



## CHAPTER 13

# Working With Threshold Rules

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This chapter describes how to configure threshold rules using Cisco Data Center Network Manager (DCNM).

This chapter includes the following sections:

- [Information About Threshold Rules, page 13-1](#)
- [Configuring Threshold Rules, page 13-4](#)

## Information About Threshold Rules

This section includes the following topics:

- [Threshold Rules Overview, page 13-1](#)
- [Threshold Rule Examples, page 13-2](#)

## Threshold Rules Overview

Cisco DCNM provides a feature that you use to specify rising or falling threshold rules for sample variables in collected statistical data. Depending on the rule definition, a set of actions are performed by Cisco DCNM. You define the threshold rule on the Threshold Rules page, and you apply the threshold rule to the existing chart.

This section includes the following topics:

- [Rising Threshold, page 13-1](#)
- [Falling Threshold, page 13-2](#)
- [Threshold Rule Properties, page 13-2](#)
- [Threshold Rule Actions, page 13-2](#)

## Rising Threshold

The rising threshold is the upper threshold for a sample variable. When the current sampled variable is greater than or equal to the specified threshold, a set of actions is performed.

**FINAL DRAFT****Falling Threshold**

The falling threshold is the lower threshold for a sample variable. When the current sampled variable is lower than or equal to the specified threshold a set of actions is performed.

**Note**


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You can specify only one rising threshold and one falling threshold for a single sampled variable.

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**Threshold Rule Properties**

Threshold rule properties are as follows:

- **Name**—Specifies the threshold rule name.
- **Frequency**—Specifies the number of times the sampled variable must cross a threshold before triggering any actions.
- **Period**—Specifies the interval of time the frequency is monitored.
- **Repeat**—Prevents the timer from resetting after triggering an action within the period.
- **Trend**—Specifies the rising or falling threshold.

**Threshold Rule Actions**

Threshold rule actions are as follows:

- Send an email or SMS to a mail server or mail to SMS gateway.
- Run a script on the server.
- Send an event to the current DCNM JMS channel.

**Threshold Rule Examples****Note**


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The granularity of a period is driven by the minimal interval of the collected data. Consequently, the period must be higher than that interval.

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This section includes the following topics:

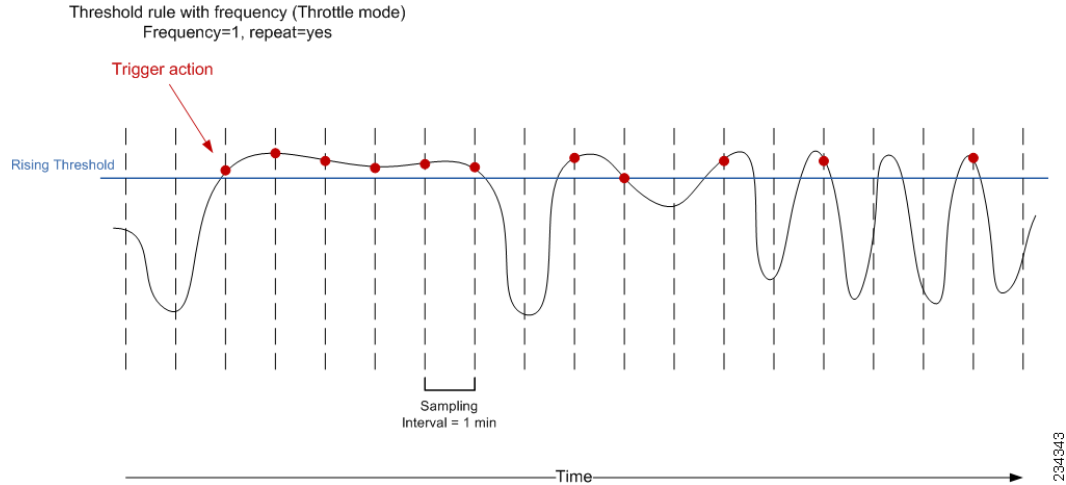
- [Trigger an Action Each Time a Threshold is Crossed, page 13-2](#)
- [Trigger an Action Only Once in a Period When a Threshold is Crossed, page 13-3](#)
- [Trigger an Action Every Fourth Period When a Threshold is Crossed, page 13-4](#)

**Trigger an Action Each Time a Threshold is Crossed**

To trigger an action each time a threshold is crossed, set properties as follows:

- **Frequency**—**1**
- **Repeat**—**Yes**

[Figure 13-1](#) shows the trigger action when you set rule properties to the preceding values.

**FINAL DRAFT****Figure 13-1** Trigger an Action Each Time a Threshold is Crossed

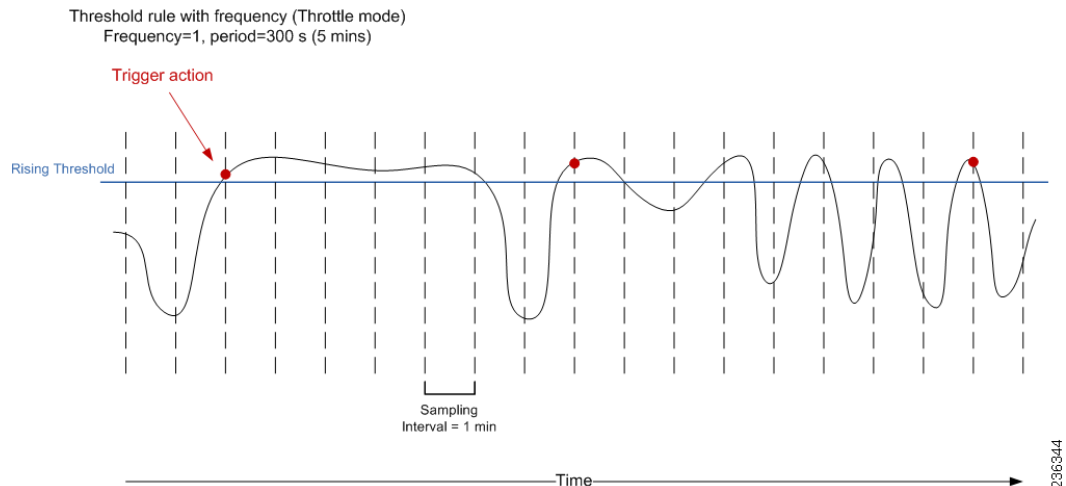
If the sampled variable crosses the threshold, an action is taken the first time it crosses the threshold. As a result, an action is performed each time the threshold is crossed.

**Trigger an Action Only Once in a Period When a Threshold is Crossed**

To trigger an action only once in a period when a threshold is crossed, set properties as follows:

- Frequency—1
- Period—300
- Repeat—No

Figure 13-2 shows the trigger action when you set rule properties to the preceding values.

**Figure 13-2** Trigger an Action Only Once When a Threshold is Crossed Within a Period

If the sampled variable crosses the threshold, an action is taken the first time it crosses the threshold. For the remaining 5 minutes, an action will not be taken. As a result, an action is performed only once during the specified period.

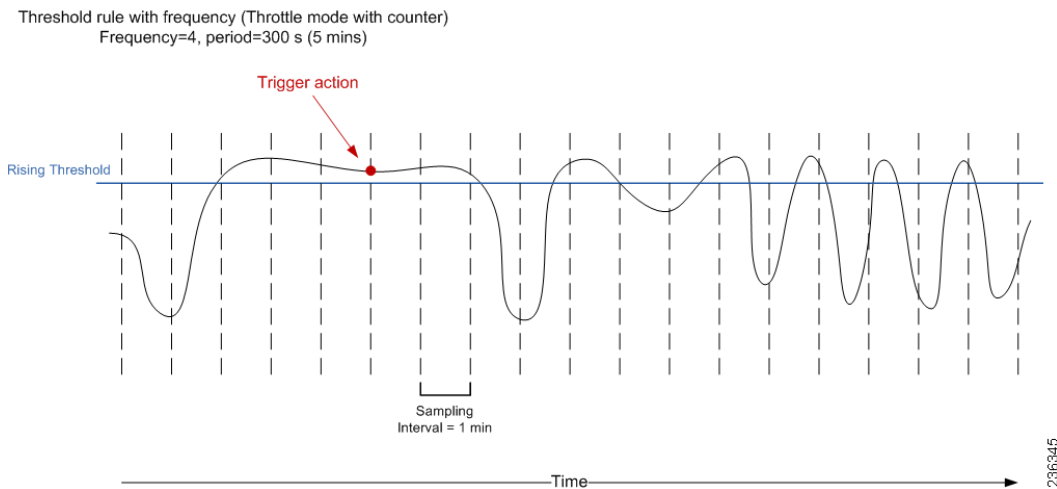
**FINAL DRAFT****Trigger an Action Every Fourth Period When a Threshold is Crossed**

To trigger an action every fourth period when a threshold is crossed, set properties as follows:

- Frequency—4
- Period—300
- Repeat—No

Figure 13-3 shows the trigger action when you set rule properties to the preceding values.

**Figure 13-3** Trigger an Action Every Fourth Period When a Threshold is Crossed



If the sampled variable crosses the threshold, an action is taken the fourth time it crosses the threshold. For the remaining 5 minutes, an action is not taken. As a result, an action is performed only once during the specified period.

**Configuring Threshold Rules**

This section includes the following topics:

- [Creating Threshold Rules, page 13-4](#)
- [Deleting Threshold Rules, page 13-5](#)
- [Editing Threshold Rules, page 13-6](#)
- [Viewing Threshold Rules, page 13-6](#)
- [Applying a Threshold Rule to a Chart, page 13-6](#)

**Creating Threshold Rules**

You can create threshold rules using Cisco DCNM.

**DETAILED STEPS**

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- Step 1** From the Feature Selector pane, choose **DCNM Server Administration > Threshold Rules**.

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**Step 2** From the toolbar, choose **New**, and then choose **New Threshold Rule**.

The Details and Threshold Bindings tabs appear in the Details pane, with the Details tab open.

**Step 3** Create a threshold rule as follows:

- a. In the Name field, enter a name.
- b. In the Description field, enter a description of the threshold rule.

After you have enter a description, the Rising Threshold check box is automatically checked and the Threshold field in the Settings area is outlined in red.



**Note** A field outlined in red indicates that an entry is required. A field outlined in yellow indicates that the entry is satisfactory.

- c. In the Settings area, enter a value in the Threshold field.

Once you have entered a value, the three options in the Action area are outlined in red.

- d. In the Action area, provide one of the following:
  - Enter email addresses (delimited with commas)
  - Select **Sent Event** to forward events to the DCNM Event Browser
  - Enter a script name

The script receives all data regarding the crossed threshold. The script can be written in any programming language and saved in one of the directories of the system PATH.



**Note** Ensure that the Cisco DCNM server is configured for an SMTP server. For more information about configuring the Cisco DCNM server, see the *Cisco DCNM Installation and Licensing Guide, Release 5.x*.

- e. (Optional) In the corresponding Settings and Action areas, configure a Falling Threshold.
- f. (Optional) Click the **Threshold Bindings** tab to view bindings.
- g. Click **Deploy**.

The rule is deployed.

When you exit Cisco DCNM and Save Pending Changes is checked in the Warning dialog box, click **Yes** to save the rule.

## Deleting Threshold Rules

You can delete rules using Cisco DCNM.

### DETAILED STEPS

**Step 1** From the Feature Selector pane, choose **DCNM Server Administration > Threshold Rules**.

The rules appear in the Summary pane.

**Step 2** From the Summary pane, right-click the appropriate rule.

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- Step 3** From the drop-down list, choose **Delete Threshold Rule**.  
A warning dialog box appears and displays “Are you sure you want to delete?”
- Step 4** Click **Yes**.  
The rule is deleted.
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## Editing Threshold Rules

You can view threshold rules using Cisco DCNM.

### DETAILED STEPS

- Step 1** From the Feature Selector pane, choose **DCNM Server Administration > Threshold Rules**.  
The rules appear in the Summary pane.
- Step 2** Edit any appropriate areas.



**Note** You cannot edit the Name field.

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## Viewing Threshold Rules

You can view threshold rules using Cisco DCNM.

### DETAILED STEPS

- Step 1** From the Feature Selector pane, choose **DCNM Server Administration > Threshold Rules**.  
The rules appear in the Summary pane.
- Step 2** Click on a rule to view it.
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## Applying a Threshold Rule to a Chart

You can apply threshold rules using Cisco DCNM.

### DETAILED STEPS

- Step 1** From the Feature Selector pane, choose the appropriate feature. For example, if you wanted to see statistics for an Ethernet port, choose **Interfaces > Physical > Ethernet**.  
The available devices appear in the Summary pane.
- Step 2** From the Summary pane, choose the appropriate device.

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- Step 3** Click the **Statistics** tab.
- Step 4** In the toolbar, click **New Chart** and then from the drop-down list choose the chart that you want to view. For example, if you wanted to see statistics for traffic, choose **Traffic Statistics Chart**.
- Step 5** In the chart toolbar, click **Launch Threshold Setting**.
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