

Neuron Health Manager

USER'S GUIDE

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At Halcyon, we believe the health of the IT infrastructure is integral to the success of a business. Our clients rely on us for complete end-to-end monitoring solutions that are straightforward, easy to deploy and use, and cost-effective, coupled with a history of client service excellence.

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 Health 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 viewing health metrics and their thresholds.
Manager Administrator	The User's Guide provides information for managers who are responsible for preparing the product for use by end users. Their tasks include setting thresholds for, and enabling/disabling health metrics.

1.3 Related Documents

This solution is composed of a series of underlying products. For further information regarding the configuration, 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 Inventory Manager	<ul style="list-style-type: none"> ▪ Neuron Inventory Manager Release Notes ▪ Neuron Inventory Manager User's Guide
Neuron Event Manager	<ul style="list-style-type: none"> ▪ Neuron Event Manager Release Notes ▪ Neuron Event Manager User's Guide
Neuron Health Manager	<ul style="list-style-type: none"> ▪ Neuron Health Manager Release Notes

Neuron
Management
Server

- Neuron Management Server Release Notes
- Neuron Management Server User's Guide

Neuron
Configuration
Manager

- Neuron Configuration Manager Release Notes
 - Neuron Configuration Manager User's Guide
-

2 General Overview

2.1 Product Overview

The *Neuron Health Manager* retrieves health data from assets that are managed by the *Neuron Management Server*. In the *Neuron Management Portal* UI (please refer to the *Neuron Management Server* User's Guide for details about the *Portal*), there is a Health Tab, which shows the health metrics that are applicable to assets monitored by the *Neuron Management Server*. It also provides a means to set thresholds on health metrics, to copy thresholds from one asset to other assets of the same type, and to enable or disable health metrics. When a health metric is enabled and the retrieved data crosses an active user defined threshold, an event of the specified threshold severity will be generated. The event can be viewed through the Events tab. The severity of the metric is displayed in the Health Tab's metric table. When a health metric is disabled, the *Neuron Health Manager* won't retrieve data for that metric from any asset.

The features of Health Tab (*Neuron Health Manager*) include:

- Easy to use interface for viewing and managing health metrics.
- Enable or disable health metrics.
- Set thresholds on health metrics.
- Copy thresholds from one asset to other assets of the same asset type.

2.2 Getting Started

The *Neuron Health Manager* only retrieves health metric data from assets that are managed by the *Neuron Management Server*. For information on how to discover and manage assets, please refer to the *Neuron Inventory Manager* User's Guide.

3 Health Tab

The Health Tab displays a table of health metrics for the asset that is selected in the left Topology panel as shown in Figure 3-1. Different types of topologies can be selected from the panel's drop-down header where each topology shows different assets, and/or assets organized in different ways. For instance, the OS Topology shows all the operating systems grouped by OS type. For more details about the Topology, please refer to the *Neuron Event Manager User's Guide*.

The screenshot shows the Neuron Management Portal interface. The left sidebar displays the 'OS Topology' panel with a tree view of assets. The selected asset is '(0) ventoux.swi.com'. The main content area shows the 'Health' tab for this asset, displaying a table of health metrics. The table has columns for Severity, Metric, Category, Unit, and Current Value. All metrics are shown with a green checkmark in the Severity column, indicating they are within normal limits.

Severity	Metric	Category	Unit	Current Value
✓	CPU Idle	CPU	%	10.33
✓	CPU Privileged Util	CPU	%	91.91
✓	CPU User Util	CPU	%	95.61
✓	CPU Util	CPU	%	9.64
✓	Available System Mem Util	Memory	%	347.22
✓	Mem Util	Memory	%	88.69
✓	Available Page File	Page File	MB	1735.37
✓	Page File Util	Page File	%	64.00
✓	Page Table Entries	Page File	%	157277.00

At the bottom of the interface, it shows 'Done' and 'Last Refreshed: Nov 24 15:14'.

Figure 3-1: Health Tab

The table in the Health Tab shows the health metrics that are retrieved from the selected asset. Different metrics are retrieved for different assets. The above figure shows health metrics for an asset selected from the OS Topology which is a Windows OS asset. If a Solaris Global Zone asset is selected (from the Systems Topology), a different set of health metrics are displayed. Figure 3-2 shows an example.

Health data is only available when selecting a specific asset in the Topology, not a topology group (those with a + or – icon next to them).

If you do not see the data you are looking for or are expecting, try selecting a different asset.

The screenshot shows the 'Health' tab in the Neuron Health Manager. The main content area displays a table of metrics for the Global Zone 'v210.halcyoninc.com'. The table has columns for Severity, Metric, Category, Unit, and Current Value. All metrics are currently green, indicating they are active and data is available.

Severity	Metric	Category	Unit	Current Value
✓	1 Min Load Average	CPU		0.09
✓	15 Min Load Average	CPU		0.10
✓	5 Min Load Average	CPU		0.10
✓	CPU Util	CPU	%	7.00
✓	CPU Util wrt Host System	CPU	%	1.40
✓	Mem Util	Memory	%	23.00
✓	Mem Util wrt Host System	Memory	%	23.00
✓	Swap Util	Swap	%	5.00
✓	ARC Real Hit Ratio	ZFS	%	99.91
✓	ARC Target Size	ZFS	GB	1.46
✓	Current ARC Size	ZFS	GB	0.71


At the bottom of the table, it says 'Done' and 'Last Refreshed: Nov 24 15:15'.

Figure 3-2: Health Tab Shows Metrics for a Global Zone

If the *Neuron Health Manager* is not licensed or the license has expired, the Health Tab will appear disabled. You can hover the mouse over the tab and see a tooltip with more information. If any related module is not licensed or the license has expired, the metrics that are handled by that module will be disabled and have grey cells in the Current Value column. You can hover the mouse over the disabled icon or the grey cell and see a tooltip with more information.

Tooltips are provided for the icon images in the Severity column, all cells in the Current Value column, and all greyed cells. The tooltip of a severity icon tells what it means. The tooltip of any cell in the Current Value column indicates whether data is available and when the data was last retrieved from the asset. The tooltip of any grey cell explains the reason.

3.1 Refresh Current Data

To pull the most recent health data from the Neuron database, click the refresh button  above the table. This will update the data in the table, specifically the Severity and Current Value fields.

When the *Neuron Health Manager* is pulling data from the database, a “Loading” bar will appear at the bottom of the display indicating that Neuron is loading data. When all data has been retrieved and the table is fully populated, a “Done” label will appear at the bottom of the display. The Last Refreshed timestamp indicates when data was retrieved from the Neuron database.

Please be aware that Refresh only retrieves data already in the Neuron database, it does not trigger operations to run and collect new data from the selected asset. To trigger operations to run, please refer to section 3.2 below.

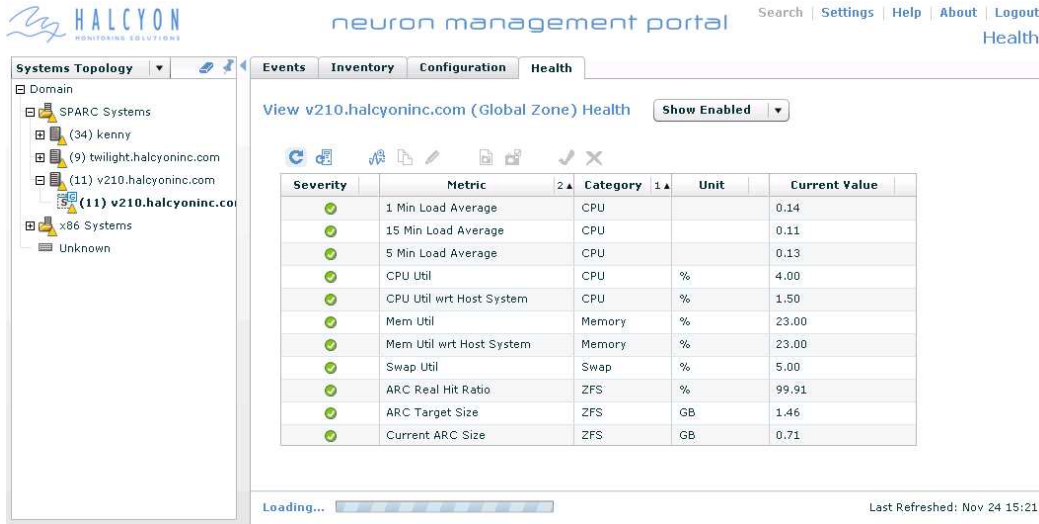


Figure 3-3: Health Tab Loading

3.2 Update Current Data

Within the Health tab, you can hover your mouse over the Severity field icon, or the Current Value field to see a tooltip that will indicate when the data displayed was retrieved from the selected asset.

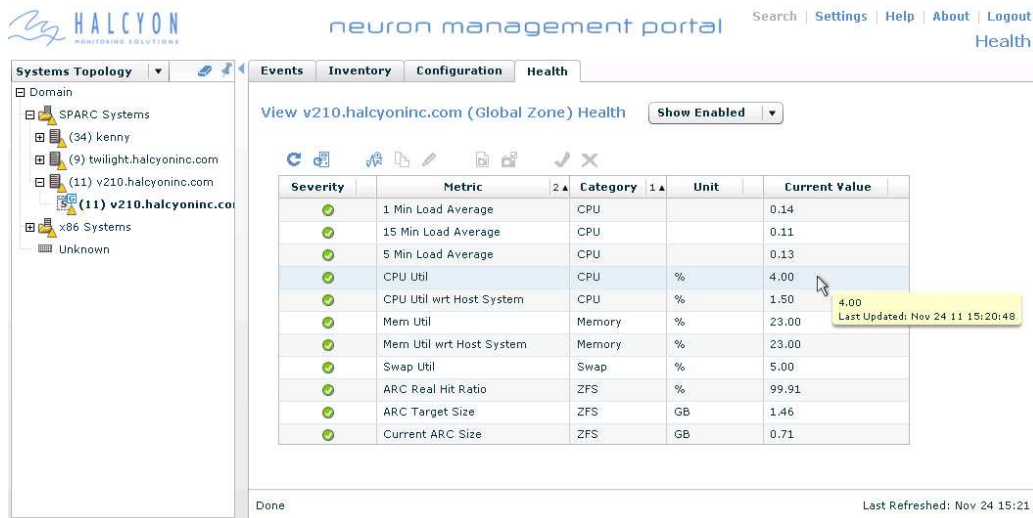



Figure 3-4: Health Data Last Updated Time

To have Neuron run health operations to collect fresh health data from the selected asset, click the update button  above the table. This will trigger health operations that apply to the selected asset (for instance, all Windows XP health operations) to run for that asset.

After triggering the operations to run, you will need to manually refresh the data displayed in the UI by clicking the Refresh button to pull the most recent data from the Neuron database (see section 3.1 above).

Be aware that some operations may take longer to run than others. If you refresh the data and some metrics indicate the existing Last Updated time, the operations may still be running and/or updating the Neuron database.


You can click Refresh again to see if any new data comes back, or click the Events tab to see if any Warnings were logged for that asset's data collection.

3.2.1 Update Button Disabled

There are a number of reasons that the Update button may be disabled. You should be able to hover your mouse over the disabled button to see a tooltip explaining why the button is disabled.

If the selected asset is unmanaged and/or has no credentials set, Neuron cannot collect data from the asset. Please refer to the *Neuron Inventory Manager* User's Guide for details on Managing assets and Setting Credentials.

4 Health Metric Thresholds

The Health Tab table shows the level of severity of the metric depending on the threshold that has been crossed by the current metric value. To view the different levels of thresholds that have been set for the metric, click the Show Threshold Columns button .

There are 2 groups of thresholds that can be applied to a metric of an asset. One group is asset thresholds, which are applied to a metric for a specific asset. For example, you could set asset thresholds on “CPU Util” specifically for a Solaris Global Zone asset named “v210.halcyoninc.com”. These thresholds will only be applied to the asset “v210.halcyoninc.com”, not to any other Solaris Global Zone assets. The other group is asset type thresholds, which are applied to all assets of a specific asset type. For example, you could set thresholds on “CPU Util” for all Solaris Global Zone assets.

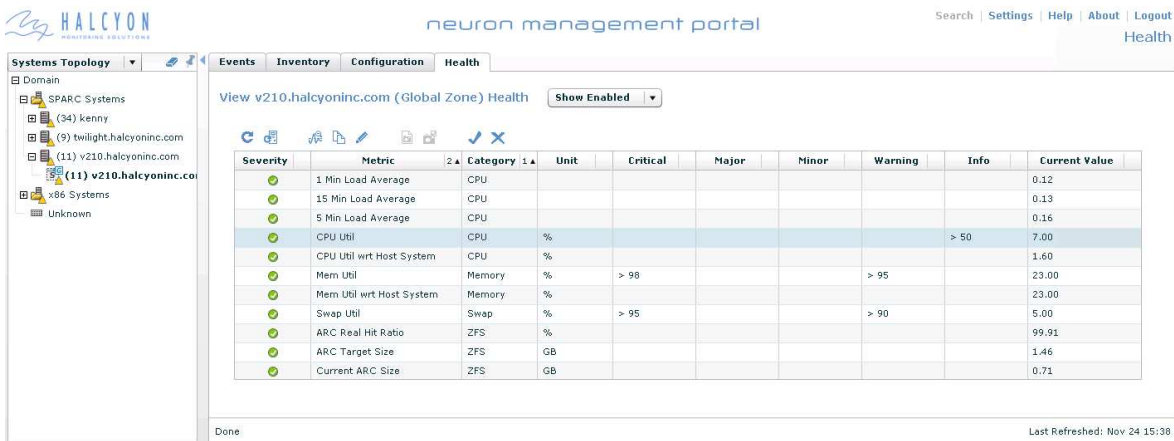
If both asset and asset type thresholds are set, the asset thresholds will override all asset type thresholds for the metric of that asset. For example, suppose there is one asset threshold set on “CPU Util” for the Solaris Global Zone asset named “v210.halcyoninc.com”:

Asset Threshold on CPU Util for asset v210.halcyoninc.com:
Info > 50%

And there are two asset type thresholds set on CPU Util for all Solaris Global Zone assets:

Asset Type Thresholds on CPU Util for all Solaris Global Zone assets:
Critical > 95%
Warning > 90%

Then the asset threshold “Info > 50%” will be actively applied to CPU Util for asset “v210.halcyoninc.com”, while the asset type thresholds “Critical > 95%” and “Warning > 90%” will be inactive for v210’s CPU Util metric. However these two asset type thresholds will still be actively applied to CPU Util for other Solaris Global Zone assets that do not have any asset threshold set.



Severity	Metric	Category	Unit	Critical	Major	Minor	Warning	Info	Current Value
	1 Min Load Average	CPU							0.12
	15 Min Load Average	CPU							0.13
	5 Min Load Average	CPU							0.16
	CPU Util	CPU	%					> 50	7.00
	CPU Util wrt Host System	CPU	%						1.60
	Mem Util	Memory	%	> 98			> 95		23.00
	Mem Util wrt Host System	Memory	%						23.00
	Swap Util	Swap	%	> 95			> 90		5.00
	ARC Real Hit Ratio	ZFS	%						99.91
	ARC Target Size	ZFS	GB						1.46
	Current ARC Size	ZFS	GB						0.71

Figure 4-1: Show Threshold Columns – Active Asset Thresholds

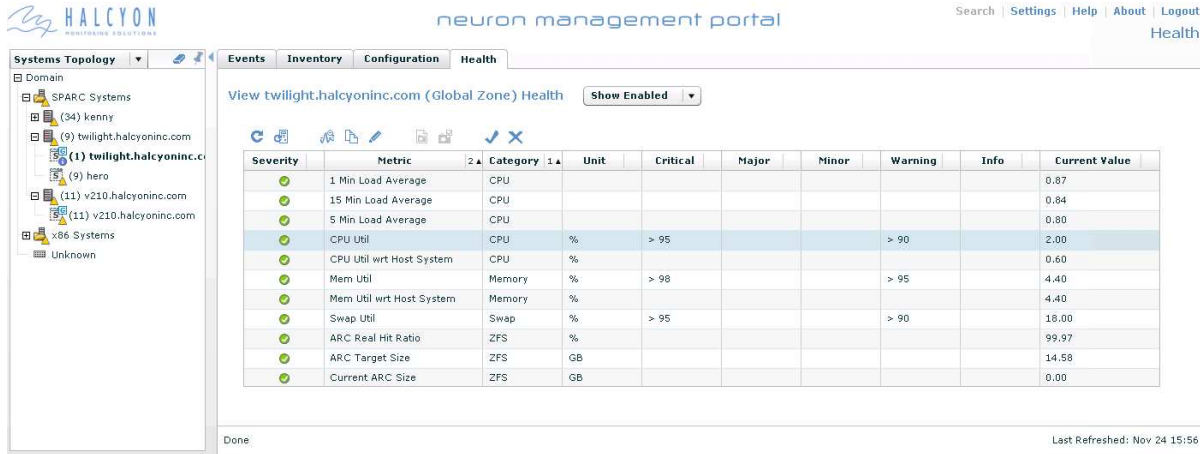



Figure 4-2: Show Threshold Columns – Active Asset Type Thresholds


4.1 Editing Thresholds

Managers and Admins can edit health metric thresholds (please refer to the *Neuron Management Server User's Guide* for more details on users and groups).

As mentioned before, there are two groups of thresholds: asset thresholds and asset type thresholds. For each group, thresholds of different severities can be set on a health metric, but at any time only one group of thresholds will be actively applied to a health metric of an asset (refer to the above section). When the value retrieved from an asset crosses an active threshold, an event of corresponding severity will be triggered and the severity of the health metric will be set.

To view the events, click on the Events Tab.

To set asset thresholds on a metric, select the specific asset from the left topology panel, then select the metric of interest in the table and click the Edit Thresholds button  (you cannot edit thresholds of multiple metrics at the same time).

To set asset type thresholds on a metric, select from the topology panel any asset of the asset type which has the metric of interest. Then select that metric in the table and click the Edit Thresholds button .

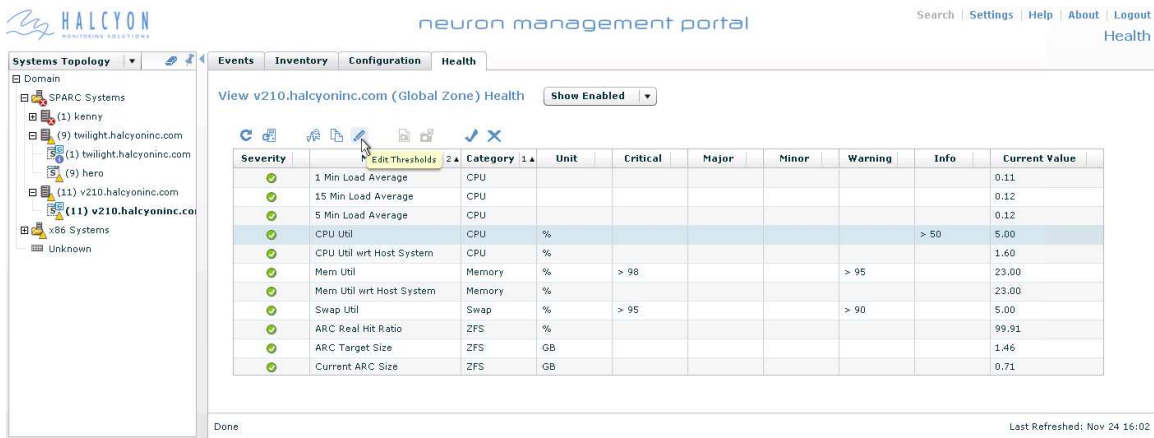


Figure 4-3: Select a Health Metric to Edit Thresholds

The Threshold Editor window will be displayed.

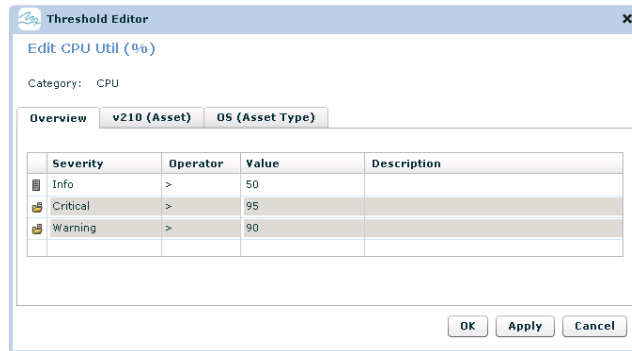



Figure 4-4: Threshold Editor

4.1.1 Overview Tab

The Overview tab displays all thresholds for that metric (one threshold per row), with asset thresholds on top and asset type thresholds below. The asset thresholds are indicated by the asset threshold icon  (see Figure 4-5).

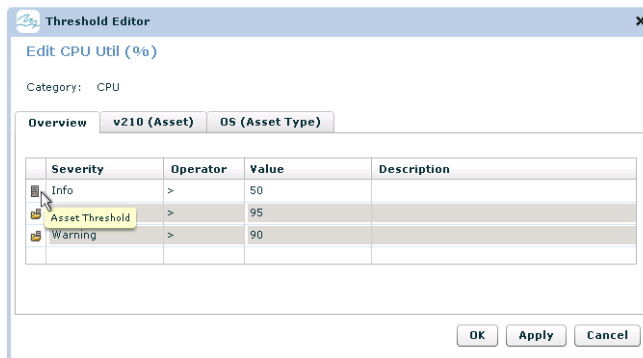



Figure 4-5: Threshold Editor Overview Tab - Asset Thresholds

The asset type thresholds are accompanied by the asset type threshold icon  (see Figure 4-6).

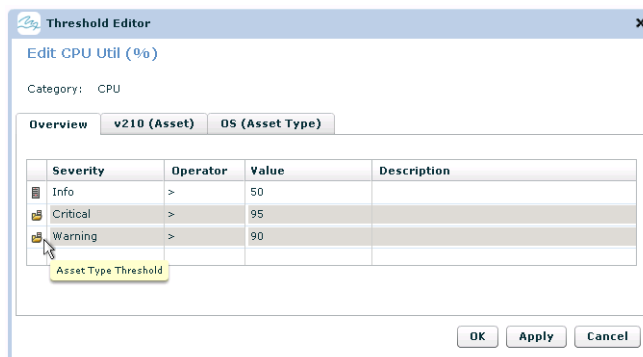


Figure 4-6: Threshold Editor Overview Tab - Asset Type Thresholds

As you can see when both asset thresholds and asset type thresholds are set on a metric, the asset thresholds are active while the asset type thresholds are inactive. The inactive asset type thresholds are displayed with a gray background. Hover over the row to see a tooltip that provides information on why the threshold is greyed out (see Figure 4-7).

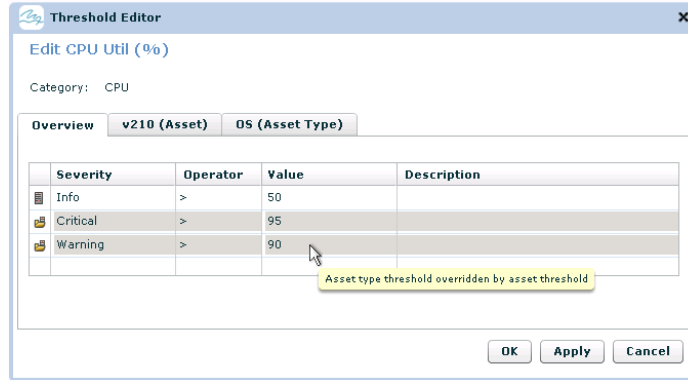


Figure 4-7: Threshold Editor Overview Tab - Inactive Asset Type Thresholds

4.1.2 Asset Threshold Tab

The second tab in the Threshold Editor displays all the asset thresholds that are currently set. You can add/edit/remove asset thresholds here.

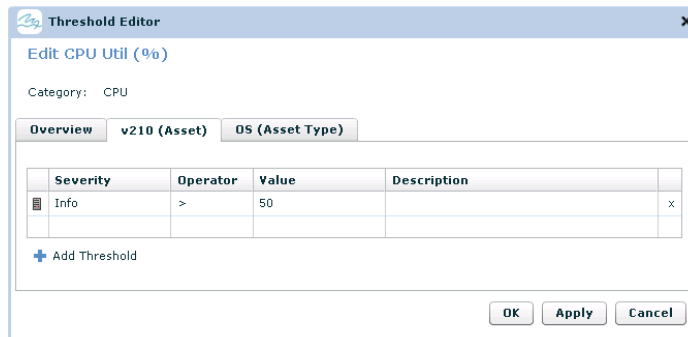


Figure 4-8: Threshold Editor Asset Threshold Tab

To add an asset threshold, click the Add Threshold button at the bottom left corner of the window and a new default row will be added to the threshold table (see Figure 4-9). Click on "Select Severity..." in the Severity column and select a severity for the threshold.

In the Operator column, a default ">" operator will appear. Click on it to select one of the ">", "=", or "<" operators.

Click the cell in the Value column and type in a numerical value which will be the threshold (at present, only numerical thresholds are supported).

Click the cell in the Description column and type the description for this threshold (optional).



Figure 4-9: Add Asset Threshold

To edit an existing threshold, click the cell you want to edit, and make the necessary changes.

To delete an existing threshold, click the delete sign “x” located at the end of each row.

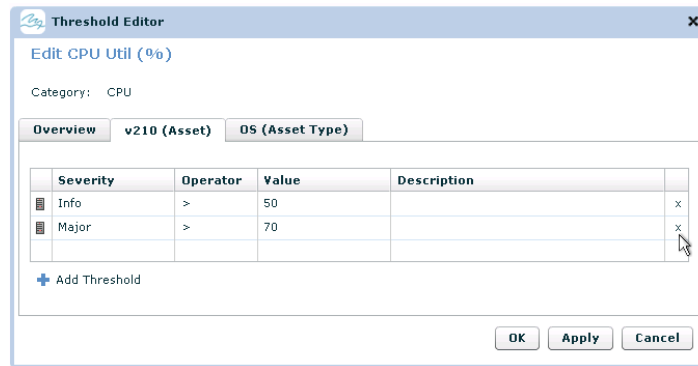


Figure 4-10: Delete Asset Threshold

A popup window will appear and ask for confirmation whether to delete the selected threshold or not.

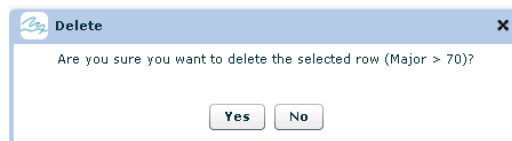


Figure 4-11: Confirm Deletion of an Asset Threshold

Click the “Yes” button to delete the selected threshold or click the “No” button to cancel the deletion.

After editing is done, click the “OK” or “Apply” button to save the changes. The Health Tab table will be updated to reflect the new thresholds (as in Figure 4-1). The Threshold Editor Window will close on its own if the “OK” button is clicked. The window will stay open if the “Apply” button is clicked, so that you can do more editing.

4.1.3 Asset Type Threshold Tab

The third tab in the Threshold Editor displays all the asset type thresholds that are currently set. You can add/edit/remove asset type thresholds here.

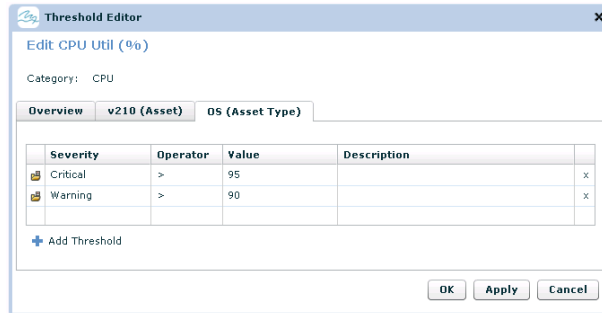


Figure 4-12: Threshold Editor Asset Type Threshold Tab

The steps to add/edit/remove asset type thresholds are the same as adding/editing/removing asset thresholds. Please refer to section 4.1.2 for details.

4.2 Copying Asset Thresholds

Managers and Admins can copy health metric asset thresholds from one asset to other assets (please refer to the *Neuron Management Server User's Guide* for more details on users and groups).

As mentioned in the above section, there are two groups of thresholds: asset thresholds and asset type thresholds. An asset threshold will only be applied to the specific asset it is set on. Copying asset thresholds allows users to apply a specific asset threshold to other assets of interest.

To copy thresholds from one asset to other assets, select the source asset in the topology panel, then select the metric(s) of interest in the health metric table. Use Ctrl + click to select more than one metric. Then click the Copy Thresholds button . For example, we want to copy the "Info > 50%" asset threshold on CPU Util that was set on an OS and Solaris Global Zone asset named "v210" to some other OS assets. We first select the OS asset "v210" in the OS topology from the left panel, then select the CPU Util metric in the health metric table and click the Copy Thresholds button.

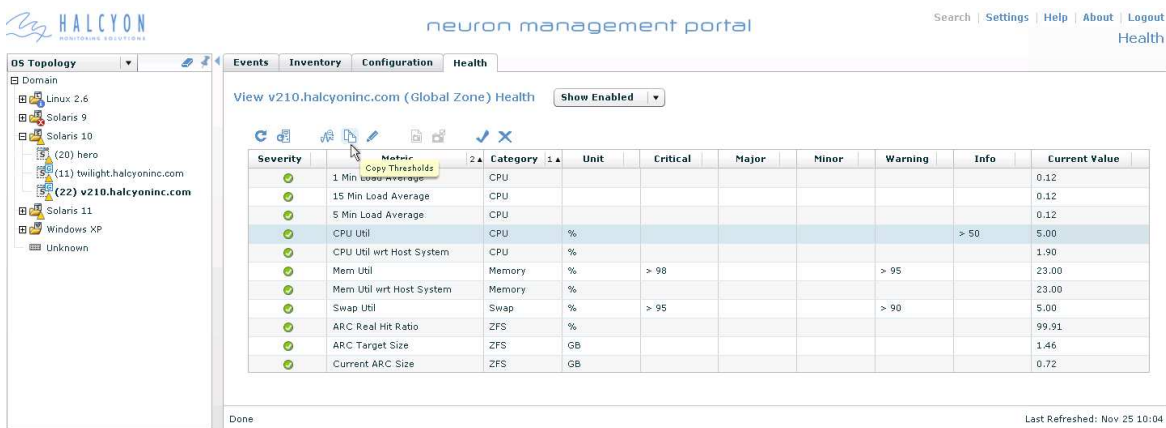


Figure 4-13: Select a Health Metric to Copy Asset Thresholds

The Copy Thresholds window will be displayed.

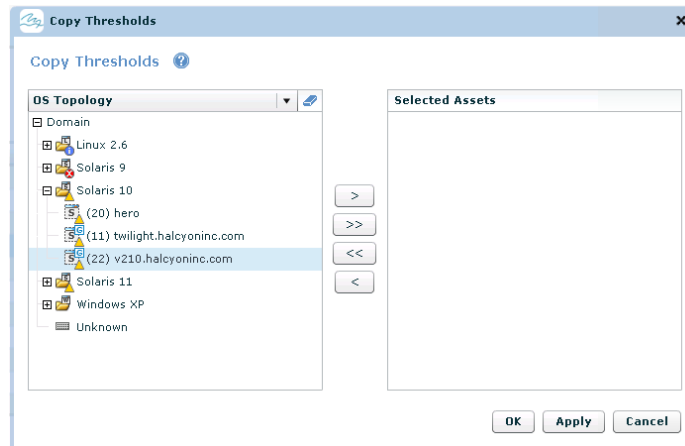


Figure 4-14: Copy Thresholds Window

Next we need to select the target assets from the left topology panel and add them to the selected assets panel on the right. Notice that in the left panel you can select different topologies from the drop-down selector at the top of the panel. We want to copy v210's CPU Util thresholds to other OS assets "hero" and "beholder" (the target assets are "hero" and "beholder"). We select these 2 assets from the left topology panel. Use Ctrl + click to select multiple assets, then add them to the right panel by either clicking the ">" (Add) button or by dragging and dropping them in the right panel.

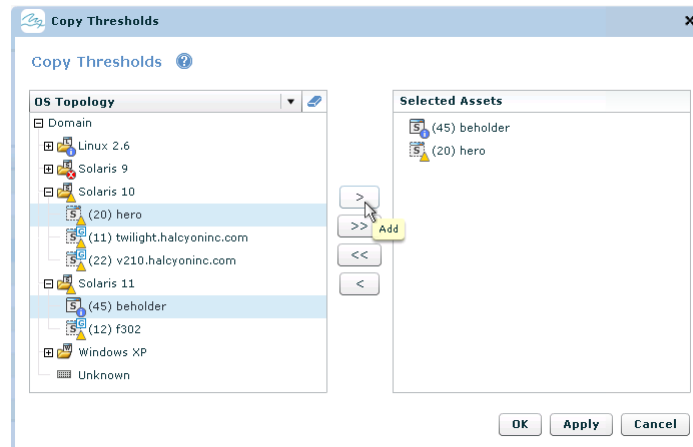


Figure 4-15: Copy Asset Thresholds - Add Target Assets

After all target assets are added to the selected assets panel on the right, click the "OK" or "Apply" button to trigger the copying of the asset thresholds set on the metric of the source asset to the target assets. If the "OK" button is clicked, the Copy Thresholds window will close on its own. The window will stay open if the "Apply" button is clicked, so that you can repeat copying to other target assets.



5 Snapshots

The *Neuron Health Manager* currently does not support snapshot functionality. Presently, snapshots are only available for Configuration metrics via the *Neuron Configuration Manager* (refer to *Neuron Configuration Manager User's Guide* for details).

6 Enable and Disable Health Metrics

Managers and Admins can enable or disable health metrics (please refer to the *Neuron Management Server User's Guide* for more details on users and groups).

When a health metric is enabled, Neuron will collect the data from assets that have this metric associated with them. If a health metric is disabled, Neuron will not collect data for this metric from those assets.

To enable or disable metric(s), select one or more metrics in the table. Use Ctrl + click to select more than one metric. Click the Enable Metric button  to enable the selected metric(s) or the Disable Metric button  to disable the selected metric(s).

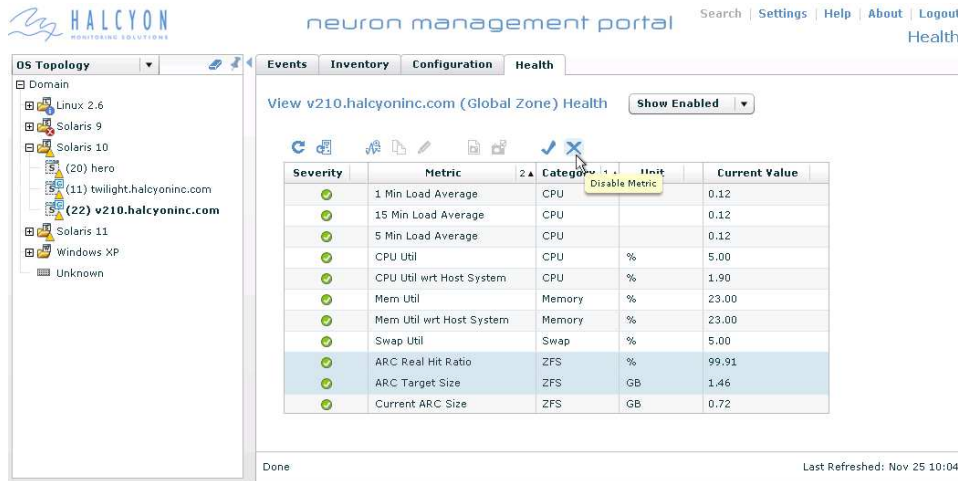


Figure 6-1: Disable Health Metrics

Note that there is a metric filter drop down box on the right side of the table header. You can choose one of the three options to show only enabled metrics, to show only disabled metrics, or to show all metrics.

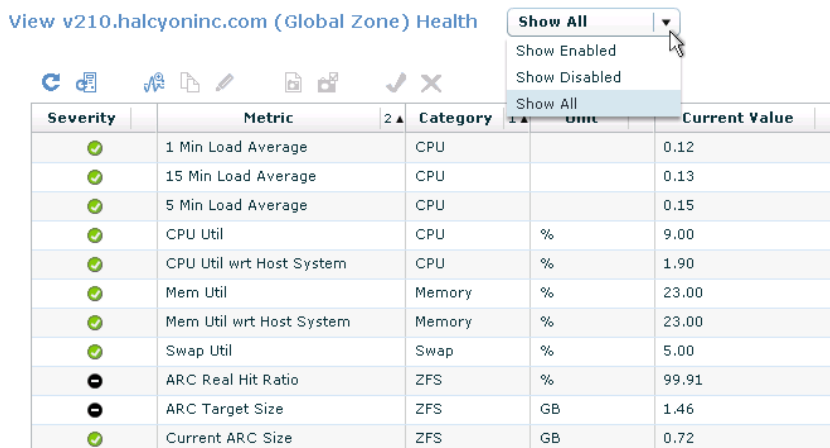


Figure 6-2: Show Enabled / Disabled / All Metrics

Enabled metrics are displayed if either “Show Enabled” or “Show All” option is selected from the drop down box. Disabled metrics are displayed if either “Show Disabled” or “Show All” option is selected.