



Configure Call Throttling

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Call Throttling Overview

Call Throttling allows your system to automatically throttle or deny new call attempts. The system takes this action when conditions cause users to experience a delay in the interval between going off hook and receiving a dial tone.

Some factors that can result in this delay are as follows:

- Heavy call activity
- Low CPU availability
- Routing loops
- Disk I/O limitations
- Disk fragmentation

The system uses the values that are specified in the call throttling parameters to determine a possible delay to dialtone and also to determine when conditions no longer require call throttling.

When throttling is necessary to prevent excessive delay to dialtone, the system enters a Code Yellow state and new call attempts are throttled (denied).

When the system calculates the delay to dialtone as being over the threshold that is configured in the call throttling service parameters, Unified Communications Manager rejects new calls. When call throttling activates, a user who attempts a new call receives a reorder tone and, depending on the phone model, may also receive a prompt on the phone display.

Call throttling effectively prevents the type of excessive delays that can cause a user to complain to the system administrator or question whether the system is down or the phone is broken. Your system constantly monitor the system to anticipate when such latency could occur.

When the delay to dialtone is within the guidelines of the call throttling service parameters, Unified Communications Manager stops throttling calls by exiting the Code Yellow state and new calls are again allowed.

Call Throttling Configuration



Caution We recommend that you not modify call throttling parameters unless advised to do so by customer support.

Call throttling occurs automatically when your system detects conditions such as heavy call activity, low CPU availability, and disk fragmentation. The system automatically exits throttling when these conditions are fixed.

Call Throttling Service Parameters

Table 1: Call Throttling Service Parameters

Service Parameter	Description
Code Yellow Entry Latency	Defines the maximum allowable delay, in milliseconds, to handle System Diagnostic Layer (SDL) messages that are sent to Cisco Unified Communications Manager by the various devices in the system. This maximum also applies to internal messages that are received and sent by Cisco Unified Communications Manager for various activities, such as keepalive intervals and change notification. If the calculated average expected delay is more than the value that is specified in this service parameter, the system enters a Code Yellow state to initiate call throttling and stops accepting new calls.
Code Yellow Exit Latency Calculation	<p>Determines the acceptable percentage of Code Yellow Entry Latency to specify exit criteria for leaving the Code Yellow state (call throttling) after Cisco Unified Communications Manager initiates call throttling.</p> <p>The value that you specify in this parameter derives from a formula that uses the value in the Code Yellow Entry Latency parameter (the delay as measured in milliseconds).</p> <p>To arrive at a percentage, use the following formula:</p> <p>Code Yellow Entry Latency value multiplied by the Code Yellow Exit Latency value</p> <p>For example:</p> <ul style="list-style-type: none"> • Code Yellow Entry Latency service parameter value: 20 milliseconds • Code Yellow Exit Latency service parameter value: 40% • Code Yellow Exit Latency value = $20 \times 0.4 = 8$ milliseconds, which means Cisco Unified Communications Manager exits Code Yellow state if the calculated message latency drops to 8 milliseconds or lower. <p>To exit the Code Yellow state, Cisco Unified Communications Manager ensures that the average expected delay is less than the value of the Code Yellow Exit Latency.</p>

Service Parameter	Description
Code Yellow Duration	<p>Specifies the number of minutes that a Cisco Unified Communications Manager system can remain in a Code Yellow state (call throttling).</p> <p>If this duration is met and the system is still in Code Yellow state, Cisco Unified Communications Manager enters a Code Red state, which indicates that Cisco Unified Communications Manager has remained in a Code Yellow state for an extended period and cannot recover.</p> <p>When Cisco Unified Communications Manager enters a Code Red state, the Cisco CallManager service restarts, which also produces a memory dump that may be helpful for analyzing the failure.</p>
System Throttle Sample Size	<p>Indicates the size of the sample, in seconds, that is used to calculate the average expected delay for Cisco Unified Communications Manager to handle an SDL message.</p> <p>For example, a sample size of 10 means that Cisco Unified Communications Manager must calculate a nonzero latency value for 10 consecutive seconds before it will calculate the average expected delay and compare it to the value in the CodeYellow Entry Latency parameter.</p> <p>You can disable call throttling by using this parameter.</p>

