MDS PulseNET
Network Management System

Version 2.2

Enterprise

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

MDS 05-6565A01, Rev. A
FEBRUARY 2011

Digital Energy
MDS

Quick Start Guide

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Third Party Contributions

MDS PulseNET contains some third party components. For a complete list, see the License Credits page in *<INSTALLDIR>\docs\core\pdf*.

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About GE MDS

Over two decades ago, GE MDS began building radios for business-critical applications. Since then, we have installed thousands of radios in over 110 countries. To succeed, we overcame impassable terrain, brutal operating conditions and disparate, complex network configurations. We also became experts in wireless communication standards and system applications worldwide. The result of our efforts is that today, thousands of utilities around the world rely on GE MDS-based wireless networks to manage their most critical assets.

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Thanks to our durable products and comprehensive solutions, GE MDS is the wireless leader in industrial automation—including oil and gas production and transportation, water/wastewater treatment, supply and transportation, electric transmission and distribution and many other utility applications. GE MDS is also at the forefront of wireless communications for private and public infrastructure and online transaction processing. Now is an exciting time for GE MDS and our customers as we look forward to further demonstrating our abilities in new and emerging markets.

As your wireless needs change you can continue to expect more from GE MDS. We'll always put the performance of your network above all. Visit us at www.gemds.com for more information.

GE MDS ISO 9001 Registration

GE MDS adheres to the internationally-accepted ISO 9001 quality system standard.

To GE Customers

We appreciate your patronage. You are our business. We promise to serve and anticipate your needs. We will strive to give you solutions that are cost effective, innovative, reliable and of the highest quality possible. We promise to build a relationship that is forthright and ethical, one that builds confidence and trust.

Related Materials on the Internet—Data sheets, frequently asked questions, application notes, firmware upgrades and other updated information is available on the GE MDS Web site at www.gemds.com.

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.

Quick Start Guide
February 2011
Version 2.2

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Overview

This guide provides an overview of MDS PulseNET Enterprise—describing its purpose, explaining key concepts, and providing instructions for basic navigation.

For specific Administrator role workflow instructions, see the *PulseNET Administrator's Guide*. For specific Operator role workflow instructions, see the *PulseNET User's Guide*.

This chapter explains the purpose of MDS PulseNET, describes the Operator and Administrator roles, and describes each of the PulseNET documents.

What is MDS PulseNET?

MDS PulseNET Enterprise (PulseNET) is a software application used for monitoring devices in Industrial Communications (IC) networks. Each device PulseNET monitors serves a specific function in the network. These functions include acting as a bridge, router, access point, remote, etc. The devices are widely dispersed geographically and operate with very limited bandwidth restrictions.

PulseNET is intended for large-scale operations with a need to monitor up to 25,000 devices.

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. For information about Operator workflows, see the *PulseNET User's Guide*.
- 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, and configuring email settings, report schedules, rule thresholds, and the sample frequency of data collection. For information about Administrator workflows, see the *PulseNET Administrator's Guide*.

Chapter 2, "Getting Started with PulseNET" provides instructions for the PulseNET navigation that is common to both roles.

How Does PulseNET Work?

For PulseNET to be used to monitor devices, an administrator must first perform a few steps:

1. The administrator must acquire a license for the number of devices to be monitored. For information about licensing, see the *PulseNET Administrator's Guide*.
2. The administrator must perform discovery on the network to locate supported devices for PulseNET to monitor. For information about discovery, see the *PulseNET Administrator's Guide*.
3. The administrator must authorize, or apply licensed capacity to, the devices to be monitored. Authorizing a device permanently assigns it to your PulseNET license. For information about authorizing devices, see the *PulseNET Administrator's Guide*.

Note An administrator can authorize a maximum number of devices to monitor that corresponds to the monitoring capacity of the license acquired from GE.

Once an administrator has authorized devices for monitoring, PulseNET will begin polling the authorized devices for configuration, availability, and performance information.

Once PulseNET starts polling, alerts are raised in the system if any of the devices are having problems. The raising of those alerts depends on the configuration of the PulseNET rules. For information about PulseNET rules and alerts, see the *PulseNET Administrator's Guide*.

Note An alert is also raised if your license is close to expiring.

Important Severity icons on the PulseNET interface indicate the level of alert severity. The updating of severity icons is delayed from 10 to 30 seconds.

PulseNET Documentation

The PulseNET documentation set consists of the following:

PulseNET Release Notes

The *PulseNET Release Notes* document (HTML) provides:

- A list of known and resolved issues.
- Workarounds for known issues.
- Installation troubleshooting information, if necessary.
- Late-breaking news about any issues that occurred just as the product was shipping.

Consult this document first, because it may contain modifications to information or procedures described in the other PulseNET documents.

PulseNET Quick Start Guide

The *Quick Start Guide* (PDF and online help) provides an overview of PulseNET—describing its purpose, explaining key concepts, and providing instructions for the basic navigation of PulseNET.

You can consult this guide prior to following the procedures described in the *Administrator's Guide* and the *User's Guide*, or use it as a supplement to these guides.

PulseNET Installation and Setup Guide

The *Installation and Setup Guide* (PDF) includes:

- Installation prerequisites, recommendations, and guidelines.
- Instructions for installing and configuring PulseNET.
- Information about installing and configuring the agent.

PulseNET Administrator's Guide

The *Administrator's Guide* (PDF and online help) is intended to assist PulseNET System Administrators with configuring and managing PulseNET.

This guide provides instructions on how to perform administrative tasks such as creating users, requesting and installing licenses, discovering and authorizing devices, requesting GE support, and configuring email settings, report schedules, rule thresholds, and the sample frequency of data collection.

PulseNET User's Guide

The *PulseNET User's Guide* (PDF and online help) provides the instructions necessary to help PulseNET operators track the status of the devices that the PulseNET system is monitoring.

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Getting Started with PulseNET

This chapter provides instructions for logging into PulseNET, describes the first dashboard you see, and introduces you to navigating with the PulseNET browser interface.

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.

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.

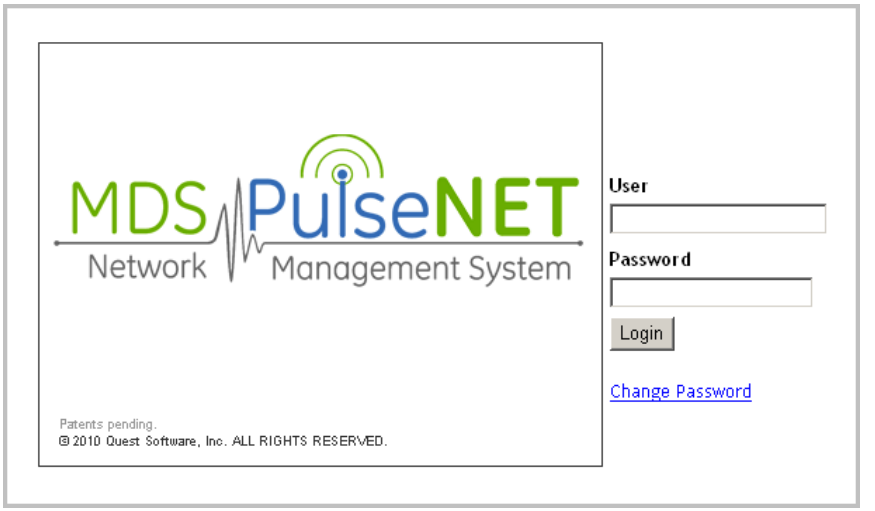
   Note For a list of browsers supported by PulseNET, see the *PulseNET Release Notes*.

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.



3 Enter your user name and password on the login screen.

4 Click **Login**.

If you are a user with the Operator role, the Summary dashboard is the first dashboard you see. If you are a user with the Administrator role, the Administration Home dashboard is the first you see.

Note The appearance of PulseNET and the range of dashboards you can access vary depending on your role. If you have Administrator-level permissions, you can access advanced dashboards and configuration workflows. See the *PulseNET Administrator's Guide* for details. Users with the Operator role have permission to access a restricted set of dashboards. See the *PulseNET User's Guide* for details.

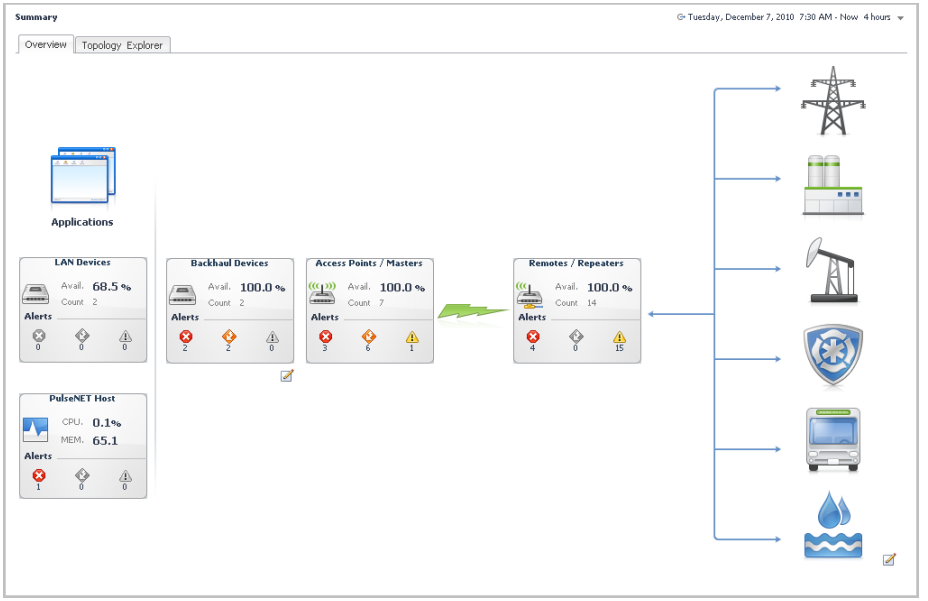
To log in to PulseNET from the GUI:

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**.

Starting from the Summary Dashboard

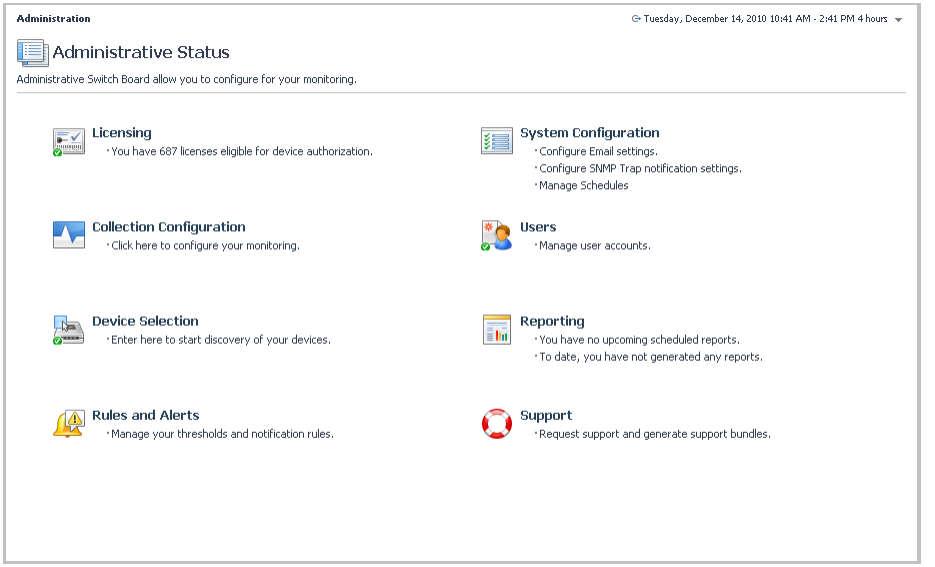
The Overview tab of the Summary dashboard is presented to you when you log in to PulseNET for the first time with the Operator role. The Overview tab displays a graphical representation of your industrial communications environment, with industrial resources (energy, water, etc.) at the right, monitored devices in the middle, and other higher-level supporting hardware and software applications, such as PulseNET, at the left.



The Summary dashboard is the default home page for an operator. For instructions on how to change your home page to a dashboard of your choice, see “Choosing a Home Page” on page 19.

Starting from the Administration Home Dashboard

The Administrator Home dashboard is presented to you when you log in to PulseNET for the first time with the Administrator role. It provides links to other dashboards from which you can perform administrative tasks.



The Administrator Home dashboard provides the following links:

System Configuration—for configuring system settings. For information, see “Configuring System Settings” in the *PulseNET Administrator’s Guide*.

Licensing—for requesting, installing, and managing licenses. For information, see “Working with Licenses” in the *PulseNET Administrator’s Guide*.

Collection Configuration—for configuring SNMP and the sample frequency of data collection. For information, see “Collection Configuration” in the *PulseNET Administrator’s Guide*.

Device Selection—for discovering, authorizing, and managing devices. For information, see “Working with Devices” in the *PulseNET Administrator’s Guide*.

Rules and Alerts—for managing rules and rule thresholds. For information, see “Working with Rules and Alerts” in the *PulseNET Administrator’s Guide*.

Reporting—for generating, scheduling, and maintaining reports. For information, see "Working with Reports" in the *PulseNET Administrator's Guide*.

Users—for creating, configuring, and maintaining PulseNET users. For information, see "Working with Users" in the *PulseNET Administrator's Guide*.

Support—for requesting support. For information, see "Support" in the *PulseNET Administrator's Guide*.

The Administration Home dashboard is the default home page for an administrator. For instructions on how to change your home page to a dashboard of your choice, see "Choosing a Home Page" on page 19.

Navigating PulseNET

This section describes basic PulseNET navigation.

Note PulseNET displays dynamic data that is updated regularly. For this reason, avoid using your browser's navigation buttons, because this may display cached views or result in an error message. Use the links in the navigation panel and display area instead.

Using the Navigation Panel

You can use the navigation panel at the left of the browser interface to move between dashboards. This panel lists high-level dashboards that are available to you based on your role. Expand a module and select a dashboard to view in the display area (for example, **Dashboards > PN Operation > Remotes / Repeaters**).

PulseNET remembers the state of the navigation panel between logins, so if, for example, you collapse the navigation panel during a session and then log out, it is collapsed the next time you log in.

Using the Breadcrumb Trail

The name of the current dashboard is displayed in bold at the top of the dashboard, at the end of a path called the breadcrumb trail:

When you move directly from one dashboard to another, the names of the previous dashboards are displayed in a breadcrumb trail.

Use the links in the breadcrumb trail to return to previously-viewed dashboards.

Using Drilldowns

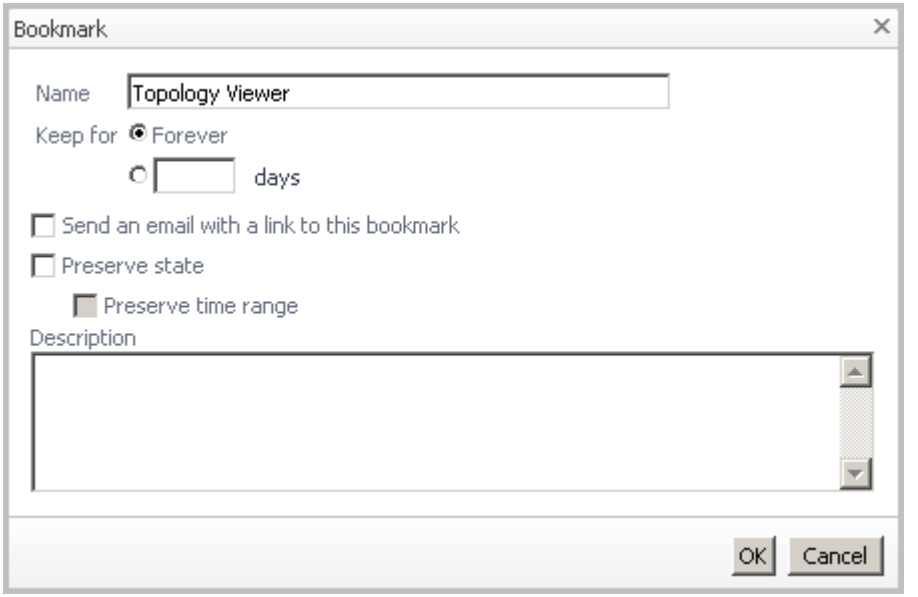
Use the graphic and text links in views to drill down to additional details that help you diagnose problems. Depending on the link, you can drill down to a different dashboard or to a smaller view called a popup that appears above the dashboard you are presently viewing.

You can drill down from many different parts of a view, including the names of monitored components, as well as from charts, tables, and icons.

For example, from the Summary dashboard click the access point icon. The Access Point / Masters dashboard appears providing a list of all of the access points PulseNET is monitoring. Click one of the access point names to drill down to the specific details for that access point.

Using Bookmarks

Use bookmarks to keep track of dashboards and views that you want to revisit or access quickly, without having to drill down several levels. A bookmark can be a snapshot of data that is "frozen" at a specific point in time, or it can be updated with current data when you access it.



To bookmark a dashboard:

1. Navigate to the dashboard that you want to bookmark.
2. Select **Bookmark** from the action panel at the right of the PulseNET browser interface.
3. In the Bookmark dialog, type a unique name in the **Name** field.
4. Select one of the **Keep for** options to indicate whether you want to keep the bookmark indefinitely or for a specified number of days. If you choose the latter, type the number of days in the text field.
5. Select **Send an email with a link to this bookmark** if you want to send someone a link to the new bookmark.

6. Select **Preserve state** if you want to keep the context input of the dashboard. For example, when you bookmark a dashboard, value *x* is selected in a menu. When you later view the bookmarked dashboard, value *x* will still be selected.
7. If you have selected **Preserve state**, the **Preserve time range** check box is available. Select this check box if you want to keep the bookmark's current start and end times. Otherwise, if the time range is relative (for example, Last 24 Hours), the bookmarked view shows metrics for the default time period when you display it.
8. **Optional**—type a description.
9. Click **OK** to save the bookmark.
10. If you selected the email option in step 5, an email window opens, containing a link to this bookmark. Complete the required fields and click **Send**.

The new bookmark is now listed under Bookmarks at the top of the navigation panel. When you select a bookmark, it appears in the display area.

To email a link to a bookmark:

1. In the Bookmarks area of the navigation panel, select a bookmark to display it.
2. Select **Email** from the action panel.

   An email window opens containing a link to the bookmark.
3. Fill in the required information and click **Send**.

To delete a bookmark in the navigation panel:

1. Place the cursor over the dimmed delete icon beside the name of the bookmark.

   The icon turns red.
2. Click the delete icon.
3. On the confirmation dialog, click **Delete**.

Opening a New Window

For some tasks, opening a new browser window instead of using the current one can be useful. When you use a new window to open a link or print, for example, the document is downloaded or printed in the background. You are unlikely then to accidentally close the original browser window when closing the document.

To open a new window:

1. Click the **New Window** link in the action panel to open a sub-session in a new browser window.
2. Navigate to and click the sub-session tab to reload the new browser window or tab independently of the source session.

Choosing a Home Page

You can choose any dashboard to be your personal home page.

To set your personal home page:

1. Navigate to any dashboard. Choose the dashboard that is most appropriate for your needs.
2. On the action panel, click **Make this my home page**.

   The dashboard is listed under **Homes** in the navigation panel and will be the first dashboard that PulseNET displays every time you log in.

If you later choose another dashboard as your home page, it replaces this one.

Note You can have multiple homes. When you mark something as a home page, it becomes the default home and it is added to the list of homes. For example, if you make the Access Points / Masters dashboard your home page, PulseNET adds it to the list of homes and it becomes your current home. If you log out and log back in, you will first see the Access Points / Masters dashboard.

Zonar and Time Range

PulseNET controls the current time range using a special control called a zonar. See "Time Range" below for more information.

Note The zonar is not available on all dashboards and views.

Time Range

Where applicable, the time range at the top of a dashboard indicates the current time range for all the views on the page. The default current time range setting is the last 4 hours.

Note If some of the views contained in a dashboard have independent time ranges, PulseNET does not display the time range.

By default, the time range for a dashboard is displayed in real time. You can freeze the time range so that the data PulseNET displays in the views corresponds to a specific interval. This is useful when trying to diagnose problems that occurred during that interval. When the time range is frozen, the views do not display new data. For further details, see “Freezing a Time Range”.

Changing the time range in a dashboard typically affects all the views in the dashboard. If an individual view in a dashboard has a different time range, that takes precedence over the time range for the dashboard.

Click the time range (shown below) to access the timeline and calendar options, which allow you to specify a new time range.

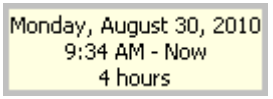
Note The time range that you select affects only the current view and drill-downs from it; it does not affect higher-level views.

Timeline

Click the **Timeline** option in the time range to:

- Select a pre-defined time range interval, from the last hour to the last 45 days.
- Specify a custom time range using a sliding bar.

Hover the cursor over the sliding bar to cause a popup to appear that displays the interval (dates and number of days or hours) spanned by the time range.



Using the zonar

Click the middle of the sliding bar to drag it to the left or the right. The start and end times of the range changes, but the total interval it spans stays the same.

Increase or decrease the interval by clicking and dragging one side of the bar. As you drag, the popup displays the new time range.

As you drag the edges of the bar, the timeline scale adjusts automatically, increasing or decreasing the units of time.

If you drag the right edge of the bar when the time range is in real time (the word *Now* is shown in the time range display), the interval persists and not the specific date and time to which you set the zonar.

Calendar

Use the calendar options to set a specific time range by specifying the time and date from which and to which you want the range to span.

To adjust the time range using the calendar options:

1. Click **Calendar** in the time range.
2. Use the **From** and **To** fields to set the time range:
   a. Click the Calendar icon in the **From** field to set the starting point for the time range. Alternatively, select **Earliest available**.

      If you clicked the calendar icon, in the calendar popup select a date and specify a time. Click above the field to close the popup.

   b. Click the Calendar icon in the **To** field to set the end point for the time range. Alternatively, select **Current time**.

      If you clicked the calendar icon, in the calendar popup select a date and specify a time. Click above the field to close the popup.
3. Set the **Granularity**. See the “About granularity” section for more information.

4 Click **Apply** to update the views based on the new time range.

Note If you enter an invalid date or time, a red exclamation mark appears and you cannot apply your changes.

About granularity

Granularity controls the size of the metric intervals. The default option is **Raw**, which displays the actual collected data points. The **Auto** option uses intervals that are sized according to the time range. For example, a one-hour range has five-minute intervals, while a one-week range has one-hour intervals.

If you set too large an interval, there may not be enough points to plot on a chart. For example, if you only have one day of data, an interval of six months results in a single point. If an interval is too small, there may be too many data points to display if the chart is small.

The maximum and minimum values of a metric are actual numbers, while data points inside an interval are averaged. Data may be reported at uneven intervals. PulseNET sets the data to be plotted in evenly-spaced intervals.

To do this, the data points inside the interval are averaged. This has the effect of evening out the maximum and minimum values if an interval contains more than one real data point. The maximum and minimum values of a metric are based on real data and not an averaged value. These values are often plotted as markers on the chart. Therefore the averaged values on the plotted curve or bar may not match the real values of the markers.

Freezing a Time Range

By default, the time range on a dashboard is displayed in real time. You can tell this at-a-glance if the word *Now* is shown in the time range display.

You can disconnect from real time and “freeze” a dashboard at a specified time range. When this occurs, the views on the dashboard will not receive any new data.

Some views show a frozen time range by default. This type of time range is called a diagnostic time range. See “Diagnostic Time Range” for more information.

To freeze a time range:

1. Select the dashboard for which you want to freeze the time range.
2. Click the icon to the left of the displayed time range at the top right of the dashboard.

   The time range is frozen and the icon changes to reflect that.

   Tip When you hover over the icon a popup indicates if the time range is real time or frozen.

   Hover over the icon to display the message: *Time range is in the past, click to switch to real time*.
3. If you later refresh a dashboard, the time range remains fixed even though the time that is displayed in the zonar changes.

To unfreeze a time range:

- Click the icon to the left of the displayed time range at the top right of the dashboard.

  The time range changes to the last monitoring time range that you used (for example, the last four hours).

Diagnostic Time Range

In some places in the PulseNET browser interface, a diagnostic time range is calculated when drilling down on an item of interest. This most often happens when looking at the details of an alert. By default, PulseNET shows a four hour window, where the alert time range is placed three hours into the window (that is, three hours prior and one hour past the alert). The diagnostic time range stays frozen until you unfreeze (toggle) the time range.

The diagnostic time range function works as follows:

- For any alert that is not in the current time range, clicking to drill down places you into a diagnostic time range.
- Some drill-downs indicate that you are in diagnostic time range.

  Note The diagnostic time range function is not available for all drill-downs.

Working with Tables

You can sort, filter, and search through data in a table if these functions are enabled on the table.

Sorting Tables

If a table is sortable, you can sort it by column by clicking a column heading. A down or up arrow icon next to the column heading indicates the sort order.

Filtering a Table

For tables that have the Search option in the title bar, you can use the Advanced Search tools to filter the information in a table.

You can filter the information so that only items that match the conditions you specify appear in the table.

To filter the information in a table:

1. Click the arrow next to the Search field at the top right of the table.
2. Click **Advanced Search...**

3. Select:
   - **Limit to:**

     Select this option and specify a number if you want to limit the number of items in the list.
   - **Order by:**

     Select this option if you want to order the items in ascending or descending sequence based on the property you select.
   - **Match the following rule:**

     Select this option and specify a condition.

The condition is based on a property that you select from the first menu. Depending on the type of property you choose (for example, a string such as an item's name or a number such as a metric value), different options are available from the second menu; select an option based on the data that you want to include. Specify the value you want the rule to match in the field at the end of the rule. If the value is a string, clear or select the **Case Insensitive** check box, depending on whether or not you want the rule to be case-sensitive.

Add or remove rules using the plus and minus sign (+ and -) icons.

Important If you create multiple rules, you must choose whether the filter matches all rules or any of the rules. **All** corresponds to the AND condition; **Any** corresponds to the OR condition.

- **Select from *n* items:**

  Select items from the list to specify the particular instances against which you want the rules to run.

4 Click **Search**.

The table list is filtered according to your criteria.

Working with Columns

You can enable and disable columns using the edit icon at the top of the table. Click the edit icon to open a popup list of all the columns, which you can use to select and de-select columns. When you are finished, click **Apply**.

Note By default, not all of the available columns are shown for each table. Click the edit icon for a table to see if there are other columns you want displayed for that table.

Searching Tables

Some tables have a **Search** option in the title bar. Start searching for an item in the table by typing in the **Search** field.

The **Search** menu provides an option to refine your search using regular expressions and an option to perform an advanced search based on rules. See "To filter the information in a table:" above for information about the advanced search functionality.

Working with Graphs

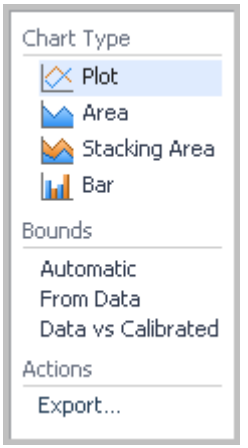
You can change a graph from one type to another to view the displayed information in a different format, you can zoom in on graphs, and you can export graphs.

Changing the Graph Type

To change from one type of graph to another:

1 Click the Customizer icon at the top right of the graph.

A popup appears.



2 From the popup, select a different graph type.

The information is displayed in a new graph type.

Using the Zoom Controls

To zoom in on a particular area of a graph:

- Hold down the Ctrl key and click and drag a rectangle over the area of the graph you want enlarged.

  The graph is redrawn displaying only the area you selected.

To restore a graph after zooming:

- Click the Reset Zoom button at the top left of the graph.

  Note The Reset Zoom button is only available after zooming.

To return to the previous zoom:

- If you have zoomed one or more times, return to the previous zoom by clicking the Previous Zoom button at the top left of the graph.

  Note The Previous Zoom button is only available after zooming.

To update the entire view with the new zoomed timerange:

1. Click the Update Page With Zoomed Time Range button at the top left of the graph.

   Note The Update Page With Zoomed Time Range button is only available after zooming.

Exporting Graphs

To export a graph to PDF format:

1. Click the Customizer icon at the top right of the graph.

   A popup appears.

2. On the popup, click **Export...**

   Another popup appears.

3. On this new popup, select an export format.

   The graph is exported in the format you selected.

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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