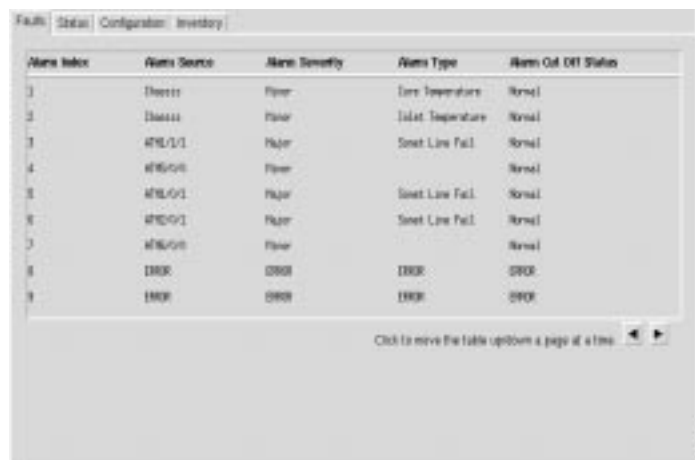# Element Manager Windows: Detailed Description

Cisco 6400 Chassis Management Window

The Cisco 6400 Chassis Management window has four tabbed sections: **Faults**, **Status**, **Configuration**, and **Inventory**.

Faults Tab

The **Faults** tab (shown in Figure 5-1) appears by default and has a single frame.

Figure 5-1   Cisco 6400 Chassis Management Window (Faults Tab)

Alarm Information Table

The Alarm Information table displays the following information:

Alarm Index — an arbitrary integer value to uniquely identify an alarm information entry.

Alarm Source — indicates the source of the alarm. The variable displays a string in one of the following formats:

- **Chassis** — chassis alarms
- **Submodule** — submodule alarms
- **port@slot#/subslot#/port#'** — port alarms

Alarm Severity — indicates the severity of the alarm, which can be minor, major or critical

Alarm Type — indicates the type of alarm, which can be one of the following:

- **coreTemp —** the core temperature limit has been exceeded
- **inletTemp** — inlet temperature limit has been exceeded
- **totalFanFail** — total fan failure
- **partialFanFail** — fan tray failure
- **fanMissing** — a fan is missing
- **pem0Fail** — power module 0 failure
- **pem1Fail** — power module 1 failure
- **sonetLineFail** — sonet line failure
- **cardOIRAlarm** — card OIR alarm for removal or wrong type insertion alarm
- **cardFail** — card failure alarm for non-redundant card failure, redundant primary card
- **cardPartialFail** — card partial failure alarm for redundancy secondary card failure

Alarm Cut Off Status — indicates whether the audible/visible local alarm relay is **cut off** locally for the particular alarm source. When the **Alarm Cut Off Status** is **normal**, the alarm in the entry has closed the local audible/visible alarm relay contacts. When the **Alarm Cut Off Status** is **cut off**, the alarm in the entry initially closed the local relay contacts, but was suppressed by a local user pressing the external ACO button on the 6400 NSP.

Status Tab

The **Status** tab (shown in Figure 5-2) appears by default and is divided into five frames: **Chassis Status**, **Power Supply 1**, **Power Supply 2**, **Temperature Threshold Configuration**, and **Facility Alarm Status**.

Figure 5-2   Cisco 6400 Chassis Management Window (Status Tab)

Chassis Status

The **Chassis Status** frame (shown in Figure 5-2) displays the following status information:

Core Temperature Status — chassis temperature status

Intake Temperature Status — intake temperature of the chassis

Fan Status — status of the chassis fan

12 Volt Power Supply Status — status of the chassis 12 volt supply

CPU Card LED Status — status of the CPU card

Ethernet Link LED — status of the Ethernet link status LED on the CPU card

Last Chassis Change — last time the chassis physical content was changed

Power Supply 1

The **Power Supply 1** frame (shown in Figure 5-2) indicates the status of power supply 1.

Power Supply 2

The **Power Supply 2** frame (shown in Figure 5-2) indicates the status of power supply number 2.

Temperature Threshold Configuration

The **Temperature Threshold Configuration** frame (shown in Figure 5-2) displays the following status information:

Clock Source Status — notification signifies that the agent detects a change in the system clock source status. Notification is generated when the status value changes.

Facility Alarm Status

The **Alarm Status** frame (shown in Figure 5-2) displays the following status information:

Critical Alarm — when a green icon appears, no critical alarms are detected. When a red icon appears, at least one critical alarm is detected.

Major Alarm — when a green icon appears, no major alarms are detected. When a red icon appears, at least one major alarm is detected.

Minor Alarm — when a green icon appears, no minor alarms are detected. When a red icon appears, at least one minor alarm is detected.

Configuration Tab

The **Configuration** tab is divided into five frames: **Chassis**, **Clock**, **Alarm**, **Temperature Threshold**, and **Power Supply Configuration**.

Figure 5-3   Cisco 6400 Chassis Management Window (Configuration Tab)

Chassis Configuration

The **Chassis Configuration** frame (shown in Figure 5-3) allows you to view and change the following Chassis configuration information:

• **Chassis Failure Action** — you can specify the action taken when there is any chassis failure, which includes either power supply, voltage, temperature and fan failure. You can set the **Chassis Failure Action** to:

Nothing — no action is taken

Send Trap — a trap specifying the fault is sent

Shutdown — the chassis is shutdown

Send Trap And Shutdown — a trap specifying the fault is sent and then the chassis is shutdown

- **Chassis Change Action** — you can specify the action taken when there are any changes made to the chassis. You can set the **Chassis Change Action** to:

Nothing — no action is taken

Send Trap — a trap specifying the change is sent

Clock Configuration

The **Clock Configuration** frame (shown in Figure 5-3) allows you to view and change the following configuration information:

- **Clock Source Priority** — you can specify the highest priority at which the 'system' is configured as a network clock source. You can set the **Clock Source Priority** to **Priority1**, **Priority2**, **Priority3**, **Priority4** or **Priority5**.

- **Chassis Clocking Mode** — you can specify the clocking mode of the system. The **Chassis Clocking Mode** can be set to:

Revertive — the clock changes to a higher priority clock when one is available.

Non Revertive — the clock sticks to the current priority, even though a higher priority clock is available.

Alarm Configuration

The **Alarm Configuration** frame (shown in Figure 5-3) allows you to view and change the following chassis configuration information:

Clear Alarms — allows you to specify whether to clear all, major or minor alarms indication and reset the alarm contacts. You can set **Clear Alarms** to **all**, **minor**, **major** or **done**.

Note   When the clear command is se to **done** the value of the object is set to done.

Temperature Threshold Configuration

The **temperature threshold Configuration** frame (shown in Figure 5-3) allows you to view and change the following configuration information:

Note   When you set the toggle button, next to an attribute, to disabled that threshold, when breached, will not generate an alarm.

Core Major Threshold — allows you to set and enable or disable the core major temperature alarm threshold.

Core Minor Threshold — allows you to set and enable or disable the core minor temperature alarm threshold.

Intake Major Threshold — allows you to set and enable or disable the intake major temperature alarm threshold.

Intake Minor Threshold — allows you to set and enable or disable the intake minor temperature alarm threshold.

Power Supply Configuration

The **Power Supply Configuration** frame (shown in Figure 5-3) allows you to view and change the following configuration information:
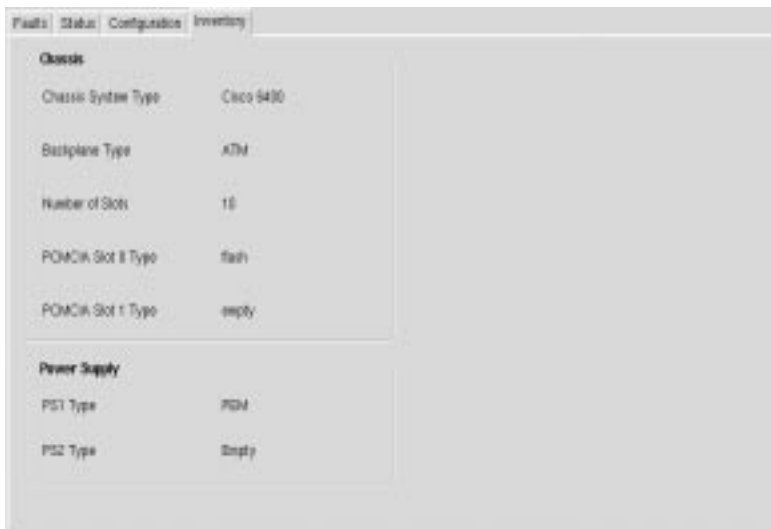
PS1 Admin Status — allows you to **Enable**, **Disable** or **Reset** power supply 1.

PS2 Admin Status — allows you to **Enable**, **Disable** or **Reset** power supply 2.

Inventory Tab

The **Inventory** tab (shown in Figure 5-4) is divided into two frames.

Figure 5-4   Cisco 6400 Chassis Management Window (Inventory Tab)

Chassis

The **Chassis** frame (shown in Figure 5-4) displays the following inventory information:

Chassis System Type — displays the chassis system type.

Backplane Type — displays the chassis backplane type.

Number of Slots — displays the number of slots in the chassis for plug-in modules.

PCMCIA Slot 0 Type — displays the type of PCMCIA slot 0 type.

PCMCIA Slot 1 Type — displays the type of PCMCIA slot 1type.

Power Supply

The **Power Supply** frame (shown in Figure 5-4) displays the following inventory information:

PS1 Type — displays the type of power supply number 1.

PS2 Type — displays the type of power supply number 2.

Cisco 6400 NSP Management Window

The Cisco 6400 NRP Management window is divided into five tabbed sections: **Faults**, **Status**, **Performance**, **Configuration**, and **Inventory**.

Faults Tab

The **Faults** tab appears by default and is divided into two frames.

Figure 5-5   Cisco 6400 NSP Management Window (Faults Tab)

Faults

The **Faults** frame (shown in Figure 5-5) displays the following error information:

Last Restart Reason — displays the reason why the system was last restarted.

Last Auth Failure Address — displays the last SNMP authorization failure IP address.

Cisco Contact Details

The **Cisco Contact Details** frame displays Cisco contact details.

Status Tab

The **Status** tab (shown in Figure 5-6) is divided into four frames.

Figure 5-6   Cisco 6400 NSP Management Window (Status Tab)

Status

The **Status** frame (shown in Figure 5-6) displays the following information:

System Uptime — displays the time that the system has been active.

Operational Status — displays the operational status of the system.

Free Memory — displays the amount of free memory in bytes.

System Configuration File

The **System Configuration File** frame (shown in Figure 5-6) displays the following information:

Host IP Address — displays the address of the host that supplied the system boot image.

File Name — displays the name of the system boot image.

Protocol — displays the protocol or media that supplied the system boot image.

Host Configuration File

The **Host Configuration File** frame (shown in Figure 5-6) displays the following information:

Host IP Address — displays the address of the host that provided the host-configuration file.

File Name — displays the name of the last configured host-confg file.

Protocol — displays the protocol that supplied the host- confg file.

Network Configuration File

The **Network Configuration File** frame (shown in Figure 5-6) displays the following status information.

Host IP Address — displays the address of the host that supplied the network-confg file.
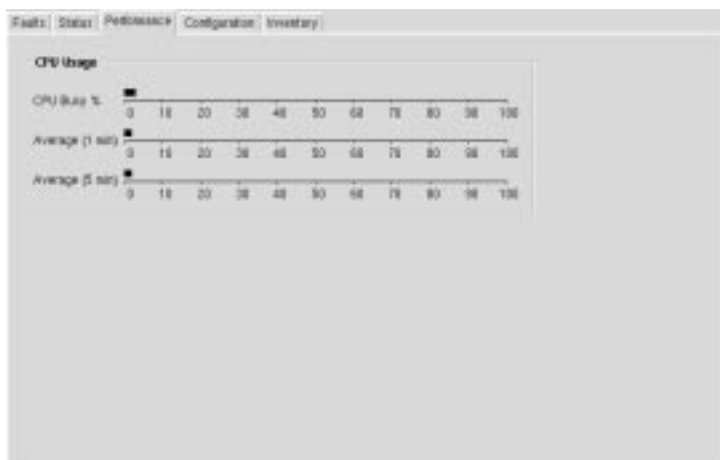
File Name — displays the name of the network configuration file.

Protocol — displays the protocol that supplied the network-confg file.

Performance Tab

The **Performance** tab (shown in Figure 5-7) has a single frame.

Figure 5-7   Cisco 6400 NSP Management Window (Performance Tab)

CPU Usage

The **CPU Usage** frame displays the following performance information:

CPU Busy — displays the percentage usage of the CPU.

Average (1 min) — displays the percentage usage of the CPU averaged over a minute period.

Average (5 min) — displays the percentage usage of the CPU averaged over a five minute period.

Configuration Tab

The **Configuration** tab (shown in Figure 5-8) has a single frame.

Figure 5-8   Cisco 6400 NSP Management Window (Configuration Tab)

System Configuration

The **System Configuration** frame allows you to view and change the following configuration information:

System Name — allows you to specify a name for the managed node. By convention, the **System Name** is the node's fully-qualified domain name. The field is blank when the **System Name** is unknown.

System Contact — allows you to specify the contact person for the managed node, together with information on how to contact the person. When contact information is unknown, the field is blank.

System Location — allows you to specify the physical location of the node. The **System Contact** field is blank when the location is unknown.

IP Address — allows you to specify the IP address of the selected NSP.

Administration Status — the **Administration Status** option allows you to enable, disable or reset the module. You can set the **Administration Status** option to:

*   **Reset —** reset the module's control logic
*   **Enable —** enable the module
*   **Disable —** disable the module

Actions

The **Actions** frame allows you to commission and decommission the selected NSP.

Commission — selecting the **Commission** button commissions the selected NSP, when it is decommissioned.

Decommission — selecting the **Decommission** button decommissions the selected NSP, when it is commissioned.

CLI Password

The **CLI Password** frame allows you to view and change the following configuration information.
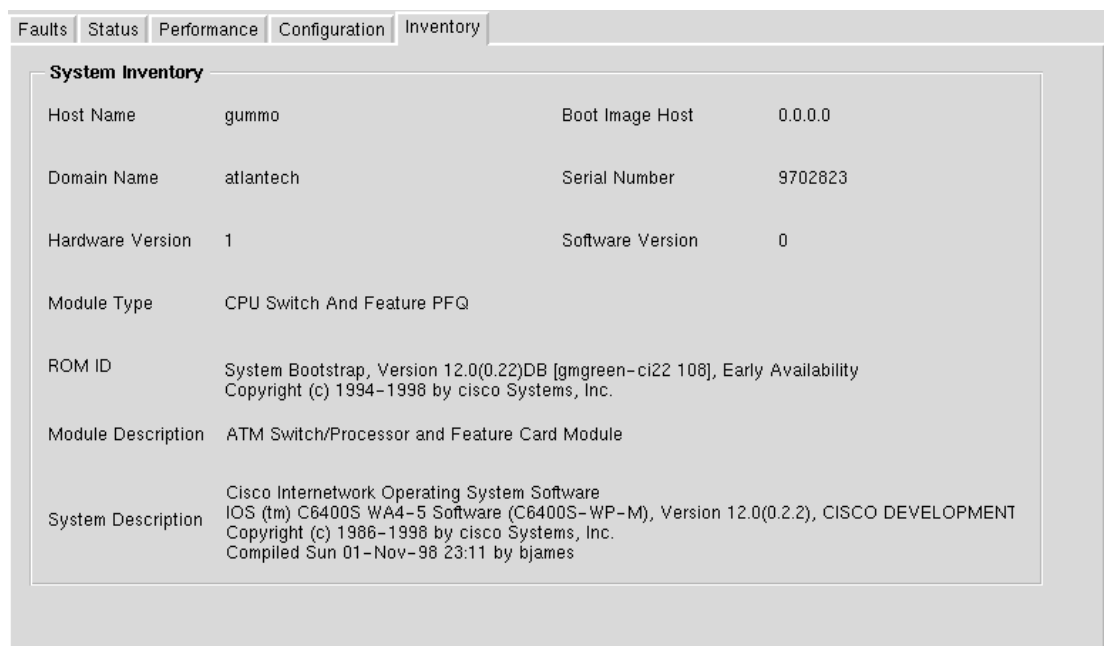
Password — allows access to the command line interface.

Note   According to the device configuration, enter either *<password>* or
<username><space><password>. For example, **joe mypassword**. The *<username>* is optional.

Inventory Tab

The **Inventory** tab (shown in Figure 5-9) has a single frame.

Figure 5-9   Cisco 6400 NSP Management Window (Inventory Tab)

System Inventory

The **System Inventory** frame displays the following inventory information:

Host Name — represents the name of the host in printable ascii characters.

Domain Name — displays the domain portion of the domain name of the host.

Hardware Version — displays the hardware version of the module.

Module Type — displays the type of module installed.

ROM ID — displays the System Bootstrap description and version identification.

Module Description — displays a descriptive string used by the agent to describe the module.

System Description — displays a description of the entity. The System Description value should
include the full name and version identification of the system's hardware type, software
operating-system, and networking software.

BootImage Host — displays the IP address of the host that supplied the current software.

Serial Number — displays the serial number of the selected module.

Software Version — displays the software version of the selected module.

Cisco 6400 NSP Logs Window

The Cisco 6400 NRP Logs Window is divided into two tabbed sections: **Event Command History** and **sysLog Message Table**.

Event Command History Tab

The **Event Command History** tab (shown in Figure 5-10) appears by default and is divided into two sections.

Figure 5-10   Cisco 6400 NSP Logs Window (Event Command History Tab)

Event Command Table

The table (shown in Figure 5-10) displays the following information:

Index — an arbitrary integer value to uniquely identify the listed events. When it reaches the maximum value, the agent wraps the value back to 1 and may flush existing entries

Event Time — the value of sysUpTime when the event occurred.

Command Source — the source of the command that instigated the event. You will see either command Line or SNMP.

Config Source — the configuration data source for the event.

Config Destination — the configuration data destination for the event.

Terminal Type — when **Command Source** is set to commandLine, the terminal type appears (unknown, console, terminal, virtual or auxiliary), otherwise notApplicable appears.

Terminal Number — when **Command Source** is set to commandLine, the terminal number appears. When the terminal is no available or not applicable, **-1** appears.

Terminal User — when **Command Source** is set to commandLine, the name of the logged in user appears. When the terminal type is not available or not applicable nothing appears in the field.

Terminal Location — when **Command Source** is set to commandLine, the hard-wired location of the terminal or the remote host for an incoming connection appears. When the terminal type is not available or not applicable nothing appears in the field.

Command Source Address — when **Terminal Type** is set to virtual, the internet address of the connected system appears. When **Command Source** is set to SNMP, the internet address of the requester appears.

Virtual Host Name — when **Terminal Type** is set to virtual, the host name of the connected system appears. When the terminal type is not available or not applicable nothing appears in the field.

Config Filename — when **Config Source** or **Config Destination** is set to networkTftp or networkRcp, the configuration file name at the storage file server appears.

RCP User — when **Config Source** or **Config Destination** is set to networkRcp, the remote user name appears.

General Information

The general information frame (shown in Figure 5-10) displays the following information:

Uptime at Last Change — displays the amount of time the system had been up from when the running configuration was last changed.

Note   When the value of **Uptime at Last Change** is greater than **Uptime at Last Save**, the configuration has been changed but not saved.

Uptime at Last Save — displays the amount of time the system had been up for, when the running configuration was last saved (written).

Note   When the value of **Uptime at Last Change** is greater than **Uptime at Last Save**, the configuration has been changed but not saved.

Uptime at last Startup Change — displays the amount of time the system had been up for, when the startup configuration was last written to. In general the **Uptime at last Startup Change** is the default configuration used when cold starting the system. It may have been changed by a save of the running configuration or by a copy from elsewhere.

Entries Bumped — displays the number of times the oldest entry in the **Event Command Table** was deleted to make room for a new entry.

Max Table Entries — displays the maximum number of entries that can be held in the **Event Command Table**.

SysLog Message Table Tab

The **SysLog Message Table** tab (shown in Figure 5-11) is divided into two frames.

Figure 5-11   Cisco 6400 NSP Logs Window (SysLog Message Table Tab)

SysLog Message Table

The table (shown in Figure 5-11) displays the following information:

Index — an arbitrary integer value to uniquely identify the listed messages. When it reaches the maximum value the agent flushes the table and wraps the value back to 1.

Severity — displays the severity of the message.

Time Stamp — displays the time the system has been running (when the message was generated).

Message Text — displays the text of the message. When the text of the message exceeds 255 bytes, the message is truncated to 254 bytes and a '*' character is appended, indicating that the message has been truncated.

Facility — name of the facility that generated the **Facility** message.

Message Name — a textual identification for the message type. A facility name in conjunction with a message name uniquely identifies a message type.

General Information

The general information frame (shown in Figure 5-11) displays the following information:

Messages Flushed — displays the number of entries that have been removed from the **SysLog Message Table** in order to make room for new entries. The **Messages Flushed** object can be used to decide whether your polling frequency on the history table is fast enough and/or the size of your history table is large enough such that you are not missing messages.

Cisco 6400 NRP Management Window

The Cisco 6400 NRP Management window is divided into seven tabbed sections: **Faults**, **Status**, **Performance**, **Configuration**, **Inventory, SSG Configuration,** and **More SSG Configuration**.

Faults Tab

The **Faults** tab (shown in Figure 5-12) appears by default and is divided into two frames.

Figure 5-12   Cisco 6400 NRP Management Window (Faults Tab)
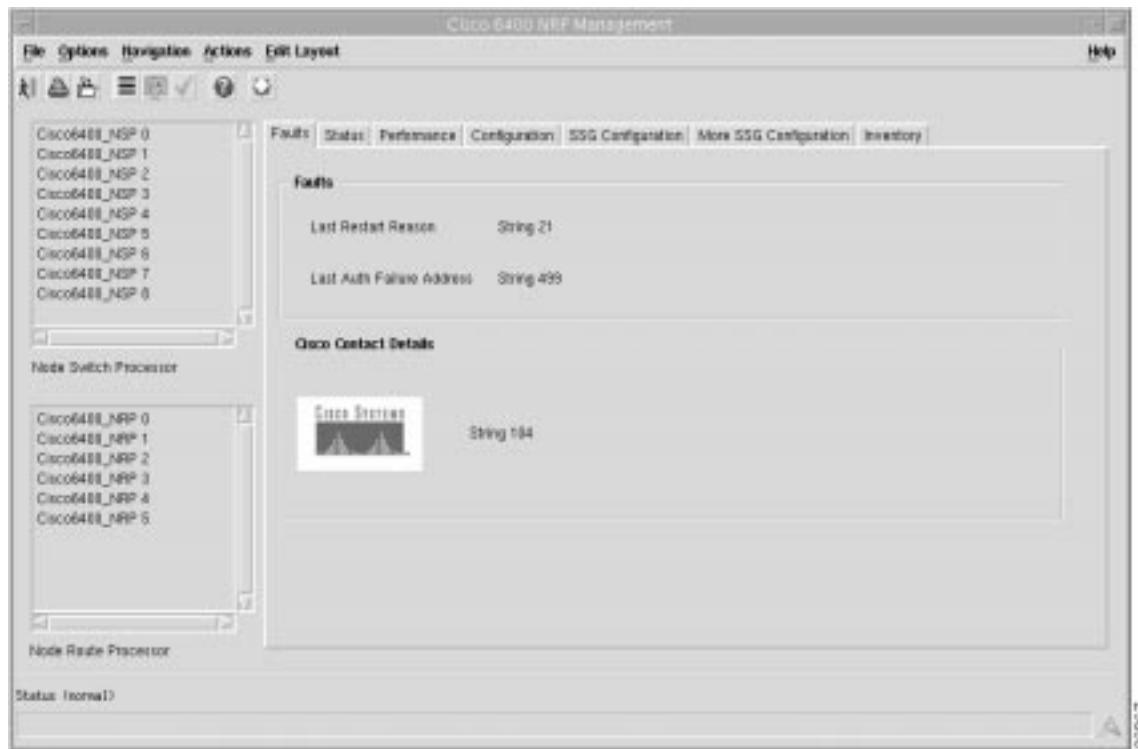
Faults

The **Faults** frame displays the following error information:

Last Restart Reason — displays the reason why the system was last restarted.

Last Auth Failure Address — displays the last SNMP authorization failure IP address.

Cisco Contact Details

The **Cisco Contact Details** frame displays Cisco contact information.

Status Tab

The **Status** tab (shown in Figure 5-13) is divided into four frames.

Figure 5-13   Cisco 6400 NRP Management Window (Status Tab)
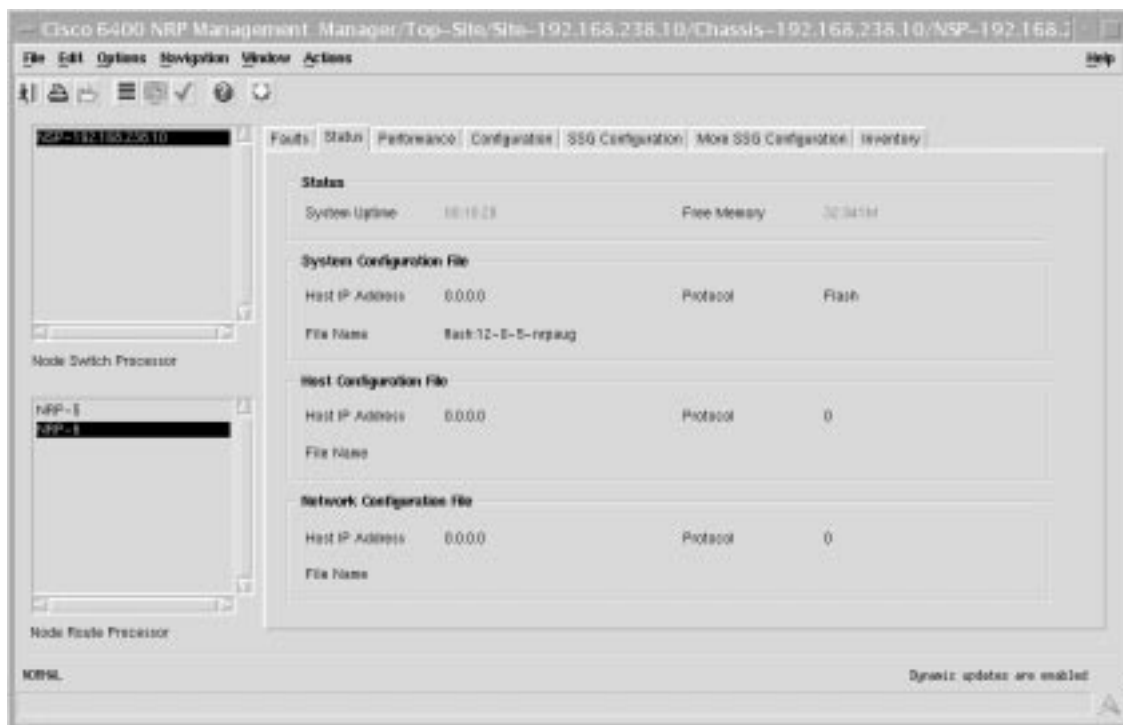
Status

The **Status** frame (shown in Figure 5-13) displays the following information:

System Uptime — displays the time that the system has been active.

Operational Status — displays the operational status of the NRP.

Free Memory — displays the amount of free memory in bytes.

System Configuration File

The **System Configuration File** frame (shown in Figure 5-13) displays the following status information:

Host IP Address — displays the address of the host that supplied the system boot image.

File Name — displays the name of the system boot image.

Protocol — displays the protocol or media that supplied the system boot image.

Host Configuration File

The **Host Configuration File** frame (shown in Figure 5-13) displays the following information:

Host IP Address — displays the address of the host that provided the host-configuration file.

File Name — displays the name of the last configured host-confg file.

Protocol — displays the protocol that supplied the host-confg file.

Network Configuration File

The **Network Configuration File** frame (shown in Figure 5-13) displays the following information:

Host IP Address — displays the address of the host that supplied the network-confg file.

File Name — displays the name of the network configuration file.

Protocol — displays the protocol that supplied the network-confg file.

Performance Tab

The **Performance** tab (shown in Figure 5-14) has a single frame.

Figure 5-14   Cisco 6400 NRP Management Window (Performance Tab)
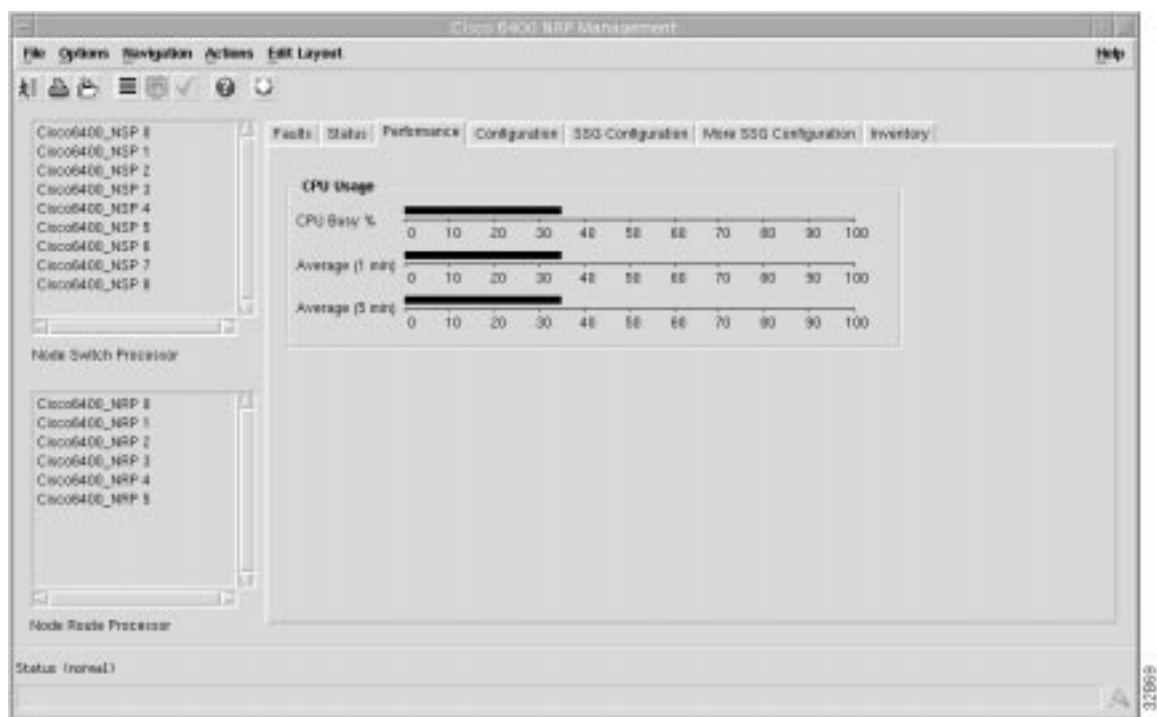
CPU Usage

The **CPU Usage** frame (shown in Figure 5-14) displays the following information:

CPU Busy — displays the percentage usage of the CPU.

Average (1 min) — displays the percentage usage of the CPU averaged over a minute period.

Average (5 min) — displays the percentage usage of the CPU averaged over a five minute period.

Configuration Tab

The **Configuration** tab (shown in Figure 5-15) is divided into three frames.

Figure 5-15   Cisco 6400 NRP Management Window (Configuration Tab)
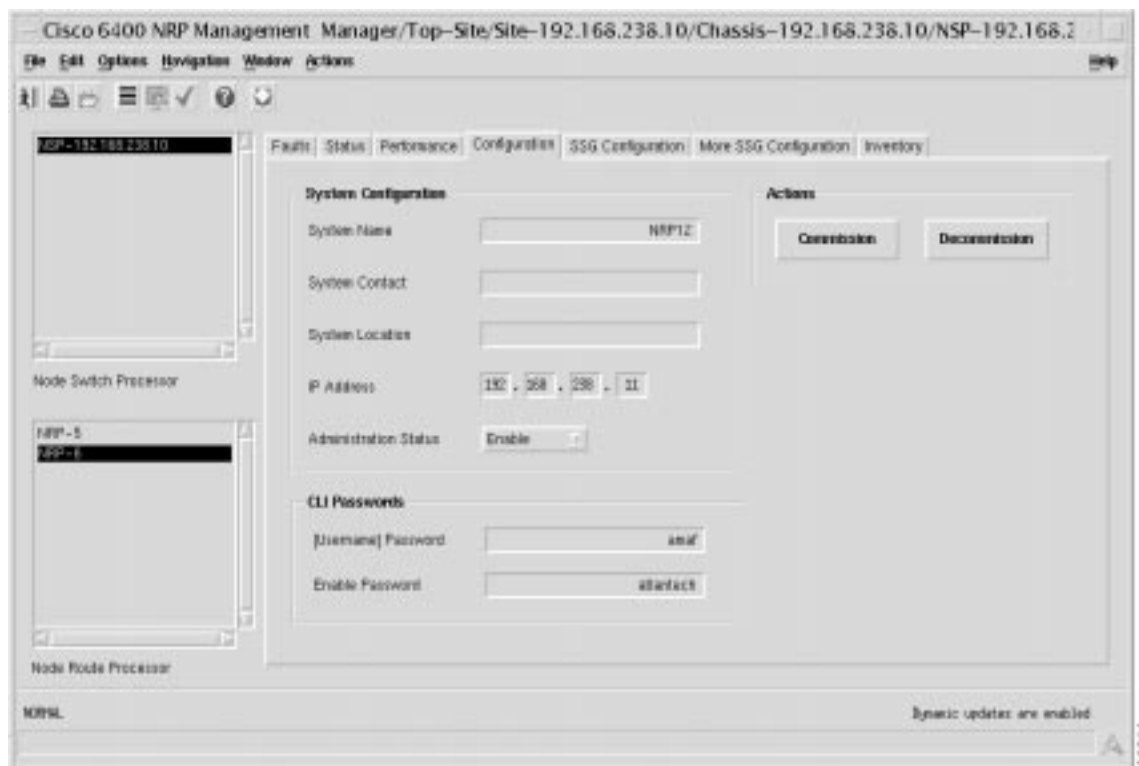
System Configuration

The **System Configuration** frame (shown in Figure 5-15) allows you to view and change the following configuration information.

System Name — allows you to specify a name for the managed node. By convention, it is the node's fully-qualified domain name. When the name is unknown it is left blank.

System Contact — allows you to specify the contact person for the managed node, together with information on how to contact them. When no contact information is known the field is left blank.

System Location — allows you to specify the physical location of the node. The field is left blank when the location is unknown.

IP Address — allows you to specify the IP address of the selected NRP.

Administration Status — allows you to enable, disable or reset the module. You can set the **Administration Status** option to **Reset** (reset the module's control logic), **Enable** (enable the module) or **Disable** (disable the module).

Actions

The **Actions** frame (shown in Figure 5-15) allows you to commission and decommission the selected NRP.

Commission — selecting **Commission** will commission the selected NRP, when it is decommissioned.

Decommission — selecting **Decommission** will decommission the selected NRP, when it is commissioned.

CLI Password

The **CLI Password** frame (shown in Figure 5-15) allows you to view and change the following configuration information:

Password — allows access to the command line interface.

Note   According to the device configuration, enter either *<password>* or *<username><space><password>*. The *<username>* is optional.

Enable Password — allows you to view privileged information on the command line interface.

SSG Configuration Tab

Note   The SSG Configuration tab is valid for IOS version 12.0(3) and later.

The **SSG Configuration** tab (shown in Figure 5-18) has three frames.

Figure 5-16   Cisco 6400 NRP Management Window (SSG Configuration Tab)
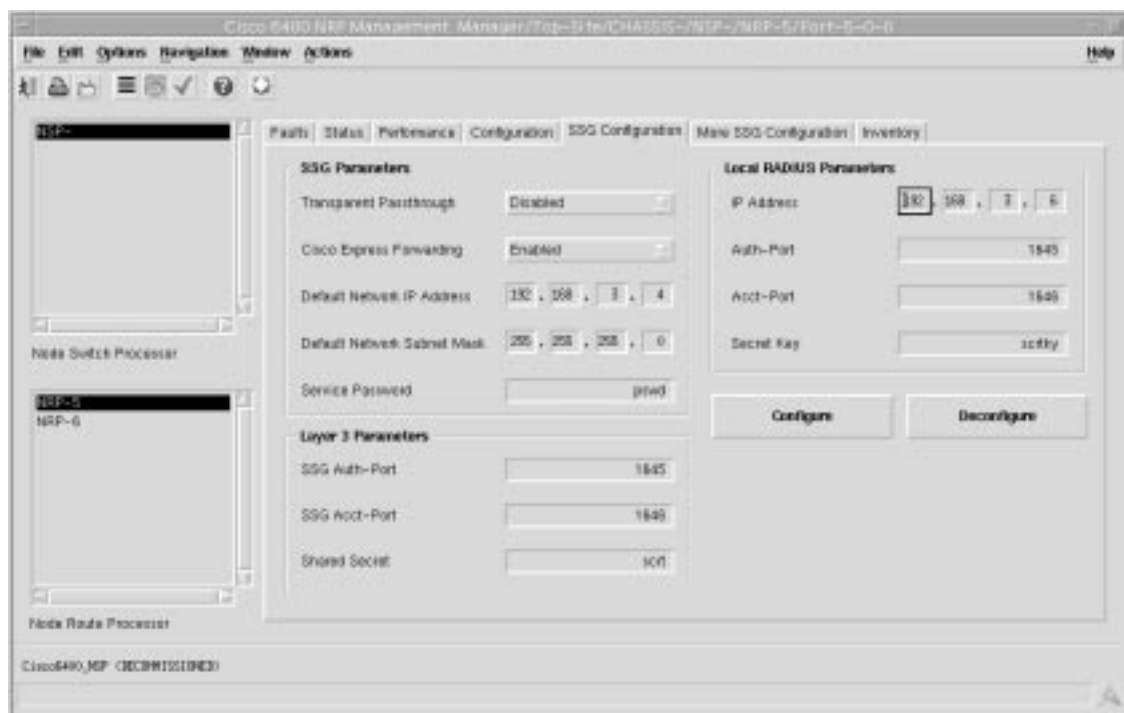
SSG Parameters

The **SSG Parameters** frame (shown in Figure 5-18) are a pre-requisite for setting NRP SSG features. The **SSG Parameters** frame displays the following information:

Transparent Passthrough — The NRP-SSG can support services and **Transparent Passthrough** simultaneously. When **Transparent Passthrough** is **Enabled**, unauthenticated traffic is allowed to pass through the NRP-SSG in either direction using normal rating methods. **Transparent Passthrough** is **Enabled**, by default.

Cisco Express Forwarding — when **Enabled** will use CEF, if **Disabled** will use fast switching. **Cisco Express Forwarding** should only be set to **Enabled** when using Cisco IOS version 12.0(5) and later.

Default Network IP Address — IP address of the default network.

Default Network Subnet Mask — subnet mask of the default network. A subnet mask is a 32 bit number used to separate the network and host sections of an IP address.

Service Password — this password must be the same as the passwords used in the PTA-MD local service profiles.

Layer 3 Parameters

The **Layer 3 Parameters** frame (shown in Figure 5-18) allows you to enable service selection dashboard access and layer 3 services. The **Layer 3 Parameters** frame displays the following information:

SSG Auth-Port — authentication port for the SSG. Defaults to 1645.

SSG Acct-Port — accountancy port for the SSG. Defaults to 1646.

Shared Secret — this is the shared password between the SSG and SSD.

Local RADIUS Parameters

The **Local RADIUS Parameters** frame (shown in Figure 5-18) are a pre-requisite for setting NRP SSG features. The **Local RADIUS Parameters** frame displays the following information:

IP Address — IP address of the local radius server that resides within the SSGs default network.

Auth-Port — authentication port for the local radius server. Defaults to 1645.

Acct-Port — accountancy port for the local radius server. Defaults to 1646.

Secret Key — this is the password shared between the local radius server and the SSG.

Configure Button

Configures the parameters set on the Cisco 6400 NRP Management Window (SSG Configuration Tab) on the NRP-SSG.

Deconfigure Button

Allows you to deconfigure the parameters set on the NRP-SSG.

More SSG Configuration Tab

The **More SSG Configuration** tab (shown in Figure 5-17) has four frames: **PPPoA Virtual Template, PPPoE Virtual Template, PPPoA Address Pool**, and **PPPoE Address Pool**. The **More SSG Configuration** tab allows parameters to be set on the NRP-SSG that are pre-requisites of the PTA-MD service. Refer to the "PTA-MD Service" section on page 2-28 for further details.

Before connecting a subscriber to a PTA-MD service using PPPoA or PPPoE the corresponding parameters on the **More SSG Configuration** tab should be configured. For example, the parameters in the **PPPoE Virtual Template** and **PPPoE IP Address Pool** should be set and configured to connect a subscriber to a PTA-MD service using PPPoE.

Figure 5-17   Cisco 6400 NRP Management Window (More SSG Configuration Tab)
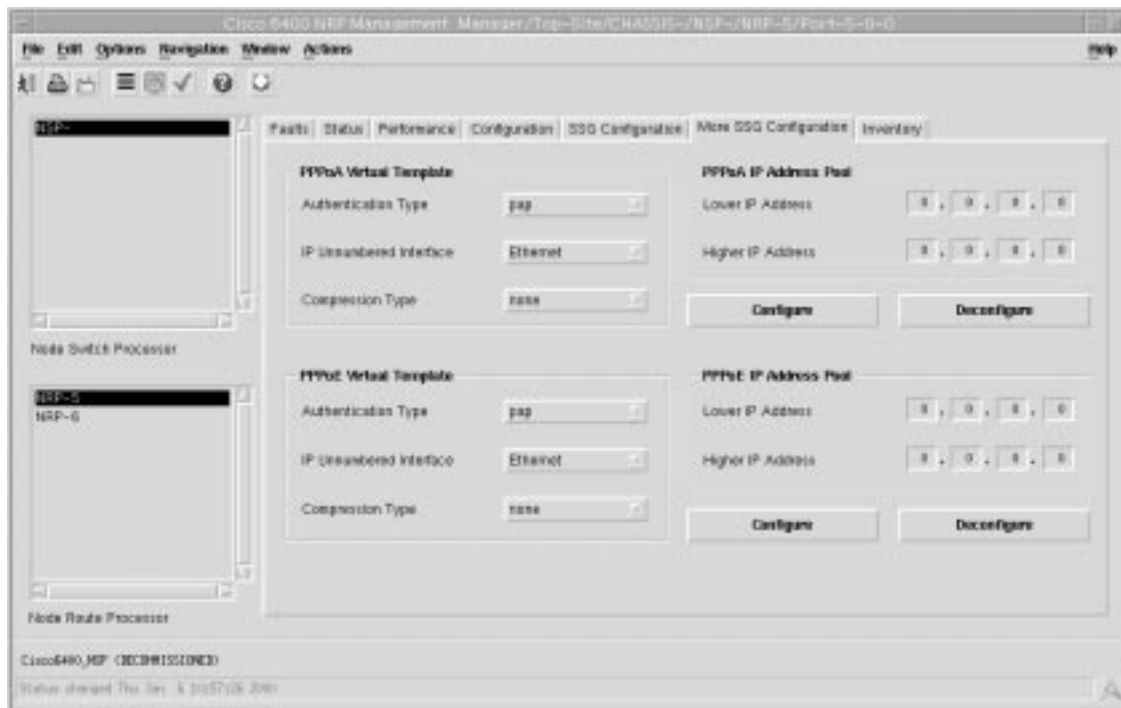
PPPoA Virtual Template

The **PPPoA Virtual Template** frame (shown in Figure 5-18) displays the following information:

Authentication Type — authentication type for any subscribers wishing to connect to this service.

IP Unnumbered Interface — this allows the operator to select which interface IP to target traffic at.

Compression Type — the compression type used within the virtual template.

PPPoE Virtual Template

The **PPPoE Virtual Template** frame (shown in Figure 5-18) displays the following information:

Authentication Type — authentication type for any subscribers wishing to connect to this service.

IP Unnumbered Interface — this allows the operator to select which interface IP to target traffic at.

Compression Type — the compression type used within the virtual template.

PPPoA IP Address Pool

The **PPPoA IP Address Pool** frame (shown in Figure 5-18) displays the following information:

Lower IP Address — the lower limit on the IP address pool.

Higher IP Address — the upper limit on the IP address pool.

No IP address pool is configured when the **Higher IP Address** and **Lower IP Address** parameter are left blank.

Configure Button

Configures the parameters set on the Cisco 6400 NRP Management Window (SSG Configuration Tab) on the NRP-SSG.

Deconfigure Button

Allows you to deconfigure the parameters set on the NRP-SSG.

PPPoE IP Address Pool

The **PPPoE IP Address Pool** frame (shown in Figure 5-18) displays the following information:

Higher IP Address — the upper limit on the IP address pool.

Lower IP Address — the lower limit on the IP address pool.

No IP address pool is configured when the **Higher IP Address** and **Lower IP Address** parameter are left blank.

Configure Button

Configures the parameters set on the Cisco 6400 NRP Management Window (SSG Configuration Tab) on the NRP-SSG.

Deconfigure Button

Allows you to deconfigure the parameters set on the NRP-SSG.

Inventory Tab

The **Inventory** tab (shown in Figure 5-18) has a single frame.

Figure 5-18   Cisco 6400 NRP Management Window (Inventory Tab)

System Inventory

The **System Inventory** frame (shown in Figure 5-18) displays the following information:

Host Name — displays the name of the host in printable ascii characters.

Domain Name — displays the domain portion of the domain name of the host.

Hardware Version — displays the hardware version of the module.

Module Type — displays the type of module installed.

ROM ID — displays the System Bootstrap description and version identification.

Module Description — displays a descriptive string used by the agent to describe the module.

System Description — displays a description of the entity. The **System Description** should include the full name and version identification of the system's hardware type, software operating-system, and networking software.

BootImage Host — displays the IP address of the host which supplied the current software.

Serial Number — displays the serial number of the selected module.

Software Version — displays the software version number of the selected module.

Cisco 6400 NRP Logs Window

The Cisco 6400 NRP Logs window is divided into two tabbed sections: **Event Command History** and **sysLog Message Table**.

Event Command History Tab

The **Event Command History** tab (shown in Figure 5-19) appears by default.

Figure 5-19   Cisco 6400 NRP Logs Window (Event Command History Tab)

Event Command Table

The table (shown in Figure 5-19) displays the following information:

Index — an arbitrary integer value to uniquely identify the listed events. When it reaches the maximum value, the agent wraps the value back to 1 and may flush existing entries

Event Time — displays the value of suspecting when the event occurred.

Command Source — displays the source of the command that instigated the event. You will see either commandLine or SNMP.

Config Source — displays the configuration data source for the event.

Config Destination — displays the configuration data destination for the event.

Terminal Type — when **Command Source** is set to commandLine, the terminal type appears (unknown, console, terminal, virtual or auxiliary), otherwise notApplicable appears.

Terminal Number — when **Command Source** is set to commandLine, the terminal number appears. When the terminal is no available or not applicable then -1 appears.

Terminal User — when **Command Source** is set to commandLine, the name of the logged in user appears. Nothing appears when the terminal type is not available or not applicable.

Terminal Location — when **Command Source** is set to commandLine, the hard-wired location of the terminal or the remote host for an incoming connection appears. Nothing appears when the terminal type is not available or not applicable nothing appears.

Command Source Address — when **Terminal Type** is set to virtual, the internet address of the connected system appears. When **Command Source** is 'SNMP', the internet address of the requester appears.

Virtual Host Name — when **Terminal Type** is set to virtual, the host name of the connected system appears. When the terminal type is not available or not applicable nothing appears.

Config Filename — when **Config Source** or **Config Destination** is set to networkTftp ornetworkRcp, the configuration file name at the storage file server appears.

RCP User — when **Config Source** or **Config Destination** is set to networkRcp, the remote user name appears.

General Information

The general information frame displays the following information:

Uptime at Last Change — displays the amount of time the system had been up from when the running configuration was last changed.

Note   When the value of **Uptime at Last Change** is greater than **Uptime at Last Save**, the configuration has been changed but not saved.

Uptime at Last Save — displays the amount of time the system had been up when the running configuration was last saved (written).

Note   When the value of **Uptime at Last Change** is greater than **Uptime at Last Save**, the configuration has been changed but not saved.

Uptime at last Startup Change — displays the amount of time the system had been up when the startup configuration was last written to. In general the **Uptime at last Startup Change** is the default configuration used when cold starting the system. It may have been changed by a save of the running configuration or by a copy from elsewhere.

Entries Bumped — displays the number of times the oldest entry in Event Command History Table was deleted to make room for a new entry.

Max Table Entries — displays the maximum number of entries that can be held in the Event Command History Table.

SysLog Message Table Tab

The **SysLog Message Table** tab (shown in Figure 5-20) is divided into two frames.

Figure 5-20   Cisco 6400 NRP Logs Window (SysLog Message Table Tab)

SysLog Message Table

The table (shown in Figure 5-20) displays the following information:

Index — an arbitrary integer value to uniquely identify the listed messages. When it reaches the maximum value the agent flushes the table and wraps the value back to 1.

Facility — displays the name of the facility that generated the message.

Severity — displays the severity of the message.

Message Name — a textual identification for the message type. A facility name in conjunction with a message name uniquely identifies a message type.

Message Text — displays the text of the message. When the text of the message exceeds 255 bytes, the message is truncated to 254 bytes and a '*' character is appended, indicating that the message has been truncated.

Time Stamp — displays the amount of time the system had been up when the message was generated.

General information

The general information frame (shown in Figure 5-20) displays the following information:

Messages Flushed — displays the number of entries that have been removed from the **SysLog Message Table** in order to make room for new entries. The **Messages Flushed** object can be utilized to determine whether your polling frequency on the history table is fast enough and/or the size of your history table is large enough such that you are not missing messages.

Max Table Entries — displays the upper limit on the number of entries that the **SysLog Message Table** may contain. A value of 0 will prevent any history from being retained. When the table is full, the oldest entry is deleted and a new one is created.

Cisco 6400 NRP ATM Port Management Window

The Cisco 6400 NRP ATM Port Management window is divided into six tabbed sections: **Faults**, **Status**, **Performance**, **Configuration**, **More Configuration**, and **Inventory**.

Faults Tab

The **Faults** tab (shown in Figure 5-21) appears by default and has one frame.

Figure 5-21   Cisco 6400 NRP ATM Port Management Window (Faults Tab)
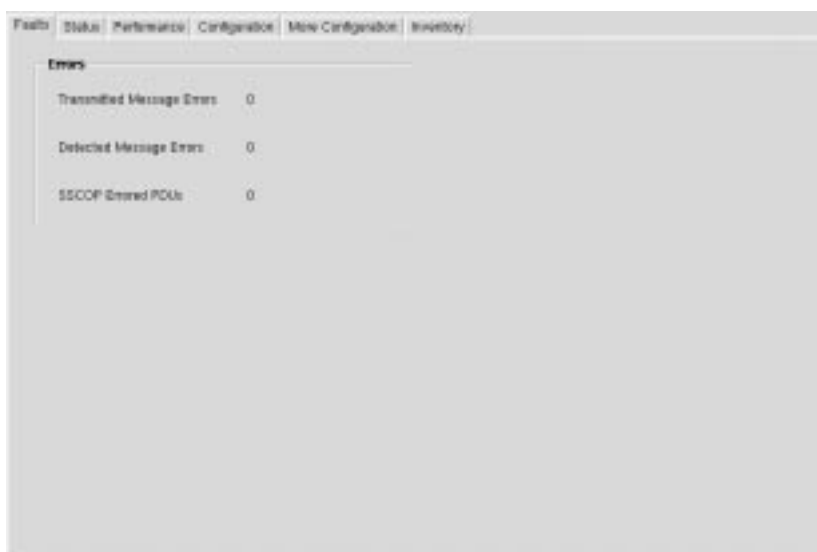
Errors

The **Errors** frame (shown in Figure 5-21) displays the following error information.

Transmitted Message Errors — displays the number of incorrect messages detected on the interface. The Incorrect Messages Counter reflects any sort of incorrect information in a message.

Detected Message Errors — displays the number of incorrect messages detected on the interface. The incorrect messages counter reflects any sort of incorrect information in a message.

SSCOP Errored PDUs — displays the sum of the following errors:

Invalid PDUs are defined in SSCOP and consist of PDUs with incorrect length (MAA-ERROR code U), undefined PDU type code or not 32-bit aligned.

PDUs that result in MAA error codes are discarded.

Status Tab

The **Status** tab (shown in Figure 5-22) has a single frame.

Figure 5-22   Cisco 6400 NRP ATM Port Management Window (Status Tab)

ATM Port Status

The ATM Port Status frame displays the following information:

Total Connections — displays the total number of existing connections at the interface.

Configured VP Interfaces — displays the number of configured VP interfaces at the physical interface.

Receive LED Status — displays the receive LED color of the port. It can be one of the following: off, steadyGreen, steadyYellow, steadyRed, flashGreen, flashYellow or flashRed.

Transmit LED Status — displays the transmit LED color of the port. It can be one of the following: off, steadyGreen, steadyYellow, steadyRed, flashGreen, flashYellow or flashRed.

SVC Minimum VCI — displays the minimum of the range of values from which VCIs are assigned to new SVC connections. When the value is larger, more VCIs are reserved for setting up PVCs. It applies to every VPI of the physical interface and every logical port.

Number of PVPs — displays the number of permanent virtual paths at the interface.

Soft VC Destination Address — displays the 20 byte ATM address of the destination ATM interface for soft ATM PVC/PVP.

Number of VCCs — displays the number of VCCs (PVCs and SVCs) configured for use at the ATM interface.

Number of VPCs — displays the number of VPCs (PVCs and SVCs) configured for use at the ATM interface. At the ATM UNI, the configured number of VPCs (PVCs and SVCs) can range from 0 to 256 only.

Active SVCs — displays the number of active switched virtual channels at the interface.

Active SVPs — displays the number of active switched virtual paths at the interface.

Number of PVCs — displays the number of permanent virtual channels at the interface.

Performance Tab

The **Performance** tab is divided into four frames.

Figure 5-23   Cisco 6400 Line Card ATM Port Management Window (Performance Tab)

Transmitted

The **Transmitted** frame (shown in Figure 5-23) displays the following performance information:

Restarts — displays the number of Restart Activity errors transmitted from the interface. The Restart Activity Counter provides a count of host, switch, or network restart activity. The counter is incriminated when transmitting a RESTART message.

Unavailable Routes -Displays the number of route unavailability transmitted from the interface. The counter is incrimented when a RELEASE, RELEASE COMPLETE (only when not preceded by a RELEASE mesg for the same call), ADD PARTY REJECT, or STATUS message that contains one of the following cause code values is transmitted (Cause values apply to both UNI3.0 and UNI3.1):

Table 5-1   Unavailable Routes Cause Code Values

Cause Value	Meaning
1	unallocated (unassigned) number
1	no route to specified transit network
3	No route to destination

Note   RELEASE COMPLETE messages that are a reply to a previous RELEASE message and contain the same cause value, are redundant (for counting purposes) and should not be counted for the counter.

Unavailable Resources — displays the number of Resource Unavailability transmitted from the interface. The counter is incriminated when a RELEASE, RELEASE COMPLETE (only when not preceded by a RELEASE message for the same call), ADD PARTY REJECT, or STATUS message that contains one of the following cause code values is received:

Table 5-2   Unavailable Resources Cause Code Values

Cause Value	Meaning
17	user busy
18	no user responding
21	call rejected
22	number changed
23	user rejects all calls with calling line ID restriction (CLIR)
27	destination out of order
31	normal, unspecified
88	incompatible destination

Note   Cause values apply to both UNI3.0 and UNI3.1

Calling Party Events — displays the number of Calling Party Events transmitted from the interface. The counter monitors error events that occur due to the originating user doing something wrong. The counter is incriminated when a RELEASE, RELEASE COMPLETE (only when not preceded by a RELEASE message for the same call), ADD PARTY REJECT, or STATUS message that contains one of the following cause code values is transmitted:

Table 5-3   Calling Party Events Cause Code Values

Cause Value	Meaning
28	invalid number format (address incomplete)
43	access information discarded
57	bearer capability not authorized
65	bearer capability not implemented
73	unsupported combination of traffic parameters
78	AAL parameters cannot be supported (UNI3.1 only)
91	invalid transit network selection
93	AAL parameters cannot be supported (UNI3.0 only)

Note   Cause values apply to both UNI3.0 and UNI3.1.

Called Party Events — displays the number of Called Party Responsible For Unsuccessful Call transmitted from the interface. The counter is incriminated when a RELEASE, RELEASE COMPLETE (only when not preceded by a RELEASE message for the same call), ADD PARTY REJECT, or STATUS message that contains one of the following cause code values is transmitted.

Table 5-4   Called Party Events Cause Code Values

Cause Value	Meaning
17	user busy
18	no user responding
21	all rejected
22	number changed
23	user rejects all calls with calling line ID restriction (CLIR)
27	destination out of order
31	normal, unspecified
88	incompatible destination

Note   Cause values apply to both UNI3.0 and UNI3.1.

Timer Expires — displays the number of **Timer Expiries** transmitted from the interface. The **Timer Expiries** counter provides a count of network timer expiries, and to some extent, host or switch timer expiries.

The conditions for incrementing the **Timer Expires** counter are:

Expiry of any network timer — receipt of a RELEASE or RELEASE COMPLETE message with Cause #102, recovery on timer expiry.

Setup attempts — displays the number of call set up attempts (both successful and unsuccessful) transmitted on the interface.

Number of Cells — displays the number of cells transmitted on the interface, including p2p and p2mp cells.

Bandwidth Utilization -Displays the utilized bandwidth as a percentage of the maximum bandwidth supported by the port.

Note   **Receive/Transmit Utilization** gauges are displayed from a subscriber's point of view, that is, the **Transmit Utilization** value shows the number of cells per second the subscriber is transmitting and the **Receive Utilization** value shows the number of cells per second the subscriber is receiving.

Connection Established

The **Connections Established** frame (shown in Figure 5-23) displays the following performance information:

Incoming — displays the number of SVC VCCs established at the signalling entity for incoming connections.

Outgoing — displays the number of SVC VCCs established at the signalling entity for outgoing connections.

Detected

The **Detected** frame (shown in Figure 5-23) displays the following performance information.

Restarts — displays the number of Restart Activity errors detected on the interface. The Restart Activity Counter provides a count of host, switch, or network restart activity. The counter is incriminated when receiving a RESTART message.

Unavailable Routes — displays the number of Route Unavailability detected on the interface. The counter is incriminated when a RELEASE, RELEASE COMPLETE (only when not preceded by a RELEASE message for the same call), ADD PARTY REJECT, or STATUS message that contains one of the following cause code values is received.

Table 5-5   Unavailable Routes Cause Codes

Cause Value	Meaning
1	unallocated (unassigned) number
1	no route to specified transit network
3	No route to destination
88	incompatible destination

Note   Cause values apply to both UNI3.0 and UNI3.1.

Unavailable Resources — displays the number of Resource Unavailability detected on the interface. The **Unavailable Resources** counter incriminated when a RELEASE, RELEASE COMPLETE (only when not preceded by a RELEASE message for the same call), ADD PARTY REJECT, or STATUS message that contains one of the following cause code values is received.

Table 5-6   Unavailable Resources Cause Codes

Cause Value	Meaning
35	requested VPCI/VCI not available
37	user cell rate not available (UNI3.1 only)
38	network out of order
41	temporary failure

45	no VPCI/VCI available
47	resource unavailable, unspecified
49	Quality of Service unavailable
51	user cell rate not available (UNI3.0 only)
58	bearer capability not presently available
63	Service or option not available, unspecified
92	too many pending add party requests

Note   Cause values apply to both UNI3.0 and UNI3.1 unless otherwise stated.

Calling Party Events — number of **Calling Party Events** detected on the interface. The counter monitors error events that occur due to the originating user doing something wrong. The counter is incriminated when a RELEASE, RELEASE COMPLETE (only when not preceded by a RELEASE message for the same call), ADD PARTY REJECT, or STATUS message that contains one of the following cause code values is received:

Table 5-7   Calling Party Events Cause Codes

Cause Value	Meaning
28	invalid number format (address incomplete)
43	access information discarded
57	bearer capability not authorized
65	bearer capability not implemented
73	unsupported combination of traffic parameters
78	AAL parameters cannot be supported (UNI3.1 only)
91	invalid transit network selection
93	AAL parameters cannot be supported (UNI3.0 only)

Note   Cause values apply to both UNI3.0 and UNI3.1.

Called Party Events — displays the number of Called Party Responsible For Unsuccessful Call detected on the interface. The counter is incriminated when a RELEASE, RELEASE COMPLETE (only when not preceded by a RELEASE message for the same call), ADD PARTY REJECT, or STATUS message that contains one of the following cause code values is received:

Table 5-8   **Called Party Events Cause Codes**

Cause Value	Meaning
17	user busy
18	no user responding
21	all rejected
22	number changed
23	user rejects all calls with calling line ID restriction (CLIR)
27	destination out of order
31	normal, unspecified
88	incompatible destination

Note   Cause values apply to both UNI3.0 and UNI3.1.

Timer Expires — displays the number of Timer Expiries detected on the interface. The Timer Expiries Counter provides a count of network timer expiries, and to some extent, host or switch timer expiries. The conditions for incrementing the counter are:

Expiry of any network timer

Receipt of a RELEASE or RELEASE COMPLETE message with Cause #102, 'recovery on timer expiry'.

Setup attempts — displays the number of call setup attempts (both successful and unsuccessful) detected on the interface.

Number of Cells — the number of cells received on the interface, including p2p and p2mp cells.

SSCOP

The SSCOP section of the **Performance** tab allows you to view the following performance information.

Connection Event — displays the SSCOP Connection Events Counter. The counter counts the sum of the following errors:

SSCOP Connection Disconnect Counter — the abnormal occurrence of the event is characterized by the expiry of Timer_NO_RESPONSE. (The event is communicated to the layer management with MAA-ERROR code P. Refer to ITU-T Q.2110 [13].)

SSCOP Connection Initiation Failure — the condition indicates the inability to establish an SSCOP connection. The event occurs whenever the number of expiries of the connection control timer (Timer_CC) exceeds the MaxCC or upon receipt of a connection reject message BGREJ PDU. (The event is communicated to layer management with MAA-ERROR code O. Refer to ITU-T Q.2110.)

SSCOP Connection Re-Establ/Resynch — occurs upon receipt of a BGN PDU or RESYNC PDU.

Configuration Tab

The window shown below appears by selecting the **Configuration** tab.The window is divided into two sections.

Figure 5-24   Cisco 6400 NRP ATM Port Management Window (Configuration Tab)

ATM Port Configuration

The **ATM Port Configuration** frame (shown in Figure 5-24) allows you to view and change the following configuration information:

Neighbor IP Address — allows you to specify the IP address of the neighbor system connected to the far end of the interface, to which a Network Management Station can send SNMP messages, as IP datagrams sent to UDP port 161, in order to access network management information concerning the operation of that system.

Note   The value of the object may be obtained in different ways, for example, by manual configuration, or through ILMI interaction with the neighbor system.

Neighbor Interface Name — allows you to specify the textual name of the interface on the neighbor system on the far end of the interface, and to which the interface connects. When the neighbor system is manageable through SNMP and supports the object ifName, the value of the object must be identical with that of ifName for the ifEntry of the lowest level physical interface for the port. When the interface does not have a textual name, the value of the object is a zero length string. Note that the value of the object may be obtained in different ways, for example, by manual configuration, or through ILMI interaction with the neighbor system.

Maximum VCCs — allows you to specify the maximum number of VCCs (PVCs and SVCs) supported at the ATM interface.

Maximum VPCs — allows you to specify the maximum number of VPCs (PVCs and SVCs) supported at the ATM interface. At the ATM UNI, the maximum number of VPCs (PVCs and SVCs) ranges from 0 to 256 only.

Max Active VPI Bits — allows you to specify the maximum number of active VPI bits configured for use at the ATM interface. At the ATM UNI, the maximum number of active VPI bits configured for use ranges from 0 to 8 only.

Max Active VCI Bits — allows you to specify the maximum number of active VCI bits configured for use at the ATM interface.

UNI Signalling Version — allows you to specify the version of UNI signalling that is currently being used on the interface. You can set the **UNI Signalling Version** to:

ATMF UNI 3.0, ATM FUNI 3.1 or ATMF UNI 4.0 — used when the interface is an UNI or IISP interface.

Not Applicable — used when the interface is a PNNI interface or when signalling is disabled. It may reflect a manually configured value for the signalling version, or may be determined by other means such as auto-configuration.

Note   Setting the variable to a value of "notApplicable" is not allowed. To modify the ciscoAtmIfUniSignallingVersion, ifAdminStatus has to be down and atmIfIlmiAutoConfiguration disabled.

UNI Type — allows you to specify the type of User to Network Interface (UNI). You can set the **UNI Type** to **public** or **private**.

Note   When ciscoAtmIfType is not UNI then UNI type value should be ignored.

Well-known VC Mode — allows you to specify whether well-known VCs should be automatically or manually created for the interface. You can set the **Well-known VC Mode** to:

Automatic — in automatic mode, well-known VCs are created with default VPI/VCI values upon startup or upon entry to the automatic mode. In **Automatic** mode, well-known VCs are not allowed to be deleted or modified by user commands. **Automatic** mode is the default mode at startup for equipment which supports automatic well-known VC creation.

Manual — in manual mode, well-known VCs won't be automatically created. Instead you can delete and create PVCs with the reserved encapsulation types aalQsAal, aal5Ilmi, and aal5Pnni as applicable. PVCs are allowed to have VCI values in the range <5-16383>, instead of <32-16383>.

Manual Delete Upon Entry — the **Manual Delete Upon Entry** action causes any existing VCs with reserved encapsulation types (aalQsAal, aal5Ilmi or aal5Pnni) to be deleted for the interface as it enters the manual state.

ATM Interface Side — allows you to specify the side of ATM interface. You can set the **ATM Interface Side** to either a **User** or **Network** side or **Not Applicable**. A **Not Applicable** value implies that Interface Type is other than uni or iisp.

Signalling Admin Status — allows you to **Enable** or **Disable** signalling/sscop on the interface. You can set the **Signalling Admin Status** option to:

Enabled — signalling/sscop on the interface is enabled.

Disabled — signalling/sscop on the interface is disabled.

Note   To modify the ciscoAtmIfSignallingAdminStatus, ifAdminStatus has to be down.

SVC UPC Intent — allows you to specify the policing (Usage Parameter Control or UPC) action to take for SVCs established through the interface. Yo can set the **SVC UPC Intent** option to **Passing**, **Tagging** or **Dropping**.

Note   Values other than passing are allowed only when policing is supported on the interface. The **SVC UPC Intent** also serves to determine which UPC to use on the terminating (destination) half-leg of Soft PVCs. For the CPU interface or logical ports on the LS1010, only the 'passing' value is supported.

Interface Type — allows you to specify the type of ATM interface. You can set the **Interface Type** to **Other**, **UNI** (User to Network), **PNNI**, **IISP** or **NNI PVC Only**.

Note   To modify the ciscoAtmIftype, ifAdminStatus has to be down and atmIfIlmiAutoConfiguration disabled.

ILMI Configuration

The **ILMI Configuration** frame (shown in Figure 5-24) allows you to view and change the following configuration information:

ILIM VCI Value — allows you to specify the VCI value of the VCC supporting the ILMI at the ATM interface. When the values of atmInterfaceIlmiVpi and atmInterfaceIlmiVci are both equal to zero then the ILMI is not supported at the ATM interface.

ILMI VPI Value — allows you to specify the VPI value of the VCC supporting the ILMI at the ATM interface. When the values of atmInterfaceIlmiVpi and atmInterfaceIlmiVci are both equal to zero then the ILMI is not supported at the ATM interface.

ILMI Keepalive Time — allows you to specify the amount of time that should elapse between successive ILMI keepalive messages sent on the interface. A value of 0 disables ILMI keepalive messages on the interface.

ILMI Auto-Configuration — allows you to **Enable** or **Disable** the ILMI link and interface type determination. You can set the **ILMI Auto-Configuration** option to:

Enabled — ILMI link and interface type determination on the interface is enabled.

Disabled — ILMI link and interface type determination on the interface is disabled.

Note   The configuration only takes effect on the next interface restart.

ILMI Configuration — allows you to **Enable** or **Disable** ILMI configuration on the interface.

Enabled — ILMI configuration on the interface is enabled.

Disabled -ILMI configuration on the interface is disabled.

Note   The configuration takes effect only on the next interface restart. Disabling the **ILMI Configuration** will also disable atmIfIlmiAddressRegistration and atmIfIlmiAutoConfiguration and atmIfIlmiKeepAlive.

ILMI Address Registration — allows you to **Enable** or **Disable** the **ILMI Address Registration** on the interface.

> **Enabled** — **ILMI Address Registration** on the interface is enabled.

> **DISabled** -**ILMI Address Registration** on the interface is disabled.

Note   The configuration takes effect only on the next interface restart.

More Configuration Tab

The **More Configuration** tab is divided into two frames.

Figure 5-25   Cisco 6400 NRP ATM Port Management Window (More Configuration Tab)
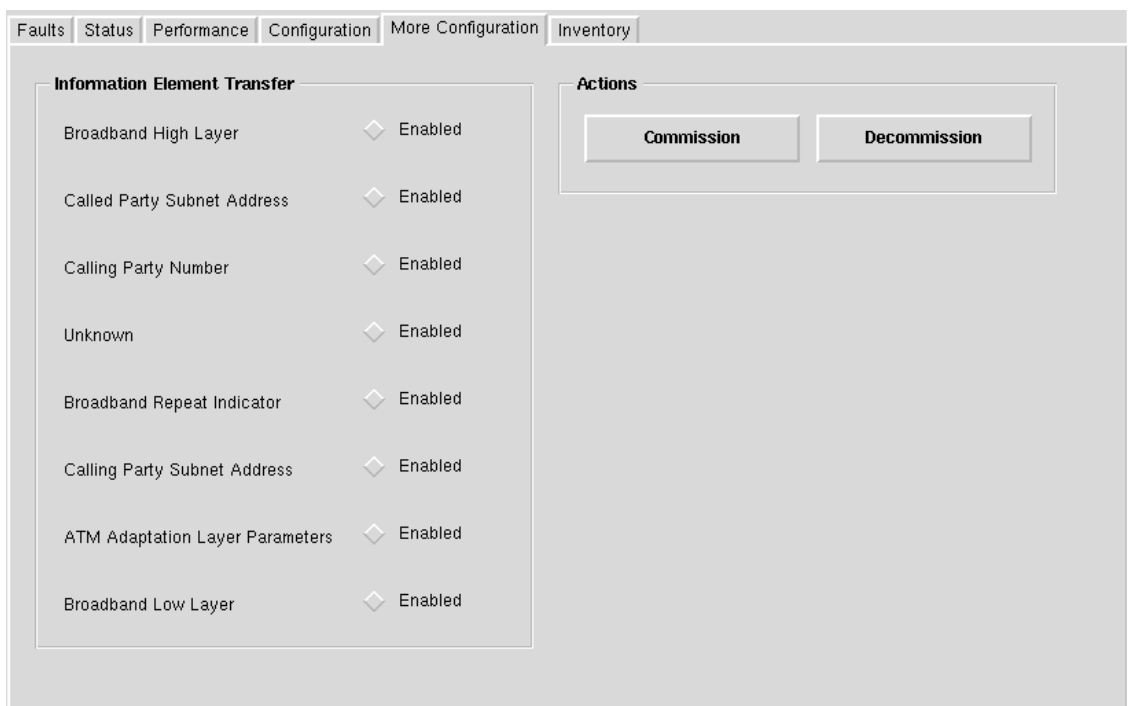
Information Element Transfer

The **Information Element Transfer** frame (shown in Figure 5-25) allows you to view and change the following configuration information:

Broadband High Layer — allows you to specify whether to accept, transfer, and deliver the Broadband High Layer Information Element from the calling party to the called party. You can set the **Broadband High Layer** to:

Enabled — information element is transferred to the called party.

Disabled — information element will not be transferred to the called party.

Called Party Subnet Address — the **Called Party Subnet Address** is required for ATM systems that support only a value of "disabled" (that is, the ATM systems does not support the feature associated with the parameter).

Calling Party Number — allows you to specify whether the Calling Party Number Information Element is transferred to the called party address. You can set the **Calling Party Number** to:

Enabled — information element is transferred to the called party.

Disabled — information element will not be transferred to the called party.

Unknown — allows you to specify whether to accept, transfer, and deliver the unknown Information Element from the calling party to the called party, when the IE instruction field flag is set to zero. You can set the **Unknown** option to:

Enabled — information element is transferred to the called party.

Disabled — information element is not transferred to the called party.

Note   When the IE action flag is set to one, the IE action indicator should be followed regardless of the configuration.

Broadband Repeat Indicator — the **Broadband Repeat Indicator** is required for ATM systems that support only a value of "disabled" (that is, the ATM systems does not support the feature associated with the parameter).

Calling Party Subnet Address — allows you to specify whether to accept and transfer the Calling Party Subaddress Information Element from the calling party to the called party. You can set the **Calling Party Subnet Address** to:

Enabled — information element is transferred to the called party.

Disabled — information element will not be transferred to the called party.

ATM Adaption Layer Parameters — allows you to specify whether to accept, transfer, and deliver the ATM Adaptation Layer Parameters Information Element from the calling party to the called party. You can set the **ATM Adaption Layer Parameters** option to:

Enabled — information element is transferred to the called party.

Disabled — information element will not be transferred to the called party.

Broadband Low Layer -The **Broadband Low Layer** parameter is required for ATM systems that support only a value of "disabled" (that is, the ATM systems does not support the feature associated with the parameter).

Actions

The **Actions** frame (shown in Figure 5-25) allows you to commission or decommission the selected NRP ATM Port.

Commission — commissions the selected NRP ATM Port, when it is decommissioned.

Decommission — decommissions the selected NRP ATM Port, when it is commissioned.

Inventory Tab

The **Inventory** tab (shown in Figure 5-26) has a single frame.

Figure 5-26   Cisco 6400 NRP ATM Port Management Window (Inventory Tab)

Inventory

The **Inventory** frame (shown in Figure 5-26) displays the following inventory information:

Admin Address — displays the address assigned for administrative purposes, for example, an address associated with the service provider side of a public network UNI. When the interface has no assigned administrative address, or when the address used for administrative purposes is the same as that used for ifPhysAddress, then the **Admin Address** is an octet string of zero length.

ATM Address Type — displays the type of primary ATM address configured for use at the ATM interface.

Physical Port Type — displays the type of physical layer medium on the port.

Cisco 6400 Line Card Management Window

The Cisco 6400 Line Card Management window has one tabbed section.

Line Card Tab

The **Line Card** tab is divided into four frames.

Figure 5-27   Cisco 6400 Line Card Management Window (Line Card Tab)
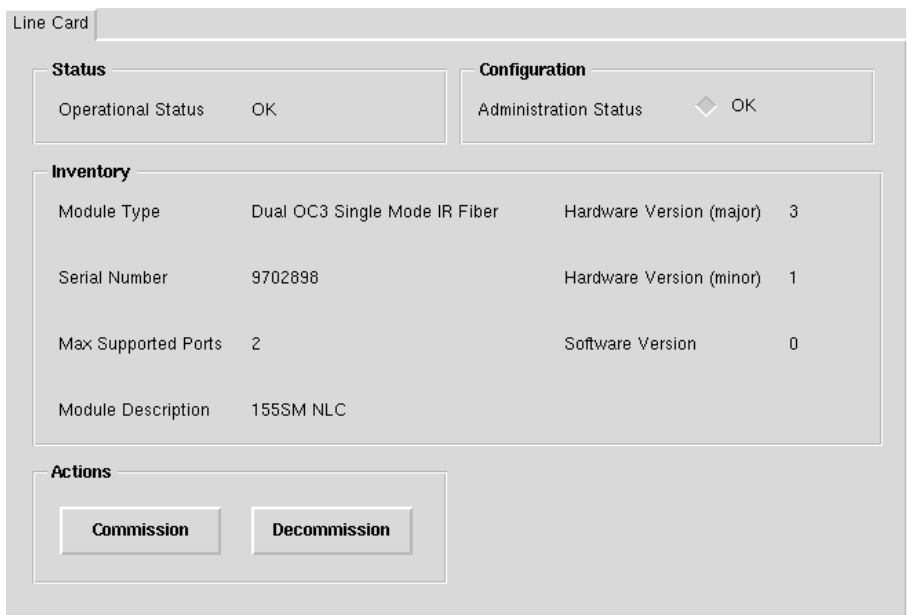
Status

The Status frame (shown in Figure 5-27) displays the following information:

Operational Status — displays the operational status of the submodule.

Configuration

The **Configuration** frame allows you to view and change the following information:

Administration Status — allows you to set the administration status to **Reset** or **OK**.

Inventory

The **Inventory** frame displays the following information:

Module Type — displays the module type of the selected Line Card.

Serial Number — displays the serial number of the sub-module.

Max Supported Ports — displays the maximum number of ports supported by the sub-module.

Hardware Version (major) — displays the major hardware version of the sub-module. Together with ciscoLS1010SubModuleHwVersionMinor, this completely specifies the hardware version of the sub-module.

Hardware Version (minor) — displays the minor hardware version of the sub-module. Together with ciscoLS1010SubModuleHwVersion, this completely specifies the hardware version of the sub-module.

Software Version — displays the current software version number.

Actions

The **Actions** frame allows you to commission and decommission the selected Line Card.

Commission — commissions the selected Line Card, when it is decommissioned.

Decommission — decommissions the selected Line Card, when it is commissioned.

Cisco 6400 Line Card ATM Port Management Window

The **Cisco 6400 Line Card ATM Port Management** window is divided into six tabbed sections: **Faults**, **Status**, **Performance**, **Configuration**, **More Configuration**, and **Inventory**.

Faults Tab

The **Faults** tab (shown in Figure 5-28) appears by default and is divided into three frames.

Figure 5-28   Cisco 6400 Line Card ATM Port Management Window (Faults Tab)

Errors

The **Errors** frame (shown in Figure 5-28) displays the following error information:

Transmitted Message Errors — displays the number of Incorrect Messages detected on the interface. The Incorrect Messages Counter reflects any sort of incorrect information in a message.

Detected Message Errors — displays the number of Incorrect Messages detected on the interface. The Incorrect Messages Counter reflects any sort of incorrect information in a message.

SSCOP Errored PDUs — displays the sum of the following errors:

Invalid PDUs are defined in SSCOP and consist of PDUs with incorrect length (MAA-ERROR code U), undefined PDU type code or not 32-bit aligned. PDUs that result in MAA error codes are discarded.

Sonet Frame Errors

The **Sonet Frame Errors** frame (shown in Figure 5-28) displays the following error information:

Path FEBE Errors — displays the number of G1 (Path FEBE) errors on the physical interface. This object is only present for SONET interfaces.

Line FEBE Errors — displays the number of Z2 (Line FEBE) errors on the physical interface. This object is only present for SONET interfaces.

Path Parity Errors — displays the number of B3 (BIP) errors on the physical interface. This object is only present for SONET interfaces.

Line Parity Errors — displays the number of B2 (BIP) errors on the physical interface. This object is only present for SONET interfaces.

Section Parity Errors — displays the number of B1 (BIP) errors on the physical interface. This object is only present for SONET interfaces.

DS1/E1/DS3/E3 Errors

The **DS1/E1/DS3/E3 Errors** frame displays the following error information:

LCV Errors — displays the number of CRC errors (in CRC-4 mode) on the physical interface. This object is only present for E1 interfaces.

C-Bit Parity Errors — displays the number of C-bit parity violations on the physical interface. This object is only present for DS3 interfaces.

P-bit Parity Errors — displays the number of P-bit parity violations or E3 G.832 BIP-8 errors on the physical interface. This object is present only for DS3/E3 interfaces.

PLCP BIP Violations — displays the number of PLCP BIP violations on the physical interface. This object is only present for DS3/E3/DS1/E1 interfaces.

E1 CRC Errors — displays the number of bit errors (CRC-6 error in ESF mode and framing bit error in SF mode) on the physical interface. This object is only present for DS1 interfaces.

DS1 Bit Errors — displays the number of Line Code Violation errors on the physical interface. This object is only present for DS3/E3/DS1/E1 interfaces.

Status Tab

The **Status** tab is divided into two frames.

Figure 5-29   Cisco 6400 Line Card ATM Port Management Window (Status Tab)

ATM Port Status

The **ATM Port Status** section (shown in Figure 5-29) displays the following status information:

Total Connections — displays the total number of existing connections at the interface.

Configured VP Interfaces — displays the number of configured VP interfaces at the physical interface.

Receive LED Status — displays the receive LED color of the port. It can be off, steadyGreen, steadyYellow, steadyRed, flashGreen, flashYellow or flashRed

Transmit LED Status — displays the transmit LED color of the port. It can be off, steadyGreen, steadyYellow, steadyRed, flashGreen, flashYellow or flashRed.

SVC Minimum VCI — displays the minimum of the range of values from which VCI's are assigned to new SVC connections. When the **SVC Minimum VCI** value is larger, more VCI's are reserved for setting up PVCs. The **SVC Minimum VCI** value applies to every VPI of the physical interface and every logical port.

Number of PVPs — displays the number of permanent virtual paths at the interface.

Soft VC Destination Address — displays the 20 byte ATM address of the destination ATM interface for soft ATM PVC/PVP.

Number of VCCs — displays the number of VCCs (PVCs and SVCs) configured for use at the ATM interface.

Number of VPCs — displays the number of VPCs (PVCs and SVCs) configured for use at the ATM interface. At the ATM UNI, the configured number of VPCs (PVCs and SVCs) can range from 0 to 256 only.

Active SVCs — displays the number of active switched virtual channels at the interface.

Active SVPs — displays the number of active switched virtual paths at the interface.

Number of PVcs — displays the number of permanent virtual channels at the interface.

Physical Layer

The **Physical Layer Status** frame (shown in Figure 5-29) displays the following status information:

Physical Interface Status — displays the status of the physical interface. The value of the object is only valid when the interface's ifAdminStatus has the value 'up'. Note that some of the enumerated values are specific to a particular physical layer. You will see: normal, los, lof, loc, ais, yellowLine, yellowPath, lop, idle, yellowAlarm, plcpLOF, plcpYellow, maFERF, pathAis or ocd.

Clock Source Status — displays the network clock source status of the interface:

notSelected — not selected as the network clock source.

selected — selected as the network clock source.

Performance Tab

The **Performance** tab (shown in Figure 5-30) is divided into four frames.

Figure 5-30   Cisco 6400 Line Card ATM Port Management Window (Performance Tab)
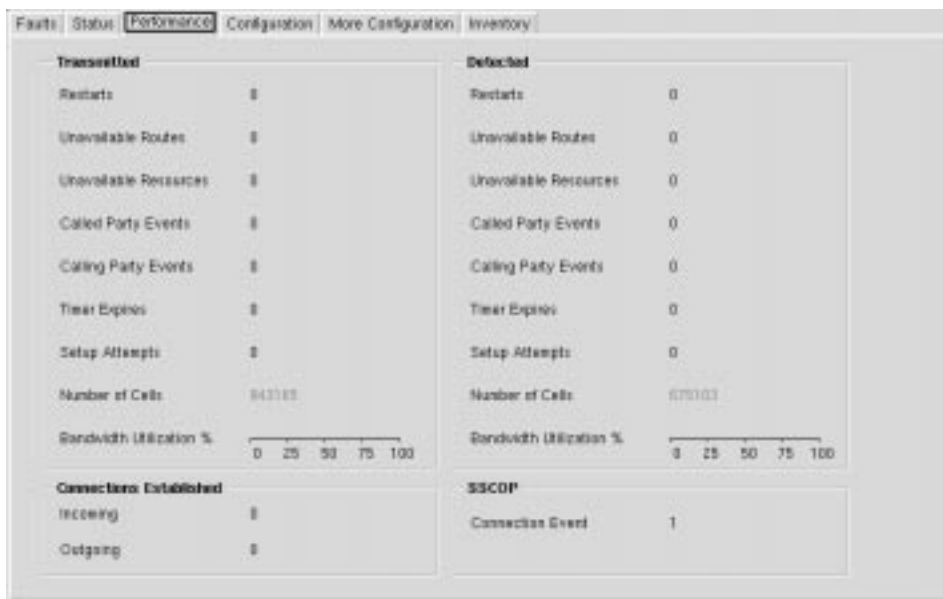
Transmitted

The **Transmitted** frame (shown in Figure 5-30) displays the following performance information.

Restarts — displays the number of Restart Activity errors transmitted from the interface. The Restart Activity Counter provides a count of host, switch, or network restart activity. The **Restarts** counter is incriminated when transmitting a RESTART message.

Unavailable Routes -Displays the number of Restart Activity errors transmitted from the interface. The Restart Activity Counter provides a count of host, switch, or network restart activity. The **Unavailable Routes** counter is incriminated when transmitting a RESTART message.

Unavailable Resources — displays the number of Resource Unavailability transmitted from the interface. The **Unavailable Resources** counter is incriminated when a RELEASE, RELEASE COMPLETE (only when not preceded by a RELEASE mesg for the same call), ADD PARTY REJECT, or STATUS message that contains one of the following cause code values is received.

Table 5-9   Unavailable Resources Cause Codes

Cause Value	Meaning
17	user busy
18	no user responding
21	call rejected
22	number changed
23	user rejects all calls with calling line ID restriction (CLIR)
27	destination out of order
31	normal, unspecified
88	incompatible destination

Note   Cause values apply to both UNI3.0 and UNI3.1.

Called Party Events — displays the number of Called Party Responsible For Unsuccessful Call transmitted from the interface. The **Called Party Events** counter is incriminated when a RELEASE, RELEASE COMPLETE (only when not preceded by a RELEASE message for the same call), ADD PARTY REJECT, or STATUS message that contains one of the following cause code values is transmitted:

Table 5-10   Called Party Events Cause Codes

Cause Value	Meaning
17	user busy
18	no user responding
21	all rejected
22	number changed
23	user rejects all calls with calling line ID restriction (CLIR)
27	destination out of order
31	normal, unspecified
88	incompatible destination

Note   Cause values apply to both UNI3.0 and UNI3.1.

Calling Party Events — displays the number of Calling Party Events transmitted from the interface. The **Calling Party Events** counter monitors error events that occur due to the originating user doing something wrong. The **Calling Party Events** counter is incriminated when a RELEASE, RELEASE COMPLETE (only when not preceded by a RELEASE mesg for the same call), ADD PARTY REJECT, or STATUS message that contains one of the following cause code values is transmitted:

Table 5-11   Calling Party Events Cause Codes

Cause Value	Meaning
28	invalid number format (address incomplete)
43	access information discarded
57	bearer capability not authorized
65	bearer capability not implemented
73	unsupported combination of traffic parameters
78	AAL parameters cannot be supported (UNI3.1 only)
91	invalid transit network selection
93	AAL parameters cannot be supported (UNI3.0 only)

Note   Cause values apply to both UNI3.0 and UNI3.1.

Timer Expires — displays the number of **Timer Expiries** transmitted from the interface. The **Timer Expiries** counter provides a count of network timer expiries, and to some extent, host or switch timer expiries. The conditions for incrementing the **Timer Expiries** counter are:

Expiry of any network timer
Receipt of a RELEASE or RELEASE COMPLETE message with Cause #102, 'recovery on timer expiry'

Setup attempts — displays the number of call setup attempts (both successful and unsuccessful) transmitted on this interface.

Number of Cells — displays the number of cells transmitted on the interface, including p2p and p2mp cells.

Bandwidth Utilization — displays the utilized bandwidth as a percentage of the maximum bandwidth supported by the port.

Note   **Receive/Transmit Utilization** gauges are displayed from a subscriber's point of view, that is, the **Transmit Utilization** value shows the number of cells per second the subscriber is transmitting and the **Receive Utilization** value shows the number of cells per second the subscriber is receiving.

Connection Established

The **Connections Established** frame (shown in Figure 5-30) displays the following performance information:

Incoming — displays the number of SVC VCCs established at the signalling entity for incoming connections.

Outgoing — displays the number of SVC VCCs established at the signalling entity for outgoing connections.

Detected

The **Detected** frame (shown in Figure 5-30) displays the following performance information:

Restarts — displays the number of **Restart Activity** errors detected on the interface. The Restart Activity Counter provides a count of host, switch, or network restart activity. The **Restarts** counter is incriminated when receiving a RESTART message.

Unavailable Routes — displays the number of Route Unavailability detected on the interface. The **Unavailable Routes** counter is incriminated when a RELEASE, RELEASE COMPLETE (only when not preceded by a RELEASE mesg for the same call), ADD PARTY REJECT, or STATUS message that contains one of the following cause code values is received.

Table 5-12   Unavailable Routes Cause Codes

Cause Value	Meaning
1	unallocated (unassigned) number
1	no route to specified transit network
3	No route to destination
88	incompatible destination

Note   Cause values apply to both UNI3.0 and UNI3.1.

Unavailable Resources — displays the number of Resource Unavailability detected on the interface. The **Unavailable Resources** counter is incriminated when a RELEASE, RELEASE COMPLETE (only when not preceded by a RELEASE mesg for the same call), ADD PARTY REJECT, or STATUS message that contains one of the following cause code values is received.

Table 5-13   Unavailable Resources Cause Codes

Cause Value	Meaning
35	requested VPCI/VCI not available
37	user cell rate not available (UNI3.1 only)
38	network out of order
41	temporary failure

45	no VPCI/VCI available
47	resource unavailable, unspecified
49	Quality of Service unavailable
51	user cell rate not available (UNI3.0 only)
58	bearer capability not presently available
63	Service or option not available, unspecified
92	too many pending add party requests

Note   Cause values apply to both UNI3.0 and UNI3.1 unless otherwise stated.

Called Party Events — displays the number of Called Party Responsible For Unsuccessful Call detected on the interface. The **Called Party Events** counter is incriminated when a RELEASE, RELEASE COMPLETE (only when not preceded by a RELEASE mesg for the same call), ADD PARTY REJECT, or STATUS message that contains one of the following cause code values is received:

Table 5-14   Called Party Events Cause Codes

Cause Value	Meaning
17	user busy
18	no user responding
21	all rejected
22	number changed
23	user rejects all calls with calling line ID restriction (CLIR)
27	destination out of order
31	normal, unspecified
88	incompatible destination

Note   Cause values apply to both UNI3.0 and UNI3.1.

Calling Party Events — number of Calling Party Events detected on the interface. The **Calling Party Events** counter monitors error events that occur due to the originating user doing something wrong. The **Calling Party Events** counter is incriminated when a RELEASE, RELEASE COMPLETE (only when not preceded by a RELEASE mesg for the same call), ADD PARTY REJECT, or STATUS message that contains one of the following cause code values is received:

Table 5-15   Calling Party Events Cause Codes

Cause Value	Meaning
28	invalid number format (address incomplete)
43	access information discarded
57	bearer capability not authorized
65	bearer capability not implemented
73	unsupported combination of traffic parameters
78	AAL parameters cannot be supported (UNI3.1 only)
91	invalid transit network selection
93	AAL parameters cannot be supported (UNI3.0 only)

Note   Cause values apply to both UNI3.0 and UNI3.1.

Timer Expires — displays the number of Timer Expiries detected on the interface. The Timer Expiries Counter provides a count of network timer expiries, and to some extent, host or switch timer expiries. The conditions for incrementing the **Timer Expires** counter are:

- Expiry of any network timer.
- Receipt of a RELEASE or RELEASE COMPLETE message with Cause #102, 'recovery on timer expiry'.

Setup attempts — displays the number of call setup attempts (both successful and unsuccessful) detected on the interface.

Number of Cells — the number of cells received of the interface, including p2p and p2mp cells.

Bandwidth Utilization — displays the utilized bandwidth as a percentage of the maximum bandwidth supported by the port.

Note   **Receive/Transmit Utilization** gauges are displayed from a subscriber's point of view, that is, the **Transmit Utilization** value shows the number of cells per second the subscriber is transmitting and the **Receive Utilization** value shows the number of cells per second the subscriber is receiving.

SSCOP

The SSCOP frame (shown in Figure 5-30) displays the following performance information:

Connection Event — SSCOP Connection Events Counter. The **Connection Event** counter counts the sum of the following errors:

SSCOP Connection Disconnect Counter — the abnormal occurrence of the event is characterized by the expiry of Timer_NO_RESPONSE. (The event is communicated to the layer management with MAA-ERROR code P. Refer to ITU-T Q.2110 [13].)

SSCOP Connection Initiation Failure — condition indicates the inability to establish an SSCOP connection. The event occurs when ever the number of expiries of the connection control timer (Timer_CC) exceeds the MaxCC or upon receipt of a connection reject message BGREJ PDU. (The event is communicated to layer management with MAA-ERROR code O. Refer to ITU-T Q.2110.)

SSCOP Connection Re-Establ/Resynch — the **SSCOP Connection Re-Establ/Resynch** event occurs upon receipt of a BGN PDU or RESYNC PDU.

Configuration Tab

The **Configuration** tab (shown in Figure 5-31) is divided into two frames.

Figure 5-31   Cisco 6400 Line Card ATM Port Management Window (Configuration Tab)

ATM Port Configuration

The **ATM Port Configuration** frame (shown in Figure 5-31) allows you to view and change the following configuration information.

Neighbor IP Address — allows you to specify the IP address of the neighbor system connected to the far end of the interface, to which a Network Management Station can send SNMP messages, as IP datagrams sent to UDP port 161, in order to access network management information concerning the operation of that system.

Note   The value of the object may be obtained in different ways, for example, by manual configuration, or through ILMI interaction with the neighbor system.

Neighbor Interface Name — allows you to specify the textual name of the interface on the neighbor system on the far end of the interface to which the interface connects. When the neighbor system is manageable through SNMP and supports the object ifName, the value of the object must be identical with that of ifName for the ifEntry of the lowest level physical interface for the port. When the interface does not have a textual name, the value of the object is a zero length string. Note that the value of the object may be obtained in different ways, for example, by manual configuration, or through ILMI interaction with the neighbor system.

Maximum VCCs — allows you to specify the maximum number of VCCs (PVCs and SVCs) supported at the ATM interface.

Maximum VPCs — allows you to specify the maximum number of VPCs (PVCs and SVCs) supported at the ATM interface. At the ATM UNI, the maximum number of VPCs (PVCs and SVCs) ranges from 0 to 256 only.

Max Active VPI Bits — allows you to specify the maximum number of active VPI bits configured for use at the ATM interface. At the ATM UNI, the maximum number of active VPI bits configured for use ranges from 0 to 8 only.

Max Active VCI Bits — allows you to specify the maximum number of active VCI bits configured for use at the ATM interface.

UNI Signalling Version — allows you to specify the version of UNI signalling that is currently being used on the interface. You can set the **UNI Signalling Version** to:

ATMF UNI 3.0, ATMF UNI 3.1 or ATM UNI 4.0 — this is used when the interface is a UNI or IISP interface.

Not Applicable — this is used when the interface is a PNNI interface or when signalling is disabled. **Not Applicable** may reflect a manually configured value for the signalling version, or may be determined by other means such as auto-configuration.

Note   Setting the **UNI Signalling Version** to a value of **Not Applicable** is not allowed. To modify the ciscoAtmIfUniSignallingVersion, ifAdminStatus has to be down and atmIfIlmiAutoConfiguration disabled.

UNI Type — allows you to specify the type of User to Network interface. You can set the **UNI Type** to **public** or **private**.

Note   When ciscoAtmIfType is not UNI then the UNI type value should be ignored.

Well-known VC Mode — allows you to specify whether well-known VCs should be automatically or manually created for the interface. You can set the **UNI Type** to:

Automatic — in automatic mode, well-known VCs is created with default VPI/VCI values upon startup or upon entry to the automatic mode. While in this mode, well-known VCs will not be allowed to be deleted or modified by user commands. This is the default mode at startup for equipment which supports automatic well-known VC creation.

Manual — in manual mode, well-known VCs are not created automatically. Instead you can delete and create PVCs with the reserved encapsulation types aalQsAal, aal5Ilmi, and aal5Pnni as applicable. PVCs are allowed to have VCI values in the range <5-16383>, instead of <32-16383>.

Manual Delete Upon Entry — the Manual DeleteUponEntry action causes any existing VCs with reserved encapsulation types (aalQsAal, aal5Ilmi or aal5Pnni) to be deleted for this interface as it enters the manual state.

ATM Interface Side — allows you to specify the side of ATM interface. You can set the **ATM Interface Side** to either a **user** or **network** side or **Not Applicable**. A **Not Applicable** value implies that Interface Type is other than uni or iisp.

Signalling Admin Status — allows you to Enable or Disable signalling/sscop on this interface. You can set **Signalling Admin Status** to:

Enabled — signalling/sscop on this interface is enabled.

Disabled — signalling/sscop on this interface is disabled.

Note   To modify the ciscoAtmIfSignallingAdminStatus, ifAdminStatus has to be down.

SVC UPC Intent — allows you to specify the policing (Usage Parameter Control or UPC) action to take for SVCs established through this interface. Yo can set this option to Passing, Tagging or Dropping.

Note   Values other than passing are allowed only when policing is supported on the interface. This also serves to determine which UPC to use on the terminating (destination) half-leg of Soft PVCs. For the CPU interface or logical ports on the LS1010, only the 'passing' value is supported.

Interface Type — allows you to specify the type of ATM interface. You can set the **Interface Type** to a **UNI** (User to Network), **PNNI**, **IISP** or **NNI PVC** only.

Note   To modify the ciscoAtmIftype, ifAdminStatus has to be down and atmIfIlmiAutoConfiguration disabled.

ILMI Configuration

The **ILMI Configuration** frame (shown in Figure 5-31) allows you to view and change the following configuration information:

ILIM VCI Value — allows you to specify the VCI value of the VCC supporting the ILMI at this ATM interface. When the values of atmInterfaceIlmiVpi and atmInterfaceIlmiVci are both equal to zero then the ILMI is not supported at this ATM interface.

ILMI VPI Value — allows you to specify the VPI value of the VCC supporting the ILMI at this ATM interface. When the values of atmInterfaceIlmiVpi and atmInterfaceIlmiVci are both equal to zero then the ILMI is not supported at this ATM interface.

ILMI Keepalive Time — allows you to specify the amount of time that should elapse between successive ILMI keepalive messages sent on this interface. A value of 0 disables ILMI keepalive messages on this interface.

ILMI Auto-Configuration — allows you to Enable or Disable the ILMI link and interface type determination. You can set the **ILMI Auto-Configuration** to:

Enabled — ILMI link and interface type determination on this interface is enabled.

Disabled — ILMI link and interface type determination on this interface is disabled.

Note   This configuration takes effect only on the next interface restart.

ILMI Configuration — allows you to Enable or Disable ILMI configuration on this interface.

Enabled — ILMI configuration on this interface is enabled.

Disabled -ILMI configuration on this interface is disabled.

Note   The configuration takes effect only on the next interface restart. Disabling this object will also disable atmIfIlmiAddressRegistration and atmIfIlmiAutoConfiguration and atmIfIlmiKeepAlive.

ILMI Address Registration — this option allows you to Enable or Disable ILMI Address Registration on this interface.

**Enabled** — ILMI Address Registration on this interface is enabled.

Disabled -ILMI Address Registration on this interface is disabled.

Note   This configuration takes effect only on the next interface restart.

More Configuration Tab

The **More Configuration** tab (shown in Figure 5-32) is divided into four frames.

Figure 5-32   Cisco 6400 Line Card ATM Port Management Window (More Configuration Tab)
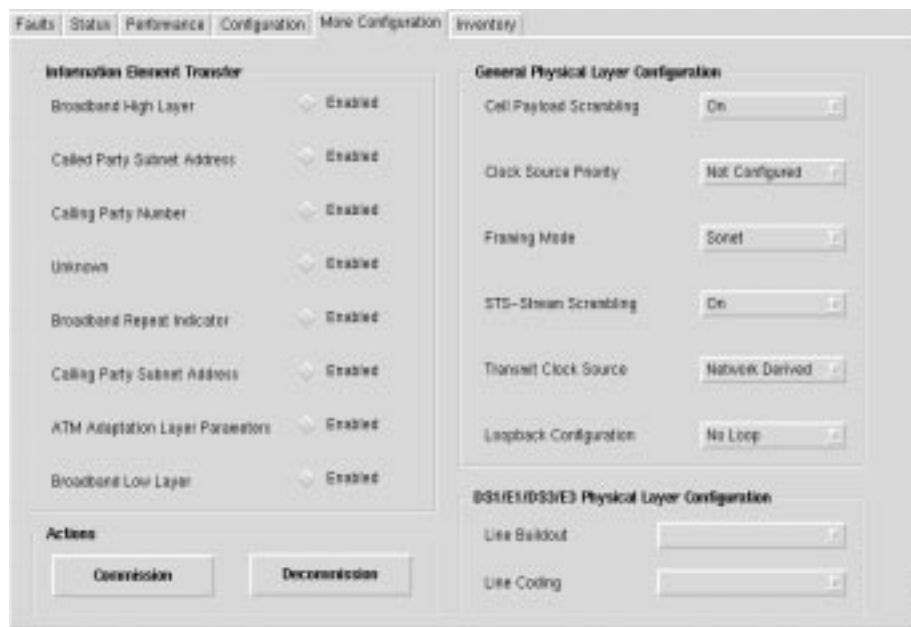
Information Element Transfer

The **Information Element Transfer** frame (shown in Figure 5-32) allows you to view and change the following configuration information.

Broadband High Layer — allows you to specify whether to accept, transfer, and deliver the Broadband High Layer Information Element from the calling party to the called party. You can set the **Broadband High Layer** option to:

Enabled — information element is transferred to the called party.

Disabled — information element will not be transferred to the called party.

Called Party Subnet Address — this parameter is required for ATM systems that support only a value of 'disabled' (at is, the ATM systems does not support the feature associated with the parameter).

Calling Party Number — allows you to specify whether the Calling Party Number Information Element is transferred to the called party address. You can set the **Calling Party Number** to:

Enabled — information element is transferred to the called party.

Disabled — information element will not be transferred to the called party.

Unknown — allows you to specify whether to accept, transfer, and deliver the unknown Information Element from the calling party to the called party, when the IE instruction field flag is set to zero. You can set the **Unknown** option to:

Enabled — information element is transferred to the called party.

Disabled — information element will not be transferred to the called party.

Note   When the IE action flag is set to one, the IE action indicator should be followed regardless of this configuration.

Broadband Repeat Indicator — this parameter is required for ATM systems that support only a value of 'disabled' (that is, the ATM systems does not support the feature associated with the parameter).

Calling Party Subnet Address — allows you to specify whether to accept and transfer the Calling Party Subaddress Information Element from the calling party to the called party. You can set the **Calling Party Subnet Address** to:

Enabled — information element is transferred to the called party.

Disabled — information element will not be transferred to the called party.

ATM Adaption Layer Parameters — allows you to specify whether to accept, transfer, and deliver the ATM Adaptation Layer Parameters Information Element from the calling party to the called party. You can set the **ATM Adaption Layer Parameters** to:

Enabled — information element is transferred to the called party.

Disabled — information element will not be transferred to the called party.

Broadband Low Layer -the **Broadband Low Layer** parameter is required for ATM systems that support only a value of 'disabled' (that is, the ATM systems does not support the feature associated with the parameter).

Actions

The **Actions** frame (shown in Figure 5-32) allows you to commission or decommission the selected Line Card ATM Port.

Commission — selecting this button will commission the selected Line Card ATM Port, when it is decommissioned.

Decommission — selecting this button will decommission the selected Line Card ATM Port, when it is commissioned.

General Physical Layer Configuration

The **General Physical Layer Configuration** frame (shown in Figure 5-32) allows you to view and change the following configuration information:

Cell Payload Scrambling — allows you to specify whether cell payload scrambling is enabled or disabled on the physical interface. You can set the **ATM Adaption Layer Parameters** to:

On — cell payload scrambling is enabled on the physical interface.

Off — cell payload scrambling is disabled on the physical interface.

Clock Source Priority — allows you to specify the priority of this interface when configured as a network clock source. You can set the **Clock Source Priority** option to: **notConfigured**, **priority1**, **priority2**, **priority3** or **priority4**.

Note   **notConfigured** indicates this is not configured as a network clock source.

Framing Mode — allows you to specify the framing format present on the physical interface. You can set the **Framing Mode** option to:

Sonet — displays sts-3c or sts-12c format and applies only to OC-3 and OC-12 type interfaces, respectively.

SDH — displays stm1 or stm4 format and applies only to
OC-3 and OC-12 type interfaces, respectively.

DS3 M23 ADM — displays M23 ADM mode and applies to DS3 type interfaces only.

DS3 M23 PLCP — displays M23 PLCP mode and applies to DS3 type interfaces only.

DS3 c-bit ADM — displays C-BIT ADM mode and applies to DS3 type interfaces only.

DS3 c-bit PLCP — indicates C-BIT PLCP mode and applies to DS3 type interfaces only.

E3 G832 ADM — displays G.832 ADM mode and applies to E3 type interfaces only.

E3 G751 ADM — displays G.751 ADM mode and applies to E3 type interfaces only.

E3 G751 PLCP -Displays G.751 PLCP mode and applies to E3 type interfaces only.

DS1 SF ADM — displays DS1 SF ADM mode and applies to DS1 type interfaces only.

DS1 ESF ADM — displays DS1 ESF ADM mode and applies to DS1 type interfaces only.

DS1 SF PLCP — displays DS1 SF PLCP mode and applies to DS1 type interfaces only.

DS1 ESF PLCP — displays DS1 ESF PLCP mode and applies to DS1 type interfaces only.

E1 ADM — displays E1 ADM mode and applies to E1 type interfaces only.

E1 PLCP — displays E1 PLCP mode and applies to E1 type interfaces only.

E1 CRC ADM — displays E1 CRC-4 ADM mode and applies to E1 type interfaces only.

E1 CRC PLCP — displays E1 CRC-4 PLCP mode and applies to E1 type interfaces only.

STS-Stream Scrambling — allows you to specify whether STS-stream scrambling is enabled or disabled on the physical interface. You can set the **STS-Stream Scrambling** option to:

on — STS-stream scrambling is enabled.

off — STS-stream scrambling is disabled.

Transmit Clock Source — allows you to specify the source of the transmit clock:

Loop Timing — displays that the recovered receive clock is used as the transmit clock. You can set **Loop Timing** to:

Free Running — displays that a local clock source is used.

Network Derived — displays that recovered receive clock from another interface is used as the transmit clock source.

Loopback Configuration — allows you to specify the loopback configured on the physical interface. You can set **Loopback Configuration** to:

No Loop — displays no loopback is present.

Diagnostic Loop — displays transmit data stream is looped to the receive direction.

Line Loop — displays receive data stream is looped to the transmit direction.

Other Loop — displays loopbacks that are not defined here.

DS1/E1/DS3/E3 Physical Layer Configuration

The **DS1/E1/DS3/E3 Physical Layer Configuration** section allows you to view and change the following configuration information:

Line Buildout — allows you to specify the line buildout configured on the transmit signal. You can set the **Line Buildout** option to:

Note   When the Framing mode is not set to DS1, E1, DS3 or E3 the data entry box next to Line Build out is blank and you will not be able to edit the field.

E3 All Cables — this applies to all cables of E3 physical interfaces.

DS3 Cables Under 225 — this applies to cables under 225 feet of DS3 physical interfaces.

DS3 Cables Over 225 — this applies to cables over 225 feet of DS3 physical interfaces.

DS1 Cables 0 To 110 — this applies to cables 0 to 110 feet of DS1 physical interfaces.

DS1 Cables 110 To 220 — this applies to cables 110 to 220 feet of DS1 physical interfaces.

DS1 Cables 220 To 330 — this applies to cables 220 to 330 feet of DS1 physical interfaces.

DS1 Cables 330 To 440 — this applies to cables 330 to 440 feet of DS1 physical interfaces.

DS1 Cables 440 To 550 — this applies to cables 440 to 550 feet of DS1 physical interfaces.

DS1 Cables 550 To 660 — this applies to cables 550 to 660 feet of DS1 physical interfaces.

DS1 Cables Over 600 — this applies to cables over 600 feet of DS1 physical interfaces.

E1 All Cables — this applies to all cables of E1 physical interfaces.

Line Coding — allows you to specify the line coding present on the physical interface. You can set **Line Coding** to:

Note   When the Framing mode is not set to DS1 or E1 the data entry box next to Line Coding is blank and you will not be able to edit the field.

AMI — displays alternate mark inversion (AMI) line code on the DS1/E1 interface.

B8ZS — displays B8ZS line code on the physical interface and applies only to DS1 interfaces.

HDB3 — displays HDB3 line code on the physical interface and applies only to E1 interfaces.

Inventory Tab

The **Inventory** tab (shown in Figure 5-33) has a single tabbed frame.

Figure 5-33   Cisco 6400 Line Card ATM Port Management Window (Inventory Tab)

Inventory

The **Inventory** frame allows you to view the following information:

Admin Address — displays the address assigned for administrative purposes, for example, an address associated with the service provider side of a public network UNI. When the interface has no assigned administrative address, or when the address used for administrative purposes is the same as that used for ifPhysAddress, then the **Admin Address** is an octet string of zero length.

ATM Address Type — displays the type of primary ATM address configured for use at the ATM interface.

Physical Port Type — displays the type of physical layer medium on the port.

Cisco 6400 Redundancy Configuration Manager Window

The Cisco 6400 Redundancy Manager window has three tabbed sections: **NSP Redundancy**, **Slot Redundancy**, and **Sub Slot Redundancy**.

NSP Redundancy Tab

The **NSP Redundancy** tab (shown in Figure 5-34) appears by default and is divided into two frames.

Figure 5-34 Cisco 6400 Redundancy Configuration Window (NSP Redundancy Tab)

Auto Sync Configuration

The **Auto Sync Configuration** frame allows you to configure the following parameters:

Start Up Config — allows you to enable or disable the start up configuration.

Standard — allows you to enable or disable the standard configuration.

Running Config — allows you to enable or disable the Running configuration.

Config Register — allows you to enable or disable the Configuration register.

Bootvar — allows you to enable or disable the Bootvar.

NSP

The **NSP** frame (shown in Figure 5-34) allows you to configure the following parameter.

Preferred CPU Slot — allows you to specify which NSP is the working NSP.

Slot Redundancy Tab

The **Slot Redundancy** tab (shown in Figure 5-35) has four frames.

Figure 5-35   Cisco 6400 Redundancy Configuration Window (Slot Redundancy Tab)

Slot 1/2

The **Slot 1/2** frame allows you to set up a redundant slot pair on slots 1 and 2 of the chassis:

Redundancy — allows you to enable or disable redundancy on the selected pair.

Preference — allows you to specify which Slot is the working slot.

Slot 3/4

The **Slot 3/4** frame allows you to set up a redundant slot pair on slots 3 and 4 of the chassis:

Redundancy — allows you to enable or disable redundancy on the selected pair.

Preference — allows you to specify which Slot is the working slot.

Slot 5/6

The **Slot 5/6** frame allows you to set up a redundant slot pair on slots 5 and 6 of the chassis:

Redundancy — allows you to enable or disable redundancy on the selected pair.

Preference — allows you to specify which Slot is the working slot.

Slot 7/8

The **Slot 7/8** frame allows you to set up a redundant slot pair on slots 7 and 8 of the chassis:

Redundancy — allows you to enable or disable redundancy on the selected pair.

Preference — allows you to specify which Slot is the working slot.

Sub Slot Redundancy Tab

The **Sub Slot Redundancy** tab (shown in Figure 5-36) has eight frames.

Figure 5-36   Cisco 6400 Redundancy Configuration Window (Sub Slot Redundancy Tab)

Slots 1/2 Subslots 0

The **Slot 1/2 Subslots 0** frame (shown in Figure 5-36) allows you to set up a redundant sub slot pair on the upper part of slots 1and 2 of the chassis:

Redundancy — allows you to enable or disable redundancy on the selected pair.

Preference — allows you to specify which subslot is the working subslot.

Slots 1/2 Subslots 1

The **Slot 1/2 Subslots 1** frame (shown in Figure 5-36) allows you to set up a redundant sub slot pair on the lower part of slots 1and 2 of the chassis:

Redundancy — allows you to enable or disable redundancy on the selected pair.

Preference — allows you to specify which subslot is the working subslot.

Slots 3/4 Subslots 0

The **Slot 3/4 Subslots 0** frame (shown in Figure 5-36) allows you to set up a redundant sub slot pair on the upper part of slots 3 and 4 of the chassis:

Redundancy — allows you to enable or disable redundancy on the selected pair.

Preference — allows you to specify which subslot is the working subslot.

Slots 1/2 Subslots 1

The **Slot 3/4 Subslots 1** frame (shown in Figure 5-36) allows you to set up a redundant sub slot pair on the lower part of slots 3 and 4 of the chassis:

Redundancy — allows you to enable or disable redundancy on the selected pair.

Preference — allows you to specify which subslot is the working subslot.

Slots 5/6 Subslots 0

The **Slot 5/6 Subslots 0** frame (shown in Figure 5-36) allows you to set up a redundant sub slot pair on the upper part of slots 5 and 6 of the chassis:

Redundancy — allows you to enable or disable redundancy on the selected pair.

Preference — allows you to specify which subslot is the working subslot.

Slots 5/6 Subslots 1

The **Slot 5/6 Subslots 1** frame (shown in Figure 5-36) allows you to set up a redundant sub slot pair on the lower part of slots 5 and 6 of the chassis:

Redundancy — allows you to enable or disable redundancy on the selected pair.

Preference — allows you to specify which subslot is the working subslot.

Slots 7/8 Subslots 0

The **Slot 7/8 Subslots 0** frame allows you to set up a redundant sub slot pair on the upper part of slots 7 and 8 of the chassis:

Redundancy — allows you to enable or disable redundancy on the selected pair.

Preference — allows you to specify which subslot is the working subslot.

Slots 7/8 Subslots 1

The **Slot 7/8 Subslots 1** frame allows you to set up a redundant sub slot pair on the lower part of slots 7 and 8 of the chassis:

Redundancy — allows you to enable or disable redundancy on the selected pair.

Preference — allows you to specify which subslot is the working subslot.
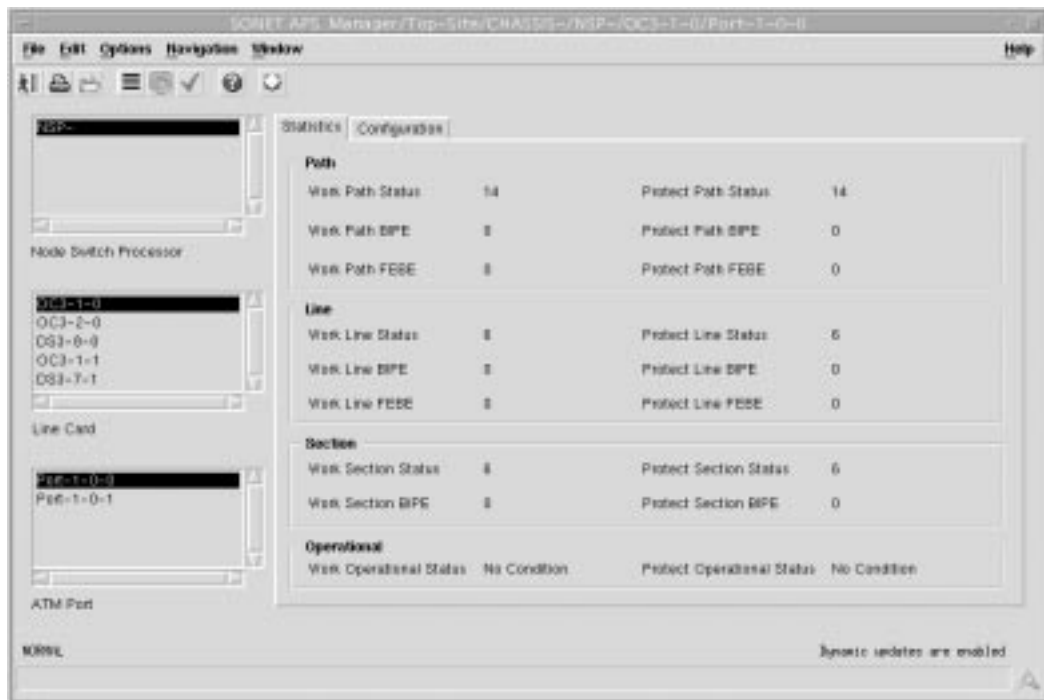
Sonet APS Manager Window

The Sonet APS Manager window is divided into two tabbed sections: **Statistics** and **Configuration**.

Statistics Tab

The **Statistics** tab (shown in Figure 5-37) appears by default and is divided into four frames.

Figure 5-37   Sonet APS Manager Window (Statistics Tab)

Path

The **Path** frame displays the following information:

Work Path Status — the **Work Path Status** indicates the path level status of the working channel in APS. The c64SonetAPSWorkPathStatus is a bit map represented as a sum of multiple alarms simultaneously. The sonetPathNoDefect should be set when and only when no other flag is set.

Possible bit positions are:

Table 5-16   Work Path Status Bit Positions

1	sonetPathNoDefect
2	sonetPathSTSAIS
3	sonetPathSTSRDI
4	sonetPathSTSLOP
5	sonetBIPE(BIP-8)
6	sonetFEBE
7	sonetPathUnequipped
8	sonetPathSignalLabelMismatch

Work Path BIPE — displays the number of path BIP-8 errors in working channel.

Work Path FEBE — displays the number of path far-end-block-errors in working channel.

Protected Path Status — this variable indicates the path level status of the protection channel in APS. The c64SonetAPSProtectPathStatus is a bit map represented as a sum of multiple alarms simultaneously. The sonetPathNoDefect should be set when and only when no other flag is set.

Possible bit positions are:

Table 5-17   Protected Path Status Bit Positions

1	sonetPathNoDefect
2	sonetPathSTSLOP
4	sonetPathSTSAIS
8	sonetBIPE(BIP-8)
16	sonetFEBE
32	sonetPathSTSRDI
64	sonetPathUnequipped
128	sonetPathSignalLabelMismatch

Protected Path BIPE — displays the number of path BIP-8 errors in the protection channel.

Protected Path FEBE — displays the number of path far-end-block-errors in the protection channel.

Line

The Line frame (shown in Figure 5-37) displays the following information:

Work Line Status — this variable indicates the line level status of the working channel in APS. The c64SonetAPSWorkLineStatus is a bit map represented as a sum of multiple alarms simultaneously. The sonetLineNoDefect should be set when and only when no other flag is set.

Possible bit position are:

Table 5-18   Work Line Status Bit Positions

1	sonetLineNoDefect
2	sonetLineAIS
3	sonetLineRDI
4	sonetBIPE(BIP-8/24)
5	sonetFEBE

Work Line BIPE — displays the number of line BIP-8/24 errors in the working channel.

Work Line FEBE — displays the number of line far-end-block-errors in the working channel.

Protected Line Status — this variable indicates the line level status of the protection channel in APS. The c64SonetAPSProtectLineStatus is a bit map represented as a sum of multiple alarms simultaneously. The sonetLineNoDefect should be set when and only when no other flag is set.

Possible bit positions are:

Table 5-19   Protected Line Status Bit Positions

1	sonetLineNoDefect
2	sonetLineAIS
4	sonetLineRDI
8	sonetBIPE(BIP-8/24)
16	sonetFEBE

Protected Line BIPE — displays the number of line BIP-8/24 errors in protection channel.

Protected Line FEBE — displays the number of line far-end-block-errors in protection channel.

Section

The **Section** frame (shown in Figure 5-37) displays the following information:

Work Section Status — this variable indicates the section level status of the working channel in APS. The c64SonetAPSWorkSectionStatus is a bit map represented as a sum of multiple alarms simultaneously. The sonetSectionNoDefect should be set when and only when no other flag is set.

Possible bit positions are:

Table 5-20   Work Section Status Bit Positions

1	sonetSectionNoDefect
2	sonetSectionLOS
3	sonetSectionLOF
4	sonetBIPE(BIp-8)

Work Section BIPE — displays the number of section BIP-8 errors in working channel.

Protected Section Status — this variable indicates the section level status of the protection channel in APS. The c64SonetAPSProtectSectionStatus is a bit map represented as a sum of multiple alarms simultaneously. The sonetSectionNoDefect should be set when and only when no other flag is set.

Possible bit positions are:

Table 5-21   Protected Section Status Bit Positions

1	sonetSectionNoDefect
2	sonetSectionLOS
4	sonetSectionLOF
8	sonetBIPE(BIp-8)

Protected Section BIPE — displays the number of section BIP-8 errors in protection channel.

Operational

The Operational frame (shown in Figure 5-37) displays the following information:

Work Operational Status — displays the last condition detected in working channel.

Protected Operational Status — this object indicates the last condition detected in protection channel.

Configuration Tab

The **Configuration** tab (shown in Figure 5-38) has a single **Configuration** frame.

Figure 5-38   Sonet APS Manager Window (Configuration Tab)
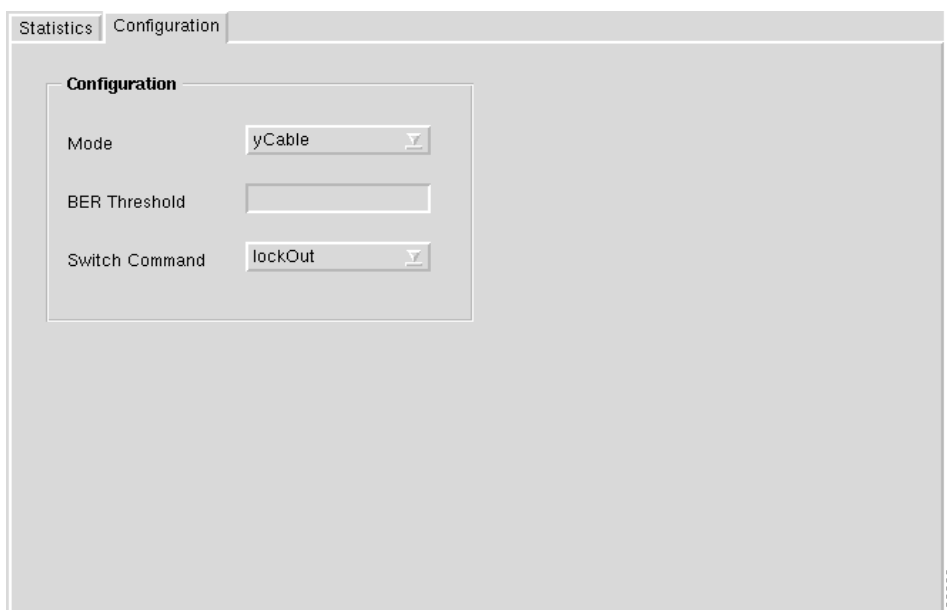
Configuration

The **Configuration** frame (shown in Figure 5-38) allows you to view and configure the following parameters:

Mode — allows you to set the APS mode on the corresponding interface referenced by ifIndex object. You can set the **Mode** option to:

   linear — the value linear is the APS mode of linear 1+1 nonreverting and unidirectional. This only true APS mode supported in cisco6400 at FCS.

   yCable — the value yCable is providing the port hardware redundancy but not transmission line redundancy and is not strictly an APS mode.

BER Threshold — allows you to set the Bit-Error-Rate threshold at which an APS request of priority 'Signal Degrade' is posted.

Switch Command — this option is used to post an APS priority request. This request succeeds when no higher-priority request is posted. You can set the **Switch Command** option to:

   lockOut — locks out the protection channel corresponding to this entry.

forceWorking & manualWorking — this posts a request to switch away from the working channel to protection channel of this entry

forceProtect & manualProtect — post a request to switch away from the protection channel to working channel of this entry.

clear — clears all posted APS priority requests in this channel.

Backup/Restore Manager Window

Note   Refer to the *"Setting Up A Workstation As A TPTP Server"* section in the *"Cisco 64000 Service Connection Manager Installation Guide"*, as required.

The Backup/Restore Manager window has a single tabbed section.

Note   Backup/Restore is on a per chassis basis. When all NRP and NSP configurations are backed up when the **Restore** button is pressed the configuration is copied onto the 6400 UAC. Selecting the **Restore** button initiates the action of restoring the running configuration to a Cisco 6400 UAC.

Backup/Restore Tab

The **Backup/Restore** tab appears by default and is divided into three frames.

Figure 5-39   Backup/Restore Manager Window (Backup/Restore Tab)

Configuration

The **Configuration** frame allows you to view/configure the following parameters:

Backup Server — allows you to set the TFTP IP address.

Backup after every Action — allows you to take a backup after every Telnet action (for example: service (de)commission, service (dis)connection. You can set the **Backup after every Action** option to:

enable — enables automatic backup after every configuration change.

disable — configuration changes are not automatically saved after every configuration change.

Note   This option when enabled will automatically backup the 6400 after every:
Service Instance "Commission" operation, Connect or disconnect operation. The default setting for Backup after every Action is "disable".

Status

The **Status** frame displays the following parameters:

Time Stamp of last Backup — the time of the last backup.

**Backup File Name** — the name of the backup file.

Note   Actions, in CEMF are equivalent to "button clicks".

Actions

The **Actions** frame allows you to initiate the following actions:

Backup — initiates the action of backing-up the running configuration of a Cisco 6400 UAC.

Restore — initiates the action of restoring the running configuration to a Cisco 6400 UAC.

Schedule Backup — select **Schedule Backup** to schedule a date and time for the backup to take place, the Schedule Dialog window (shown in Figure 5-40) appears:

Figure 5-40   Schedule Dialog Window
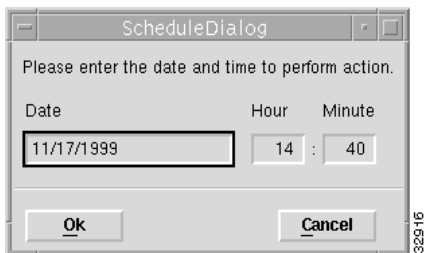
Enter a date (**mm**/**dd**/**yyyy**) and time (**hh**:**mm**) for the scheduled backup to take place automatically. Click on the **Ok** button to save the new date and time.

IOS Image Download for NSP/NRP Window

The IOS Image Download for NSP/NRP window (shown in Figure 5-41) has a single tabbed section.

Caution   The SCM is unable to verify that the source image is a valid IOS boot image for the device. Downloading an invalid boot image could prevent the device from booting normally, which would leave it unmanageable and unable to carry traffic. Details of how to load a working IOS image in this situation can be obtained from the documentation accompanying your Cisco 6400. When you have downloaded an invalid boot image but have not yet rebooted the device, you should download a valid boot image immediately. In particular, be aware that NSP boot images are not compatible with the NRP, and vice-versa.

Download Tab

The **Download** tab (shown in Figure 5-41) appears by default and is divided into three frames.

Figure 5-41   IOS Image Download for NSP/NRP Manager Window (Download Tab)

Configuration

The **Configuration** frame allows you to view/configure the following parameters:

TFTP Server IP Address — allows you to set the TFTP IP address.

Destination File System — allows you to specify any file system name supported by the 6400 UAC. File system names supported by the 6400 are:

- boot flash
- flash
- disk 0
- disk 1

Source File Name — allows you to specify the source file name (IOS image name).

Destination File Name — allows you to specify the name for the file as it is stored in the file system of the 6400 SCM.

Format the destination device before copying? — allows you to format the destination device before copying. You can set the **Format the destination device before copying?** option to:

> **Yes** — enables formatting of the destination device.

> **No** — disables formatting of the destination device.

Reboot device using new image? — allows you to reboot the device after a successful download. You can set the **Reboot device using new image?** option to:

> **Yes** — enables rebooting of the device.

> **No** — disables rebooting of the device.

Status

The **Status** frame (shown in Figure 5-41) allows you to view the **Last download operation** that displays the date and time of the last download.

Actions

The **Actions** frame (shown in Figure 5-41) allows you to initiate the following actions:

Download — clicking on the **Download** button downloads the IOS image (specified by the **Source File Name** in the **Configuration** frame) from the specified TFTP server to the file system of the Cisco 6400 (specified in the **Destination File Name** in the **Configuration** frame).

Scheduled Download — clicking on **Scheduled Download** opens a **ScheduleDialog** window. The **ScheduleDialog** window allows you to enter a **Date** (in *<mm><dd><yyyy>* format) and time (**Hour** and **Minute** format) for the download to be performed.