



CHAPTER 6

Using Actions

When a device or monitor state change occurs, Cisco netManager can perform an action to try to correct the problem, notify someone of the state change, or launch an external application.

For example, you can set up an action that sends you an e-mail alert when your web server device is down.

You can configure actions on a single device or monitor, or define an Action Policy to use across multiple devices or monitors.

Cisco netManager provides the following action types:

- **Beeper Action**—Activate a beeper.
- **Pager Action**—Send a message to a pager.
- **Program Action**—Run another program (executable) to take some action.
- **Email Action**—Send an SMTP mail message.
- **Winpop Action**—Display a message in a popup window on a Windows NT system.
- **SMS Action**—Send a Short Message Service (SMS) notification to a pager or cell phone.
- **Service Restart Action**—Stop or restart a Windows NT system.
- **Syslog Action**—Send a message to a host that is running a Syslog server.
- **Text to Speech Action**—Send a text-to-speech notification to a speaker.
- **Sound Action**—Sound an alarm by playing a sound file on the Cisco netManager console.
- **Active Script Action**—Allows you to write either VBScript or JScript code to perform a check on a device. If the script returns an error code, the monitor is considered down. Be aware that Cisco netManager does not support the scripts that you create, only the ability to use them in the Script Action.
- **Web Alarm**—Sound an alarm by playing a sound file on the Cisco netManager web interface.

About Action Strategies

When configuring actions for your devices and monitors, there are a few things you should take into consideration:

- Large lists of devices have the potential of sending out very large numbers of external notifications (e-mail, SMS, beeper, and so on).

Imagine the number of messages sent if external notifications are placed on a router and every device and monitor that uses that router for their connection to the Internet. If the router goes down, it will appear as if all of the devices are down, and messages will be sent for each of them. Consider using [dependencies](#) and limiting the external notifications to the router and the most important of the devices in the group.

- Do not rely on sound actions when there is not someone around to hear the notification.

Sound notifications are safe to use in almost any situation, but is not the best choice for items that need to be monitored overnight.

- If the device states do not fit what you need, change them or add new ones.

You may want to add device states for longer periods of downtime. Consider creating a **Down at least 60 mins** state and sending an escalated message to show that the device is still down after an hour.

- Action Policies are easier to manage than lists of actions built on a device. For more information, see [About Action Policies, page 6-21](#).

Whenever possible, it is a good idea to use action policies over actions configured for a single device. That way, you can reuse the work you put into the list, and can keep better watch over the actions that are being fired.

- Visual notifications are usually enough for most of the devices on your network.

Unless a device is vital to the operations of the business or office, the state change color and shape should be enough to let you know what is going on with your monitored devices.

- If you want to be notified if any or all of the monitors on a device go down, assign the action to the device. If you are concerned with specific monitors on a device, assign the action to the monitor itself. Remember that if you assign the action to both the monitor and the device, both actions will fire if the monitor goes down.

About the Action Library

The Action Library shows all of the actions configured for your network. These actions can be assigned to any device or monitor, or included in an action policy. When you assign the action to a device or monitor, you specify the state change that will trigger the action. To open the Action Library, from the main menu of the Cisco netManager console, select **Configure > Action Library**.

From this dialog, you can:

- **Create a new action**—Click **New**. After the action has been created, it can be associated to one or multiple devices or monitors. You can create the following types of actions to send a message or take an action when the status of a device or monitor changes:
 - Beeper
 - Sound
 - Pager

- Program
 - Service Restart
 - SMS
 - SMTPMail
 - Syslog
 - Text to Speech
 - WinPopup
 - Web Alarms
 - Action Script
- **Make changes to an action**—Select the action you want to modify and click **Edit**. Changes made here affect each instance of the action.
 - **Copy an action**—To create a copy of an action so you can base a new action on the setup information of an existing one, select the action and click **Copy**. You can then edit the new copy as needed.
 - **Remove an Action from the Action Library and devices and monitors.**—To remove an Action from both the Action Library and any device or monitor to which it is assigned, select the action, then click **Delete**. This is a global delete of the selected action; the action is removed from any action policy, device, or active monitor to which the action is associated.

If you need to remove an action from a specific action policy, device, or monitor, open the properties for the policy, device, or monitor and delete it there. This removes only the specified instance of that action; the action remains in the Action Library and on other devices to which it is assigned.



Note Be aware that when you remove an action from the Action Library, you are removing that action from all action policies, as well as all devices and monitors that the action is assigned to. In addition, all statistics relating to that action are also deleted from the database. When you first open the Action Library, if you have not yet defined an Action, you will see the default Web Alarm, which you can assign to any device or monitor.

Configuring an Action

There are two aspects of fully configuring an action. The first is to create the action itself in the Action Library dialog. The setup consists of:

- Defining the target of the action (for example, a pager or e-mail address)
- Entering the notification variables or program arguments (which specify what information to report in the action message or to pass to another program).

After the action has been created, the second step is to assign the action or action policy to a device or active monitor and to link it to a state change (action policies are already linked to a state change during the policy definition). For more information see:

- [Assigning an Action to a Device, page 6-15](#)
- [Assigning an Action to a Monitor, page 6-16](#)
- [Creating an Action Policy, page 6-21](#)

After the actions have been completely configured, Cisco netManager launches the action as soon as the proper state change is reached.

Action Builder Wizard

The Action Builder Wizard is used to associate an action with a state change for the current device or monitor. Use this wizard to set up an action to be executed when the specified state change occurs. New actions created through the wizard are added to the Action Library. After the action has been added to the library, it can be assigned to any device, active monitor, or action policy in your database.

- **Fire an action when the monitor enters the following state**—Select a state from the pull-down list. The assigned action launches as soon as the polling engine determines that the device or monitor has reached this state.
- **Action to Fire**—Select a configured action from the pull-down list, or click the **Browse** button to access the Action Library. The Action Library is used to configure these actions for use across the application.

Access the wizard in any of three ways:

- Go to **Device Properties > Actions**, then click **Add**.
- Go to **Device Properties > Active Monitors > Monitor Properties > Actions**, then click **Add**.
- On the Actions Policies dialog, click **Add**.

Creating a Beeper Action

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- Step 1** From the GO menu, select **Configure > Action Library**.
- Step 2** In the Action Library, do one of the following:
- Click **New**, then select **Beeper Action**.
 - Select an existing Beeper Action, then click **Edit**. The action properties page opens.
- Step 3** Set the appropriate options:
- **Name**—Enter the name of the action as it appears in the Action library.
 - **Description**—Enter a short description of the action. This is displayed in the Action Library dialog along with the entry in the Name box.
 - **Beeper number**—Enter the phone number to dial. You can use parentheses to delimit the area code and a dash to separate the exchange from the extension numbers; for example, (617) 555-5555.
 - **Pause after answer**—Enter a number of seconds the modem should pause before sending the signal codes once a connection has been made.
 - **End transmission**—By default, # is the correct symbol for the end transmission command. Some international systems require other or additional symbols.
 - **Modem setup**—Select either Primary or one of the alternate setups. Click [Port Settings](#) to further define your selection. Modem Setup is used specifically to support different service providers in case you use more than one provider for sending your beeper notifications. There could also be times you want to change your settings to meet a specific service provider's requirements for a specific notification (for example, a lower baud rate). To do this, you can set do an alternate modem setup and associate this to the notification instead of using your primary setting.



Note Changing the port settings for the desired modem setup will affect *all* uses of that setting.

- **Up code**—Specifies the characters sent to the beeper to indicate that the device has come back up after being down (the default value is 0*).
- **Down Code**—Specifies the code sent to indicate the device is down (the default value is 1*).
- **On passive monitor code**—Specifies the code sent to indicate that an active monitor has been received for the device. (Default value is 2*) You can use the asterisk (*) character to separate codes from a subsequent message.
- **Recurring action code**—The [percent variable](#) for the action. The default action codes are:
 - %System.NumberofUpDevices
 - %System.NumberofDownDevices

Step 4 Click **OK** to save this action. The action now appears in the Action Library.

Step 5 Assign the action to a device or a monitor by using the procedure defined in:

- [Assigning an Action to a Device, page 6-15](#)
 - [Assigning an Action to a Monitor, page 6-16](#)
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Port Settings

The port settings dialog box contains the following options:

- **Modem Initialization String (ATE0)**—The default string is ATE0Q0V1X4F1.
 - (E0) Command Echo Off
 - (Q0) results code
 - (V1) verbal results code (as opposed to numeric)
 - (X4) result codes for some specific phone/modem conditions (see modem manufacturer for details)
 - (F1) local echo off
- **COM Port**—Select the port to which your modem is attached.
- **Baud Rate**—Select the speed (measured in bits per second) at which the serial port will communicate with the modem.



Note Newer modems (for example, 56K versions) may be utilized if their rate of transfer can be stepped down to a maximum of 2400 bps (TAP specification). However, some newer modems cannot be made to transfer below 9600 bps even though you may use an initialization string that specifies a lower rate of transfer.

- **Data bits**—Select the type of data bit transmission used to communicate with the selected port (6, 7, or 8 data bits).
- **Parity**—Select the type of parity expected by the modem connected to the selected serial port.
- **Stop**—Select the stop bits used to communicate with the selected port (1 or 2 data bits).

Creating a Pager Action

Step 1 From the **GO** menu, select **Configure > Action Library**.

Step 2 In the Action Library, do one of the following:

- Click **New**, then select **Pager Action**.
- Select an existing Pager Action, then click **Edit**.

The action properties page opens.

Step 3 Set the appropriate options:

- **Name**—Enter an identifying name for this pager action.
- **Description**—Enter a short description of the action. This is displayed along with the names in the Action Library.
- **Terminal number**—Enter the pager number to dial. Your service provider can provide you with this number.
- **Terminal password**—If required, enter the pager password here. This is a password that is required to log in to some paging services.
- **Modem Setup**—Select either **Primary** or one of the **Alternate** setups. Click [Port Settings](#) to further define your selection. Modem Setup is used specifically to support different service providers in case you use more than one provider for sending your pager notifications. There could also be times you want to change your settings to meet a specific service provider's requirements for a specific notification (for example, a lower baud rate). To do this, you can do an alternate modem setup and associate this to the notification instead of using your primary setting.



Note Changing the Port Settings for the desired modem setup will affect *all* uses of that setting.

- **Protocol**—Select the type of protocol used by your pager service.
- **Pager ID**—Enter the pager identification number.
- **Message**—Enter a text message plus any of the [percent variable](#) codes used to deliver Cisco netManager information with the page.

Step 4 Click **OK** to save this action. The action now appears in the Action Library.

Step 5 Assign the action to a device or a monitor by using the procedure defined in:

- [Assigning an Action to a Device, page 6-15](#)
- [Assigning an Action to a Monitor, page 6-16](#)

Creating an E-Mail Action

Step 1 From the **GO** menu, select **Configure > Action Library**.

Step 2 In the Action Library, do one of the following:

- Click **New**, then select **E-mail Action**.
- Select an existing E-mail Action, then click **Edit**.

The action properties page opens.

- Step 3** Enter the e-mail destination information.
- **Name**—Enter a unique name for this action.
 - **Description**—Enter a short description of the action. This is displayed in the Action Library along with the entry in the Name box.
 - **SMTP Mail Server**—Enter the IP address or host (DNS) name of your e-mail server (SMTP mail host).
 - **Port**—Enter the port number that the SMTP server is installed on.
 - **Mail To**—Enter the e-mail addresses you want to send the alert to. Email addresses must be fully qualified. Two addresses may be entered, separated by commas (but no spaces). Addresses should not contain brackets, braces, quotes, or parentheses.
- Step 4** Click **Mail Content**. Enter the content of the e-mail alert.
- **From**—Enter the e-mail address that will appear in the From field of the e-mail that is sent by the E-Mail action.
 - **Subject**—Enter a text message or edit the default message. You can use any of the [percent variable](#) codes.
 - **Message body**—Enter a text message or edit the default message. You can use any of the [percent variable](#) codes.
- Step 5** Click **OK** to save this action. The action now appears in the Action Library.
- Step 6** Assign the action to a device or a monitor by using the procedure defined in:
- [Assigning an Action to a Device, page 6-15](#)
 - [Assigning an Action to a Monitor, page 6-16](#)



Note You can also assign notifications to be sent according to device type, event type, or event severity. For more information on notifications, see [Chapter 7, “Using Notifications.”](#)

Creating an SMS Action

Short Message Service (SMS) is similar to paging. However, SMS messages do not require the mobile phone to be active and within range and will be held for a number of days until the phone is active and within range. SMS messages are transmitted within the same cell or to anyone with roaming service capability.



Note Cisco netManager transmits the SMS message to the provider, and the provider forwards it to the cell phone. Cisco netManager does not broadcast SMS messages directly.

- Step 1** From the **GO** menu, select **Configure > Action Library**.
- Step 2** In the Action Library, do one of the following:
- Click **New**, then select **SMS Action**.
 - Select an existing SMS Action, then click **Edit**.

The action properties page opens.

Step 3 Set the appropriate options:

- **Name**—Enter a unique display name to identify the SMS notification.
- **Description**—Enter a short description of the action. This is displayed in the Action Library along with the entry in with the Name box.
- **Country**—Using the list box, select the country for the SMS provider.
- **Provider**—Using the list box, select the desired provider.



Note If the provider list is incomplete and/or incorrect, you can click the Providers button to add, edit, or delete providers in this list.

- **Connection Settings**—Mode is either Email or Dialup, depending on how the provider was created in the system.
- **Email to**—If the connection setting is Email, enter the e-mail address of the SMS device.
- **Phone Number**—If the connection setting is Dialup, enter the phone number to call with the message.
- **Message**—Enter a text message plus any desired [percent variable](#) codes.

Step 4 Click **OK** to save this action. The action now appears in the Action Library.

Step 5 Assign the action to a device or a monitor by using the procedure defined in:

- [Assigning an Action to a Device, page 6-15](#)
- [Assigning an Action to a Monitor, page 6-16](#)

Creating a Sound Action

You can add a sound to the Action library. This sound can then be assigned to an action by creating an Action Policy, or by adding an action to a specific device.

Step 1 From the **GO** menu, select **Configure > Action Library**.

Step 2 In the Action Library, do one of the following:

- Click **New**, then select **Sound Action**.
- Select an existing WinPopup Action, then click **Edit**.

The Action Properties page opens.

Step 3 Set the appropriate options:

- **Name**—The name of the action as it appears in the Action library.
- **Description**—Enter a short description of the action. This is displayed in the Action Library along with the entry in with the Name box
- **Sound file name**—Enter the full path to the sound file, or click the folder icon to select it from your computer. The sound file name is located on the server where Cisco netManager is running.

- **Continuous play**—Select this option to have the sound play continuously until the Cancel Sound button is clicked on the main Cisco netManager toolbar.
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Creating a WinPopup Action

- Step 1** From the **GO** menu, select **Configure > Action Library**.
- Step 2** In the Action Library, do one of the following:
- Click **New**, then select **WinPopup Action**.
 - Select an existing WinPopup Action, then click **Edit**.
- The Action Properties page opens.
- Step 3** Set the appropriate options:
- **Name**—Enter an identifying name for this winpopup action.
 - **Description**—Enter a short description of the action. This is displayed in the Action Library along with the entry in with the Name box.
 - **Destination**—Specify the Windows NT host or domain that you want to receive this notification.
 - **Message**—Enter a text message using a [percent variable](#) if needed.
 - **Refresh**—Click this button to refresh the Destination list. This populates the list with all of the targets you choose to send a winpopup action to.
- Step 4** Click **OK** to save this action. The action now appears in the Action Library.
- Step 5** Assign the action to a device or a monitor by using the procedure defined in:
- [Assigning an Action to a Device, page 6-15](#)
 - [Assigning an Action to a Monitor, page 6-16](#)
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Creating a Syslog Action

- Step 1** From the **GO** menu, select **Configure > Action Library**.
- Step 2** In the Action Library, do one of the following:
- Click **New**, then select **Syslog Action**.
 - Select an existing Syslog Action, then click **Edit**.
- The action properties page opens.
- Step 3** Set the appropriate options:
- **Name**—Enter a name for the action. This will appear in the Action Library.
 - **Description**—Enter a short description of the action. This is displayed in the Action Library along with the entry in with the Name box.
 - **Syslog Server**—Enter the IP address of the machine that is running the Syslog server.
 - **Port**—Enter the UDP port that the Syslog listener is listening on. The default port is 514.

- **Message**—Enter a text message to be sent to the Syslog server. This message may include notification variables. The Syslog message box limits input to 511 characters. If notification variables are used, then the message that actually gets sent will be limited to 1023 bytes, in order to comply with the Syslog protocol. Nonvisible ASCII characters such as tabs and linefeeds will be replaced by space characters.
- Step 4** Click **OK** to save this action. The action now appears in the Action Library.
- Step 5** Assign the action to a device or a monitor by using the procedure defined in:
- [Assigning an Action to a Device, page 6-15](#)
 - [Assigning an Action to a Monitor, page 6-16](#)
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Creating a Text-to-Speech Action

- Step 1** From the **GO** menu, select **Configure > Action Library**.
- Step 2** In the Action Library, do one of the following:
- Click **New**, then select **Text-to-Speech Action**.
 - Select an existing Text-to-Speech Action, then click **Edit**.
- The action properties page opens.
- Step 3** Set the appropriate options:
- **Name**—Enter a unique name for this action.
 - **Description**—Enter a short description of the action. This is displayed in the Action Library along with the entry in with the Name box.
 - **Speak Rate**—Select how fast the voice speaks the message.
 - **Volume**—Select the volume of the message.
 - **Message**—Enter any text message you want audibly repeated. Your own text can be used in addition to percent variables.
- Step 4** Click **OK** to save this action. The action now appears in the Action Library.
- Step 5** Assign the action to a device or a monitor by using the procedure defined in:
- [Assigning an Action to a Device, page 6-15](#)
 - [Assigning an Action to a Monitor, page 6-16](#)
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Creating a Program Action

You can define program actions to launch an external application when a state change occurs.

- Step 1** From the **GO** menu, select **Configure > Action Library**.
- Step 2** In the Action Library, do one of the following:
- Click **New**, then select **Program Action**.

- Select an existing Program Action, then click **Edit**.

The action properties page opens.

Step 3 Set the appropriate options:

- **Name**—Enter a name for the action you are creating. This is the name that appears in the Action Library.
- **Description**—Enter a short description of the action. This is displayed in the Action Library along with the entry in with the Name box.
- **Program filename**—Enter the executable name of the application you want to launch. Use the folder button to help you do this.
- **Working path**—Specify a directory where the working files for the application are stored. Use the folder button to help you do this. The working path is located on the server where Cisco netManager is running.
- **Program arguments**—Enter any [percent variable](#) you want to pass to the specified program.

Step 4 Click **OK** to save this action. The action now appears in the Action Library.

Step 5 Assign the action to a device or a monitor by using the procedure defined in:

- [Assigning an Action to a Device, page 6-15](#)
 - [Assigning an Action to a Monitor, page 6-16](#)
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Creating an Active Script Action

This action allows you to write either VBScript or JScript code to perform a customized action. If the script returns an error code, then the action has failed.

Step 1 From the **GO** menu, select **Configure > Action Library**.

Step 2 In the Action Library, do one of the following:

- Click **New**, then select **Active Script Action**.
- Select an existing Active Script Action, then click **Edit**.

The action properties page opens.

Step 3 Set the appropriate options:

- **Name**—The name of the action as it appears in the Action Library.
- **Description**—The description of the action as it appears in the Action Library.
- **Timeout**—The amount of time (in seconds) Cisco netManager should wait for the action script to run.



Note Though the maximum timeout is 60 seconds, you should avoid using a timeout longer than the default of 10 seconds. You should use the shortest timeout possible.

- **Script type**—VBScript or JScript.
- **Script text**—Write or insert your action code here.

Step 4 Click **OK** to save this action. The action now appears in the Action Library.

- Step 5** Assign the action to a device or a monitor by using the procedure defined in:
- [Assigning an Action to a Device, page 6-15](#)
 - [Assigning an Action to a Monitor, page 6-16](#)
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Creating a Web Alarm Action

A Web Alarm is an action type that plays a sound over the web interface when a device state change occurs. All users logged in via the web interface will see these alarms. The type is configured in the Actions Library, and can be associated to any device or monitor like any other action.

Step 1 From the **GO** menu, select **Configure > Action Library**.

Step 2 In the Action Library, do one of the following:

- Click **New**, then select **Web Alarms Action**.
- Select an existing Web Alarm action, then click **Edit**.

The Action Properties page opens.

Step 3 Set the appropriate options:

- **Name**—The name identifies the Web Alarm action in the Action Library list.
- **Description**—A short description of the action. The description appears in the Action Library list.
- **Message**—Enter a short message to send to the visual cue part of the Web Alarm in the web interface.
- **Play Sound**—Select this option to play the sound file whenever a web alarm action is fired. Clear this option to only have the visual cue appear in the Web Interface.
- **Sound file name**—Select a sound file that has been installed in your `the NMconsole\WebSounds` directory. Custom sounds added to this directory appear in the drop-down list.



Note For Web Alarms to work properly, your browser must support embedded sound files.

Step 4 Click **OK** to save this action. The action now appears in the Action Library.

- Step 5** Assign the action to a device or a monitor by using the procedure defined in:
- [Assigning an Action to a Device, page 6-15](#)
 - [Assigning an Action to a Monitor, page 6-16](#)
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Dismissing or Muting Web Alarms

A dialog appears in the web interface when one or more of these alerts fire. This dialog allows you to dismiss or mute the alarms that have been fired. Clicking the Dismiss or Dismiss All button stops only the current sound being played. It does not stop the sound for future occurrences of the Web Alarm. To disable Web Alarms, go to **Configure > Preferences** and clear the Enable web alarms option.

When you double-click an entry in this dialog, you are taken to that device's Device Status report.

Creating a Service Restart Action

After you configure this action, you can start or stop an NT service when another device or monitor experiences a state change. In order for the Service Restart Action to work:

- Both the Cisco netManager computer and the target device (where NT service is to restart) must have identical user accounts.
- The Cisco netManager Engine service needs to log in as a user account that belongs to the administrators group and that exists on the target machine.

Step 1 From the **GO** menu, select **Configure > Action Library**.

Step 2 In the Action Library, do one of the following:

- Click **New**, then select **Service Restart Action**.
- Select an existing Service Restart Action, then click **Edit**.

The action properties page opens.

Step 3 Set the appropriate options:

- **Name**.—Enter the name of the action as you would like it to appear in the Action Library.
- **Description**.—Enter a short description of the action. This is displayed in the Action Library along with the entry in the Name box.
- **Host**.—Click the browse button to select the desired host from your Network Neighborhood.
- **User name (domain\username)**.—Enter a user login to use with this monitor. To monitor the service on another machine, the WinEvent monitor has to be configured with the correct user name and password and a user account that belongs to the administrators group on the remote machine. If a domain account is used, then the expected user name is domain\user. If the device is on a workgroup, there are two possible user names: workgroup name\user or machine name\user. No user name or password is needed for local services (services on the machine where Cisco netManager is running).
- **Password**.—Enter the password for the login used above. To monitor NT services on an XP machine with an account that has no password, the XP's Local Security Settings might have to be modified. From **Administrative tools > Local Security Settings**, click **Security Settings > Local Policies > Security Options**. Then right click the setting **Account: Limit local account use of blank passwords to console logon only** and click **Properties**, then select **Disable**.
- **Service**.—Click the browse button to select the desired service associated with your host.
- **Command**.—Use the list box to select either Start or Stop, depending on whether you want the associated alert to Start or Stop the service you have selected.

Step 4 Click **OK** to save this action. The action now appears in the Action Library.

Step 5 Assign the action to a device or a monitor by using the procedure defined in:

- [Assigning an Action to a Device, page 6-15](#)
 - [Assigning an Action to a Monitor, page 6-16](#)
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Configuring Recurring Actions

This feature gives users the ability to execute actions based on a regular schedule, independently of the status of devices. Among other things, this can be used to send regular *heartbeat* messages to a pager or cell phone, letting the user know the system is up and running.

After an action has been configured through the Action Library, use this feature to configure the schedule for the action. The recurring action list shows the name of the action and the recurring schedule configured for that action.



Note Recurring actions can be configured to adhere to a blackout schedule.

Step 1 From the GO menu, select **Configure > Recurring Actions...**

Step 2 Do one of the following:

- Click **New** to create a new recurring action.
- Select an entry and click **Edit** to make changes that entry.
- Select an entry and click **Copy** to create a copy of that entry. You can then edit the new copy as needed. GO to [Step 4](#).

Step 3 Enter the following information:

- **Action name**—Enter a name for the recurring action.
- **Select an action**—Select an action from the drop-down list. This list displays all actions in your Action Library that you can configure as the recurring action.
- Click **browse (...)** next to the Select an action box to launch the Action Library. In the Action Library, you can create a new action to configure as the recurring action.



Note A Web Alarm action cannot be used as a recurring action.

Step 4 Enter the following information:

- **Enable this schedule**—Select this option to activate the recurring action; clear the option to disable the recurring report.
- **Blackout Schedule**—Click this button to access the Weekly Blackout Schedule dialog box.
- **Monthly**—Select the time, day, and month or months you want the action to execute. The action only executes during the month selected from this list. Quarterly actions can be created by selecting the last day of each quarter. If a day is entered that does not exist in a selected month (September 31, February 30, and so on) then the action is executed on the last day of that month.
- **Weekly**—Select the day and time each week you want the action to execute.

To execute an action more frequently than daily, select **Every _minutes** and enter a number of minutes for Cisco netManager to wait before firing the recurring action.



Note To schedule multiple time periods, you must create another recurring action.

Step 5 Click **Finish**.

Testing an Action

After an action has been created, you can test that action to make sure it works properly.

To test an action:

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- Step 1** Select **Configure > Action Library**. The Action Library appears.
 - Step 2** In the Action Library, select the action you want to test.
 - Step 3** Click **Test**.
 - Step 4** Review the action in the Action Progress dialog.
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Deleting an Action

To remove actions that were added at the device or monitor level, select the action in the Actions dialog of the Device or Monitor Properties, and click **Remove**. This does not effect any other item in the database.

If you have assigned action policies to your devices, you can remove the action from the policy itself.

To completely remove an action from the database, you must access the Action Library, select the action and click **Delete**. When an action is removed from the Library, it is also removed from all items configured to use that action.

Assigning an Action to a Device

You can assign one or more individual actions to a device, or assign an action policy that may contain multiple actions used across your device list.

To assign actions to a device:

-
- Step 1** Right-click a device, then click **Properties**. The Device Properties dialog opens.
 - Step 2** Click **Actions**. The Actions dialog opens.
 - Step 3** Select the **Apply individual actions** option.
 - Step 4** Click **Add** to access the Action Builder wizard.
 - Step 5** Follow the directions in the Action Builder wizard.
 - Step 6** At the end of the wizard, click **Finish** to add the action to the device.
 - Step 7** If you need to add more actions to the device, click **Add** and repeat these directions.
 - Step 8** When you have completed adding actions, click **OK**.
-

To assign an action policy to a device:

-
- Step 1** Right-click a device, then click **Properties**. The Device Properties dialog opens.

- Step 2** Click **Actions**. The Actions dialog opens.
- Step 3** Select the **Apply this Action Policy** option.
- Step 4** Select the action policy you want to use for this device. If you need to create a new action policy first, click **Add** to access the Action Builder dialog.
- Step 5** Click **OK** to save the changes.
- After an action has been added to the device, the action fires when that device reaches the specified state.
-

Assigning an Action to a Monitor

You can assign one or more individual actions to a monitor, or assign an action policy that may contain multiple actions.

To assign an action to an active monitor:



Note During the configuration of a new monitor, you are presented with the Action Builder as part of the wizard. The following set of directions is for existing monitors.

- Step 1** Right-click the device the active monitor is configured on, then click **Properties**. The Device Properties dialog opens.
- Step 2** Click **Active Monitors**. The Active Monitors dialog opens.
- Step 3** Double-click the monitor you want to add actions to.
- Step 4** Do one of the following to go to the Actions Properties page:
- In the web interface, in the Active Monitor Properties wizard, click **Next**.
 - In the console, in the Active Monitor Properties dialog, select **Actions**.
- Step 5** Select the **Apply individual actions** option.
- Step 6** Click **Add** to access the Action Builder wizard.
- Step 7** Follow the directions in the Action Builder wizard.
- Step 8** At the end of the wizard, click **Finish** to add the action to the monitor.
- Step 9** If you need to add more actions to the monitor, click **Add** and repeat these directions.
- Step 10** Click **OK** after all actions have been added.
-

To assign an action policy to an active monitor:



Note During the configuration of a new device, you are presented with the Action Builder as part of the wizard. The following instructions are for existing devices.

- Step 1** Right-click the device the active monitor is configured on, then click **Properties**. The Device Properties dialog opens.
- Step 2** Click **Active Monitors**. The Active Monitors dialog opens.

- Step 3** Double-click the monitor you want to add actions to.
- Step 4** Do one of the following to go to the Actions properties dialog box:
- In the web interface, in the Active Monitor Properties wizard, click **Next**.
 - In the console, in the Active Monitor Properties dialog, select **Actions**.
- Step 5** Select the **Apply this Action Policy** option.
- Step 6** Select the action policy you want to use for this device. If you need to create a new action policy first, click the browse button to access the Action Policies dialog.
- Step 7** Click **OK** to save the changes.

To assign an action to a passive monitor:

- Step 1** Right-click the device the passive monitor is configured on, then click **Properties**. The Device Properties dialog opens.
- Step 2** Click **Passive Monitors**.
- Step 3** Double-click the monitor you want to add actions to. The Passive Monitor Properties page opens.
- Step 4** Click **Next**.
- Step 5** Click **Add** to access the Action Builder wizard.
- Step 6** Follow the directions in the Action Builder wizard.
- Step 7** At the end of the wizard, click **Finish** to add the action to the monitor.
- Step 8** If you need to add more actions to the monitor, click **Add** and repeat these directions.
- Step 9** Click **OK** after all actions have been added.



Note You cannot assign an action policy to a passive monitor.

After an action has been added to the monitor, the action fires when that state reaches the assigned down state.

Creating a Blackout Period

You can create a blackout period to have Cisco netManager suspend specific actions during the scheduled period of time. Use this feature to keep from sending a notification to someone who is on vacation, or to keep from sending e-mail when there is no one to receive it.

To create a blackout period:

- Step 1** Access the Action Builder Wizard.
- Step 2** Within this wizard, click the **Blackout period** button.
- Step 3** On the Weekly Blackout Schedule dialog, set the times you want the blackout to occur. The schedule that is set is repeated weekly.
- Step 4** Click **OK**.

Step 5 Complete the wizard.

About Percent Variables

Table 6-1 Active Monitor Variables

Active Monitor Variables	Description
%ActiveMonitor.Argument	SNMP instance number. This is only used when an action is associated directly with an active monitor, and not the device as a whole.
%ActiveMonitor.Comment	The human readable name that coincides with the network switch. This is only used when an action is associated directly with an active monitor, and not the device as a whole.
%ActiveMonitor.Name	The name of the active monitor that fired an action. This is only used when an action is associated directly with an active monitor, and not the device as a whole.
%ActiveMonitor.NetworkInterfaceAddress	IP address for the network interface. This is only used when an action is associated directly with an active monitor, and not the device as a whole.
%ActiveMonitor.Payload	The payload returned by a WMI, Exchange, SQL, or SNMP active monitor. This is only used when an action is associated directly with an active monitor and not the device as a whole.
%ActiveMonitor.State	The current status of the monitor, such as "Down at least 5 min." This is only used when an action is associated directly with an active monitor, and not the device as a whole.

Table 6-2 Device Variables

Device Variables	Description
%Device.ActiveMonitorDownNames	List of down services using the abbreviated name if available.
%Device.ActiveMonitorUpNames	Full service names of all monitored services on a device with an up status.
%Device.Address	IP address (from the device properties page).

Table 6-2 Device Variables (continued)

Device Variables	Description
%Device.Attribute.[Attribute Name]	<p>Returns an attribute from the SNMP information available for the device, such as the contact name. To specify the attribute, append the category name (listed below) to the end of the variable. For example: %Device.Attribute.Contact, returns the contact name.</p> <p>Default categories:</p> <ul style="list-style-type: none"> • *. Returns all attributes. • Info1. Upgrade path from v8. • Info2. Upgrade path from v8. • Contact. Contact information from SNMP. • Location. Location information from SNMP. • Description. Description information from SNMP. • Custom. If you have created a custom attribute you can use the name of that custom attribute in the percent variable. <p>Example:</p> <p>%Device.Attribute.Phone %Device.Attribute.RackPosition</p> <p>To avoid an error, when placing %Device.Attribute in quotation marks, place a space between the last letter and the closing quotation mark.</p> <p>Example:</p> <p>"%Device.Attribute.Contact" (correct)</p> <p>"%Device.Attribute.Contact" (incorrect)</p>
%Device.DatabaseID	Returns the database ID of a device.
%Device.DisplayName	Display Name (from the General section of the device properties page).
%Device.HostName	Host Name (from the General section of the device properties page).
%Device.Notes	Notes. (from the Notes section of the device properties page).
%Device.SNMPOid	SNMP object identifier.
%Device.State	The state's description (such as "Down at least 2 min" or "Up at least 5 min").
%Device.Status	The name of the active monitor, preceded by the device state ID; for example, 10 DNS.
%Device.Type	Device Type (from the General section of the device properties page).

Table 6-3 *Passive Monitor Variables*

Device Variables	Description
%PassiveMonitor.DisplayName	The name of the monitor as it appears in the Passive Monitor Library.
%PassiveMonitor.LoggedText	Detailed event description: <ul style="list-style-type: none"> • SNMP traps—Returns the full SNMP trap text. • Windows Log Entries—Returns information contained in the Windows Event Log entries. • Syslog Entries—Returns the text contained in the Syslog message.
%PassiveMonitor.Payload.*	Payload generated by a passive monitor.
%PassiveMonitor.Payload.EventType	The type of passive monitor (Syslog, Windows Event, or SNMP Trap).

Table 6-4 *System Variables*

System Variables	Description
%System.Date	The current system date. Configure the date format in Regional Options (from Program Options).
%System.DisplayNamesDownDevices	Displays names of devices with down monitors.
%System.DisplayNamesDownMonitors	Shows the name of a device and each monitor that is down on that device. The format of the response is 'device name':'monitor 1','monitor 2','...' Example: ARNOR: FTP, HTTPS, Ping
%System.DisplayNamesUpDevices	Displays names of up devices.
%System.DisplayNamesUpMonitors	Shows the name of a device and each monitor that is up on that device. The format of the response is 'device name':'monitor 1','monitor 2','...' Example: ARNOR: FTP, HTTPS, Ping
%System.InstallDir	Displays the directory on which Cisco netManager is installed.
%System.NumberofDownDevices	Number of down devices on your network.
%System.NumberOfDownMonitors	Number of down monitors on your network.
%System.NumberofUpDevices	Number of up devices on your network.
%System.NumberOfUpMonitors	Number of up monitors on your network.
%System.Time	The current system time. The format is hh:mm:ss.

About Action Policies

You can use Action Policies to stack multiple actions together in a single policy. You can then assign the action policy to any device or monitor. If you later need to edit an action, you can edit the action policy and the changes will be applied to all of the devices that use that particular action.

The Action Policy dialog shows the action policies that you can assign to any device or monitor. This is where you create a new action policy, modify an existing policy, or delete a policy.

To open the Action Policies, from the menu bar:

-
- Step 1** Select **Configure > Action Policies**.
- Step 2** From this dialog, you can:
- **Create a new policy**—Click **New**. Use the Add/Edit Action Policy dialog to create a policy.
 - **Change an existing policy**—Select the policy you want to change and click **Edit**. Use the Add/Edit Action Policy dialog to edit the policy.
 - **Copy an existing policy**—To create a copy of an action policy so you can base a new policy on the setup information of an existing one, select the action policy and click **Copy**. You can then edit the new copy as needed.
 - **Remove a policy**—Select the policy you want to remove and click **Delete**. This deletes the policy and removes it from use on any devices or monitors to which it is assigned, though it does not remove the actions configured under the policy. Also, any record in the Action Log for this action policy is deleted.
-

For more information, see:

- [Creating an Action Policy, page 6-21](#)
- [Editing Action Policies, page 6-22](#)
- [Implicit Action Policy, page 6-22](#)

Creating an Action Policy

This feature gives you the ability to stack multiple actions together in a single policy. You can then assign those actions to any device or monitor in your device list. Once assigned, you can edit the policies in the Action Policies dialog without having to make changes to all of the devices that use that particular action.

To create an action policy:

-
- Step 1** From the menu bar, select **Configure > Action Policies**. The Action Policies dialog opens.
- Step 2** On the Action Policies dialog, click **New**.
- Step 3** In the New Action Policy dialog, enter a name in the Policy name box. This name is used to identify the policy later, so you should make sure the name is something that will help you remember what is contained in that policy.
- Step 4** Click **Add**. The Action Builder wizard appears.
- Step 5** Follow the directions in the wizard.

- Step 6** Click **Finish** at the end of the wizard to add the action to the policy.
- Step 7** Add as many actions as you need to complete the policy. To move actions up and down in the list, click the **Up** and **Down** buttons above the action list.
- If you select Only execute first action, Cisco netManager executes the actions in the list, starting at the top, and stops as soon as an action successfully fires.
- Step 8** Once all of the actions have been added, click **OK** to create the policy and add it to the active list.
- Step 9** Assign the action policy to a device or monitor by using the procedure defined in:
- [Assigning an Action to a Device, page 6-15](#)
 - [Assigning an Action to a Monitor, page 6-16](#)

**Note**

During device discovery, you can assign an existing action policy (if one has been created previously), create a simple action policy through a wizard, or access the Action Policy Editor to create an action policy yourself.

Editing Action Policies

When you make changes to an action policy, you change the operation of all items that are currently assigned to use the policy.

To edit an action policy:

- Step 1** From the main menu, select **Configure > Action Policies**. The Action Policies dialog opens.
- Step 2** On the Action Policies dialog, select the policy you want to edit.
- Step 3** Click **Edit**.
- Step 4** Make changes to the policy as necessary.
- Step 5** Click **OK**.

Implicit Action Policy

With the Implicit Action Policy, Cisco netManager automatically assigns actions to all devices in your database. There is no way to opt out of the Implicit Action policy, so any action in that policy will be used by all devices. The Implicit Action Policy is not used for active monitors, just devices.

The Implicit Action policy is configured and can be edited through the Action Policies dialog. If at any time during the normal operation of Cisco netManager you notice that actions are firing and you cannot find the action associated to the down device or monitor, remember to check the Implicit Action Policy.

About Acknowledgements

When a device state changes, regardless of any action that has been placed on the device, Cisco netManager uses the Acknowledgement feature to make you aware that a state change occurred. In the device list, the name of the device appears in bold, and in the map view, the device name appears on a black background.

After the device is placed in Acknowledgement mode, it remains in this mode until you actively acknowledge it.

Acknowledging a device state change does not keep that device from firing actions. To stop a device from firing actions, you must put the device into maintenance mode.

To acknowledge a state change, do one of the following:

- Select the device or devices you want to acknowledge and right-click a selected item. In the right-mouse menu, select **Acknowledge**.
 - Access the State Change Acknowledgement report and select the devices you want to acknowledge. After the devices are selected, click **Clear** to remove the devices from the report, thereby acknowledging the state change.
-

Example: Getting an E-Mail Alert when the Web Server Fails

This example shows how to set up monitoring of your web server so that you get an e-mail alert when the web server fails, or when web content is not available.

First, you need to set up the monitors for your web server. Then, create an e-mail action and assign it to the monitors. Both tasks can be done within a wizard.

-
- Step 1** Open device properties for your web server device, then select the Active Monitor properties.
- Step 2** Click **Add**. The Active Monitor Properties wizard opens.
- Step 3** Use the wizard to add the HTTP active monitor to your web server device. This monitor verifies that HTTP (port 80) is active.
- a. On the Select Active Monitor Type screen, select **HTTP**, then click **Next**.
 - b. On the Set Polling Properties screen, click **Next**.
 - c. On the Setup Actions for Monitor State Changes screen, select **Apply individual actions**, then click **Add**.
 - d. On the Select or Create Action screen, select **Create a new action**, then click **Next**.
 - e. On the Select Action Type screen, select **E-Mail Action**, then click **Next**.
 - f. On the Select State Change screen, click **Finish**.
 - g. On the New Email Action screen, enter the information.
 - h. Click Mail Content, enter the information.
 - i. Click **OK** to save changes and return to the previous screen. Click **OK** again to return to the Setup Actions for Monitor State Changes screen. Click **Finish**.
- Step 4** Use the same wizard to add the HTTP Content active monitor. This monitor verifies that the web server returns some valid content in response to an HTTP request.
- a. On the Select Active Monitor Type screen, select **HTTP Content**, then click **Next**.

- b. On the Set Polling Properties screen, click **Next**.
- c. On the Setup Actions for Monitor State Changes screen, select **Apply individual actions**, then click **Add**.
- d. On the Select or Create Action screen, select **Select an action from the Action Library**, then click **Next**.
- e. On the Select Action and State screen, select **MailtoWebmaster**, then click **Finish** to save the changes and return to the Setup Actions for Monitor State Changes screen.
- f. Click **Finish**.

The two active monitors and resulting e-mail action are now enabled. When the web server is down for more than 2 minutes, HTTP active monitor will fail, triggering the e-mail action.



Note You can also assign notifications to be sent according to device type, event type or event severity. For more information on notifications see [Chapter 7, “Using Notifications.”](#)
