

ProRAE Guardian™

Version 1.11



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WARNINGS

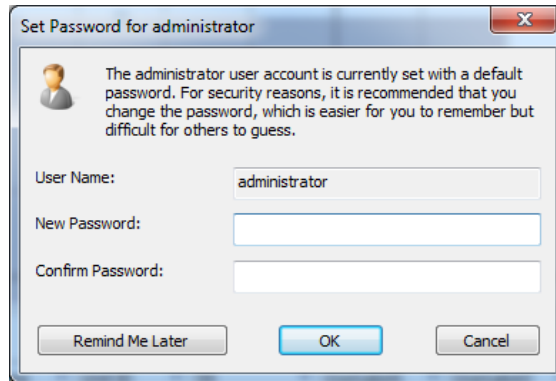
Read Before Operating

This manual must be carefully read by all individuals who have or will have the responsibility of using, maintaining, or servicing this product. The product will perform as designed only if it is used, maintained, and serviced in accordance with the manufacturer's instructions.

Important Security Feature: Read Before Operating

ProRAE Guardian requires user logon to change critical settings. The default username is "administrator" and the default password for this account is "raesystems". For security, change the password as soon as possible. Please write down your new password and store it in a secure place for reference, should you forget it.

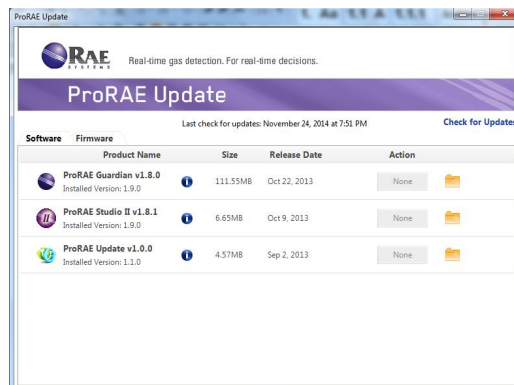
The password will not reset upon installation, and you will be asked to change the default password on startup with the following dialog:



To change/add accounts, click "Administration/Admin Panel..." under the global menu in the upper left corner of the application.

Automatic Updates via ProRAE Update

When you start ProRAE Guardian and log in, ProRAE Update automatically checks with RAE Systems for updates to ProRAE Guardian and other RAE Systems software (this requires an active connection with the Internet). If any updates are available, it shows them, along with new features, version number, and release date. You can then download any updates, or dismiss them and perform updates at a later time.



Section 1: ProRAE Guardian

1 General Information

The ProRAE Guardian software program collects, stores, and displays real-time sensor data from a variety of sensing devices to enable critical decision support for safety applications.

One ProRAE Guardian installation can capture real-time readings from up to 64 PTM (AreaRAE, etc.) monitors, and up to 450 RCS (Mesh-radio, such as MeshGuard) monitors. It supports not only RAE Systems wireless products, but selected third-party devices as well.

ProRAE Guardian collects, stores, and displays real-time data from remote monitors. Google Maps are integrated into the interface, plus MXD and other maps and graphics can be imported and applied. Sensor locations are overlaid on the maps or graphics, providing direct context.

1.1 Key Features

- Real-time display of device status, sensor readings, and alarms
- Access security prevents tampering
- User interface displays multiple simultaneous instrument readings
- Reconfigurable pane sizes and locations for customized viewing
- Integrated Google Maps show precise instrument locations with alarm status
- Remote alarming via email
- Open platform for third-party devices and systems
- Image overlay option
- Remote viewing with a web browser

2 Requirements

2.1 Hardware Requirements

Pentium (or compatible) CPU, 1.0 GHz or better.
Color monitor (at least 1024x768 resolution, 16-bit color)
3GB or more of RAM to support up to 500 instruments and 30 remote viewer sessions
At least 2GB (4GB recommended) of free hard disk space*
CD-ROM drive
Serial port (RS-232/USB COM port) for instrument/modem connection
Sound card (to enable local sound notifications)
LAN connection for network-connected devices.
Live Internet connection (required to view Google Maps)

*Software installation only. ProRAE Guardian may require significantly larger amounts of disk space to store device datalog information.

2.2 Software Requirements

Operating system: Microsoft Windows (Windows 7 or Windows 8)
Adobe Acrobat Reader V5.0 or higher (to view documentation)

2.3 Run-Time Requirements

The PC's "Energy Saving" feature should be set at "Always On." Never turn off the hard disk when ProRAE Guardian software is running. "Hibernate" (if available) must be disabled.

2.4 User Privilege Requirements

During installation, you must have administrator privileges on the local PC.

Notes:

Administrator privileges are not required in order to run the program; this applies for all operations except GPS module registration.

1. Registering the GPS module in ProRAE Guardian requires administrator privileges:
 - A. Right-click the ProRAE Guardian icon on the Desktop and select "Run as administrator" (Windows 7 or Windows 8) or select "Run as..."
 - B. Go to "ESRI Map" to register the GPS module.
2. After the GPS module is registered, you can restart ProRAE Guardian with a normal user account.

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3. The tool "GISDataRegistration" is for registering the GIS map from RAE Systems. It requires administrator privileges.

Start the tool by clicking the menu "Start >> Programs >> RAE Systems Inc >> ProRAE Guardian >> ProRAEGuardian >> GISDataRegistration."

4. "Datalog TransferTool" is for transferring the datalog in ProRAE Remote and/or ProRAE.Net to ProRAE Guardian, if you are upgrading from ProRAE Remote or ProRAE.Net on the PC. It requires administrator privileges.

Start the tool by clicking the menu "Start >> Programs >> RAE Systems Inc >> ProRAE Guardian >> ProRAEGuardian >> Datalog TransferTool."

2.5 Remote Web Viewing Requirements

Remote viewing is supported on the following operating systems and web browsers:

Windows 7, Windows 8

- Internet Explorer 10 or higher
- Google Chrome

Mac

- Safari

iOS

- Google Chrome
- Safari

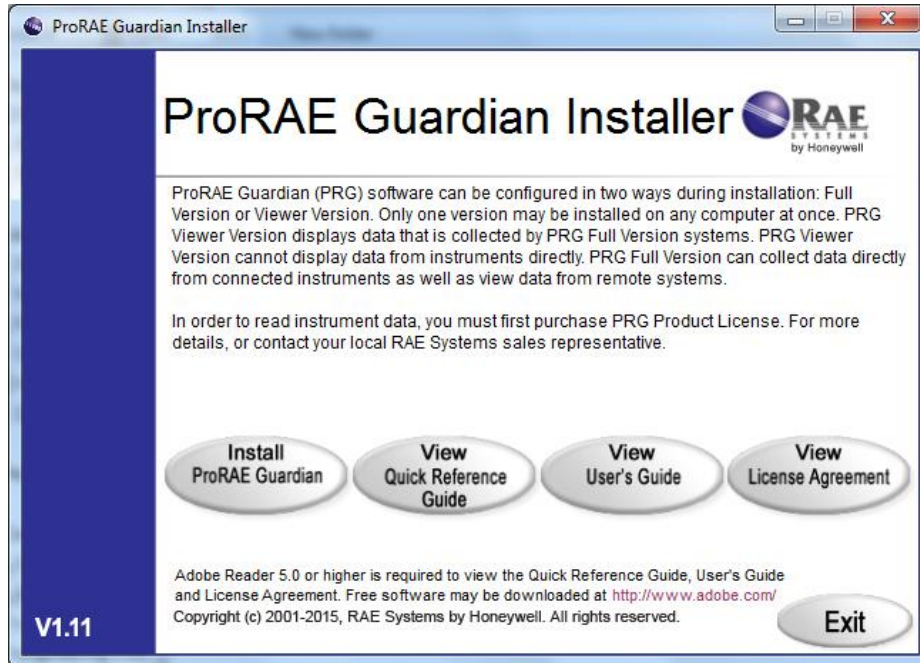
You must also have WAN, LAN, or Internet access, depending on the system. In some cases, firewall issues may prevent you from connecting, so it may be necessary to consult with your company's I.T. department.

2.6 SSL Certificate For HTTPS Installation

The Care Center in ProRAE Guardian v1.9 supports HTTP or HTTPS installation (refer to page 10 for the installation details). An SSL certificate is required for HTTPS installation. The SSL certification can be purchased from a public certificate supplier such as GoDaddy or DigiCert.

3 ProRAE Guardian Installation

Load the ProRAE Guardian software from the CD or from the Internet, and when this window appears, follow the installation instructions:



During installation, screens prompt you to select the language for ProRAE Guardian, as well as your locale. The locale selection automatically sets appropriate units of measurement (such as kilometers per hour vs. miles per hour or degrees Fahrenheit vs. Celsius), etc. The Service Port settings screen allows you to set a Viewer Port and Server Port. (For more on port settings, refer to page 143.) Note that you can change all of these settings once the program is installed, so you do not need to do anything at this time if you do not want to.

When the installation is complete, click “Finish” to exit the installer program.

Click “Exit” on the initial screen to dismiss it.

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3.1 Installing ProRAE Guardian

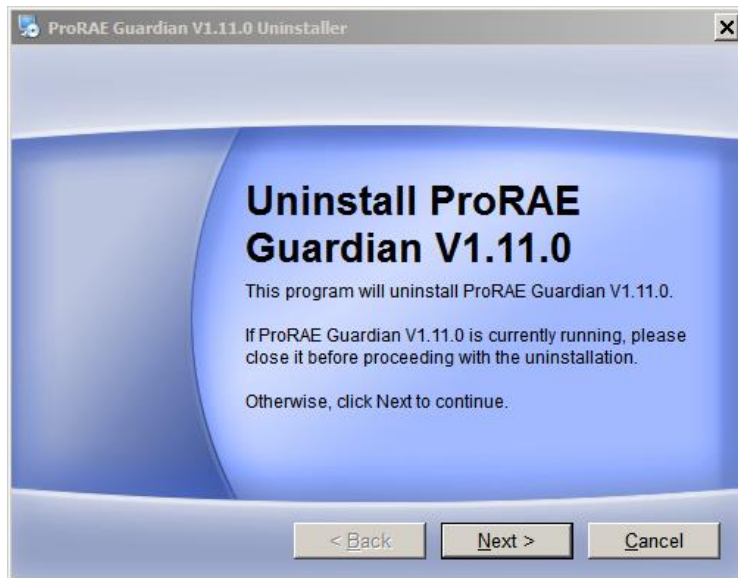
Find the installer and double-click its icon to start.

3.2 Uninstalling An Earlier Version Of ProRAE Guardian

If a previous version of ProRAE Guardian is found, you should uninstall it. Select “Uninstall ProRAE Guardian” and then click “Next.”



At this prompt, click “Next.”



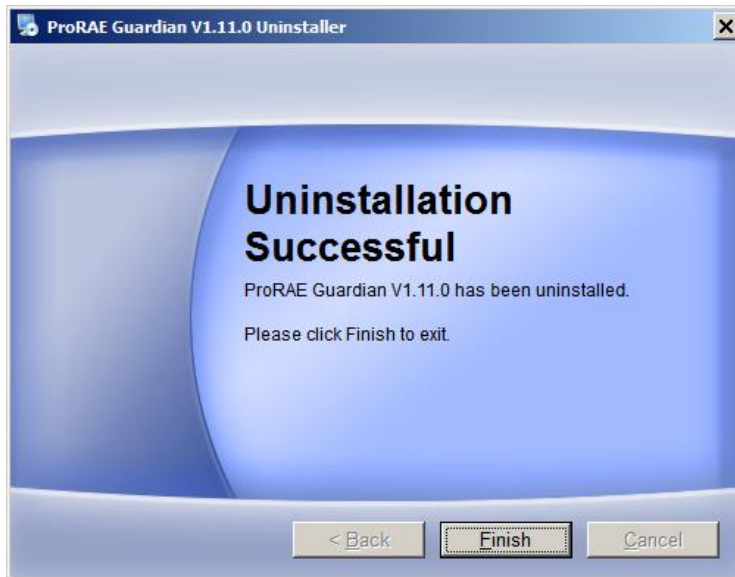
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Click “Next.”



Note: If you are getting rid of your computer (or replacing it), and it has an existing ProRAE Guardian Product Key, click the box that says, “I want to deactivate and release the ProRAE Guardian Product Key.” This removes it from the computer. Do not do this if you plan to continue using your existing Product Key on this computer.

When uninstallation is done, the screen message says, “Uninstallation Successful.”



Click “Finish” to exit.

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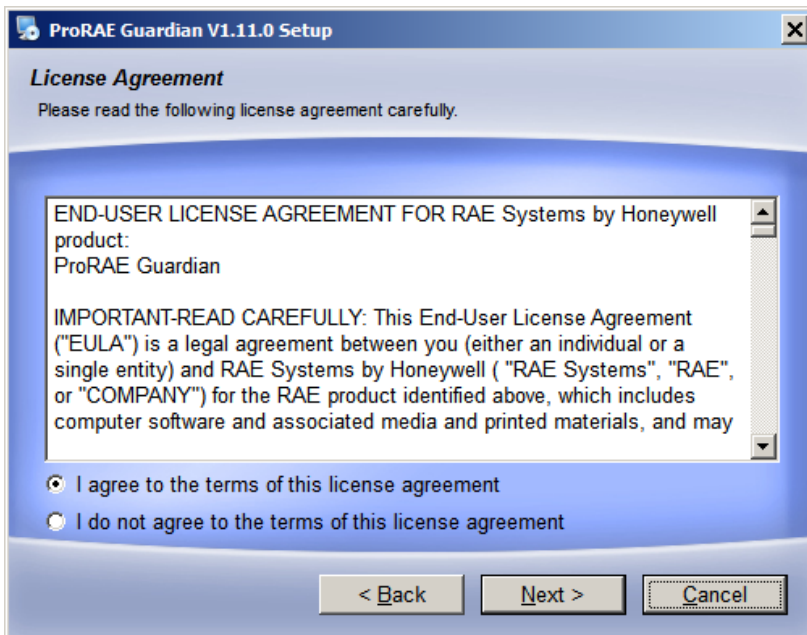
3.3 Installation

Whether you just removed a previous version of ProRAE Guardian or are starting fresh, you begin here:



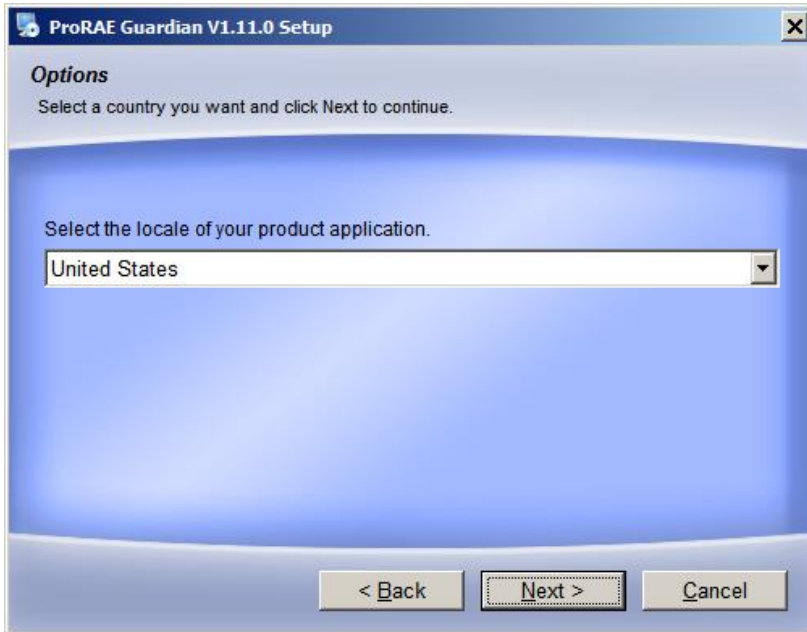
Click "Next" to begin.

When you see the License Agreement, read it and then click "I agree to the terms of this license agreement." Then click "Next."



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Select the country in which ProRAE Guardian will be operating:



Select the language you want and click “Next”:

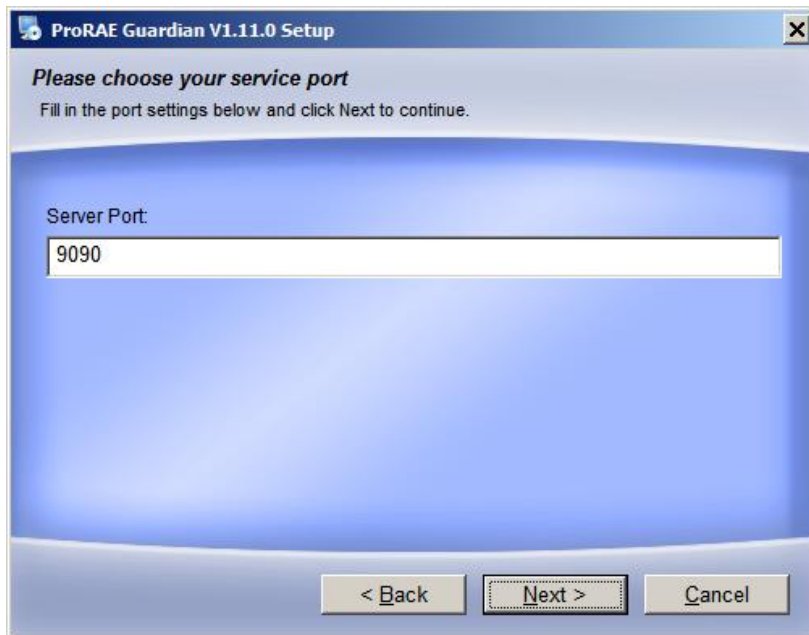


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Select “Full-Version ProRAE Guardian” to install the full version and click “Next”:



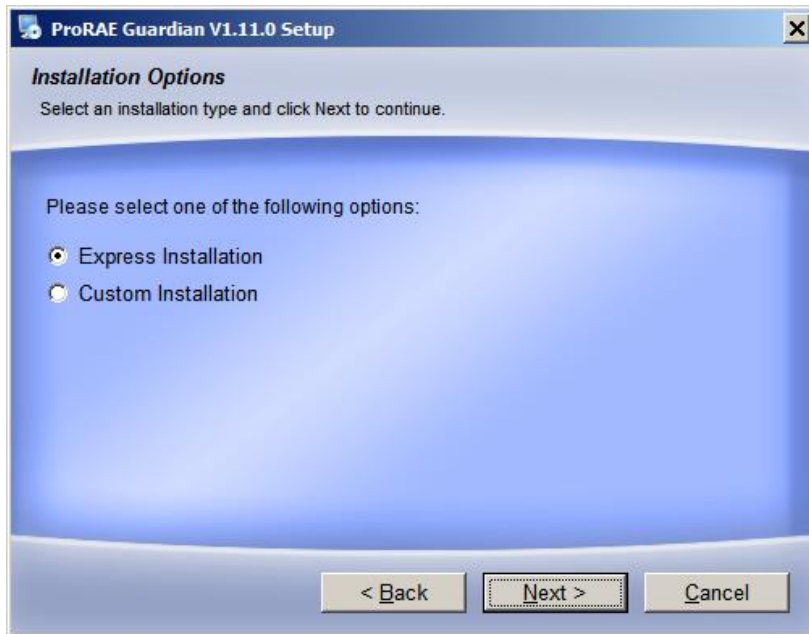
Provide the port numbers or use the default values. If you are not sure which port number to use, check with your I.T. department to ensure there are no conflicts.



Click “Next.”

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Select "Express Installation and click "Next."

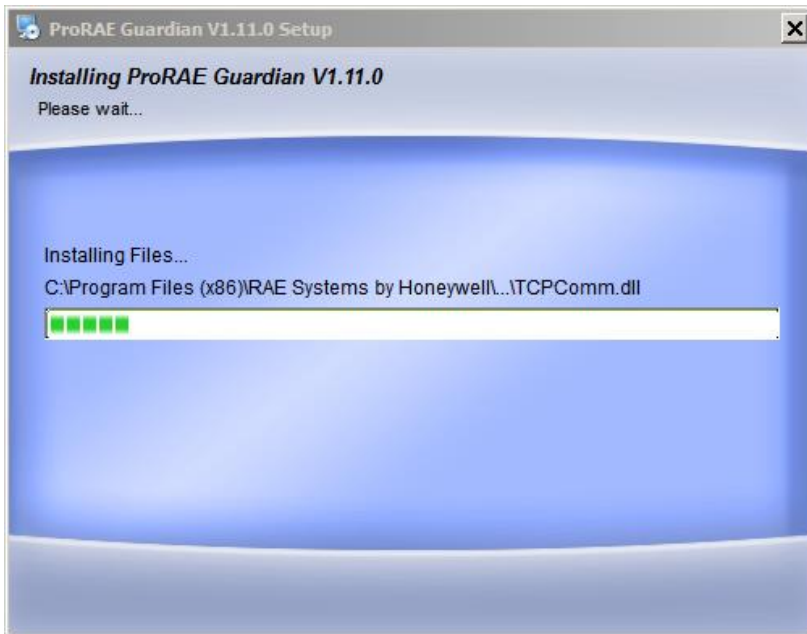


A warning message alerts you that you of the default username and password. After following the instructions, click "Next."



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ProRAE Guardian begins installation (a progress bar is shown):

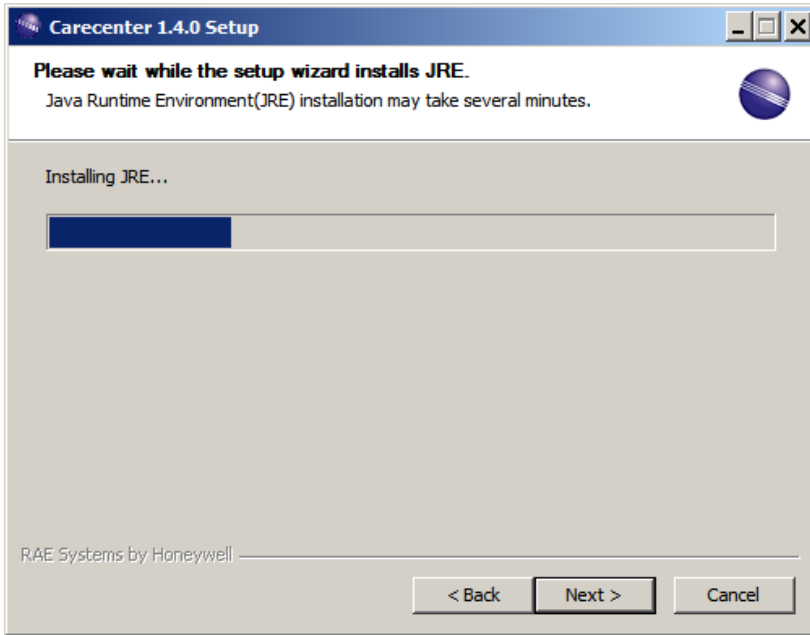


Once the procedure is complete, a Wizard for setting up Care Center is shown. Click "Next" to start the setup.



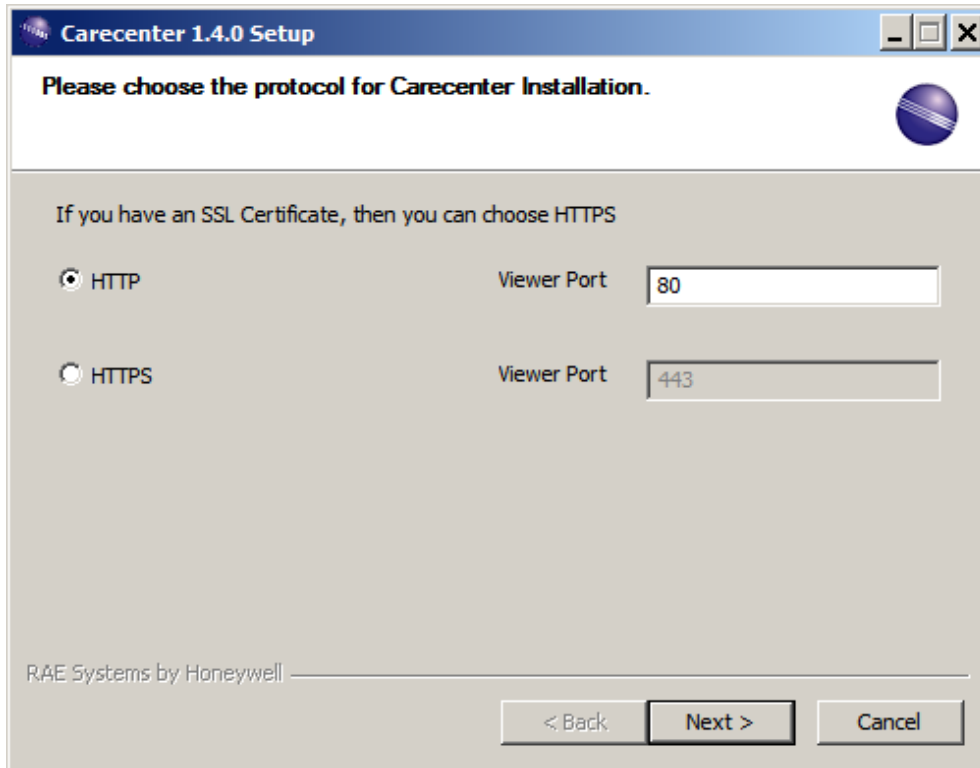
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It installs the Java Runtime Environment (JRE):



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After the JRE is installed, you have a choice of HTTP or HTTPS (secure HTTP). The procedures are different because setup for HTTPS requires obtaining an SSL certificate from a public certificate supplier such as GoDaddy or DigiCert, etc.).



Carecenter 1.4.0 Setup

Please choose the protocol for Carecenter Installation.

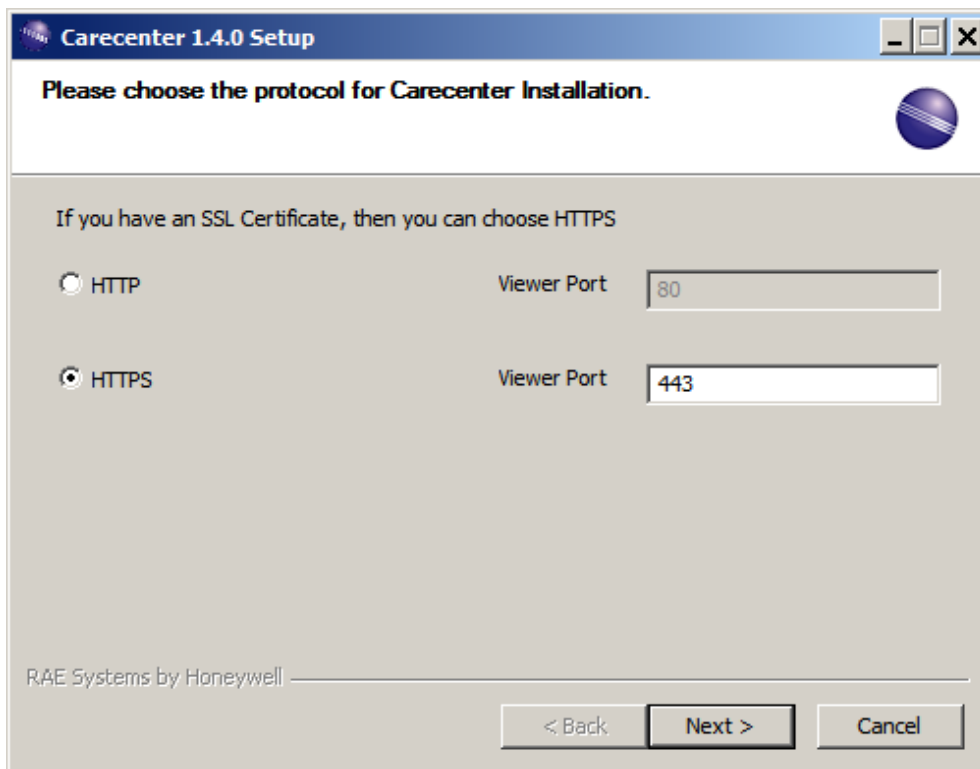
If you have an SSL Certificate, then you can choose HTTPS

HTTP Viewer Port

HTTPS Viewer Port

RAE Systems by Honeywell

< Back Next > Cancel



Carecenter 1.4.0 Setup

Please choose the protocol for Carecenter Installation.

If you have an SSL Certificate, then you can choose HTTPS

HTTP Viewer Port

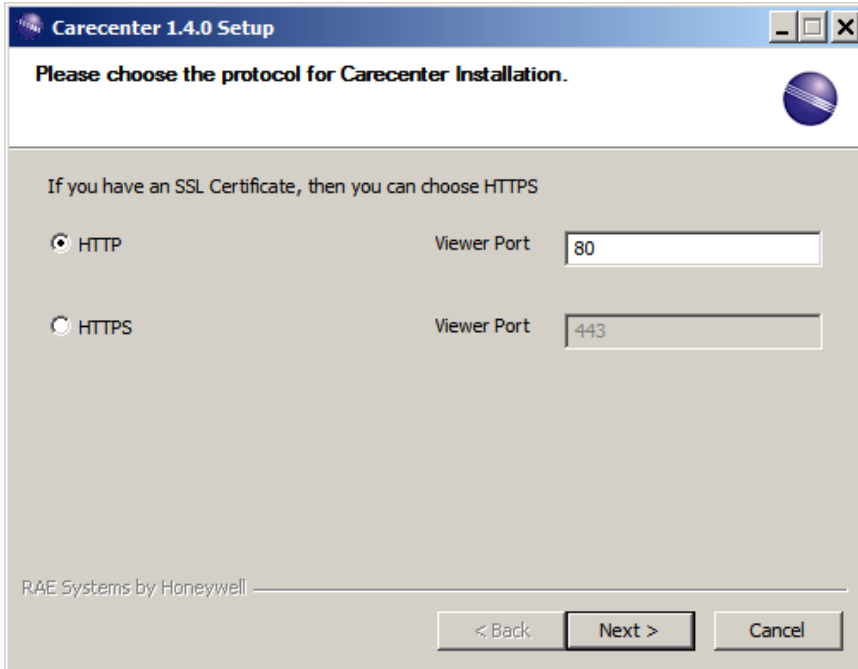
HTTPS Viewer Port

RAE Systems by Honeywell

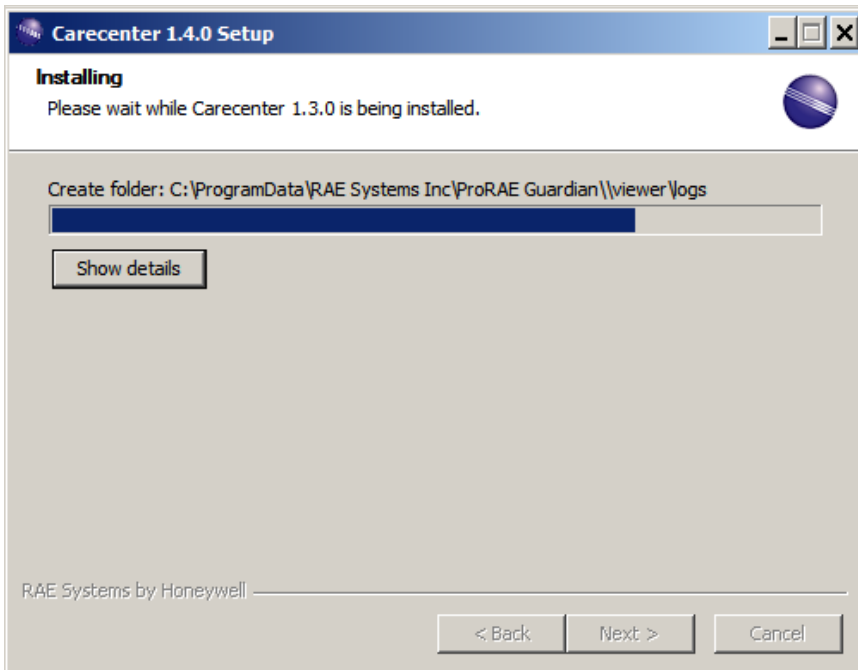
< Back Next > Cancel

3.4 HTTP

Click “HTTP” and then click “Next.”



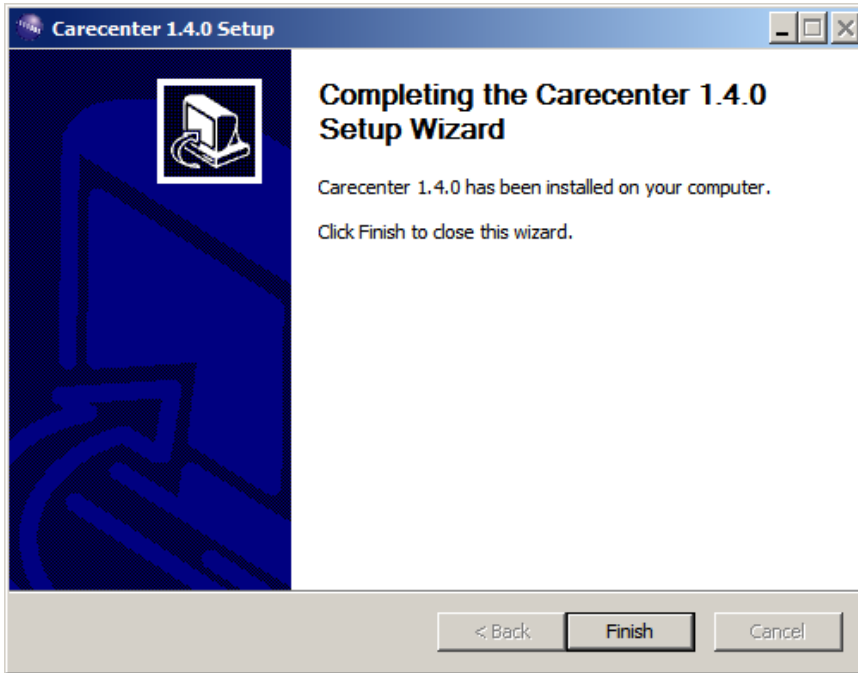
After the installation completes, you see this screen:



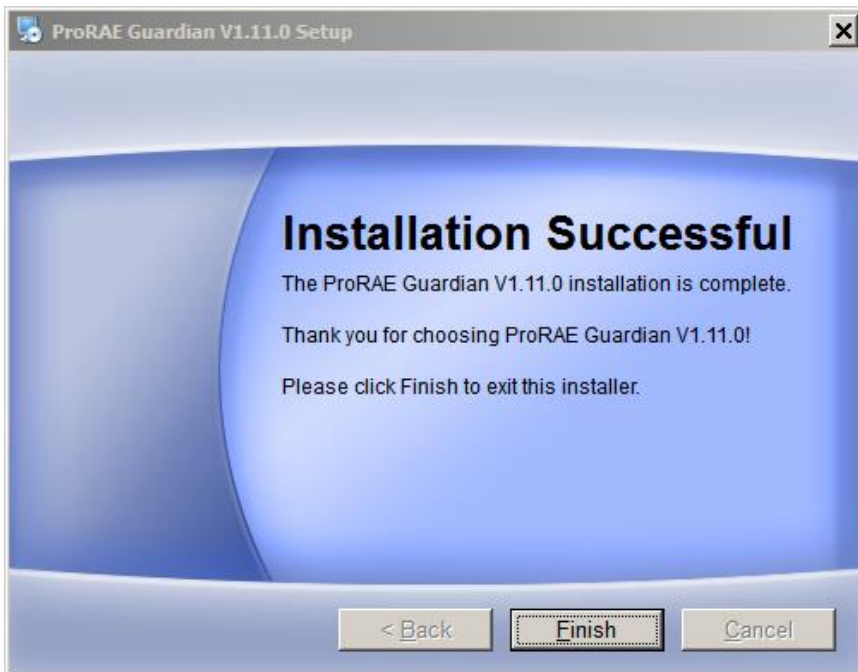
Click “Finish” to finish Carecenter’s installation.

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You will see this screen next:



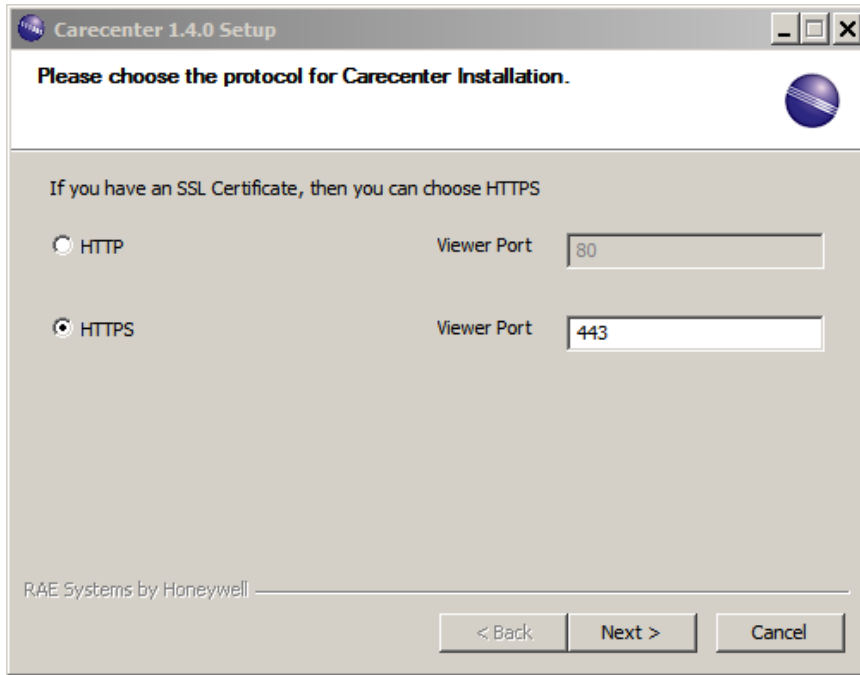
Click "Finish." This confirmation message is shown:



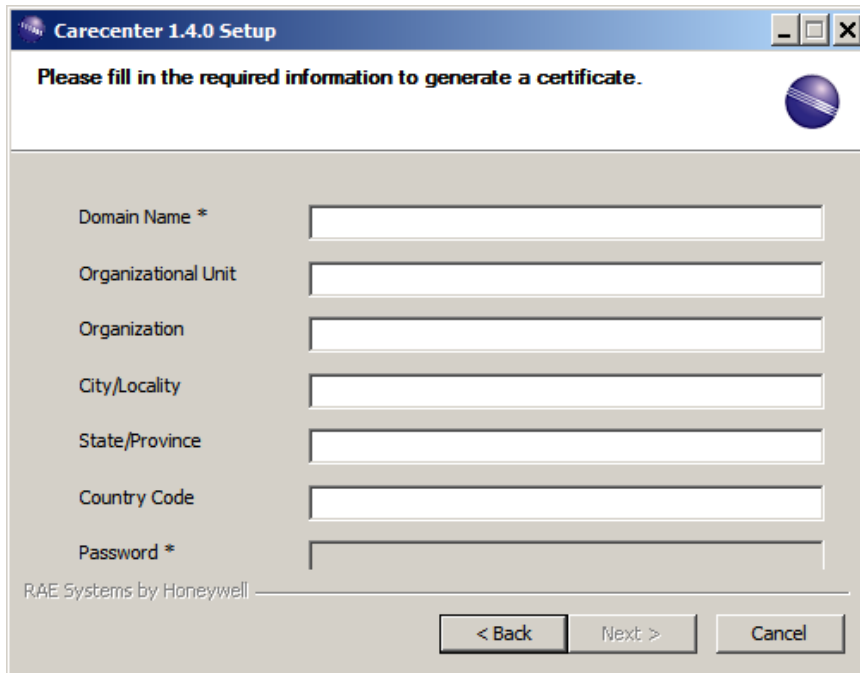
Click "Finish" to exit. Installation of ProRAE Guardian is now complete.

3.5 HTTPS

If you select HTTPS, you will have to purchase and install an SSL Certificate.



Input the Domain Name with your SSL certificate (for example, "*.proraeguardian.com"). Fill in your Organizational Unit, Organization, City/Locality, State/Province, and Country Code. Then click "Next."



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You must obtain an SSL Certificate from a certification body such as Verisign, GoDaddy, DigiCert, etc.

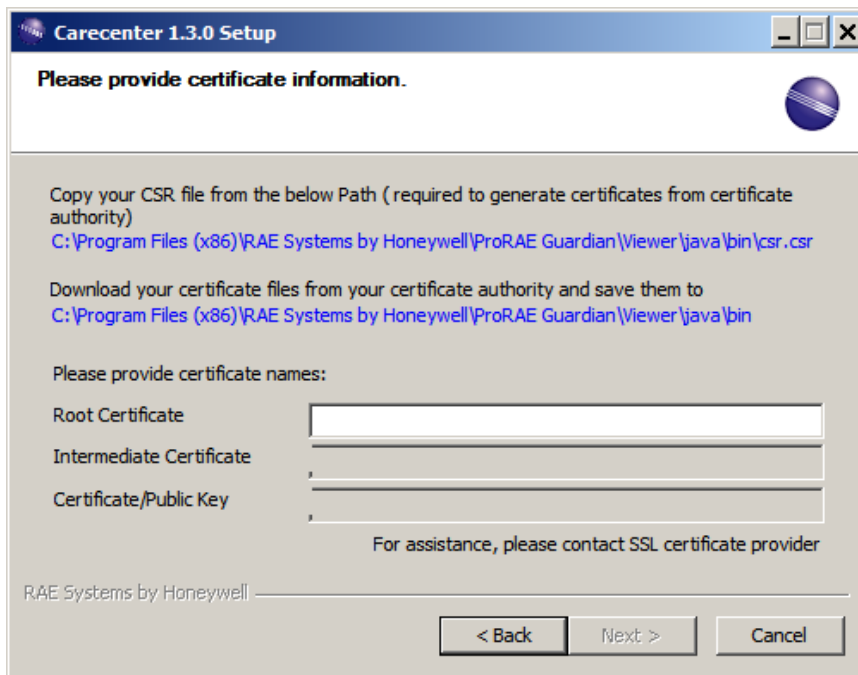
After entering the information, the installer generates a CSR file. This CSR file has to be provided to a Certification Authority (CA) . The Certificate Authority provides three certificates: Root certificate, intermediate certificate, and public certificate.

Copy these files and paste them into this folder on your computer at this location:

C:\Program Files\RAE Systems by Honeywell\ProRAE Guardian\Viewer\java\bin

Note: If the directory has the same files, copy and replace them.

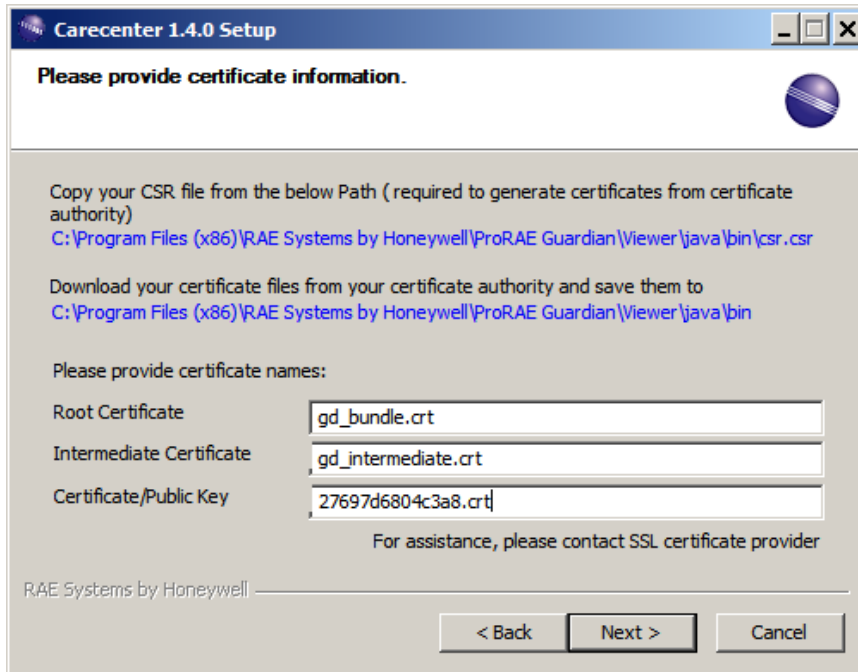
Note: Certificate names can change for different Certificate Authorities, but the three certificates (root, intermediate and public key) need to be uploaded to the folder.



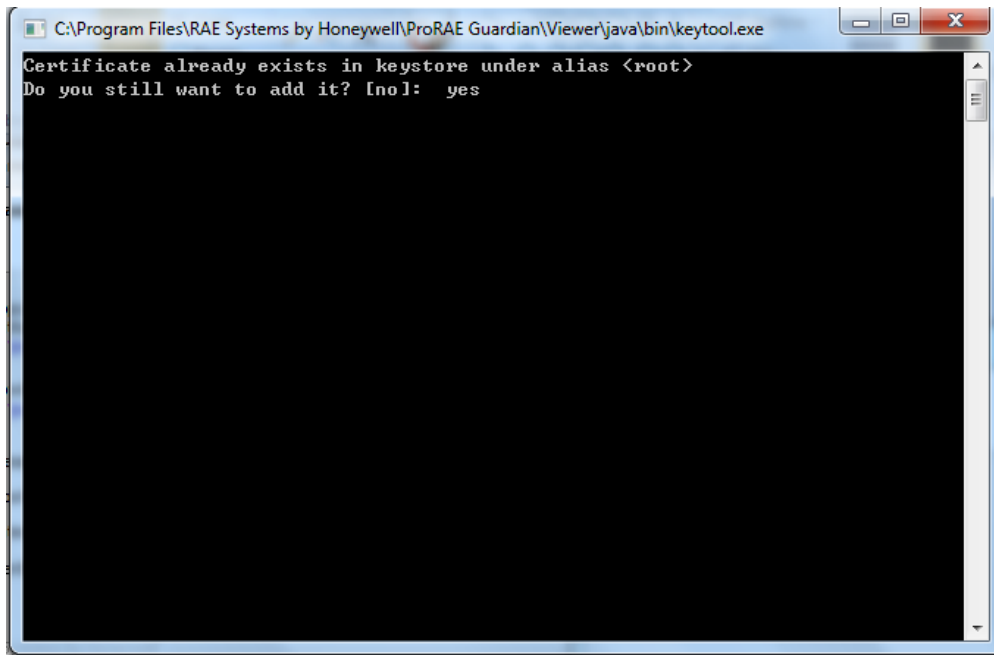
The screenshot shows a Windows-style dialog box titled "Carecenter 1.3.0 Setup". The main heading is "Please provide certificate information." Below this, there are instructions: "Copy your CSR file from the below Path (required to generate certificates from certificate authority)" followed by the path "C:\Program Files (x86)\RAE Systems by Honeywell\ProRAE Guardian\Viewer\java\bin\csr.csr". Another instruction says "Download your certificate files from your certificate authority and save them to" followed by the path "C:\Program Files (x86)\RAE Systems by Honeywell\ProRAE Guardian\Viewer\java\bin". There are three input fields labeled "Root Certificate", "Intermediate Certificate", and "Certificate/Public Key". At the bottom, there is a note "For assistance, please contact SSL certificate provider" and three buttons: "< Back", "Next >", and "Cancel". The footer of the dialog box reads "RAE Systems by Honeywell".

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Type in the Root Certificate (for example, gd_bundle.crt), Intermediate Certificate (example: gd_intermediate.crt), and Public Key (example: 27967d6084c3a7.crt). Then click “Next.”

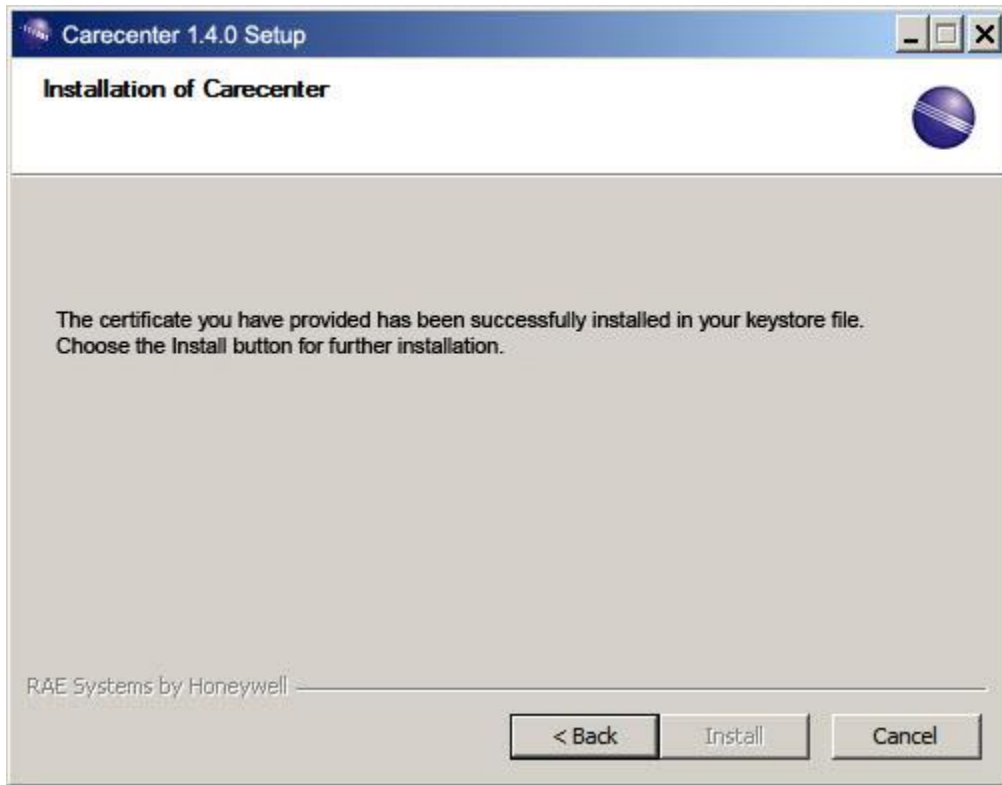


Now you will see a window that tells you a Certificate already exists in keystore. Type “yes” and then click the “Enter” key.



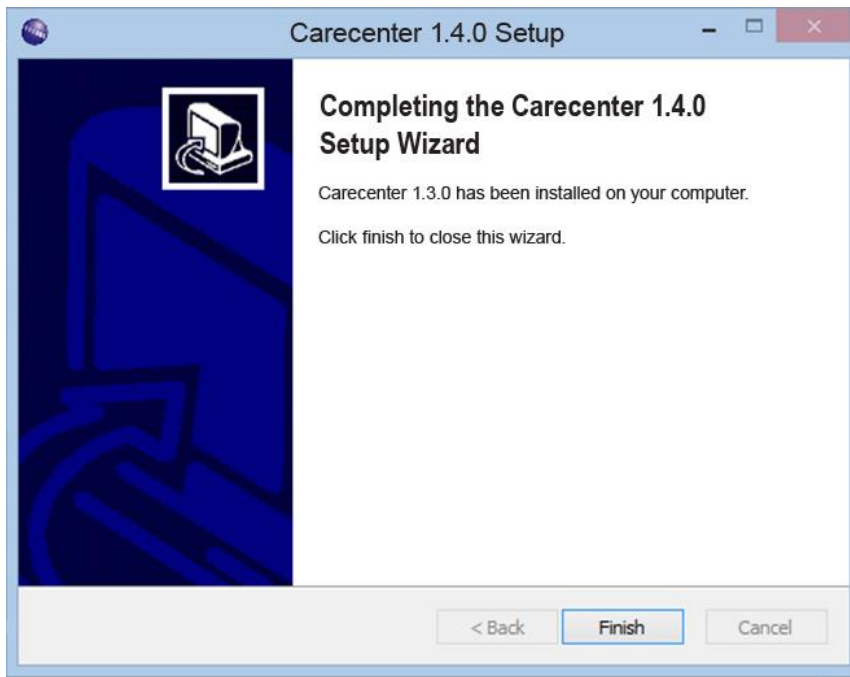
You will see a success screen, telling you that the certification information has been accepted:

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Continue the installation of Care Center by clicking "Install."

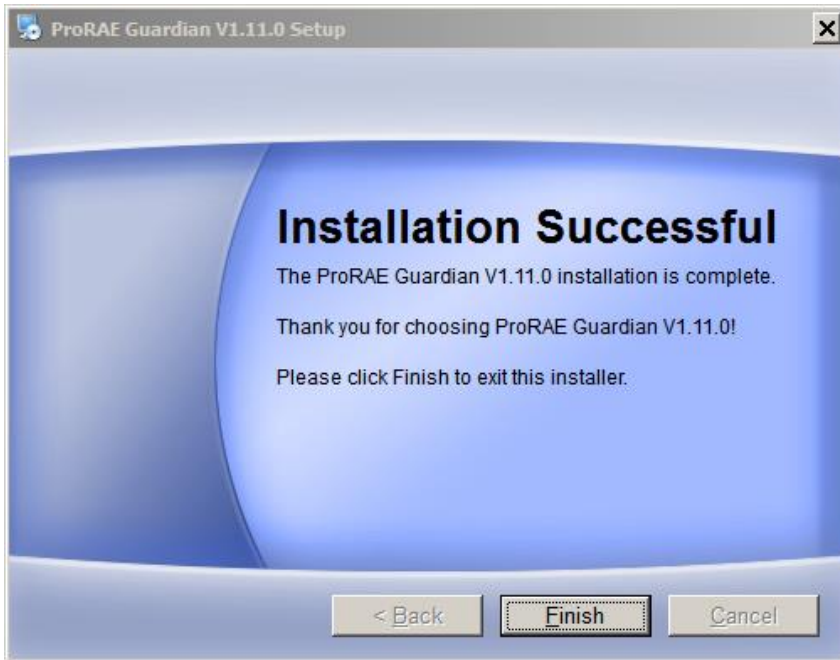
When you see this screen, click "Finish":



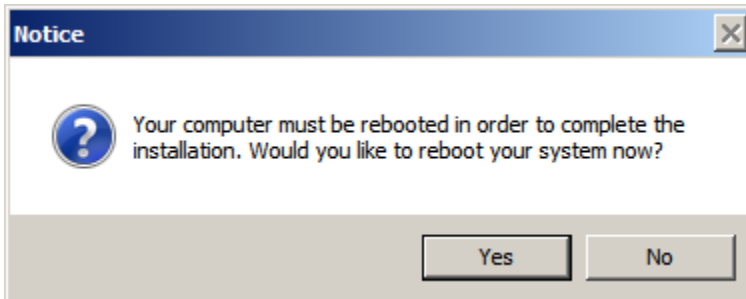
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You will now see a screen that says installation was successful.

Click "Finish" to complete the procedure and exit the ProRAE Guardian installer.



Your computer will need to be rebooted in order to complete the installation. You can either do it right away or do it later. If you choose to do it later, ProRAE Guardian will not work until you reboot.



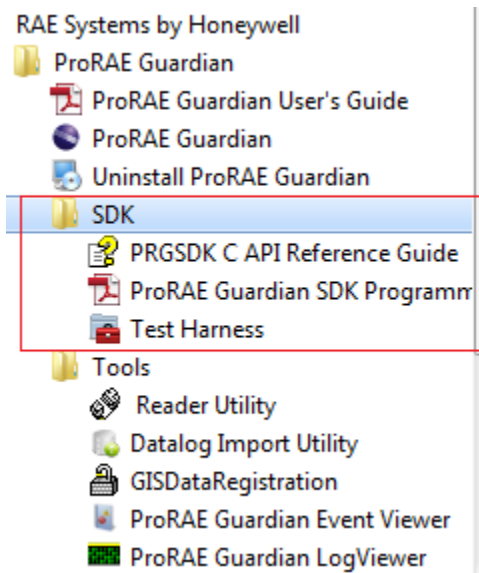
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3.6 ProRAE Guardian SDK

Note: Starting with ProRAE Guardian 1.11, SDK (software development kit) is installed automatically with the ProRAE Guardian Installer.

To make the SDK APIs available for use, the following items should be checked:

1. SDK License feature must be enabled via a separate license. Contact RAE Systems to get the SDK License. Update the license key to enable the SDK license feature.
2. DataForwarding -> Enable Remote Viewer should be checked and started.



4 ProRAE Guardian License Registration

ProRAE Guardian requires a license that must be purchased from RAE Systems. The license is based on the number and types (tiers) of instruments to be monitored via ProRAE Guardian.

The license can be registered and activated two ways: With a computer connected to the Internet or on a computer that is not connected to the Internet. The two methods are included in the next section.

4.1 Activating A License Using A Computer With Internet Access

1. Purchase a ProRAE Guardian license from RAE Systems sales. You will receive a license certificate that includes your Product Key and the number of Tier 1, Tier 2, and Tier 3 licenses. (**Note:** If you want to add more instrument tiers later to accommodate more instruments, you can contact RAE Systems.)
2. Download ProRAE Guardian software from www.raesystems.com or install it from a CD.
3. Install ProRAE Guardian software.
4. Once installation is complete, start ProRAE Guardian. Because your license has not been registered and bound to your machine, you see the ProRAE Guardian License Wizard screen.
5. Enter the 20-character Product Key and follow the steps in the Installation Wizard to fill in Registration Information. Click "Next."
6. Follow the steps in the next screens for registration information, including naming your computer something memorable (or a name assigned by your IT department, for example).
7. Click "Finish" to upload to RAE Systems and receive confirmation of registration.

Note: If you receive an error message, make sure your computer is connected to the Internet. If it is not, but should be, establish an Internet connection and try again. Also, make sure that you are using a Product Key that is not already in use on another computer.

8. If the Product Key is accepted upon retrying, then ProRAE Guardian starts.

Note: After running ProRAE Guardian for the first time and performing license registration, you will not need to go through these steps again, unless you uninstall the program or release the license from the computer.

4.2 Activating A License Using A Computer Without Internet Access

1. Purchase a ProRAE Guardian license from RAE Systems sales. (**Note:** If you want to add more instrument tiers later, you can. Contact RAE Systems.)
2. Install ProRAE Guardian Software from the CD.
3. Once installation is complete, start ProRAE Guardian. Because your license has not been registered and bound to your machine, you see the ProRAE Guardian License Wizard screen. Click "Next."
4. Enter the 20-character Product Key and follow the steps in the Installation Wizard to fill in Registration Information. Click "Next."
5. Follow the steps in the next screens for registration information, including naming your computer something memorable (or a name assigned by your IT department, for example).
6. Click "Finish" to upload to RAE Systems and receive confirmation of registration.

You will receive an error message. Before proceeding, make sure that you are using a Product Key that is not already in use on another computer.

7. Plug a flash drive into your computer's USB port.
8. Select "I want to use another computer with an Internet connection."

Note: If you typically have a problem viewing external sources, such as Google Maps, then consult with your I.T. department so that they can configure your Proxy Server settings. Otherwise, you likely do not need to use Proxy Server settings.

9. Click "Next."
10. The License Wizard now shows a screen with instructions for manually providing the registration file.
11. Select the path to the file named request.key on your computer by clicking the link and then selecting the file.
12. Copy "request.key" to your flash drive.
13. Unplug the flash drive and then plug it into a computer with Internet access.
14. Open a browser window and go to www.prorae-guardian.com/register. You now see the screen that says "Welcome to ProRAE Guardian Product Product Key Management."
15. Select "Register and activate a new Product Key," and click "Next."
16. You will see a screen that says "Register a new Product Key." Select your "request.key" file and click "Open."
17. Click "Next."
18. When the screen changes to "Register a new Product Key," follow the instructions to download a file called "activation.key" to your flash drive.
19. Remove the flash drive and plug it into the computer where you have installed ProRAE Guardian.

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20. Browse to the location where “activation.key” is stored on your flash drive and upload the file by clicking “Next.”
21. If the Product Key is accepted, then you see a “Congratulations!” screen that informs you that ProRAE Guardian is now registered and activated for use.
22. Click “Finish” to exit the License Wizard. ProRAE Guardian automatically starts.

Note: After running ProRAE Guardian for the first time and performing license registration, you will not need to go through these steps again, unless you uninstall the program or release the license from the computer.

5 Starting ProRAE Guardian

Once ProRAE Guardian has been installed on your computer, there should be an icon for it on the desktop.

To start ProRAE Guardian, double-click the icon.

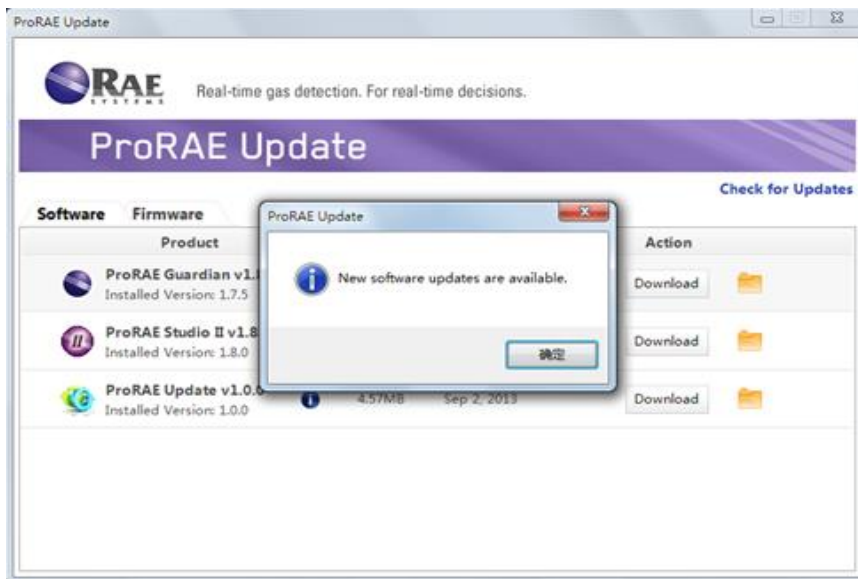


The main screen appears, and ProRAE Guardian is ready to use.

Note: If there is no ProRAE Guardian icon on your computer's desktop, you can start it by launching it directly by following this path:

Start >> Programs >> RAE Systems Inc >> ProRAE Guardian >> ProRAEGuardian

Note: When you start ProRAE Guardian, it checks whether any updates are available. A "Software Update" message box tells you if your software is up to date or if a newer version is available.



Note: Internet connectivity is required in order to check for software updates and to download them.

6 Security Features

ProRAE Guardian has password protection for changing critical settings, plus it has an automatic countdown that locks everyone out (requiring a password for re-entry) after 30 minutes. This does not stop or pause ProRAE Guardian operation, but it does prevent tampering. The administrator can provide access privileges for others, plus manage them from within ProRAE Guardian.

6.1 Important Security Feature: Logon And Password

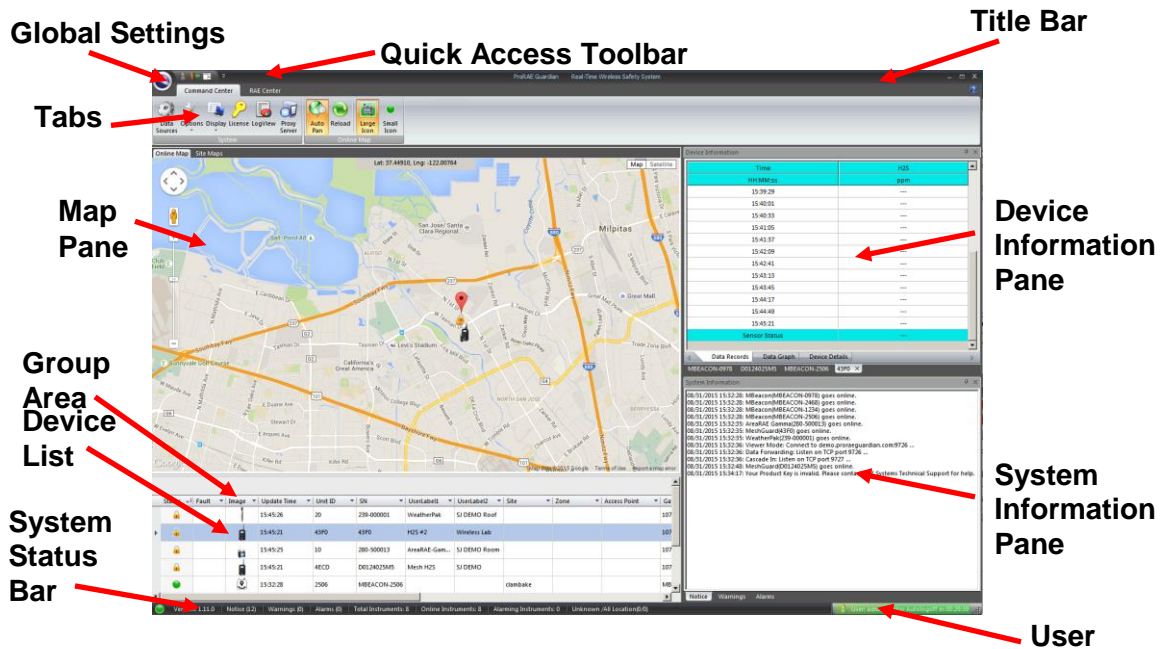
ProRAE Guardian requires user logon to change critical settings. The default username is “administrator” and the default password for this account is “raesystems”. For security reasons, we recommend that you change the password as soon as possible. Please write down your new password and store it in a secure place for reference, in case you forget it.

The password for this account is ALWAYS reset to “raesystems” upon installation. To change/add accounts, click “Administration/Admin Panel...” under global menu in the upper left corner of the application.

For further information, refer to section 8.1, which explains Admin access and functions.

7 ProRAE Guardian User Interface Overview

The ProRAE Guardian user interface consists of a single main window, organized into sections by function. The Map Pane and Device List are organized as a group, and can be collectively resized. The Device Information Pane and System Information Pane can be resized, reorganized, or selectively hidden. The System Status Bar along the bottom can also be selectively hidden.



7.1 Resizing The Window



The window can be changed, and standard Windows-style controls are used. The buttons are located in the upper right corner of the window, and include (left to right):

- Minimize
- Restore/Maximize
- Close

At the bottom right corner of the window is a place where you can grab to resize/reshape the main window (if it is not maximized).



Click on this corner, and while holding down the left mouse button, drag it to change the width and height of the window.

8 Global Settings

All settings that pertain to the entire application are available under the Global Settings control, located in the upper left corner of the screen. Clicking on the RAE Systems logo reveals the Global Settings menu.

8.1 Accessing Global Settings

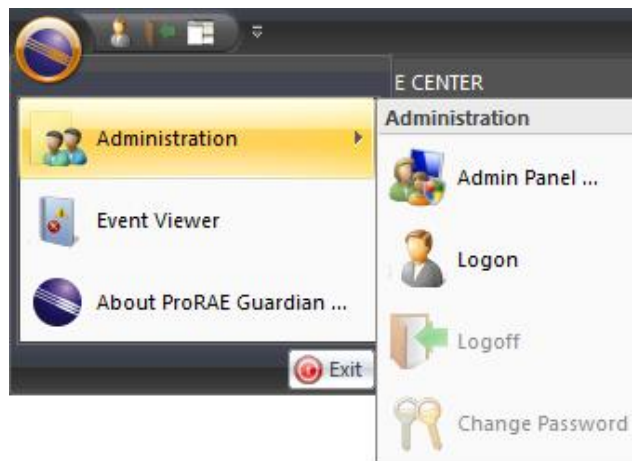


Click on the RAE Systems logo in the upper left corner of the window (when highlighted, there is a yellow glow around the logo), and three main options headings are shown:

- Administration
- Event Viewer
- About ProRAE Guardian...



When you move the mouse over “Administration,” it is highlighted, and a submenu appears:

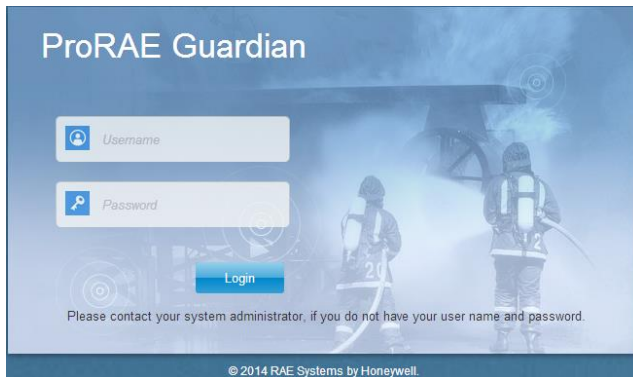


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Note: If you have provided an administrator's password, the submenu looks like this:



Click “Admin Panel...” will pop up web browser with below login page. After log on the web viewer, go to “Control Center” >> “User Management” to perform operations like add user, edit user and change password, etc.

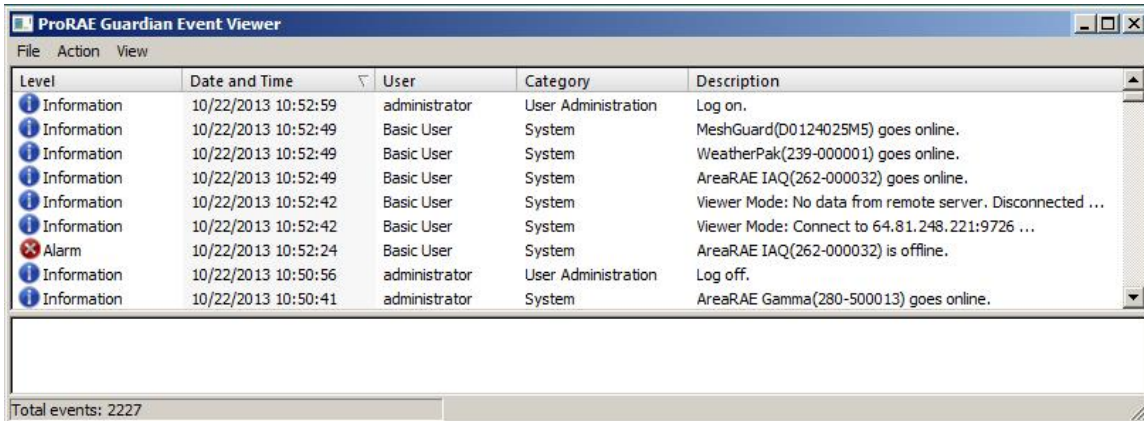
A screenshot of the 'User Management' web interface. The interface has a blue header with navigation tabs: 'User Management', 'Action Rules', 'Activity Automation', and 'System Settings'. Below the header, there is a table with columns: 'User ID', 'Name', 'Company', 'Email', 'Department', 'Comments', and 'Actions'. The table contains one entry for the user 'administrator'. To the right of the table, there are links for 'Add User' and 'Show 15 entries'. At the bottom of the interface, there are navigation buttons for 'Previous', '1', and 'Next'.

Refer to “23.1 User Management” in “Section 2: ProRAE Guardian Remote Viewer” for more details on user management.

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8.2 Event Viewer

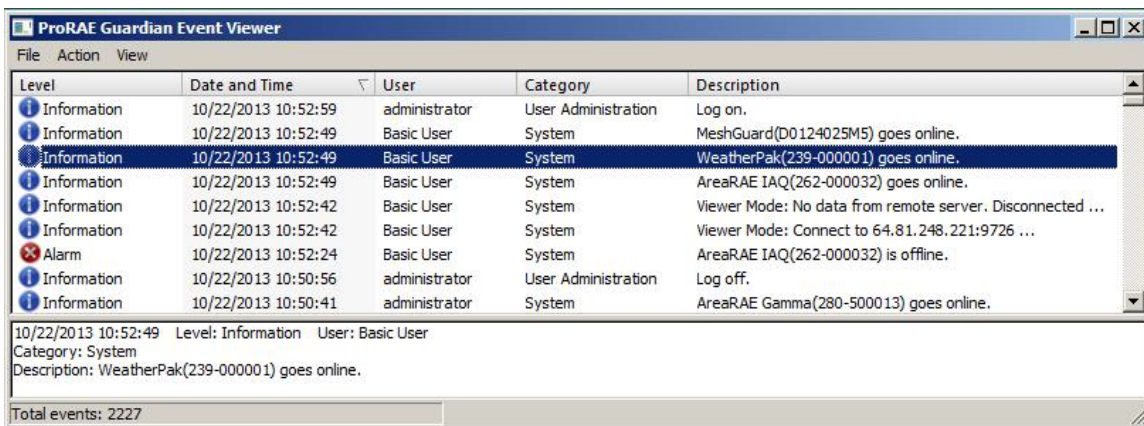
The Event Viewer gives you insight into what events were recorded since ProRAE Guardian was first started after installation. The Level (of importance/severity) is listed first in each row, along with date and time, the system's user, the category of the information, and a description of what occurred. In addition, the total number of events is shown at the lower left corner of the window.



Alarms and warnings are color-coded with different icons, making it easy to scroll through the list to find events of interest/concern.

Alarm	05/08/2011 17:45:20	administrator	System	San Jose roof1(282-500147) Alarming: [Pump]
Information	05/02/2011 13:33:17	administrator	System	Open serial port 3
Information	05/02/2011 13:33:24	administrator	System	Listen on TCP port 9723 ...
Warning	05/02/2011 13:16:21	administrator	System	Fail to connect to 64.81.248.221:9726!

For more details, click on the row containing any event. The bottom pane then shows whatever details are available.



The event log stores 10,000 unique events, which should be enough for about six months of normal use. Further, the event log incorporates a "FIFO," or "first-in/first-out," buffer, which means it will always store the most-recent 10,000 events.

For security reasons, there is no way to directly edit the Event log. You may export the event log to an Excel-readable file by using the export function. ProRAE Guardian V1.6 ships with a separate Event Viewer exe (located in the ProRAE Guardian installation

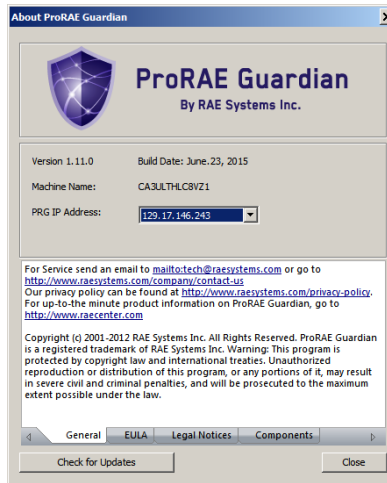
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directory) that can be used to view the Event Log in the event that ProRAE Guardian is not installed or will not start.

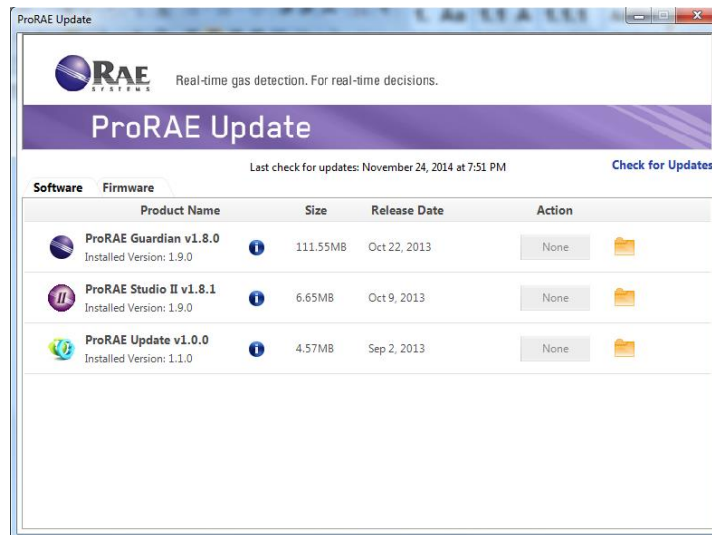
8.3 About ProRAE Guardian

When you click “About ProRAE Guardian,” a window appears, and it includes general and support information, as well as tab-organized information about the End User License Agreement (EULA), Legal Notices, and Components.

The PRG About box also shows you the current IP Address that PRG is using, as well as the Windows Machine name of your system.



Note: Click the button labeled “Check for Updates” if you want to find out if there is an update available to ProRAE Guardian. ProRAE Update provides a message box that tells you if your software is up to date or if a newer version is available. Both software and firmware updates are checked for availability (there is a tab for each kind).



Note: Internet connectivity is required in order to check for software updates and to download them.

8.4 Quick Access Toolbar

The Quick Access Toolbar provides a customizable way for you to have fast access to the functions that you use most.

You can move the Quick Access Toolbar below the Ribbon that includes the Command Center and RAE Center.

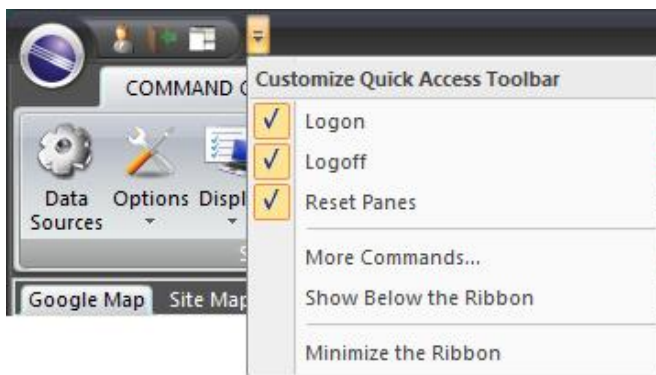
When you mouse over any of the Quick Access Toolbar icons, a tooltip shows you what it is. The default set is Logon, Logoff, and Reset Panes. However, you can customize the toolbar to include other functions.



Click on the downward-facing arrow icon to the right of the Quick Access Toolbar to access the Customize Quick Access Toolbar options.

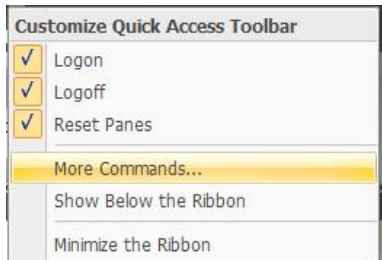


Here you can change whether Logon, Logoff, and Reset Panes are visible, but you can also move the Quick Access Toolbar (by clicking “Show Below the Ribbon”) or minimize Ribbon.

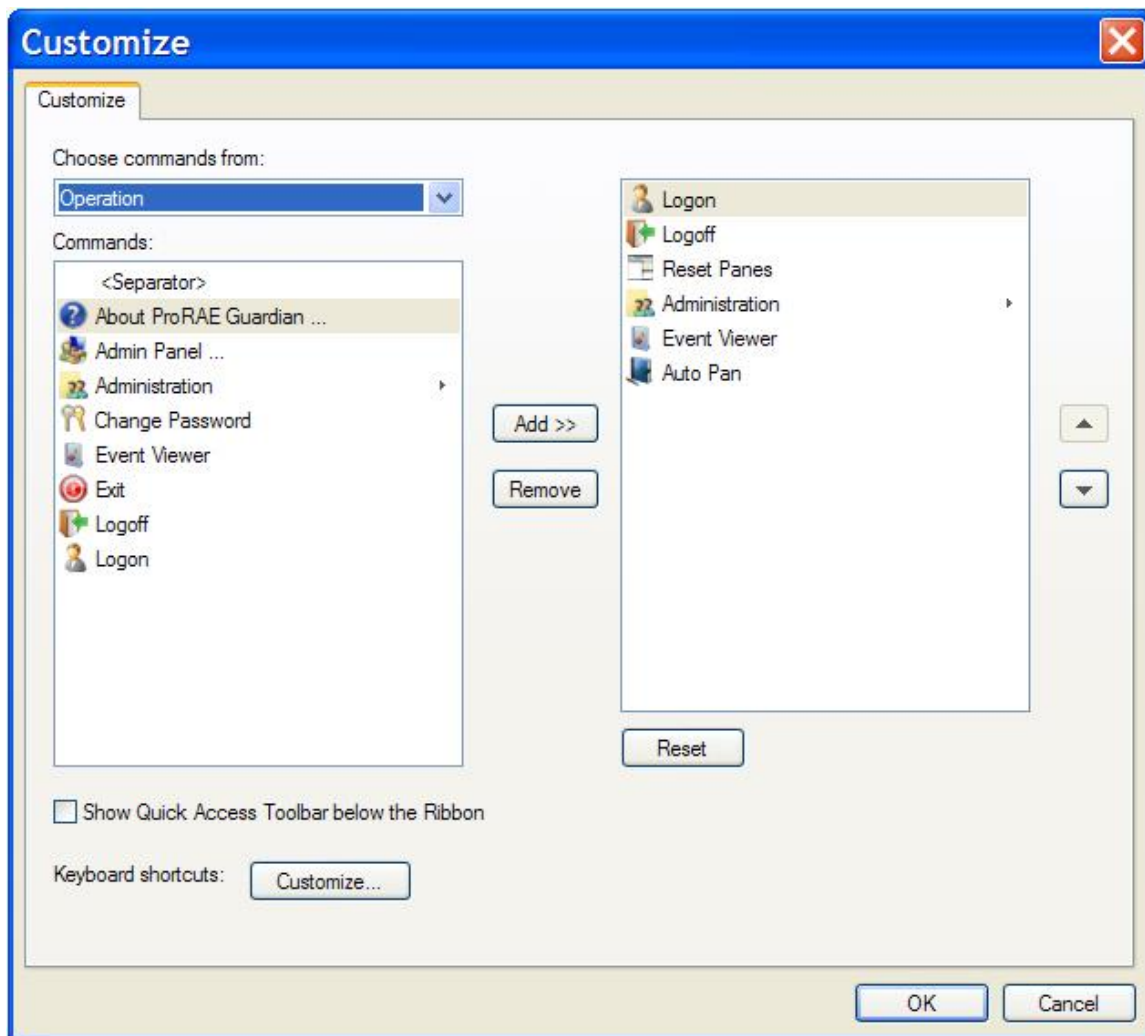


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Note: You can right-click on the Ribbon to access “Customize Quick Access Toolbar...”, “Show Quick Access Toolbar Below The Ribbon,” and “Minimize the Ribbon.” Click “More Commands...” to access a panel that allows you to customize the Quick Access Toolbar:



The “Customize” window appears:



Click an item in the left pane and then click “Add>>” to add it to the list in the right pane. (If something is already in the list in the right pane, ProRAE Guardian does add it again.)

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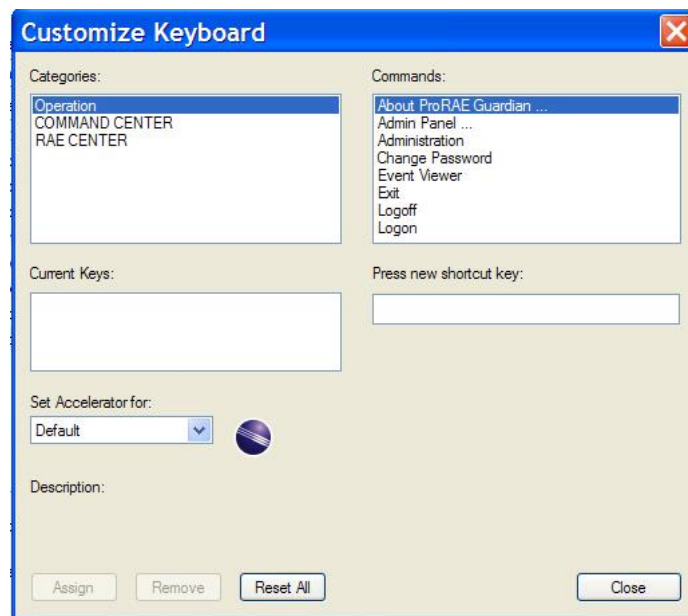
To change the order in which any of the items in the right pane appear in the Quick Access Toolbar, click on the item and then click either the up arrow or down arrow to move it up or down in the list. The top item appears farthest to the left in the row of icons, whereas the bottom item appears at the far right.

You can select to Show Quick Access Toolbar below the Ribbon by clicking the checkbox. When you close this window, the change is made. (You can return it to its original location above the Ribbon by clicking the checkbox so that it is empty.)

To remove an item from the Quick Access Toolbar, highlight the item and then click "Remove."

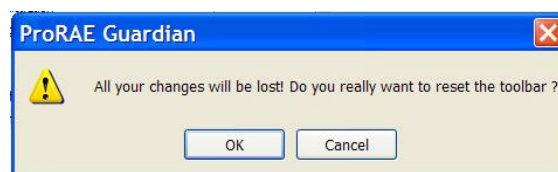
Shortcuts using keyboard commands can be created and edited by clicking the "Customize..." button at Keyboard shortcuts.

Categories and commands can be selected by clicking them. If there are current keyboard shortcuts, they are shown in the pane labeled Current Keys.



To create a new shortcut, click a command and then press a key (or combination of keys, such as Control-Shift-E), and it is then shown in the Current Keys box.

You can reset the list to the originally installed set (Logon, Logoff, Reset Panes) by clicking "Reset." An alert pops up to make sure you really want to do this:



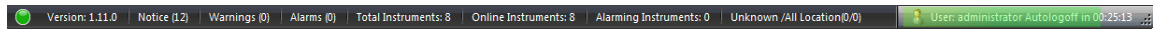
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Click “OK” to reset the toolbar.

Click “Cancel” to not reset the toolbar and to dismiss the alert.

8.5 System Status Bar

The System Status Bar, which runs along the bottom of the window, indicates whether the system is online (green dot), as well as the number of notices, warnings, and alarms during the session.



You can customize what is on the System Status bar. Right-click on any item in the bar. You will see this pop-up menu:

Status Bar Configuration		
<input checked="" type="checkbox"/>	System Status	System is in alarm.
<input checked="" type="checkbox"/>	Version	Version: 1.6.0
<input checked="" type="checkbox"/>	Notice	Notice (2)
<input checked="" type="checkbox"/>	Warnings	Warnings (0)
<input checked="" type="checkbox"/>	Alarms	Alarms (1)
<input checked="" type="checkbox"/>	Number of instruments connected.	Total Instruments: 15
<input checked="" type="checkbox"/>	Number of online instruments.	Online Instruments: 15
<input checked="" type="checkbox"/>	Number of instruments with sensor alarm or fault alarm.	Alarming Instruments: 1
<input checked="" type="checkbox"/>	User Information	User: administrator Autologoff in 00:28:09

As shown, all options are selected, and therefore these items are visible on the System Status Bar. To turn any of the items on or off, mouse over the items, which highlights them:

Status Bar Configuration		
<input checked="" type="checkbox"/>	System Status	System is normal.
<input checked="" type="checkbox"/>	Version	Version: 1.6.0
<input checked="" type="checkbox"/>	Notice	Notice (2)
<input checked="" type="checkbox"/>	Warnings	Warnings (0)
<input checked="" type="checkbox"/>	Alarms	Alarms (0)
<input checked="" type="checkbox"/>	Number of instruments connected.	Total Instruments: 6
<input checked="" type="checkbox"/>	Number of online instruments.	Online Instruments: 6
<input checked="" type="checkbox"/>	Number of instruments with sensor alarm or fault alarm.	Alarming Instruments: 0
<input checked="" type="checkbox"/>	User Information	User: administrator Autologoff in 00:29:58

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Then click on the item. If it is checked, it is “live” and appears in the System Status Bar. If it is not checked, then it is not included on the System Status Bar.

Status Bar Configuration	
<input checked="" type="checkbox"/>	System Status System is in alarm.
<input checked="" type="checkbox"/>	Version Version: 1.6.0
<input checked="" type="checkbox"/>	Notice Notice (2)
<input checked="" type="checkbox"/>	Warnings Warnings (0)
	Alarms Alarms (0)
<input checked="" type="checkbox"/>	Number of instruments connected. Total Instruments: 15
<input checked="" type="checkbox"/>	Number of online instruments. Online Instruments: 15
<input checked="" type="checkbox"/>	Number of instruments with sensor alarm or fault alarm. Alarming Instruments: 1
<input checked="" type="checkbox"/>	User Information User: administrator Autologoff in 00:29:21

To close this dialog box, click on the System Status Bar.

For information on resizing and relocating the panes, see page 121.

9 Tabs

Major functional groups within ProRAE Guardian are organized as “Centers,” which are accessed by clicking each area’s tab along the top of the application. In ProRAE Guardian, there are two such Centers, the Command Center and the RAE Center. The Command Center encapsulates all the real-time functionality of ProRAE Guardian. It includes real-time instrument readings, maps, and datalogs. The RAE Center is your personal portal to RAE Systems. It includes up-to-the minute information direct from RAE Systems about your ProRAE Guardian system, updates, and new options, along with valuable offers for both hardware and software from RAE Systems. Check the RAE Center periodically for updates.



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9.1 Command Center

The main tab for ProRAE Guardian, Command Center, contains the most often used functions for setting up and using the program. Clicking on any of the icons opens windows with menus and other functional controls. The Command Center is divided into two sections, System and Google Map.

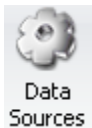
Note: On a computer acting as a ProRAE Guardian host, there are areas for the device type and GPS.

9.1.1 System



The System area of the Command Center provides access to the tools you need for setting up ProRAE Guardian, setting options, and other features, all outlined in the following sections.

9.1.1.1 Data Sources



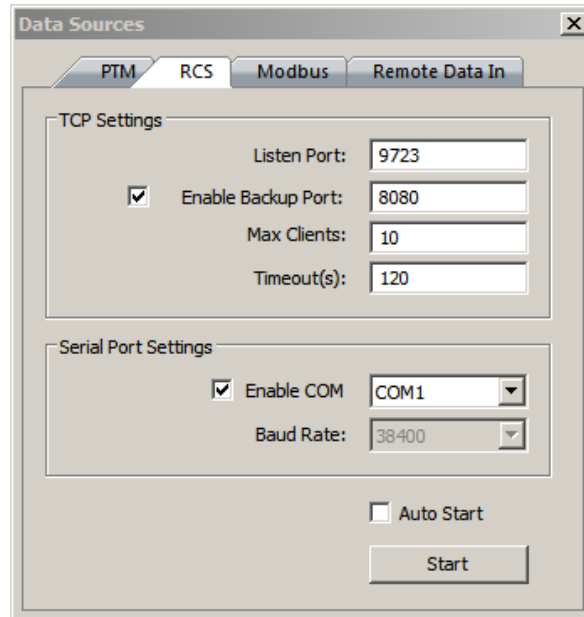
When you click the Data Sources button, a window appears with three tabs that include the places where you input and choose settings that help you to configure the software for your computer running ProRAE Guardian.

Three types of data sources can be configured to match the source:

PTM	Point To Multipoint, for use with RAELink3 or RAELink2 modem
RCS	Remote Communication Standard, for use with RAE Systems mesh radio-equipped devices such as MeshGuards
Modbus	Data from equipment using Modbus protocol
Remote Data In	Data from external sources via ProRAE Guardian's XML interface

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The general settings are described in the following section. Configuration of a system using each of these Data Sources types is covered in the following sections.

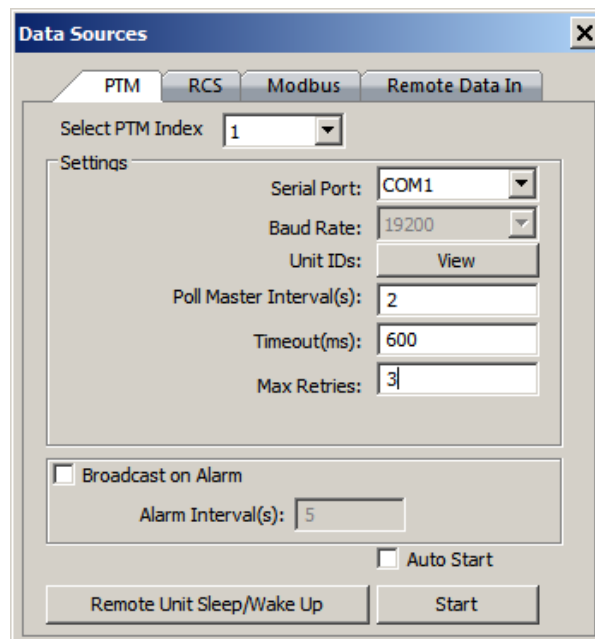


The screenshot shows the 'Data Sources' window with the 'PTM' tab selected. The window has a title bar with a close button (X) in the top right corner. Below the title bar are four tabs: 'PTM', 'RCS', 'Modbus', and 'Remote Data In'. The 'PTM' tab is active. The window is divided into two main sections: 'TCP Settings' and 'Serial Port Settings'. In the 'TCP Settings' section, there are four input fields: 'Listen Port' (9723), 'Enable Backup Port' (checked checkbox, 8080), 'Max Clients' (10), and 'Timeout(s)' (120). In the 'Serial Port Settings' section, there are two input fields: 'Enable COM' (checked checkbox, COM1) and 'Baud Rate' (38400). At the bottom of the window, there is an unchecked 'Auto Start' checkbox and a 'Start' button.

Close the Data Sources window by clicking the “X” at the upper right corner.

9.1.1.2 PTM

“PTM” stands for “point to multipoint.” This Data Sources tab allows configuration with AreaRAEs and other monitors via a RAELink3 or RAELink2 in Host mode.



The screenshot shows the 'Data Sources' window with the 'PTM' tab selected. The window has a title bar with a close button (X) in the top right corner. Below the title bar are four tabs: 'PTM', 'RCS', 'Modbus', and 'Remote Data In'. The 'PTM' tab is active. At the top of the window, there is a 'Select PTM Index' dropdown menu set to '1'. Below this is a 'Settings' section with several input fields: 'Serial Port' (COM1), 'Baud Rate' (19200), 'Unit IDs' (View button), 'Poll Master Interval(s)' (2), 'Timeout(ms)' (600), and 'Max Retries' (3). Below the 'Settings' section, there is an unchecked 'Broadcast on Alarm' checkbox and an 'Alarm Interval(s)' input field set to '5'. At the bottom of the window, there is an unchecked 'Auto Start' checkbox, a 'Remote Unit Sleep/Wake Up' button, and a 'Start' button.

9.1.1.3 Select PTM Index

Use this pull-down menu to select from as many as four different RAELink3 hosts.

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9.1.1.4 Settings: Serial Port

The serial port being used by a compatible modem/device is typically sensed by the program and preselected. If you want to change the selection, make sure the “Start” button is not on, and you should be able to select any of the COM ports available on your system. If no port shows up, it could be because ProRAE Guardian did not detect any available local COM ports.

Select which serial port is connected to the RAELink, RAELink2, or RAELink3 host modem. Select a COM port from the drop-down menu. This selection should typically be left at its default setting.

9.1.1.5 Settings: Baud Rate

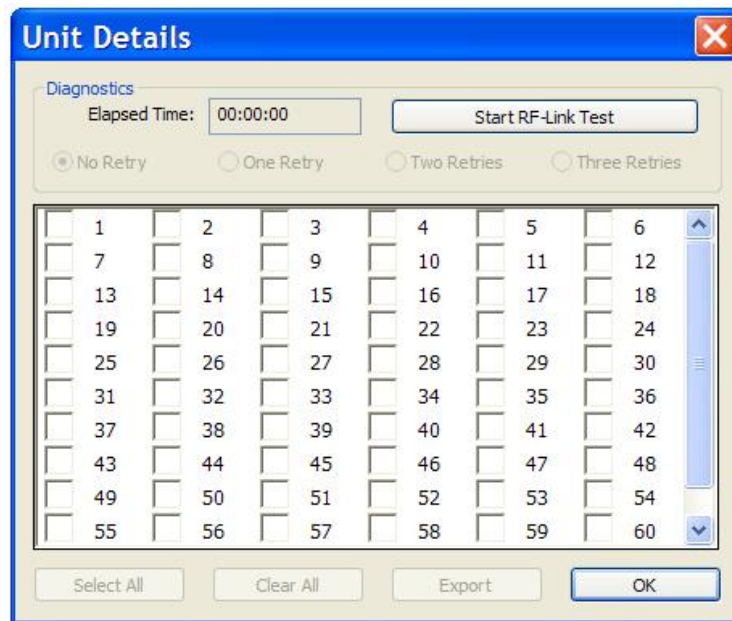
The baud rate is the transmission rate at which data flows between computers. The baud rate is roughly equivalent to the number of bits per second (bps). For proper data transfer, the baud rate must be the same at the transmitting and receiving ends of a connection. Currently, the baud rate is fixed at 19200 bps. This setting should not be changed.

9.1.1.6 Settings: Unit IDs

Clicking the “View” button under “Unit IDs” opens up the Unit IDs dialog box. This box has two modes: Normal and Diagnostic. The default is Normal mode. In Normal mode, ProRAE Guardian shows a check next to each PTM channel on which it has detected an instrument. ProRAE Guardian automatically detects any instrument broadcasting on any of the 64 available channels. (By default, channels 1 through 8 are selected.)

Alternatively, you can manually select a channel, and ProRAE Guardian scans it regardless of whether there is a device present.

You can select the remote units if polling is not started. Click the ones you want, and then click “OK” to dismiss this dialog box.

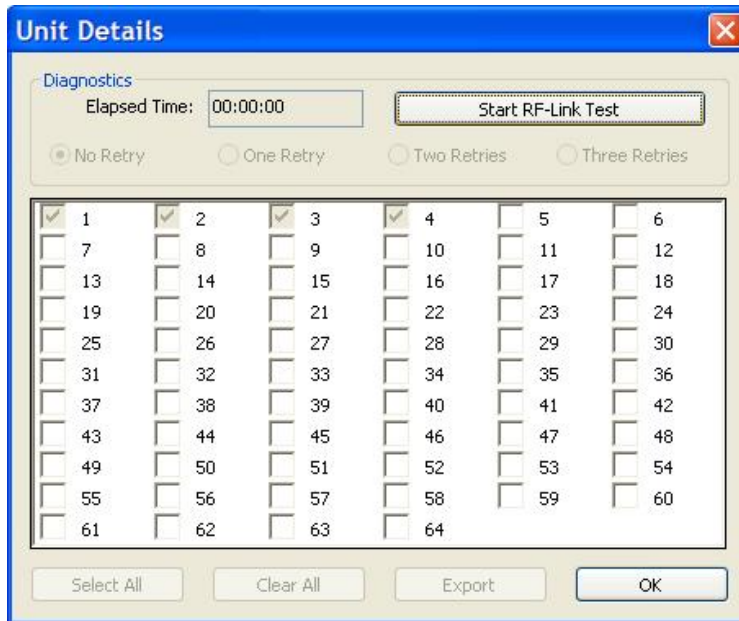


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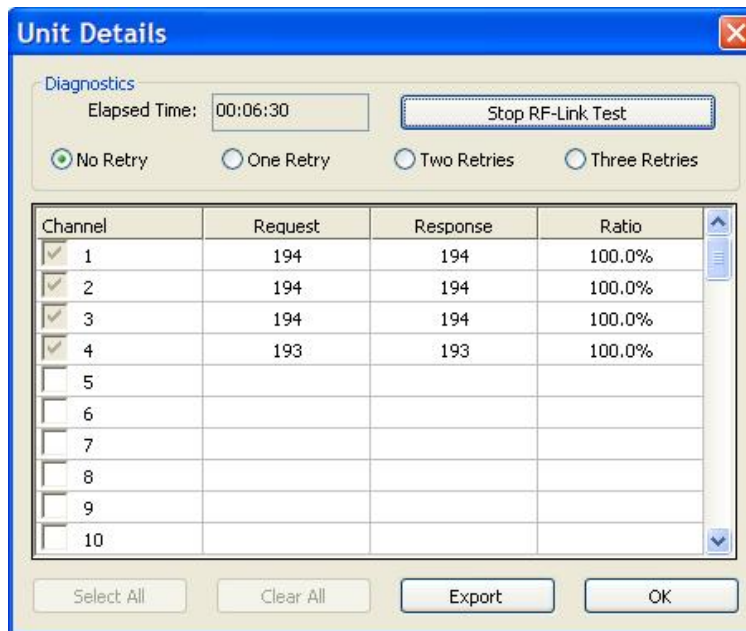
In Diagnostic mode, ProRAE Guardian measures the efficiency of each channel and shows the percentage of successful transmission attempts. In this mode, ProRAE Guardian ignores the “Max Retries” setting on the PTM tab. Instead, it retries the channel link transfer according to the retry radio button selections in the “Diagnostics” section of the “Channel Details” dialog.

You can start diagnostic mode after starting PTM polling begins.

Click “Start RF-Link Test” to start diagnostic mode.



Once it starts, it checks the channels one by one and provides results in the table:



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You can save the results for reference or troubleshooting. Click “Export” to save the test results to a text file.

To stop diagnostic mode, Click “Stop RF-Link Test.”

To exit, click “OK.”

Why You Shouldn't Automatically Opt For The Maximum Number Of Channels

You might wonder, why not simply click on “select all” in the “Unit Details” dialog box so that you don't have to think about how many channels you will use, and let the system “size itself.”

We strongly advise against automatically choosing the maximum number. ProRAE Guardian can run when all 64 channels are selected, but you will most likely experience poor updating performance with this setting, especially if you do not actually have 64 instruments connected. This is because of how ProRAE Guardian polls PTM instruments.

In order to completely understand the next section, you need to understand just how ProRAE Guardian collects data from PTM instruments. ProRAE Guardian sends out a request for data on a particular channel. It waits to see if an instrument responds with data. If, after a certain period of time (Timeout), it gets no response on that channel, it resends the request. If, after a certain number of retries (Max Retries), it still gets no response, it then moves on to the next channel. It repeats this sequence until all selected channels (Max Channels – selected channels only) have been covered. Then ProRAE Guardian waits until the total polling cycle time (Poll Master Interval) is reached (since the polling on first checked channel). Then it goes to the beginning and starts over.

Here is another way to express this sequence: On every selected channel of Max Channels, ProRAE Guardian sends out a request for the channel. It waits for every Timeout to get a response to that request, and if it gets no response after Max Retries, it moves on to the next selected channel.

Therefore, if you only have two instruments, one set to Channel 1 and one set to Channel 64, you would get completely different update times depending upon:

1. If you had all 64 instruments selected under Max Channels, or just Channel 1 and Channel 64, and
2. If you had a long or short Poll Master Interval, and
3. If you had a long or short Timeout, and
4. If you had a large or small number of Max Retries.

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9.1.1.7 Settings: Poll Master Interval(s)

The Poll Master Interval decides the minimum updating interval for every active remote monitor. When ProRAE Guardian is in operation, it polls all active remote detectors in sequence. The Poll Master Interval is the channel reading update interval. ProRAE Guardian asks for data according to the Poll Master Interval. For example, if the Poll Master Interval is set to 2 sec (the default setting), ProRAE Guardian sends out a request for information every two seconds for each active channel. If there are many detectors in the system, if you selected a large number in the Max Channels section, or if Timeout and/or Max Retries values are set too high, the actual time for one cycle might be longer than this number. The number range is 1 to 60 seconds, and the default is 2 seconds.

These examples illustrate how this works:

Condition: The Poll Master Interval is set to 2 seconds, and ProRAE Guardian gets a response from the instrument in 600ms.

1. There is only one instrument in the system.
ProRAE Guardian waits 2 seconds to poll the instrument again.
Therefore, the instrument data updating interval is 2 seconds.
2. There are 64 instruments in the system.
After polling all 64 instruments, ProRAE Guardian takes about 38 seconds (which is larger than the Poll Master Interval) to poll all the instruments. Therefore, the instrument data upgrading interval is about 38 seconds.

9.1.1.8 Settings: Timeout (ms)

Every time ProRAE Guardian sends out a request for data, it waits for a response. If there is valid response within the Timeout time, ProRAE Guardian switches to poll other active monitors. If there is no valid response in the Timeout interval, ProRAE Guardian resends the request. The range is 200 to 800 ms, and the default is 600 ms.

Note: Using the default value of 600ms is highly recommended.

9.1.1.9 Settings: Max Retries

Due to the nature of wireless communication, some errors may occur when an instrument communicates with the host computer. When errors occur or when an instrument is switched off, the host computer cannot receive valid data from it. Max Retries displays the number of times the host computer retries communication with the instrument before it is considered to be one failure of communication. When 10 consecutive failures of communication occur, the status indicator for that instrument changes from green to gray, and this monitor is then set to "inactive." The number range is 0 to 5.

9.1.1.10 Settings: Broadcast On Alarm

Checking this box enables ProRAE Guardian to send a signal that places all PTM devices in alarm when one PTM device goes into alarm. Input the number of seconds between alarms.

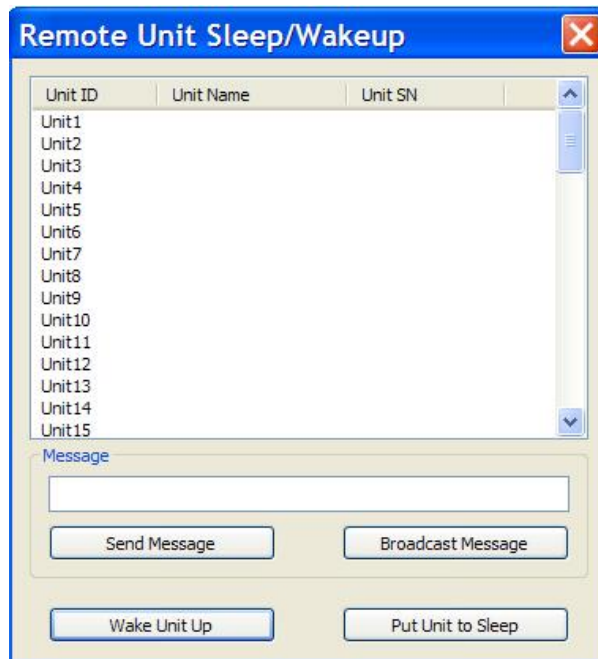
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9.1.1.11 Auto Start

This setting automatically commences communication with the indicated instruments whenever ProRAE Guardian is started. If this checkbox is checked, you only need to hit the Start button once, and thereafter ProRAE Guardian will always attempt communication every time it starts.

9.1.1.12 Remote Unit Sleep/Wakeup

Clicking the Remote Unit Sleep/Wakeup button opens this window. You can select specific units on the network to wake or put to sleep, as well as send a message that you type in the "Message" field. You can also click "Broadcast Message" to send the message to the entire network. Just type any message in the "Message" text box, and click "Broadcast message" to send to the displays of all active PTM devices attached to this machine. Alternatively, click "Send Message" to send the message to only the display of the selected Unit(s).



9.1.1.13 Start

Clicking the Start button tells ProRAE Guardian to start communicating with the indicated instruments. If Auto Start is not checked, you must perform this operation every time ProRAE Guardian is started if you want communication to take place with these instruments.

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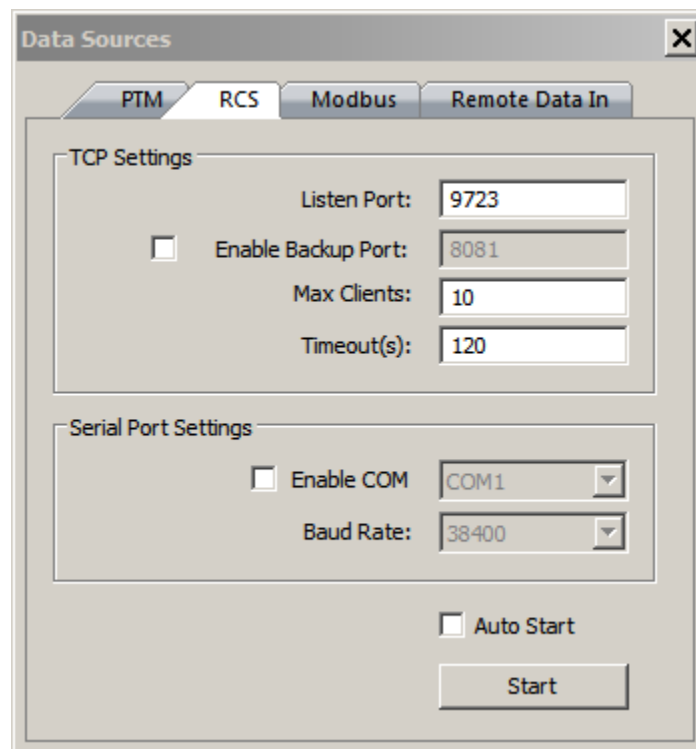
9.1.2 RCS

“RCS” stands for “RAE Communication Standard.” This is the communication protocol used by all RAE Systems mesh radios. RAE Systems mesh radios utilize a peer-to-peer, self-configuring, self-healing radio signaling system based upon the Zigbee standard. It provides robust communications in noisy environments, even in the presence of obstacles that may disrupt more fragile point-to-point radio systems.

This tab has two distinct sections. One is labeled “TCP Settings,” and the other is labeled “Serial Port Settings.” These sections are for configuring RAEMesh Readers in two different ways, depending upon their specific connectivity to the host PC.

The “TCP Settings” section of the RCS tab allows for configuration of RAE Systems devices that are connected on a local area network via Internet protocol. These include the FMC2000 controller and the RAEMesh Reader (indoor version).

The “Serial Port Settings” section of the RCS tab allows you to set up a mesh-type reader that is connected directly to the computer's serial port via DB-9 or USB connection.



The screenshot shows a software window titled "Data Sources" with a close button (X) in the top right corner. The window has four tabs: "PTM", "RCS", "Modbus", and "Remote Data In". The "RCS" tab is selected. The window is divided into two main sections: "TCP Settings" and "Serial Port Settings".

TCP Settings:

- Listen Port: 9723
- Enable Backup Port: 8081
- Max Clients: 10
- Timeout(s): 120

Serial Port Settings:

- Enable COM: COM1
- Baud Rate: 38400

At the bottom of the window, there is an Auto Start checkbox and a Start button.

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9.1.2.1 Listen Port (TCP Settings)

Set the appropriate port to match your reader device (the default is 9723).

Note: If you change the port on ProRAE Guardian, you should change the TCP port with the same value for all the FMC2000 controllers and RAEMesh Readers (indoor version) that connect to the ProRAE Guardian.

9.1.2.2 Enable Backup Port (TCP Settings)

In some installations, port 9723 is blocked and therefore communication between the reader and the computer is also blocked. In these situations, the problem may be resolved if you enable the backup communication port option. If you do not wish to enable a backup port, leave the box unchecked (the default is "Off"). Most installations will not require this.

9.1.2.3 Max Clients (TCP Settings)

ProRAE Guardian can support large numbers of mesh instruments. However, when these instruments are connected to a mesh reader configured via Ethernet in this fashion, serious negative network performance issues may result if large numbers of instruments are involved. Consider this when configuring large mesh networks. The default for this setting is 10, and the range is 1 to 64.

9.1.2.4 Timeout(s) (TCP Settings)

ProRAE Guardian closes the TCP connection if there is no data communication on the TCP connection after the Timeout interval elapses. The default is 120 seconds.

9.1.2.5 Enable COM (Serial Port Settings)

Once your mesh modem is connected and operating, simply select the "Enable COM" checkbox and use the drop-down menu to select the appropriate COM port.

9.1.2.6 Baud Rate (Serial Port Settings)

The baud rate is the transmission rate at which data flows between computers. The baud rate is roughly equivalent to the number of bits per second (bps). For proper data transfer, the baud rate must be the same at the transmitting and receiving ends of a connection. Currently, the baud rate is fixed to 38400 bps. This setting should not be changed.

9.1.2.7 Auto Start

This setting automatically commences communication with the indicated instruments whenever ProRAE Guardian is started. If this checkbox is checked, you only need to hit the Start button once, and thereafter ProRAE Guardian will always attempt communication every time it starts.

9.1.2.8 Start

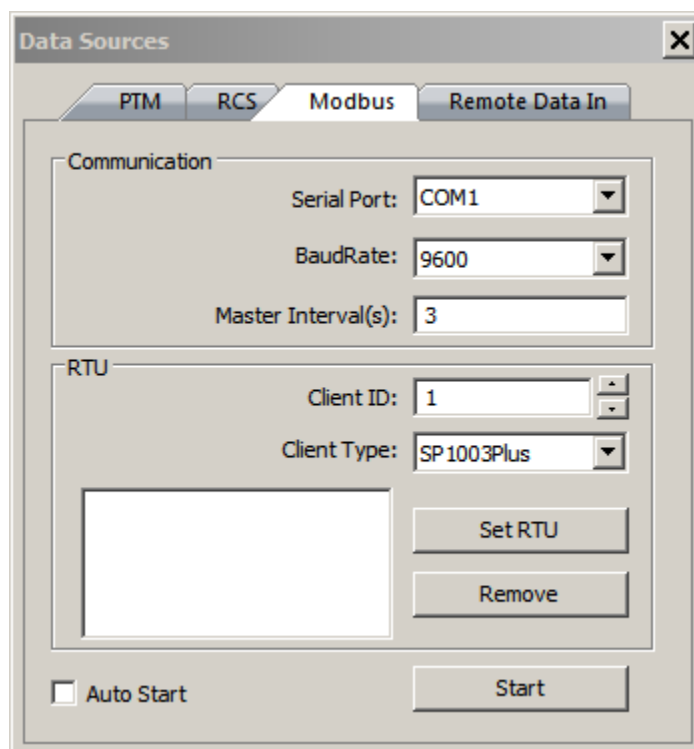
Clicking the Start button tells ProRAE Guardian to start communicating with the indicated instruments. If Auto Start is not checked, you must perform this operation every time ProRAE Guardian is started if you want communication to take place with these instruments.

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9.1.3 Modbus

This Data Sources tab allows configuration the communication with RAE Systems Modbus products.

This tab has two sections. One is labeled “Communication,” and the other is labeled “RTU.” The “Communication” section allows for configuration of PRG parameters for Modbus communication (serial port, baud rate and interval). The “RTU” section allows you to set up a list of clients that connect to the computer's serial port.



9.1.3.1 Communication

Settings for communication port, speed (BaudRate), and transmission interval are set here.

9.1.3.2 Serial Port

This senses for an open port, or you can set an available port.

9.1.3.3 Baud Rate

The BaudRate sets the speed at which the computer and remote device communicate. They should match, so check with the instrument's requirements before setting a BaudRate. The default value is 9600.

9.1.3.4 Master Interval(s)

This value (in seconds) defines the interval that ProRAE Guardian waits before communicating with the next Modbus device. The range is 1 to 60 seconds.

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9.1.3.5 RTU

RTU (real-time updating) defines the details for each Modbus client. It allows you to set which instruments are to be polled for data. Select a client ID number, then a client type (type of instrument), and then click "Set RTU." Add as many instruments as appropriate.

9.1.3.6 Client ID

Select an ID number that you want for an instrument on the network. According to Modbus communication, each client on the same bus must have a unique client ID. Select the correct ID for each client. The range is 1 to 247.

9.1.3.7 Client Type

Choose an instrument from the list that uses Modbus protocol. ProRAE Guardian supports SP1003Plus, RAEGuards, RAEGuard2, RAEAlert, SP-3200, FMC-1000 and STC103.

Note: SP1003Plus, SP3200 and STC103 are supported in China only, and STC103 needs the configuration file before the selection.

9.1.3.8 Set RTU

Click "Set RTU" to add a Modbus client to the client list. After selecting a Client ID and Client Type, register it in the list by clicking "Set RTU." It shows up in the list to the left. Repeat the steps (ID, Type and Set RTU) to add more clients to the Modbus communication.

9.1.3.9 Remove

If you want to remove an instrument from the list, click on its name in the list and then click "Remove." It is now removed from the roster.

9.1.3.10 Auto Start

This setting automatically starts communication with the indicated instruments whenever ProRAE Guardian is started. If this checkbox is checked, you only need to hit the Start button once, and thereafter ProRAE Guardian will always attempt communication every time it starts.

9.1.3.11 Start

Clicking the Start button tells ProRAE Guardian to start communicating with the indicated instruments. If Auto Start is not checked, you must perform this operation every time ProRAE Guardian is started if you want communication to take place with these instruments.

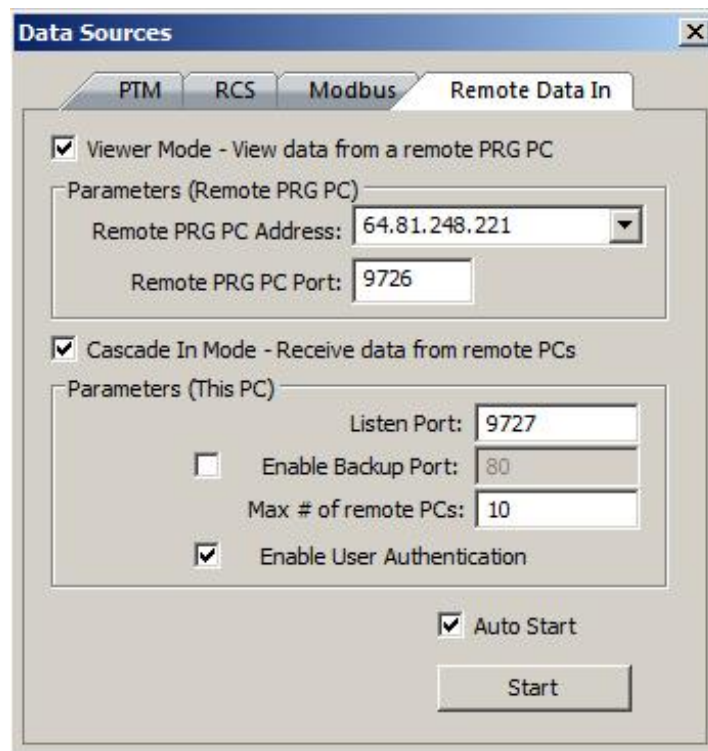
9.1.4 Remote Data In

The "Remote Data In" has settings that control how ProRAE Guardian uses instrument and other data sent to it from other ProRAE Guardian Full Version machines. So-called "Remote ProRAE Guardian computers" can send data to another ProRAE Guardian Full Version machine to be used in two possible ways:

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- 1. Remote Viewer.** In “Viewer Mode,” the local ProRAE Guardian machine can “view” instrument data from instruments that are attached to a remote machine running ProRAE Guardian software. This is the most common way Remote Data In is used. Viewer mode is available in all ProRAE Guardian Versions.
- 2. Data “Aggregator.”** In “Cascade Mode” many other ProRAE Guardian machines can forward their data to a “master” ProRAE Guardian machine for aggregation. In this way, all data from all machines can be aggregated into one master view, regardless of source.

Note: Cascade Mode is only available on ProRAE Guardian Full Version installations.



9.1.4.1 Viewer Mode – View data from a remote PRG PC

To set up this machine to view data from a remote computer with ProRAE Guardian, check the checkbox labeled “Viewer Mode – View data from a Remote PRG PC.”

9.1.4.2 Remote PRG PC Address (Parameters – Remote PRG)

Input the IP address of the remote ProRAE Guardian computer or URL into this field.

Note: The IP address of the remote ProRAE Guardian computer must be known and accessible in order for Viewer mode to function properly. In this case, it is also recommended to use a fixed IP address.

9.1.4.3 Remote PRG PC Port (Parameters – Remote PRG)

Type in the port number of the remote ProRAE Guardian computer on which the viewer data can be accessed. **Note:** If both machines (Viewer and host) are set to their default values, this

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should work without changes, unless the specific port is blocked (possibly by a firewall). If this occurs, change port numbers on both systems, or consult your IT department.

9.1.4.4 Cascade In Mode – Receive data from remote PCs

To allow this computer to accept data from other ProRAE Guardian Full Version computers to be aggregated into a single view, check the checkbox beside “Cascade In Mode – Receive data from remote PCs.”

9.1.4.5 Listen Port (Parameters – This PC)

In order for Cascade Mode to operate properly, both computers (sender and receiver) must have the same port number specified. The default is 9727.

9.1.4.6 Enable Backup Port (Parameters – This PC)

Sometimes, ports may be blocked due to network configuration. If this occurs, checking the checkbox beside “Enable Backup Port” may resolve the problem. **Note:** This is typically not necessary.

9.1.4.7 Max # of remote PCs (Parameters – This PC)

ProRAE Guardian can accept cascaded data from many computers, but the more computers that send data, the more network bandwidth that is required. The default for the setting is 10, and the range is 1 to 64.

9.1.4.8 Enable User Authentication

Check this box to require authentication by any remote source (UserID and Password). Without proper authentication, ProRAE Guardian will not accept data from remote PCs.

9.1.4.9 Auto Start

This setting automatically commences communication with the indicated instruments whenever ProRAE Guardian is started. If this checkbox is checked, you only need to hit the Start button once, and thereafter ProRAE Guardian will always attempt communication every time it starts.

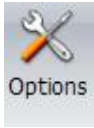
9.1.4.10 Start

Clicking the Start button tells ProRAE Guardian to start communicating with the indicated instruments. If Auto Start is not checked, you must perform this operation every time ProRAE Guardian is started if you want communication to take place with these instruments. If it is already communicating, the Start button says “Stop.”

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9.1.5 Options

This toolbar icon opens the Options dialog box, which allows setting various display, alarm, and other functions.



The Options Dialog/Control window has four tabs:

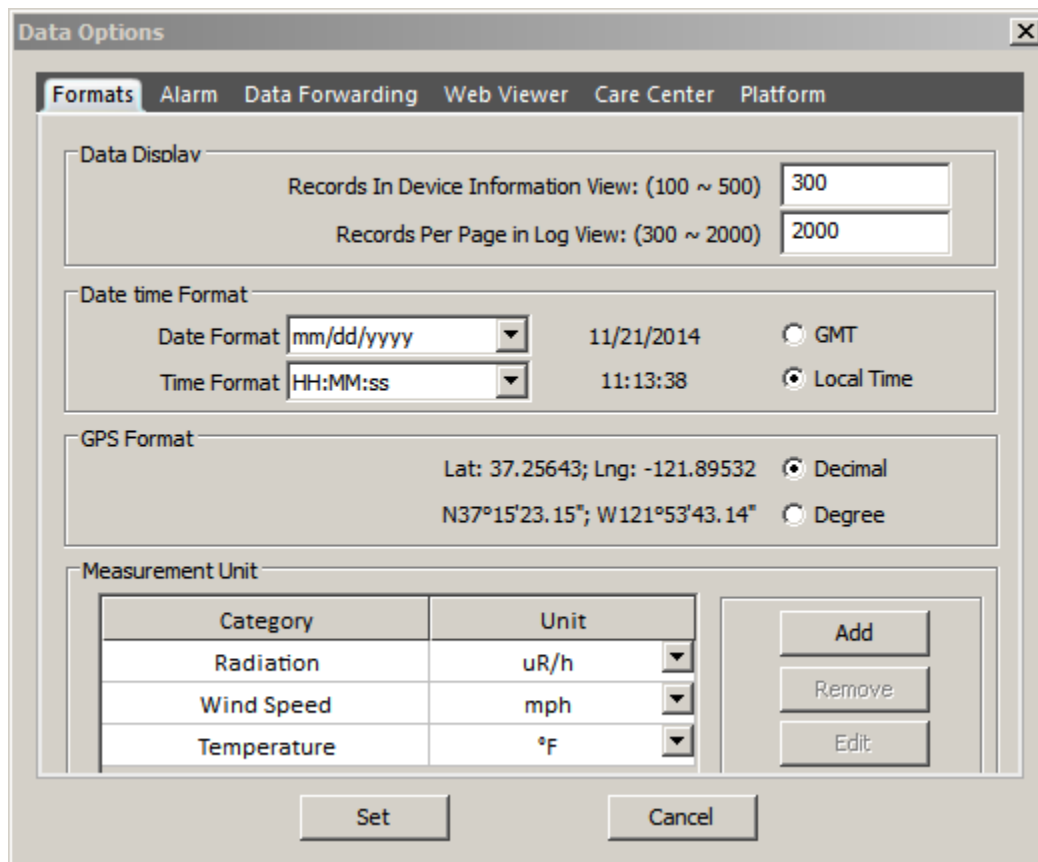
- Data Options
- Add-ons
- Device Templates
- Status

9.1.5.1 Data Options

Data Options has five tabs and many features that set parameters and provide insight and control for ProRAE Guardian and its data.

9.1.5.2 Formats

As its name implies, Formats is where you set the way in which data is presented. There are four sections, Data Display, Date time Format, GPS Format, and Measurement Unit:



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Data Display

Records In Device Information View. This sets the maximum number of records shown in the Device Information Pane (the range can be set from 100 to 500). The larger the setting, the more system RAM the program will use, but the more data that will be available via this pane.

Records Per Page in Log View. This sets the maximum number of records shown in the Log View (the range can be set from 300 to 2,000). This setting allows you to configure how much data can be viewed on any one page of the datalog for viewing convenience.

Date time Format

Date and time can be expressed in many different ways.

The date can be indicated in one of the following formats via the pull-down menu:

- mm/dd/yyyy 12/31/2010
- yyyy-mm-dd 2010-12-31
- yy-mm-dd 10-12-31
- yyyy/mm/dd 2010/12/31
- yy/mm/dd 10/12/31
- dd/mm/yyyy 31/12/2010

The time can be indicated in one of the following formats via the pull-down menu:

- HH:MM 12:15
- HH:MM:ss 12:15:27
- HH:MM:ss AM/PM 12:15:27 AM
- HH:MM AM/PM 12:15 AM

GMT/Local Time. Click either of the radio buttons to select GMT (Greenwich Mean Time) or local time, which is shown in the time format you select via the pull-down menu.

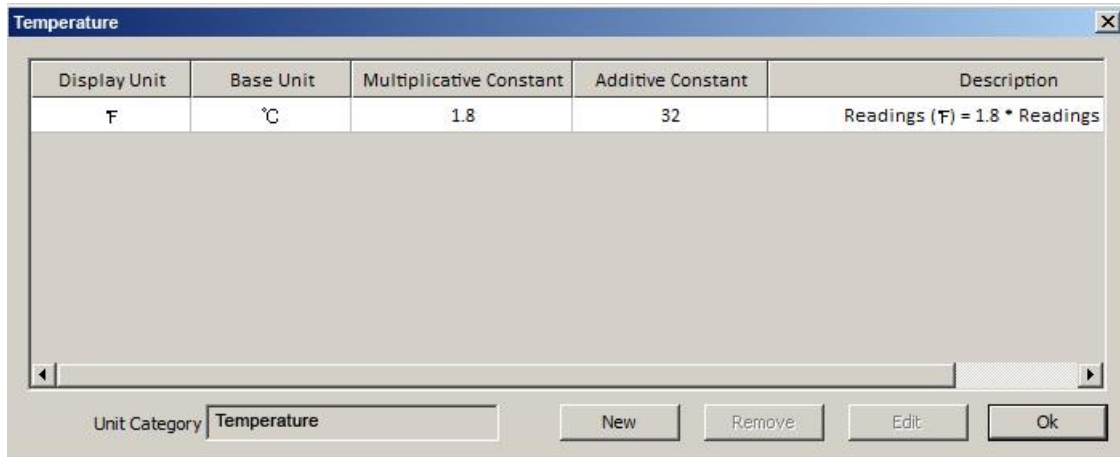
GPS Format

Click either of the radio buttons to select decimal or degree GPS coordinate data format.

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Measurement Unit

This section allows configuration of a custom measurement unit for some instrument readings. An example of such a custom unit setting is pre-loaded into the program by default to illustrate a conversion from Fahrenheit to Celsius. To see how the conversion is programmed, select the "Temperature" line in the Measurement Unit box. Then click "Edit". You will then see the following dialog:



This dialog shows that an equation has been programmed into the system relating Degrees F to Degrees C. The equation is:

$$\text{Readings (°F)} = 1.8 * \text{Readings (°C)} + 32$$

To add a new Unit of Measurement, go back to the previous dialog and click the "Add" button. Then, in the "Unit Category" text box, type in a new Measurement Category name of your choice. This should typically be the general category that both Units (the original source and your new Unit of Measurement) have in common. Referring to the example, "Temperature" is the category that both °F and °C are members of.

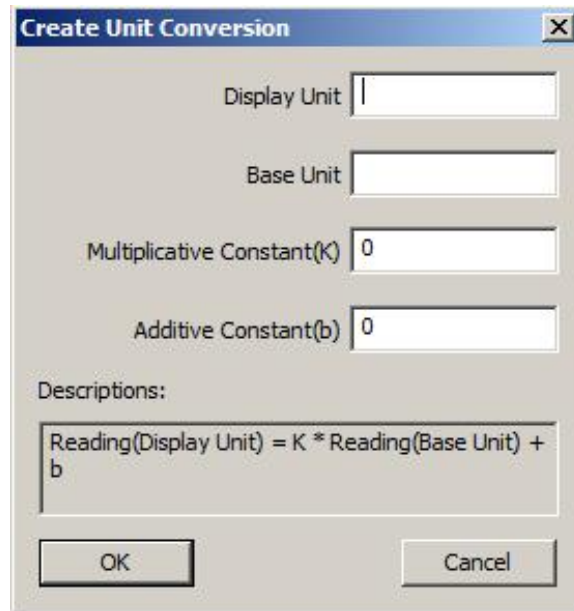
To illustrate this further, let's enter a useful new Unit of Measurement for Velocity. ProRAE Guardian has, by default, only one unit of measurement for velocity: m/sec (meters per second). So let's add a new unit of Velocity equal to mi/hr (miles per hour). To do this, perform the following actions:

1. Go to the original dialog and click on "Add."
2. Enter "Velocity" in the "Unit Category" text field.
3. Click the button labeled "New".

Note: If you do not enter a name (such as "Velocity") into the text field and click "New," an error message saying, "Please input the unit category name" will pop up to remind you to give it a name.

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You should now see another dialog box like the following:



In the text field labeled “Display Unit,” type “mph” (for “miles per hour”). This is our new unit of measurement for velocity. For “Base Unit,” you must enter a unit of measurement that ProRAE Guardian currently has defined. The best way to figure out what unit ProRAE Guardian already has defined is to use the “Device Information” pane for an instrument that you want to work with. If you have, for example, a WeatherPak with a wind velocity monitor, then in the Device Information pane you should be able to click on the “Device Details” tab and scroll down to see the “Spd” sensor detail. In this detail you will see the “Unit of Measurement” of the Spd sensor for the WeatherPak is “m/sec” (meters per second). This is what you need to type into the “Base Unit” field of the Create Unit Conversion dialog box in our example.

After you have entered the new Display Unit name, and determined the Base Unit name that it will be derived from, then you must enter a linear equation relating the two values that conforms to the general form:

Output Value = Input Value * Additive Constant + Additive Constant.

If you can express the relationship between the two values with the above equation, you can use this function to create whatever new Units of Measurement you want.

In our example above, the equation relating miles per hour to meters per second is $1 \text{ m/sec} = 2.24 \text{ mph}$. That means

$$\text{Display Value (in mph)} = 2.24 * \text{Input Value (in m/sec)}$$

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For example, the instrument's wind speed sensor has a reading of 10 m/sec, which equals to 22.4 mph.

So in order to program our new conversion, type 2.24 into the "Additive Percent" text field. Leave the "Additive Constant" text field set to zero. Now the "Description" field should read:

$$\text{Readings (mph)} = 2.24 * \text{Readings (m/sec)}$$

After this, click the "OK" button to close the dialog. You should now see your new Measurement Unit in the Measurement Unit box. To choose between m/sec and mph, simply select the desired Unit from the drop-down menu, and click the "Set" button. After you do this, all m/sec readings in ProRAE Guardian will now be displayed as mph readings.

Note: This unit conversion is only for the local computer, and does not affect the datalog. It is for display only.

9.1.5.3 Alarm

The Alarm tab provides options for local and remote notification when ProRAE Guardian receives alarm data from its network.

Enable Off-Line Alarm Notifications. If this is checked, the Off-line Alarm feature is activated, ensuring that you are informed in cases when remote instruments lose connection with ProRAE Guardian.

How the Off-Line Alarm Works

ProRAE Guardian starts to check the online instrument number once the number is equal to (or greater than) the value of "Minimum Online Devices" (refer to the next screen image). When some instruments go offline (as a result of their power being turned off or because of lost communication with ProRAE Guardian) and if the online instrument number drops below the value of "Minimum Online Devices," ProRAE Guardian activates the Off-line Alarm.

Once the online instrument number equals or exceeds the value set in "Minimum Online Devices," ProRAE Guardian no longer activates the alarm.

Notes:

1. The Off-line Alarm has a lower priority than the Main Alarm. If there is a Main Alarm, ProRAE Guardian shows the Main Alarm.
2. If the TCP connection is not stable, do not enable this the Off-Line Alarm feature on a cascaded ProRAE Guardian.

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The screenshot shows the 'Data Options' dialog box with the 'Alarm' tab selected. The dialog has a title bar with a close button. Below the title bar are tabs for 'Formats', 'Alarm', 'Data Forwarding', 'Web Viewer', 'Care Center', and 'Platform'. The 'Alarm' tab contains several settings:

- Enable Offline Alarm Notification
- Minimum Online Devices: 8
- Bring Window to Top on Alarm
- Enable PC Voice
- Send Email Notifications on Alarm
- Attach ProRAE Guardian Screen Snapshot in Email
- SMTP Server: mail.corp.hammlabs.com
- SMTP Port: 25
- My Server requires secure connections. (SSL/TLS)
- User Name: Robert Jones
- Password: [masked]
- Sender: rjones@hammlabs.com
- Receiver(s): fsmith@hammlabs.com
- Send a Test Email button

At the bottom of the dialog are 'Set' and 'Cancel' buttons. A 'Note' box on the right contains the following text:

Note

1. Use semicolon(;) to separate multiple receivers.
2. Please send a test email to verify the settings.

Minimum Online Devices. The minimum number of devices that should remain online to prevent the system from sending an “offline” alarm notification.

Bring Window to Top on Alarm. When this is checked, the ProRAE Guardian window comes to the top if you have other applications open on your computer, ensuring that you are informed of any alarm state changes.

Enable PC Voice. When this is checked, a voice reads any information that is shown in the System Information pane. This lets you know when ports are opened or closed, when a monitor goes into or out of alarm, etc.

Note: If you enable this option, make sure your computer has a sound card and that the volume is not set too low or muted.

Send Email Notifications on Alarm. If the host computer is connected to the Internet via a LAN, checking this option enables email alarm notification. The alarm time, monitor number, and the reason (pump blocked, concentration of some gas is too high, etc.) is included in the email.

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Attach ProRAE Guardian Screen Snapshot in Email. Enable this by checking the box. This captures ProRAE Guardian's image and sends it as an attachment with the email to whoever is notified.

SMTP Server. Adding proper settings under "SMTP Server" may require that you get this information from your I.T. department (they may also have to supply a "User Name" and "Password" for you). Once all settings are done, use the "Send a Test Email" button to send a test email.

SMTP Port. This controls the port for which outgoing mail connections will be accepted.

My server requires secure connections. (SSL/TLS). You may need to set this security option, depending on security options required by your systems administrator.

User Name. This edit box shows the username used for authentication on the SMTP server (Extended SMTP). If the SMTP server does not require authentication, leave it blank.

Password. This edit box shows the password companion with the User Name used for authentication on the SMTP server (Extended SMTP). If the SMTP server does not require authentication, leave it blank.

Note: There are various authentication methods (LOGIN, CRAM-MD5, PLAIN, etc.) for Extended SMTP. ProRAE Guardian only supports the most common "Login" method that uses BASE64 coding. Contact your IT support for more information about your SMTP server.

Sender. This edit box shows the originator (source of alarm) of the alarm email.

Receiver(s). In this edit box, input the destination email address of the manager who is in charge of alarm notification circulation. If you want to send emails to multiple addresses, separate them with a semicolon (";"), but do not place spaces between them or in the addresses.

Send a Test Email. Clicking this button sends a test email to the destination email address. This is to be used for testing the Internet Email configuration.

Note: It is recommended that you test the email function to make sure it works when configuring the email parameters.

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9.1.5.4 Data Forwarding

After Data Forwarding is properly set and started, the remote ProRAE Guardian Full version and/or ProRAE Guardian Viewer can connect to this ProRAE Guardian to retrieve real-time instrument data from the ProRAE Guardian. Data forwarding must also be properly enabled to allow Add-ons to communicate with ProRAE Guardian.

The screenshot shows the 'Data Options' dialog box with the 'Data Forwarding' tab selected. The dialog has a title bar with a close button and a menu bar with options: Formats, Alarm, Data Forwarding, Web Viewer, Care Center, and Platform. The main content area contains several sections:

- Enable Remote Viewers - Allow remote Viewers to view data from this PC**
 - Parameters (This PC)**
 - Listen Port: Enable Backup Port:
 - Max Viewers:
- Cascade Out Mode - Send data to a remote PC**
 - Parameters (Remote PC)**
 - Remote PC IP Address:
 - Remote PC Port:
 - Enable User Authentication
 - Username:
 - Password:
- Enable Data Forwarding** **Auto Start**

At the bottom of the dialog are two buttons: 'Set' and 'Cancel'.

There are two modes for forwarding real-time data:

- “Remote Viewer” mode
- “Cascade Out” mode

In “Remote Viewer” mode, ProRAE Guardian acts as server for a remote ProRAE Guardian to connect to. This is a common configuration.

In “Cascade Out” mode, ProRAE Guardian connects to the remote ProRAE Guardian Full version. Use this mode in cases in which the remote ProRAE Guardian cannot connect to the local ProRAE Guardian (for instance, if the local PC is using a dynamic IP address).

Notes:

1. ProRAE Guardian Viewer does not support the Data Forwarding function.
2. When the local ProRAE Guardian Full version is set to “Cascade Out” mode, the remote ProRAE Guardian must be a Full version.

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To configure the settings, you must stop the Data Forwarding function by unchecking the “Enable Data Forwarding.”

9.1.5.5 Remote Viewer mode

To configure the settings for “Remote Viewer” mode, you must check the box labeled “Enable Remote Viewers.”

The screenshot shows the 'Data Options' dialog box with the 'Data Forwarding' tab selected. The 'Enable Remote Viewers' checkbox is checked. Under 'Parameters (This PC)', the 'Listen Port' is set to 9726, 'Max Viewers' is 32, and 'Enable Backup Port' is unchecked with a value of 20. The 'Cascade Out Mode' checkbox is unchecked. Under 'Parameters (Remote PC)', the 'Remote PC IP Address' is a dropdown menu, 'Remote PC Port' is 9727, and 'Enable User Authentication' is unchecked. There are also 'Username' and 'Password' input fields. At the bottom, 'Enable Data Forwarding' and 'Auto Start' are both unchecked. 'Set' and 'Cancel' buttons are at the bottom.

Listen Port: The TCP port on which ProRAE Guardian listens for other ProRAE Guardian that are connected. The default is 9726. Use the default setting on both the local ProRAE Guardian and the remote ProRAE Guardian.

Enable Backup Port: Sometimes, ports may be blocked due to the network configuration. If this occurs, checking the box beside “Enable Backup Port” may resolve the problem. **Note:** This is typically not necessary.

Max Viewers: ProRAE Guardian can accept connections from many computers, but the more computers that are connected, the more network bandwidth that is required. The default for the setting is 32.

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9.1.5.6 Cascade Out mode

To configure the settings for “Cascade Out” mode, you must check the box labeled “Cascade Out Mode.”

The screenshot shows the 'Data Options' dialog box with the 'Data Forwarding' tab selected. The dialog has a title bar with a close button (X) and a menu bar with options: 'Formats', 'Alarm', 'Data Forwarding', 'Web Viewer', 'Care Center', and 'Platform'. The main content area contains several sections:

- Enable Remote Viewers - Allow remote Viewers to view data from this PC**
 - Parameters (This PC)**
 - Listen Port:
 - Enable Backup Port:**
 - Max Viewers:
- Cascade Out Mode - Send data to a remote PC**
 - Parameters (Remote PC)**
 - Remote PC IP Address:
 - Remote PC Port:
 - Enable User Authentication**
 - Username:
 - Password:
- Enable Data Forwarding**
- Auto Start**

At the bottom of the dialog are two buttons: 'Set' and 'Cancel'.

Remote PC IP Address: The remote ProRAE Guardian Full version IP address (such as 215.125.12.1) or domain name (such as remoteprg.company.com).

Remote PC port: The TCP port on which the remote ProRAE Guardian Full version listens. The default is 9727. Use the default setting on both the local ProRAE Guardian and the remote ProRAE Guardian.

Enable User Authentication: Check the box if the remote PC is configured to require authentication for connection. Make sure that the username and password that you enter are correct for a user account that exists on the remote PC.

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9.1.5.7 Enable Data Forwarding

To enable the Data Forwarding function, you must check the “Enable Data Forwarding” box.

The screenshot shows the "Data Options" dialog box with the "Data Forwarding" tab selected. The dialog has a title bar with a close button (X) and a menu bar with options: "Formats", "Alarm", "Data Forwarding", "Web Viewer", "Care Center", and "Platform".

Under the "Data Forwarding" tab, there are two main sections:

- Local PC Settings:**
 - Enable Remote Viewers - Allow remote Viewers to view data from this PC**
 - Parameters (This PC):**
 - Listen Port:
 - Enable Backup Port:
 - Max Viewers:
- Remote PC Settings:**
 - Cascade Out Mode - Send data to a remote PC**
 - Parameters (Remote PC):**
 - Remote PC IP Address:
 - Remote PC Port:
 - Enable User Authentication**
 - Username:
 - Password:

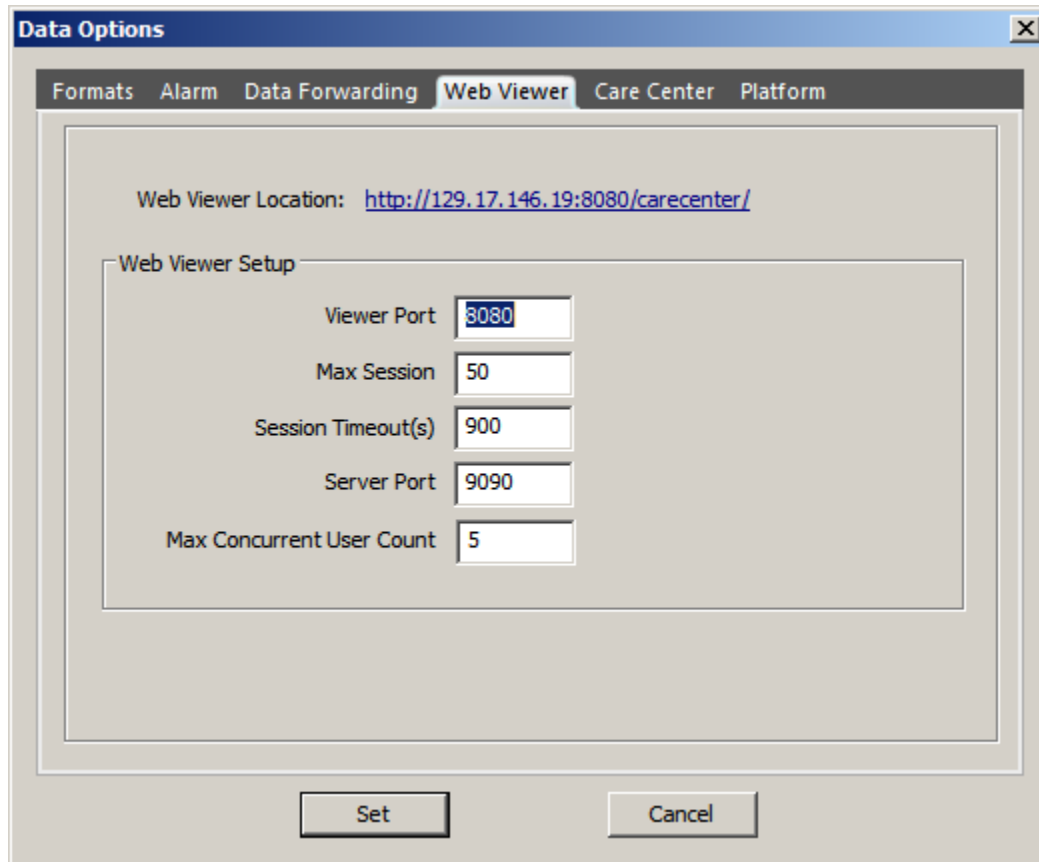
At the bottom of the dialog, there are two checked checkboxes: **Enable Data Forwarding** and **Auto Start**. Below these are two buttons: "Set" and "Cancel".

After you make your selections, click “Set” to save your intended settings. If you do not want to save the new settings, click “Cancel.”

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9.1.6 Web Viewer

This contains settings for managing web services, including setup for remote viewers. For more information on setting up a system's communication for remote viewers, see page 142.



9.1.6.1 Web Viewer Location

This is the port number that is used by the web server to deliver information to the remote browser viewer. The port number is used as part of the URL used by remote viewers. The default value is 8080. However, if there is a conflict when you try to connect remotely using this port, change the Server Port number (try 8081 or 8082, etc.), click "Set," and then close the window.

If you still have difficulty, there may be a firewall issue or other problem that should be resolved by your I.T. manager.

9.1.6.2 Max Session

The Maximum Session parameter allows you to limit the maximum number of remote viewer sessions that can be active at the same time. If the total number of active viewers has reached this limit, any attempt to open a new remote viewer will show "Maximum session limit has exceeded."

The default value for Maximum Sessions is 50.

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9.1.6.3 Set The Session Timeout

This setting parameter allows you specify the time-out period in seconds to automatically terminate a user session, which remains inactive for this period. Viewing time is set in seconds. The default value is 900 seconds (15 minutes).

9.1.6.4 Server Port

This port number is used internally to communicate between the ProRAE Guardian Host and web server. The default value is 9090.

Note: Do not change this parameter unless you are certain that the port number is being used by another program on this host computer.

9.1.6.5 Max Concurrent User Count

This sets the maximum number of concurrent users.

9.1.7 Care Center

This contains settings for managing ProRAE Guardian services and the AutoRAE2 docking station list for the Care Center service to communicate.

There are three services (Care Center, Management and Database service) in ProRAE Guardian that communicates with other modules in ProRAE Guardian via TCP sockets. Each service listens on one TCP port, so that port cannot be used by others on that machine.

9.1.7.1 Care Center Device Port

This changes the TCP port for CareCenter Service only when it is used by other applications on the machine. The default is 9094.

9.1.7.2 Management Service Port

Use this to change the TCP port for Management Service only when it is used by other applications on the machine. The default is 9093.

9.1.7.3 Database Service Port

The Database Service Port changes the TCP port for Database Service only when it is used by other application on the machine. The default is 9092.

9.1.7.4 Docking Stations

ProRAE Guardian Care center module uses UDP broadcasting to detect an online AutoRAE2 docking station, and ProRAE Guardian supports manually adding the AutoRAE2 docking stations that are outside the UDP broadcasting domain.

9.1.7.5 IP Address

The IP address for the AutoRAE2 docking station.

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9.1.7.6 Port

This is the TCP port on which the AutoRAE2 docking station listens. The default is 9800.

The screenshot shows the 'Data Options' dialog box with the 'Care Center' tab selected. The dialog has a title bar with a close button. Below the title bar are tabs for 'Formats', 'Alarm', 'Data Forwarding', 'Web Viewer', 'Care Center', and 'Platform'. The 'Care Center' tab is active. Inside the dialog, there are three service ports: 'CareCenter Service Port' (9094), 'Management Service Port' (9093), and 'Database Service Port' (9092). Below these is a 'Docking Stations' section containing a list box with two entries: '10.78.120.233:9800' and '10.78.121.230:9800'. To the right of the list box are fields for 'IP Address' (10.78.121.230) and 'Port' (9800), along with 'Delete' and 'Add' buttons. At the bottom of the dialog are 'Set' and 'Cancel' buttons.

9.1.7.7 Delete

Remove the selected AutoRAE2 docking station from the list.

9.1.7.8 Add

Add the AutoRAE2 docking station to the communication list with the IP address and port.

9.1.7.9 Set

Apply all the changes on all the tabs of "Data Options"

9.1.7.10 Cancel

Discard all the changes on all the tabs of "Data Options"

Note: Care Center may not be accessible if an active product key license for ProRAE Guardian host does not have the "Care Center supported" attribute enabled.

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Note: If you want to verify your license, click License in the ProRAE Guardian application (not the web version). You will see whether it is supported:

The image shows two side-by-side screenshots of the 'License' dialog box. Both screenshots show the same Machine ID (74672885-660F) and Product Key (12354-82D19-D0437-C258C). The left screenshot shows the 'CareCenter Supported' status as 'No', while the right screenshot shows it as 'Yes'. Both screenshots include a table with license limits and a 'Close' button.

	Tier 1	Tier 2	Tier 3
License Limits	100	100	100
In Use	1	0	47
SDK Supported	No	No	No
CareCenter Supported	No	No	No

	Tier 1	Tier 2	Tier 3
License Limits	100	100	100
In Use	1	0	47
SDK Supported	No	No	No
CareCenter Supported	Yes	Yes	Yes

If a 20-character Product Key does not have the Care Center attribute enabled, then send a request to RAE Systems (RAE-InsideSales@honeywell.com). After getting confirmation from the sales team, you can refresh the license key. The Care Center attribute will then become active.

9.1.8 Platform

This contains settings for managing the platform's local and remote access, as well as settings for identifying the computer running ProRAE Guardian.

The image shows the 'Data Options' dialog box with the 'Platform' tab selected. The dialog has several sections: 'Local Access' with a checkbox for 'Automatically log user off after 30 minutes'; 'Remote Access' with a checkbox for 'Enable Access Control' and an 'Access Code' field; and 'Platform Information' with fields for 'UserLabel1', 'UserLabel2', and 'Installation Name'. The 'Set' and 'Cancel' buttons are at the bottom.

Local Access

Automatically log user off after 30 minutes

Remote Access

Enabling Access Control will require any machine receiving data from this machine to also have Access Control enabled. Both machines will have to use the same Access Code to be able to connect and transfer data.

Enable Access Control

Access Code: [.....]

Platform Information

This information will be transmitted along with readings to all remote machines.

UserLabel1: [UserLabel1]

UserLabel2: [UserLabel2]

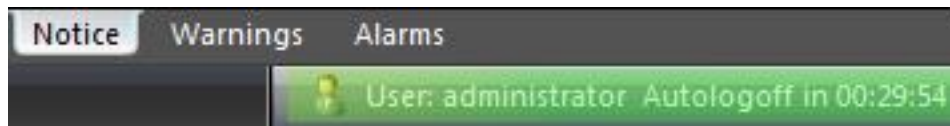
Installation Name: [JSMITHPC1]

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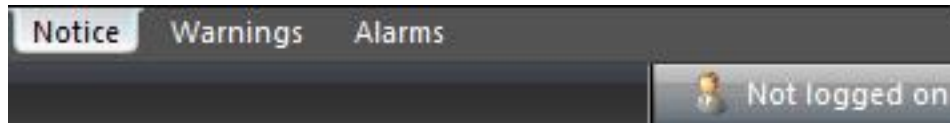
9.1.8.1 Local Access

Automatically log user off after 30 minutes. Selecting this checkbox provides a type of “automatic security” by automatically logging off users if you should leave the computer running ProRAE Guardian unattended. You will be automatically logged off 30 minutes after you log on. The default setting for automatic logoff is “on.” To disable automatic logoff, uncheck the checkbox and click “Set.”

When this is enabled, the countdown starts as soon as you successfully log in. A countdown timer is displayed in the lower right corner of the screen, along with the name of the user. A progress bar is overlaid in green to indicate that it is “live.” As the countdown elapses, the green becomes shorter. When only 4 minutes remain, the bar turns red to indicate that ProRAE Guardian will automatically log you off. If you click the bar, it will reset to a 30-minute countdown.



Note: When no user is logged into ProRAE Guardian, the program remains running, and this image is shown:



You can monitor all instruments as usual. You simply cannot make any changes to critical settings.

9.1.8.2 Remote Access

Enable Access control. This setting provides an additional level of security when ProRAE Guardian is sending information to another ProRAE Guardian machine. If disabled, ProRAE Guardian connects to other machines as before, using only the settings in “Data Forwarding” and “Remote Data In” dialog boxes. When enabled, however, any machine that ProRAE Guardian connects to must also have “Access Control” enabled and also have the identical Access Code entered into its settings. This way, both machines must be configured with the same secret code in order to establish a connection and transfer data.

Machines attempting to connect without the proper code will be rejected. All connections, successful and failed, are logged in the Event Viewer.

The default setting for this feature is disabled. To enable Access Control, check the checkbox, enter your desired Access Code into the text box, and click “Set.”

Note: The default Access Code is “raesystems”.

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Access Code. This sets the code that any machines receiving data from this machine must have. If the operator of the remote machine does not use the exact code, then communication is not established.

Show Access Code. Once you have clicked “Show Access Code,” the dots in the Access Code field change to letters or numbers, and the button says, “Hide Access Code.”

9.1.8.3 Platform Information

Two columns of information are transmitted along with other data to remote machines. Each can have its own label, which you type into the fields “User Label 1” and “User Label 2.” A third field is called “Installation Name,” which by default takes the name of your computer, but can be any name you choose.

Platform information refers to information from your ProRAE Guardian installation that is transmitted along with instrument readings to all remote machines that ProRAE Guardian connects to. This helps identify the connecting machine, as well as help the remote user understand the context of the information they are receiving.

UserLabel1 and UserLabel2 are column headings for two user-defined columns in the ProRAEGuardian Device list. The default column headings are “UserLabel1” and “UserLabel2,” although you may change these headings to whatever you wish by typing in the text boxes and clicking “Set.” As soon as you do, the corresponding column headings in the Device List change.

If a remote machine connected to this machine is running ProRAE Guardian Viewer, its corresponding column headings also change. This way, you can name each of these columns with easily identifiable names that are meaningful to you, such as “Location” and “User.”

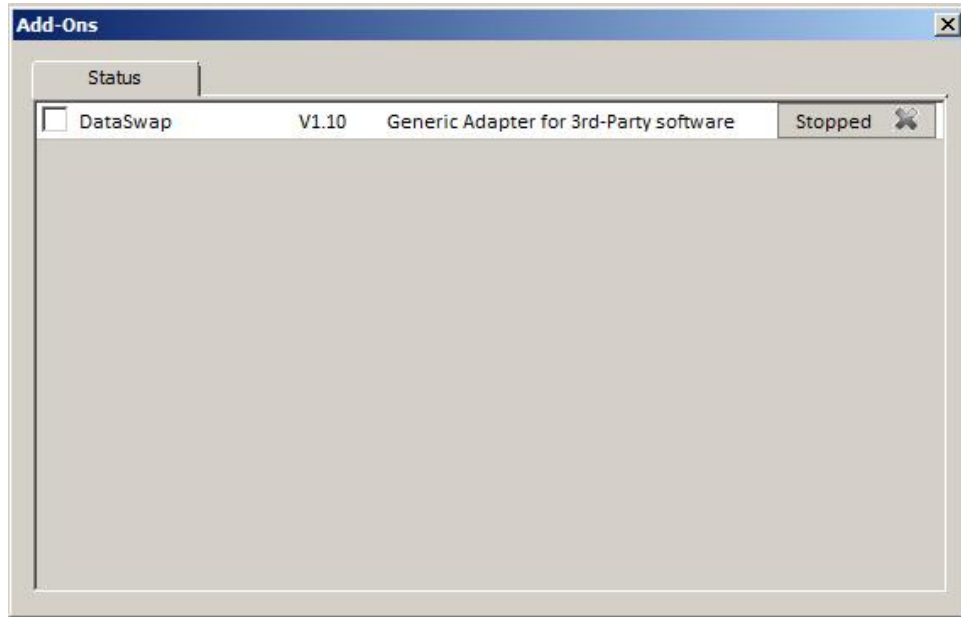
Installation Name is used to identify the computer when it is connecting to a remote system. This name is stored in the Event Log of the remote system for later reference. By default, the Installation Name is set to the Windows Machine Name of the computer that ProRAE Guardian is installed on. You can change this to any convenient name by typing in the text box and clicking “Set.” This way, you can name each of your ProRAE Guardian machines with easily identifiable names that are meaningful to you, such as “PRG Installation 1.”

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9.1.8.4 Add-Ons

The Add-on module(s) are to extend the ProRAE Guardian functions. Each add-on module is a stand-alone process for customized functions that are not provided by ProRAE Guardian as a “standard” function.

Click the Add-Ons button to show the Add-Ons Dialog/Control box to load or unload the module, or to start or stop the module.

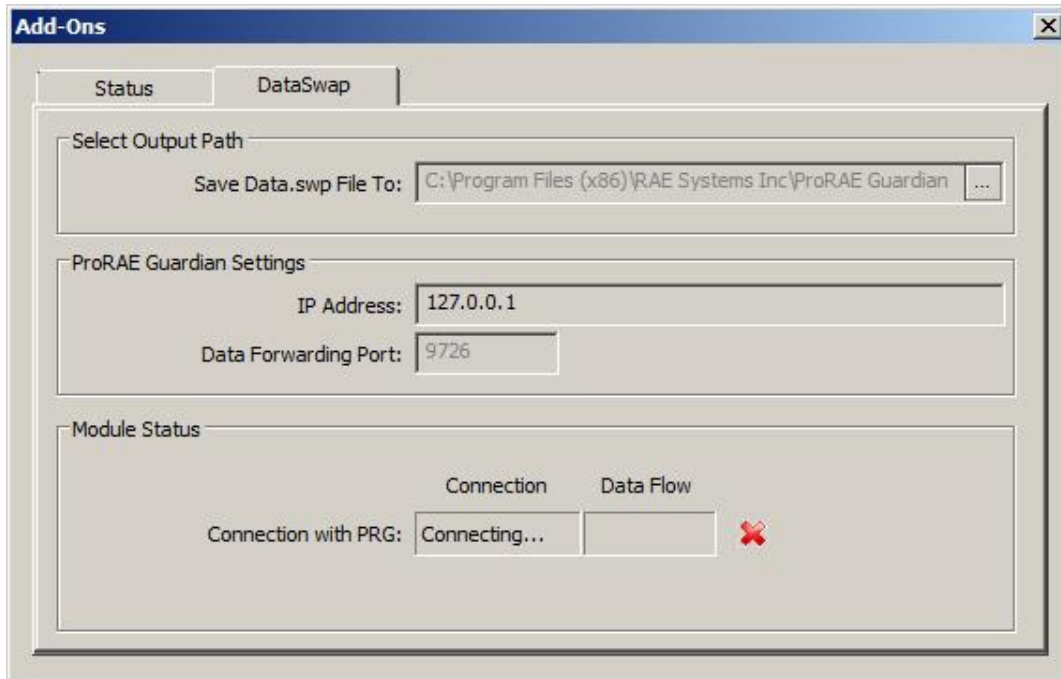


- Click the “Started” button to stop the module and configure the setting of the module under the “DataSwap” tab.
- Uncheck the “DataSwap” box to unload the module. ProRAE Guardian V1.6 will *not* load the module when restarted.

The “DataSwap” module is shipped with ProRAE Guardian. The DataSwap module is for backward compatibility with ProRAE Remote and saves real-time instrument data to a text file named “data.swp”. This file is used for sharing data with other software such as PlumeRAE.

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Check the box if you want to load the module automatically when ProRAE Guardian starts.



In the module configuration window, select the folder for the output file named data.swp, and change the “Data Forwarding Port.” The default value of 9726 is also the default Data Forwarding port in ProRAE Guardian.

Important!

Beginning with ProRAE Guardian V1.6, you can run the program without local administrator privileges. On some windows operating systems (such as Windows 8 or Windows 7), the OS prevents you from writing to the file in some protected folders such as “C:\Windows” and “C:\Program Files.” During installation, *do not* change the datalogging folder to a folder that requires administrator privileges, if you do not want to run the ProRAE Guardian with administrator privileges. Choosing the default folder provided by the installer is recommended. The default folder is typically “C:\RAE Systems Inc\ProRAE Guardian Datalog\”.

Make sure you enable the “Data forwarding” function on the ProRAE Guardian. (Refer to the section labeled “Data Forwarding,” page 63, on how to configure Data Forwarding on ProRAE Guardian.)

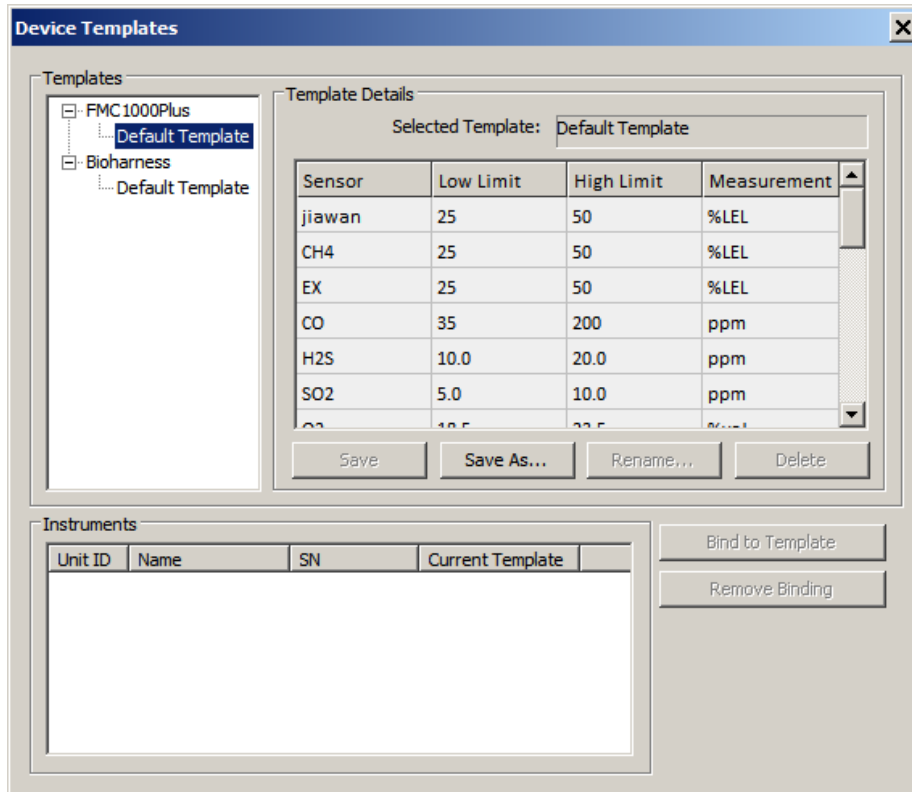
Click “Start” to start the module processing. Check “Auto Start” to start the module process automatically after the module is loaded.

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9.1.8.5 Device Templates

Devices in the network that need different alarm points for different applications, times of day, etc., can be grouped into Templates that are stored and later used with ProRAE Guardian.

Note: Access requires administrator privileges and a password.



Creating a Template

1. Create a Template by clicking “Save As...”
2. Name the template (do not use any of the invalid characters, which include < > / | \ ” ’ , . ; : ~ ! @ # \$ % ^ * ? =).
3. Click “OK.”

The new template name shows up in the Templates list.

Add instruments to the Template:

1. Select one or more instruments to bind into a template by clicking on it in the Instruments list. Select multiple instruments by using Control-Click on each one in the list you want to bind to a template.
2. Click a Template name in the list (this directs which Template to bind to).
3. Click “Bind To Template.”

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When you select a template, you can choose “Save,” “Save As...,” “Rename...” or “Delete.” In each instance (except “Save”), a pop-up dialog will come up when you click the button.

Note: If you delete a Template, it is permanently erased.

Note: The default template cannot be edited or deleted. However, you can edit the default template and then save your edits to a new template using the “Save As” function.

You can edit parameters in the Template Details.

1. Click the name of a template.
2. In any of the boxes showing parameters (such as Low Limit), you can click and highlight a number and then type a new number.
3. Save the changes to the Template by clicking “Save.”

Note: You cannot edit the Default Template or any of its settings.

Removing an instrument from a Template

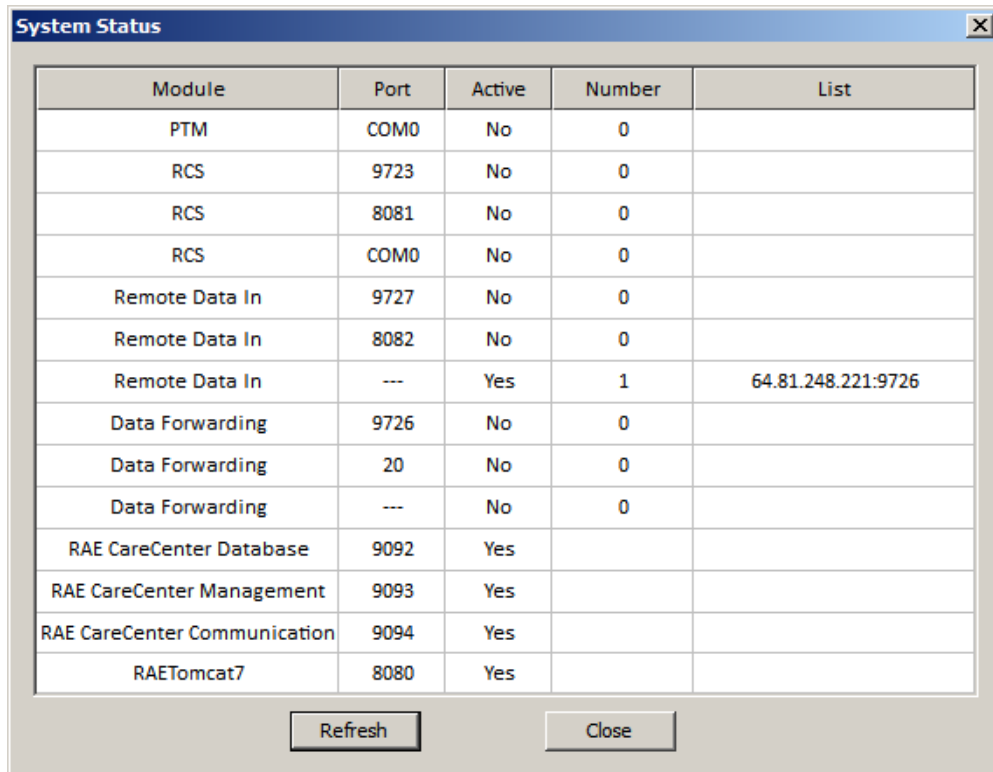
You can unbind an instrument from a template very simply.

1. Click on the name of the Template so that it is highlighted.
2. Click on the instrument's name. (Select multiple instruments by using Control-Click.) The entire row containing the instrument and the Current Template name is highlighted.
3. Click “Remove Binding.”

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9.1.9 Status

The System Status dialog box acts as a control panel to show details of your system. This information is useful when setting up and diagnosing problems with ProRAE Guardian systems.



The screenshot shows a window titled "System Status" with a close button in the top right corner. Below the title bar is a table with five columns: "Module", "Port", "Active", "Number", and "List". The table contains 15 rows of data. At the bottom of the window are two buttons: "Refresh" and "Close".

Module	Port	Active	Number	List
PTM	COM0	No	0	
RCS	9723	No	0	
RCS	8081	No	0	
RCS	COM0	No	0	
Remote Data In	9727	No	0	
Remote Data In	8082	No	0	
Remote Data In	---	Yes	1	64.81.248.221:9726
Data Forwarding	9726	No	0	
Data Forwarding	20	No	0	
Data Forwarding	---	No	0	
RAE CareCenter Database	9092	Yes		
RAE CareCenter Management	9093	Yes		
RAE CareCenter Communication	9094	Yes		
RAETomcat7	8080	Yes		

The upper portion includes columns for each of the following:

- Module
- Port
- Active
- Number
- List

9.1.9.1 Module

Each module of the system is listed in this column. The data in the other columns is referenced to this column.

9.1.9.2 Port

This lists the data port assigned to each module.

9.1.9.3 Active

This tells whether the port is active.

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9.1.9.4 Number

Number of connections connected to ProRAE Guardian. The connection is a logical or physical connection from the modem to ProRAE Guardian. For example, a serial port cable from a RAELink3 modem to ProRAE Guardian is one connection; a TCP link from an FMC2000 controller to ProRAE Guardian is one connection.

9.1.9.5 List

The IP addresses and ports for connected clients are shown here.

9.1.10 Display

This group of parameters governs the number of displayed records, date and time format, and measurement units.



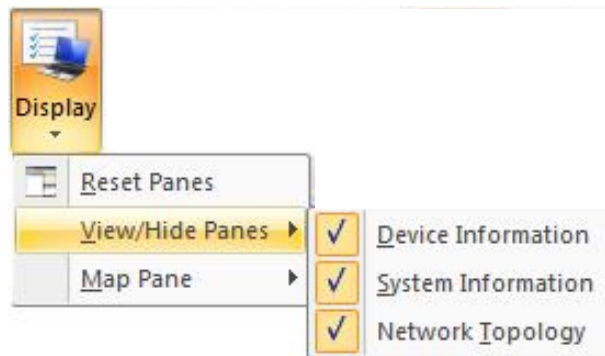
When you are done making changes, click “Set” to implement them and to close the dialog box. If you wish to exit without implementing the changes, click “Cancel.” No changes are made, and the dialog box closes.

9.1.10.1 Reset Panes

When you click “Reset Panes,” the panes are reconfigured to their default sizes and locations.

9.1.10.2 View/Hide Panes

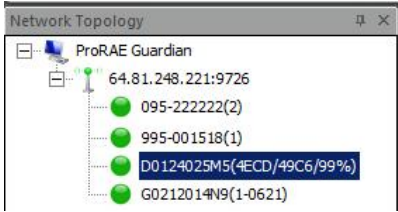
When you click “View/Hide Panes,” you can show or hide the Device Information and/or System Information panes.



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9.1.10.3 View/Hide Panes

When “Network Topology” is checked, the Network Topology pane is shown along the left side of ProRAE Guardian:



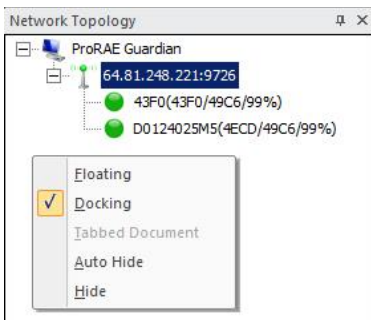
The antenna icon shows the wireless router, with each device connected to it in a list below it. The wireless router's IP address and port number are shown, and each connected device's serial number is also indicated. If there is more than one wireless router and instruments are wirelessly connected to it, then the other wireless routers and their instruments are similarly displayed.

Online and offline status of instruments is shown by a colored dot (green for connected, gray for offline, red for in-alarm status).

If you click on any of the instruments in the list, information in the Device Information pane changes to reflect information specific to it. At the same time, the device is highlighted in the Device List pane. (If you click another device in the Device List, the same device is highlighted in the Network Topology pane.)

Each wireless network can be minimized or maximized by clicking the “-” or “+” to the left of its antenna icon.

There are other options for the Network Topology pane. Right-click in the pane, and a menu is shown with options for Floating, Docking, Auto Hide, and Hide:



Status is shown with a check box. When the Network Topology pane is included in the main window (the default appearance), Docking is checked. If you click “Floating,” the pane detaches and can be moved anywhere on your screen.

Included in the Network Topology heading is a small symbol that indicates “Auto Hide”:



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It works the same way as choosing Auto Hide in the menu. When you click it, the Network Topology pane is hidden, and a tab along the left side of the main window is shown, labeled “Network Topology.” To make the Network Topology pane visible, click the tab.



You can hide the Network Topology pane by clicking the small “X” in the upper right corner of the heading, or by selecting “Hide” in the menu.

You can hide the Device Information or System Information panes by clicking the small “X” in the upper right corner of the heading, or by selecting “Hide” in the menu that is shown when you right-click either pane’s heading.



When you place your mouse over the tab while the pane is hidden, the pane appears.

In addition, in these headings is a small symbol that indicates “Auto Hide”:

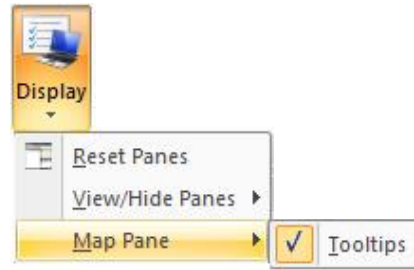


It works the same way as choosing Auto Hide in the menu for each pane. When you click it, the pane is hidden, and a tab along the right side of the main window is shown instead of the pane.

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9.1.10.4 Map Pane

You can turn tooltips on and off for the Map Pane.

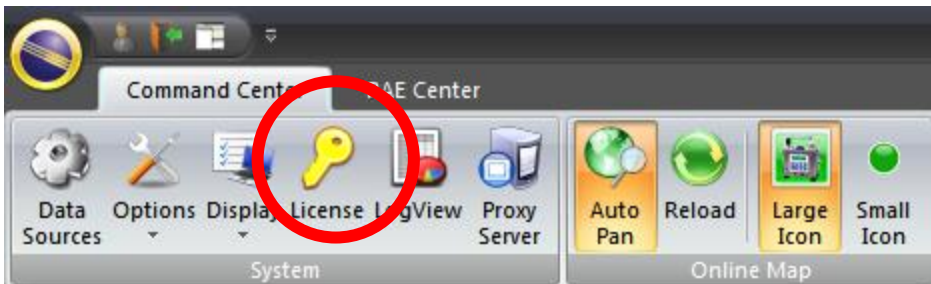


9.1.10.5 License

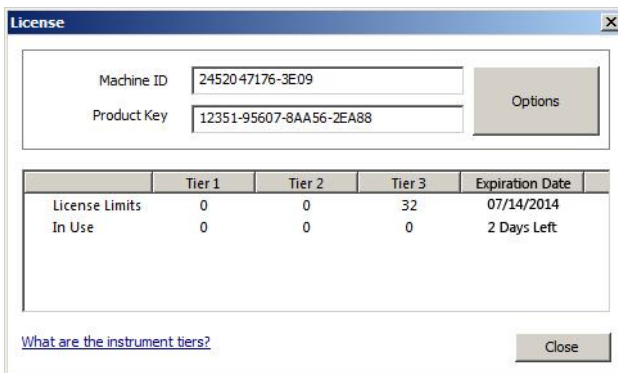


License management in ProRAE Guardian provides a way to download the latest license information for your Product Key from the ProRAE Guardian license management service or to deactivate your licenses and release Product Key for use on another computer. Registration/activation is covered on page 12.

Click the “License” icon:



The license information box appears. This is where you can view your Product Key and manage it.



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Note: If your license does not have an expiration date, then the Expiration Date column is not shown.

When you click the “Options” button, the ProRAE Guardian License Wizard appears, and it provides two options:

- I want to refresh my license
- I want to deactivate and release my license for use on another computer

Except when you need to renew or move a license, you will not need to use this feature. If you do need to renew or deactivate/release a license, follow each of the steps outlined by the ProRAE Guardian License Wizard.

For information on which instruments are included in each tier, click “What are the instrument tiers?” A chart shows the instruments supported in each licensed tier. When you are done viewing the chart, click “Close.”

Important! If you deactivate your license on this computer, then ProRAE Guardian will not run again until you reactivate it or activate it with another license number.

9.1.11 Log View



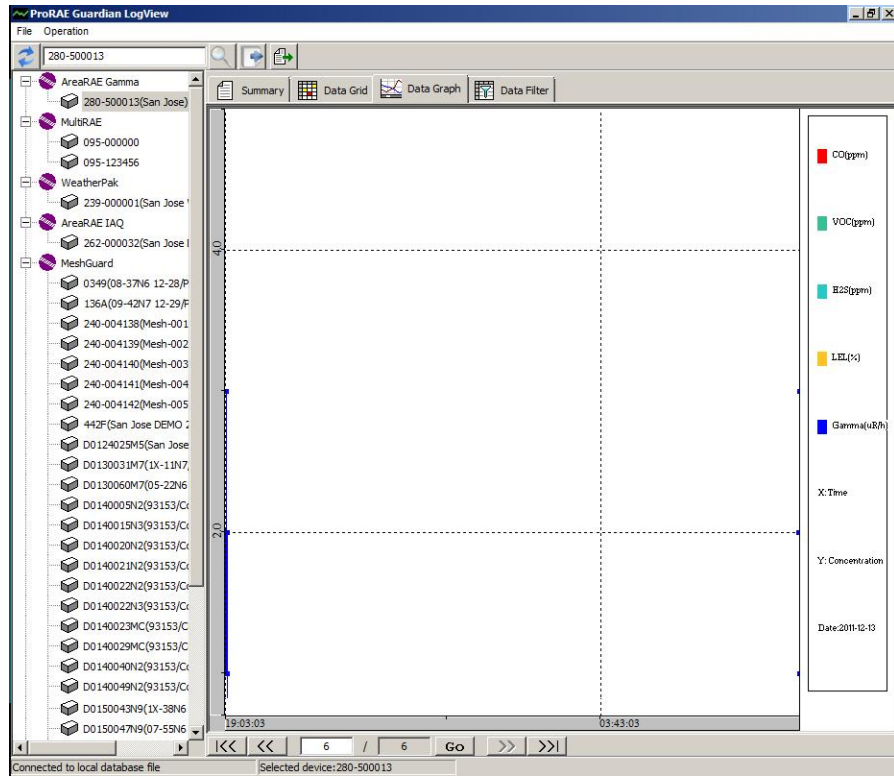
Log View provides a very detailed view of all of the sensors on the network and data from each one.

When you click the Log View button, a window with two panes appears:

- Left Pane:** Navigation of the monitors/nodes
- Right Pane:** Query, Export (actions)
Summary, Data Grid, Graph, Filtered Grid (with controls)

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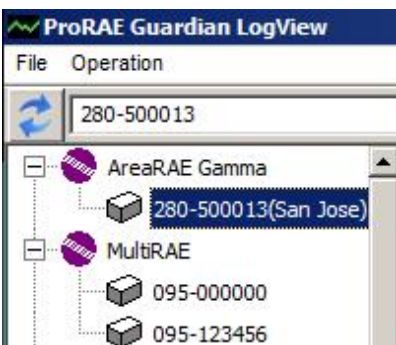
When you select Log View, this is the main window that opens:



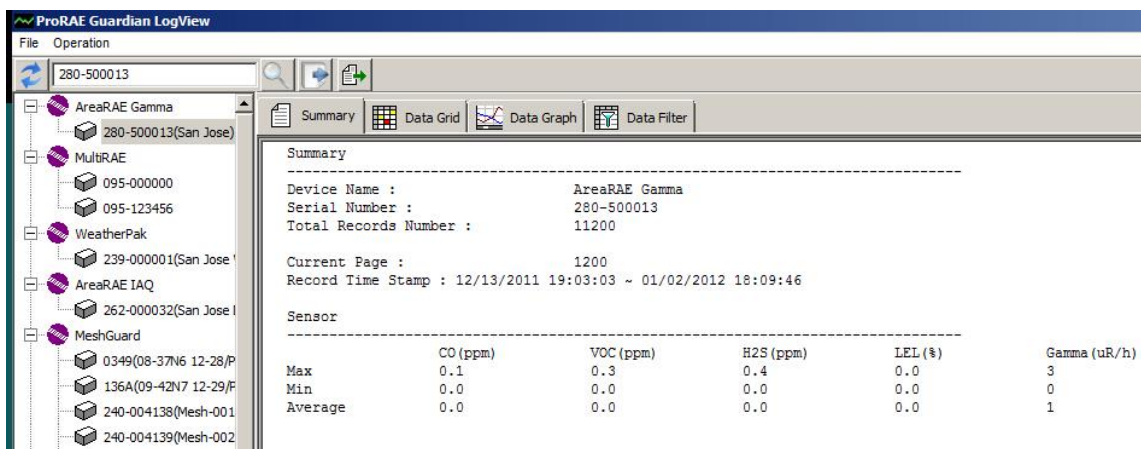
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9.1.11.1 Viewing An Instrument's Information

To view information about a specific instrument, double-click on the instrument serial number that appears below the name of the type of device:



After a few seconds, the right pane is filled with datalog information from that instrument, which is shown in summary form under the Summary tab:



Summary

Device Name : AreaRAE Gamma
Serial Number : 280-500013
Total Records Number : 11200

Current Page : 1200
Record Time Stamp : 12/13/2011 19:03:03 ~ 01/02/2012 18:09:46

Sensor

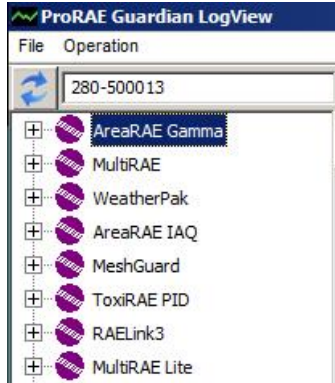
	CO (ppm)	VOC (ppm)	H2S (ppm)	LEL (%)	Gamma (uR/h)
Max	0.1	0.3	0.4	0.0	3
Min	0.0	0.0	0.0	0.0	0
Average	0.0	0.0	0.0	0.0	1

Note: If there is more than one of any device included in the left pane's list, they are organized by device type (MeshGuard, AreaRAE, etc.), with each individual device of that type below it. In this example, there are many MeshGuards, so they are organized under the "MeshGuard" heading."

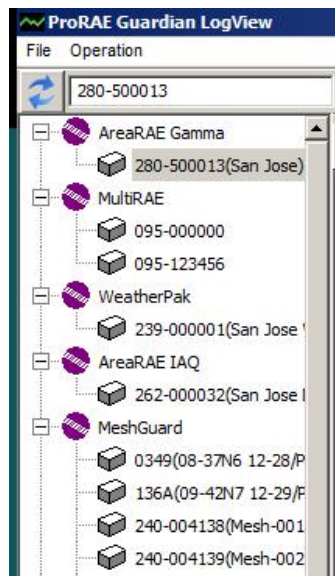
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9.1.11.2 Compacting/Expanding/Updating The Device List

The list of instruments can be compacted by clicking on the “-” sign to the left of each instrument's name. When they are compacted, only the device name is shown (each of the devices of that type are hidden), and a “+” sign appears to the left.



Open each of them again by clicking on the “+” sign.



To refresh the Instrument List, click this icon:



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9.1.11.3 Using The Query Button



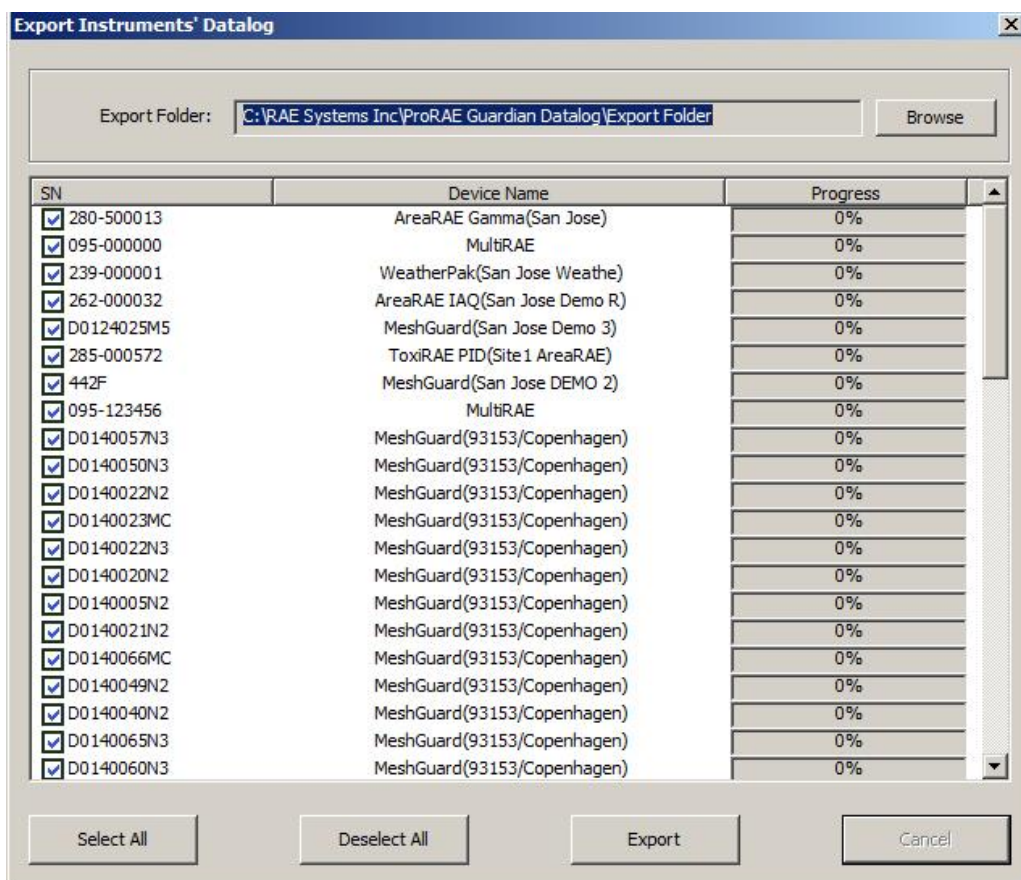
Click this button instead of double-clicking the instrument in the stack on the left side. Either way grabs the data.

9.1.11.4 Export Multiple Instruments' Datalog



Clicking the “Export Multiple Instruments' Datalog” button saves the data from all the instruments in the list as CSV (comma-separated value) text files. The data in the files can then be viewed in a spreadsheet or edited by using software such as Microsoft Excel, etc.

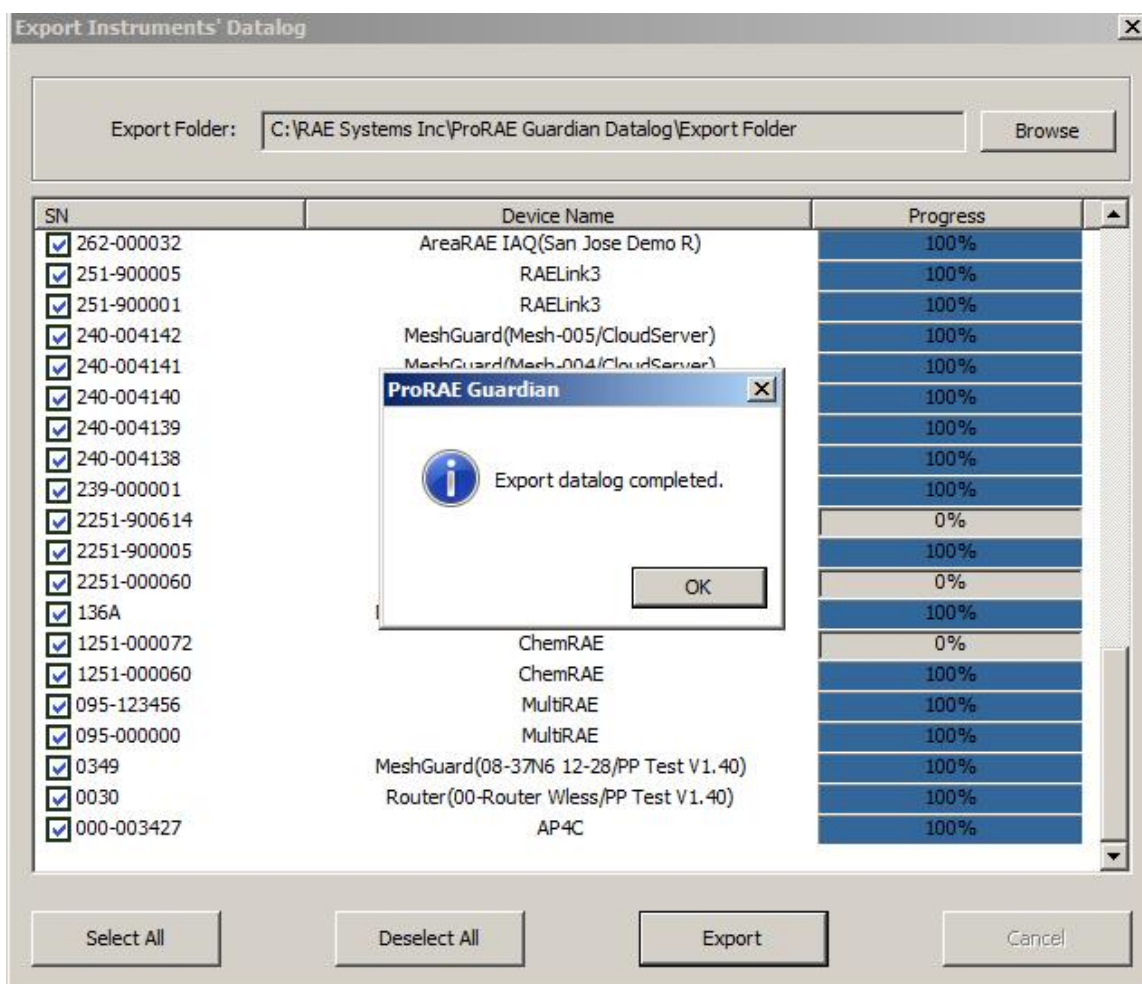
By default, all logs are selected, but you can use the buttons to deselect all and/or individually select log files. You can also set the destination where you would like all the log files to be saved.



Once you have made the selections, click “Export.”

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The progress bars show that the files are being saved. When all the files have been saved, you see a dialog box that says, “Export datalog completed.” You may now exit from the Export windows.



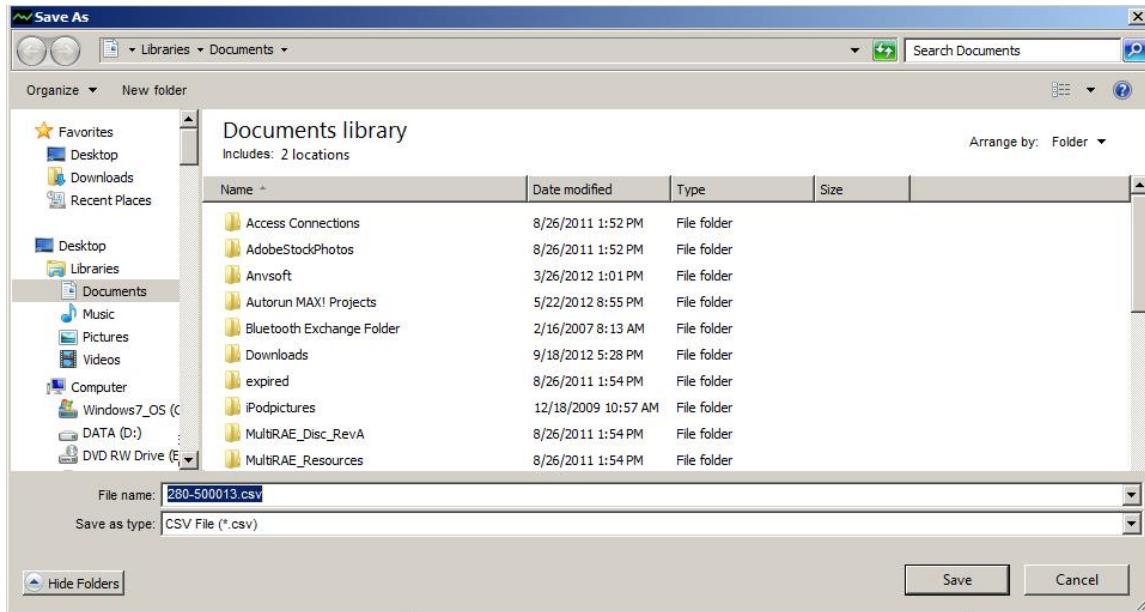
9.1.11.5 Export Current Selected Instrument's Datalog



Clicking the “Export Current Display” button saves the currently displayed data as a CSV (comma-separated value) text file. The data in the file can then be viewed in a spreadsheet or edited by using software such as Microsoft Excel, etc.

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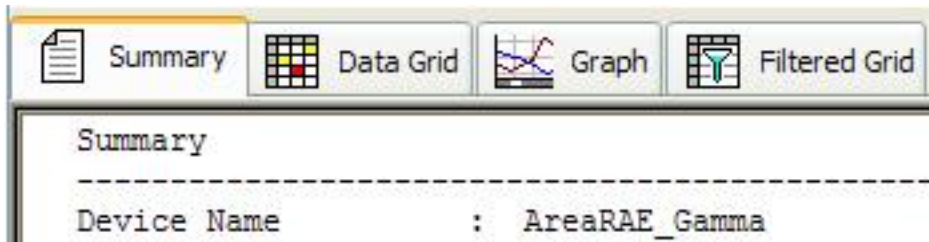
After you click the button, input the file name and then click the “Save” button to export the data file.



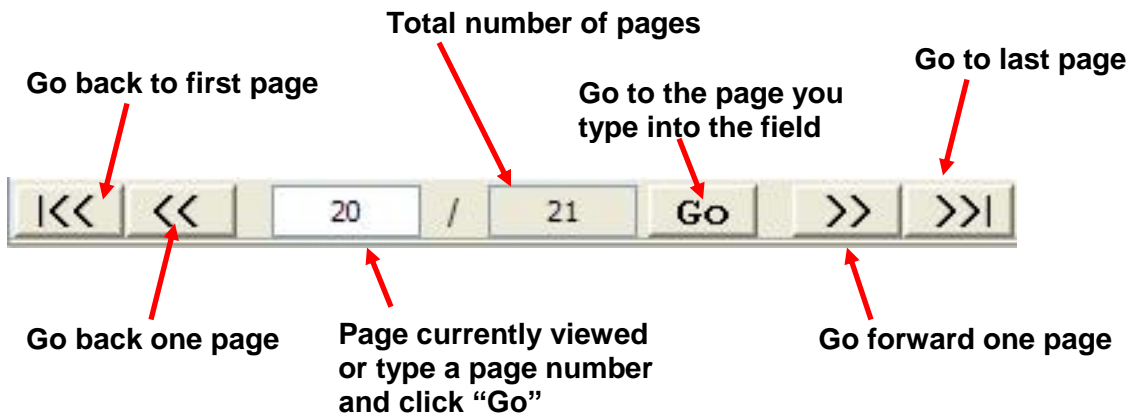
Note that one “page” of the datalog is not equal to one screen on your display. Datalog page size is set in the “Data Options/Datalog” dialog box. The default is 2,000 records/page.

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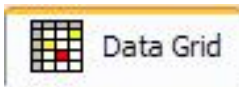
9.1.11.6 Summary



The Summary tab provides a summarized view of a specific device's data. These summaries are organized by pages. You can navigate them by using the navigation buttons along the bottom of the page:



9.1.11.7 Data Grid



Data Grid shows all data in a datalog as a multi-page table, showing individual sensor readings at each interval. Use the same navigation described on the Summary tab to go from page to page.

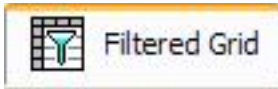
9.1.11.8 Graph



The Graph tab provides an interactive graph display of data and uses colors to show individual sensor readings, with concentrations (or other values) plotted against time. Use the same navigation described on the Summary tab to go from page to page.

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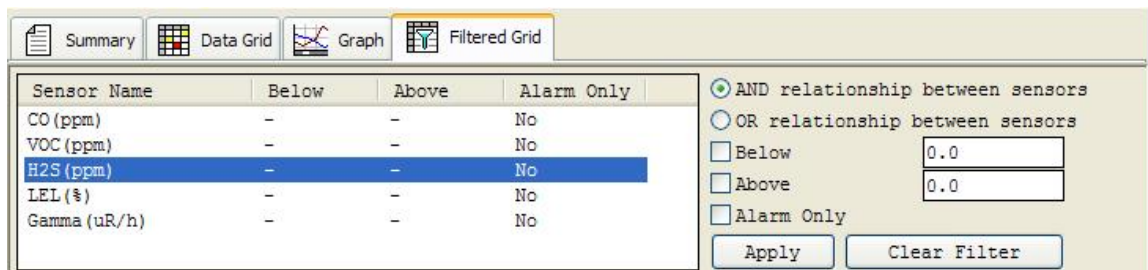
9.1.11.9 Filtered Grid



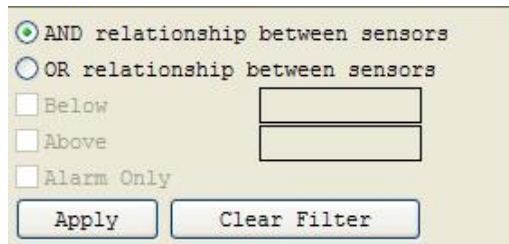
Filtered Grid allows you to create and use “and/or” relationships and level-detection filters to customize which data appears in the grid. It also allows you to select only entries in which an alarm was triggered.

Here is an example of how you can use this tool to tailor what you see in your data grid.

1. Click on one of the sensors in your list.



2. Choose “AND relationship between sensors” or “OR relationship between sensors.”



3. Now select “Below,” “Above” by clicking in the checkbox. If you select “Below” or “Above,” you must supply a value by typing it into the box to the right of the appropriate checkbox. Note that the units are the same as those shown in parentheses after the name of the sensor. A choice of “Alarm Only” tells the filter that you only want data that occurs during an alarm.

Important! When using both “Above” and “Below” values, check your values carefully. If you are looking for values between two specific points, make sure the “AND” button is selected and that the “Below” value and “Above” value reflects a range. For instance, if you want to look for all entries with an H₂S sensor reading between 0.3 and 0.6, select “AND” and set the value for “Above” to 0.3 and “Below” to 0.6.

If you are looking for values outside a range, such as anything below 0.3 and higher than 0.6, select “AND” and set “Above” to 0.6 and “Below” to 0.3. This excludes any values

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between 0.3 and 0.6. If you only want to see entries in the datalog from when alarms were tripped, click the checkbox labeled “Alarm Only.”

The screenshot shows the 'Filtered Grid' configuration window. It includes a table for sensor settings and a control panel for relationships and thresholds.

Sensor Name	Below	Above	Alarm Only
CO (ppm)	-	-	No
VOC (ppm)	-	-	No
H2S (ppm)	-	-	No
LEL (%)	-	-	No
Gamma (uR/h)	-	-	No

Relationships and Thresholds:

- AND relationship between sensors
- OR relationship between sensors
- Below: 0.0
- Above: 0.0
- Alarm Only

Buttons: Apply, Clear Filter

No.	Date/Time	CO(ppm)	VOC(ppm)	H2S(ppm)	LEL(%)	Gamma(uR/h)
1261	09/09/2010 12:06:21	0.0	0.0	0.1	0.0	2
1262	09/09/2010 12:06:22	0.0	0.0	0.1	0.0	2

Remember: An “AND” relationship dictates that the requirement set by both “Below” and “Above” must be satisfied for the data to be shown in the table. An “Or” relationship requires a minimum of only one must be satisfied for data to be shown.

Once you have set the parameters, click “Apply” to apply them. The grid will be repopulated according to your values.

Note: The filter applies to the current page of Data Grid.

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9.1.12 Proxy Server



Many organizations use web proxy servers to route their Internet traffic through them for security reasons, and also for controlling Internet access. So, if your organization uses a web proxy server, then ProRAE Guardian needs to know the server information. Otherwise, ProRAE Guardian will not be able to access Google Maps via the Internet.

There are a few quick ways to check whether your ProRAE Guardian requires web proxy server settings:

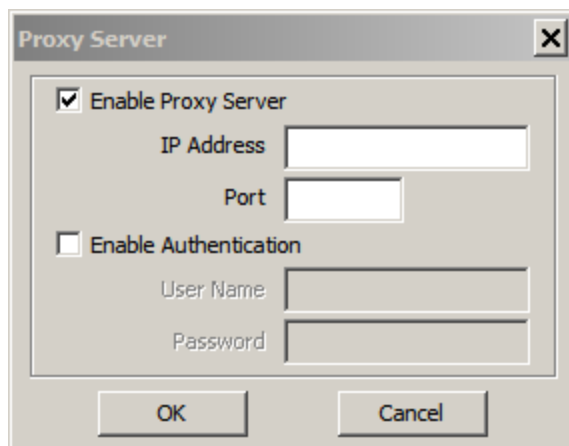
1. ProRAE Guardian cannot access Google maps, even when the PC is connected to the Internet.
2. In your Internet Explorer, go to Tools > Internet Options > Connections > LAN Settings, and look for Proxy server settings. These are shared settings that ProRAE Guardian automatically uses if they are set here.

If you typically have a problem viewing external sources, such as Google Maps, then consult with your I.T. department so that they can configure your Proxy Server settings. Otherwise, you likely do not need to use Proxy Server settings.

Proxy Server Settings & Enabling Proxy Server

To use a proxy server, you must provide settings and enable it.

1. Click the Proxy Server icon.
2. Click Enable Proxy Server



3. Add the IP Address and Port of the proxy server (check with your systems administrator for these settings).

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4. Check the box labeled "Enable Authentication" (this is optional, so check with your systems administrator to determine whether it is necessary).
5. Click "OK."

9.2 Google Map

The tab labeled "Google Map" has buttons for settings that control appearance of the Google Map and devices overlaid on it. The Maps are served on line from Google, thus to get the map, the computer on which ProRAE Guardian is running must be connected to the Internet.



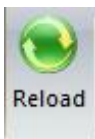
9.2.1 Auto Pan

If devices on your network are located in different places, activating Auto Pan by clicking the Auto Pan button can save time when you want to view it on the map. When Auto Pan is activated, it tells ProRAE Guardian to move the map and center any device selected in the Device List.



9.2.2 Reload

Clicking this button reloads the map and refreshes the image locations of everything on the network that is represented on the map.



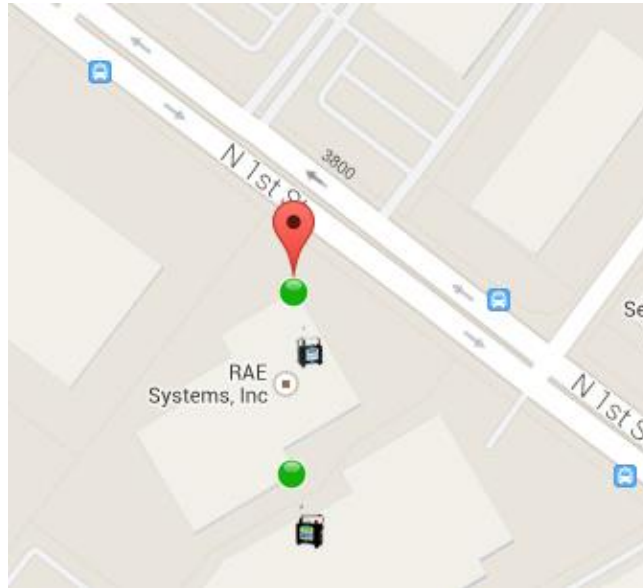
9.2.3 Large Icon

There are two types of representation for each physical device in the network: Large Icon and Small Icon. The large icon is a graphic representation of the instrument, such as an AreaRAE, which accompanies a small icon (a dot) that indicates its status.



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On the map, the large icons look like this:



Note: The red flag with the black dot inside indicates the monitor selected in the Device List (when you mouse over the red flag, a tool tip appears, saying, “Current Selected Device”).

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9.2.4 Small Icon

A Small Icon uses just a dot instead of a graphic representation.



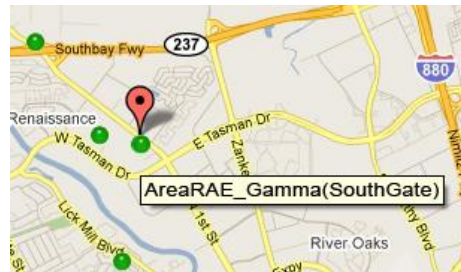
Important! The Small Icon acts as a status indicator and is therefore color-coded. It can be one of three colors:

- Green** Monitoring and communicating normally
- Gray** The device is offline (not communicating)
- Red** The device is in an alarm state

On the map, small icons look like this:



Note: Whether you have selected “Large Icons” or “Small Icons,” you can see the name of the monitor by mousing over it:



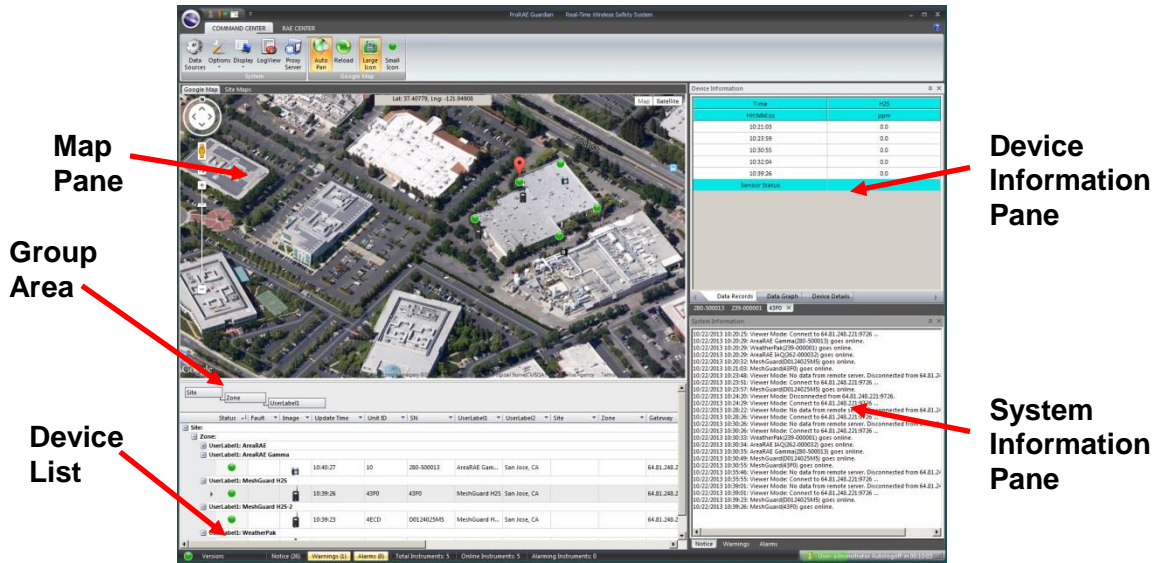
9.3 RAE Center

This takes you to the RAE Center website, which contains information about RAE Systems software and gas-detection equipment.

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10 Panes

The ProRAE Guardian window is divided into panes, which can be rearranged, resized, minimized, or hidden from view. These, in addition to the Device List, provide the primary user interface for ProRAE Guardian.



10.1 Map Pane

The Map Pane provides a visual reference that can be either a Google Map or a Site Map. In addition, ESRI MXD and Tiger maps can optionally be used.

Note: As you mouse over, the latitude and longitude coordinates track the map location as selected by the cursor.

10.1.1 Google Map

Google Map is the default Map View of ProRAE Guardian. Refer to section “9.2 Google Map” (page 94) for operation buttons on Google Map.

10.1.1.1 Latitude And Longitude

When you move the mouse from one location to another, the latitude and longitude change is reflected:



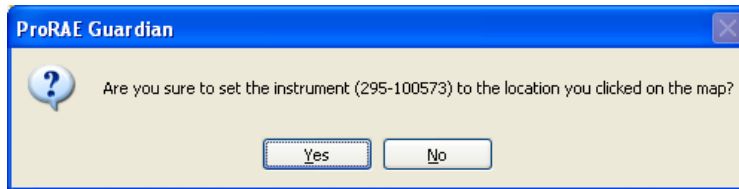
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10.1.1.2 Set instrument GPS location manually

After clicking the instrument in the Device List, you can locate the instrument on the map by manually setting its GPS coordinates. It is a useful feature for instruments without GPS modules.

Note: You can only set GPS coordinates and place instruments on a map if the instruments are locally connected.

Move the mouse on the map to the location of the instrument. Right-click on the map, and a message box pops up. Click “Yes” to set the instrument on the map.

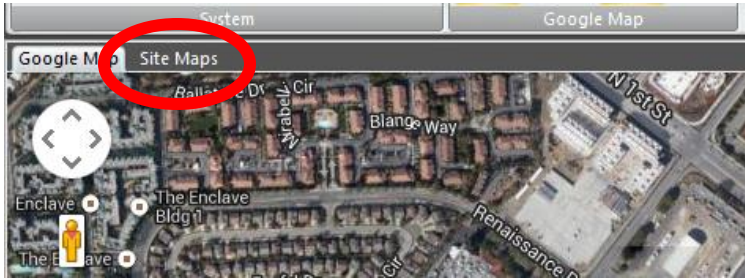


If you manually set the GPS coordinates (by right-clicking on the Google map or ESRI map) for the instrument, the button “Reset GPS Setting” is enabled. Clicking the button clears the manual GPS setting, and the instrument is then shown on the map with the GPS coordinates from the instrument (if it is equipped with a GPS sensor). Otherwise (if it does not have a GPS sensor), it will not show on the map.

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10.1.2 Site Maps

To access Site Maps, click the “Site Maps” tab:



Site Maps enables the use of a map or layout of a facility or specific region within ProRAE Guardian. This gives you the flexibility to show locations of devices inside a facility, or on an annotated map delineating specific hazard zones, etc.

When you click on the Site Maps tab, the Site Maps toolbar replaces the Google Maps toolbar along the top of the screen:



The Image View toolbar acts as a control panel for configuring and monitoring everything in the Map pane when in Site Maps.

10.1.2.1 Site Mode



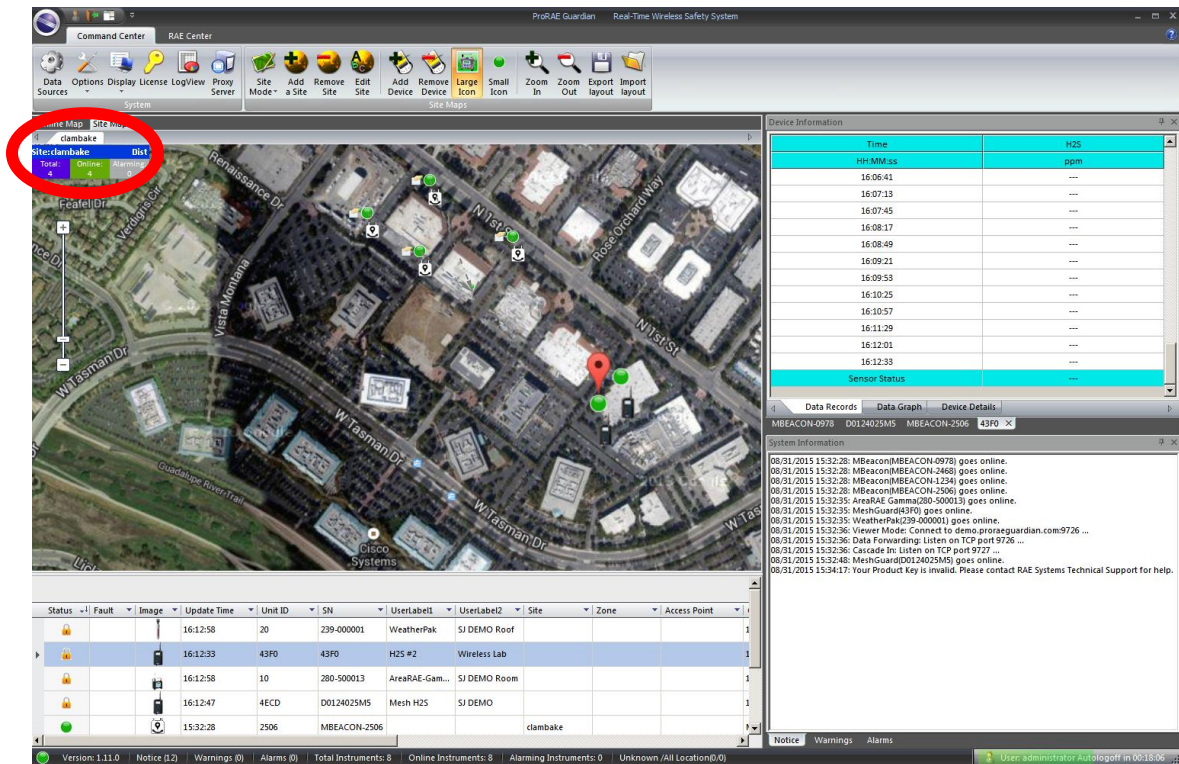
There are two different modes under Site Mode: Tab Mode and Splitter Mode.

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10.1.2.2 Tab Mode

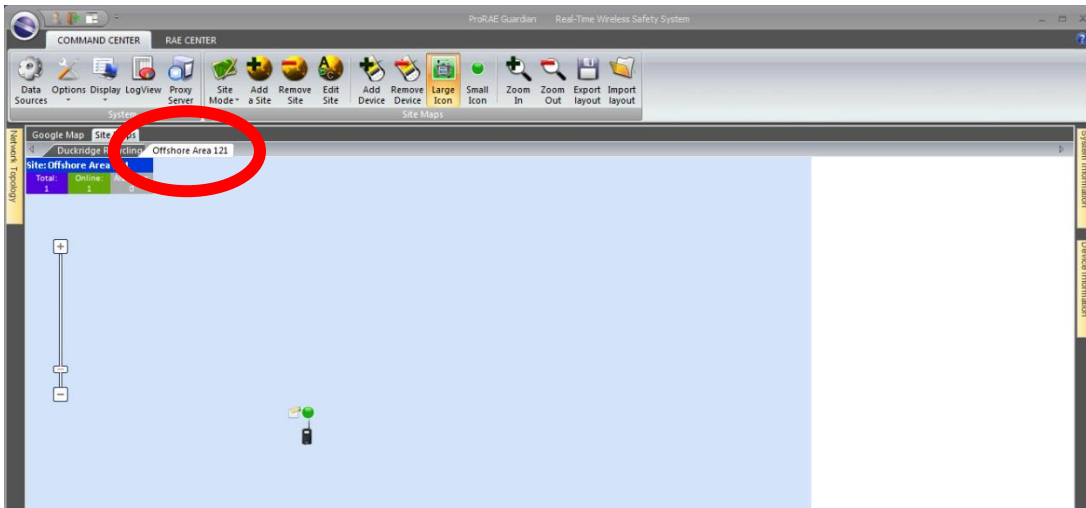


Selecting Tab Mode sets the view of one site map at a time, but arranges the visible and hidden site maps so that you can click a tab to view one and hide the others:



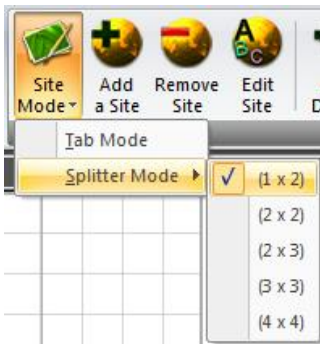
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Click another tab, and that Site Map is shown while others are hidden:

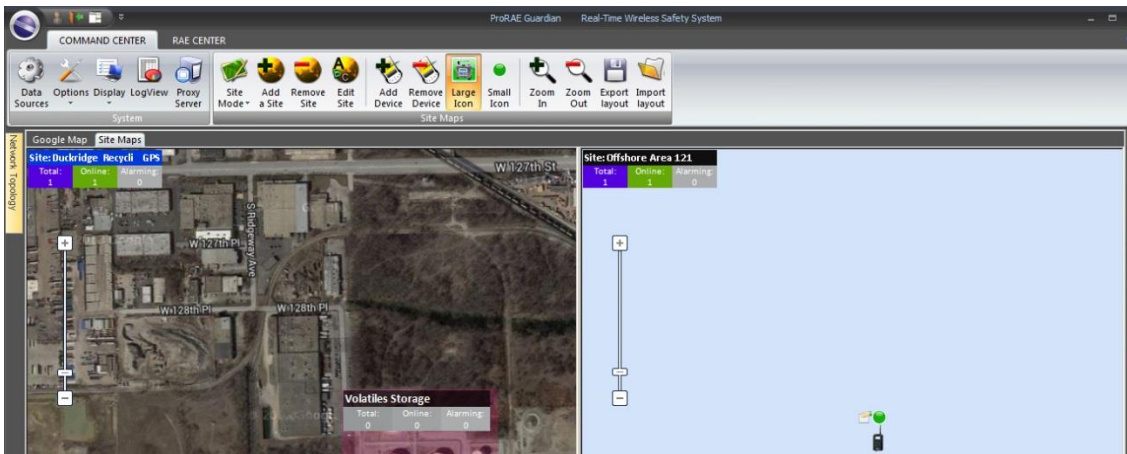


10.1.2.3 Splitter Mode

Splitter Mode is another way to view Site Maps. Instead of tabs that allow quick show/hide functionality, Splitter Mode allows you to show 2, 4, 6, 9, or 16 Site Maps simultaneously in panes that are subdivisions of the main pane.

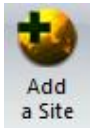


Site Maps are shown in rows and columns (this example shows 1x2 arrangement, one row with two maps):



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10.1.2.4 Add A Site



You can always add new sites for monitoring via ProRAE Guardian. Click “Add a Site,” and a template for creating a new site is shown:

A screenshot of the "Site Properties" dialog box. The dialog has a title bar with "Site Properties" and a close button. On the left is a large grid area. On the right, there are several input fields and buttons. The "Site Name" field is empty. "Image Width" is set to 800 and "Image Height" is set to 600. Under "Background", "BG Image" is selected with a radio button, and a "Select Image" button is visible. Under "Calibration", there are three buttons: "Start GPS Calibration", "Start Distance Calibration", and "Reset Calibration". At the bottom, there are fields for "Author", "Create Time", and "Modify Time", all of which are empty. "OK" and "Cancel" buttons are at the bottom center.

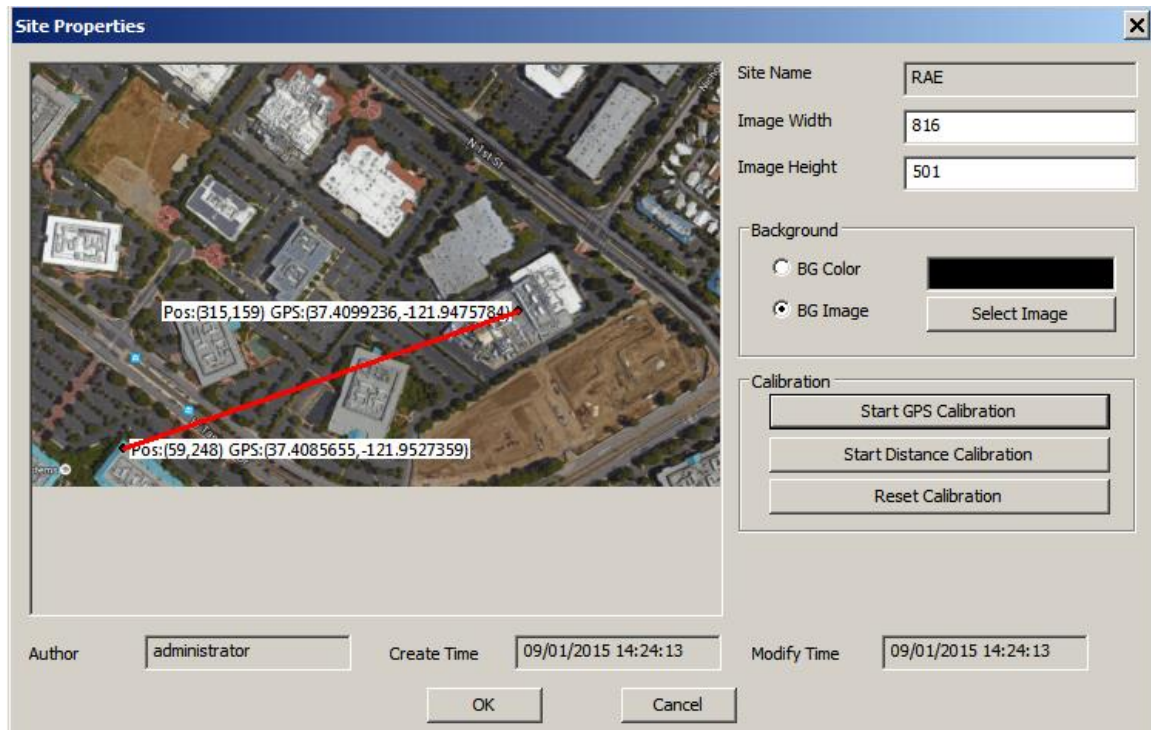
1. Name the site.
2. Set the image size. If you do not know the dimensions or if you are not going to insert an image, leave the settings unchanged.
3. Select a background color. This is optional. You might not have a map or diagram for a site, but want to show instruments in a pattern (such as a circle of instruments surrounding a spill) or by relative proximity.
4. Select a background image. “Image” refers to a graphic instead of a Google map. This means that you can import a JPEG, BMP, or PNG image such as a photograph, a blueprint, or a scanned image of a map that suits your needs. When you click on BG Image, the dialog box appears. You must select an image type (PNG Files, JPEG files, etc.) and then find the image you want to use.

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5. Set GPS or distance locations for your map. You can perform GPS calibration or you can perform distance calibration.

Setting GPS locations:

- A. Click “Start GPS Calibration” and then click on a position on your map for which you know the GPS location (latitude and longitude). The Input GPS Information dialog box appears with fields for latitude and longitude. Fill in the data and then click “OK.”
- B. Click another location on the map, again at a known location. The Input GPS Information dialog box appears with fields for latitude and longitude. Fill in the data and then click “OK.”

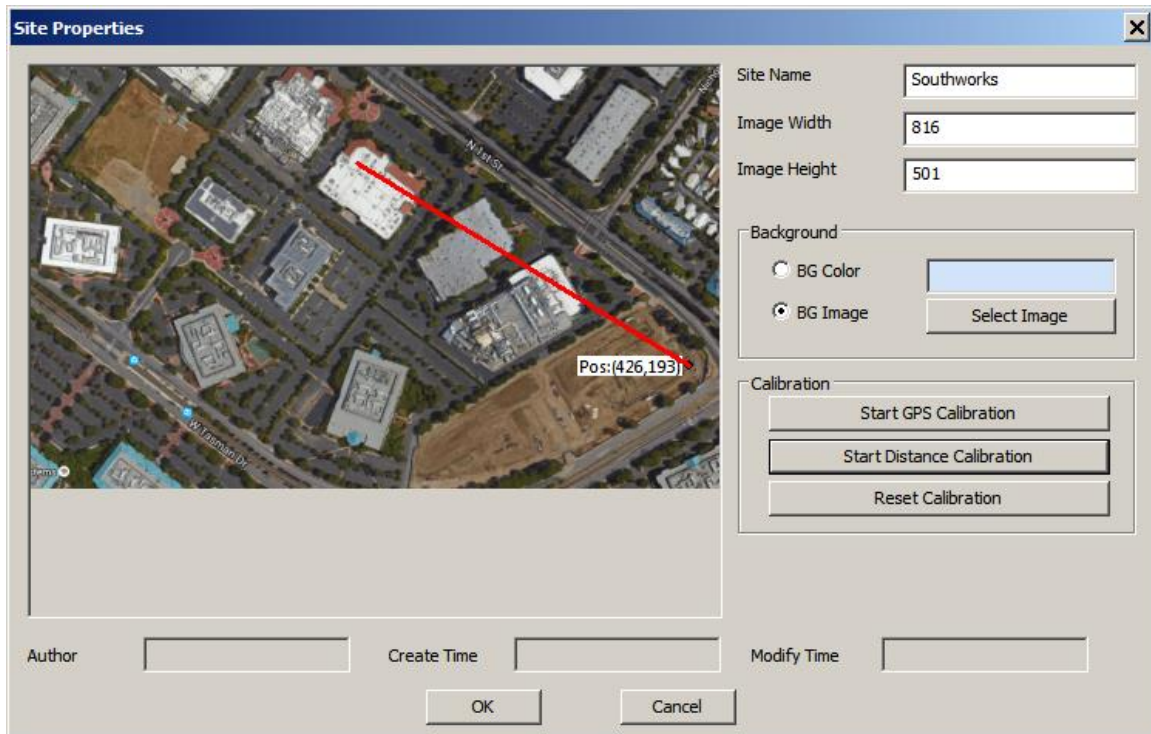


Note: If you want to remove or change the distance settings, click “Reset Calibration.” This clears the locations.

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Using Distance Calibration:

- A. Click “Start Distance Calibration” and then click on a position on your map. Drag the mouse to another location and click. Fill in the distance (in meters). Click “OK.” The map now shows the two points and the distance between them.



Note: If you want to remove or change the distance settings, click “Reset Calibration.” This clears the locations.

6. Save your site by clicking “OK.”

Your site is now ready for you to add instruments and to locate them on the image.

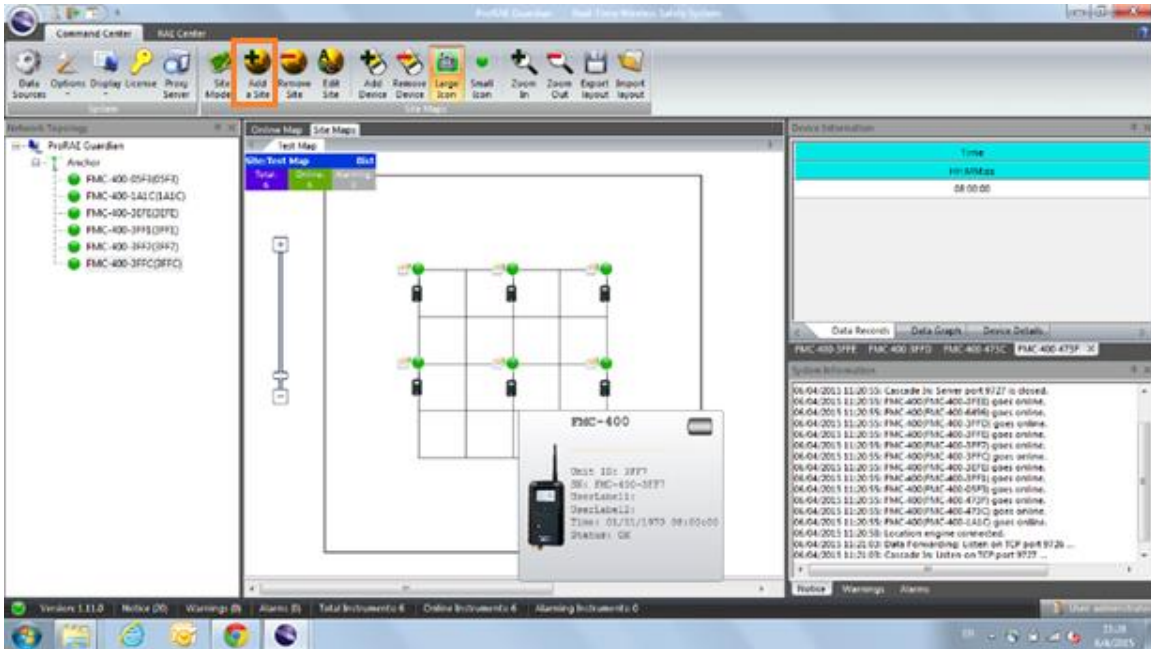
Important!

Any coordinates you provide act as reference points for instruments placed on the grid, and their locations will only be as correct as the coordinates you use.

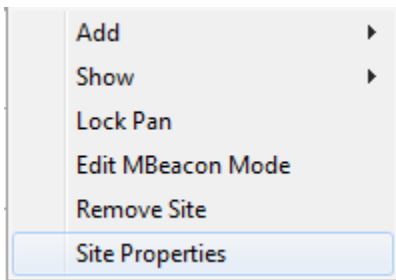
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10.1.2.5 Location Estimation Setup

Enabling location estimation requires adding devices and setting their location through ProRAE Guardian.



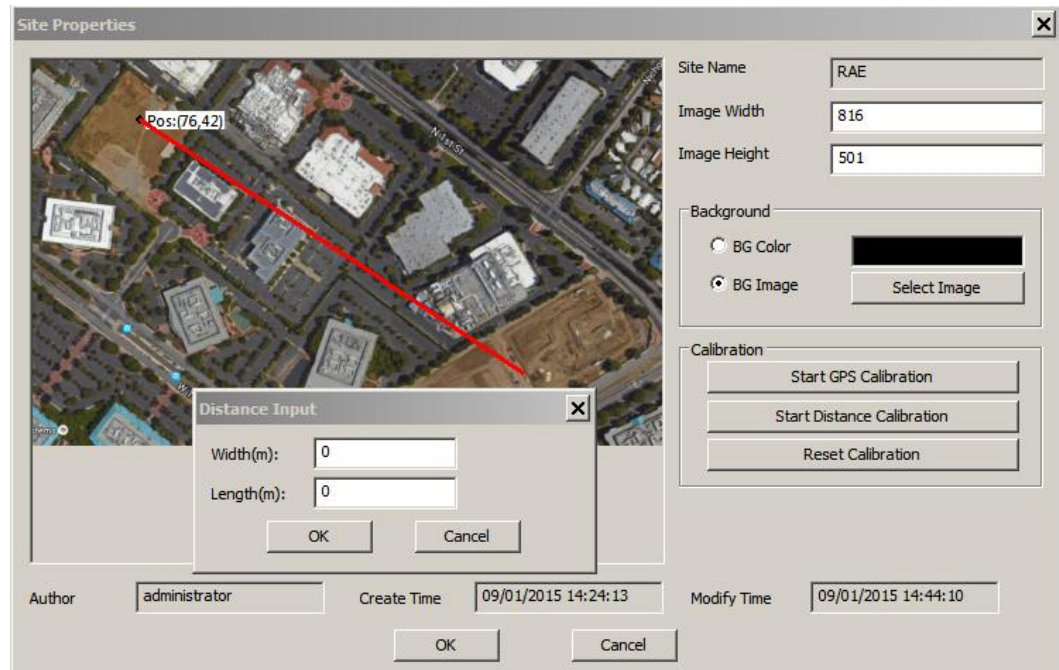
1. Select “Site Map Setup.”
2. Add a site.
3. Edit “Site Properties.”



4. Set Image for the site.
5. Start Distance Calibration for the site.

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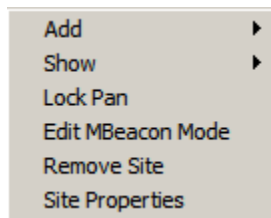
- Click on the site image for two points, and connect them using a line. **Note:** It must be an oblique line. It is recommended that you use a diagonal line and then input the width and length. This will provide the necessary information for the distance calibration.



10.1.2.6 MBeacon Setup

If you are using MBeacons in your system, you must set their locations before using them.

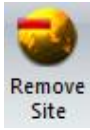
- Click “Show” and select “MBeacon” to show MBeacons on the Site Map.



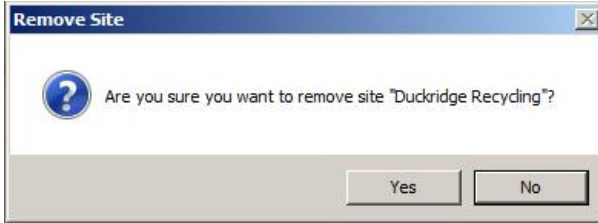
- Click “Edit MBeacon Mode” to enter the MBeacon setup mode.
- Place each MBeacon to the position on the site map corresponding to the real position. For the real MBeacon position, many factors need to be considered, including the the best positions, the placement height, and the spacing distance between MBeacons. These factors should be referenced from Plant Safety II system.

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10.1.2.7 Remove Site



When you click on this button, a dialog box pops up. It asks if you would like to delete the current location:

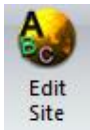


If you click "Yes," then the location and its contents (background image and device locations) are deleted.

If you click "No," then the location and its content remain and the dialog box closes.

Important! If you remove the current location, the action cannot be undone.

10.1.2.8 Edit Site



When you click on this button, a dialog box pops up with fields already populated with the information you input when you created the site. You can change the image or background color, as well as GPS locations. When you are done editing, click "OK" to save the changes.

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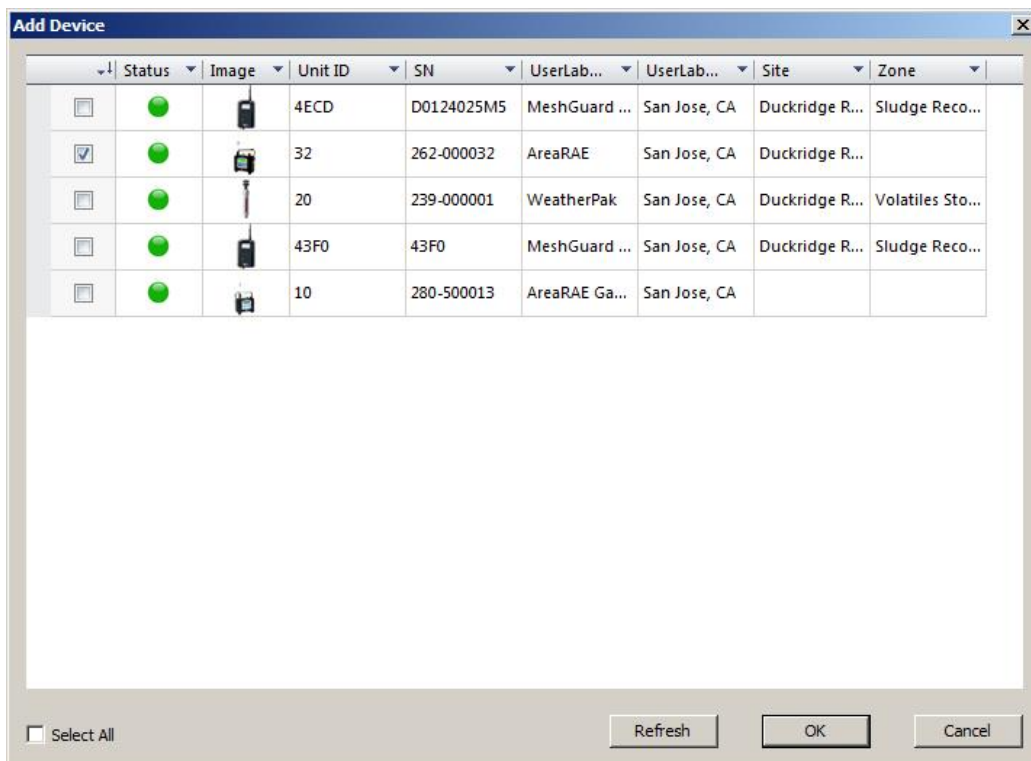
10.1.2.9 Add Device



Once you have created a new site and have imported a graphic for a background (or have selected a background color), you can place the devices on the image.

1. Click the “Add Device” button.
2. Move your mouse and locate the circle with the crosshairs in the middle exactly where you want a device located on the image.
3. Click the mouse once to set the location.

When the dialog box comes up, you can choose the device you want by its serial number. Then click “OK” to save your choice(s).

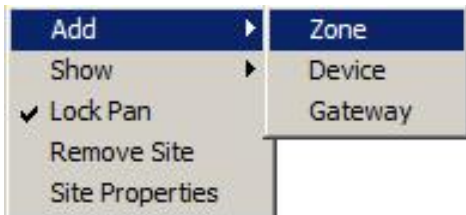


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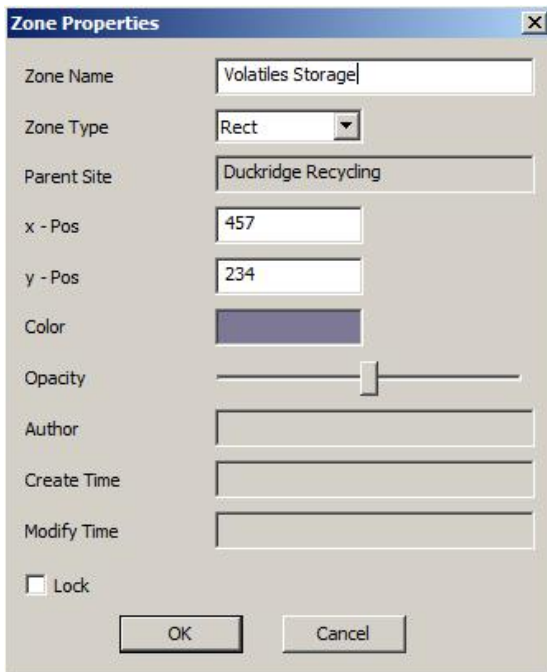
10.1.2.10 Creating Zones

A Site Map can have instruments shown anywhere on it, but it is sometimes useful to assign zones that delineate a relationship among different devices. For example, one zone might be an area that processes volatile compounds, whereas another might be where materials are stored, and each may have its own network or protocols. Zones can be created on a Site Map before or after instruments are located on the map.

To create a zone, right-click in the image and select Add > Zone.

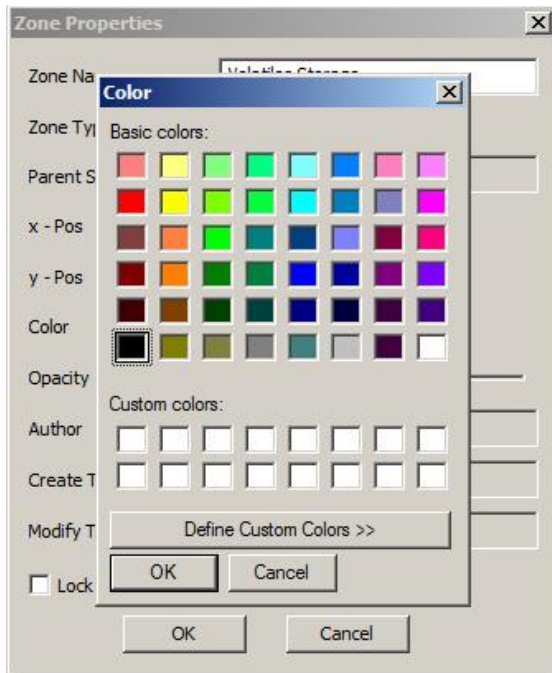


Name the zone, and then select a rectangle or ellipse for delineating the zone.

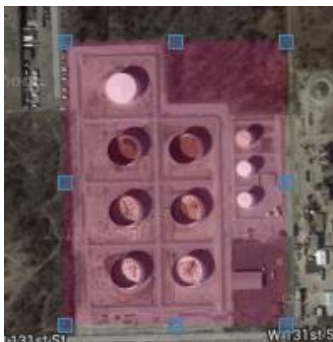


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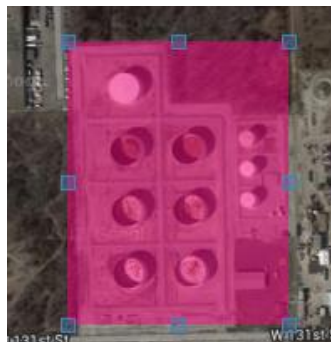
Select a color from the main palette or select a custom color.



Set the Opacity using the slide control. Sliding it to the left makes the zone more transparent, while sliding to the right makes it more opaque:



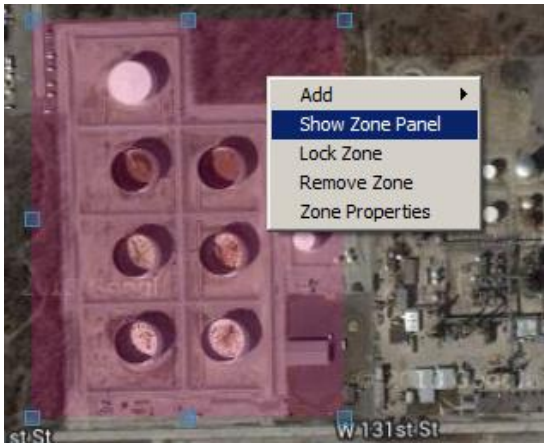
Low opacity



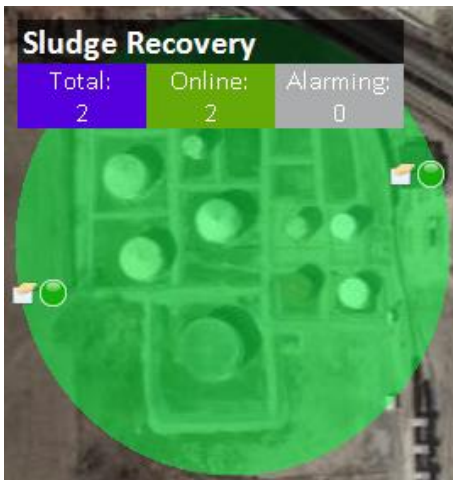
High opacity

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You can add a Zone Panel to each zone, which tells you the total number of devices in that zone, how many are online, and how many are in alarm. Right-click on the zone and select “Show Zone Panel.”



A Zone Panel shows status and the name of the zone, providing easy at-a-glance indication of where zones are located, which devices are in the zone, and their status.

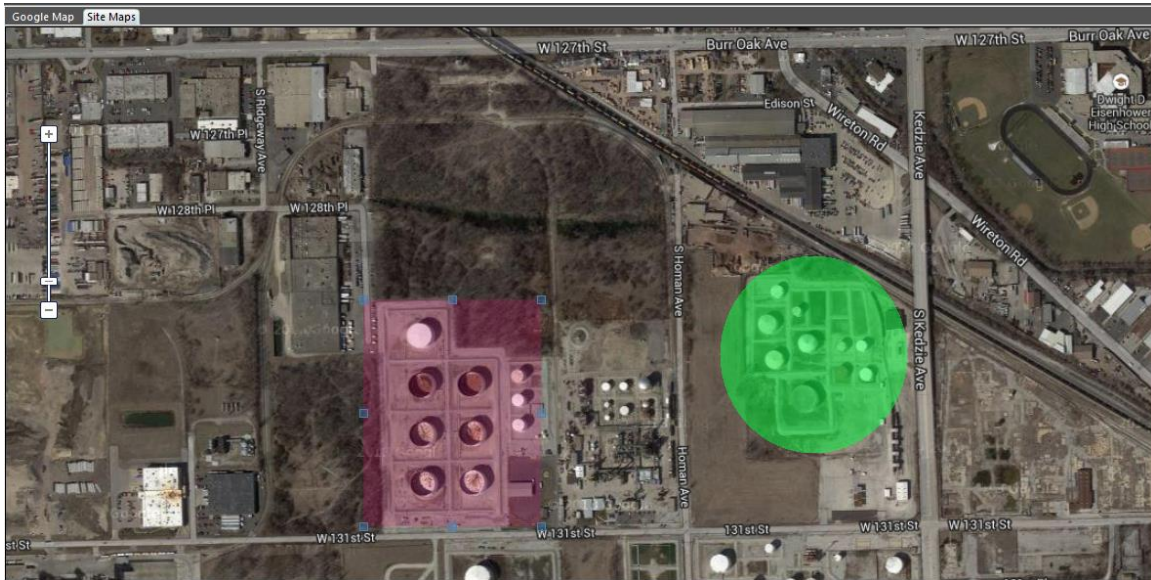


If you want to add another zone, follow the same procedure:



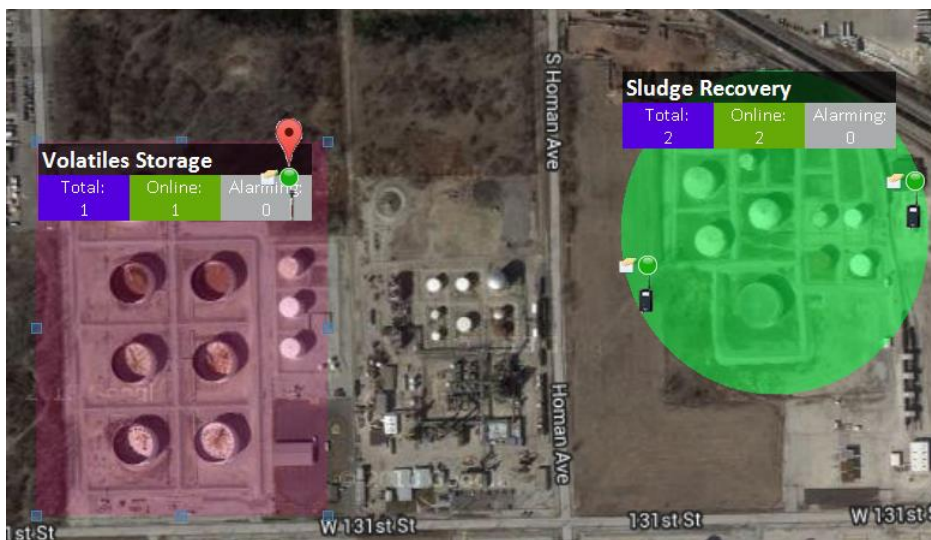
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If you use contrasting colors for zones, it's easier to spot them on maps.



Add a device or gateway using the same menu box. Right-click on a zone or anywhere else on the Site Map, and then select Add > Zone or Add > Gateway.

Once the device or gateway is shown, you can drag it anywhere on the Site Map. If you place it inside a zone, the Zone Panel for that zone reflects that it is part of the zone and whether it is online or offline, and whether it's in alarm.



If you click on an instrument on the Site Map, a small flag above it indicates that it is selected, and the corresponding row in the Device List is highlighted. Also, if you click on a line in the Device List, the corresponding instrument in the Site Map is flagged to show it is selected.

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When a zone is clicked, points along its perimeter are highlighted in blue. If the zone has not been locked, it can be resized by dragging these highlights. In addition, the zone can be moved by clicking in the zone and dragging it around.

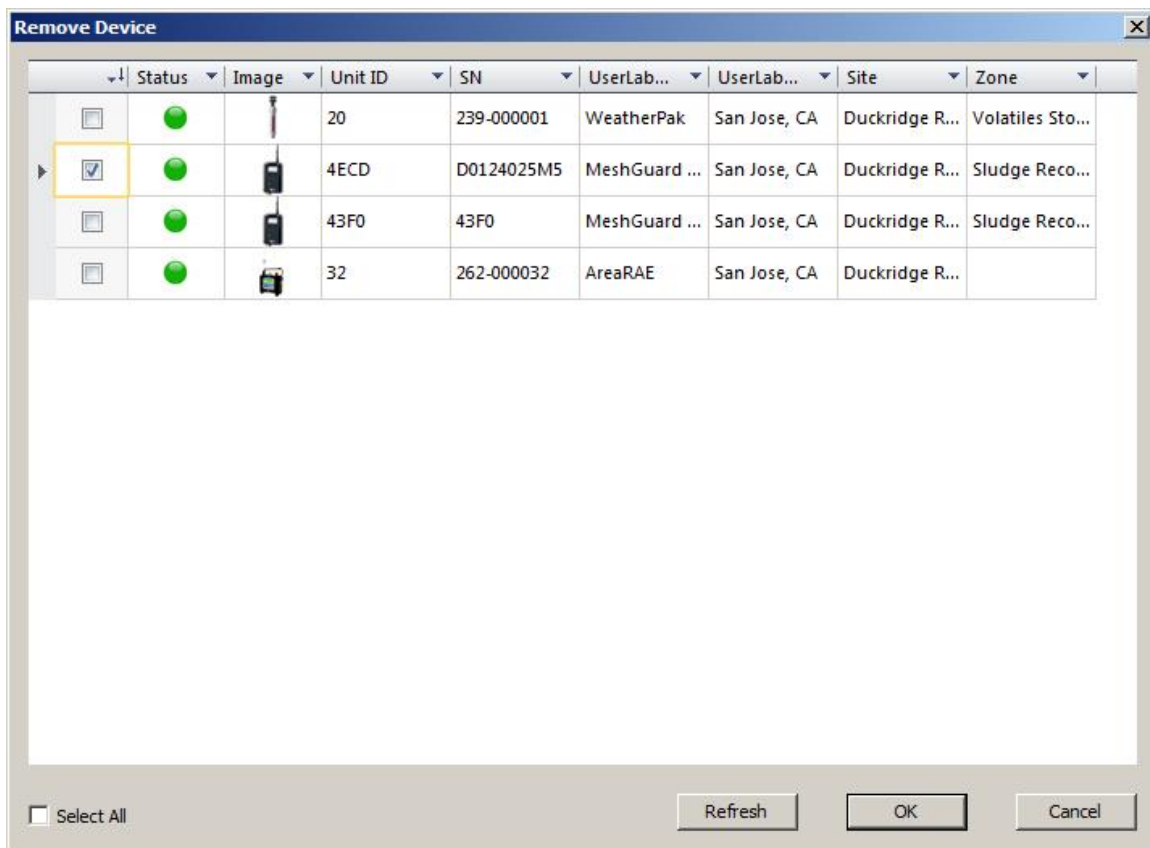
To lock a zone, right-click on the zone, and then select “Lock Zone.” The zone is now locked and cannot be resized or moved unless you unlock it.

You can remove a zone by right-clicking on the zone and selecting “Remove Zone.” If you select this, a confirmation alert asks if you want to do this. If you remove a zone, it cannot be un-removed.

Finally, if you want to view information about the zone or alter its properties, right-click on the zone and select “Zone Properties.” You can change the zone's name, position, color, and opacity. If you want to lock the zone so that it cannot be altered, click “Lock.” When you are done, click “OK” to close Zone Properties.

10.1.2.11 Remove Device

If you want to remove one or more devices, click “Remove Device.” Then click the check box(es) in the list that you want to remove. Click “OK.” You will be asked to confirm this action. Click “Yes” to delete the device(s) and “No” to exit the action without deleting.



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Note: You can select all devices for deleting by clicking the “Select All” box instead of each individual box.

10.1.2.12 Filtering And Arranging Data

If you are monitoring many instruments/devices but want to concentrate on some specific ones, or exclude all but a specific type, you can easily do this. You can also reverse the order of the lists.

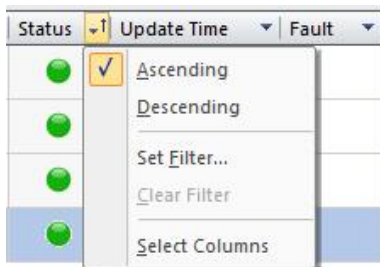
Reversing the list order is easy. Click the heading (Status, Fault, etc.), and it automatically reverses the order. For example, here is the standard order:

Status	Fault	Image	Update Time	Unit ID	SN
			11:24:34	4ECD	D0124025M5
			11:24:43	43F0	43F0
	Offline		11:09:32	1	995-001477
	Offline		11:07:44	1	995-001492
	Offline		11:09:31	1	995-001518
	Offline		11:09:30	1	995-001490
	Offline		11:07:44	1-0621	G0212014N9
	Offline		10:56:38	2	095-222222
	Offline		10:56:38	3	095-333333

After you click the header, the order changes. In addition, an arrow appears to the right of the pull-down triangle to indicate sort direction:








You can also click on the triangle in a header to open a menu of options that includes setting whether the sort order is ascending or descending. If you have already set the sort order to ascending or descending, a check box indicates the direction.

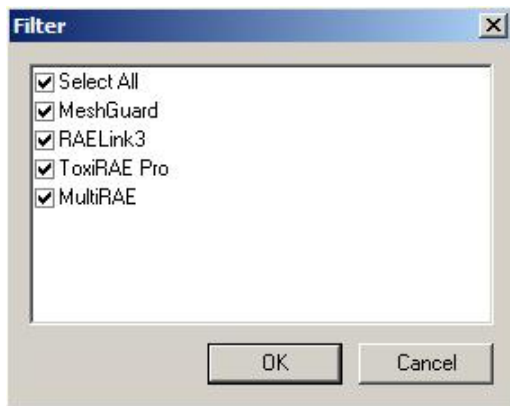


In addition, filters can be set for excluding or including instruments and their data. Pull down the menu and select “Set Filter...”

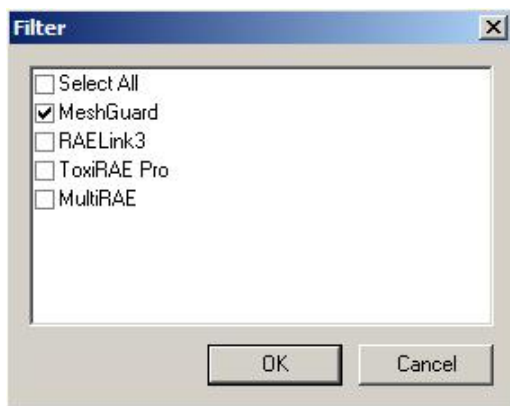
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Status	Fault	Image	Update Time	Unit ID	SN
Offline	Offline			521	G0212014N9
Offline	Offline				095-555555
Offline	Offline				995-001477
Offline	Offline				995-001492
Offline	Offline		11:00:31	1	995-001518



Check boxes in the dialog box indicates which instruments are showing. Click on the ones you don't want to see so that they are no longer selected. Then click "OK."



Alternatively, deselect all of them and just select the one(s) you want to see.

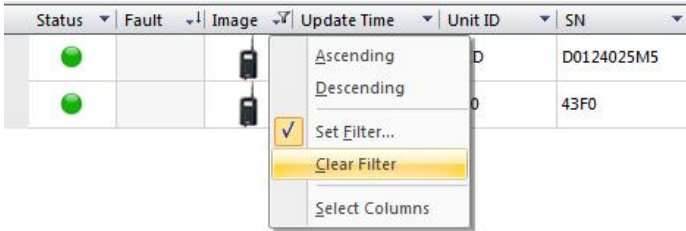


In this case, only MeshGuard has been selected, so only data pertaining to MeshGuards are shown:

Status	Fault	Image	Update Time	Unit ID	SN
Online			11:26:34	4ECD	D0124025M5
Online			11:26:19	43F0	43F0

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If you want to show all instrument data again, simply pull down the menu and click “Clear Filter...”

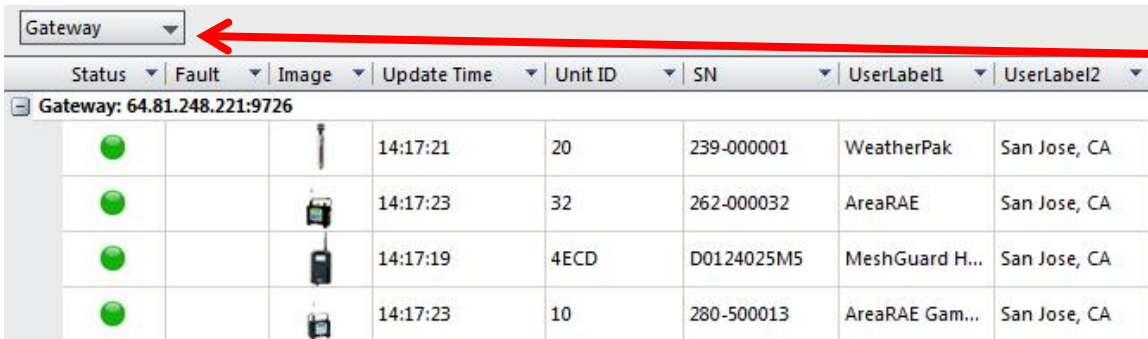


When the filter is cleared, all columns are again visible:

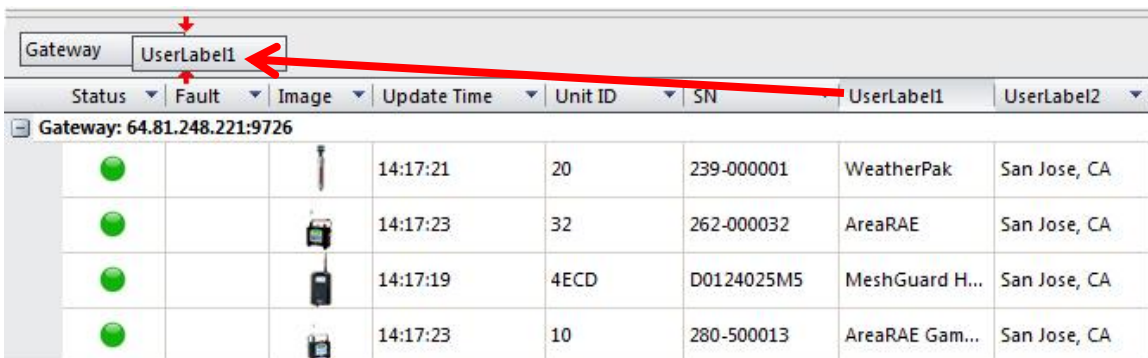
City	Status	Fault	Instrument	Image	Update Time	Unit ID	SN	Gateway	H2S(ppm)
San Jose, CA	●		MeshGuard H...		15:48:16	4ECD	D0124025M5	64.81.248.221:9726	0.0
San Jose, CA	●		MeshGuard H2S		15:48:11	43F0	43F0	64.81.248.221:9726	0.0

10.1.2.13 Using Groups To Filter Information

Another way to filter your information is to produce hierarchies built from the labels (the headings above the Device List). Drag a label into the Group Area to begin building a hierarchy:

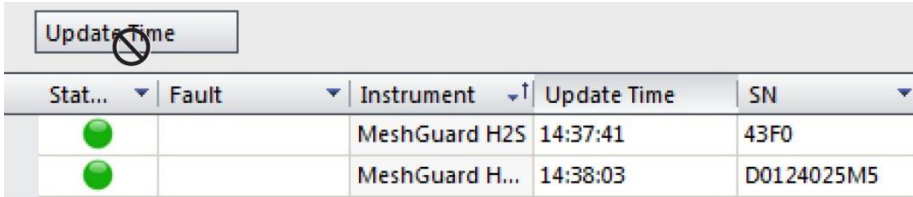


When you drag a label into the Group Area, red arrows above and below point to where it can be located:



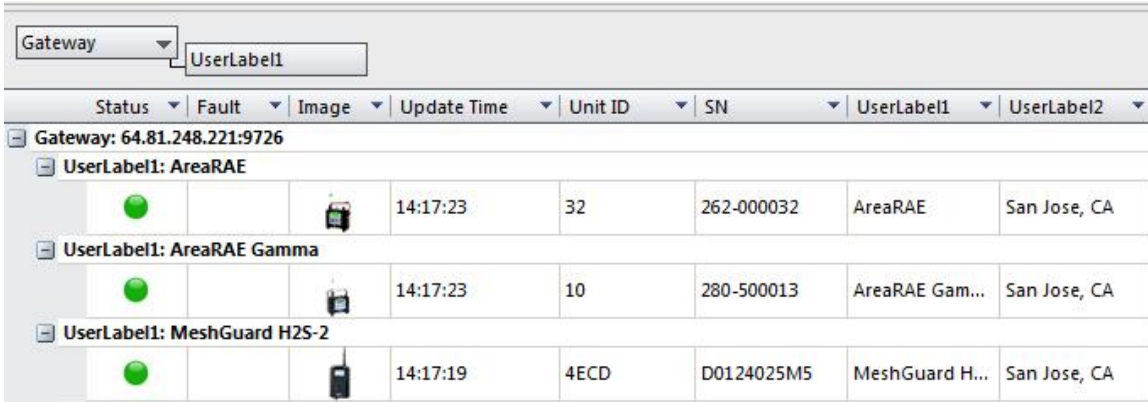
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Note: Some labels cannot be grouped. If a column label cannot be dragged to the Group Area or to the location you want, it will not “stick” to the Group Area, and while you move it a “no” symbol is displayed over the label:



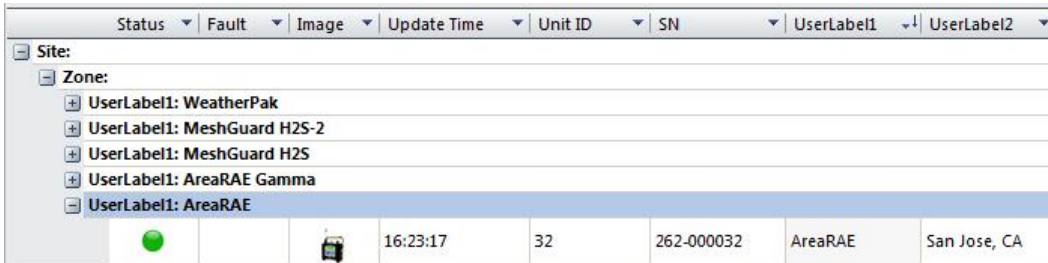
Stat...	Fault	Instrument	Update Time	SN
●		MeshGuard H25	14:37:41	43F0
●		MeshGuard H...	14:38:03	D0124025M5

When labels are grouped in a hierarchy, the levels are clearly shown in a parent/child arrangement:



Status	Fault	Image	Update Time	Unit ID	SN	UserLabel1	UserLabel2
Gateway: 64.81.248.221:9726							
UserLabel1: AreaRAE							
●			14:17:23	32	262-000032	AreaRAE	San Jose, CA
UserLabel1: AreaRAE Gamma							
●			14:17:23	10	280-500013	AreaRAE Gam...	San Jose, CA
UserLabel1: MeshGuard H2S-2							
●			14:17:19	4ECD	D0124025M5	MeshGuard H...	San Jose, CA

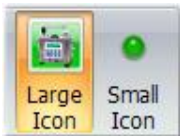
When you build hierarchies, the device list is ordered accordingly. In addition, you can expand or collapse each subgroup by clicking the “+” or “-” to the left of each label.



Status	Fault	Image	Update Time	Unit ID	SN	UserLabel1	UserLabel2
Site:							
Zone:							
+ UserLabel1: WeatherPak							
+ UserLabel1: MeshGuard H2S-2							
+ UserLabel1: MeshGuard H2S							
+ UserLabel1: AreaRAE Gamma							
- UserLabel1: AreaRAE							
●			16:23:17	32	262-000032	AreaRAE	San Jose, CA

You can remove any of the levels of your hierarchy by dragging a label from the Group Area back to the labels bar.

10.1.2.14 Large Icon



There are two types of representation for each physical device in the network: Large Icon and Small Icon. The large icon is a graphic representation of the instrument, such as an AreaRAE, which accompanies a small icon (a dot) that indicates its status.

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10.1.2.15 Small Icon



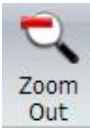
A Small Icon uses just a dot instead of a graphic representation. **Note:** If you choose small icons instead of large ones, be careful to use a background image that provides enough contrast.

10.1.2.16 Zoom In



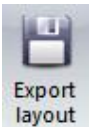
If you need a closer view, or if multiple devices appear in a clutter, click “Zoom In” to make the graphic larger.

10.1.2.17 Zoom Out



If you want a wider view, click “Zoom Out” to expand the graph.

10.1.2.18 Export Layout



Once you have created a new layout and then placed devices on it, you should save it if you want to use it again. Click the “Export Layout” button. When the dialog box appears, name the file and click “Save.” The layout is saved as a unique file with the suffix “.ivl,” which stands for “image view layout.”

10.1.2.19 Import Layout



You can import a stored layout by clicking the “Import Layout” button and then selecting a layout file (which has an “.ivl” suffix). Then click “Open.”

10.2 Device Information Pane

Device Information has tabs along the bottom for showing Data Records, Data Graph, and Device Details. Below that set of tabs is another that is generated when you click on the devices listed in the Device List pane. These tabs are identified by the SN (serial number) of each device in the Device List. Any of these tabs (and its data) can be removed from this display area by clicking the “X” on the upper right corner of the tab. To include data (and produce a tab) again, click the device in the Device List pane.

Note: The order of all tabs (left to right) can be changed. Simply click and hold the left mouse button to select a tab, and then drag it right or left to reposition it.

Data Records consists of time and sensor readings in a chart.

Data Graph shows the sensor readings on a graph, with colors indicating the different sensors.

Device Details can be compacted by clicking on the “-” to the left of each major item (Device, GPS, or Sensor) or sub-item (each sensor has information and can be compacted, too.).

Note: The order of all tabs (left to right) can be changed. Simply click and hold the left mouse button to select a tab, and then drag it right or left to reposition it.

10.3 System Information Pane

System Information, as its name implies, monitors activities at the system level, such as the opening and closing of ports, establishment of connections and so forth.

There are 3 tabs in the System Information Pane

- Notice
- Warnings
- Alarms

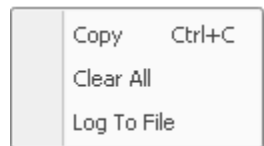
The “Notice” tab logs the event of normal system operations, such as open or closed ports, etc.

The “Warnings” tab logs the event of system operation errors, such as failures to open a port.

The “Alarms” tab logs the instrument alarm history (for example, a sensor low alarm).

Notes:

1. Each tab is limited to 500 events. If the event number in the tab exceeds the limit, the first event is removed from the tab, and the latest event is added to the last line of the tab. This rule applies separately to each of the three tabs.
2. Right-click in the tab to show a pop-up menu (Copy, Clear All, Log To File) to copy the information in the tab, or clear the information, or log to a text file. This operation applies to the selected tab, not all three tabs.



11 Managing Panes

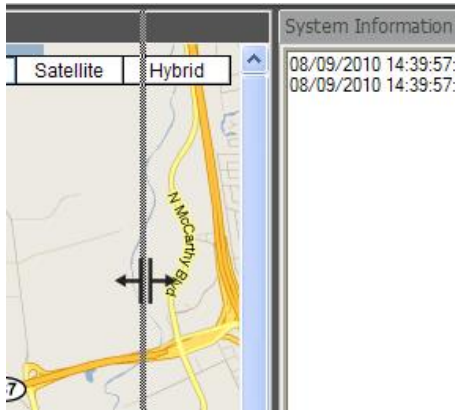
The Device Information Pane and System Information panes on ProRAE Guardian are detachable from the main user interface, making it possible to “park” them anywhere on your computer desktop. In addition, ProRAE Guardian supports multiple displays, so you can, for example, have the main window on one display and locate one or both of the detachable panes on another display.

11.1 Resizing Panes

To resize the panes, move your mouse over the “seam” between two panes. This sizing icon appears:

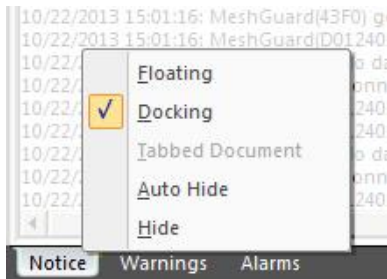


Press and hold the left button on your mouse and move the “seam” to resize the panes. When you are done, release the button.



11.2 System Information Tabs Attributes

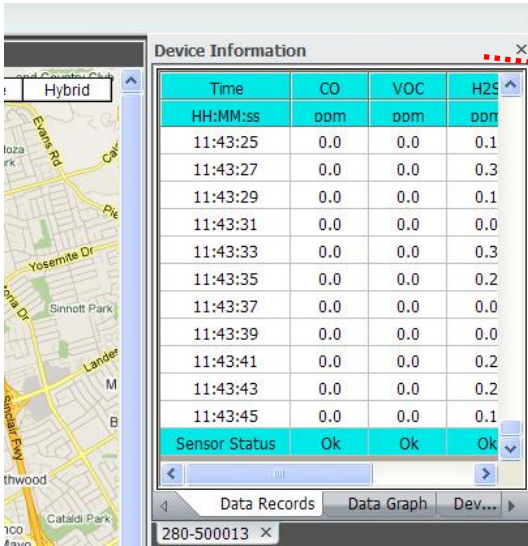
When you right-click over “Notice,” “Warnings,” or “Alarms,” a menu of options is shown. Whether the pane is floating or docking is indicated. You can change the pane from Floating to Docking by clicking one or the other. In addition, you can tell the pane to Auto Hide or to Hide (disappear). If you want a hidden pane to be shown, go to the top of the window and click “Reset Panes.” This brings back any hidden panes.



11.3 Rearranging Panes

You can change the arrangement of the panes by using a “drag and drop.” Point to the top of a pane and then click the left mouse button. While holding down the button, drag the pane away from the main window or to another part of the window.

Note: You can also break out a pane by double-clicking on the top gray bar of that pane. If it is docked, then it breaks away when you double-click. If it is undocked, it redocks itself when you double-click the gray bar.



Grab the top of the pane and pull it away from its “dock.”

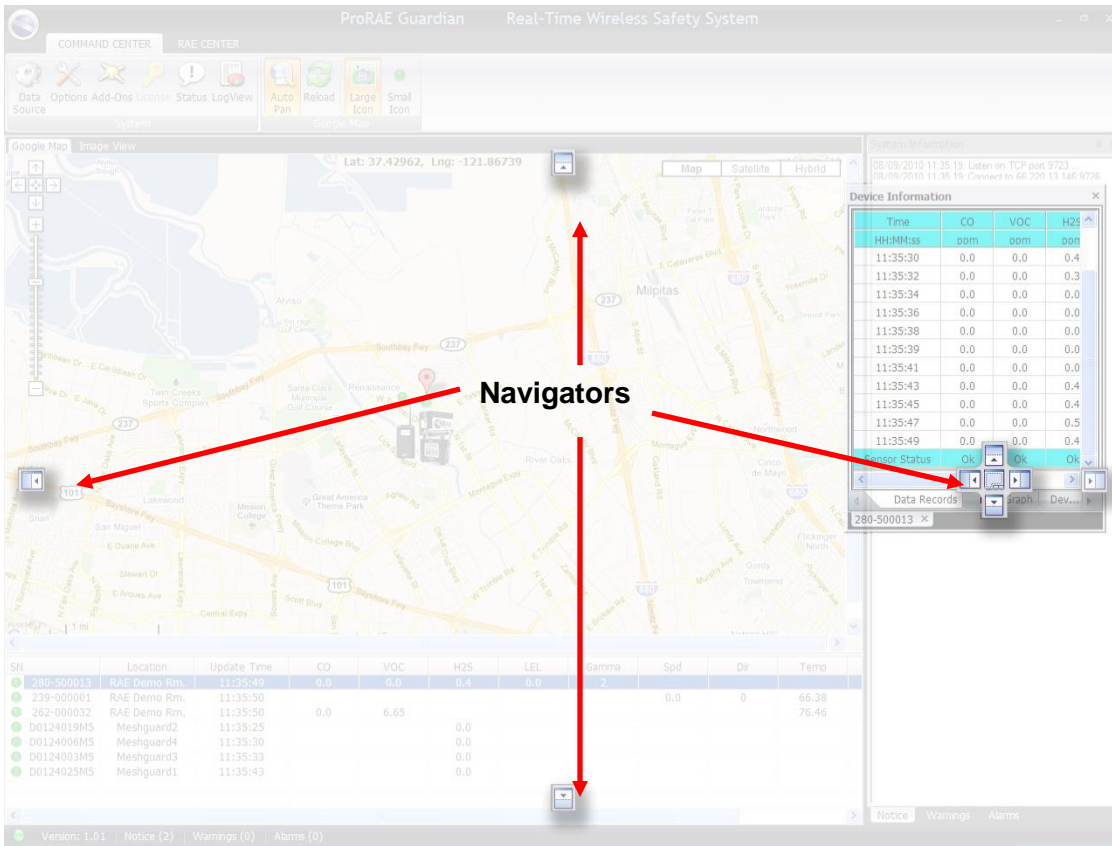
As you move the pane, small “navigators” appear. Drag the pane to the blue block at the outer edge of any of these navigators to dock the pane on that portion of the main window. Otherwise, just drag it off the main window to your desktop. Then release the button.



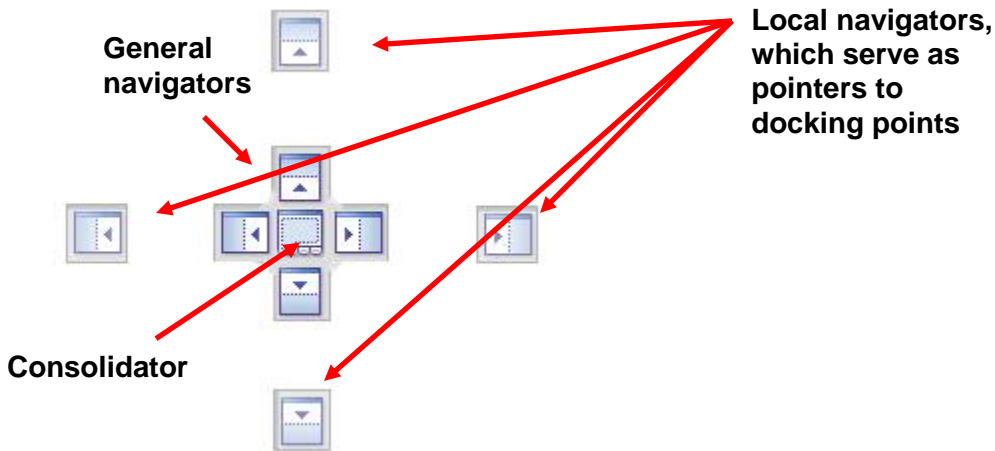
As you move the pane, “navigators” appear.

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In the case of a full screen, the navigators can be spread across the entire screen's view.

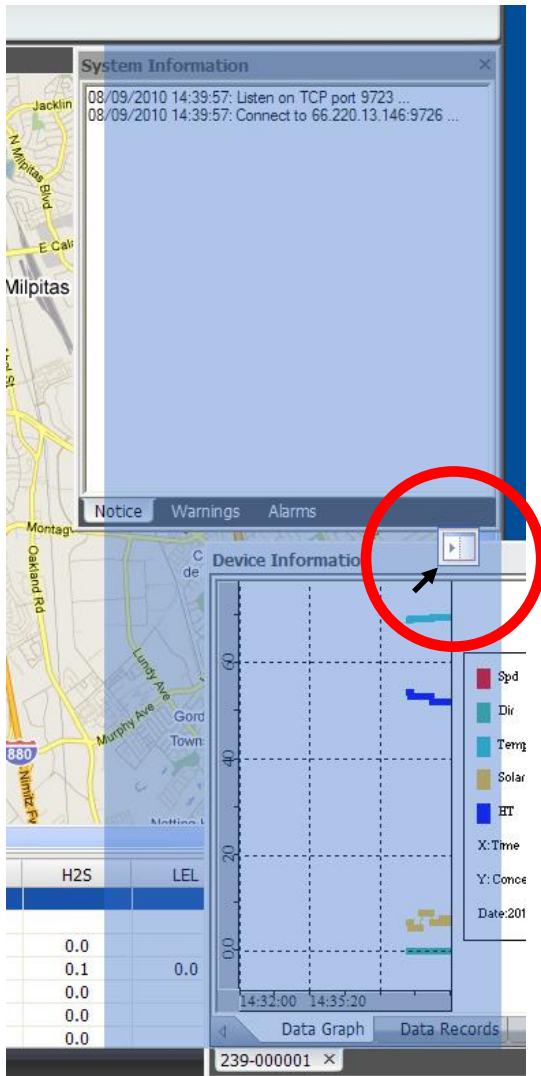


In addition to the directional navigators, there is a “consolidator,” which if you drag a detached or separate System Information or Device Information pane on top of the other, ProRAE Guardian consolidates the two into a single pane with multiple tabs (see page 125 for details).



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As you move a pane by pointing to one of the navigators, the area where it will dock is highlighted with a blue overlay.



Again, when you are satisfied with the placement, release the mouse button.

Note: Once you relocate a pane, it will remain there, even when you close the program and open it again. The exception is if you removed the pane from the main window. When you reopen the program, the pane floats over the main window.

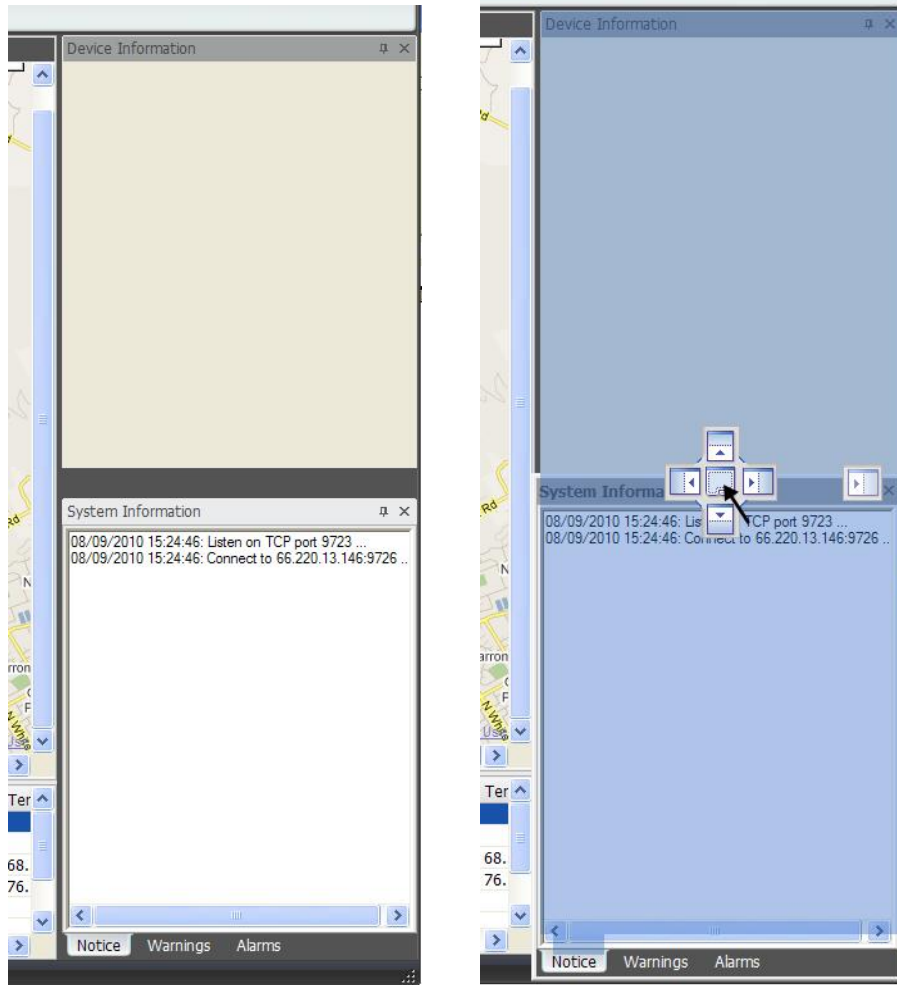
11.3.1 Resetting Panes

If you have relocated the panes and want to set them back in the same locations (and sizes) as they appeared when the program was installed, click the “Reset Panes” icon in the Quick Access Toolbar.

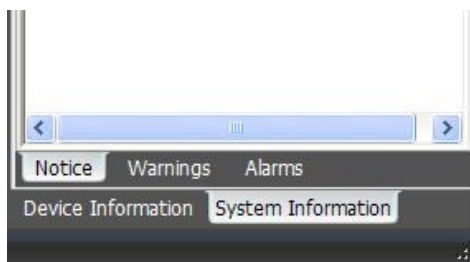
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11.3.2 Consolidating System Information and Device Information Panes

If the Device Information pane or System Information pane is detached or shown as a separate pane, you can drag it on top of the other pane and consolidate the two into a single pane with multiple tabs.



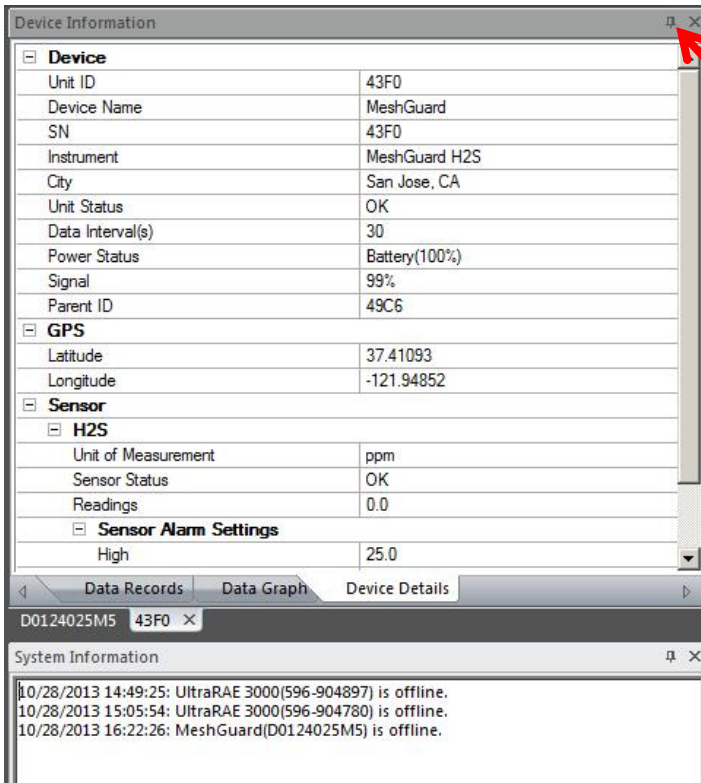
The pane you dragged disappears and tabs appear along the bottom, representing the System Information and Device Information panes, which can be toggled for viewing.



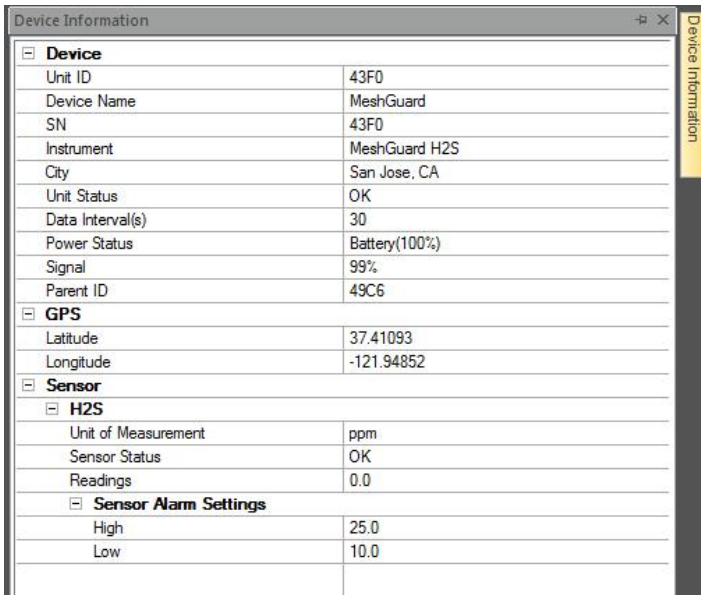
Note: The order of all tabs (left to right) can be changed. Simply click and hold the left mouse button to select a tab, and then drag it right or left to reposition it.

11.4 Minimizing Panes

You can hide a pane by clicking the symbol to the left of the “X” in the upper right corner.



This hides the pane and places a tab along the edge of the window:

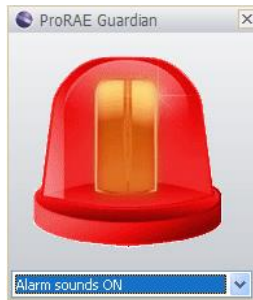


When you mouse over the tab, the pane is shown. If you click on the tab, the pane is shown and hides only when you click the icon again.

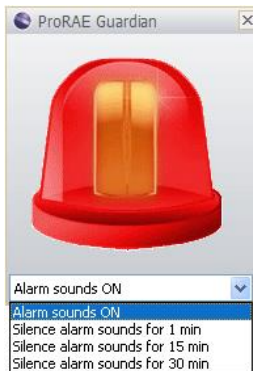
12 Alarms

12.1 Main Alarm

When any sensor on the network exceeds its alarm trigger point, or if a device goes offline or a port or connection closes, ProRAE Guardian alerts you with a loud alarm and a dialog box with a flashing beacon.



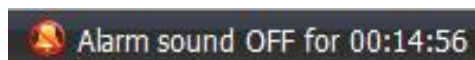
ProRAE Guardian gives you the option of suppressing the alarm sound. If it is set to "Alarm sounds ON," then anytime an alarm state is triggered, the alarm sounds immediately. You can select to disable the audible alarm for 1 minute, 15 minutes, or 30 minutes. This can be useful if you are performing maintenance and testing and do not want to set off the audible alarm each time you make a change.



If you choose to silence an alarm for a period, you see different flashing-light image that indicates the sound is turned off:

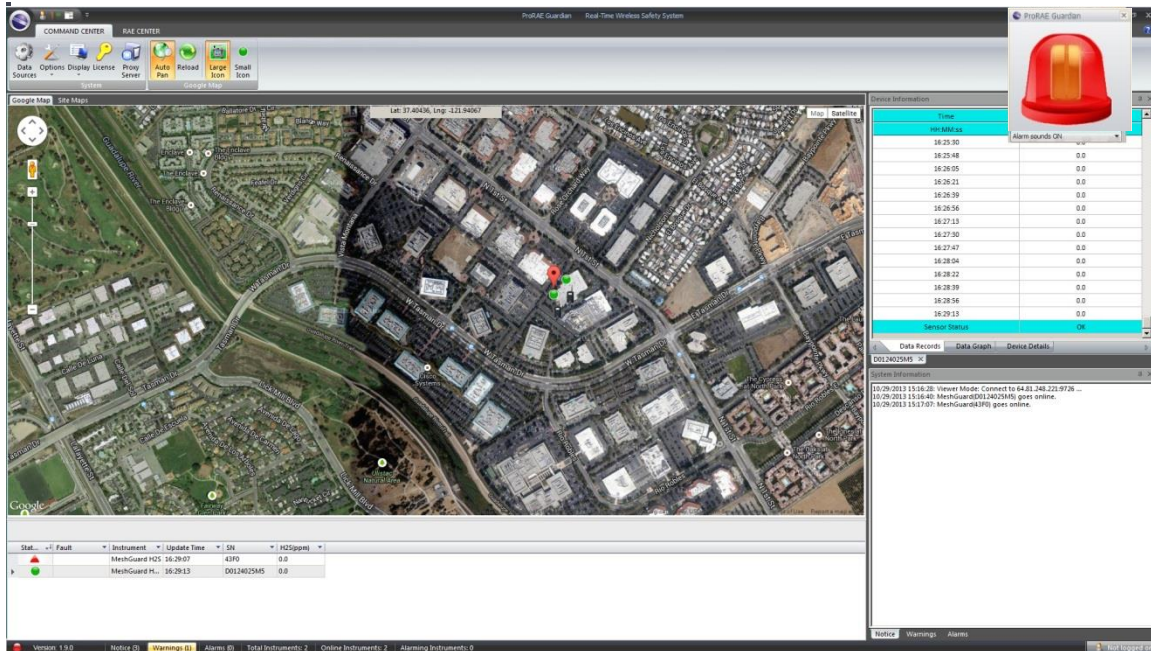


In addition, while the alarm sound is off, the System Status bar has a message that tells you it is off, plus it has a countdown that tells how long the sound will be off:








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To silence the alarm during the current alarm event, click the “X” in the upper right corner of the image. The image is dismissed, and the sound stops. However, the red triangle in the left column of the Device List and a flashing red triangle in the System Status Bar remain, indicating the alarm.



There are four states indicated by a color/shape combination:

-  Lost contact/no contact with device
-  Device is functioning and ProRAE Guardian is receiving data
-  Fault indication (pump stall, etc.)
-  Device is in alarm
-  License exceeded

When a device produces an alarm or fault, that device moves to the top of the Device List. Sometimes the monitor, but not the sensor, will be indicated in an alarm situation (such as if a battery fails).

Note: If the number of instruments covered by the license is exceeded, any instrument over the licensed number is accompanied by a “lock” icon in the device list, and no readings from that instrument are shown. If an instrument that is within the range of the license goes offline, another instrument that exceeded the license’s number is now within the licensed number, and the icon changes from the “lock” to an active-status icon, accompanied by readings (if data is received).

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12.2 Fault Alarm

A second alarm type, a fault alarm, has been added. Like the standard alarm, it pops up a small window with a flashing icon. The icon looks like this:



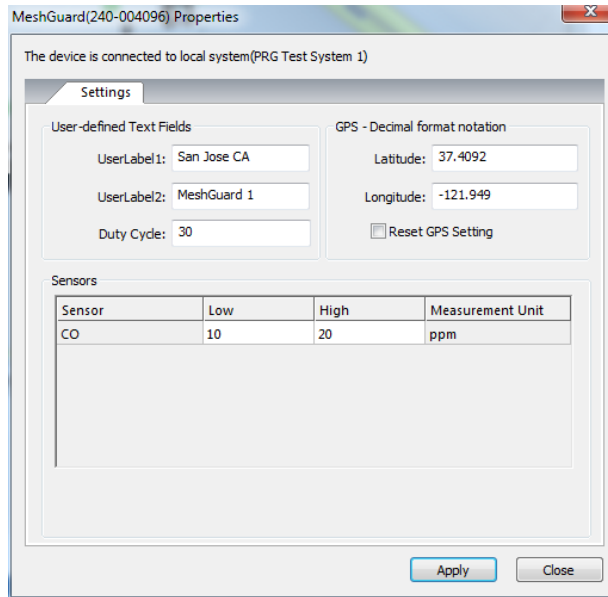
It indicates a fault, such as a pump stall, dead battery, etc. Its sound is different than the main alarm, providing secondary audio cueing. Like the main alarm, the window can be dismissed and the sound silenced or set to intervals. When the fault alarm is present, the icon in the Device List and the “Alarms” text in the System Status Bar blink, as well.

12.3 Offline Alarm Feature

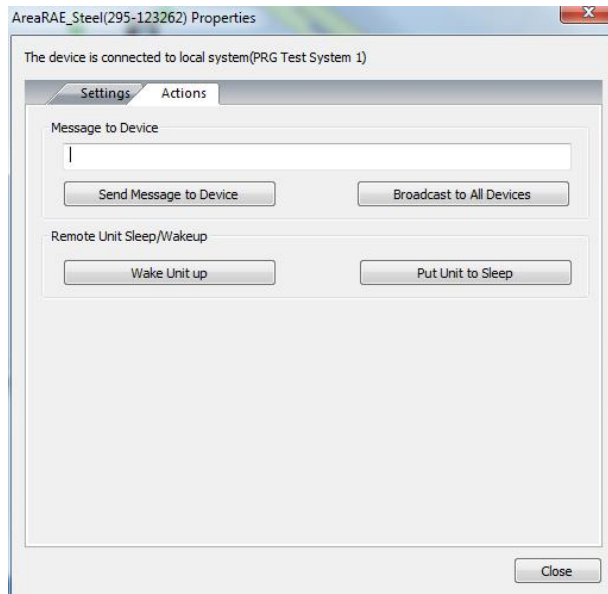
There is also an “Offline Alarm” feature. It can be configured to be enabled/disabled, plus its threshold set. If ProRAE Guardian detects an “Offline Alarm” status, it shows the “Fault Alarm” icon and makes the corresponding alarm sound.

13 Device Properties

If you double-click on any instrument's row in the Device List, a Device Properties window opens, with details of readings (if any). This can be done at anytime (not just when there is an alarm state). If you are logged in as an administrator, the fields' backgrounds are white, and depending on the type of device, there are settings you can edit. If you are not logged in, then the fields and their text are grey, indicating that you cannot edit them.



If the device is a locally attached PTM instrument, you see a second tab called “Actions.” Like the “Settings,” your options are determined by the device’s capabilities and editable functions:



ProRAE Guardian User's Guide

In some cases, such as with a BioHarness, you can select a template, or make other changes. In addition, if your ProRAE Guardian is in a network with another ProRAE Guardian, it shows the device is connected to a remote system, as well as identification information about the device (its name and serial number). In such cases, all the settings on the device property dialog are greyed out. You need to the ProRAE Guardian that the device is attached locally to change the settings for that device.

14 Configuring ProRAE Guardian Data Communication

Before starting ProRAE Guardian to monitor your network, make sure that the network's controller and monitors are communicating properly and that each is uniquely identified. Check the controller's display to ensure that all monitors are reporting data.

It is necessary to configure the software before operation on the host PC. Before the first operation, have the following information available:

- The serial port number (COM1, COM2, COM3, etc.) for the modem cable connected between your computer and the wireless modem (RAELink3 or RAEMesh Reader).
- For Email alarm notification, make sure the host PC is connected to the Internet via a LAN. Also make sure the IP address of the mail server (SMTP) is correct. If your SMTP server requires authentication, check that your username and password are valid before inputting them into ProRAE Guardian. (For example, install e-mail client software such as Outlook Express, Foxmail, etc., on your PC and test the username and password for the SMTP server).

14.1 Configure ProRAE Guardian to retrieve instrument data

All communication settings for ProRAE Guardian to get instrument data are in the "Data Sources" dialog:

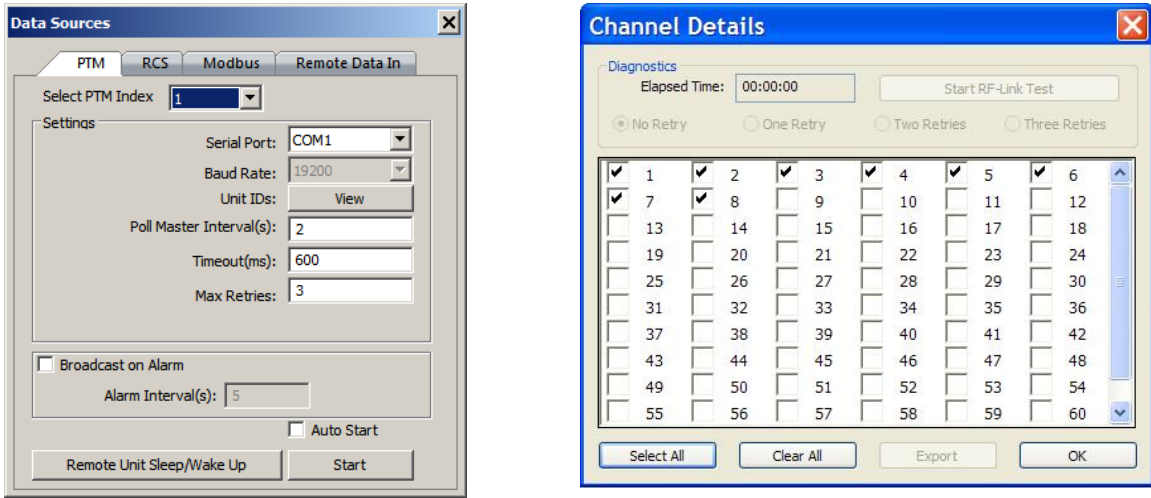


ProRAE Guardian User's Guide

14.1.1 PTM

This tab is for communication with AreaRAE instruments.

For most of the applications, you must configure the COM port and select the channels:



Note: You can configure up to four COM ports. Select these through “Select PTM Index.” Then click “Start” to start the PTM function. Checking “Auto Start” is recommended.

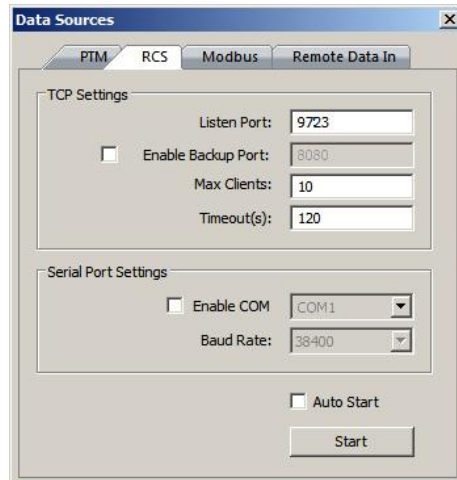
If you do not have RCS instruments or retrieve data from remote systems, click “X” to close the “Data Sources” dialog box. The PTM instruments should show on the ProRAE Guardian.

14.1.2 RCS

This tab is for communication with MeshGuard instruments.

For most of the applications, you must:

1. Select whether to enable the COM port.
2. Select the COM port if enabled.



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Click “Start” to start the RCS function. Checking “Auto Start” is recommended.

If you do not retrieve data from a remote ProRAE Guardian, click “X” to close the “Data Sources” dialog box. The RCS instruments should show on the ProRAE Guardian.

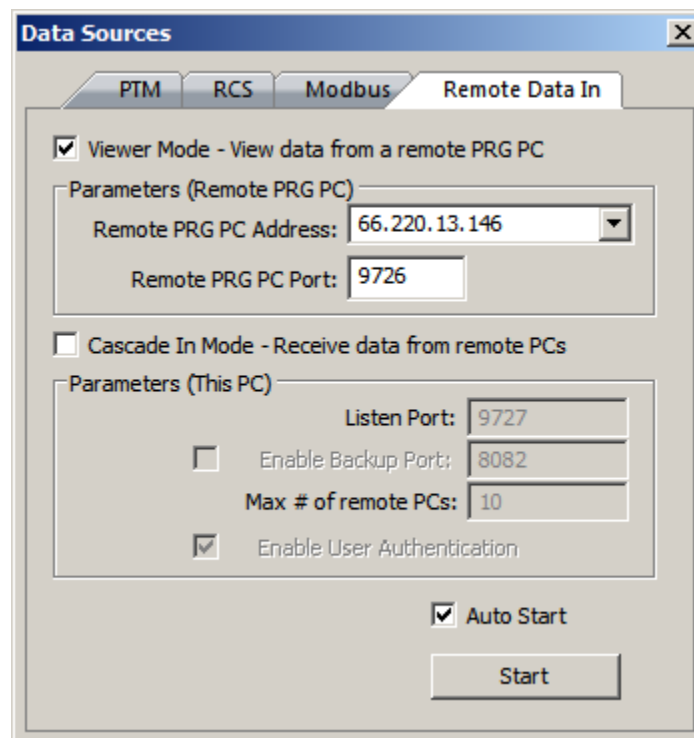
14.1.3 Remote Data In

This tab is for communication with remote ProRAE Guardian Full Version (and other software with the same interface).

For most of applications, what you must:

1. Check “Viewer Mode.”
2. Input the “Remote PRG PC Address.”

Note: You must start “Data Forwarding” in the remote ProRAE Guardian Full Version.



Check “Enable Data Forwarding” and click “Set.” Checking “Auto Start” is recommended.

Check the computer with the Source ProRAE Guardian for its IP address. If there are several IP addresses, choose the one that can communicate with the Destination ProRAE Guardian. Alternatively, you can get the computer's domain name if it is available.

14.2 Configuring ProRAE Guardians To Share Real-Time Data

ProRAE Guardians can share real-time device data via the network interface. However, you must configure both ProRAE Guardians to allow them to work together.

There are two schemes to share real-time data between ProRAE Guardians. To simplify the explanation, we will call the ProRAE Guardian Full version with instrument data as the “Source” ProRAE Guardian, and call the other end of ProRAE Guardian the “Destination” ProRAE Guardian.

The Viewer scheme sets the Source ProRAE Guardian as a TCP server and sets the Destination ProRAE Guardian as TCP client. In this scheme, the Source ProRAE Guardian must be the Full version, the Destination ProRAE Guardian can be Full version or Viewer.

The Cascade scheme sets the Destination ProRAE Guardian as a TCP server and sets the Source ProRAE Guardian as TCP client. This scheme is for special cases that the Destination ProRAE Guardian cannot connect to the Source ProRAE Guardian, but they can do it in the reverse. For example, the Source ProRAE Guardian has a GPRS modem to which the IP address is dynamically assigned, and the Destination ProRAE Guardian is with a fixed IP address.

In this scheme, both ProRAE Guardians must be Full Version installations.

The following are two schemes for configuring both ProRAE Guardians.

14.2.1 Viewer Scheme

You must configure both on the Source ProRAE Guardian and Destination ProRAE Guardian properly to let them work together.

Note: If the “source” ProRAE Guardian has “Remote Access Control” enabled, the “destination” ProRAE Guardian *must* have “Remote Access Control” enabled and be set to use the same access code.

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14.2.1.1 Source ProRAE Guardian

Configure “Data Forwarding” on the Source ProRAE Guardian to enable “Remote Viewer” mode:

The screenshot shows the "Data Options" dialog box with the "Data Forwarding" tab selected. The dialog has a title bar with a close button (X) and a menu bar with options: "Formats", "Alarm", "Data Forwarding", "Web Viewer", "Care Center", and "Platform".

Under the "Data Forwarding" tab, the following options are visible:

- Enable Remote Viewers - Allow remote Viewers to view data from this PC
 - Parameters (This PC):
 - Listen Port: Enable Backup Port:
 - Max Viewers:
- Cascade Out Mode - Send data to a remote PC
 - Parameters (Remote PC):
 - Remote PC IP Address:
 - Remote PC Port:
 - Enable User Authentication
 - Username:
 - Password:
- Enable Data Forwarding
- Auto Start

At the bottom of the dialog are two buttons: "Set" and "Cancel".

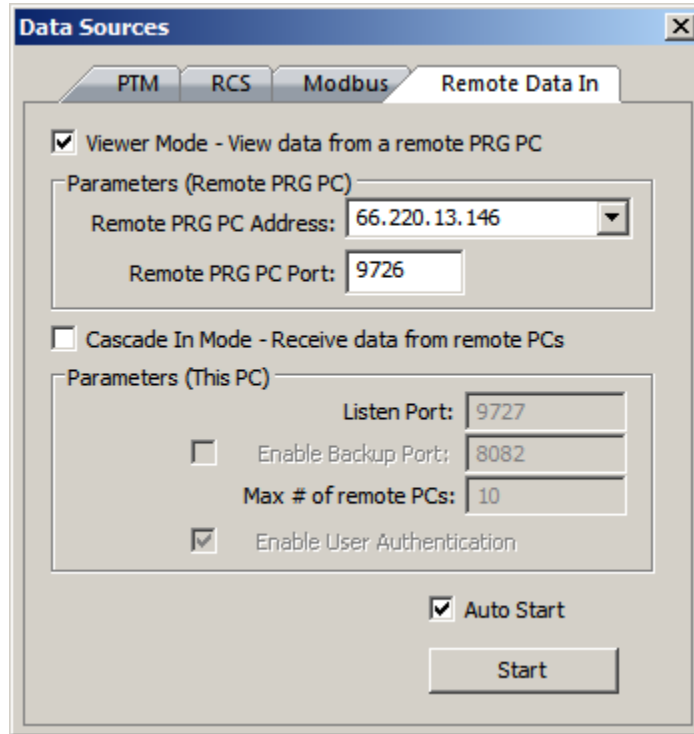
Check “Enable Remote Viewers” and click “Set.” Checking “Auto Start” is recommended.

Check the computer with the Source ProRAE Guardian for its IP address. If there are several IP addresses, choose the one that can communicate with the Destination ProRAE Guardian. Alternatively, you can get the computer's domain name if it is available.

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14.2.1.2 Destination ProRAE Guardian: Viewer Mode

Configure the “Remote Data In” on the Destination ProRAE Guardian to enable the “Viewer” mode:



Input the IP address of the domain name of the Source ProRAE Guardian.

Make sure the “Remote PRG PC Port” is the same as the “Listen Port” of Source ProRAE Guardian (or the “Backup Port” if enabled).

Click “Start” to start connection. Checking “Auto Start” is recommended.

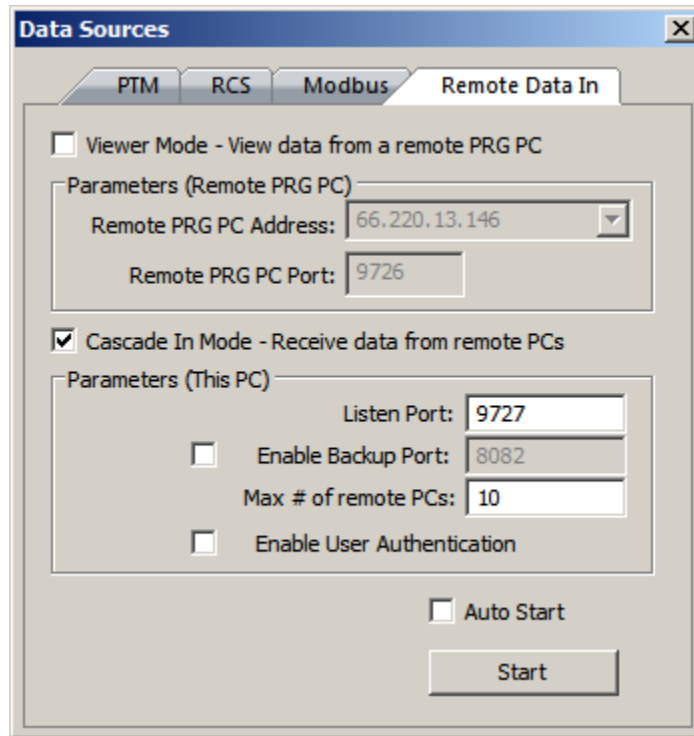
14.2.2 Cascade Scheme

You must configure the Source ProRAE Guardian and Destination ProRAE Guardian properly so that they can work together.

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14.2.2.1 Destination ProRAE Guardian: Cascade In Mode

Configure the “Remote Data In” on the Destination ProRAE Guardian to enable the “Cascade In” mode:



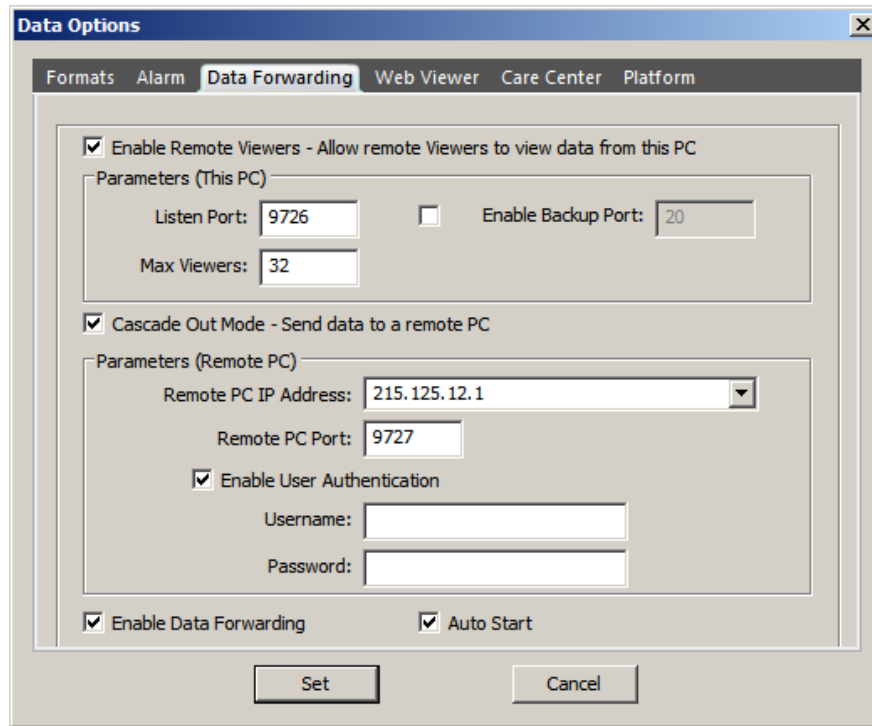
Click “Start” to start the connection. Checking “Auto Start” is recommended.

Check the PC with the Destination ProRAE Guardian for its IP address. If there are several IP addresses, choose the one that can communicate with the Source ProRAE Guardian. Or you can get the computer's domain name if it is available.

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14.2.2.2 Source ProRAE Guardian: Cascade Out Mode

Configure the “Data Forwarding” on the Source ProRAE Guardian to enable “Cascade Out” mode as shown here:



The screenshot shows the "Data Options" dialog box with the "Data Forwarding" tab selected. The dialog has a title bar with a close button (X) and a menu bar with options: Formats, Alarm, Data Forwarding, Web Viewer, Care Center, and Platform. The main content area contains several sections:

- Enable Remote Viewers - Allow remote Viewers to view data from this PC
- Parameters (This PC):
 - Listen Port: 9726
 - Enable Backup Port: 20
 - Max Viewers: 32
- Cascade Out Mode - Send data to a remote PC
- Parameters (Remote PC):
 - Remote PC IP Address: 215.125.12.1
 - Remote PC Port: 9727
 - Enable User Authentication
 - Username: [text box]
 - Password: [text box]
- Enable Data Forwarding
- Auto Start

At the bottom of the dialog are two buttons: "Set" and "Cancel".

Input the IP address or domain name of the Destination ProRAE Guardian in the “Remote PC IP Address” field.

Make sure the “Remote PC port” is the same as the “Listen Port” of the Destination ProRAE Guardian (or the “Backup Port” if enabled).

Check “Enable Data Forwarding” and click “Set.” Checking “Auto Start” is recommended.

15 Communications Port Configuration

It is unlikely that you will need to configure your computer's communication (COM) port, but if it is necessary, follow the instructions below.

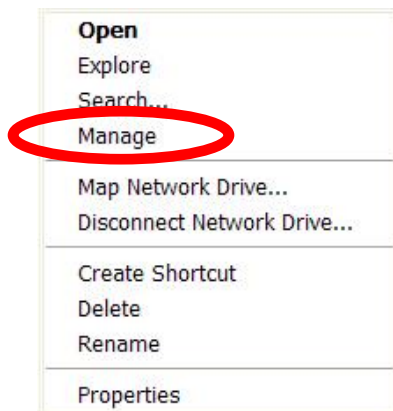
15.1 Determining The Port Number

In order for the computer and a host modem to communicate via the serial port (or virtual serial port, in the case of a USB connection), you must supply the port number to the terminal emulation program. The port number is not obvious, so you must find it in the computer. Follow this procedure:

1. With the mouse, right-click the "My Computer" icon.

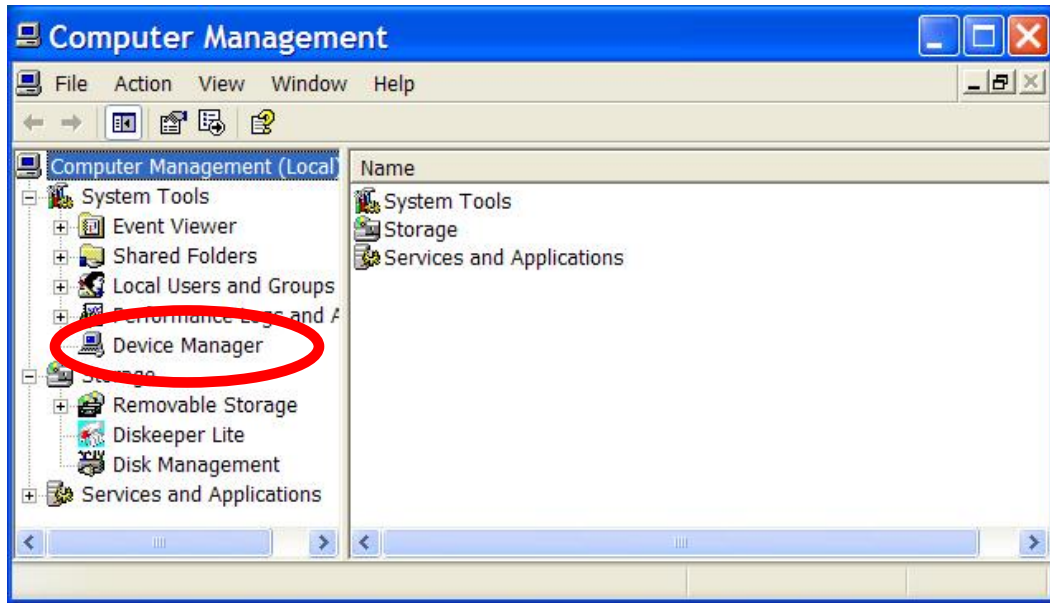


2. Select "Manage."

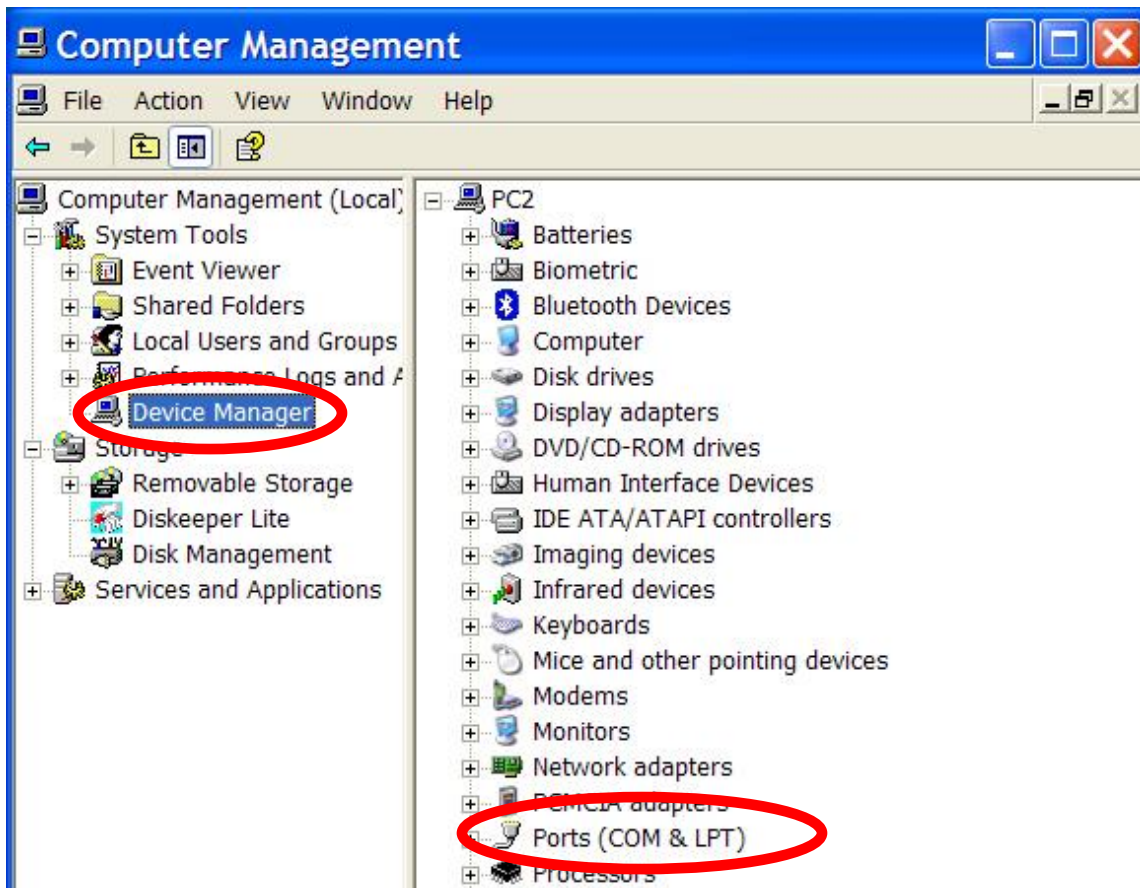


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3. Under "System Tools," select "Device Manager."

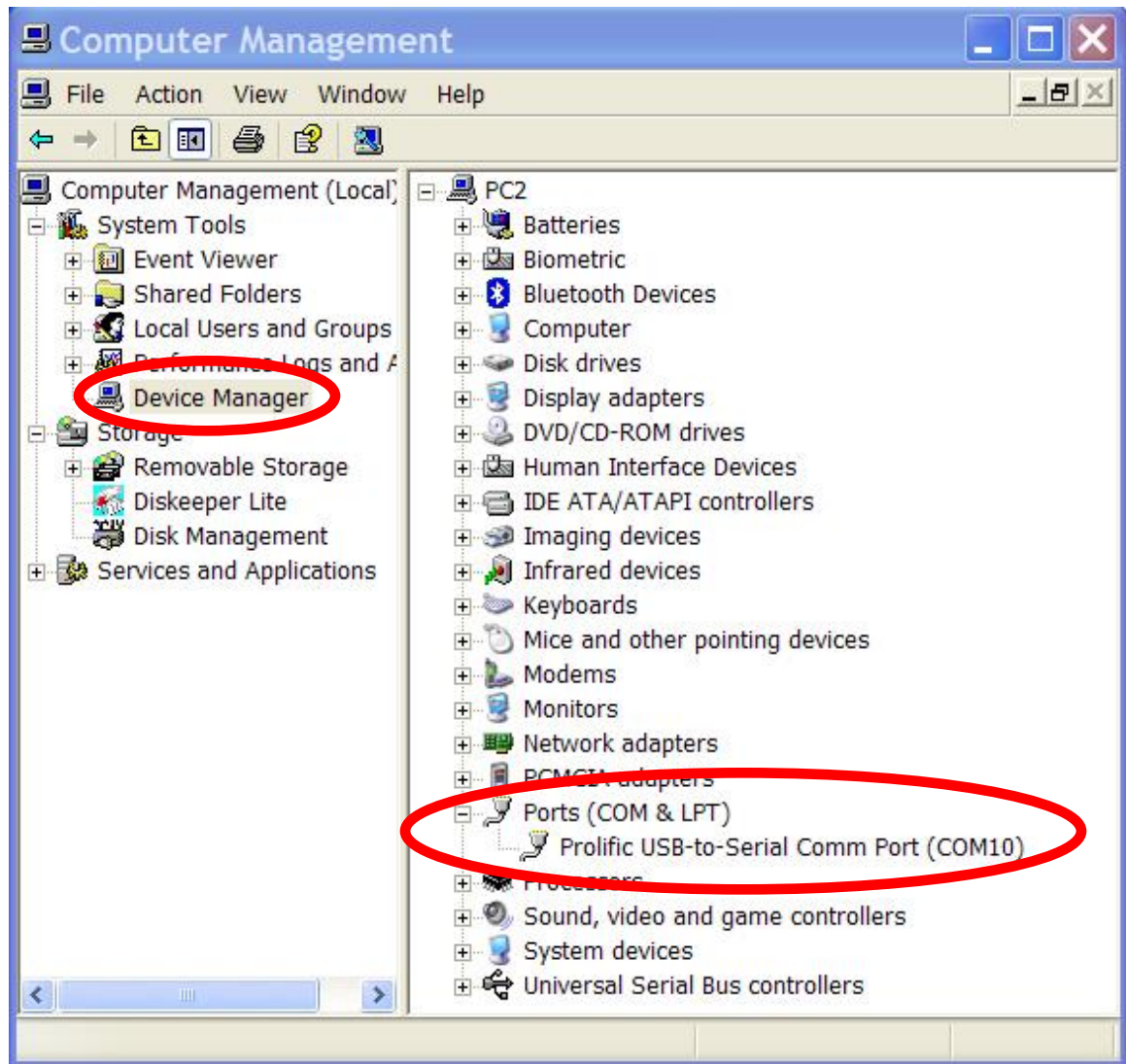


4. Click "Device Manager." A list appears in the right pane, including "Ports (COM & LPT)."



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5. In the right pane, select “Ports (COM & LPT).”



If the computer has built-in serial ports, they are listed as “Communications Port (COM1)”, or are similarly named.

If a Serial-To-USB controller is used, its entry looks similar to this:

Prolific Serial-To-USB Comm Port (COM10)

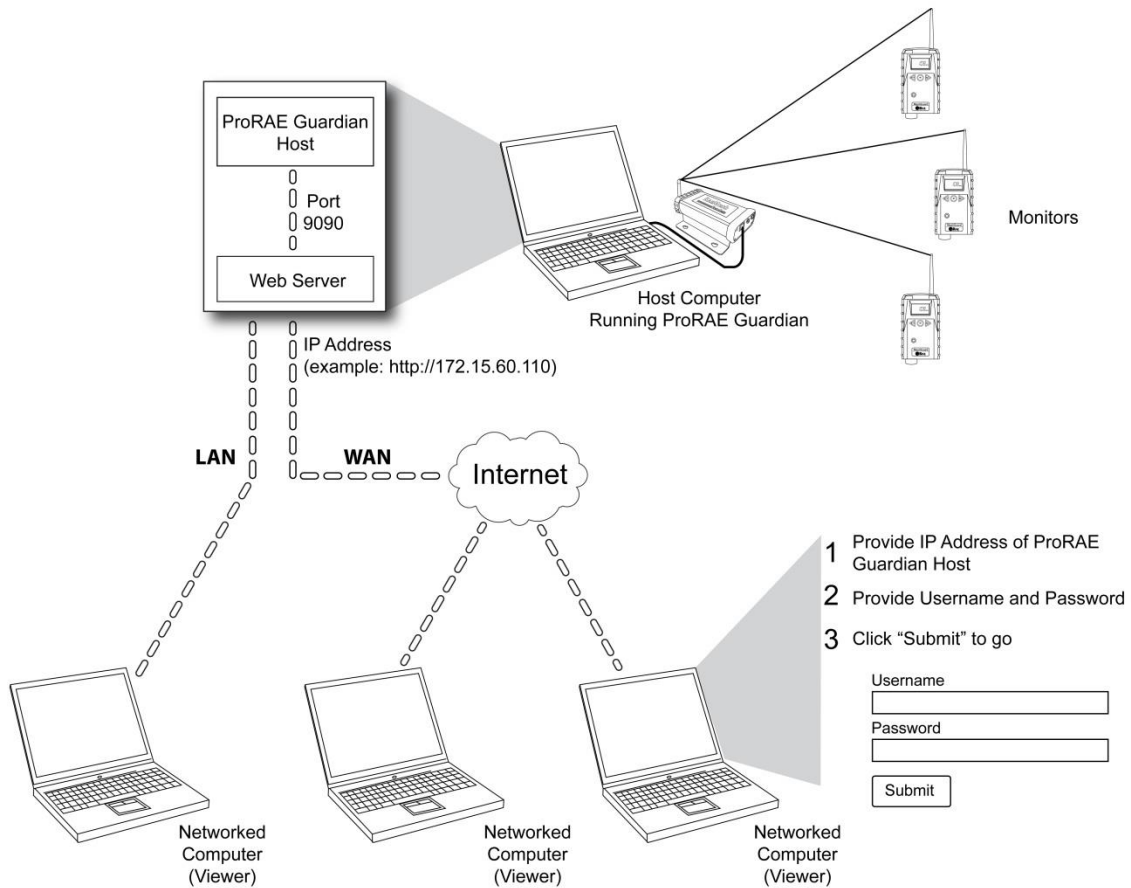
Note: If you want more details about the Serial-To-USB converter, double-click on its name. This pops up a dialog box with details. The “General” tab gives an overview, and the Port Settings tab tells you the details of the port configuration.

You will need the port number later, so write it down. Also, if you unplug the Serial-To-USB converter and plug it in again, it is possible that the computer will assign a different port number to it. Therefore, each time you plug it in, check the port number.

16 Viewing ProRAE Guardian Remotely Via Web Browser

ProRAE Guardian allows remote viewing via a web browser. Once the host ProRAE Guardian is configured, it is easy to connect to it and view its data from a computer running a web browser. Viewing via a remote computer's browser require a username and login (default values are "administrator" and "raesystems", respectively). The host computer runs ProRAE Guardian and its own web server.

This diagram shows a typical network configuration for local and remote viewing of data via ProRAE Guardian and remote computers:



You must also have WAN, LAN, or Internet access, depending on the system. In some cases, firewall issues may prevent you from connecting, so it may be necessary to consult with your company's I.T. department.

There are two steps to the process of remotely viewing ProRAE Guardian. You must first configure the computer with ProRAE Guardian to allow remote viewing. Then you must connect remotely via a web Browser to view (this requires a Username, and a Password).

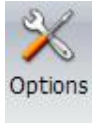
16.1 ProRAE Guardian Configuration (Host)

1. Install the latest version of ProRAE Guardian.
2. Start ProRAE Guardian.

16.1.1 Check The Web Viewer Port

This parameter setting specifies the port number that is used by the web server to deliver information to the remote browser viewer. The port number is used as part of the URL used by remote viewers. See Remote Viewer URL. The default value is 8080.

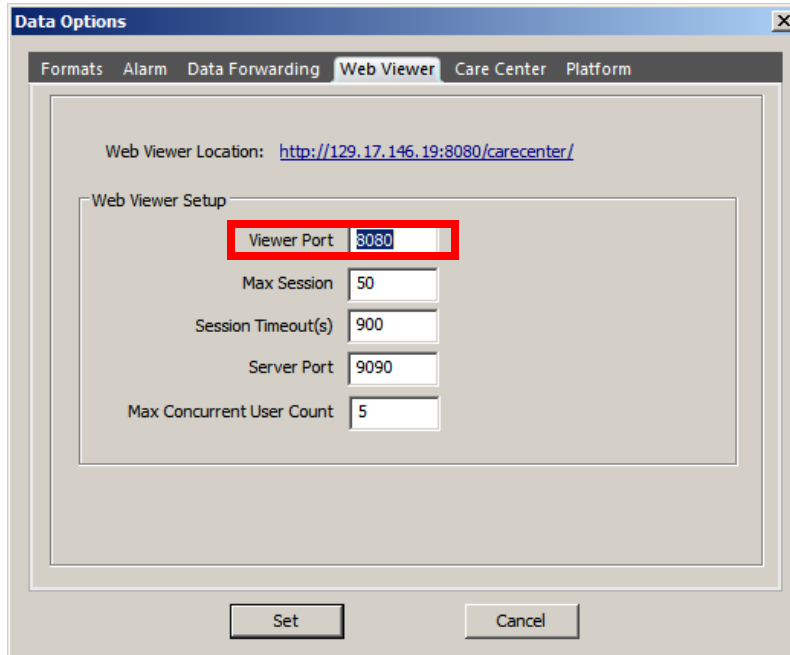
1. Click "Options."



The Options Dialog/Control window has four tabs:

- Data Options
- Add-ons
- Device Templates
- Status

3. Click "Data Options."
4. Select "Web Viewer." Now look at the Viewer Port.



5. The default value is 80. However, if there is a conflict when you try to connect remotely using this port, change the Server Port number (or the value used during installation), click "Set," and then close the window.

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If you still have difficulty, there may be a firewall issue or other problem that should be resolved by your I.T. manager.

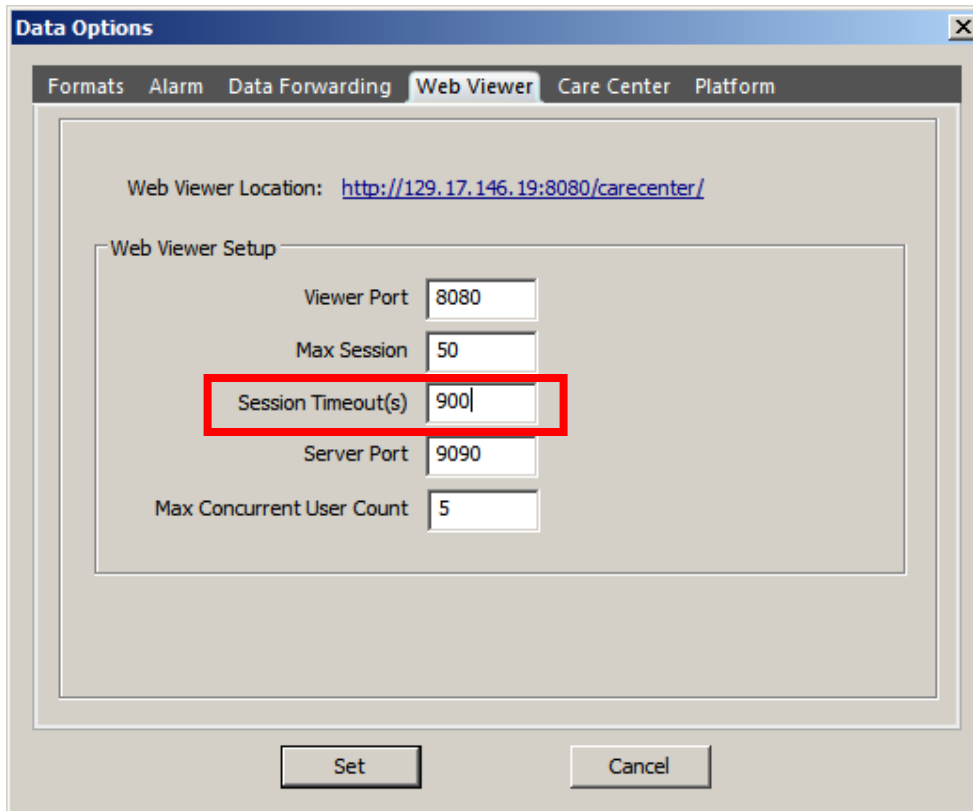
16.1.2 Max Session

This parameter allows you to limit the maximum number of remote viewer sessions that can be active at the same time. If the total number of active viewers has reached this limit, any attempt to open a new remote viewer will show “Maximum session limit has exceeded.”

The default value for Maximum Sessions is 50.

16.1.3 Set The Session Timeout

This setting parameter allows you specify the time-out period in seconds to automatically terminate a user session, which remains inactive for this period. Viewing time is set in seconds. The default value is 900 seconds (15 minutes).



The screenshot shows a window titled "Data Options" with a tabbed interface. The "Web Viewer" tab is selected. The "Web Viewer Location" is set to <http://129.17.146.19:8080/carecenter/>. The "Web Viewer Setup" section contains the following fields:

Viewer Port	8080
Max Session	50
Session Timeout(s)	900
Server Port	9090
Max Concurrent User Count	5

At the bottom of the dialog are "Set" and "Cancel" buttons. The "Session Timeout(s)" field is highlighted with a red rectangle.

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16.1.4 Server Port

This port number is used internally to communicate between the ProRAE Guardian Host and web server. The default value is 9090.

Note: Do not change this parameter unless you are certain that the port number is being used by another program on this host computer.

16.1.5 Exit Services

Close the window to exit.

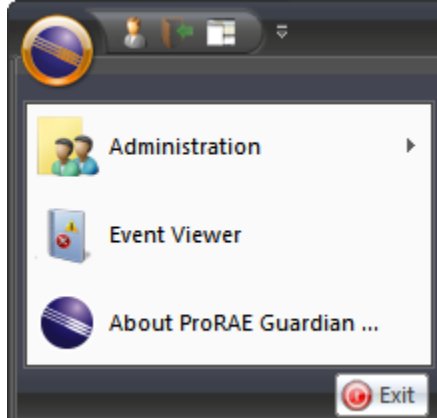
16.1.6 Allow Remote Access Via The Internet

1. Click on the RAE Systems logo in the upper left corner of the window (when highlighted, there is a yellow glow around the logo).



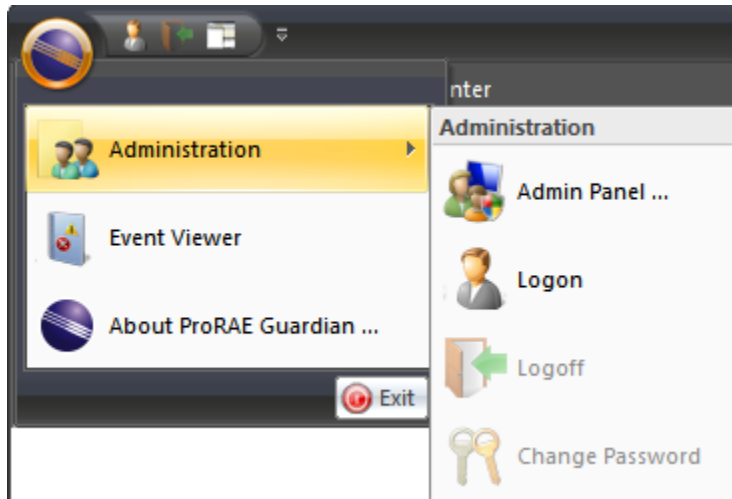
Three main options headings are shown:

- Administration
- Event Viewer
- About ProRAE Guardian...

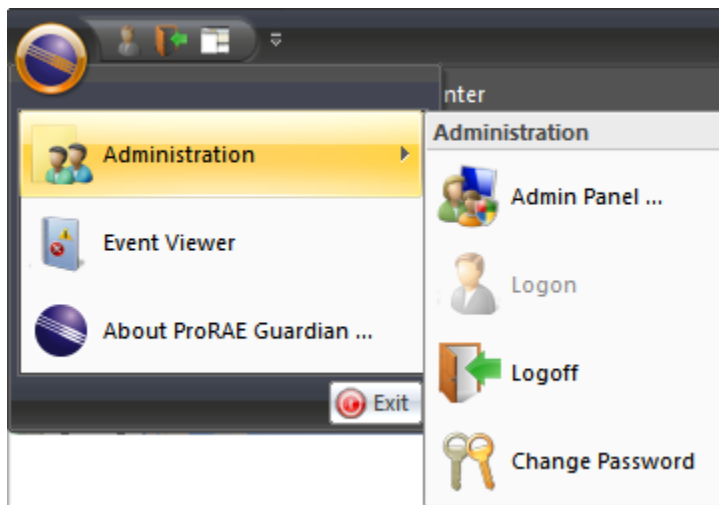


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When you move the mouse over “Administration,” it is highlighted, and a submenu appears:



Note: If you have provided an administrator's password, the submenu looks like this:



Access to the Admin Panel requires that you provide a password. It opens ProRAE Guardian Remote Viewer. You will have to provide your User Name and Password there.

Click on the RAE Systems logo in the upper left corner of the window.



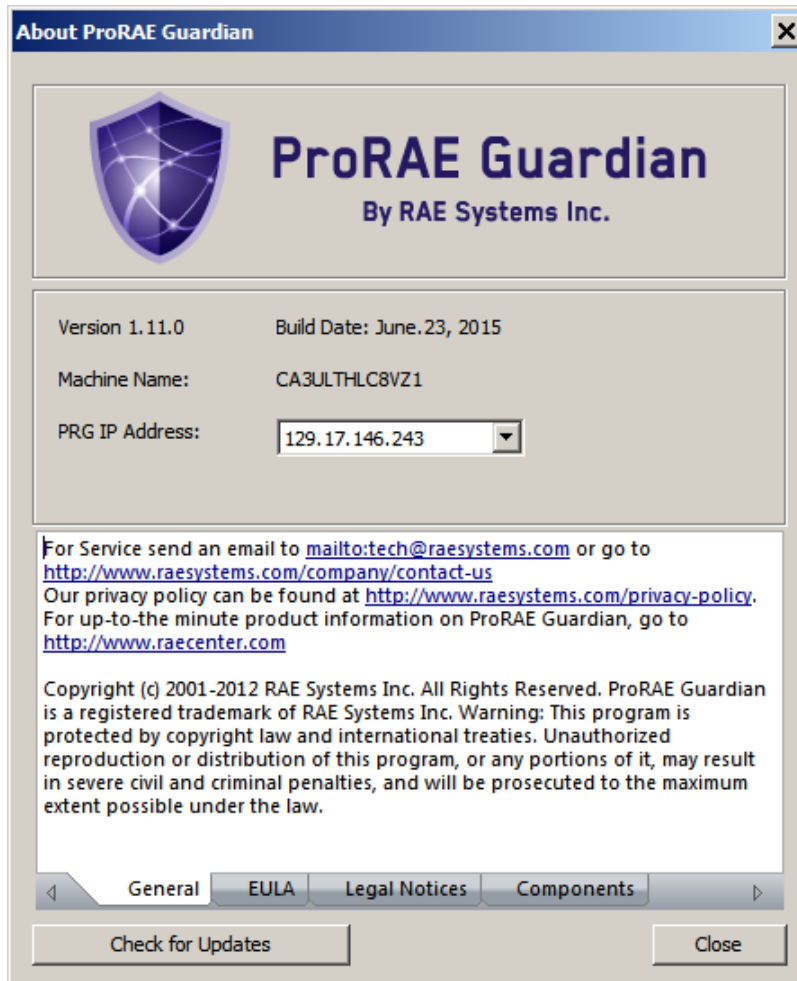
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Three main options headings are shown:



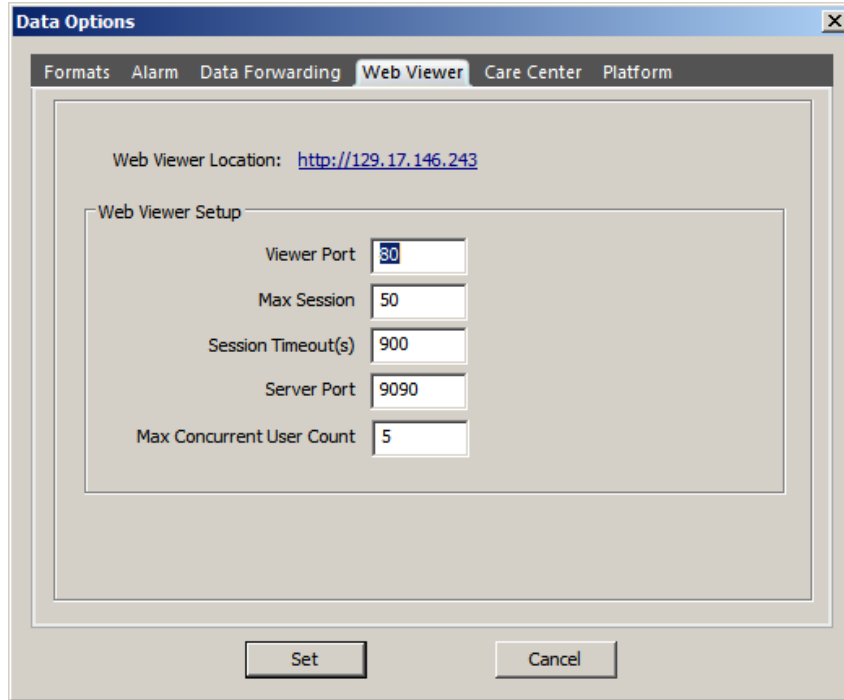
Move the mouse over “About ProRAE Guardian...,” and click it.

The “About ProRAE Guardian” window includes the “PRG IP Address.” Copy this address. You will need it when you access ProRAE Guardian remotely via a browser.



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The IP address also shows up on the Data Options' "Web Viewer" tab as "Web Viewer Location. You can click it to test it locally, or copy it and send it via email.



The screenshot shows a dialog box titled "Data Options" with a close button (X) in the top right corner. The dialog has several tabs: "Formats", "Alarm", "Data Forwarding", "Web Viewer" (which is selected), "Care Center", and "Platform".

Under the "Web Viewer" tab, the "Web Viewer Location" is displayed as <http://129.17.146.243>. Below this is a section titled "Web Viewer Setup" containing five input fields:

- Viewer Port: 80
- Max Session: 50
- Session Timeout(s): 900
- Server Port: 9090
- Max Concurrent User Count: 5

At the bottom of the dialog, there are two buttons: "Set" and "Cancel".

Section 2: ProRAE Guardian Remote Viewer

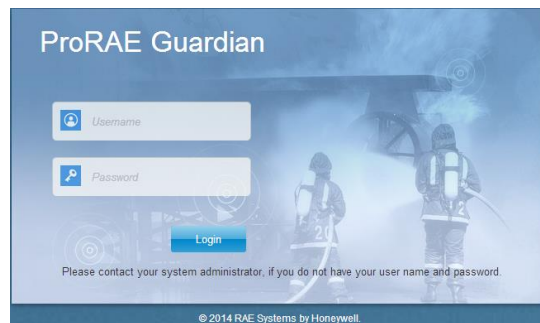
ProRAE Guardian Remote Viewer takes data from a network that is monitored by ProRAE Guardian and provides a browser-based view.

Refer to the “Section 1: ProRAE Guardian” for information on configuring ProRAE Guardian, as well as its functions and capabilities.

17 Starting ProRAE Guardian Remote Viewer

If your ProRAE Guardian host is set to broadcast, then you can view it remotely through a web browser via ProRAE Guardian Remote Viewer. The administrator must provide you with the IP address of the ProRAEGuardian host, as well as a user name and password.

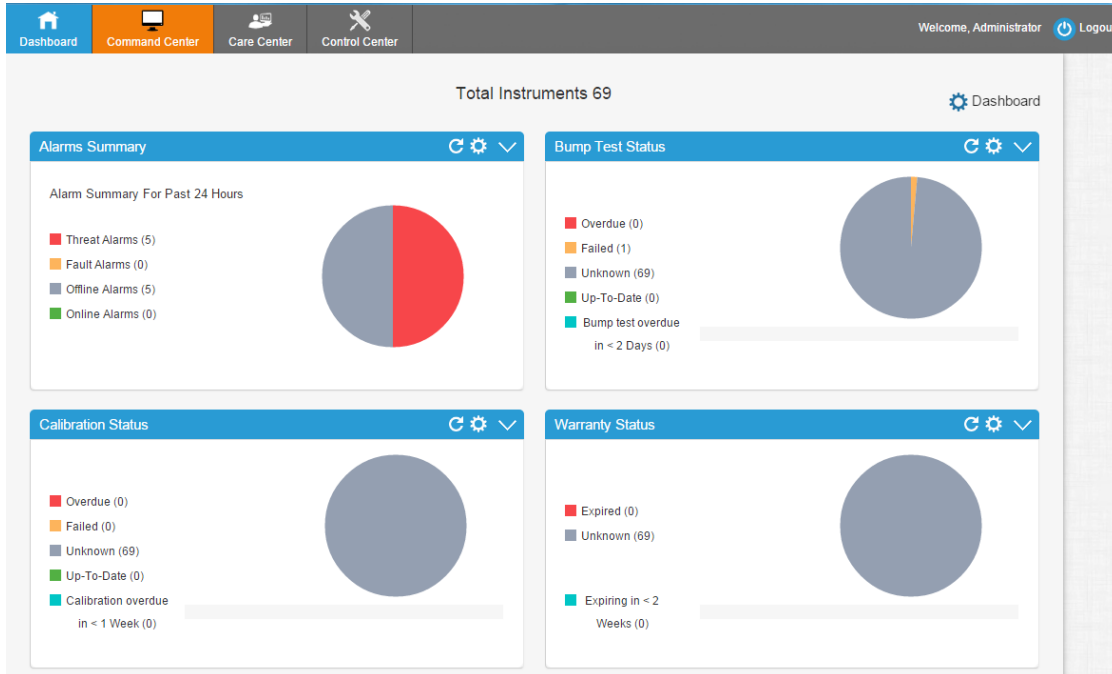
1. Open your web browser.
2. Type the IP address into your web browser, and you should see this login screen:



3. Fill in your Username and Password, and then click “Login.”

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If the connection is successful, the ProRAE Guardian main screen is shown, and the “Dashboard” tab is pre-selected. This central location is also where you access the Command Center, Care Center, and Control Center, plus it provides you with a button for instantly logging out.








Notes:

- The logout time is set in the “Session Timeout” portion of Control Center >> System Settings.
- To restart the logout countdown in the web-based viewer, reload the page.

18 Status Indicators

ProRAE Guardian Remote Viewer uses colors and shapes to provide status information. Some are identical to those used on ProRAE Guardian, but others are unique to ProRAE Guardian Remote Viewer.

Device List. There are four states indicated by a color/shape combination:

-  Lost contact/no contact with device
-  Device is functioning and ProRAE Guardian is receiving data
-  Fault indication (pump stall, etc.)
-  Device is in alarm
-  License exceeded

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Alarm Status. The colors indicate the alarm status:

- Threat Alarms: Total number of instruments in threat alarm in the past 24 hours.
- Fault Alarms: Total number of instruments with a fault alarm in the past 24 hours.
- Offline Alarms: Total number of instruments that went offline in the past 24 hours.
- Online Alarms: Total number of instruments that came back online in the past 24 hours.

Bump Test Status. The colors indicate the calibration status:

- Overdue: Total count of instruments that are overdue for bump testing.
- Failed: Total count of instruments that failed a bump test.
- Unknown: Total count of instruments without last bump test information recorded.
- Up-To-Date: Total count of instruments with up-to-date bump test.
- Bump Test overdue in < 2 Days: Total count of instruments that will be overdue for bump testing in less than two days.

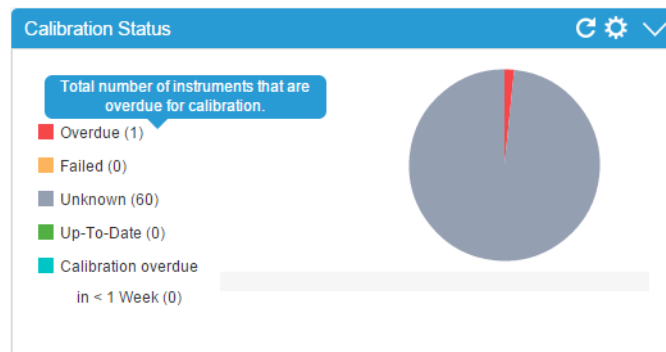
Calibration Status. The colors indicate the calibration status:

- Overdue: Total count of instruments that are overdue for calibration.
- Failed: Total count of instruments that failed calibration.
- Unknown: Total count of instruments without last calibration information recorded.
- Up-To-Date: Total count of instruments with up-to-date calibration.
- Calibration overdue in < 1 Week: Total count of instruments that will be overdue for calibration in less than one week.

Warranty Status. The colors indicate the warranty status of instruments:

- Expired: Total count of instruments with expired warranties.
- Unknown: Total count of instruments without warranty information.
- Expiring in < 2 Weeks: Total count of instruments weeks.

Note : Details can also be viewed by mousing over the bar and viewing a Tool Tip, as shown below:



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Instrument Total, Online, And Alarm Status. The total number of instruments is indicated, along with the number of them that are currently online, and the number that are in alarm.

Total Instruments 131	Total instruments registered as part of the network.
Online Instruments 131	Number of online instruments.
Alarming Instruments 11	Number of instruments in alarm.

In addition, an alarm status indicator is included in the Command Center button. This alerts you to open the Command Center and view an instrument (or instruments) in alarm.



Command Center button when no alarms are present.



When alarms are present, the Command Center button “pulses” between its blue state and bright orange state to alert you.

19 General Customization

If your ProRAE Guardian host is set to broadcast, then you can view it remotely through a web.

19.1 Collapsing/Expanding

You can collapse (minimize) or expand (maximize) a display panel, map, etc., when you see this symbol:



For example, a map can be minimized by clicking the arrow along the navigation bar:



When a display panel, map, etc., is collapsed, you can expand it by clicking this symbol:



19.2 Column Management

Columns in the Device List or other lists in the lower pane can be reordered, hidden, filtered, and grouped.

Columns (and their contents) can be rearranged by dragging a heading to another location.

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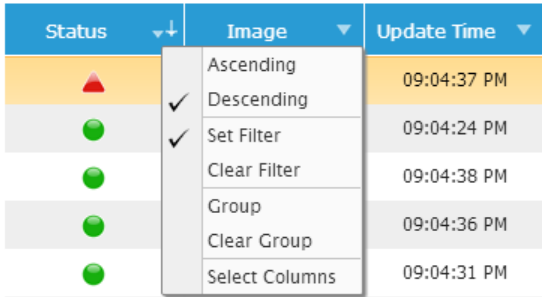
Click on a column heading and drag:



The columns are now reordered:



You can change the sort order (ascending or descending), set filters, group columns (or clear groups), and select columns for display.



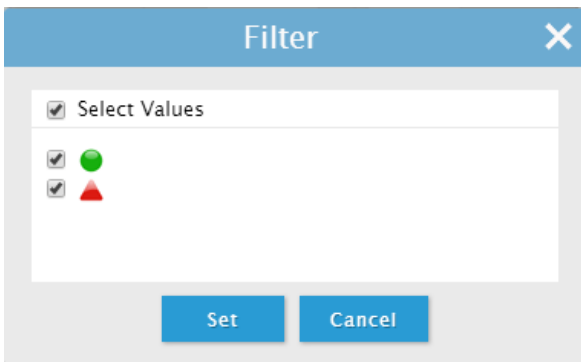
Note: Change the sort order from ascending to descending, and vice versa, by clicking on a heading. “Ascending” and “descending” are indicated by the up-facing and down-facing arrows, respectively.



When filtering is active, the Filter icon is shown:



When you choose a filter, you can select which rows show or are hidden. If a checkbox is checked, then its related rows will show.






Once you have chosen which filters to apply, click “Set.”

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When a Group is active, the Group icon is shown:



Here is an example of what you see when you Group by Image (note the “Group” icon to the left of the word “Image”):

Status	Image	Fault	Update Time	Unit ID	SN
☐ (1)					
▲			10:43:21 PM	10	280-500013
☐ (2)					
●			10:43:15 PM	4ECD	D0124025M5
●			10:43:11 PM	43F0	43F0
☐ (1)					

To save screen space, click the “-” symbol to the left of the item that defines the group. This collapses the group, and only the type and number of the items in that group is shown.

This example shows grouping by image, with all collapsed:

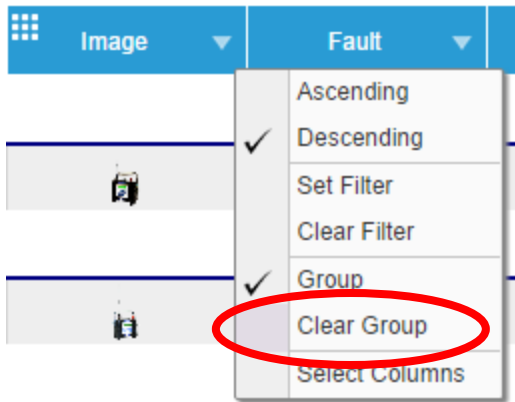
Status	Image	Fault	Update Time	Unit ID	SN	UserLabel1
☐ (1)						
☐ (2)						
☐ (1)						
☐ (1)						

This shows grouping by Status, all collapsed:

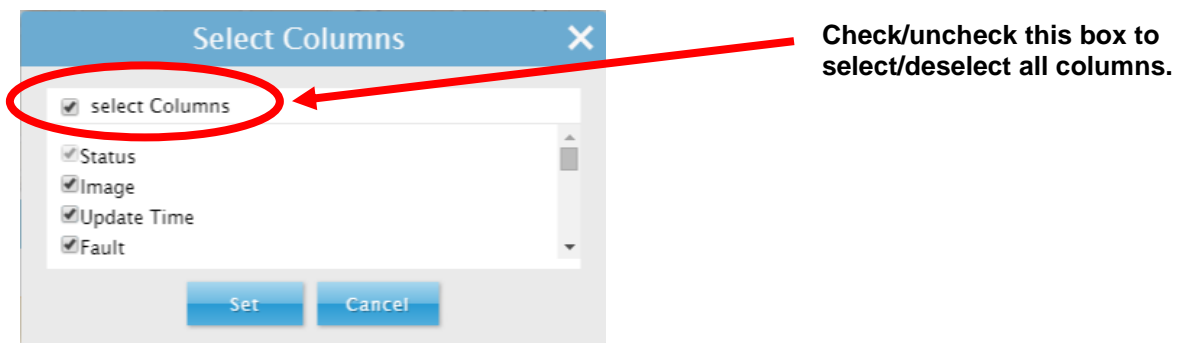
Status	Image	Fault	Update Time	Unit ID	SN	UserLabel1
☐ ▲ (1)						
☐ ● (4)						

ProRAE Guardian User's Guide

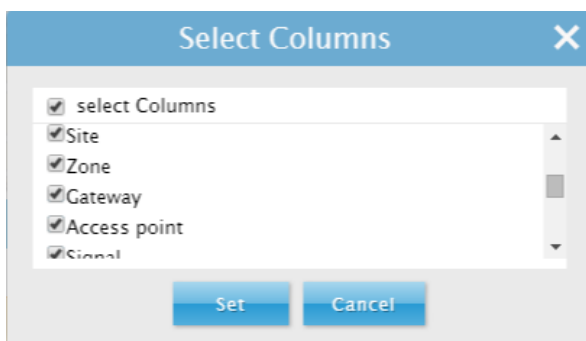
To exit Group view, click “Clear Group.”



The option labeled “Select Columns” lets you choose which columns are shown or hidden. This is particularly useful if you want to hide some data that isn’t necessary to monitor all the time (for example, “Site,” if you only have one site, or “Gateway”).



Scroll down the list to view and select/deselect other columns.



Once you have selected the columns, click “Set” (or “Cancel” to return without changes).

20 Dashboard

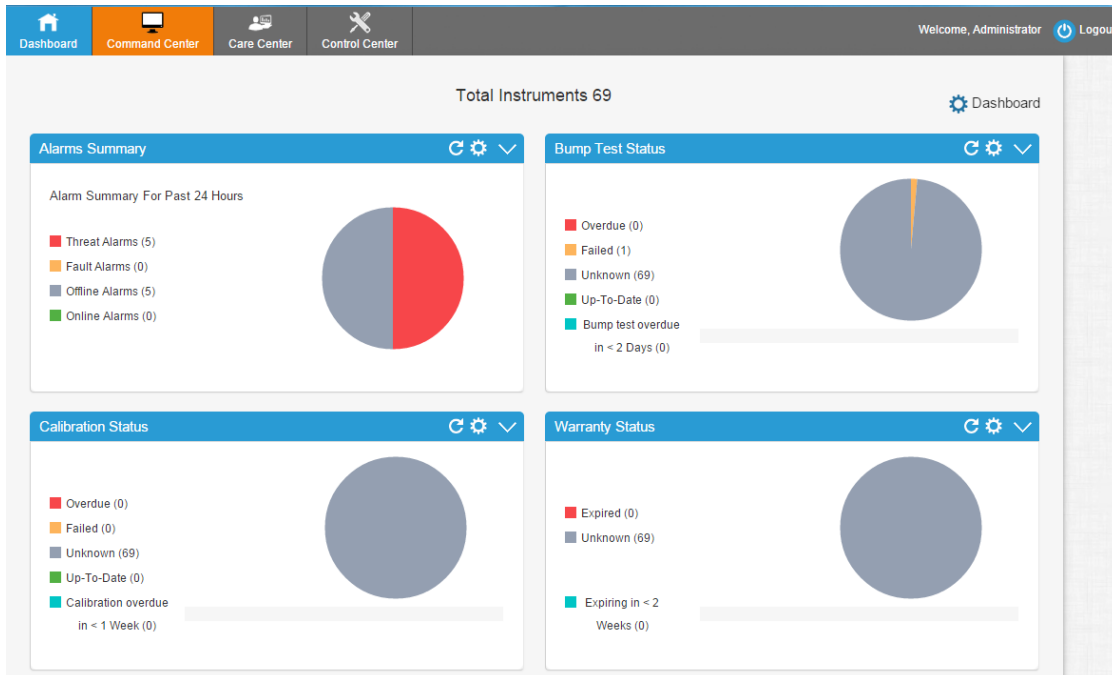
The Dashboard provides you with a customizable overview of all of your instruments and a summary of alarms. At top of the display, the total number of instruments is shown.

Total Instruments 39

There are four collapsible panels, plus a settings box labeled “Dashboard,” where you customize the display to individually show or hide the Alarm Summary, Bump Test Status, Calibration Status, and Warranty Status panels.

Note: You can collapse all four panels at the same time.

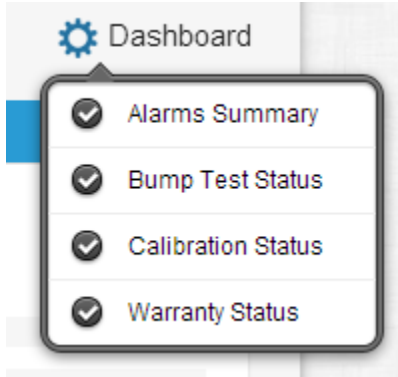
Each panel has three icons, top right: Refresh, Settings, and Collapse/Expand.



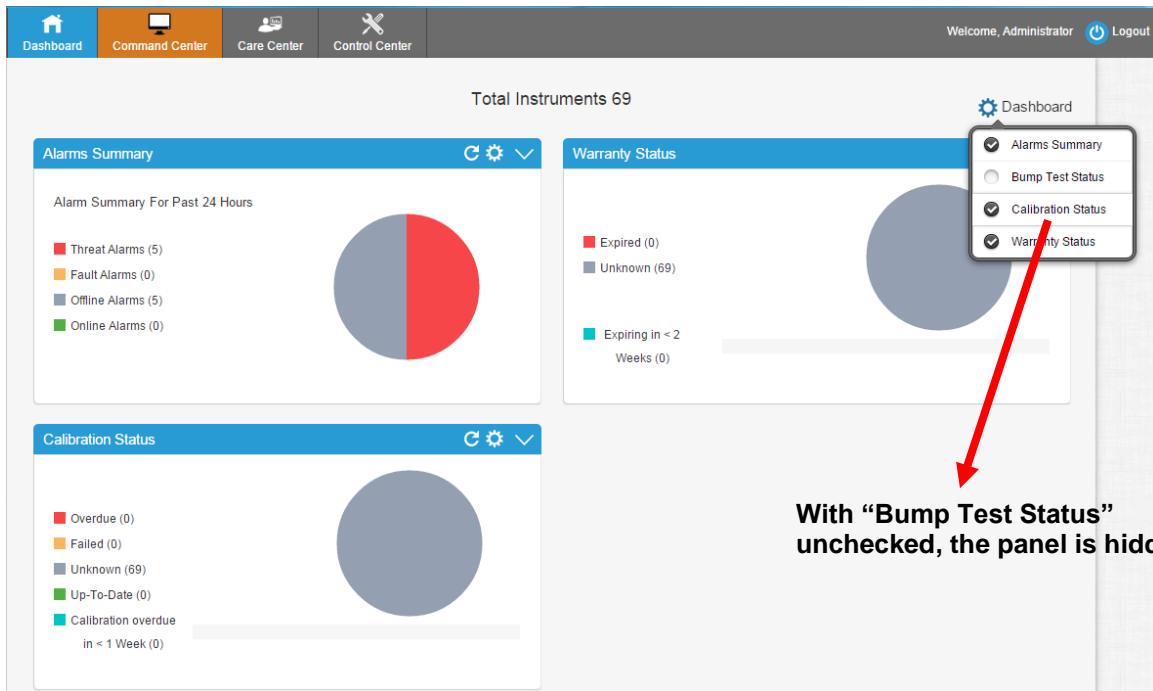
ProRAE Guardian User's Guide

20.1 Dashboard Control

The Dashboard control allows you to choose which collections of data are either shown or hidden. Click the Dashboard icon to access customization:



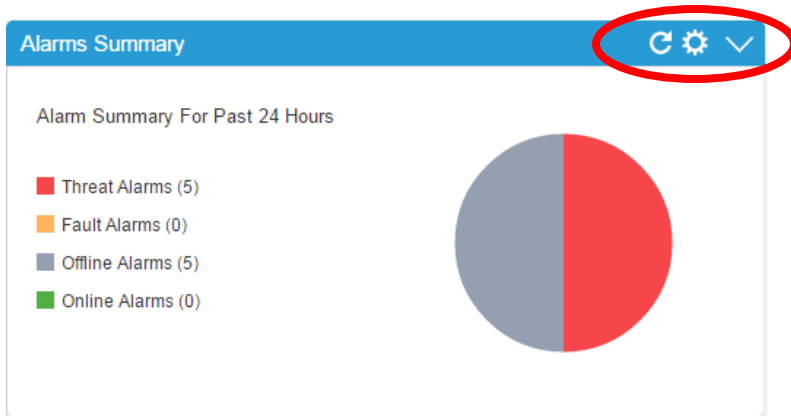
All of the panels are listed. A check mark indicates that a panel is showing. Unchecking hides the corresponding panel.






Note: A minimum of one panel is always showing (you can never hide all of the panels), regardless of whether any or all panels are collapsed.

20.2 Panels

Each status/summary panel has controls for Refresh, Settings, and Expand/Collapse:

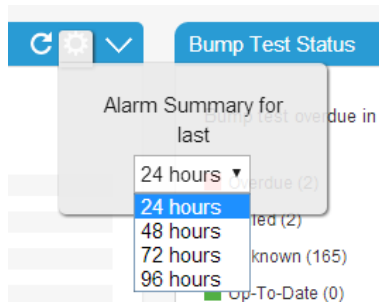


-  **Refresh**
-  **Settings**
-  **Collapse**
-  **Expand**

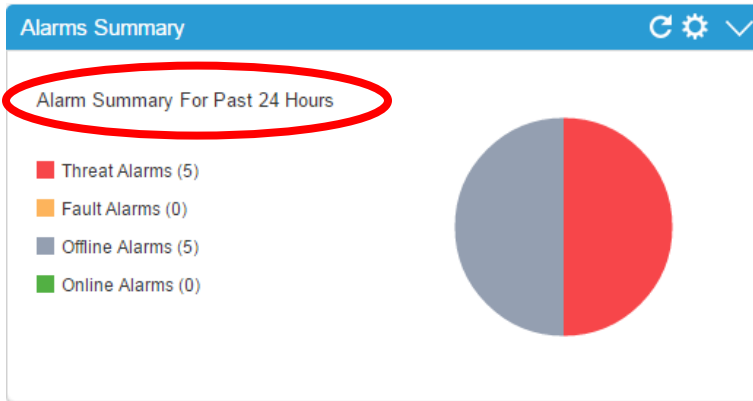
Refresh. Click the “Refresh” icon to update the information in the panel.

Settings expands to a menu of settings. These settings act as filters to refine the ranges of the summary or status. When you mouse over the icon, a menu for Alarms Summary is presented, where you set summary interval.

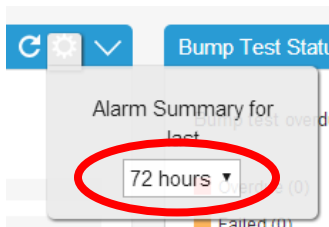
Click the downward-facing arrow in the menu items and then select an option by clicking it.



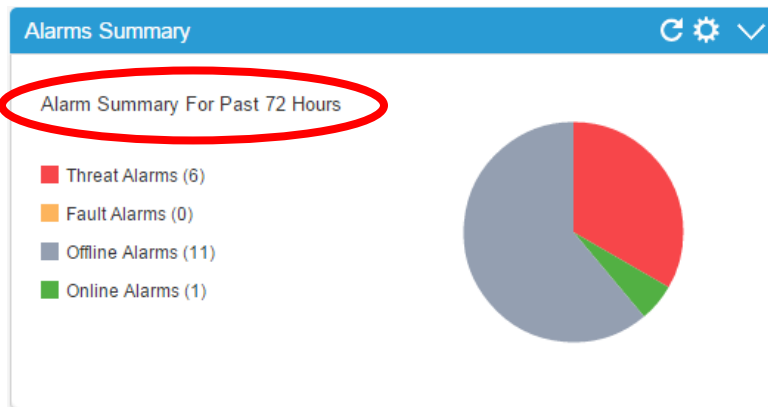
ProRAE Guardian User's Guide



When you make a selection, the panel is updated and shows your choice.





Selection



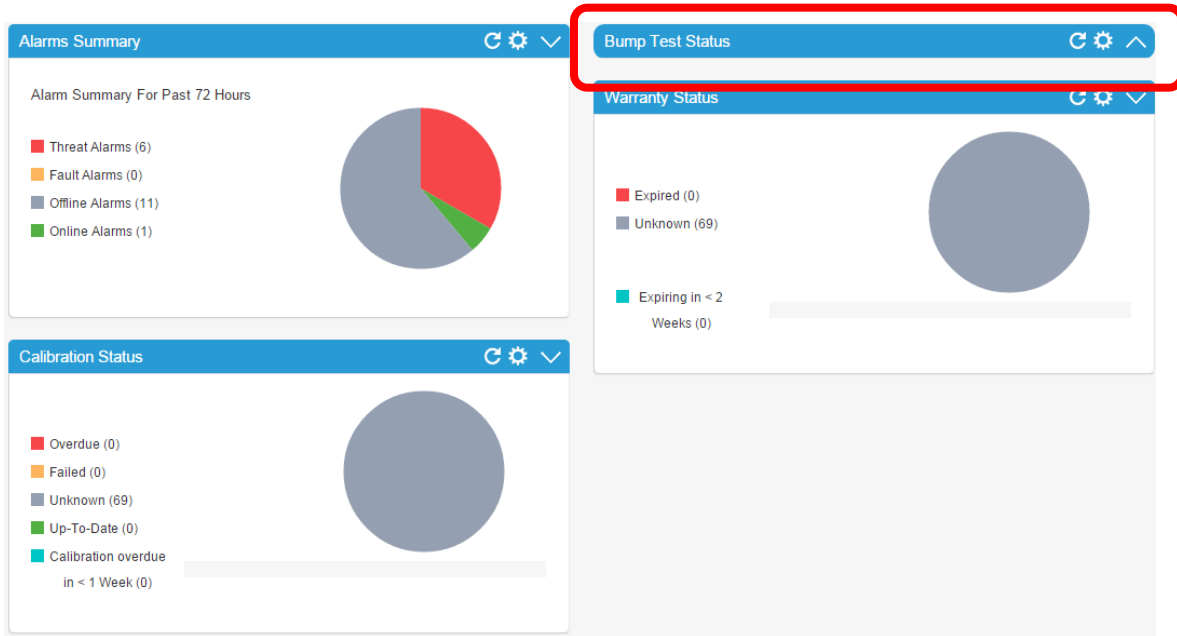
Updated panel

Expand/Collapse. The Collapse/Expand control allows you to minimize a panel or expand a panel to its full size again.

-  **Collapse**
-  **Expand**

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The “Bump Test Status” panel has been collapsed here:



Note: All panels can be collapsed.

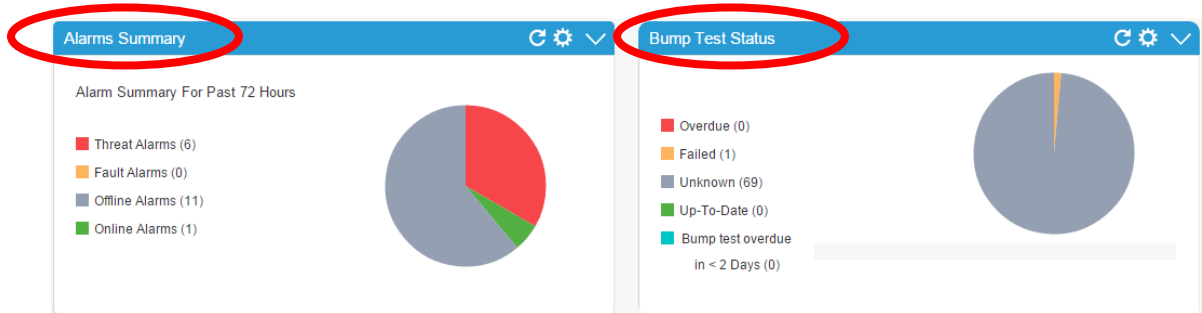
The names and controls for collapsed panels are always shown, even when collapsed:



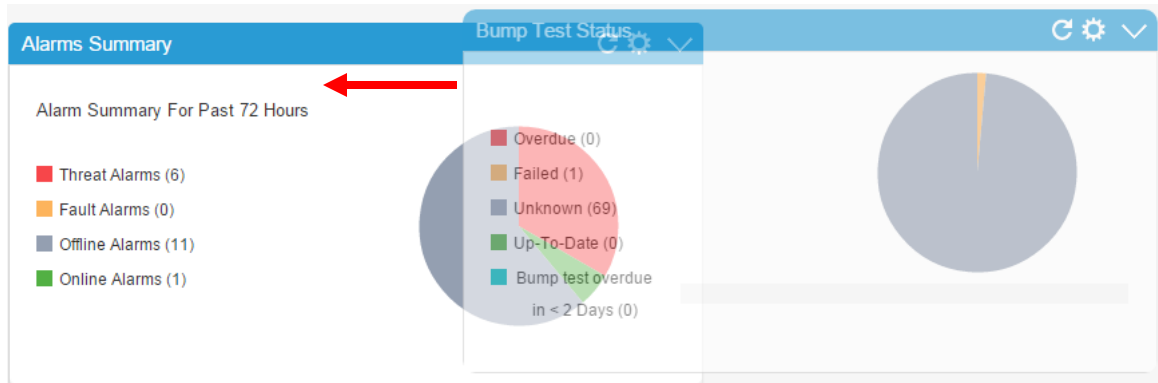
20.3 Reordering Panels

Panels can be reordered in any way you choose. Simply drag a pane from one location to another, and the two panes switch places:

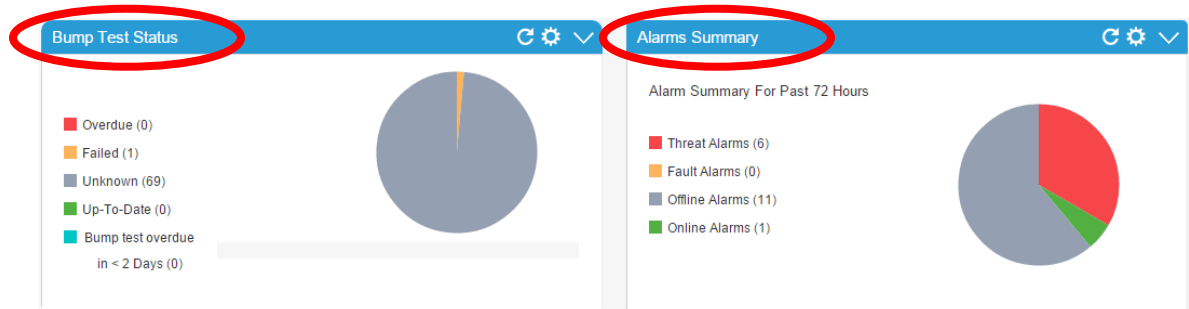
1. Panels in their initial locations:



2. Dragging a panel to another location:



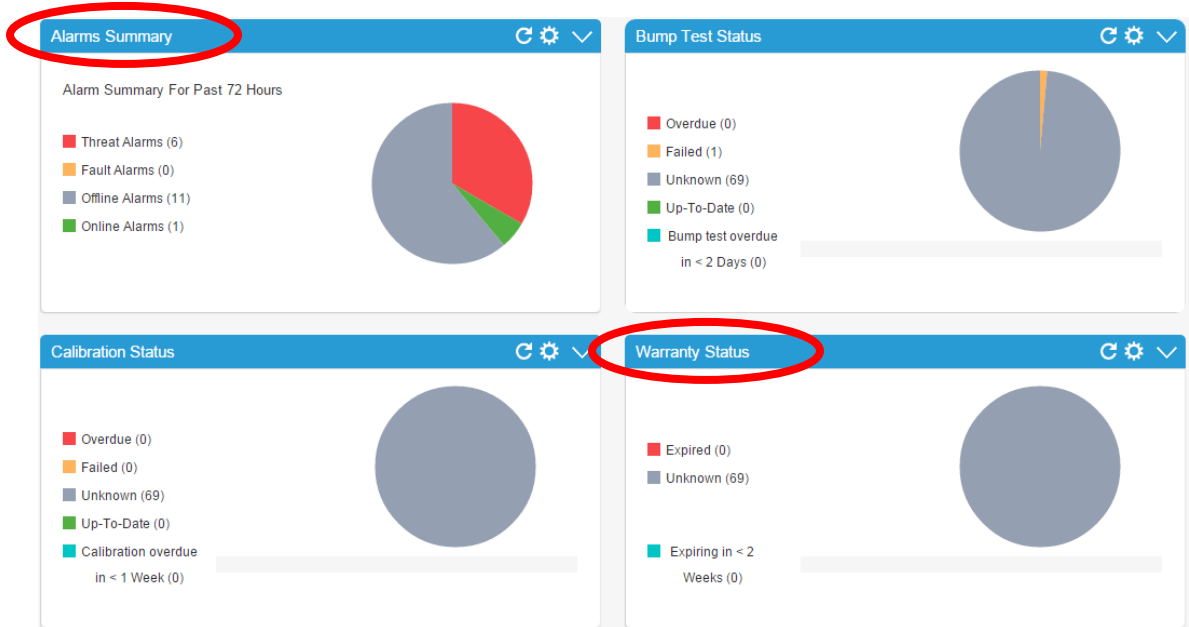
3. The panels' locations are now switched:



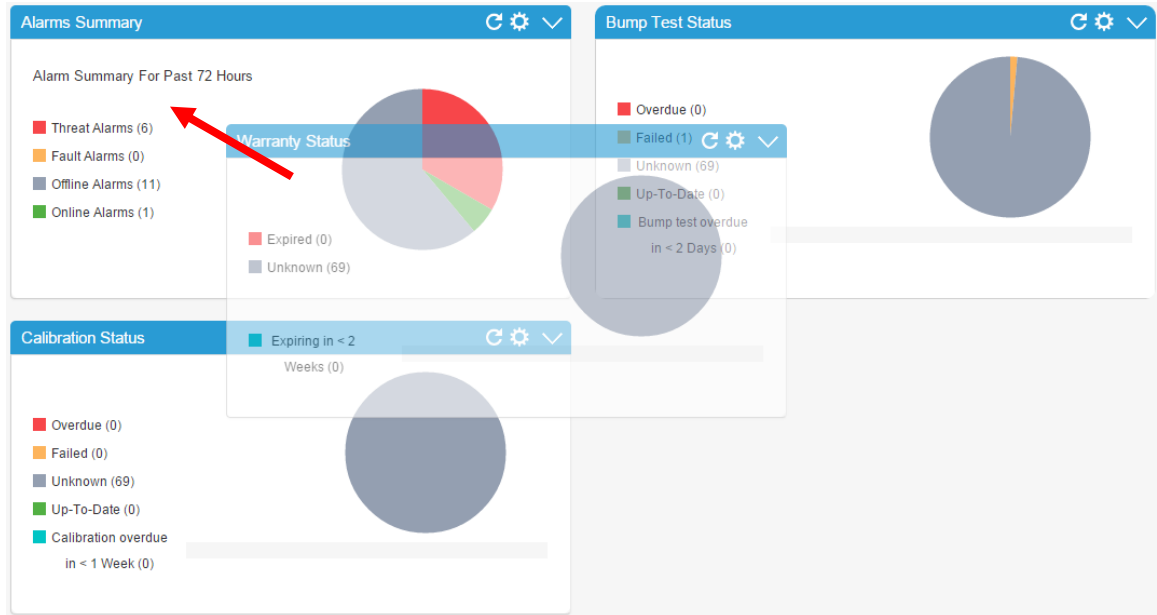
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Panels can be dragged to any location, including diagonally.

1. Original locations:

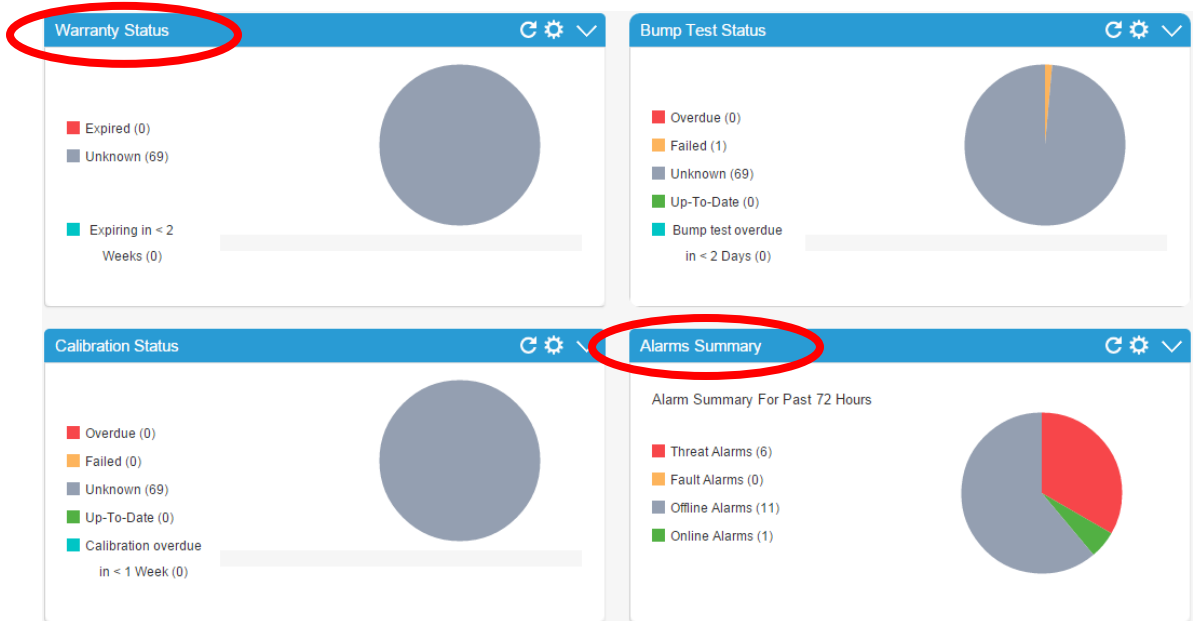


2. Moving one panel diagonally:



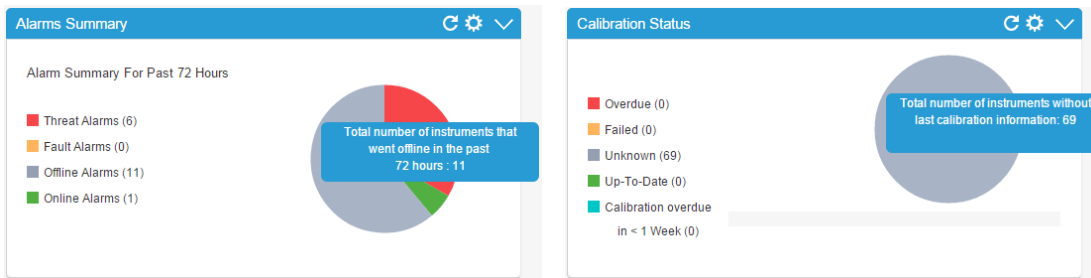
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3. Panels are now relocated:

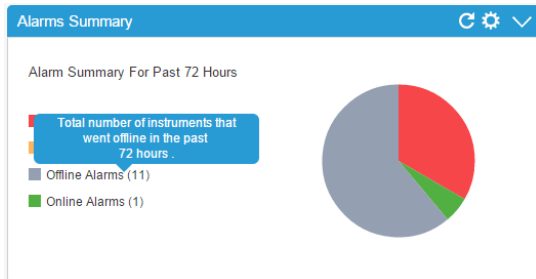


20.4 Expanded Details

When you mouse over the graphs or their legends, greater detail is shown. For example, mouse over any part of a graph, and a higher level of detail appears:



In addition, if you mouse over any of the legends, you get more details:



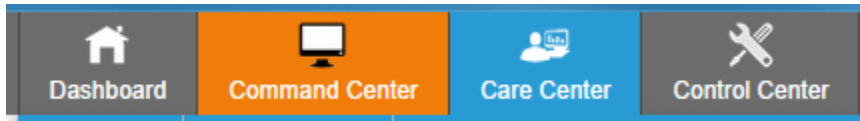
21 Command Center



Command Center gives you an overview of your system and its instruments, including smartphones.

IMPORTANT!

Whenever one or more devices on the ProRAE Guardian-monitored network are in alarm, the Command Center button fades between the normal blue or gray color and bright orange. This provides an attention-getting visible cue, even if the computer's sound is turned down or the alarm sound is silenced:



The total instruments in the roster, as well as the number of online instruments and instruments in alarm, are shown for quick reference.



If the alarm's sounds are on and an instrument is in alarm, the alarm icon is shown along with the text "Alarm sounds ON."

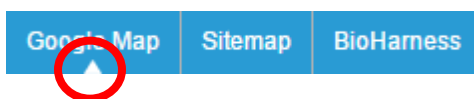


If the alarm's sounds are off, the muted alarm is shown along with the selected period until it sounds again.



In addition, you can choose to view with Google Maps, Site Maps (if they are configured), and BioHarness (if one or more BioHarnesses are in use and if you have access to BioHarness data) by clicking the appropriate tab.

Note: The current selection is indicated by a small triangle at the bottom of the selected tab.



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An example of a Google Map (with instruments/status indicated):

The screenshot shows a Google Map interface with a blue header bar. The map displays a street grid with several instrument locations marked by colored icons: a red triangle, a green circle, and a yellow square. Below the map is a data table with the following columns: Status, Image, Fault, Update Time, Unit ID, Serial Number, UserLabel1, UserLabel2, and Site.

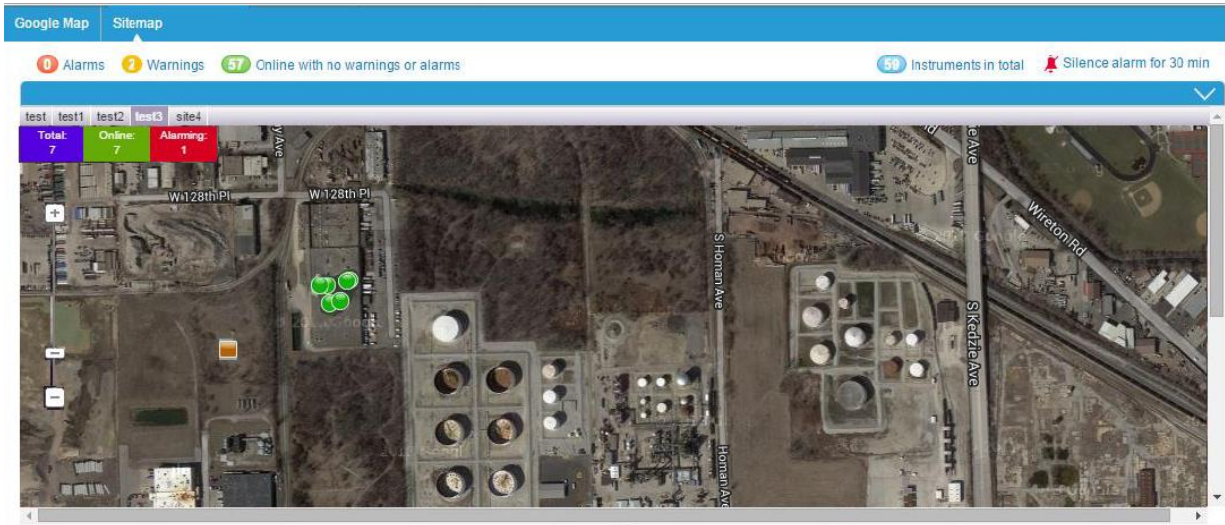
Status	Image	Fault	Update Time	Unit ID	Serial Number	UserLabel1	UserLabel2	Site
		Pump/Fan	05:54:50 PM	32	262-000032			
			05:54:50 PM	10	280-500013			
			05:54:49 PM	2-1D37	M02EB20005	YN-QRAE-2	SJ DEMO Room	
			05:54:49 PM	2-215A	MAB6Z017Q7	YN-MultiRAE	SJ DEMO Room	
			05:54:49 PM	2-13AE	G024202EPB	YN-ToxiRAE	SJ DEMO Room	
			05:54:51 PM	2	251-902470	RL3 Remote	DEMO Room	
			05:54:50 PM	20	239-000001	WeatherPak	West Metro Fire	

An example of a Site Map:

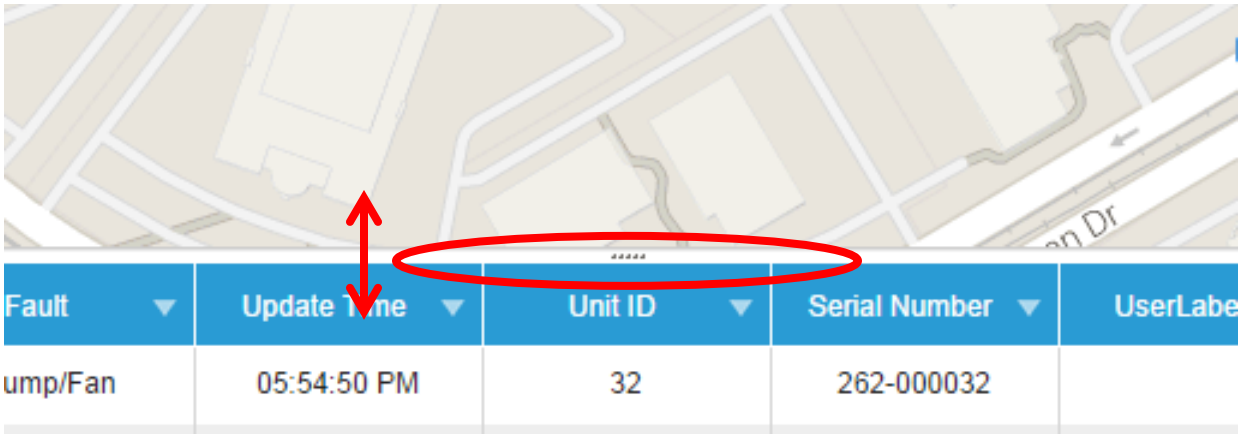
The screenshot shows a Site Map interface with a blue header bar. The top bar includes navigation options for Google Map and Sitemap, and status indicators for Alarms (0), Warnings (2), Online with no warnings or alarms (57), Instruments in total (59), and Silence alarm for 30 min. Below the header is a summary bar for sites: test (Total: 7, Online: 7, Alarming: 1), test1, test2, test3, and site4. The main area is an aerial satellite view of an industrial facility with several green circles indicating instrument locations. Below the map is a data table with the following columns: Status, Image, Fault, Update Time, Unit ID, Serial Number, UserLabel1, UserLabel2, and Site.

Status	Image	Fault	Update Time	Unit ID	Serial Number	UserLabel1	UserLabel2	Site
			02:29:49 PM	2A42	BH8-RP0018			
			02:29:31 PM	1C46	RAEPOINT-1			site4
			02:29:31 PM	1C47	RAEPOINT-2			test
			02:29:31 PM	1C48	RAEPOINT-3			site4
			02:29:55 PM	2-215A	MAB6Z017Q7	YN-MultiRAE	SJ DEMO Room	test2
			02:29:55 PM	2-13AE	G024202EPB	YN-ToxiRAE	SJ DEMO Room	

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Note: You can set the default map in Control Center under “System Settings.” Whether you are using a Google Map or Sitemap, you can resize the map so that you can either view more of the map or more of the instrument data by clicking and dragging the bar separating the two panes up or down.



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21.1 BioHarness

If BioHarnesses are used on a network, special permissions must be given in order to view details about them, in order to comply with regulations regarding medical privacy contained in HIPAA (the U.S. Health Insurance Portability and Accountability Act).

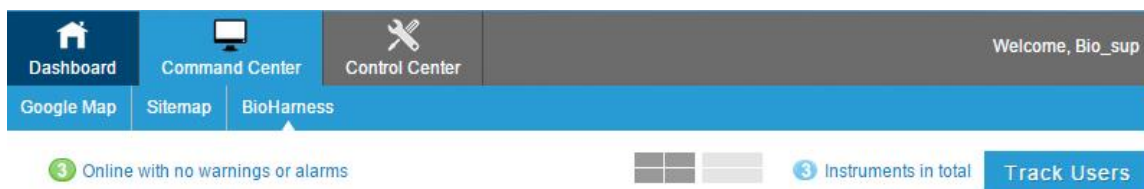
If you log in as a BioHarness Supervisor or as a BioHarness Medical Professional, you have enhanced access to information about users wearing BioHarnesses. This access must be set via Control Center's User Management tab.

To give a user this enhanced access:

1. Click an existing User ID's "Edit User Information" icon or click "Add User" to create a new user profile.
2. Select the role of BioHarness Medical Professional or BioHarness Supervisor.
3. Make any other changes to the user profile and then click "Save."

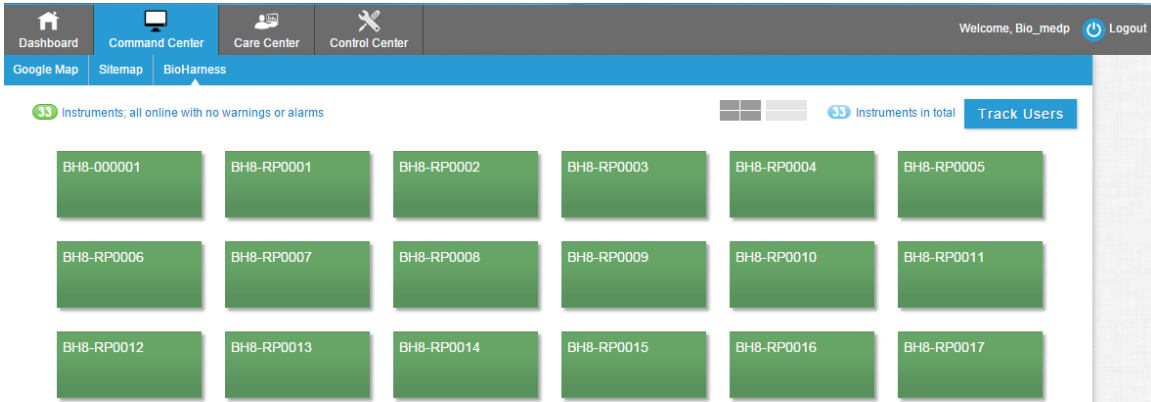


Anyone logging in as a BioHarness Supervisor or as a BioHarness Medical Professional sees a BioHarness tab under Command Center, as well as the number of BioHarnesses online, a view selector, total instruments count, and a button labeled "Track Users."



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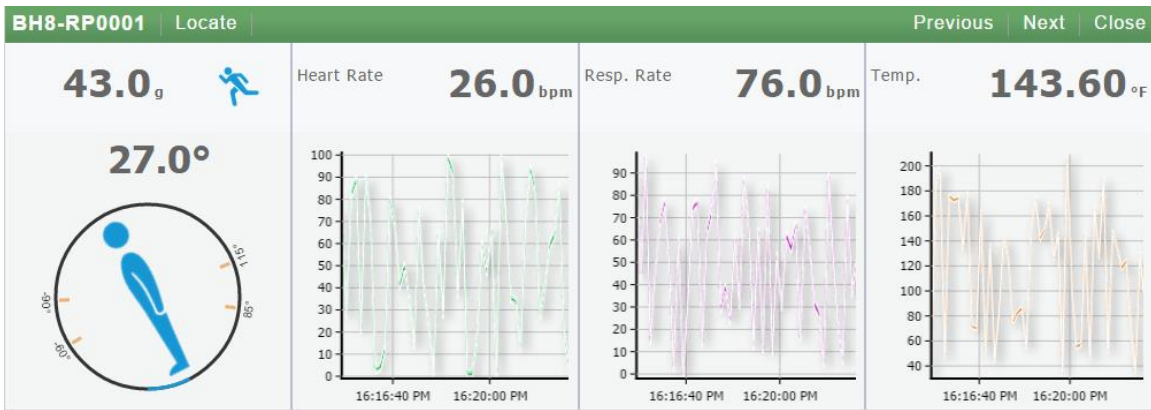
A BioHarness Supervisor or as a BioHarness Medical Professional can view the BioHarness users, but only those with a BioHarness Medical Professional role can see the individual BioHarness users' details.



A BioHarness Supervisor or as a BioHarness Medical Professional can view the BioHarness users, but only those with a BioHarness Medical Professional role can view details of the BioHarness users in the roster. Mousing over one of the BioHarness users in the roster brings up a “View Details” tip.

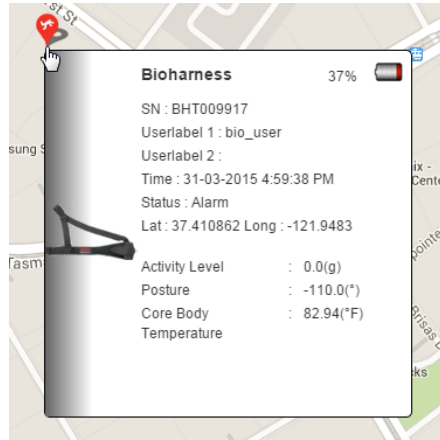


Click the block, and details are shown:



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If you click “Locate,” a map appears, showing the BioHarness user's location:



The status is shown on the location flag, and if you use your mouse to point to it, data about that BioHarness is shown in a window.

Click “Previous” to see the previous user record, and “Next” to see the next one.

Click “Close” to close the window and return to the main BioHarness view.

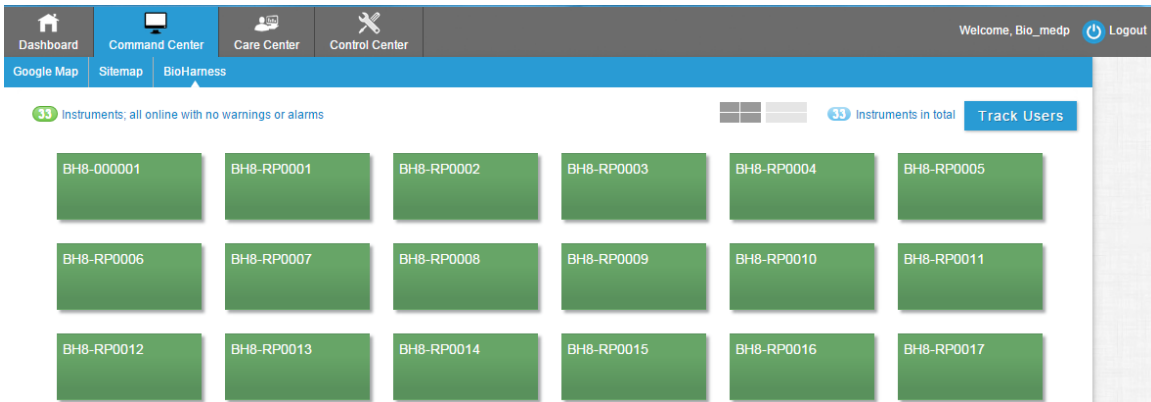
21.1.1 Views

You can view BioHarness users using two different views, Standard and Group.



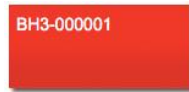
Metro (Standard) View

Metro View arranges all of the BioHarness users in rows, each color-coded to match its status.



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BioHarness Status. Each individual using a BioHarness on the network is represented by a color-coded Icon with the instrument's ID. The color coding indicates status.



One or more High Alarm or Low Alarm levels has been exceeded.

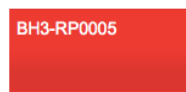
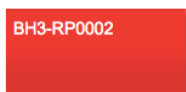
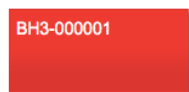


Some or all components being monitored have exceeded Low Warning threshold settings.



No alarms.

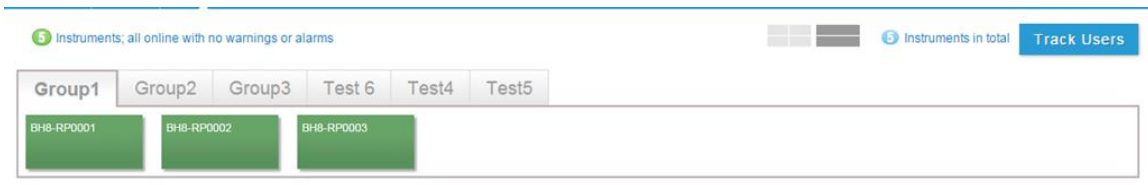
Note: These are automatically arranged by status, in order of alarm severity:



Group View

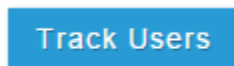
Click "Group View" to see BioHarness users organized into tabbed groups. Click on a tab to view the users in that group.

Note: User Groups are created and managed under System Settings.



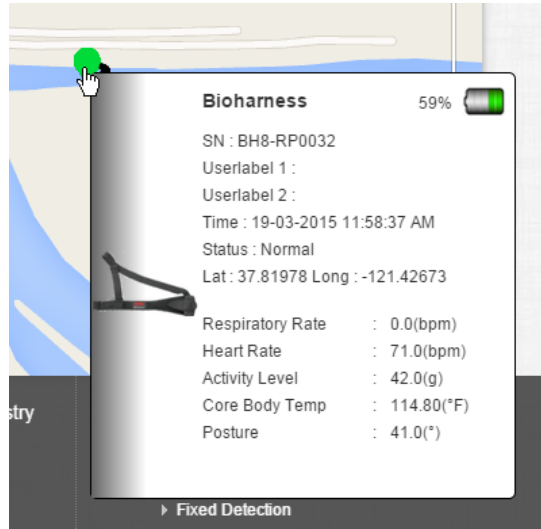
Track Users

If you have access as a BioHarness Medical Professional or BioHarness Supervisor, you can click a button labeled "Track Users" to bring up a map showing the locations of users with BioHarnesses. **Note:** "Track Users" is not available to other roles.



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Mousing over any of the BioHarness users' locations brings up information about the BioHarness and its user:



When the map is showing, the “Track Users” button changes to “Dashboard.” Click this button to dismiss the map and return to the BioHarness dashboard.



21.1.2 BioHarness Settings

You can view and change BioHarness settings, including thresholds for low and high alarms and low and high warnings:

Sensor Name	Alarm High	Alarm Low	Warning High	Warning Low
Heart Rate(bpm)	140.0	40.0	100.0	50.0
Respiratory Rate(bpm)	20.0	12.0	18.0	14.0
Core Body Temp(DegC)	38.3	35.0	37.5	35.8
Activity Level(g)	7.0	-7.0	5.0	-5.0
Posture(Deg)	125.0	-125.0	105.0	-105.0

Other Settings	
	Default
Age	24
Profile	Athletic

Allow Individual Users to Override Default Values

[Update](#)

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In “User Settings,” you can input or edit alarm settings, set the user age, and activity profile:

BioHarness Settings

User Settings

Communication Settings

Sensor Settings

Sensor Name	Alarm High	Alarm Low	Warning High	Warning Low
Heart Rate(bpm)	<input type="text" value="140.0"/>	<input type="text" value="40.0"/>	<input type="text" value="100.0"/>	<input type="text" value="50.0"/>
Respiratory Rate(bpm)	<input type="text" value="20.0"/>	<input type="text" value="12.0"/>	<input type="text" value="18.0"/>	<input type="text" value="14.0"/>
Core Body Temp(DegC)	<input type="text" value="38.3"/>	<input type="text" value="35.0"/>	<input type="text" value="37.5"/>	<input type="text" value="35.8"/>
Activity Level(g)	<input type="text" value="7.0"/>	<input type="text" value="-7.0"/>	<input type="text" value="5.0"/>	<input type="text" value="-5.0"/>
Posture(Deg)	<input type="text" value="125.0"/>	<input type="text" value="-125.0"/>	<input type="text" value="105.0"/>	<input type="text" value="-105.0"/>

Other Settings

	Default
Age	<input type="text" value="24"/>
Profile	<div style="border: 1px solid #ccc; padding: 5px; width: fit-content; margin: 0 auto;"> <input checked="" type="checkbox"/> Athletic <input type="checkbox"/> Very Active <input type="checkbox"/> Moderately Active <input type="checkbox"/> Activity Compromised </div>

Allow Individual Users to Override Default Values

Update

In “Communication Settings,” you can set time values for various parameters, plus set the temperature unit (Fahrenheit or Celsius) used while monitoring the BioHarness in ProRAE Guardian:

BioHarness Settings

User Settings

Communication Settings

	Default	Notes
BioHarness to Safety Communicator data report interval(sec)	<input type="text" value="10"/>	
Safety Communicator to PRG Host data report interval(sec)	<input type="text" value="10"/>	
BioHarness to Safety Communicator communication timeout(sec)	<input type="text" value="5"/>	Safety Communicator uses this timer to decide if BioHarness is not reachable, MUST >= 3*Interval_BioHarness
Safety Communicator to PRG Host communication timeout(sec)	<input type="text" value="5"/>	PRG Host uses this timer to decide if Safety Communicator/BioHarness is away, MUST >= 3*Interval_Safety Communicator
BioHarness to Safety Communicator connect timeout(sec)	<input type="text" value="300"/>	
Safety Communicator to PRG Host connect timeout(sec)	<input type="text" value="300"/>	
Temperature unit	<input type="text" value="Fahrenheit"/>	

Update

After making the settings changes, click “Update.”

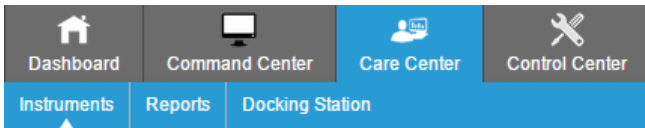
22 Care Center

The Care Center module is used to manage instruments in a fleet and docking stations, as well as to create reports. It provides the following details and all common attributes of the instrument, docking station, and reports. You can view all reports generated by the system either manually or automatically. In addition:

- a. It provides a way to see all instruments, along with their attributes in a fleet.
- b. It provides a way to manually add, modify, and remove instruments from the fleet.
- c. It displays all common attributes of the instruments and can export fleet details in PDF format.
- d. It provides a way to perform the following operations on each instrument in the fleet:
 1. View data log
 2. View setup log
 3. View calibration log
 4. View bump test log
 5. View product documentation
 6. Edit attributes
 7. Check firmware update

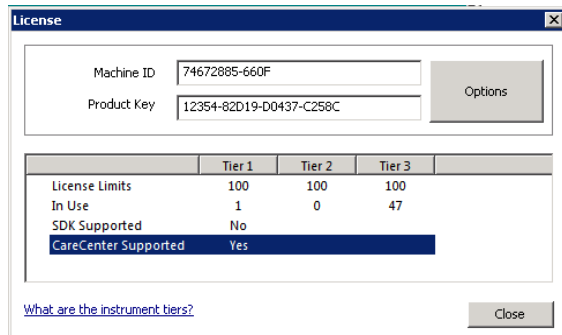
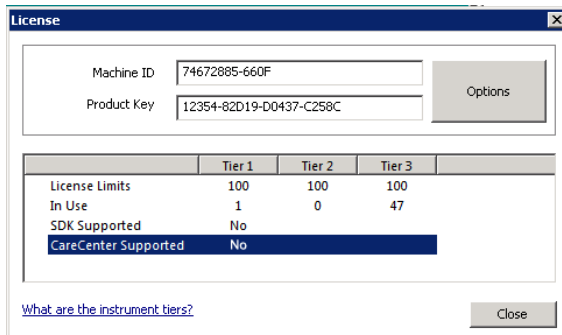


When you mouse over the Care Center tab, you see its options:



Note: Care Center may not be accessible if an active product key license for the ProRAE Guardian host does not have the “Care Center supported” attribute enabled.

Note: If you want to verify your license, click on the License toolbar in the ProRAE Guardian application (not the web version). You will see whether it is supported:



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If a 20-character Product Key does not have the Care Center attribute enabled, then send a request to RAE Systems (RAE-InsideSales@honeywell.com). After getting confirmation from the sales team, you can refresh the license key. The Care Center attribute will then become active.

When Care Center is disabled, you can still view the instrument datalog by clicking on individual instruments.

The screenshot shows the ProRAE Guardian web interface. The top navigation bar includes Dashboard, Command Center, Care Center, and Control Center. The main content area is titled 'Instruments' and features a search bar for serial numbers and a 'Submit' button. Below the search bar is a table with the following data:

Product Name	Serial Number	Model Name	First Communication Date	Last Communication Date	Actions
AreaRAE Gamma	280-500013	PGM-5120	05-12-2014 2:44:07 PM	13-02-2015 2:46:06 PM	[Icons]
AreaRAE IAQ	262-000032	PGM-5220	05-12-2014 2:44:07 PM	09-02-2015 12:34:25 PM	[Icons]
MultiRAE Lite	MAB6Z017Q7	PGM-6208D	05-12-2014 2:44:07 PM	13-02-2015 2:46:05 PM	[Icons]
QRAE3	M02EB20005	PGM-2500	05-12-2014 2:44:06 PM	13-02-2015 2:46:05 PM	[Icons]

A dropdown menu is open over the 'Actions' column, showing options: Data Log, Calibration Log, Bump Test Log, and Setup Log.

Once you have received your license for Care Center, then additional functionality is unlocked.

The screenshot shows the ProRAE Guardian web interface with the 'Care Center' tab selected. The main content area is titled 'Instruments' and includes a 'Check Firmware Update' button and a search bar. Below the search bar is a table with the following data:

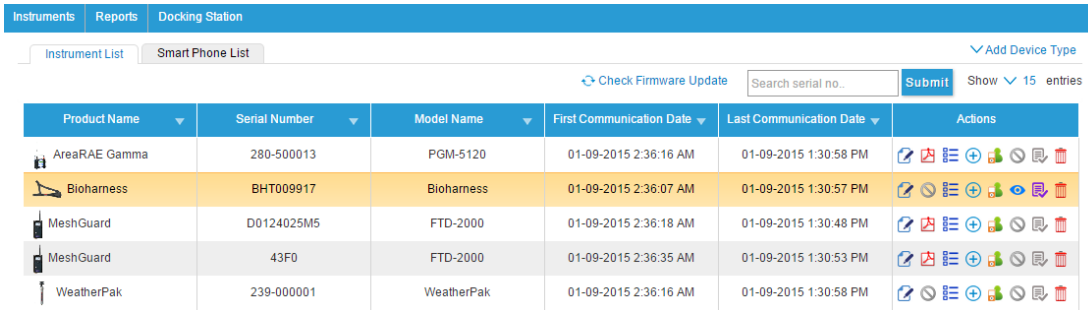
Product Name	Serial Number	Model Name	First Communication Date	Last Communication Date	Actions
AreaRAE Gamma	280-500013	PGM-5120	01-09-2015 2:36:16 AM	01-09-2015 1:30:58 PM	[Icons]
Bioharness	BHT009917	Bioharness	01-09-2015 2:36:07 AM	01-09-2015 1:30:57 PM	[Icons]
MeshGuard	D0124025M5	FTD-2000	01-09-2015 2:36:18 AM	01-09-2015 1:30:48 PM	[Icons]
MeshGuard	43F0	FTD-2000	01-09-2015 2:36:35 AM	01-09-2015 1:30:53 PM	[Icons]
WeatherPak	239-000001	WeatherPak	01-09-2015 2:36:16 AM	01-09-2015 1:30:58 PM	[Icons]

The 'Bioharness' row is highlighted in yellow. The 'Actions' column for each row contains a set of icons for various operations.

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22.1 Instruments

All of the instruments associated with the ProRAE Guardian network are shown here. There are two tabs, one labeled “Instrument List” and one labeled “Smart Phone List.”



The screenshot shows a web interface for managing instruments. At the top, there are tabs for "Instruments", "Reports", and "Docking Station". Below the tabs, there are two sub-tabs: "Instrument List" (selected) and "Smart Phone List". A search bar with the placeholder "Search serial no." and a "Submit" button is present. To the right of the search bar, it says "Show 15 entries". Below the search bar is a table with the following columns: Product Name, Serial Number, Model Name, First Communication Date, Last Communication Date, and Actions. The table contains five rows of instrument data.

Product Name	Serial Number	Model Name	First Communication Date	Last Communication Date	Actions
AreaRAE Gamma	280-500013	PGM-5120	01-09-2015 2:36:16 AM	01-09-2015 1:30:58 PM	[Icons]
Bioharness	BHT009917	Bioharness	01-09-2015 2:36:07 AM	01-09-2015 1:30:57 PM	[Icons]
MeshGuard	D0124025M5	FTD-2000	01-09-2015 2:36:18 AM	01-09-2015 1:30:48 PM	[Icons]
MeshGuard	43F0	FTD-2000	01-09-2015 2:36:35 AM	01-09-2015 1:30:53 PM	[Icons]
WeatherPak	239-000001	WeatherPak	01-09-2015 2:36:16 AM	01-09-2015 1:30:58 PM	[Icons]

22.2 Reports

Care Center provides the option to generate and view reports. These support the following:

- Manually add and delete reports
- Navigate through the reports list
- Sort reports based on the attributes in the view
- Filter reports based on the attributes in the view
- Query reports-based attributes

Calibration Summary Report. This report shows the calibration summary and details of instruments for a week, a month, or a custom date range spanning more than a week.

Bump Test Summary Report. This report shows a bump test summary and details of instruments. It provides the option to generate a report for a week, a month, or a custom date range spanning more than a week. In addition, it includes a summary of calibration status for all active instruments in the system. The summary details the total number of active instruments in use, instruments overdue for a bump test, those that will be due for a bump test in the next five days, those that are up to date, the number of instruments with no bump test information, etc. The Bump Test Summary Report also includes list of instruments (with details) for which there is no calibration information available.

BioHarness Report

A BioHarness Report can be viewed/downloaded by anyone with a role of BioHarness Medical Professional. Others can see that there is a BioHarness report, but cannot view or download it.

Instrument Data Log Report. This report shows data log for an instrument. It provides the option of generating a report for a day, week, month, or custom date range spanning more than an hour.

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The report has a summary section showing minimum and maximum values for each sensor, averages, STEL, number of alarms of each type, etc. In addition, there is a log of all data log records for the report's duration, in descending order of their timestamp.

BioHarness Reports. The following BioHarness reports are provided, as well. Only users registered with a "BioHarness Medical Professional" role can create or view BioHarness reports.

- **Group Report.** This report shows graphs for BioHarness users associated with a particular group. A Group Report shows minimum and maximum results of sensors for the group.
- **System Report.** This report shows BioHarness users who are associated with groups. A System Report shows minimum and maximum results of sensors for the system.
- **Individual Compared To Group Report.** This report shows a comparison of individual BioHarness users and the group. The report shows minimums and maximums of sensors for the individual and the group.
- **Individual Compared to System Report.** This report shows a comparison of individual BioHarness users and overall system data. It shows minimums and maximums of sensors for an individual and the system.
- **Group Compared To System Report.** This report shows a comparison of a particular group and the overall system. It includes minimum and maximum sensor values for the group and the system.

At the upper right of the page are options that include:




- **Check Firmware Update.** Click here to check whether a newer version of the firmware is available for a particular instrument.
- **Add Instrument.** Click this to manually add an instrument by entering relevant information.
- **Show (number) entries.** This provides the option to change the number of instruments displayed on the grid.

22.3 Docking Station

This displays the docking stations being monitored and instruments docked in them.



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Instrument Name	Serial Number	Device Location	Last Communication Date	Last Update Date	Actions
[-] AutoRAE 2 Controller	T021000261	AutoRAE 2 Controller(T0210002	14-08-2014 12:50:41 AM	14-08-2014 12:50:40 AM	  
[-] ToxiRAE Pro Cradle	T025000041				
ToxiRAE Pro PID	G021300007				
[-] MultiRAE (Pumped) C	T023000218				
MultiRAE Pro	MCB3A10011				
[-] QRAE 3 Cradle	T026000109				
QRAE 3	M02CB40004				






Click “Search Docking Station” to search for a docking station on the network. When one is found, it is added to the roster.

Docking stations on the network are shown, with their instruments currently in the dock, in a hierarchy below them. You can hide the instruments’ sensor information individually by clicking the “-” to the left of each name. You can hide all instruments by clicking the “-” to the left of the docking station’s name. To show the instruments or sensors, click the appropriate “+” symbol.

22.3.1 Actions



-  Do Calibration
-  Do Bump Test
-  Download Test Report

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22.3.2 Reports

Care Center provides a way to create reports (Calibration Summary and Bump Test summary) of the whole system. You can sort/change the order of columns by dragging a heading. It provides all reports generated by the system, manually as well as automatically. The report repository has the following attributes:

- Report ID
- Report Name
- Report Type
- Date Created
- PDF Report
- Event Type (there are two types):
 - a. Automatic – Generated and added by the system
 - b. Manual – Manually added in the system

Care Center > Reports

[+ Create Report](#) Show 15 entries

Report ID	Report Type	Created On	Event Type	Note	Actions
22	Instrument Datalog Summar	2014-06-26	Manual	-	 
21	Instrument Datalog Summar	2014-06-26	Manual	-	 
20	Instrument Datalog Summar	2014-06-26	Manual	-	 
19	Calibration Summary Report	2014-06-26	Manual	-	 
18	Bump Test Summary Report	2014-06-26	Manual	-	 
17	Calibration Summary Report	2014-06-26	Manual	cal_testr	 
16	Calibration Summary Report	2014-06-26	Manual	sasd	 
15	Instrument Datalog Summar	2014-06-26	Manual	-	 
14	Instrument Datalog Summar	2014-06-26	Manual	-	 
13	Instrument Datalog Summar	2014-06-26	Manual	Test_instrument_datalog	 
12	Instrument Datalog Summar	2014-06-26	Manual	-	 
11	Instrument Datalog Summar	2014-06-26	Manual	Test_instrumnet	 
10	Calibration Summary Report	2014-06-26	Manual	-	 
9	Calibration Summary Report	2014-06-26	Manual	-	 
6	Calibration Summary Report	2014-06-26	Manual	ca	 

◀ Previous **1** 2 Next ▶

Click on the heading you want to move, and drag it to another location:

Report ID	Report Type	Created On	Event Type
22	Instrument Datalog Summar	2014-06-26	Event Type
21	Instrument Datalog Summar	2014-06-26	Manual

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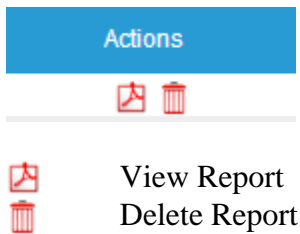
You can also change the sort order (ascending or descending) and other attributes.

Report ID	Report Type	Created On	Event Type	Note	Actions
91	Instrument Datalog Summary	4 PM	Manual	-	
90	Calibration Summary Report	9 AM	Automatic	-	
89	Instrument Datalog Summary	9 AM	Manual	-	
88	Instrument Datalog Summary	4 AM	Manual	-	
87	Bump Test Summary Report	7 AM	Manual	-	
86	Calibration Summary Report	9 AM	Manual	-	
85	Instrument Datalog Summary	7 AM	Manual	-	
84	Calibration Summary Report	3 AM	Manual	-	

Global options for Reports include Create Report, Search, and Show (number of) entries. You can show 15, 50, 100, or 200 entries.

22.3.3 Actions

Under “Actions,” you can select “View Report,” and “Delete Report.”



22.3.4 Pages

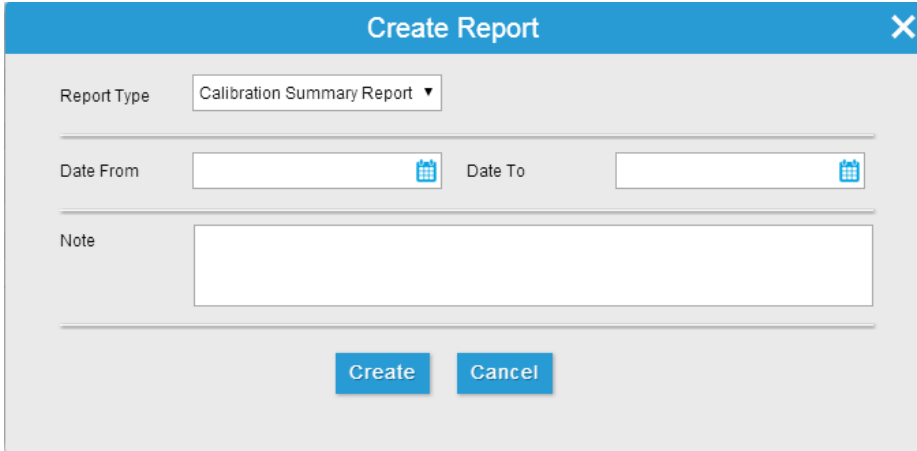
When more than one page of reports is available, a navigator lets you move to the next or previous page, as well as to each specific page (by number):



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22.3.5 Create Report

This report displays system statistics showing overall health of instruments within a specified date range with regards to calibration (for example, overdue or calibration within 30 days) or bump test (last bump test date).

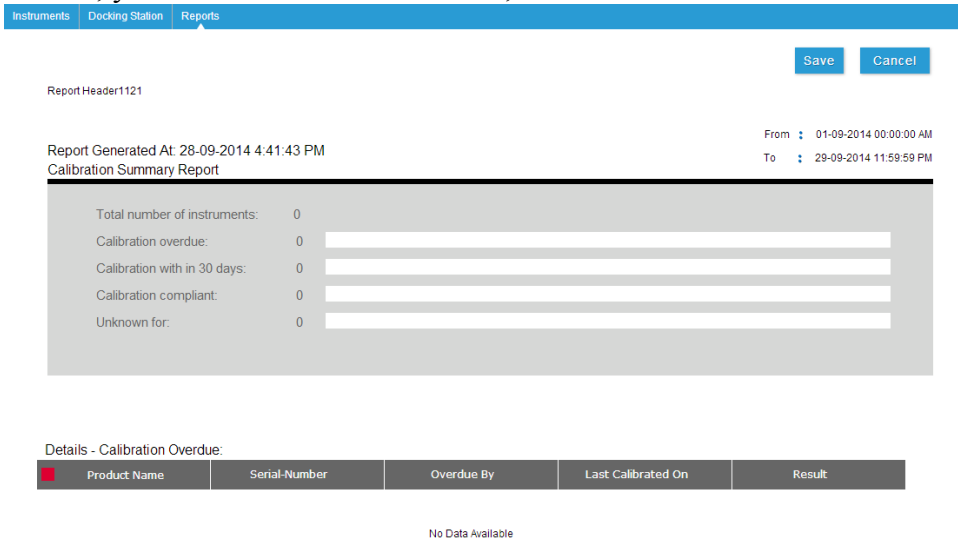


You can select either a Calibration Summary Report or Bump Test Summary Report. Select the start date (“Date From”) and ending date (“Date To”) and type any note you would like to add. Then click “Create.” (Click “Cancel” if you do not want to create the report.)

In addition, you can create BioHarness Group, System, Individual Compared To Group Report, Individual Compared to System, Group Compared To System reports, as well.

Note: Only someone with a role of "BioHarness Medical Professional" user can create or view BioHarness reports.

The report is created (if there is no data, then the report will be blank). Once a report is created, you can click “Save” to save it, or “Cancel” to delete it.



Product Name	Serial-Number	Overdue By	Last Calibrated On	Result
No Data Available				

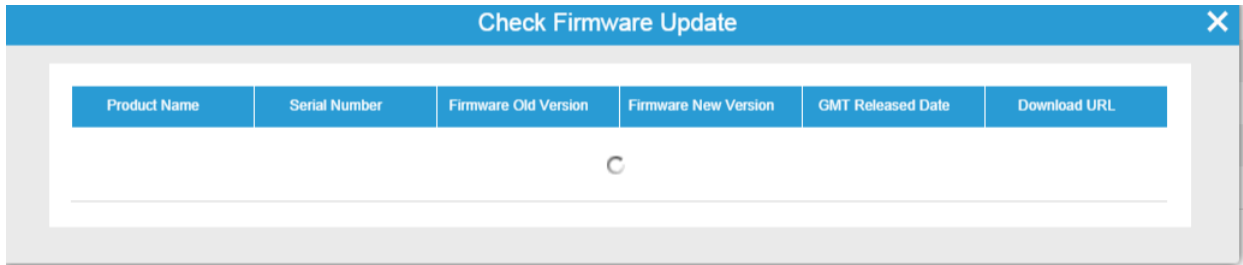
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22.3.6 Check Firmware Update

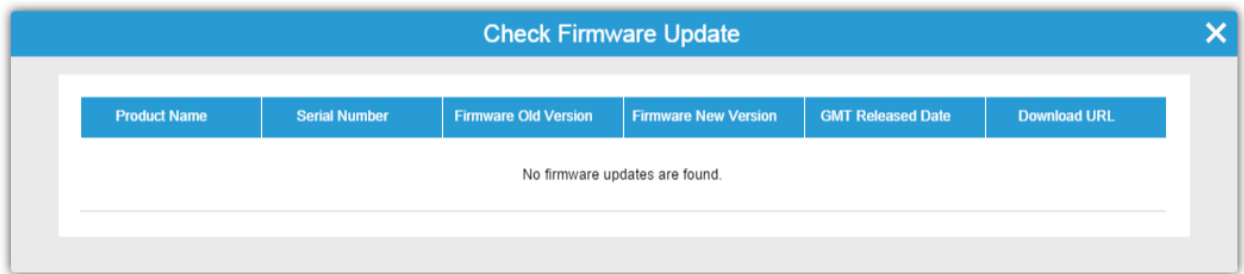
Type in an instrument's serial number and then click "Submit."



ProRAE Guardian Remote searches for firmware updates.



If firmware updates are not found, then you see this:













If a firmware update is found, then you see details about it.

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22.4 Actions

You can choose from the Actions to customize, view logs, etc. Icon buttons are located at the right side of the screen for each row that corresponds to an instrument.

Instrument List Actions:

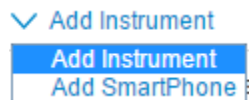
-  Edit instrument
-  or  No product documentation or view PDF of product documentation
-  View logs
-  Generate report
-  Assign to logged in user
Set/unset Qualified (unqualified is indicated by gray icon) Non-BioHarness
-  instruments are indicated by 
-  Use log
-  Remove instrument

Smart Phone List Actions:

-  Edit Smart Phone
-   Qualified Smart Phone (unqualified is indicated by gray icon)
-  Remove instrument

22.5 Add Instrument/Add Smartphone

Add an instrument or smartphone (for use with BioHarness only) to your roster by clicking “Add Instrument” and selecting either “Add Instrument” or “Add Smartphone” and then following the instructions on the new page for adding it.



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22.5.1 Add Instrument

Not all fields have to be filled, but it is mandatory to select a Product Name and Serial Number. When you select a Product Name, the Model Name is automatically provided.

The screenshot shows a web form for adding an instrument. At the top right are 'Save' and 'Cancel' buttons. Below them is an 'Add Sensor' button. The form fields are:

- Product Name * (dropdown menu)
- Serial Number * (text input)
- Model Name * (text input)

- Site (dropdown menu, value: Site1)
- Zone (dropdown menu, value: No zone found)
- First Communication Date (calendar icon)
- Last Communication Date (calendar icon)
- Last Calibration Date (calendar icon)
- Last Bump Test Date (calendar icon)
- Next Calibration Date (calendar icon)
- Bump Test Due Date (calendar icon)
- Warranty Date (calendar icon)
- Firmware Version (Major, Minor, Patch)
- Last Calibration Result (dropdown menu, value: Unknown)
- Last Bump Test Result (dropdown menu, value: Unknown)
- Part Number (text input)
- Description (text area)

Product Name. Select an instrument from the drop-down list. If you want to add a custom instrument, the system allows manually typing the instrument name.

Zone. Care Center displays all zones available in ProRAE Guardian.

Last Calibration Result. Options include Success, Partial Success, and Fail. The default is “Unknown.” **Note:** Partial Success occurs when some sensors are not calibrated or bump tested. This typically happens when the calibration gas is not present. If any calibration fails, the result is “Fail.”

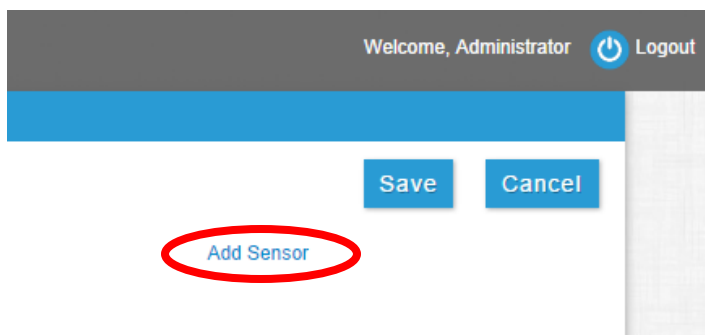
Last Bump Test Result. Options include Success, Partial Success, and Fail. The default is “Unknown.” **Note:** Partial Success occurs when some sensors are not calibrated or bump tested. This typically happens when the calibration gas is not present. If any bump test fails, the result is “Fail.”

Firmware Version. These fields provide a way to enter major, minor, and patch version information for the instrument. (Example: 11.11.a)

Note: The Major and Minor fields accept only two digits. The Patch field accepts only alphabet letters.

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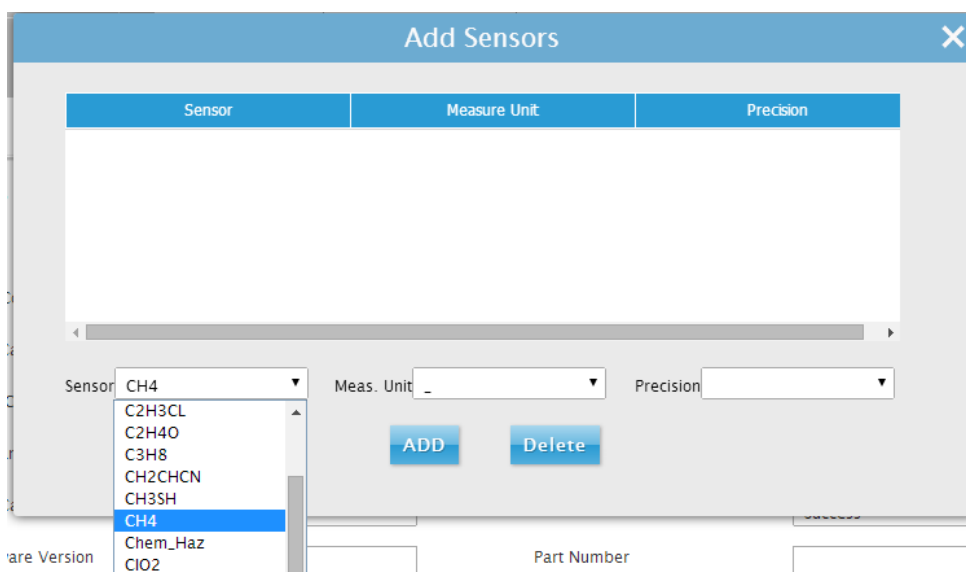
You can also add sensors to each instrument.



Click “Add Sensor” to add one or more sensors for a particular instrument. This helps to add instrument data log and sensor details in reports. You have the option to delete sensors, as well.

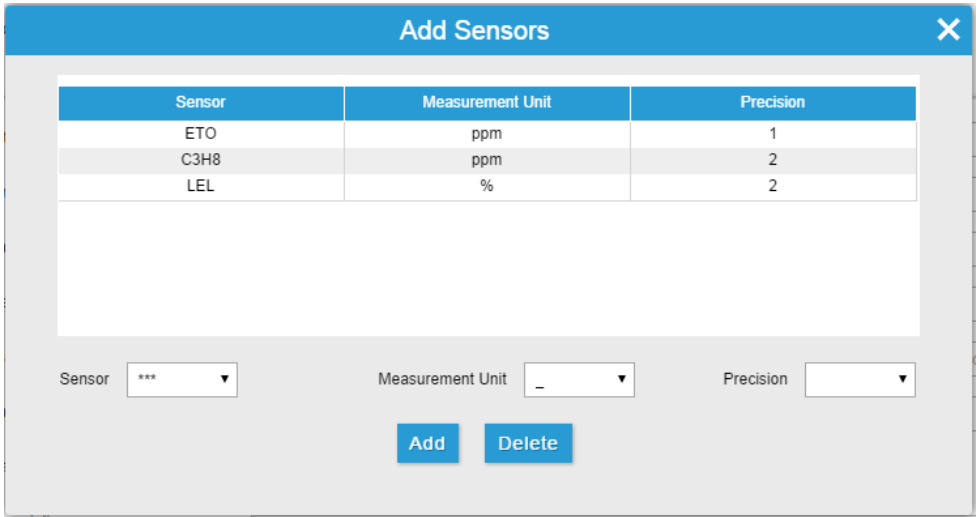
Note: You can choose any sensor in any instrument. Use caution to ensure the correct sensor and corresponding measurement unit are selected.

Select the sensor type, measurement unit, and precision. Then click “Add” to include it or “Delete” to remove it.



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Precision signifies the number of decimal places to which the reading is to be displayed.

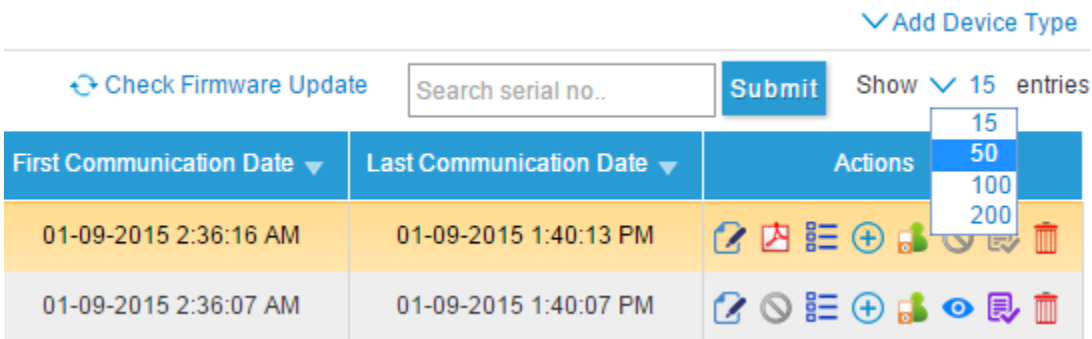


When you are done adding sensors, click the “X” at the top right corner of the window to close it. Your choices are automatically saved.

When you are done filling in the instrument information, click “Save” to save it or “Cancel” to dismiss it without saving.

22.6 Show (number) entries

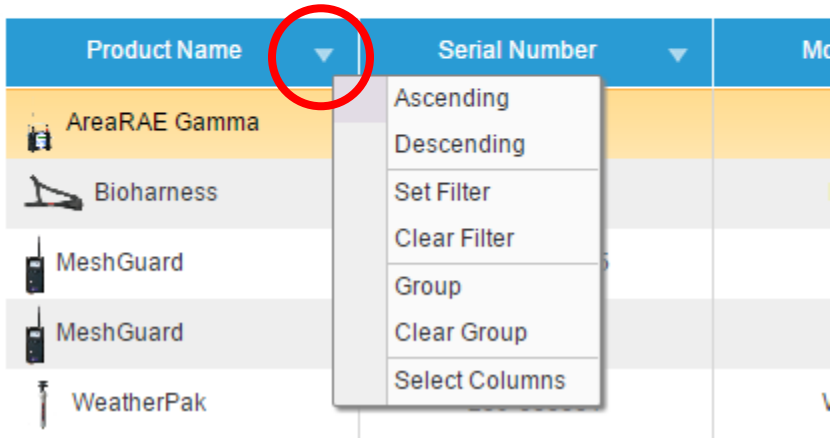
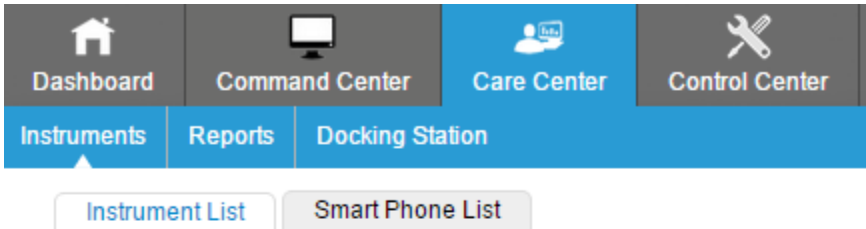
Use the pull-down menu to select how many entries you want to see at one time:



22.7 Columns And Settings

Product Name ▼	Serial Number ▼	Model Name ▼	First Communication Date ▼	Last Communication Date ▼	Actions
----------------	-----------------	--------------	----------------------------	---------------------------	---------

Each column has selections for setting the view order (ascending/descending), filtering, grouping, and selecting columns. The submenu provides access to the options.



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22.8 Grouping

You can group instruments by selecting “Group.” This arranges instruments for faster recognition.

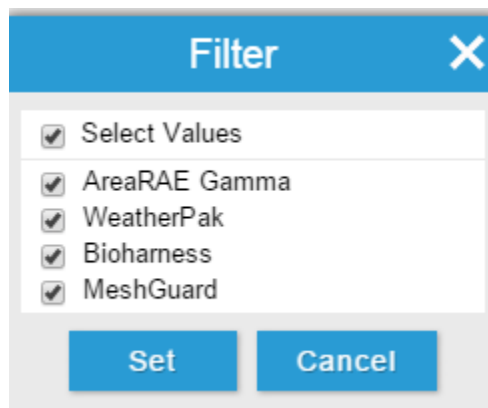
Product Name	Serial Number	Model Name	First Communication Date	Last Communication Date	Actions
AreaRAE Gamma (1)					
AreaRAE Gamma	280-500013	PGM-5120	01-09-2015 2:36:16 AM	01-09-2015 1:40:13 PM	[Actions]
Bioharness (1)					
Bioharness	BHT009917	Bioharness	01-09-2015 2:36:07 AM	01-09-2015 1:40:07 PM	[Actions]
MeshGuard (2)					
MeshGuard	D0124025M5	FTD-2000	01-09-2015 2:36:18 AM	01-09-2015 1:40:14 PM	[Actions]
MeshGuard	43F0	FTD-2000	01-09-2015 2:36:35 AM	01-09-2015 1:39:57 PM	[Actions]
WeatherPak (1)					

Grouping is indicated by this icon in the upper left corner of a heading in the instruments list:



22.9 Filtering

Filtering lets you selectively show and hide instruments, which is useful if you are only interested in viewing data from one or more types of instruments.













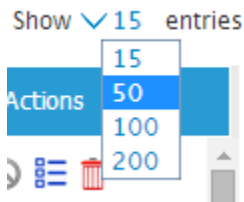
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22.10 Actions

You can choose from the Actions to customize, view logs, etc. Icon buttons are located at the right side of the screen for each row that corresponds to an instrument.



-  Edit instrument
-  or  No product documentation or view PDF of product documentation
-  View logs
-  Generate report
-  Assign to logged in user
-  Set/unset Qualified (unqualified is indicated by gray icon) Non-BioHarness instruments are indicated by .
-  Use log
-  Remove instrument



22.10.1 Add Smart Phone

BioHarnesses operate with a smart phone, so you can add a smart phone to your roster.

Note: Not all fields have to be filled, but it is mandatory to select a Phone ID.

Phone ID *

Smart Phone Type	<input type="text" value="Unknown"/>	OS Version	<input type="text"/>
First Communication Date	<input type="text"/>	SimCard ID	<input type="text"/>
Last Communication Date	<input type="text"/>	Smart Phone Number	<input type="text"/>

When you are done, click “Save.”

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22.10.2 Create Instrument Report

This report displays statistics of a specific instrument within a specified date. You must click on the “Generate Report” icon to start the process:



This window appears:

The screenshot shows a dialog box titled "Create Instrument Report". It features a "Select Attributes" section with a dropdown menu, an "Equal To" dropdown, and an empty text box. Below this are "Date From" and "Date To" fields, both containing "2015-09-01" and accompanied by calendar icons. A "Detailed Data Grid" checkbox is checked. There is also a "Template" dropdown menu. At the bottom, there is a "Note" text area and two buttons: "Create" and "Cancel".

Select attributes and build your query. Select the start date (“Date From”) and ending date (“Date To”) and type any note you would like to add. Then click “Create.” (Click “Cancel” if you do not want to create the report.)

The report is created (if there is no data, then the report will be blank). Once a report is created, you can view it as a PDF, save the report to CSV (comma-separated value) format for opening in a spreadsheet program such as Microsoft Excel, or “Cancel” to delete it.

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Instruments Reports Docking Station

View As PDF Save Report To CSV Cancel

Report Generated At: 01-09-2015 2:03:11 PM
Alarm Events Summary

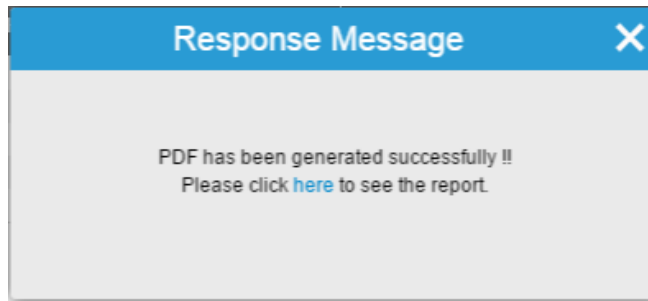
Instrument Datalog Summary
From : 01-09-2015 00:00:00 AM
To : 01-09-2015 11:59:59 PM

Sensor	High Alarm Measurement	Low Alarm Measurement	Sensor Alarm Count
CO	0	0	0
VOC	0	0	0
H2S	0	0	0
LEL	0	0	0
GAMMA	0	0	0

CO (ppm)

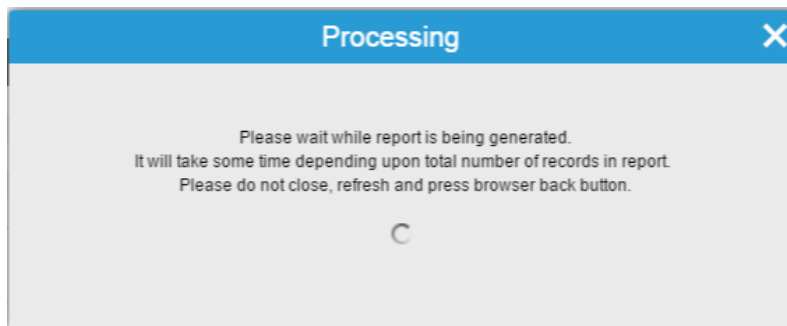
01-09-2015 3:56 AM 01-09-2015 5:20 AM 01-09-2015 6:43 AM 01-09-2015 8:06 AM 01-09-2015 9:30 AM 01-09-2015 10:53 AM 01-09-2015 12:16 PM 01-09-2015 1:40 PM

If you choose the PDF option, a PDF is generated, and you see this message:



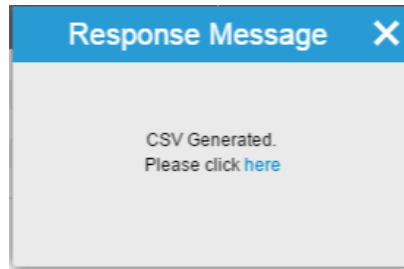
Click the link to view the PDF.

If you choose Save Report To CSV, a progress box is shown as it creates the CSV file:

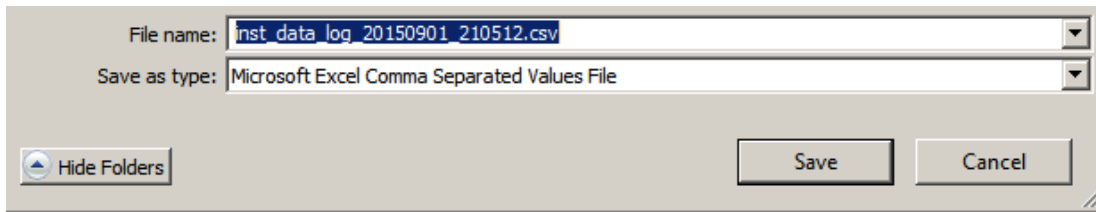


When it is done, this message appears:

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Click the link and then you see the save dialog, populated with the system's name of the file. You can rename it anything you want. When you are satisfied with the name, click "Save."



23 Control Center

Control Center provides a way to control the access through user management, Action rules, Activity Automation, and Systems Settings.



Control Center has tabs that provide access to functions within Control Center.



Note: You can set the default view in Control Center under “System Settings.” Your options are “User Management,” “Action Rules,” “Activity Automation,” and “Systems Settings.”

23.1 User Management

In User Management, you can control access to the system to add another user and to edit user information, as well as assign different instruments to a user. It provides an option to change the password, as well.

User ID	Mobile	Company	Email	Department	Select All	Actions
administrator	-				<input type="checkbox"/>	
advanced	-		advanced@gmail.com	Industrial Hygienic	<input type="checkbox"/>	
andreas	-		andreas.mehne@honeywell.com	Industrial Hygienic	<input type="checkbox"/>	
bio_medp	-		bio_medp@test.com	Industrial Hygienic	<input type="checkbox"/>	
bio_sup	-		bio_sup@test.com	Industrial Hygienic	<input type="checkbox"/>	
BioUser	-		test@test.com	Industrial Hygienic	<input type="checkbox"/>	
Guest	-		guest@gmail.com	Industrial Hygienic	<input type="checkbox"/>	
m	-		Mingchao.Li@Honeywell.com	Industrial Hygienic	<input type="checkbox"/>	
user	-		user@test.com	Industrial Hygienic	<input type="checkbox"/>	
user_bio	-		user_bio@test.com	Industrial Hygienic	<input type="checkbox"/>	
vivek	-		vivek@essitco.com	Industrial Hygienic	<input type="checkbox"/>	

[Add User](#) [Export Profile](#) Show ▼ 15 entries

← Previous 1 Next →

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23.1.1 Add User

Add User. You can add a new user to your roster or edit user information and provide comments, a password, contact information, etc. When you are done editing the information, click “Save” to save the changes, or “Cancel” to abandon them.

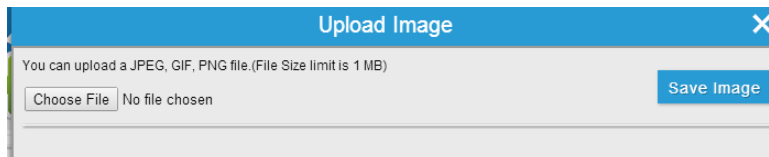
The form contains the following fields and options:

- User ID * (text input) with a [Check availability](#) link.
- Roles * (dropdown menu with options: Administrators, Advanced Users, BioHarness Medical Professor, BioHarness Supervisor).
- Email * (text input) with a placeholder "@text.com".
- Password * (text input) and Confirm Password * (text input).
- Name: First, Middle, Last (text inputs).
- Nick-Name (text input).
- Phone: Country, Area, Number, Mobile, + Country, Number (text inputs).
- Company (text input) and Department (dropdown menu with "Industrial Hygienic" selected).
- Group (dropdown menu with "Select group" selected).
- Comments (text area).

Check Availability. Input a name into UserID and click “Check Availability.” This checks whether the UserID is already being used. If the UserID is not already in use, then you receive this message:



Upload Image. Click the “pencil” icon in the lower-right corner of the image. You can then upload an image to represent the person. Once the image is uploaded, click “Save Image.” If you do not want to save the image, click the “X” in the upper right corner.



Email. Provide an email address using the format shown.

Password. Input a password that meets the criteria outlined here. The combination of letters/symbols/numbers required depends on the requirements set in ProRAE Guardian Remote Viewer's Password Policy (under Control Center>>System Settings>>Password Policy).

Confirm Password. Once you have input a password into the Password field, retype it exactly into the Confirm Password field. If they do not match, the password will be rejected.

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The administrative section below the required section is for a name, phone, etc. One of the most important features here is Group. A user can be assigned to a group that already exists. Pull down “Select group” and choose one. (This is optional.)


Export Profile. You can export one or more (or all) profiles. Click on a box in a user's line in the list and then click “Export Profile.” If you want to select all profiles, click “Select All” at the top of the list (to de-select all, click it again to clear them).

When one or more users is selected, the “Export Profile” button changes from gray to blue. Click “Export Profile,” and you will see this alert:



Click “here,” and a “Save As” box appears with a pre-formatted file name, with a “.csv” extension (the file is in “comma-separated value” format, which is easily opened in programs such as Microsoft Excel). You can change the filename and/or select a location. Click “Save,” and the file is saved.

Personal information should be provided in the lower half of the page. In addition to a profile name, it is helpful to select a group, if the user is part of one. That way, the group can be referenced later, saving time in sorting records.

	User ID *	<input type="text"/>	Check availability
	Roles *	<ul style="list-style-type: none">AdministratorsAdvanced UsersBioHarness Medical ProfessorBioHarness Supervisor	
	Email *	<input type="text" value="@text.com"/>	
	Password *	<input type="password"/>	Confirm Password * <input type="password"/>






Name	<input type="text" value="First"/>	<input type="text" value="Middle"/>	<input type="text" value="Last"/>
Nick-Name	<input type="text"/>		
Phone	<input type="text" value="Country"/> <input type="text" value="Area"/> <input type="text" value="Number"/>	Mobile	+ <input type="text" value="Country"/> <input type="text" value="Number"/>
Company	<input type="text"/>		Department <input type="text" value="Industrial Hygienic"/>
Group	<input type="text" value="Select group"/>		
Comments	<input type="text"/>		

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23.1.2 Actions

Select actions from the icon buttons under “Actions” to work with the data in the grid.

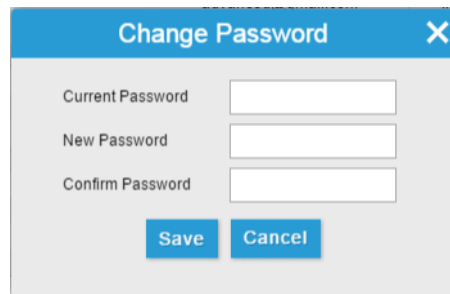


-  Edit User Information
-  Change Password
-  Assign Instrument
-  Generate Report
-  Delete User

Note: If any icon is gray, it is not available.

Edit User Information. Make changes to a profile. When you are done, click “Save” to retain the changes.

Change Password. To change a password, you must provide the current password and then type the new password. Then type the password again in “Confirm Password.” If the two do not match exactly, the new password will not be accepted.

A dialog box titled "Change Password" with a close button (X) in the top right corner. It contains three text input fields labeled "Current Password", "New Password", and "Confirm Password". Below the fields are two buttons: "Save" and "Cancel".

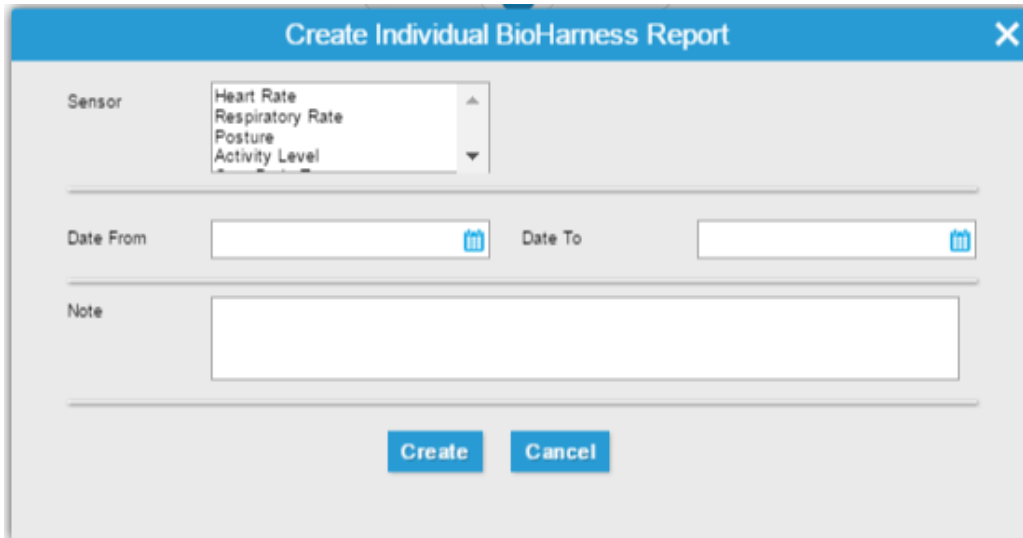
Assign Instrument. You can assign any instrument(s) to a person.

1. Find the person you want to assign one or more instruments to and click the “Assign Instrument” icon under “Actions.”
2. Click one or more checkboxes in the rightmost column to select one or more instruments, or click Select All at the top of the column.
3. Click “Assign” to assign the instrument(s) to the selected person.

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Create Individual BioHarness Report

Click on the "Generate Individual BioHarness Report" icon to create an individual report for a BioHarness user. The report shows minimum and maximum sensor values from the BioHarness for an individual.



The screenshot shows a dialog box titled "Create Individual BioHarness Report" with a close button (X) in the top right corner. The dialog contains the following fields:

- Sensor:** A dropdown menu with the following options: Heart Rate, Respiratory Rate, Posture, and Activity Level.
- Date From:** A text input field with a calendar icon to its right.
- Date To:** A text input field with a calendar icon to its right.
- Note:** A large text area for entering a note.
- Buttons:** Two buttons at the bottom: "Create" and "Cancel".

You can select either a sensor type or continue without selecting sensors. If you continue without selecting any sensors, then by default all sensors are selected. Select the start date ("Date From") and end date ("Date To") and type any note you would like to add. Then click "Create." (Click "Cancel" if you do not want to create the report.)

The report is created (if there is no data, then the report will be blank). Once a report is created, you can click "Save" to save it, or "Cancel" to delete it.

Note: Individual report of BioHarness user can be created only by someone with the user role of "BioHarness Medical Professional." To get data for individual report, assign a BioHarness instrument to a BioHarness user, so that data will appear according to selected sensors.

Delete User. Click the "Delete User" icon to delete a user from the roster.

























ProRAE Guardian User's Guide

23.2 Action Rules

ProRAE Guardian allows creation of Action Rules so that you can have notifications sent or external applications invoked whenever the conditions are met.

User Management | **Action Rules** | Activity Automation | System Settings

[+](#) Create RuleSet [≡](#) Ruleset Log Show 15 entries

Name	Status	Last Triggered	Last Triggered Action	Actions
action rule3	Active	23-09-2014 8:41:55 PM	Email sent to <> ahzhang@raesystems.com	 
action rule 1	Active	23-09-2014 8:41:55 PM	Email sent to <> ahzhang@raesystems.com	 
action rule2	Active	23-09-2014 8:41:56 PM	Email sent to <> ahzhang@raesystems.com	 
action rules 4	Active			
Rule_1	Active	09-09-2014 6:13:07 AM	Email sent to <> test@gmail.com	 
Ruleset	Active			 
Ruleset 1	Active			 
Ruleset 59	Active			 
Ruleset 60	Active			 
Ruleset 62	Active			 
Ruleset 63	Active			 
Ruleset m61	Active			 
ruleset12	Active			 

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23.3 Create RuleSet

You can create a RuleSet, which supports flexible and customizable rules to trigger email notifications or invoke external applications. Define, add, modify, and delete alert notifications and action rules so that ProRAE Guardian uses the following attributes to define rule conditions and logical operators such as “And” and “Or” or “Equal To” for each rule condition.

- Product Name
- Site Name
- Instrument Alarm Type
- Alarms Count
- Sensor Reading
- Sensor Alarm Type

Then select an Action:

- Email Notification
- Invoke External Application

Finally, select an Action interval (number of minutes).

Note: You can generate as many different RuleSets as you want. You can also add attributes and rules.

There is a limitation on the supported attributes of the Product (Instrument). Validation of conditions is checked by the system. If the RuleSet condition is not correct, then it will not allow successfully creating a RuleSet. You can define add, modify and delete alert notifications.

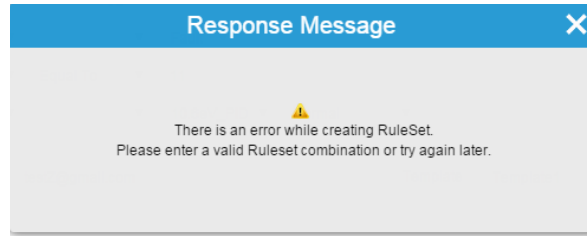
You can expand a rule to suit the level of detail of the information you need by adding conditions. In the “Description” box, the rule appears with all of its details. Here is an example:

Description

```
Rule
if Product Name = 4GL AND Site Name = site 2 AND Instrument Alarm Type = Fault AND Alarms Count = 56 AND Sensor Reading (sensor name = 10.6eV_PID and
unit name =per) = 56 AND Sensor Alarm Type (sensor name = 10.6eV_PID) = Normal then Action = Email Notification Email_Id=test@gmail.com
Templates=Template1;
```

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In case of a RuleSet Conflict: If there is a RuleSet Conflict in action rules, ProRAE Guardian tests and validates the rules. As a result, it will not allow you to proceed. An alert message pops up to tell you that there is a problem:



For a rule to be valid, it must comply with at least one of the following RuleSet configurations:

Product Name	Site Name	Zone Name	Instrument Alarm Type	Instrument Alarm Count	Sensor alarm	Sensor Reading	Status
		√			√		√
√					√	√	√
√	√				√	√	√
√		√			√	√	√
√	√	√			√	√	√
	√				√	√	√
	√	√			√	√	√
		√			√	√	√
√						√	√
√	√					√	√
√		√				√	√
√	√	√				√	√
	√					√	√
	√	√				√	√
		√				√	√

Continued on next page



























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Product Name	Site Name	Zone Name	Instrument Alarm Type	Instrument Alarm Count	Sensor alarm	Sensor Reading	Status
√	√		√				√
√		√	√				√
√	√	√	√				√
	√		√				√
	√	√	√				√
		√	√				√
			√	√			√
√			√	√			√
√	√		√	√			√
√		√	√	√			√
√	√	√	√	√			√
	√		√	√			√
	√	√	√	√			√
		√	√	√			√
√			√		√		√
√	√		√		√		√
√		√	√		√		√
√	√	√	√		√		√
	√		√		√		√
	√	√	√		√		√
		√	√		√		√
√			√		√	√	√
√	√		√		√	√	√
√		√	√		√	√	√
√	√	√	√		√	√	√
	√		√		√	√	√
	√	√	√		√	√	√
		√	√		√	√	√
√			√		√	√	√
√	√		√		√		√
√		√	√		√		√
√	√	√	√		√		√
	√		√		√		√
	√	√	√		√		√

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When RuleSets are active and actions are triggered, they are logged and in the dashboard the Last Triggered date and time is shown along with the action that was triggered in the Last Triggered Action column:

Name	Status	Last Triggered	Last Triggered Action	Actions
action rule3	Active	23-09-2014 8:41:55 PM	Email sent to <-> ahzhang@raesystems.com	 
action rule 1	Active	23-09-2014 8:41:55 PM	Email sent to <-> ahzhang@raesystems.com	 
action rule2	Active	23-09-2014 8:41:56 PM	Email sent to <-> ahzhang@raesystems.com	 
action rules 4	Active			 
Rule_1	Active	09-09-2014 6:13:07 AM	Email sent to <-> test@gmail.com	 
Ruleset	Active			 
Ruleset 1	Active			 
Ruleset 59	Active			 
Ruleset 60	Active			 
Ruleset 62	Active			 
Ruleset 63	Active			 
Ruleset m61	Active			 
ruleset12	Active			 

< Previous 1 Next >

[Save](#) [Cancel](#)

RuleSet Name* Active

Rule [Add More Rule](#)

Select Attribute

[+](#)

Select Action

[+](#)

Action Interval minutes [Validate Rule](#)

[Add More Rule](#)

Description

Rule
if Product Name = AP4C then Action =

23.4 Attributes And Validation

When you build a RuleSet, you can validate the rule to ensure that you have created a rule that works with the available parameters and data.



23.5 RuleSet Log

A RuleSet Log displays a history of rule sets that were triggered in a given time range. It provides the Rule Set Name, Trigger Date, Result (successful or fail), Details (of the action performed), and their corresponding Actions.

Ruleset Name	Trigger Date	Result	Details	Actions
--------------	--------------	--------	---------	---------

23.6 Activity Automation

You can create automated activities that run at specific times and on specific days at specific intervals. You name the activity, select whether it should be active, and set start and end dates.

Activity Name	Activity Type	Status	Start Date	End Date	Actions
Activity	Generate Reports	Active	22-09-2014 11:30:00 AM	23-09-2014 11:29:59 AM	
bump test1	Bump Test	Active	07-08-2014 9:00:00 AM	31-08-2014 8:59:59 AM	
generate reports	Generate Reports	Active	12-08-2014 9:00:00 AM	31-08-2014 8:59:59 AM	
test 1	Calibration	Active	12-08-2014 9:00:00 AM	17-08-2014 8:59:59 AM	
test 11	Calibration	Active	04-08-2014 11:30:00 AM	16-08-2014 11:29:59 AM	
test 2	Calibration	Active	04-08-2014 11:30:00 AM	16-08-2014 11:29:59 AM	
test download test report	Download Test Report	Active	06-08-2014 9:00:00 AM	17-08-2014 8:59:59 AM	
test generate reports	Generate Reports	Active	10-08-2014 9:00:00 AM	16-08-2014 8:59:59 AM	
test_email	Calibration	Active	29-08-2014 11:30:00 AM	30-08-2014 11:29:59 AM	
test2	Calibration	Active	05-08-2014 9:00:00 AM	16-08-2014 8:59:59 AM	

Actions

- Edit Activity
- Delete Activity

23.6.1 Schedule Activity

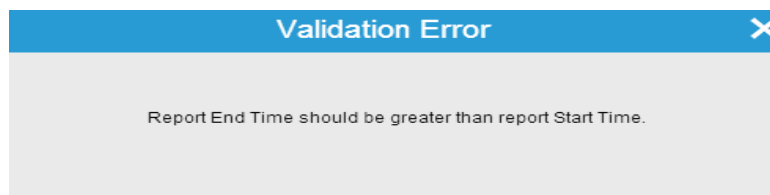
An automated activity must be created before it can be scheduled. To start, click “Schedule Activity,” which presents you with a clean template of an activity that you can name and either activate or leave inactive for later activation.

The screenshot shows the 'Schedule Activity' form with the following details:

- General:** Activity Name* (text input), Activity Type (dropdown menu set to 'Calibration'), and an 'Active' checkbox.
- Triggers:** Schedule Triggers for Fixed Recurring Settings. Includes Start Date* and End Date (both with calendar icons).
- Settings:** Radio buttons for Shift, Daily, Weekly, and Monthly. A Start Time* field with a '+' icon.
- Actions:** Select Action dropdown menu with 'Select' and a '+' icon.
- Description:** A text area containing 'Activity Type - Calibration then Action ='. There is a '+' icon to the right of the description field.
- Buttons:** 'Save' and 'Cancel' buttons are located at the top right of the form.

23.6.2 General

1. Type a name for the activity.
2. Select an activity type from the menu. Options include:
 - Calibration
 - Bump Test
 - Download Test Report
 - Generate Reports
3. If you want this activity to be active, click the checkbox. Otherwise, leave it unchecked.
4. It provides as many activities as you want. However, there is a conflict checker. If you create a condition that produces an error, you see an alert. For example, if you set the report's end time to be earlier than the report's start time, you see a message like this:



Note: There is no limit on scheduled activities.

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23.6.3 Triggers

In this area, you set the parameters that define when the activity takes place.

1. Set the Start Date and End Date. Note: The start date is mandatory to schedule the activity, but the end date can be left open.
2. Select Settings for when the activity should occur. Your options are:
 - Shift
 - Daily
 - Weekly
 - Monthly

When you select any of these, different sub-parameters are shown for you to select. Anytime you see the “+” in a circle, you can click it to add another sub-parameter (for example, with Shift selected, you can have multiple start times).

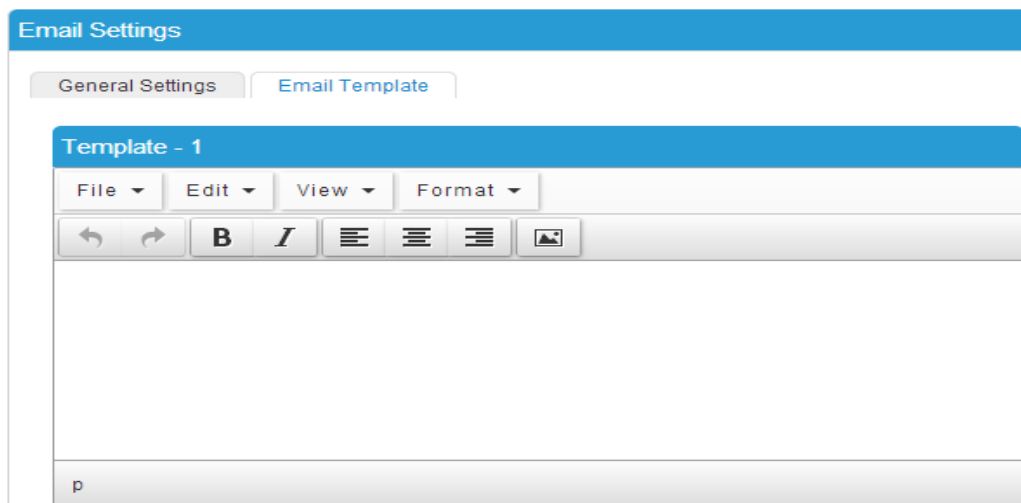
23.6.4 Actions

Here is where you select the action(s) you want performed at the times and intervals you select in Triggers.

Under “Select Action,” you can choose “Email Notifications” or “Invoke External Applications.” If you select “Email Notifications” ProRAE Guardian can send an email to one or more recipients (separate them with a comma), using a template of your choice.

Note: If your account does not have a template, then you can create a template from:

Control Center>>System Settings>>Email settings



If you select “Invoke External Applications” as your action, then you can use it to invoke an external application (such as an executable, web service, etc.) with parameters.

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For example:

Like Path = "C:\Program Files (x86) \XYZ.exe " and arguments = "C:\ProgramData\RAE Systems Inc\ProRAE Guardian\XYZ.xyz "

Under "Description," you can see the details as entered in required fields.

General Save Cancel

Activity Name* Active

Activity Type Calibration

Triggers

Schedule Triggers for Fixed Recurring Settings

Start Date* End Date

Settings

Shift Daily Weekly Monthly

Start Time*

Actions

Select Action Select

Description

Activity Type - Calibration then Action =

When you are satisfied with the activity's parameters, click "Save" to save the activity, or "Cancel" to cancel it and exit the page.

23.6.5 Activity Log

Activity log provides an option to collect and retrieve data across different sets of activities.

ProRAE Guardian allows for execution of activities by automating those that are important for the proper functioning of a gas-detection system. You can choose the activities for automatic execution and also specify the triggers or schedule that starts the automatic execution of those activities.



The view has the following attributes:

From To Select Activity Select Result Submit Show 15 entries

Activity Name	Activity Type	Result	Start Date	End Date	Detail	Actions
---------------	---------------	--------	------------	----------	--------	---------

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You can select a period (“From” and “To”) for gathering the data logs created during that period. Use the calendar to set either date (or both):

From  To  ▼ Select Activity



September 2014						
Mo	Tu	We	Th	Fr	Sa	Su
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	1	2	3	4	5
6	7	8	9	10	11	12

Activity Type

23.6.6 Select Activity

Select the type of activity that you want data on. Options include:

- Calibration
- Bump Test
- Download Test Report
- Generate Reports

From  To  ▼ Select Activity ▼ Select Result



Activity Type	Result	Start Date	End Date

- Select Activity
- Calibration
- Bump Test
- Download Test Report
- Generate Reports

23.6.7 Select Result

Select the level of success, ranging from failed to successful. Your options include:

- Successful
- Partly Successful
- Failed

From  To  ▼ Select Activity ▼ Select Result

Activity Type	Result	Start Date	End Date	Detail

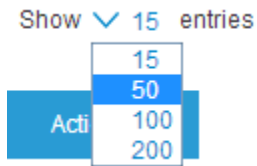
- Select Result
- Successful
- Partly Successful
- Failed

Once you have made your selections, click “Submit” to get and display the data in the list.

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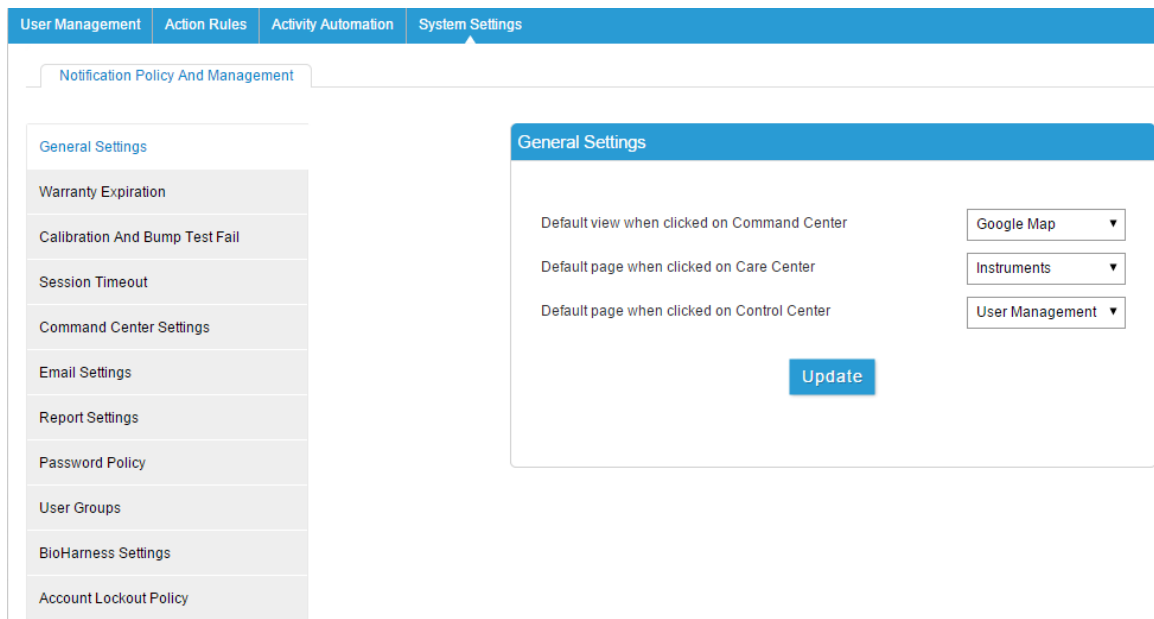
23.6.8 Show (number) entries

Select the number of entries that you want to have showing in the list.



23.7 System Settings

System Settings govern parameters that affect all of ProRAE Guardian Remote Viewer. Select from the menu along the left side of the screen which settings you want to examine or change. The parameters are shown to the right.



23.8 General Settings

Use the pull-down menus to set what appears as the default view in your ProRAE Guardian panes when you select “Command Center,” “Care Center,” and “Control Center”:

General Settings

Default view when clicked on Command Center

Default page when clicked on Care Center

Default page when clicked on Control Center

Default view when clicked on Command Center:

- Site Map
- Google Map

Default page when clicked on Care Center:

- Instruments
- Docking Stations
- Reports

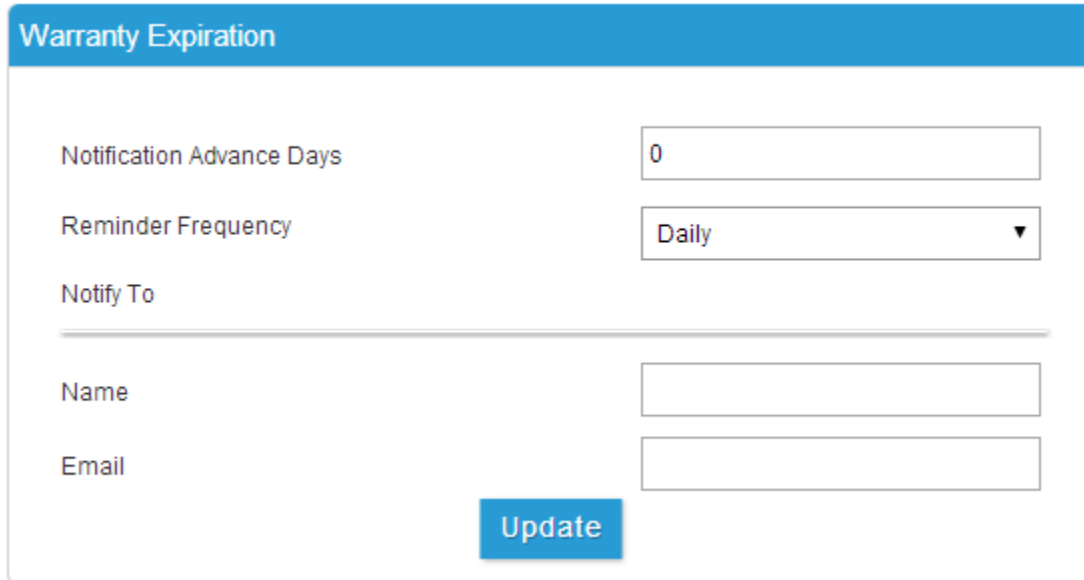
Default page when clicked on Control Center:

- User Management
- Action Rules
- Activity Automation
- System Settings

When you are done making changes, click “Update” to activate them.

23.9 Warranty Expiration

You can set a reminder to let you know in advance of a warranty expiration, allowing you to plan for warranty extension to avoid gaps in service.



The screenshot shows a form titled "Warranty Expiration" with a blue header. The form contains the following fields and controls:

- Notification Advance Days:** A text input field containing the number "0".
- Reminder Frequency:** A dropdown menu with "Daily" selected and a downward arrow.
- Notify To:** A section header followed by a horizontal separator line.
- Name:** A text input field.
- Email:** A text input field.
- Update:** A blue button with white text.

Notification Advance Days: Set the number of days in advance of warranty expiration for ProRAE Guardian to send you a notification.

Reminder Frequency (how often to repeat the notification):

- Daily
- Weekly
- Monthly

Notify To: Input the person's name and email address that you want notified via email.

When you are done making changes, click "Update" to activate them.

23.10 Calibration And Bump Test Fail

This provides customizable advance notification of the date when a calibration or bump test will be due.

Calibration And Bump Test Fail

Notification Advance Days	<input type="text" value="0"/>
Reminder Frequency	<input type="text" value="Daily"/>
Notify To	
<hr/>	
Name	<input type="text"/>
Email	<input type="text"/>
<input type="button" value="Update"/>	

Notification Advance Days: Notify the user via email that Calibration and Bump Test are due in the next few days.

Reminder Frequency (how often to repeat the notification):

- Daily
- Weekly
- Monthly

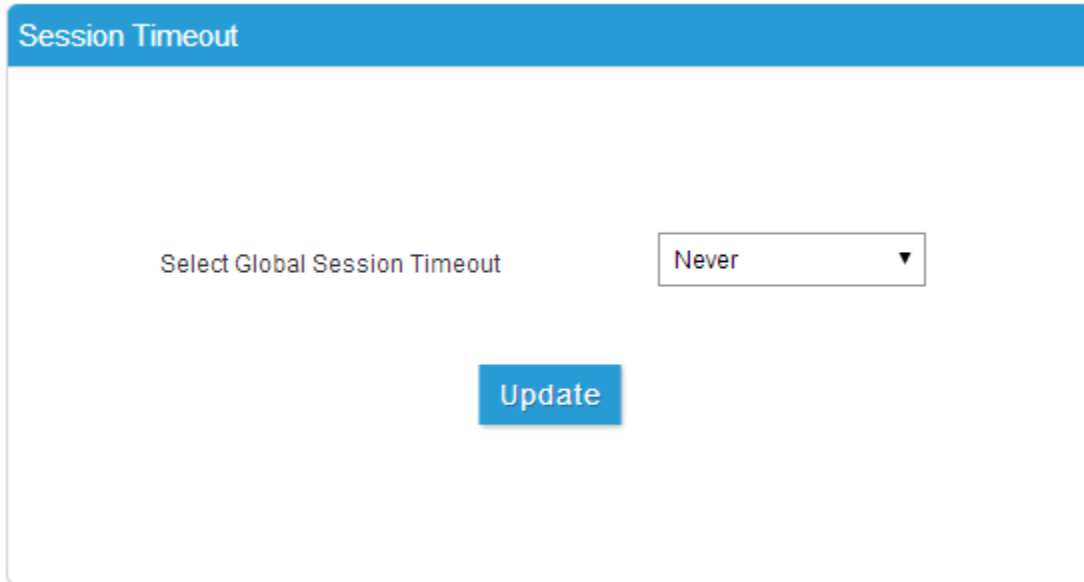
Notify To: Input the person's name and email address that you want notified via email.

When you are done making changes, click "Update" to activate them.

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23.11 Session Timeout

Set the default time at which ProRAE Guardian Remote Viewer times out and requires you to input your Username and Password to log in again.



The screenshot shows a web interface for configuring the session timeout. At the top, there is a blue header bar with the text "Session Timeout". Below the header, the main content area is white. On the left side, the text "Select Global Session Timeout" is displayed. To the right of this text is a dropdown menu with "Never" selected and a downward-pointing arrow. Below the dropdown menu is a blue button with the text "Update".

Select Global Session Timeout:

- Never
- 5m
- 15m
- 30m
- 60m

After you have made your selection, click “Update” to activate it.

23.12 Command Center Settings

Set parameters that determine how many records are shown, date and time format, GPS format, and measurement units.

Command Center Settings

Data Display
Records In Device Information View:(50 ~ 300)

Date Format 28-09-2014
Time Format 01:06:58 PM

GPS Format
Lat: 37.25643; Lng: -121.89532 Decimal
N37°15'23.15" W121°53'43.14" Degree

Measurement Unit

Category	Unit
Radiation	<input type="text" value="uR/h"/>
Wind Speed	<input type="text" value="m/sec"/>
Temperature	<input type="text" value="°F"/>

When you are done making changes, click “Update” to activate them.

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23.13 Email Settings

You can create preset email messages and information such as your service provider and SMTP server settings. In addition, you can create two email templates, complete with formatting.

Email Settings

General Settings | Email Template

Sender Email:

Sender Password:

Subject:

Message:

Email Service Provider: Yahoo Gmail Other

[Validate Email](#)

If you select “Other” for email, more options are available:

Email Settings

General Settings | Email Template

Sender Email:

Sender Password:

Subject:

Message:

Email Service Provider: Yahoo Gmail Other

SMTP Server Settings

Host: Port: Require SSL

[Validate Email](#)

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23.13.1 Email Templates

There are two templates that you can fill out in order to have premade messages that are sent via emails. Formatting, type attributes, and other features can be set and saved.

The screenshot displays the 'Email Settings' interface. At the top, there is a blue header bar with the text 'Email Settings'. Below this, there are two tabs: 'General Settings' and 'Email Template'. The 'Email Template' tab is active. The interface shows two template editors, 'Template - 1' and 'Template - 2'. Each editor has a blue header bar with the template name. Below the header, there is a menu bar with 'File', 'Edit', 'View', and 'Format' options. Underneath the menu bar is a toolbar with icons for undo, redo, bold (B), italic (I), bulleted list, numbered list, and image insertion. The main editing area for each template contains the text 'Template1' and 'Template2' respectively. At the bottom of the interface, there is a blue 'Update' button.

When you are done making changes, click “Update” to activate them.

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23.14 Report Settings

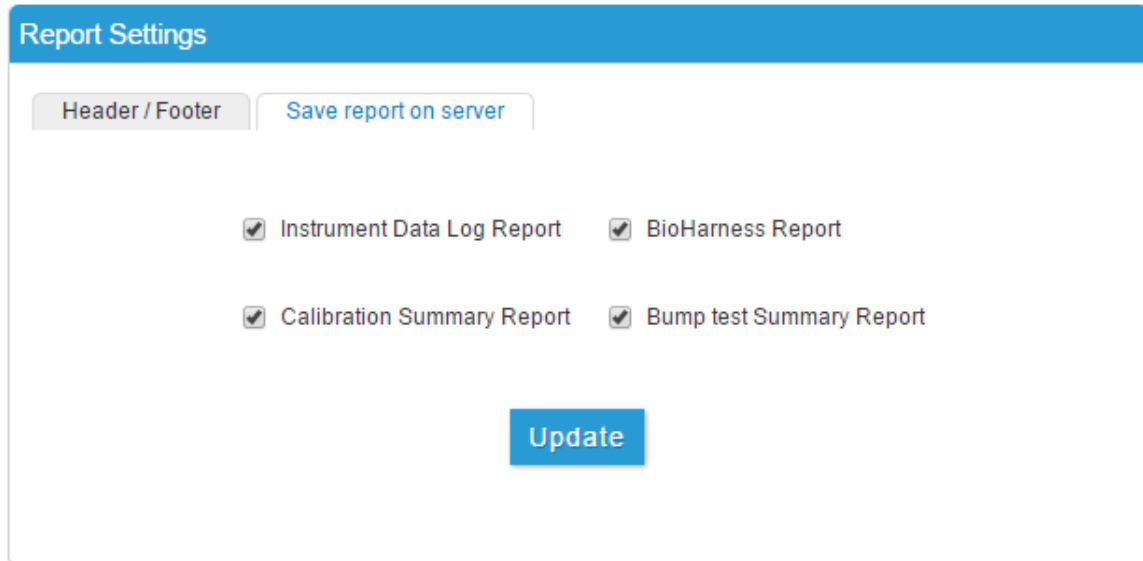
Like your email templates, you can create templates for your report header (top of each page) and footer (bottom of each page). This includes formatting. Start by creating a Report Header and a Report Footer:

The screenshot shows the 'Report Settings' interface. At the top, there is a blue header bar with the text 'Report Settings'. Below this, there are two tabs: 'Header / Footer' (selected) and 'Save report on server'. The main content area is divided into two sections: 'Report Header' and 'Report Footer'. Each section has a blue header bar with the section name. Below each header bar is a rich text editor with a menu bar containing 'File', 'Edit', 'View', and 'Format'. The editor toolbar includes undo, redo, bold (B), italic (I), bulleted list, numbered list, and link icons. The 'Report Header' section contains the text 'Report' and a 'p' placeholder. The 'Report Footer' section contains the text '© 2014 RAE Systems by Honeywell.' and a 'p' placeholder. At the bottom center of the interface is a blue 'Update' button.

When you are done making changes, click “Update” to activate them.

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You can also set which reports are saved onto the server. Click “Save report on server” and then check or uncheck the types of reports you want to include or exclude:



The screenshot shows a web interface titled "Report Settings". At the top, there is a blue header bar with the text "Report Settings". Below the header, there are two tabs: "Header / Footer" (which is currently selected and highlighted in grey) and "Save report on server" (which is highlighted in blue). Under the "Save report on server" tab, there are four checkboxes, each followed by a report name: "Instrument Data Log Report", "BioHarness Report", "Calibration Summary Report", and "Bump test Summary Report". All four checkboxes are checked. At the bottom center of the form, there is a blue button labeled "Update".

When you are done making changes, click “Update” to activate them.

23.15 Password Policy

You can set your password policy to be weak, medium-strength, or strong. The rules for each level are explained when you click one of the choices:

Weak Medium Strong

Password must contain minimum 8 characters, at least one letter, one numeric digit, and optional special character.

Update

When you are done making your selection, click “Update” to activate it.

23.16 User Groups

You can create groups of users here. To create a group, click on “Add Group” and then provide a name and a description. To save the group name, click “Add.”

Group name	Description	Actions
Group 2		
group1	1	
Investigators	Group checks for causes of le	

← Previous 1 Next →

Click “Add Group” to create a new group. Provide a group name and a brief description (optional), and then click “Add.” You have created a group that shows up in the User Groups roster.

Group name *

Description (optional)

Add Cancel

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23.17 BioHarness Settings

Set alarm thresholds, as well as personal age and activity profile values under “User Settings.” When you are done, click “Update.”

BioHarness Settings

User Settings

Communication Settings

Sensor Settings

Sensor Name	Alarm High	Alarm Low	Warning High	Warning Low
Heart Rate(bpm)	<input type="text" value="140.0"/>	<input type="text" value="40.0"/>	<input type="text" value="100.0"/>	<input type="text" value="50.0"/>
Respiratory Rate(bpm)	<input type="text" value="20.0"/>	<input type="text" value="12.0"/>	<input type="text" value="18.0"/>	<input type="text" value="14.0"/>
Core Body Temp(DegC)	<input type="text" value="38.3"/>	<input type="text" value="35.0"/>	<input type="text" value="37.5"/>	<input type="text" value="35.8"/>
Activity Level(g)	<input type="text" value="7.0"/>	<input type="text" value="-7.0"/>	<input type="text" value="5.0"/>	<input type="text" value="-5.0"/>
Posture(Deg)	<input type="text" value="125.0"/>	<input type="text" value="-125.0"/>	<input type="text" value="105.0"/>	<input type="text" value="-105.0"/>

Other Settings

	Default
Age	<input type="text" value="24"/>
Profile	<input type="text" value="Athletic"/>

Allow Individual Users to Override Default Values

Enable Smart Phone Authentication

Enable Bioharness3 Authentication

Update

Click the checkboxes to allow individual users to override default values, enable smart phone authentication, and enable and BioHarness3 authentication.

Set communication parameters such as reporting intervals under the “Communication Settings” tab. When you are done, click “Update.”

BioHarness Settings

User Settings

Communication Settings

	Default	Notes
BioHarness to Safety Communicator data report interval(sec)	<input type="text" value="10"/>	
Safety Communicator to PRG Host data report interval(sec)	<input type="text" value="10"/>	
BioHarness to Safety Communicator communication timeout(sec)	<input type="text" value="300"/>	Safety Communicator uses this timer to decide if BioHarness is not reachable, MUST >= 3*Interval_BioHarness
Safety Communicator to PRG Host communication timeout(sec)	<input type="text" value="300"/>	PRG Host uses this timer to decide if Safety Communicator/BioHarness is away, MUST >= 3*Interval_Safety Communicator
BioHarness to Safety Communicator connect timeout(sec)	<input type="text" value="5"/>	
Safety Communicator to PRG Host connect timeout(sec)	<input type="text" value="5"/>	
Temperature unit	<input type="text" value="Fahrenheit"/>	

Update

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23.18 Account Lockout Policy

You can manage the way ProRAE Guardian locks out unauthorized people by limiting the number of times they can attempt to use an incorrect password before they are locked out for an interval you set.

The screenshot shows the 'Account Lockout Policy' configuration page. It has a blue header with the title. Below the header, there are two dropdown menus. The first is labeled 'Select Number of Invalid Attempts' and is set to '5 attempts'. The second is labeled 'Select Lockout Duration' and is set to '5 minutes'. Below these menus is a blue 'Update' button.

1. Set the number of attempts:

This screenshot shows the 'Account Lockout Policy' page with the 'Select Number of Invalid Attempts' dropdown menu open. The menu lists options: 5 attempts, 2 attempts, 5 attempts (highlighted in blue), 8 attempts, and 10 attempts. The 'Update' button is visible below the menu.

2. Set the lockout duration:

This screenshot shows the 'Account Lockout Policy' page with the 'Select Lockout Duration' dropdown menu open. The menu lists options: 5 minutes, 5 minutes, 15 minutes, 30 minutes (highlighted in blue), and 1 hour. The 'Update' button is visible below the menu.

3. When you are done making your selection, click “Update” to activate it.

24 Technical Support

To contact RAE Systems Technical Support:

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ProRAE Guardian

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