



**CAUTION:** Before proceeding, refer to the "Important Regulatory and Safety Notices to Service Personnel" document that was included with your router. It is also recommended to refer to the *Ultrix Installation Guide* which is available for download from our website.

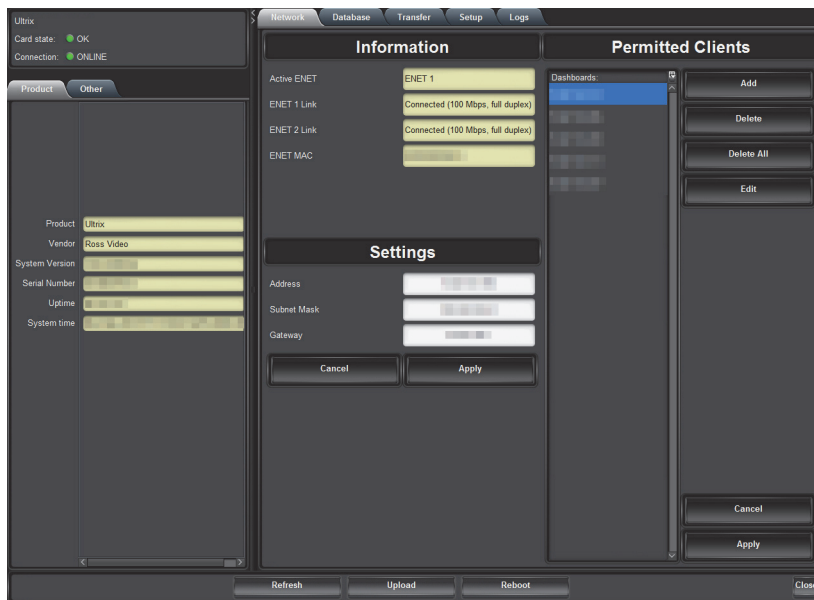
### Before You Begin

It is important to note that before installing a new Ultrix I/O Board in an existing Ultrix routing system, the Ultrix router software version must be noted. Your new Ultrix I/O Board ships with a default firmware installed and must be updated to match the current version running in the Ultrix router. This will require contacting Ross Technical Support for the appropriate software version (which includes I/O Board firmware). The Ultrix router software (and corresponding I/O Board firmware) is upgraded through the DashBoard client.

★ It may be there are later software versions than is currently running are available. The opportunity may be taken at this time to upgrade to a later software version, however, some database editing may be required as features between versions are added.

#### To verify the software version currently installed on your Ultrix router

1. Ensure the Ultrix router has a valid ethernet connection.
2. Ensure that you are running DashBoard client software version 7.1.0 or higher and that the computer running the DashBoard client is located on the same network as the Ultrix router.
3. Launch DashBoard by double-clicking its icon on your computer desktop.
4. In the Basic Tree View, locate the Ultrix router you want to verify the software for.
5. Locate the Ultrix in the Tree View of DashBoard.
6. Expand the Ultrix node to display a list of sub-nodes in the Tree View.
7. Expand the Ultrix sub-node.
8. Double-click the **System Status** node to display the tabs in the DashBoard window.



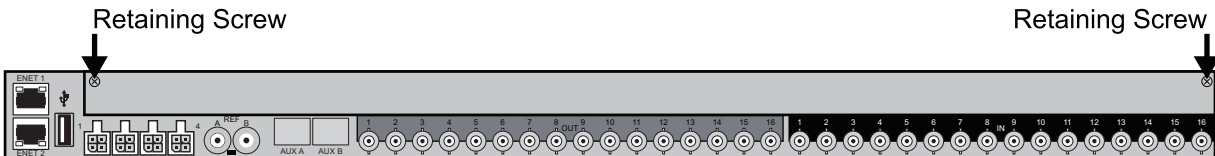
9. Select the **Product** tab. This tab is located in the series of tabs on the left-side of the DashBoard window.
10. Make a note of the value in the **System Version** field. This is the software version your router is currently running. You will need to provide Ross Technical Support this information when you contact them.

## Removing the Blank Plate from the Ultrix Chassis

If you are not replacing an I/O Board, you will need to first remove the blank plate from the required slot. You will need a #1 Phillips screwdriver to disengage the captive screw. While the figures show an ULTRIX-FR1 chassis, the procedure is also applicable to the ULTRIX-FR2 and ULTRIX-FR5.

### To remove the blank plate from the Ultrix chassis

1. Power down the Ultrix router and disconnect it from mains power.
2. Disengage the captive retaining screws on either end of the Blank Plate. Refer to **Figure 1** for screw locations.



**Figure 1** Ultrix Rear Panel — Retaining Screw Locations on the Blank Plate

3. Remove the Blank Plate from the chassis and set it aside.

## Removing an I/O Board from the Ultrix Chassis

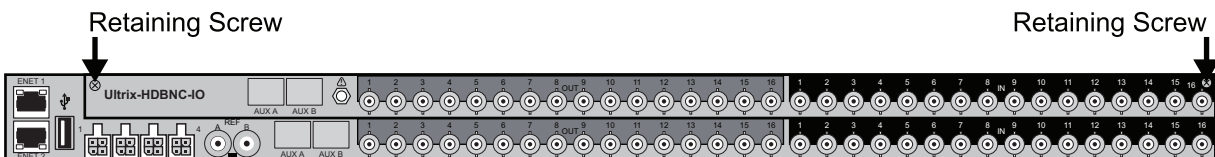
If you are replacing an I/O Board, you must first remove the old board from the chassis. There are two screws and one bolt that affix the board to the chassis: a screw on each end of the board and then a Middle Retaining Bolt. You must disengage all three before the board can be removed from the chassis. You will need a 3/16" socket to disengage the bolt (included in the kit shipped with your router).



**Caution** — Steps must be followed in the presented order. Failing to do so can damage the I/O Board.

### To remove an I/O Board from the Ultrix chassis

1. Power down the Ultrix router and disconnect it from mains power.
2. Disengage the retaining screws on either end of the I/O Board. Refer to **Figure 2** for screw locations.

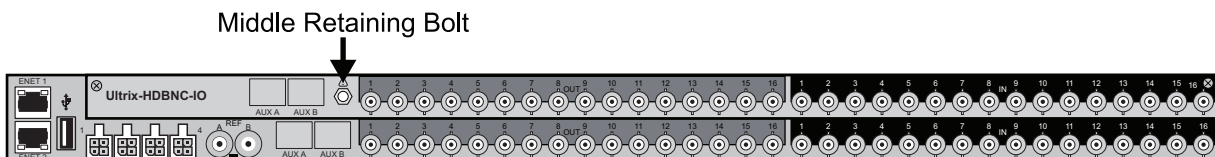


**Figure 2** Ultrix Rear Panel — Location of Retaining Screws on the I/O Board

3. From the Ultrix rear panel, unfasten the Middle Retaining Bolt. Note that this bolt is not removable. Refer to **Figure 3** for the bolt location on the rear panel.



**Caution** — Ensure the Middle Retaining Bolt is fully unfastened before attempting to remove the I/O Board from the chassis. While the bolt is not removable and serves as a threaded insertion and extraction tool. It should be free to move in and out a few millimeters in its socket once unfastened.



**Figure 3** Ultrix Rear Panel — Location of Middle Retaining Bolt on the I/O Board

- Grasp the board with both hands and gently pull it towards you to remove it from the router backplane.

## Installing an I/O Board into the Ultrix Chassis

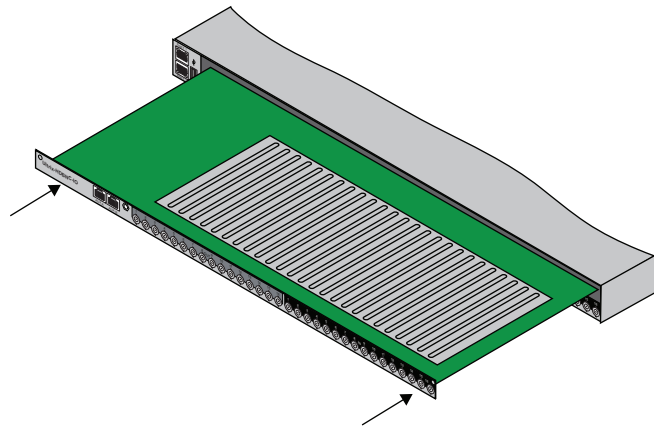
The I/O Board is affixed to the BNC strip it serves as a complete unit. There are two screws and one bolt that affix the board to the chassis: a screw on each end of the board and a Middle Retaining Bolt.



**ESD Susceptibility** — *Static discharge can cause serious damage to sensitive semi-conductor devices. Avoid handling circuit boards in high static environments such as carpeted areas and when synthetic fiber clothing is worn. Always exercise proper grounding precautions when working on circuit boards and related equipment.*

### To install an I/O Board into the Ultrix chassis

- Using the card guides inside the chassis, gently slide the I/O Board into the chassis while lifting up slightly to take the weight.

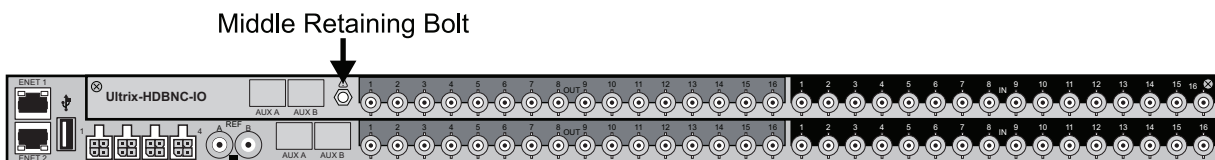


**Figure 4** Sliding the I/O Board into the Chassis

- Gently slide the board in until you feel it start to resist as the edge connectors begin to mate. This will occur approximately 1/8" (3mm) before the board is fully seated. At this stage, the Middle Retaining Bolt should be used to pull the board into its final mated position.
- Using a 3/16" socket, fully tighten the Middle Retaining Bolt. This bolt secures the I/O Board to the chassis from the interior, ensuring proper contacts between the I/O Board and the router backplane.



**Caution** — *You must first fully tighten the Middle Retaining Bolt before tightening the screws on the I/O Board. Not doing so will damage the I/O Board, the connectors on the backplane, or both.*



**Figure 5** Ultrix Rear Panel — Location of Middle Retaining Bolt on the I/O Board

- Using a Phillips screwdriver, fully tighten the screws located on the left and right sides of the I/O Board.
- ★ Tightening these screws is required to ensure proper alignment between the I/O Board and the router backplane.
- If required, affix the provided I/O labels to the rear panel to suit your numbering scheme.

6. Power on the Ultrix router as outlined in the *Ultrix Installation Guide*.



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**Notice** — *The Ultrix router automatically powers on when power is applied.*

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## Upgrading the Ultrix Router Software

Upon the initial power up of the Ultrix router after the hardware upgrade the **Alarms** table in the **Hardware Configuration** interface in DashBoard reports a “**System Error**” with a Failed state (red indicator), and the **Frame Information** table in the **Hardware Configuration** interface reports a new Firmware version for the newly upgraded slot. To complete the Ultrix I/O Board upgrade, you must upgrade the software and clear the alarm states.

### To upgrade the Ultrix software

1. Verify that you have the latest software version file for the router. Contact Ross Technical Support for details.
2. Repeat steps 1 to 8 in the procedure “**To verify the software version currently installed on your Ultrix router**” of this document to display the **System Status** tab for your Ultrix router.
3. Click **Upload**, located near the bottom of the tab.

The **Select File to Upload** dialog opens.

4. Navigate to the \*.bin file you want to upload. This is the file that Ross Technical Support provided you.
5. Click **Open**.
6. Click **Finish** to start the upgrade.
7. Monitor the upgrade.

An **Upload Status** dialog enables you to monitor the upgrade process.

- ★ Avoid clicking **Reboot** until the Ultrix has successfully completed the file upload process and the **OK** button is enabled.

8. Click **OK** to reboot the Ultrix.

The **Reboot Confirm** dialog opens, indicating the Ultrix will reboot.

9. Click **Yes** to continue the upgrade process.

- ★ The router is temporarily taken off-line during the reboot process. The process is complete once the status indicators for the router return to their previous status.

10. Verify that the **Alarms** and **Frame Information** tables in the **Hardware Configuration** interface are updated:

- Repeat steps 1 to 7 in the procedure “**To verify the software version currently installed on your Ultrix router**” of this document.
- Expand the **Devices** node and double-click the **Ultrix** sub-node to display the **Hardware Configuration** interface in DashBoard.
- Click **Alarms** (located in the left toolbar of the interface) to verify that the “**System Error**” is not displayed.
- Click **Frame Information** (located in the left toolbar of the interface) to verify the Firmware versions.