

eFT323 / eFT323I

NetEx/eFT[™] for HP9000 & Integrity HP-UX Systems

Release 5.2.0 N4

Memo To Users

October 1, 2008

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Support

Customers can contact NESi customer support to request assistance with this software via the following methods:

- By calling: (800) 854-0359
- By e-mailing: support@netex.com
- By filling out a form on the Customer Support page at: <u>http://www.netex.com</u>

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Information in this publication is subject to change. Comments concerning the contents of this manual should be directed to:

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Introduction

This guide describes how to install the Network Executive Software (NESi) **eFT323** NetEx/eFT product on HP9000/HP-UX PA-RISC platforms and the **eFT323I** NetEx/eFT product on HP-UX Integrity (64bit) platforms. Unless otherwise noted herein, all descriptions and references to eFT323 are applicable to both eFT323 and eFT323I. In particular, the details provided in this document for installing eFT323 are identical for both products.

Special Features

This version of the NetEx/eFT product features the following:

• When installed on HP-UX 11.x or newer releases, this product will support large files (files of size greater than 2 Gbytes).

Prerequisites

- Access to the **root** account.
- Up to 26 Mbytes of disk space. This can be divided over two file systems, if necessary, with up to 21 Mbytes for a distribution directory, and up to 5 Mbytes for a target directory.
- The install script will ask for one UNIX UserID name as the owner of all installed files. The UserID must exist at installation time.
- The installation script requires the use of the **make** and **ld** (linker) utilities. These utilities are released with the HP-UX operating system.
- Customers must obtain a software KEY from NESi prior to running the eFT323 software. Customers must contact NESi customer support with the customer site name, hostname, and the EFT product designator (e.g., eFT323 for PA-RISC systems or eFT323I for Integrity systems). NESi customer support will supply the necessary key once this information has been received. The customer needs to place this key into the NESikeys file as discussed in "Appendix E. License Key File" on page 20.

For TCP/IP Protocol:

The host must be a functioning node on the TCP/IP Local Area Network.

For NETEX Protocol:

H320IP NetEx/IP must be fully installed, tested and running.

Tested Configurations

This product has been tested on the following configurations:

- HP-UX 11.11 (11i V1) on a HP9000/E25
- HP-UX 11.23 (11i V2) on a HP Integrity rx8640 (Itanium)

• HP-UX 11.31 (11i V3) on a HP Integrity rx8640 (Itanium)

Related Publications

The following books provide more information about this software product *EFTxx3* (*Rel 5.0.0*) *NetEx/eFT for UNIX Software Reference Manual*

Service Notes

The following are known problems and/or limitations with this release of eFT323 NetEx/eFT:

- Traditional NetEx/eFT file transfers will support large files on versions of HP-UX that provide this feature (e.g., HP-UX 11.x or later). This release of NetEx/eFT is not supported on an OS version prior to 11.x.
- This release of NetEx/eFT does not support the NetEx/IP Protocol on Integrity systems. If you select the "NETEX" protocol during NetEx/eFT installation on Integrity, the installation will fail with the following message:

```
EFT323 currently does not run with NETEX on HP-UX ia64 systems.
```

• When running LOCAL or REMOTE commands, if there are commands within an invoked shell script file that you do not want to execute when under NetEx/eFT, you can test for an environment variable USERA, defined to be "yes" by NetEx/eFT. For example, if you enter the NetEx/eFT command "remote myscript", and "myscript" is a Bourne shell script containing an "echo Hello World" command, you can avoid the "Hello World" output during NetEx/eFT LO-CAL or REMOTE invocation by making the following edit:

The USERA environment variable is always defined under NetEx/eFT as described above and can be tested for within any shell script file.

- If you use the NetEx/eFT Initiator (a.k.a. the "user" command, or NetEx/eft "client") interactively, you may find that your first command is garbled after logging into an HP-UX system via the Service Initiator. Your terminal session may even hang in some cases. This is caused by the Service Initiator login output, which echoes the introductory information from the HP-UX login (e.g., the "Message of the Day"). This data may contain terminal control information that is inadvertently causing your terminal to respond. Since the login has already been completed through a pseudo-terminal by the Service Initiator, the terminal response is seen by the Initiator as garbage. To avoid this problem, you can add the '-verbose off' qualifier on the connect command, or as a reply to the 'Qualifiers?' prompt if you are using the login alias.
- In some HP-UX environments, each successful connection into the HP9000 may leave an active UNIX shell process running after the connection has been terminated. If this problem occurs, the Service Initiator startup file can be modified to assure that the shell exits properly. Edit the file '/usr/nesi/eft/si/startup' and replace the following line:

```
EFT SERVER exec $sicom/user/start_server -si -service %s
```

with

EFT SERVER exec \$sicom/user/start_server -si -service %s; exit

The Service Initiator must be stopped and restarted for this change to take effect. All users planning to log in to the HP9000 via NetEx/eFT will need to make sure that the tset command in their UNIX shell start-up file (either ".login" for C shell or ".profile" for Bourne shell) does not prompt the user for a terminal type when logging in through a pseudo-terminal. Otherwise the shell would see the exit command before the NetEx/eFT server is started, and the login will fail. See the UNIX man page for tset for further information.

- If three keyboard interrupts in a row are pressed in response to an ASK -SECURE command, the user's terminal characteristics may not be reset (i.e., the terminal may be left in no echo mode). In this case, the user should reset the terminal manually, this can be done with an 'stty echo' command.
- Due to a change beginning with release N1 of NetEx/eFT, the SERVICE INITIATOR service name defaults to "EFT"; therefore users running NetEx/eFT and USER-Access in a NETEX environment will be required to use the –SERVICE connect qualifier in connecting between EFT and UA hosts. Connecting from EFT to UA hosts requires the use of "–SERVICE USER" and connecting from UA to EFT hosts requires the use of "-SERVICE EFT".
- Running this release of the NetEx/eFT product on Integrity is currently restricted to use over the TCP/IP network protocol only. There is currently no support for NetEx/IP on HP-UX Integrity systems

Installation Notes

This section provides complete installation procedures for the eFT323 HP-UX NetEx/eFT product.

Before You Begin

Before you begin installation, note the following:

- Make certain that you have all of the items listed in **Prerequisites** in the Introduction section.
- Add the encrypted Software Key obtained from Network Executive Software to the NESi License Key file (NESikeys) that will normally reside in the NetEx/eFT ROOT directory (normally /usr/nesi/eft). See "Appendix E. License Key File" on page 20 for the format of this file if you need to create it for the first time.
- As you follow the installation procedure, use the special instructions for the protocol type on which the NetEx/eFT product will run on your system (TCP/IP or NETEX).
- If this is an update to NetEx/eFT, stop the old Service Initiator before you begin. Use the utility provided (/usr/nesi/eft/si/control, shown below), replacing the hostname *localhost* with the name of your local host. For more information, see "Appendix B. Stopping the Service Initiator" on page 16.

```
$ /usr/nesi/eft/si/control -h localhost stop
```

- During installation, you will load the NetEx/eFT release into a distribution directory, and then install it into the target directory. Existing files in the target directory will be automatically replaced with the new release files, but any user-modified control files will be automatically preserved.
- The installation process does not modify anything in the distribution directory, which makes it possible to perform repeated installations into different target directories, each with different install options.
- To preserve disk space, you can delete the distribution directory once NetEx/eFT is fully installed into the target directory.
- The installation procedures and examples assume a distribution directory of /usr/nesi/eft_n4 and a target directory of /usr/nesi/eft. However, any valid directory (with adequate space) can be selected. If you use alternate directories, be sure to replace /usr/nesi/eft_n2 and /usr/nesi/eft with the alternate directories in the steps that follow.

Installation Procedure

To perform a complete installation and verification of this product, follow the steps in this section.

Step 1. Create the NetEx/eFT Distribution Directory

Create your distribution directory and set your current default directory:

```
$ mkdir /usr/nesi (if it does not exist)
$ chmod 755 /usr/nesi
$ mkdir /usr/nesi/eft_n4
```

\$ cd /usr/nesi/eft_n4

Step 2. Load the Distribution

The NetEx/eFT release for HP-UX is distributed as one TAR file on CD-ROM. The TAR file name is "eft323_n4.tar" (for PA-RISC) and "eft323i_n4.tar" for (Integrity).

Mount the CD-ROM to a named file system entry point (e.g., /cdrom). The specific mount command is determined by the system software components installed on your UNIX system. Refer to your UNIX Operating System manual or UNIX System Administrator for assistance in mounting the CD-ROM.

The NetEx/eFT release for HP-UX is distributed as a single TAR file on the CD-ROM. To load NetEx/eFT, use the following procedure, replacing '/cdrom' below with the name of the mounted CD-ROM directory. Load the distribution into the distribution directory:

\$ tar -xvf /cdrom/eft323.tar

Note: For best results, load the distribution directly from CD-ROM to the node on which the files will be stored. If this is not possible, your current node must be allowed root access to the file server node on which the files are loaded.

The distribution CD-ROM also contains a copy of the eFT323 "Memo To Users" and *EFTxx3 Software Reference Manual* in Adobe PDF format. These two documents are not part of the software distribution TAR file and can be viewed with the Adobe Acrobat or Acrobat Reader applications directly from the CD-ROM.

The filenames are:

- *eft323m.pdf* EFT323 Memo To Users (covers both eFT323 and eFT323I)
- *eftxx3.pdf* EFTxx3 NetEx/eFTTM for UNIX Systems Software Reference Manual

Step 3. Install the Distribution

The NetEx/eFT installation script prompts for a valid install option, the target directory, and the type of network (TCP/IP or NETEX). Press ENTER to use the default response shown within square brackets.

If an earlier version of NetEx/eFT already resides in the selected target directory, then existing executables will be overwritten, but the prior version of each updated text file (for example, a script or configuration file) is preserved with "_save" appended to the name.

To run the install script, you must be logged in as **root**. If you are not already logged in as **root**, invoke /bin/su before proceeding.

To run the installation script:

\$./install

Note: During the installation procedure (between the 'Starting NetEx/eFT installation' and the 'NetEx/eFT installation completed' messages) the install program does the following:

- Creates the NetEx/eFT target directories, if necessary.
- Binds the NetEx/eFT modules: CLIENT, SERVER, CONTROL, SVCINIT.
- Changes the ownership of the Service Initiator to root and sets the SETUID permission bit for this executable. This allows the Service Initiator to run with root privilege, giving it permission to update login-accounting files (utmp and wtmp files).
- Copies the NetEx/eFT control files to the target directory. Any previous control files that were modified are preserved.
- Creates two symbolic links, user and uaserver, that reference the installed NetEx/eFT CLIENT and SERVER executables. The symbolic links will be created in the /usr/bin directory unless an alternate directory is specified. This allows all users with the selected directory in their search paths to run these executables. If symbolic links named "user" and "uaserver" already exist, they will be replaced. If a file or directory exists with one of these names, the original will be preserved with the name "user_save" or "uaserver_save", respectively.

Step 4. Update Network Databases

For TCP/IP Protocol:

No action is required at this point for TCP/IP.

For NETEX Protocol:

No action is required at this point for NETEX.

Step 5. Start the Service Initiator

Important note: Before starting the Service Initiator, you may have to edit its startup script. If your system has been altered, for example, so that the UNIX login procedure uses non-standard prompts for "login:" or "Password:", or if the "Login incorrect" message has been changed, then the appropriate keywords will need to be likewise modified in the file /usr/nesi/eft/si/startup. See "Appendix C. Service Initiator Keywords" on page 17 for a description of each keyword.

To start the Service Initiator, issue the following command:

```
$ /usr/nesi/eft/si/startup
```

The Service Initiator will log messages to the file /usr/nesi/eft/si/svcinit.log. Use the following tail command to look at the log file:

\$ tail /usr/nesi/eft/si/svcinit.log

One of the messages should read:

EFT Service offered

This confirms that the NetEx/eFT service 'EFT' is being offered by the Service Initiator.

Step 6. Verify NetEx/eFT

A simple verification script has been supplied as part of the NetEx/eFT release. This verification script prompts you for the local host name of your system, and a valid username and password on this host (for verification purposes, the username and password specified should at least have the privileges you do - specify your username and password to be safe). It attempts to connect back to the host, login, and send and receive several files.

To invoke the verification procedure, set your working directory to the *user*'s subdirectory and invoke NetEx/eFT with the input script *verify.ua*, as follows:

\$ cd /usr/nesi/eft/user \$ user verify.ua

You should see several messages printed to your terminal, followed by a final **Verification Successful** message. If an error is encountered during the verification, the procedure terminates and an error message is displayed.

Note: The NetEx/eFT Initiator (client) is normally invoked with the command *user*. If *user* is already a command on your system (for some other purpose), *usera* is recommended. The installation procedure automatically creates a symbolic link named 'user' in a selected 'bin' directory. If a file already had that name, it was moved to *user_save*.

Step 7. Set Up Automatic Service Initiator Startup

These instructions should be followed if HP-UX B.11.00 is running.

The NetEx/eFT Service Initiator can be started automatically at boot time by creating a startup file in the directory '/sbin/init.d' and adding a symbolic link to this file in the directory '/sbin/rc2.d'. This installation step is optional.

Create the startup file and symbolic links using the naming conventions described in the rc man page. First, create a file named '/sbin/init.d/svcinit' by making a copy of '/sbin/init.d/template':

\$ cp -p /sbin/init.d/template /sbin/init.d/svcinit

Next, use an editor to make the file '/sbin/init.d/svcinit' look like the following file. Remember to replace /usr/nesi/eft below with your definition of this root directory. You may also need to replace "localhost" with the local network-name of your host (particularly if this is a NETEX installation):

```
#!/sbin/sh
PATH=/usr/sbin:/usr/bin:/sbin
export PATH
rval=0
case "$1" in
'start msg')
      echo "Start NetEx/eFT SVCINIT"
      ;;
'stop_msg')
      echo "Stop NetEx/eFT SVCINIT"
      ;;
'start')
      if [ -x /usr/nesi/eft/si/startup ]
      then
            nohup /usr/nesi/eft/si/startup >/dev/null 2>&1
            echo "SVCINIT started"
      else
            echo "Unable to start SVCINIT"
```

```
rval=1
fi
;;
'stop')
if [ -x /usr/nesi/eft/si/control ]
then
/usr/nesi/eft/si/control stop -h localhost
fi
;;
*)
echo "usage: $0 {start|stop}"
rval=1
;;
esac
exit $rval
```

Last, add symbolic links with names that adhere to the conventions described in the man page for rc. The Service Initiator can be one of the last applications started for run level 2, therefore the sequence number for startup should be high, and the sequence number for shutdown (to run level 1) should be low. The following example illustrates suggested names for these symbolic links:

```
$ ln -s /sbin/init.d/svcinit /sbin/rc2.d/S990svcinit
$ ln -s /sbin/init.d/svcinit /sbin/rc1.d/K009svcinit
```

At system boot time, the Service Initiator will be started with the process name SVCINIT. Its messages will be logged to the file /usr/nesi/eft/si/svcinit.log.

At this point, you may wish to verify your changes by rebooting the system.

This completes the installation of NetEx/eFT on your client host.

Release 5.2.0 N4

The following features or corrections are included:

- This release of NetEx/eFT continues to support installation and operation on both PA-RISC (HP-UX 11.11 and later) and Integrity systems (HP-UX 11.23 and HP-UX 11.31). When running on PA-RISC systems, the product name is **eFT323**; when running on Integrity, the product name is **eFT323**.
- This release resolves the login problem that occurred on HP-UX 11.23 systems when the eFT323 si/startup file specified LOGINTYPE=login and NetEX/eFT users on remote systems attempted to connect to eFT on HP-UX. The **eFT323I** Service Initiator component has been enhanced with the new getuts(3C) API that is now part of HP-UX on Integrity systems.
- This release fixes a bug that prevented the eFT323 Service Initiator from starting if the service name in the si/startup file was preceded by one or more leading white space characters.

Release 5.2.0 N3

The following features or corrections are included:

- This release of NetEx/eFT now enables installation and operation on both PA-RISC (HP-UX 11.11 or later) and Integrity (64-bit) systems (HP-UX 11.23). When running on PA-RISC systems, the product name is **eFT323**; when running on Integrity, the product name is **eFT323**.
- Running this release of the NetEx/eFT product on Integrity is currently restricted to using the TCP/IP network protocol.

Release 5.2.0 N2

The following features or corrections are included:

- This release of NetEx/eFT was built on HP-UX 11.11 and tested on HP-UX 11.11 and HP-UX 11.23.
- The NetEx/eFT product now runs on HP-UX 11iV2 as well as on prior releases of HP-UX 11.

Release 5.2.0 N1

This is the initial release of this product.

- This release of NetEx/eFT was built and tested on HP-UX 11.0.
- CAM support, including the use of UABACKUP and UARESTORE, has been disabled.
- NESi license software has been integrated into the product.
- Support for use of ftp aliases has been added.

• If the previous release of the Service Initiator would be started using the rlogin protocol as the default, it would reject remote NetEx/eFT logins with the message "Failed to invoke RLOGIN daemon on host 'localhost'". This problem has been fixed.

Appendix A. Updating the TCIP/IP Network Control Files

For TCP/IP:

The /etc/services network control file can be updated to change the NetEx/eFT default. If Network Information Service (NIS - formerly Yellow Pages) is active, update the equivalent files on the master NIS server and 'make' the changes.

In the /etc/services file, add a TCP/IP 'eft' service. You must first select a unique port number. Port numbers in the range 0-5000 are reserved for TCP network services. NetEx/eFT uses port number 6900 as the default. For example, add the following line to the end of the file:

eft 6900/tcp EFT

Appendix B. Stopping the Service Initiator

The Service Initiator can be stopped by using the Service Initiator Control program /usr/nsc/sicom/si/control. Generally, the command to stop the Service Initiator is:

\$ /usr/nesi/eft/si/control STOP -H host -S service

where 'host' is the name of the local network host and 'service' is the name of a network service being offered by the Service Initiator ("EFT" is generally the service name being offered). The optional OP-ERATOR password may need to be specified with the "-O" option. Stopping the Service Initiator this way will clean up /etc/utmp entries without affecting the associated servers that are still running. Stopping the Service Initiator with 'kill' will cause those /etc/utmp entries to remain in the file until re-boot or until they are re-used.

The log file may be examined by issuing the following, while the Service Initiator is active:

\$ tail /usr/nesi/eft/si/svcinit.log

Appendix C. Service Initiator Keywords

The Service Initiator startup input file /usr/nesi/eft/si/startup contains a list of keywords that can be set to alter the way the Service Initiator operates for a given SERVICE being offered.

SERVER

Specifies the command that is used to invoke or run the NetEx/eFT server.

OPERATOR

Specifies a password that is required when issuing commands through the CONTROL program (used for shutting down the Service Initiator).

LOGTIMEOUT

Specifies the login timeout in seconds. This is used to terminate a login request that for some unknown reason, is hanging around.

MINIMUM

Specifies the minimum session number that will be offered for this service. For example, a MINIMUM value of 5 would result in SERVICE "EFT" being offered as "EFT005" up to MAXIMUM (below). Specifying MINIMUM or MAXIMUM do nothing to limit the number of NetEx/eFT sessions that are allowed. They are simply provided as a naming tool.

MAXIMUM

Specifies the maximum session number that will be offered for this service. A value of 30 for example would result in the last offer of "EFT" being "EFT030", before the offers started over at MINIMUM.

TRACE

Allows different levels of tracing of the Service Initiator. Refer to the startup file /usr/nesi/eft/si/startup for a description of the different trace levels.

UNIX_CMD

This keyword was used to resolve a potential problem on HP-UX 11iV2 systems when the Service Initiator keyword LOGINTYPE='login' was specified instead of the default value of LOG-INTYPE ='rlogin'. It enabled the specification of an earlier version of the UNIX login command (normally "/bin/login") to one obtained from an HP-UX 11iV1 system, e.g. "UNIX_CMD /usr/bin/login_11i_V1".

UNIX_LOGIN

This keyword and the two that follow (UNIX_PASSWD and UNIX_BADLOG) are to be modified only if the site has made modifications to the default UNIX login utility /bin/login. These three keywords define strings that the Service Initiator looks for when interacting with /bin/login during a NetEx/eFT login request. UNIX_LOGIN defines the first prompt used by /bin/login when it is looking for a user name. The default value is the string "login: ".

UNIX_PASSWD

(see UNIX_LOGIN above). Defines the prompt used by /bin/login when it is looking for a password. The default value is the string "Password: ".

UNIX_BADLOG

(see UNIX_LOGIN above). Defines the resulting string returned by /bin/login when an invalid login attempt has been made. The default value is the string "Login incorrect".

GATEWAY

Enables/disables gateway processing of remote NODE qualifier. This should be 'on' for gateway hosts, 'off' for all others. DEFAULT: 'off'

SIHELPER

Service name of the remote 'sihelper' process or NULL to disable SIHELPER support. DE-FAULT: 'sihelper' to enable SIHELPER support.

SIPLUS

Enables/disables SI+ proxy connect support. If 'on', the standard connect request is forwarded to the remote NODE. DEFAULT: 'on'

RLOGIN

Enables/disables 'rlogin' to remote NODE. If 'on', the Unix 'rlogin' mechanism is used to connect to the remote NODE. DEFAULT: 'off'

SERVER

Command invoked to activate the native network server. DEFAULT (Unix): exec /usr/nesi/eft/user/start_server

SIP_TIMEOUT

Connect timeout to use for SI+ proxy connects. This should be short to prevent long delays if the requested service is not offered on the remote NODE. DEFAULT: 1 sec.

SIP_INTERVAL

Connect interval to use for SI+ proxy connects. See also SIP_TIMEOUT. DEFAULT: 1 sec.

LOGINTYPE

The method used to log in to the system on which the Service Initiator is running. Valid values are 'rlogin' and 'login'. If 'rlogin' is specified, the rlogin protocol is used to log in to LOGIN-HOST. The 'login' method will allocate a pty, fork a process, invoke login, and invoke SERVER. DEFAULT: 'rlogin'

LOGINHOST

Host name or IP address to log in to when using LOGINTYPE 'rlogin'. DEFAULT: 'localhost'

OFFER_TIMEOUT

(NETEX only) length of time (in seconds) to offer before timing out. If the offer times out, it is automatically reissued. DEFAULT: 0 (offer indefinitely).

Appendix D. Product Configuration File

Each NESi software product that has integrated the License Verification Software facility now contains a product configuration file. The NetEx/eFT product includes this file in its installation distribution file set. During installation, this file (*prodconf*) is installed in the USER subdirectory of the installation directory, which defaults to */usr/nesi/eft*.

The default *prodconf* file shipped with NETEX/eFT contains the following information:

```
# Network Executive Software, Inc.
# EFT Product Configuration file
LICPATH /usr/nesi/NESikeys # NESi License Key file
```

A '#' character denotes a comment. Non-comment records must contain a keyword/value string. The initial version of this file contains only a single keyword/value record:

• LICPATH – this keyword defines the full path to the NESi License Key File (see "Appendix E. License Key File").

Appendix E. License Key File

A single NESi License Key file must reside on each HP-UX system on which one or more NESi products containing license support will be installed. The following guidelines apply:

- The default file name is *NESikeys*.
- The LICPATH keyword/value pair in the product configuration file (see "Appendix D. Product Configuration File") specifies the full path name to this file. The default is: */usr/nesi/NESikeys*.
- The systems programmer installing the software must initially create this file prior to invocation of NetEx/eFT components such as Service Initiator and Client.
- A leading '#' character in a file record denotes a comment line.
- The systems programmer installing this software must edit this file to add a new encrypted Software Key each time such a key is obtained from NESi for the eFT323 and eFT323I products (and other license-enabled NESi products). This should be done prior to installing the product, and must be done prior to being able to run the product successfully.
- The file may contain multiple keys per product due to new product releases or a change to the plat-form's fingerprint (on UNIX this corresponds to the hostname for the target host). To make the file easier to maintain over time, it is recommended that you precede each Key entry with a comment line that documents the product and release level of the product that the key is associated with. It will then be easier to delete older Keys that are no longer valid for the product.
- The following shows an example of what a NESikeys.ini file might look like after adding several Keys to the file:

Network Executive Software, Inc. Software License Key file
Key for EFT323 N4 (6-20-08):
86481096ff6c3ebb9b34099b7e639fef
Key for EFT323I N3 (8-3-06):
e0fef4aaae2aad2f48e23bbfc3e720a2
Key for EFT323 N2 (5-30-06):
e0fef4aaae2aa01e3d7f35d53039612d