NETGEAR®

NETGEAR® ProSafe® NMS200 Network Management Software

Quick Reference Manual

350 East Plumeria Drive
San Jose, CA 95134
USA

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Overview

1

Introduction

This Quick Reference Guide will help you start using your *Product Name & Model* as quickly and productively as possible. After a review of the hardware and software requirements needed for your installation in System Basics, you can move on to *Installation and Startup* on page 11. To start using the software, see *Discovering Resources* on page 16.

This software includes reporting capabilities. These are described in online help. Key features available in this software are the following:

- **Deep Discovery**—Detailed device information retrieved automatically.
- Real time monitoring of **Alarms** that impact your network. (See *Alarm Panels* on page 28.)
- A **Resource inventory** available at a glance. (See *Managing Resources* on page 26)
- Configurable **Detail Panels** below the display of listed devices. These tell you about devices you select.

For more detailed descriptions of features, see the User Manual or online help.

> **Tip:** If you want to find something but are unsure about which manual contains it, you can search all the Acrobat files in a single directory. For example, in Acrobat v.8, Shift+Ctrl+F opens a directory-wide, multi-document search.

System Basics

System requirements vary depending how you use the application and the operational environment. Because we do not know your specific network and devices, the recommendations are based on typical, not definitive configurations.

Base the minimum configuration of any system on its expected peak load. Your installation should spend 95% of its time idle and 5% of its time trying to keep pace with the resource demands.

Supported Operating System Versions

The following are supported operating system versions:

- Microsoft® Windows Server® 2003 (Standard, Enterprise, and Web), Server 2008 Enterprise.

Note: Windows Terminal Server is not supported. The installer becomes non-responsive with Data Execution Prevention enabled. This option is disabled by default on Windows Server 2008, but is enabled on a Windows Server 2008 machine running Terminal Server.

- Microsoft Windows XP (Professional) with current patches applied, including SP3.
- Microsoft Windows Vista (Business and above)
- Windows 7

CAUTION:

You must disable User Access Control if you are installing on Vista, Windows Server 2008, or Windows 7. Also: Installer may halt when pre-existing bash sessions or cmd sessions are open. Close all such sessions. **Also:** This application cannot co-exist with other installations of Cygwin on the same Windows computer. Do not install it where Cygwin is already installed, either separately or as part of another application. If Cygwin is already installed, remove it before installing this application. If you do not see any obvious indication Cygwin is installed (like an icon on the desktop or program list, or a directory named c:\Cygwin), but suspect it is, you can open the registry (Start > Run, then type `regedit`), and look for *HKEY_CURRENT_USER* > *Software* > *Cygnus Solutions* > *Cygwin.*

Hardware Recommendations

NETGEAR® ProSafe® NMS200 Network Management Software contains an *Application Server* that runs continuously in the background, and a *Client* (the user interface you actually see). You can start and stop the client portion of the software without impacting the application server. Device monitoring stops when you stop the application server or turn off its host machine. The client can also be on a different machine than the application server. Hardware recommendations are based on the different types of installation available:

Full Installation (Application server + Client)—Pentium 4, 3.2 GHz CPU, 2G RAM, and 20G available disk space.

Client only—Pentium 4, 2.8 GHz, 2G RAM, and 1G available disk space.

Basic Network Considerations

The Network Management software communicates over the network. The machine it is on must be connected to a network for the application to start successfully. Normally the client and server portions of the management system will be installed on the same system. The system where the management server is installed must be configured with a static IP

address.The fixed IP address is required for the managment server to communicate with the managed devices.

Firewalls, or even SNMP management programs using the same port on the same machine where this software is installed can interfere with communication with your equipment. Your network may have barriers to communication with this software. Dealing with such barriers, initial device configuration to accept management, security measures or firewalls is outside the scope of these instructions. Consult with your network administrator to ensure this software has access to the devices you want to manage with the Protocols described below.

> **Tip:** One simple way to check connectivity from a Windows machine to a device is to open a command shell with Start > Run `cmd`. Then, type `ping [device IP address]` at the command line. If the device responds, it is connected to the network. If not, consult your network administrator to correct this. No useful information comes from disconnected or powered-down devices.

See Chapter 4, *Troubleshooting* in this guide or see the User Manual, or online help, for additional information about how to troubleshoot this software.

Authentication

For successful discovery of the resources on your network, this software requires authenticated management access to the device. To get this access, you must provide the correct SNMP community strings, WMI login credentials, and any other command-line (Telnet / SSH) or browser (HTTP/HTTPS) authentication, and SNMP must be turned on, if that is not the device's default. Some devices require pre-configuration to recognize this management software. Consult your network administrator for this information.

Name Resolution

The network management server and client require resolution of equipment names to work completely, whether by host files or domain name system (DNS). The application server cannot respond to hosts with IP addresses alone. The application server might not even be in the same network and therefore the host would be unable to connect.

If your network does not have DNS, you can also assign hostnames in `%windir%\system32\drivers\etc\hosts` on Windows. You must assign a hostname in addition to an IP address somewhere in the system. Here are some example hosts file contents (including two commented lines where you would have to remove the # sign to make them effective):

```
#      102.54.94.97     rhino.acme.com          # source server
#       38.25.63.10     x.acme.com              # x client host
127.0.0.1       localhost
```

CAUTION:

This software supports installation only on the local file system. Avoid installing to shared drives.

Protocols

The network managament software uses the following protocols: TCP/IP, SNMP, HTTP/S, UDP Multicast.

Fixed IP Address

The network managament software includes a web server and must be installed on a host with a fixed IP address or a permanently assigned Dynamic Host Control Protocol (DHCP) lease. For trial purposes, you can rely on a dynamic IP address assignment with a long lease, but this is not recommended for production installations.

If you do change your host's IP address:

To accommodate a changed IP address, first delete the contents of `\oware\temp`. Change your local IP address anywhere it appears in `\owareapps\installprops\lib\installed.properties`. Then restart your machine.

Alternatively, in a shell, after running `oware` to set the environment, you can run `ipaddresschange -n` followed by the new IP address to which you want to change.

Updating Your License

If you have a limited license — for example NETGEAR® ProSafe® NMS200 Network Management Software by default limits discovery to five devices — then your application does not function outside those licensed limits. If you purchase additional licenses, put the updated license file in a convenient directory, then use the *Settings* > *Permissions* > *Register License* menu item to open a file browser. Locate the license file, and click the *Register License* button. Your updated license should be visible in *Settings* > *Permissions* > *View Licenses.* Go to *www.netgear.com/nms200* for more information on licenses.

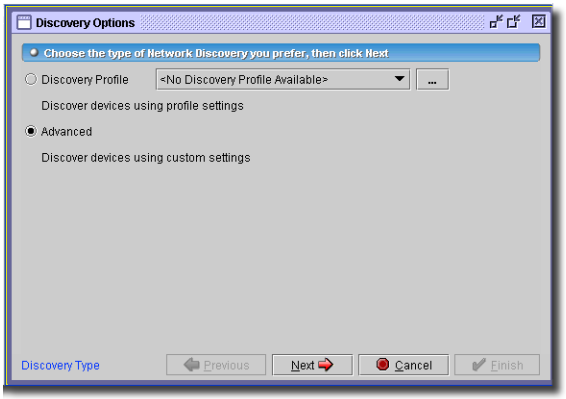
Note: You must also re-register licenses if you have updated your installation from a previous version where you previously upgraded licenses. In any case, you must restart the application server or wait up to 15 minutes before a license modification is effective. If you import a license that, for example, changes the application's expiration date, it does not immediately take effect. You must restart the application server or wait at least 15 minutes.

If you license new features, you must restart the application server and client.

The Application Interface

Figure 1 shows a typical screen. The navigation panel to the left provides quick access to common functions (discovery, reports, and so on), which can also be accessed through the menus. When visible the left panel remains on screen while the main panel changes to reflect the currently selected function.

Figure 1. Discovery Screen



Main Panel

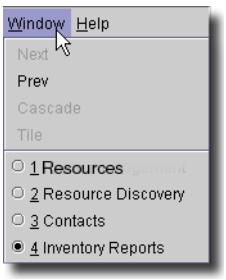
Nodes that appear in the navigation panel depend on installed options.

Managing Multiple Screens

The content of the Main Panel is referred to as a window. Just as you can open several documents in your word processor, you can open several windows in this application. To see the list of windows you have open, click the *Window* menu.

In the *Browser View* setting, you can see only one active window at a time. You cannot tile or minimize these windows unless you select Multiple Document Interface (MDI) View (the default in NETGEAR® ProSafe® NMS200 Network Management Software) from the View > Launcher menu.

Figure 2. Window Menu



If you right-click a device, for example, and select *Open*, the editor screen that appears does not close the screen where you selected the device. Both remain open. You can navigate between screens by selecting them in the Window menu, or with the browser buttons.

Figure 3. Browser Buttons and *Select Layout / Select Content*

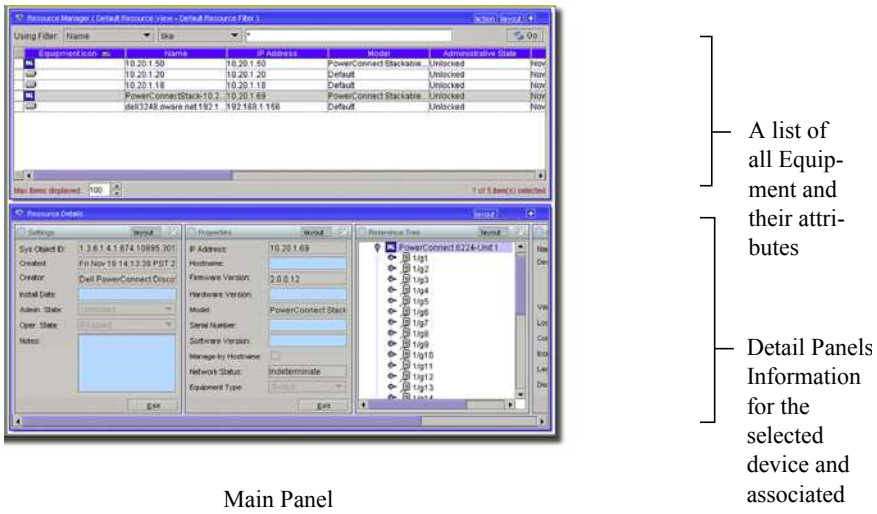
The right and left arrows just left of the *Select Layout* pick list navigate backward and forward through the open screens. To close a screen layout, click the *Close* button to the right of the browser buttons and layout selectors.

Note: If you open more than 20 windows, the “Recommended Open Windows Exceeded” error message appears. To change the recommended number, consult the *NMS200 User Guide*. While you can still open more windows, doing so may slow performance.

Screen Layouts

When you select *PrintersResources* in the Navigation Panel, for example, the default view looks like Figure 4.

Figure 4. Default View



The lower portion of the screen displays detail panels with information about the equipment selected in the upper panel. For details about changing and managing screen layouts, see *Managing Layouts* on page 32.

Getting Started

This section outlines the steps in a typical installation and first use. This section does not describe all the details of possible installations. Refer to the *NMS200 User Guide* or online help for additional information. A typical installation will consist of the following:

1. **Installation and Startup**—See the *NMS200 User Guide* for additional information.
2. **Discovering Reasources**—After you first install the application, you must discover the equipment you want to manage.
3. **Alarm Panels**—See Alarm Panels for a discussion of alarms and events managed by the application.

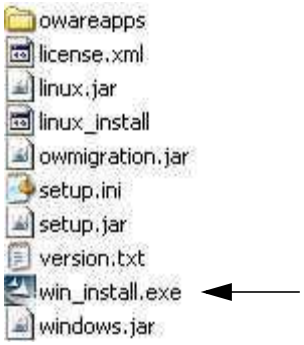
You can also set up users, device access passwords, and groups for both users and devices. For example, use Group Operations to perform or schedule operations on multiple devices. Consult the *NMS200 User Guide* for details about administration and the many additional discovery, management, and reporting options available.

Note: Best practice is to use the default Admin user unless security concerns dictate otherwise. If you must add a new user, best practice is to add that user to a User Group and modify that group's permissions rather than adding permissions user-by-user
Also: bash.exe or md5sum.exe (two files that are installed with this product) may trigger false positives with some anti-virus software. If you get a virus detection warning for these files during installation, take no action.

Installation and Startup

For a basic installation, install and start your management software with these steps:

1. Unzip (decompress) the file if you downloaded the application in `.zip` format, and close any applications that might interfere with this installation.
2. To install this software, log in to your computer as an administrator-type user that can install software, and run either `win_install.exe`. Do not install as a user named "admin" or as the root user.

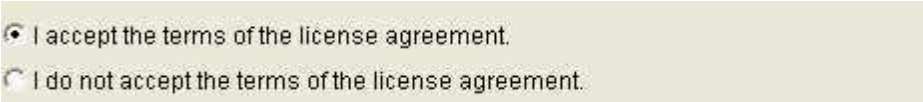


In Linux, the installing user must have a home directory, and must have permissions to write both there and in the installation's target directory. At one point the Linux installation stops and asks the installing user to run a script in a separate shell as root user. Other than these differences, to install on both Windows and Linux, you must follow these steps. After initiating installation, click *Next*.

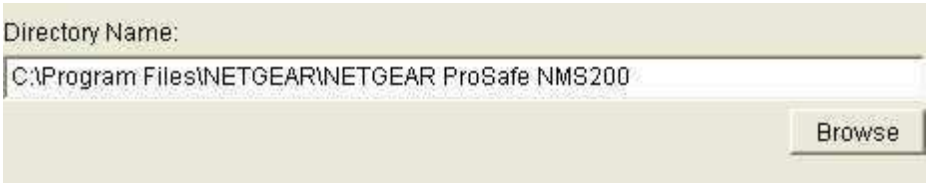
CAUTION:

You must install as a non-root user with the permission to create directories in the selected installation target path. Installing to a directory that requires root level access fails.
Also: Using the login "admin" to do the installation wipes out any pre-configured "admin" permissions that come with the application. Therefore, do not use "admin" as the installing user account.

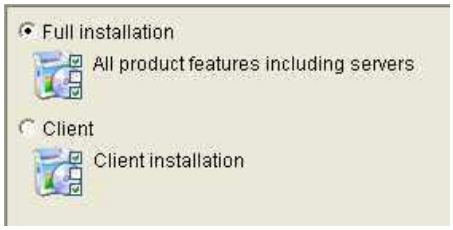
3. Confirm your hardware meets the displayed *Minimum System Requirements*. These instructions assume a full install. Both the client and management server software will be installed on the same system. Click *Next*.



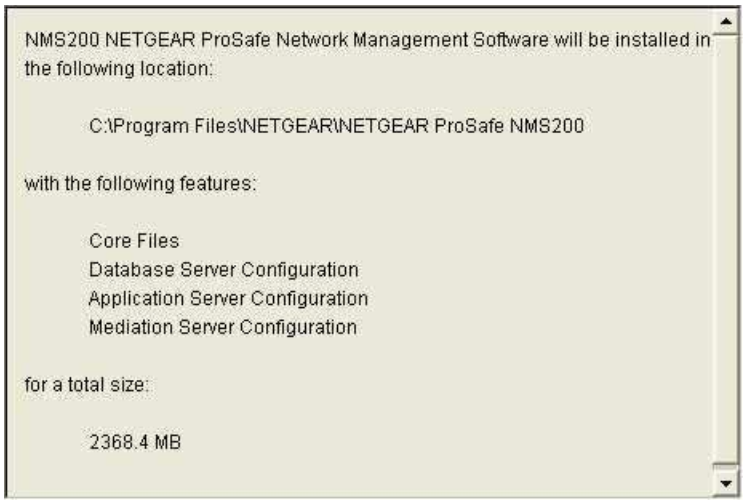
4. Accept the license agreement after reading it, otherwise, you cannot proceed. Click *Next*.



5. Confirm or alter the installation path. Click *Next*.



6. Select either *Full* installation or *Client* installation. (You must install the *Full* installation on at least one machine before the *Client* will work on any others.) Click *Next*.



7. View the final confirmation of components to install. Click *Next*.

   Observe the progress bar as files are copied for installation.

8. The database size typically defaults to 2G with unlimited expansion.
9. Click *Finish*.
10. In a **Windows** installation, notice the *Server Monitor* icon ( ) in the system tray. When the icon turns green, you can start your application client. This icon indicates the application server's status. Green is running, red is stopped, yellow is starting or stopping. Application server monitors your devices even when the client is not visible, or you are not logged into your machine. Best practice is to install the application server to a host you do not turn off if you want constant monitoring of your devices.

Note: This software is a Java application. Virtual memory use increases when you install it. This is normal. If you monitor memory use over time it may appear that it is growing. This is a normal function of Java's memory management.

You can also uninstall this product as you would any other. Go to *Add/Remove Programs* in Windows' Control Panel, for example. Uninstalling removes all installed files and files created by using the installed system (that it has permission to delete). It does not remove directories that were not created by this application's installation or runtime. User-created directories in the product's directory path or desktop short cuts remain after product removal.

Starting the Client

After you verify that the application server is started (in Windows, the monitor icon in the system tray turns green), use the *Start* button (or its Linux equivalent) to find NETGEAR® ProSafe® NMS200 Network Management Software among your programs. This is under

Start > *Programs* > *NETGEAR* >. Click that icon to start the client. Installation will place an NMS200 icon on the Desktop.

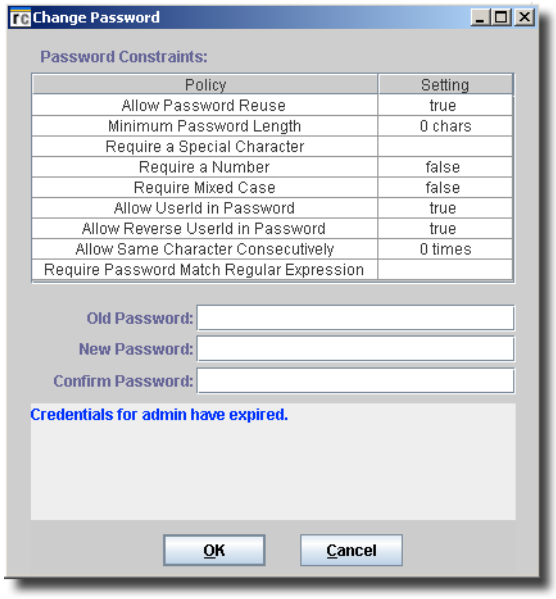
You can also launch the client program by clicking on this icon.

Figure 5. Login Screen

A login screen appears. The default login user is *admin*, with a blank password. Enter *admin* and click **Logon**. After logging in as *admin*, you are prompted to change the password. See the *NMS200 User Guide* or online help for more information about options for adding and

configuring user privileges and the kind of password constraints that appear on the *Change Password* dialog.

Figure 6. Change Password



The Enter a new password, confirm and click **OK**. The Startup screen will display. See Screen Layouts for more about managing the user interface. See *Troubleshooting Tips* on page 52 to solve application problems.

Troubleshooting

If startup fails, see *Troubleshooting* on page 51 or consult the *NMS200 User Guide*.

The following sections discuss typical steps in getting started, once you have installed the network management software.

Discovering Resources

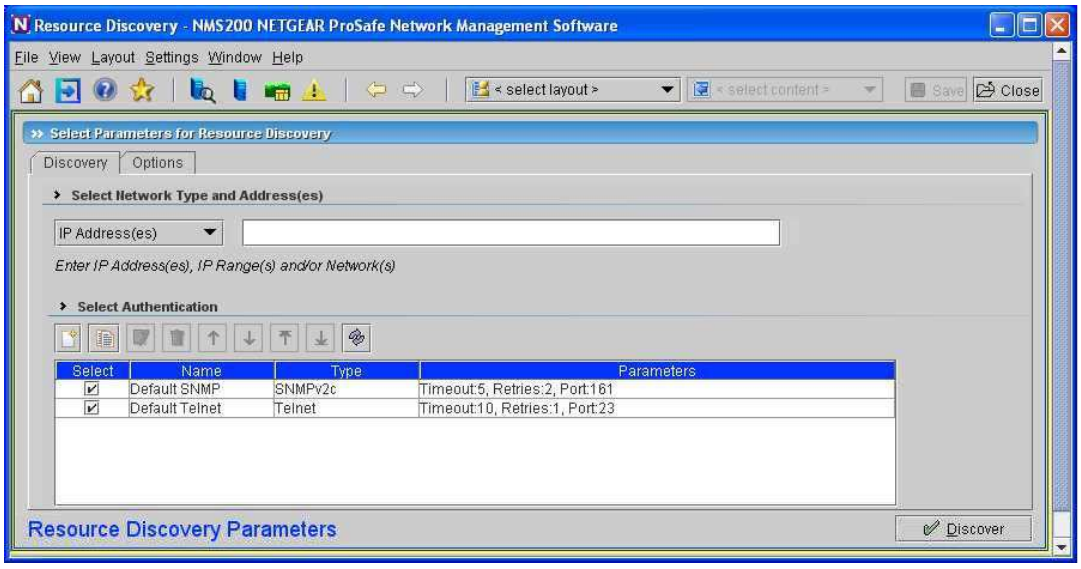
To begin managing resources in your network, you must discover them to store their information in the application database. You can do discovery manually, as described in this section, or automatically (see online help or the *NMS200 User Guide* for the latter). Once you have discovered devices, you can manage them.

The initial screen for the *admin* user displays a link to begin discovery.

Figure 7. Initial Screen for Admin.

Click Begin Discovery. The Resource Discovery screen will display. You can enter the IP addresses of devices to be discovered or a range of addresses to search. Consult the section about *Advanced Discovery* in online help for additional information. Follow these steps to discover your network resources:

1. The next Discovery Wizard screen that appears is where you determine what devices you are going to discover. Here, you can specify the IP address ranges to include or exclude, the SNMP authentication to use, and the ports to query, among other things.

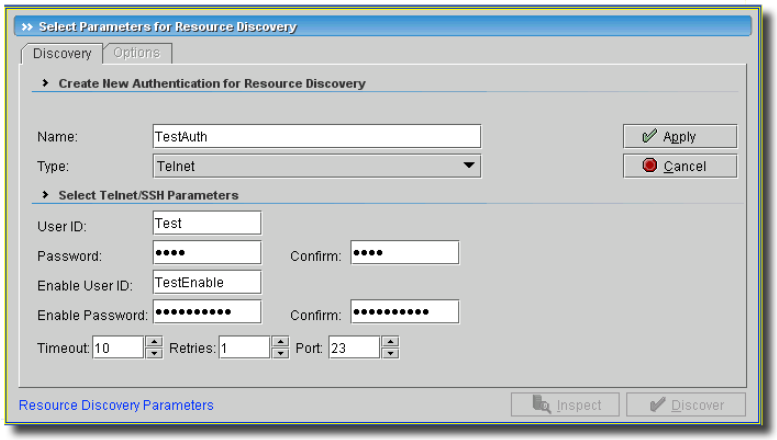


At the top of this screen's work area, select an address type from the drop-down list (options include *IP Range, IP address, Hostname, Subnet, CIDR, File Name, Multicast SLP, SNMP Broadcast*) and enter the appropriate information in the fields directly to the right of that list. Then click *Add* to add the address(es) to the processing queue, or click

Remove to delete a previously created range you selected. You can add several such criteria.

Note: Select Manage via Hostname in a DNS / DHCP environment. For this to be effective, however, the association between hostname and the correct IP address for the discovered equipment must be accurate.

2. **New / Edit Authentication**. You can select authentication(s) to go with a selected discovery target with the checkboxes that appear in the list of existing authentications in the *Select Authentication* panel. In addition, you can *Add* or *Edit* authentications to associate with that target. When you *Add* an authentication, or *Edit* an existing one, an authentication editor opens in the bottom of the screen.



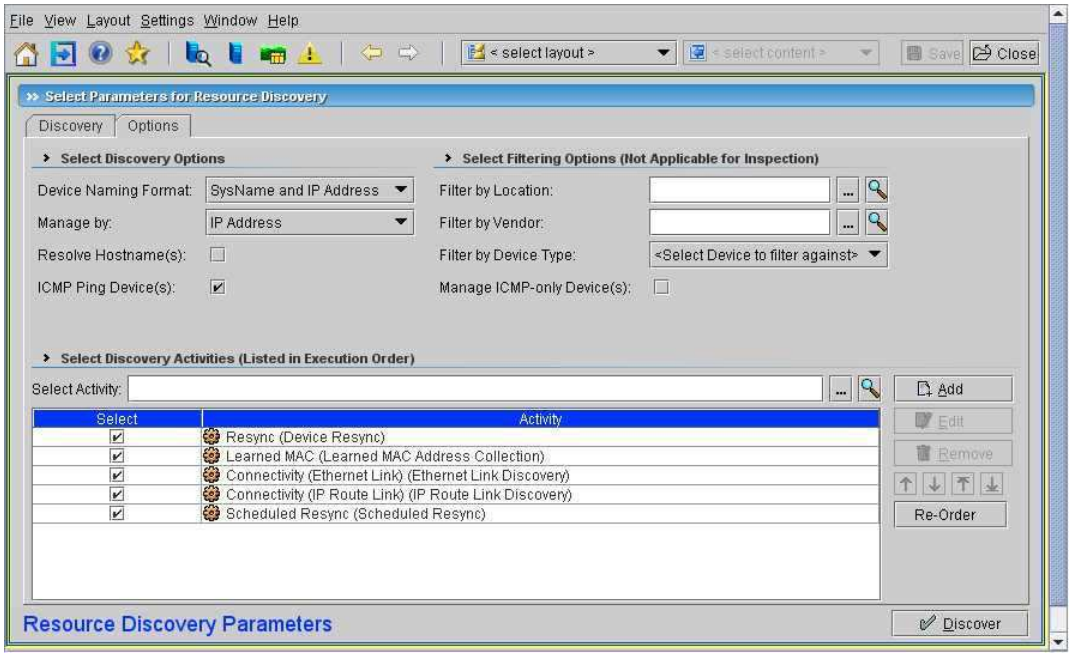
Select or create the *Name* for the authentication, and select the *Type* from the pick list. See the *NMS200 User Guide* for details about what to expect for the different types.

Note: Ensure the type selected matches the management interface on the equipment you want to discovery. You can use some single authentications in different types, for example: Telnet and SSH.

Notice that you can also alter the *Timeout, Retries,* and *Port* for the authentication at the bottom of this screen, so the authentication fits with your network's connection speed.

3. Select Devices for Discovery. Click *Apply* to accept your authentication.

4. **Options**. This screen lets you configure a variety of global discovery options for the targets configured in the *Discovery* tab.



Tip: In addition to discovering devices by themselves, you can now discover links between them as an activity that follows discovering the devices. Click the checkbox next to the link discovery task appropriate to your network in the lower part of this screen to do link discovery too. (See Link Discovery for an alternative)

Consult the *NMS200 User Guide* or online help for details about the options available in the upper portion of this screen.

5. **Select Discovery Activities (Listed in Execution Order)**—The lower portion of the screen lists activities to perform after discovery. Use the *Select Activity* field along with the command (...) and search buttons to its right to find activities. Selecting here lets you select from those listed by default, and from those that appear in the *Activities Manager*. Click *Add* to list a selected activity below, checked as *Select*ed. Some activities appear automatically (from the *default* discovery profile). Check those you want to activate.

   The *Edit* button lets you configure the selected Activity's parameters, if it is available and appropriate. The editor also appears if you *Add* a task with configurable parameters. If you select an activity that requires user input, the standard attribute selection screen(s) for that activity appear during Discovery. Fill in the required attributes, and Discovery continues.

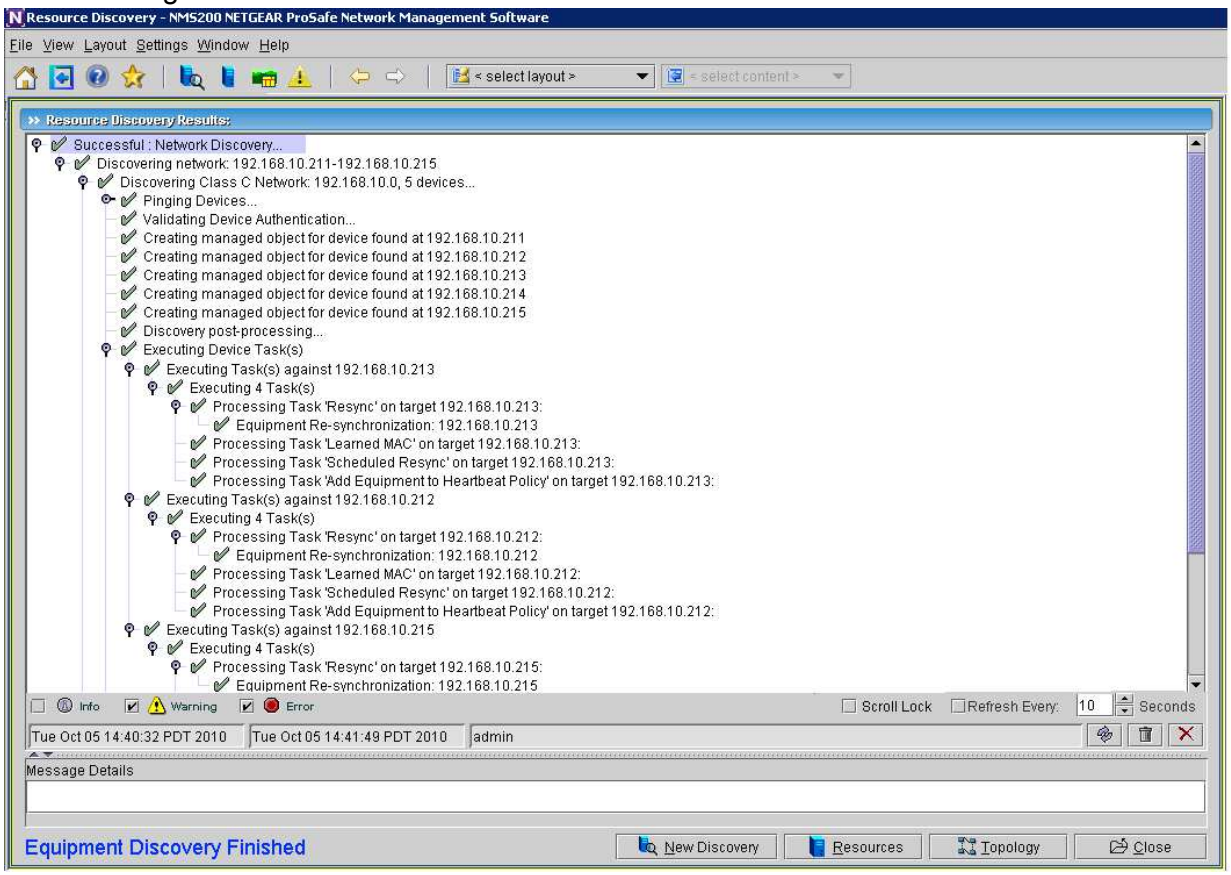
   Remove deletes the selected activity from the list.

Tip: You can add a task to add discovered devices to NMS200 NETGEAR® ProSafe® Network Management Software's heartbeat. You can configure what appears by default as described in the *NMS200 User Guide*.

You can also use the up/down/top/bottom arrows to reorder selected rows, reordering what activities discovery executes. Regardless of the row order, however, device-based tasks run first, and group-based tasks (like link discovery) run last, since groups depend on their member information.

Clicking *Reorder* moves the activities with *Select* checked to the top of the list.

6. After you have configured this tab, you can click the *Discover* button.
7. **Discover.** Clicking the *Discover* button executes the discovery you have configured, storing the information retrieved from devices in the NMS200 NETGEAR® ProSafe® Network Management Software database.

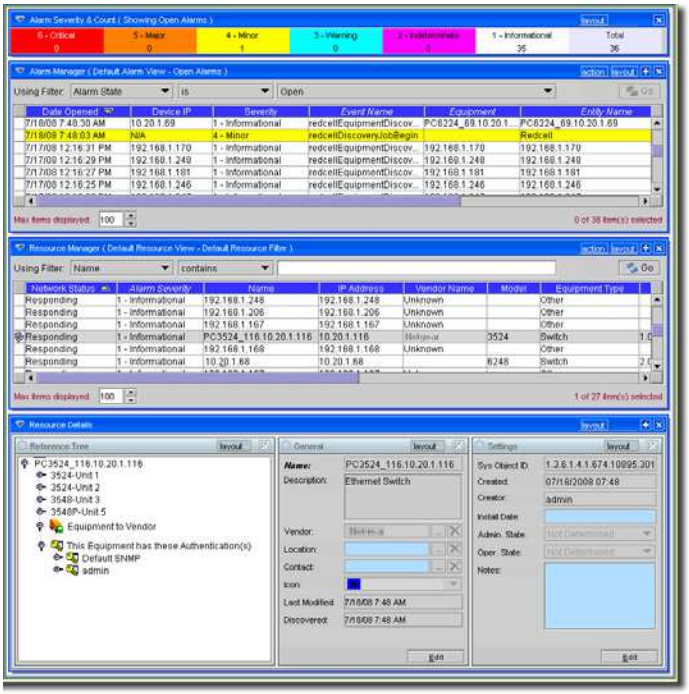


Clicking this button displays a standard NMS200 NETGEAR® ProSafe® Network Management Software audit screen. This displays the messages between the network management software and the discovered devices, including the post-discovery activities. Select a message in the top of the screen to see the time and date it occurred in mid-screen, and the contents of some messages in the *Message Details* panel at the bottom of this screen. See Audit Trails for details of how to revisit this screen after discovery is complete.

You can click *Close* at any time. If you click it before the *Equipment Discovery Finished* message appears, discovery continues in the background.

The final discovery panel, whether appearing for a Resource Discovery Profile or at the end of the a conventional basic / advanced discovery process presents asynchronous information. If you click *Finish* before the process is done, the discovery process still continues. While that is occurring you may not see elements being discovered in their resync schedule until the discovery job is actually complete. Executing scheduled resync while discovery is still ongoing may result in exceptions.

8. When discovery is done for the user *admin*, and you click *Close*, the following Layout screen appears by default.



Main Panel

This screen displays alarms received from discovered devices, the devices themselves, and details about devices you select in the lowest panel. See Managing Resources for more about the resource management portion of this screen. See Alarm Panels for information about the alarms, and Managing Layouts for a description about how you can customize your user interface.

Tip: You can toggle the display of the navigation pane that leads to most available application functions with the *Show / Hide Navigation Window* button.

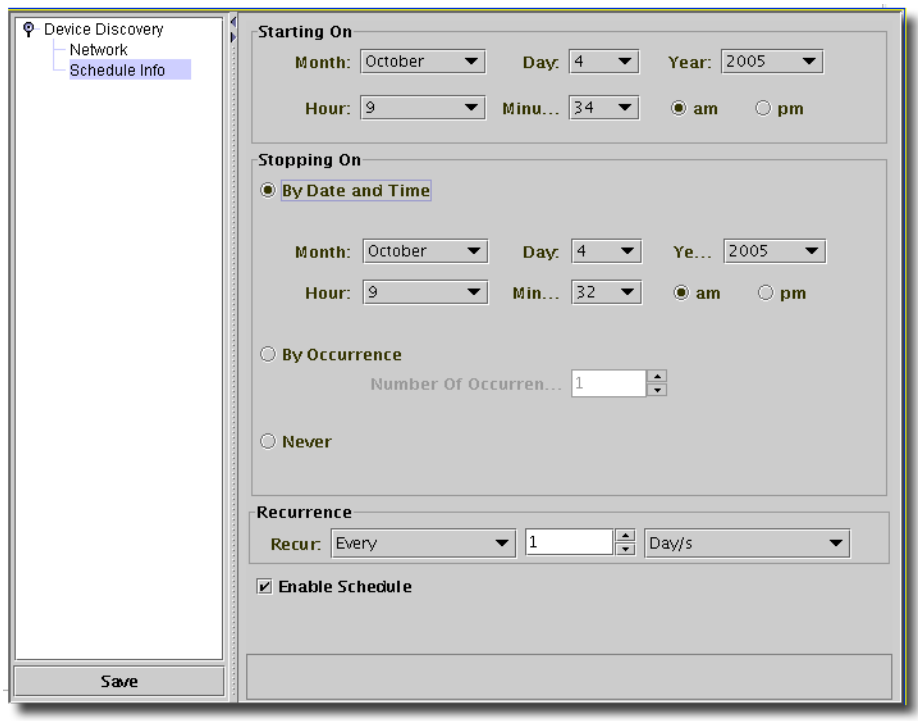
To clarify the origin of application features, the navigation window often appears throughout the documentation.

9. After you click Finish, a QuickView screen appears.

Scheduling Discovery

When you first discover devices, you typically use a Discovery Profile that includes the discovery parameters (IP addresses, authentication used, and so on). You can keep your inventory up-to-date and discover equipment over a range of addresses by scheduling a repeated discovery. To do this, after you create the Discovery Profile in *Discovery Profiles,* open the *Schedules* screen (accessible through *File* > *Open* > *System Services* > *Schedules* or under the *System Services* node in the navigation window), click *New* and select *Device Discovery*. Select the profile, and configure the schedule in the *Schedule Info* panel.

Figure 8. Schedule Info



You cannot schedule discovery using the *Default* profile. See the *NMS200 User Guide* for more about what you can automate.

Monitoring Performance

You can actively monitor performance, as described in this section, or you can monitor event and alarm activity as described in Alarm Panels.

Default Monitors

Other, seeded monitors are available to add to the core set of monitors. By default, these are active monitoring the group of all discovered entities.

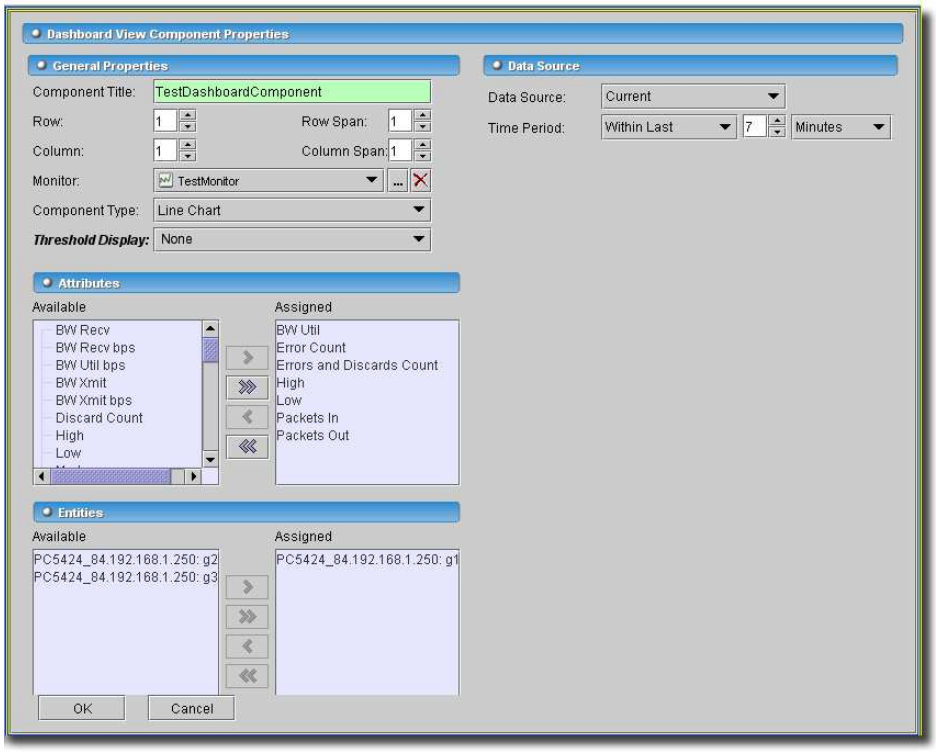
Create a Dashboard View

You can create custom dashboard views as described in the following steps:

1. Click *Active Monitoring* > *Dashboard Views* to open the view manager.
2. Click *action* > *New* to create a new view. By default this appears with two rows and three columns. You can change those numbers and click *Update* to create a different layout. For simplicity, ther example has one column and row.

Install a Monitor in the View

3. Click *action* > *Add Component* then click *Action* > *properties* inside the view's cell. The *Dashboard View Component Properties* screen appears.

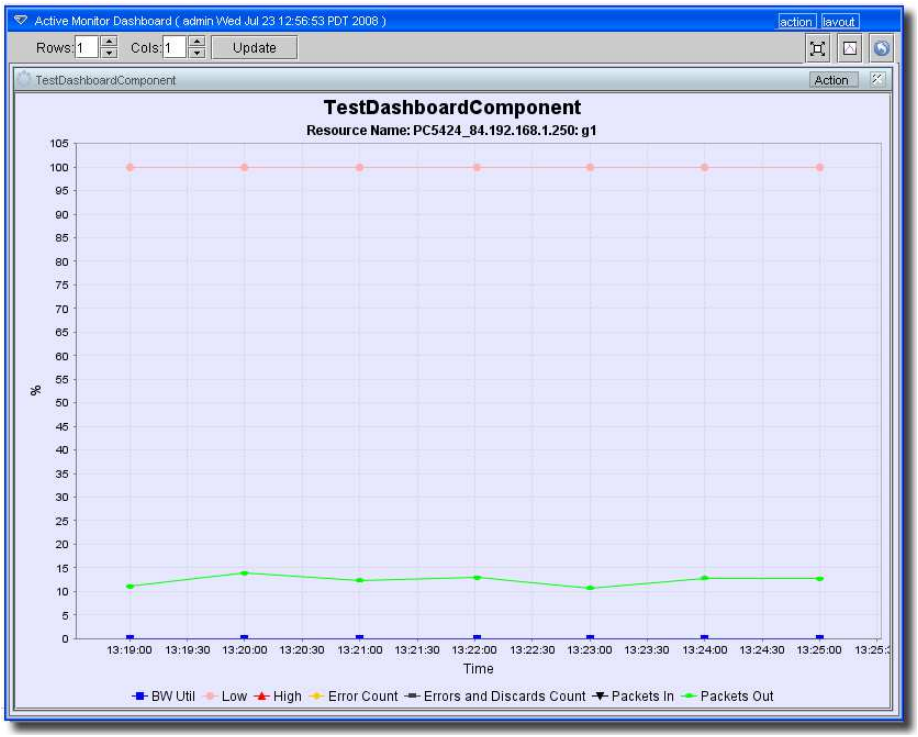


4. Enter a name for this component (TestDashboardComponent, here), and select a monitor and display type. Notice also that for this example we leave *Threshold Display* as *none* (displaying thresholds as a part of the graph is also possible).
5. If you plan to monitor more than a single attribute, then select one entity to monitor at the bottom of the screen (select an entity, then use the arrow to move it from *Available* to *Selected*) and any number of attributes to monitor above that. Alternatively, you can select

several entities to monitor, but only one attribute. In our example, we select a single interface, and monitor several attributes (*BW Util, Error Count, Errors and Discards Count, High, Low, Packets In, Packets Out*).

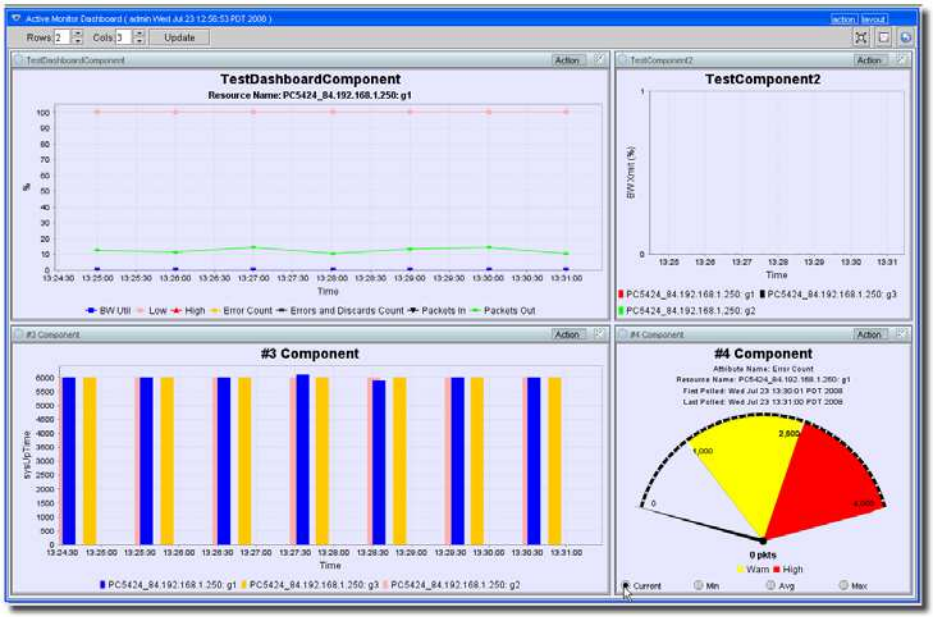
The exact configuration of this portion of the screen depends on the *Component Type* you select.

6. Notice you can also configure items in the *Data Source* portion of the screen. For this example we accept the defaults. Consult the online help for additional information.
7. Finally, click *OK* to display the monitored data within the dashboard view you have configured.



Note: You may have to wait until monitoring intervals are relevant. If you monitor every minute, you will have to wait at least that long to get data.

8. Notice that this simple example does not show all possibilities for these views. For example, you can have several components within a single view. In the example below, the same monitor appears in all four panels, displaying the monitoring for different attributes in different graph types.

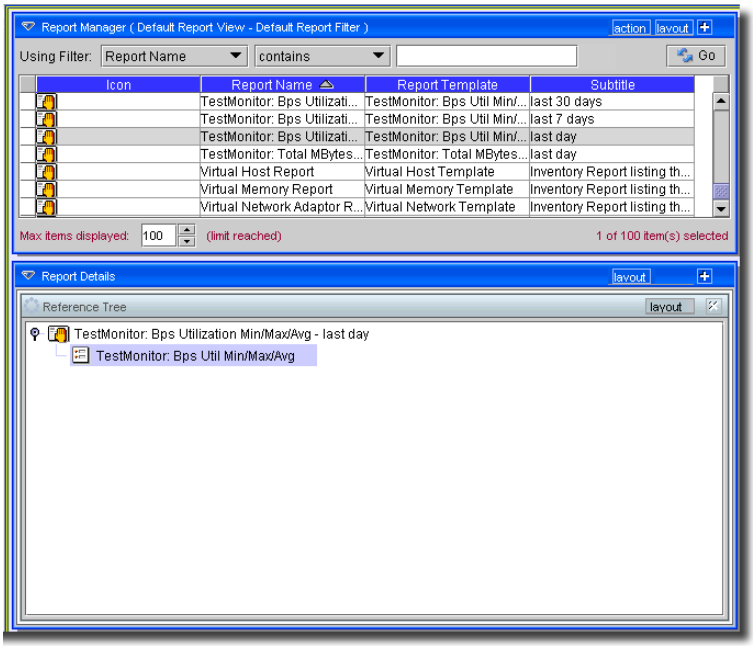


You can also configure a variety of views to reflect different monitoring needs, and with the network management software's multi-windowing capabilities, flip back and forth between the different views.

Reports From Monitors

When you create a monitor, a report template and several reports automatically appear for it in the *Reports* section of the application.

Figure 9. Monitor Reports



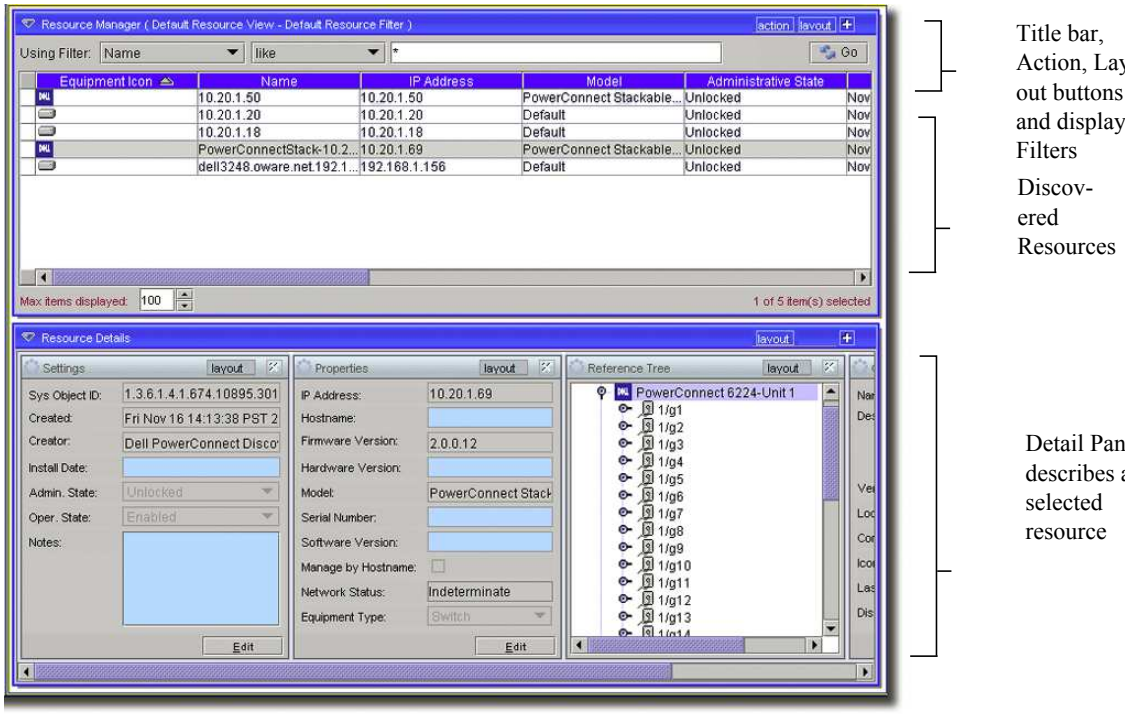
You can modify these reports, but by default, they include the monitored attributes and/or devices. The reports appear pre-configured for the day, week, and the last 30 days. These intervals are also modifiable. See the *NMS200 User Guide* or online help for more information about customizing reports.

Managing Resources

Open the *Resources* screen to display the discovered devices. (See *Discovering Resources* on page 16 for instructions about discovery.)

Click the *Go* button in the upper right corner of this panel to refresh the screen if resources do not appear when you discovery is complete.

Figure 10. Resource View



You can view all discovered resources from this screen. Selecting a resource in the upper panel lets you view details about that resource in the lower panel.

Click the plus (+) in the upper right corner of the Details Panel to add or remove sub-panels there. If the details panel is blank, that means you have selected no resource above.

You can also double-click one of those same rows to open an Equipment Editor with the detail panels' information and more. Refer to the *NMS200 User Guide* for additional information about this editor.

The section about Alarm Panels discusses alarm management. This can be an important part of resource management too.

Alarm Panels

This section describes the alarm panels, visible when you click *Event Services* > *Alarms* in the navigation tree or *File* menu. You can reorder or hide these panels to customize your view. You can also further customize some of these panels by adding, removing or reordering their columns. When you select an alarm in Alarm Manager, its information appears in the detail panels at the bottom of this screen.

Alarm Severity & Count

This panel displays the count of events by severity, and totals them on the right.

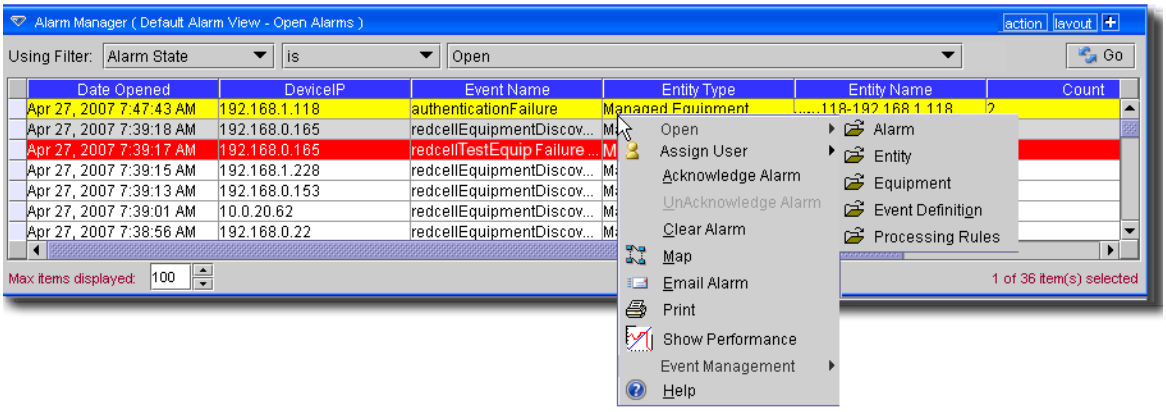
Figure 11. Event Severity & Count

This can either display *All Events* or *Open Events*. Change between these counts by clicking the *Layout* button. Select *Change Filter* and choose the *All Events* or *Open Events* items.

Alarm Manager

In the *Default* filter, only Open alarms appear on these screens. You can change displayed columns (Alarm attributes) with the plus (+) button near the top right of the screen, and modify filters to restrict the alarms that appear in the display (see the *NMS200 User Guide* or online help for more about filters). For example, you could filter to see alarms that are major and above for only selected equipment.

Figure 12. Alarm Manager



Tip: As in most such screens, you can sort the listed Alarms by clicking a column header. Toggle the sort order by clicking the header again.

The *Action Button* or right-click menu displays the following items (some installations hide some of these):

Open > Entity—This opens an editor where you can configure the device from which this alarm came. See the *NMS200 User Guide*, or online help.

Open > Alarm—Opens a screen describing all the details of the selected alarm. See *Alarm Panels* on page 28.

Open > Equipment—This opens an editor where you can configure the device from which this alarm came (an *Entity*, if different, is a subcomponent of the equipment). See the *NMS200 User Guide*, or online help for more about this.

Open > Event Definition—This opens an editor where you can reconfigure this alarm and what it means. See the *NMS200 User Guide* or online help for more information.

Open > Processing Rules —This opens an editor where you can configure the processing rules for this alarm. See the *NMS200 User Guide* or online help for more about these.

Acknowledge Alarm—Acknowledges the selected Alarm(s). The current date and time appear in the *Ack Time* field, and the name of the currently logged-on user appears in the *Ack By* field.

Unacknowledge Alarm—Unacknowledges previously acknowledged alarm(s), and clears the entries in the *Ack By* and *Ack Time* fields.

Assign User—Assign this alarm to one of the users displayed in the sub-menu by selecting that user.

Clear Alarm—Select this option to clear the alarm.

Show Performance —When you select this command the network management software finds all of the performance attributes being monitored for the selected equipment and creates a dashboard with one dashboard component for each attribute. (See Active Performance Monitor in the *NMS200 User Guide* for details.)

If you multi-select more than one device, each component shows the top five metrics for each attribute. If you select only one top-level device, The device's interface and port children are searched for performance attributes and these attributes appear with the top five children for each attribute.

The data that appears is based on the monitors for thatthat device and where Retain Data is checked. If you have several monitors and you are retaining data on those monitors, the screen reflects those data points.

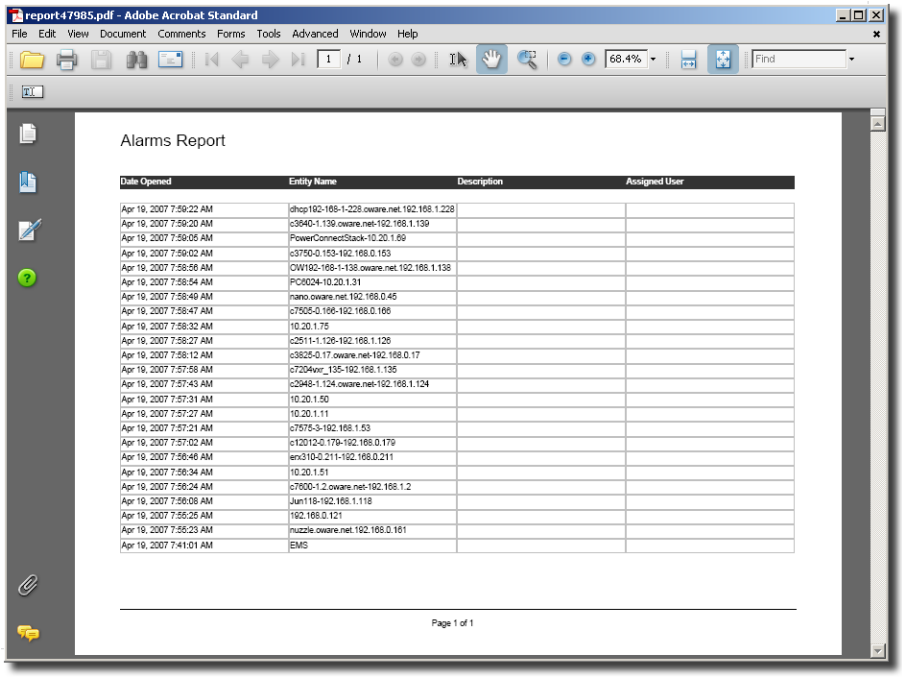
If you select two devices in Resources manager and click action > Show performance, Both of the devices' common attributes are displayed in the form. (You cannot display interface data because the devices do not have interfaces in common.)

Map—Opens a topology view displaying the equipment from which the selected alarm(s) came. See Mapping Equipment in the *NMS200 User Guide* or online help.

E-mail Alarm—E-mail the selected alarms. A subsequent screen lets you specify the addressee, header, and footer.

Print—Prints the displayed Alarms to a pdf file.

Figure 13. Printed Alarms (pdf)



You can print or save this report from Acrobat. If you do not have the free Acrobat reader, download it from www.adobe.com. This reader must be installed for printing to work.

Common Tasks

2

Administering the Application

This software controls access to your network resources and device data, and offers many forms of automation:

- You can configure multiple security levels (read-only access, read/write-access, administrative access, and so on) and multiple types of users (user groups). This is described briefly in the next section. .
- You can automate and schedule a variety of operations.

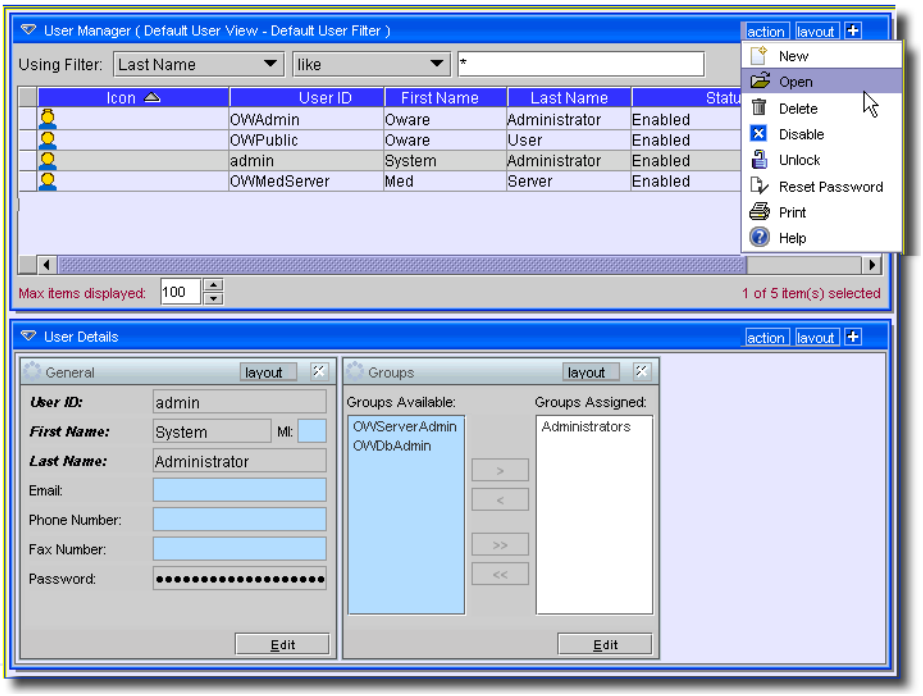
The following sections describe these examples. For additional information, see the *NMS200 User Guide*, or online help.

Users and User Groups

User Manager

The application's User Manager lets you associate passwords, group membership, and contact information with users. Select *Settings* > *Permissions* > *User Manager* to see the User Manager.

Figure 1. User Manager



Note: This application comes with system users like OWAdmin. These are normal and cannot be deleted.

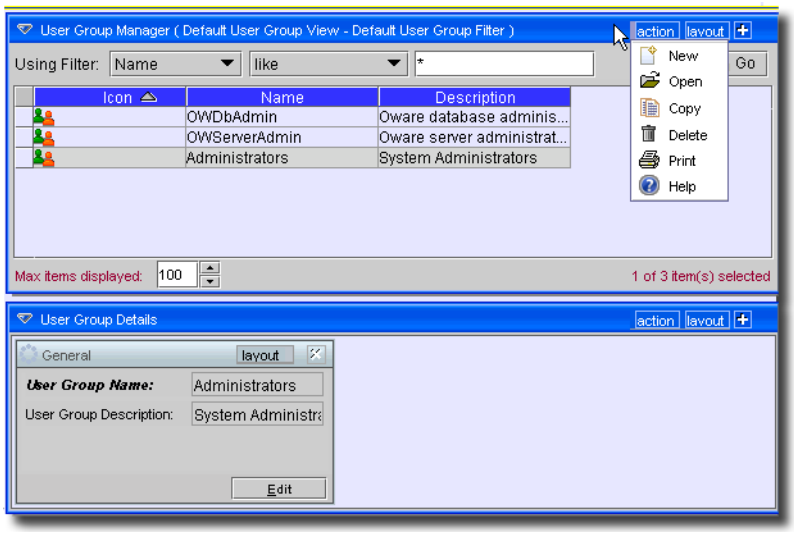
Click *action* > *New* to create a new user, or *action* > *Open* to edit a user you have selected from the list. When you open the User (or User Group) editor, you can also configure permissions, as described in *Permissions* on page 33.

Tip: Best practice is to configure users, put them in a group (see *User Groups* on page 33), then assign permissions to the groups. Permissions accessible from individual users' screens override group permissions, so tailoring individual permissions is still possible.

User Groups

The User Group Manager lets you create user groups just as you create or edit users. The detail panels display the name, description and whether the group is protected. Open this manager from *Settings* > *Permissions* > *User Group Manager*. Initially, a Group is nothing more than a name and a description.

Figure 2. User Group Manager



Click *New* or select a group and click *Open* to modify a group. You cannot delete some groups; for example, you cannot delete Administrators.

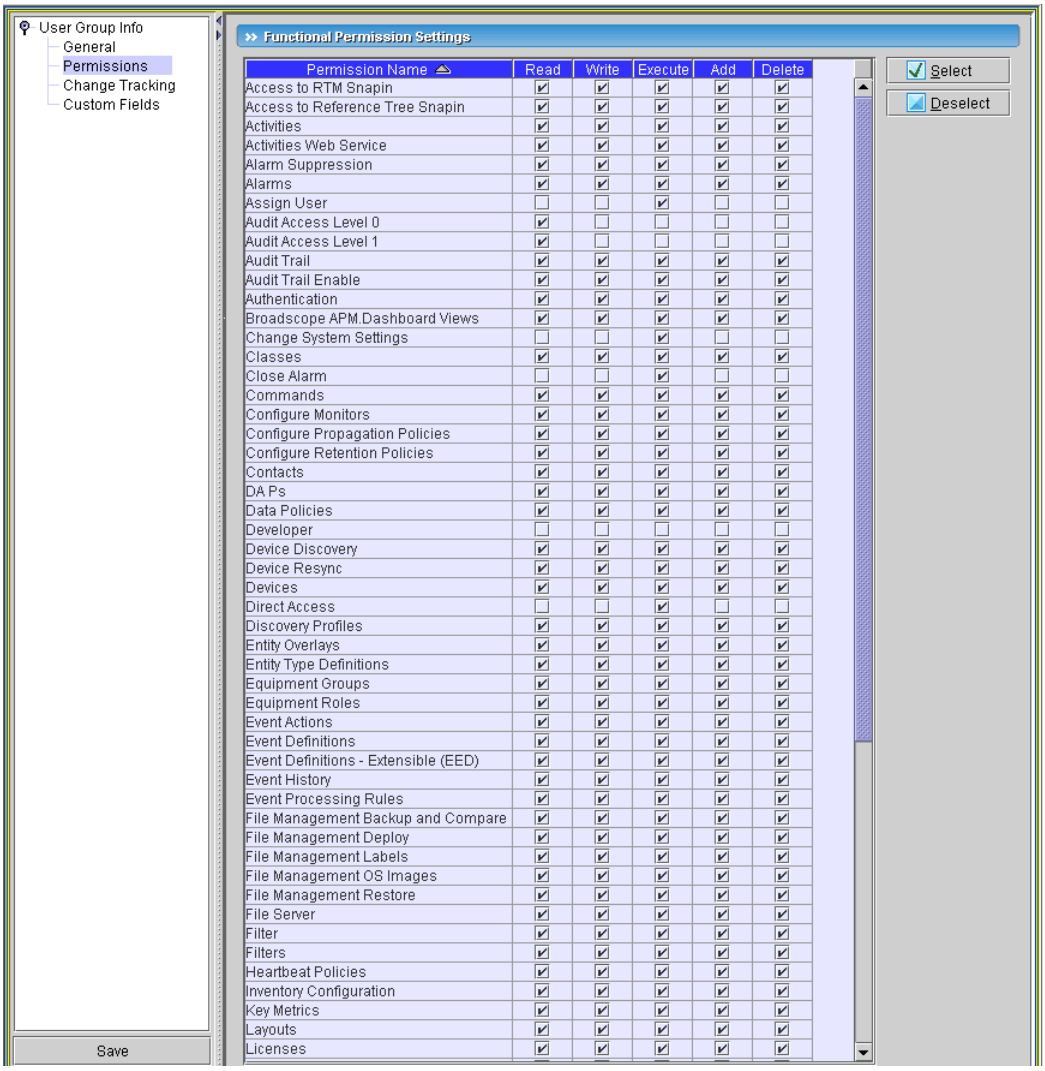
Once created, however, you can associate individual users with groups, and grant permissions to users based on their association with a group. By default, new groups have no permissions. See *Permissions* on page 33.

Permissions

This panel appears in editors for both groups and individual users. It lets you configure permissions (also known as “functional permissions”) for individual users which override those configured for groups. The permissions displayed in this screen are only those for the

selected, individual user (or group). To see the combined group and user permissions, see the *All Permissions* panel in the User editor.

Figure 3. Functional Permissions



Configure permissions by checking the actions that appear in the row with the permission. These determine a user's capabilities within the application. Generally, the following describes the effects of enabling these actions:.

Action	Default Behavior
execute	When checked, this action lets you launch a particular manager and query for elements. Alternatively this action can control a specific application function, (typically described by the permission name) like provisioning a policy
add	This enables the *New* menu item on the action menu. If you do not check this action, then the *New* menu item does not appear.
read	When checked, this enables the *Edit* menu item on the action menu.

Action	Default Behavior
write	When checked, this enables the *Save* button within editors.
delete	When checked, this enables the *Delete* menu item on the action menu within managers.

The functional permissions that use these actions appear in this screen. Select a permission, and in the Group editor, the description appears at the bottom of the screen.

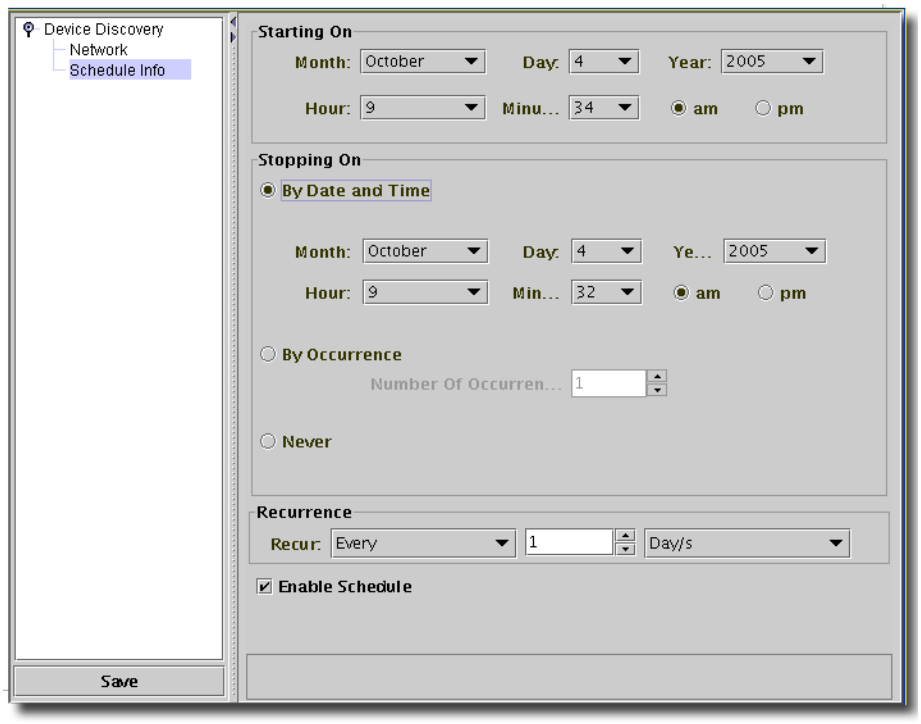
Note: Functional permissions are global and additive with other permissions. If you have a group permission and individual functional permissions set, the result is a union, not an intersection of the two.
Also: Best practice is to add users to user groups with the appropriate functional permissions rather than alter individual user functional permissions.

To see the details about how to do this, consult the *NMS200 User Guide*, or online help.

Scheduling Operations

You can schedule many of this software's actions. Open the Schedules screen either from *File* > *Open* > *System Services* > *Schedules* or from the navigation pane.

Figure 4. Schedules



Click *New,* then select an operation (Group Operations, Inventory Reports, Resynchronization, and so on), and configure the selected option.

Finally, select the schedule timing, frequency, and so on. Consult the *NMS200 User Guide* for more information about scheduling capabilities.

Tip: You can set up a recurring discovery of an IP range that automatically adds any new networked devices to those already in your inventory.

Common Management Tasks

The following are common tasks when you manage devices:

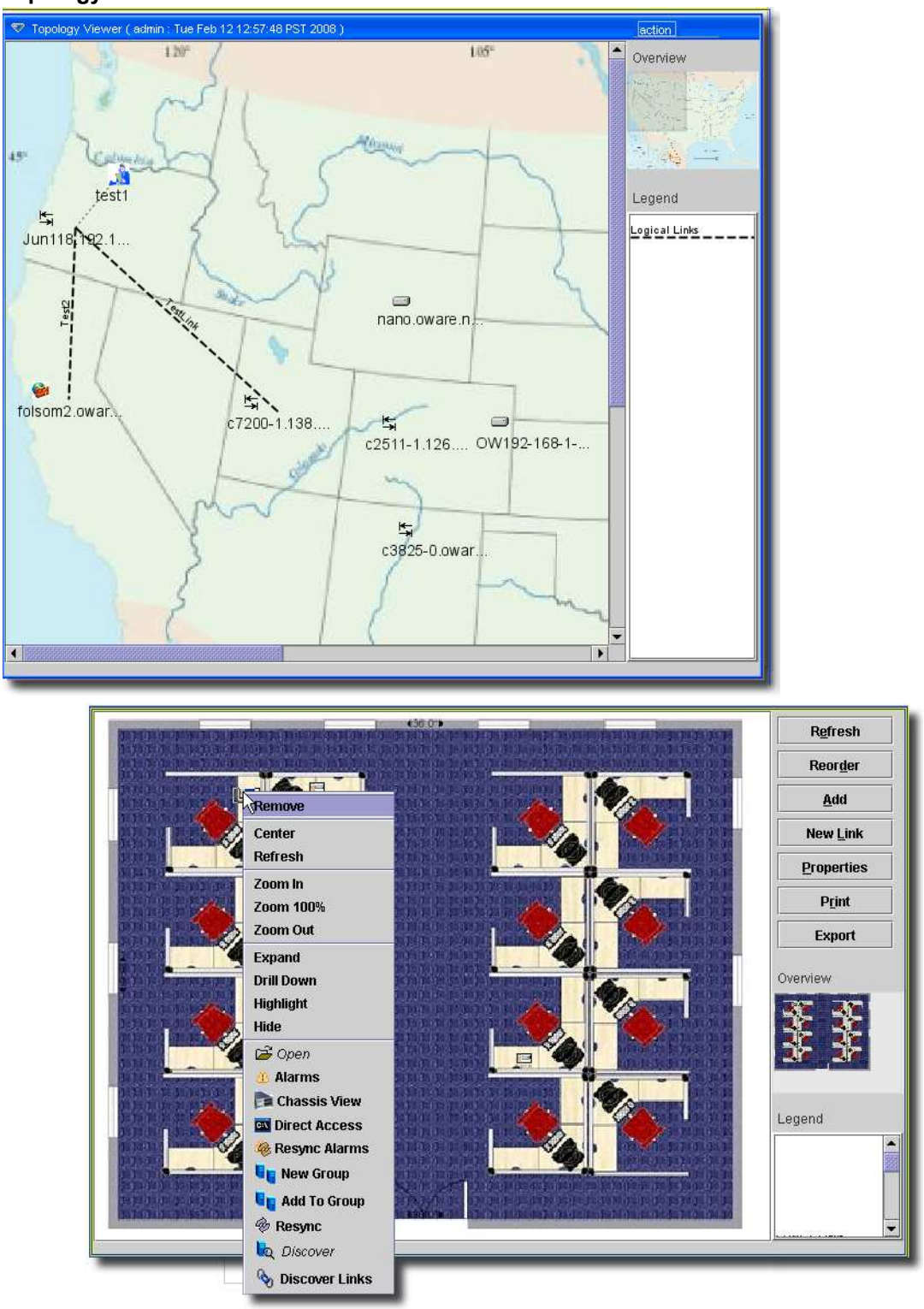
Change (or view) a device setting—Right-click a device in *Resources* and select *Open.* The subsequent screens let you see and change device settings when you elect to save your changes. You can also use the Detail panels to do this.

Create a group—Groups let you change settings on multiple devices. From *Resources,* select listed devices (Ctrl+click to select several), and right click. Select *Add to Group*, to add to an existing group, or *New Group* to create a new group with the selected devices. Selecting *Group Op* lets you do things to the entire group of devices. See the *NMS200 User Guide* for details.

Mapping Equipment

In addition to their listing in the Inventory screen, discovered resources can appear in a topology mapping.

Figure 5. Topology



To see discovered equipment in a map, do the following:

1. Open *Topology View* from the navigation panel, or with *File* > *Open* > *Inventory* > *Topology Views*.
2. Click *action* > *New* to begin configuring a view.
3. Click *action* > *Add* content.
4. In the subsequent screen, click *Equipment* (you can also add contacts, for example).
5. In the next screen, select the inventory that you want to map. You can Ctrl+Click to select multiple items.
6. Click *Select*.
7. The equipment appears, represented as icons on a blank (white) screen. You can re-arrange these icons by clicking and dragging them. The icons display the color of the highest value alarm (critical / red is the highest) that most recently came from that device.
8. Select a background by clicking *Properties*, then selecting a *background* from the pick list. To add graphics to those listed, click the command button (...) to the right of the pick list, and select the graphic file. As long as the graphic is a `.jpg, .gif` or `.png` file, it can appear behind the icons.

   Tip: Notice that, within the view, you can make a larger display than appears in this screen and click and drag the gray square in the *Overview* (bottom, right) panel to select the area in the larger view screen.

   You can also right-click an item to see a menu of additional options (see the *NMS200 User Guide* for details). For example, you can alter the magnification of the view with the *Zoom* options, or open a web session with the selected device with the *Direct Access* option.

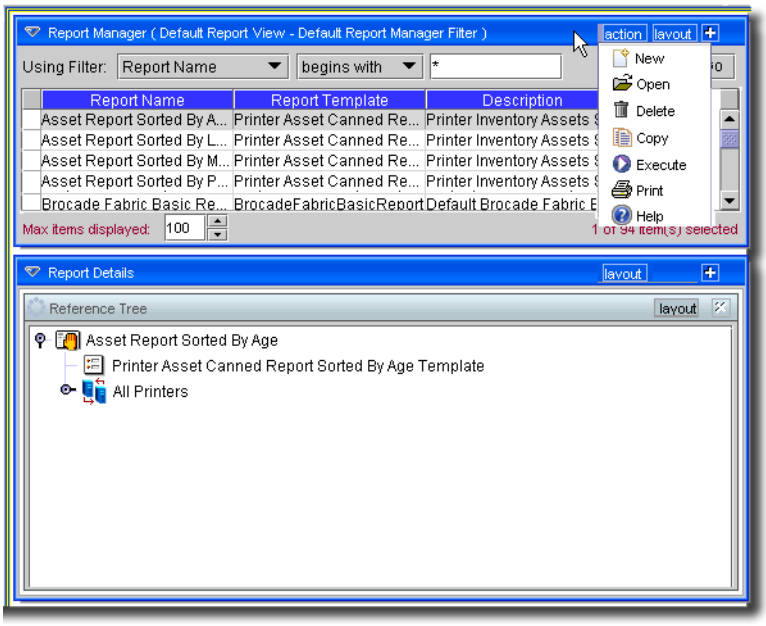
   Not all selections work with all devices. Consult the *NMS200 User Guide* for more information about the functions available on this screen.
9. Click *File* > *Save* to preserve this view.

Reports

Reporting includes a defined report combined with a report template. The report definition itself selects the devices to query and the (reusable) template selects which of the available attributes of those printers appear in the report.

The first reports you create about discovered equipment are typically done with the included report templates that come with your software. To create a report with an existing template, open *File* > *Open* > *Reports* > *Reports,* or click the icon in the navigation window.

Figure 6. Report Manager



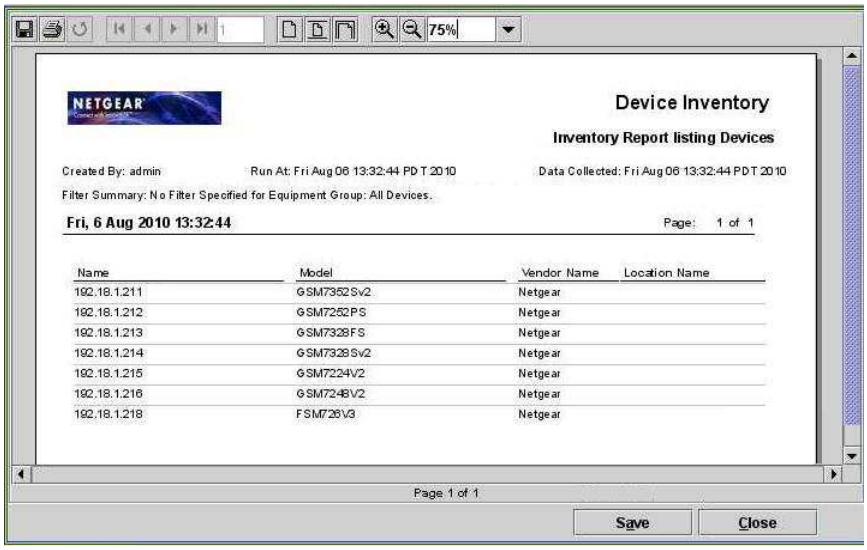
Although you can limit what appears by using the filter at top of this screen, by default, all reports appear in this list. The devices they report about, and their associated templates appear as nodes in a tree in the lower panel.

Note: To create some reports about devices, you must initiate monitoring or polling on the selected device before generating the report. For Trend Reports, you must set thresholds polled. See *Branding Reports* on page 42, or the online help for additional information.

See the online help for instructions about creating or altering Report templates themselves, and assigning them to reports.

To see a report after selecting it, click *Go.*

Figure 7. Executed Report



Click the disk icon on this screen to save the report in any of several file formats, including pdf (Acrobat), HTML, CSV (comma-separated value), RTF, single or multi-sheet Excel spreadsheets (.xls), or XML. Click the printer icon to send this report to a printer.

Note: For pdf printing to work correctly, you must have the Acrobat reader installed. This is available, free, from www.adobe.com. If you are using a Web Client, this may look different, too.
Also: You can save a report from the web client, but cannot export its contents.

See online help for more about saving historical reports.

Branding Reports

Reports come with a default logo, but you can change that, as is illustrated in the above screen. Put the `.png`, `.jpg` or `.gif` graphic file with your desired logo in `owareapps\redcell\images`. In the `owareapps\installprops\lib\installed.properties` file, alter this property:

redcell.report.branding.image=<filename_here>

No need to include the path, just use the file name.

Note: You must include the file on clients as well as the application server.

CAUTION:

You must create images that are no taller than 50 pixels, and no wider than 50 pixels.

Troubleshooting

3

Troubleshooting Tips

The following answer common questions that arise when managing your equipment. For more details, refer to the <Italic>User Guide. The applicability of the following will depend on what drivers and other add-ons you have installed with MS200 NETGEAR® ProSafe® Network Management Software.

The following sections discuss some troubleshooting techniques. See the *NMS200 User Guide* for additional techniques.

Name Resolution

If your network does not have DNS, you can also assign hostnames on a Windows platform n the file `%windir%\system32\drivers\etc\hosts`. Here, you must assign a hostname in addition to an IP address in the system. Here are some example hosts file contents (including two commented lines where you would have to remove the # sign to make them effective):

```
#      102.54.94.97     rhino.acme.com          # source server
#       38.25.63.10     x.acme.com              # x client host
127.0.0.1       localhost
```

This software supports installation to *only* the local file system. Avoid installing to shared drives.

Common Issues

The following list contains possible issues and some suggested sources and resolutions for these issues:

Application does not start:

- Check whether the IP address of server has changed.
- Ensure the database is large enough. See the application's other manuals for instructions about changing the database size.

Device data does not appear:

- Ensure the login credentials are correct (consult your network administrator)
- Check whether the login protocol is enabled on device

Network configuration issues:

- Ensure that your firewall is not preventing access to the devices you want to manage.

Equipment values are not configurable:

- Ensure the login credentials are correct (consult your network administrator)

Deploying firmware fails. Symptoms are:

- Pressing the *Deploy Now* button does nothing.
- The FTP/TFTP File Server status is *Stopped*.

A possible work-around is to perform a backup of the device first.

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