



Setting Thresholds

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Understanding Thresholds and Threshold Groups

Service Monitor uses thresholds to determine when a MOS value—reported from a sensor or included in CDRs from a Cisco Unified CallManager cluster—has fallen to an unacceptable level. When MOS falls below a threshold, Service Monitor sends a QoVMOSViolation trap to up to four trap receivers.

Service Monitor supplies global thresholds and provides default values for them. Service Monitor can use global thresholds to compare against MOS values reported from sensors or clusters. Since the MOS threshold values might vary depending upon the codec being used in a call, global thresholds include separate values for commonly used codecs such as these:

- G711Alaw64k
- G711Alaw56k
- G711Ulaw64k
- G711Ulaw56k
- G722 64K
- G722 56k
- G722 48k
- G728
- G729
- G729AnnexA
- G729AnnexB
- G729AnnexAwAnnexB



Note

For more information about codecs, see [Understanding Codecs: Complexity, Hardware Support, MOS, and Negotiation](http://www.cisco.com/en/US/tech/tk1077/technologies_tech_note09186a00800b6710.shtml) at this URL:
http://www.cisco.com/en/US/tech/tk1077/technologies_tech_note09186a00800b6710.shtml

You can update the global threshold default values to reflect MOS values below the average MOS seen in your system. By monitoring Service Monitor reports, you can determine average MOS values and then adjust global thresholds accordingly. You can also easily restore global thresholds to the default values that Service Monitor supplies.

If you would like to use different threshold values for particular sensors, clusters, or groups of endpoints reported on by either sensors or clusters, you can override global thresholds by adding these threshold groups:

- **CVTQ Groups**—A CVTQ group includes one or more clusters, two sets of endpoints, and one or more threshold values for commonly used codecs.
- **Sensor Groups**—A sensor group includes one or more sensors, two sets of endpoints, and one or more threshold values for commonly used codecs.

You can create up to 10 CVTQ groups and up to 10 sensor groups. CVTQ groups are prioritized from highest (one) to lowest (ten), as are sensor groups. In cases where an endpoint is included in more than one CVTQ group or more than one sensor group, Service Monitor compares MOS for the endpoint against the highest priority group that it belongs to.

For more information, see the following topics:

- [Configuring Global Thresholds, page 5-2](#)
- [Configuring CVTQ Groups, page 5-3](#)
- [Configuring Sensor Groups, page 5-8](#)

Configuring Global Thresholds

Service Monitor compares MOS reported from sensors and clusters against global thresholds when no CVTQ group or sensor group setting is applicable. You cannot delete or clear global thresholds. You can update them and you can restore them to default values. You can override global thresholds by creating user-defined threshold groups; for more information, see [Configuring CVTQ Groups, page 5-3](#) and [Configuring Sensor Groups, page 5-8](#).

Use this procedure to update global thresholds.

Step 1 Select **Thresholds > Global**. The Global Thresholds page appears, displaying the information in the following table.

Fields and buttons	Description/Action
Codec	Codec name. Grayed out because you cannot edit it.
MOS	
Suggested Default	Suggested default value for the codec. Grayed out because you cannot edit it.
Current Value	Enter a value from 0.0 to 5.0.

Fields and buttons	Description/Action
Revert to Suggested Defaults button	Click to set the current value of each codec to the suggested default value.
Apply button	Click to apply changes to current values.

Step 2 Enter a new current value for any codec in the table and click **Apply**.

Restoring Global Thresholds to Default Values

Use this procedure to restore global threshold values to the suggested default values that are displayed on the Global Thresholds page.

Step 1 Select **Thresholds > Global**. The Global Thresholds page appears.

Step 2 Click the **Revert to Suggested Defaults** button.

Configuring CVTQ Groups

A CVTQ group includes one or more Cisco Unified CallManager clusters, two sets of endpoints, and threshold values for one or more commonly used codecs. You can define up to 10 CVTQ threshold groups; Service Monitor prioritizes the CVTQ threshold groups from 1 (highest priority) to 10 (lowest priority), initially reflecting the order in which you create the groups. (You can reprioritize them.) If an endpoint belongs to more than one CVTQ threshold group, Service Monitor uses the thresholds for the highest priority CVTQ threshold group.

- Step 1** Select **Thresholds > CVTQ Groups**. The CVTQ Threshold Groups page appears, displaying up to 10 user-defined CVTQ threshold groups with information described in the following table.

Fields and Buttons	Description/Action
Check box column	Select a CVTQ threshold group if you want to delete it.
Name column	A unique user-defined name for the CVTQ threshold group.
Priority column	A number from 1 to 10, indicating highest to lowest priority. To change priority, enter a different one- or two-digit number for each group in this column for two or more CVTQ threshold groups and click the Update Priority button.
Add button	Click to add a CVTQ threshold group (up to a maximum of 10 CVTQ threshold groups). See Adding a CVTQ Threshold Group, page 5-4 .
Edit column	Click the Edit link in this column to update this group. Editing a CVTQ Threshold Group, page 5-6 .
Delete button	Select one or more check boxes and click the Delete button to delete a CVTQ threshold group.
Update Priority button	Click after entering unique numbers in the Priority column. The page will display again with the CVTQ threshold groups in priority order.



Adding a CVTQ Threshold Group

When you add a CVTQ threshold group, it is assigned the lowest priority among existing CVTQ threshold groups. To adjust its priority, see [Updating CVTQ Threshold Group Priority, page 5-8](#).



Note You can add up to 10 CVTQ threshold groups.

- Step 1** Select **Thresholds > CVTQ Groups**. The CVTQ Threshold Groups page appears.
- Step 2** Click **Add**. The Add CVTQ Threshold Group page appears.
- Step 3** Enter data described in the following table.

GUI Element	Description/Action
Group Name field	Enter a name. The name must be unique among all CVTQ groups.
Select Clusters list	<p>These words appear in the list box: All current and future clusters.</p> <p>Note If you do not select any clusters, the threshold values in this group apply to clusters that are currently managed and will be applied to clusters that are managed in the future.</p> <p>To select clusters:</p> <ol style="list-style-type: none"> 1. Click . The Select Clusters dialog box appears, displaying cluster IDs that Service Monitor has obtained from CMRs and CDRs. 2. Select check boxes. 3. Click OK. <p>Default: None.</p>
Override Thresholds list	<p>Update thresholds:</p> <ol style="list-style-type: none"> 1. Click . The MOS Threshold Settings dialog box appears. 2. For at least one codec, enter a MOS threshold value. 3. Click OK.
Endpoint 1	<p>Specify a source—or destination—endpoint by selecting one of these radio buttons and entering the appropriate data:</p> <ul style="list-style-type: none"> • DN—Directory number. Enter an exact directory number or use wildcards (x) or a combination of numbers and wildcards to specify a range of directory numbers. • IP—IP address. Enter an exact IP address or use wildcards (*) or a combination of numbers and wildcards to specify a range of IP addresses. <p>Note For more information, see Specifying IP Addresses or Directory Numbers for Endpoints, page 2-3.</p>
Endpoint 2	<p>Specify a source—or destination—endpoint by selecting one of these radio buttons and entering the appropriate data:</p> <ul style="list-style-type: none"> • DN—Directory number. Enter an exact directory number or use wildcards (x) or a combination of numbers and wildcards to specify a range of directory numbers. • IP—IP address. Enter an exact IP address or use wildcards (*) or a combination of numbers and wildcards to specify a range of IP addresses. <p>Note For more information, see Specifying IP Addresses or Directory Numbers for Endpoints, page 2-3.</p>



Step 4 Click **OK**. The CVTQ Threshold Group page appears, displaying the newest CVTQ threshold group last in the list (in the lowest priority position).

Editing a CVTQ Threshold Group

**Note**

To change CVTQ threshold group priority, see [Updating CVTQ Threshold Group Priority, page 5-8](#).

- Step 1** Select **Thresholds > CVTQ Groups**. The CVTQ Threshold Groups page appears.
- Step 2** Select a group and click **Edit**. The Edit CVTQ Threshold Group page appears.
- Step 3** Enter data described in the following table.

GUI Element	Description/Action
Group Name field	You can change the name if you want to. The name must be unique among all CVTQ groups.
Select Clusters list	<p>If no clusters are selected, these words appear in the list box: All current and future clusters.</p> <p>Note If a cluster is already included in a CVTQ group when credentials for a cluster are deleted, the cluster remains in the group.</p> <p>To select clusters:</p> <ol style="list-style-type: none"> 1. Click . The Select Clusters dialog box appears, displaying cluster IDs that Service Monitor has obtained from CMRs and CDRs. 2. Select check boxes. 3. Click OK. <p>Note If no clusters are selected, the threshold values in this group apply to clusters that are currently managed and will be applied to clusters that are managed in the future.</p>
Override Thresholds list	<p>Update thresholds:</p> <ol style="list-style-type: none"> 1. Click . The MOS Threshold Settings dialog box appears. 2. For at least one codec, enter a MOS threshold value. 3. Click OK.
Endpoint 1	<p>Specify a source—or destination—endpoint by selecting one of these radio buttons and entering the appropriate data:</p> <ul style="list-style-type: none"> • DN—Directory number. Enter an exact directory number or use wildcards (x) or a combination of numbers and wildcards to specify a range of directory numbers. • IP—IP address. Enter an exact IP address or use wildcards (*) or a combination of numbers and wildcards to specify a range of IP addresses. <p>Note For more information, see Specifying IP Addresses or Directory Numbers for Endpoints, page 2-3.</p>
Endpoint 2	<p>Specify a source—or destination—endpoint by selecting one of these radio buttons and entering the appropriate data:</p> <ul style="list-style-type: none"> • DN—Directory number. Enter an exact directory number or use wildcards (x) or a combination of numbers and wildcards to specify a range of directory numbers. • IP—IP address. Enter an exact IP address or use wildcards (*) or a combination of numbers and wildcards to specify a range of IP addresses. <p>Note For more information, see Specifying IP Addresses or Directory Numbers for Endpoints, page 2-3.</p>

Updating CVTQ Threshold Group Priority

If the directory number or IP address for an endpoint is included in more than one CVTQ group, Service Monitor applies the thresholds for the highest priority CVTQ threshold group.

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- Step 1** Select **Thresholds > CVTQ Groups**. The CVTQ Threshold Group page appears, displaying up to 10 user-defined CVTQ threshold groups.
 - Step 2** Enter any unique numbers—up to two digits—in the Priority column.
 - Step 3** Click **Update Priority**. Service Monitor reorders the CVTQ threshold groups and displays them in priority order.
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Deleting a CVTQ Threshold Group

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- Step 1** Select **Thresholds > CVTQ Groups**. The CVTQ Threshold Group page appears, displaying up to 10 user-defined CVTQ threshold groups.
 - Step 2** Select the check boxes for the CVTQ threshold groups that you want to delete.
 - Step 3** Click **Delete**. A confirmation dialog box is displayed.
 - Step 4** Click **Yes**. Service Monitor displays any remaining CVTQ threshold groups in priority order.
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Configuring Sensor Groups

A sensor group includes one or more sensors, two sets of endpoints, and threshold values for one or more commonly used codecs. You can define up to 10 sensor threshold groups; Service Monitor prioritizes the sensor threshold groups from 1 (highest priority) to 10 (lowest priority), initially reflecting the order in which you create the groups. (You can reprioritize them.) If an endpoint belongs to more than one sensor threshold group, Service Monitor uses the thresholds for the highest priority sensor threshold group.

- Step 1** Select **Thresholds > Sensor Groups**. The Sensor Threshold Group page appears, displaying up to 10 user-defined sensor groups with information described in the following table.

GUI Element	Description/Action
Check box column	Select a sensor group to update its priority or to delete it.
Name column	A unique user-defined name for the sensor group. The name must be unique among all sensor groups.
Priority column	A number from 1 to 10, indicating highest to lowest priority. To change priority, enter a different one- or two-digit number for each group in this column for two or more sensor groups and click the Update Priority button.
Add button	Click to add a sensor threshold group (up to a maximum of 10 CVTQ threshold groups). See Adding a Sensor Group, page 5-9 .
Edit column	Click the Edit link in this column to update this group. See Editing a Sensor Group, page 5-10 .
Delete button	Select one or more check boxes and click the Delete button to delete a CVTQ threshold group.
Update Priority button	Click after entering unique numbers in the Priority column. The page will display again with the sensor threshold groups in priority order.



Adding a Sensor Group

When you add a sensor group, it is assigned the lowest priority among existing sensor groups. To adjust its priority, see [Updating Sensor Group Priority, page 5-11](#).



Note You can add up to 10 sensor groups.

- Step 1** Select **Thresholds > Sensor Groups**. The Sensor Threshold Group page appears.
- Step 2** Click **Add**. The Add Sensor Threshold Group page appears.
- Step 3** Enter data described in the following table.

GUI Element	Description/Action
Group Name field	Enter a name. The name must be unique among all sensor groups.
Select Sensors list	<p>These words appear in the list box: All current and future sensors.</p> <p>Note If you do not select any sensors, the threshold values in this group apply to sensors that are currently managed and will be applied to sensors that are managed in the future.</p> <p>To select sensors:</p> <ol style="list-style-type: none"> 1. Click . The Select Sensors dialog box appears. 2. Select check boxes. 3. Click OK.
Override Thresholds list	<p>Update thresholds:</p> <ol style="list-style-type: none"> 1. Click . The MOS Threshold Settings dialog box appears. 2. For at least one codec, enter a MOS threshold value. 3. Click OK.
Endpoint 1	Enter the IP address of a voice gateway or an IP phone. To include a range of IP addresses, enter a partial IP address and use an asterisk (*) to indicate any number. Default: *.*.*.*.
Endpoint 2	Enter the IP address of a voice gateway or an IP phone. To include a range of IP addresses, enter a partial IP address and use an asterisk (*) to indicate any number. Default value: *.*.*.*.



- Step 4** Click **OK**. The Sensor Threshold Group page appears, displaying the new sensor group threshold group last in the list (in the lowest priority position).

Editing a Sensor Group



Note To change sensor group priority, see [Updating Sensor Group Priority, page 5-11](#).

- Step 1** Select **Thresholds > Sensor Groups**. The Sensor Threshold Group page appears.
- Step 2** Select a group and click the **Edit** link for a sensor group. The Edit Sensor Threshold Group page appears.
- Step 3** Enter data described in the following table.

GUI Element	Description/Action
Group Name field	You can change the name if you want to. The name must be unique among all sensor groups.
Select Sensors list	<p>If no sensors are selected, these words appear in the list box: All current and future sensors.</p> <p>To select sensors:</p> <ol style="list-style-type: none"> 1. Click . The Select Sensors dialog box appears. 2. Select check boxes. 3. Click OK. <p>Note If no sensors are selected, the threshold values in this group apply to sensors that are currently managed and will be applied to sensors that are managed in the future.</p>
Override Thresholds list	<p>Update thresholds:</p> <ol style="list-style-type: none"> 1. Click . The MOS Threshold Settings dialog box appears. 2. For at least one codec, enter a MOS threshold value. 3. Click OK.
Endpoint 1	Enter the IP address for a voice gateway or an IP phone. To include a range of IP addresses, enter a partial IP address and use an asterisk (*) to indicate any number. Enter *.*.*.* to include all IP addresses.
Endpoint 2	Enter the IP address for a voice gateway or an IP phone. To include a range of IP addresses, enter a partial IP address and use an asterisk (*) to indicate any number. Enter *.*.*.* to include all IP addresses.

Updating Sensor Group Priority

If a sensor is included in more than one sensor group, Service Monitor applies the thresholds for the highest priority sensor threshold group.

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- Step 1** Select **Thresholds > Sensor Groups**. The Sensor Threshold Group page appears, displaying up to 10 user-defined sensor groups.
 - Step 2** Enter any unique numbers—up to two digits—in the Priority column.
 - Step 3** Click **Update Priority**. Service Monitor reorders the sensor groups and displays them in priority order.
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Deleting a Sensor Group

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- Step 1** Select **Thresholds > Sensor Groups**. The Sensor Threshold Group page appears, displaying up to 10 user-defined sensor groups.
 - Step 2** Select the check boxes for the sensor groups that you want to delete.
 - Step 3** Click **Delete**. A confirmation dialog box is displayed.
 - Step 4** Click **Yes**. Service Monitor displays any remaining sensor groups in priority order.
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