



Trinix

Broadlinx Software

Release Notes

Software Version 3.0.1



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Online User Documentation — Current versions of product catalogs, brochures, data sheets, ordering guides, planning guides, manuals, and release notes in .pdf format can be downloaded.

FAQ Database — Solutions to problems and troubleshooting efforts can be found by searching our Frequently Asked Questions (FAQ) database.

Software Downloads — Download software updates, drivers, and patches.



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Broadlinx Release Notes

Note The Broadlinx 3.0.1 firmware is pre-loaded on all 3G boards. The 3.0.1 version of Broadlinx fully supports 3Gbps operations.

Purpose

This document provides software installation instructions for the 3.0.1 software release of the Broadlinx software. Broadlinx provides Web pages for the following operations:

- Network configuration of the NR-33000 board(s)
- Downloading of software upgrades to the various boards in the system
- System monitoring using Internet Explorer

Broadlinx supports SNMP /NetCentral monitoring with the correct license. Broadlinx boards and software are available for all of the Trinix Routing switchers.

CAUTION Installation of this upgrade will interrupt video signals passing through the system. The length of this interruption will vary depending on system size and specific procedures used. Users of this equipment should consult with Grass Valley Technical Support personnel before proceeding.

The Release Notes Addendum provides a list of software corrections and known limitations with this release.

Interoperability Requirements

- Any Encore system that is newer than version 1.7.3
- Any Jupiter system.

Related Documents

Trinix Planning and Installation Manual, part no. 071827608.

New Features

The 3.0.1 version of the Broadlinx software has several new features. The most notable of which is support for 3Gbps operations. The following is a list of the new features.

- Added support for 3Gbps operations.
- Improved SNMP support
- Improved Identification of the Software Version.
- Improved Broadlinx Web page updates and alarms.
- Improved reliability.

Support for 3Gbps Operations

The 3.0.1 version of Broadlinx supports all 3 Gbps operations. Several modules have been added for this support:

- TRX-HI-3G
- TRX-HO-3G
- TRX-DM256-3G
- TRX-DM128-3G
- TRX-DM128R-3G

Improved SNMP Support

The 3.0.1 version of Broadlinx has improved SNMP support. A new SNMP feature allows you to select inputs and outputs that will send an SNMP trap sent to NetCentral when an input or output signal is lost.

Improved Identification

Improved Identification of the Software Version

The Broadlinx software version is available on the Broadlinx Web page. However, the software version is not easily attainable on the Compact-Flash disk that is used for upgrade installations. You can now use the PC to identify the version of the software that is on a compact flash card or that is in a directory on the PC.

Follow these steps to identify the version of software on the Compact-Flash disk:

1. Open the text file called `version.txt`, which will be located in the root directory on the Compact-Flash disk to get the release version. The equivalent Broadlinux console command is

```
versionShow
```

The software version will then be displayed.

Improved Identification of the Version of the Microcontrollers and FPGAs

You can also see the version information for the microcontrollers and FPGAs. The PC program called `cm.exe` (and is located on the flash disk) is used to display the version information for the microcontrollers and FPGAs.

To identify the version information for the microcontrollers and FPGAs:

1. Start the `CMD.exe` application.
2. Enter the following command at the command prompt,

```
cm config.ar
```

The Equivalent Broadlinux console command is

```
codeManagerShow.
```

Improved Broadlinux Web Page

Improvements have been made to the Broadlinux Web Page.

- The **Reload button** (Located above the left hand Web page.) has been added to cause both pages to refresh. In the past, the Refresh buttons on the right hand page only update the right hand web page. The left hand page was not refreshed.
- A warning on the web page will now appear if the Secondary NIC_Ref board NR33000 processor or controller board becomes active.
 - Normal operating conditions is to have the Primary NA3300 be active.

Note This warning can only be cleared by activating the Primary board.

- Only an Active board can show valid device information.
 - If the Secondary board becomes active, the device information on the Primary board is no longer valid.
 - If the primary board becomes active again, the device information on the secondary board is no longer valid.

Other Improvements

The following improvements were also added to improve performance and functionality:

- Support for the 720P50 video reference format.
- Improve Error logging
- Added functions to aid debugging on the Com Bus.
- Added the Device Frame and Slot Ids to the debug messages for esTrib errors.

Firmware Update

Note The Broadlinx 3.0.1 firmware is pre-loaded on all 3G boards. The 3.0.1 version of Broadlinx fully supports 3Gbps operations.

The firmware is installed using a factory-programmed Compact-Flash module. You must obtain the necessary files and copy them to a blank Compact-Flash module with 32 MB or more, of available memory if the programmed flash is not available. For more information, contact Technical Support.

The following process is used to update firmware on any or all of the boards within a Trinix frame using a serial console port or Ethernet/Telnet connection. The update is detailed in the following sections of this document:

- Preliminary Update Procedure.
- Updating Re-loader and Loader firmware on all boards within the frame.
- Activating New Software and Restart Boards.

Before starting the Installation process, please read the following facts:

- Web tools such as NetConfig cannot be used to install Release 2.4.2.
- Certain steps of the following procedure will momentarily interrupt switcher operations. These steps are preceded by Caution statements.
- Protected paths are not monitored during firmware updates. If the primary path fails during a firmware update, no fail-over switch will occur.
- Certain DV-33512 systems will require DIP switch changes to operate properly with Release 2.4 or newer software. DIP switches S401-7 and S401-8 (on both boards) should be set to "On;" if the stickers are not present, these switches should be set to "Off." The remaining six switches on S401 are always set to "Off."

For more information, contact Technical Support.

Updating New Broadlinx Boards

No Installation is required; Broadlinx boards are shipped with the current Trinix software installed.

Updating Existing Broadlinx Boards

The Broadlinx Firmware Management page displays the possible types of PC boards, the version of sub-level software that is presently associated with each type that is installed, the versions of top-level software packages

present in the Broadlinx board, and the compatibility Status of these software elements.

Preliminary Update Procedure

Follow these steps to start the Preliminary Update procedure.

Note The steps in this Preliminary Procedure will not affect on-air operations.

1. Connect to the Trinix NR-33000 (Broadlinx) board via a console session on a PC. This can be done using a serial connection or an Ethernet/Telnet connection:

- a. Serial connection method:

The serial method has the advantage of not requiring a reconnect after an NR-33000 reset.

On the back of the Trinix frame, there are two "Console" connections: one for the Primary NR slot (Console "A") and one for the Secondary NR slot ("Console B"). An RS-232 cable is used to connect to these ports as required during the following procedure.

COM 1 of the PC should be connected to Console A of the router.

If there are two NRs, a second cable should be used to connect COM 2 with Console B. (It is possible to use only one serial cable, but this requires moving the Trinix end of the cable back and forth between the Console A and Console B connectors during the upgrade.)

The COM ports should be configured as follows:

9600 baud

No Parity

8-Data Bits

1-Stop Bit

A Windows terminal program (such as HyperTerminal) should be used to interact with the NR-33000(s). If there are two NRs, two copies of HyperTerminal should be running: one for COM 1 / Console A / Primary, the other for COM 2 / Console B / Secondary.

- b. Ethernet/Telnet connection method:

You must know the current IP address of the Broadlinx board(s) to use this method.

Open the Windows Command program on a PC that is on the Trinix network. At the prompt, enter:

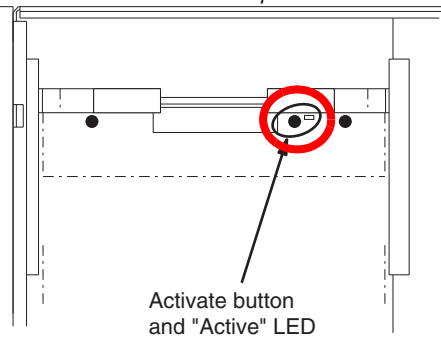
```
telnet [IP address of the Broadlinx board]
```

If you don't know the IP address of the board, and assuming the board has already been set up for access via a web browser, you should be able to use the browser to obtain this information. If for some reason the address isn't available from the browser, the Grass Valley NetConfig application can be used to discover the address.

For convenience, two copies of Telnet should be running: one for the Primary NR-33000 and one for the secondary.

2. If there are two NR-33000 boards present, you must be able to identify which is active. (The firmware update process **MUST** be performed through the **ACTIVE** NR-33000 card, because it has control of the Trinix "Com" bus.) This can be done either by checking the "Active" LED on the NR or by using the `boardShow` console command.
 - a. The Active LED indicator, which is amber, is located next to the Activate push button. See [Figure 1](#).

Figure 1. NR-33000 Broadlinx board (as positioned in DV-33512 chassis)



- b. To use the boardShow console command, go to a console window and type:

```
boardShow
```

Typically the system will respond as follows:

```
Broadlinx NR33000 board:  
Frame Type: 0x1 128 X 128  
Frame No   : 0x0  
Level     : 0x01  
  
Power Supplies : OK  
XPT Control  : Internal  
XPT Drivers  : Active  
COM Drivers:Active
```

["Active COM Drivers" confirms that this NR-33000 is active.]

Primary card slot.

["Primary" indicates where this NR-33000 board is located.]

```
Board Revision: B2 -  
CPU FPGA Revision: 02 B  
Backplane detected: 00 No  
Switch S3 (RS): 12 2  
Battery present and Charged 0B  
value = 0 = 0x0
```

Installing the Provided Compact Flash Memory modules

Follow these steps to install the provided Compact Flash memory module in one of the NR-33000 memory slots.

1. locate the inactive board if there are two NR-33000 boards. See [Figure 2](#) and [Figure 3](#).

Figure 2. Primary Broadlinx location (DV-33512 installation shown).

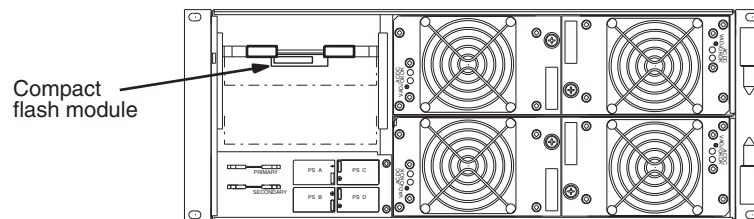
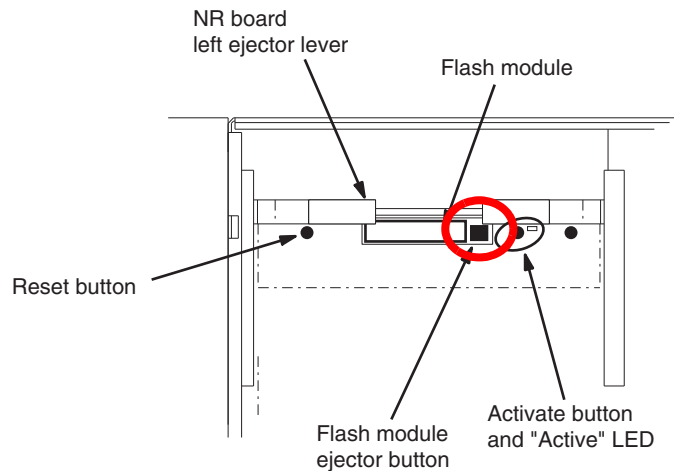


Figure 3. NR-33000 reset/activation controls.

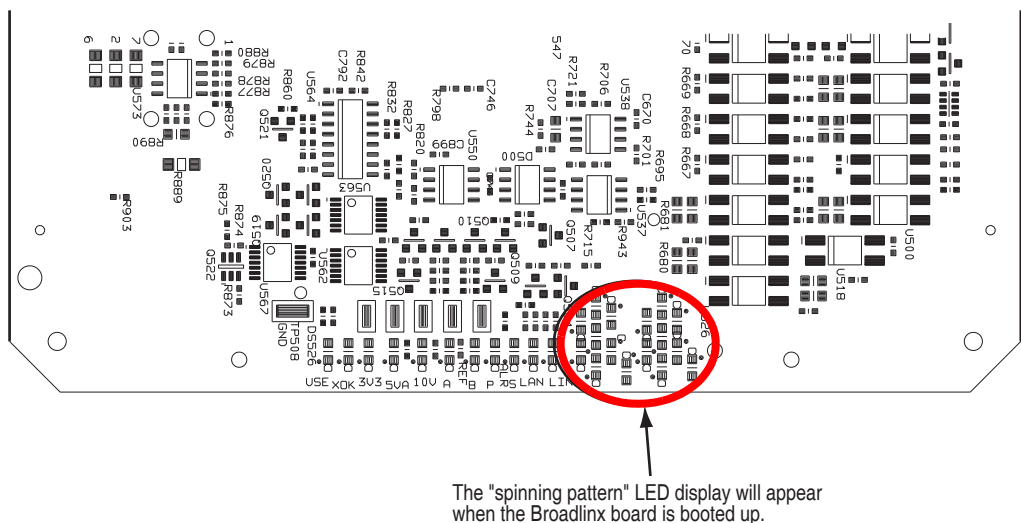


- Remove the old flash module by pressing on the adjacent small square ejector button next to the LED (Figure 3). You will need to move the left ejector lever slightly to allow the module to be removed.

Wait until any on-board red Alarm LEDs are cleared.

- Insert the new flash module and seat it firmly.
- Press the **Reset** button. The boot process will take about 45 seconds, after which you will see a “spinning” pattern of the LEDs on the front edge of the board. See Figure 4.

Figure 4. Broadlinx board LEDs.



If the board does not reboot, pull out and re-seat the NR-33000 board. As the board is re-seated, keep the ejector levers spread apart and slide the board in until the levers make contact. The levers are then folded toward each other to seat the board.

- If there are two NR boards, make the inactive NR-33000 active:
 - Jupiter-** and **Encore-**controlled systems - press the "Activate" button (see [Figure 3](#)). The "Active" LED indication will switch to this board. Note that a Secondary (amber) alarm will be asserted when the Secondary NR is active.
 - SMS 7000-**controlled system - use the SMS console command:

```
switchanc "name of configured anc"
```

...entering the quotation marks as shown. Or, press the "Reset" button on the **active** NR-33000 (see [Figure 3](#)). The "Active" LED indication will switch to the opposite board.

Note You may see error messages in console/telnet windows at this time because the router hardware is not yet fully updated. These messages can be ignored.

5. Install the memory module on the remaining NR-33000 and repeat these steps.

Updating the Re-loader and Loader

Note The Re-loader and Loader Update procedure will not affect on-air operations.

Follow these steps to update all the boards within the frame (except an active NR-33000 card):

1. Go to the console window that is associated with the **active** NR-33000.
2. Repeat the connection procedure described in [Preliminary Update Procedure](#) if the window shows a “Connection to host lost” message.

a. Type:

```
sendLoader -1
```

Note If the window shows a continuous list of “Bad FPGA data” etc., messages, enter the task suspend command `ts tLogger` to halt the logger process. Then re-enter the `sendLoader` command.

Typically the system will respond with the following console message; separate progress messages will be displayed for each board in the frame:

```
Suspend Health Check
Frame 00, Slot 08
Send reloader to frame 0 slot 8 (class 2, type 4)
 100% done
Send succeeded for frame 0 slot 8
Send loader to frame 0 slot 8 (class 2, type 4)
 100% done
Send succeeded for frame 0 slot 8
 100% done...
```

...etc. Progress will also be indicated by red LEDs illuminating on the boards as they are updated.

3. Update the inactive NR-33000 board after the frame boards have been updated:

a. If the **inactive** NR is in the **Primary** slot, type:

```
sendLoader 10,0,0
```

b. If the **inactive** NR is in the **Secondary** slot, type:

```
sendLoader 10,0,1
```

Typically the system will respond with the following console message:

```
Suspend Health Check
Frame 00, Slot 01
Send reloader to frame 0 slot 1 (class 2, type 10)
 100% done
Send succeeded for frame 0 slot 1
Send loader to frame 0 slot 1 (class 2, type 10)
 100% done
```

```
Send succeeded for frame 0 slot 1
100% done
Frame 00, Slot 08 Release tributary bus
Resume Health Check
value = 0 = 0x0
```

...etc. After a “Firmware Update Succeeded” message you may need to press [Enter] to restore the command line prompt.

4. Update the active NR-33000 card:
 - a. If the **active** card is in the **Primary** slot, type:

```
sendLoader 10,0,0
```

- b. If the **active** card is in the **Secondary** slot:

```
sendLoader 10,0,1
```

Typically the system will respond with the following console message; separate progress messages will be displayed for the reloader, loader and firmware update.

```
Suspend Health Check
Frame 00, Slot 00
Send reloader to frame 0 slot 0 (class 2, type 10)
 100% done
Send succeeded for frame 0 slot 0
Send loader to frame 0 slot 0 (class 2, type 10)
 100% done
Send succeeded for frame 0 slot 0
20000123.154540: Firmware update requested for frame
0 slot 0 (class 2, type 10). (slaveDevice.cc:169)
 100% done
Frame 00, Slot 01 Release tributary bus
Resume Health Check
value = 0 = 0x0
```

5. Proceed to the [Activating New Software and Restarting Boards](#) section.

Activating New Software and Restarting Boards

This procedure will download new software to the various boards in the system and reboot boards as needed.

Follow these steps to Activate the new software and then restart the board.

1. Log in to the Broadlinx web page for the NR board (if there are two NR boards, log in to the **active** board). Go to the Firmware Management menu.

If you have just reset the board, you may have to wait a moment for the web server software to start before you can log in.

Note If you are unfamiliar with procedures for displaying the Firmware Management menu, refer to Section 4 of the Trinix manual. If Adobe Acrobat Reader is installed on the PC, the Trinix manual can be displayed on line by clicking the “Help” command in the Broadlinx title bar.

Note The factory default login and password to reach the Firmware Management window are both “admin.”

The Broadlinx Firmware Management table displays the types of possible PC boards, the version of sub-level software that is presently associated with each type that is installed, the versions of top-level software packages present in the Broadlinx board, and the compatibility Status of these software elements. An example of this table is shown in [Figure 5](#).

Figure 5.

Firmware Management

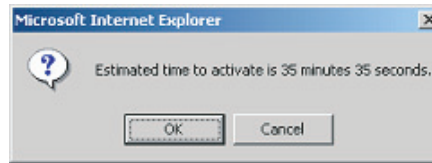
Module	Fpga Active	Fpga Pending	uControl Active	uControl Pending	Status
HI-33110				6	●
SI-33110			6	6	●
HO-33110		16		8	●
SO-33110	16	16	8	8	●
DM-33100		7		8	●
HR-33000	16	18	8	8	●
SR-33000		10		8	●
RP-33500			5	5	●
SR-33500	7	7	6	6	●
DM-33501	15	16	6	6	●
DM-33502	15	16	6	6	●
HI-33120					●
HO-33120	8	8	2	2	●
VI-33100		6		1	●
HI-33200	5	6	1	1	●
DM-128					●
DM-128R					●
VxWorks			20071023	20071023	●
Web Interface			20071023	20071023	●

2.4.2

Following an installation using a Compact Flash, some of the Status lights will most likely be red. This means that the software currently running in the module is different (older) than software just installed and that the new software should be activated as described below.

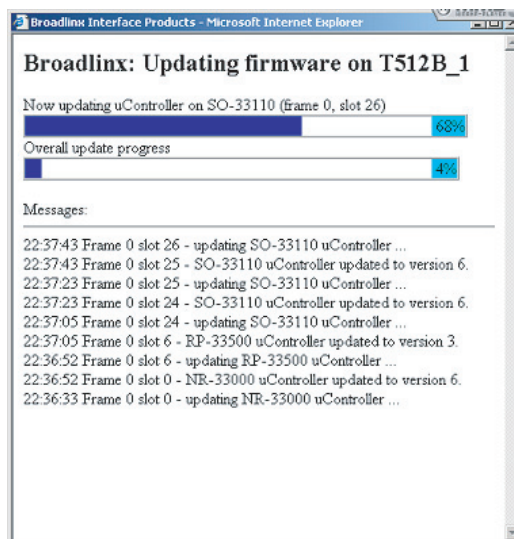
2. Select **Activate**. An “Estimated Time” display will appear:

Figure 6.



3. Select **OK**. A status window will appear:

Figure 7.



The new software will be copied from the NR-33000 to each board that requires update.¹ This process can take from several minutes to a half hour or more. Progress will be shown by the progress bars and by alarm LEDs on the boards themselves.

If the Broadlinx: Updating firmware window is accidentally closed, you can reopen it by navigating to the home page of the Broadlinx card. The rest of the Broadlinx pages are not available while the update is in progress.

¹ Except for systems with two NRs; in these systems the NR performing the update will not install software on itself, as described below.

4. When the progress bars reach 100%, a “Finished firmware update” message will appear. Close the updating firmware window.
5. The Broadlinx web page will indicate “Post Complete.” Select **Back** and navigate back to the Firmware Management menu. A **Restart** button will now appear near the bottom of the display. (The display may vary from that shown.)

Figure 8.

Module	Fpga Active	Fpga Pending	uControl Active	uControl Pending	Status
HI-33110				6	●
SI-33110			6	6	●
HO-33110		16		8	●
SO-33110	16	16	8	8	●
DM-33100		7		8	●
NR-33000	16	18	8	8	●
SR-33000		10		8	●
RP-33500			5	5	●
SR-33500	7	7	6	6	●
DM-33501	15	16	6	6	●
DM-33502	15	16	6	6	●
HI-33120					●
HO-33120	8	8	2	2	●
VI-33100		6		1	●
HI-33200	5	6	1	1	●
DM-128					●
DM-128R					●
VxWorks			20071023	20071023	●
Web Interface			20071023	20071023	●

Restart * Cards must be restarted to start using the new firmware.

2.4.2

Activate Upload Cancel

6. Select **Restart**.

The following popup will appear:

Figure 9.



CAUTION The following step will cause a momentary interruption to video passing through the router.

7. Select **OK**.

The Post Complete popup will reappear.

8. If this is a **single** NR-33000 system go to *Activating and Restarting the NR in a Single NR system*. If this is a redundant NR system, go to *Updating the second NR in a Redundant NR-33000 system*.

Activating and Restarting the NR in a Single NR system

Note The Firmware Management page cannot be used to Restart an active NR.

CAUTION The following step will briefly interrupt sync to the router. If there is only one NR in the system, and a switch command is received while the NR board is unseated, the switch will not be synchronous.

CAUTION Encore-controlled systems: if for some reason there is only one NR board, switch commands cannot be executed while the NR board is unseated or rebooting.

1. Un-seat and re-seat the NR board.
2. Go to the Firmware Management window after the NR has rebooted. All Status lights should be green.
3. This completes the update procedure for a single NR system.

Updating the second NR in a Redundant NR-33000 system

1. Go to the **inactive** NR-33000 and check to see that the board has finished booting up. Use the hardware button (shown in [Figure 3](#)) to switch the board to active mode.
2. Log in to the newly activated board and go to the Firmware Management window.

You may have to wait a moment for the web server software to start before you can log in.

Figure 10.

Module	Fpga Active	Fpga Pending	uControl Active	uControl Pending	Status
HI-33110				6	●
SI-33110			6	6	●
HO-33110		16		8	●
SO-33110	16	16	8	8	●
DM-33100		7		8	●
HR-33000	16 ...	18	8	8	●
SR-33000		10		8	●
RP-33500			5	5	●
SR-33500	7	7	6	6	●
DM-33501	16	16	6	6	●
DM-33502	16	16	6	6	●
HI-33120					●
HO-33120	8	8	2	2	●
VI-33100		6		1	●
HI-33200	6	6	1	1	●
DM-128					●
DM-128R					●
VxWorks			20071023	20071023	●
Web Interface			20071023	20071023	●

In the NR-33000 status line, the “dots” and the red light will indicate that the opposite (inactive) NR requires update.

3. Select **Activate**. The estimated time popup will appear.
4. Select **OK**. The new NR software will be copied from the active NR to the inactive NR. When the progress bars reach 100%, a “finished firmware update” message will appear.
5. Close the updating firmware window. The Broadlinx web page will then indicate “Post Complete.”
6. Return to the Firmware Management menu and select **Restart**. The following popup will appear.

Figure 11.



CAUTION The following step will cause a momentary interruption to video passing through the router.

7. Select **OK**. The Post Complete window will reappear.
8. Select **Back** and **Firmware Management**. All Status lights should be Green. See [Figure 12](#).

Figure 12.

Module	Fpga Active	Fpga Pending	uControl Active	uControl Pending	Status
HI-33110				6	●
SI-33110			6	6	●
HO-33110		16		8	●
SO-33110	16	16	8	8	●
DM-33100		7		8	●
NR-33000	18	18	8	8	●
SR-33000		10		8	●
RP-33500			5	5	●
SR-33500	7	7	6	6	●
DM-33501	16	16	6	6	●
DM-33502	16	16	6	6	●
HI-33120					●
HO-33120	8	8	2	2	●
VI-33100		6		1	●
HI-33200	6	6	1	1	●
DM-128					●
DM-128R					●
VxWorks			20071023	20071023	●
Web Interface			20071023	20071023	●

2.4.2

(Optional) Switch the primary NR to active mode.

This completes the installation.

