



Initial Node Provisioning

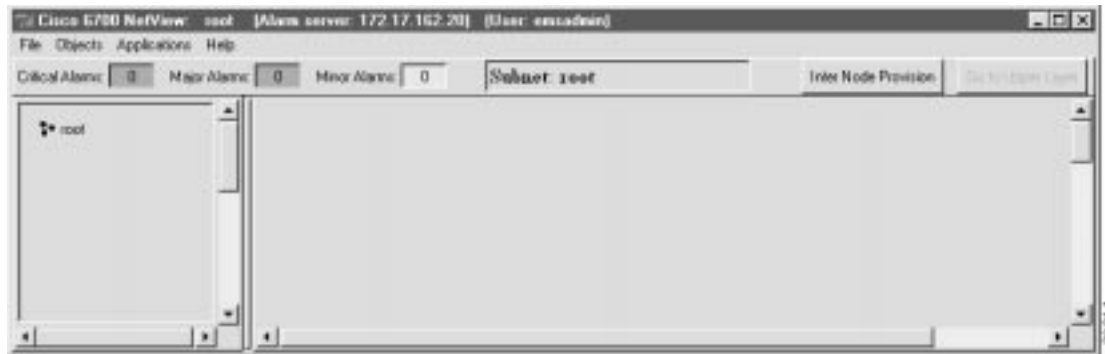
This chapter contains procedures for the initial provisioning of a network element (NE). You should complete these procedures in the following order:

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About Nodes

After launching EMS and logging in with a valid username and password, EMS presents the Cisco 6700 NetView. (See Figure 4-1.) NetView displays the network topology, including all nodes and subnets.

Figure 4-1 Cisco 6700 NetView



Before EMS can communicate with the NE, you must create a node in Cisco 6700 NetView. EMS uses nodes to represent each NE in the network.



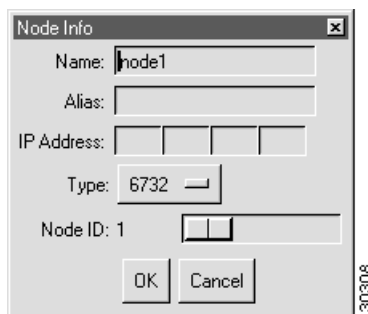
Note

In the following procedure, the node name and node alias must not include spaces, quotation marks, or other nonalphanumeric characters.

Creating a Node

- Step 1 From Cisco 6700 NetView, select **Objects > New Node**. EMS presents the node information window. (See Figure 4-2.)

Figure 4-2 Node Information Window



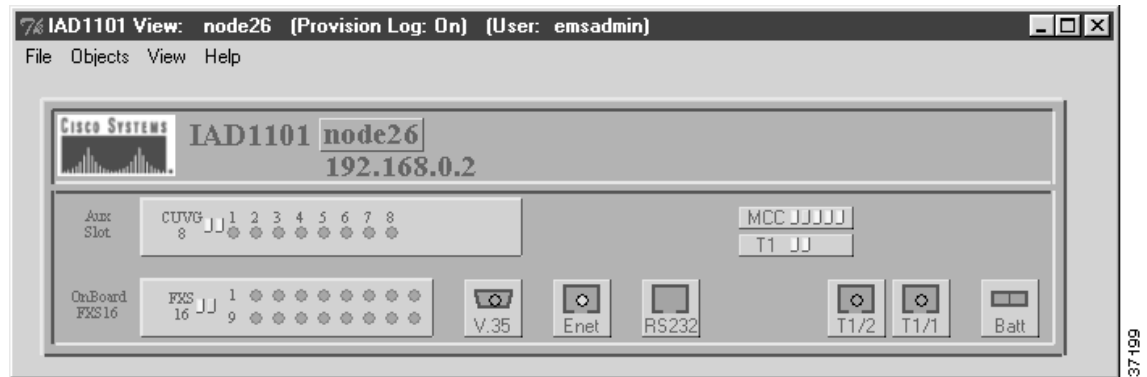
- Step 2 Enter a node name (and optional node alias) for the NE. The node name identifies the node in Cisco 6700 NetView. The node alias provides additional description information (such as location or organization name).
- Step 3 In the IP address text box, enter the primary IP address of the NE. If you are provisioning the NE for the first time, enter the default IP address: **192.168.0.2**.

- Step 4** In the **Type** field, select the proper NE type (**6732**, **6705**, or **IAD1101**).
- Step 5** EMS provides a default node ID number for the NE. Consult your EMS administrator for the correct node ID for use with this NE. Highlight the number and enter a new node ID, or use the slider to change the node ID.
- Step 6** Click the **OK** button when finished. You will return to Cisco 6700 NetView. The newly-created node will appear as an icon, with the node name and IP address below the icon. (See Figure 4-3.)
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Figure 4-5 Cisco 6705 NodeView



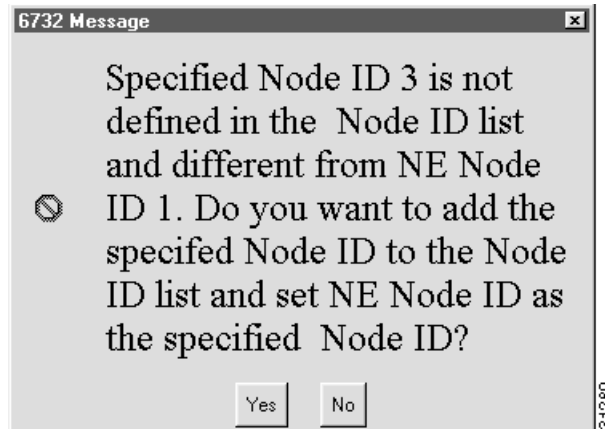
Figure 4-6 Cisco IAD1101 NodeView



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 4-7.)

Figure 4-7 Node ID Conflict



To resolve a 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.

For example, if you create a node in Cisco 6700 NetView and assign a node ID of 3, but the NE is provisioned with a node ID of 1, EMS reports a node ID conflict when you double-click the **node** icon. Select **Yes** (see Figure 4-7) to change the NE node ID to 3. Select **No** to leave the NE with its node ID of 1.

No Response

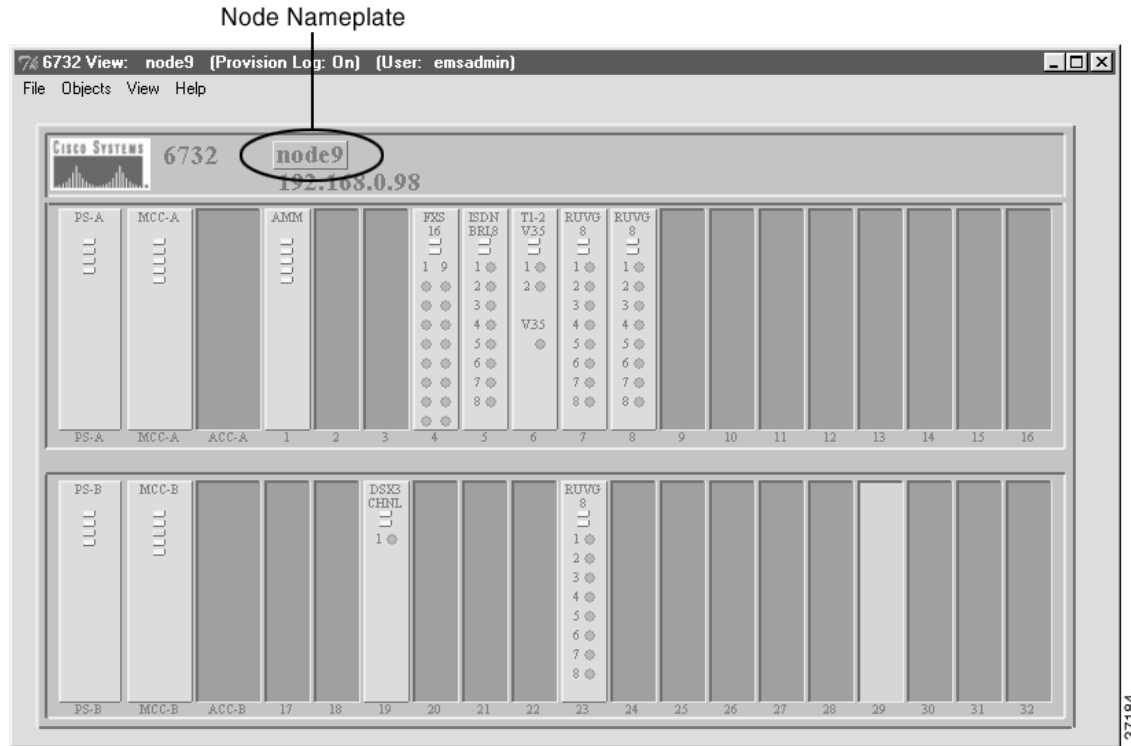
If EMS is unable to connect with the NE, a warning message appears describing the problem. The following list identifies common issues that could prevent the EMS workstation from communicating with the NE:

- The EMS workstation is not configured with the correct IP address. See “Connecting the NE to EMS Workstation” on page 3-3, and configure the IP address provided by your EMS administrator.
- The Ethernet cable connecting the EMS workstation to the NE is not an Ethernet crossover cable. Contact your EMS administrator to obtain an Ethernet crossover cable.
- The NE is not powered on. Contact your EMS administrator to ensure the proper connection between the NE and power source.
- The NE is configured with an IP address other than the factory default IP address. This might occur if the NE was previously configured for a different network. To reset the NE with factory default IP address, contact your EMS administrator for the proper procedure.
- The node is configured for the wrong type of NE. Although EMS can communicate with the NE, the warning message occurs each time NodeView is launched. To correct this, delete the **node** icon in Cisco 6700 NetView and create a node using the correct chassis type. (See the “Creating a Node” on page 4-2.)

Opening the NE Provision Window

From Cisco 6700 NodeView, double-click the node nameplate. (See Figure 4-8.)

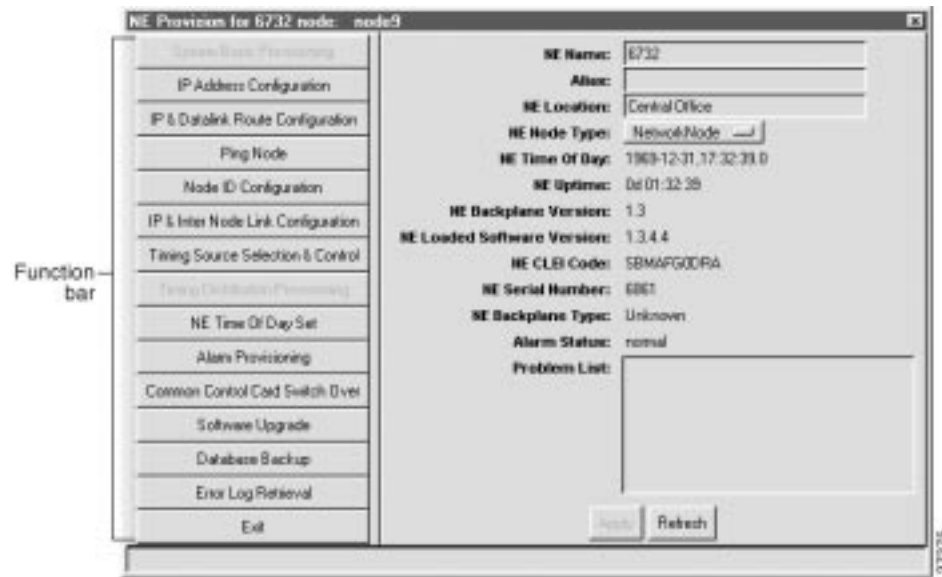
Figure 4-8 NodeView and Node Nameplate



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EMS launches the NE provision window. (See Figure 4-9.)

Figure 4-9 NE Provision Window



The left side of the window contains the function bar, a group of buttons used to navigate the NE provision window. Note that the **System Basic Provisioning** button is grayed out in the button bar. This indicates that the system basic provisioning window is open. To open a different provisioning window, click one of the buttons in the function bar.



Note

The NE Loaded Software Version field refers to the MCC embedded software version, not to the EMS software version installed on your PC.

Assigning Network IP Addresses for the NE

The NE must be assigned an appropriate IP address before the NE can be introduced in the network. Your EMS administrator should provide IP information for the NE, including subnet masks.



Caution

Do not assign an IP address to the NE unless the IP address is specifically designated for this NE. Improper use and assignment of IP addresses can create severe problems, including network failure.

- Step 1** From the NE provisioning window, click **IP Address Configuration** in the function bar to bring up the IP address configuration window. (See Figure 4-10.)

Figure 4-10 IP Address Configuration

System Basic Provisioning	Active MCC IP Address:	192	168	124	206	Repeat Active MCC IP Address:	192	168	124	206
IP Address Configuration	Active MCC Netmask:	255	255	255	0	Repeat Active MCC Netmask:	255	255	255	0
IP & Datalink Route Configuration	Standby MCC IP Address:	192	168	124	207	Repeat Standby MCC IP Address:	192	168	124	207
Ping Node	Standby MCC Netmask:	255	255	255	0	Repeat Standby MCC Netmask:	255	255	255	0
Node ID Configuration	Ethernet IP Address:	0	0	0	0	Repeat Ethernet IP Address:	0	0	0	0
IP & Inter Node Link Configuration	Ethernet Netmask:	0	0	0	0	Repeat Ethernet Netmask:	0	0	0	0
Timing Source Selection & Control										
Timing Distribution Provisioning										
NE Time Of Day Set										
Alarm Provisioning										
Common Control Card Switch Over										
Software Upgrade										
Database Backup										
Error Log Retrieval										
Exit										

Apply Refresh

The Cisco 6732 NE is factory-configured with the following default IP addresses and subnet masks:

- Active MCC IP Address—**192.168.0.2**
- Active MCC Netmask—**255.255.255.0**
- Standby MCC IP address—**192.168.0.3**
- Standby MCC Netmask—**255.255.255.0**

The Cisco 6705 NE is factory-configured with the following default IP address and subnet mask:

- Active MCC IP Address—**192.168.0.2**
- Active MCC Netmask—**255.255.255.0**

The Cisco IAD1101 NE is factory-configured with the following default IP address and subnet mask:

- Active MCC IP Address—**192.168.0.2**
- Active MCC Netmask—**255.255.255.0**

- Step 2** Enter the IP addresses and netmasks provided by your EMS administrator. Be sure to repeat all entries in the **Repeat** fields on the right.

- Step 3** The **Ethernet IP Address** and **Ethernet Netmask** allow you to specify a separate route for the Ethernet port on the NE. If the Ethernet IP address is left unassigned (0.0.0.0), the Ethernet port will use the IP address of the active MCC.
- Step 4** Click the **Apply** button to confirm the IP address provisioning. EMS displays a warning message, indicating that you will disconnect from the NE. Click **Yes** to confirm the changes.
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**Note**

After entering an address or netmask, you must enter the same address/netmask in the **Repeat** fields (on the right side of the window). For example, if you enter 1.2.3.4 as the **Active MCC IP Address**, you must also enter 1.2.3.4 in the **Repeat Active MCC IP Address** field. EMS does not allow you to apply your changes unless all entries are repeated properly.

**Note**

After assigning a new IP address, the EMS workstation will lose contact with the NE. To further provision the NE, configure the IP address of the EMS workstation on the same IP network as the NE. See “Configuring TCP/IP on the EMS Workstation” on page 3-2 for more information.

Creating a Default Route to the Local Node

To allow remote management and provisioning, you must create a default route from the remote node to the local node. For example, you would need a default gateway pointing to the IP address of the local node if you have multiple Cisco 6700 series products on different subnets and use a router to communicate between them.

- Step 1** Open the remote node by double-clicking the remote node icon in Cisco 6700 NetView. EMS launches the NodeView of the remote node.
- Step 2** Double-click the node nameplate. EMS launches the NE provision window.
- Step 3** From the function bar on the left, click on the **IP & Datalink Route Configuration** button. This brings up the data-link route configuration window. (See Figure 4-11.)

Figure 4-11 IP & Data Link Route Configuration Window

NE Provision for IAD1101 node: IAD1101

System Basic Provisioning

IP Address Configuration

IP & Datalink Route Configuration

Ping Node

Node ID Configuration

IP & Inter Node Link Configuration

IP RIP Configuration

IP Network Address Translation (NAT)

IP Access Lists

Timing Source Selection & Control

Timing Distribution Provisioning

NE Time Of Day Set

Alarm Provisioning

Software Upgrade

Database Backup

Error Log Retrieval

Exit

Interface: Type Card Line

Destination IP Address: 0 0 0 0

Gateway IP Address:

Netmask:

Route Type: Host

Route List:

ID	Interface
1	Ethernet

Add Delete Refresh

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- Step 4** Set the following parameters in the data-link route configuration window:
 - **Card Type**—Card used in the remote node (Cisco 6705).
 - **Card**—Slot number of the card used in the remote node.
 - **Line**—Facility number of the line used on the card in the remote node.
 - **Destination Address**—Leave blank.
 - **Gateway Address**—IP address of the local node (Cisco 6732).
 - **Netmask**—Leave blank.
 - **Route Type**—Set to **Default**.
- Step 5** Click **Add** when you are finished.

- Step 6** Click the **Exit** button (on the function bar) to return to the NodeView.
- Step 7** Select **File > Exit** to return to Cisco 6700 NetView.



Note As an alternative to entering the gateway address in Step 4, open the command prompt window and enter (for example): C:>route add 172.17.30.26 192.168.124. 250 (route add<remote IP> <local IP>)

Reassigning a Node IP Address

Any changes made to the NE IP address must also be made to the node.



Note If you begin the following procedure from Cisco 6700 NetView, skip to Step 3.

- Step 1** From the NE provisioning window, click **Exit** in the function bar. EMS returns to Cisco 6700 NodeView.
- Step 2** Select **File > Exit** from the menu bar. EMS returns to Cisco 6700 NetView.
- Step 3** Right-click the **node** icon to bring up the node popup menu.
- Step 4** Select **Display Node Attributes** to view the node information window. (See Figure 4-12.)

Figure 4-12 Node Information Window

- Step 5** In the IP Address field, enter the IP address that has been assigned to the NE in the “Assigning Network IP Addresses for the NE” procedure. (See page 4-9.) For the Cisco 6732, this is the **Active MCC IP Address**; for the Cisco 6705, this is the **MCC IP Address**.
- Step 6** Click **OK**. EMS returns to Cisco 6700 NetView. The **node** icon displays the newly assigned IP address.

About Provisioning the NE

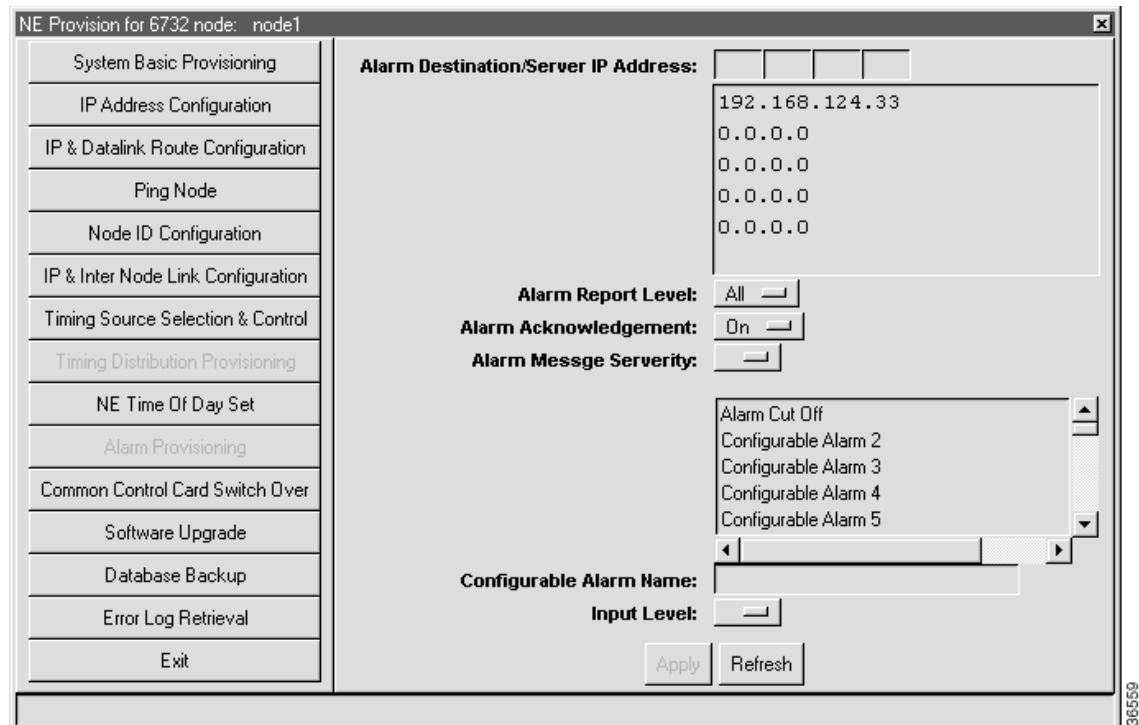
The following procedures are completed in the NE provision window, and must be completed for each NE in the network. To bring up the NE provisioning window, double-click the **node** nameplate in Cisco 6700 NodeView. (See Figure 4-9 on page 4-8.)

Provisioning Alarms

Each NE can send alarms to one or more EMS alarm servers. EMS workstations using Windows NT or UNIX use the EMS alarm server application to gather alarms from the Network. Use of the alarm server is detailed in Chapter 17, “Cisco 6700 Series Element Management System Alarm Server.”

- Step 1** From the NE provisioning window, click **Alarm Provisioning** in the function bar. EMS displays the alarm provisioning window. (See Figure 4-14.)

Figure 4-13 Alarm Provisioning Window



- Step 2** Click an IP address in the list below the **Alarm Destination/Server IP Address** field.
- Step 3** Enter the IP address of an alarm destination (EMS alarm server).
- Step 4** To customize alarm reporting for this alarm server, set the following fields:
- **Alarm Report Level**—Select **All** to report all alarms, **Critical** to report only critical alarms, or **Major** to report major and critical alarms.
 - **Alarm Acknowledgement**—Select **On** to allow flow control between the node and alarm server, or select **Off** to disable flow control.
- Step 5** To customize any of the 16 alarm inputs, click an alarm name in the list below **Alarm Message Severity**.

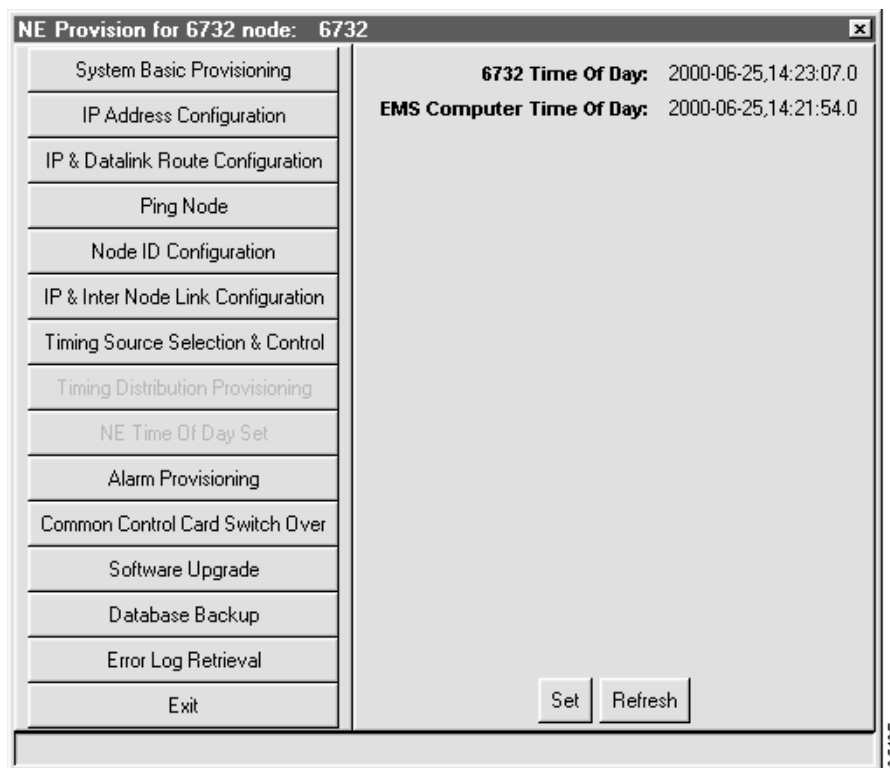
- Step 6 In the **Alarm Message Severity** field, select the severity level of the alarm: **Critical**, **Major**, or **Minor**.
- Step 7 To change the name of the alarm, type a new name in the **Configurable Alarm Name** field.
- Step 8 Return to Step 5 to customize additional alarm inputs.
- Step 9 Click **Apply** to provision the alarm server.
- Step 10 To configure additional alarm servers, return to Step 2 and click a different IP address from the list.

Setting the NE Clock

Setting the node clock synchronizes the NE clock with the EMS clock.

- Step 1 From the NE provisioning window, select **NE Time of Day Set** from the function bar.
- Step 2 Click the **Set** button to synchronize the NE clock with the EMS workstation clock. The **Refresh** button updates the time displayed on the screen. (See Figure 4-14, which shows the Set NE Time of Day window, before synchronization.)

Figure 4-14 Set NE Time of Day Window



**Note**

All Cisco 6700 Series line interface modules are synchronized to Greenwich Mean Time (GMT), rather than the “Time of Day” setting on the EMS workstation. One-day performance monitoring (PM) tests use GMT, not the EMS time of day, to determine the start and end times of the 24-hour monitoring window.

Provisioning Timing Sources

- Step 1** Starting from the NE provisioning window, select **Timing Source Selection & Control** to bring up the timing source provisioning window. (See Figure 4-15.)

Figure 4-15 Timing Source Provisioning Window

- Step 2** To provision a timing source for the NE, set the following fields:
- **Primary Timing Source**—Select the **Type**, **Card**, and **Line** to provide timing.
 - **Assigned SSM Quality Level**—Set to **STU** (synchronized, traceability unknown).

- **Switch Request**—Select one of the following options:
 - **Release**—Timing source switches automatically on loss of signal.
 - **ManualSwitch**—Timing source switches manually, unless it causes holdover or freerun.
 - **ForcedSwitch**—Forces timing source to switch.
- **Secondary Timing Source**—You can specify an optional secondary timing source. The secondary timing source is not monitored for out-of-frequency range errors.



Note You can select the same card and line for both the primary and secondary timing sources. However, this configuration offers no redundancy and should only be used temporarily during reconfigurations.

- **Protection Mode**—Select one of the following options:
 - **Non-revertive**—Timing source does not revert back to primary timing source.
 - **Revertive**—Timing source reverts back to primary timing source after a period of time, specified in the **Wait to Restore** field.
- **Wait to Restore**—Enter the minimum amount of time to wait before a recovered timing source becomes active again. This function is only applicable if the **Protection Mode** is set to **Revertive**.
- **PLL Mode**—Select one of the following options:
 - **Normal**—NE synchronizes with selected timing source.
 - **Freerun**—MCC internal oscillator is used as the timing source.
 - **Holdover**—NE is to hold over from selected timing source.

Step 3 Click **Apply** to provision a timing source or sources for the NE.

Requalifying the Primary Source Manually

If the Primary Timing Source is disqualified due to an “out-of-frequency range” error, the primary input will not automatically requalify after the error ends. You must manually requalify it.

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- Step 1** From the timing source provisioning window, click **None** in the primary timing source **Type** field.
 - Step 2** Select **None** from the drop-down menu.
 - Step 3** Click **Apply**.
 - Step 4** In the primary timing source **Type** field, reselect the primary timing source.
 - Step 5** Click **Apply**.
-