

Neuron Performance Manager

USER'S GUIDE

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Your Infrastructure is Our Business

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1 Preface

1.1 Purpose of the Document

The purpose of this document is to describe the Neuron Performance Manager and how end-users, managers, and administrators will use it.

1.2 Intended Audience

This guide is written for the following type of audience:

Table 1.2-1: Intended Audience

| Role | Usage |
|---------------|--|
| End User | The User's Guide is intended for end users who use the product on a daily basis. This guide provides information on how to use the product for tasks such as generating and viewing reports. |
| Manager | The User's Guide provides information for managers who are responsible for preparing the product for use by end users. Their tasks include the setup of graph templates, report templates, and report schedules. |
| Administrator | The User's Guide contains details information for administrators in order to configure the product. |

1.3 Related Documents

This solution is composed of a series of underlying products. For further information regarding the configuration, the usage and administration of the products, please refer to the following documents.

These documents may be located in the doc folder of the solution distribution or on the website (www.halcyoninc.com/docs).

Table 1.3-1: Related Documents

| Component Name | Related Documents |
|----------------------------|---|
| Neuron Management Suite | <ul style="list-style-type: none"> ▪ Neuron Management Suite Installation Guide |
| Neuron Management Server | <ul style="list-style-type: none"> ▪ Neuron Management Server Release Notes ▪ Neuron Management Server User's Guide |
| Neuron Performance Manager | <ul style="list-style-type: none"> ▪ Neuron Performance Manager Release Notes |

2 General Overview

2.1 Product Overview

Neuron Performance Manager provides a web-based user interface for managing and viewing performance reports for the performance data collected by the *Halcyon Neuron Management Suite (HNMS)*. Using a web browser it provides a means for defining host groups, graph templates, report templates, and scheduled reports. Reports can be scheduled or generated on demand. Historical reports can be viewed as well.

Neuron Performance Manager features include:

- Easy to use interface for defining reports and schedules.
- Automatically configures and connects to the already installed *Halcyon Neuron Management Suite* performance database.
- Reports are generated according to defined report schedules.
- Send reports to email recipients when reports are generated.
- E-mailed reports can be generated in several formats: XML, XHTML, PDF.
- Historical reports are stored in the database and can be viewed at any time.
- Defined reports can be generated on demand for any host.
- Easily generate reports for a specific property on a selected host.
- Reports can be exported as XML files.
- Reports can be published to a configurable directory.
- Supports SSL communication between Performance Manager and web-based clients.

2.2 Getting Started

2.2.1 Enable Data Collection

In order to actually use Neuron Performance Manager, data collection must be enabled. Please refer to the *Configuration* section of this document for more information on configuring the Performance Manager. The configuration property to note for enabling data collection is *reporter.dataCollectionEnabled*.

2.2.2 Login to Neuron Performance Manager

In order to login to the Neuron Performance Manager, go to the following URL:

`https://<hostname>:<port>/perfmgr`

The hostname is the name of the host that the Neuron Management Suite was installed. The port number can be found in the `managementPortal.config` file located in the `[LOCALDIR]/conf` directory for future reference (see *Neuron Management Suite Installation Guide* for more information).

Please note that during installation the default user *admin* is set up with a secure password. In order to change the default password of this user or to create additional users use the *User Manager* utility. Please refer to the *Neuron Management Server User's Guide's* "User Management" Section.

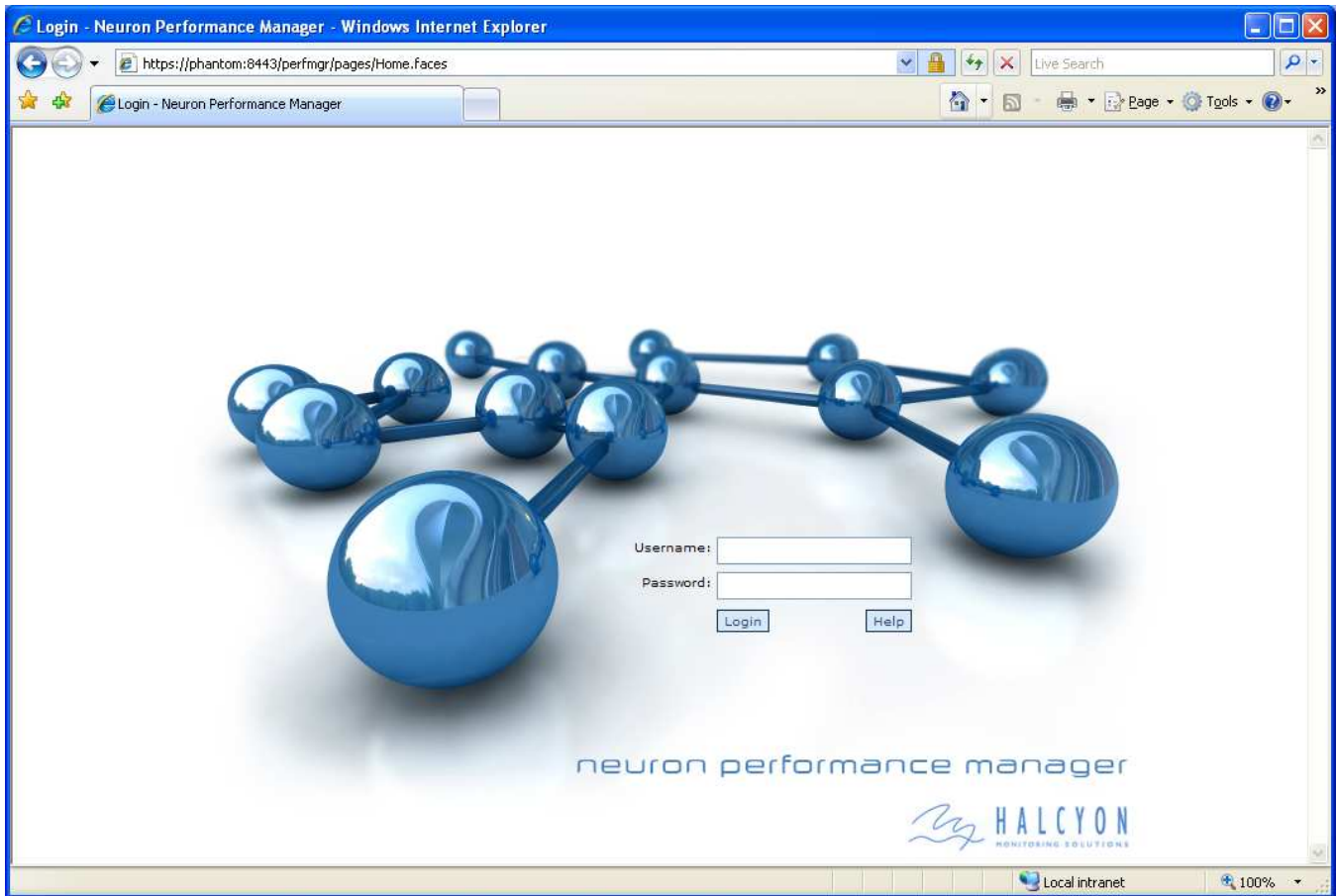


Figure 2.2-1: Neuron Performance Manager Login Page

2.3 The User Interface

Each page in the *Neuron Performance Manager* user interface contains two parts:

- Menu Bar
- Data Section

2.3.1 Menu Bar

The *Menu Bar* sits at the top of the page and provides easy access to the main parts of the application. Figure 2.3-1 shows the menu bar.

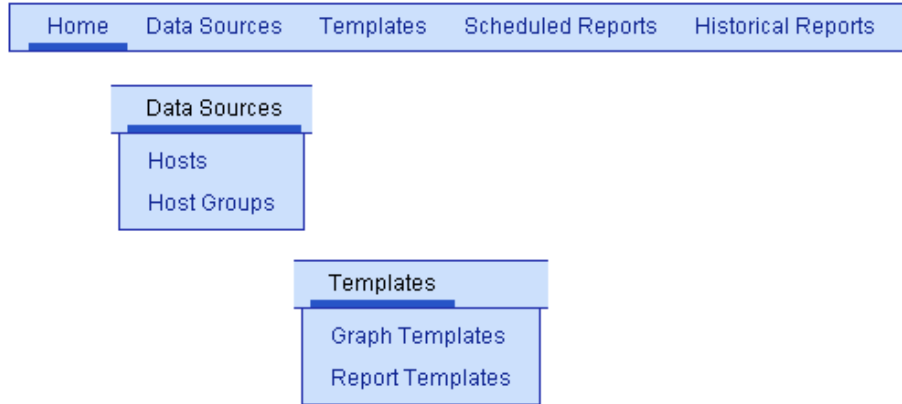


Figure 2.3-1: Performance Manager Menu Bar

The following items are accessible via the menu bar:

- Home
- Data Sources
 - Hosts
 - Host Groups
- Templates
 - Graph Templates
 - Report Templates
- Scheduled Reports
- Historical Reports

2.3.2 Data Section

Neuron Performance Manager displays most of its data in tables that follow some basic principles which are explained in this section.

Create Import

| ▲ Name | Category | Report Type | Owner | Actions |
|-------------|-------------|-------------|---------|---------------------------------------|
| Load | Load | Single Host | rolandh | View Edit Copy Delete Export Generate |
| Performance | Performance | Single Host | rolandh | View Edit Copy Delete Export Generate |

Figure 2.3-2: Typical Table in Performance Manager

2.3.2.1 Table Action

On top of the table those actions are displayed that do not depend on a specific object such as a report template. In the table shown the actions *Create* and *Import* can be used to create or import a report template, respectively.

2.3.2.2 Table Header

The first row in the table is the table header. Column headings that are displayed in white can be clicked on in order to sort the table contents according to the selected column. An up arrow or down arrow is displayed to the left of the column heading of the sorted column indicating the current sort direction.

Columns whose headings are displayed in light blue cannot be sorted.

2.3.2.3 Filter Toggle

The down arrow on the right can be used to toggle the filters that should be applied to the table contents. When the arrow is clicked the table shown in Figure 2.3-3 is displayed.

Create Import

| ▲ Name | Category | Report Type | Owner | Actions |
|-------------|-------------|-------------|---------|---------------------------------------|
| | | ▼ | | Filter |
| Load | Load | Single Host | rolandh | View Edit Copy Delete Export Generate |
| Performance | Performance | Single Host | rolandh | View Edit Copy Delete Export Generate |

Figure 2.3-3: Table Filters

2.3.2.4 Table Filters

When filters are displayed an input field is available below headings of those columns that can be filtered. There are four possible filter types:

String Filter

▲ Name

Only rows that contain the filter value are displayed

Integer Filter

Port

Only rows that are equal to the filter value are displayed

Date Filter

Collect Attempt

Only rows that contain data between the provided filter values are displayed; both filter values are optional

Selection Filter

Collection Enabled

Only rows that contain the selected filter value are displayed

3 Welcome Screen

When the user first logs into *Neuron Performance Manager* the welcome screen shown in Figure 3-1 is displayed.

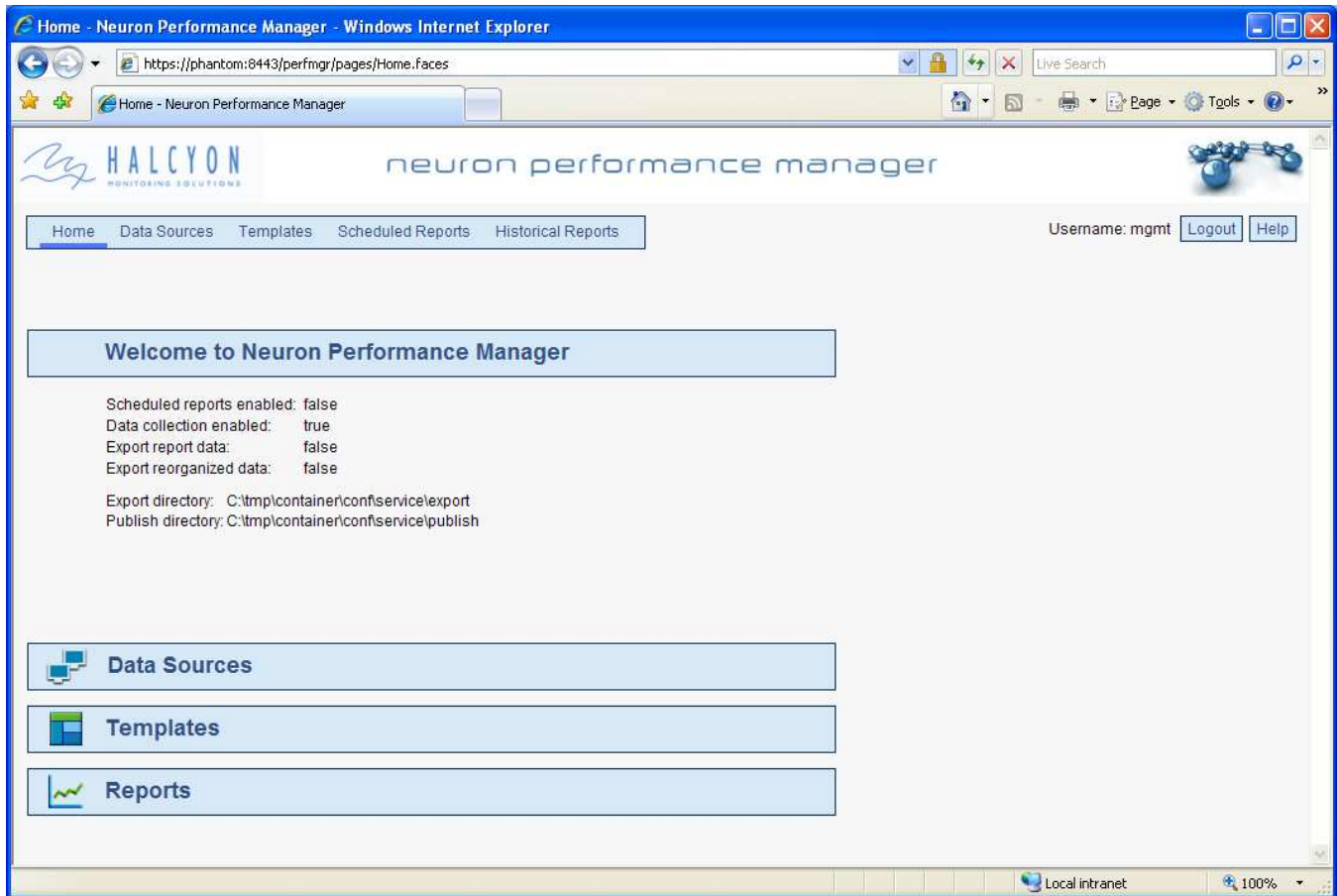


Figure 3-1: Neuron Performance Manager Welcome Screen

3.1 Home

The welcome screen, which can always be reached from other pages by clicking on the *Home* menu item, contains quick links to the most important actions in Performance Manager. These actions are grouped logically. The following groups and actions are available:

| | |
|---------------------------------------|--|
| Welcome to Neuron Performance Manager | This group displays Neuron Performance Manager configuration information. |
| Data Sources | View the data sources from which data is collected. Data sources can be hosts and host groups. The following actions are provided: <ul style="list-style-type: none"> • <i>View hosts</i> - view the hosts from which data is collected. • <i>View host groups</i> - view the host groups that have been defined. • <i>Create host group</i> - create a new host group. |
| Templates | Define the various templates that are used to generate reports. The following |

actions are provided:

- *View graph templates* - view all graph templates that have been defined.
- *View report templates* - view all report templates that have been defined.
- *Create graph template* - create a new graph template which defines the layout of graphs.
- *Create report template* - create a new report template which combines multiple graph templates and defines the metrics to display.

Reports

Manage scheduled reports and view historical reports. The following actions are provided:

- *View scheduled reports* - view all scheduled reports that have been defined.
- *View historical reports* - view all reports that have been generated.
- *Schedule report* - create a new scheduled report that is executed once or at regular intervals.

3.2 License Warning

Without a license Performance Manager will work for a 14 day period, after that time a warning as shown in Figure 3.2-1 is displayed on the welcome screen. If you wish to purchase a license, please contact Halcyon Monitoring Solutions at the addresses provided.

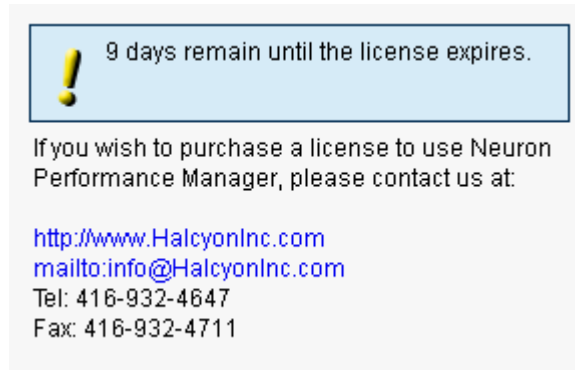


Figure 3.2-1: Neuron Performance Manager License Warning

4 Viewing Hosts

Role: End User

This page allows you to see which hosts or assets *Halcyon Neuron Management Suite* has obtained and stored data for in its performance database. *Neuron Performance Manager* can graph, report on, and have scheduled reports configured and generated for the data from these hosts.

The screenshot shows the 'Hosts' page in the Neuron Performance Manager web interface. The page title is 'Hosts - Neuron Performance Manager - Windows Internet Explorer'. The browser address bar shows 'https://phantom:8443/perfmgr/pages/Hosts.faces'. The page header includes the Halcyon logo and 'neuron performance manager'. A navigation menu has 'Home', 'Data Sources', 'Templates', 'Scheduled Reports', and 'Historical Reports'. The user is logged in as 'mgmt' with 'Logout' and 'Help' buttons. The main content area is titled 'Hosts' and contains a table with the following data:

| Name | IP | Port | Agent Type | Collect Attempt | Last Collected | Collection Enabled | Disabled Reason | Actions |
|-----------------------|---------------|------|------------|------------------|------------------|--------------------|-----------------|-----------------------------------|
| 10.20.1.244 | 10.20.1.244 | 1161 | Sun MC | 09/14/2010 16:11 | 09/14/2010 16:13 | Yes | | View Disable Merge Collect Report |
| 10.20.1.55 | 10.20.1.55 | 1161 | Sun MC | 09/14/2010 16:11 | | Yes | | View Disable Merge Collect Report |
| 10.20.1.64 | 10.20.1.64 | 1161 | Sun MC | 09/14/2010 16:11 | | Yes | | View Disable Merge Collect Report |
| 10.20.1.68 | 10.20.1.68 | 1161 | Sun MC | 09/14/2010 16:11 | | Yes | | View Disable Merge Collect Report |
| 10.20.202.153 | 10.20.202.153 | 5556 | Neuron | 09/14/2010 16:11 | | Yes | | View Disable Merge Collect Report |
| 10.20.202.153 | 10.20.202.153 | 5556 | Sun MC | 09/14/2010 16:11 | 09/14/2010 16:15 | Yes | | View Disable Merge Collect Report |
| 10.20.5.100 | 10.20.5.100 | 1161 | Sun MC | 09/14/2010 16:11 | | Yes | | View Disable Merge Collect Report |
| 10.20.5.141 | 10.20.5.141 | 4161 | Sun MC | 09/14/2010 16:11 | | Yes | | View Disable Merge Collect Report |
| 10.20.5.24 | 10.20.5.24 | 7779 | Sun MC | 09/14/2010 16:11 | | Yes | | View Disable Merge Collect Report |
| 10.20.5.73 | 10.20.5.73 | 1161 | Sun MC | 09/14/2010 16:11 | | Yes | | View Disable Merge Collect Report |
| 10.20.5.85 | 10.20.5.85 | 1161 | Sun MC | 09/14/2010 16:11 | | Yes | | View Disable Merge Collect Report |
| 10.20.5.89 | 10.20.5.89 | 1161 | Sun MC | 09/14/2010 16:11 | 09/14/2010 16:13 | Yes | | View Disable Merge Collect Report |
| bedrock | 10.20.1.53 | 0 | Other | 09/14/2010 08:49 | 09/14/2010 08:49 | Yes | | View Disable Merge Collect Report |
| butler | 10.20.5.92 | 0 | Other | 09/13/2010 09:46 | 09/13/2010 09:46 | Yes | | View Disable Merge Collect Report |
| butler | 10.20.5.92 | 163 | Sun MC | 09/14/2010 16:11 | | Yes | | View Disable Merge Collect Report |
| butler.halcyoninc.com | 10.20.5.92 | 168 | Sun MC | 09/14/2010 16:11 | | Yes | | View Disable Merge Collect Report |
| butler.halcyoninc.com | 10.20.5.92 | 1161 | Sun MC | 09/14/2010 16:11 | 09/14/2010 16:11 | Yes | | View Disable Merge Collect Report |
| darkstar | 10.20.1.23 | 0 | Other | 09/13/2010 09:46 | 09/13/2010 09:46 | Yes | | View Disable Merge Collect Report |
| groove | 10.20.5.54 | 1161 | Sun MC | 09/14/2010 16:11 | | Yes | | View Disable Merge Collect Report |
| halogen | 10.20.1.67 | 1161 | Sun MC | 09/14/2010 16:11 | | Yes | | View Disable Merge Collect Report |
| helena | 10.20.5.103 | 0 | Other | 09/13/2010 09:46 | 09/13/2010 09:46 | Yes | | View Disable Merge Collect Report |
| mammoth | 10.20.1.59 | 0 | Other | 09/13/2010 09:20 | 09/13/2010 09:20 | Yes | | View Disable Merge Collect Report |
| mammoth | 10.20.1.59 | 1161 | Sun MC | 09/14/2010 16:11 | | Yes | | View Disable Merge Collect Report |
| monster | 10.20.5.6 | 6680 | Neuron | 09/14/2010 16:11 | 09/10/2010 16:01 | Yes | | View Disable Merge Collect Report |
| nanarchy | 10.20.5.141 | 0 | Other | 09/14/2010 16:11 | 09/14/2010 16:11 | Yes | | View Disable Merge Collect Report |
| NECKAR | 10.20.1.54 | 1161 | Sun MC | 09/14/2010 16:11 | | Yes | | View Disable Merge Collect Report |
| nightmare | 10.20.5.93 | 0 | Other | 09/14/2010 16:10 | 09/14/2010 16:11 | Yes | | View Disable Merge Collect Report |
| prairie | 10.20.5.40 | 1161 | Sun MC | 09/14/2010 16:11 | | Yes | | View Disable Merge Collect Report |
| robot | 10.20.5.17 | 1161 | Sun MC | 09/14/2010 16:11 | | Yes | | View Disable Merge Collect Report |
| twilight | 10.20.5.90 | 1161 | Sun MC | 09/14/2010 16:11 | | Yes | | View Disable Merge Collect Report |

At the bottom of the table, there is a text input field 'Enter a reason...' and three buttons: 'Disable All', 'Enable All', and 'Collect All'.

Figure 4-1: Hosts Table

The data fields in the Hosts table are described below:

| | |
|--------------------|--|
| Name | The name of the asset or host running an agent. |
| IP | The IP address of the asset or host running an agent. |
| Port | The port of the agent. |
| Agent Type | The type of agent (ex: Neuron). |
| Collect Attempt | The time of the last data collection attempt for this agent. |
| Last Collected | The time of the last successful data collection from this agent. |
| Collection Enabled | <i>This field is not currently applicable to Neuron Performance Manager.</i> |
| Disabled Reason | <i>This field is not currently applicable to Neuron Performance Manager.</i> |
| Actions | The actions that can be performed for this row: <ul style="list-style-type: none"> • View - view details for this host • Disable/Enable - manually disable/enable data collection for this host (<i>this action is only available for Sun MC and Neuron agents</i>) • Merge - merge data for this host with another host • Collect - start data collection for this host (<i>this action is only available for Sun MC and Neuron agents</i>) • Report - generate a report for this host |

4.1 Viewing Host Details

After clicking on *View* in the Hosts table the window shown in Figure 4.1-1 is displayed.

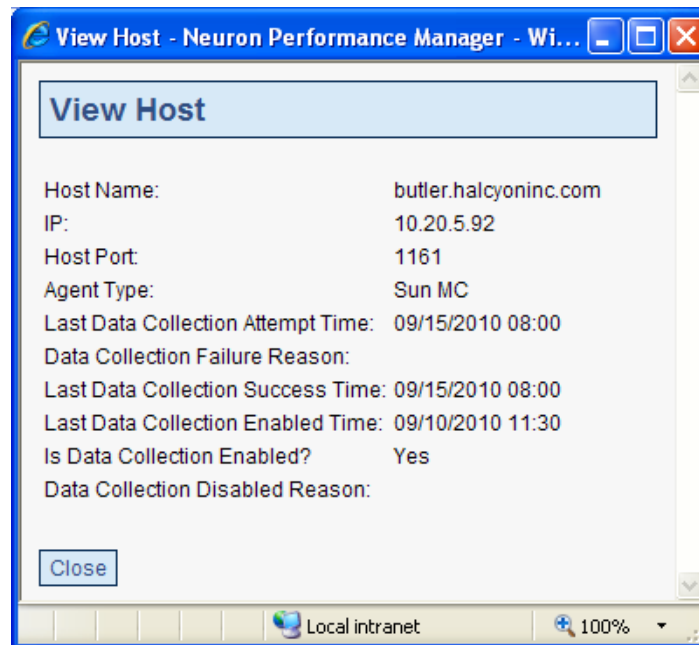


Figure 4.1-1: View Host

The View Host window contains the following data fields:

| | |
|-----------------------------------|--|
| Host Name | The name of the host running the agent. |
| IP | The IP of the host running the agent. |
| Host Port | The port of the agent. |
| Agent Type | The type of agent (ex: Neuron). |
| Last Data Collection Attempt Time | The time of the last data collection attempt. |
| Data Collection Failure Reason | If the data collection was unsuccessful, this field displays the reason why it failed. |
| Last Data Collection Success Time | The time of the last successful data collection. |
| Last Data Collection Enabled Time | The time when data collection was last enabled. |
| Is Data Collection Enabled? | Whether data collection is enabled or not. |
| Data Collection Disabled Reason | The reason why data collection has been disabled. |

Click on *Close* to dismiss the View Host window.

4.2 Generate Report

Using this command it is possible to quickly generate a report for the selected host.

After clicking on *Report* in the Hosts table the window shown in Figure 4.2-1 is displayed.

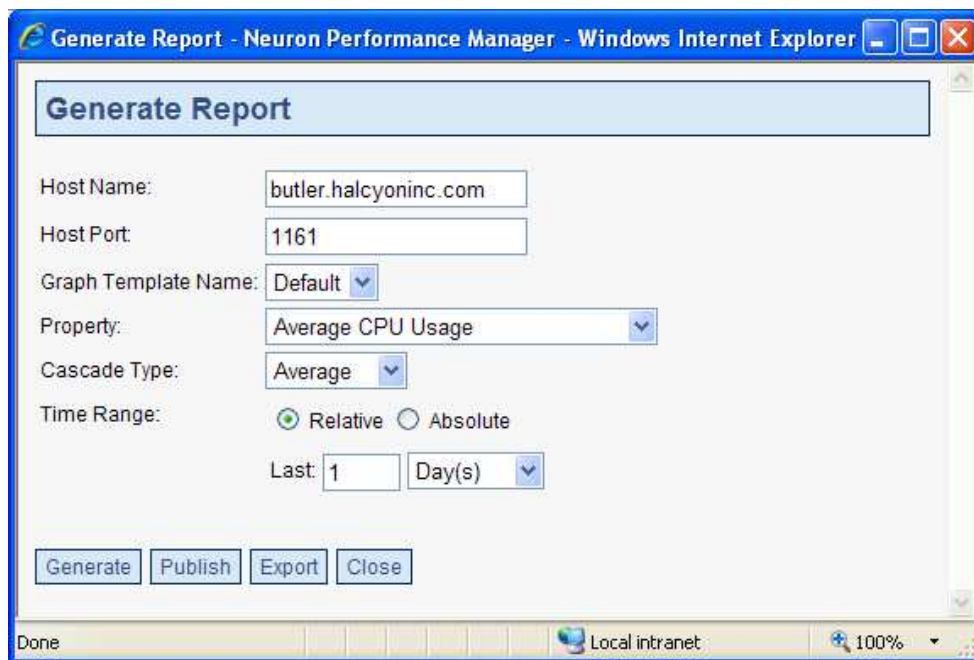


Figure 4.2-1: Generate Report

The Generate Report window contains the following data fields:

| | |
|---------------------|--|
| Host Name | The name of the host running the agent. |
| Host Port | The port of the agent. |
| Graph Template Name | The name of the graph template to use for the report. |
| Property | The property for which to generate the report. Only properties for the selected hosts are shown in the drop down box. |
| Cascade Type | The cascade type determines which data series should be displayed on a graph. Select one of <i>Average</i> (average data values), <i>Maximum</i> (maximum data values), <i>Minimum</i> (minimum data values), or <i>Last</i> (last data values). |
| Time Range | The time range of reporting date. This can be either a <i>relative</i> time range such as <i>Last 20 Days</i> , or an <i>absolute</i> time range with start and end times. |

Click on *Generate* to generate the report. The contents of the window will be replaced with the newly generated report (Figure 4.2-2).

Click on *Publish* to publish the report to the publish directory.

Click on *Export* to generate the report. A dialog box will appear that allows saving of the report to an XML file. The XML file is also exported to the export directory.

Click on *Close* to dismiss the Generate Report window.

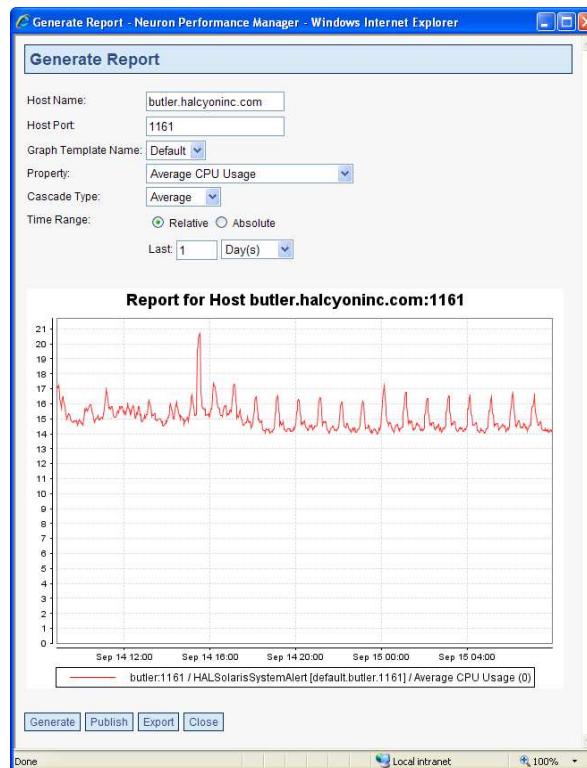


Figure 4.2-2: Generated Report

5 Working with Host Groups

Hosts can be grouped together and form *Host Groups*. These groups can be used in *Scheduled Reports* in order to generate reports for several hosts at a time.

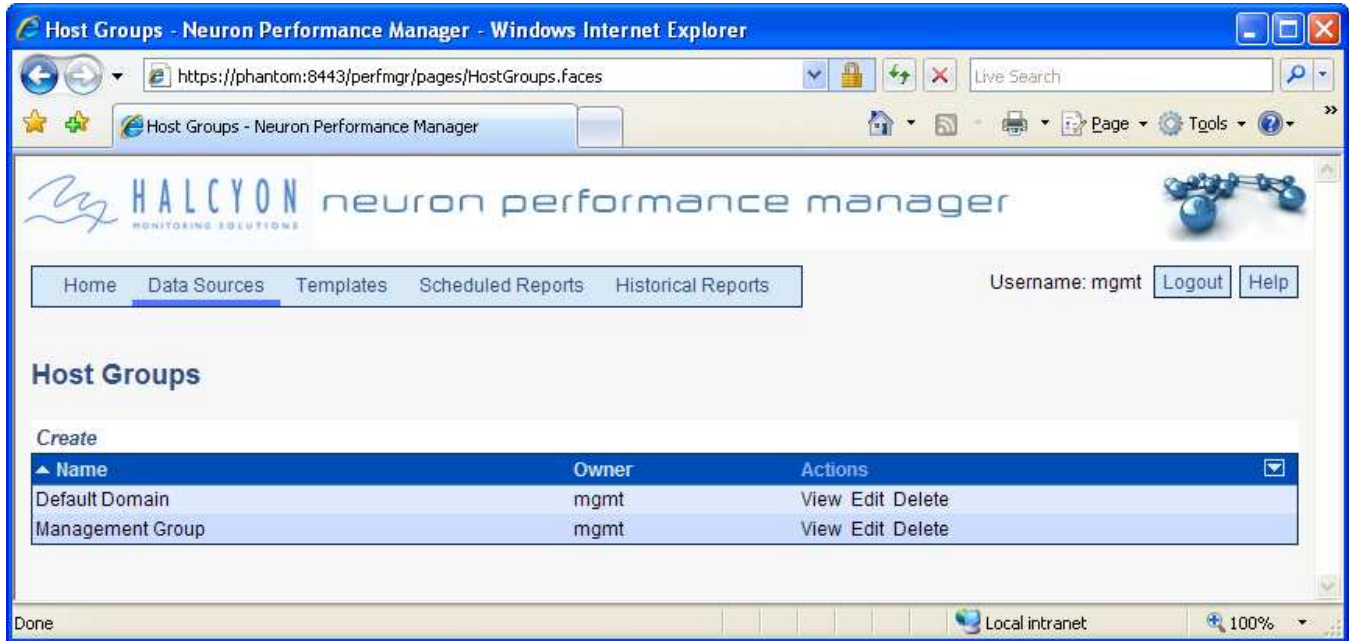


Figure 5-1: Host Groups Table

The *Host Groups* table lists all defined host groups (Figure 5-1). The data fields in the Host Groups table are described below:

| | |
|---------|---|
| Name | The name of the host group. |
| Owner | The user that created the host group. |
| Actions | The actions that can be performed for this row: <ul style="list-style-type: none"> <i>View</i> - view details of the host group <i>Edit</i> - edit details of the host group <i>Delete</i> - delete the host group |

After clicking on *Create* in the Host Groups table the *Create Host Group* window is shown. Follow the instructions for editing a host group (5.2 below) to create a host group.

5.1 Viewing Host Group Details

Role: End User

After clicking on *View* in the Host Groups table the window shown in Figure 5.1-1 is displayed.

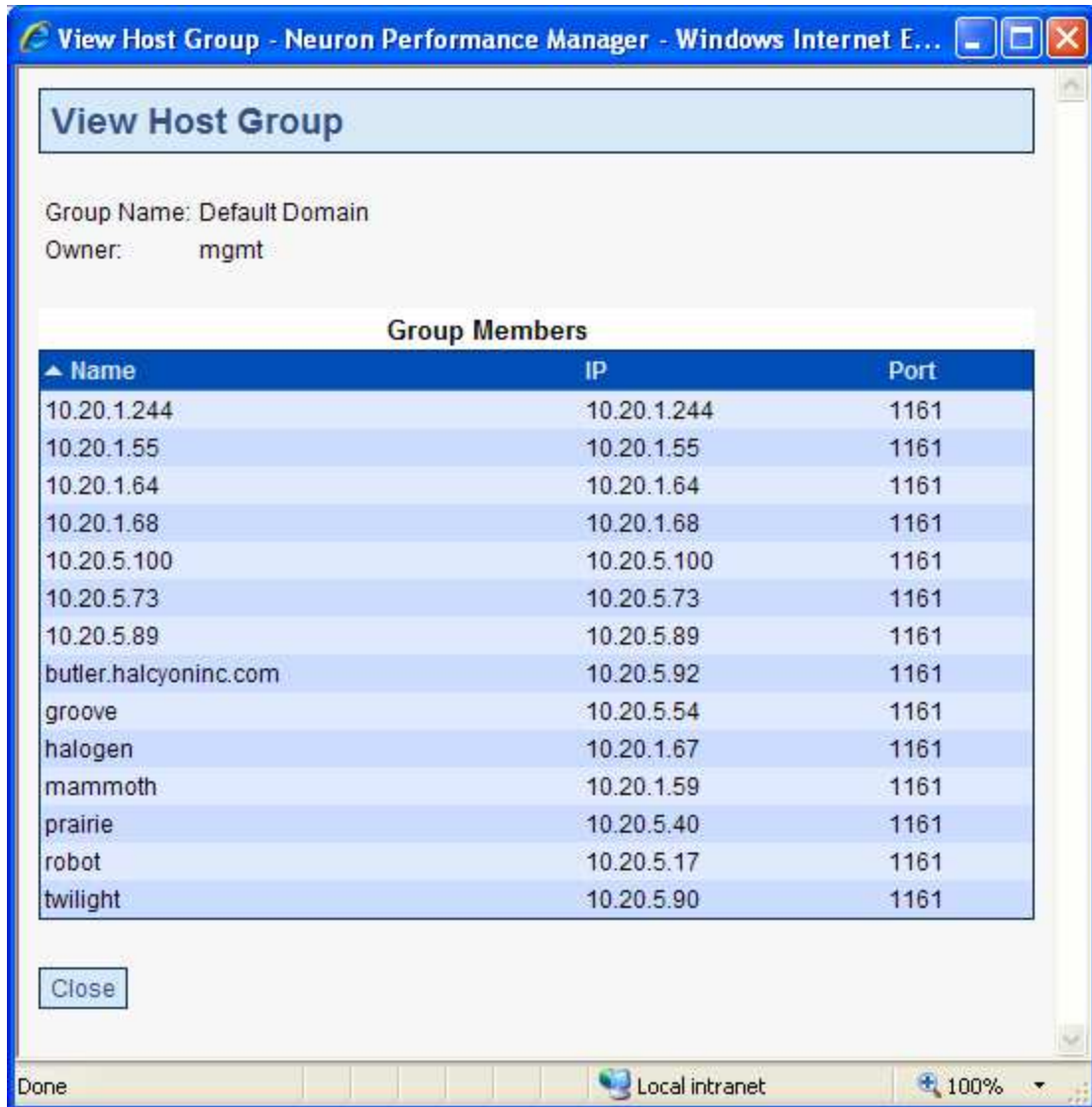


Figure 5.1-1: View Host Group

The View Host Group window contains the following data fields:

Group Name The name of the host group
 Owner The user that created the host group

It also contains the Group Members table that displays all members of the host group. The data fields in the Group Members table are described below:

Name The name of the host running the agent
 IP The IP address of the host running the agent
 Port The port of the agent

Click on *Close* to dismiss the View Host Group window.

5.2 Editing Host Group Details

Role: Manager

After clicking on *Edit* in the Host Groups table the window shown in Figure 5.2-1 is displayed.

Edit Host Group

Group Name:

Owner:

Group Members

| Name | IP | Port | Actions |
|-----------------------|-------------|------|--------------|
| | | | Filter Clear |
| 10.20.1.244 | 10.20.1.244 | 1161 | Remove |
| 10.20.1.55 | 10.20.1.55 | 1161 | Remove |
| 10.20.1.64 | 10.20.1.64 | 1161 | Remove |
| 10.20.1.68 | 10.20.1.68 | 1161 | Remove |
| 10.20.5.100 | 10.20.5.100 | 1161 | Remove |
| 10.20.5.73 | 10.20.5.73 | 1161 | Remove |
| 10.20.5.89 | 10.20.5.89 | 1161 | Remove |
| butler.halcyoninc.com | 10.20.5.92 | 1161 | Remove |
| groove | 10.20.5.54 | 1161 | Remove |
| halogen | 10.20.1.67 | 1161 | Remove |

Available Hosts

| Name | IP | Port | Actions |
|-----------------------|---------------|------|--------------|
| | | | Filter Clear |
| 10.20.202.153 | 10.20.202.153 | 5556 | Add |
| 10.20.202.153 | 10.20.202.153 | 5556 | Add |
| 10.20.5.141 | 10.20.5.141 | 4161 | Add |
| 10.20.5.24 | 10.20.5.24 | 7779 | Add |
| 10.20.5.85 | 10.20.5.85 | 1161 | Add |
| NECKAR | 10.20.1.54 | 1161 | Add |
| bedrock | 10.20.1.53 | 0 | Add |
| butler | 10.20.5.92 | 0 | Add |
| butler | 10.20.5.92 | 163 | Add |
| butler.halcyoninc.com | 10.20.5.92 | 168 | Add |

Done Cancel

Figure 5.2-1: Edit Host Group

The Edit Host Group window contains the following data fields:

Group Name The name of the host group
 Owner The user that created the host group

It also contains the Group Members and Available Hosts tables. The Group Members table displays all members of the host group. The data fields in the Group Members table are described below:

| | |
|---------|--|
| Name | The name of the host running the agent |
| IP | The IP address of the host running the agent |
| Port | The port of the agent |
| Actions | The actions that can be performed for this row: <ul style="list-style-type: none"> Delete – delete the host from the host group |

The Available Hosts table lists all hosts that are not in the host group currently being view. The data fields in the Available Hosts table are described below.

| | |
|---------|--|
| Name | The name of the host running the agent |
| Port | The port of the agent |
| Actions | The actions that can be performed for this row: <ul style="list-style-type: none"> Add – add the host to the host group |

Click on *Delete* in the Group Members table to delete a host from the host group.

Click on *Add* in the Available Hosts table to add a host to the host group.

Click on *Done* to dismiss the Edit Host Group window and confirm all changes that have been made.

Click on *Cancel* to dismiss the Edit Host Group window and all changes that have been made.

5.3 Deleting a Host Group

Role: Manager

After clicking on *Delete* in the Host Groups table the window shown in Figure 5.3-1 is displayed.

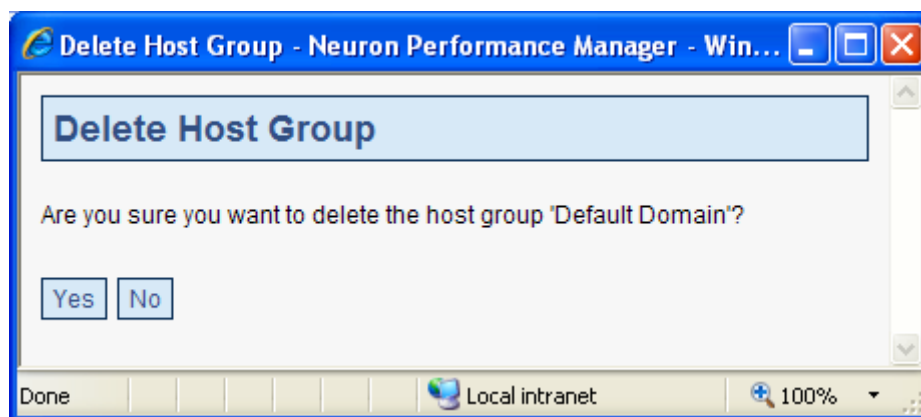


Figure 5.3-1: Delete Host Group

Click on *Yes* to dismiss the Delete Host Group window and confirm deletion of the host group.

Click on *No* to dismiss the Delete Host Group window without deleting the host group.

6 Working with Graph Templates

Graph templates define the format of graphs that appear on reports, their size, whether they are line, area or stacked type graphs.

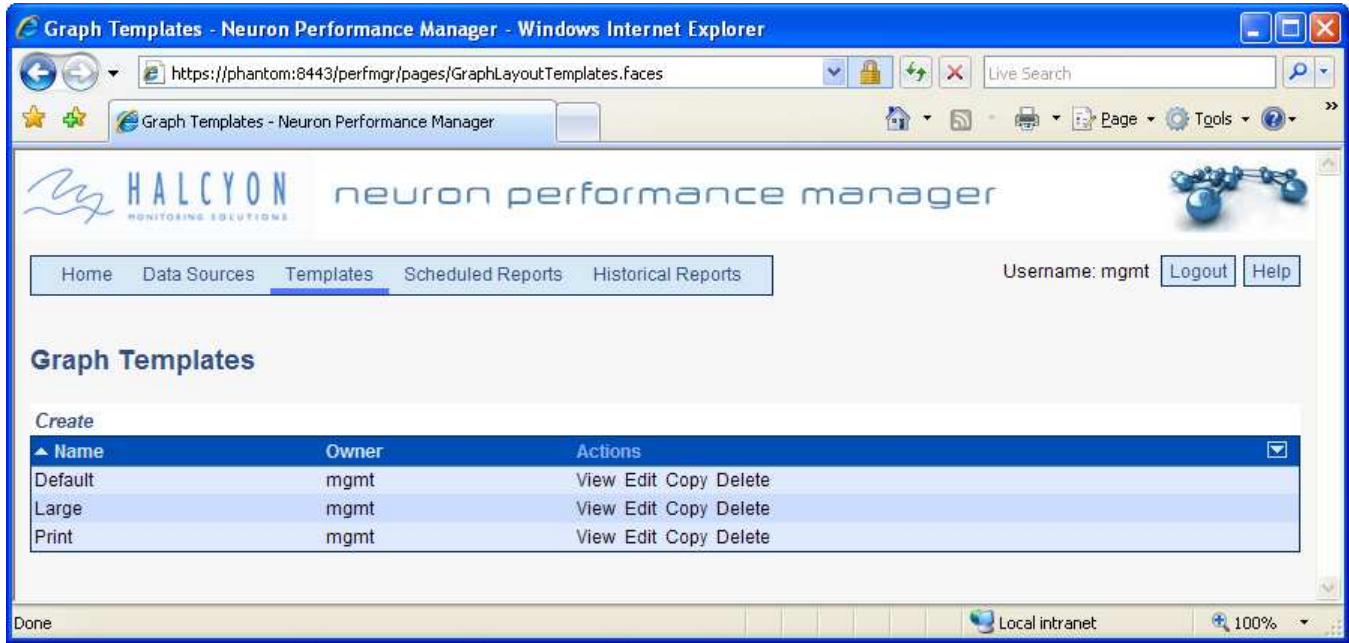


Figure 6-1: Graph Templates Table

The *Graph Templates* table lists all defined graph templates (Figure 6-1). The data fields in the Graph Templates table are described below:

| | |
|---------|--|
| Name | The name of the graph template. |
| Owner | The user that created the graph template. |
| Actions | The actions that can be performed for this row: <ul style="list-style-type: none"> • <i>View</i> - view details of the graph template • <i>Edit</i> - edit details of the graph template • <i>Copy</i> – copy the graph template • <i>Delete</i> - delete the graph template |

After clicking on *Create* in the Graph Templates table the *Create Graph Template* window is shown. Follow the instructions for editing a graph template (6.2 below) to create a graph template.

6.1 Viewing Graph Template Details

Role: End User

After clicking on *View* in the Graph Templates table the window shown in Figure 6.1-1 is displayed.

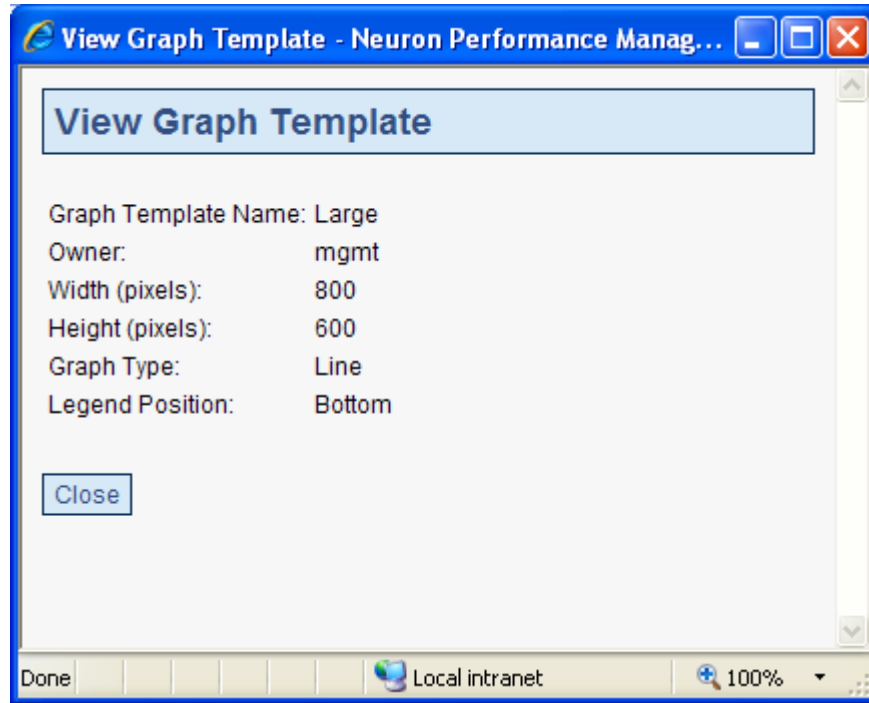


Figure 6.1-1: View Graph Template

The View Graph Template window contains the following data fields:

| | |
|---------------------|--|
| Graph Template Name | The name of the graph template. |
| Owner | The user that created the graph template. |
| Width (pixels) | The width of the graph created using the graph template. |
| Height (pixels) | The height of the graph created using the graph template. |
| Graph Type | The type of graphs created using the graph template. |
| Legend Position | The position of the legend on graphs created using the graph template. |

Click on *Close* to dismiss the View Graph Template window.

6.2 Editing Graph Template Details

Role: Manager

After clicking on *Edit* in the Graph Template table the window shown in Figure 6.2-1 is displayed.

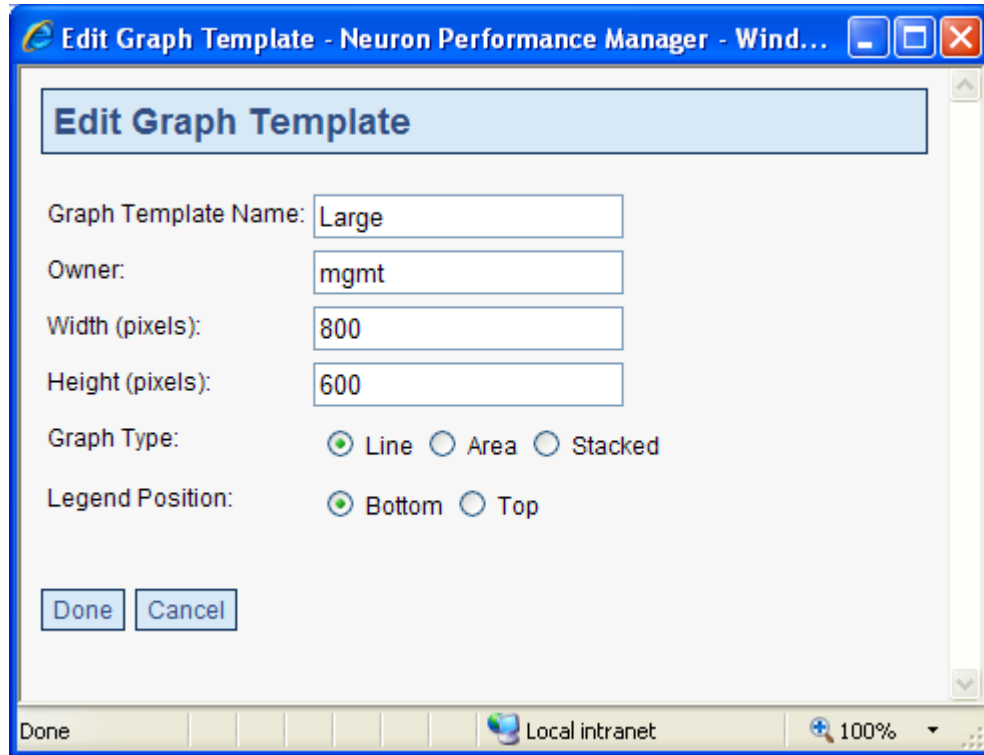


Figure 6.2-1: Edit Graph Template

The Edit Graph Template window contains the following data fields:

| | |
|---------------------|--|
| Graph Template Name | The name of the graph template. |
| Owner | The user that created the graph template. |
| Width (pixels) | The width of the graph created using the graph template. |
| Height (pixels) | The height of the graph created using the graph template. |
| Graph Type | The type of graphs created using the graph template. |
| Legend Position | The position of the legend on graphs created using the graph template. |

Click on *Done* to dismiss the Edit Graph Template window and confirm all changes that have been made.

Click on *Cancel* to dismiss the Edit Graph Template window and all changes that have been made.

6.3 Copying a Graph Template

Role: Manager

After clicking on *Copy* in the Graph Template table the *Copy Graph Template* window is shown. Follow the instructions for editing a graph template to copy the graph template.

6.4 Deleting a Graph Template

Role: Manager

After clicking on *Delete* in the Graph Template table the window shown in Figure 6.4-1 is displayed.

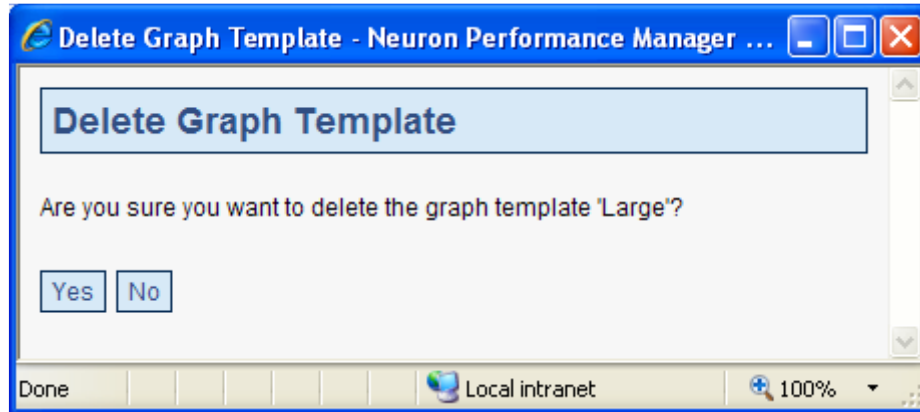


Figure 6.4-1: Delete Graph Template

Click on *Yes* to dismiss the Delete Graph Template window and confirm deletion of the graph template.

Click on *No* to dismiss the Delete Graph Template window without deleting the graph template.

7 Working with Report Templates

Report templates combine multiple graph templates and define which metrics to display.

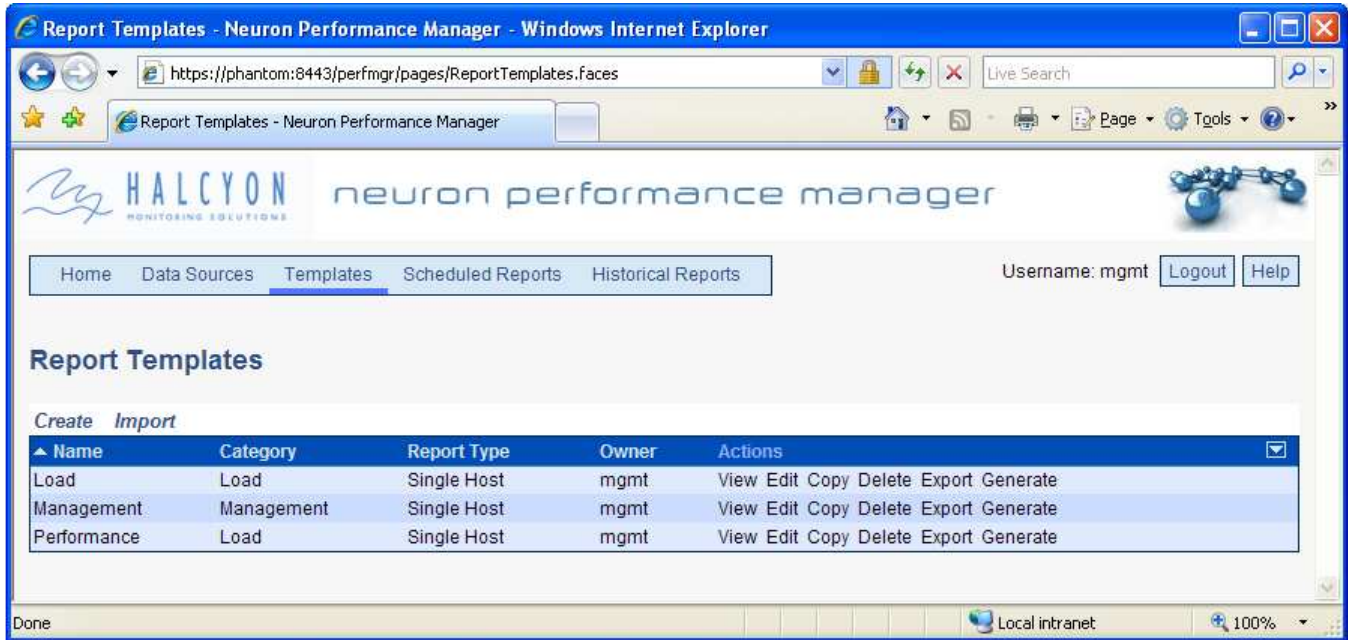


Figure 7-1: Report Templates Table

The *Report Templates* table lists all defined report templates (Figure 7-1). The data fields in the Report Template table are described below:

| | |
|-------------|--|
| Name | The name of the report template. |
| Category | The category of the report template. |
| Report Type | The report type for the report template. <i>Multi Host</i> indicates that each graph contains data from all selected hosts for a given type of metric. <i>Single Host</i> indicates that each graph contains data from one host only. |
| Owner | The user that created the report template. |
| Actions | The actions that can be performed for this row: <ul style="list-style-type: none"> • <i>View</i> - view details of the report template • <i>Edit</i> - edit details of the report template • <i>Copy</i> - copy the report template • <i>Delete</i> - delete the report template • <i>Export</i> - export the report template • <i>Generate</i> - generate a report based on the report template |

After clicking on *Create* in the Report Templates table the *Create Report Template* window is shown. Follow the instructions for editing a report template (7.2 below) to create a report template.

After clicking on *Import* in the Report Templates table the window shown in Figure 7-2 is shown.

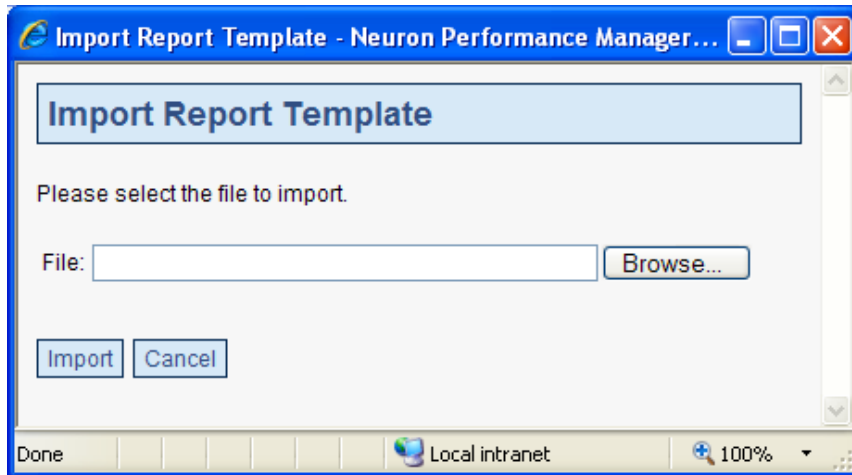


Figure 7-2: Import Report Template

Use the *Browse* button to select the file to import.

Click on *Import* to import the report template.

Click on *Cancel* to dismiss the Import Report Template window without importing the report template.

7.1 Viewing Report Template Details

Role: End User

After clicking on *View* in the Report Templates table the window shown in Figure 7.1-1 is displayed.

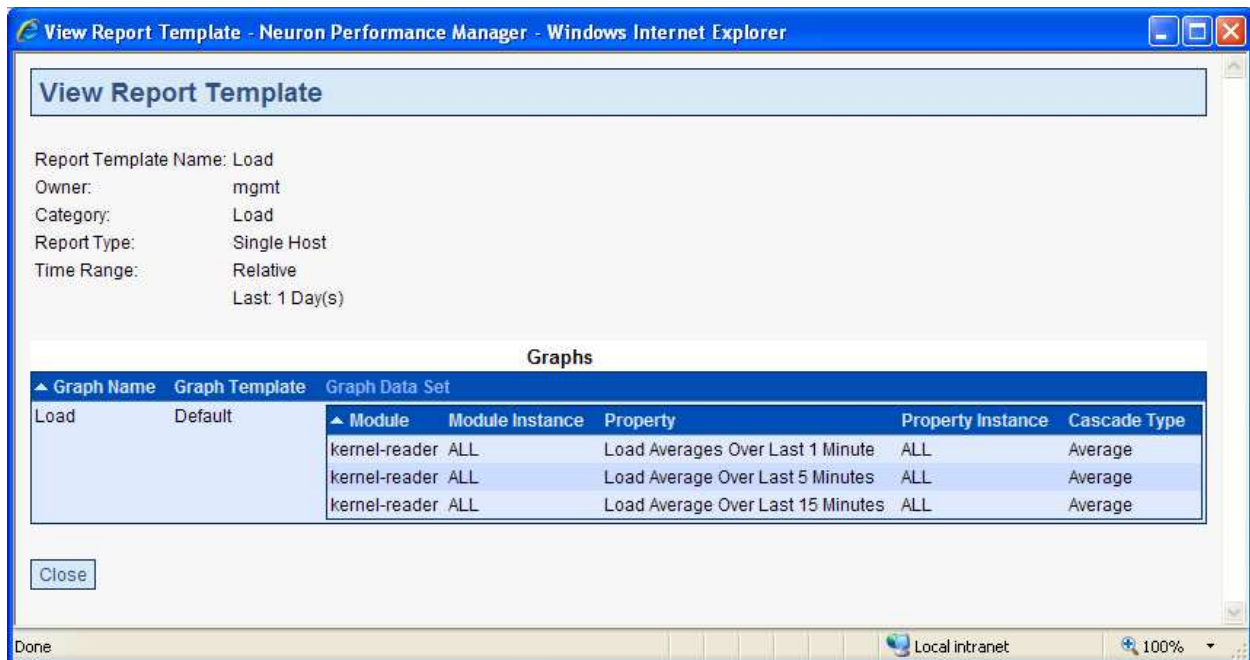


Figure 7.1-1: View Report Template

The View Report Template window contains the following data fields:

| | |
|----------------------|---|
| Report Template Name | The name of the report template. |
| Owner | The user that created the report template. |
| Category | The category of the report template. |
| Report Type | The report type for the report template. <i>Multi Host</i> indicates that each graph contains data from all selected hosts for a given type of metric. <i>Single Host</i> indicates that each graph contains data from one host only. |
| Time Range | The time range of reporting date. This can be either a <i>Relative</i> time range such as <i>Last 20 Days</i> , or an <i>Absolute</i> time range with start and end times. |

It also contains the Graphs table that displays all graphs that should be displayed on reports generated using the report template. The data fields in the Graphs table are described below:

| | |
|----------------|---|
| Graph Name | The name of the graph. |
| Graph Template | The graph template. |
| Graph Data Set | The properties that should be displayed on the report. It contains the following fields: <ul style="list-style-type: none"> • Module - the module of the property to be graphed • Module Instance - the module instance of the property • Property - the name of the property • Property Instance - the instance of the property • Cascade Type - the cascade type of the property |

Click on *Close* to dismiss the View Report Template window.

7.2 Editing Report Template Details

Role: Manager

After clicking on *Edit* in the Report Template table the window shown in Figure 7.2-1 is displayed.

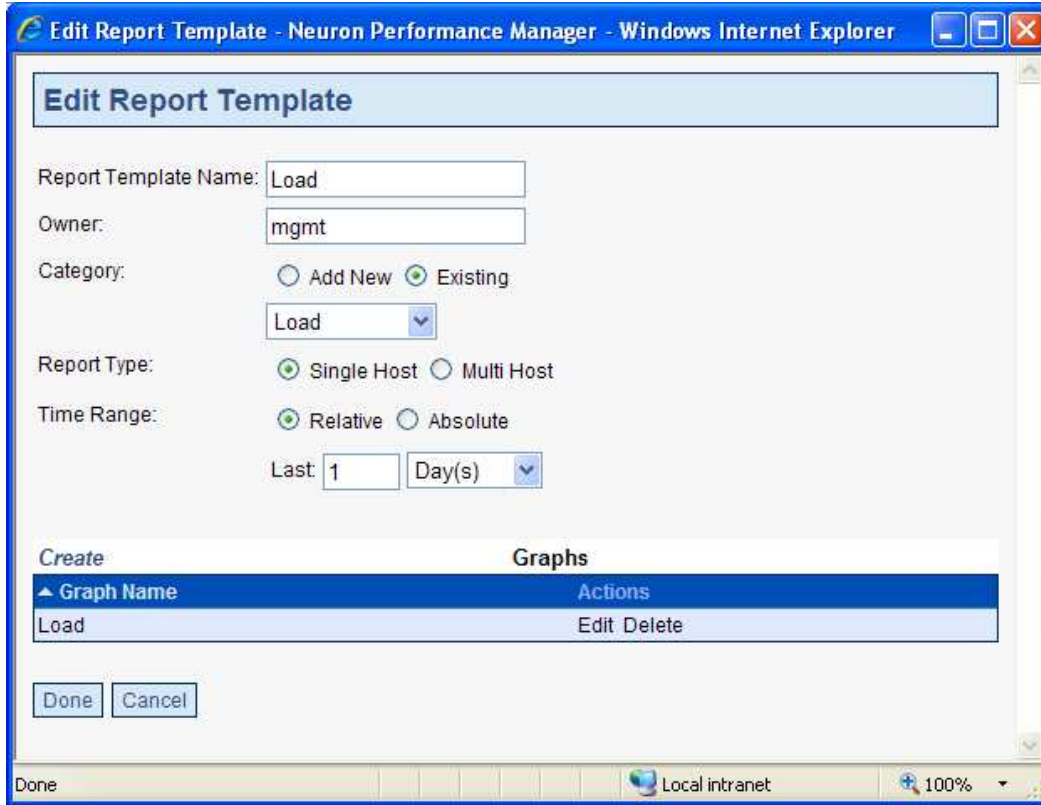


Figure 7.2-1: Edit Report Template

The Edit Report Template window contains the following data fields:

- Report Template Name The name of the report template.
- Owner The user that created the report template.
- Category The category of the report template.
- Report Type The report type for the report template. *Multi Host* indicates that each graph contains data from all selected hosts for a given type of metric. *Single Host* indicates that each graph contains data from one host only.
- Time Range The time range of reporting date. This can be either a *Relative* time range such as *Last 20 Days*, or an *Absolute* time range with start and end times.

It also contains the Graphs table that displays all graphs that should be displayed on reports generated using the report template. The data fields in the Graphs table are described below:

| | |
|------------|--|
| Graph Name | The name of the graph. |
| Actions | The actions that can be performed for this row: <ul style="list-style-type: none"> • Edit - edit the graph of the report template • Delete - delete the graph from the report template |

Click on *Edit* in the Graphs table to edit a graph of the report template. Follow the instructions for creating a graph.

Click on *Delete* in the Graphs table to delete a graph from the report template.

Click on *Create* to create a graph and add it to the report template.

Click on *Done* to dismiss the Edit Report Template window and confirm all changes that have been made.

Click on *Cancel* to dismiss the Edit Report Template window and all changes that have been made.

7.3 Creating a Graph

Role: Manager

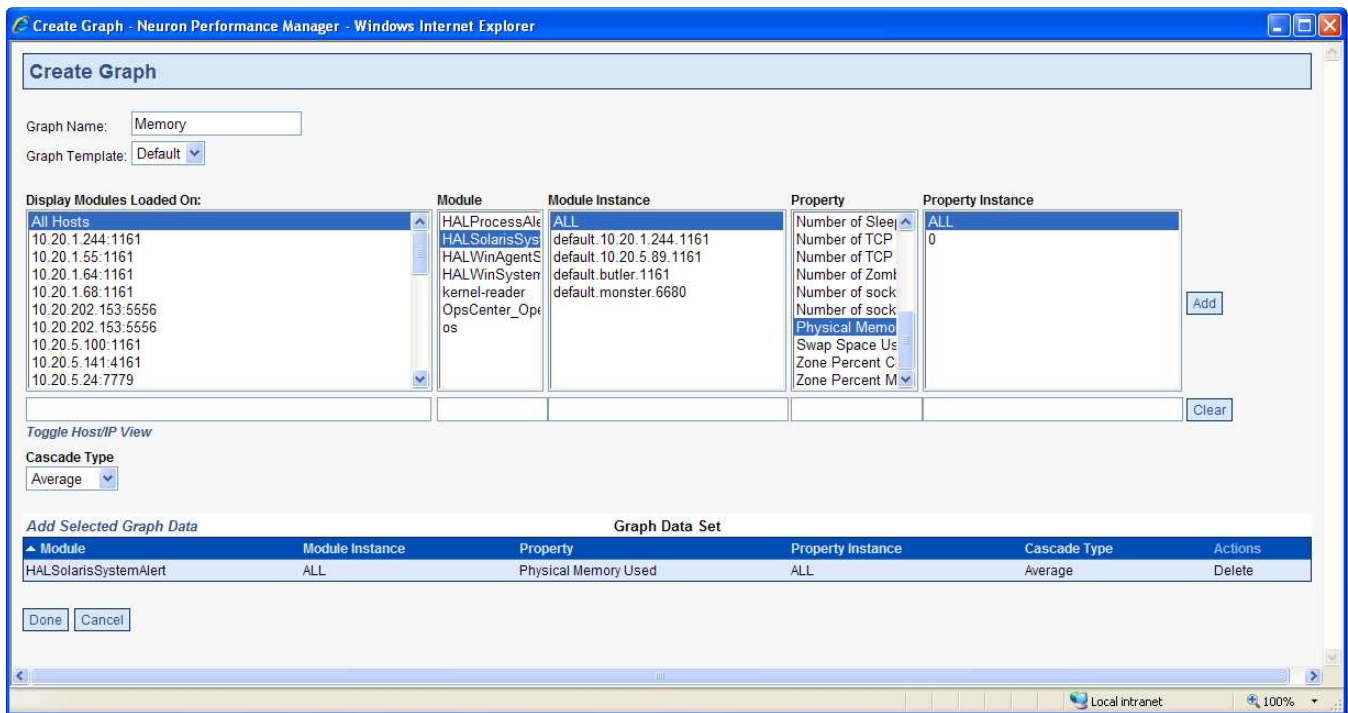


Figure 7.3-1: Create Graph Window

After clicking on *Create* (within the Edit Report Template window) the window shown in Figure 7.3-1 is displayed. It can be used to add graphs to a report template. Each graph contains a Graph Data Set that lists the properties that should be displayed on a graph. The data fields in the Create Graph window are described below:

| | |
|----------------|---|
| Graph Name | The name of the graph. |
| Graph Template | The graph template to use for this graph. |

The following fields define the Graph Data that can be selected:

| | |
|---------------------------|--|
| Display Modules Loaded On | The host for which to display properties in the following select boxes. If no host is selected all properties found in the database are displayed for selection. If a host is selected, only the properties currently in the database for that host will appear for selection. |
| Module | The module of the property to be graphed. |
| Module Instance | The module instance of the property. |
| Property | The name of the property. |
| Property Instance | The instance of the property, eg. the row or the CPU number |
| Cascade Type | The cascade type of the property determines which data series should be displayed on a graph. Select one of <i>Average</i> (average data values), <i>Maximum</i> (maximum data values), <i>Minimum</i> (minimum data values), or <i>Last</i> (last data values). |

If *ALL* is selected for *Module Instance* and/or *Property Instance* then the graph will display the selected property for all module and/or property instances.

You can also enter values manually in the text boxes below the associated Graph Data fields. These can be cleared by clicking the *Clear* button.

You can click on the *Toggle Host/IP View* to change the whether the *Display Modules Loaded On* shows the hostname or IP.

The Create Graph window also contains the *Graph Data Set* which shows the list of all properties that have been added to the graph. The data fields in the Graph Data Set table are described below:

| | |
|-------------------|--|
| Module | The module of the property to be graphed. |
| Module Instance | The module instance of the property. |
| Property | The name of the property. |
| Property Instance | The instance of the property, eg. the row or the CPU number |
| Cascade Type | The cascade type of the property, eg. Average or Last |
| Actions | The actions that can be performed for this row: <ul style="list-style-type: none"> • Delete - deletes the property from the graph |

Click on *Add Selected Graph Data* to add the selected property to the graph.

Click on *Delete* in the Graph Data Set table to delete a property from the graph.

Click on *Done* to dismiss the Create Graph window and confirm all changes that have been made.

Click on *Cancel* to dismiss the Create Graph window and all changes that have been made.

7.4 Copying a Report Template

Role: Manager

After clicking on *Copy* in the Report Template table the *Copy Report Template* window is shown. Follow the instructions for editing a report template to create a copy of the report template. Make sure to change the values for *Report Template Name* and *Graph Name* since they must be unique.

7.5 Deleting a Report Template

Role: Manager

After clicking on *Delete* in the Report Template table the window shown in Figure 7.5-1 is displayed.

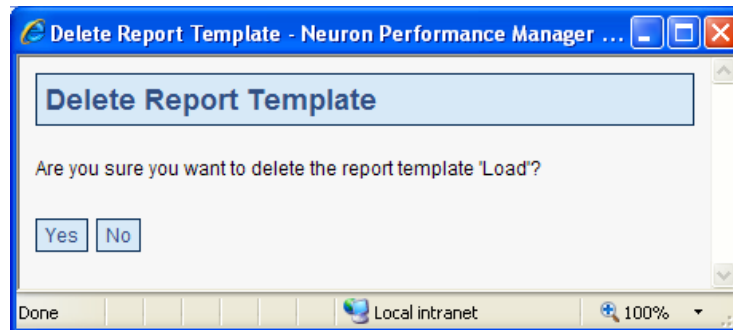


Figure 7.5-1: Delete Report Template

Click on *Yes* to dismiss the Delete Report Template window and confirm deletion of the report template.

Click on *No* to dismiss the Delete Report Template window without deleting the report template.

7.6 Exporting a Report Template

Role: End User

After clicking on *Export* in the Report Template table the window shown in Figure 7.6-1 is displayed. This is the standard web browser dialog for opening or saving files. The format of the exported report template is XML. The default file name contains the name of the report template and the current date and time. Use this dialog to open or save the generated XML file.

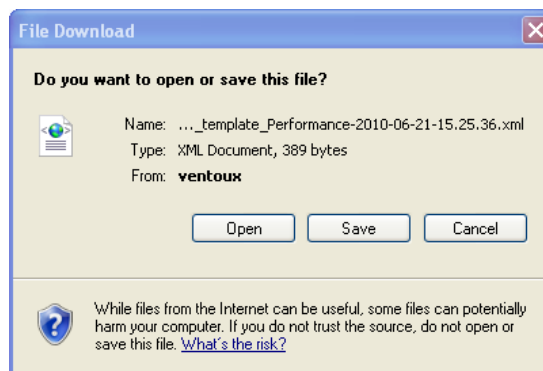


Figure 7.6-1: Export Report Template

7.7 Generating a Report

Role: End User

After clicking on *Generate* in the Report Template table the window shown in Figure 7.7-1 is displayed.

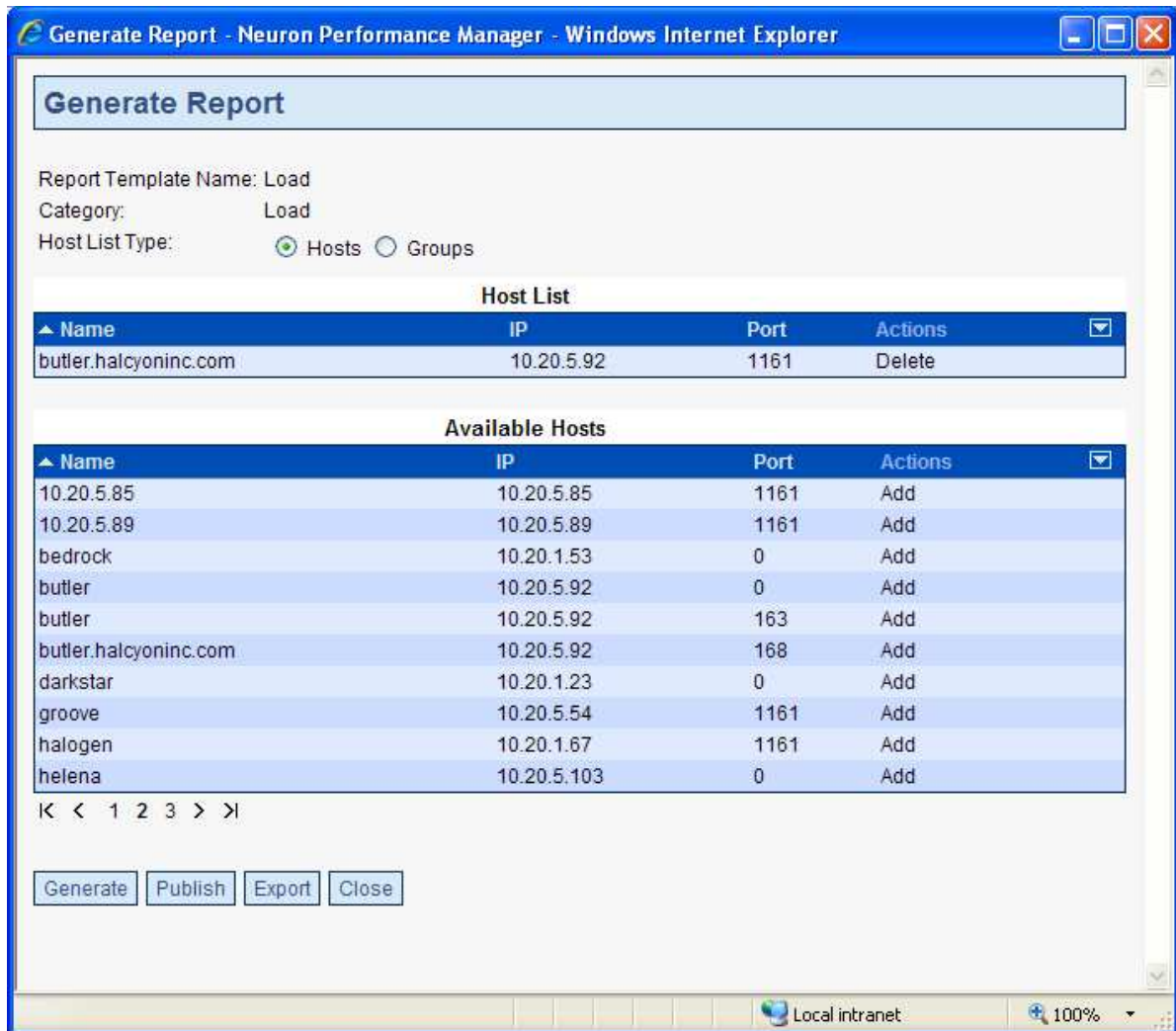


Figure 7.7-1: Generate Report

The Generate Report window contains the following data fields:

- Report Template Name The name of the report template.
- Category The category of the report template.
- Host List Type Select how the hosts for which to generate the report are to be selected. Changing this selection will switch between the *Host List* and *Group List*.

It also contains either the *Host List* together with the *Available Hosts* table or the *Group List* together with the *Available Host Groups* table.

Select the hosts or host groups by clicking on *Add* in the Available Hosts or Available Host Groups tables.

Remove selected hosts or host groups by clicking on *Delete* in the Host List or Group List table.

Click on *Generate* to generate the report. The contents of the window will be replaced with the newly generated report (Figure 7.7-2).

Click on *Publish* to publish the report to the publish directory.

Click on *Export* to generate the report. A dialog box will appear that allows saving of the report to an XML file. The XML file is also exported to the export directory.

Click on *Close* to dismiss the Generate Report window.

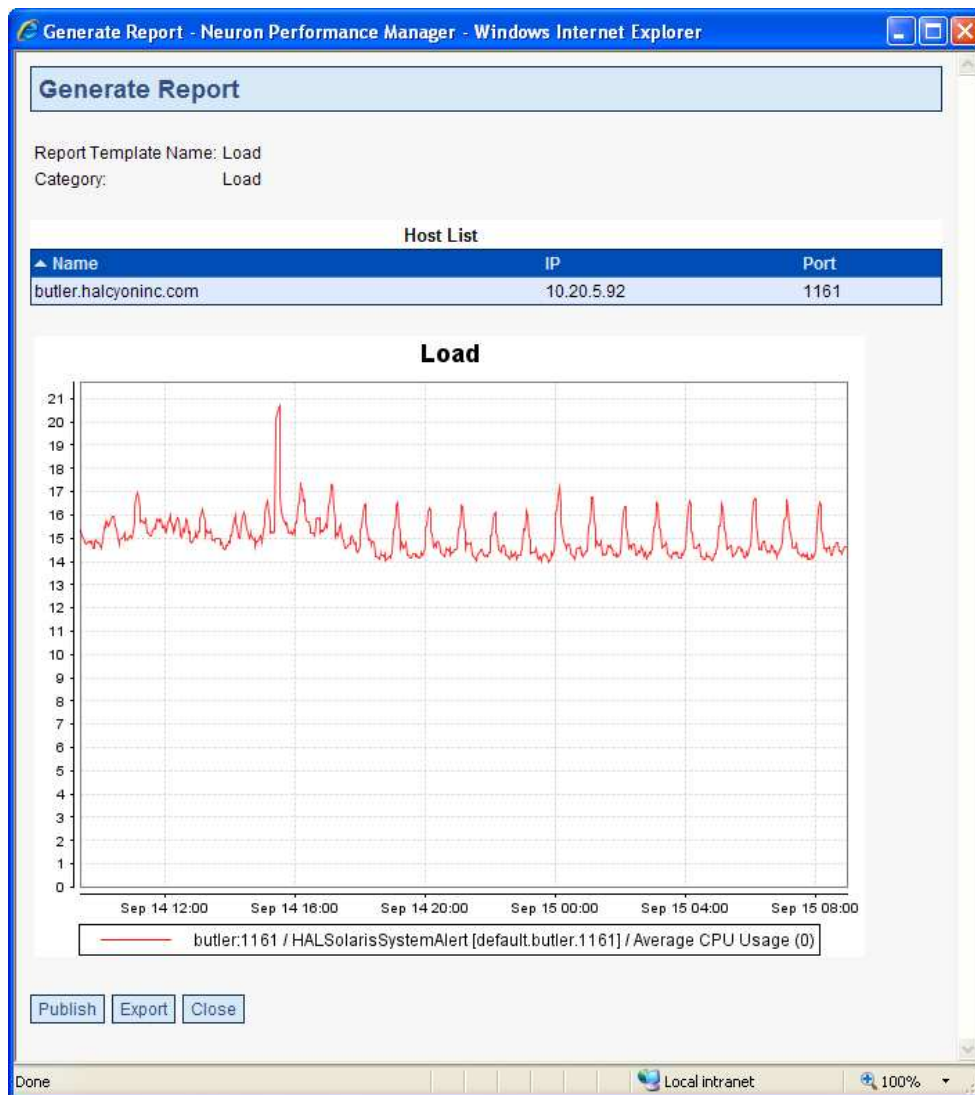


Figure 7.7-2: Generated Report

8 Working with Scheduled Reports

Scheduled reports are executed at preset frequencies. They define the report templates and graph templates to be used to generate reports. The results of executing scheduled reports can be viewed by selecting the *Historical Reports* menu item.

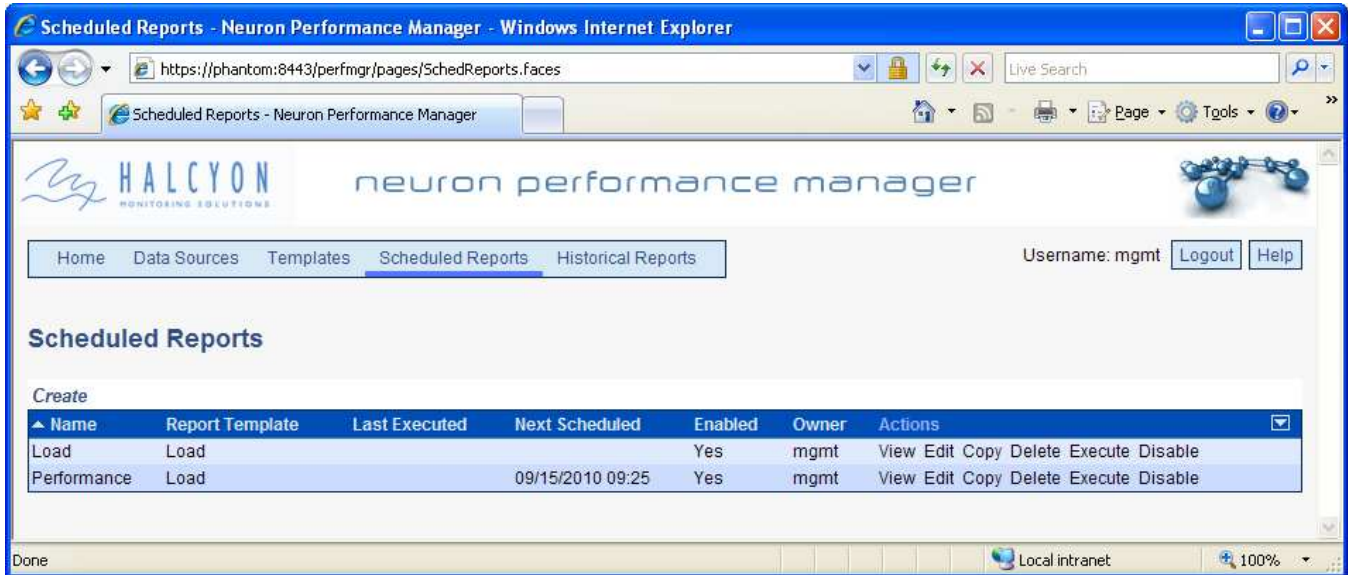


Figure 8-1: Scheduled Reports Table

The *Scheduled Reports* table lists all defined scheduled reports (Figure 8-1). The data fields in the Scheduled Reports table are described below:

| | |
|-----------------|---|
| Name | The name of the scheduled report. |
| Report Template | The name of the report template. |
| Last Executed | The time when the scheduled report was last executed. |
| Next Scheduled | The time when the scheduled report is executed again. |
| Enabled | Whether the scheduled report is enabled or not. If the scheduled report is disabled automatic report generation does not occur. However, it is possible to manually execute the scheduled report by clicking on <i>Execute</i> . |
| Owner | The user that created the scheduled report. |
| Actions | The actions that can be performed for this row: <ul style="list-style-type: none"> • <i>View</i> - view details of the scheduled report • <i>Edit</i> - edit details of the scheduled report • <i>Copy</i> - copy the scheduled report • <i>Delete</i> - delete the scheduled report • <i>Execute</i> - execute the scheduled report • <i>Disable</i> - disable the scheduled report • <i>Enable</i> - enable the scheduled report |

After clicking on *Create* in the Scheduled Reports table the *Create Scheduled Report* window is shown. Follow the instructions for editing a scheduled report (8.2 below) to create a scheduled report.

8.1 Viewing Scheduled Report Details

Role: End User

After clicking on *View* in the Scheduled Reports table the window shown in Figure 8.1-1 is displayed.

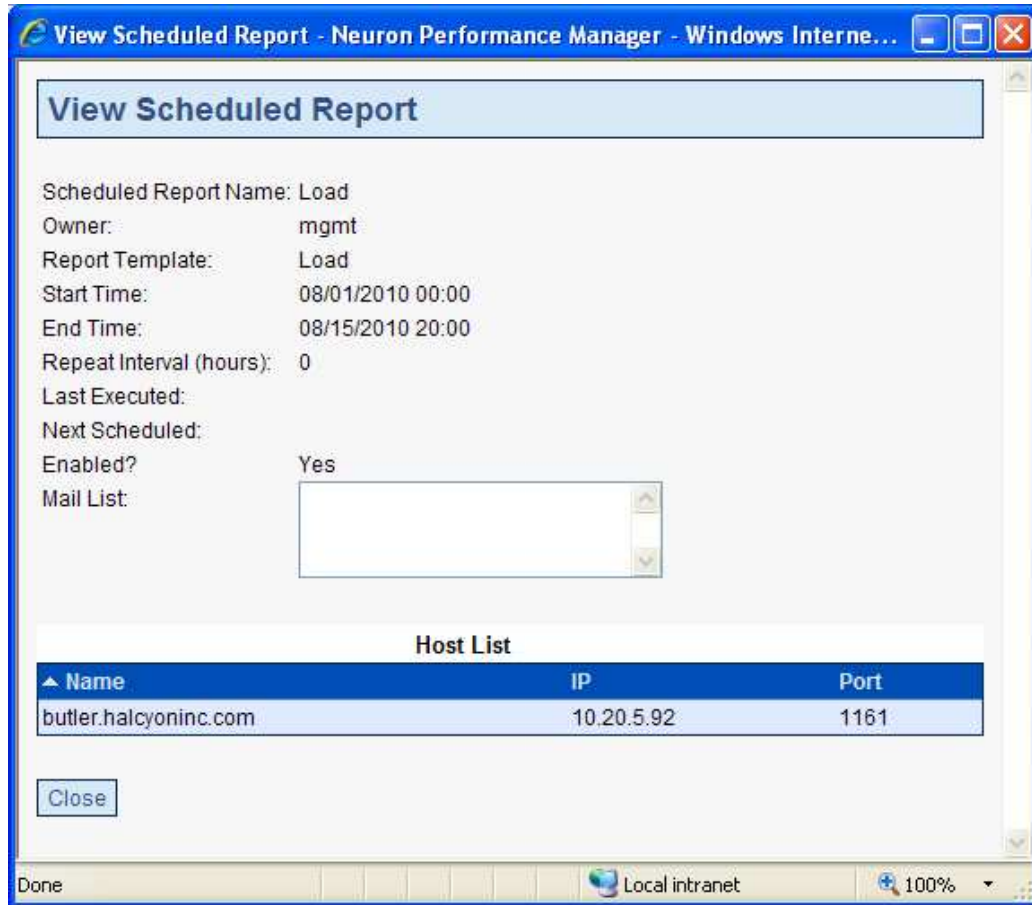


Figure 8.1-1: View Scheduled Report

The View Scheduled Report window contains the following data fields:

| | |
|-----------------------|--|
| Scheduled Report Name | The name of the scheduled report. |
| Owner | The user that created the scheduled report. |
| Report Template | The name of the report template. |
| Start Time | The time when the scheduled report is to be executed for the first time. |
| End Time | The time after which the scheduled report is no longer to be executed. |

- Repeat Interval (hours) The interval between report generations. If set to 0 the report will be generated only once.
- Last Executed The time when the scheduled report was last executed.
- Next Scheduled The time when the scheduled report will be executed next.
- Enabled? Whether the scheduled report is enabled or not.
- Mail List The list of recipients of the generated report. Each line contains one e-mail address.
- Host List The list of hosts for which the scheduled report is generated. This list is only shown if the host list type is *Hosts*
- Group List The list of host groups for which the scheduled report is generated. This list is only shown if the host list type is *Groups*

Click on *Close* to dismiss the View Scheduled Report window.

8.2 Editing Scheduled Report Details

Role: Manager

After clicking on *Edit* in the Scheduled Reports table the window shown in Figure 8.2-1 is displayed.

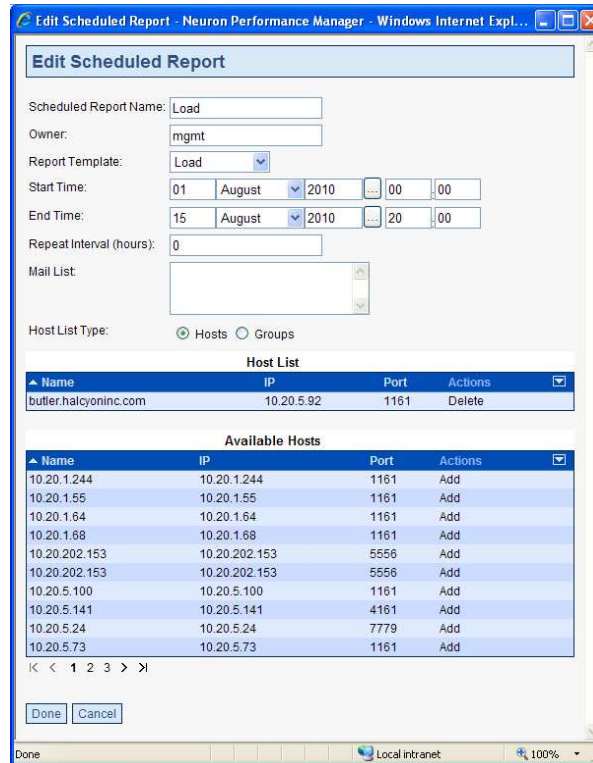


Figure 8.2-1: Edit Scheduled Report

The Edit Scheduled Report window contains the following data fields:

| | |
|-------------------------|---|
| Scheduled Report Name | The name of the scheduled report. |
| Owner | The user that created the scheduled report. |
| Report Template | The name of the report template. |
| Start Time | The time when the scheduled report is to be executed for the first time. |
| End Time | The time after which the scheduled report is no longer to be executed. |
| Repeat Interval (hours) | The interval between report generations. If set to 0 the report will be generated only once. |
| Mail List | The list of recipients of the generated report. Each line contains one e-mail address. |
| Host List Type | Determines whether the scheduled report should be executed for <i>Hosts</i> or <i>Groups</i> . |
| Host List | The list of hosts for which the scheduled report is generated. This list is only shown if the host list type is <i>Hosts</i> |
| Available Hosts | The list of available hosts for the <i>Host List</i> . This list is only shown if the host list type is <i>Hosts</i> |
| Group List | The list of host groups for which the scheduled report is generated. This list is only shown if the host list type is <i>Groups</i> |
| Available Host Groups | The list of available host groups for the <i>Group List</i> . This list is only shown if the host list type is <i>Groups</i> |

Click on *Add* in the *Available Hosts* or *Available Groups* list to add a host or group to the *Host List* or *Groups List*, respectively.

Click on *Delete* in the *Host List* or *Group List* to remove a host or group from the *Host List* or *Group List*, respectively.

Click on *Done* to dismiss the Edit Scheduled Report window and confirm all changes that have been made. All scheduled reports will be cancelled and rescheduled to reflect the changes made. The *Next Scheduled* data field of the edited scheduled report is updated. Note: The *Last Executed* time takes precedence over the *Start Time* in determining the *Next Scheduled* time. For example, if the *Last Executed* field contains *Jul 21, 2008 10:00:00* and the *Start Time* has been changed to *Jul 21, 2008 10:30:00* the *Next Scheduled* field will be *Jul 21, 2008 11:00:00* (assuming the *Repeat Interval* is 1 hour). It will not be *Jul 21, 2008 11:30:00*.

Click on *Cancel* to dismiss the Edit Scheduled Report window and all changes that have been made.

8.3 Copying a Scheduled Report

Role: Manager

After clicking on *Copy* in the Scheduled Reports table the *Copy Scheduled Report* window is shown. Follow the instructions for editing a scheduled report to create a copy of the scheduled report.

8.4 Deleting a Scheduled Report

Role: Manager

After clicking on *Delete* in the Scheduled Reports table the window shown in Figure 8.4-1 is displayed.

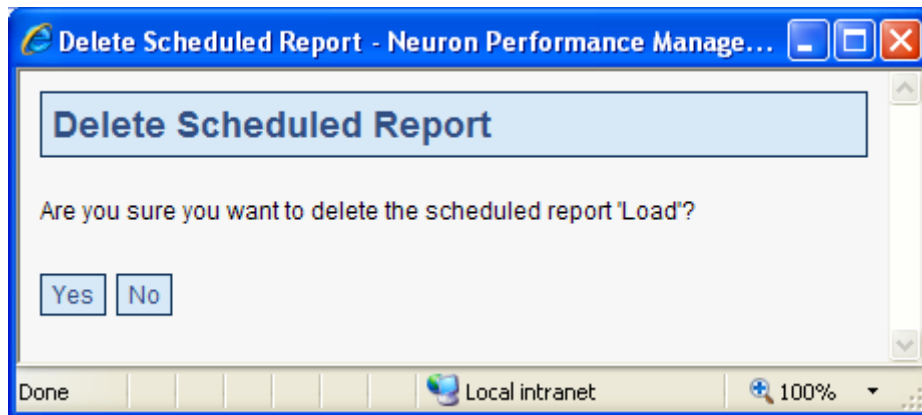


Figure 8.4-1: Delete Scheduled Report

Click on *Yes* to dismiss the Delete Scheduled Report window and confirm deletion of the scheduled report. All scheduled reports will be cancelled and rescheduled to reflect the changes made.

Click on *No* to dismiss the Delete Scheduled Report window without deleting the scheduled report.

8.5 Executing Scheduled Reports

Role: End User

After clicking on *Execute* in the Scheduled Reports table the scheduled report is executed immediately and the window shown in Figure 8.5-1 is displayed.

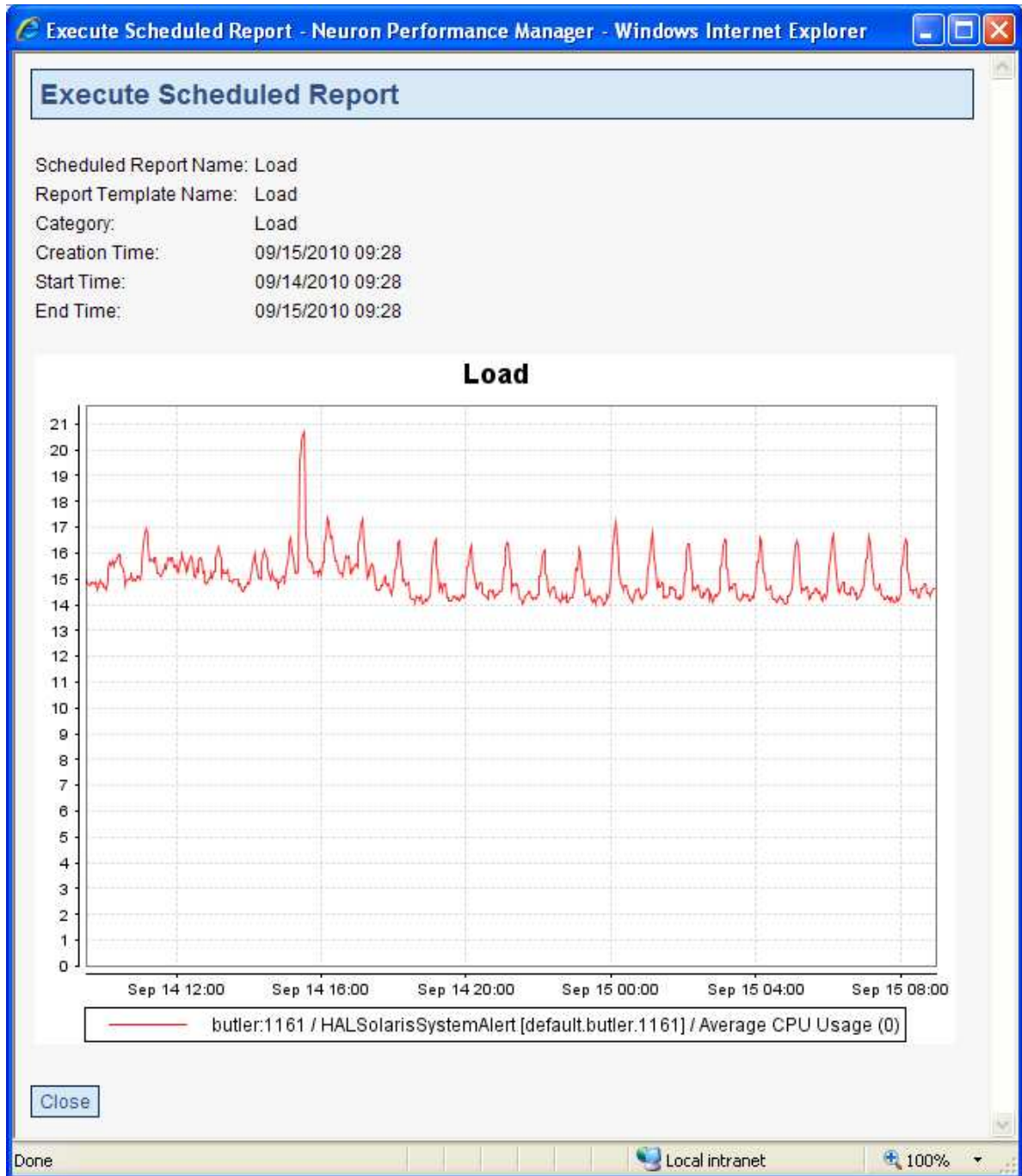


Figure 8.5-1: Executing Scheduled Report

The Execute Scheduled Report window contains the following data fields:

| | |
|-----------------------|---|
| Scheduled Report Name | The name of the scheduled report. |
| Report Template Name | The name of the report template. |
| Creation Time | The time when the report was generated. |

| | |
|------------|---|
| Start Time | The start time of the data displayed in the report. |
| End Time | The end time of the data displayed in the report. |

The Execute Scheduled Report window also contains the graphs for the generated report.

Click on *Close* to dismiss the Execute Scheduled Report window.

8.6 Disabling/Enabling Scheduled Reports

Role: Manager

A scheduled report can be disabled and enabled. If a scheduled report is disabled no reports will be generated until it is enabled again.

After clicking on *Disable* in the Scheduled Reports table the action *Disable* is changed to *Enable*. Similarly, after clicking on *Enable* the schedule report is enabled and the action is changed to *Disable*.

9 Historical Reports

Neuron Performance Manager generates reports according to the configured scheduled reports and stores them in the database. These reports can then be viewed by selecting the *Historical Reports* menu item.

| Scheduled Report | Creation Time | Start Time | End Time | Actions |
|------------------|------------------|------------------|------------------|-------------|
| Load | 09/15/2010 09:30 | 09/14/2010 09:30 | 09/15/2010 09:30 | View Delete |
| Performance | 09/15/2010 09:30 | 09/14/2010 09:30 | 09/15/2010 09:30 | View Delete |
| Performance | 09/15/2010 09:30 | 09/14/2010 09:30 | 09/15/2010 09:30 | View Delete |
| Load | 09/15/2010 09:28 | 09/14/2010 09:28 | 09/15/2010 09:28 | View Delete |
| Load | 08/12/2010 16:09 | 08/11/2010 16:09 | 08/12/2010 16:09 | View Delete |

Figure 9-1: Historical Reports Table

The *Historical Reports* table lists all reports that have been generated by executing scheduled reports (Figure 9-1). The data fields in the Historical Reports table are described below:

| | |
|------------------|--|
| Scheduled Report | The name of the scheduled report that generated the report. |
| Creation Time | The time when the report was generated. |
| Start Time | The start time of the data displayed in the report. |
| End Time | The end time of the data displayed in the report. |
| Actions | The actions that can be performed for this row: <ul style="list-style-type: none"> • <i>View</i> - view the historical report • <i>Delete</i> - delete the historical report |

9.1 Viewing Historical Reports

Role: End User

After clicking on *View* in the Historical Reports table the window shown in Figure 9.1-1 is displayed.

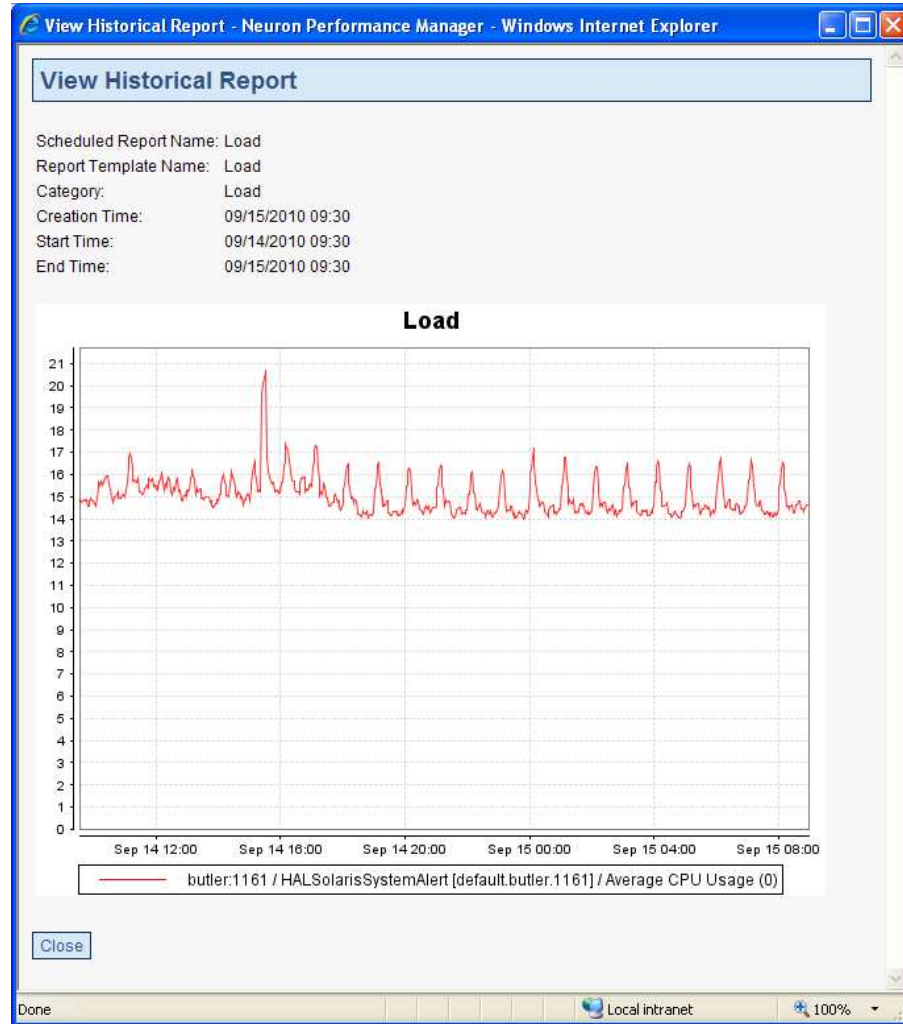


Figure 9.1-1: View Historical Report

The View Historical Report window contains the following data fields:

| | |
|-----------------------|---|
| Scheduled Report Name | The name of the scheduled report that generated the report. |
| Report Template Name | The name of the report template. |
| Creation Time | The time when the report was generated. |
| Start Time | The start time of the data displayed in the report. |
| End Time | The end time of the data displayed in the report. |

The View Historical Report window also contains the graphs for the selected historical report.

Click on *Close* to dismiss the View Historical Report window.

9.2 Deleting a Historical Report

Role: Manager

After clicking on *Delete* in the Historical Reports table the window shown in Figure 9.2-1 is displayed.

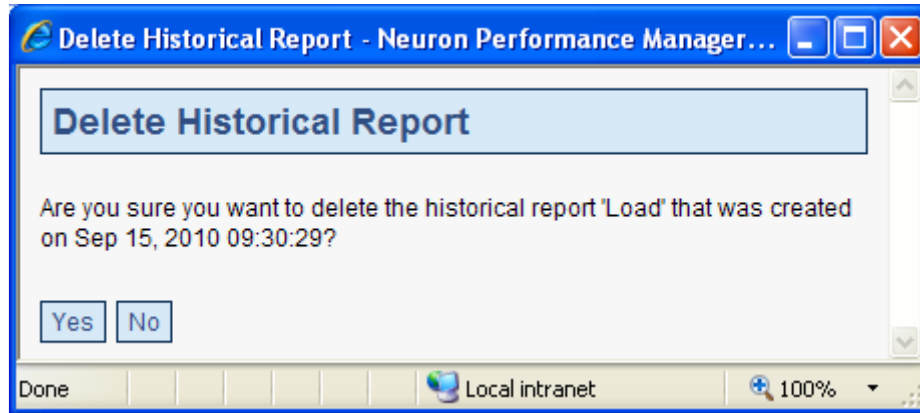


Figure 9.2-1: Delete Historical Report

10 Exporting and Publishing Data

Neuron Performance Manager can export and publish generated reports to configurable directories.

NOTE: Please refer to the Configuration section of this document for more information on the configuration options noted below.

10.1 Scheduled Reports

Role: Administrator

Scheduled reports are executed according to the specified start time and interval. If the configuration option **reporter.exportData** is set to *true* the raw data of the report is exported to an XML file in the export directory (defined by the **reporter.exportDirectory** option). A scheduled report can also be executed manually from the Scheduled Reports table. This will also export the raw data of the report if the configuration option is set.

The name of the exported XML file starts with *reporter-export* and contains the name of the scheduled report, the name of the report template, as well as the time when the report was generated. Example: *reporter-export-Load_Schedule-Load-2010-06-16-10.43.20.xml*.

When a scheduled report is executed the resulting report is also published to an MHTML file in the publish directory (defined by the **reporter.publishDirectory** option). The name of the report file starts with *Reporter-report* and contains the name of the scheduled report, the name of the report template as well as the time when the report was published. Example: *Reporter-report-Load_Schedule-Load-2010-06-16-10.22.59.mhtml*.

10.2 Manual Reports

Role: Administrator

Reports can also be generated manually from the Hosts table by selecting *Report* for a host, or from the Report Templates table by selecting *Generate* for a report template. In both cases the resulting window offers options to *Publish* or *Export* the generated report.

If *Export* is selected the raw data for the generated report can be downloaded directly and saved locally. The name of the exported XML file starts with *reporter-export* and contains the name of the host or report template as well as the time when the report was generated.

Examples:

reporter-export-CPU_and_Memory-2010-06-26-10.30.53.xml
reporter-export-Report_for_Host_10_20_1_70_8161-2010-06-26-10.37.30.xml

If *Publish* is selected the report is published to the publish directory. The name of the report file starts with *Reporter-report* and contains the name of the host or report template as well as the time when the report was published.

Examples:

reporter-report-CPU_and_Memory-2010-06-26-10.30.54.mhtml
reporter-report-Report_for_Host_10_20_1_70_8161-2010-06-26-10.39.02.mhtml

The file format for published reports is *MHTML* (MIME HTML). Applications that support this format are *Internet Explorer* and *Microsoft Word*.

11 Configuration

Role: Administrator

Neuron Management Suite provides several configuration options for the Neuron Performance Manager, many of which are listed below, through the PerfdbService. The information detailed below only outlines what some of the main configuration properties are, as well as their defaults (in italics up front) and possible values (in italics).

To make any configuration changes to the product, please refer to the *Configuration* section of the *Neuron Management Server User's Guide*.

| | |
|-----------------------------------|---|
| housekeeper.cleanupInterval | <i>10</i> The interval (in seconds) between checks for requests and data collectors to finish. When Performance Manager is stopped and data collectors are still running then the specified value defines how long Performance Manager will wait between each check for these requests and data collectors to finish. This allows for graceful shutdown of Performance Manager even when data collection is in progress. |
| reporter.mode | <i>CURRENT</i> If this value is set to <i>CURRENT</i> , data collection is enabled (and can be disabled), scheduled reports are generated, and database reorganization is enabled as well. If it is set to <i>ARCHIVE</i> , data collection, scheduled reports, and database reorganization are disabled. It is possible to generate reports and to execute scheduled reports manually. Archive mode is intended for viewing historical data from an archive database. |
| reporter.retentionPeriod.2MinBin | <i>1</i> The retention period (in days) for the 2 minute data bin after which reporting data is discarded. |
| reporter.retentionPeriod.20MinBin | <i>1</i> The retention period (in weeks) for the 20 minute data bin after which reporting data is discarded. |
| reporter.retentionPeriod.60MinBin | <i>1</i> The retention period (in months) for the 60 minute data bin after which reporting data is discarded. |
| reporter.retentionPeriod.1DayBin | <i>1</i> The retention period (in years) for the 1 day data bin after which reporting data is discarded. |
| reporter.retentionPeriod.reports | <i>365</i> The retention period (in days) for historical reports after which they are discarded. |
| reporter.dataCollectionEnabled | <i>true</i> Whether or not (<i>true</i> or <i>false</i>) data collection should be performed on a scheduled basis. |

| | |
|---------------------------------------|--|
| reporter.dataCollectionScheduleDelay | 5 The delay (in seconds) for scheduling data collection after data collection has been triggered. |
| reporter.reorgEnabled | <i>true</i> Whether or not (<i>true</i> or <i>false</i>) the database should be reorganized (old data purged). |
| reporter.reorgExport | <i>false</i> If set to <i>true</i> deleted data is exported to the directory specified by reporter.exportDirectory. The format of deleted data is XML. |
| reporter.maxCollectors | 10 The maximum number of data collectors that will be started. For every Sun MC and Neuron agent, a separate data collector will be started. This can be used to tune performance based on available resources. |
| reporter.maxCollectorsOnDemand | 10 The maximum number of on-demand data collectors that will be started. This can be used to tune performance based on available resources |
| reporter.maxOnDemandHostsBeforeWarn | 20 If the user requests manual data collection for more than this number of hosts at once, a warning popup will be presented. |
| reporter.requestTimeout | 30 The timeout (in seconds) for requests to a Sun MC server. |
| reporter.agent.requestTimeout | 2 Timeout (in seconds) for requests to a Sun MC or Neuron agent. |
| reporter.agent.maxRetries | 2 The maximum number of times that Performance Manager will attempt to get data from an agent before skipping it. |
| reporter.agent.request.delay.metadata | 100 The amount of time (in seconds) to sleep the collection of metadata to prevent network congestion Agent host overload. |
| reporter.agent.request.delay.data | 250 The amount of time (in seconds) to sleep data collection to prevent network congestion Agent host overload. |
| reporter.disableTimeout | 168 After regularly scheduled data collection for a host has failed continuously for this number of hours, data collection will be disabled. The timeout is calculated from the last successful data collection or the last time data collection was enabled, whichever is later. (Note: You can always manually force data collection in the Hosts table, while generating a graph will also attempt to collect data if necessary.) |

| | |
|--|---|
| reporter.maxTablesReport | <p>10</p> <p>The maximum number of tables to be queried when reading data for reports.</p> <p>Do not change this without the advice of Halcyon Support.</p> <p>Data for each bin is stored in separate tables according to the retention period. Reading from too many tables to generate a single graph line means that far too many data points are being used to generate a graph of a given size. It's pointless and excessively heavy to read 10,000 data points for a graph that is only 1000 pixels wide. It's better to drop down to already averaged coarser data.</p> <p>For example, the 20 minute data bin stores its data in separate tables for each week. When a report is generated, data is read from these tables. If the number of tables to be read is exceeded, data will be read from a coarser data bin. For the 20 minute data bin this means that the 60 minute data bin is read if the report data exceeds the configured number of weeks. In this case the default value is 10 weeks. Similarly, the 1 day data bin is read if the report data exceeds 10 months. Note: This process starts from the data bin that contains all data according to the bin's retention period.</p> |
| reporter.scheduleReportGeneration | <p><i>true</i></p> <p>Whether to schedule report generation (<i>true</i> or <i>false</i>). If this is set to <i>true</i>, reports will be generated according to scheduled reports in the Scheduled Reports table.</p> |
| reporter.scheduleReportGenerationDelay | <p>60</p> <p>The delay (in seconds) for scheduling report generation after startup of Performance Manager has finished.</p> |
| reporter.exportData | <p><i>false</i></p> <p>If set to <i>true</i>, report data is exported to the directory specified by <i>reporter.exportDirectory</i> when a scheduled report is executed. The format of raw report data is XML.</p> |
| reporter.dataFormat | <p>STANDARD</p> <p>The format for data values (average, minimum, maximum, and last) when exporting data to XML files. Two values are allowed:</p> <ul style="list-style-type: none"> • STANDARD - default floating point notation, e.g. 0.059 • SCIENTIFIC - scientific notation, e.g. 59E-3 |
| reporter.exportDirectory | <p><i>export</i></p> <p>The directory for exported and deleted report data. When a scheduled report is executed and <i>reporter.exportData</i> is set to <i>true</i> raw report data is exported to a file in this directory. Also, when data is deleted from the database because it is older than the specified retention period and <i>reporter.reorgExport</i> is set to <i>true</i> the deleted data is saved to files in this directory.</p> |
| reporter.publishDirectory | <p><i>publish</i></p> <p>The directory for publishing reports. When a report is published it is saved in this directory.</p> |

| | |
|-------------------------------------|---|
| reporter.reportStylesheet | <p><i>performance-report.xsl</i></p> <p>The stylesheet for transforming reports to the desired output format. It is used whenever a report is generated.</p> <p>NOTE: This setting or the specified file should only be modified by experienced users since an incorrect stylesheet can cause the transformation to fail.</p> |
| reporter.dataCsvStylesheet | <p><i>performance-csv.xs</i></p> <p>The stylesheet for transforming data to CSV using the TransformData command line tool.</p> |
| reporter.dataTsvStylesheet | <p><i>performance-tsv.xsl</i></p> <p>The stylesheet for transforming data to TSV using the TransformData command line tool.</p> |
| mail.reportGeneration.sender | <p><i>Neuron Performance Manager <perfmgr@localhost></i></p> <p>The sender to use for report generation notifications.</p> |
| mail.reportGeneration.subject | <p><i>"%schedule" Scheduled Report - %template - %category - %timestamp</i></p> <p>The subject to use for report generation e-mail notifications. The following parameterized variables may be used:</p> <ul style="list-style-type: none"> <i>%schedule</i> - the name of the Scheduled Report that generated the email <i>%template</i> - the name of the Report Template on which the report is based <i>%category</i> - the Category of the Report Template on which the report is based <i>%report_start</i> - the start of the time period for which to display data <i>%report_end</i> - the end of the time period for which to display data <i>%timestamp</i> - the time at which the report was generated |
| mail.reportGeneration.reportType | <p><i>PDF</i></p> <p>The type of report for report generation notifications. Supported formats are: <i>XML, XHTML, PDF</i>.</p> |
| mail.reportGeneration.includeReport | <p><i>true</i></p> <p>Whether reports should be included in report generation notifications. Set this to <i>false</i> if the e-mail sent to the specified recipients should not include the generated report.</p> |
| graph.cleanInterval | <p><i>60</i></p> <p>Interval (in seconds) between cleaning up of temporary report graphs that might still be in <i>graph.tempDirectory</i> and that are older than <i>graph.tempGraphAge</i>.</p> |
| graph.tempGraphAge | <p><i>600</i></p> <p>The minimum age (in seconds) of temporary report graphs after which they are deleted.</p> |
| graph.tempDirectory | <p><i>graphs</i></p> <p>The temporary directory for storing report graphs.</p> |

12 Architecture

This section is meant to provide a general overview of the architecture and terminology of the Neuron Performance Manager.

The application contains the following data components (as seen outlined in this document):

- **Scheduled Reports** - define when reports should be generated. Reports are scheduled after a specified start time. If that time is in the past the report is generated immediately. Also, a repeat interval defines when the report should be generated next. They also define for which hosts or groups of hosts the report should be generated and to which email addresses a report generation notification should be sent.
- **Report Templates** - define the data that should be displayed on a report. It is possible to define an absolute or a relative time range of the displayed data. Report templates also define if data for several hosts should be displayed in separate graphs on the report or in just one graph. Finally, they contain a list of graphs which specify the objects that should be displayed on the report. The objects correspond to those found within the *Halcyon Neuron Management Suite* performance database.
- **Graph Templates** - define how the data should be displayed on a report. They provide the attributes for the graphs such as height, width, graph type (line, area, or stacked graph), or the position of the legend.
- **Host Groups** - provide a means for logical grouping of hosts. Host groups can be used in scheduled reports to specify the hosts for which a report should be generated.

In order to provide and manage reporting data, a number of background tasks run. These include:

- **Data Collectors** - they are started at regular intervals by and within the *Halcyon Neuron Management Suite (HNMS)* to retrieve reporting data from *Neuron Agents*. All data retrieved is stored in the HNMS performance database.
- **Report Generators** - they are started according to the *Scheduled Reports* defined. A separate report generator is started for each scheduled report. They generate reports and store them in the HNMS performance database.
- **Reorganization Task** - this task removes old data from the *HNMS* performance database.

12.1 Bins and Data Cascade Types

The *Neuron Management Suite* performance database stores historical data in *bins* of varying time durations, and time resolutions. Bins of shorter duration have a finer time resolution and bins of longer duration have a coarser resolution.

The bins are named according to their resolution. The *2 Minute* bin has the finest resolution. Data for this bin is stored in tables that contain 1 day each. The *20 Minute* bin stores data in tables that contain 1 week each. The *60 Minute* bin stores data in tables that contain 1 month each. Finally, the *1 Day* bin stores data in tables that contain 1 year each.

Data is cascaded using 4 different algorithms to provide the maximum amount of information for data far into the past. These algorithms are the *Average*, *Minimum*, *Maximum*, and *Last* data cascade types, described below:

The data bin with the finest resolution is the *2 Minute* bin. Every 20 minutes, data is cascaded from the *2 Minute* bin into the *20 Minute* bin.

Using the *Average* algorithm, the last 10 values stored in the *2 Minute* bin are averaged, and the averaged value is stored in the *20 Minute* bin.

Using the *Minimum* algorithm, the last 10 values stored in the *2 Minute* bin are inspected, and the minimum value of those 10 is stored in the *20 Minute* bin.

Using the *Maximum* algorithm, the last 10 values stored in the *2 Minute* bin are inspected, and the maximum value of those 10 is stored in the *20 Minute* bin.

Using the *Last* algorithm, the last value stored in the *2 Minute* bin is stored in the *20 Minute* bin.

This process is repeated when data is cascaded from the *20 Minute* bin into the *60 Minute* bin and from the *60 Minute* bin into the *1 Day* bin.

Cascaded data for each of these 4 data cascade types can be retrieved. When viewing data in bins of long duration, the *Average* data cascade type will show smooth data, as it has been averaged over many individual measurements. The *Last* data cascade type will show noisier data that represents a single measurement. The *Maximum* and *Minimum* data cascade types will show the largest and smallest measured values that were measured at 2 minute intervals, regardless of the time resolution of the bin. For example, when viewing the *1 Day* bin, the time resolution is 24 hours, so the minimum or maximum measurement made in that 24 hour period will be shown.