



CHAPTER 2

Using Device Discovery

You can use Active Discovery to scan your network for new monitors (Active Monitors and Performance Monitors) and devices on a regular basis. Newly discovered items are added to the Active Discovery Results report, and Cisco netManager notifies you that a new device was found, or a new monitor was found on an existing device. You can then review the report and select the items you want to add to your device list.

Using the Device Discovery Wizard

The Device Discovery wizard scans your network for devices, using the protocol(s) and settings you choose. After devices and monitors are found, you select the ones you want to monitor and Cisco netManager creates devices in the database for each item you choose.

The wizard begins by default after installation. After this initial Discovery, you can run another Discovery at any time from the console by clicking **File > Discover Devices**.



Note

The Device Discovery Wizard is only available in the Cisco netManager console.

Device groups are created based on subnetworks found during the scan. You may notice that some group folders may be empty. This is because a subnet was found, but the devices in that subnet were not scannable or you chose not to monitor them.

Scan Types

There are four options for device discovery. They are:

- **SNMP SmartScan:** SmartScan discovers devices by reading SNMP information on your network. This scan type uses an SNMP enabled router to identify both network devices and subnetworks. We recommend using SmartScan as your primary Discovery method.
- **IP Range Scan:** Cisco netManager scans a range of IP addresses and finds the devices that respond to one or more of the chosen services. The Discover Devices wizard prompts you to enter a range of the IP addresses in your network. You should use IP Range Scan if SNMP is either unavailable or does not meet your needs.

- **Network Neighborhood:** Scanning a Network Neighborhood creates a list of devices by scanning the Windows network to which your computer is connected, and finding the other systems on the network. Use this type of scan if you only want to discover Windows devices.
- **Hosts File Import:** Cisco netManager imports devices from the system's Hosts file, which is a text file that lists host names and their IP addresses on a network. For small networks, the Hosts file is an alternative to DNS. The Hosts file may also be called a host table by some TCP/IP vendors.

For a step-by-step example of how to Discover devices, see [Example: Manually Adding a Device to a Device Group, page 2-4](#).

Using Device Discovery

This section describes how to use the Device Discovery wizard with the SNMP SmartScan option to discover devices.

In this example, you want to discover all of the devices attached to a specific SNMP-enabled router on your network. To accomplish this, you need to:

- Know the IP address of the SNMP-enabled router whose network you want to discover.
- Know the Read Community name assigned to the devices on the network.

To discover devices:

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- Step 1** From the console, select **File > Discover Devices**. The New Device Discovery Wizard appears.
 - Step 2** Select **SNMP SmartScan** as the method for scanning your network, then click **Next**. The SNMP SmartScan settings dialog opens.
 - Step 3** In the **SNMP enabled router** box, enter the IP address of the SNMP enabled router you want to use for this scan.
 - Step 4** In the **SNMP read communities** box, enter the proper read community string for that router. If an incorrect string is entered, Cisco netManager will be unable to scan the network. Additional community strings may be entered, separated by commas, if there are multiple SNMP enabled devices on your network that use different strings.

Optionally, select the Windows credential that you want to use during discovery. These credentials are configured in the Credentials Library, and store Windows authentication information (username and password) for those devices that require a logon for discovery or monitoring. Click the **Browse (...)** button next to this box to access the Credentials Library. You can select a specific credential, select **All** to try all credentials that are configured or select **None** to ignore those devices that require you to log on. The credential that is successful is associated with each device.

- Step 5** Click the **Advanced** button if you want to change the scan's default timeouts in milliseconds, retry counts, and scan depth.
 - Click the **Limit scan to IP class of root device** option if you want to limit the scan to the network class (A, B, or C) defined by the IP address of the root device. If the IP address is within the network class of the root device, the scan proceeds. Otherwise, the scan skips to the next IP address.
 - Click the **Resolve host names** option if you want to populate the list of discovered devices with host names in addition to IP addresses.
 - Click **OK** to save changes and return to the SNMP SmartScan settings dialog.

Step 6 Click **Next**. The Active/Performance Monitors to Scan dialog opens. Select the type of Active Monitor(s) and Performance Monitor(s) you want to use in this scan process. Let's select Ping and HTTP as our Active Monitors and Disk Utilization as our Performance Monitor to be used in the scan process.

- The *Ping monitor* polls the device on a regular basis to establish whether it is Up or Down. By default, Cisco netManager sends a ping command to each viable IP address in the range configured during the first section of this wizard. If the device responds, Cisco netManager scans for the monitors listed on this dialog. If the device does not respond, discovery moves on to the next IP address. You can select **Use comprehensive discovery** to have device discovery scan each IP address for all of the selected monitors without first sending the ping command to the device. Discovery takes longer if this option is selected.



Note If you want a Ping monitor created for the devices found in discovery, you must select **Ping** as an active monitor to scan even if you have cleared the **Use comprehensive discovery** option.



Note If a device only has one interface, Cisco netManager intentionally does not add the Interface Active Monitor during discovery. Doing so with the Ping Active Monitor would be redundant.

- The *HTTP monitor* polls a web server (if one is discovered) on the device on a regular basis to establish if it is Up or Down.



Tip

To see how a monitor is configured, you can go to the Active Monitor Library (**Configure > Active Monitors**), select a monitor, then click **Edit**.

- The *Disk Utilization monitor* monitors and reports on the available disk space for the selected device. Data collected is displayed in the Disk Utilization Report.

Step 7 Click **Next**. The Device Discovery displays the estimated remaining scan time and the scan's progress. You can cancel the Device Discovery by clicking **Stop**.

Step 8 When the Discovery is over, the **Devices to Monitor** window opens, listing all of the devices just discovered. Note that if any of the devices have already been entered into the database, a shortcut to the device will be created in the device list. To add all of the devices to the database, click **Next**. To remove specific devices to be monitored from this list, clear the checkbox next to the device you want to remove.



Note Not all discovered devices that appear in the list will be added to the database if you have reached the device count limit of your license. To verify which devices have been added, go to the device list on the console or web interface.



Note Additional Active Monitors and Performance Monitors that are already in the database will not be added to devices.

Step 9 Click **Next**. The Action Policy Selection dialog opens. For more information about Action Policies, see the [About Action Policies, page 7-20](#).

Step 10 Complete the remaining screens in the wizard.

The Results summary shows the number of selected new devices, number of active and performance monitors, whether or not an Action Policy is applied, and the number of selected device shortcuts.

- Step 11** Click **Finish** to begin monitoring the devices. A progress bar appears while devices are added to the database, then the Device View opens. For more information about Device Views, see [About the Device View, page 3-2](#).



Note If some device group folders are empty, it is due to the fact that although a subnet was found, the devices in the subnet were either not scannable, or you chose not to monitor them.

Adding a Single Device Manually

There are three ways to add devices, individually, to the monitoring database:

- In the Map View or Device View, right-click and select **New > New Device**.
- From the console, you can display the Device Types (list of device icons) in the left pane, then click and drag one to the Device or Map view.
- From the console, click **File > New > New Device**.
- From the web interface, click **Go > Devices > New Device**.



Note The device will not be added if you have reached the device count limit of your license. A 'Failed to load device properties' error message will appear.

Example: Manually Adding a Device to a Device Group

When you manually add a device, you are prompted to enter the IP address or host name. Cisco netManager attempts to resolve the IP address or hostname, then scans the device for Active Monitors. When the scan is complete, you can further configure the device as needed. To demonstrate, we'll add a workstation to a device group.

To manually add a device to a device group:

- Step 1** From the console, select the Device Group from the left hand pane to which you want to add a new device. Click the **Map View** tab (at the bottom of the console) to display the map for the group.
- Step 2** Right-click in the Map View, then click **New > New Device**. The Add New Device dialog opens.
- Step 3** Enter the IP address or host name for the device into the box.

Optionally, click **Advanced**, to set any of the Active Monitor scan, Performance Monitor scan, and other options. For more information, see the Help.

Optionally, select **Add device immediately without scanning** to add a device without scanning for the device. This immediately adds a *bare-bones* device, generically categorized as a workstation.



Note Any monitors for which the **Use comprehensive discovery** option is selected will be checked when the device is added.

- Step 4** Click **OK** to add the device. If the device already exists in another group, you will get a message to that effect. If you want to add a short cut for the device in this new group, click **Yes**. The Device Properties dialog opens.
- Step 5** You can either accept the default Properties populated when you added the device, or modify them. If you accept them, click **OK**. The new device icon appears in the Map View.
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Example: Clicking and Dragging a Device to a Device Group

To click and drag a device to a device group:

- Step 1** In the left pane of the console, select **Device Types (Basic)** or **Device Types (Advanced)**, depending on which device type you desire.
- Step 2** Drag the device icon to the Map View. The Add New Device dialog opens.
- Step 3** The remaining steps are the same as those used in steps 3-5 of the [Example: Manually Adding a Device to a Device Group, page 2-4](#).
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