IPSWITCH

WhatsUp Gold

WhatsVirtual

v16.4

WhatsUpGold

IT MANAGEMENT MADE SIMPLE

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CHAPTER 1

Welcome

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Welcome to WhatsVirtual

As an integrated plug-in for WhatsUp Gold, WhatsVirtual provides the capability to discover, map, monitor, alert and report on both small virtual environments, hosted by a single VMware host, or entire data centers, managed by one or more VMware vCenter servers.

When you use a vCenter server to manage your virtual environment, it becomes the point of communication between WhatsVirtual, the virtual machines within that environment, and the hosts on which the virtual machines are running. WhatsVirtual communicates with the vCenter server to discover the virtual environment, poll the virtual machines, collect events associated with actions taken on virtual machines, and issue actions to individual virtual machines.

The files for WhatsVirtual plug-in are installed automatically with Ipswitch WhatsUp Gold. Your license file determines whether or not you can access the WhatsVirtual plug-in. To update your license with a purchased WhatsVirtual plug-in, visit the *WhatsUp Customer Portal* (*http://www.whatsupgold.com/wugCustPortal*).

CHAPTER 2

Using WhatsVirtual

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Discovering virtual devices

Virtual devices are discovered with physical devices connected to the network during the WhatsUp Gold discovery process when a VMWare scan is performed. As each device is discovered, WhatsUp Gold attempts to connect using the VMware vSphere API. If a connection is made using the VMware credentials through the VMware vSphere API, the device is assigned to either the VMware vCenter server, or VMware Host role, and a query is made through the API to determine which virtual machines are associated with the managing server.

The VMware scan type enables the discovery of vCenter servers, hosts and virtual machines. Use the Scan Settings on the Discovery Console, to set the scan type, add VMware vCenter servers or VMware hosts as targets for the VMware scan, and select the option to rescan vCenter servers that have already been added to WhatsUp Gold using WhatsVirtual. For more information, see Scan settings in the Discovery Settings help.

Note: If you are managing your virtual environment using a vCenter server and want to collect detailed hardware information about the VMware hosts within that environment, you must add and select the credentials for those VMware hosts as well as for the vCenter server.

Important: If you do not select the **Auto scan virtual environments** option in the Discovery Console Advanced settings prior to performing a VMWare scan, virtual machines associated with the host that are outside of the scan range are not discovered, and virtual machines discovered because they are included in the scan range are not automatically associated with the virtual host.

Tip: To ensure virtual devices are found during discovery, confirm VMware Tools are installed on each virtual machine you want to discover. If VMware tools are not installed on a virtual machine, the device will not be discovered during the VMware Scan.

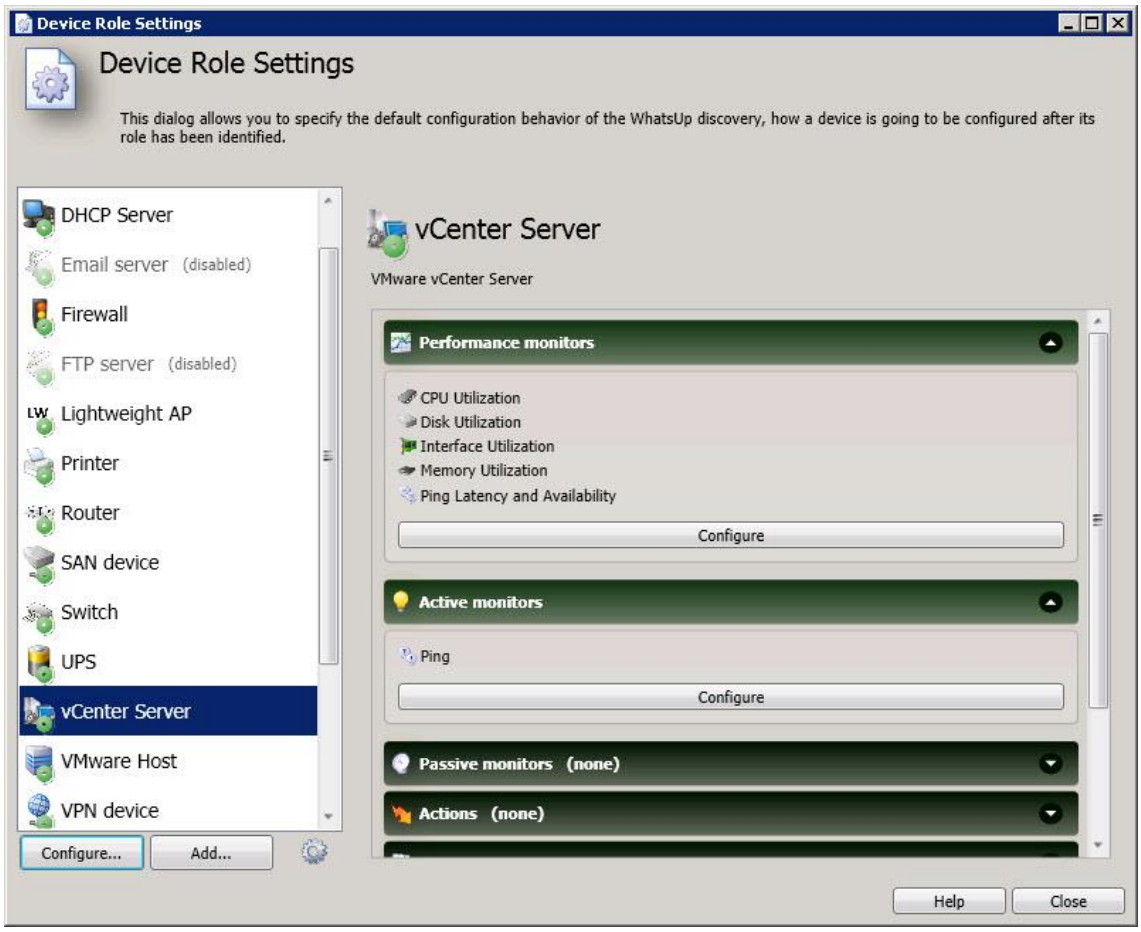
While you can add as many targets to the VMware scan as is needed, you can also discover your virtual environment by selecting the vCenter server that is managing your environment as the target of the scan. This will result in the discovery of all of the virtual machines and hosts managed by the vCenter server.

For information on the WhatsUp Gold Discovery Console and instructions for discovering network devices, see Discovering Network Devices and Configuring and Running Discovery in the Ipswitch WhatsUp Gold help.

If desired, you can specify the default configuration behaviors of virtual devices found during the WhatsUp Gold discovery by using the **Device Role Settings** dialog which is accessed through the WhatsUp Gold console. The Device Role Settings determines which monitors, context menu items, and custom web links are assigned to the wireless device, as well as defining which wireless device attributes are collected during polling.

To modify Device Role Settings:

1. Access the Device Role Settings dialog, select **Tools > Discover Devices** from the WhatsUp Gold console main menu. The WhatsUp Gold Discover Devices dialog appears.
2. From the Discover Devices dialog menu, select **Advanced > Device role settings**. The Device Role Settings dialog appears.



3. For virtual devices, configure the following device roles:
   - vCenter Server

- VMware Host

Note:: Devices cannot be manually entered into WhatsUp Gold, they are automatically added during discovery. For more information on discovery options, see Configuring and running discovery.

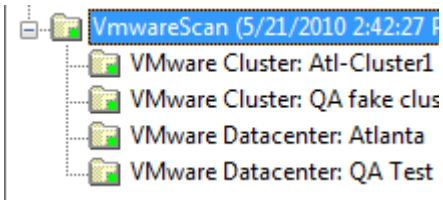
Viewing discovery output

The Device View provides a hierarchical scheme for display and monitoring of the virtual environment. The following logical groupings are automatically created based on information gathered during a VMware scan:

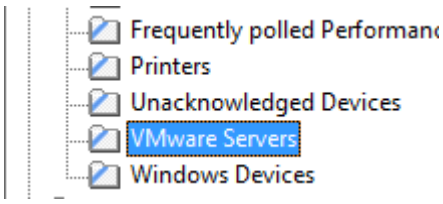
- **VmwareScan**. A logical container that contains all of the Datacenters, virtual hosts, and virtual machines discovered during a VMware scan.
- **Datacenter**. A logical container that contains all of the virtual machines managed by a vCenter server and the virtual hosts providing managed resources as reported to WhatsVirtual during a VMware scan.

Note: While a vCenter server may manage one or more datacenters, virtual machines cannot be moved using VMotion to a host outside of the datacenter of its original host.

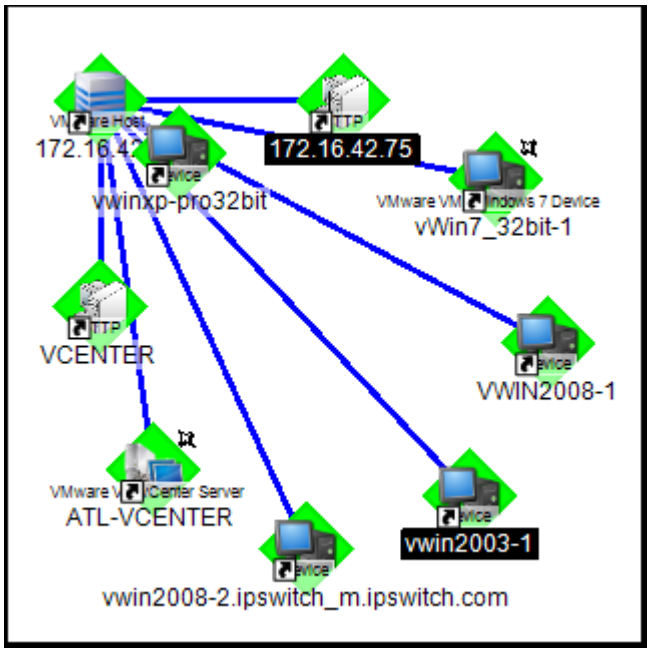
- **Cluster**. A logical container that contains a group of hosts that share resources and enable the VMware Distributed Resource Scheduler (DRS) and VMware High Availability (HA) solutions. A cluster lists the VMware hosts and virtual machines as reported to WhatsVirtual during a VMware scan.



A VMware Servers dynamic group identifies all VMware servers discovered during the discovery scan.



Discovered vCenter servers, virtual hosts and virtual machines can be viewed on the Map View. Select the Cluster or Datacenter you want to view from the **Device Groups** pane, then select the **Map View**. The selected vCenter, virtual hosts and all of the managed virtual machines appear on the Map View.



Manage and monitor virtual devices

Using WhatsVirtual, WhatsUp Gold manages virtual devices similarly to physical devices; you can add performance monitors, active monitors, and passive monitors; set thresholds in the Alert Center and create alerts associated with these thresholds; create customized actions and create action policies that invoke these actions; and collect and view events created by the vCenter server in response to actions taken in support of vMotion, High Availability (HA) and virtual machine security.

While much of the management and monitoring of virtual devices is the same as physical devices, areas where there are differences include:

- Performance monitor data gathering methods for virtual hosts.
- Extended right-click menu options for virtual machines.
- vCenter server event collection in support of vMotion, High Availability (HA) and virtual machine security.
- Manual addition and classification of virtual hosts and virtual machines.

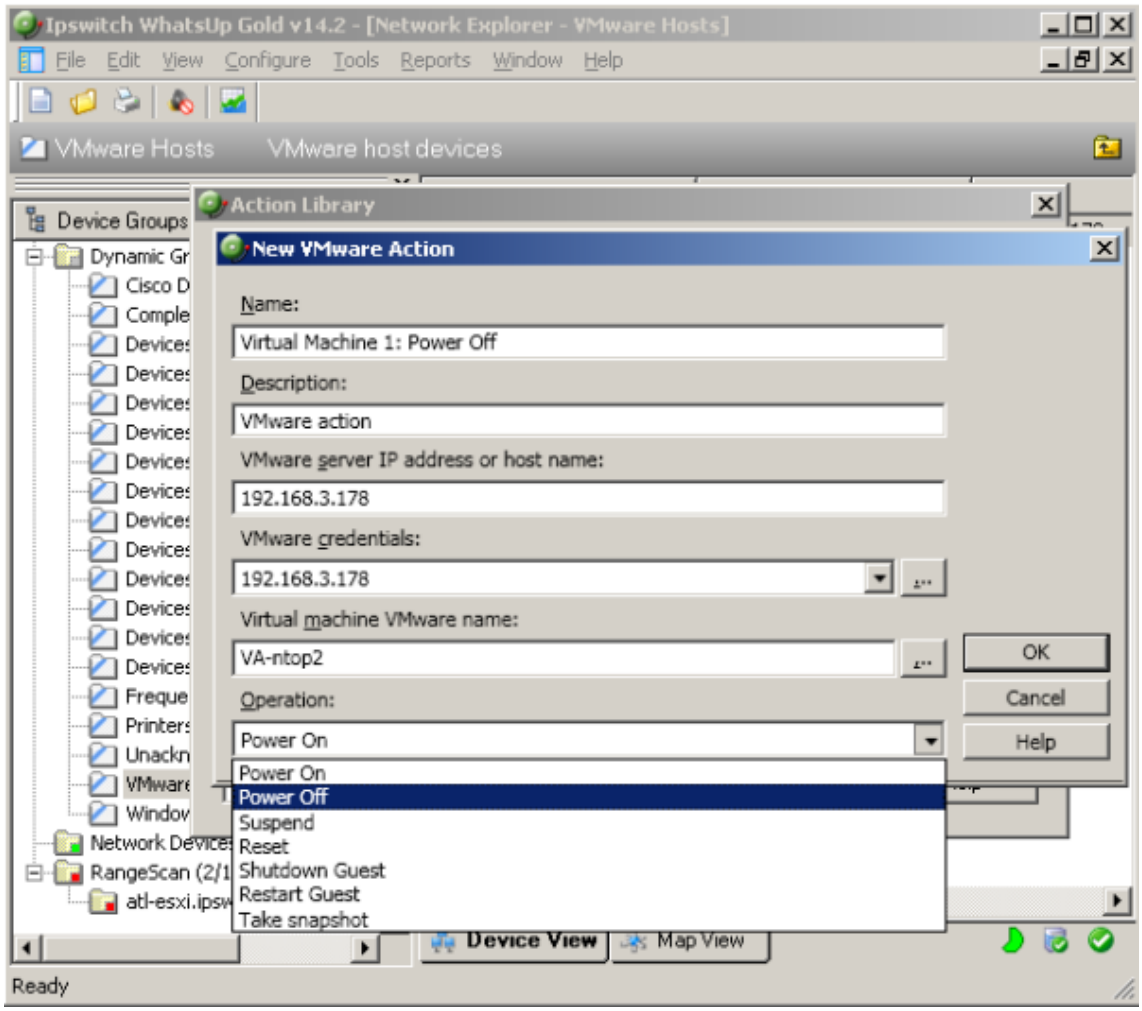
Performance monitors

Performance monitors are automatically assigned after discovery based on role. Additionally, you can assign performance monitors manually from the Performance Monitors tab of the Device Properties menu. vCenter servers and their managed virtual machines use the

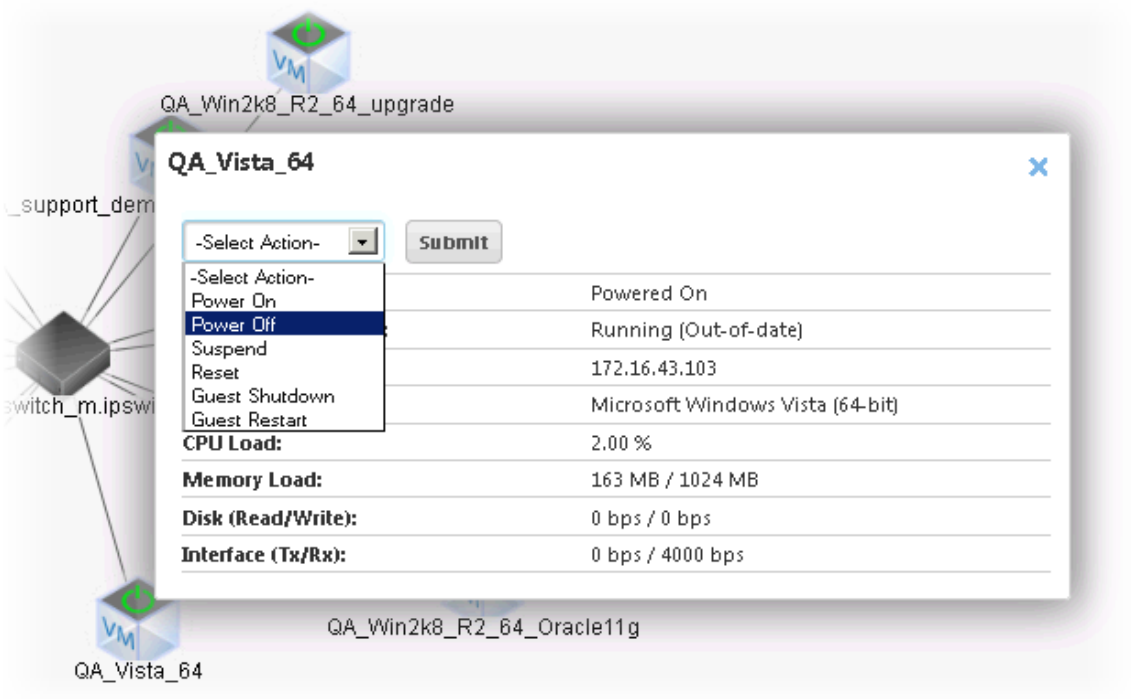
VMware vSphere API to gather statistics for the CPU, Memory, Disk, and Interface Utilization performance monitors.

Actions on virtual machines

You can create actions to be applied to virtual machines from the New VMware Action dialog (**Configure > Action Library > New > VMware**). You can power on, power off, suspend, reset, shutdown a guest, restart a guest, or take a snapshot of the virtual machine.



From the web interface, you can immediately run an action on a virtual machine from the Map View by clicking on the virtual machine, selecting the action you want to perform from the list in the device information window that appears, and clicking **Submit**.



vCenter server event collection

WhatsVirtual uses the VMware vSphere API to collect events from the vCenter server about your virtual environment. These events are generated by the vCenter server in support of VMware technologies such as VMotion, Distributed Resource Scheduler (DRS), High Availability (HA) and Fault Tolerance.

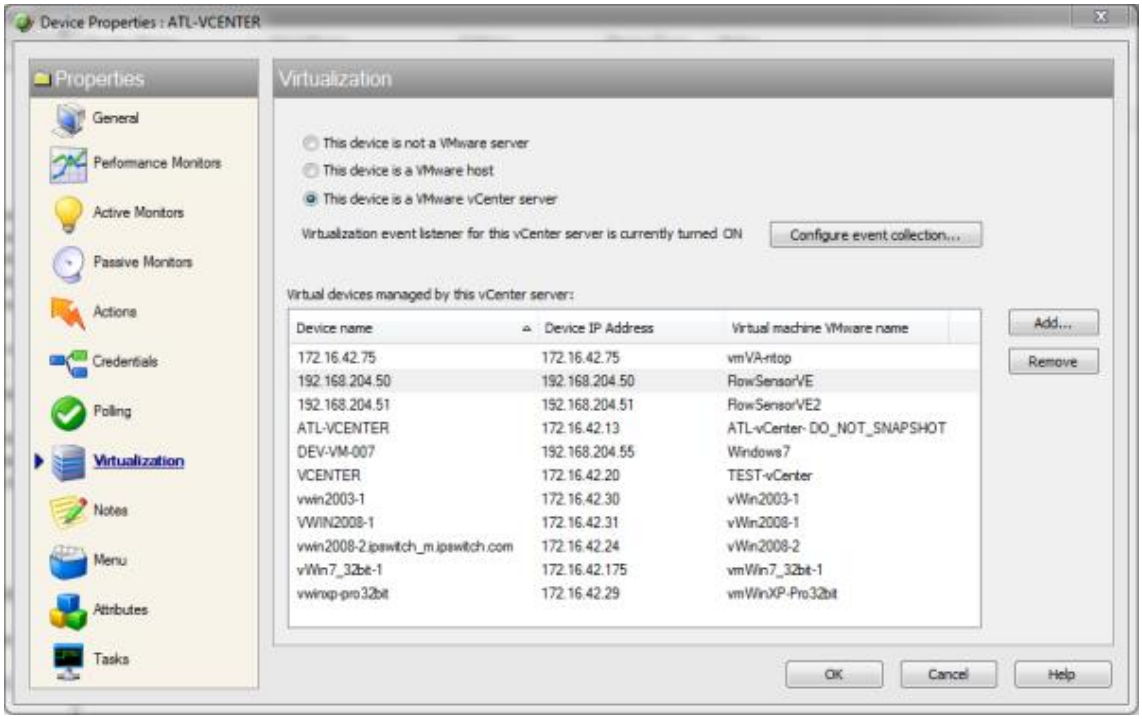
You can configure WhatsVirtual and WhatsUp Gold to collect events of interest from the vCenter. There are several groups of events that can be selected. By using thresholds in the Alert Center or actions defined in the Action Library, these event groups can then be used to trigger actions and alerts, as well as provide information to reports about your virtual environment.

The process for configuring WhatsUp Gold to collect, alert, and perform actions on events includes the following tasks:

- Enable event collection (Global setting to enable event collection)
- Configure event groups and start event collection for individual vCenters.

You enable the collection of events from the WhatsUp Gold console (**Configure > Program Options > General**). The **Enable WhatsVirtual event collection** option is selected by default. This is a global option that allows the collection of events from all of the vCenter servers WhatsUp Gold discovers.

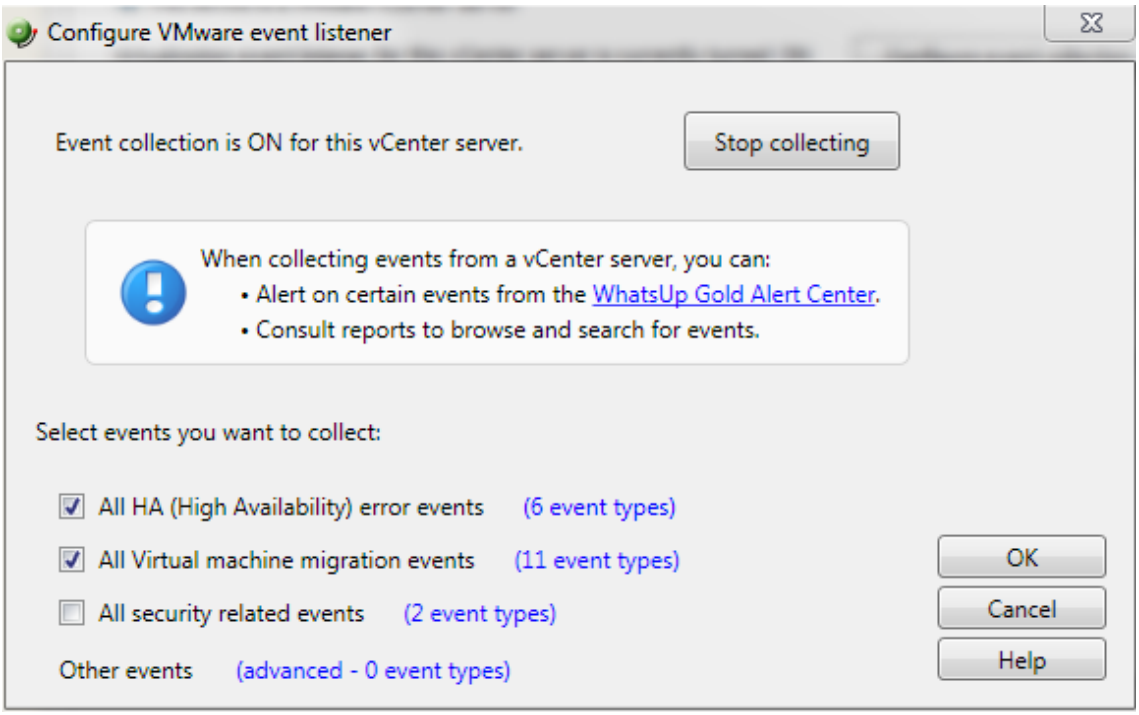
After WhatsUp Gold has been enabled to collect events, each vCenter server must be configured to collect the events you wish to collect. The event collection configuration of a vCenter server is accomplished from the Configure VMware event listener dialog. To reach the Configure VMware event listener dialog, click **Configure event collection** on the Device Properties - Virtualization dialog.



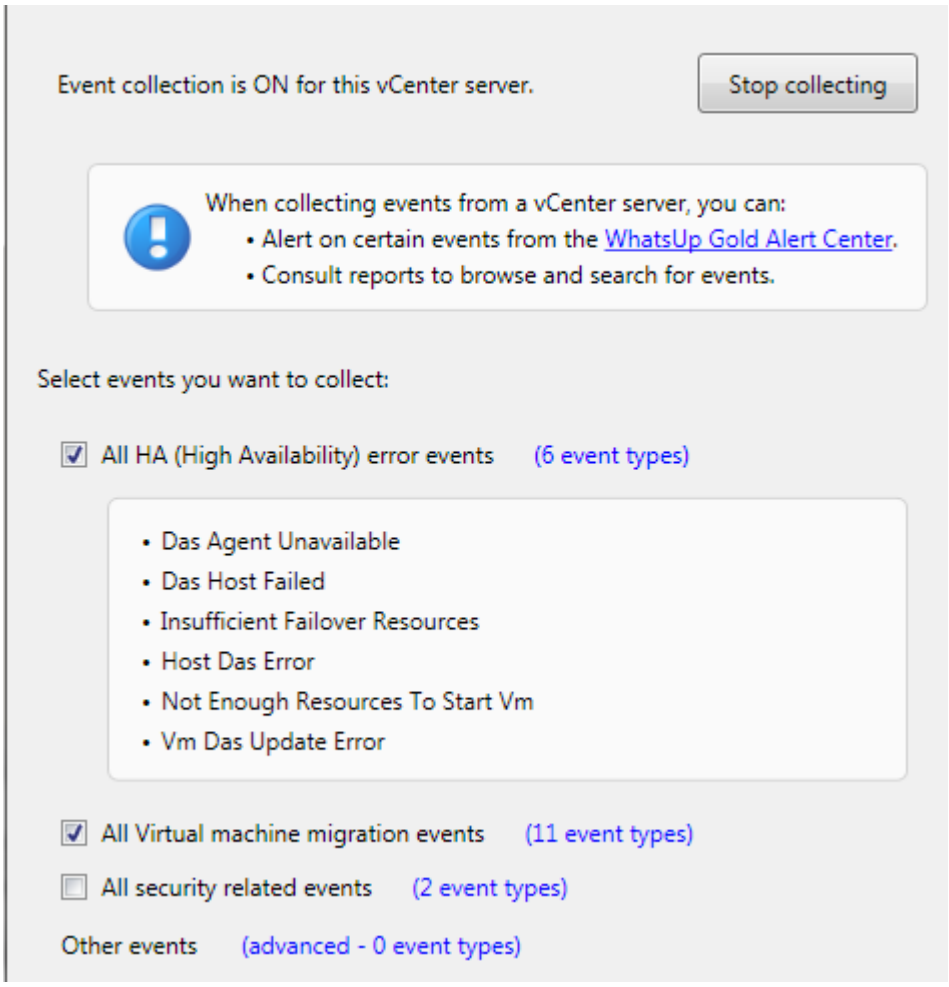
Use the Configure VMware event listener dialog to:

- Control the collection of events from the vCenter server.
- Select the predefined event groups that contain the events you want to collect.

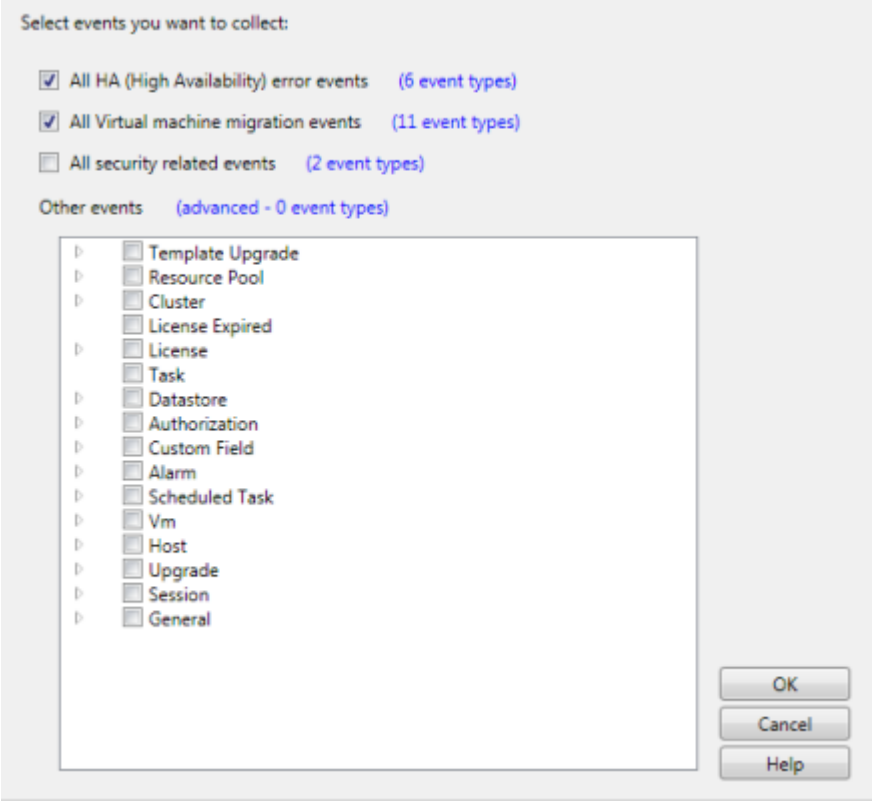
- Select a custom list of events from the Other events dialog.



Select the predefined groups of events you want to collect. To see the events included in each group, click the **<#> event types** link beside the group. For more information about the event types, see Configure VMware event listener in the dialog help.



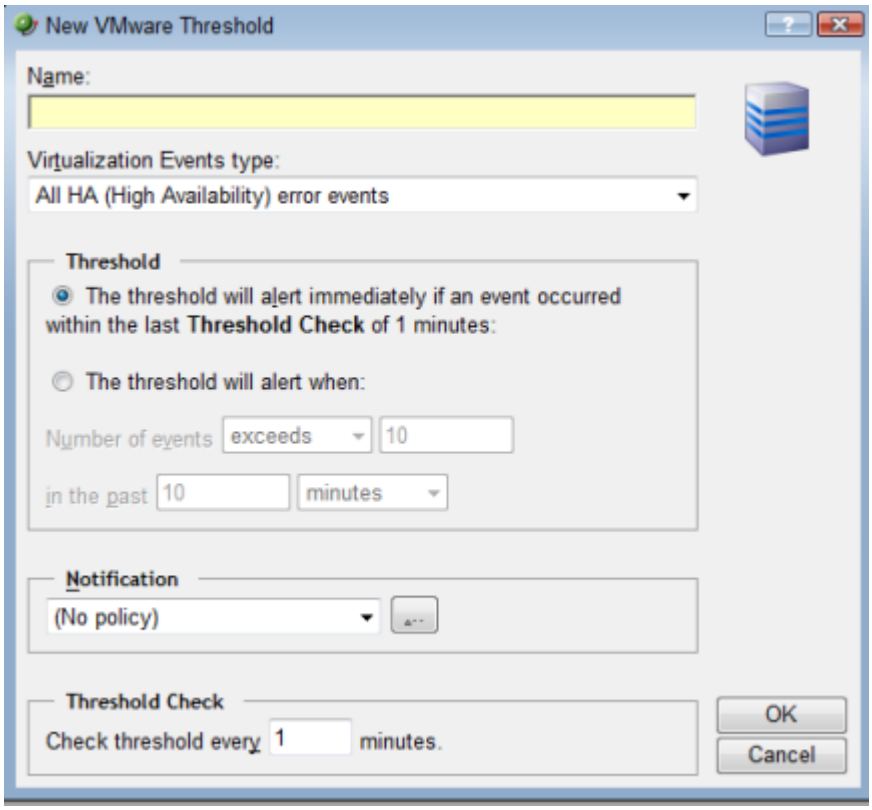
To select from the other events list, click on the **advanced - <#> event types** link. The Other events dialog will open. This window is a hierarchical tree of the available events. Selecting the root of any tree, selects all of the events associated with that event group. To open an event group, click the ▷ icon.



You can select any of the event types from the Virtualization Events type box. The threshold will alert when any event within that event type occurs during the threshold period.

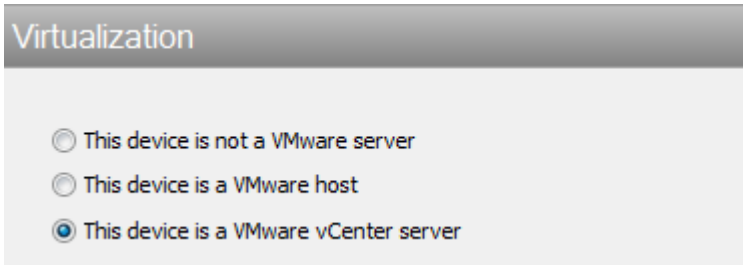
Configuring a VMware threshold from the Alert Center

You can create a VMware event threshold in the WhatsUp Gold Alert Center on any event group WhatsVirtual is configured to collect from the managing vCenter server. Use the New VMware Threshold dialog to configure the alert threshold. (**Alert Center Tab > Threshold Library > New > VMware**)



Manually assigning a VMware server role to a device

You can manually designate discovered devices as vCenter servers or virtual hosts on the Device Properties - Virtualization dialog.

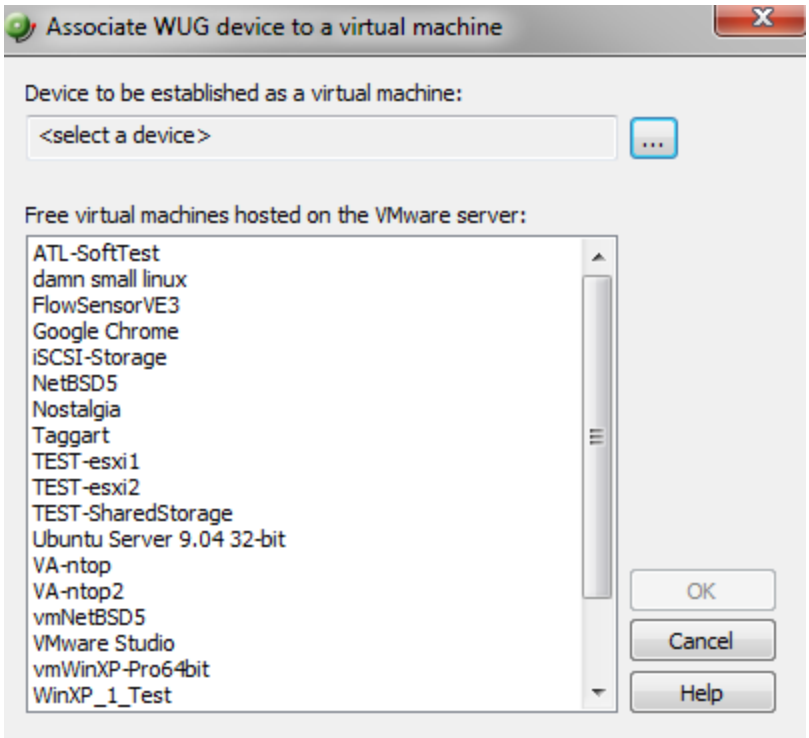


To manually designate a device as a vCenter server or virtual host, you must select or create VMware credentials for the device, and then select the VMware server role you want to assign to the device.

- Select **This device is a VMware host**, if you want to designate the device as a VMware host.

- Select **This device is a VMware vCenter server**, if you want to designate the device as a vCenter server.

After a device is designated as a vCenter server or VMware host, you can manually associate virtual machines by clicking the **Add** button on the **Virtualization** tab of the Device Properties dialog. WhatsUp Gold polls the vCenter server or VMware host to discover all of the virtual machines it is managing, and displays a list of these machines on the Associate WUG device to a virtual machine dialog.



You can also use the Browse (...) button to locate the device you want to add as a virtual machine.

Note: Devices that are manually designated as a vCenter server, VMware host, or virtual device respond to actions created for virtual environments, and appear as virtual devices in dashboard reports, however they do not appear on the **Map View** as virtual devices until they are discovered using a VMware scan.

Viewing the WhatsVirtual maps

After you have completed your VMware discovery scan, you may view your virtual devices in either the WhatsUp Gold console or the WhatsUp Gold web interface. The WhatsVirtual maps are rendered from the information gathered from the vCenter server and show all reported connections between virtual machines, VMware hosts, DataCenters, and the vCenter server. Maps are generated specifically for each Cluster, DataCenter, VMware host, and vCenter server discovered during the VMware scan. Click **View > Refresh** in the console to update the

WhatsVirtual maps, so that changes to the virtual environment are reflected in the maps, such as when virtual machines are powered off, migrated, or deleted. You can configure the WhatsVirtual maps to only show virtual machines that are powered on, and you can set the interval which WhatsVirtual will collect mapping data.

To view a WhatsVirtual map in the WhatsUp Gold console interface:

1 Click on the **Whats Virtual** tab in the WhatsUp Gold views dialog.

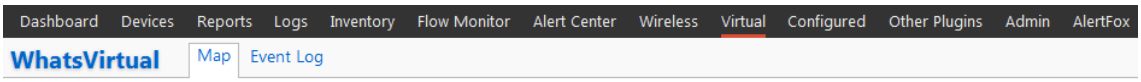
-or-

In the navigation pane of the WhatsUp Gold views dialog, click **WhatsVirtual**. The WhatsVirtual navigation pane appears.

2 Expand the VMware maps tree and select the map you want to view.

To view a WhatsVirtual map in the WhatsUp Gold web interface:

1 Select **Virtual** in the ribbon header.



2 Expand the VMware maps tree and select the map you want to view.

Note:: The WhatsVirtual map view in the web interface is a "live map" meaning the map refreshes a the data collection interval and devices may move, disappear, or appear based on their association with the server.

3 Use the slider bar to zoom in or zoom out of the WhatsVirtual map. You may also pan left, right, up, or down by clicking on the map and moving the direction you would like to go.

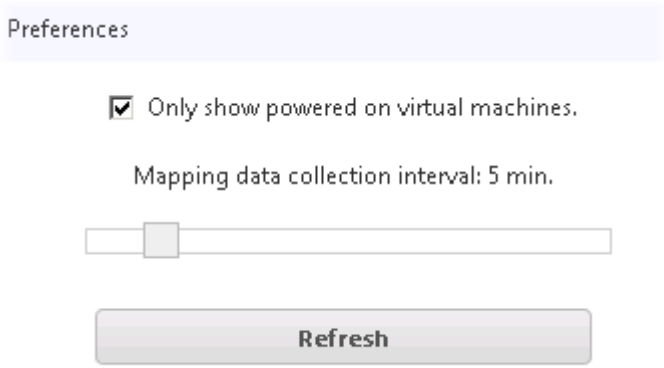
Tip:You can start, stop, or reset a virtual machine from using the WhatsVirtual web interface right-clicking on a virtual machine displayed in the map and selecting **Power On**, **Power Off**, or **Reset**.

Configuring WhatsVirtual Live Maps

You may configure WhatsVirtual live maps in either the web interface or console.

Configuring live maps in the web interface

From the preferences dialog which is located in the WhatsVirtual navigation pane, you can set the data collection interval (vCenter polling interval for each device), configure the maps to show only those virtual machines that are currently powered on, and manually refresh WhatsVirtual maps.



To set the data collection interval for WhatsVirtual maps, move the slider to the right to increase the collection interval, or move the slider to the left to decrease the collection interval.

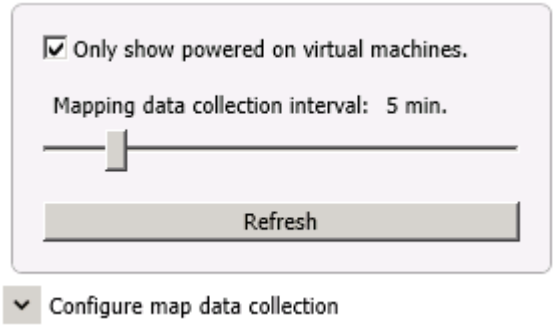
Important: The default data collection interval is 5 minutes. Settings lower than the default may create a higher than normal CPU usage (up to an additional 20% of available CPU) on the WhatsUp Gold server and may increase overhead on the vCenter server.

Select the **Only show powered on virtual machines** check box to show only virtual machines that are powered on.

Click **Refresh** to refresh the WhatsVirtual maps. The maps will refresh with information gathered during the latest poll of the vCenter server.

Configuring live maps in the console interface

From the map data collection configuration dialog which is located in the WhatsVirtual navigation pane, you can set the data collection interval (vCenter polling interval for each device), configure the maps to show only those virtual machines that are currently powered on, and manually refresh WhatsVirtual maps.



To set the data collection interval for WhatsVirtual maps:

1. In the WhatsVirtual navigation pane, click **Configure map data collection**. The WhatsVirtual map configuration dialog appears.
2. Move the slider to the right to increase the collection interval, or move the slider to the left to decrease the collection interval.

Important: The default data collection interval is 5 minutes. Settings lower than the default may create a higher than normal CPU usage (up to an additional 20% of available CPU) on the WhatsUp Gold server and may increase overhead on the vCenter server.

To show only virtual machines that are powered on:

1. In the WhatsVirtual navigation pane, click **Configure map data collection**. The WhatsVirtual map configuration dialog appears.
2. Select the **Only show powered on virtual machines** check box.

To refresh the WhatsVirtual maps:

Click **Refresh** to refresh the WhatsVirtual maps. The maps refresh with information gathered during the latest poll of the vCenter server.

Managing virtual machines using WhatsVirtual live maps

Clicking on an icon within the WhatsVirtual live map launches a dialog that displays detailed information about the individual virtual machine. The following information is displayed:

- **Power State**. Indicates if the virtual machine is powered on or off.
- **VMware Tools Status**. Indicates whether or not VMware Tools is running on the virtual machine.
- **IP Address**. Displays the IP address currently assigned to the virtual machine.
- **Operating System**. Displays the OS currently installed and running on the virtual machine.
- **CPU Load**. Displays the current percentage of CPU usage by the virtual machine.
- **Memory Load**. Displays the current percentage of memory usage by the virtual machine.
- **Disk (Read/Write)**. Displays the speed data is being read from and written to the virtual machine's disk.
- **Interface (Tx/Rx)**. Displays the speed data is being sent from and received by the virtual machine.

Note: If VMware Tools are not installed, IP Address and Operating System will not appear in the information dialog. If any other virtual machine details are not available, affected boxes will not appear in the information dialog.

This dialog also allows you to perform certain actions on a machine.

To perform an action on a virtual machine:

1. Click the icon representing the device on the WhatsVirtual live map to launch the detailed information dialog.
2. Use the Select Action list to choose which action to perform.
   - Power On.
   - Power Off.
   - Suspend.
   - Reset.
   - Guest Shutdown.
   - Guest Restart.
3. Click **Submit**.

Note: If any virtual machine actions cannot be performed, affected actions will not appear in the Select Action list.

Viewing the WhatsVirtual reports

Dashboard reports

The following reports have been added to WhatsUp Gold to provide information about your virtual environment.

- **Virtual Host List**. This dashboard report provides a list of all the virtual hosts on the network.
- **Virtual Machine Current CPU Utilization**. This dashboard report provides the current CPU utilization for the selected virtual machine.
- **Virtual Machine Current Disk Utilization**. This dashboard report provides the current Disk utilization for the selected virtual machine.
- **Virtual Machine Current Interface Utilization**. This dashboard report provides the current Interface utilization for the selected virtual machine.
- **Virtual Machine Current Memory Utilization**. This dashboard report provides the current Memory utilization for the selected virtual machine.
- **Virtual Server**. This dashboard report provides a list of all the virtual machines managed by a virtual server. The virtual server may be a vCenter server or VMware host.
- **Virtual Server Attributes**. This dashboard report provides system attributes for the virtual server, hardware information for VMware hosts, and a list of the virtual devices managed by the virtual server. The virtual server may be a vCenter server or a VMware host.

Note: Hardware information will be displayed only if the selected device is a VMware host for which credentials were supplied and selected during a VMware scan.

- **WhatsVirtual Events**. This dashboard report displays events that WhatsVirtual is configured to collect from the vCenter server. The events appear in reverse chronological order, so that the last event received appears at the top of the list.

Configuring VMware dashboard reports

Before you can configure a dashboard report, it must be added to your dashboard view. For information on adding dashboard reports to a dashboard view, see Adding dashboard reports to a dashboard view in the dialog help.

Configure VMware dashboard reports on the Configure Report dialog (**Menu > Configure Report**).

Click the Browse **(...)** button to select the device you want to use as a data source for the report.

Full reports

WhatsVirtual Events. This report displays events that WhatsVirtual is configured to collect from the vCenter server. The events appear in reverse chronological order, so that the last event received appears at the top of the list.

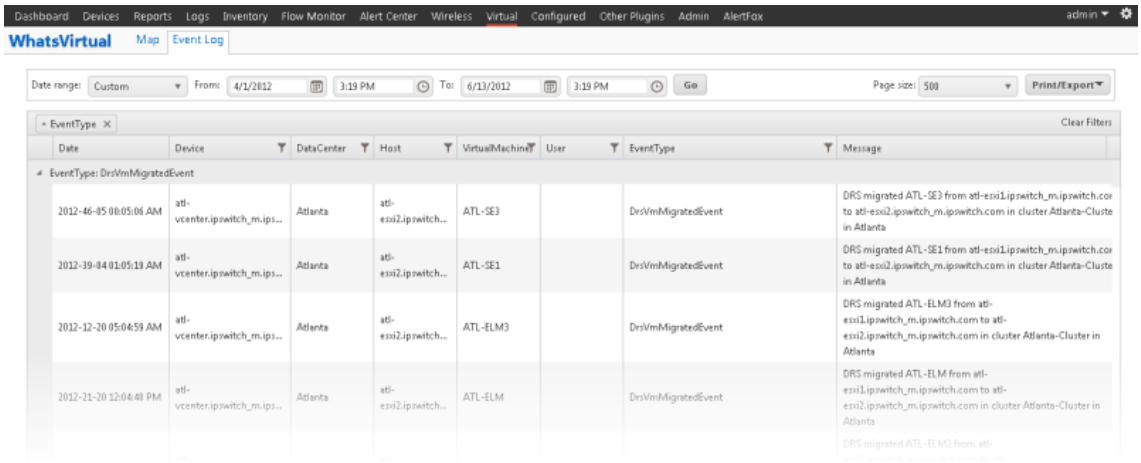
You can access the WhatsVirtual Events report from the WhatsUp Gold web interface by selecting **Event Log** from the **Virtual** tab.

About the WhatsVirtual Event Log

The WhatsVirtual Event Log provides a record of the events generated by virtual devices managed by a vCenter server.

To access the WhatsVirtual Event Log:

- From the WhatsUp Gold ribbon, click **Virtual > Event Log**.



Note: To gather events for this report, make sure you have enabled WhatsVirtual event collection. From the WhatsUp Gold console, click **Configure > Program Options**, click **General**, then select the **Enable WhatsVirtual event collection** check box. For more information, see WhatsUp Gold Program Options.

To configure the types of events gathered for WhatsVirtual Event Log:

1. Click **Devices > Devices** from the WhatsUp Gold navigation ribbon.
2. Locate the vCenter server in the device list.
3. Right-click on the vCenter server and select **Properties**.
4. Click **Virtualization** in the Device Properties dialog that appears.
5. Select **This device is a VMware vCenter server** if it is not selected already.
6. Click **Virtualization Events**.
7. Use the **Configure VMware Event Listener** dialog to select event types you want to collect in the WhatsVirtual Event Log.

For more detailed information on applicable device properties and VMware event types, see Using Device Properties - Virtualization and Configure VMware event listener.

Log Body

The following information is displayed in the log:

- **Date**. Displays the date and time the event occurred.
- **Device**. Displays the name, alias, or IP address of the device on which the event occurred.
- **DataCenter**. Displays the name of the data center if event is specific to a data center.
- **Host**. Displays the name of the host if event is specific to a host.
- **VirtualMachine**. Displays the name of the virtual machine if event is specific to a virtual machine.
- **User**. Displays the VMWare user associated with the event.

Note: Many events are the result of automatic actions within the VMware system. The user box will only display a VMware user when the event is the result of user action.

- **EventType**. Describes the event that occurred.
- **Message**. Displays the message sent from the vCenter server to WhatsVirtual.

Note: If the log data exceeds the maximum number of records set for full reports, use the Paging Options to view more records for the report. The maximum number of records any full report displays is specified in the Preferences dialog.

Event Log Customization

You can use the preset date ranges or specify a custom range using the date and time controls at the top of the Event Log page. After selecting the desired date and time, click **Go**.

The event log report only displays event data that occurred within your specified range. Additionally, you can click and drag the column headers to group the Event Log data by one or more columns. To remove grouping for a column, click **X** to the right of the column for which you want to remove column grouping. You can also view Event Log column data according to user-defined filters.

To create a custom filter for a column:

1. Click the icon for the column you want to filter.
2. Use the dialog that appears to define the filter.
3. Click **Filter** to apply the filter to the column.

Note: Multiple columns can have filters applied simultaneously.

Export Options

To export Event Log report data:

1. Click **Print/Export**.
2. Select one of the following options:
   - **Print View**. Displays a printable Event Log report in a new browser window.
   - **Export to PDF**. Launches a Print/Export Options dialog that allows you to select Current page or All pages. Click **Ok** to generate a .pdf file of Event Log data applicable to your selection.
   - **Export to CSV**. Launches a Print/Export Options dialog that allows you to select Current page or All pages. Click **Ok** to generate a .csv file of Event Log data applicable to your selection.

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