

MDS **PuiseNET**

Network Management System

Version 2.2

Enterprise

*An Enterprise Management Tool for GE MDS Products
and other IP-Connected Devices*

MDS 05-6568A01, Rev. A
FEBRUARY 2011



Digital Energy
MDS

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Manual Revision and Accuracy

This manual was prepared to cover a specific version of our product. Accordingly, some screens and features may differ from the actual version you are working with. While every reasonable effort has been made to ensure the accuracy of this guide, product improvements may also result in minor differences between the manual and the product shipped to you. If you have additional questions or need an exact specification for a product, please contact our Customer Service Team using the information at the back of this guide. In addition, manual updates can often be found on the GE MDS Web site at www.gemds.com.

User's Guide
February 2011
Version 2.2

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Introduction

This guide provides the instructions necessary to help MDS PulseNET operators track the status of the devices that the PulseNET system is monitoring.

For general PulseNET navigation instructions, see the *PulseNET Quick Start Guide*. For Administrator role workflow instructions, see the *PulseNET Administrator's Guide*.

This chapter describes the Operator and Administrator roles and provides instructions for logging in to PulseNET.

Perform these steps before following the instructions in this chapter:

- Obtain your PulseNET user name and password from your administrator.
- Ensure that your Web browser has JavaScript functionality enabled.

Understanding PulseNET Roles

There are two PulseNET roles:

- An operator is responsible for tracking the status of the devices that the PulseNET system is monitoring. Operators have access to a restricted set of dashboards.
- An administrator controls the overall functionality of the system and provides support for PulseNET operators. An administrator has a number of responsibilities including creating users, requesting and installing licenses, discovering and authorizing devices, requesting GE support, as well as configuring email settings, report schedules, rule thresholds, and the sample frequency of data collection. For Administrator workflow instructions, see the *PulseNET Administrator's Guide*.

Logging in to PulseNET

This section describes how to log in to the PulseNET browser interface.

Note PulseNET must be running before you can log in.

To log in to PulseNET using a Web browser:

- 1 Open a Web browser instance.

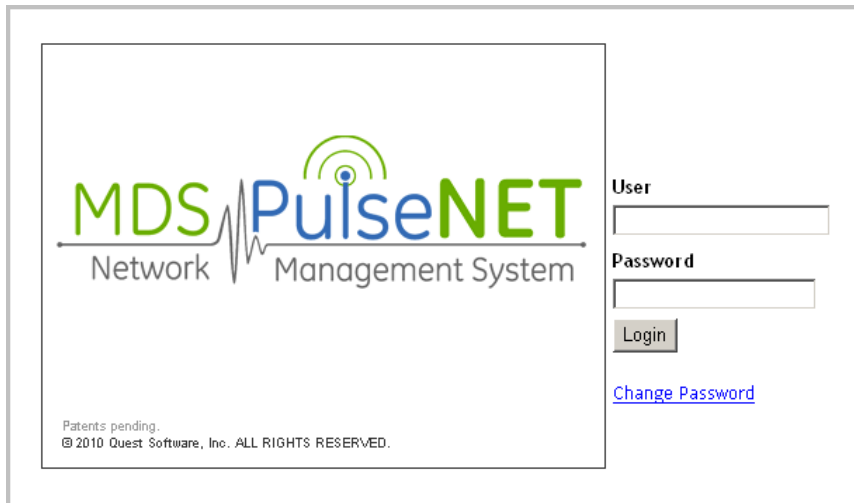
Note For a list of browsers supported by PulseNET, see the *PulseNET Release Notes*.

- 2 Navigate to a URL that uses the following syntax:

`http://<hostname>:<port>/`

where *<hostname>* is the name of the machine that has a running instance of PulseNET and *<port>* is the http port specified during installation (the default is 8080).

The PulseNET login screen appears.



Patents pending.
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- 3 Enter your user name and password on the login screen.
- 4 Click **Login**.

As an operator, the Summary dashboard is the first dashboard that you see. For information about that dashboard, see “[Summary Dashboard](#)” on page 11.

To log in to PulseNET from the GUI:

- 1 Depending on where you installed the program icons, choose **Start > Programs > GE MDS > PulseNET 2.2 > PulseNET Console**.
- 2 Enter a valid username and password and click **Login**.

Working with PulseNET

This chapter describes the PulseNET Operator role user interface and workflows.

Note On some of the Operator role views, characters at the end of device names may be cut off, if space is limited.

Summary Dashboard

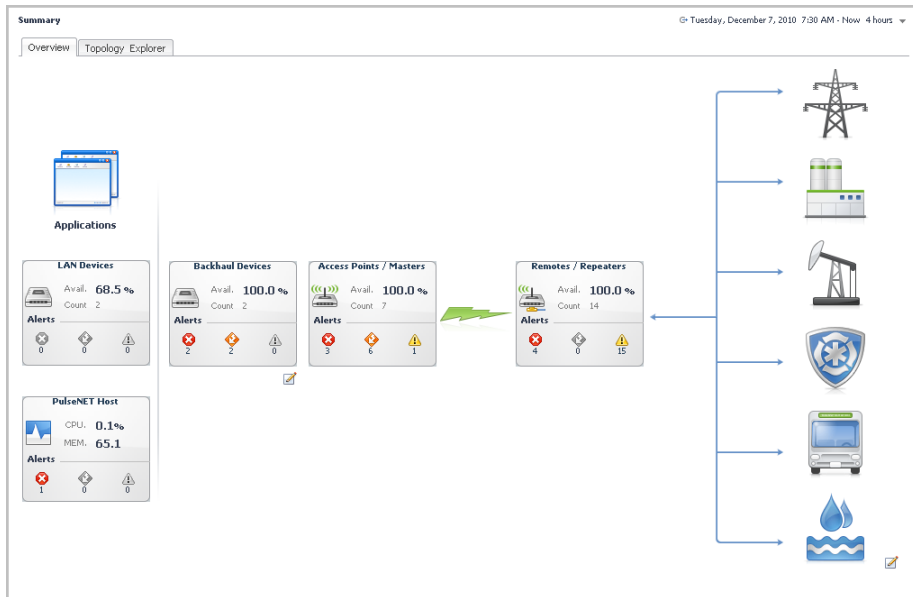
As a PulseNET operator, the first dashboard you see when you log in to PulseNET is the Summary dashboard. The appearance of the Summary dashboard is configured by a PulseNET administrator.

Note The Summary dashboard is automatically refreshed every two minutes.

The Summary dashboard has two tabs: the [Overview Tab](#) and the [Topology Explorer Tab](#).

Overview Tab

The Overview tab displays an end-to-end diagram of the industrial communications infrastructure.



The industrial communications segments are illustrated on the right side of the Overview tab. Data is transported from those segments to remotes through cell relays. On the Overview tab, the cell relays are represented by arrows.

To the left of the cell relay arrows, the Overview tab presents you with a snapshot of the state of all of the remotes that PulseNET is monitoring. For more information about snapshots, see “[Snapshots](#)” on page 13.

Each remote is connected to an access point. One access point may be connected to several hundred remotes. To the left of the Remotes snapshot, the Overview tab presents you with a snapshot of the state of all of the access points that PulseNET is monitoring.

Access points are connected over a network to various applications (for example, PulseNET for monitoring), which are represented by the applications icons on the left side of the Overview tab. A snapshot of the state of the PulseNET application is provided among the applications icons.

PulseNET can also monitor backhaul devices, which provide connection between access points and the applications end of the industrial communications infrastructure, and LAN devices. A snapshot of the state of all the backhaul devices PulseNET is monitoring is provided to the left of the Access Points snapshot and a snapshot of the state of all the LAN devices PulseNET is monitoring is provided among the applications icons.

Note The Backhaul Devices snapshot is only displayed if an administrator has configured it to be displayed.

Snapshots

The snapshot views (for example, the Access Points snapshot) on the Overview tab provide a snapshot of the state of all of the devices of a particular type that PulseNET is monitoring.



The percentage value on each snapshot indicates the average availability of all monitored devices of that type (for example, remotes) over a configurable time range. For information about how to configure the time range, see the *PulseNET Quick Start Guide*. The default time range is the last four hours.

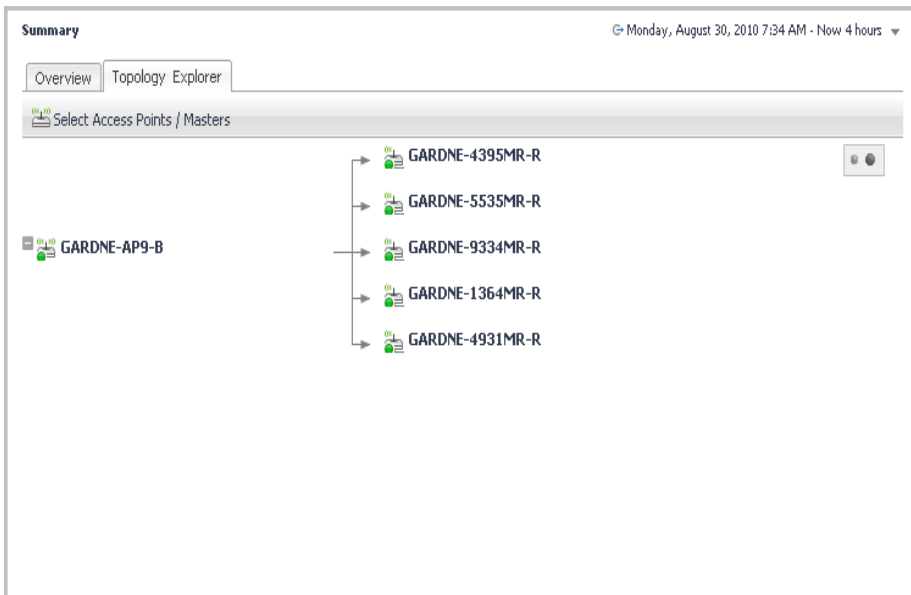
Note If the devices that PulseNET is monitoring are newly authorized, you do not see any data until PulseNET performs the next data collection.

In the center of each snapshot, under the heading, is a count that indicates the number of devices of that type that are being monitored by PulseNET. Click the icon on the left side of the snapshot to navigate to the Role Summary view for the corresponding device type. For more information about Role Summary views, see “[Role Summary Views](#)” on page 15.

Toward the bottom of each snapshot, there are three alert icons—fatal, critical, and warning. Below each is the number of alerts of that severity, for the corresponding device type, that exists in the PulseNET system. Click an alert icon or number to navigate to the Alert Browser. The Alert Browser lists the alerts that correspond to the icon or number you click. For more information about the Alert Browser, see “[Alert Browser](#)” on page 26.

Topology Explorer Tab

You may want to follow the collected data of a few specific devices for a period of time (for example, while maintenance activity is being performed on those devices). You can do this by mapping the devices using the Topology Explorer.



To map devices using the Topology Explorer:

- 1 From the Summary dashboard, click the **Topology Explorer tab**.
- 2 Click **Select Access Points**.
The Access Points Selection dialog box appears.
- 3 On the dialog box, select one or more access points from the list.

4 Click Map.

The access point(s) and any associated remote(s) are displayed in a relational diagram in the Topology Explorer.

You navigate within the Topology Explorer in the same way that you navigate within the Topology Viewer. For a description of this navigation, see “Topology Viewer” on page 30.

Role Summary Views

From any of the device snapshots on the Summary dashboard, click the icon on the left or the title of the snapshot to navigate to the corresponding Role Summary view.

The screenshot shows a web interface titled "Remotes / Repeaters" with a search bar and a table of device data. The table includes columns for Health, Device Name, Device Model, IP Address, Roundtrip Time (ms), RSSI (dBm), SNR (dB), Uplink Modulation, Downlink Modulation, Availability (%), Last Poll, and Health History. The data rows list various devices like DENVER-API-RM211-R, DENVER-API-RM212-R, DENVER-API-RM213-R, DENVER-M900-RM222-R, DENVER-M900-RM223-R, Inet1-RM-201, Inet1-RM-202, Inet1-RM-203, Inet1-RM-205, Inet1-RM-207, Inet2-RM-208, Inet2-RM-209, Merc3650-RM-215, and Merc900-RM-219.

Health	Device Name	Device Model	IP Address	Roundtrip Time (ms)		RSSI (dBm)		SNR (dB)		Uplink Modulation	Downlink Modulation	Availability (%)	Last Poll	Health History
				Current	Average	Current	Average	Current	Average					
⚠	DENVER-API-RM211-R	MDS Mercury 3650	10.0.0.211	187	77	-	0.00	-	0.00	QAM16 3/4	QAM16 3/4	100	Dec 8, 2010 12:41:02 PM	🟢🟢🟢
⚠	DENVER-API-RM212-R	MDS Mercury 3650	10.0.0.212	172	74	-	0.00	-	0.00	QAM16 3/4	QAM16 3/4	100	Dec 8, 2010 12:41:02 PM	🟢🟢🟢
⚠	DENVER-API-RM213-R	MDS Mercury 3650	10.0.0.213	172	76	-	0.00	-	0.00	QAM16 3/4	QAM16 3/4	100	Dec 8, 2010 12:41:02 PM	🟢🟢🟢
❌	DENVER-M900-RM222-R	MDS Mercury 900	10.0.0.222	187	76	-	0.00	-	0.00	QPSK 1/2	QAM16 3/4	100	Dec 8, 2010 12:41:02 PM	🔴
❌	DENVER-M900-RM223-R	MDS Mercury 900	10.0.0.223	187	77	-	0.00	-	0.00	BPSK 1/2	QAM16 3/4	100	Dec 8, 2010 12:41:02 PM	🔴
⚠	Inet1-RM-201	MDS INET 900	10.0.0.201	187	75	-	0.00	-	0.00	-	-	100	Dec 8, 2010 12:41:02 PM	🟢🟢🟢
⚠	Inet1-RM-202	MDS INET 900	10.0.0.202	172	76	-	0.00	-	0.00	-	-	100	Dec 8, 2010 12:41:02 PM	🟢🟢🟢
⚠	Inet1-RM-203	MDS INET 900	10.0.0.203	172	75	-	0.00	-	0.00	-	-	100	Dec 8, 2010 12:41:02 PM	🟢🟢🟢
⚠	Inet1-RM-205	MDS INET 900	10.0.0.205	172	75	-	0.00	-	0.00	-	-	100	Dec 8, 2010 12:41:02 PM	🟢🟢🟢
❌	Inet1-RM-207	MDS INET-II 900	10.0.0.207	172	73	-	0.00	-	0.00	-	-	100	Dec 8, 2010 12:41:02 PM	🔴
⚠	Inet2-RM-208	MDS INET-II 900	10.0.0.208	172	75	-	0.00	-	0.00	-	-	100	Dec 8, 2010 12:41:02 PM	🟢🟢🟢
⚠	Inet2-RM-209	MDS INET-II 900	10.0.0.209	172	74	-	0.00	-	0.00	-	-	100	Dec 8, 2010 12:41:02 PM	🟡
❌	Merc3650-RM-215	MDS Mercury 3650	10.0.0.215	172	75	-	0.00	-	0.00	BPSK 1/2	QAM16 1/2	100	Dec 8, 2010 12:41:02 PM	🔴
⚠	Merc900-RM-219	MDS Mercury 900	10.0.0.219	187	77	-	0.00	-	0.00	BPSK 1/2	QAM16 3/4	100	Dec 8, 2010 12:41:02 PM	🟢🟢🟢

A Role Summary view displays a list of devices and provides information (configuration information such as the name, location, and IP address, along with some metrics) about each device.

Note Role Summary views are automatically refreshed every two minutes.

The presence of the Failover icon next to the device name indicates that the failover device is now the operational device. For information on how to configure access point failover, see the *PulseNET Administrator's Guide*.

Note Access point failover is only supported on Mercury access points.

You can use the menu next to the Search utility at the top right of the table to show or hide columns.

Click any column heading to sort the table by that column. An arrow next to the column heading indicates whether the list is sorted in ascending or descending order.

Click any configuration value to navigate to the Detail view for the device. For information about Detail views, see “[Detail Views](#)” on page 18.

The last poll time is the last time that a successful performance, configuration or availability collection completed for the device.

Note The Detail view for the device displays the last time that a successful configuration poll completed for the device, toward the top right of the view.

Hover over or click any metric value to see a chart that plots the metric over a specific interval. The time over which any metric is plotted on a chart and over which any average value is calculated depends on the zonar setting. For information about the zonar, see the *PulseNET Quick Start Guide*.

Note For current and average values, current is the most recently known value within the configured time period and average is an average of the collected values over the course of the time period.

In the Health column, there is an icon (warning, critical, or fatal) that represents the health of the device. Click the icon to open a dialog box that displays the outstanding alerts for that device. From this dialog box, you can acknowledge and clear alerts. For information about acknowledging and clearing alerts, see “[Alert History Dialog Box](#)” on page 28.

In the Health History column, there is a bar that represents the health history of the device. The period of time for which health history is shown corresponds to the zonar setting. For information about the zonar, see the *PulseNET Quick Start Guide*. Click the health history bar to open a dialog box that displays a detailed health history bar graph. Click the bar graph to open a dialog box that displays all of the outstanding alerts for the

device. From this dialog box, you can acknowledge and clear alerts. For information about acknowledging and clearing alerts, see “[Alert History Dialog Box](#)” on page 28.

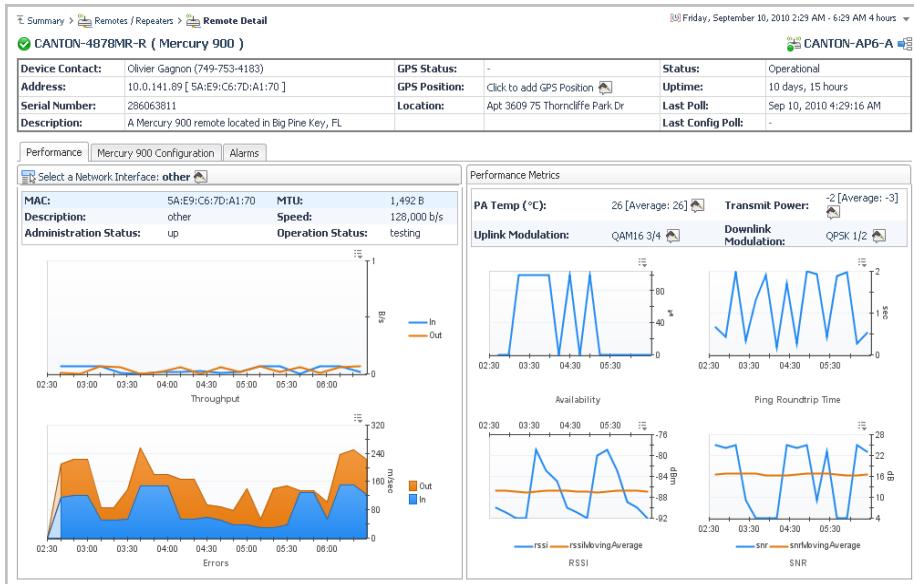
In the Maintenance column, which is only available on backhaul devices, access points and remotes Role Summary views, the maintenance window status of the device is displayed. This indicates whether or not the device is presently within a maintenance window (that is, PulseNET is not collecting data from the device). A ‘Yes’ in the column indicates that the device is within a maintenance window. For information about configuring maintenance windows, see “Working with Devices” in the *PulseNET Administrator’s Guide*.

The last column in each row is a link to the Topology Viewer. For more information about the Topology Viewer, see “[Topology Viewer](#)” on page 30.

Note If you learn that the configuration for a device has changed and you do not have the information you need to manually edit the configuration, your administrator can perform discovery again to acquire the new configuration information. Discovery is documented in the *PulseNET Administrator’s Guide*.

Detail Views

A Detail view provides the configuration and performance details for a device.



Important Much of the information provided on a Detail view is dependent on the time range or zonal setting. For information about the time range, see the *PulseNET Quick Start Guide*.

Note A Detail view checks for new data every two minutes and is automatically refreshed if new data is available.

The Detail view is divided into two panes: the Configuration pane (at the top of the view) and the Metrics pane (below the Configuration pane).

The Configuration pane displays configuration information such as the IP address, serial number, and last poll time for the device. With the exception of the GPS position, which is not available for all devices, this information is not interactive. Click the GPS position cell, if available, to add the GPS position and then click **Save**.

Note For some devices, the GPS position can be collected. Where this is the case, any GPS position you add is overwritten when that data is collected from the device.

Note If you learn that the configuration for a device has changed and you do not have the information you need to manually edit the configuration, your administrator can perform discovery again to acquire the new configuration information. Discovery is documented in the *PulseNET Administrator's Guide*.

When the failover device for an access point is configured in PulseNET and failover occurs, the device identity information (device name, serial number, location, and so on) displayed in the Configuration pane does not change; that is, the device identity information for the primary access point is still displayed. However, PulseNET now polls the failover device for availability and performance data.

The presence of the Failover icon, next to the device name on the Configuration pane, indicates that the failover device is now the operational device. Also, the IP address of the failover device is now displayed.

For information on how to configure access point failover, see the *PulseNET Administrator's Guide*.

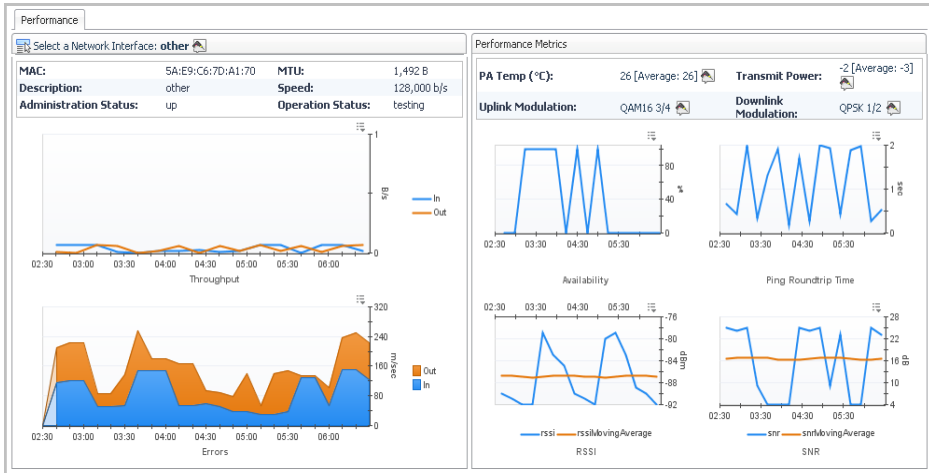
Note Access point failover is only supported on Mercury access points.

The Metrics pane has multiple tabs:

- [Performance Tab](#)
- [Device Configuration Tab](#)
- [Remotes Connected Tab](#)
- [Network Interfaces Tab](#)
- [Alerts Tab](#)
- [Change Diary Tab](#)

Performance Tab

The Performance tab provides a number of metrics and graphs that pertain to the performance of the device.



If you hover the cursor over a particular spot on a graph, you are shown the exact value for that spot.

Note The Errors graph displays aggregate values.

You can change a graph from one type to another to view the displayed information in a different format, zoom in on a graph, and export a graph. For information about working with graphs, see the *PulseNET Quick Start Guide*.

Device Configuration Tab

This tab is only available in remote and access point Detail views. The Device Configuration tab provides additional configuration information about the device.

Mercury 900 Configuration				Channel Details (Commit: False)	
IP Address:	10.0.141.89	Device Auth Mode:	IEEE 802.1	Channel 0:	Disabled
SNMP Support:	1, 2c	HTTP Auth Mode:	Basic	Channel 1:	Enabled
		User Auth Method:	Local	Channel 2:	Enabled
		User Fallback Mode:	Local	Channel 3:	Disabled
Network Name:	CANTON	Ethernet Port:	Enabled	Channel 4:	Enabled
Encryption:	Enabled	VLAN:	Disabled	Channel 5:	Enabled
Telnet Access:	Unavailable	Frequency Mode:	Static Hopping	Channel 6:	Enabled
SSH Value:	Available <input type="checkbox"/>	Hop Pattern:	d	Channel 7:	Enabled
HTTP Access:	Available: https <input type="checkbox"/>	Firmware Version:	3.5.0	Channel 8:	-
				Channel 9:	Disabled
				Channel 10:	-
				Channel 11:	Enabled
				Channel 12:	Enabled
				Channel 13:	Disabled

Communicating with the Device

If a device is configured to allow communication through Telnet, SSH, or HTTP, the Device Configuration tab provides access to the device through a corresponding link, located toward the bottom left of the tab.

To use the Telnet or SSH link, you must first register an appropriate protocol handler.

On Linux, you register protocol handlers with your Web browser. For more information about how to register a protocol handler with your Web browser, consult your Web browser's Help or online support.

On Windows, you register protocol handlers with the operating system. For more information about registering a protocol handler on Windows, search (for example: "application protocol handler") the MSDN Library at <http://msdn.microsoft.com>. There are also open source tools (for example, UrlConf) available that make the task of registering a protocol handler on Windows easier.

Remotes Connected Tab

This tab is only available in access point Detail views. The Remotes Connected tab lists the PulseNET-authorized remotes that are connected to the access point.

Remotes Connected: 5 of 256

Only 5 remote(s) are currently authorized. Contact your administrator to authorize monitoring of remotes for this access point.

Health	Device Name ^	Device Model	IP Address	Roundtrip Time (ms)		RSSI (dbm)		SNR (dB)		Uplink Modulation	Downlink Modulation	Availability (%)	Last Poll	Health History
				Current	Average	Current	Average	Current	Average					
✓	MONONA-1996MR-R	Mercury 900	10.0.140.43	1777	1171	-80.0	-86.8	23	16	QAM64 3/4	QPSK 3/4	100	Aug 30, 2010 11:52:13 AM	✓
✓	MONONA-6244MR-R	Mercury 900	10.0.140.171	1337	1047	-80.0	-86.8	23	16	QAM64 2/3	QPSK 3/4	100	Aug 30, 2010 11:52:13 AM	✓
✓	MONONA-6538MR-R	Mercury 900	10.0.141.79	233	938	-80.0	-86.8	23	16	QAM64 3/4	QPSK 3/4	100	Aug 30, 2010 11:52:13 AM	✓
✓	MONONA-7132MR-R	Mercury 900	10.0.142.26	763	1064	-80.0	-86.8	23	16	QAM64 3/4	QAM64 3/4	100	Aug 30, 2010 11:52:13 AM	✓
✓	MONONA-7873MR-R	Mercury 900	10.0.140.33	329	873	-80.0	-86.8	23	16	QAM64 2/3	QAM16 1/2	100	Aug 30, 2010 11:52:13 AM	✓

Click a remote to navigate to the Detail view for that device.

Network Interfaces Tab

This tab is only available in the backhaul and LAN devices Detail views. The Network Interfaces tab displays the list of network interfaces for the device and provides information (configuration information along with some metrics) about each interface.

Interface Name ^	Admin	Status	Operational	Availability (%)	Utilization (%)		Errors In		Errors Out		Speed	MAC Address	Interface Type
					Current	Average	Current	Average	Current	Average			
LAN	✓	✗	✗	-	-	-	0	0	0	0	0 bps		ethernet
Management	✓	✓	✓	-	-	0	0	0	0	0	100 Mbps	00:15:67:35:1e:18	other
Radio	✓	✓	✓	-	-	-	0	0	0	0	12 Mbps		wireless
T1	✗	✗	✗	-	-	-	0	0	0	0	1.536 Mbps		other

For each network interface in the list, the tab provides the following information by default:

- The name of the network interface.
- The status (operational or not) of the network interface.
- The availability of the network interface as a percentage of the current time range.
- The current and average utilization for the network interface.

- The current and average errors in for the network interface.
- The current and average errors out for the network interface.
- The speed of the network interface in bits per second.
- The MAC address of the network interface.
- The type of network interface.

Hover the cursor over any metric value to see a chart that plots the metric over a specific interval. The time over which any metric is plotted on a chart and over which any average value is calculated depends on the zonar setting. For information about the zonar, see the *PulseNET Quick Start Guide*.

Note For current and average values, current is the most recently known value within the configured time period and average is an average of the collected values over the course of the time period.

Alerts Tab

The Alerts tab lists the outstanding alerts for the device.



The screenshot shows a window titled "Alerts" with a sub-header "1 Outstanding Alert(s) for 9740". Below the header is a table with columns: Select All, Unselect All, Acknowledge, Clear, Sev, Device Name, Time, Ack..., Cleared, Message, and Origin. A single alert is listed with a severity of "Warning", device name "9740", time "12/8/10 2:48 PM", and message "A Warning alert was received from device 1949741 with message: Standby radio not available. Dink-Alert".

Select All	Unselect All	Acknowledge	Clear	Sev	Device Name	Time	Ack...	Cleared	Message	Origin
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Warning	9740	12/8/10 2:48 PM	No	No	A Warning alert was received from device 1949741 with message: Standby radio not available. Dink-Alert	

The Alerts tab displays the same information for each alert and functions in the same way as the Alerts List pane of the Alerts Browser. For more information, see “[Alerts List Pane](#)” on page 27.

From the Alerts tab, you can acknowledge and clear alerts as you would using the Alert History dialog box. For information about acknowledging and clearing alerts, see “[Alert History Dialog Box](#)” on page 28.

Change Diary Tab

The Change Diary tab provides a history of the configuration changes for the device.

Component Name	Changes
DENVER-AP1-RM211-R	3
Device	7
Network Interfaces	0
eth1	1
eth0	1
msd0	1

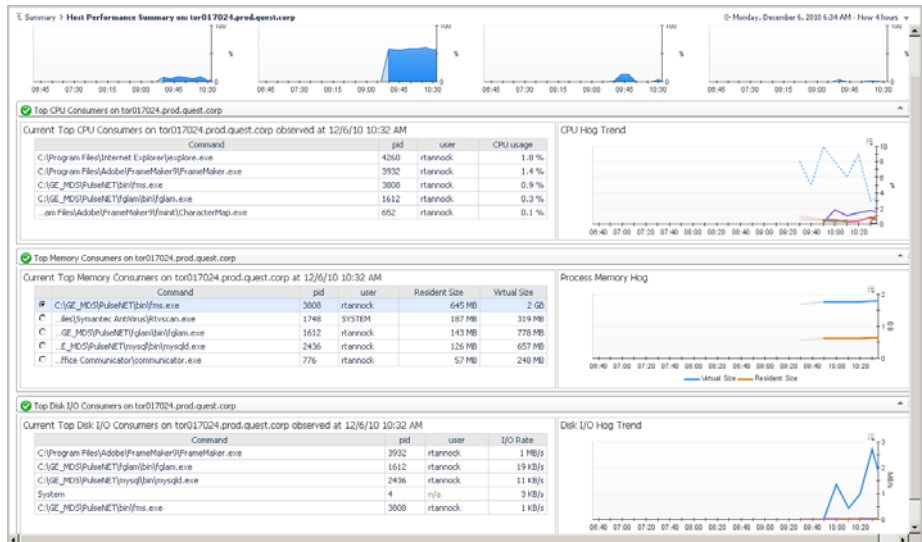
Time	Property	Old Value	New Value
12/8/10 1:05 PM	Network Interfaces	n/a	null
12/8/10 1:05 PM	Network Interfaces	n/a	null
12/8/10 1:05 PM	Network Interfaces	n/a	null

On the left of the Change Diary tab, the components (the device and its network interfaces) are listed. To the right of each component, the number of configuration changes that have been made to the component is displayed.

On the right of the Change Diary tab, the individual changes (the changed property with old and new values) are listed in the order (with the date and time) they occurred. Click a component on the left to see a list of its changes on the right.

Host Performance Summary View

From the PulseNET Host snapshot on the Summary dashboard, click the icon on the left or the title of the snapshot to navigate to the corresponding Host Performance Summary view.



The Host Performance Summary view provides a number of metrics and graphs that pertain to the performance of the PulseNET Host.

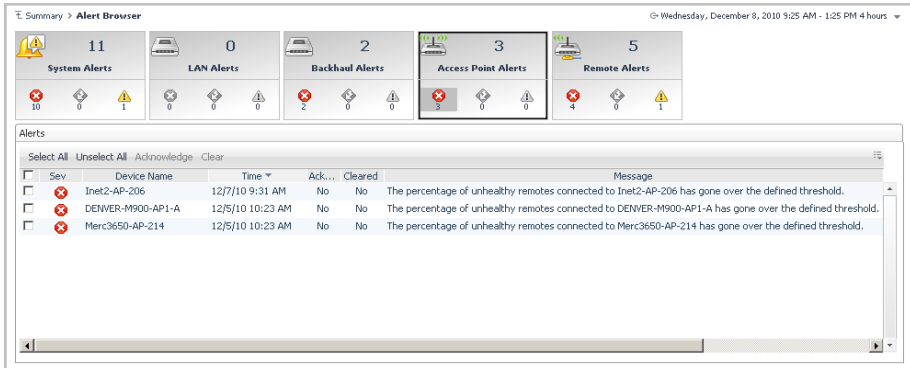
If you hover the cursor over a particular spot on a graph, you are shown the exact value for that spot.

Click the radio button corresponding to a top memory consumer to view the Process Memory Hog graph for that consumer.

You can change a graph from one type to another to view the displayed information in a different format, zoom in on a graph, and export a graph. For information about working with graphs, see the *PulseNET Quick Start Guide*.

Alert Browser

From the Overview tab on the Summary dashboard, on any of the snapshot views, click one of the Alert icons or counts to navigate to the Alert Browser.



The Alert Browser is divided into two panes: the [Tiles Pane](#) at the top of the screen and the [Alerts List Pane](#) below it.

Tiles Pane

The Tiles pane has the following tiles:

- The **System Alerts** tile
- The **LAN Devices Alerts** tile
- The **Backhaul Devices Alerts** tile
- The **Access Point Alerts** tile
- The **Remote Alerts** tile

Note The Backhaul Devices Alerts tile is only displayed if an administrator has configured the Backhaul Devices snapshot to be displayed on the Overview tab of the Summary dashboard. For more information about the Overview tab, see [“Overview Tab”](#) on page 12.

Each tile provides a snapshot of the corresponding outstanding alerts in the PulseNET system. Click the icon at the top left of a tile or the total number of alerts at the top right

of a tile to view a list of all the corresponding outstanding alerts. The list appears in the Alerts List pane below. Click an alert icon (fatal, critical, or warning) or the corresponding number of alerts to view a list of the corresponding outstanding alerts of that severity.

Note The total number of system alerts may exceed the sum of all device alerts. That is because other alerts (such as licensing alerts) are included in the system alert total.

Alerts List Pane

By default, the Alerts List pane lists the outstanding alerts for the device type (for example, remotes) and status indicator (fatal, critical, or warning) you select from one of the snapshots on the Summary dashboard or from the Tiles pane. For example, if you click a warning status indicator on the Access Points snapshot, the Alerts List pane lists all of the outstanding warning alerts for the access points PulseNET is monitoring.

For each alert in the list, the Alerts List pane provides the following information by default:

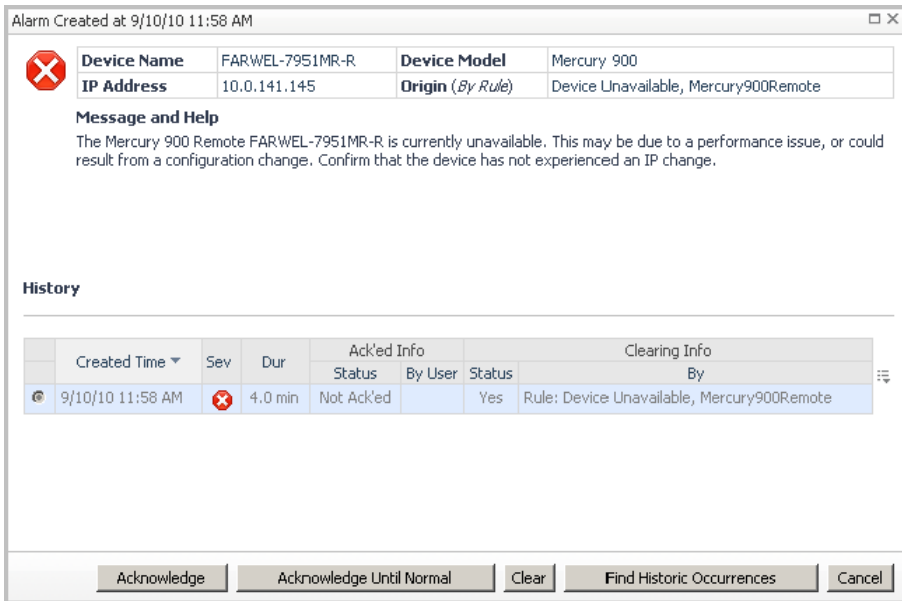
- An icon that represents the severity (fatal, critical, or warning) of the alert.
- The name of the device for which the alert was raised.
- The time at which the alert was raised.
- Whether or not the alert has been acknowledged.
- Whether or not the alert has been cleared.
- The alert message.
- The rule that originated the alert.

Click any value in the row for an alert to open the Alert History dialog box. For more information, see the “[Alert History Dialog Box](#)” subsection in this chapter.

Click a column heading to sort the table by that column. An arrow next to the column heading indicates whether the list is sorted in ascending or descending order.

Alert History Dialog Box

The Alert History dialog box displays the history of the alert.



On the Alert History dialog box, you can perform the following actions:

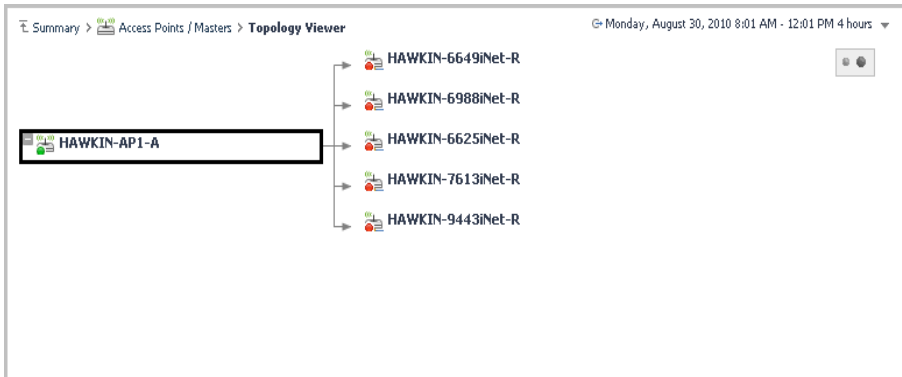
- Acknowledge** — This action is irreversible. Select the alert(s) you want to acknowledge and then click **Acknowledge**. For an acknowledged alert, if you hover the cursor over the acknowledged status for the alert, a dwell appears that displays the name of the user who acknowledged the alert as well as the time and date the alert was acknowledged. PulseNET stores this information in an audit report as well. Also, PulseNET displays 'Yes' in the Ack'd column for acknowledged alert(s). If an acknowledged alert fires again at a later time (usually because the condition has occurred again), PulseNET displays 'No' in the Ack'd column for that alert.
- Acknowledge Until Normal** — This option is available for outstanding (that is, not-yet-cleared) alerts only. The alert and all consecutive alerts fired by the same rule on the same object are acknowledged until the first alert fired after the alert source returns to a normal state. Select an alert you want to acknowledge until normal and then click **Acknowledge Until Normal**. Acknowledged Until Normal

and your user name appear in the Ack'ed Info column on the Alert History dialog box.

- **Clear** — In most cases, PulseNET clears each alert when the condition that triggered it changes. For example, an alert fires when a metric for a monitored device exceeds a certain threshold. If the metric's value drops below this threshold, PulseNET clears the original alert. If the alert condition occurs again, the alert reappears. You should only clear alerts when they do not clear themselves. Select the alert(s) that you want to clear and then click **Clear**. If the alerts list is filtered to show only current alerts, the cleared alerts are removed from the list. If the list is filtered to show historical alerts, the cleared alerts appear dimmed and PulseNET displays 'Yes' in the Cleared column for those alerts.
- **Find Historical Occurrences** — Click **Find Historical Occurrences** to cause the Alert Historical Occurrences view to appear. This view displays the historical occurrences of an alert. The Alert Historical Occurrences view shows a maximum of 15 occurrences, starting from the beginning of the current time range. Use << **Get More** and **Get More** >> to scroll through more historical occurrences.
Note If there are 15 or fewer historical occurrences, Get More links are not provided.
- **Cancel** — Click **Cancel** to close the dialog box.

Topology Viewer

The Topology Viewer provides a diagram that shows the relationship between an access point and any connected remotes.



You can access the Topology Viewer from either of the remotes or access points Role Summary views by clicking the Topology Viewer icon in the row for a remote or access point. For information about the Remotes and Access Points views, see “[Role Summary Views](#)” on page 15.

You can also access the Topology Viewer from any remote or access points Detail view by clicking the Topology Viewer icon at the top right of the view. For information about Detail views, see “[Detail Views](#)” on page 18.

If you click the Topology Viewer icon for a remote, in the Topology Viewer that remote is marked with a black rectangle. If the remote is connected to an access point to which other remotes are also connected, those relationships are shown in the diagram.

If you click the Topology Viewer icon for an access point, in the Topology Viewer the access point is marked with a black rectangle and displayed at the left. If the access point is connected to remotes, those relationships are shown in the diagram.

You can alternate between the Minimized and Normal zoom levels using the Zoom Level controls at the top right of the Topology Viewer.

When the topology diagram is quite large, a mini-map appears next to the Zoom Level controls. Click and drag the cursor within the mini-map to pan around the topology diagram.

Hover the cursor over an access point or remote in the Topology Viewer to view configuration details for the device. Click an access point or remote to navigate to the Detail view for the device. For information about Detail views, see “[Detail Views](#)” on page 18.

Note The Topology Viewer is automatically refreshed every two minutes.

Working with PulseNET Reports

This chapter describes how to use the Manage Reports view (**Homes > Manage Reports**).

Execution	Name	Template	Schedule	Format	Size (bytes)
Oct 1, 2010 12:00:00 AM	AP Overview 1	Access Point/Master Overview (Report)	Beginning of the month	PDF	Run now...
Sep 28, 2010 3:00:00 AM	Test Run 1	Availability For All Devices (Report)	Off-Hours Database Maintenance	PDF	Run now...
Sep 11, 2010 12:00:00 AM	Test Run 2	Availability For Monitored Access Points/Masters (Report)	Daily Off Hours	PDF	Run now...

In the Manage Reports view, you can:

- [Sort the Manage Reports List](#)
- [Search for a Generated or Scheduled Report](#)
- [Filter the Manage Reports List](#)
- [Generate a New Report](#)
- [Schedule a Report to Run in the Future](#)
- [Edit an Existing Scheduled Report](#)
- [Enable or Disable an Existing Scheduled Report](#)
- [Download a Generated Report](#)
- [Delete a Generated or Scheduled Report](#)

Sort the Manage Reports List

To sort the Manage Reports list by name or create time, click the **Name** or **Create Time** column headings as required. An arrow beside the column heading indicates the order (ascending or descending) in which the list is sorted.

Search for a Generated or Scheduled Report

Use the Search tool at the top right of the Manage Reports list to search for a specific generated or scheduled report. For instructions on how to use the Search tool, see “Working with Tables” in the *PulseNET Quick Start Guide*.

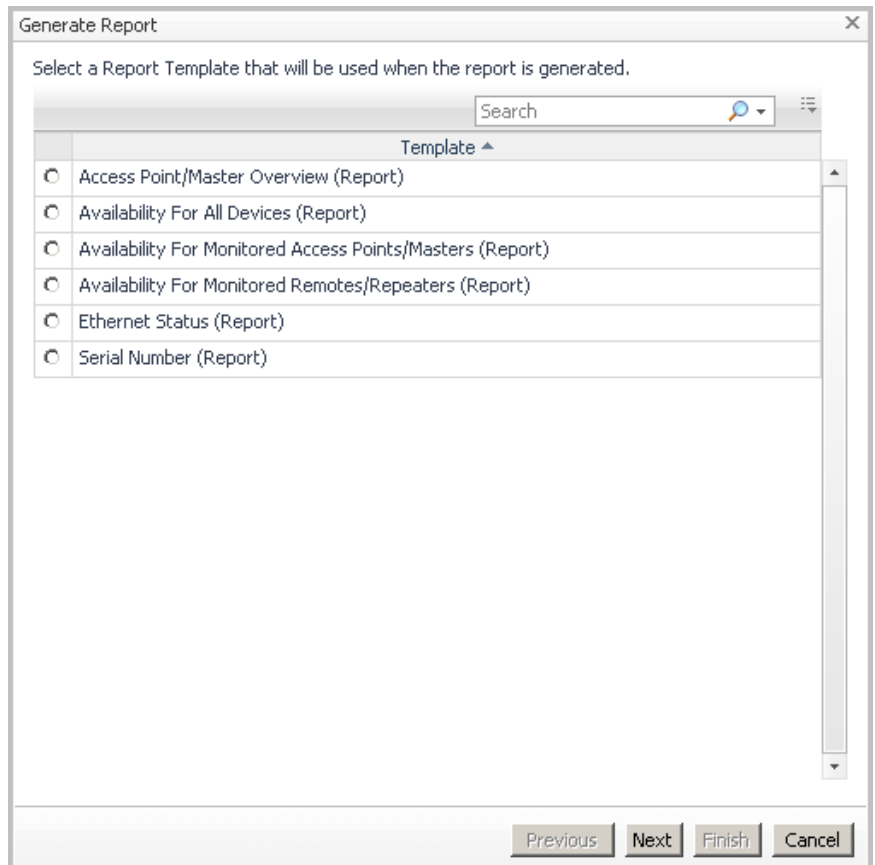
Filter the Manage Reports List

Use the Search tool at the top right of the Manage Reports list to filter the list. For instructions on how to use the Search tool, see “Working with Tables” in the *PulseNET Quick Start Guide*.

Generate a New Report

To generate a new report:

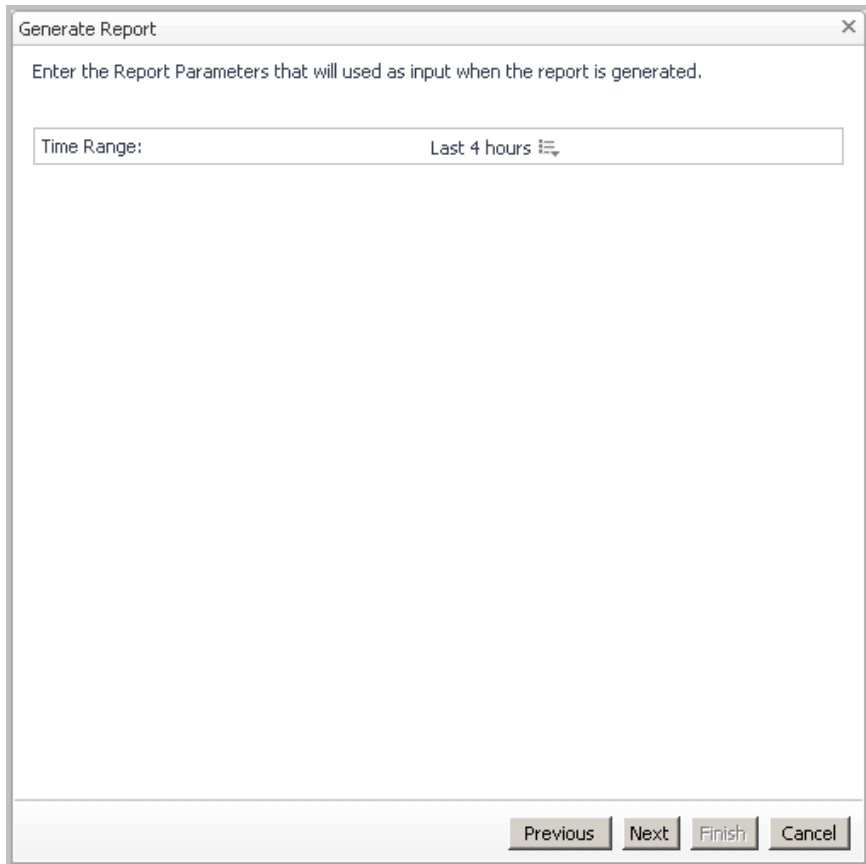
- 1 Click **Generate a Report** at the top left of the Manage Reports view.
A wizard appears and prompts you to select a report template.



Note The Generate Report wizard is also available from the Manage Reports view (Administration > Reporting > Manage Reports).

2 Select a report template and click **Next**.

The wizard provides a description of the report you selected and prompts you to provide report inputs.



Generate Report

Enter the Report Parameters that will used as input when the report is generated.

Time Range: Last 4 hours

Previous Next Finish Cancel

The report inputs provide timeframe context for the report.

Note At any time you can click **Previous** to go back to the previous step.

You can leave the report inputs as they are or tailor the report by specifying report input values according to your requirements. To change an input value, click the **Edit** icon next to the value of the input to access an Edit dialog box. The contents of the dialog box vary depending on the input you are editing. For example, an input can be a time range that determines the range of time over which data will

be reported. For a description of each report input, see “[Report Inputs](#)” on page 51. If you change an input value, click **Set** on the Edit dialog box.

- 3 When you are finished editing the report inputs, click **Next**.

The wizard prompts you to provide administrative information.

Generate Report

Enter the inputs below and click Finish to generate the report.

Name *

Report Format PDF

Email Recipients Disabled: Email Configuration not configured.

Email Recipients

* indicates required field

Previous Next Finish Cancel

- a Enter a name for the report in the first field.
- b Select a format for the report from the drop-down list provided.
- c Provide the list of email addresses that are to receive the report. Separate email addresses with a comma.

4 Click **Finish.**

Once the report is generated, a dialog box appears asking if you would like to download the report now.

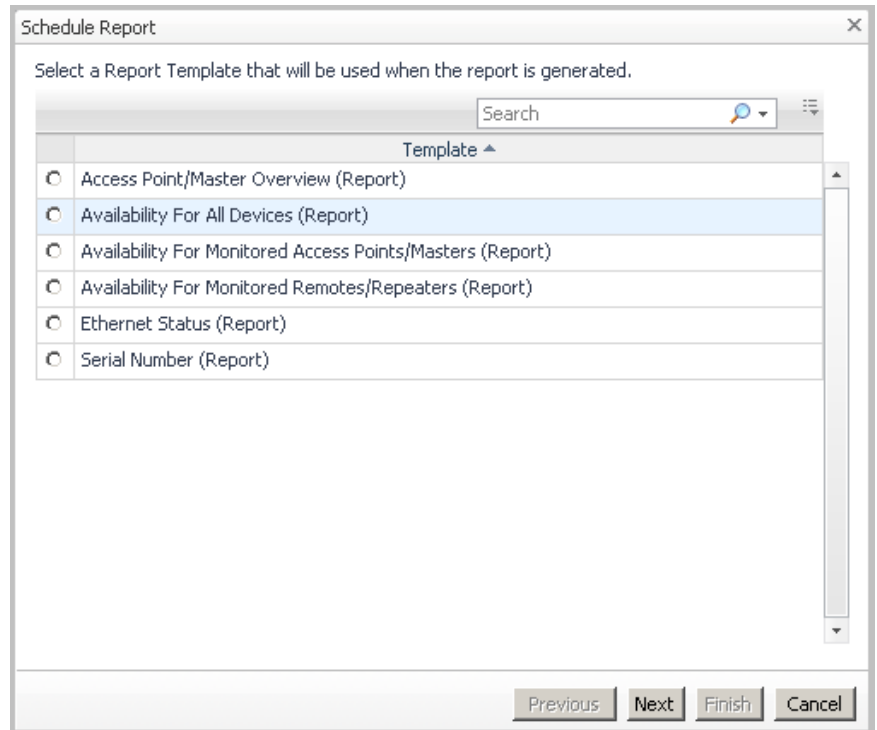
5 Click **Download Now, or click **Cancel** to download the report at another time.**

Note The report is available for downloading in the Manage Reports view (Administration > Reporting > Manage Reports).

Schedule a Report to Run in the Future

To schedule a report:

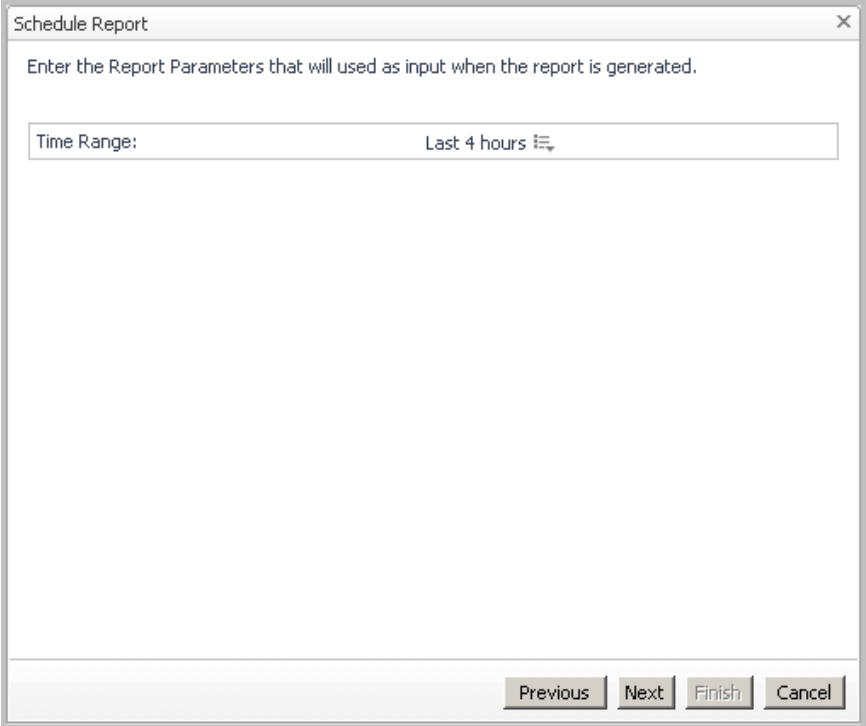
- 1 Click **Schedule a Report** at the top left of the Manage Reports view.
A wizard appears and prompts you to select a report template.



Note The Schedule a Report wizard is also available from the Manage Reports view (Administration > Reporting > Manage Reports).

2 Select a report template and click **Next**.

The wizard provides a description of the report you selected and prompts you to provide report inputs.



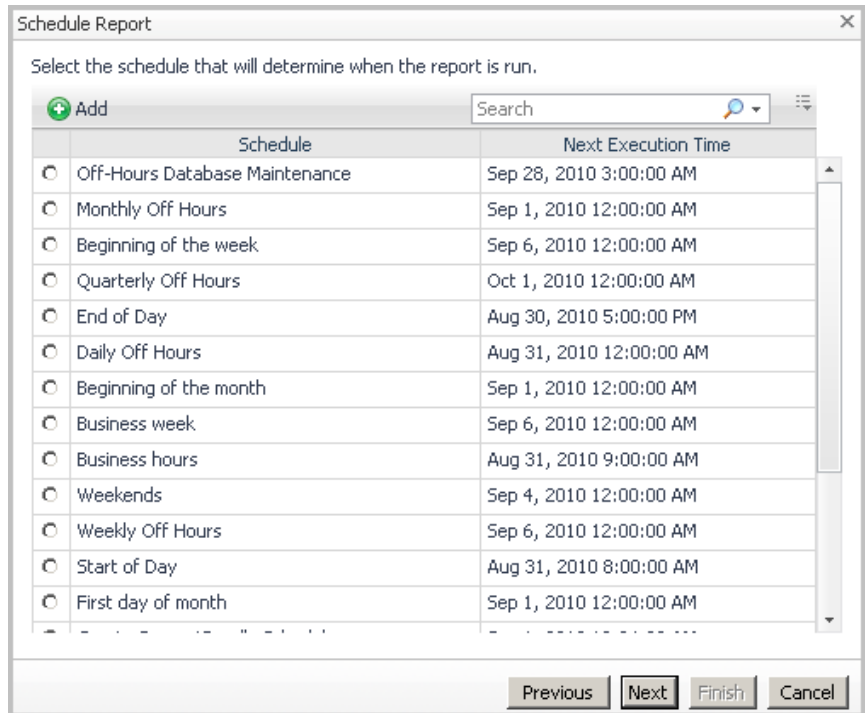
Screenshot of the "Schedule Report" dialog box. The dialog has a title bar with "Schedule Report" and a close button. The main area contains the text "Enter the Report Parameters that will used as input when the report is generated." Below this is a text input field with the label "Time Range:" and the value "Last 4 hours" followed by an edit icon. At the bottom right, there are four buttons: "Previous", "Next", "Finish", and "Cancel".

The report inputs provide timeframe context for the report.

Note At any time you can click **Previous** to go back to the previous step.

You can leave the report inputs as they are or tailor the report by specifying report input values according to your requirements. To change an input value, click the **Edit** icon next to the value of the input to access an Edit dialog box. The contents of the dialog box vary depending on the input you are editing. For example, an input can be a time range that determines the range of time over which data will be reported. For a description of each report input, see "[Report Inputs](#)" on page 51. If you change an input value, click **Set** on the Edit dialog box.

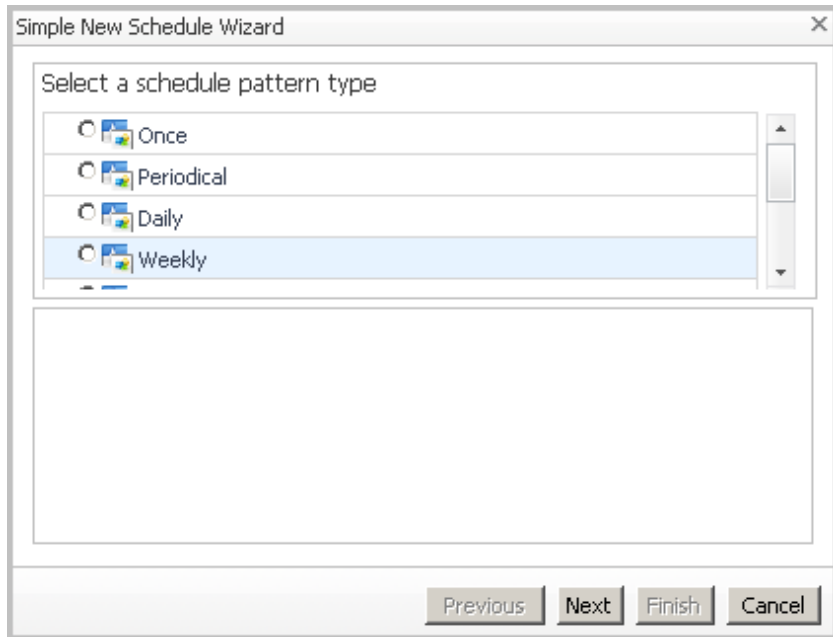
- 3 When you are finished editing the report inputs, click **Next**.
 The wizard prompts you to select a schedule for the report.



If you are an administrator and you want to create your own schedule to add to the list of available schedules:

- a Click **Add**.

The New Schedule Wizard appears.



- b Create your new schedule using the New Schedule Wizard and click **Finish**.

Your schedule is added to the list of available schedules.

Note Only administrators can add new schedules.

- 4 Select a schedule for your report.

You can choose from the following report schedules:

Schedule	Description
Off-hours Database Maintenance	This runs at 3 AM on the 28th day of each month.
Monthly Off Hours	This runs at midnight on the last night of each month.
Beginning of the Week	This runs at midnight every Sunday night.
Quarterly Off Hours	This runs at midnight on the last night of the third month of each quarter.
End of Day	This runs at 5 PM every day.
Daily Off Hours	This runs at midnight every night.
Beginning of the Month	This runs at midnight on the last night of every month.
Business Week	This runs at midnight, every night from Sunday through Thursday.
Business Hours	This runs at 9 AM every weekday.
Weekends	This runs at midnight every Friday and Saturday night.
Weekly Off Hours	This runs at midnight every Sunday night.
Start of Day	This runs at 8 AM every day.
First Day of Month	This runs at midnight on the last night of every month.
Create SupportBundle Schedule	This runs at four minutes past midnight on the first day of every month.
Frequent [Test]	This is a test and runs every five minutes.

Schedule	Description
Hourly	This runs every hour, on the hour.
Beginning of the Day	This runs at midnight every night.
First Day of Week	This runs at midnight every Sunday night.
Daily Database Maintenance	This runs at 2 AM every night.
Custom Schedules	These are any schedule you created using the New Schedule Wizard.

5 Click Next.

The wizard prompts you to provide administrative information.

Schedule Report

Enter the inputs below and select Finish to create the Scheduled Report.

Name *

Report Format PDF

Retain copies 5

Enabled

Email Recipients

* indicates required field

Previous Next Finish Cancel

- a Enter a name for the report schedule in the first field.
- b Select a format for the report from the drop-down list provided.
- c Enter the number of this type of report you want the system to keep.
For example, if you enter 5, the system will save the most recent version of the report along with the 4 previous versions.
- d Click the **Enabled** check box to enable the schedule.
- e Provide the list of email addresses that are to receive the report. Separate email addresses with a comma.

6 Click Finish.

Edit an Existing Scheduled Report

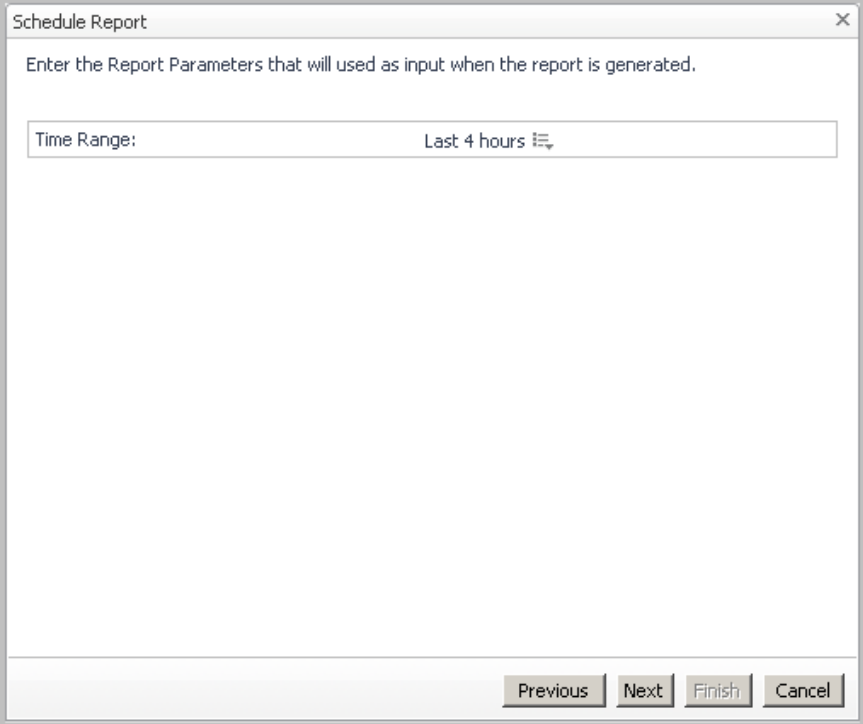
To edit an existing scheduled report:

- 1 Click the report's icon.

A popup appears.


- 2 Click **Edit**.

The Schedule a Report wizard appears and prompts you to provide report inputs.



Schedule Report

Enter the Report Parameters that will used as input when the report is generated.

Time Range: Last 4 hours 

Previous Next Finish Cancel

You can leave the report inputs as they are or tailor the report by specifying report input values according to your requirements. To change an input value, click the **Edit** icon next to the value of the input to access an Edit dialog box. The contents of the dialog box vary depending on the input you are editing. For example, an input can be a time range that determines the range of time over which data will

be reported. For a description of each report input, see “[Report Inputs](#)” on page 51. If you change an input value, click **Set** on the Edit dialog box.

- 3 When you are finished editing the report inputs, click **Next**.

The wizard prompts you to select a schedule for the report.

Schedule Report

Select the schedule that will determine when the report is run.

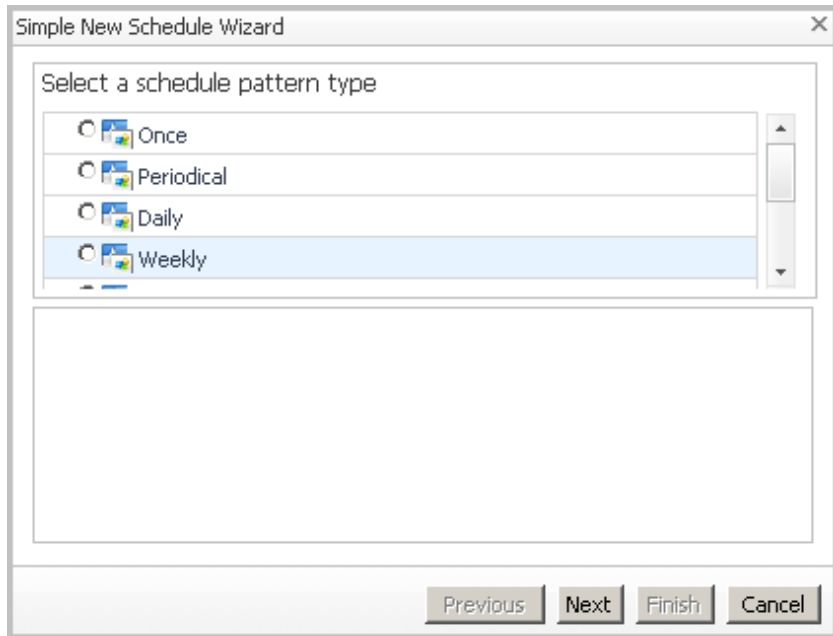
Search

	Schedule	Next Execution Time
<input type="radio"/>	Off-Hours Database Maintenance	Sep 28, 2010 3:00:00 AM
<input type="radio"/>	Monthly Off Hours	Sep 1, 2010 12:00:00 AM
<input type="radio"/>	Beginning of the week	Sep 6, 2010 12:00:00 AM
<input type="radio"/>	Quarterly Off Hours	Oct 1, 2010 12:00:00 AM
<input type="radio"/>	End of Day	Aug 30, 2010 5:00:00 PM
<input type="radio"/>	Daily Off Hours	Aug 31, 2010 12:00:00 AM
<input type="radio"/>	Beginning of the month	Sep 1, 2010 12:00:00 AM
<input type="radio"/>	Business week	Sep 6, 2010 12:00:00 AM
<input type="radio"/>	Business hours	Aug 31, 2010 9:00:00 AM
<input type="radio"/>	Weekends	Sep 4, 2010 12:00:00 AM
<input type="radio"/>	Weekly Off Hours	Sep 6, 2010 12:00:00 AM
<input type="radio"/>	Start of Day	Aug 31, 2010 8:00:00 AM
<input type="radio"/>	First day of month	Sep 1, 2010 12:00:00 AM

If you are an administrator and you want to create your own schedule to add to the list of available schedules:

- a Click **Add**.

The New Schedule Wizard appears.



- b Create your new schedule using the New Schedule Wizard and click **Finish**.

Your schedule is added to the list of available schedules.

Note Only administrators can add new schedules.

- 4 Select a schedule for the report and click **Next**. For a list of available schedules and their descriptions, see “[Schedule a Report to Run in the Future](#)” on page 39. The wizard displays the administrative information for the report.

Schedule Report

Enter the inputs below and select Finish to create the Scheduled Report.

Name *

Report Format PDF

Retain copies 5

Enabled

Email Recipients

* indicates required field

Previous Next Finish Cancel

- 5 **Optional.** Edit the administrative information.
- 6 Click **Finish**.

Enable or Disable an Existing Scheduled Report

To enable or disable an existing scheduled report:

- 1 Click the **Scheduled Report** icon.
A popup appears.
- 2 If you are enabling the scheduled report to run, click **Enable Scheduled Execution**. If you are disabling the scheduled report, click **Disable Scheduled Execution**.

Download a Generated Report

To download a generated report:

- 1 Click the size value for the generated report at the far right of the Manage Reports list.
A dialog box appears.
- 2 Click **Open**.

Delete a Generated or Scheduled Report

To delete a generated or scheduled report:

- 1 Click the check box next to the report's icon to select the report.
The Delete icon becomes enabled.
- 2 Click the **Delete** icon.
A dialog box appears and asks you if you are sure.
- 3 Click **Delete**.

Report Inputs

The following table describes the report inputs.

Note The inputs vary for each report. Not all reports require every input.

Report Input	Description
Number of Months	Type an integer value to denote the number of months.
Time Range	<p>Specify a period of time on which to report. Time range for a metric observation can be specified in various ways, but it is always composed of a range of date-time objects, and a granularity. Select:</p> <ul style="list-style-type: none">• Time Range Type: Choose one:<ul style="list-style-type: none">- Last N (to display the time range for the last <number><unit>) For example, last 2 months.- Calendar Aligned (enter a time range and offset number)- Custom (choose the date range on the calendar)• Unit: Select the timeframe (for example, Year, Month, etc.)• Number/Offset: Enter a value for the time range.• Granularity: Choose one:<ul style="list-style-type: none">- RAW—data observations are shown in the metric history with the smallest available granularity, or a number of milliseconds, for example, 300,000 for 5 minutes.- AUTO—the system will pick the best granularity based on the time range. For example, a numeric value of -2- a specific time interval from the drop-down (for example, 1 minute)
Has Name Like	Returns a list of values matching the string.

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IN CASE OF DIFFICULTY...

If you have problems, comments or questions pertaining to the MDS PulseNET application, please contact GE MDS using one of the methods listed below:

Phone: 585 241-5510

E-mail: gemds.techsupport@ge.com

FAX: 585 242-8369

Web: www.gemds.com