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About This Guide

The SNMP Integrator Guide covers the features of the Operations Center SNMP adapter that allow you to poll, gather, and view data available on SNMP agents while you work in the Operations Center console.

- Chapter 1, “Overview,” on page 7
- Chapter 2, “SNMP Integration Adapter,” on page 9
- Chapter 3, “The Model Repository,” on page 15
- Chapter 4, “SNMP Hosts and Devices,” on page 27
- Chapter 5, “Communication & Protocol Settings,” on page 35

Audience

This guide is intended for Operations Center system administrators.

Feedback

We want to hear your comments and suggestions about this manual and the other documentation included with this product. Please use the User Comments feature at the bottom of each page of the online documentation.

Additional Documentation & Documentation Updates

This guide is part of the Operations Center documentation set. For the most recent version of the SNMP Integrator Guide and a complete list of publications supporting Operations Center, visit our Online Documentation Web Site at Operations Center online documentation.

The Operations Center documentation set is also available as PDF files on the installation CD or ISO; and is delivered as part of the online help accessible from multiple locations in Operations Center depending on the product component.

Additional Resources

We encourage you to use the following additional resources on the Web:

- NetIQ User Community (https://www.netiq.com/communities/): A Web-based community with a variety of discussion topics.

Technical Support

Use these resources for support specific to Operations Center:

- Telephone in Canada and the United States: 1-800-858-4000
- Telephone outside the United States: 1-801-861-4000
- E-mail: support@netiq.com (support@netiq.com)
- Submit a Service Request: http://support.novell.com/contact/ (http://support.novell.com/contact/)

**Documentation Conventions**

A greater-than symbol (>) is used to separate actions within a step and items in a cross-reference path. The > symbol is also used to connect consecutive links in an element tree structure where you can either click a plus symbol (+) or double-click the elements to expand them.

A trademark symbol (®, ™, etc.) denotes a NetIQ trademark. An asterisk (*) denotes a third-party trademark.

When a single pathname can be written with a backslash for some platforms or a forward slash for other platforms, the pathname is presented with a forward slash to preserve case considerations in the UNIX* or Linux* operating systems.
Adapters are configured with a one-to-one relationship, where one adapter talks to a specific management system. The Operations Center integration platform ships with support for many industry-standard network and systems management tools. An adapter is Operations Center’s interface with the management systems in your network. Operations Center cannot interact with any management system until adapters are created for that system.

This guide covers the features of the Operations Center SNMP adapter that allow you to poll, gather, and view data available on SNMP agents while you work in the Operations Center console.

It is assumed that you have a good understanding of the Simple Network Management Protocol (SNMP) and how to use it to manage your equipment.

For more information, see *Essential SNMP* by Douglas Mauro and Kevin Schmidt, published by O’Reilly (ISBN: 0-596-00020-0).
SNMP Integration Adapter

SNMP (Simple Network Management Protocol) is a set of protocols used to manage complex networks. SNMP works by sending messages, called protocol data units (PDUs), to different parts of a network.

SNMP-compliant devices, called agents, are entities that interface with the actual device you want to manage. Network bridges, hubs, routers, and servers are devices that you want to manage with SNMP. These devices have managed objects, such as hardware, configuration parameters, and performance statistics that are directly involved in current operation of the device.

- Section 2.1, "Supported SNMP Versions," on page 9
- Section 2.2, "Supported Java Runtime Environment Requirements," on page 10
- Section 2.3, "SNMP Adapter Database Requirements," on page 10
- Section 2.4, "Creating an SNMP Adapter," on page 10
- Section 2.5, "Starting the Adapter Manually," on page 11
- Section 2.6, "Stopping the Adapter," on page 11
- Section 2.7, "Modifying the Adapter Properties," on page 12
- Section 2.8, "Checking SNMP Adapter Status," on page 12
- Section 2.9, "Deleting an Adapter," on page 13

2.1 Supported SNMP Versions

You can configure Operations Center to work with SNMP V1 Agents. Operations Center supports versions that comply with SNMP Version 1, 2c, and 3 specifications, as defined by the Internet Engineering Task Force (IETF).
2.2 Supported Java Runtime Environment Requirements

The SNMP adapter is supported for Oracle JDK.

For more information, see "Java Runtime Environment" in the Operations Center Getting Started Guide.

2.3 SNMP Adapter Database Requirements

Before you can set up and run a SNMP adapter, you should have an active database definition for the Operations Center Event Data Store.

For more information regarding creating database definitions and the data warehouse, see "Creating Database Definitions, Configuring the Event Data Store, and Connecting to External Databases" in the Operations Center Server Configuration Guide.

For a list of the most current versions of supported databases (for example, IBM DB2), see "Supported Databases" in the Operations Center Getting Started Guide.

2.4 Creating an SNMP Adapter

To create an SNMP adapter in the Operations Center console:

1. In the Explorer pane, expand the Administration root element to display a list of its adapters.
2. Right-click Adapters, then select Create Adapter to display the Create Adapter dialog box:

   ![Create Adapter Dialog Box]

3. In the dialog box, open the Type drop-down list, then select NOC - SNMP Integrator.
   
   The Name field displays a default name and the Properties table lists the adapter properties and values.
4 In the Name field, enter a meaningful adapter name in place of the default name. For example, change:

Adapter: NOC - SNMP Integrator
to:

SNMP Devices Headquarters

If more than one adapter is created with the same name, subsequent adapters are created with a sequential number appended to the end of the name.

5 In the Value column of the properties table, specify values for the SNMP adapter properties:

- **AlarmColumns**: A comma-separated list that determines which alarm columns are displayed and the order that the alarm items are displayed (source of alarm, alarm class, and so on) in the Alarms view. For example:

  -ID,Host/Device=host,Ack=acknowledged,Count=occurrences,Class=alarmClass,assignedTo,message

  We recommend that you use all of the values listed in the above example.

- **Script.onInitialized**: A script that executes when the adapter is first initialized. All of the `Script` properties are optional.

- **Script.onStart**: A script that executes whenever the adapter is started, either manually or auto-started when the Operations Center server starts.

- **Script.onStop**: A script that executes whenever the adapter is manually stopped.

6 To automatically start the adapter, select **Start adapter automatically**. If the check box is not selected, you must start the adapter manually each time you start Operations Center.

7 Click **Create**, then click **Close**. After it starts, the new SNMP adapter is added to the **Adapters** object in the **Explorer** pane.

2.5 **Starting the Adapter Manually**

To start the adapter:

1 In the **Explorer** pane, expand the **Administration** root element to display a list of its adapters.

2 Right-click the SNMP adapter, then select **Start Adapter**.

2.6 **Stopping the Adapter**

To stop the adapter:

1 In the **Explorer** pane, expand the **Administration** root element to display a list of its adapters.

2 Right-click the SNMP adapter, then select **Stop Adapter**.
2.7 Modifying the Adapter Properties

Edit the SNMP adapter properties through the adapter element property pages.

To update adapter properties, such as Alarm Columns, or to run scripts on adapter startup/shutdown:

1. In the Explorer pane, expand the Administration root element to display a list of its adapters.
2. Double-click the SNMP adapter name to open its Status property page.
3. In the left pane, click Adapter to open the Adapter property page.
4. Edit the property values, then click Apply.

2.8 Checking SNMP Adapter Status

The condition of the SNMP adapter is visually indicated in the Explorer pane, as shown in Figure 2-1:

*Figure 2-1  Adapters with Condition Indicator Icons*

The colored icons indicate the status of the adapter. You can tell at a glance if the adapter is up and running (green), or if some other status is indicated. Table 2-1 lists the color codes for adapter status.

*Table 2-1  Condition Indicator Color Key*

<table>
<thead>
<tr>
<th>Color</th>
<th>Description</th>
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<tbody>
<tr>
<td>Red</td>
<td>The status of the associated element is CRITICAL.</td>
</tr>
<tr>
<td>Orange</td>
<td>The status of the associated element is MAJOR.</td>
</tr>
<tr>
<td>Yellow</td>
<td>When the adapter is in the process of starting or stopping, the status is MINOR.</td>
</tr>
<tr>
<td>Blue</td>
<td>The status of the associated element is INFORMATIONAL.</td>
</tr>
<tr>
<td>Green</td>
<td>When the adapter is started and running, the status is OK.</td>
</tr>
<tr>
<td>Gray</td>
<td>When the adapter is stopped, the status is UNKNOWN.</td>
</tr>
<tr>
<td>Brown</td>
<td>The status of the associated element is UNMANAGED.</td>
</tr>
</tbody>
</table>

To hide or display the condition indicators:

Right-click the Explorer pane background, then select Show Condition Indicators to hide or display the indicators.
2.9 Deleting an Adapter

To delete an adapter:

1. In the *Explorer* pane, expand the *Administration* root element to display a list of its adapters.
2. Right-click the SNMP adapter, then select *Delete Adapter*. 
The Model Repository

SNMP-compliant devices, called agents, are the entities that interface with the actual devices being managed. Bridges, Hubs, Routers, or network servers are examples of managed devices. After the SNMP adapter is created, it must be configured to communicate with your SNMP agents. This step requires setting up the Model Repository. The Model Repository is a set of models that describe the data being monitored by the SNMP agents with which the SNMP adapter communicates. A model can be thought of as an object hierarchy template for structuring objects managed by the various managed devices.

The managed devices contain objects, such as hardware, configuration parameters, and performance statistics. These objects are arranged in what is known as a virtual information database, called a Management Information Base, also called MIB (http://www2.rad.com/networks/applications/snmp/main.htm#mib#mib). SNMP allows managers and agents to communicate for the purpose of accessing these objects.

3.1 Importing Management Information Bases (MIBs)

A Management Information Base (MIB) is a type of information warehouse. It is a collection of metadata definitions, which define the properties of the managed object within the device to be managed. Every managed device keeps a database of values for each of the definitions written in the MIB. It is not the actual database itself—it is the metadata about the information contained within the agent. Definition of the MIB conforms to the SMI given in RFC 1155. The latest Internet MIB given in RFC 1213 is sometimes called the MIB-II.

3.1.1 Viewing a List of MIB Modules

Operations Center supports both SMI version 1 and version 2, and ships with approximately 100 MIB databases, mostly comprised of those standardized MIBs defined by the IETF. When the SNMP adapter starts up, it automatically extracts the MIBs. View the list of databases on the SNMP Integrator adapter element’s MIB Database property page, as shown above.

If it is necessary to import additional MIBs for your SNMP Agents, see Section 3.1.2, “Importing a MIB Database,” on page 16 the following section. Supported and imported MIBs are automatically added to the Model Repository and are available for selection when setting up hosts/devices.
Figure 3-1 shows a list of MIB modules used by the SNMP adapter MIB Database property page:

To access this view, right-click the top-level SNMP Integrator adapter element in the Elements hierarchy, then select Properties.

3.1.2 Importing a MIB Database

To import a MIB Database

1. In the Explorer pane, expand Elements.
2. Right-click the SNMP adapter, and select Properties.
3. In the left pane, click MIB Database.
4. Click Import MIB.
5. Click Look In and select a MIB database file.
6. Click Import.
3.1.3 Browsing for a MIB

To find a MIB by browsing:

1. In the Explorer pane, expand Elements.
2. Right-click the SNMP adapter, and select Properties.
3. In the left pane, click MIB Database.
4. Click Browse.

The Choose MIB Branch dialog box opens to allow you to browse the MIB Database tree:

5. Select an item and view properties in the right display pane.

3.1.4 Finding a MIB

To search for a MIB:

1. In the Explorer pane, expand Elements.
2. Right-click the SNMP adapter, and select Properties.
3. In the left pane, click MIB Database.
4. Click Find to display the Search dialog box.
5. Do one of the following:

   - Enter a keyword matching the host name.
   - Use a Perl 5 regular expression to search for MIBs. The following example matches all hosts with netiq.com:

     .*netiq.com

Click OK to start the search. On completion of the search, the number of matching MIBs is confirmed and matches are highlighted in the MIB Database property page.
3.1.5 Removing a MIB from the Database

To remove a MIB from the database:

1. In the Explorer pane, expand Elements.
2. Right-click the SNMP adapter, and select Properties.
3. In the left pane, click MIB Database.
4. Select a module and click Remove.

3.2 Managing a Model Repository Structure

When you set up the SNMP adapter, it is necessary to create a model structure to organize data originating from the MIBs.

Three types of objects are available to create the structure for the Model Repository:

- **Containers**: Placeholder objects, similar to a folder, that can logically group other, “contained” objects.
  
  For more information, see Section 3.2.2, “Creating Repository Containers,” on page 19.

- **Collectors**: Containers that can also have properties that point directly to specific MIB values within an agent. Collectors allow you to select managed objects from wherever they normally live in the Model Repository and collect them in one central place.

  For more information, see Section 3.2.3, “Creating Repository Collectors,” on page 20.

- **Branches**: Allows selecting a MIB branch from an exact point downwards in the MIB metadata tree.

  For more information, see Section 3.2.4, “Creating Repository Branches,” on page 24.

The following sections provide instructions on creating structure for the Model Repository:

- Section 3.2.1, “Browsing the Model Repository,” on page 19
- Section 3.2.2, “Creating Repository Containers,” on page 19
- Section 3.2.3, “Creating Repository Collectors,” on page 20
- Section 3.2.4, “Creating Repository Branches,” on page 24
- Section 3.2.5, “Removing Containers, Collectors, and Branches,” on page 25
### 3.2.1 Browsing the Model Repository

To browse the model repository:

1. In the *Explorer* pane, expand the *Elements* root element.
2. Right-click the *SNMP Adapter* element, then select *Model Repository* to open the Browse Model Repository dialog box:

![Model Repository Dialog Box](image)

3. Double-click each item to browse its branch of the tree. Selecting an item shows basic information displayed in the pane to the right.

### 3.2.2 Creating Repository Containers

A container is simply a placeholder object that can be used to logically group other, "contained" objects. A container is analogous to a folder.

- "Adding Containers to the Model Repository" on page 20
- "Removing a Container from the Model Repository" on page 20
Adding Containers to the Model Repository

To add containers to the model repository:

1. In the Browse Model Repository dialog box, right-click an item, then select Add > Container.
   
   A new container (folder) is added to the tree view:

   ![Model Repository dialog box]

2. Use the fields displayed in the right pane to update the name and class for the new container.

Removing a Container from the Model Repository

To remove a container from the model repository:

1. In the Browse Model Repository dialog box, right-click a container, then select Remove.
   
   The container is removed from the tree.

3.2.3 Creating Repository Collectors

Collectors allow you to select managed objects from various locations and collect them in a central place. A collector is a container that also is made up of properties, which point directly to specific MIB values within an agent. These properties can have user-defined thresholds assigned to them, which is a way to model state within the adapter.

- “Adding Collectors to the Model Repository” on page 20
- “Adding Properties to a Collector” on page 22
- “Editing Collector Properties” on page 23

Adding Collectors to the Model Repository

To add collectors to the model repository:

1. In the Browse Model Repository dialog box, right-click an item, then select Add > Collector.
   
   A new collector is added to the tree view.
2 Specify the name and class for the collector.
3 Continue to “Adding Properties to a Collector” on page 22.
Adding Properties to a Collector

To add properties to a collector:

1. In the Browse Model Repository dialog box, browse, then select the collector item.
2. Click Add to open the Create Collector Property dialog box:

   ![Create Collector Property Dialog]

3. Specify a name for the property.
4. Under MIB Address, click (Ellipse) to browse, then select the appropriate MIB node. Making a selection fills in the OID and MIB Address fields.
5. (Optional) Specify Data Points to Retain for this property (Historical Data).
6. (Optional) Select the Enable Threshold Calculation check box to specify conditions for generating alarms.
   Then, specify the condition threshold values:
   6a. From the Expression Condition drop-down list, select the element condition that triggers the element condition change alarm.
       This is used in conjunction with the Violation Counter value.
   6b. In the Violation Counter field, specify the number of times the threshold can be reached before the element condition change is issued.
       For example, if the Expression Condition is Critical and the Violation Counter is 2, an element condition change is issued after an element reaches the Critical condition twice.
7. Select the Generate Alarm when Condition Is Set check box to issue an alarm when the threshold is violated using the Violation Counter and Expression Condition values.
   If deselected, no alarm is issued.
Then, select one of the following options to determine which action is performed after an alarm is issued:

- **Generate clear alarm after condition is reset**: Clears the alarm when the element’s condition is reset.
- **Maintain condition until acknowledged by operator**: Locks the element’s condition until it is manually released when the alarm is acknowledged.

8 Define the violation trigger threshold using an *Expression Type* and corresponding *Value* settings together to define the violation trigger threshold:

<table>
<thead>
<tr>
<th>Expression Type</th>
<th>Evaluates Expressions…</th>
</tr>
</thead>
<tbody>
<tr>
<td>Above</td>
<td>Above the specified value.</td>
</tr>
<tr>
<td>Below Value</td>
<td>Below the specified value.</td>
</tr>
<tr>
<td>Between</td>
<td>Containing values between the specified minimum and maximum.</td>
</tr>
<tr>
<td>String</td>
<td>Whose results match the specified string.</td>
</tr>
<tr>
<td></td>
<td>Define the string value using equals, contains, starts with, ends with, or matches (regex) operators.</td>
</tr>
<tr>
<td></td>
<td>Select the <em>Invert result value (Boolean “not”)</em> check box to evaluate the inverse of the string specified.</td>
</tr>
</tbody>
</table>

For example, select *Above* as the Expression Type to monitor values that exceed the number specified in the Expression's *Above Value* field.

9 When the definition is complete, click OK to save the collector property.

**Editing Collector Properties**

To update collector properties:

1 Select the property item in the Collector Property list.
2 Click *Change* to open the Edit Collector Property dialog box.
3 Update the information, then click OK.
3.2.4 Creating Repository Branches

Branches are extracted from the MIB metadata tree. A branch is a convenient monitoring point that allows a whole class of information to be duplicated within Operations Center from the target host/device.

Keep in mind when creating a branch object, that potentially a large amount of data must be collected to build the branch hierarchy; using a small subset of a MIB branch is likely the best approach to collecting this data.

To add branches to the Model Repository:

1. In the *Browse Model Repository* dialog box, right-click a folder or container, then select *Add > Branch*.

   A new branch is added to the tree view:

   ![Branch addition](image)

2. Use the properties displayed in the right pane to update the name and class for the new branch.

3. Click *Choose MIB Branch* to browse, then select the appropriate MIB branch.

4. Select the *Display Top Node of Branch (Branch Root)* check box to display the top object of the MIB branch as a *Operations Center* child element.

5. Select the *Display Child Branch Elements* check box to show all child elements of the selected MIB branch in the *Operations Center* hierarchy tree.
In the figure in Step 1 on page 24, child branches for the IP Resources branch are selected for display. Therefore, any host or device element set up in Operations Center with Windows 2000 as a selected model automatically has the MIB child elements under the IP Resources element, as shown in Figure 3-2. Notice how the entire structure under the Enzo element corresponds to the Windows 2000 structure, as set up in the Model Repository.

Figure 3-2. Selected branches defined in the Model Repository display under the enzo element in the Operations Center console

3.2.5 Removing Containers, Collectors, and Branches

Any of the model objects can be easily deleted from the Model Repository.

To remove a model object from the Model Repository:

1. In the Browse Model Repository dialog box, right-click the item, then select Remove.

The container, collector, or branch is removed from the tree.
SNMP Hosts and Devices

All SNMP agents that you wish to monitor must be configured as hosts/devices in Operations Center. This section explains adding and managing hosts and devices.

- Section 4.1, “Adding Hosts/Devices,” on page 27
- Section 4.2, “Managing Hosts/Devices,” on page 31
- Section 4.3, “Finding a Host,” on page 31
- Section 4.4, “Removing Hosts,” on page 32
- Section 4.5, “Changing the Host/Device Community,” on page 32
- Section 4.6, “Polling a Host/Device,” on page 33

4.1 Adding Hosts/Devices

SNMP agents that are monitored must be configured in Operations Center using options available on the element’s right-click menu or in the element’s property pages.

For each SNMP agent that you set up for your SNMP adapter, you must specify which model(s) it belongs to. The model has the MIBs required for the adapter to talk to and gather information from the host or device.
Figure 4-1 shows a host that belongs to the Windows 2000 container in the Model Repository. This host gathers information and log events based on the available MIBs and threshold calculations (specified in collectors), as defined for the Windows 2000 model.

**Figure 4-1** Operations Center console: All hosts and devices are displayed as elements in the Operations Center Explorer pane

There are two ways to add hosts or devices:

- Section 4.1.1, “Adding a Host or Device Manually,” on page 29
- Section 4.1.2, “Discovering Hosts/Devices,” on page 30
4.1.1 Adding a Host or Device Manually

To add a host or device:

1. In the Explorer pane, expand the Elements root element.
2. Right-click the top-level SNMP Integrator adapter element, then select Monitor SNMP/Device to open the Monitor SNMP Host/Device dialog box:

   ![Monitor SNMP Host/Device dialog box]

3. Specify the appropriate information:

   - **Host/Device Name**: The host name of the machine to monitor.
   - **Element Name**: The display name used for the host. If this field is blank, the Host/Device Name is used.
   - **Host/Device Port**: The port used to communicate with the host or device.
   - **Selected Models**: Lists all available model definitions that describe the data monitored from this SNMP host or device. Select one or more models.
   - **Communication Settings**: These are set globally using the top-level object. To use custom settings for a particular host, click Communication Settings, then see Section 5.2, “Overriding Global Communication Settings,” on page 36.
   - **Protocol Settings**: These are set globally using the top-level object. To use custom settings for a particular host, click Protocol Settings, then see Section 5.3, “Overriding Global Protocol Settings,” on page 36.

4. Click Create.

   The new host displays beneath the SNMP Integrator adapter element.
4.1.2 Discovering Hosts/Devices

Performing a discovery is a fast way to find and add SNMP capable hosts on the network that meet the given criteria.

When using the network discovery feature, please note:

- The network must allow UDP broadcasts.
- The discovery is performed across one subnet only.
- Discovery can be performed on the same subnet as the Operations Center server.

To perform a network discovery to add hosts:

1. In the Explorer pane, expand the Elements root element.
2. Right-click the top-level SNMP Integrator adapter element, then select Discover Network.
3. (Optional) Type the network IP address in the Network Mask field. Leave this field blank to discover on the network local to the Operations Center server.
4. (Optional) Type the port number in the Port field. Leave this field blank to use the default port of 161.
5. Select one or more models in Selected Models.
   For more information about setting up your model repository, see Section 3.2, "Managing a Model Repository Structure," on page 18.
6. To use custom communication settings for the discovery, click Communication Settings.
   For information on communication settings, see Section 5.2, "Overriding Global Communication Settings," on page 36.
7. To use custom protocol settings for the discovery, click Protocol Settings.
   For information on protocol settings, see Section 5.3, "Overriding Global Protocol Settings," on page 36.
8. (Optional) If using SNMP v1 or v2c, deselect the Discover using broadcast option to perform a more complete search for hosts and devices. Instead of using a broadcast, the discovery attempts to contact each IP Address individually.
9 Click Apply to start the discovery. Discovered hosts and devices display as elements under the SNMP Integrator adapter element.

10 To track the discovery process, monitor the /OperationsCenter_install_path/logs/formula.trc file. If the following Warning message occurs, discovery has found an agent but was unable to establish communications (e.g., login information is incorrect):

   WARN Integration.SNMP.Adapter: SNMP_Integrator_Adapter_Name - Discovery received a REPORT for address IP_Address

For information about log files, see “Understanding Trace Logs and Content” in the Operations Center Server Configuration Guide

4.2 Managing Hosts/Devices

SNMP Hosts can be managed or unmanaged using options on the host element’s right-click menu.

To manage or unmanage a host:

1 In the Explorer pane, expand the Elements root element > SNMP Integrator > the top-level SNMP object.

2 Do either of the following:
   • To start monitoring a host, right-click a host, then select Manage > Start.
   • To stop monitoring a host, right-click a host, then select Manage > Stop.

4.3 Finding a Host

To locate a particular SNMP host in the Hosts property dialog box:

1 In the Explorer pane, expand the Elements root element.

2 Right-click the SNMP Integrator element, then select Properties to open the Status property page.

3 In the left pane, click Hosts/Devices to open the Hosts/Devices property page.

4 Click Find to open the Find dialog box.

5 Specify a keyword matching the host name, then click OK.
   The search takes place. A dialog box confirms the number of matching hosts and highlights them in the Hosts/Devices property page.

6 Click OK to close the dialog box.

   TIP: You can also use a Perl 5 regular expression to search for hosts. The following example matches all hosts with Acme.com:

   .*Acme.com
4.4 Removing Hosts

SNMP hosts can be removed using the individual host element menu or using the Hosts property dialog box:

- Section 4.4.1, “Removing a Host,” on page 32
- Section 4.4.2, “Removing Multiple Hosts,” on page 32

4.4.1 Removing a Host

To remove a host using the element menu:

1. In the Explorer pane, expand the Elements root element > SNMP Integrator.
2. Right-click a host, then select Remove Host/Device.

4.4.2 Removing Multiple Hosts

To remove multiple hosts using the top-level object’s host Properties dialog box:

1. In the Explorer pane, expand the Elements root element.
2. Right-click the top-level SNMP Adapter element, then select Properties to open the Status property page.
3. In the left pane, click Hosts/Devices to open the Hosts/Devices property page.
4. Select one or more hosts, then click Remove Host/Device.

4.5 Changing the Host/Device Community

With SNMP, communities are used to establish trust and security between managers and agents. Each agent is configured with three community names: read-only, read-write, and trap. The community names are the passwords that you use to access your account and that represent primary types of activity:

- **read-only**: This community string only allows data values to be read. There is no modification of any kind. This is the only community string used by the SNMP Integrator adapter.
- **read-write**: This community string allows both the reading and writing of data values. This means that values can be reset, interfaces can be reset, and changes can be made to a device’s configuration.
- **trap**: This community string allows you to receive asynchronous notifications from an agent.

To change the community for a host or device:

1. In the Explorer pane, expand the Elements root element.
2. Right-click the top-level SNMP Adapter element, then select Properties to open the Status property page.
3. In the left pane, click Hosts/Devices to open the Hosts/Devices property page.
4. Select the host, then click Change Community.
5. Specify your password in the prompt dialog box.
4.6 Polling a Host/Device

To enable or disable polling:

1. In the Explorer pane, expand the Elements root element > SNMP Integrator.
2. Right-click a top-level host element, then do any of the following:
   - To enable polling, select Manage > Enable Polling.
   - To disable polling, select Manage > Disable Polling.
   - To enact an immediate poll, select Manage > Poll Now.
5 Communication & Protocol Settings

Communication settings establish the basic connection properties between Operations Center and any SNMP agent. They also enable the dynamic loading of applications that are not static.

Protocol settings include the version of SNMP and password to establish communications with a host or device.

TIP: To identify static applications, run the PSL \$DUMP KM_LIST command, which lists Yes or No in the fourth column.

Review the following sections to set up and manage global communication settings:

- Section 5.1, “Configuring Global Communication & Protocol Settings,” on page 35
- Section 5.2, “Overriding Global Communication Settings,” on page 36

5.1 Configuring Global Communication & Protocol Settings

Communication and protocol settings can be set at the global level for all hosts using the top-level object.

To configure communication and protocol settings globally:

1. In the Explorer pane, expand the Elements root element.
2. Right-click the top-level SNMP Integrator adapter element, then select Properties to open the Status property page.
3. Do the following to define communication settings:
   
   3a. In the left pane click Communication Settings. The settings on the Communications Settings property page are used globally.
   
   3b. Use the spinners to specify values.
      
      The following settings monitor the downstream connection between the agent and the client (which is the integration):
      
      - **Poll Interval**: The amount of time between heartbeat packets to indicate the client is still talking to agent.
      - **Poll Retry Interval**: The number seconds between of retry attempts.
      - **Poll Timeout**: The number of seconds to wait to establish a connection to the agent.
      - **Poll Timeout Retries**: The maximum number of retry attempts.
      - **Maximum Active Polls**: The maximum number of times that polling requests are sent.

   3c. Select the Generate alarms for polling activity option to issue alarms corresponding to each poll for data.
3d Leave the *Enable debug tracing* check box deselected.

If you select this check box, a large amount of data is logged in the *formula.trc* file. Only select this check box when asked by Technical Support for troubleshooting purposes.

3e Click *Apply*.

4 Do the following to define protocol settings:

4a In the left pane click *Protocol Settings*.

The settings on the Protocol Settings property page are used globally.

4b Specify SNMP Protocol Version and community string.

4c Click *Apply*.

### 5.2 Overriding Global Communication Settings

To override the global communication settings for a particular host, you can establish custom settings:

1 In the *Explorer* pane, expand the *Elements* root element > the top-level *SNMP Integrator* adapter element.

2 Right-click a host, then select *Properties* to open the Status property page.

3 In the left pane, click *Host/Device* to open the Host/Device property page.

4 Click *Communication Settings*.

5 Select the *Use custom settings for this host/device* check box.

6 Specify the poll and integration settings for the host.

   For information on specific settings, see Section 5.1, “Configuring Global Communication & Protocol Settings,” on page 35.

7 Click *Apply* to save changes.

### 5.3 Overriding Global Protocol Settings

To override the global communication settings for a particular host, you can establish custom settings:

1 In the *Explorer* pane, expand the *Elements* root element > the top-level *SNMP Integrator* adapter element.

2 Right-click a host, then select *Properties*.

3 In the left pane, click *Host/Device* to open the Host/Device property page.

4 Click *Protocol Settings*.

5 Select the *Use custom settings for this host/device* check box.

6 Specify the SNMP version, community string for the host, authentication and privacy protocols and passphrases.

7 Click *Apply* to save changes.