NORTEL

Nortel Application Switch Element Manager

Users Guide

NN47220-101 (320512-D)

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Contents

Using the Nortel Application Switch Element Manager

Overview

The Nortel Application Switch Element Manager (ASEM) provides a graphical user interface (GUI) for remotely managing a Nortel Application Switch through the Simple Network Management Protocol (SNMP). This document provides an overview of how to use the ASEM.

The following topics are covered in this book:

- "Setting ASEM Properties" (page 5)

- "Opening a Switch" (page 8)

- "The ASEM Interface" (page 13)

- "Switch Configuration Tools" (page 35)

- "Monitoring Performance" (page 40)

- "Customizing the ASEM Display" (page 42)

Setting ASEM Properties

ASEM uses the Simple Network Management Protocol (SNMP) to configure and manage a Nortel Application Switch. The ASEM Properties screen is used to configure parameters used to communicate with a switch. These parameters include polling interval, time-out, and retry count. These parameters are set at any time before or after a device is opened.

To set the properties in the ASEM **Properties** screen, follow this procedure:

Step	Action
1	From the ASEM menu, select **Nortel ASEM > Properties**. This screen is illustrated in "Properties Screen" (page 6).

Properties Screen
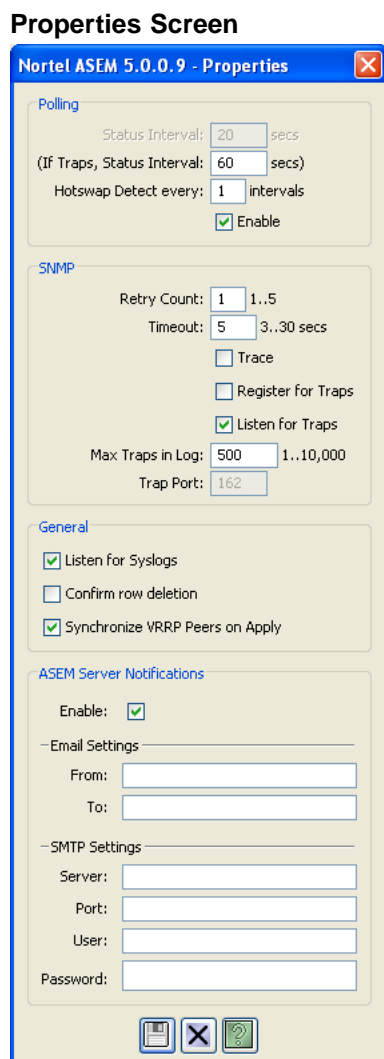
2   Select the properties to change and set their values.

> *Note:* The ASEM Server Notifications area is only available
> when a connection to an ASEM Server has been established.
> Use the ASEM Server Notifications area to configure ASEM
> Server e-mail notifications.

3   Click **Save**.

> *Note:* Each switch has individual Polling/Retry Count, Time-out,
> and Trace values. The root properties set on this screen
> establish default settings.

"Property screen fields" (page 7) outlines the fields present on this
screen.

—**End**—

Property screen fields

Field	Description
Polling Fields	
Status Interval	The interval at which statistics and status information are gathered.
(If Traps, Status Interval)	If the **Register for Traps** check box is selected, then it specifies the interval in seconds at which statistics and status information are gathered.
Hotswap Detect	The multiples of polling intervals between hotswap checks.
Enable	If checked, ASEM polls the switch according to the settings listed above the **Enable** check box.
SNMP Fields	
Retry Count	The number of times ASEM retransmits any SNMP message before reporting a `timeout` message.
Timeout	The length of time between each retry of each SNMP waiting period, from 3 to 30 seconds. If the retry count is set to 2 and the time-out value to 5 seconds, ASEM reports a `timeout` (no response from the switch) after 10 seconds.
Trace	If checked, ASEM sends detailed SNMP information to the log.
Register for Traps	If checked, ASEM attempts to register the client's IP address to one of the trap hosts' IP fields.
Listen for Traps	If checked, ASEM listens for traps and attempts to hook to the trap port 162.
Max Traps in Log	The specified number of traps that may exist in the trap log. The default is 500.
Trap Port	The number of the port on which trap messages are captured. The default is 162.
General Fields	
Listen for Syslogs	If checked, ASEM listens for syslogs and attempts to hook to the syslog port 514.
Confirm row deletion	If checked, ASEM requests for confirmation each time a row in the application is deleted.

Field	Description
Synchronize VRRP Peers on Apply	If checked, the switch synchronizes the SLB, filter, and VRRP configuration on a peer switch on `Apply`. To take effect, peers must be configured on the switches and the administrator password on the switches must be identical.
ASEM Server Notifications Fields	
Enable	Enable or disable ASEM Server e-mail notifications.
From	The e-mail address used to send the notification.
To	The e-mail address that receives the notification. *Note:* This field supports only a single e-mail address. To send an e-mail notification to multiple addresses, create a mail list for those addresses.
Server	The e-mail server used to send the notification.
Port	The port used by the e-mail server to receive messages.
User	The user name used to log into the e-mail server.
Password	The password used to log into the e-mail server.

Opening a Switch

ASEM provides two options for opening a switch for configuration and management. A switch can either be opened using SNMP versions 1 or 2, or SNMP version 3. The following sections explain how to open a switch through either of these methods.

Opening a Switch Using SNMP versions 1 or 2

To open a switch using SNMP versions 1 or 2, follow this procedure:

Step	Action
1	From the menu, select **Nortel ASEM > Open**. The **Open Device** screen opens. This screen is illustrated in "Open Device screen" (page 9).

Open Device screen

Open the **Open Device** screen from the toolbar or by right-clicking on the ASEM tree control. See "ASEM Toolbar" (page 21) and "ASEM Tree Control" (page 25) for more information on these options.

2   Identify the device to be opened by typing the Domain Naming Services (DNS) name or Internet Protocol (IP) address of the device in the **Device Name** field.

3   Type the appropriate community strings in the **Read Community** and **Write Community** fields. The default strings are `public` and `private` respectively. These settings apply to SNMP version 1 or 2 access. For access using SNMP version 3, see "Opening a Switch using SNMPv3" (page 10).

4   Click **Open**.

Optionally, click **Ping** to check if the switch is reachable on the network before attempting to open it.

—**End**—

To connect to the switch through the Telnet protocol, click **Telnet**.

Opening a Switch using SNMPv3

Before opening a switch using SNMP version 3, SNMP version 3 must be enabled on the switch. Refer *Nortel Application Switch Operating System 24.0 Command Reference* (NN47220-105) for information on enabling SNMP version 3.

To open a switch using SNMP version 3, follow this procedure:

| Step	Action
1	From the menu, select **Nortel ASEM > Open**. The **Open Device** screen opens. This screen is illustrated in "Open Device screen" (page 9). Open the **Open Device** screen from the toolbar or by right-clicking on the ASEM tree control. See "ASEM Toolbar" (page 21) and "ASEM Tree Control" (page 25) for more information on these options.
2	Identify the device to be opened by typing the Domain Naming Services (DNS) name or Internet Protocol (IP) address of the device in the **Device Name** field.
3	Click the **v3 Enabled** check box.
4	Enter the user name in the **User Name** field.
5	If applicable, select the appropriate authentication protocol in the **Authentication Protocol** drop-down list. The options in the list are **None**, **MD5**, and **SHA-96**. If **None** is selected, no further configuration is required. Steps 6 to 8 assume that an authentication protocol was selected.
6	Enter the authentication password in the **Authentication Password** field.
7	If applicable, select the appropriate privacy protocol in the **Privacy Protocol** drop-down list. The options are **None** and **DES**.
8	Enter the privacy password in the **Privacy Password** field.
9	Click **Open**.

—End—

Previously Opened Switches

Any switch that was opened during past sessions appear as a folder in the left-hand tree control navigation pane. This folder is be labeled with the IP address or DNS name of the switch. Click on the desired folder to initiate a new connection to the switch.

Troubleshooting the Opening of a Switch

Errors can occur during the opening of a switch. If an error occurs, ASEM displays an error message. This message is illustrated in "Connection Error Message" (page 11).

Connection Error Message
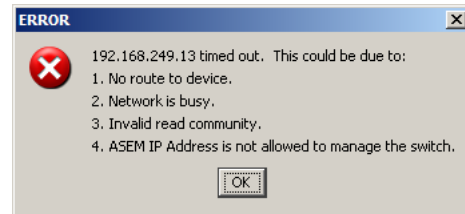
If this message is displayed, the following items should be checked:

- In slower networks, increase the **Retry Count** and **Timeout** values on the **Properties** screen. See "Setting ASEM Properties" (page 5) for information on performing this task.

- In the **Open Device** screen, ensure that the correct read and write community strings have been entered for SNMP version 1 and 2 connections. See "Opening a Switch Using SNMP versions 1 or 2" (page 8) for more information on performing this task.

- In the **Open Device** screen, ensure that the correct SNMP version 3 information has been entered for SNMP version 3 connections. See "Opening a Switch using SNMPv3" (page 10) for more information on performing this task.

- Ensure that the switch is physically connected to the network.

- Ensure that the switch is turned on and receiving power.

- Ensure that the switch has been assigned a correct IP address.

- Ensure that the correct IP address is being used in the **Open Device** screen.

- Ensure that the problem does not exist because of an unrelated network misconfiguration.

- Ensure that SNMP access is enabled on the switch. Refer *Nortel Application Switch Operating System 24.0 Command Reference* (NN47220-105) for information on enabling SNMP access.

- Ensure that switch is not blocking access from the client IP address.

Connecting to a ASEM Server

When connecting to a switch through the ASEM, the user also has the option of connecting to an ASEM Server. To connect to a ASEM Server, follow this procedure:

Step	Action

1 From the **Open Device** screen, select the **Login to ASEM Server** check box. "Open Device screen" (page 12) illustrates this screen. For information on accessing and using this screen, see "Opening a Switch" (page 8).

> *Note:* One more check box **Remember Password** is provided next to the **Login to ASEM Server** check box. If selected, the ASEM stores the ASEM Server password on a per device basis on the client system. When the dialog is opened again for the same device, the **ASEM Server Password** field is updated with this stored password.

Open Device screen
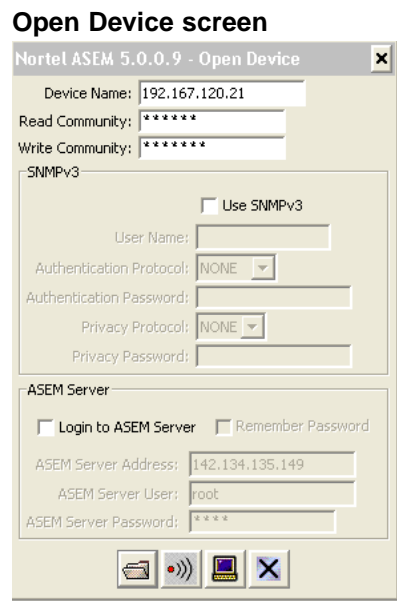
2 Enter the IP address or DNS name of the server in the **ASEM Server Address** field.

3 Enter the server user name in the **ASEM Server User** field. By default, the user name is **root**.

4 Enter the server password in the **ASEM Server Password** field.

5 Click **Open**.

> *Note:* To use the Nortel Intelligent Traffic Management options, a connection to an ASEM Server must be established.

—End—

The ASEM Interface

The ASEM interface consists of two framed windows with menu and tool bars. The left-hand tree control frame is used to display a list of switches that were connected to during previous sessions. The right-hand frame display changes with the different functions performed throughout the application. An example of the ASEM interface is illustrated in "ASEM Interface" (page 13).

ASEM Interface
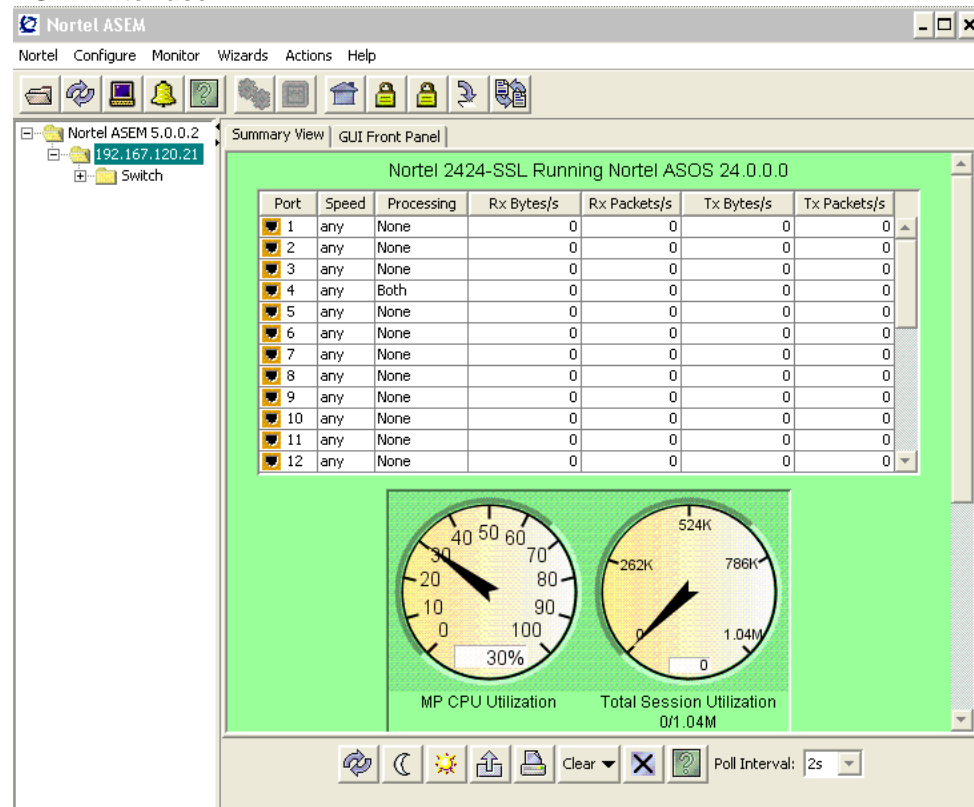
The following topics are covered in this section:

- "ASEM Interface Elements" (page 13)

- "Working with Switch Screens" (page 32)

ASEM Interface Elements

The following section outlines the common interface elements that make up the Nortel Application Switch Element Manager. These common elements are found throughout the application.

- "ASEM Menubar" (page 14)

ASEM Menubar

The ASEM menubar provides the commands used to monitor and configure the switch. "Main menubar items" (page 14) provides a brief outline of the main menubar items.

> *Note:* The `Configure` and `Monitor` menubar items are explained in detail in the ASEM help documents.

Main menubar items

Menu	Description
Nortel	The **Nortel** menu provides commands for: • Opening a switch. • Refreshing the switch view. • Setting polling and SNMP properties. • Setting tree control preferences. • Refreshing switch status. • Switch rediscovery. • Log viewing. • Managing a switch. • Telnetting to a switch. • Import, export, and clearing of preferences. • Closing ASEM.
Configure	The **Configure** menu contains commands for switch configuration.
Monitor	The **Monitor** menu provides commands for switch performance monitoring.

Menu	Description
Wizards	The **Wizards** menu differs depending on the type of switch being managed: In Nortel Link Optimizer switches, the **Wizards** menu opens the initial configuration wizard. This wizard steps the user through the initial configuration. This wizard is a one-time action performed while installing a new switch. This wizard cannot be used to modify an existing switch configuration. In Nortel Application Switches the **Wizards** menu provides access to the Server Load Balancing Wizard. This wizard can be used at any time to provide a simplified interface for the configuration of server load balancing through ASEM. The Link Load Balancing Wizard is only accessible when the LLB key is enabled. The Traffic Management Wizard is only accessible when the ITM key is enabled and the ASEM client is connected to an ASEM Server.
Actions	The **Actions** menu provides commands for: • Opening the browser-based interface. • Applying switch configuration changes. • Saving switch configuration changes.
Help	The **Help** menu provides commands for accessing the online help and support options for the ASEM.

Detailed Menu Descriptions outlines the options available in the **Nortel**, **Actions**, and **Help** menus in detail. For a detailed description of the **Configure** and **Monitor** menus, consult the ASEM online help.

Nortel, Actions, and Help menus

Icon	Text	Description
Nortel Menu		
📁	Open	Opens a screen that enables the user to connect to a switch. The user can connect to a switch through this window by entering the appropriate SNMP information. The four buttons at the bottom of this window allows the user to open, ping, or telnet to the desired switch or close the window without connecting.

Icon	Text	Description
	Open Last	Opens a menu that lists previously opened switches and allows connection to the switches based on stored information.
	Properties	Opens a screen used to change default polling and SNMP information. The three buttons at the bottom of this screen allow you to save the changed information, close this window, and ask for help.
	Tree Preferences	Opens a screen used to choose the Tree Node Sort Preferences. These preferences are: • System Name • Device Name • IP Address • System Description • Version • MAC Address Global preferences for Tree Node settings can also be set under the Global Default Tree Node Preferences. The display options are: • Device Name • System Name • IP Address • MAC Address For more information see "Tree Preferences Screen" (page 25).
	Refresh Status	Refreshes the ASEM screen with the latest changes. This poles the switch.
	Rediscover Device	Closes the switch and reopens it, checking for configuration changes such as software versioning.
	Telnet	Opens the **Telnet** window for telnet access to the switch.
	Trap Log...	Opens the **Trap Log** screen for viewing the switch trap log.
	Syslog...	Opens the **Syslog** screen for viewing the switch syslog.

Icon	Text	Description
	Log...	Opens the **Log** screen for viewing the switch log.
	Manage Switch...	Opens the **Manage Switch Configuration Details** dialog box. This dialog provides options to Insert/Modify/Delete jobs that manage devices by monitoring SNMP OIDs.
	Export Preferences	Opens the **Export Preferences** screen. This screen is used to export preferences to a file for use on another system or for back up purposes.
	Import Preferences	Opens the **Import Preferences** screen. This screen is used to import previously exported preferences.
	Clear Preferences	Opens the **Clear Preferences** screen. This screen is used to clear all configured user preferences.
	Exit	Closes the ASEM.
Actions Menu		
	Open Home Page	Opens the switch browser-based interface. HTTP access must be enabled in the command line interface to use the BBI.
	Open Secure Home Page	Opens the secure browser-based interface. HTTPS access must be enabled in the command line interface to use the secure BBI. This feature is only available in switches running Nortel Application Switch Operating System 21.0.1.0 or higher.
	Open SSL Page	Opens the browser-based interface for a Nortel Application Switch 2424-SSL. This feature is only available on the Nortel Application Switch 2424-SSL.
	Apply Configuration	Applies any changes that have been made to the switch configuration.

Icon	Text	Description
⏱	Schedule Apply/Save	Allows for the scheduling of Apply and Save operations. A connection must be established to an ASEM Server before this menu item is accessible. *Note:* Scheduled Apply/Save must also have the ITM key enabled. Many ITM menu options displayed on the ASEM Client must have the ITM key enabled and be logged onto an ASEM Server. A user could log onto an ASEM Server for a switch, but if an ITM key on the switch is not enabled, nothing happens.
📋	Save Configuration (back up)	Saves the current configuration in backup memory and saves the active configuration by overwriting the current configuration.
💾	Save Configuration (no back up)	Saves the current configuration to the flash memory.
↩	Revert	Reverts the switch to the current active configuration. This is available if the new configuration settings were not applied.
💾	Revert Apply	Reverts the switch to the current saved configuration. This is available if the new configuration settings were applied but not saved.
⇅	Reset Switch	Reloads and saves the current RAM memory. This is similar to cycling the power of the switch. This feature is only available to Nortel Application Switches.
⇅	Cold Reset Switch	Reloads and saves the current RAM memory. This is similar to cycling the power of the switch. Using this button, the maintenance kernel option can be accessed. This feature is only available on Nortel 180 or AD Series Web Switches.

Icon	Text	Description
⇅	Warm Reset Switch	Reloads and saves the current RAM memory like a regular reset. This feature is only available on Nortel 180 or AD Series Web Switches.
	Diff Config	Opens a screen to display any pending configuration changes. This feature is only available on Nortel Application Switches.
	Diff Flash	Opens a screen to display any pending configuration changes and the affected configuration stored in flash memory on the switch. This feature is only available on Nortel Application Switches.
	Configuration Dump	Opens a console screen displaying a dump of the current switch configuration. From this screen the configuration can be saved or printed. This feature is only available on Nortel Application Switches.
	Clear SLB All SPs Non-Operational Statistics	Clears all SPs non-operational SLB statistics on the switch, resetting them to zero. This command does not reset the switch and does not affect the following counters: • Counters required for Layer 4 and Layer 7 operation (such as current real server sessions). • All related SNMP counters. This feature is only available on Nortel Application Switches.

Icon	Text	Description
	Clear Flash Dump	Clears the dump region of the flash memory. Dump information contains internal switch data. This feature is only available on Nortel Application Switches.
	Close	Closes the selected switch.
	Delete	Deletes the switch entry from the ASEM tree.
	Tear-off	Tears off the selected window.
	Collapse All	Collapses the tree to show only the switch or application root from the selected tree node.
	Expand All	Expands the tree to show all nodes and subnodes.
Help Menu		
	Contents	Opens the *Nortel Application Switch Element Manager User's Guide* (this document).
	Online Support	Provides contact to technical support by connecting to the Nortel Customer Support Web page.
	Legend	Defines the color coding of ports in the ASEM. The port colors are as follows: • Green - Up • Red - Down • Orange - No Link • Cyan - Standby • Blue - Testing • Gray - Unmanageable • Pink - Loopback
	About ASEM	Opens a screen that displays information about the switch devices and minimum software versions that are supported.

ASEM Toolbar

"Toolbar items" (page 21) outlines the toolbar items available in the Nortel
Application Switch Element Manager. These toolbar items are available
throughout the application.

Toolbar items

Button	Name	Description	Menu equivalent
	Open	Opens a switch. This requires the address or the domain name of the switch and the appropriate authentication information.	**Nortel ASEM > Open**
	Refresh Status	Refreshes the status of the switch displayed in the ASEM.	**Nortel ASEM > Refresh Status**
	Telnet	Opens a Telnet session to the switch.	**Nortel ASEM > Telnet**
	Trap Log	Opens the trap log.	**Nortel ASEM > Trap Log**
	Help	Opens the Using ASEM online help in a web browser window. This button is also available in each ASEM screen for context-sensitive help.	**Help > Contents**
	Configure	Provides access to configuration commands for either the switch or the port. **Switch:** To configure the switch, click **Configure** . **Port:** To configure single or multiple ports, select the desired ports and click **Configure** . • To select multiple, non-adjacent ports, hold the **CTRL** key while selecting the desired ports and then click **Configure** . • To configure adjacent ports from the **GUI Front Panel** screen, click and drag the mouse over the desired elements to select them and	**Configure > Switch** **Configure > Port**

Button	Name	Description	Menu equivalent
		click **Configure** . The **SHIFT** key and mouse click can also be used to select multiple ports in the tree panel.	
	Monitor	Monitors the performance of either the port or the switch. **Switch:** To monitor the switch, click **Monitor** . **Port:** To monitor single or multiple ports, select the desired ports and click **Monitor** . • To select multiple, non-adjacent ports, hold the **CTRL** key while selecting the desired ports and then click **Monitor** . • To monitor adjacent ports from the **GUI Front Panel** screen, click and drag the mouse over the desired elements. The ports that are inside the rectangle are selected. Then click **Monitor** .	**Monitor > Switch** **Monitor > Port**
	Browse Home Page	Opens the Browser-Based Interface (BBI) of the switch. To access the BBI, use the CLI command, `/cfg/sys/access/http e` to configure the switch to allow HTTP traffic.	**Actions > Open Home Page**
	Browse Secure Home Page	Opens the secure home page of the switch. To access the secure home page, use the CLI menu: `/cfg/sys/access/https` to configure the switch to allow HTTPS traffic. Refer *Nortel Application Switch Operating System 24.0 Command Reference* (NN47220-105) for detailed information on setting up secure home page access.	**Actions > Open Secure Home Page**

Button	Name	Description	Menu equivalent
		This feature is only available to switches using Nortel Application Switch Operating System 22.0.1.0 or higher	
🔒	Browse SSL Home Page	This button launches the web browser and open the home page of the SSL accelerator portion of a Nortel Application Switch 2424-SSL using HTTPS. This feature is only available to the Nortel Application Switch 2424-SSL.	**Actions > Open SSL Home Page**
	Apply Configuration	The Apply Configuration operation causes the entire New Configuration to be copied to the Current Configuration. This causes the switch to operate with the new settings. At this point, the New and Current configurations are identical.	**Actions > Apply Configuration**
	Diff Config	Displays the difference between the Active (Current) Configuration and the New Configuration This feature is only available to Nortel Application Switches.	**Actions > Diff Config**

ASEM Screen and Tab Buttons

outlines the buttons that appear on ASEM screens and tabs. Not all buttons appear on every screen or tab.

ASEM Screen and Tab Buttons

Button	Name	Description	Menu Equivalent
⚙	Set	The **Set** button is used to save any changed fields on the screen or tab to the switch New Configuration. These changes do not take effect until they are applied.	**None** - This button exists in all pages in the Configure menu

Button	Name	Description	Menu Equivalent
	Modify	When a data row is selected and the **Modify** button is clicked, the fields of an edit form are filled with the data of the selected row.	**None** - This button exists in all pages where row data can be modified
	Apply	Clicking the **Apply** button causes the entire New Configuration to be copied to the Current Configuration. This causes the switch to operate with the new settings. At this point, the New and Current Configurations are identical.	**Actions > Apply Configuration**
	Refresh	Click **Refresh** to discard any unsaved changes and re-retrieves the screen data.	**Nortel - Refresh Status**
	Insert	Inserts a new row of data in an Edit table. Clicking **Insert** opens a separate screen data entry screen.	**None** - This button exists on all pages where rows can be inserted
	Delete Selected Rows	Deletes the currently selected rows of a table.	**None** - This button exists on all pages where rows can be deleted
	Filter	Configures a filtered view of table data. This filter is for display purposes only and does not change the switch configuration.	**None** - This button exists on all pages where table data can be filtered
	Copy	Copies data to paste on a similar section on any other table.	**None** - This button exists on all pages where table data can be copied
	Paste	Pastes any copied data. This is different from a drag and drop operation.	**None** - This button exists on all pages where table data can be pasted
	Reset Changes	Restores the original values since the last modified data that has not been sent to the switch.	**None** - This button exists on all pages where table data can be modified
	Export Table Data	Exports the table data into a text file.	**None** - This button exists on all pages containing table data
	Print	Opens the **Print** dialog so that the current page can be printed.	**None** - This button exists on all pages

Button	Name	Description	Menu Equivalent
✕	Close	Closes the current screen. If the screen is docked, the screen closes and re-opens. If the screen is undocked, the screen closes.	**Actions > Close**
🔲	Help	In a specific screen or tab, this button opens context-sensitive help in a web browser.	**None** - This button exists on all pages and on the toolbar

ASEM Tree Control

The tree control displays all the switches opened during previous sessions in the left-hand frame of the ASEM. The tree hierarchy mimics much of the menu system, to allow ease of navigation. Each switch node is represented with a folder icon. Each port is represented with a port icon. A gray dot indicates a terminal node.

When working with the ASEM tree control, the following actions can be performed:

• Click on any of the nodes to open and view its related window.

• Right-click on any of the nodes to display a context menu of operations related to that node.

Tree Preferences Screen   The **Tree Preferences** screen is used to configure the display of the ASEM tree control. This screen is illustrated in "Tree Preferences screen" (page 25).

Tree Preferences screen
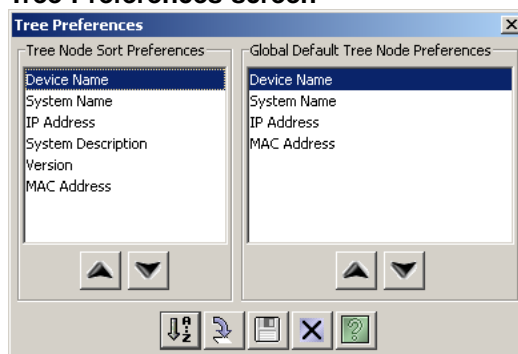
The **Tree Node Sort Preferences** section of this screen is used to set preferences for the sorting and displaying of items in the ASEM tree control. The sorting of tree control items can be performed by:

• System Name

• Device Name

- IP Address

- System Description

- Version

- MAC Address

The **Global Default Tree Node Preferences** section of this screen is used to set global preferences. The global display of tree nodes can be set by:

- Device Name

- System Name

- IP Address

- MAC Address

To change tree node preferences using the **Tree Preferences** screen, perform the following task:

Step	Action
1	Open the **Tree Preferences** screen by selecting **Nortel ASEM > Tree Preferences** from the menu.
2	Select an item in either section and use the up and down arrows to arrange the desired order.
3	Click **Save Tree Nodes Now** to save the new preferences. The changes take effect the next time ASEM is re-opened.

—End—

ASEM Context Menus

Context menus are available by right-clicking on any of the tree control nodes or screens in ASEM. These context menus provide immediate access to commands for the switch or ports.

The following context menus are available in the ASEM:

- "Application Root Context Menu" (page 27)

- "Switch Root Context Menu" (page 27)

- "Switch Tree Context Menu" (page 28)

- "Port Context Menu" (page 30)

Application Root Context Menu   Right-click the application root of the tree control to view the available context menu choices for the ASEM application. "Application Root Context Menu" (page 27) illustrates this context menu.

Application Root Context Menu
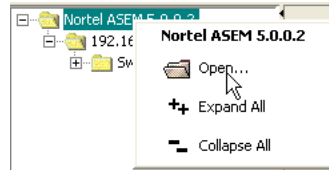
"Application Root Context Menu items" (page 27) The following table describes the items on this context menu

Application Root Context Menu items

Menu Item	Description
Open	Opens a switch. This requires the address or the domain name of the switch and the appropriate authentication information.
Collapse All	Collapses the tree to show only the switch or application root from the selected tree node.
Expand All	Expands the tree to show all nodes and subnodes.

Switch Root Context Menu   Right-click the switch root (the folder showing the switch IP address or name) to view the available context menu choices. "Switch Root Context Menu" (page 27) illustrates this context menu.

Switch Root Context Menu
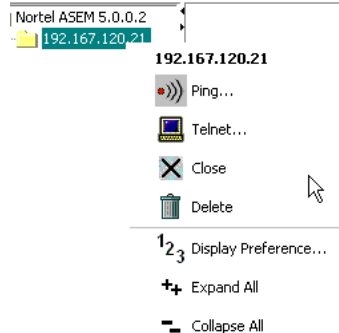
"Switch Root Context Menu items" (page 28) describes the items on this context menu.

Switch Root Context Menu items

Menu Item	Description
Ping	Sends an ICMP packet to the selected switch to see if it is reachable on the network.
Telnet	Opens a Telnet screen to the selected switch.
Close	Closes the switch and all associated screens.
Delete	Deletes the switch entry from the ASEM tree control.
Display Preferences	Edits the tree node display preferences for the selected switch.
Expand All	Recursively expands the tree control to show all nodes and sub-nodes.
Collapse All	Recursively collapses the tree control to show only the switch or application root from the selected tree control node.

Switch Tree Context Menu   Right-click on the switch tree node to view the available context menu choices for the selected switch. "Switch Tree Context Menu" (page 28) illustrates this context menu.

Switch Tree Context Menu
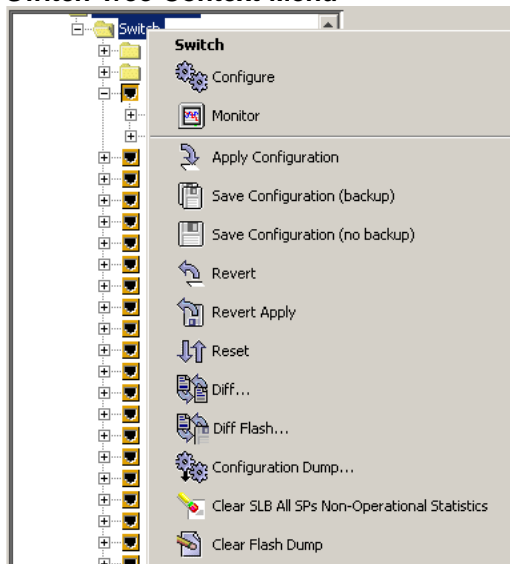
"Switch Tree Context Menu items" (page 29) describes the items on this context menu.

Switch Tree Context Menu items

Menu Item	Description
Configure	Provides access to configuration commands for the switch.
Monitor	Provides access to the monitoring commands for the switch.
Apply Configuration	Applies any changes that have been made to the switch configuration.
Save Configuration (back up)	Saves the current configuration in backup memory and saves the active configuration by overwriting the current configuration.
Save Configuration (no back up)	Saves the current configuration to the flash memory.
Revert	Reverts the switch to the current active configuration. This is available if the new configuration settings were not applied.
Revert Apply	Reverts the switch to the current saved configuration. This is available if the new configuration settings were applied but not saved.
Reset Switch	Reloads and saves the current RAM memory. This is similar to cycling the power of the switch. This feature is only available to Nortel Application Switches.
Diff	Opens a screen to display any pending configuration changes. This feature is only available on Nortel Application Switches.
Diff Flash	Opens a screen to display any pending configuration changes and the affected configuration stored in flash memory on the switch. This feature is only available on Nortel Application Switches.

Menu Item	Description
Configuration Dump	Opens a console screen displaying a dump of the current switch configuration. From this screen the configuration can be saved or printed. This feature is only available on Nortel Application Switches.
Clear SLB All SPs Non-Operational Statistics	Clears all SPs non-operational SLB statistics on the switch, resetting them to zero. This command does not reset the switch and does not affect the following counters: • Counters required for Layer 4 and Layer 7 operation (such as current real server sessions). • All related SNMP counters. This feature is only available on Nortel Application Switches.
Clear Flash Dump	Clears the dump region of the flash memory. Dump information contains internal switch data. This feature is only available on Nortel Application Switches.

Port Context Menu   The Port Context Menu can be accessed in one of two ways:

• To access the context menu for a single port, right-click the port.

• To access the context menu for multiple ports, select the desired ports and right-click in the selection area.

"Port Context Menu" (page 30) illustrates the Port Context Menu.
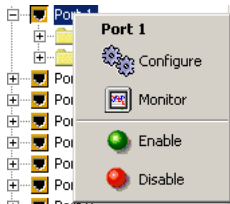
Port Context Menu

"Port Context Menu items" (page 31) describes the items on this context menu.

Port Context Menu items

Menu Item	Description
Configure	Provides access to the port configuration commands.
Monitor	Provides access to the port monitoring commands.
Enable	Enables the port.
Disable	Disables the port.

Screen Context Menu   The Screen Context Menu is accessed by right-clicking on a screen in the right-hand frame of ASEM. "Screen Context Menu" (page 31) illustrates this context menu.
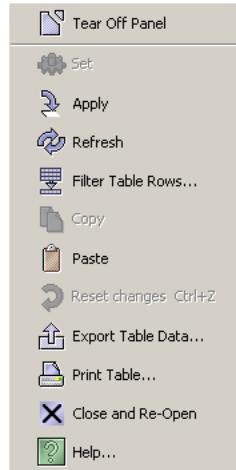
Screen Context Menu

"Screen Context Menu items" (page 31) describes the items on this context menu.

Screen Context Menu items

Menu Item	Description
Tear Off Panel	Undocks the current screen from the right-hand frame.
Set	Saves any changed fields on the screen or tab to the switch New Configuration. These changes do not take effect until they are applied.

Menu Item	Description
Apply	Causes the entire New Configuration to be copied to the Current Configuration. This causes the switch to operate with the new settings. At this point, the New and Current Configurations are identical.
Refresh	Discards any unsaved changes and re-retrieves the screen data.
Filter Table Rows	Opens the Filter Table screen to configure a filtered view of table data. This filter is for display purposes only and does not change the switch configuration.
Copy	Copies data to paste on a similar section on another table.
Paste	Pastes any copied data. This is different from a drag and drop operation.
Reset Changes	Restores the original values since the last modified data that has not been sent to the switch.
Export Table Data	Exports the table data into a text file.
Print Table	Opens the **Print** dialog so that the current page can be printed.
Close and Re-Open	Closes the current screen. If the screen is docked, the screen closes and re-opens. If the screen is undocked, the screen closes.
Help	In a specific screen or tab, this button opens context-sensitive help in a web browser.

Working with Switch Screens

The ASEM screen is divided into two main frames. The left-hand frame contains the tree control used to manage the switch and switch components accessed in the application. The right-hand frame contains the screens through which configuration and management of the switch is performed.

The following sections contain information on accessing the screens in the right-hand frame of ASEM and interacting with them:

- "Viewing a Switch Screen" (page 33)
- "Undocking a Switch Screen" (page 33)
- "Docking a Switch Screen" (page 34)
- "Closing a Switch Screen" (page 34)

Viewing a Switch Screen

To view a switch screen, follow this procedure:

Step	Action
1	Click on a node in the tree control.
2	The screen associated with the node item is displayed in the right-hand frame of ASEM. If applicable, select a tab on this screen.

—End—

To provide visual cues about information in ASEM, the following display conventions are followed on all screens:

- Fields with italicized labels indicate values that take effect immediately after clicking the **Set** button. These fields do not need to be applied to update the configuration.

- Fields that appear with a white background can be edited.

- Fields that appear with a gray background cannot be edited.

- Field text appears in bold when data is in the process of being entered or modified.

Undocking a Switch Screen

Any screen in the right-hand frame can be undocked from the frame. This feature is useful in instances such as when information must be compared between two or more switches, when configuration data is being moved between switch configuration screens or if a particular monitoring screen must be left open.

To undock a switch screen, perform the following task:

Step	Action
1	Right-click on the screen displayed in the right-hand frame.
2	From the context menu, select the menu item **Tear Off Panel**.

—End—

The screen is now undocked. illustrates an example of an undocked screen.

Undocked Screen
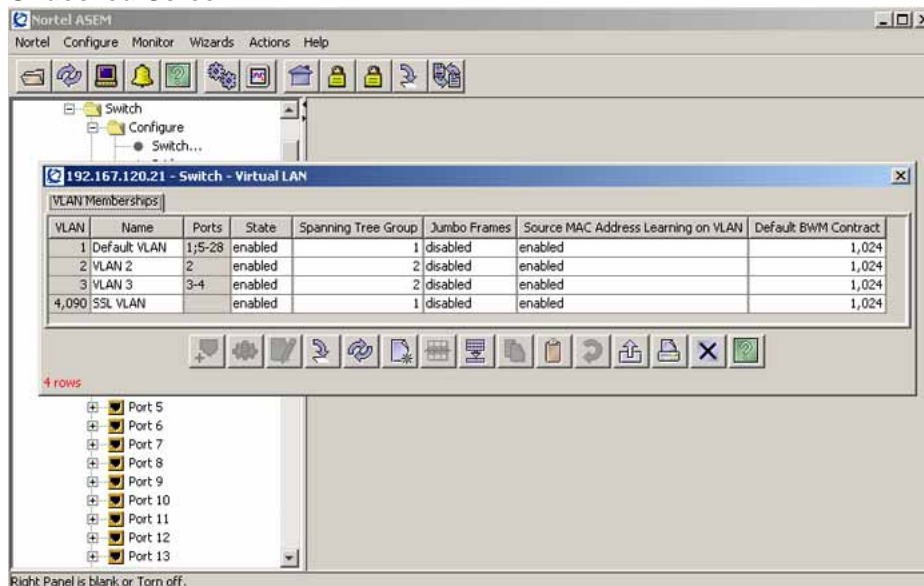
> *Note:* If an undocked screen is left undocked when ASEM is closed, the screen will be re-open undocked the next time the application is run.

Docking a Switch Screen

An undocked screen can be docked back into the right-hand frame. To re-dock a panel, follow this procedure:

Step	Action
1	Right-click on the screen displayed in the right-hand frame.
2	From the context menu, select the menu item **Dock Panel**.

—End—

Closing a Switch Screen

The operation of closing a switch screen is dependent upon the current state of the screen. In undocked screens, clicking the **Close** button closes the screen. In docked screens however, clicking the **Close** button has the effect of closing and re-opening the screen; refreshing the contents of the screen and all tabs.

The **Apply, Revert**, and **Revert-Apply** actions can also have the effect of closing a screen. In undocked screens, executing one of these commands closes the current screen. In docked screens, executing one of these commands closes and re-opens it.

When an **Apply** action is performed from one of the ASEM wizards (Intelligent Traffic Management, Link Load Balancing, or Server Load Balancing), all screens are closed. The **Apply** action only pertains to the current switch.

Switch Configuration Tools

This section provides an overview of the tools provided by ASEM for the configuration and management of switches. These tools are available on most screens and tabs in the application.

For information on switch access and ASEM interface elements, consult the following sections:

The following topics are covered in this section:

Configuration Tools

"Configuration Tools" (page 35) describes the configuration tools available on all ASEM screens and tabs. These tools, represented as buttons on the screens and tabs, are used to finalize and save changes made to switch configuration.

Configuration Tools

Function	Description
Browse	Some fields in editable forms have a browse button associated with them. Click on a **Browse** button to configure the field with a list of pre-defined or known parameters.
Set	The **Set** button causes any changed field values to be set into the New Configuration of the switch. These changes do not take effect until they are applied.

Function	Description
Apply	The **Apply** button causes the entire New Configuration to be copied to the Current Configuration. This causes the switch to operate with the new settings. At this point, the New and Current configurations are identical. Italicized labels indicate variables that take effect immediately. They do not require an **Apply** to update the configuration.
Refresh	The **Refresh** button causes the screen to retrieve the data from the switch and update the display. Any changes made that were not saved with a **Set** are now gone. Also, any changes made to the configuration by another user are picked up and displayed.

Working with Tables and Forms

ASEM uses the following types of tables and forms to display data:

- Edit Tables and Forms

- Poll Tables and Forms

- Graph Tables

The following section, "Working with Edit Tables and Forms" (page 36), describes using Edit Tables and Forms. For information on working with Poll Tables and Forms, see "Working with Polling Tables and Forms" (page 40). For information on working with Graph Tables, see "Working with Graphing Tables" (page 40).

Working with Edit Tables and Forms

ASEM provides several tools for working with data on Edit Tables and Forms. The following topics provide an overview of these tools.

Copy and Paste   Data on Edit Tables and Forms can be manually copied and pasted between fields. To copy and paste information between data fields, perform the following procedure:

Step	Action

1   Select the field to be copied by clicking in it.

2   Copy the data in the source field through one of these methods:

- Click **Copy** at the bottom of the screen.

- Right-click the selected field and click **Copy** item in the context menu.

3   Paste the data into the destination field through one of these methods:

- Click **Paste** at the bottom of the screen.

- Right-click the selected field and click **Paste** item in the context menu.

—End—

A single string value can be pasted into multiple rows of the same column by selecting all of the desired columns before pasting.

Selecting a Group of Fields with the Marquee Selection   A group of fields can be selected using the Marquee selection. Hold down the left mouse button and drag the mouse across the desired fields. Release the mouse button when selection is complete. The group of fields can now be treated as a single unit.

Drop-Down Lists   Drop-down lists are available for fields that have a fixed set of parameters. Fields with drop-down lists display an arrow button when the field is selected. Click the arrow to display the list of values and select a value from the list by clicking on it.

Drag and Drop Operations   Data can be dragged and dropped between similar Edit Tables and Forms in ASEM.

In Edit Tables and Forms, perform the following steps to drag and drop data:

Step	Action
1	Open two or more undocked screens.
2	Click the source screen and drag the mouse to the destination screen without releasing the left mouse button.
3	Release the left mouse button in the destination screen.

—End—

The data in the destination and source screens will now match. Click **Set** and **Apply** to save the changed data.

In the case of Edit Tables, if there is an unequal number of rows in the source and destination screens, the destination screen will have rows added to it. For example, if the source screen has four rows and the destination screen only three, a new row is added to the destination screen.

Data can also be dragged out of ASEM into a text application. In this instance the dragged data is placed into the text application as text.

Insert button New rows are added to Edit Tables through the use of the **Insert** button. Clicking **Insert** opens a separate data entry screen that contains the same fields as the Edit Table. Enter the data into the screen and click the Insert button again to add it to the Edit Table.

In the case of Edit Forms, data entry is performed directly on the form.

Browse and Modify Buttons In some data entry screens, the **Browse** button opens a selection screen used to choose from a list of pre-configured parameters. Once a selection has been made, click the **Modify** button to make the change active in the data entry screen.

Delete Row Button Delete a row of data by clicking the **Delete** button. Select the index numbers of the desired rows and click the **Delete** button.

Filtering Table Data

When a table contains multiple entries (such as 500 configured filters), a table filter can be built to define which items are displayed.

To build a table filter, perform the following tasks:

Step	Action
1	Click **Filter**. The **Table Filter** screen appears. "Table Filter screen" (page 38) illustrates an example of the Table Filter screen.

Table Filter screen
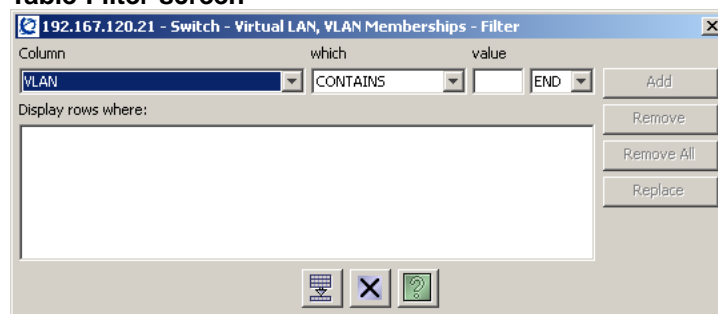
| 2 | Select a filtering field from the **Column** drop-down list. All of the fields in the table are present in this drop-down list. |
| 3 | Select an operator from the **which** drop-down list. The operators are: |

  - CONTAINS (Always a string)

  - IS GREATER THAN

- IS LESS THAN

- EQUALS

- DOES NOT EQUAL

The operator used depends on the column data and value type. For example, if the column is an enumeration type that is based on an enumeration MIB type, entering a number in the value field compares enumeration numbers instead of string types. If the value type is a string, it uses the label of the enumeration type for comparison, instead of the number.

4   Enter a comparison value into the **Value** field.

5   Select **AND**, **OR**, or **END** from the last drop-down list. The **AND** and **OR** operations go in the order of the filter statements from the top to the bottom of the screen. Build complex filters by stringing together various statements with **AND** and **OR**. Using the **END** operator terminates the filter, even if it is not the last filter statement.

6   Click **Add**.

7   Repeat steps 1 through 6 for each filter statement that makes up the larger filter.

8   Click **Filter**.

—End—

Select a row in the **Display rows where** list, make a modification and click **Replace** to modify a filter statement in the list.

Click **Remove all** and **Filter** to return to the unfiltered table.

Select a row in the **Display rows where** list and click the **Remove** button to remove a filter statement from the list.

Sorting Table Data

Data in an Edit Table can also be sorted by column. Initially, rows are sorted in order by column. To change the sort order, perform the following steps:

Step	Action
1	Select the column to be sorted on.
2	Click the column once to sort in ascending order or twice to sort in descending order.

---

3 If applicable, select the next column to sort by.

—End—

Monitoring Performance

This section provides an overview of performance monitoring. For detailed information about monitoring commands, refer ASEM online help by selecting **Help > Contents** from the ASEM menu.

ASEM displays monitored data in Poll Tables and Forms and Graph Tables. Monitoring data in Poll Tables and Forms are discussed in the following section. Graph Tables are discussed in .

Working with Polling Tables and Forms

Monitored data is displayed in Polling Tables and Forms. Data in the fields are updated and displayed at intervals determined by the **Poll Interval** drop-down list present at the bottom of all polling screens. The polling interval can be adjusted from 2 seconds to 60 minutes.

Exporting Data

Data in a polling table can be exported to a text file in a tabular format. Select the desired fields, click **Export** , and specify the location to store the new file. Data is then be exported to the file.

Printing Data

Click **Print** to print the contents of the polling table or form.

Working with Graphing Tables

Data displayed in a graph table can be displayed as a graph.

To view data in a graph, perform the following procedure:

Step	Action
1	Select the data to be graphed. For information on data selection, see.

Selected graphing data

2   Click the graphing button at the bottom of the screen that represents the type of graph to create. The graphing options are:

- Line Graph

- Area Graph

- Bar Graph

- Pie Graph

—End—

Note: The screen graphing buttons are not enabled until data is selected.

A graphing table is displayed based on the data selected and the graph type selected. illustrates an example of a graph table displaying a bar graph.

Graphing Table - Bar Graph
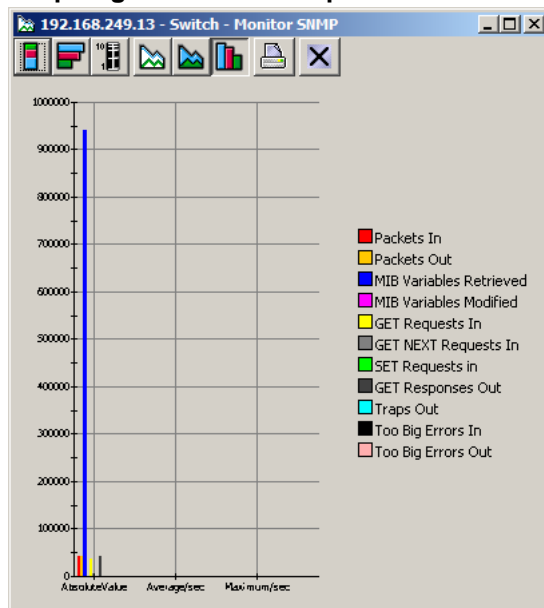
Note: Graph tables cannot be filtered.

Altering the Graph Display

The **Line**, **Area**, and **Bar** graph types have several sub-types that can be used to change the display of the graph. .outlines the sub-types available.

Graph sub-types

Graph Type	Graph Sub-types
Line Graph	Horizontal, Log Scale
Area Graph	Stacked, Horizontal, Log Scale
Bar Graph	Stacked, Horizontal, Log Scale

Pie Graphs have no sub-types.

Customizing the ASEM Display

The appearance of the ASEM application can be customized to suit user preferences. Changes does not effect the functioning of the switch, only the appearance of the application.

Altering the appearance of the application involves changing specific .**properties** files located in the **properties** sub-folder of the ASEM installation directory. These files can be altered with a simple text editor.

The following sections describe the elements of the ASEM that can be changed:

> **CAUTION**
> Altering the appearance of the ASEM involves altering `.properties` files located in the **properties** sub-folder of the application installation. Nortel recommends that copies of the original `.properties` files be saved in a separate folder before altering them. These original files can be restored by replacing the altered the files in the properties directory.

Modifying Label Appearance

The `alias.properties` file lists the correspondence between MIB variables and the label used to describe that value in the application. To change the label used, perform this procedure:

Step	Action
1	Open the **alias.properties** file in a text editor. For Nortel 180 and AD Series switches, the file is located in `<ASEM installation directory>/properties/Tigon`. For Nortel Application Switches, the file is located in `<ASEM installation directory>/properties/aws24`.
2	All entries in the file are listed in the following format: **MIB Variable=Description** Change the **Description** portion to reflect the new label to be used in the application. *Note:* Changing the **MIB Variable** portion causes the application to use the system default value for the label.
3	Save the changes made to the file. These changes are displayed the next time the application is started.

—End—

Modifying the list of well-known ports

The `ports.properties` file contains a list of ports known to be used by various protocols. This is used in the ASEM application where a list of such ports is useful. This list can be edited in a simple text editor to add or delete ports. For a list of well-known ports, refer *Nortel Application Switch Operating System 24.0 Command Reference* (NN47220-105).

To modify the `ports.properties` file, perform the following procedure:

Step	Action
1	Open the `ports.properties` file in a text editor. This file is located in `<ASEM installation directory>/properties`.
2	All entries in the file are listed in the following format: **Protocol=Port** Edit the file as appropriate using the format listed above. *Note:* Editing the `ports.properties` file can have an adverse affect on the application. Ensure all changes to this file are intended before saving them.
3	Save the changes made to the file. These changes are displayed the next time the application is started.

—End—

Modifying or adding Well-known Protocols

The `protocols.properties` file lists well-known protocols. This is used in the ASEM application where a list of such protocols is useful. This list can be edited in a simple text editor to add or delete protocols.

To modify the `protocols.properties` file, perform the following procedure:

Step	Action
1	Open the `protocols.properties` file in a text editor. This file is located in `<ASEM installation directory>/properties`.
2	All entries in the file are listed in the following format: **Protocol=Index Value** Edit the file as appropriate using the format listed above.

> *Note:* Editing the `protocols.properties` file can have an
> adverse affect on the application. Ensure all changes to this file
> are intended before saving them.

3   Save the changes made to the file. These changes are displayed
the next time the application is started.

—End—

Altering the Default Browser

By default, ASEM uses Netscape as a web browser. This default can be
changed to reflect personal preference or system configuration.

To change the default browser, perform the following procedure:

Step	Action
1	Open the `dm_ui.properties` file in a text editor. This file is located in `<ASEM installation directory>/properties`.
2	Locate the line in the file that reads: `#BrowserApp=netscape`. This is located near the bottom of the file.
3	Remove the number sign and replace netscape with the web browser to use. If the web browser is present in the system path, enter the name of the application. If it is not, enter the fully justified path to the application.
4	Save the change made to the file. This change takes effect the next time the application is started.

—End—

Localization of ASEM

The ASEM display can be localized to work better with a non-English
language.

> *Note:* This procedure requires the use of an external application,
> `native2ascii.exe`, that is part of the Sun Java Development Kit.
> The Sun JDK is freely available and can be downloaded from the Sun
> Java web site.

To localize the task, perform the following procedure:

Step	Action
1	Create a copy of the `alias.properties` file. Re-name this file to `alias_<temporary name>.properties` where `<temporary name>` is a temporary placeholder used to save the file under a different name.
2	Open the copy of the `alias.properties` file created in the previous step in a text editor.
3	Change the labels in this file to the new language equivalents.
4	Save the file in `UTF8` format.
5	Run the `native2ascii` application from the operating system command line using the following format: `native2ascii <input file name> <output file name>` In this instance, substitute `<input file name>` above with the name of the file created in step 1. Specify a different file name for the `<output file name>`. This file contains the localized file.
6	Re-name the *output file* from step 5 to `alias.properties` and replace the existing `alias.properties` file. It is advisable to create a back up of the existing file before replacing it.

—End—

Changing the MIB Default Values

The `mibDefault.properties` file contains default values for MIB variables used throughout the ASEM application. This file can be edited by a simple text editor.

To change the MIB default values, perform the following procedure:

Step	Action
1	Open the `mibDefault.properties` file in a text editor. For Nortel 180 and AD Series switches, the file is located in `<ASEM installation directory>/properties/Tigon`. For Nortel Application Switches, the file is located in `<ASEM installation directory>/properties/aws24`.
2	All entries in the file are listed in the following format: **MIB Variable=Value** Edit the file as appropriate using the format listed above.

3   Save the changes made to the file. These changes are displayed the next time the application is started.

—End—

Index

A

Apply Configuration button 23, 24

B

Browse Home Page button 22
buttons
   toolbar

C

configuration, applying 23, 24
configuration, difference 23
Configure button 22
Confirm row deletion 7

D

Device Manager
   setting poll interval 7
   setting properties 5
   setting properties. 5
Diff Config button 23

F

filtered view of table data 38

H

Help button 21, 25

L

Listen for Traps 7

M

menus.See individual menu names 14
Monitor button 22

N

Nortel ASEM
   toolbar buttons

O

Open Device button 21

P

Properties dialog box 5

R

Read Community, SNMP 9
Refresh Status button 21, 24
Register for Traps 7
Retry Count 7

S

snmp 7
Status Poll Interval 7
syslog
   listen for 7

T

table data
   filtered view 38
Telnet button 21
Timeout 7
toolbar buttons

trace routes, enabling 7
Trap Log button 21
traps
    designating a port 7
    listening for 7
    max number in log 7
    registering for 7

tree control 25

W

Web interface, opening 22
wizard 15
Write Community, SNMP 9

Nortel Application Switch Element Manager

Users Guide

NORTEL

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