Embedded Software Utilities

This chapter describes the procedures that operate on the Cisco 6700 embedded software.

Note The term "embedded software" does not refer to the EMS software. Embedded software is stored in Flash memory on the Main Control Card (MCC) of the Cisco 6700 NE. EMS is a graphical user interface launched from a user workstation. To install or upgrade EMS, see Chapter 2, "EMS Installation."

Backing Up the System Database

The EMS database backup utility allows you to back up the existing configuration of a node to a TFTP server. After the database has been backed up, the node configuration can be restored if needed. The database restore procedure is described in the "Database Erase" section on page 10-10.

Before You Begin

Before beginning the embedded software upgrade, complete the following tasks:

- Connect a local EMS workstation to the Cisco 6700 NE chassis.
- Back up the system database before starting the software upgrade.
- Verify that a TFTP server is online and available to receive the database backup information. TFTP server verification can be confirmed by pinging the TFTP host (confirms that the Cisco 6700 NE is properly routed to the TFTP host).
- Verify that the TFTP server contains the embedded software file **SwLoad.fbx** in the TFTP directory.

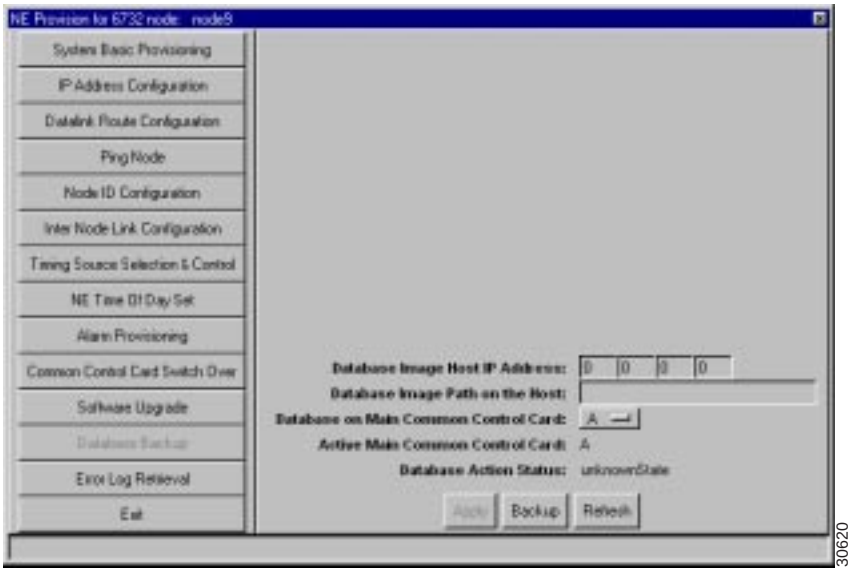
To back up the system database:

Step 1 Open the node view of the NE to be backed up.

Step 2 Double-click the node nameplate to launch the NE provisioning window.

Step 3 Select the **Database Backup** tab from the NE provisioning window. (See Figure 10-1.)

Figure 10-1 Database Backup



Step 4 Complete the following fields to begin the database backup procedure:

- **Database Image Host IP Address**: Enter the IP address of the TFTP host.
- **Database Image Path on the Host**: Enter the file name that will be used for the database backup file.
- **Database on Main Common Control Card**: Select the MCC (A or B) to be backed up. The active MCC is shown in the Active Main Common Control Card field.

Step 5 Click **Apply** to save the backup configuration.

Step 6 Click **Backup** to begin the database backup.

Upgrading the Embedded Software Image on the Cisco 6732

The latest embedded software image is available on Cisco Connection Online (CCO). See the "About This Guide" chapter for more information about CCO.

Caution Cisco recommends that you perform a **local** software upgrade, with a local EMS workstation directly connected to the Cisco 6732 chassis.

Before You Begin

Before beginning the embedded software upgrade:

- Connect a local EMS workstation to the Cisco 6732 chassis alarm maintenance and monitoring card (AMM), or to the active main control card if the chassis does not contain an AMM card.
- Back up the system database before starting the software upgrade.
- Verify that a TFTP server is online and available to receive the database backup information. TFTP server verification can be confirmed by pinging the TFTP host (this confirms that the Cisco 6732 is properly routed to the TFTP host).
- Verify that the TFTP server contains the embedded software file **SwLoad.fbx** in the TFTP directory.

Note When upgrading multiple nodes in a network, always start from the far end of the network, one node at a time. In a typical network, a number of remote nodes (subscriber nodes) are connected to a central office terminal (COT) node. If the upgrade of COT is mishandled, the entire network may be lost. Upgrade tests and sample enhancements should be made at the edge node. If the upgrade tests fail on the edge nodes, never attempt to upgrade the COT node.

The Cisco 6732 software upgrade procedure consists of the following sections:

- Upgrade the Standby MCC
- Switch Control to Standby MCC
- Upgrade Remaining MCC
- Reset the Line Cards

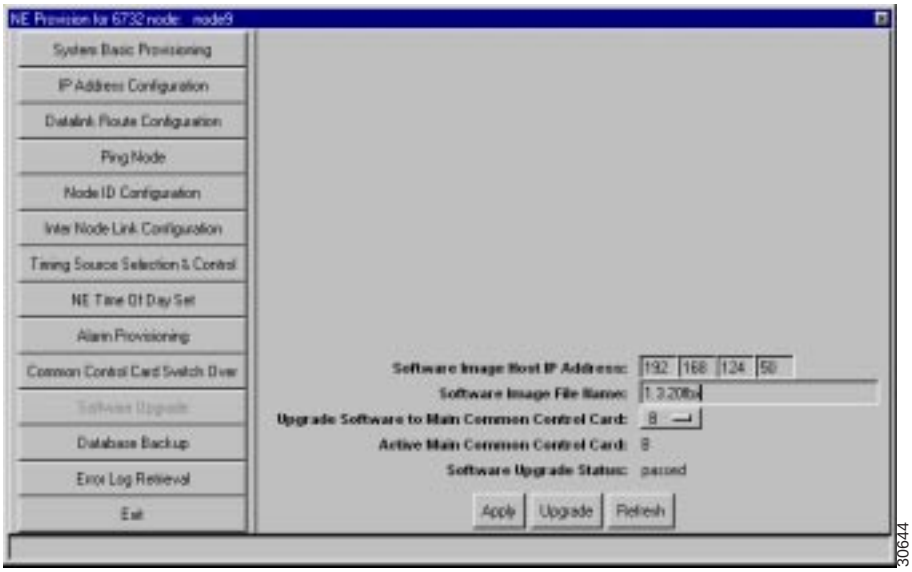
Upgrade the Standby MCC

Step 1 Open the node view of the NE to be backed up.

Step 2 From node view, double-click the node nameplate to launch the NE provisioning window.

Step 3 Select **Software Upgrade** from the function bar to display the software upgrade window.

Figure 10-2 Software Upgrade Window



Step 4 In the **Software Image Host IP Address** field, enter the IP address of the TFTP server.

Step 5 In the **Software Image File Name** field, enter **SwLoad.fbx**.

Step 6 Look at the **Active Main Common Control Card** field, where EMS indicates the active MCC (**A** or **B**).

Step 7 In the **Upgrade Software to Main Common Control Card** field, select the MCC that is **NOT ACTIVE** (the standby MCC). For example, if EMS shows that the active MCC is in slot A, select **B**.

Step 8 Click **Apply** to confirm the host IP address and path to the image filename.

Step 9 Click **Upgrade** to download the embedded software image into the Flash memory of the selected MCC.

Caution If EMS is unable to complete the embedded software upgrade, an error message will be displayed at the bottom of the NE provision window. In this case, **do not reset the MCC**; restart the embedded software upgrade process.

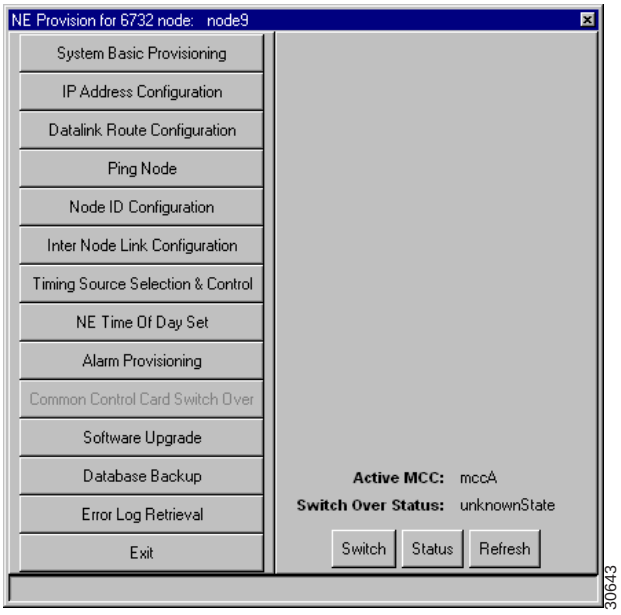
Step 10 The MCC must be reset before the new embedded software becomes active. Use one of the following procedures to reset the MCC:

- Physically remove and reseat the MCC in the NE chassis. See the *Cisco 6732 Full Access Device Hardware Installation Guide* for handling procedures.
- Return to net view, right-click on the node icon and select **Node Critical Commands**. Enter the password when prompted, then select the **MCC Reset** tab. The complete MCC reset procedure is detailed in the "MCC Reset" section on page 10-11.

Switch Control to Standby MCC

Step 1 Return to the NE provision window, and click **Common Control Card Switch Over** in the function bar. (See Figure 10-3.)

Figure 10-3 Common Control Card Switch Over Option

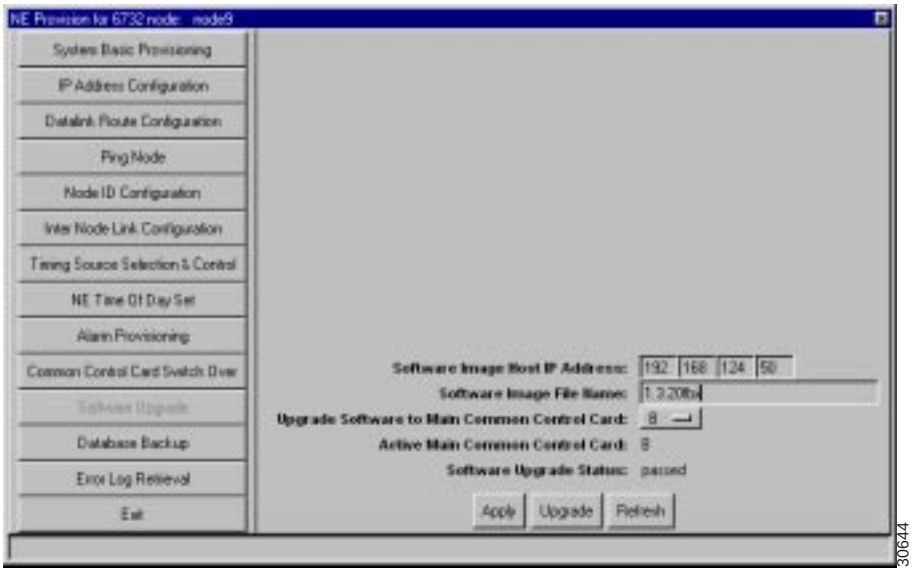


Step 2 Click **Switch** to switch control from the active MCC to the standby MCC.

Upgrade Remaining MCC

Step 1 Select **Software Upgrade** from the function bar to display the software upgrade window.

Figure 10-4 Software Upgrade Window



Step 2 The **Software Image Host IP Address** and **Software Image File Name** fields should already be set from steps 4 and 5; if necessary, enter the correct IP address and file name for the TFTP server.

Step 3 Look at the **Active Main Common Control Card** field, where EMS indicates the currently active MCC (**A** or **B**).

Step 4 In the **Upgrade Software to Main Common Control Card** field, select the MCC that is **NOT ACTIVE**. For example, if EMS shows that the active MCC is in slot A, select **B**.

Step 5 Click **Apply** to confirm the host IP address and path to the image filename.

Step 6 Click **Upgrade** to download the embedded software image into the Flash memory of the selected MCC.

Caution If EMS is unable to complete the embedded software upgrade, an error message will be displayed at the bottom of the NE provision window. In this case, **do not reset the MCC**; restart the embedded software upgrade process.

Step 7 The MCC must be reset before the new embedded software becomes active. Use one of the following procedures to reset the MCC:

- Physically remove and reseat the MCC in the NE chassis. See the *Cisco 6732 Full Access Device Hardware Installation Guide* for handling procedures.
- Return to net view, right-click on the node icon and select **Node Critical Commands**. Enter the password when prompted, then select the **MCC Reset** tab. The complete MCC reset procedure is detailed in "MCC Reset" section on page 10-11.

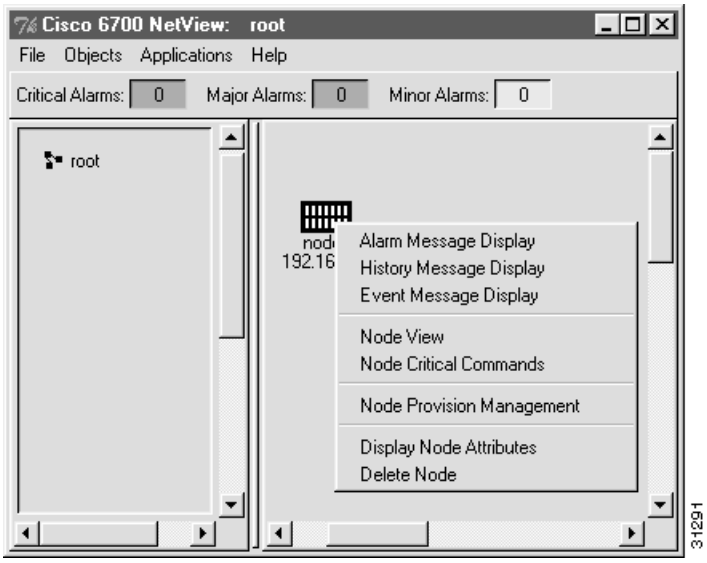
Reset the Line Cards

Caution The following procedure reboots the line cards and effectively takes them out of service. Any traffic being carried on the cards will be dropped. Proper planning and system coordination must be exercised to eliminate or reduce the potential for interrupted subscriber service.

Step 8 Return to the EMS net view.

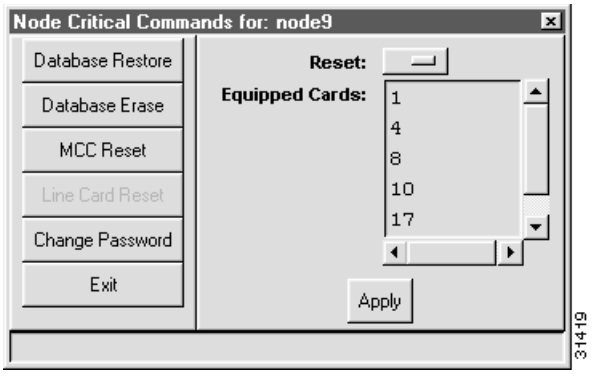
Step 9 Right-click the node being upgraded, and select **Node Critical Commands** from the popup menu. (See Figure 10-5.)

Figure 10-5 Node Popup Menu



Step 10 Click **Line Card Reset** in the function bar to open the line card reset window. (See Figure 10-6.)

Figure 10-6 Line Card Reset



Step 11 Set the **Reset** field to **Yes**.

Step 12 In the **Equipped Cards** list, highlight all line cards to be reset.

Note Cisco 6732 common cards (BPS/HP and AMM) do not need to be reset.

Step 13 Click **Apply** to reset all selected line cards.

Upgrading the Embedded Software Image on the Cisco 6705

The latest embedded software image is available on Cisco Connection Online (CCO). See the "About This Guide" chapter for more information about CCO.

Caution Cisco recommends that you perform a **local** software upgrade, with a local EMS workstation directly connected to the Cisco 6705 chassis.

Before You Begin

Before beginning the embedded software upgrade, complete the following tasks:

- Connect a local EMS workstation to the Cisco 6705 chassis.
- Back up the system database before starting the software upgrade.
- Verify that a TFTP server is online and available to receive the database backup information. TFTP server verification can be confirmed by pinging the TFTP host (this confirms that the Cisco 6705 is properly routed to the TFTP host).
- Verify that the TFTP server contains the embedded software file **SwLoad.fbx** in the TFTP directory.

Note When upgrading multiple nodes in a network, always start from the far end of the network, one node at a time. In a typical network, a number of remote nodes (subscriber nodes) are connected to a central office terminal (COT) node. If the upgrade of COT is mishandled, the entire network may be lost. Upgrade tests and sample enhancements should be made at the edge node. If the upgrade tests fail on the edge nodes, never attempt to upgrade the COT node.

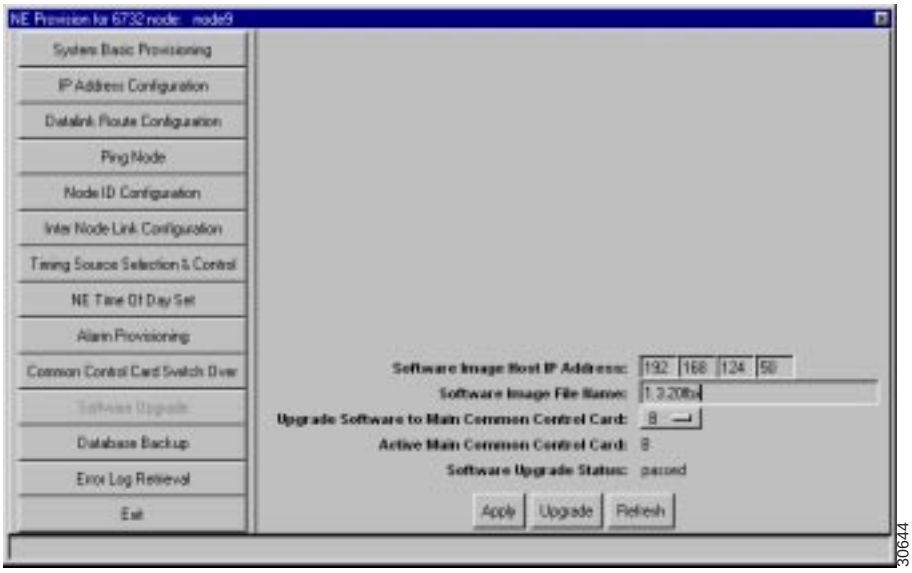
To upgrade or install the embedded software:

Step 1 Open the node view of the NE to be backed up.

Step 2 From node view, double-click the node nameplate to launch the NE provisioning window.

Step 3 Select **Software Upgrade** from the function bar to display the software upgrade window.

Figure 10-7 Software Upgrade Window



Step 4 In the **Software Image Host IP Address** field, enter the IP address of the TFTP server.

Step 5 In the **Software Image File Name** field, enter **SwLoad.fbx**.

Step 6 The Upgrade Software to Main Common Control Card field should be set to **A**; the Cisco 6705 has only one MCC, identified as A.

Step 7 Click **Apply** to confirm the host IP address and path to the image filename.

Step 8 Click **Upgrade** to download the embedded software image into the Flash memory of the MCC.

Caution If EMS is unable to complete the embedded software upgrade, an error message will be displayed in the EMS NE provisioning window. In this case, **do not reset the MCC**; restart the embedded software upgrade process.

Step 9 The MCC must be reset before the new embedded software becomes active. Use one of the following procedures to reset the MCC:

- Physically remove and reseat the MCC in the NE chassis. See the *Cisco 6705 Integrated Access Device Hardware Installation Guide* for handling procedures.
- From the EMS net view, right-click on the node icon and select **Node Critical Commands**. Enter the password when prompted, then select the **MCC Reset** tab. The complete MCC reset procedure is detailed in the "MCC Reset" section on page 10-11.

Caution Resetting the MCC causes all line cards in the Cisco 6705 to be reset as well, momentarily placing the line cards out of service. Any traffic being carried on the line cards will be lost or dropped. Proper planning and system coordination must be exercised to eliminate or reduce the potential for interrupted subscriber service.

Node Critical Commands

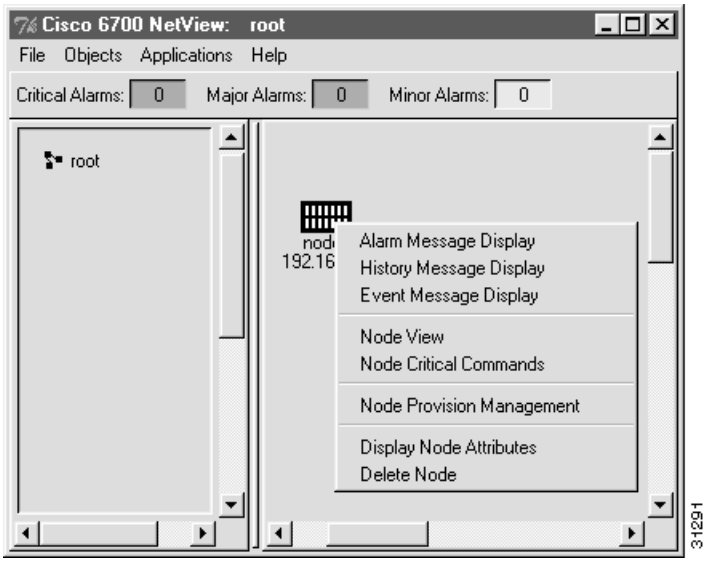
The following embedded software utilities are launched from the node critical commands window:

- Database Restore
- Database Erase
- MCC Reset
- Line Card Reset

Caution These commands are service-affecting, and **any user traffic passing through the node will be dropped**.

To launch the node critical commands window, right-click on a node icon in net view and select **Node Critical Commands**. (See Figure 10-8.)

Figure 10-8 Node Popup Menu



You will be prompted to enter a password; contact your EMS administrator to obtain the correct node critical commands password.

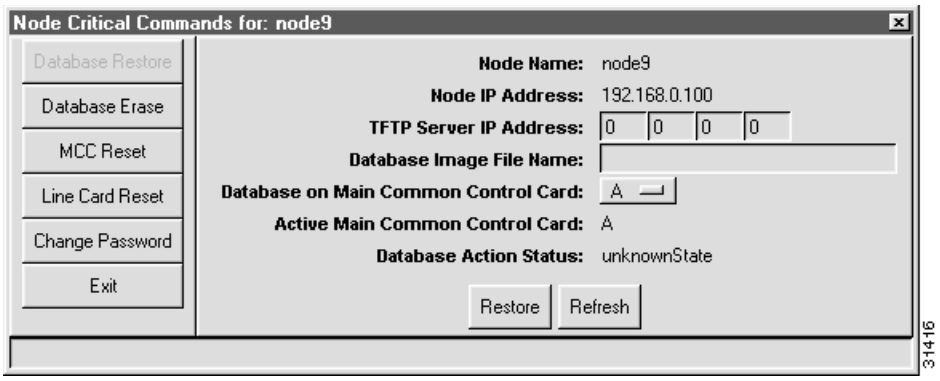
Note Your EMS workstation requires a special password file to launch the node critical commands window. If EMS cannot locate the password file, you will not be able to launch the node critical commands window. Contact your EMS administrator to obtain the password file.

Database Restore

Use the database restore function to restore a backed up database to an MCC on the Cisco 6732 or Cisco 6705. See the "Backing Up the System Database" section on page 10-1 for the database backup procedure.

The database restore window appears after launching the node critical commands window. (See Figure 10-9.)

Figure 10-9 Database Restore



Complete the following fields to provision the database restore function:

- **TFTP Server IP Address**: Enter the IP address of the TFTP server that contains the database backup file.
- **Database Image File Name**: Enter the file name of the database backup file on the TFTP server.
- **Database on Main Common Control Card**: Select the MCC to be restored (A or B). The active MCC is indicated in the **Active Main Common Control Card** field.

Click **Restore** to upload the database file from the TFTP server to the selected MCC.

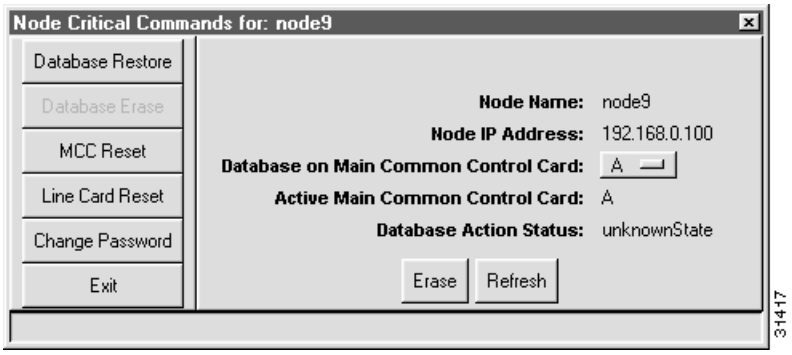
Database Erase

The database erase function erases all data stored on an MCC in the Cisco 6732 or Cisco 6705.

Caution Erasing the database removes all card and line provisioning, including cross connects and inter-node connections.

After launching the node critical commands window, click **Database Erase** in the function bar to open the database erase window. (See Figure 10-10.)

Figure 10-10 Database Erase



To erase the existing database from an MCC, select the MCC to be erased in the **Database on Main Common Control Card** field. Click **Erase** to erase the database.

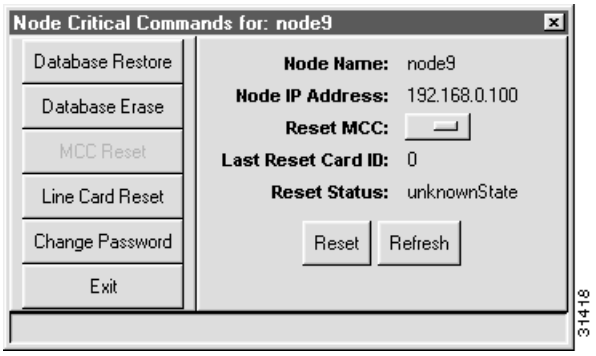
MCC Reset

The MCC reset function resets the MCC and reloads the embedded software.

Caution Resetting the MCC causes all line cards in the Cisco 6705 to be reset as well, momentarily placing the line cards out of service. Any traffic being carried on the line cards will be lost or dropped. Proper planning and system coordination must be exercised to eliminate or reduce the potential for interrupted subscriber service.

From the node critical commands window, click **MCC Reset** from the function bar to open the MCC reset window. (See Figure 10-11.)

Figure 10-11 MCC Reset



To reset the MCC, select the MCC to be reset (A or B) in the **Reset MCC** field, and click **Reset** to reset the selected MCC.

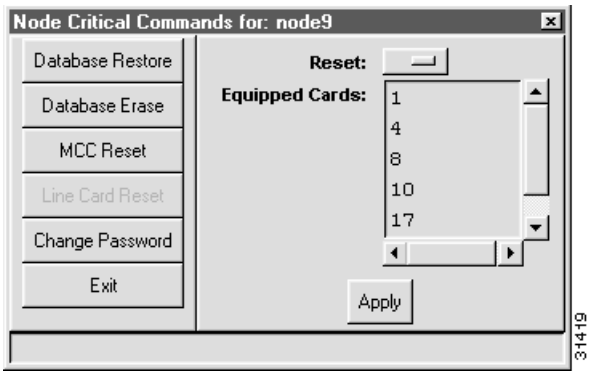
Line Card Reset

The line card reset function resets all selected cards in the Cisco 6705 or Cisco 6732 chassis.

Caution The following procedure reboots the selected line cards and effectively takes them out of service. Any traffic being carried on the cards will be dropped. Proper planning and system coordination must be exercised to eliminate or reduce the potential for interrupted subscriber service.

From the node critical commands window, click **Line Card Reset** from the function bar to open the line card reset window. (See Figure 10-12.)

Figure 10-12 Line Card Reset



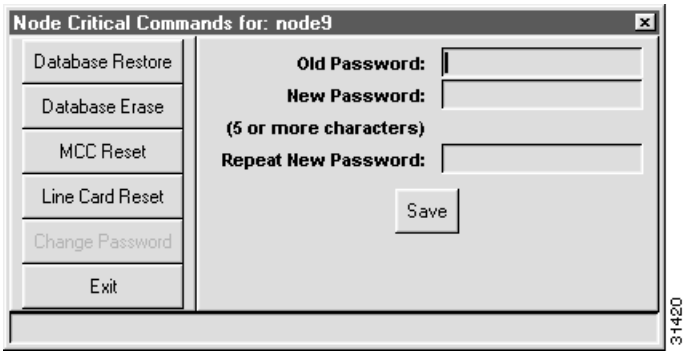
In the **Equipped Cards** list, highlight all line cards to be reset. Set the **Reset** field to **Yes**, and click **Apply** to reset the selected line cards.

Change Password

The Change Password function is used to change the node critical commands password. This password is used to launch the node critical commands window.

Note The node critical commands password is not the password used to log in to EMS. To change the EMS login password for a particular user, see Chapter 11, "Element Management System Utilities."

Figure 10-13 Change Node Critical Commands Password



Complete the following fields to change the node critical commands password:

- **Old Password**: Enter the old (existing) password.
- **New Password**: Enter an alphanumeric string (of at least five characters in length). This string will replace the old password.
- **Repeat New Password**: Retype the new password to confirm the password change.

Click **Save** to change the node critical command password.