change the default values shown in the screen to match the values you added to the FTAM Responder worksheet.
3. Press Perform Task [f4].

A pop-up screen is displayed which states Task completed.

4. Press the space bar to return to the FTAM Configuration screen.

Figure 2-3 View/Modify FTAM Responder Screen

C.05.00		View/Modify FTAM Responder						
Fill in or modify the desired fields and then press "Perform Task".								
Reponder's alias		myhostname						
Presentation selector (hex string)		0001						
Session selector (hex string) . .		0001						
Transport selector (hex string)		0001						
Maximum number of associations . .		50						
Help	Main Menu	Shell	Perform Task	hpindxl				Exit Task

NOTE If you make configuration changes to the FTAM Responder, you need to start HP FTAM for the changes to take effect. Refer to the last section of this chapter for instructions.

To configure the FTAM Remote Responder

1. Select Remote Responders: Add ...

The Add Remote Responder screen shown below is displayed.

2. Enter the values from the FTAM Remote Responder worksheet.
3. Press Perform Task **↑4**.

A pop-up screen is displayed which states Task completed.

4. Press the space bar to return to the FTAM Configuration screen.
5. Press Back to OSIADMIN f8.

The following message appears: You have modified the FTAM configuration. These changes may be invoked now, or you may invoke them later through the "Update OTS" option in OSIADMIN's OTS menu.

Figure 2-4 Add Remote Responder Screen

```

C.05.00                               Add Remote Responder

      Fill in or modify the desired fields and then press "Perform Task".

Remote responder's alias . . . . . █ _____

Presentation selector (hex string)  _____

Session selector (hex string) . .  _____

Transport selector (hex string)     _____

Network address (hex string) . .  _____
                                   _____
                                   _____


```

6. Enter y to execute `otsdate` or n to continue.

If you press y, you will see a message that the FTAM configuration has been updated. Press Return to return to the FTAM menu.

If you press n, you are returned directly to the FTAM menu. (You will need to update OTS later. Instructions are in the next section.)

7. Press Previous Menu **f8** to return to the osiadmin Main menu.

To start/update OTS and HP FTAM

OTS

OTS needs to be started or updated for your configuration changes to take effect. If you chose to update OTS after you finished the configuration steps in the previous section, you do not need to complete the following OTS steps.

1. At the osiadmin Main menu, select OTS. The OTS menu is displayed.
2. If OTS is not running, select Start OTS. If OTS is running, select Update OTS.

You will see messages on your screen as OTS starts or is updated.

3. Press **Return** when you are prompted to do so. The OTS menu is displayed.
4. Press Previous Menu **f8**.

The osiadmin Main menu is displayed. If you did not make configuration changes to the FTAM Responder, you do not need to start HP FTAM. Do not complete the following HP FTAM steps and instead proceed to chapter 3 for HP FTAM/9000 verification steps.

HP FTAM

If you made configuration changes to the FTAM Responder, you need to start HP FTAM for your configuration changes to take effect.

1. At the osiadmin Main menu, select FTAM. The FTAM menu is displayed.
2. Select Start FTAM.

You will see messages on the screen as FTAM starts.

3. Press **Return** when you are prompted to do so. The FTAM menu is displayed.
4. Press Previous Menu **f8**. The osiadmin Main menu is displayed.

Next, you will verify HP FTAM/9000 using the steps in chapter 3.

Starting the FTAM Responder at System Startup

The FTAM Responder can be started automatically at system startup.

To start the FTAM Responder automatically, in the file `/etc/rc.config.d/ftam`, set the variable `FTAMSTART` to “on”:

`FTAMSTART=on`

If you want to start the Responder with arguments, in the file `/etc/rc.config.d/ftam`, set the variable `FTAMSTART_ARGS` to the argument:

`FTAMSTART_ARGS=-inf`

If you do not want the FTAM Responder to start automatically, in the file `/etc/rc.config.d/ftam`, set the variable `FTAMSTART` to “off”:

`FTAMSTART=off`

Additional Configuration Parameters

Other optional parameters not configured for FTAM using osiadmin can be configured by modifying the configuration files:
/etc/opt/ots/conf/local_app, /etc/opt/ots/conf/remote_app,
/etc/opt/ots/conf/ftam_parms, /etc/opt/ftam/conf/ftam_conf, and
/etc/opt/ftam/conf/ftam_pw. The parameters are described in the next five sections.

FTAM Local Application Parameters: local_app

This file contains configuration information required by local FTAM applications. For example, the local P-addresses are contained in this file.

ae_max_send_size This is the maximum size Presentation layer PDU that can be sent. This value cannot be configured.

FORMAT	decimal
UNIT	bytes
RANGE	fixed
DEFAULT	16834
OSICONF	no
DYNAMIC	yes
SCREEN	NA
FIELD	NA

ae_max_rcv_size This is the maximum size Presentation layer PDU that can be received. This value cannot be configured.

FORMAT	decimal
UNIT	bytes
RANGE	fixed
DEFAULT	16834
OSICONF	no
DYNAMIC	yes
SCREEN	NA
FIELD	NA

ftam_ddn_lookup_path This parameter controls the mapping between aliases and Directory Distinguished Names (DDNs). It consists of a series of one or more “templates”. A template can be combined with an alias to produce a DDN, and an alias can be extracted from a DDN given a template.

When you specify an alias for a desired FTAM responder, the alias is combined with each template, in order, until a DDN is created that matches a DDN in the remote_app file. The P_addr associated with this DDN is used to establish the connection.

Additional Configuration Parameters

When you specify the alias for a desired FTAM responder through `osiadmin`, the alias is combined with the first template in the `ftam_ddn_lookup_path` to create the value of `ae_remote_aet` or `ftam_resp_aet`.

HP recommends that you use the default value. If you change it, HP recommends that the value of the `ftam_resp_aet` and `ae_remote_aet` always follow the form of the first template in `ftam_ddn_lookup_path`. HP also recommends using only one template at this time.

FORMAT	ASCII string
UNIT	NA
RANGE	The parameter has the form: /C=country /L=local /O=org_name /OU=org_unit /AP=ap_title /AE=ap_entity
DEFAULT	O=Org_name/OU=org_unit/OU=%s/AP=ftam/AE=resp
OSICONF	no
DYNAMIC	yes
SCREEN	NA
FIELD	NA

FTAM Initiator Parameters

ftam_init_aet This parameter specifies the AE title for the FTAM initiator process. This value should be derived from the ftam_ddn_lookup_path.

FORMAT ASCII string

UNIT NA

RANGE The parameter has the form:
/C=country
/L=local
/O=org_name
/OU=org_unit
/AP=ap_title
/AE=ap_entity
/

RANGE where:

country - two character country code from the ISO country list

local - locality (alphanumeric string)

org_name - organization (alphanumeric string)

org_unit - organization sub-unit (alphanumeric string)

ap_title - application process (alphanumeric string)

ap_entity - application entry (alphanumeric string)

The total line length must not exceed 1024 characters (including the parameter name and any white space).

Additional Configuration Parameters

DEFAULT	/O=org_name/OU=org_unit /OU=alias (from ftam_ddn_lookup_path parameter)/AP=ftam/AE=init
OSICONF	yes
DYNAMIC	yes
SCREEN	View/Modify FTAM Initiator
FIELD	Country/Locality/Organization/ Organizational Unit/Application Process/ Application Entity

ae_local_padd This parameter is the local Presentation Address for this application.

FORMAT	ASCII string
UNIT	NA
RANGE	The parameter has the form: P-sel.S-sel.T-sel where: P-sel - Presentation selector (0 - 32 hexadecimal digits) S-sel - Session selector (0 - 32 hexadecimal digits) T-sel - Transport selector (0 - 64 hexadecimal digits) Each selector must be an even number of digits. Absent selectors (0 length) are treated as null selectors. In this case, the period (.) between selectors must still be included. For example 31.30 indicates a null S-sel, 31.30. indicates a null T-sel
DEFAULT	0002.0002.0002 (Reserved P-Address)
OSICONF	no

DYNAMIC	yes
SCREEN	NA
FIELD	NA

WARNING

The following T-Selectors are reserved and cannot be used here. 435F626F677573, 52454C4159, 323236, 323332, 323338, 323430, 323432, 323434.

The NSAP portion of the Presentation Address is the NSAP configured for the local node and is added automatically by the configuration program.

ae_max_active_invoke This parameter sets the number of times this AE Title may be used by an FTAM application. This is important when an FTAM application (such as ftam, fcp) is being used by multiple users simultaneously.

FORMAT	decimal number
UNIT	invocations
RANGE	1 - 300
DEFAULT	10
OSICONF	yes
DYNAMIC	yes
SCREEN	View/Modify FTAM Initiator
FIELD	Maximum Number of Invocations

Configuring HP FTAM/9000
Additional Configuration Parameters

ae_max_active_assoc This parameter sets the number of connections an FTAM application is allowed to have established at any one time. This parameter is important for FTAM applications that use low level context sensitive functions and maintain multiple connections at any one time.

FORMAT	decimal number
UNIT	connections/associations
RANGE	1 - 50
DEFAULT	20
OSICONF	yes
DYNAMIC	yes
SCREEN	View/Modify FTAM Initiator
FIELD	Maximum Number of Associations/Invocation

ae_objid This object ID may optionally be sent by an application or service during connection establishment, and may be used for security or authentication purposes by non-HP equipment. If the other equipment does not require this object ID, no object ID should be configured. Globally unique object IDs are assigned by CCITT and/or ISO; a private organization can assign its own.

FORMAT	ASCII string
UNIT	NA
RANGE	Elements of the object ID are separated by periods. For example, 2.5.4.29

DEFAULT	none
OSICONF	no
DYNAMIC	yes
SCREEN	NA
FIELD	NA

ae_max_inb_assoc This parameter sets the number of inbound connections that the application can service at any one time. Since the FTAM initiator only creates connections and does not accept them, this value should always be 0.

FORMAT	decimal number
UNIT	connections/associations
RANGE	0
DEFAULT	0
OSICONF	no
DYNAMIC	yes
SCREEN	NA
FIELD	NA

FTAM Responder

ftam_resp_aet This parameter specifies the AE title for the FTAM responder process.

FORMAT ASCII string

UNIT NA

RANGE The parameter has the form:
 /C=country
 /L=local
 /O=org_name
 /OU=org_unit
 /AP=ap_title
 /AE=ap_entity
 /

RANGE where:

 country - two character country code from the ISO country list

 local - locality (alphanumeric string)

 org_name - organization (alphanumeric string)

 org_unit - organization sub-unit (alphanumeric string)

 ap_title - application process (alphanumeric string)

 ap_entity - application entry (alphanumeric string)

 The total line length must not exceed 1024 characters (including the parameter name and any white space).

DEFAULT	/O=org_name/OU=org_unit /OU=alias (from ftam_ddn_lookup_path parameter)/AP=ftam/AE=init
OSICONF	yes
DYNAMIC	yes
SCREEN	View/Modify FTAM Initiator
FIELD	Responder's Alias (Allows changing OU alias)
ae_local_paddr	This parameter is the local Presentation Address for this application
FORMAT	ASCII string
UNIT	NA
RANGE	The parameter has the form: P-sel.S-sel.T-sel where: P-sel - Presentation selector (0-32 hexadecimal digits) S-sel - Session selector (0-32 hexadecimal digits) T-sel - Transport selector (0-64 hexadecimal digits) Each selector must be an even number of digits. Absent selectors (0 length) are treated as null selectors. In this case, the period (.) between selectors must still be included. For example 31.30 indicates a null S-sel, 31.30. indicates a null T-sel.
DEFAULT	0001.0001.0001 (Reserved P-address)
OSICONF	yes

Configuring HP FTAM/9000
Additional Configuration Parameters

DYNAMIC	yes
SCREEN	View/Modify FTAM Responder
FIELD	Presentation Selector Session Selector Transport Selector

WARNING	The following T-Selectors are reserved and cannot be used here. 435F626F677573, 52454C4159, 323236, 323332, 323338, 323430, 323432, 323434.
---------	--

The NSAP portion of the Presentation Address is the NSAP configured for the local node and is added automatically by the configuration program.

ae_objid This object ID may optionally be sent by an application or service during connection establishment, and may be used for security or authentication purposes by non-HP equipment. If the other equipment does not require this object ID, no object ID should be configured. Globally unique object IDs are assigned by CCITT and/or ISO; a private organization can assign its own.

FORMAT	ASCII string
UNIT	NA
RANGE	Elements of the object ID are separated by periods. For example, 2.5.4.29
DEFAULT	none
OSICONF	no
DYNAMIC	yes
SCREEN	NA
FIELD	NA

ae_max_inb_assoc This parameter sets the number of inbound connections that the application can service at any one time.

FORMAT	decimal number
UNIT	connections/associations
RANGE	10 - 100
DEFAULT	50
OSICONF	yes
DYNAMIC	yes
SCREEN	View/Modify FTAM Responder
FIELD	Maximum Number of Associations

FTAM Local Applications

ae_local_paddr This parameter is the local Presentation Address for this application

FORMAT	ASCII string
UNIT	NA
RANGE	<p>The parameter has the form: P-sel.S-sel.T-sel where: P-sel - Presentation selector (0-32 hexadecimal digits) S-sel - Session selector (0-32 hexadecimal digits) T-sel - Transport selector (0-64 hexadecimal digits) Each selector must be an even number of digits. Absent selectors (0 length) are treated as null selectors. In this case, the period (.) between selectors must still be included. For example 31..30 indicates a null S-sel, 31..30. indicates a null T-sel.</p>
DEFAULT	none
OSICONF	yes
DYNAMIC	yes
SCREEN	Add/View/Modify FTAM Local Application
FIELD	Presentation Selector Session Selector Transport Selector

WARNING

The following T-Selectors are reserved and cannot be used here. 435F626F677573, 52454C4159, 323236, 323332, 323338, 323430, 323432, 323434. There are also two reserved default P-Addresses. 0001.0001.0001 and 0002.0002.0002.

The NSAP portion of the Presentation Address is the NSAP configured for the local node and is added automatically by the configuration program.

ae_objid This object ID may optionally be sent by an application or service during connection establishment, and may be used for security or authentication purposes by non-HP equipment. If the other equipment does not require this object ID, no object ID should be configured. Globally unique object IDs are assigned by CCITT and/or ISO; a private organization can assign its own.

FORMAT	ASCII string
UNIT	NA
RANGE	Elements of the object ID are separated by periods. For example, 2.5.4.29
DEFAULT	none
OSICONF	no
DYNAMIC	yes
SCREEN	NA
FIELD	NA

ae_max_active_invoke This parameter sets the number of times this AE Title may be used by an FTAM application. This is important when the application is being used by multiple users simultaneously.

Additional Configuration Parameters

FORMAT	decimal number
UNIT	invocations
RANGE	1 - 300
DEFAULT	1
OSICONF	yes
DYNAMIC	yes
SCREEN	Add/View/Modify FTAM Local Application
FIELD	Maximum Number of Invocations

ae_max_active_assoc This parameter sets the number of connections the application is allowed to have established at any one time. This parameter is important for applications that use low level context sensitive functions and maintain multiple connections at any one time.

FORMAT	decimal number
UNIT	connections/associations
RANGE	1 - 50
DEFAULT	20
OSICONF	yes
DYNAMIC	yes
SCREEN	Add/View/Modify FTAM Local Application
FIELD	Maximum Number of Associations/invocations

ae_max_inb_assoc This parameter sets the number of inbound connections that the application can service at any one time.

FORMAT	decimal number
UNIT	connections/associations
RANGE	0 - 50
DEFAULT	10
OSICONF	yes
DYNAMIC	yes
SCREEN	Add/View/Modify FTAM Local Application
FIELD	Maximum Number of Inbound Associations

FTAM Remote Parameters: remote_app

This file contains the list of remote FTAM applications. For example, the AE Titles of remote FTAM applications are configured in this file. The following parameters are found in the remote_app file:

ae_remote_aet This parameter specifies the AE title for a remote FTAM application.

FORMAT ASCII string

UNIT NA

RANGE The parameter has the form:
 /C=country
 /L=local
 /O=org_name
 /OU=org_unit
 /AP=ap_title
 /AE=ap_entity
 /

RANGE where:

 country - two character country code from the ISO country list

 local - locality (alphanumeric string)

 org_name - organization (alphanumeric string)

 org_unit - organization sub-unit (alphanumeric string)

ap_title - application process (alphanumeric string)

ap_entity - application entry (alphanumeric string)

The total line length must not exceed 1024 characters (including the parameter name and any white space).

DEFAULT	/O=org_name/OU=org_unit /OU=alias (from ftam_ddn_lookup_path parameter)/AP=ftam/AE=init
OSICONF	yes
DYNAMIC	yes
SCREEN	View/Modify FTAM Initiator
FIELD	FTAM AE Title

ae_remote_paddr	This parameter is the remote Presentation Address for this application.
FORMAT	ASCII string
UNIT	NA
RANGE	<p>The parameter has the form: P-sel.S-sel.T-sel.NSAP1.NSAP2...NSAP8 where: P-sel - Presentation selector (0-32 hexadecimal digits) S-sel - Session selector (0-32 hexadecimal digits) T-sel - Transport selector (0-64 hexadecimal digits) Each selector must be an even number of digits. Absent selectors (0 length) are treated as null selectors. In this case, the period (.) between selectors must still be included. For example 31..30 indicates a null S-sel, 31.30. indicates a null T-sel. NSAP # - Network Address (0-40 hexadecimal digits) 1 - 8 NSAPs may be specified. When multiple NSAPs are given, the ACSE layer of FTAM will attempt to connect with NSAP1. If (and only if) the connect fails, will NSAP2 be tried until all NSAPs are tried. Omit any unused NSAP slots including period(.). For example: 32.31.30.123456 specifies one remote NSAP, 123456.</p>
DEFAULT	none
OSICONF	yes

DYNAMIC	yes
SCREEN	Add/View/Modify Remote Responder Add/View/Modify FTAM Remote Application
FIELD	Presentation Selector Session Selector Transport Selector Network Address
ae_remote_objid This object ID may optionally be sent by an application or service during connection establishment, and may be used for security or authentication purposes by non-HP equipment. If the other equipment does not require this object ID, no object ID should be configured. Globally unique object IDs are assigned by CCITT and/or ISO. A private organization and assign its own. The object ID has to follow the ASN1 encoding rule. The first digit is 0 (CCITT), 1 (ISO), or 2 (Joint ISO-CCITT). If the first digit is 0 or 1, the second digit is in a range of 0-39. The last digit is an AE qualifier. For example: 1.3.9999.1.7.7	
FORMAT	ASCII string
UNIT	NA
RANGE	Elements of the object ID, separated by periods.
DEFAULT	none
OSICONF	no
DYNAMIC	yes
SCREEN	NA
FIELD	NA

FTAM Parameters: ftam_parms

The following group of parameters are used by the FTAM applications running on the local node. These parameters are located in the ftam_parms file.

ft_qos This parameter allows you to configure the class of error recovery for all FTAM connections. A list of the FTAM error classes follows.

FT_NO_RECOVERY	0
FT_CLASS_1_RECOVERY	1
FT_CLASS_2_RECOVERY	2
FT_CLASS_3_RECOVERY	3 (not supported)

If the unsupported class 3 is configured, the class of 2 will be used instead.

FORMAT	decimal number
UNIT	FTAM error class identifier
RANGE	0, 1, 2, 3
DEFAULT	0
OSICONF	no

DYNAMIC	yes
SCREEN	NA
FIELD	NA

ft_chkpt_window This parameter allows you to configure the size of the checkpoint window in this local system. It is used by all FTAM connections. The value is only used if the ft_qos error class is set to 1 or 2.

FORMAT	decimal number
UNIT	number of outstanding checkpoints allowed
RANGE	0 - 100
DEFAULT	1
OSICONF	no
DYNAMIC	yes
SCREEN	NA
FIELD	NA

ft_no_of_recovery This parameter allows you to configure the number of recoveries that will be attempted on each file transfer. This will prevent looping of the recovery procedure. The value is only used if the ft_qos error class is set to 1 or 2.

FORMAT	decimal number
UNIT	number of times to attempt recovery
RANGE	1 - 99999
DEFAULT	5
OSICONF	no
DYNAMIC	yes
SCREEN	NA
FIELD	NA

ft_recovery_timer This parameter allows you to configure the time of delay required for the local FTAM responder to recover, before the recovery procedure begins. The timer is sent back to the FTAM initiator via the F-RECOVER response. The FTAM initiator will retry with an F-RECOVER request after the timer has expired. The value is only used if the ft_qos error class is set to 1 or 2.

FORMAT	decimal number
UNIT	seconds
RANGE	0 - 3600

DEFAULT	30
OSICONF	no
DYNAMIC	yes
SCREEN	NA
FIELD	NA

ft_recovery_err_retry This parameter allows you to configure the number of attempts that the FTAM initiator will re-send an F-RECOVER request when the FTAM responder is not ready to perform a recovery. The FTAM initiator will retry up to the number of retries configured as long as a negative F-RECOVER response is received and the current activity state is in progress for read or write. The value is only used if the ft_qos error class is set to 1 or 2.

FORMAT	decimal number
UNIT	maximum number of retries
RANGE	0 - 100
DEFAULT	2
OSICONF	no
DYNAMIC	yes
SCREEN	NA
FIELD	NA

FTAM Parameters: ftam_conf

The parameters in this file generally do not need to be set or changed for normal FTAM operations. They are required when interoperating with machines which require these optional parameters to be specified in a way that is different from the default behavior of HP's FTAM.

The environment variable `AEQ_SENDING` is supported to determine if the AE qualifiers (AEQ) will or will not be encoded and sent in the AARQ and AARE PDUs. This environment variable can have three values: "no", "yes", and "file". If it is set to "no," then the FTAM applications will not encode and send the AEQ in the calling, called, or responding AE titles. These AE titles are specified in the `local_app` and `remote_app` files. If it is set to "yes," the AEQ will always be encoded and sent. If it is set to "file," the values defined in the `ftam_conf` file are used. If it is set to a value other than "no," "yes," or "file," a default, the values defined in the `ftam_conf` file, is used.

The following group of parameters are used by the FTAM applications running on the local node. These parameters are located in the `ftam_conf` file. These are optional parameters. If these are not set or if the `ftam_conf` file does not exist, FTAM applications still run using default values.

local_init	This parameter indicates that the subsequent AEQ_enable parameter specified applies to ftam_init.
AEQ_enable	This parameter decides if the Application Entity Qualifier (AEQ) will or will not be encoded and sent as part of the Calling Application Entity Title (AET) in the ACSE Association Request (AARQ) PDU. If it is set to 0, then the Calling AEQ will not be encoded and sent. If it is set to 1 or if this parameter is not defined, the default action is used. The default action is to encode and send the Calling AEQ. Also, for this parameter to be used, the Calling AET should have been defined in the local_app file.
FORMAT	decimal number
UNIT	NA
RANGE	0 - 1
DEFAULT	1
OSICONF	no
DYNAMIC	yes
SCREEN	NA
FIELD	NA

local_responder	This parameter indicates that the subsequent AEQ_enable parameter specified applies to ftam_responder.
AEQ_enable	This parameter decides if the Application Entity Qualifier (AEQ) will or will not be encoded and sent as part of the responding Application Entity Title (AET) in the ACSE Association Response (AARE) PDU. If it is set to 0, then the responding AEQ will not be encoded and sent. If it is set to 1 or if this parameter is not defined, the default action is used. The default action is to encode and send the responding AEQ. Also, for this parameter to be used, the responding AET should have been defined in the local_app file.

FORMAT	decimal number
UNIT	NA
RANGE	0 - 1
DEFAULT	1
OSICONF	no
DYNAMIC	yes
SCREEN	NA
FIELD	NA

remote_responder This parameter is the name of the remote host machine. The subsequent value of the AEQ_enable parameter applies to this machine.

FORMAT	ASCII string
UNIT	NA
RANGE	NA
DEFAULT	NA
OSICONF	no
DYNAMIC	yes
SCREEN	NA
FIELD	NA

AEQ_enable This parameter decides if the Application Entity Qualifier (AEQ) will or will not be encoded and sent as part of the responding Application Entity Title (AET) in the ACSE Association Request (AARQ) PDU. If it is set to 0, then the called AEQ will not be encoded and sent. If it is set to 1 or if this parameter is not defined, the default action is used. The default action is to encode and send the called AEQ. Also, for this parameter to be used, the called AET should have been defined in the remote_app file.

FORMAT	decimal number
UNIT	NA
RANGE	0 - 1
DEFAULT	1
OSICONF	no
DYNAMIC	yes
SCREEN	NA
FIELD	NA

FTAM Password Types: ftam_pw

The following parameters are used to specify how the password is encoded and sent in the Protocol Data units (PDUs). The password can be sent as either octet strings or graphic strings. If the ftam_pw file is not present or if the parameters contain invalid values, FTAM applications uses a default behavior. The default behavior is to encode and send the passwords as octet strings.

Most responder implementations allow passwords to be encoded and sent as either octet or graphic strings. Therefore the contents of this file do not normally require any changes. But, when interoperating with a remote system that supports only graphic string passwords, the parameters in this file need to be changed suitably.

ftam_responder This parameter specifies the name of the remote host. The password type is specified in the filestore_pw parameter.

FORMAT	ASCII string
UNIT	NA
RANGE	NA
DEFAULT	NA
OSICONF	no
DYNAMIC	yes
SCREEN	NA
FIELD	NA

filestore_pw

This parameter specifies how the filestore password is encoded and sent. If it is set to 0, the password is sent as an octet string. If it is set to 1, the filestore password is sent as a graphic string. For any other value, the password is sent as an octet string.

3 Verifying HP FTAM/9000

Verification Overview

To verify that HP FTAM/9000 has been configured correctly, you will run two tests. The first test will perform a local loopback test from the osiadmin Main menu. The second test will use the FTAM interactive interface to transfer a file on the local system.

If you experience unexpected system behavior, refer to the “Troubleshooting” chapter in the *OSI Troubleshooting Guide*.

To verify the HP FTAM/9000 configuration

This local connection test is to verify that HP FTAM/9000 is configured correctly.

1. If you are in the osiadmin program, press **f8** until the osiadmin Main menu is displayed.

If you exited the osiadmin program after you finished configuring FTAM, you instead need to enter `/usr/sbin/osiadmin` at the system prompt.

2. Select FTAM.

The FTAM menu is displayed.

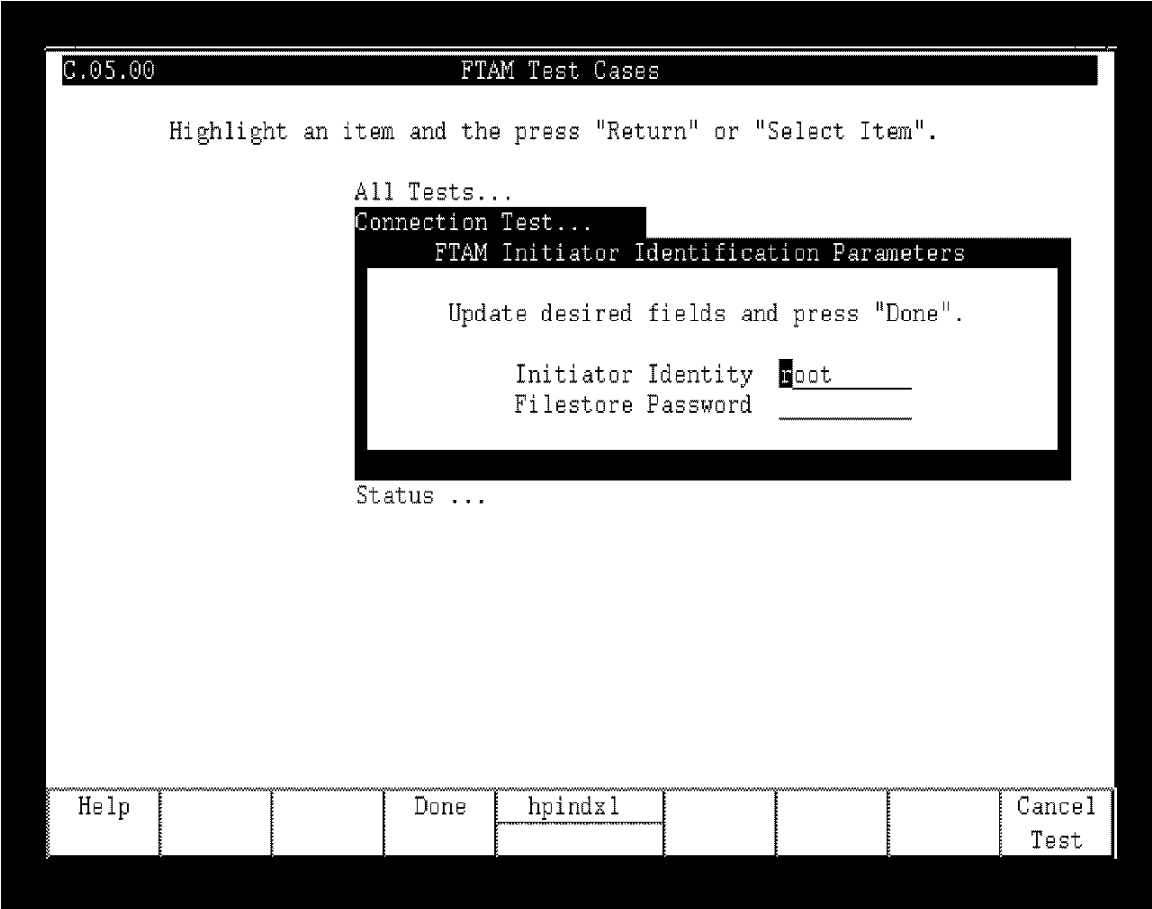
3. Select Test Connectivity.

osidiag is loaded, and the FTAM Test Cases menu is displayed .

4. Select Connection Test ...

The FTAM Initiator Identification Parameters pop-up menu shown below is displayed.

Figure 3-1 FTAM Initiator Identification Parameters Pop-Up Menu



5. Enter the password for your system.
6. Press Done f4.

The FTAM Destination Presentation Address pop-up menu shown below is displayed. The default value that you will see on your screen is correct for establishing a local connection.

Figure 3-2 FTAM Destination Presentation Address Pop-Up Menu

[illegible]

7. Change the default parameters, if necessary, referring to the FTAM Responder worksheet.
8. Press Done **f4**.

When you see the --More-- prompt at the bottom of the screen, press the space bar to scroll the message down. If you see a FAILED test status instead of a PASSED test status, refer to the *OSI Troubleshooting Guide* for information.
9. Press Return to clear the screen.
10. Press Exit OSIDIAG **f8**.
11. Press Previous Menu **f8**.

12. Press Exit OSIADMIN #8.

You are returned to the system prompt.

To verify HP FTAM/9000 operation

In this test, you will use the FTAM interactive interface to transfer a file on the local system. The “remote” application that is referred to below is the FTAM Responder.

1. At the system prompt, enter `/opt/ftam/bin/ftam`.
2. At the `ftam>` prompt, enter `open <remote_node>`.
<remote_node> is the remote application's alias from the FTAM Responder worksheet in chapter 2. You will be prompted for a user name.
3. Enter your login on the remote node.
The default is your local user name. You will be prompted for a password.
4. Enter the password for the given login on the remote.
5. Enter `put /opt/ots/lbin/bin2conf /tmp/bin2conf`.
6. Enter `get /tmp/bin2conf /tmp/bin2conf`.
7. Enter `quit`.
8. At the root prompt (#), enter `cmp /opt/ots/lbin/bin2conf /tmp/bin2conf`.

If `cmp` returns without printing anything, the files match and you have verified FTAM.

If the verification test failed, refer to the “Performing Remote Interoperability Procedures” chapter in the *OSI Troubleshooting Guide*. Follow the instructions in the “FTAM” section of that chapter.

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