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Release Notes for the BayStack 450 10/100/1000 Series Switch

309976-A Rev 00

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Introduction

These release notes contain important information about software version V2.0 for the BayStack™ 450 switch that may not be included in the related user guide *Using the BayStack 450 10/100/1000 Series Switch* (Part number 309978-A Rev 00). The information in these release notes supersedes the applicable information in the user guide.

These release notes contain the following sections:

- "Upgrading the BayStack 450 Firmware" (page 1)
- "The Upgrade Process" (page 2)
- "Accessing the Firmware Images" (page 4)
- "Upgrade Restrictions" (page 4)
- "Nortel Networks Online Documentation" (page 5)
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- "Known Problems" (page 10)
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- "1000BASE-LX Connectors" (page 12)
- "Replacing MDAs" (page 13)
- "Network Management" (page 14)

Upgrading the BayStack 450 Firmware

The BayStack 450 switch firmware provides a code load facility that allows you to upgrade the firmware image over any switch port, including any MDA ports.

The BayStack 400-ST1 Cascade Module *will not operate* with BayStack 450 switches that are configured with BayStack 450 software versions *earlier than* version V1.1.0. You *must upgrade all units* with BayStack 450 software version V1.1.0 (or later) *before* installing the BayStack 400-ST1 Cascade Modules.

To access the firmware images, see "Accessing the Firmware Images" on page 4.

The Upgrade Process

Upgrading the BayStack 450 switch to software version V2.0 is a two-step process:

1. **Download the *boot code image.***
2. **Download the *agent image.***

To properly upgrade the BayStack 450 switch, the boot code image *must be downloaded first*, before you download the agent image. If the agent image (the operational firmware) is downloaded before the boot code image, the firmware may not be programmed into the BayStack 450 switch FLASH memory.

The switch indicates a failed image load as follows:

An alternating LED pattern is displayed on the BayStack 450-24T 10/100 status LEDs (ports 13 to 24), on the BayStack 450-12T 10/100 status LEDs (ports 1 to 12), and on the BayStack 450-12F Link status LEDs (ports 1 to 12).

If this happens, cycle the switch power (power off the switch, then power it on). Use the Software Download screen to download the new boot code image. After the boot code image download completes, download the new agent image.

Important Considerations

When you upgrade your BayStack 450 switch:

- Download *two images* (the *boot code image* and the *agent image*). The new boot code image must be downloaded *before* the agent image is downloaded.
- After upgrading your units, verify the firmware and software versions in the sysDescr field of the System Characteristics screen.

  The firmware version should be **FW:V1.43** and the software version should be **SW:V2.0.0**.

Note: When you upgrade to software version V2.0, you should also obtain a copy of *Using the BayStack 450 10/100/1000 Series Switch* (Part number 309978-A Rev 00). That user guide provides information about using the new software version V2.0 features. See “Nortel Networks Online Documentation” on page 5 to get the latest version of the user guide.

Recovering from a Failed Upgrade

The upgrade process is a fairly straightforward process when implemented correctly. However, if you do not follow the correct steps to upgrade your switch, the switch can become temporarily disabled.

- If you install a BayStack 400-ST1 Cascade Module before you upgrade the switch to software version V1.1.0 (or later), the code load facility may not function properly:

  -- To correct this situation, remove the BayStack 400-ST1 Cascade Module and upgrade the firmware properly before reinstalling it.

- If you try to download the agent image *before* you download the boot code image, the upgrade may fail:

  -- The agent firmware can detect an incompatible revision and will discontinue programming itself into FLASH memory. This condition is indicated by a steady pattern of alternating LEDs.

  -- The switch will not automatically reset. To recover from this condition, you must cycle power to the switch, upgrade the boot firmware, and then upgrade the agent firmware.

Stack Installation Tips

When you install your stack:

- All switches must have the same software version before they are configured in a stack. Units with software versions that are different from the base unit will not join the stack. This condition is indicated by CAS Up and CAS Dwn LEDs blinking on those units.
- In a properly configured stack configuration, you can upgrade the entire stack as a single unit.
- Select only one unit, preferably the top unit or the bottom unit, as the base unit by setting the Unit Select Switch on the cascade module to the Base position (up = Base).

Accessing the Firmware Images

You can access the firmware image files directly from the Internet:

Note: When upgrading the firmware image to software version V2.0, you must download *two images* (the *boot code image* and the *agent image*). You must download the boot code image *before* you download the agent image.

1. **Go to** *support.baynetworks.com/software.*
2. **Under the BayStack Workgroup Products heading, select BayStack_450x, then click the Go button.**
3. **Under the Operational Software heading, click on BayStack 450 Ethernet Switch boot code V2.0.**

   Follow the prompts to download the BayStack 450 boot code image. The boot code image file name is *b4502001.img.*
4. **After the BayStack 450 boot code image is downloaded, click on BayStack 450 Ethernet Switch agent V2.0.0.**

   Follow the prompts to download the BayStack 450 agent image. The agent image file name is *b4502002.img.*

For detailed information about downloading a new software image, see Chapter 3, “Using the Console Interface,” in *Using the BayStack 450 10/100/1000 Series Switch.*

Upgrade Restrictions

The following restrictions apply when you upgrade the switch firmware to Software Version V2.0:

- When you upgrade a BayStack 450 stack configuration that uses a Gigabit distributed trunk for the uplink to the TFTP server, you must first disable the uplink trunk at both ends.
- When you upgrade a BayStack 450 stack configuration that contains a BayStack 410-24T unit (which is configured with at least one distributed trunk member), and the distributed trunk is the uplink to the TFTP server, you must first disable the uplink trunk at both ends.

- The firmware cannot be upgraded to software version V2.0 through a port that is configured for *tagged* traffic; upgrade your switch firmware to software version V2.0 through a port that is configured as an *untagged* member of VLAN 1. (Software Version V2.0 now supports upgrades to future versions over VLANs other than VLAN 1, with tagged or untagged ports.)
- When the BayStack 450 switch is upgraded with the new boot code image, all existing entries in the Event Log are erased. This corrects a potential problem with an earlier software version. A new entry is written to the Event Log confirming the upgrade of the boot code image.
- During the load process, the ports are configured as follows:

  -- Twisted-pair ports: autonegotiation enabled

  -- Fiber optic ports: 100 Mb/s, half-duplex

  -- Gigabit MDA ports: autonegotiation disabled, Preferred Phy set to Right

Nortel Networks Online Documentation

To be sure you have the latest updates to your product documentation, including these release notes, visit the Nortel Networks Web site at the following location:

support.baynetworks.com/library/tpubs/

Find the product for which you need documentation. Then locate the specific category and model or version for your hardware or software product. Using Adobe Acrobat Reader, you can open the manuals and release notes, search for the sections you need, and print them on most standard printers. You can download Acrobat Reader free from the Adobe Systems Web site, *www.adobe.com*.

You can purchase selected documentation sets, CDs, and technical publications through the collateral catalog. The catalog is located on the World Wide Web at *support.baynetworks.com/catalog.html* and is divided into sections arranged alphabetically:

- The “CD ROMs” section lists available CDs.
- The “Guides/Books” section lists books on technical topics.
- The “Technical Manuals” section lists available printed documentation sets.

New Features

Software version V2.0 provides the following new features:

- Protocol-based VLANs
- RADIUS authentication support for TELNET and console access
- Support for upgrade over VLANs other than VLAN 1 (tagged or untagged)
- User-specified management VLAN
- IGMP multicast group display screen
- Link up/down traps configurable per port
- Enhanced SNMP support for network management tools
- Support for stack event traps (for example, if a unit leaves or joins the stack, or if a new base-unit is assigned)
- Support for Autotopology

Bug Fixes

The following problems are corrected with software version V2.0:

- When replacing an MDA with another type of MDA, you no longer have to cycle the switch power between the MDA removal and replacement procedures (see “Replacing MDAs” on page 13).

Known Restrictions

The following known restrictions apply to software version V2.0 (and earlier versions):

- Software version V2.0. does not support the Fast Aging feature. The Fast Aging feature is currently available only in software release V1.3.2.
- You cannot assign a port to multiple protocol VLANs that have the same protocol ID (not applicable to gigabit ports or BayStack 410-24T ports).
- If you manually configure a port path cost, the path cost is not recalculated regardless of speed or trunk state changes.

- MultiLink Trunking

  MultiLink Trunking allows you to group ports of varying speeds (for example, you can group 10 Mb/s, 100 Mb/s, and 1000 Mb/s ports in any combination). Although this is a valid configuration, Nortel Networks recommends that you only group ports of equivalent speeds when configuring a trunk. The MultiLink trunk algorithm distributes connections across all of the available links in the trunk, regardless of speed.

- System reset due to MultiLink Trunking reconfiguration

  If you add a new unit, that is configured with at least one bounded trunk[1] (with no distributed trunks[2]), into a stack that is configured with one or more distributed trunks, the new unit automatically resets before entering the operational mode of the stack.

- MultiLink Trunking interoperability with Accelar™

  When a MultiLink trunk is connected to an Accelar switch, and you reset one of the stack units or change the spanning tree status of the MultiLink trunk, the connection between the stack and the Accelar switch can be disrupted.

  If this happens, reset the Accelar switch. If resetting the Accelar switch does not correct the problem, contact your Nortel Networks Technical Solutions Center (see “How to Get Help” in *Using the BayStack 450 10/100/1000 Series Switch*).

- Monitoring outgoing frames on trunk member ports

  When you monitor outgoing frames on a full-duplex port that is a MultiLink trunk member, Nortel Networks recommends that you use the address-based mirroring mode. If you use port-based mirroring with this type of configuration, some frames may not be displayed.

- IEEE 802.1D spanning tree parameters

  Spanning tree parameters cannot be configured from the console interface (CI) menus and screens.

  Configuration support is available through the Bridge MIB using Simple Network Management Protocol (SNMP). Refer to RFC 1493 for more information.

[1] Bounded trunk: an active trunk with all trunk members configured on the same module.

[2] Distributed trunk: an active trunk with trunk members configured on at least two different units within a single stack.

- Spanning tree port participation

  The Fast Learning value (used with the Participation field in the Spanning Tree Port Configuration screen) is the same as the Normal Learning value, except that the state transition timer is shortened to 2 seconds.

  Nortel Networks recommends using the Fast Learning value to optimize switch-to-endstation connections. When you connect one switch to another switch, the Normal Learning (default) value provides the best results.

- Spanning Tree Participation disabled for monitor port

  When you use the Port Mirroring feature in a standalone switch configuration, the Spanning Tree Participation for the monitor port is automatically set to Disabled. If you then insert the same standalone switch into a stack, the Spanning Tree Participation for the previously configured monitor port *remains* Disabled. You must manually reset the Spanning Tree Participation to Normal Learning or Fast Learning using the Spanning Tree Port Configuration screen.

- The spanning tree configuration must be the same on both ends of a MultiLink trunk.

- Autonegotiation restriction with gigabit ports

  The BayStack 450 switch gigabit MDA ports comply with IEEE 802.3z Draft 3.2 and IEEE 802.3z Draft 4.1; however, the following restriction applies to the autonegotiation feature:

  -- Autonegotiation does not restart if an invalid code word is received from the link partner during the autonegotiation process. In cases where autonegotiation fails, disable and then enable autonegotiation.

- Redundant gigabit Phy

  You cannot use the redundant gigabit Phy port (the backup Phy port) to create two different paths.

- RMON Alarms and Event entries

  RMON Alarms and Event entries are *not* saved to nonvolatile random access memory (NVRAM). When a reset condition or power-down sequence occurs, the entries are not preserved. This conforms to the current RFC 1757 standard. All RMON Alarms and Events must be reentered.

- RMON Event Log table's secondary index

  The RMON Event Log table's secondary index is not incremented when all of the table's entries have been used. In this case, the existing indexes are reused. Thus, the index number cannot be used to indicate the total number of log entries received.

- RMON History Control entries

  A maximum of 85 RMON History Control entries per stack unit are supported. The entry exists on the unit containing the "ControlDataSource".

- Adding or removing stack units

  When you add a new unit to the stack or remove an existing stack unit, you will not be able to perform IP management functions for approximately 30 seconds.

  During this time period, the following can occur:

  -- Packets are lost when performance testing with SmartBits or any other traffic generator.

  -- IP Multicast streams stop receiving.

  -- TELNET sessions time out and users lose their TELNET connection without warning. Users must re-establish lost TELNET sessions.

  -- ICMP echo (PING) requests do not receive responses.

  -- All IP-related processes fail temporarily.

- Changing from a stack unit to a standalone switch

  When you change a switch from a stack unit into a standalone switch, or vice versa, the IP address of the switch/stack changes. As a result, all existing management applications that use the previous IP address are lost until you reconnect using the new IP address.

- Console may display a blank screen

  When you connect a console terminal to an operating switch through the Comm Port, the console may display a blank screen. This is a normal condition. Press [Ctrl]-C to refresh the screen or, to get beyond the Nortel Networks logo screen, press [Ctrl]-Y.

- Tagged bridge protocol data units (BPDUs)

  Tagged BPDUs are not supported in this version.

- Network interface controllers (NICs)

  The MultiLink Trunking feature only supports multiport NICs that are configured as a single MAC address, single IP address entity.

- Downgrading a switch or stack to an earlier version

Note: Some earlier software versions do not support distributed trunking. You must remove any distributed trunks before you downgrade the switch or problems will occur.

  If you must downgrade a switch from software version V2.0 to an earlier version, you must first remove any existing distributed trunks using the MultiLink Trunk Configuration screen. You can remove the trunk by disabling the trunk and setting all the trunk members to none [blank field].

  If you downgrade a switch with a bounded MultiLink trunk from software version V2.0 to an earlier version, some ports may become disabled. If this happens, you can enable the ports again using the Port Configuration screen.

- Configuring port mirroring monitor ports

  Nortel Networks recommends that you configure the port mirroring monitor port to be on the same stack unit as the mirrored ports.

Known Problems

The following problems are known to exist in software version V2.0 (and earlier versions):

- If you attempt to renumber units which were once active in a stack (but are no longer present) to a non-zero value, your stack database may become unstable. To prevent this condition, renumber non-active switches to zero before attempting to renumber the remaining units in your stack.
- If you change or delete trunk members via an SNMP network management tool while the MultiLink Trunk is enabled, your trunk configuration could have problems after the trunk is disabled. Nortel Networks recommends that you first disable the trunk, make your required changes, and then enable the trunk.
- When you remove a unit from a stack configuration, the value of rcVlanPortMembers MIB object does not update.

- After you enable RADIUS authentication support with a server IP address and a shared secret, if you remove the RADIUS IP address or the shared secret, you will be locked out of the console and TELNET. Before removing the server IP address or shared secret, first disable RADIUS authentication.
- If a software configuration conflict is detected on startup or when a stack forms between trunk members, the trunk becomes disabled but still displays the Enabled value in the MultiLink Trunk Configuration screen and from SNMP network management tools. If you change the trunk to disabled and then back to enabled, the CI screen displays the conflict.
- The following MIB objects for Gigabit ports return the wrong value and cause some SNMP network management applications to incorrectly report the port speed/duplex mode:

  -- rcPortAdminDuplex

  -- rcPortAdminSpeed

  -- rcPortOperDuplex

  -- rcPortOperSpeed
- Gigabit MDA ports count oversized frames (larger than 1785 bytes), as both oversized frames *and* as lost frames.
- MDAs must be *firmly secured* in the chassis for proper operation. Be sure to secure the MDA in the chassis by *firmly* tightening the two thumbscrews on the MDA front panel.
- A link state cannot be established when you plug a cable that is 100 percent utilized into a BayStack 450 switch port. As soon as a break in the traffic occurs, the link state is established.
- When you connect the BayStack 450 switch to an Alteon network interface controller (NIC), the switch learns invalid MAC addresses whenever autonegotiation for a gigabit MDA port is enabled (the invalid MAC addresses eventually age out).

  This problem occurs only when you reset the switch (via the console interface main menu or during a power cycle) and does not affect the correct operation of the BayStack 450 switch.
- Some SNMP commands fail if your base unit has a unit ID other than 1.
- IGMP host reports are not sent out of mirrored gigabit ports.

Connecting to Accelar Gigabit Ports

The BayStack 450 switch supports gigabit MDA port connections to the Nortel Networks Accelar switch gigabit ports, with the following restrictions:

- Autonegotiation *is not* supported on the Accelar 1000BaseSXWG (ASIC Version *GMAC 2*).

  When connecting to this version, disable autonegotiation on the BayStack 450 switch gigabit MDA port.

- Autonegotiation *is* supported on the Accelar 1000BaseSXWG (ASIC Version *GMAC 4*).

  When connecting to this version, set autonegotiation to enabled (or disabled) at both ends of the communications link. The autonegotiation setting must be identical at both ends of the communications link.

You can determine the ASIC version number for the 1000BaseSXWG gigabit card using the following command from the Accelar console port:

```
Accelar-1100# sh sys info
```

1000BASE-LX Connectors

The 1000BASE-LX (gigabit) MDAs use a longwave 1300 nm, fiber optic transceiver to connect devices over single-mode (5 km/16,405 ft) or multimode (550 m/1,805 ft) fiber optic cables.

Note: The transceiver must be mode conditioned externally via a special offset SMF/MMF patch cord for 1000BASE-LX multimode applications. The offset SMF/MMF patch cord allows the same transceiver to be used for both multimode and single-mode fiber. See your Nortel Networks sales representative for more information about the SMF/MMF patch cord.

The optical performance of this transceiver cannot be guaranteed when connected to a multimode fiber plant without the use of the special offset SMF/MMF (mode conditioning) patch cord.

The 1000BASE-LX MDA transceiver is designed to mechanically accommodate the *single-mode ferrules* used on one end of the special offset SMF/MMF patch cord. *Multimode ferrules* can bind and cause damage to the transceiver.

Caution: Do not connect multimode cables directly into the 1000BASE-LX MDA transceiver. Connect a special offset SMF/MMF patch cord into the transceiver, then connect the multimode cable into the SMF/MMF patch cord.

For more information about gigabit transmission over fiber optic cable and mode conditioning, refer to:

Reference Note: Gigabit Ethernet Physical Layer Considerations (Part number 201540-B).

The publication is available on the World Wide Web at *support.baynetworks.com/library/tpubs/*. At the Web site, click on Accelar under the Routing Switches heading.

Replacing MDAs

When replacing an installed MDA with another type of MDA, complete the following steps to clear the NVRAM:

1. **Power down the BayStack 450 switch.**

   Remove the AC power cord from the power source.

2. **Remove the installed MDA.**

   Loosen the thumbscrews and remove the MDA.

3. **Cycle the switch power[1].**

   Power up the switch and wait for the Nortel Networks logo screen to appear (approximately 10 seconds); then power down the switch.

4. **Install the replacement MDA.**

   Be sure to *firmly* tighten the two thumbscrews on the MDA front panel (refer to the MDA installation documentation).

5. **Power up the switch.**

[1] Not required for software version V2.0 and later.

Network Management

Table 1 lists the supported network management applications that are available for your BayStack 450 switch:

Table 1. Supported Network Management Applications

Application	BayStack 450 Software Version V1.2 (HW Rev B and D)	BayStack 450 Software Version V1.3.0/V1.3.1/V1.3.2 (HW Rev B and D)	BayStack 450 Software Version V2.0 (HW Rev B, D, and L)
UNIX Optivity LAN 8.1.1	Standalone mode only	No	No
Windows Optivity Campus 7.0.2	Yes	No	No
Optivity 9.0	Partial support only (see Note)	Partial support only (see Note)	Partial support only (see Note)
Optivity Infocenter 9.0, with 9.0.0.2 patch[1]	Yes	Yes	Yes
Device Manager 2.0.3	No	Yes	No
Device Manager 3.0.3	No	Yes	Yes

[1] Requires installation of the Optivity Integration Toolkit (OIT) for the BayStack 450.

Note: Optivity 9.0 provides partial support only for these switch versions. For a list of Optivity modules or components that support the BayStack product, see *Release Notes for Optivity Network Management System 9.0 for Solaris and Windows NT* (Part number 205970-A). You can obtain a copy of the Optivity 9.0 release notes at: *support.baynetworks.com/library/tpubs/nav/netman/nms.htm#OPTN90*.