ESX™-2400 and *ESX*™-4800 Gigabit Ethernet Routing Switches

Release Notes

Software Version 4.2

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Legal Notices

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1.0 General Description of Software Release

These release notes highlight features that have been added or changed in the 4.2 software release for the *ESX*-2400 and *ESX*-4800 Gigabit Ethernet Routing Switches.

2.0 System Requirements

Release 4.2 supports the *ESX*-2400 and *ESX*-4800 switches. If you are currently using Software Version 4.1, upgrading to version 4.2 requires the ESX Network Switch Controller (*ESX-NSC)* to be upgraded before you upgrade the client on your management station. If you upgrade the client first, you will not be able to manage the nodes using *ESX-Cli* . Release 4.2 of *ESX-Cli* cannot communicate with 4.1 nodes. This restriction does not apply to *ESX-Admin*.

3.0 Standard Features

3.1 IP Routing Protocols

- IP Routing is supported, including ICMP, ARP, CIDR (longest prefix match).
- RIP V1, RIP V2, and OSPF V2 are supported.
- Static Routing is supported.
- DHCP Relay is supported.

3.2 Bridging

- 802.1d Spanning Tree is supported.
- Spanning Tree per Bridge group is supported.
- Bridge groups or port-based VLANS are supported.

3.3 Trunking

- Multi-link trunking is supported.
- Bridge / IP trunking is supported.
- Interoperability with Cisco-Ether Trunking is supported.

3.4 Filtering

- Wire speed TCP / UDP port filters while IP routing are supported.

3.5 Hardware

- *ESX*-2400 and *ESX*-4800 are supported.
- *ESX-NSC* II is supported.
- 48TX, 24TX / 3SX, 24TX / 3LX, 6SX, and 6LX line cards are supported. (TX=10 / 100; SX=Short-band, Multi-mode Gigabit fiber; LX= Long-haul, Single-mode Gigabit fiber.)

3.6 Availability and Redundancy

- Line cards and power supplies are hot swappable.
- Independent power supplies are provided on the *ESX*-2400.
- Cold standby via a redundant *ESX-NSC* is supported.

3.7 Network Management

- *ESX-Admin*, *ESX-Cli*, and *ESX-Mon* are supported on Microsoft NT 4.0 Workstation and Server.
- *ESX-Admin* (the GUI interface) supports:
  - Chassis configuration
  - Assignment of IP addresses
  - OSPF, RIP, static route, and DHCP protocols
  - Bridge and Spanning Tree configurations
  - Collection of Ethernet and IP statistics
  - Device-specific application policy configuration
- Out-of-band access is supported through the *ESX-NSC* using a serial port, an external modem, and / or Ethernet. Telnet server is supported.
- Bridge, Ethernet, MIB II, and FORE Systems Enterprise MIBs are supported.
- *ESX-Admin* software supports HP Open View for Windows NT, allowing you to manage the *ESX*-2400 and the *ESX*-4800 switches using the HP Open View software.
  - The installation script automatically supports installation over HP OpenView NNM for Windows NT.
  - Refer to the readme.txt file for instructions about installing and configuring the switch to support HP Open View for Windows.
- Wire speed Firewall Switch Agent (FSA) integrated with Check-Point Firewall-1.
- Directory Enabled Application Class-of-Service (CoS) policies are supported.

- Directory Enabled Policy Management is supported with the following features:
  - Advanced Directory Services Agent (ADSA) and LDAP client
  - Schema definitions for application class of service policies
  - Hierarchical policy specification: global, regional, departmental, and device specific
  - Novell NDS 4.11 and Netscape Directory Server
- Integration with HP OpenView NNM / NT is supported.
- *ESX-Cli* supports the same functionality as *ESX-Admin* through a command line interface.
  - Save / Load configuration is supported.
  - The *ESX-Cli* interface supports command-line editing and command history. The key sequences used to edit command lines are similar to those used by the EMACS family of text editors. The history function is similar to that used by the UNIX c-shell. During command-line editing, *ESX-Cli* is always in "insert mode." In other words, any character typed will be inserted into the command line at the current cursor position and all characters to the right of the typed character will be shifted to the right. Keys available with all *ESX-Cli* (NT console, serial port, telnet) implementations:

CTRL-A	move to beginning of line
CTRL-E	move to end of line
CTRL-B	move to previous character
CTRL-F	move to next character
CTRL-D	delete current charater
CTRL-H or BackSpace	delete previous character on line
ESC-D	delete current word
ESC-BackSpace	delete previous word
ESC-B	move to previous word
ESC-F	move to next word
CTRL-U	erase entire line
ESC-ESC	erase entire line
CTRL-K	erase rest of line
CTRL-L	clear screen
CTRL-P	recall previous command in history
CTRL-N	recall next command in history

!	history substitution function: an exclamation point followed by another character will be substituted for the relevant command from the history as follows: !!: previous command !<integer>: command number <integer> !<-integer>: command <integer> places back in the history !<string>: previous command beginning with <string> CTRL-R: history search function: type characters to search for followed by return and the first command in history matching the characters will be displayed.

Additional keys available with NT console *ESX-Cli* (both local and remote):

Home	move to beginning of line
End	move to end of line
Delete	delete current charater
Left Arrow	move to previous character
Right Arrow	move to next character
Up Arrow	recall previous command in history
Down Arrow	recall next command in history
CTRL-Up Arrow	scroll up one line in command window
CTRL-Down Arrow	scroll down one line in command window
PgUp	scroll up one page in command window
PgDown	scroll down one page in command window
CTRL-Home	scroll to top of command window
CTRL-End	scroll to bottom of command window

4.0 Known Issues or Concerns

This section describes known limitations of release 4.2 of the *ESX* product. These limitations will be corrected as soon as possible. If you have any questions regarding these limitations, please contact FORE Systems Technical Assistance Center using one of the methods described in section 5.0 of these release notes.

4.1 Ip Routing Protocols and Bridging

- OSPF External Type 1 routes are not supported.
- Static and dynamically learned default routes do not override a default route that you add using the gateway option of the **`cfg ip`** command.

  Workaround: Do not use the gateway option on the out-of-band adapter if you require the use of a default route in the switch.
- OSPF will flood link state packets on all ports, including the port it was received on, in violation of the OSPF protocol specification. This causes extraneous packets which are ignored.

  Workaround: None required.
- When an interface is added to an existing bridge group, the current bridge tables are flushed and never relearned unless you perform a link down/link up. This is also the case when changing the name of the bridge group.

  Workaround: Perform a link down/link up to cause the bridge to relearn the routes and rebuild the bridge tables.

4.2 Network Management

- Although this release does not support configuring OSPF and RIP on the same interface, *ESX-Admin* and *ESX-Cli* allow it. Doing so will cause the *ESX-NSC* to crash and reboot on the first link state change.

  Workaround: Do not configure OSPF and RIP on the same interface.
- You need to stop and restart the router to have the following configuration changes take effect: OSPF Router ID, Router Preference Levels.
- Hot swapping is not supported when you replace a line card with another line card of a different media.

4.3 *ESX-Cli* Commands

- When saving OSPF configurations utilizing the save command in *ESX-Cli*, the generated ASCII file will contain 0s for IP address and netmask. This is a display issue only.
- The Directory *ESX-Cli* has changed:
  - new location: e4e8.bin (default management directory)
  - old location: C:\winnt\system32\e4e8.bin
- Issuing an *ESX-Cli* "stop adsa" command will generate the following false warning message:

  Warning: Attempting to execute the **`stop`** command while connected to the switch via an in-band port will terminate all management sessions. If you are connected via the OOB port, only in-band management sessions will be lost.

  Workaround: Ignore this error message.
- If you are executing a command of the form **`ESX-Cli -yes <command>`** and the command is cancelled by pressing <CTRL-C>, subsequent *ESX-Cli* sessions may not be able to execute LCP specific commands. *ESX-Cli* will report an error saying that another application is already connected.

  Workaround: Reboot the *ESX-NSC*.
- Currently, support for viewing dynamic OSPF state is not available from *ESX-CLI*. In order to view the following tables, the user must use *ESX-Admin*:

  -Link State Database

  -Area State

  -Neighbor State

  -Virtual Interface State

  -Interface State

  When many interfaces are configured to run the OSPF protocol, the size of the router-LSA message can grow larger than the default OSPF MTU of 1500 bytes. This situation can result in data corruption and loss of OSPF functionality on the *ESX*.

  Workaround: If more than 100 interfaces are configured to run OSPF, the MTU on each interface should be increased accordingly. The following are the recommended MTU sizes:

  more than 100 interfaces: 2500 bytes

  more than 200 interfaces: 4500 bytes

  Ensure that the configured MTU values are identical on all OSPF routers attached to a given network.

4.4 *ESX-Admin* Commands

- In OSPF, when the designated router changes, duplicate entries for a Backup Designated Router (BDR) may appear in the same area in *ESX-Admin*.

  Workaround: Exit and re-enter *ESX-Admin*.

4.5 SNMP

- SNMP operations are limited to Get, Get Next, and Trap. SNMP Sets are not supported in this release. Remote configuration changes can only be made via Telnet, *ESX-Cli* client, or ESX-Admin. Trap destination(s) must be configured via the command line interface (*ESX-Cli*) only.
- When you attempt to walk the MIB, part of the MIB tree may not be displayed.

  Workaround: Perform SNMP walks on each branch.
- The ifLastChange MIB object returns incorrect values.

4.6 System Operation

- Gigabit Ethernet ports may not correctly auto-negotiate with other vendors.

  Workaround: If auto-negotiation fails, set full-duplex manually.
- The bridge address entries are not aged. When the forwarding table fills up, all entries are flushed.

CAUTION

Using a disk which already has a copy of *ESX-NSC* software to reconstruct the RAID array may corrupt both disks. To prevent this, only replace RAID 1 member disks with disks that are labeled "SPARE." Before inserting a SPARE disk, remove the SPARE label. Until this problem is fixed, perform a low level SCSI format or return used disks to FORE Systems for replacement SPARE disks.

- When starting the Remote Client for the Adaptec RAID system, you see the following error message:

  ```
  WARNING, one of the modules is not loaded properly.  No SPX/IPX protocol."  Click OK.
  ```

  There is no operational impact on the application.
- The *ESX-NSC* control link is preconfigured to run at 100 Mb/sec. Do not modify this setting.
- If you cancel *ESX-NSC* upgrade before it completes, the Install Shield program will continue running. This will prevent you from running Install Shield again.

Workaround: Do not terminate *ESX-NSC* upgrade before it completes.

- *ESX-NSC* may crash while running *ESX-NSC* upgrade.

  Workaround: Repeat the upgrade procedure.

4.7 Software Installation

- When you select the HP OpenView for NNM Component, the software installation will automatically update the HP OpenView NNM database with "FORE Systems" information. You may receive the following failure message during installation:

  ```
  HP OpenView NNM failed.
  ```

  Workaround: Follow this procedure to manually modify the NNM database:

1. Exit from all HP OpenView NNM sessions.
2. Stop all HP OpenView NNM background processes by typing:
   `ovstop`
3. Start the HP OpenView NNM database by typing:
   `ovstart ovwdb`
4. Add *ESX*-4800 and *ESX*-2400 capability fields in by typing:
   `ovw -fields`
5. Start up all the remaining HP OpenView NNM background processes by typing:
   `ovstart -v | more`
6. After step 5 is completed, all of the HP OpenView NNM background processes should be running. Shut down background processes by typing:
   `ovstop netmon`
7. Update the database by typing:
   `ovtopofix -u -o 1.3.6.1.4.1.2154.1.1.1.1.0 2>&1 | more`
   `ovtopofix -u -o 1.3.6.1.4.1.2154.1.1.1.2.0 2>&1 | more`
8. Restart netmon by typing:
   `ovstart netmon`

4.8 Directory and Policy Management

- When two partially conflicting policies are applied to the same port, the switch will enforce the higher precedence policy and reject the lower precedence policy.

  The ideal behavior is to partially enforce the lower precedence policy (for the TCP / UDP ports on which there is no conflict).

- When multiple policies of same type, include the same link port but specify different actions for the same application are applied to the same node, the switch will reject that application.

  Workaround: Avoid assigning multiple policies for the same application on the same node.

4.9 Firewall Switching Agent (FSA)

- Since DHCP uses the UDP protocol, DHCP lease request messages received for ports in a security group will be redirected to the firewall. But the NT TCP stack on the firewall server will not forward the packet since the packet is an all "1s" packet.

  Workaround: To configure FW-1 to support DHCP across FW-1, perform the following steps:

1. Make sure FW-1s IP is in the same subnet (class B or C) as the DHCP client.
2. Install the DHCP relay agent on the FW-1. If this is the first time you install the DHCP relay agent, you will be prompted with DHCP relay dialog. Add IP address of the DHCP server.
3. To reconfigure the relay agent, from Network applet in Start/Setting/Control Panel, select Protocols tab, choose Properties, choose DHCP relay tab.
4. From DHCP manager, make sure FW-1s IP address is included in the list of active scopes. The DHCP server only responds to the relay agent's discover request if it belongs to one of the scopes.
5. In the switch port DHCP relay agent, configure ports that lead to the client subnet and server subnet. Also, configure the relay agent on the FSA port.

5.0 Contacting Technical Support

In the U.S.A., customers can reach FORE Systems' Technical Assistance Center (TAC) using any one of the following methods:

1. Select the support link from FORE's World Wide Web page:

   http://www.fore.com/

2. Send questions, via e-mail, to:

   support@fore.com

3. Telephone questions to the TAC at:

   800-671-FORE (3673) or **724-742-6999**

4. FAX questions to the TAC at:

   724-742-7900

Technical support for customers outside the United States should be handled through the local distributor or via telephone at the following number:

+1 724-742-6999

No matter which method is used to reach the TAC, customers should be ready to provide the following:

- A support contract ID number
- The serial number of each product in question
- All relevant information describing the problem or question