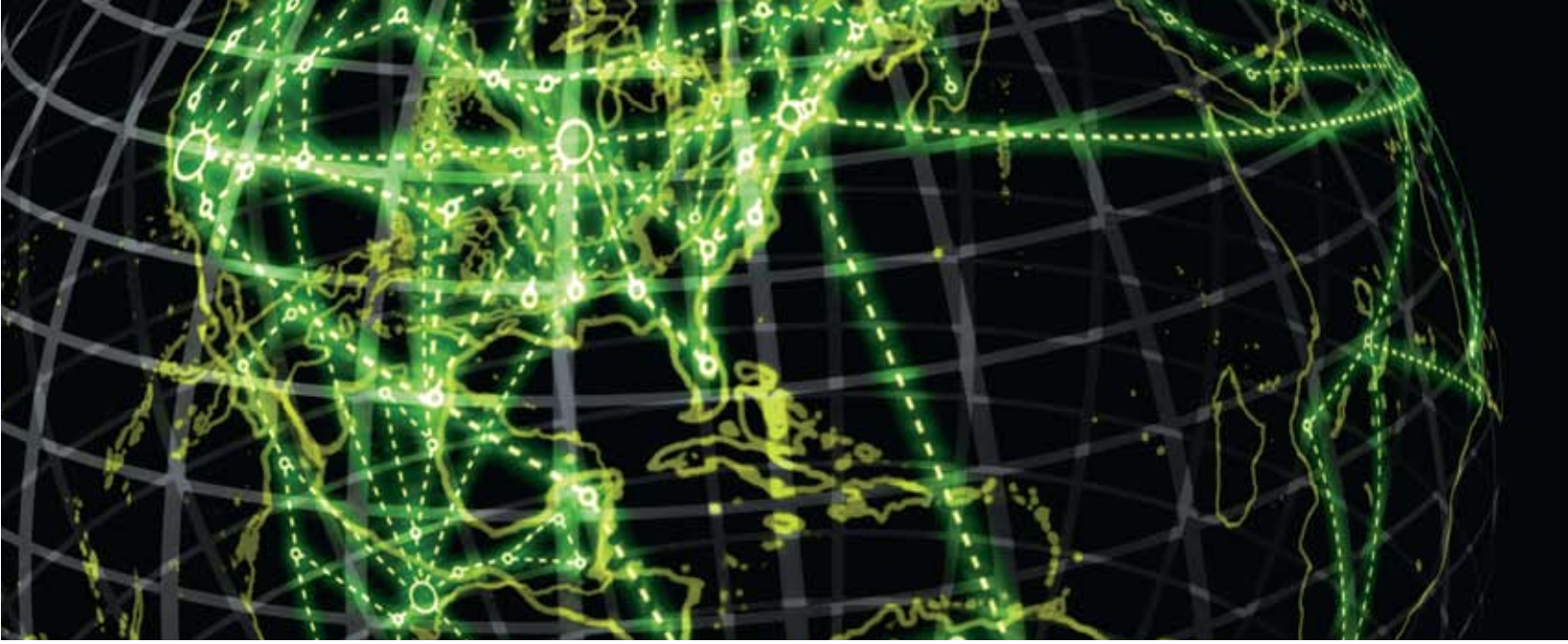

IPSWITCH

Using WhatsConnected Layer 2 Discovery

About, configuring, installing, and using the Layer 2 discovery features in WhatsUp Gold

IPSWITCH WhatsUpGold

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Copyright notice

CHAPTER 1

WhatsConnected Overview

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Welcome to WhatsConnected

WhatsConnected is a layer 2 and layer 3 network discovery and visualization plug-in for WhatsUp Gold that equips network managers with a comprehensive tool set to accurately depict and visualize their device connectivity, including VLAN overlays, down to the individual port. Layer 2 discovery and mapping accesses the physical infrastructure information embedded in devices to provide significantly more detailed topology information than layer 3 discovery mechanisms. In addition to widely used IP discovery protocols, such as ICMP, ARP, and SNMP, layer 2 discovery leverages a number of other mechanisms to discover devices including industry standard Link Layer Discovery Protocol or LLDP, as well as equipment manufacturer proprietary discovery protocols.

With layer 2 information available about how devices in your network are connected, their interdependencies, and their locations, you can locate problems and resolve them more easily. WhatsConnected helps you understand your network from top to bottom and focus on keeping it running securely and at peak performance.

WhatsConnected provides the key functions network professionals need to be able to discover, map, search, and document their networks.

Discovery

The WhatsConnected discovery process uses industry-standard protocols, such as ICMP and SNMP, to find devices on your network. Information about discovered devices is available as a simple device list view, a device category view, and a detailed topology view.

Mapping

After WhatsConnected knows about the devices on your network, it can generate a map that shows the physical connections between all of the devices. Standard and custom maps provide an easy way to browse the network infrastructure. With the connectivity data readily available, managing the day-to-day complexities of a network is simplified.

Any topology map in WhatsConnected can be exported to WhatsUp Gold, automating custom map views and active monitor creation for the interfaces on the map's devices. WhatsConnected integrates with WhatsUp Gold to identify and create powerful monitoring strategies for your network.

Searching

The WhatsConnected detailed device views allow for simple browsing of connectivity for any device on the network. You can use the Layer 2 Trace and IP/MAC Finder tools to easily discover the location of any device on the network.

Documenting

WhatsConnected makes it easy to share network details. You can export your topology maps to Microsoft Visio and generate reports that contain detailed information about the devices on your network.

Finding more information and updates

The following are information resources for WhatsConnected. This information may be periodically updated and available on the *WhatsUp Gold Web site* (http://www.whatsupgold.com/support/index.asp).

- **Release Notes**. The release notes provide an overview of changes, known issues, and bug fixes for the current release. The notes also contain instructions for installing and configuring WhatsConnected. The release notes are available on the *WhatsUp Gold web site* http://www.whatsupgold.com/WhatsConnectedv1relnotes.
- **Application Help for the console**. The console help contains dialog assistance, general configuration information, and how-to's that explain how to use the features. The Table of Contents is organized by functional area, and can be accessed from the main menu or by clicking **Help**.
- **WhatsUp Gold optional plug-ins**. You can extend the core features of WhatsUp Gold by installing plug-ins. For information on available plug-ins and to see release notes for each plug-in, see *WhatsUp Gold plug-ins documentation* (http://www.whatsupgold.com/wugplugins).
- **Licensing Information**. Licensing and support information is available on the *MyIpswitch licensing portal* (http://www.myipswitch.com/). The web portal provides enhanced web-based capabilities to view and manage Ipswitch product licenses.
- **Knowledge Base**. Search the Ipswitch Knowledge Base of technical support and customer service information. The knowledge base is available on the *WhatsUp Gold web site* (http://support.ipswitch.com/kb/).
- **User Forum**. Use the online user group forums to interact with other WhatsUp Gold users to share helpful information about the application. The User Forums are available on the *WhatsUp Gold web site* (http://forums.ipswitch.com/).

Sending feedback

We value your opinions on our products and welcome your feedback.

To provide feedback on existing features, suggest new features or enhancements, or suggest ways to make our products easier to use, please fill out our *product feedback form* (http://www.ipswitch.com/company/prodfeedback.asp).

CHAPTER 2

Installing and Configuring WhatsConnected

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System requirements

The minimum software and hardware requirements are based on the WhatsUp Gold v12.3 requirements. For more information, see the *WhatsUp Gold v12.3 Release Notes* (http://www.whatsupgold.com/wug123relnotes).

Installation overview

The files for WhatsConnected are installed automatically with WhatsUp Gold v12.3. Your license file determines whether you can access WhatsConnected. Before installing, we recommend that you read the Release Notes for possible application update details and review the *System requirements* (on page 5) information to ensure that the system, on which you are attempting to install, meets the base-level requirements.

To update your license to purchase WhatsConnected, visit the *MyIpswitch portal* (http://www.myipswitch.com). For more information, see *Activating WhatsConnected licenses* (on page 5).

Activating WhatsConnected licenses

If WhatsConnected is installed using the installation application downloaded from the Web link provided in the purchase confirmation email, the program is fully functional immediately after installation.

If the WhatsConnected license is not automatically activated during installation, you can manually activate WhatsConnected using the activation program in the WhatsUp Gold group on the Windows Start menu.

To activate WhatsConnected manually:

Note: Before you begin the manual activation process, make sure that you have your product serial number available to use in the activation program.

1. Click **Start** > **Programs** > **Ipswitch WhatsUp Gold** > **Manage WhatsUp Gold License**. The activation program appears.
2. Follow the onscreen instructions to complete the product activation.

Note: When activation completes, a confirmation page indicates that the license has been activated. If activation does not complete successfully, you may be behind a proxy or firewall that is blocking the activation request. In this case, click **Offline** and follow the onscreen instructions.

For more help and information about licensing, go to the *Mypswitch licensing portal* (http://www.myipswitch.com/).

CHAPTER 3

Discovering Networks

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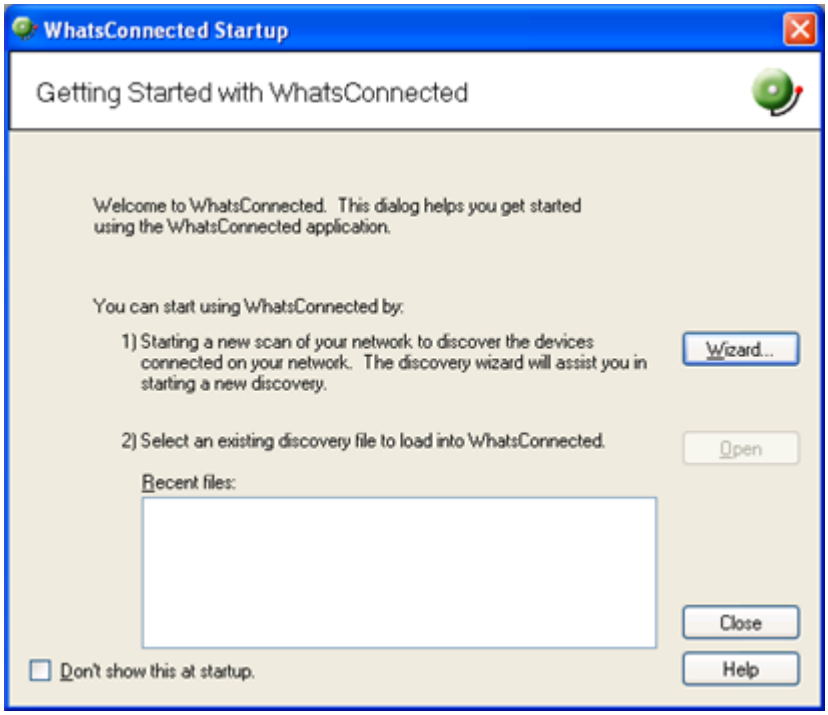
Getting started with WhatsConnected

To start WhatsConnected:

- From the WhatsUp Gold console, click **Tools > WhatsConnected**. WhatsConnected starts.

When you start the WhatsConnected application, the WhatsConnected Startup dialog helps you begin using the WhatsConnected application.



There are two Getting Started options to help you begin gathering and viewing Layer 2 network information:

- Start a new network scan to discover devices connected on the network. Click **Wizard** to start the Wizard discovery process.
- If you have saved WhatsConnected discovery files previously, you can select an existing discovery file in the **Recent files** list, then click **Open**.

Click **Do not show this at startup** to prevent this dialog from appearing each time you start WhatsConnected.

For more information about other methods to do network discovery, see *About Layer 2 Network Discovery* (on page 8).

About Layer 2 Network Discovery

WhatsConnected discovers the devices on your network and displays a topological map of the network's physical structure. WhatsConnected also captures detailed information about each device, including IP and MAC addresses for all interfaces on the device, information about software installed on the device, and more.

There are three ways to add devices with the Layer 2 Network Discovery:

- Through the Layer 2 Network Discovery option in the WhatsConnected console **Discover > Network** menu. For more information, see Run Discovery.
- Through the single device discovery option in the WhatsConnected console **Discover > Device** menu. For more information, see Add New Device in the WhatsConnected Help.
- Through the Getting Started with WhatsConnected Wizard that appears when you start WhatsConnected. For more information, see *Getting started with WhatsConnected* (on page 7).

Configuring Layer 2 Network Discovery

Layer 2 Network Discovery can run with a minimal amount of configuration. The discovery settings can be specific and point to a certain part of your network, or more general and pertain to the entire network. In both cases, network settings are key to successful network scans.

There are two main elements to configure for each network scan.

- A base discovery configuration that includes a discovery scan type and IP scope. For more information, see *About Layer 2 Network Discovery scan types* (on page 9).
- The network protocols and credentials used during the network scan. For more information, see the *Configuring network protocols and credentials* (on page 12) section.

Layer 2 Network Discovery setup is accomplished by using the Discovery Setup wizard or manually through several WhatsConnected dialogs. This section describes how you can manage both the discovery settings and protocol settings manually.

About Layer 2 Network Discovery scan types

An important part of Layer 2 Network Discovery is understanding the different methods by which a network can be discovered. There are two Layer 2 Network Discovery methods.

ARP Cache Discovery

Address Resolution Protocol (ARP) Cache discovery locates network devices by reading SNMP information on your network. This scan type uses SNMP enabled devices (usually routers) to identify devices that are active on your network. In addition to using the ARP cache on each network device, ARP Cache discovery also uses many proprietary discovery protocols to find additional devices connected to the network.

The Discovery Setup wizard prompts you to enter a Seed IP Scope (IP addresses, IP address ranges – including IP subnets) that indicates where you would like the discovery to start. These devices are used as the seed of the network discovery.

Important: We recommend that you use ARP Cache discovery as your primary discovery method.

Ping Sweep discovery

Ping Sweep discovery scans a range of IP addresses and finds the devices that respond to the ICMP or SNMP protocol.

The Network Discovery Setup wizard prompts you to enter a Seed IP Scope (IP addresses, IP address ranges including subnets) that indicates where you would like to focus your network scan.

Note: The Ping Sweep discovery method is used for very specific discovery scans. If you are unsure of your network configuration, including any of its subnetworks, ARP Cache discovery is a more appropriate method for discovering your network.

For more information about how Seed IP Scopes work in each Layer 2 discovery method, see *About Seed IP Scope* (on page 11).

About Layer 2 discovery settings

Each network scan requires several base-level settings that guide the discovery scan of your network. Discovery settings are grouped by a general name that describes the area of the network that the settings scan.

Configuring discovery settings

To add discovery settings:

1. From the main menu of the WhatsConnected console, select **Configure > Discovery Settings**. The Discovery Settings dialog appears.

2. The dialog displays all previously defined discovery settings. To create a new collection of discovery settings, right-click in the left list, a right-click menu appears.
3. Click **New**. The New Discovery Settings dialog appears.
4. Enter a **Name** that gives context to the discovery settings you are creating (i.e. TestLab, Production Network). This name is stored so that it can be reused for later network scans.
5. Click **OK**.
6. On the Discovery Settings dialog, a new entry appears in the left pane list for the new collection of discovery settings. Select the new collection name from the list.
7. Select the discovery method for the network scan from **Method**. For more information about the discovery types, see *About Layer 2 Network Discovery scan types* (on page 9).
8. Enter the number of **Max Threads** to use while running the discovery scan. This indicates the number of separate threads to run in the background as WhatsConnected attempts to communicate with the devices on the network.

> **Note**: If you are concerned about the load discovery could place on the network, you can reduce the Max Threads to cut back on the concurrent network communication.

9. Select whether the discovery engine should try to **Ping Devices First** before attempting any other protocol.
10. Select whether the discovery engine should attempt to **Ping Discovered Subnets** to provide a more complete scan during an **ARP Cache** type of discovery.

> **Note**: This option tells the engine to take each discovered subnet and run a ping sweep through it to ensure all devices are discovered in the defined subnet.

11. Select whether to **Enable Collector Log**. This is a trace flag for support purposes; enable this option only by direction from technical support
12. Enter the **Seed IP Scope**. For more details in regards to the Seed IP Scope, see *About Seed IP Scope* (on page 11).
13. Enter the **Include IP Scope**. For more details in regards to the Seed IP Scope, see *About Include IP Scope* (on page 11).
14. Enter the **Exclude IP Scope**. For more details in regards to the Seed IP Scope, see *About Exclude IP Scope* (on page 11).
15. Click **OK** to save all changes made in the Discovery Settings dialog.

To rename discovery settings:

1. From the main menu of the WhatsConnected console, select **Configure > Discovery Settings**. The Discovery Settings dialog appears.
2. The dialog displays all previously defined discovery settings. To rename a collection of discovery settings, right-click the collection that you would like to rename, then click **Rename**. The Rename Discovery Settings dialog appears.
3. Enter a new **Name** for the collection of discovery settings.
4. Click **OK**.
5. Click **OK** to save all changes made in the Discovery Settings dialog.

To delete discovery settings:

1. From the main menu of the WhatsConnected console, select **Configure** > **Discovery Settings**. The Discovery Settings dialog appears.
2. The dialog displays all previously defined discovery settings. To delete a collection of discovery settings, right-click the collection that you would like to delete, then click **Delete**. The selected collection of discovery settings is deleted.
3. Click **OK**.
4. Click **OK** to save all changes made in the **Discovery Settings** dialog.

About discovery IP scopes

Discovery IP scopes are a means by which discovery is configured to understand the area(s) of the network that it scans, or excludes from a scan.

IP scopes can be:

- A single IP address (i.e. 10.0.0.1)
- A range of IP addresses (i.e. 10.0.0.1-10.0.0.100)
- A subnet range of IP addresses (i.e. 10.0.0.1/24 or 10.0.0.1/255.255.255.0)

The following is a description of how these IP scopes are used in WhatsConnected discovery settings.

About Seed IP Scope

Seed IP Scope defines the range of IP addresses where network discovery starts a scan.

- For Ping Sweep discovery, these addresses are contacted with an initial ICMP request.
- For ARP Cache discovery, these addresses are queried for additional data. The discovery engine reads SNMP data from these devices and continues to scan the network for additional devices based on the SNMP responses from the seed devices.

About Include IP Scope

Include IP Scope defines the range of IP addresses in which to include in the network scan.

- For Ping Sweep Discovery, Include IP Scope is the same as the Seed IP Scope.
- For ARP Cache Discovery, Include IP Scope indicates an IP address range that the network scan should restrict itself to during discovery.

Example

- A single IP address (i.e. 10.0.0.1)
- A range of IP addresses (i.e. 10.0.0.1-10.0.0.100)
- A subnet range of IP addresses (i.e. 10.0.0.1/24 or 10.0.0.1/255.255.255.0)

About Exclude IP Scope

Exclude IP Scope defines the range of IP addresses to exclude from in the network scan.

- For Ping Sweep Discovery, Exclude IP Scope might be an IP range of servers or workstations that are a subnet of the Seed IP Scope.
- For the ARP Cache Discovery, Exclude IP Scope indicates an IP address range that network scan should not attempt to discover.

Configuring network protocols and credentials

Several industry-standard protocols are used in Layer 2 Network Discovery. The two main protocols used in this type of discovery are ICMP and SNMP; the SSH protocol can also be used to enhance discovery of Linux and UNIX devices.

The following section describes how to manage each protocol and its settings.

The ICMP protocol

The ICMP protocol allows the discovery engine to test whether a particular IP address is active and responding on the network. Depending on network latency, this protocol can be adjusted to meet the configuration on your network.

To change the ICMP settings for the discovery engine:

1. From the main menu of the WhatsConnected console, select **Configure** > **Protocol Settings**. The Protocol Settings dialog appears.
2. The left pane of the dialog displays all registered protocols; ICMP is a default protocol. Select the root ICMP node to expand the tree node.
3. Select **ICMP 1**. The protocol settings appear in the right pane.

Important: You must have at least one ICMP protocol setting for discovery to operate properly.

4. Increase or decrease the **Timeout** settings. The default timeout is 500 milliseconds.

Note: If you are discovering across a WAN link, increase the timeout.

5. Increase or decrease the number of ICMP **Retries**. The default number of one retry is recommended for most networks.

Note: If you are discovering across a WAN link, increase the number of retries.

6. Click **OK** to save the protocol changes.

The SNMP protocol and credentials

The SNMP protocol allows the discovery engine to query detailed device information from each SNMP-enabled device. The correct SNMP Read community names, along with the appropriate timeout and number of retries are required for successful network queries.

This section describes how to add and maintain the appropriate SNMP protocol settings for successful network discovery.

To add a SNMP protocol setting:

1. From the main menu of the WhatsConnected console, select **Configure** > **Protocol Settings**. The Protocol Settings dialog appears.
2. The left pane of the dialog displays all registered protocols; SNMP is a default protocol. Select the root SNMP node, the tree node expands.

3 Browse the default SNMP settings by clicking on the SNMP entries in the tree.

If your SNMP settings are not visible, you can add a new SNMP setting by right-clicking on the SNMP root and selecting **New**. A new SNMP entry is placed in the tree. In the right pane, a default Read/Write community name appears.

4 Select the **SNMP Version** (v1 or v2) that your network devices are configured to support.

5 Enter the new SNMP **Read Community** name.

6 Optionally, enter a new SNMP **Write Community** name.

7 Increase or decrease the SNMP **Timeout**. This setting is dependent on the latency and load on your network devices. Longer timeouts can cause discovery to slow down. However, if the network is experiencing a lot of network traffic, a longer timeout is recommended. A default of 1000 milliseconds is recommended for small to medium size networks.

Note: If you are discovering across a WAN link, allow for a longer timeout.

8 Increase or decrease the number of SNMP **Retries**. This setting is dependent on the latency and load on your network devices. More retries allow for SNMP failures or heavy network loads. However, more retries slow down the discovery process. One or two retries is recommended for small to medium size networks.

Note: If you are discovering across a WAN link, increase the number of retries.

9 Click **OK**, to save the protocol changes.

Note: As Layer 2 Network Discovery runs, each SNMP protocol setting is used until a successful community name is found. Consider keeping the number of SNMP community names to a minimum to increase the efficiency of the network scan. Also, the discovery scan uses the SNMP settings in the order that they are listed in the protocol list. Use the **Move Up** and **Move Down** options on the right-click menu to move the most likely SNMP community names to the top of the list.

To edit a SNMP protocol setting:

1 From the main menu of the WhatsConnected console, select **Configure > Protocol Settings**. The Protocol Settings dialog appears.

2 The left pane of the dialog displays all registered protocols; SNMP is a default protocol. Select the root SNMP node, the tree node expands.

3 Browse the default SNMP settings by clicking on the SNMP entries in the tree. Select the SNMP entry you would like to modify.

4 Modify the existing settings.

- Select the **SNMP Version** (v1 or v2) that your network devices are configured to support.
- Edit the SNMP **Read Community** name.
- Optionally, edit the SNMP **Write Community** name.

- Increase or decrease the SNMP **Timeout**. This setting is dependent on the latency and load on your network devices. Longer timeouts can cause discovery to slow down. However, if the network is experiencing a lot of network traffic, a longer timeout is recommended. A default of 1000 milliseconds is recommended for small to medium size networks.

Note: If you are discovering across a WAN link, increase the number of retries.

- Increase or decrease the number of SNMP **Retries**. This setting is dependent on the latency and load on your network devices. More retries allow for SNMP failures or heavy network loads. However, more retries slow down the discovery process. One or two retries is recommended for small to medium size networks.

Note: If you are discovering across a WAN link, allow for a longer timeout.

5 Click **OK** to save the protocol changes.

To delete a SNMP protocol setting:

1 From the main menu of the WhatsConnected console, select **Configure** > **Protocol Settings**. The Protocol Settings dialog appears.
2 The left pane of the dialog displays all registered protocols; SNMP is a default protocol. Select the root SNMP node, the tree node expands.
3 Browse the default SNMP settings by clicking on the SNMP entries in the tree. Select the SNMP entry you would like to delete.
4 Right-click the SNMP node, then click **Delete**. The SNMP entry is removed.
5 Click **OK** to save the protocol changes.

The SSH Protocol

The SSH protocol allows the discovery engine to query detailed device information from Linux and UNIX devices. The correct SSH user name and password are required to query information from your Linux/UNIX devices. This protocol is not required; it is needed only if you wish to discovery of Linux/UNIX systems. Leave empty if you do not want to use this protocol.

To add an SSH protocol setting:

1 From the main menu of the WhatsConnected console, select **Configure** > **Protocol Settings**. The Protocol Settings dialog appears.
2 The left pane of the dialog displays all registered protocols; SSH is a NOT a default protocol and displays as an empty root in the left tree view. Select the root SSH node, if pre-defined SSH settings exist, they display in the expanded tree.
3 Browse the existing SSH settings by clicking on the SSH entries in the tree.

   If your SSH settings are not visible, you can add a new SSH setting by right-clicking on SSH root and selecting **New**. A new SSH entry is placed in the tree. In the right pane, protocol fields appears.
4 Enter a new SSH **User Name**.

5 Enter a new SSH **Password**.

Note: SSH user names and passwords are encrypted.

6 Enter a defined SSH port. The default port number is 22.
7 Click **OK**, to save the protocol changes.

To edit a SHH protocol setting:

1 From the main menu of the WhatsConnected console, select **Configure** > **Protocol Settings**. The Protocol Settings dialog appears.
2 The left pane of the dialog displays all registered protocols. Select the root SSH node and the tree node expands.
3 Browse the existing SSH settings by clicking on the SSH entries in the tree. Select the SSH entry you would like to modify.
4 Modify the existing settings.
   - Enter a new SSH **User Name**.
   - Enter a new SSH **Password**.

Note: SSH user names and passwords are encrypted.

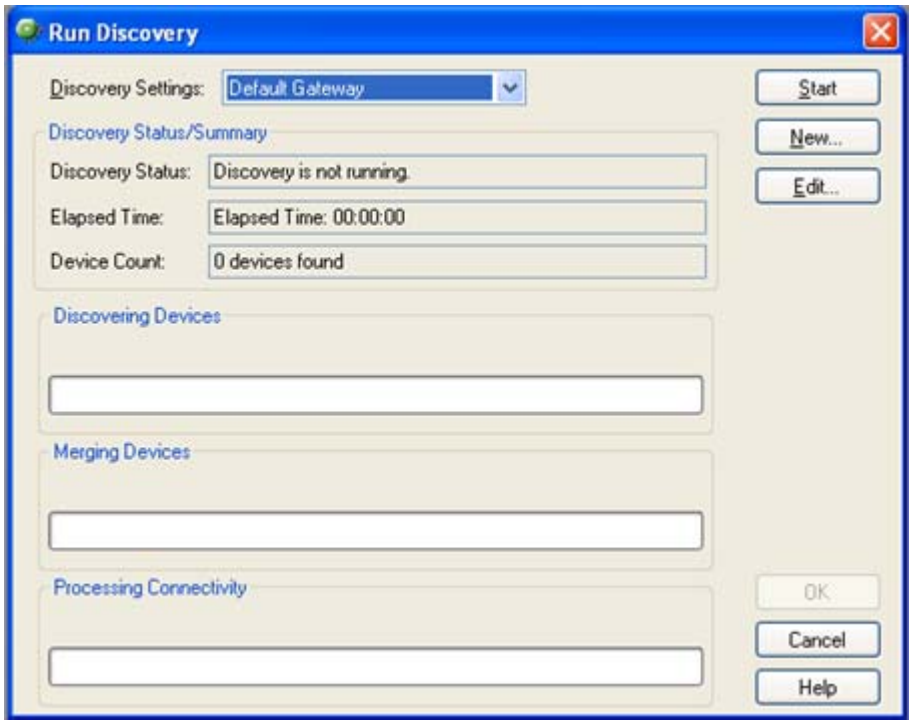
   - Enter the defined SSH port. The default port number is 22.
5 Click **OK**, to save the protocol changes.

To delete a SSH protocol setting:

1 From the main menu of the WhatsConnected console, select **Configure** > **Protocol Settings**. The Protocol Settings dialog appears.
2 The left pane of the dialog displays all registered protocols. Select the root SSH node and the tree node expands.
3 Browse the existing SSH settings by clicking on the SSH entries in the tree. Select the SSH entry you would like to modify.
4 Right-click the SSH, then click **Delete**. The SSH entry is removed.
5 Click **OK** to save the protocol changes.

Running a Layer 2 Network Discovery

Layer 2 Network Discovery scans your network for devices, using the protocol(s) and settings you selected. After devices are found, you may view the new discovery results in the WhatsConnected console.



To run a Layer 2 Network Discovery:

1. From the console click **Discover > Network**. The Run Discovery dialog appears.
2. From the **Discovery Settings** list, select the discovery configuration that you want to run. To learn more about discovery configurations, see *Configuring Layer 2 Network Discovery* (on page 8).
3. Click **New**. The Network Discovery Setup wizard appears.
   - or -
   Select an existing profile in the **Discovery Settings** list, then click **Edit**. The Network Discovery Setup wizard appears.
   - or -
   Select an existing profile in the **Discovery Settings** list, then click **Start**. The Network Discovery for the selected profile runs. Go to step 11.
4. In the **Name** box, enter a discovery configuration name that identifies the network (or part of the network) you want to discover. If you are editing an existing profile, the name is entered by default.
5. Select a method for discovering the network. Either **ARP Cache** or **Ping Sweep** discovery, then click **Next**. For more information about discovery types, see *About Layer 2 Network Discovery scan types* (on page 9).
6. Enter an **IP Seed Scope** to define the starting point of either the ARP Cache discovery, or the IP ranges to use in the Ping Sweep discovery.

- Click **Add Default Gateway** to add your default network gateway to the **IP Seed Scope**.
- Click **Advanced** to further define the IP scope configuration of the discovery process.

To learn more about Advanced IP scope settings, see Discovery Advanced IP Scoping in the WhatsConnected Help.

7 Click **Next**. The Discovery Protocol Settings dialog appears.

8 Define the SNMP and ICMP settings required to discover your network. Enter the **SNMP read communities** as well as any **Timeout** and **Retry** information for the SNMP or ICMP requests.

9 Click **Finish**. The wizard closes and the new discovery configuration is automatically added to the **Discovery Settings** list in the Run Discovery dialog.

10 Click **Start** to run the discovery process.

11 When the discovery progress is complete, click **OK**. The Device Categories dialog appears. You can view network device information in this dialog or use the **View** menu for other network viewing options. For more information, see *Viewing Network Data* (on page 23).

For more information, see Example: Using the Discovery Setup Wizard.

Adding a device manually

There are two ways to add a single device:

- From the main menu of the WhatsConnected console, select **Discover > Device**.
- On the WhatsConnected console toolbar, click **Plus**.

To manually add a device to the network data:

1 From the WhatsConnected console, select **Discover > Device** (or select the Plus image from the console toolbar). The Add Device dialog appears.

2 Enter the **IP Address/Hostname** for the device into the appropriate field.

3 Click **OK**. The Run Discovery dialog appears.

4 Click **Start Discovery**.

5 After the discovery process is complete, click **OK** to add the device to the network data. The Device Categories View appears and the newly added device is automatically selected.

Refreshing network connectivity

After a network is discovered, you can update connectivity data with a single discovery process.

To refresh the connectivity of a network:

1 From the main menu of the WhatsConnected console, select **Discovery > Refresh Connectivity**. The Run Discovery dialog appears and the discovery process begins to examine all networking devices to update their sighting and connectivity information. The progress indicators display the status of the discovery process.

2 Click **OK**. The updated information is automatically be added to the current network data.

CHAPTER 4

Using the WhatsConnected console

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About the console

The WhatsConnected console is a Windows application used for discovering, visualizing, and exporting network data. The console has the following components:

- *Layer 2 Network Discovery* (on page 8)
- *Network Device* (on page 56) and Topology Map Views
- *Exporting Topology Maps to WhatsUp Gold* (on page 52)
- *Exporting Topology Maps to Microsoft Visio™* (on page 52)

About Layer 2 Network Discovery Files

WhatsConnected saves the information from a network discovery in a discovery file (.dis file extension). This flat file format makes it easy to share and move network data between computers with WhatsConnected installed. The size of these files is dependent on the number of devices saved in each discovery run and can be managed as part of the general file system.

Managing Layer 2 Network Discovery Files

At the end of a network discovery scan, the network data is loaded into the WhatsConnected console. At this point, there a several features available for you to manage the discovery (.dis) files. You can:

- Create a new discovery file.
- Open an existing discovery file.
- Replace devices in a current discovery file with devices from another discovery file.
- Merge devices in a current discovery file with devices from another discovery file.
- Replace topology maps in a current discovery file with maps from another discovery file.

- Merge maps in a current discovery file with maps from another discovery file.
- Save a discovery file.
- Save an existing discovery file to another discovery file.

Creating a new discovery file

At the end of a network discovery run, the network data is updated in the WhatsConnected console. At this point, you can save this network data to a discovery file. This file can be later used when the WhatsConnected console is opened.

To create a new discovery file:

- From the console, click **File > New**. This clears any existing network data so that you can perform a new network discovery.

  For an example of using network discovery, see *Running a Layer 2 Network Discovery* (on page 16).

Opening a discovery file

After starting the WhatsConnected console, you may want to open an existing discovery file.

To open an existing discovery file:

1. From the console, click **File > Open**. The File Open dialog appears.
2. Browse to a network discovery file, then click **Open**. The network data is loaded into the WhatsConnected console.

Opening a recently used discovery file

The WhatsConnected console keeps track of any recently opened/saved discovery files. You may open these files at any time from the console File menu.

To open a recently used discovery file:

- From the console, click **File**. At the bottom of the menu, any recently opened/saved files are listed. Select the network discovery file that you want to open.

Using Replace Devices

The WhatsConnected console provides the capability to replace the set of devices in the current network data model with those from another discovery file.

To replace the current set of devices:

1. From the console, click **File > Replace Devices**. The Open Discovery File dialog appears.
2. Browse to locate the discovery file that you want to open, then click **Open**.

The current device set will be replaced with the devices from the selected file. The topology maps will not be modified.

Using Merge Devices

The WhatsConnected console provides the capability to merge the current set of devices with the devices from another discovery file.

To merge the current set of devices:

1. From the console, click **File > Merge Devices**. The Open Discovery File dialog appears.
2. Browse to locate the discovery file that you want to open, then Click **Open**.

The device set from the selected file will be merged with the current set of devices. The topology maps will not be modified.

Using Replace Maps

The WhatsConnected console provides the capability to replace the topology maps with the current discovery file with those of another discovery file.

To replace the current topology maps with those from an external data file:

1. From the console, click **File > Replace Maps**. The Open Discovery File dialog appears.
2. Browse to locate the discovery file that you want to open, then Click **Open**.

The topology maps from the external file will replace those maps of the current discovery file.

Using Merge Maps

The WhatsConnected console provides the capability to merge the topology maps in the current discovery file the with those of another discovery file.

To merge topology maps from an external data file with the current set of maps:

1. From the console, click **File > Merge Maps**. The **File Open** dialog appears.
2. Browse to locate the discovery file that you would like to open. Click **Open**.

The topology maps from the external discovery file will be merged with those of the current discovery file.

Using Save

The WhatsConnected console provides the capability to save the current network data model to a discovery file (.dis). Any modifications made to a network data model, such as added devices through discovery or added/modified topology maps, need to be saved much like a standard document after it has been modified.

Note: A discovery file can only be saved after it has received an initial discovery file name. Therefore, use **File > Save As** to assign a file name to the network model the first time.

To save network data to a discovery file:

- From the console, click **File > Save**. The file is saved.

Using Save As

The WhatsConnected console provides the capability to save the current network data model to a discovery file. After an initial discovery, or if you want to save the network model to a different discovery file name, you can use the Save As feature.

To save network data to a discovery file:

1. From the console, click **File > Save As**. The Save Discovery File dialog appears.
2. Give the discovery file a name, then click **Save**.

The network data will be saved to the file.

CHAPTER 5

Viewing Network Data

In This Chapter

About network data views 23
About Device Categories View 25
About Device List View 29
About the Topology Maps View 33
About the Subnets view 41
About the Links view 43

About network data views

The WhatsConnected console provides the capability of browsing network discovery results using a number of different views. The views that WhatsConnected provides:

- *The Device Categories view* (on page 25)
- *The Device List view* (on page 29)
- *The Topology Map view* (on page 33)
- *The Subnets view* (on page 41)
- *The Links view* (on page 43)

The following section describes how each view is used to visualize your network data.

About data grid views

An important feature of the WhatsConnected console is its capability to show network data in a data grid, or spreadsheet-like form. These *data grid views* provide a number of user functions that are beneficial to creating multiple views of your network data. The following section describes the base-level functions of the data grid view:

- *Column filtering* (on page 24)
- *Print and Print Preview* (on page 24)
- *Save to a comma-separated value (CSV) file* (on page 24)
- *Copying to clipboard* (on page 25)
- *Remove selected devices* (on page 25)

Column filtering

Each data grid view allows you to show and hide its columns. This feature provides a powerful filtering capability so that you may structure your views in a way that brings the data into a form that you find most useful as a network administrator.

To show and hide columns in a data grid view:

1. Right-click a column heading in the data grid view. A list displaying all the columns that are displayed in that data grid appears; only columns with checks are displayed in the data grid.
2. To show a column, click the name of the column that you want to display in the grid. The data grid updates automatically.
3. To hide a column, clear the check from column that you would like to remove from the grid. The data grid updates automatically.
4. To close the column list options, click anywhere outside of the list box.

Note: Show and hide selections are not persistent between different sessions of WhatsConnected. When you close the current session of WhatsConnected, data grid views return to their default display settings.

Print and Print Preview

Each data grid can produce printable reports of the items in the data grid view.

Note: The print capability is disabled in the trial version of WhatsConnected.

To print items in a data grid view:

1. Right-click any item in the data grid view. A right-click menu appears.
2. Select **Print**. The standard Print dialog appears.
3. Select the print options, then click **OK**.

To print preview items in a data grid view:

1. Right-click any item in the data grid view. A right-click menu appears.
2. Select **Print Preview**. The standard Print Preview view appears. You may use this view to preview how the report will look when printed.

Tip: You can print the document by clicking the Printer icon in the Print Preview toolbar.

Save to a comma-separated value (CSV) file

Each data grid can be saved to a comma-separated text file. This allows data to be extracted from the WhatsConnected data files and imported into other applications, such as Microsoft Excel.

Note: This capability is disabled in the trial version of WhatsConnected.

To save to a comma-separated value (CSV) file:

1. Right-click any item in the data grid view. A right-click menu appears.
2. Click **Save to CSV**. The Save to CSV file dialog appears.
3. Browse to the location where you want to save the CSV file, then enter a **File name** for the data grid view.
4. Click **Save**.

Copying to clipboard

Each data grid can be copied to the windows clipboard and then pasted into another application.

Note: This capability is disabled in the trial version of WhatsConnected.

To copy data items to the clipboard:

1. Click any item in the data grid view to ensure the correct view is selected.
2. Press `Control + C`. The data grid view items copy to the clipboard.
3. Open any application to which you can paste the clipboard data; for example Microsoft Excel™.
4. Press `Control + V`. The contents of the clipboard copy into the application.

Remove selected devices

WhatsConnected allows you to customize device lists by removing devices from a data grid device list. This feature lets you select devices that you want to manage with WhatsConnected.

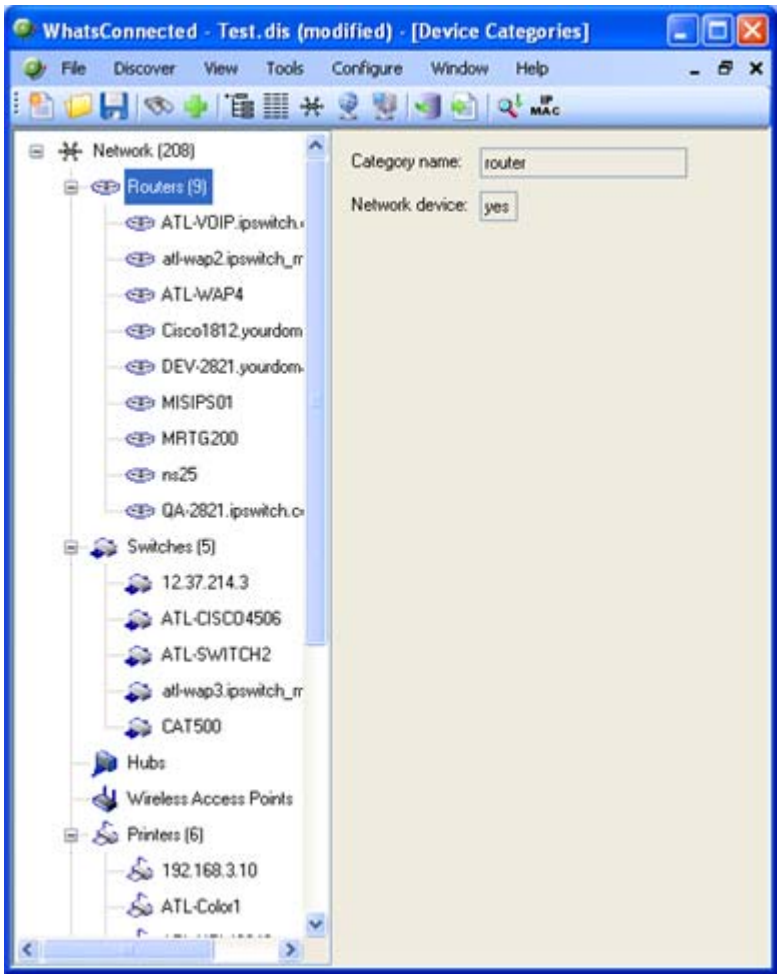
To remove selected devices from a data grid view:

1. In a data grid view, select the devices you want to remove from the device list.
   - Press CTRL then select multiple non-contiguous devices in the list.
   - Press SHIFT to select multiple contiguous devices in the list.
2. Right-click in the data grid view. The right-click menu appears.
3. Click **Remove selected devices**. A confirmation dialog appears and asks if you are sure you want to delete the selected devices.
4. Click **Yes** to delete the selected devices or **No** to cancel the device deletion. If you clicked Yes, the selected devices are removed from the device list.

About Device Categories View

Device Categories View automatically categorizes and groups network devices so they can be viewed by their functional characteristics. Categories include networking groups such as Routers, Switches, Hubs, and Wireless Access Points. This view also helps distinguish between desktop and server operating systems such as Macintosh, Windows, Windows Servers, Linux, and UNIX. Additional device categories, such as Printers and IP Phones, help organize your

network data. Any device that is either not categorized, nor supports SNMP, is placed in the Unknown category.



The Device Categories view also provides a tabular view of the inventory and configuration data that is gathered from each network device. For more information, see *About Device Details tab view* (on page 27).

Data displayed in this view can be removed, printed, print previewed, or saved to a comma-separated-value (CSV) file for use in Microsoft Excel or other reporting applications. For more information, see *About data grid views* (on page 23).

To view Device Categories:

1 From the main menu of the WhatsConnected console, select **View > Device Categories**. The Device Categories view appears.

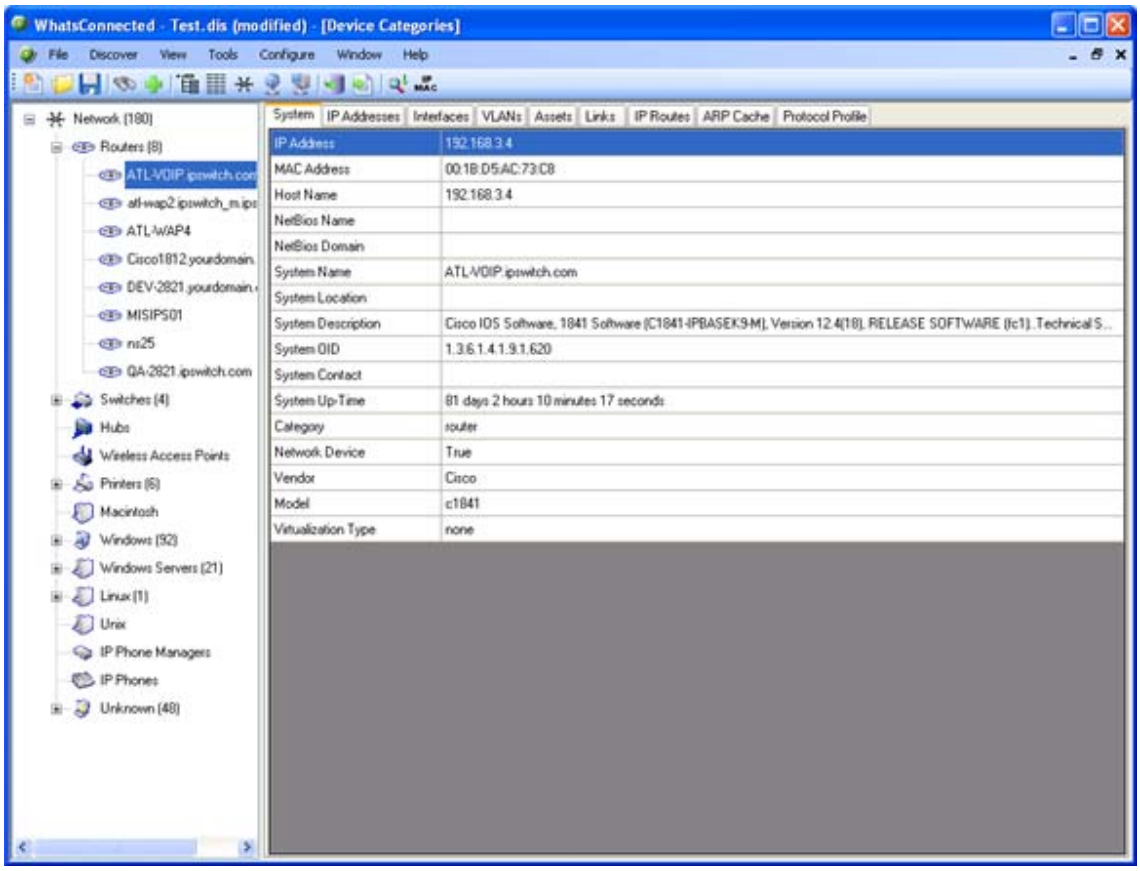
> **Tip**: You can also view device categories from the WhatsConnected console shortcut menu. Click (Device Categories shortcut icon). The Device Categories dialog appears.

2 Click a category to expand it and view more information about the devices in the category.

3 Click a device to display device details on the right side of the page.

About Device Details tab view

Associated with the Device Categories view, the Device Details tab provides a tabular view that displays detailed network device information. When a device is selected in the Device Categories view, the details of the device are shown in the Device Details tab view.



Tabs are only shown if a device has data that can be displayed. Possible tab views that may be associated with each device are:

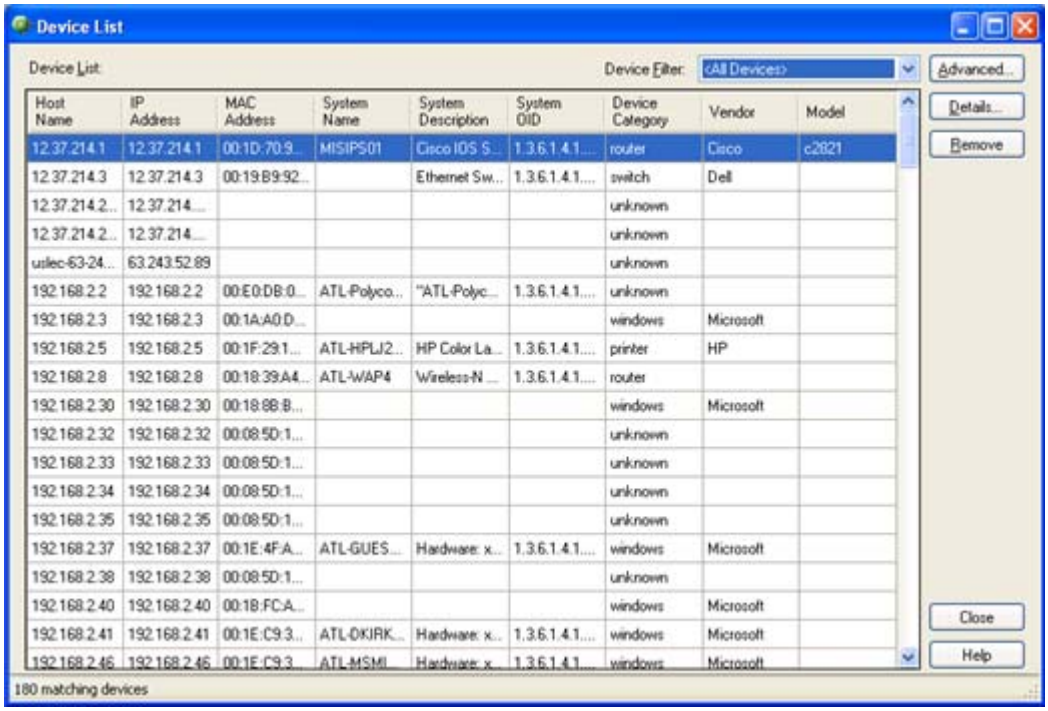
- **System**. Provides IP Address/MAC Address, MIB II information, product vendor, and other system information.
- **IP Addresses**. Provides IP Address configuration information.
- **Interfaces**. Provides name entries (IF information) for each device interface and other interface information.
- **Bridge Ports**. Provides Bridge Port and VLAN name and index information.
- **VLANs**. Provides Virtual LAN configuration information.
- **LAG Trunks**. Provides Link Aggregation Group information.
- **Assets**. Provides inventory information about the device components.
- **Links**. Provides physical connectivity information from this device to other network devices.
- **IP Routes**. Provides IP route configuration data information.

- **Spanning Tree (STP)**. Provides spanning tree configuration and status information.
- **ARP Cache**. Provides Address Resolution Protocol (ARP) table information.
- **Forwarding**. Provides Layer 2 forwarding information.
- **Protocol Profile**. Provides information about successful protocol matches for this device.
- **HSRP**. Provides information about the Hot Standby Router Protocol (HSRP) on the device. The information relates to the standby nature of routers.
- **IP Phone**. Provides information about the selected (individual) IP phone.
- **IP Phone Manager**. Provides information about the IP phones that are registered or are communicating with a call manager.
- **IP Routes**. Provides information about the IP routes configured for this device.
- **VRRP**. Provides information about the Virtual Router Redundancy Protocol (VRRP) on the device. The information relates to the standby nature of routers.
- **STP**. Provides information about Spanning Tree Protocol entries discovered on this device.
- **Software**. Provides information about installed software discovered on this device.

Each of the Device Details tabs is built with the data grid views that were described previously. For more information about the data grid views, see *About data grid views* (on page 23). These views allow you to browse, sort, and export (print) the data that is shown for each device.

About Device List View

Device List View is a spreadsheet-like view that helps you organize, filter, and find network devices and data.



Host Name	IP Address	MAC Address	System Name	System Description	System OID	Device Category	Vendor	Model
12.37.214.1	12.37.214.1	00:1D:70:9...	MISIPS01	Cisco IOS S...	1.3.6.1.4.1....	router	Cisco	c2821
12.37.214.3	12.37.214.3	00:19:B9:92...		Ethernet Sw...	1.3.6.1.4.1....	switch	Dell	
12.37.214.2...	12.37.214....					unknown		
12.37.214.2...	12.37.214....					unknown		
uslec-63-24...	63.243.52.89					unknown		
192.168.2.2	192.168.2.2	00:E0:DB:0...	ATL-Polyco...	"ATL-Polyc...	1.3.6.1.4.1....	unknown		
192.168.2.3	192.168.2.3	00:1A:A0:D...				windows	Microsoft	
192.168.2.5	192.168.2.5	00:1F:29:1...	ATL-HPLJ2...	HP Color La...	1.3.6.1.4.1....	printer	HP	
192.168.2.8	192.168.2.8	00:18:39:A4...	ATL-WAP4	Wireless-N ...	1.3.6.1.4.1....	router		
192.168.2.30	192.168.2.30	00:18:88:B...				windows	Microsoft	
192.168.2.32	192.168.2.32	00:08:5D:1...				unknown		
192.168.2.33	192.168.2.33	00:08:5D:1...				unknown		
192.168.2.34	192.168.2.34	00:08:5D:1...				unknown		
192.168.2.35	192.168.2.35	00:08:5D:1...				unknown		
192.168.2.37	192.168.2.37	00:1E:4F:A...	ATL-GUES...	Hardware: x...	1.3.6.1.4.1....	windows	Microsoft	
192.168.2.38	192.168.2.38	00:08:5D:1...				unknown		
192.168.2.40	192.168.2.40	00:18:FC:A...				windows	Microsoft	
192.168.2.41	192.168.2.41	00:1E:C9:3...	ATL-DKIRK...	Hardware: x...	1.3.6.1.4.1....	windows	Microsoft	
192.168.2.46	192.168.2.46	00:1E:C9:3...	ATL-MSMI...	Hardware: x...	1.3.6.1.4.1....	windows	Microsoft	

You can filter data displayed in the view by using the Device Filter and Advanced features.

Data displayed in this view can be removed, printed, print previewed, or saved to a comma-separated-value (CSV) file for use in Microsoft Excel or other reporting applications. For more information, see *About data grid views* (on page 23).

Tip: You can double-click any device in the Device List view. The Device Details tab view opens with more details about the device.

To view Device List:

1 From the main menu of the WhatsConnected console, select **View > Device List**. The Device List view appears.

Tip: You can also view device list from the WhatsConnected console shortcut menu. Click (Device List shortcut icon). The Device List dialog appears.

To view Device Details:

- With the device list open, double-click a device in the list. The Device Details appear. For more information, see *About Device Details tab view* (on page 27).

About Device List columns

The device list shows all matching devices in the data grid view. There are number of columns that display the respective data for each device.

The columns of the grid view are:

- **Hostname**. The DNS hostname for the device.
- **IP Address**. The IP address that the device was discovered by.
- **MAC Address**. The MAC address associated with the main IP address.
- **NetBios Name**. The windows NetBios name (if supported and known).
- **NetBios Domain**. The windows NetBios domain (if supported and known).
- **System Name**. The MIB II system name.
- **System Description**. The MIB II system description.
- **System OID**. The MIB II system object ID.
- **Vendor**. The network device manufacturer.
- **Model**. The network device model number.

Using Device List filters

You can use Device List filters to locate specific network devices and subnets. These filtering tools let you to find devices that match your specified search criteria.

To filter the device list by device type in the list view grid:

1 From the main menu of the WhatsConnected console, select **View > Device List**. The Device List view appears.

> **Tip**: You can also view device list from the WhatsConnected console shortcut menu. Click (Device List shortcut icon). The Device List dialog appears.

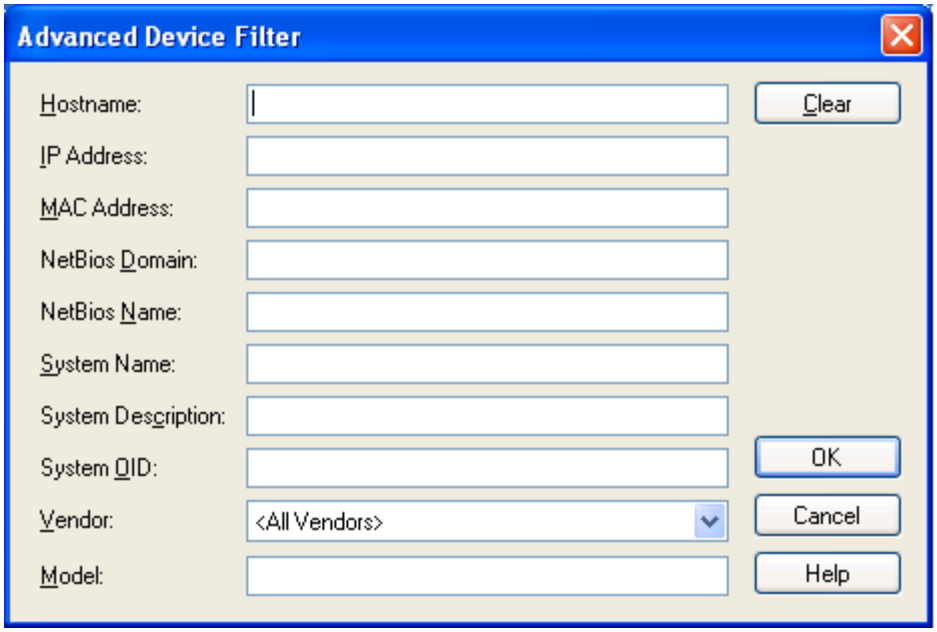
2 Click the **Device Filter** list, then select the device type you want to view in the device list. The filtered devices appear in the device list.

To filter the device list by search criteria:

1 From the main menu of the WhatsConnected console, select **View > Device List**. The Device List view appears.

> **Tip**: You can also view device list from the WhatsConnected console shortcut menu. Click (Device List shortcut icon). The Device List dialog appears.

2 Click **Advanced**. The Advanced Device Filter dialog appears.



3 Enter the desired search criteria in the provided fields. Use a wild card in any text box. For example, Hostname: device1*.

4 After the device filter search criteria are entered, click **OK.** The list displays only the devices that match the search criteria.

5 Click **Advanced** to further refine the search criteria, then click **OK**. Only the current list of devices is compared against the current set of search criteria to show a refined set of devices.

6 Click **Clear**, then click **OK** to clear all search criteria and return to the complete device list.

Viewing Device List details

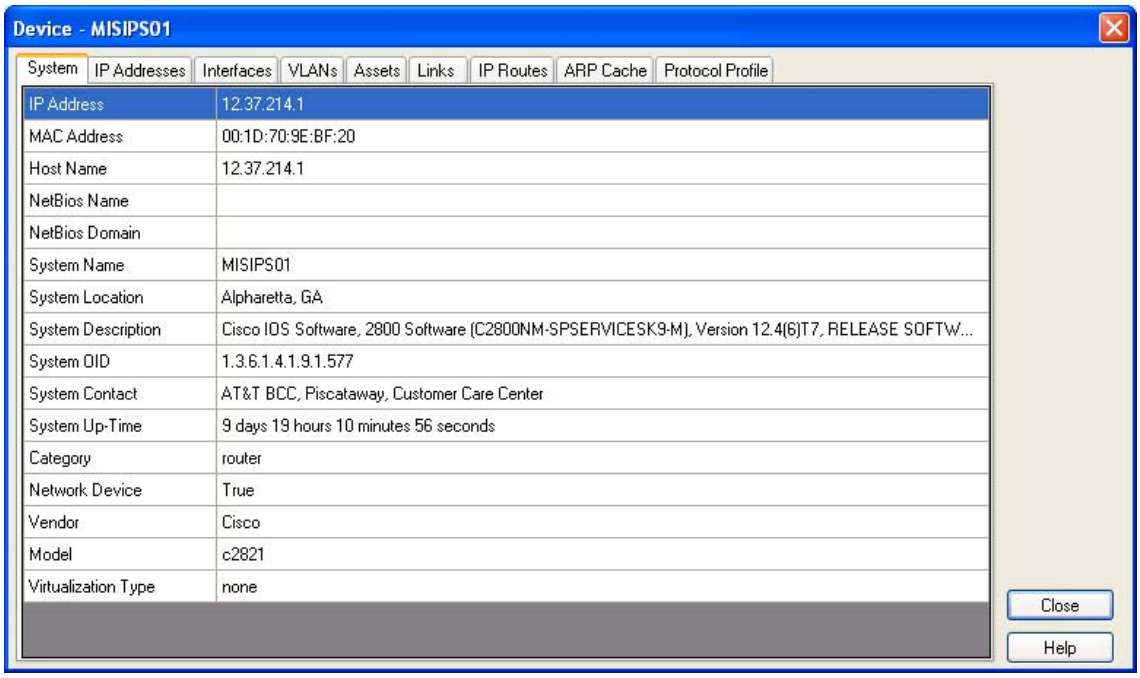
Associated with the Device List view, the Device Details tab provides a tabular view that displays detailed network device information. When a device is selected in the Device List view, the details of the device are shown in the Device Details tab view.

To view the device list details:

1 From the main menu of the WhatsConnected console, select **View > Device List**. The Device List view appears.

Tip: You can also view device list from the WhatsConnected console shortcut menu. Click (Device List shortcut icon). The Device List dialog appears.

2 In the device list, select a device for which to view more details, then click **Details**. The Device Details list appears.



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- **IP Phone**. Provides information about the selected (individual) IP phone.
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- **IP Routes**. Provides information about the IP routes configured for this device.
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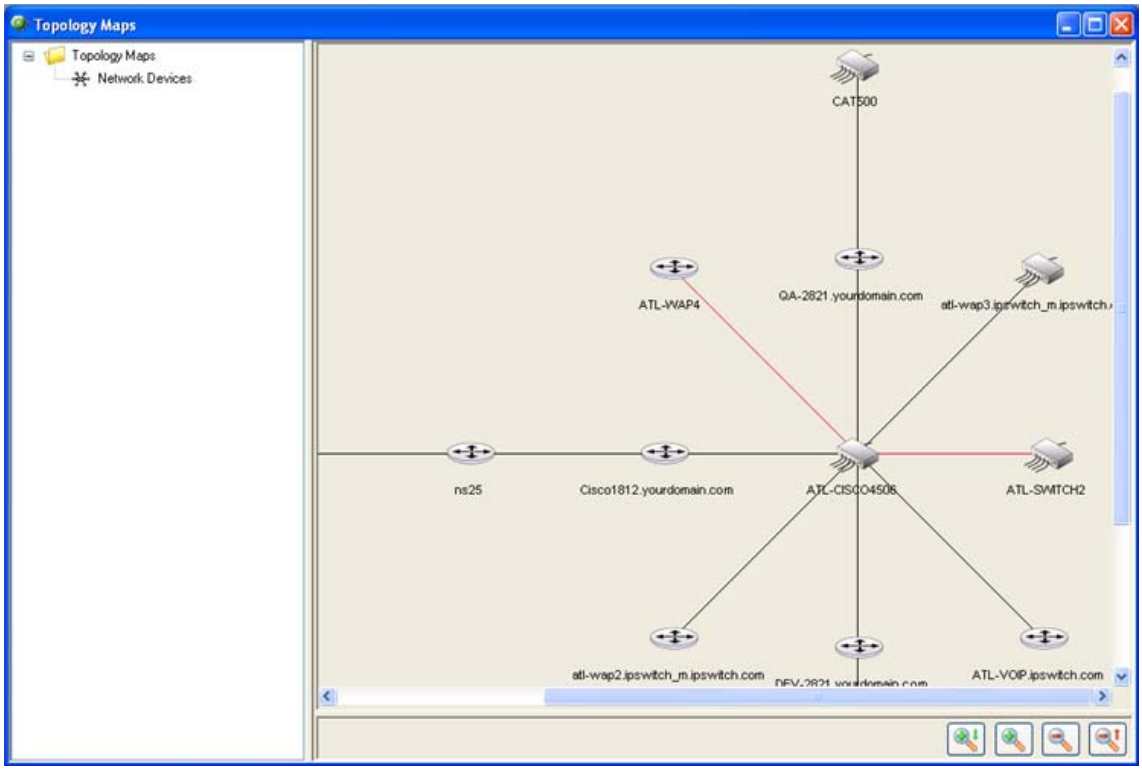
- **STP**. Provides information about Spanning Tree Protocol entries discovered on this device.
- **Software**. Provides information about installed software discovered on this device.

Each of the Device Details tabs is built with the data grid views that were described previously. For more information about the data grid views, see *About data grid views* (on page 23). These views allow you to browse, sort, and export (print) the data that is shown for each device.

About the Topology Maps View

The Topology Maps view displays the layer 2, or physical topology, of your networking devices. Topology maps can be organized by groups or individually. By default, WhatsConnected builds a *Network Devices* view that displays the topology of your core network device infrastructure.



With the topology data, you can build custom topology views that display important elements of your network infrastructure. These topology views can be exported to Visio for sharing or WhatsUp Gold as new devices.

About Topology Tree View

Topology Maps View is an explorer-type view that allows you to organize and view network data in a graphical format. The topology viewer provides the capability to visually represent the relationships between each network device based on either its physical network connectivity or on your preferences. The left tree view allows you to organize topology groups and maps while the right view displays a graphical topology view of the network devices. To learn more about topology maps and using the topology maps view, see *Managing and customizing topology groups and maps* (on page 34).

Managing and customizing topology groups and maps

The topology tree view allows you to manage your topology maps through the right-click menu. WhatsConnected allows you to create your own custom topology maps. Using the layer 2 connectivity data, you can interactively place devices on a topology map and then use the right-click menu for that device to add/remove connected devices.

To add a new topology map:

1. Right-click on any topology group in the topology tree view. The right-click menu appears.
2. Select **Add Map**. The Add Map dialog appears.
3. Enter a name for the new topology map in **Name**.

> **Note**: Topology map names must be unique.

4. Click **OK**. The topology map is added to the selected group.

To add a new topology group:

1. Right-click on topology group in the topology tree view. The right-click menu appears.
2. Select **Add Group**. The Add Group dialog appears.
3. Enter the name of the new topology group in **Name**.

> **Note**: Topology group names must be unique.

4. Click **OK**. The topology group is added as a subfolder under the selected group.

To rename a topology group or map:

1. Right-click on topology group or map in the topology tree view. The right-click menu appears.
2. Select **Rename**. The Rename Group/Map dialog appears.
3. Enter the new name of the topology group or map in **Name**.
4. Click **OK**. The topology group or map is updated to reflect the new name.

To delete a topology group or map:

1 Right-click on a topology group or map in the topology tree view. The right-click menu appears.
2 Click **Delete**. The group/map will be removed from the topology tree view.

To cut and paste a topology group or map:

1 Right-click on topology group or map in the topology tree view. The right-click menu appears.
2 Select **Cut**. The group or map is removed from the topology tree view.
3 Right-click on the topology group that you would like to place the topology item under in the tree view. The right-click menu appears.
4 Select **Paste**. The group or map is placed under the selected topology group.

About adding individual or connected devices to a topology map

WhatsConnected allows you to customize topology maps by adding devices to the topology map.

There are two methods by which to add devices to a topology map:

- Adding an individual device to a topology map.
- Adding a connected device to a topology map.

The following steps describe how to accomplish both methods.

To add device(s) to a topology map:

1 From the main menu of the WhatsConnected console, select **View > Topology Maps**. The Topology Maps view appears.

> **Tip**: You can also view topology maps from the WhatsConnected console shortcut menu. Click (Topology maps shortcut icon). The Topology Maps dialog appears.

2 Select a topology map you want to modify in the topology tree view.
3 Right-click in the topology map area. The right-click menu appears.
4 Select **Add Devices**. The Select Devices dialog appears.
5 Select the devices from the list that you would like to add to the topology map. You can:
   - Double-click a device to select it and return to the previous dialog.
   - Press `Ctrl` and click to select multiple non-contiguous devices in the list.
   - Press `Shift` and click to select multiple contiguous devices in the list.
6 Click **OK**. The selected devices are placed on the topology map. The layout settings (for example, radial or hierarchy) determine how the new devices are displayed in the topology map. To learn more about topology layout modes, please see *About Topology layout modes* (on page 38).

> **Note**: The topology map shows the relationships between devices on the map based on their Layer 2 connectivity—if two devices are physically connected, the topology view illustrates their connection.

To add connected devices to a topology map:

1 From the main menu of the WhatsConnected console, select **View > Topology Maps**. The Topology Maps view appears.

> **Tip**: You can also view topology maps from the WhatsConnected console shortcut menu. Click (Topology maps shortcut icon). The Topology Maps dialog appears.

2 Right-click on a device in a topology map. The right-click menu appears.

3 Select **Add Connected**. The following options are displayed.

- **Network Devices**[x/y]. Add all connected network devices to the topology map.
- **Servers**[x/y]. Add all connected servers to the topology map.
- **Workstations**[x/y]. Add all connected workstations to the topology map.
- **Printers**[x/y]. Add all connected printers to the topology map.
- **All Devices**[x/y]. Add all connected devices to the topology map.

> **Note**: [x/y] represents the following:
> y = the number of devices of that type connected to the device you have selected.
> x = the number of connected devices that are already on the topology map.

- **Select**. Use the Select Devices dialog to individually select which connected devices are added to the topology map.

4 By clicking on any of the displayed options, the topology map is updated with the selected devices.

About removing devices from a topology map

WhatsConnected allows you to customize topology maps by removing devices from a topology map.

There are four methods to remove devices from a topology map:

- Remove all devices from a topology map.
- Remove a single device from a topology map.
- Remove select devices from a topology map.
- Remove connected devices from a topology map.

The following steps describe the methods to remove devices.

To remove all devices from a topology map:

1 Select the topology map in the topology tree view.

2 Right-click in the topology map area. The right-click menu appears.

3 Select **Remove All**. All devices are removed from the topology map.

To remove a single device from a topology map:

1. Select the topology map in the topology tree view.
2. Right-click on a device on the topology map. The right-click menu appears.
3. Select **Remove Device**. The device is removed from the topology map.
   - or -
4. Select a device on the topology map.
5. Press DELETE. The device is removed from the topology map.

To remove selected devices from a topology map:

1. Select the topology map in the topology tree view.
2. Right-click in the topology map area. The right-click menu appears.
3. Click **Remove Devices**. The Select Devices dialog appears.
4. Use the Select Devices dialog to select the devices that you would like removed from the topology map.
   - Press CTRL to select multiple non-contiguous devices in the list.
   - Press SHIFT to select multiple contiguous devices in the list.
5. Click **OK**. The selected devices are removed from the topology map.

To remove connected devices from a topology map:

1. Select the topology map in the topology tree view.
2. Right-click on a device on a topology map. The right-click menu appears.
3. Select **Remove Connected**. The following options are displayed.
   - **Network Devices** [x/y]. Remove all the connected network devices from the topology map.
   - **Servers** [x/y]. Remove all the connected servers from the topology map.
   - **Workstations** [x/y]. Remove all the connected workstations from the topology map.
   - **Printers** [x/y]. Remove all the connected printers from the topology map.
   - **All Devices** [x/y]. Remove all connected devices from the topology map.

Note: [x/y] represents the following:
y = number of devices of this type connected to the device you have selected.
x = number of connected devices that are already on the topology map.

- **Select**. Click to use the Select Devices dialog to individually select the connected devices to remove from the topology map.

4 The selected devices are removed from the topology map.

Viewing device properties from a topology map

From the Topology Map, you can use the right-click menu to view device properties for each device on the map.

To view device properties on the topology map:

1 From the main menu of the WhatsConnected console, select **View > Topology Maps**. The Topology Maps view appears.

> **Tip**: You can also view topology maps from the WhatsConnected console shortcut menu. Click (Topology maps shortcut icon). The Topology Maps dialog appears.

2 Select a topology map you want to modify in the topology tree view.
3 Right-click a device with connected devices, then select **Device Properties**. The Device Viewer appears.
4 Click the tab for the device information you want to view.

Viewing device properties from the topology map

From the Topology Map, you can use the right-click menu to view link properties for each link on the map.

To view link properties on the topology map:

1 From the main menu of the WhatsConnected console, select **View > Topology Maps**. The Topology Maps view appears.

> **Tip**: You can also view topology maps from the WhatsConnected console shortcut menu. Click (Topology maps shortcut icon). The Topology Maps dialog appears.

2 Select a topology map you want to modify in the topology tree view.
3 Right-click a link line between connected devices, then select **Link Properties**. The Link Properties dialog appears.
4 View the information about the two linked devices. If viewing a Multi-Link properties dialog, you can scroll or click the page bar to select the device connection point you want to view.
- or -
Click **Remove Link** to remove the link between the devices on the topology map.

About Topology layout modes

To understand the layout modes, you must first be familiar with the layout strategy used by the WhatsConnected topology engine. For each map, the topology viewer selects a root device which becomes the starting point of the diagrams. The root device is selected based

on finding the device on the diagram with the most network connections. You can also change the root device.

To change the Root Device:

1. Select any device on the topology map, then right-click. The right click menu appears.
2. Click **Select As Root Device**. This overrides the automatic root calculation and all parent/child relationships are built based on the newly selected device as the root device.

Using the connectivity model, the topology viewer sets the *root* as the parent and then assigns all connected devices as children. This process continues until all devices on the topology map are given a parent/child relationship.

With the parent/child relationships calculated, the WhatsConnected topology viewer provides three layout modes for any topology map. These modes describe the manner in which each child node (or device) is given its position on the topology map. The layout modes are described as follows:

- **Radial**. In this mode, each child node is connected to its parent in a radial (or circular) pattern. For more information, see *About Radial layout settings* (on page 39).
- **Hierarchy**. In this mode, each child node is given a position in a hierarchical or tree-like view with the root being either on the left, top, right or bottom. For more information, see *About Hierarchy Layout settings* (on page 40).
- **Manual**. In this mode, you can use the drag-and-drop features of the topology view to position the device on the topology map where you want to locate it. For more information, see *About Manual Layout setting* (on page 40).

To change a topology map layout settings:

1. From the main menu of the WhatsConnected console, select **View > Topology Maps**. The Topology Maps view appears.

> **Tip**: You can also view topology maps from the WhatsConnected console shortcut menu. Click (Topology maps shortcut icon). The Topology Maps dialog appears.

2. Select a topology map you want to modify in the topology tree view.
3. Right-click the topology map, then select Layout Settings. The Layout Settings dialog appears.
4. Use the Layout Settings dialog to adjust the layout options. For more information about auto-layout settings, see Layout Settings in the WhatsConnected Help.
5. Click **OK**. The selected devices will be repositioned on the topology map.

About Radial Layout settings

In the radial layout mode, connected child devices are given positions in a radial (or circular) pattern around their parent device. You can modify the layout results by changing the following layout attributes:

- **Level Spacing**. This setting dictates the amount of space between the parent and child device. Increase this value to provide more spacing between the parent and children devices.

- **Node Angle**. This setting dictates the amount of space between each child (or sibling) devices. Increase this value to fan out the children.

> **Note**: When increasing the node angle, if a large number of devices are shown connected to one parent, the radial layout may overlap (make a full circle). In this case you may need to decrease the node angle and increase the level spacing.

About Hierarchy Layout settings

In the hierarchy layout mode, connected child devices are given positions in a hierarchical (or tree like) pattern in relationship to their parent. You can modify the layout results by changing the following layout attributes:

Direction. This setting indicates the placement of the root device and the direction the children will be placed from the root device.

- **Down**. The root device is placed at the top of the topology map, and children are placed respectively below the root device.
- **Up**. The root device is placed at the bottom of the topology map, and children are placed respectively above the root.
- **Left**. The root device is placed at the right of the topology map, and children are placed respectively to the left of the root.
- **Right**. The root device is placed at the left of the topology map, and children are placed respectively to the right of the root.

Alignment. This setting indicates the placement of the root (or parent) device in relationship to its children.

- **Center**. The root/parent device is centered (either vertically/horizontally) with respect to its children.
- **Left**. The root/parent device is located to the far left (either vertically/horizontally) with respect to its children.
- **Right**. The root/parent device is located to the far right (either vertically/horizontally) with respect to its children.

Level Spacing. This setting dictates the amount of space between the parent and child devices. Increase this value to provide more spacing between the parent and children devices.

Node Spacing. This setting dictates the amount of space between each child (or sibling) devices. Increase this value to create more space between sibling devices.

Straight Links. A flag that indicates whether the lines from the parent device to the children devices should be straight lines or routed (angled) lines.

About Manual Layout settings

In manual layout mode, the automatic layout methods are turned off and you are given complete control over device placement on the topology map. The topology maps provide a

drag-and-drop capability to simplify creating and arranging a custom topology map. The following is a list of drag-and-drop operations in manual layout mode.

- **Left Mouse Click**. Selects a device on the topology map.
- **Shift + Left Mouse Click**. Multi-selects devices on a topology map.
- **Left Mouse Click + Mouse Move**. Selects and drags a device to a new position on the topology map.
- **Alt + Left Mouse Click + Mouse Move**. Selects and drags a device PLUS all of its children to a new position on the topology map.

You can use the manual layout mode to add new devices to the topology map. The method to add a device is the same as adding a device in radial or hierarchical layout mode. After the devices are placed on the topology map, you can manually move devices on the map or select the *radial* (on page 39) or *hierarchy* (on page 40) layout settings to readjust the map.

Layout Children

While in the manual layout mode, the WhatsConnected topology maps provide the capability to use the auto-layout algorithms to reposition child devices on a topology map.

To reposition child devices on a topology map:

Note: Make sure that the layout settings are set to Manual layout to change layout children settings. For more information see, Layout Children in the WhatsConnected Help.

1. From the main menu of the WhatsConnected console, select **View > Topology Maps**. The Topology Maps view appears.

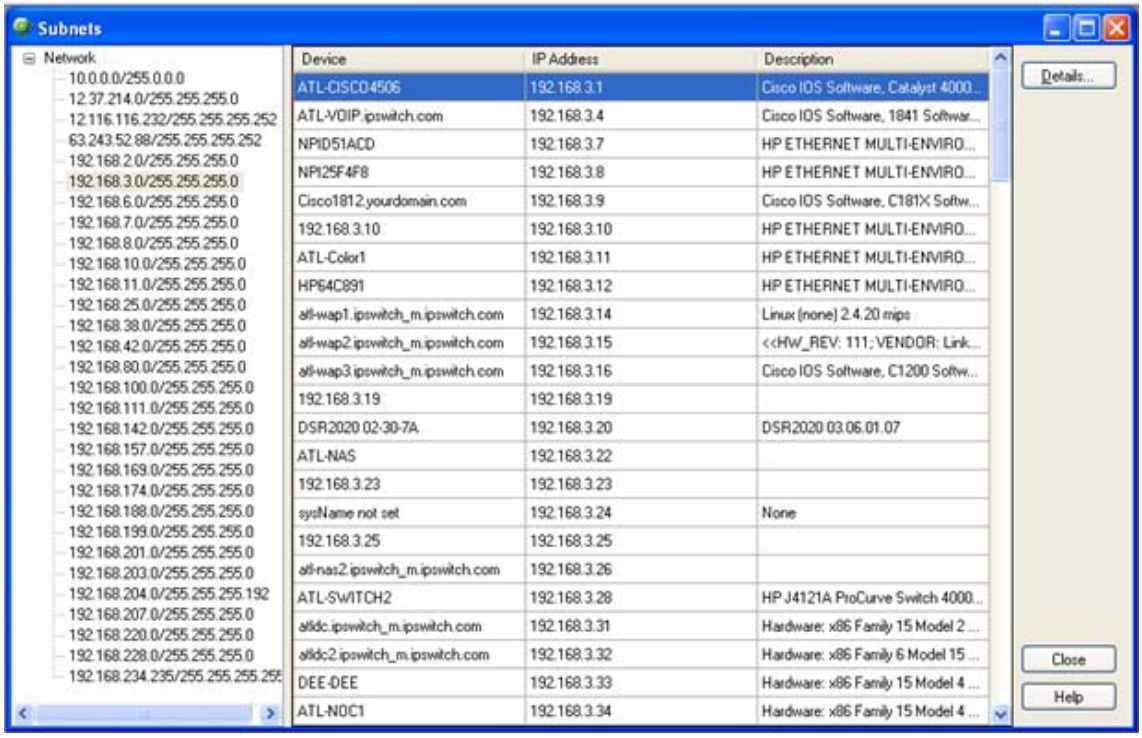
Tip: You can also view topology maps from the WhatsConnected console shortcut menu. Click (Topology maps shortcut icon). The Topology Maps dialog appears.

2. Select a topology map you want to modify in the topology tree view.
3. Right-click a device with connected devices, then select **Layout Children**. The Layout Children dialog appears.
4. Use the Layout Settings dialog to adjust the layout options. For more information about auto-layout settings, see *Layout Children* in the WhatsConnected Help.
5. Click **OK**. The selected devices will be repositioned on the topology map.

About the Subnets view

The Subnets view is an explorer-type view that shows the grouping of network devices based on their respective subnets (or IP addressing information).

The device list on the right side of the pane is a data grid view and therefore supports all sorting, exporting, and column filtering options. For more information about data grid views, see *About data grid views* (on page 23).



Viewing Subnet device details

Associated with the Subnets view, the Device Details tab provides a tabular view that displays detailed subnet device information. When a device is selected in the Subnet view, the details of the device are shown in the Device Details tab view.

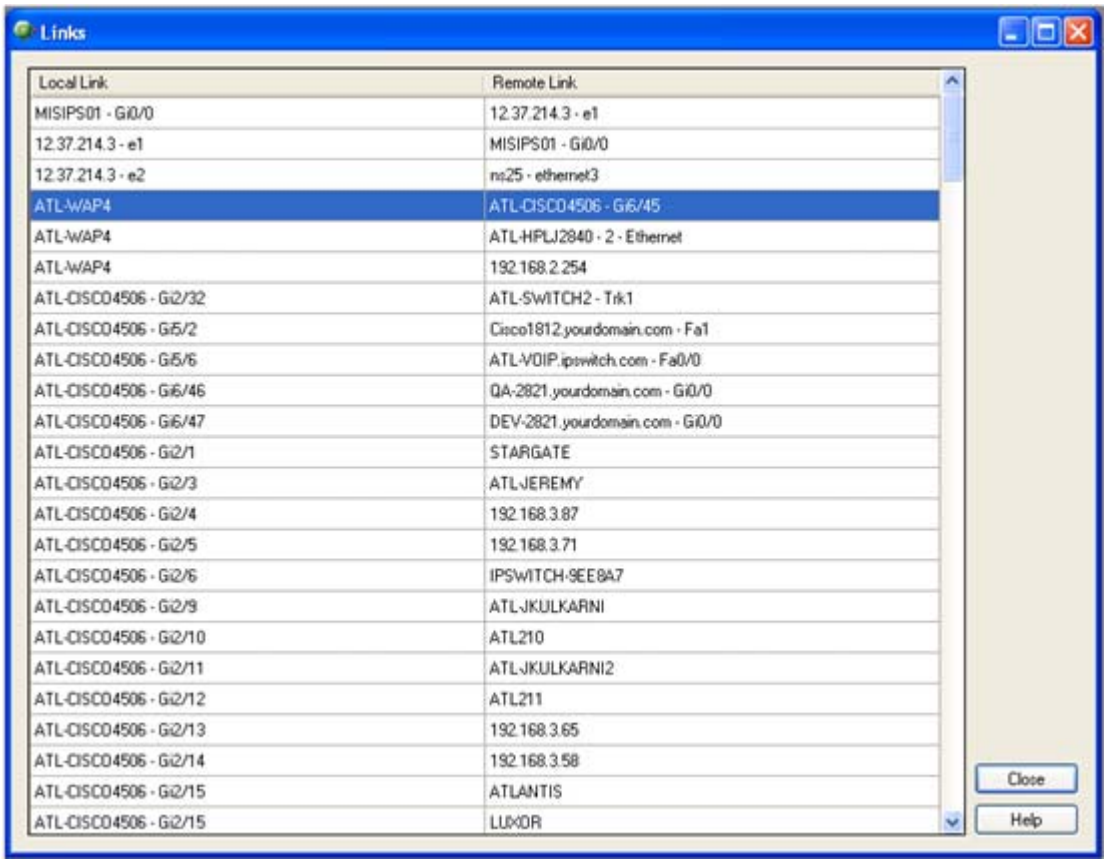
To view subnet device details:

- From the main menu of the WhatsConnected console, select **View > Subnets**. The Subnets view appears.

Tip: You can also view subnets from the WhatsConnected console shortcut menu. Click (Subnets icon). The Subnets dialog appears.

About the Links view

The Links view is a spreadsheet-like view that displays all known topology links in the network discovery file. This view provides a concise list of all of your network connections.



Data displayed in this view can be printed, print previewed, or saved to a comma-separated-value (CSV) file for use in Microsoft Excel or other reporting applications. For more information, see *About data grid views* (on page 23).

To view the Links view:

1 From the main menu of the WhatsConnected console, select **View > Links**. The Links view appears.

> **Tip**: You can also view links from the WhatsConnected console shortcut menu. Click (Links shortcut icon). The Links dialog appears.

2 View the following information about the links:

- **Local Link**. Shows the local side of a connection. This connection is the Display Name of the device, and if available, the interface information.
- **Remote Link**. Shows the remote side of a connection. The connection is the Display Name of the remote device, and any available interface information.

3 Click **Close** to close the Links dialog.

CHAPTER 6

Using WhatsConnected Tools

In This Chapter

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Using Layer 2 Trace 46
Using IP/MAC Finder 49
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Using the Device Viewer 56

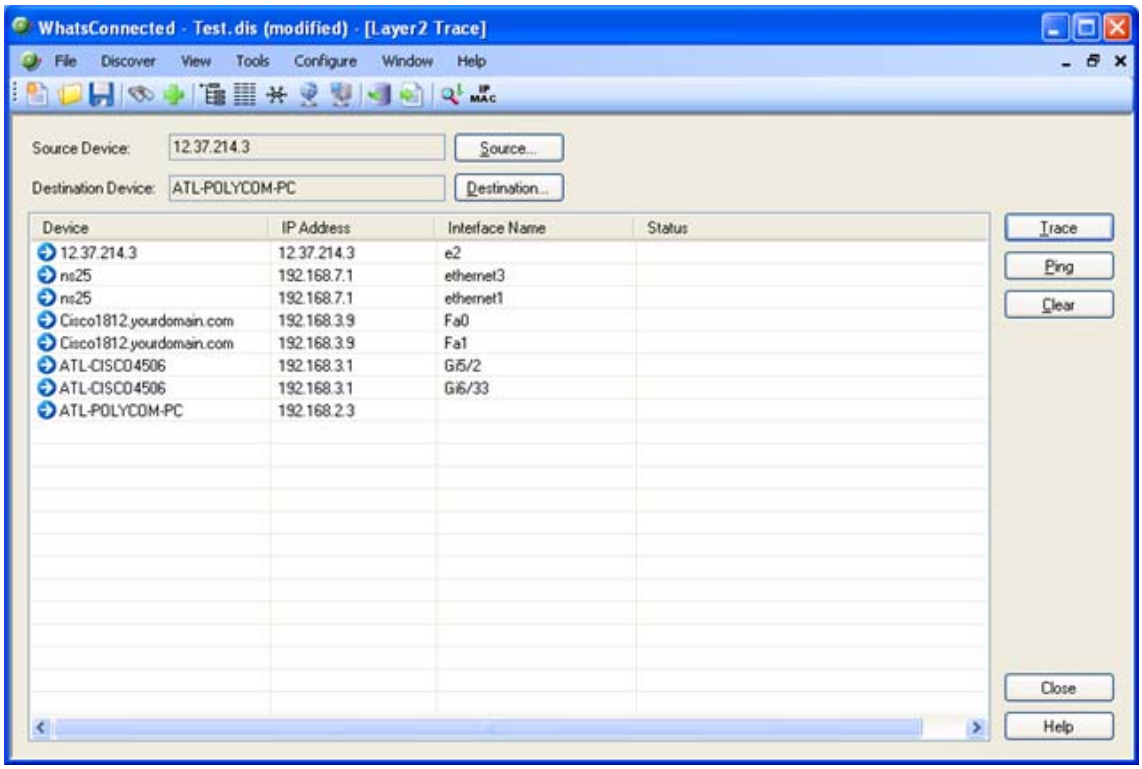
About WhatsConnected Tools

WhatsConnected includes network tools that are available in both the WhatsConnected and WhatsUp Gold consoles.

- Layer 2 Trace tool
- IP/MAC Finder tool
- *Export Topology to Visio* (on page 52) tool
- *Device Viewer* (on page 56) tool

Using Layer 2 Trace

In troubleshooting situations, it is often critical to understand the path that network data takes to access another network device. The Layer 2 Trace tool provides a method to trace the physical network path from one device to another.



Using previously discovered network connectivity data, the Layer 2 Trace tool finds the path between the two devices and then displays each network interface that is used to build the path. The trace tool also allows for a quick check of the status and availability of each step along the layer 2 path.

The Layer 2 trace tool is accessible from the WhatsConnected and WhatsUp Gold console.

To run the Layer 2 Trace tool from WhatsConnected console:

From WhatsConnected:

1 From the main menu of the WhatsConnected console, select **Tools > Layer 2 Trace**. The Layer 2 Trace dialog appears.

Tip: You can also view Layer 2 Trace tool from the WhatsConnected console shortcut menu. Click (Layer 2 Trace shortcut icon). The Layer 2 Trace dialog appears.

From WhatsUp Gold:

1 From the WhatsUp Gold console, select a device group map view.
2 Right-click on any device in the map view. The right-click menu appears.

Click **Layer 2 Trace**. The WhatsConnected - Layer 2 Trace dialog appears.

3 Click **Source**. The Select Source Device dialog appears.
4 Select a starting device for the layer 2 trace, then click **OK**. The IP address selection appears in the Source Device box.

Tip: You can use the Device Filter list to view specific device types.

5 Click **Destination**. The Select Destination Device dialog appears.
6 Select a destination device for the layer 2 trace, then click **OK**. The IP address selection appears in the Destination Device box.

Tip: You can use the Device Filter list to view specific device types.

7 Click **Trace**. The step-by-step layer 2 path from the source device to the destination device displays in a list format. The results of the search are displayed in the Layer2 Trace tool list columns.

- **Device**. Lists the devices that the network path traverses.
- **IP Address**. Lists the IP address of each device on the network path.
- **Interface Name**. Lists the interfaces that the network path traverses.
- **Status**. Lists the device status information.

Note: After a trace is completed, you can click **Ping** to view the current status of the Layer 2 path. This tool pings each device identified in the trace and uses SNMP to query the interface for its status.

8 Click **Clear** to remove the information from the Layer 2 Trace table and start a new trace.
- or -
Click **Close** to close the dialog.

To run the Layer 2 Trace tool from WhatsUp Gold console:

1 From the WhatsUp Gold console, right-click a device in a Device View or Map View tab. The right-click menu appears.
2 Click **Layer 2 Trace**. The Layer 2 Trace dialog appears.
3 Click **Source**. The Select Source Device dialog appears.
4 Select a starting device for the layer 2 trace, then click **OK**. The IP address selection appears in the Source Device box.

Tip: You can use the Device Filter list to view specific device types.

5 Click **Destination**. The Select Destination Device dialog appears.

6 Select a destination device for the layer 2 trace, then click **OK**. The IP address selection appears in the Destination Device box.

Tip: You can use the Device Filter list to view specific device types.

7 Click **Trace**. The step-by-step layer 2 path from the source device to the destination device displays in a list format. The results of the search are displayed in the Layer2 Trace tool list columns.

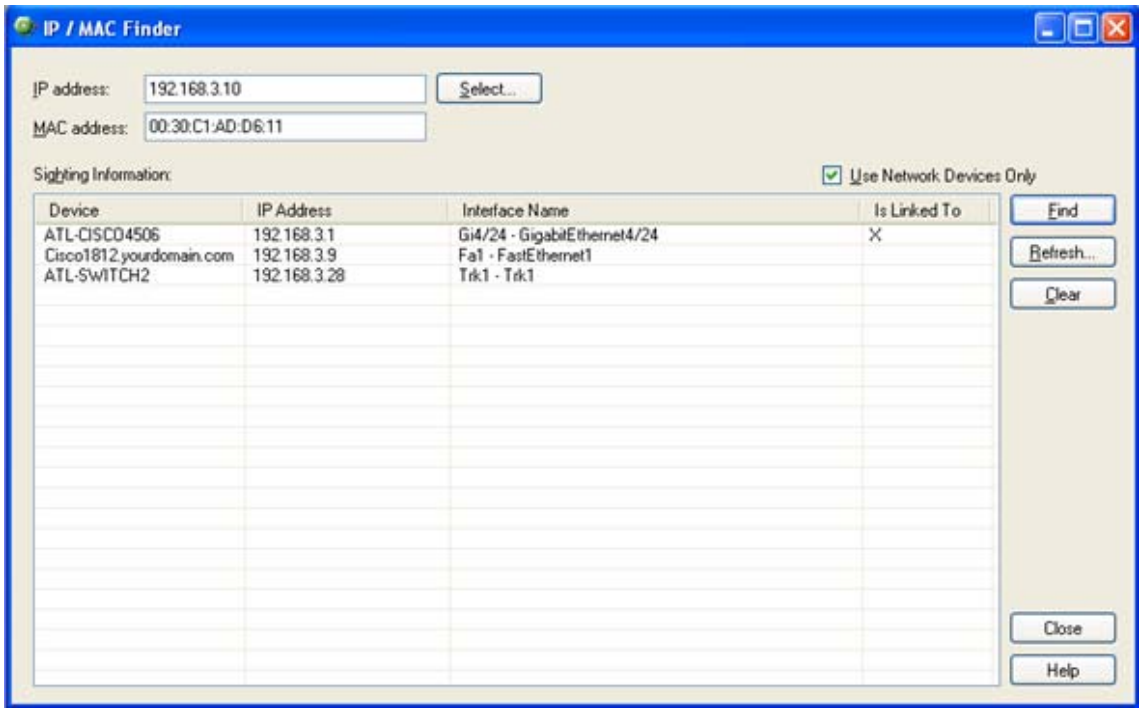
- **Device**. Lists the devices that the network path traverses.
- **IP Address**. Lists the IP address of each device on the network path.
- **Interface Name**. Lists the interfaces that the network path traverses.
- **Status**. Lists the device status information.

Note: After a trace is completed, you can click **Ping** to view the current status of the Layer 2 path. This tool pings each device identified in the trace and uses SNMP to query the interface for its status.

8 Click **Clear** to remove the information from the Layer 2 Trace table and start a new trace.
- or -
Click **Close** to close the dialog.
- or -
Click **Save** to open the Save Up Dependency dialog. This dialog provides a list of Layer 2 paths, found in the Layer 2 trace, that can use up dependencies in WhatsUp Gold polling dependency rules. For more information, see *Dependencies overview* in the WhatsUp Gold Help.

Using IP/MAC Finder

The IP/MAC Finder tool provides an easy way to locate an IP or MAC address on the network. Using the previously discovered network devices, IP/MAC Finder will find and display network interfaces that have sighting information for the supplied IP or MAC address. To get the most up-to-date sighting information, you can use the Refresh button which sends SNMP requests to each network device to quickly update the sighting information.



When enough network data is available, IP/MAC Finder indicates to which network interface the IP or MAC address is physically connected.

Note: The IP/MAC Finder is accessible from both the WhatsConnected console and the WhatsUp Gold console.

The IP/MAC Finder tool can search for either an IP or a MAC address on the network. The results of the search are displayed in the IP/MAC Finder list columns.

To use the IP/MAC Finder tool on the WhatsConnected console:

From WhatsConnected:

1 From the main menu of the WhatsConnected console, select **Tools > IP/MAC Finder**. The IP/MAC Finder dialog appears.

> **Tip**: You can also view IP/MAC finder tool from the WhatsConnected console shortcut menu. Click IP MAC (IP/MAC Finder shortcut icon). The IP/MAC Finder dialog appears.

From WhatsUp Gold:

1 From the WhatsUp Gold console, select a device group map view.
2 Right-click on any device in the map view. The right-click menu appears.
3 Click **IP/MAC Finder**. The WhatsConnected - IP/MAC Finder dialog appears.

4 Enter the appropriate information in the following fields.

- **IP Address**. Enter the IP address of a device for which you want to find sightings on the network. Leave this option blank if you are only scanning for a MAC address.
  - or -
  Click **Select** to select a device, in the Select Devices dialog, for which you want to identify a MAC address. For more information, see *About the Select button* (on page 51).

> **Note**: The IP/MAC Finder tool does not support IPv6 addresses.

- **MAC Address**. Enter The MAC address for which you are scanning the network. Leave this option blank if you are only scanning for an IP address.

5 Select **Use Network Devices Only** to display the IP/MAC sightings found only on *network* device types.
- or -
Deselect **Use Network Devices Only** to display all IP/MAC sightings found on *all* device types.

6 Click **Find** to search the network to locate where the IP or MAC device is on the network. The results of the search are displayed in the Sighting Information list:

- **Device**. Lists the name of the network device that has sighting information for the IP or MAC address.
- **IP Address**. Lists the IP address of the sighting device.
- **Interface Name**. Lists the network interface that is routing or forwarding traffic to the IP or MAC address.
- **Is Linked To**. Lists the network devices to which the device is linked.

7 Click **Clear** to remove the information from the IP/MAC Finder table and start a new device sighting.
- or -
Click **Close** to close the dialog.

To use the IP/MAC Finder tool within WhatsUp console:

1 From the WhatsUp Gold console, right-click a source device in a Device View or Map View tab. The right-click menu appears.
2 Click **IP/MAC Finder**. The IP/MAC Finder dialog appears.
3 Enter the appropriate information in the following fields.

- **IP Address**. Enter the IP address of a device for which you want to find sightings on the network. Leave this option blank if you are only scanning for a MAC address.
  - or -
  Click **Select** to select a device, in the Select Devices dialog, for which you want to identify a MAC address. For more information, see *About the Select button* (on page 51).

Note: The IP/MAC Finder tool does not support IPv6 addresses.

- **MAC Address**. Enter The MAC address for which you are scanning the network. Leave this option blank if you are only scanning for an IP address.

4 Select **Use Network Devices Only** to display the IP/MAC sightings found only on *network* device types.
- or -
Deselect **Use Network Devices Only** to display all IP/MAC sightings found on *all* device types.
5 Click **Find** to search the network to locate where the IP or MAC device is on the network. The results of the search are displayed in the Sighting Information list:

- **Device**. Lists the name of the network device that has sighting information for the IP or MAC address.
- **IP Address**. Lists the IP address of the sighting device.
- **Interface Name**. Lists the network interface that is routing or forwarding traffic to the IP or MAC address.
- **Is Linked To**. Lists the network devices to which the device is linked.

6 Click **Clear** to remove the information from the IP/MAC Finder table and start a new device sighting.
- or -
Click **Close** to close the dialog.

About the Select button

The IP/MAC Finder tool's Select feature uses previously discovered network information to help you find a device, then select the device for which to search the network for sightings of its IP or MAC address.

To use the Lookup button:

1. Open the **IP/MAC Finder** tool from either the WhatsConnected or WhatsUp Gold console (see *Using the IP/MAC Finder* (on page 49)).
2. Click **Select**. The Select Devices dialog appears. This dialog allows you to pick a device from your existing network discovery.
3. In the **Device Filter** list, select the device type you want to display in the Device List. All device devices are listed by default. The device list displays those devices that match the device filter criteria.
4. Select a device in the list, then click **OK**. The IP address and MAC address automatically fills the **IP Address** and **MAC Address** fields.

About the Refresh Connectivity button

The IP/MAC Finder tool's Refresh Connectivity feature refreshes the connectivity model by sending SNMP requests to each network device to update the network data.

To use the Refresh Connectivity button:

1. Open the **IP/MAC Finder** tool from either the WhatsConnected or WhatsUp Gold console (see *Using the IP/MAC Finder* (on page 49)).
2. Click **Refresh**. The Run Discovery dialog appears.
3. Wait for the progress information to indicate that the discovery is complete.
4. Click **OK**. The network model updates with the latest connectivity information based on this discovery run.

Exporting network data

With your network data and topology maps in place, you are ready to start monitoring and exporting your Layer 2 network devices. One of the key features of the WhatsConnected solution is the capability to export network data into platforms outside of the WhatsConnected console. Sharing the details of your network through Microsoft Visio™ documents or creating topology maps in WhatsUp Gold provide flexible tools to document and monitor your network.

Exporting topology maps to Visio

You can export the WhatsConnected network data to Microsoft Visio 2003 or 2007 where you can further view and edit the network map. The following information describes the steps to export your topology maps to Visio from WhatsConnected or WhatsUp Gold.

To export a topology map to Microsoft Visio from WhatsConnected:

1. From the main menu of the WhatsConnected console, click **View > Topology Maps**. The Topology Maps tree appears.
2. Select the topology map, in the topology tree view, that you want to export.
3. Right-click in the topology map area. The right-click menu appears.
4. Click **Export To**. The right-click menu appears.
5. Click **Visio**. The Visio Export dialog appears.

> **Tip**: You can also select the topology map you want to export, then from the shortcut menu of the WhatsConnected console, click (Export topology to Microsoft Visio icon). The Visio Export dialog appears.

6. Enter the appropriate information in the following fields:
   - **Document Dimensions**
     - **Sheet(s) across**. Defines the width of the document.
     - **Sheet(s) down**. Defines the height of the document.
   - **Include in export**
     - **Custom Properties**. Each shape on the Visio document can be populated with custom properties. Select this option to indicate that you want custom properties placed on the Visio shape.

> **Note**: Custom properties include: IP address, MAC address, Host name, NetBIOS name, NetBIOS domain, System name, System description, System OID, System contact, System up-time, Vendor, Model, Serial Number, Hardware revision, Firmware revision, and Software revision.

     - **Link Labels**. Select this option to indicate that labels should be placed on the Visio links that attach devices to one another. In most cases, this represents the interface names that connect the devices.
     - **Multi-Link Labels**. Select this option to indicate that a multi-link label should be displayed in the Visio document. Multi-link labels are used when multiple ports/interfaces connect two devices (i.e. LAG ports).

> **Note**: The shapes that are used in the Visio document are based on the shapes that are shown in the topology view. You may change these shapes in the Application Settings dialog.

7. Click **OK**. The topology map is exported to a Visio document.

To export a topology map to Microsoft Visio from WhatsUp Gold:

1. From the WhatsUp Gold console, right-click a device in a Map View tab that you want to export to Visio. The right-click menu appears.
2. Click **Export Topology To Visio**. The Export Topology to Visio dialog appears.
3. Select a Device Group/Map View that you want to export to Visio, then click **Export**.
4. Enter the appropriate information:

- **Export Shapes**. Select the type of shapes to use in the Topology Maps. You can select from these choices:
  - **WhatsUp**. The topology maps use the basic functional shapes from WhatsUp Gold to draw a device on the topology maps.
  - **Cisco**. The topology maps use the standard Cisco icons/images for each functional collection (Router, Switch, etc) to represent a device.
  - **Visio**. The topology maps use the standard Visio icons/images for each functional collection (Router, Switch, etc) to represent a device.
- **Document Dimensions**
  - **Sheet(s) across**. Defines the width of the document.
  - **Sheet(s) down**. Defines the height of the document.
- **Include in export**
  - **Custom Properties**. Each shape on the Visio document can be populated with custom properties. Select this option to indicate that you want custom properties placed on the Visio shape.

Note: Custom properties include: IP address, MAC address, Host name, NetBIOS name, NetBIOS domain, System name, System description, System OID, System contact, System up-time, Vendor, Model, Serial Number, Hardware revision, Firmware revision, and Software revision.

  - **Link Labels**. Select this option to indicate that labels should be placed on the Visio links that attach devices to one another. In most cases, this represents the interface names that connect the devices.
  - **Multi-Link Labels**. Select this option to indicate that a multi-link label should be displayed in the Visio document. Multi-link labels are used when multiple ports/interfaces connect two devices (i.e. LAG ports).

Note: The shapes that are used in the Visio document are based on the shapes that are shown in the topology view. You may change these shapes in the Application Settings dialog.

5 Click **OK**. The topology map is exported to a Visio document.

Exporting topology maps to WhatsUp Gold

You can use the right-click menu to export the WhatsConnected topology map details to WhatsUp Gold v12.3 or later. When the topology map is exported, the devices discovered with WhatsConnected are automatically created as new devices (or merged with existing devices) in the WhatsUp database.

The following are created by the WhatsConnected export:

- The device collection and Map View are created to represent the WhatsConnected topology map.
- Active and statistical monitors are created for topology connections on each Map View.

- Device Inventory attributes are created in the WhatsUp database. Device attributes, such as Name, Description, Contact, Location, Serial Number, Model, and VLAN, are created on each exported device.

Note: WhatsConnected tools are enabled in the WhatsUp console. For more information about WhatsConnected tools, see *Using WhatsConnected Tools* (on page 45).

During the export, WhatsConnected compares devices in the WhatsUp Gold database with those in the WhatsConnected network data. Matches are made based on device attributes to avoid duplicate devices exporting to WhatsUp Gold.

To export a topology map to Ipswitch WhatsUp Gold:

1. From the main menu of the WhatsConnected console, select **View > Topology Maps**. The Topology Maps view appears.
2. Select the topology map, in the topology tree view, that you want to export.
3. Right-click in the topology map area. The right-click menu appears.
4. Click **Export To**. The right-click menu appears.
5. Click **WhatsUp Gold**. The WhatsUp Gold Export dialog appears.

Tip: You can also select the topology map you want to export, then from the shortcut menu of the WhatsConnected console, click (Export topology to WhatsUp Gold icon). The WhatsUp Gold Export dialog appears.

6. Enter the appropriate information:
   - **WhatsUp Gold Settings**
     - **Server**. This information is auto-filled. It indicates the WhatsUp Gold server to which WhatsConnected will export the topology map.
     - **Node License Count**. This indicates the current WhatsUp Gold device count available for the WhatsUp Gold license.
     - **Currently in use**. This indicates the current number of devices used out of the overall available device count in the license.
     - **Node export count**. This indicates the number of devices to be created during the selected map export.

Important: WhatsConnected does not allow you to export devices to the WhatsUp database that exceed the available device count in the license. If prompted, you must reduce the number of devices that you are attempting to export. Remove the devices from the WhatsConnected topology map.

   - **Layer 2 / Topology Export Settings**. Use the following options to describe the information and types of monitors to create during the export.
     - **Enable Exported Ping/SNMP Interface Active Monitors**. Select this option to enable Ping and SNMP Interface Active Monitors. This mode activates the polling engine to immediately begin polling the new monitors upon their creation.

- **Create Ping Latency and Availability Performance Monitors**. Select this option to create Ping Latency and Availability Monitors for the exported devices.
- **Create Interface Utilization Performance Monitors**. Select this option to create Interface Utilization Performance Monitors for the interfaces that connect the exported devices on the topology map.

Note: Only the interfaces that connect devices are exported.

- **Enable Exported Performance Monitors**. Select this option to enable Performance Monitors for the exported devices. This mode activates the polling engine to immediately begin polling the new monitors upon their creation.

7 Click **Export**. The **Status** field and progress bar displays the progress of the export.

To view the export results, open WhatsUp Gold console and find the device collection with the same name as the WhatsConnected topology map. The default topology map is named *Network Devices*.

Using the Device Viewer

The Device Viewer allows you to view device configuration and inventory details from the WhatsUp Gold console. The information displayed in the Device Viewer is pulled from the WhatsUp database.

To run the Device Viewer tool:

1 Start the WhatsUp Gold console.
2 Locate a device that has been exported from WhatsConnected to the WhatsUp database.
3 Right-click the device in the WhatsUp console. The right-click menu appears.
4 Select **Device Viewer**. The WhatsConnected Device Viewer appears displaying the device details. Tabs are only shown if a device has data that can be displayed. Possible tab views that may be associated with each device are:

- **System**. Provides IP Address/MAC Address, MIB II information, product vendor, and other system information.
- **IP Addresses**. Provides IP Address configuration information.
- **Interfaces**. Provides name entries (IF information) for each device interface and other interface information.
- **Bridge Ports**. Provides Bridge Port and VLAN name and index information.
- **VLANs**. Provides Virtual LAN configuration information.
- **LAG Trunks**. Provides Link Aggregation Group information.
- **Assets**. Provides inventory information about the device components.
- **Links**. Provides physical connectivity information from this device to other network devices.
- **IP Routes**. Provides IP route configuration data information.

- **Spanning Tree (STP)**. Provides spanning tree configuration and status information.
- **ARP Cache**. Provides Address Resolution Protocol (ARP) table information.
- **Forwarding**. Provides Layer 2 forwarding information.
- **Protocol Profile**. Provides information about successful protocol matches for this device.
- **HSRP**. Provides information about the Hot Standby Router Protocol (HSRP) on the device. The information relates to the standby nature of routers.
- **IP Phone**. Provides information about the selected (individual) IP phone.
- **IP Phone Manager**. Provides information about the IP phones that are registered or are communicating with a call manager.
- **IP Routes**. Provides information about the IP routes configured for this device.
- **VRRP**. Provides information about the Virtual Router Redundancy Protocol (VRRP) on the device. The information relates to the standby nature of routers.
- **STP**. Provides information about Spanning Tree Protocol entries discovered on this device.
- **Software**. Provides information about installed software discovered on this device.

Note: The device details are the same as those displayed in the Device Details Viewer in the WhatsConnected console. For more information, see *About Device Details tab view* (on page 27).

Note: You can click **Select** to open the Select Device dialog and select another device. For more information, see Select Devices in the WhatsConnected Help.

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