Provisioning Cards and Lines

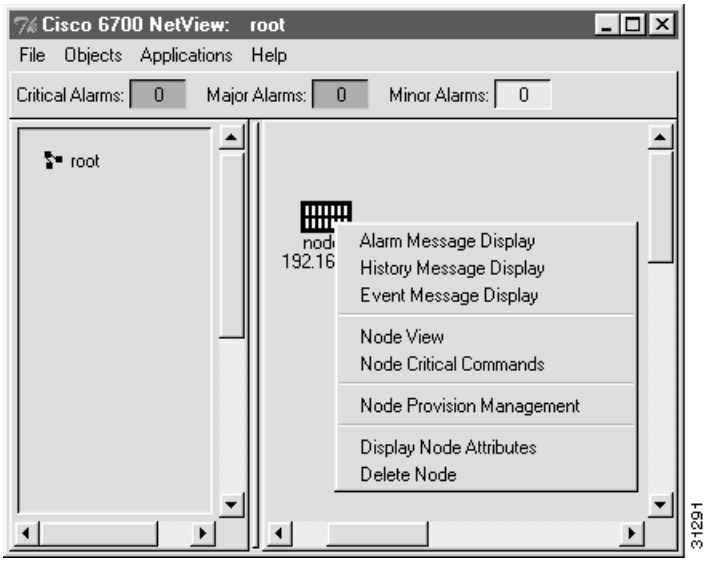
This section describes the general procedures used to provision cards and lines on the Cisco 6700 NE.

Launch the Node View

Card and line provisioning is done from the **node view** of an NE. From the node view, you can provision all cards and lines in the NE.

To launch the node view, double-click the node icon, or right-click the node icon and select **Node View** from the popup menu. (See Figure 5-1.)

Figure 5-1 Right-Click Popup Menu



Depending on the chassis type, EMS launches the Cisco 6732 node view (see Figure 5-2) or the Cisco 6705 node view (see Figure 5-3).

Figure 5-2 Cisco 6732 Node View

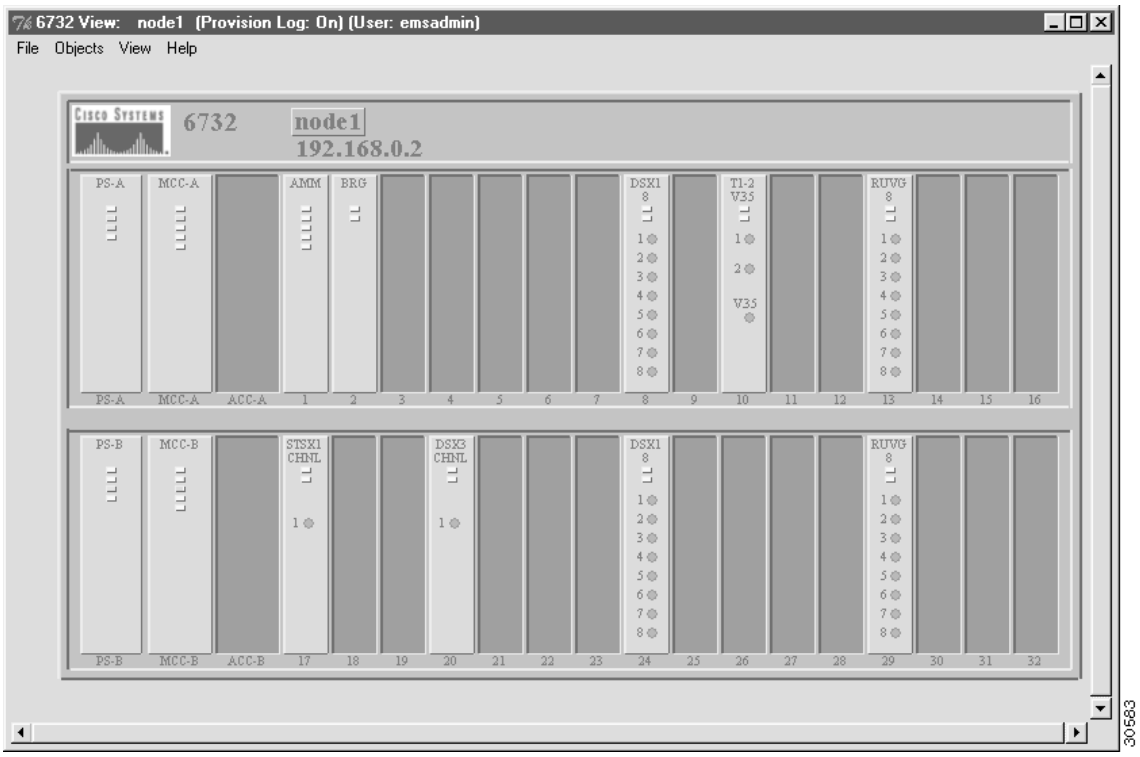
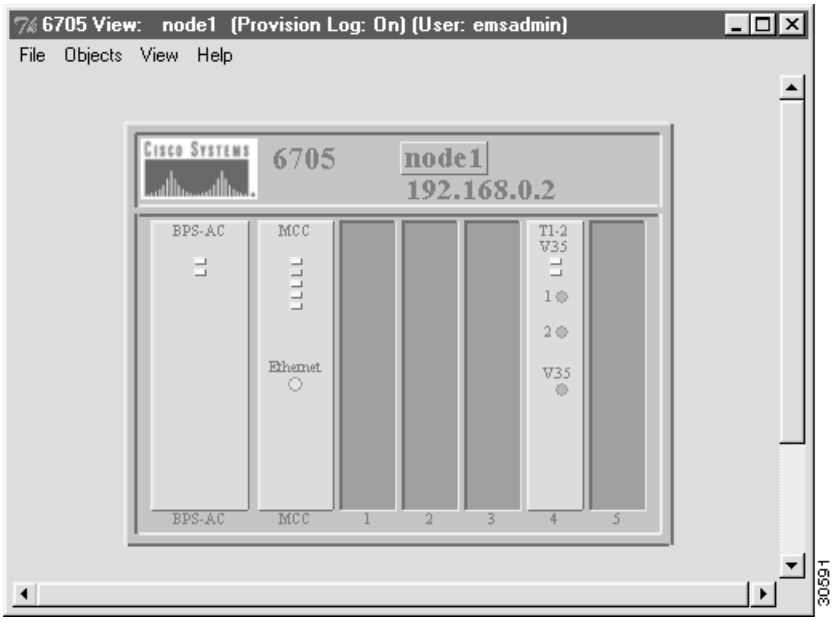


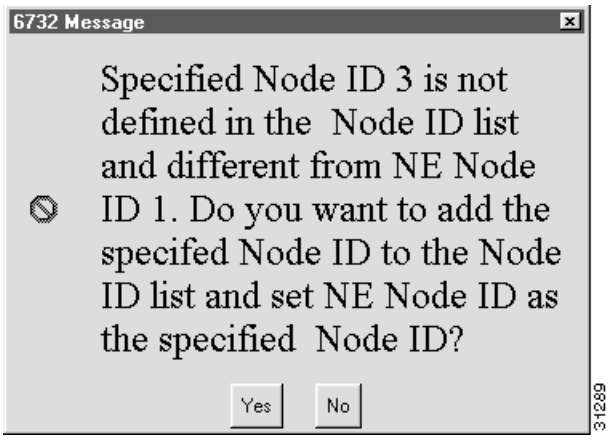
Figure 5-3 Cisco 6705 Node View



Node ID Conflict

If the node ID entered in EMS differs from the current node ID assigned to the NE, EMS reports a node ID conflict. (See Figure 5-4.)

Figure 5-4 Node ID Conflict



- Select **Yes** to override the NE provisioning and assign the EMS node ID to the NE.
- Select **No** to leave the NE with its original (conflicting) node ID.

Example: You create a node in EMS net view and assign a node ID of **3**, but the Cisco 6700 NE is provisioned with a node ID of **1**. When you double-click the node icon, EMS reports a node ID conflict. Selecting **Yes** changes the NE node ID to 3. Selecting **No** leaves the NE with its node ID of 1.

No Response

If EMS is unable to connect with the NE, you will see a warning message describing the problem. The following list identifies common issues that might prevent the EMS workstation from communicating with the NE:

- The EMS workstation is not configured with the correct IP address. See Chapter 3, “Initial Provisioning,” for the IP address configuration procedure, and contact your EMS administrator to obtain a valid IP address for the NE.
- The Ethernet cable connecting the EMS workstation to the NE is not a crossover cable. Contact your EMS administrator to obtain a crossover cable.
- The Cisco 6700 NE is not powered on. Contact your EMS administrator to ensure the proper connection between the NE and power source.
- The Cisco 6700 NE is configured with an IP address other than the factory default IP addresses. This may occur if the NE was previously configured for a different network. To reset the NE with factory default IP addresses, contact your EMS administrator for the proper procedure.
- The node is configured for the wrong type of NE. While EMS will still be able to communicate with the NE, the warning message will occur each time node view is launched. To correct this, delete the node icon in net view, and create a node using the correct chassis type. See Chapter 4, “Provisioning Nodes,” for the node creation procedure.

Adding a Card

EMS detects all cards in the Cisco 6732 or Cisco 6705 chassis.

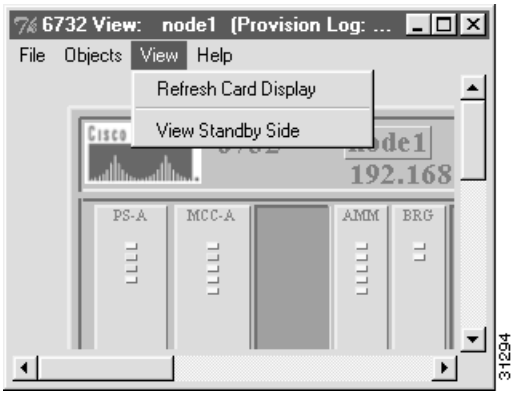
Step 1 Insert a card in the desired chassis slot. For detailed card and slot information, consult the *Cisco 6732 Full Access Device Hardware Installation Guide* or the *Cisco 6705 Integrated Access Device Hardware Installation Guide*.

Step 2 From the net view, open the node view of the chassis using one of the following methods:

- Double-click the node icon
- Right-click the node icon, and select **Node View** from the popup menu.

Step 3 Select **View > Refresh Card Display** from the menu bar. (See Figure 5-5.)

Figure 5-5 Node View Menu



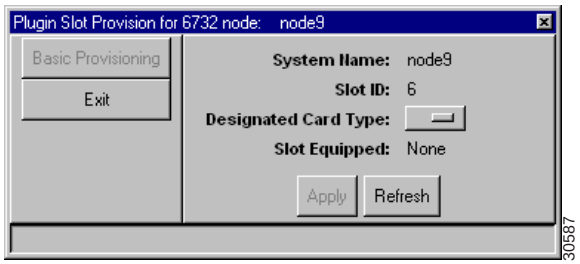
EMS refreshes the node view display to reflect newly inserted cards.

Provisioning Slots

To provision a slot for a particular card in a Cisco 6732 or Cisco 6705 chassis, complete the following steps from node view:

Step 1 Double-click the slot to be provisioned. EMS launches the plugin slot provisioning window. (See Figure 5-6.)

Figure 5-6 Plugin Slot Provisioning Window



Step 2 In the **Designated Card Type** field, select the desired card type from the pull-down list. EMS displays only the cards that are compatible with the selected slot. For more information about slot and card compatibility, consult the *Cisco 6732 Full Access Device Hardware Installation Guide* or the *Cisco 6705 Integrated Access Device Hardware Installation Guide*.

Step 3 Click **Apply** to provision the slot.

Placing Cards In Service

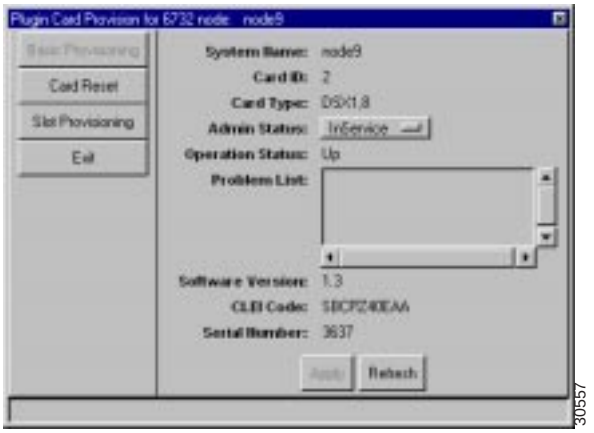
EMS provides both individual and batch procedures for placing cards in service.

Individual Card Provisioning

To place an individual card in service, complete the following steps starting in node view:

Step 1 Double-click the card to be placed in service. EMS launches the plugin card provisioning window. (See Figure 5-7.)

Figure 5-7 Plugin Card Provisioning Window



Step 2 Set the **Admin Status** field to **InService**.

Step 3 Click **Apply** to place the card in service.

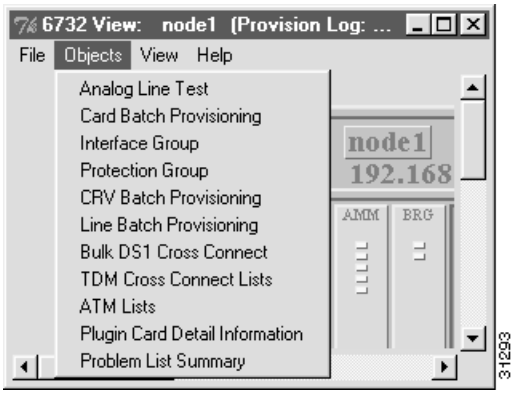
Step 4 Click the **Exit** button on the left side of the window to return to node view.

Batch Card Provisioning

To place cards multiple cards in service using the batch procedure, complete the following steps starting in node view:

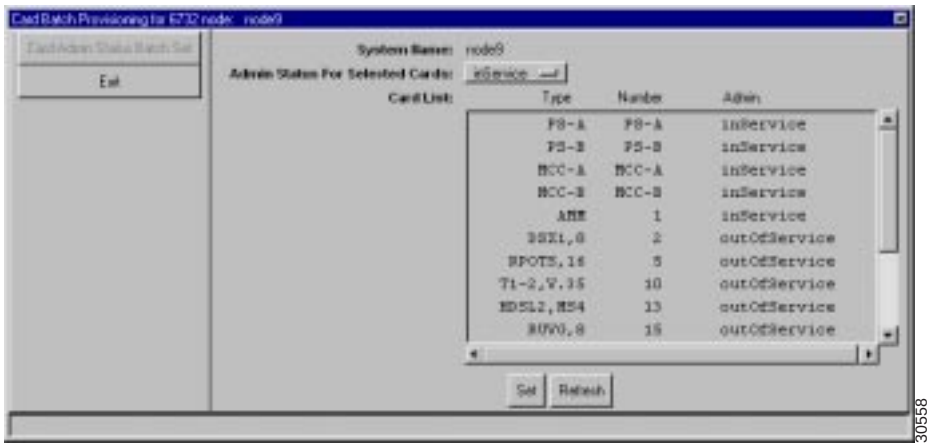
Step 1 Select **Objects > Card Batch Provisioning** from the node view menu bar. (See Figure 5-8.)

Figure 5-8 Node View Menu



Step 2 EMS displays the card batch provisioning window. (See Figure 5-9.) The **Card List** lists all cards that the NE has detected as installed.

Figure 5-9 Card Batch Provisioning Window



Step 3 In the **Admin Status for Selected Cards** field, select **inService**.

Step 4 In the **Card List** window, select the line cards to be placed in service.

Step 5 Click the **Apply** button to put the cards in service. EMS works down the list, changing each **outOfService** to **inService**.

Step 6 Click the **Exit** button on the left side of the window to return to node view.

Provisioning Broadband Card 1:1 Protection

EMS allows one-to-one (1:1) protection of the following broadband cards:

- DSX3-CHNL
- STSX1-CHNL

If one card fails, the second card will automatically restore the traffic through the chassis to the backplane. This ensures greater dependablity in the event of a hardware failure.

Broadband protection can only be provisioned on designated broadband slots. Two pairs of slots in the Cisco 6732 chassis are designated for broadband protection:

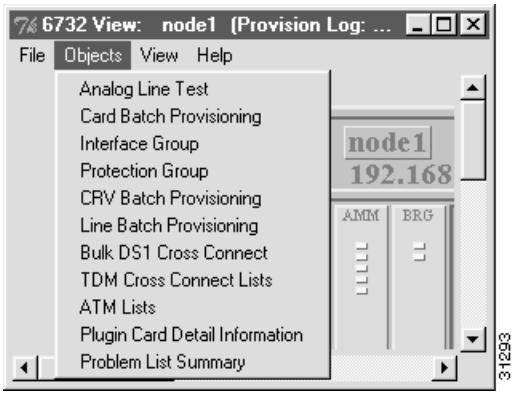
- Slots 17 and 18
- Slots 19 and 20

In addition to provisioning broadband protection with EMS, the protected cards require a special cable, provided with the card, designed specifically for joining the two cards. For more information, see the *Cisco 6732 Full Access Device Hardware Installation Guide*.

Note Extended Super Frame (ESF) connections and inter-node data links (INDL) are not protected with broadband line card protection.

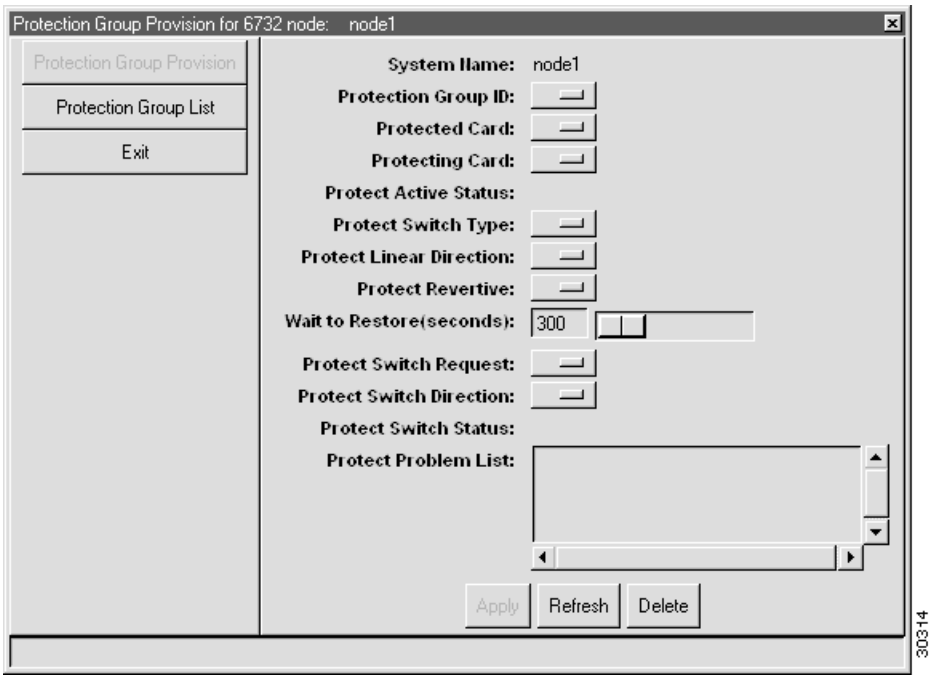
To launch the broadband protection provisioning window, select **Objects > Protection Group** from the node view menu. (See Figure 5-10.)

Figure 5-10 Node View Menu



EMS launches the protection group provisioning window. (See Figure 5-11.)

Figure 5-11 Protection Group Provisioning Window



Complete the following fields to provision broadband 1:1 protection:

- **Protected Switch Direction**: select **ProtectingToProtected**, which allows the protecting card to take over for the protected card.
- **Proctection Group ID**: select **1** for slots 17 and 18, or **2** for slots 19 and 20.
- **Protected Card**: enter the slot number of the active card. This is the card that remains active during normal operation.
- **Protecting Card**: enter the slot number of the standby card. This is the card that becomes active in the event of an active card failure.
- **Protect Revertive**: select **Yes**. This allows the active card to switch back into service automatically when fully functional.
- **Protect Switch Request**: select **Release**. This allows the switch request to be established.

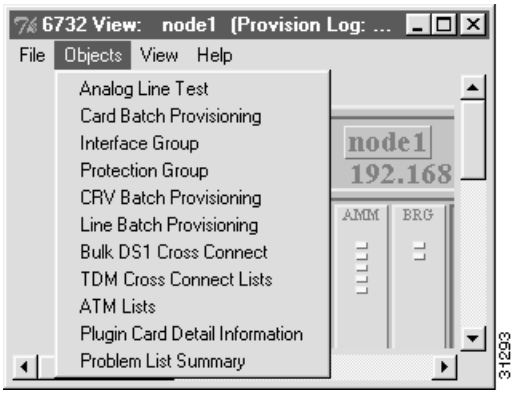
Click **Apply** to activate broadband 1:1 protection.

Placing Multiple Lines In Service (Batch Provisioning)

To place multiple lines in service, complete the following steps starting in node view:

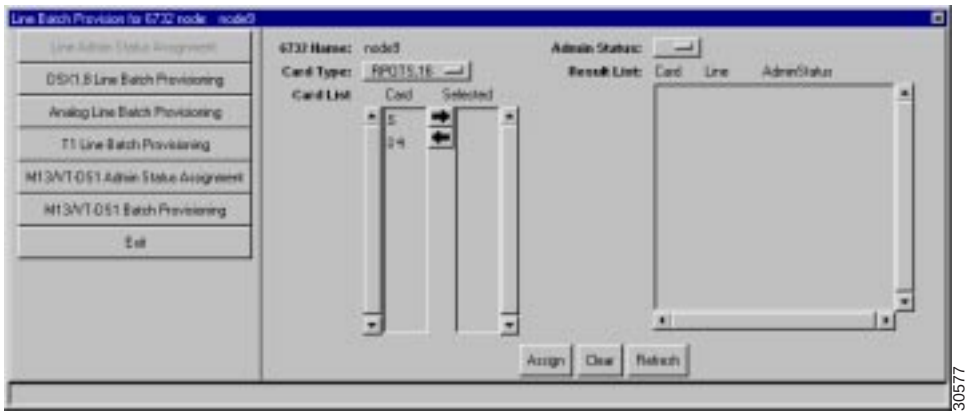
Step 1 Select **Objects** > **Line Batch Provisioning** from the node view menu bar. (See Figure 5-12.)

Figure 5-12 Node View Menu



Step 2 EMS displays the line status assignment window. (See Figure 5-9.)

Figure 5-13 Line Admin Status Assignment Window



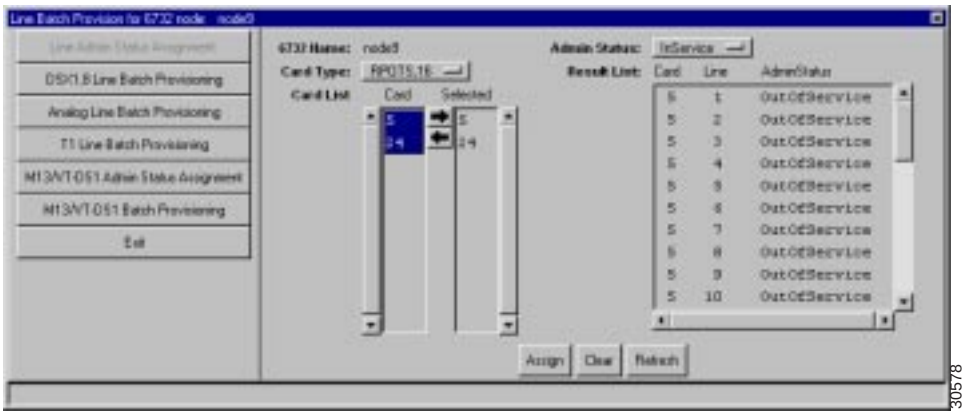
Step 3 In the **Admin Status** field, select **inService**.

Step 4 In the **Card Type** field, select one of the line card types that are currently installed in the NE. If the selected card type is present, EMS displays the slot numbers for each card in the **Card List** window. For example, if your NE has FXS/16 cards in slots 3 and 4, selecting the **FXS** card type will display 3 and 4 in the card list window.

Step 5 In the **Card List** window, click each card number while holding down the **Control** key to select (highlight) the card.

Step 6 When all card numbers are selected, click the right arrow next to the card list window. The **Result List** (on the right side of the window) displays all lines on the selected cards, along with the status (**inService** or **outOfService**) of each line. (See Figure 5-14.)

Figure 5-14 Line Batch Provisioning Window with Selected Cards



Step 7 In the **Result List** window, select the lines to be placed in service.

Step 8 After the lines are selected, click the **Apply** button to put the lines in service. EMS works down the list, changing each **outOfService** to **inService**.

Step 9 Return to Step 4 and repeat these steps for each card type present in the NE.

Step 10 Click the **Exit** button on the left side of the window to return to node view.

Step 11 Select **View > Refresh Card Display** to update the node view display. Lines that have been placed in service will display a green LED.

Provisioning Lines

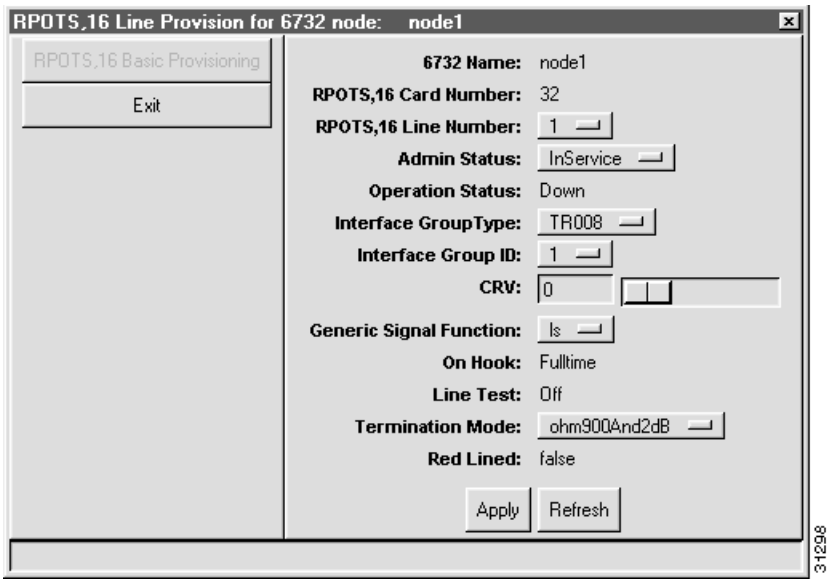
To provision a line on a Cisco 6700 line card, double-click the line icon. EMS displays the appropriate line provision window.

The following sections describe basic provisioning for individual lines on the following Cisco 6700 line cards.

Analog Cards (FXS/16, RPOTS/16, and RUVG/8)

Note Figure 5-15 shows the RPOTS/16 line provisioning window. The FXS/16 and RUVG/8 line provisioning windows are identical in structure and appearance (with **FXS,16** or **RUVG,8** appearing in place of **RPOTS,16**).

Figure 5-15 RPOTS/16 Line Provisioning Window



In the **Line Number** field, select the analog line to be provisioned.

Set the following parameters according to your application:

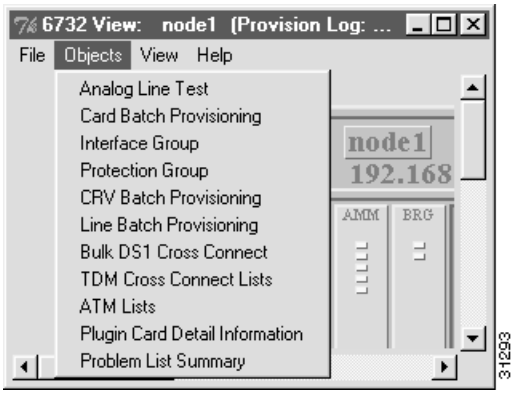
- **Admin Status**: Set the status of the individual line, **InService** or **OutOfService**.
- **Generic Signal Function**: Select **ls** (default) or **gs**.
- **Termination Mode**: Select one of the following modes, expressed in ohms and digital-to-analog signal loss in dB:
  - **ohm600and0dB**
  - **ohm600and1dB** (default for RUVG/8)
  - **ohm600and2dB** (default for FXS/16)
  - **ohm600and5dB**
  - **ohm900andM2dB** (minus 2dB)
  - **ohm900and2dB** (default for RPOTS/16)
  - **ohm900and5dB**

After making changes in the basic provisioning window, click **Apply** to provision the line. Repeat steps through to provision additional lines on the card.

Analog Line Batch Provisioning

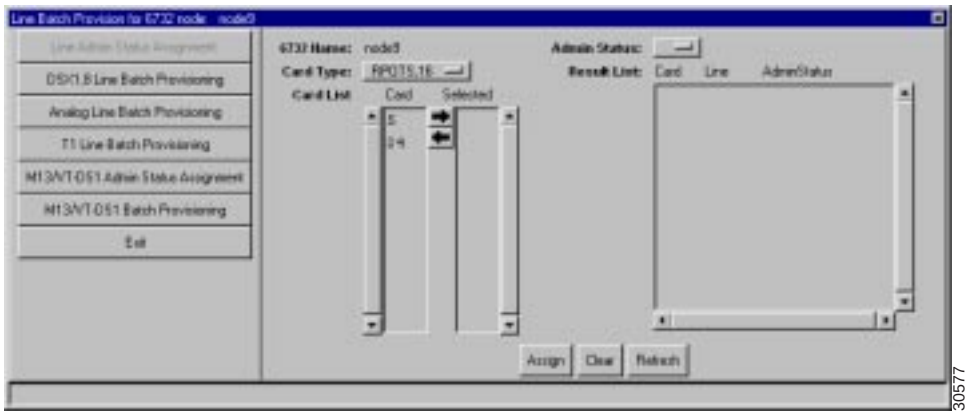
Step 1 Select **Objects > Line Batch Provisioning** from the node view menu bar. (See Figure 5-12.)

Figure 5-16 Node View Menu



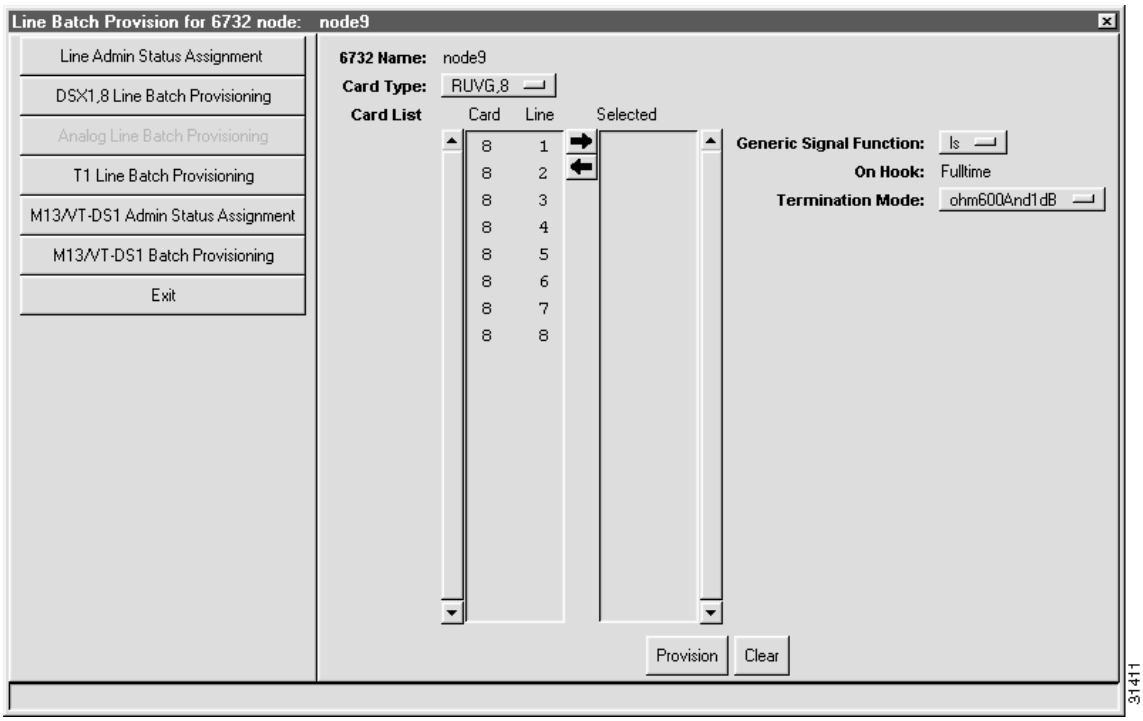
Step 2 EMS displays the line status assignment window. (See Figure 5-9.)

Figure 5-17 Line Admin Status Assignment Window



Step 3 Select **Analog Line Batch Provisioning** in the function bar. EMS displays the analog line batch provisioning window. (See Figure 5-18.)

Figure 5-18 Analog Line Batch Provisioning Window



Step 4 Set the **Card Type** to the card or cards to be provisioned.

Step 5 In the **Card List**, highlist the lines to be provisioned.

Step 6 Click the the right arrow between the **Card List** and the **Selected** list. EMS places the selected lines in the **Selected** list.

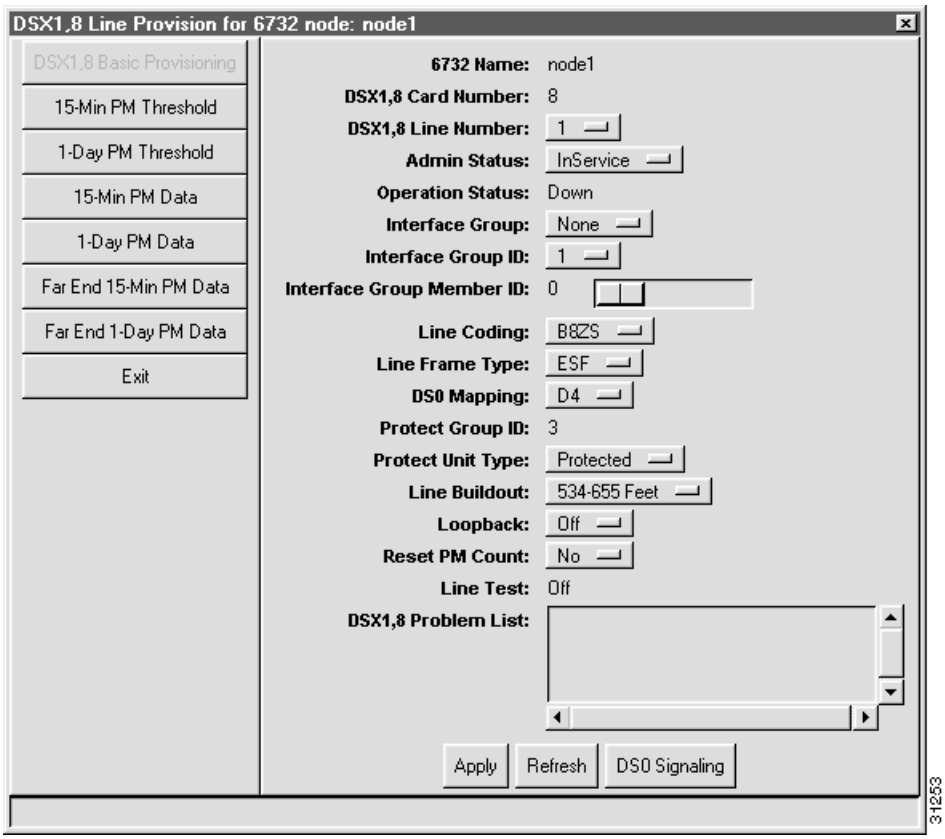
Step 7 Set the following parameters according to your application:

- **Generic Signal Function**: Select **ls** (default) or **gs**.
- **Termination Mode**: Select one of the following modes, expressed in ohms and digital-to-analog signal loss in dB:
  - **ohm600and0dB**
  - **ohm600and1dB** (default for RUVG/8)
  - **ohm600and2dB** (default for FXS/16)
  - **ohm600and5dB**
  - **ohm900andM2dB** (minus 2dB)
  - **ohm900and2dB** (default for RPOTS/16)
  - **ohm900and5dB**

Step 8 Click **Apply** to provision the lines.

DSX1/8 Card

Figure 5-19 DSX1/8 Line Provisioning Window



Set the following parameters according to your DSX1 application:

- **DSX1/8 Line Number**: Select the line number to be provisioned on the selected card.
- **Interface Group**: Select **None**, **TR008**, or **GR303**.
- **Interface Group ID**: Select the interface group ID, from 1 to 4.
- **Interface Group Member ID**: Select a member ID for this DSX1.
- **Line Coding**: Select **B8ZS** (binary 8 zero substitution) or **AMI** (alternate mark inversion).
- **Line Frame Type**: Select **ESF** (extended superframe), **SF** (superframe), or **SLC96** (subscriber loop carrier, 96 lines).
- **DS0 Mapping**: Select **D1**, **SLC-D4** (for use with TR-008), or **D4** (for use with GR-303).
- **Protect Unit Type**: Not used.
- **Line Buildout**: Select the transmit line length from the pulldown menu.
- **Loopback**: Select **Off** (disable loopback), **Line** (facing away from the NE), or **Equipment** (internal loopback).
- **Reset PM Count**: Select **Yes** to reset the performance monitoring data. See Chapter 13, “System Maintenance and Monitoring,” for PM information and procedures.

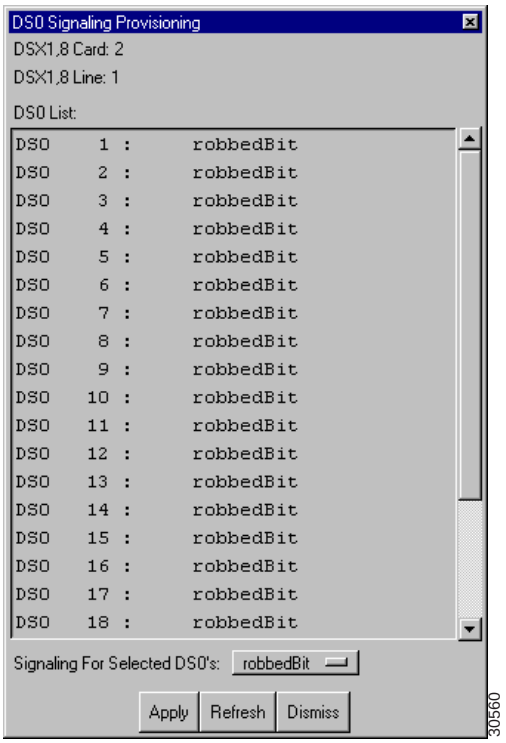
- **DS0 Signaling**: Clicking this button opens the DS0 signaling window (see "DS0 Signaling Window" below).

After making changes in the basic provisioning window, click **Apply** to provision the line.

DS0 Signaling Window

From the DSX1/8 line provisioning window (see Figure 5-19), click **DS0 Signaling** to open the DS0 signaling window (see Figure 5-20).

Figure 5-20 DS0 Signaling Window



Step 1 Highlight the DS0 channels to be modified.

Step 2 Set the Signaling for Selected DS0s:

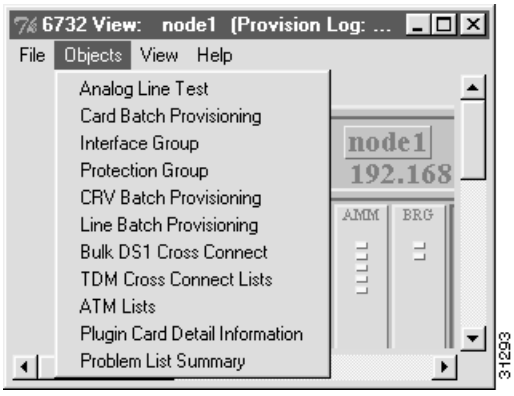
- **robbedBit**: Eighth bit is robbed in frames 6 and 12 in D4 framing (AB signaling) and 6, 12, 18, and 24 in ESF framing (ABCD signaling).
- **clearChannel**: DS0 channel is used exclusively for data transmision.

Step 3 Click **Apply** to provision the selected DS0 channels.

DSX1 Line Batch Provisioning

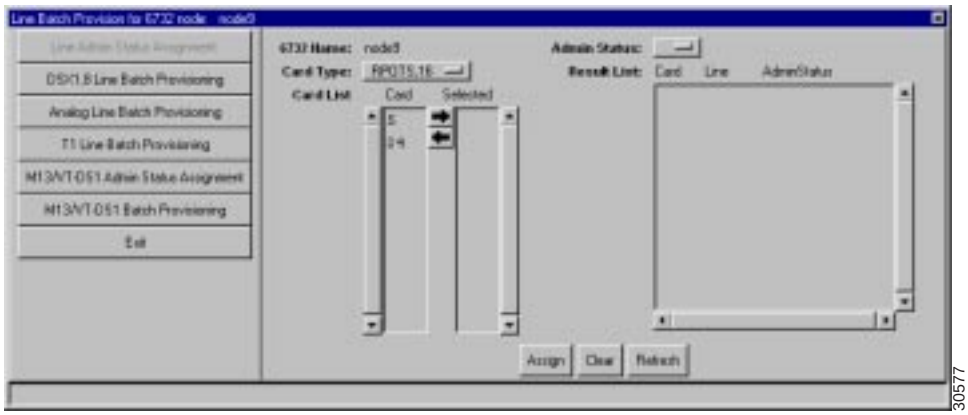
Step 1 Select **Objects** > **Line Batch Provisioning** from the node view menu bar. (See Figure 5-21.)

Figure 5-21 Node View Menu



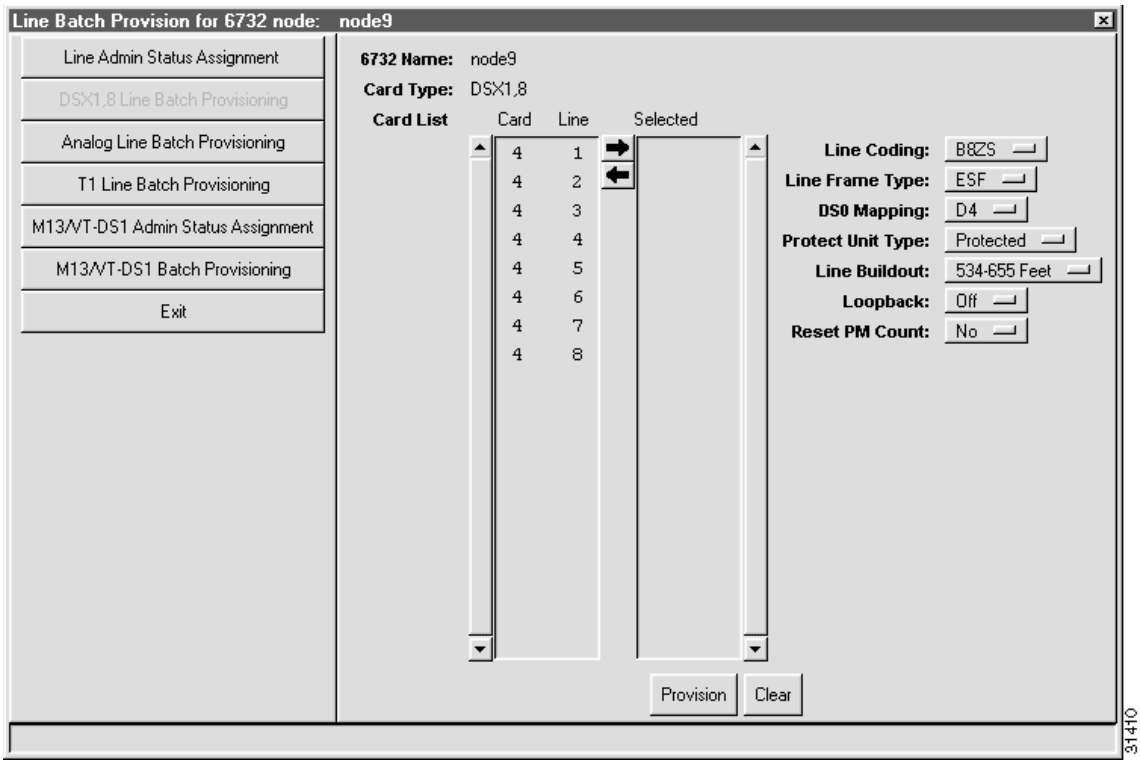
Step 2 EMS displays the line status assignment window. (See Figure 5-22.)

Figure 5-22 Line Admin Status Assignment Window



Step 3 Select **DSX1,8 Line Batch Provisioning** in the function bar. EMS displays the DSX1 line batch provisioning window. (See Figure 5-23.)

Figure 5-23 DSX1 Line Batch Provisioning Window



Step 4 In the **Card List**, highlist the lines to be provisioned.

Step 5 Click the the right arrow between the **Card List** and the **Selected** list. EMS places the selected lines in the **Selected** list.

Step 6 Set the following parameters according to your application:

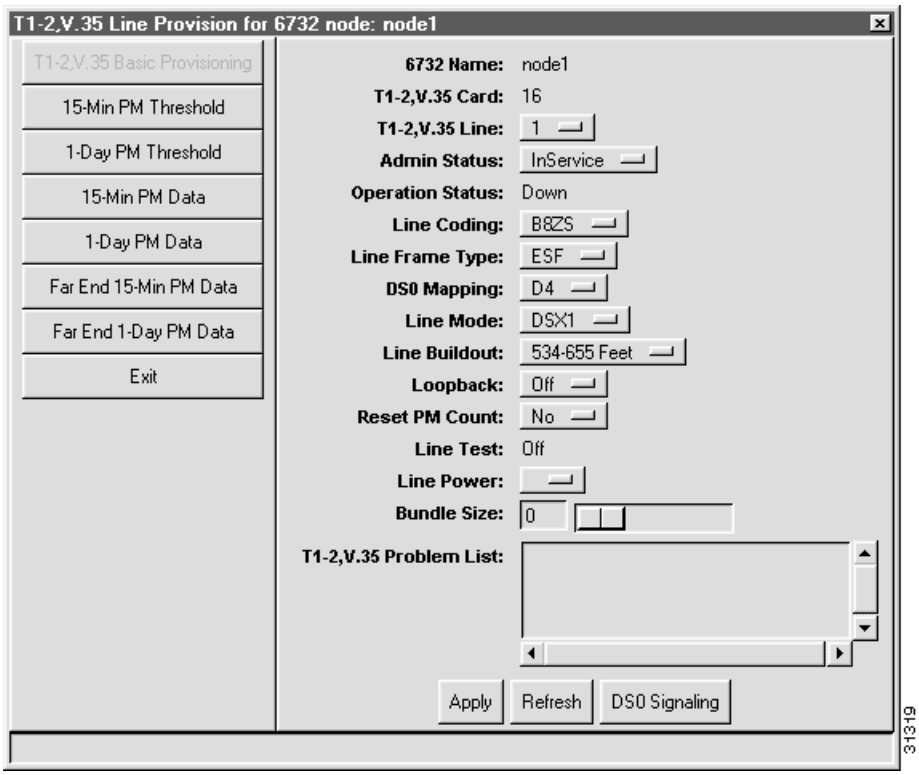
Set the following parameters according to your DSX1 application:

- **Line Coding**: Select **B8ZS** (binary 8 zero substitution) or **AMI** (alternate mark inversion).
- **Line Frame Type**: Select **ESF** (extended superframe), **SF** (superframe), **HDLU-C** (high speed digital line unit, central), or **HDLU-R** (high speed digital line unit, remote).
- **DS0 Mapping**: Select **D1**, **SLC-D4** (for use with TR-008), or **D4** (for use with GR-303).
- **Protect Unit Type**: Not used.
- **Line Buildout**: Select the transmit line length from the pulldown menu.
- **Loopback**: Select **Off** (disable loopback), **Line** (facing away from the NE), or **Equipment** (internal loopback).
- **Reset PM Count**: Select **Yes** to reset the performance monitoring data. See Chapter 13, “System Maintenance and Monitoring,” for PM information and procedures.

Step 7 Click **Apply** to provision the lines.

T1-2-V35 Card

Figure 5-24 T1 Basic Provisioning Window



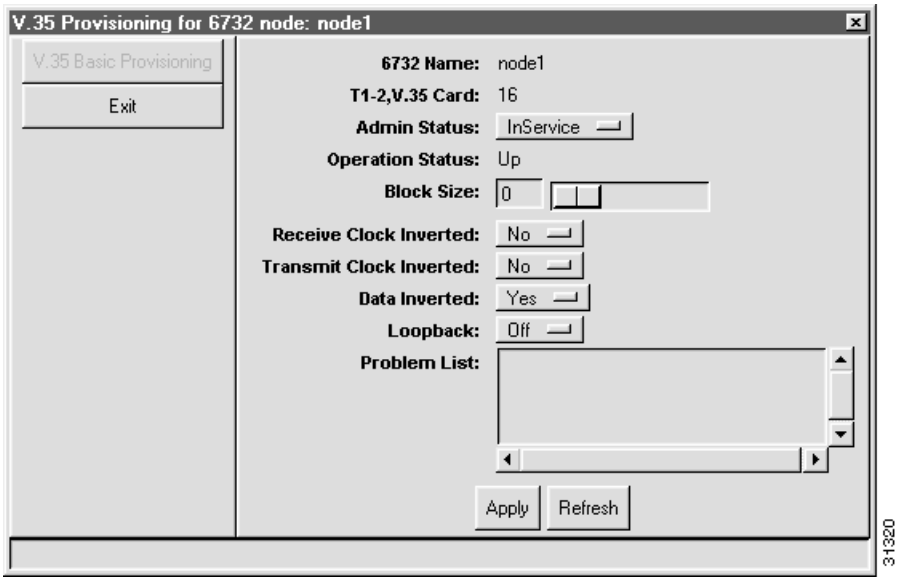
Set the following parameters according to your T1 application:

- **DSX1/8 Line Number**: Select the line number to be provisioned on the selected card.
- **Line Coding**: Select **B8ZS** (binary 8 zero substitution) or **AMI** (alternate mark inversion).
- **Line Frame Type**: Select **ESF** (extended superframe), **SF** (superframe), **HDLU-C** (high speed digital line unit, central), or **HDLU-R** (high speed digital line unit, remote).
- **DS0 Mapping**: Select **D1**, **SLC-D4** (for use with TR-008), or **D4** (for use with GR-303).
- **Line Mode**: Select **DSX1** or **T1** line mode.
- **Line Buildout**: Select the transmit line length from the pulldown menu.
- **Loopback**: Select **Off** (disable loopback), **Line** (facing away from the NE), or **Equipment** (internal loopback).
- **Reset PM Count**: Select **Yes** to reset the performance monitoring data. See Chapter 13, “System Maintenance and Monitoring,” for PM information and procedures.
- **DS0 Signaling**: Clicking this button opens the DS0 signaling window.

After making changes in the basic provisioning window, click **Apply** to provision the line.

Provisioning the V.35 Port

Figure 5-25 V.35 Port Basic Provisioning Window



Set the following parameters according to your T1 application:

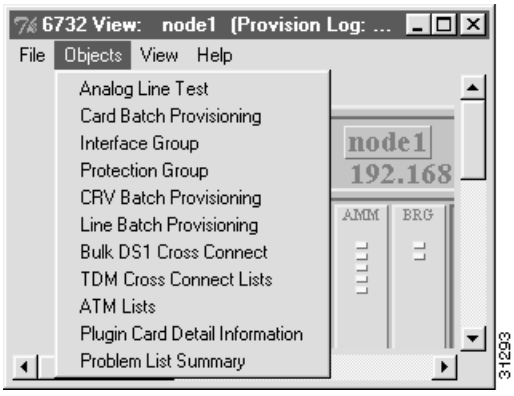
- **Block Size**: Select the number of DS0 channels to be provisioned for the V.35 port.
- **Receive Clock Inverted**: Select **Yes** to invert the received clocking signal.
- **Transmit Clock Inverted**: Select **Yes** to invert the transmitted clocking signal.
- **Data Inverted**: Select **Yes** to invert the data over the V.35 port.
- **Loopback**: Select **Off** (disable loopback), **Line** (facing away from the NE), or **Equipment** (internal loopback).

After making changes in the basic provisioning window, click **Apply** to provision the line.

T1 Line Batch Provisioning

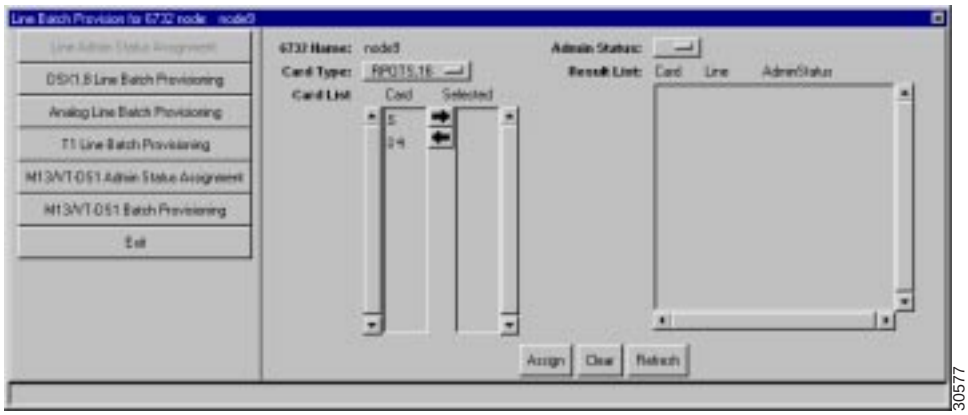
Step 1 Select **Objects > Line Batch Provisioning** from the node view menu bar. (See Figure 5-26.)

Figure 5-26 Node View Menu



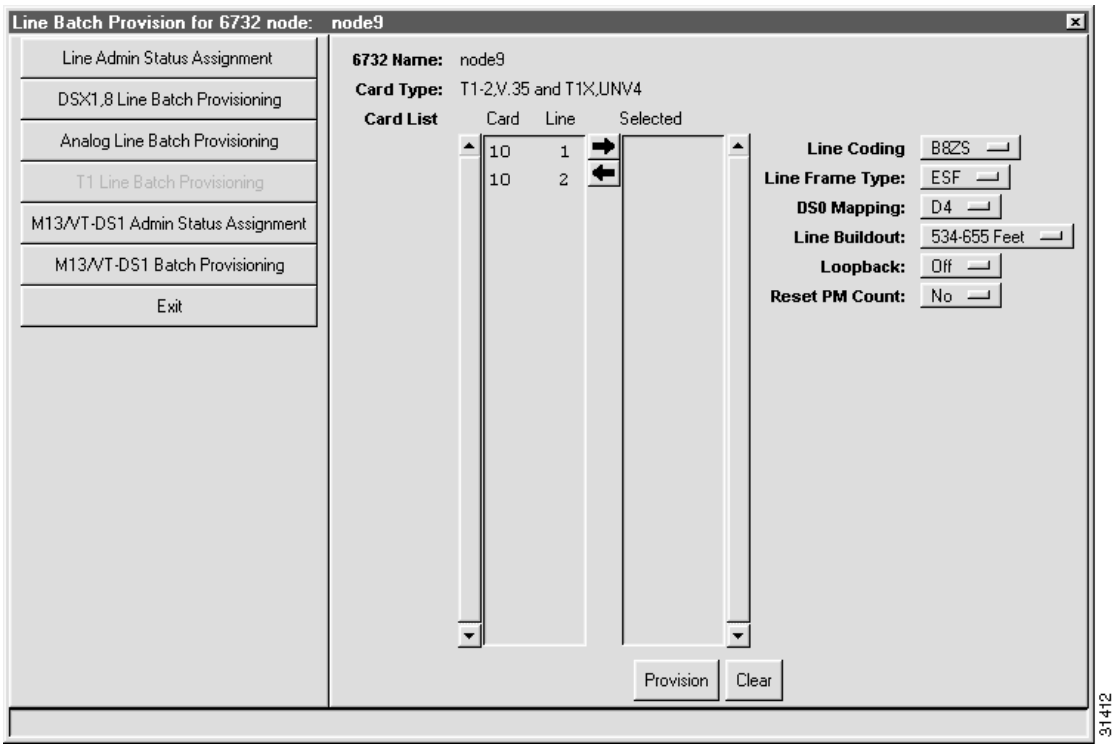
Step 2 EMS displays the line status assignment window. (See Figure 5-9.)

Figure 5-27 Line Admin Status Assignment Window



Step 3 Select **T1 Line Batch Provisioning** in the function bar. EMS displays the T1 line batch provisioning window. (See Figure 5-28.)

Figure 5-28 T1 Line Batch Provisioning Window



Step 4 Set the **Type** to **VT-DS-1** (STSX1).

Step 5 In the **Card List**, highlist the lines to be provisioned.

Step 6 Click the the right arrow between the **Card List** and the **Selected** list. EMS places the selected lines in the **Selected** list.

Step 7 Set the following parameters according to your application:

- **Line Coding**: Select **B8ZS** (binary 8 zero substitution) or **AMI** (alternate mark inversion).
- **Line Frame Type**: Select **ESF** (extended superframe), **SF** (superframe), **HDLU-C** (high speed digital line unit, central), or **HDLU-R** (high speed digital line unit, remote).
- **DS0 Mapping**: Select **D1**, **SLC-D4** (for use with TR-008), or **D4** (for use with GR-303).
- **Line Buildout**: Select the transmit line length from the pulldown menu.
- **Loopback**: Select **Off** (disable loopback), **Line** (facing away from the NE), or **Equipment** (internal loopback).
- **Reset PM Count**: Select **Yes** to reset the performance monitoring data. See Chapter 13, “System Maintenance and Monitoring,” for PM information and procedures.

Step 8 Click **Apply** to provision the lines.