CHAPTER 23

Performance Objects and Counters

This chapter, which provides an overview of Cisco Unified CallManager-related objects and counters, contains information on the following topics:

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Working with Performance Objects and Counters

Cisco Unified CallManager directly updates Performance counters (called PerfMon counters), which are call-processing-related counters. The counters contain simple, useful counts such as number of registered phones, number of active calls, and number of available conference bridge resources.

The Cisco Unified CallManager object contains most of the performance counters, and these counters have only one instance. The instance-based counters that belong to the other objects can have zero or more instances. For example, if two phones are registered to Cisco Unified CallManager, two instances of each counter that belong to the Cisco phones object exist.

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Tip For the latest performance monitoring counters, objects, and counter descriptions that are available for Cisco Unified CallManager, access the performance monitoring counters in the Real-Time Monitoring Tool. In RTMT, you can review a counter description, as described in the "Displaying a Counter Description" section in the *Cisco CallManager Serviceability Administration Guide, Release 5.0(4)*.

Cisco Analog Access

The Cisco Analog Access object provides information about registered Cisco Analog Access gateways. Table 23-1 contains information about Cisco Analog Access counters.

Table 23-1 Cisco Analog Access

Counters	Counter Descriptions
OutboundBusyAttempts	This counter represents the total number of times that Cisco Unified CallManager attempts a call through the Analog Access gateway when all ports were busy.
PortsActive	This counter represents the number of ports that are currently in use (active). A port appears active when a call is in progress on that port.
PortsOutOfService	This counter represents the number of ports that are currently out of service. Counter applies only to loop-start and ground-start trunks.

Cisco Annunciator Device

The Cisco Annunciator Device object provides information about registered Cisco annunciator devices. Table 23-2 contains information about Cisco Annunciator counters.

Table 23-2 Cisco Annunciator Device

Counters	Counter Descriptions
OutOfResources	This counter represents the total number of times that Cisco Unified CallManager attempted to allocate an annunciator resource from an annunciator device and failed; for example, because all resources were already in use.
ResourceActive	This counter represents the total number of annunciator resources that are currently active (in use) for an annunciator device.
ResourceAvailable	This counter represents the total number of resources that are not active and are still available to be used at the current time for the annunciator device.
ResourceTotal	This counter represents the total number of annunciator resources that are configured for an annunciator device.

Cisco CallManager

The Cisco CallManager object provides information about calls, applications, and devices that are registered with the Cisco Unified CallManager. Table 23-3 contains information about Cisco CallManager counters.

Table 23-3 Cisco CallManager

Counters	Counter Descriptions
AnnunciatorOutOfResources	This counter represents the total number of times that Cisco Unified CallManager attempted to allocate an annunciator resource from those that are registered to a Cisco Unified CallManager when none were available.
AnnunciatorResourceActive	This counter represents the total number of annunciator resources that are currently in use on all annunciator devices that are registered with a Cisco Unified CallManager.
AnnunciatorResourceAvailable	This counter represents the total number of annunciator resources that are not active and are currently available.
AnnunciatorResourceTotal	This counter represents the total number of annunciator resources that are provided by all annunciator devices that are currently registered with Cisco Unified CallManager.
AuthenticatedCallsActive	This counter represents the number of authenticated calls that are currently active (in use) on Cisco Unified CallManager. An authenticated call designates one in which all the endpoints that are participating in the call are authenticated. An authenticated phone uses the Transport Layer Security (TLS) authenticated Skinny protocol signaling with Cisco Unified CallManager.

Table 23-3 Cisco CallManager (continued)

Counters	Counter Descriptions
AuthenticatedCallsCompleted	This counter represents the number of authenticated calls that connected and subsequently disconnected through Cisco Unified CallManager. An authenticated call designates one in which all the endpoints that are participating in the call are authenticated. An authenticated phone uses the TLS authenticated Skinny protocol signaling with Cisco Unified CallManager.
AuthenticatedPartiallyRegisteredPhone	This counter represents the number of partially registered, authenticated SIP phones.
AuthenticatedRegisteredPhones	This counter represents the total number of authenticated phones that are registered to Cisco Unified CallManager. An authenticated phone uses the TLS authenticated Skinny protocol signaling with Cisco Unified CallManager.
BRIChannelsActive	This counter represents the number of BRI voice channels that are currently in an active call on this Cisco Unified CallManager.
BRISpansInService	This counter represents the number of BRI spans that are currently available for use.
CallManagerHeartBeat	This counter represents the heartbeat of Cisco Unified CallManager. This incremental count indicates that Cisco Unified CallManager is up and running. If the count does not increment, that indicates that Cisco Unified CallManager is down.
CallsActive	This counter represents the number of voice or video streaming connections that are currently in use (active); in other words, the number of calls that actually have a voice path that is connected on Cisco Unified CallManager.
CallsAttempted	This counter represents the total number of attempted calls. An attempted call occurs any time that a phone goes off hook and back on hook, regardless of whether any digits were dialed, or whether it connected to a destination. The system considers some call attempts during feature operations (such as transfer and conference) to be attempted calls.
CallsCompleted	This counter represents the number of calls that were actually connected (a voice path or video stream was established) through Cisco Unified CallManager. This number increases when the call terminates.
CallsInProgress	This counter represents the number of voice or video calls that are currently in progress on Cisco Unified CallManager, including all active calls. When a phone, that is registered as Skinny Client Control Protocol (SCCP) phone goes off hook, the CallsInProgress progress counter increments. until it goes back on hook. For Cisco Unified IP Phones 7902, 7905, 7912, 7940, and 7960 that register as SIP phones, the CallsInProgress counter increments when the dial softkey is pressed. For all other SIP phones, the CallsInProgress counter increments when the first digit is pressed. When all voice or video calls that are in progress are connected, the number of CallsInProgress represents the number of CallsActive. The counter decreases by one when a phone goes back on hook.

Table 23-3 Cisco CallManager (continued)

Counters	Counter Descriptions
EncryptedCallsActive	This counter represents the number of encrypted calls that are currently active (in use) on this Cisco Unified CallManager. An encrypted call represents one in which all the endpoints that are participating in the call are encrypted.
EncryptedCallsCompleted	This counter represents the number of encrypted calls that were connected and subsequently disconnected through this Cisco Unified CallManager. An encrypted call represents one in which all the endpoints that are participating in the call are encrypted.
EncryptedPartiallyRegisteredPhones	This counter represents the number of partially registered, encrypted SIP phones.
EncryptedRegisteredPhones	This counter represents the total number of encrypted phones that are registered on this Cisco Unified CallManager.
FXOPortsActive	This counter represents the number of FXO ports that are currently in use (active) on a Cisco Unified CallManager.
FXOPortsInService	This counter represents the number of FXO ports that are currently available for use in the system.
FXSPortsActive	This counter represents the number of FXS ports that are currently in use (active) on a Cisco Unified CallManager.
FXSPortsInService	This counter represents the number of FXS ports that are currently available for use in the system.
HuntListsInService	This counter represents the number of hunt lists that are currently in service on Cisco Unified CallManager.
HWConferenceActive	This counter represents the total number of hardware conference resources that are provided by all hardware conference bridge devices that are currently registered with Cisco Unified CallManager.
HWConferenceCompleted	This counter represents the total number of conferences that used a hardware conference bridge (hardware-based conference devices such as Cisco Catalyst 6000, Cisco Catalyst 4000, Cisco VG200, Cisco series 26xx and 36xx) that is allocated from Cisco Unified CallManager and that have completed, which means that the conference bridge has been allocated and released. A conference activates when the first call connects to the bridge. The conference completes when the last call disconnects from the bridge.
HWConferenceOutOfResources	This counter represents the total number of times that Cisco Unified CallManager attempted to allocate a hardware conference resource from those that are registered to a Cisco Unified CallManager when none was available.
HWConferenceResourceActive	This counter represents the total number of conference resources that are in use on all hardware conference devices (such as Cisco Catalyst 6000, Catalyst 4000, Cisco VG200, Cisco series 26xx and 36xx) that are registered with Cisco Unified CallManager. System considers conference to be active when one or more calls are connected to a bridge.
HWConferenceResourceAvailable	This counter represents the number of hardware conference resources that are not in use and that are available to be allocated on all hardware conference devices (such as Cisco Catalyst 6000, Cisco Catalyst 4000, Cisco VG200, Cisco series 26xx and 36xx) that are allocated from Cisco Unified CallManager and that have been completed, which means that the conference bridge has been allocated and released. A conference activates when the first call connects to the bridge. The conference completes when the last call disconnects from the bridge.

Table 23-3 Cisco CallManager (continued)

Counters	Counter Descriptions
HWConferenceResourceTotal	This counter represents the number of active conferences on all hardware conference devices that are registered with Cisco Unified CallManager.
InitializationState	This counter represents the current initialization state of Cisco Unified CallManager. Cisco Unified CallManager includes the following initialization state values: 1-Database; 2-Regions; 3-Locations; 4-Calling Search Space; 5-Time Of Day; 6-AAR Neighborhoods; 7-Digit Analysis; 8-Route Plan; 9-Call Control; 10-Supplementary Services; 11-Directory; 12-SDL Link; 13-Device; 100-Initialization Complete. Not all states displays when this counter is used. This does not indicate that an error occurred; it simply indicates that the state(s) initialized and completed within the refresh period of the performance monitor.
LocationOutOfResources	This counter represents the total number of times that a call through Locations failed due to the lack of bandwidth.
MOHMulticastResourceActive	This counter represents the total number of multicast MOH resources that are currently in use (active) on all MOH servers that are registered with a Cisco Unified CallManager.
MOHMulticastResourceAvailable	This counter represents the total number of active multicast MOH connections that are not being used on all MOH servers that are registered with a Cisco Unified CallManager.
MOHOutOfResources	This counter represents the total number of times that the Media Resource Manager attempted to allocate an MOH resource when all available resources on all MOH servers that are registered with a Cisco Unified CallManager were already active.
MOHTotalMulticastResources	This counter represents the total number of multicast MOH resources or connections that are provided by all MOH servers that are currently registered with a Cisco Unified CallManager.
MOHTotalUnicastResources	This counter represents the total number of unicast MOH resources or streams that are provided by all MOH servers that are currently registered with Cisco Unified CallManager. Each MOH unicast resource uses one stream.
MOHUnicastResourceActive	This counter represents the total number of unicast MOH resources that are currently in use (active) on all MOH servers that are registered with Cisco Unified CallManager. Each MOH unicast resource uses one stream.
MOHUnicastResourceAvailable	This counter represents the total number of unicast MOH resources that are currently available on all MOH servers that are registered with Cisco Unified CallManager. Each MOH unicast resource uses one stream.
MTPOutOfResources	This counter represents the total number of times Cisco Unified CallManager attempted but failed to allocate an MTP resource from one MTP device that is registered with Cisco Unified CallManager. This also means that no transcoders were available to act as MTPs.
MTPResourceActive	This counter represents the total number of MTP resources that are currently in use (active) on all MTP devices that are registered with a Cisco Unified CallManager. Each MTP resource uses two streams. An MTP in use represents one MTP resource that has been allocated for use in a call.

Table 23-3 Cisco CallManager (continued)

Counters	Counter Descriptions
MTPResourceAvailable	This counter represents the total number of MTP resources that are not in use and are available to be allocated on all MTP devices that are registered with Cisco Unified CallManager. Each MTP resource uses two streams. An MTP in use represents one MTP resource that has been allocated for use in a call.
MTPResourceTotal	This counter represents the total number of media termination point (MTP) resources that are provided by all MTP devices that are currently registered with Cisco Unified CallManager.
PartiallyRegisteredPhone	This counter represents the number of partially registered SIP phones.
PRIChannelsActive	This counter represents the number of PRI voice channels that are in an active call on a Cisco Unified CallManager.
PRISpansInService	This counter represents the number of PRI spans that are currently available for use.
RegisteredAnalogAccess	This counter represents the number of registered Cisco analog access gateways that are registered with system. The count does not include the number of Cisco analog access ports.
RegisteredHardwarePhones	This counter represents the number of Cisco hardware IP phones (for example, Cisco Unified IP Phone models 7960, 7940, 7910, and so on.) that are currently registered in the system.
RegisteredMGCPGateway	This counter represents the number of MGCP gateways that are currently registered in the system.
RegisteredOtherStationDevices	This counter represents the number of station devices other than Cisco hardware IP phones that are currently registered in the system (for example, Cisco IP SoftPhone, CTI port, CTI route point, Cisco voice-mail port).
SIPLineServerAuthorizationChallenges	This counter represents the number of authentication challenges for incoming SIP requests that the Cisco Unified CallManager server issued to SIP phones. An authentication challenge occurs when a SIP phone with Digest Authentication enabled sends a SIP line request to Cisco Unified CallManager.
SIPLineServerAuthorizationFailures	This counter represents the number of authentication challenge failures for incoming SIP requests from SIP phones to the Cisco Unified CallManager server. An authentication failure occurs when a SIP phone with Digest Authentication enabled sends a SIP line request with bad credentials to Cisco Unified CallManager.
SIPTrunkApplicationAuthorization	This counter represents the number of application-level authorization checks for incoming SIP requests that the Cisco Unified CallManager server issued to SIP trunks. An application-level authorization check occurs when the Cisco Unified CallManager system compares an incoming SIP request to the application-level settings on the SIP Trunk Security Profile window in Cisco Unified CallManager Administration.
SIPTrunkApplicationAuthorizationFailures	This counter represents the number of application-level authorization failures for incoming SIP requests that occurred on Cisco Unified CallManager SIP trunks. An application-level authorization failure occurs when Cisco Unified CallManager compares an incoming SIP request to the application-level settings on the SIP Trunk Security Profile window in Cisco Unified CallManager Administration and finds that application-level authorization for one or more of the features on that window is not allowed.

Table 23-3 Cisco CallManager (continued)

Counters	Counter Descriptions
SIPTrunkServerAuthenticationChallenges	This counter represents the number of authentication challenges for incoming SIP requests that Cisco Unified CallManager issued to SIP trunks. An authentication challenge occurs when a SIP trunk with Digest Authentication enabled sends a SIP request to Cisco Unified CallManager.
SIPTrunkServerAuthenticationFailures	This counter represents the number of authentication challenge failures that occurred for incoming SIP requests from SIP trunks to Cisco Unified CallManager. An authentication failure occurs when a SIP trunk with Digest Authentication enabled sends a SIP request with bad credentials to Cisco Unified CallManager.
SWConferenceActive	This counter represents the number of active conferences on all software conference devices that are registered with Cisco Unified CallManager.
SWConferenceCompleted	This counter represents the total number of conferences that used a software conference bridge that was allocated from a Cisco Unified CallManager and that have been completed, which means that the conference bridge has been allocated and released. A conference activates when the first call connects to the bridge. The conference completes when the last call disconnects from the bridge.
SWConferenceOutOfResources	This counter represents the total number of times that Cisco Unified CallManager attempted to allocate a software conference resource from those that are registered to Cisco Unified CallManager when none were available. Counter includes failed attempts to add a new participant to an existing conference.
SWConferenceResourceActive	This counter represents the total number of conference resources that are in use on all software conference devices that are registered with Cisco Unified CallManager. The system considers a conference to be active when one or more calls connect to a bridge. One resource is equal to one stream.
SWConferenceResourceAvailable	This counter represents the number of new software-based conferences that can be started at the same time, for Cisco Unified CallManager. You must have a minimum of three streams available for each new conference.One resource is equal to one stream
SWConferenceResourceTotal	This counter represents the total number of software conference resources that are provided by all software conference bridge devices that are currently registered with Cisco Unified CallManager.
SystemCallsAttempted	This counter represents the total number of server originated calls and attempted calls to the Unity Message waiting indicator (MWI).
T1ChannelsActive	This counter represents the number of T1 CAS voice channels that are in an active call on a Cisco Unified CallManager.
T1SpansInService	This counter represents the number of T1 CAS spans that are currently available for use.
TLSConnectedSIPTrunks	This counter represents the number of SIP trunks that are configured and connected via Transport Layer Security (TLS).
TLSConnectedWSM	This counter represents the number of WSM Connectors that is configured and connected to Motorola WSM via Transport Layer Security (TLS).
TranscoderOutOfResources	This counter represents the total number of times that Cisco Unified CallManager attempted to allocate a transcoder resource from a transcoder device that is registered to a Cisco Unified CallManager when none was available.

Table 23-3 Cisco CallManager (continued)

Counters	Counter Descriptions
TranscoderResourceActive	This counter represents the total number of transcoders that are in use on all transcoder devices that are registered with Cisco Unified CallManager. A transcoder in use represents one transcoder resource that has been allocated for use in a call. Each transcoder resource uses two streams.
TranscoderResourceAvailable	This counter represents the total number of transcoders that are not in use and that are available to be allocated on all transcoder devices that are registered with Cisco Unified CallManager. Each transcoder resource uses two streams.
TranscoderResourceTotal	This counter represents the total number of transcoder resources that are provided by all transcoder devices that are currently registered with Cisco Unified CallManager.
VCBConferenceActive	This counter represents the total number of active video conferences on all video conference bridge devices that are registered with Cisco Unified CallManager.
VCBConferenceAvailable	This counter represents the total number of new video conferences on all video conference bridge devices that are registered with Cisco Unified CallManager.
VCBConferenceCompleted	This counter represents the total number of video conferences that used a video conference bridge that are allocated from Cisco Unified CallManager and that have been completed, which means that the conference bridge has been allocated and released. A conference activates when the first call connects to the bridge. The conference completes when the last call disconnects from the bridge.
VCBConferenceTotal	This counter represents the total number of video conferences that are supported on all video conference bridge devices that are registered with Cisco Unified CallManager.
VCBOutOfConferences	This counter represents the total number of times that Cisco Unified CallManager attempted to allocate a video conference resource from those that are registered to Cisco Unified CallManager when none was available.
VCBOutOfResources	This counter represents the total number of failed new video conference requests. A conference request can fail because, for example, the configured number of conferences is already in use.
VCBResourceActive	This counter represents the total number of video conference resources that are currently in use on all video conference devices that are registered with Cisco Unified CallManager.
VCBResourceAvailable	This counter represents the total number of video conference resources that are not active and are currently available.
VCBResourceTotal	This counter represents the total number of video conference resources that are provided by all video conference bridge devices that are currently registered with Cisco Unified CallManager.
VideoCallsActive	This counter represents the number of active video calls with active video streaming connections on all video conference bridge devices that are registered with Cisco Unified CallManager.

Table 23-3 Cisco CallManager (continued)

Counters	Counter Descriptions
VideoCallsCompleted	This counter represents the number of video calls that were actually connected with video streams and then released.
VideoOutOfResources	This counter represents the total number of times that Cisco Unified CallManager attempted to allocate a video-streaming resource from one of the video conference bridge devices that is registered to Cisco Unified CallManager when none was available.

Cisco CallManager Attendant Console

The Cisco CallManager Attendant Console (Cisco CallManager Attendant Console Server service) object provides information about the Cisco Unified CallManager Attendant Console. Table 23-4 contains information about Cisco CallManager Attendant Console counters.

Table 23-4 Cisco CallManager Attendant Console

Counters	Counter Descriptions
CallsActive	Do not use this counter. Information in this counter may not accurately reflect the total number of active calls.
CallsRedirected	This counter represents the total number of redirected calls for the Cisco CallManager Attendant Console Server service. This number increases every time that a pilot point receives a call and redirects the call to a member of its hunt group.
CallsTotal	This counter represents the total number of all calls that have been made since the Cisco CallManager Attendant Console Server service started.
CcmLineLinkState	This counter represents the line state. Values include 0, 1, 10, or 11. A value of 0 indicates that the Cisco CallManager Attendant Console Server service has not registered or has not received line link state information from Cisco CallManager; 1 indicates that the Cisco CallManager Attendant Console Server service has registered and is receiving line link state information from Cisco CallManager; 10 indicates that the Cisco CallManager Attendant Console Server service has logged into CTI but has not registered or has not received line link state information from Cisco CallManager; 11 indicates that the Cisco CallManager Attendant Console Server service has logged into CTI and has registered and is receiving line link state information.
ClientsOnline	This counter represents the total number of Cisco Unified CallManager attendant console clients that are currently online. Attendant Console clients include all users that are configured in the attendant console User Configuration window in Cisco Unified CallManager Administration that are currently online. This number increases by one for each client that goes online and decreases by one for each client that goes offline.
ClientsRegistered	This counter represents the total number of registered clients for the Cisco CallManager Attendant Console Server service. This number increases by one for each new registration of a Cisco Unified CallManager attendant console client when the client application logs in.

Table 23-4 Cisco CallManager Attendant Console (continued)

Counters	Counter Descriptions
ClientsTotal	This counter represents the total number of Cisco Unified CallManager Attendant Console clients that are currently registered with the Cisco CallManager Attendant Console Server service. Attendant console clients represent all users that are configured in the Attendant Console User Configuration window in Cisco Unified CallManager Administration.
HeartBeat	This counter represents the heartbeat of the Cisco CallManager Attendant Console Server service. This incremental count indicates that Cisco CallManager Attendant Console Server service is up and running. If the count does not increase, this means that the service is down.
LinesActive	Do not use this counter. Information in this counter may not accurately reflect the total number of active lines.
LinesIdle	Do not use this counter. Information in this counter may not accurately reflect the total number of idle lines.
LinesTotal	Do not use this counter. Information in this counter may not accurately reflect the total number of lines.
PilotPointsTotal	This counter represents the total number of pilot points that are configured in Cisco Unified CallManager.
StartTime	This counter represents the time in milliseconds since the Cisco CallManager Attendant Console Server service started. The real-time clock in the computer, which is simply a reference point that indicates the current time and the time that has elapsed, in milliseconds, since the service started provides the basis for this time. The reference point specifies midnight, January 1, 1970.
Version	This counter represents the version of the Cisco CallManager Attendant Console Server service.

Cisco CallManager System Performance

The Cisco CallManager System Performance object provides system performance information about Cisco Unified CallManager. Table 23-5 contains information about Cisco CallManager system performance counters.

Table 23-5 Cisco CallManager System Performance

Counters	Counter Descriptions
AverageExpectedDelay	This counter represents the current average expected delay before any incoming message gets handled.
CallsRejectedDueToCallThrottling	This counter represents the total number of calls that were rejected since the start of service due to call throttling.
CallThrottlingGenericCounter3	This counter represents a generic counter that is used for call-throttling purpose.
CodeRedEntryExit	This counter indicates whether Cisco Unified CallManager has entered or exited a Code Red state (call-throttling mode). Valid values include 0 (Exit) and 1 (Entry).

Table 23-5 Cisco CallManager System Performance (continued)

Counters	Counter Descriptions
CodeYellowEntryExit	This counter indicates whether Cisco Unified CallManager has entered or exited a Code Yellow state (call-throttling mode). Valid values include 0 (Exit) and 1 (Entry).
EngineeringCounter1	Do not use this counter unless directed by a Cisco Engineering Special build. Cisco uses information in this counter for diagnostic purposes.
EngineeringCounter2	Do not use this counter unless directed by a Cisco Engineering Special build. Cisco uses information in this counter for diagnostic purposes.
EngineeringCounter3	Do not use this counter unless directed by a Cisco Engineering Special build. Cisco uses information in this counter for diagnostic purposes.
EngineeringCounter4	Do not use this counter unless directed by a Cisco Engineering Special build. Cisco uses information in this counter for diagnostic purposes.
EngineeringCounter5	Do not use this counter unless directed by a Cisco Engineering Special build. Cisco uses information in this counter for diagnostic purposes.
EngineeringCounter6	Do not use this counter unless directed by a Cisco Engineering Special build. Cisco uses information in this counter for diagnostic purposes.
EngineeringCounter7	Do not use this counter unless directed by a Cisco Engineering Special build. Cisco uses information in this counter for diagnostic purposes.
EngineeringCounter8	Do not use this counter unless directed by a Cisco Engineering Special build. Cisco uses information in this counter for diagnostic purposes.
QueueSignalsPresent 1-High	This counter indicates the number of high-priority signals in the Cisco Unified CallManager queue. High-priority signals include timeout events, internal Cisco Unified CallManager keepalives, certain gatekeeper events, and internal process creation, among other events. A large number of high-priority events will cause degraded performance on Cisco Unified CallManager and result in slow call connection or loss of dial tone. Use this counter in conjunction with the QueueSignalsProcessed 1-High counter to determine the processing delay on Cisco Unified CallManager.
QueueSignalsPresent 2-Normal	This counter indicates the number of normal-priority signals in the Cisco Unified CallManager queue. Normal-priority signals include call-processing functions, key presses, on-hook and off-hook notifications, among other events. A large number of normal-priority events will cause degraded performance on Cisco Unified CallManager, sometimes resulting in delayed dial tone, slow call connection, or loss of dial tone. Use this counter in conjunction with the QueueSignalsProcessed 2-Normal counter to determine the call-processing delay on Cisco Unified CallManager. Remember that high-priority signals must complete before normal-priority signals begin to process, so check the high-priority counters as well to get an accurate picture of the potential delay.
QueueSignalsPresent 3-Low	This counter indicates the number of low-priority signals in the Cisco Unified CallManager queue. Low-priority signals include station device registration (except the initial station registration request message), among other events. A large number of signals in this queue could result in delayed device registration, among other events.

Table 23-5 Cisco CallManager System Performance (continued)

Counters	Counter Descriptions
QueueSignalsPresent 4-Lowest	This counter indicates the number of lowest priority signals in the Cisco Unified CallManager queue. Lowest priority signals include the initial station registration request message during device registration, among other events. A large number of signals in this queue could result in delayed device registration, among other events.
QueueSignalsProcessed 1-High	This counter indicates the number of high-priority signals that Cisco Unified CallManager processes for each 1-second interval. Use this counter in conjunction with the QueueSignalsPresent 1-High counter to determine the processing delay on this queue.
QueueSignalsProcessed 2-Normal	This counter indicates the number of normal-priority signals that Cisco Unified CallManager processes for each 1-second interval. Use this counter in conjunction with the QueueSignalsPresent 2-Normal counter to determine the processing delay on this queue. Remember that high-priority signals get processed before normal-priority signals.
QueueSignalsProcessed 3-Low	This counter indicates the number of low-priority signals that Cisco Unified CallManager processes for each 1-second interval. Use this counter in conjunction with the QueueSignalsPresent 3-Low counter to determine the processing delay on this queue. The number of signals processed gives an indication of how much device registration activity is being processed in this time interval.
QueueSignalsProcessed 4-Lowest	This counter indicates the number of lowest priority signals that Cisco Unified CallManager processes for each 1-second interval. Use this counter in conjunction with the QueueSignalsPresent 4-Lowest counter to determine the processing delay on this queue. The number of signals that are processed gives an indication of how many devices began the Cisco Unified CallManager registration process in this time interval.
QueueSignalsProcessed Total	This counter provides a sum total of all queue signals that Cisco Unified CallManager processes for each 1-second period for all queue levels: high, normal, low, and lowest.
SkinnyDevicesThrottled	This counter represents the total number of Skinny devices that are being throttled. A Skinny device gets throttled (asked to shut down and reregister) when the total number of events that the Skinny device generated exceeds the configured maximum threshold value (default value specifies 2000 events) within a 5-second interval.
ThrottlingSampleActivity	This counter indicates how many samples, out of the configured sample size, have non-zero averageExpectedDelay values. This counter gets reset when any sample has an averageExpectedDelay value of zero. This process repeats for each batch of samples. A batch represents the configured sample size.
TotalCodeYellowEntry	This counter indicates the number of times that Cisco Unified CallManager call processing enters the code yellow state. This counter remains cumulative from the start of the Cisco Unified CallManager process.

Cisco CTIManager

The Cisco CTI Manager object provides information about Cisco CTI Manager. Table 23-6 contains information about Cisco CTIManager counters.

Table 23-6 Cisco CTI Manager

Counters	Counter Descriptions
CcmLinkActive	This counter represents the total number of active Cisco Unified CallManager links. CTI Manager maintains links to all active Cisco Unified CallManagers in the cluster.
CTIConnectionActive	This counter represents the total number of CTI clients that are currently connected to the CTIManager. This counter increases by one when new connection is established and decreases by one when a connection is released. The CTIManager service parameter MaxCTIConnections determines the maximum number of active connections.
DevicesOpen	This counter represents the total number of devices that are configured in Cisco Unified CallManager that CTI applications control and/or monitor. Devices include hardware IP phones, CTI ports, CTI route points, and so on.
LinesOpen	This counter represents the total number of lines that are configured in Cisco Unified CallManager that control and/or monitor CTI applications.
QbeVersion	This counter represents the version number of the Quick Buffer Encoding (QBE) interface that the CTIManager uses.

Cisco Dual-Mode Mobility

The Cisco Dual-Mode Mobility object provides information about the dual-mode mobility application on Cisco Unified CallManager. Table 23-6 contains information about Cisco Dual-Mode Mobility counters.

Table 23-7 Cisco Dual-Mode Mobility

Counters	Counter Descriptions
CallsAnchored	This counter represents the number of calls that are placed or received on dual-mode phones that are anchored in Cisco Unified CallManager. The counter increments when a call is received from or placed to a dual-mode phone. The counter increments twice if a dual-mode phone calls another dual-mode phone.
DMMSRegistered	This counter represents the number of Dual-mode Mobile Station (DMMS) subscribers that are registered in the wireless LAN (WLAN).
FollowMeAborted	This counter represents the number of failed follow-me operations.
FollowMeAttempted	This counter represents the number of follow-me operations that Cisco Unified CallManager attempted. The counter increments when a SIP 302 - Moved Temporarily message is received from the Wireless Service Manager (WSM) and Cisco Unified CallManager redirects the call to the DMMS in WLAN.
FollowMeCompleted	This counter represents the number of follow-me operations that were successfully completed. The counter increments when the DMMS in WLAN answers the call and the media (voice path) is successfully established with the calling device.
FollowMeInProgress	This counter represents the number of follow-me operations that are currently in progress. The counter increments when a follow-me is attempted, and it decrements when the follow-me operation is aborted or completed.
H1HandOutAttempted	This counter represents the number of H1 hand-out operations that dual-mode phones attempt. The counter increments when Cisco Unified CallManager processes a call to the H1 number from a DMMS.
H1HandOutCompleted	This counter represents the number of successfully completed H1 hand-out operations The counter increments when the DMMS in WLAN successfully reestablishes a media (voice path).
H2HandOutCompleted	This counter represents the number of successfully completed H2 hand-out operations. The counter increments when the DMMS in WLAN successfully reestablishes a media (voice path).
H2HandOutsAttempted	This counter represents the number of H2 hand-out operations that dual-mode phones attempt. The counter increments when Cisco Unified CallManager receives a call to the H2 number from a DMMS.
HandInAborted	This counter represents the number of hand-in operations that failed.
HandInAttempted	This counter represents the number of hand-in operations that dual-mode phones attempt.
HandInCompleted	This counter represents the number of successfully completed hand-in operations. The counter increments when the DMMS in WLAN successfully reestablishes a media (voice path).

Table 23-7 Cisco Dual-Mode Mobility (continued)

Counters	Counter Descriptions
HandInInProgress	This counter represents the number of hand-in operations that are currently in progress. The counter increments when a hand-in is attempted, and the counter decrements when the hand-in is aborted or completed.
HandOutAborted	This counter represents the number of hand-out operations that failed.
HandOutInProgress	This counter represents the number of H1 and H2 hand-out operations that are currently in progress. The counter increments when a H1 or H2 hand-out is attempted, and it decrements when the hand-out is aborted or completed.

Cisco Extension Mobility

The Cisco Extension Mobility object provides information about the extension mobility application. Table 23-8 contains information about Cisco Extension Mobility counters.

Table 23-8 Cisco Extension Mobility Application

Counters	Counter Descriptions
RequestsHandled	This counter represents the total number of HTTP requests that the extension mobility application handled since the last restart of the Cisco CallManager service. A typical login would constitute two HTTP requests: one to query the initial login state of the device and another to log in the user on a device. Similarly, a typical logout also results in two HTTP requests.
RequestsInProgress	This counter represents the number of HTTP requests that the extension mobility application currently is handling. A typical login would constitute two HTTP requests: one to query the initial login state of the device and another to log in the user on a device. Similarly, a typical logout also results in two HTTP requests.
RequestsThrottled	This counter represents the total number of Login/Logout Requests that failed due to throttling.
LoginsSuccessful	This counter represents the total number of successful login requests that were completed through EM Service.
LogoutsSuccessful	This counter represents the total number of successful logout requests that were completed through EM Service
Total Login/LogoutRequestsAttempted	This counter represents the total number of Login and Logout requests that were attempted through this EM Service. This number includes both successful and unsuccessful attempts.

Cisco Gatekeeper

The Cisco Gatekeeper object provides information about registered Cisco gatekeeper devices. Table 23-9 contains information about Cisco gatekeeper device counters.

Table 23-9 Cisco Gatekeeper

Counters	Counter Descriptions
ACFsReceived	This counter represents the total number of RAS Admission Confirm messages that are received from the configured gatekeeper and its alternate gatekeepers.
ARQsAttempted	This counter represents the total number of RAS Admission Request messages that are attempted by using the configured gatekeeper and its alternate gatekeepers.
RasRetries	This counter represents the number of retries due to loss or delay of all RAS acknowledgement messages on the configured gatekeeper and its alternate gatekeepers.
VideoOutOfResources	This counter represents the total number of video-stream requests to the configured gatekeeper or its alternate gatekeepers that failed, most likely due to lack of bandwidth.

Cisco H.323

The Cisco H.323 object provides information about registered Cisco H.323 devices. Table 23-10 contains information about Cisco H.323 device counters.

Table 23-10 Cisco H.323

Counters	Counter Descriptions
CallsActive	This counter represents the number of streaming connections that are currently active (in use) on the configured H.323 device; in other words, the number of calls that actually have a voice path that is connected.
CallsAttempted	This counter represents the total number of calls that have been attempted on a device, including both successful and unsuccessful call attempts.
CallsCompleted	This counter represents the total number of successful calls that were made from a device.
CallsInProgress	This counter represents the number of calls that are currently in progress on a device.
VideoCallsActive	This counter represents the number of video calls with video streaming connections that are currently active (in use) on all H.323 trunks that are registered with a Cisco Unified CallManager; in other words, the number of calls that actually have video-streaming connections on a Cisco Unified CallManager.
VideoCallsCompleted	This counter represents the number of video calls that were actually connected with video streams for all H.323 trunks that were registered with a Cisco Unified CallManager. This number increases when the call terminates.

Cisco Hunt Lists

The Cisco Hunt Lists object provides information about the hunt lists that are defined in Cisco Unified CallManager administration. Table 23-11 contains information about Cisco hunt list counters.

Table 23-11 Cisco Hunt Lists

Counters	Counter Descriptions
CallsAbandoned	This counter represents the number of abandoned calls that occurred through a hunt list. An abandoned call represents one in which a caller hangs up before the call is answered.
CallsActive	This counter represents the number of calls that are currently active (in use) that occurred through a hunt list. An active call represents one that gets distributed and answered, and to which a voice path connects.
CallsBusyAttempts	This counter represents the number of times that calls through a hunt list were attempted when all members of the line and/or route groups were busy.
CallsInProgress	This counter represents the number of calls that are currently in progress through a hunt list. A call in progress represents one that the Call Distributor is attempting to extend to a member of a line or route group and that has not yet been answered. Examples of a hunt list member include a line, a station device, a trunk device, or a port/channel of a trunk device.
CallsRingNoAnswer	This counter represents the total number of calls through a hunt list that rang but that called parties did not answer.
HuntListInService	This counter specifies whether the particular hunt list is currently in service. A value of 0 indicates that the hunt list is out of service; a value of 1 indicates that the hunt list is in service. Reasons that a hunt list could be out of service include the hunt list is not running on a primary Cisco Unified CallManager based on its Cisco Unified CallManager Group or the hunt list has been disabled in Cisco Unified CallManager Administration.
MembersAvailable	This counter represents the total number of available or idle members of line and route groups that belong to an in-service hunt list. An available member currently handles a call and will accept a new call. An idle member does not handle any call and will accept a new call. A hunt list member can comprise a route group, line group, or a combination. A member of a line group represents a directory number of a line on an IP phone or a voice-mail port. A member of a route group represents a station gateway, a trunk gateway, or port/channel of a trunk gateway.

Cisco HW Conference Bridge Device

The Cisco HW Conference Bridge Device object provides information about registered Cisco hardware conference bridge devices. Table 23-12 contains information about Cisco hardware conference bridge device counters.

Table 23-12 Cisco HW Conference Bridge Device

Counters	Counter Descriptions
HWConferenceActive	This counter represents the number of conferences that are currently active (in use) on a HW conference bridge device. One resource represents one stream.
HWConferenceCompleted	This counter represents the total number of conferences that have been allocated and released on a HW conference device. A conference starts when the first call connects to the bridge. The conference completes when the last call disconnects from the bridge.
OutOfResources	This counter represents the total number of times that an attempt was made to allocate a conference resource from a HW conference device and failed, for example, because all resources were already in use.
ResourceActive	This counter represents the number of resources that are currently in use (active) for this HW conference device.One resource represents one stream.
ResourceAvailable	This counter represents the total number of resources that are not active and are still available to be used now for a HW conference device. One resource represents one stream.
ResourceTotal	This counter represents the total number of resources for a HW conference bridge device. This counter equals the sum of the counters ResourceAvailable and ResourceActive. One resource represents one stream.

Cisco IP Manager Assistant

The Cisco IP Manager Assistant (IPMA) Service object provides information about the Cisco Unified CallManager Assistant application. Table 23-13 contains information on Cisco IPMA counters.

Table 23-13 Cisco IP Manager Assistant Service

Counters	Counter Descriptions
AssistantsActive	This counter represents the number of assistant consoles that are currently active. An active assistant console exists when an assistant is logged in from his or her assistant console desktop application.
LinesOpen	This counter represents the number of phone lines that the Cisco Unified CallManager Assistant application opened. An open phone line exists when the application assumes line control from CTI.
ManagersActive	This counter represents the current number of managers that the Cisco IPMA is servicing.
SessionsCurrent	This counter represents the total number of managers assistants that are currently using the Cisco Unified CallManager Assistant application. Each manager and each assistant constitutes an active session, so for one manager/assistant pair, this counter would reflect two sessions.

Cisco Lines

The Cisco Lines object represents the number of Cisco lines (directory numbers) that can dial and connect to a device. Lines represent all directory numbers that terminate on an endpoint. The directory number that is assigned to it identifies the line. The Cisco Lines object does not include directory numbers that include wildcards such as a pattern for a Digital or Analog Access gateway.

The Active counter represents the state of the line, either active or not active. A zero indicates the line is not in use. When the number is greater than zero, this indicates that the line is active, and the number represents the number of calls that are currently in progress on that line. If more than one call is active, this indicates the call is on hold either because of being placed on hold specifically (user hold) or because of a network hold operation (for example, a transfer is in progress, and it is on transfer hold). This applies to all directory numbers that are assigned to any device.

Cisco Locations

The Cisco Location object provides information about locations that are defined in Cisco Unified CallManager. Table 23-14 contains information on Cisco location counters.

Table 23-14 Cisco Locations

Counters	Counter Descriptions
BandwidthAvailable	This counter represents the current bandwidth in a given location. A value of 0 indicates that no bandwidth is available.
BandwidthMaximum	This counter represents the maximum bandwidth that is available in a given location. A value of 0 indicates that infinite bandwidth is available.
CallsInProgress	This counter represents the number of calls that are currently in progress on a particular Cisco Unified CallManager.
OutOfResources	This counter represents the total number of times that a call on a particular Cisco Unified CallManager through the location failed due to lack of bandwidth.
RSVP AudioReservationErrorCounts	This counter represents the number of RSVP reservation errors in the audio stream.
RSVP MandatoryConnectionsInProgress	This counter represents the number of connections with mandatory RSVP that are in progress.
RSVP OptionalConnectionsInProgress	This counter represents the number of connections with optional RSVP that are in progress.
RSVP TotalCallsFailed	This counter represents the number of total calls that failed due to a RSVP reservation failure.
RSVP VideoCallsFailed	This counter represents the number of video calls that failed due to a RSVP reservation failure.
RSVP VideoReservationErrorCounts	This counter represents the number of RSVP reservation errors in the video stream
VideoBandwidthAvailable	This counter represents the bandwidth that is currently available for video in the location where the person who initiated the video conference resides. A value of 0 indicates that no bandwidth is available.

Table 23-14 Cisco Locations (continued)

Counters	Counter Descriptions
VideoBandwidthMaximum	This counter represents the maximum bandwidth that is available for video in the location where the person who initiated the video conference resides. A value of 0 indicates that no bandwidth is allocated for video.
VideoOutOfResources	This counter represents the total number of failed video-stream requests (most likely due to lack of bandwidth) in the location where the person who initiated the video conference resides.

Cisco Media Streaming Application

The Cisco IP Voice Media Streaming Application object provides information about the registered MTPs, MOH servers, conference bridge servers, and annunciators. Table 23-15 contains information on Cisco IP Voice Media Streaming Application counters.

Note One object exists for each Cisco Unified CallManager in the Cisco Unified CallManager group that is associated with the device pool that the annunciator device is configured to use.

Table 23-15 Cisco Media Streaming Application

Counter	Counter Descriptions
ANNConnectionsLost	This counter represents the total number of times since the last restart of the Cisco IP Voice Media Streaming Application that a Cisco Unified CallManager connection was lost.
ANNConnectionState	For each Cisco Unified CallManager that is associated with an annunciator, this counter represents the current registration state to Cisco Unified CallManager; 0 indicates no registration to Cisco Unified CallManager; 1 indicates registration to the primary Cisco Unified CallManager; 2 indicates connection to the secondary Cisco Unified CallManager (connected to Cisco Unified CallManager but not registered until the primary Cisco Unified CallManager connection fails).
ANNConnectionsTotal	This counter represents the total number of annunciator instances that have been started since the Cisco IP Voice Media Streaming Application service started.
ANNInstancesActive	This counter represents the number of actively playing (currently in use) announcements.
ANNStreamsActive	This counter represents the total number of currently active simplex (one direction) streams for all connections. Each stream direction counts as one stream. One internal stream provides the audio input and another output stream to the endpoint device.
ANNStreamsAvailable	This counter represents the remaining number of streams that are allocated for the annunciator device that are available for use. This counter starts as 2 multiplied by the number of configured connections (defined in the Cisco IP Voice Media Streaming App service parameter for the Annunciator, Call Count) and is reduced by one for each active stream that started.
ANNStreamsTotal	This counter represents the total number of simplex (one direction) streams that connected to the annunciator device since the Cisco IP Voice Media Streaming Application service started.

Table 23-15 Cisco Media Streaming Application (continued)

Counter	Counter Descriptions
CFBConferencesActive	This counter represents the number of active (currently in use) conferences.
CFBConferencesTotal	This counter represents the total number of conferences that started since the Cisco IP Voice Media Streaming Application service started.
CFBConnectionsLost	This counter represents the total number of times since the last restart of the Cisco IP Voice Media Streaming Application that a Cisco Unified CallManager connection was lost.
CFBConnectionState	For each Cisco Unified CallManager that is associated with a SW Conference Bridge, this counter represents the current registration state to Cisco Unified CallManager; 0 indicates no registration to Cisco Unified CallManager; 1 indicates registration to the primary Cisco Unified CallManager; 2 indicates connection to the secondary Cisco Unified CallManager (connected to Cisco Unified CallManager but not registered until the primary Cisco Unified CallManager connection fails).
CFBStreamsActive	This counter represents the total number of currently active simplex (one direction) streams for all conferences. Each stream direction counts as one stream. In a three-party conference, the number of active streams equals 6.
CFBStreamsAvailable	This counter represents the remaining number of streams that are allocated for the conference bridge that are available for use. This counter starts as 2 multiplied by the number of configured connections (defined in the Cisco IP Voice Media Streaming App service parameter for Conference Bridge, Call Count) and is reduced by one for each active stream started.
CFBStreamsTotal	This counter represents the total number of simplex (one direction) streams that connected to the conference bridge since the Cisco IP Voice Media Streaming Application service started.
MOHAudioSourcesActive	This counter represents the number of active (currently in use) audio sources for this MOH server. Some of these audio sources may not be actively streaming audio data if no devices are listening. The exception exists for multicast audio sources, which will always be streaming audio. When an audio source is in use, even after the listener has disconnected, this counter will always have one input stream for each configured MOH codec. For unicast streams, the stream may exist in a suspended state where no audio data is received until a device connects to listen to the stream. Each MOH multicast resource uses one stream for each audio source and codec combination. For example, if the default audio source is configured for multicast, G.711 mu-law and wideband codecs, then two streams get used (default audio source + G.711 mu-law and default audio source + wideband).
MOHConnectionsLost	This counter represents the total number of times since the last restart of the Cisco IP Voice Media Streaming Application that a Cisco Unified CallManager connection was lost.
MOHConnectionState	For each Cisco Unified CallManager that is associated with an MOH, this counter represents the current registration state to Cisco Unified CallManager; 0 indicates no registration to Cisco Unified CallManager; 1 indicates registration to the primary Cisco Unified CallManager; 2 indicates connection to the secondary Cisco Unified CallManager (connected to Cisco Unified CallManager but not registered until the primary Cisco Unified CallManager connection fails).

Table 23-15 Cisco Media Streaming Application (continued)

Counter	Counter Descriptions
MOHStreamsActive	This counter represents the total number of active (currently in use) simplex (one direction) streams for all connections. One output stream exists for each device that is listening to a unicast audio source, and one input stream exists for each active audio source, multiplied by the number of MOH codecs. When an audio source has been used once, it will always have one input stream for each configured MOH codec. For unicast streams, the stream may exist in a suspended state where no audio data is received until a device connects to listen to the stream. Each MOH multicast resource uses one stream for each audio source and codec combination. For example, if the default audio source is configured for multicast, G.711 mu-law and wideband codecs, then two streams get used (default audio source + G.711 mu-law and default audio source + wideband).
MOHStreamsAvailable	This counter represents the remaining number of streams that are allocated for the MOH device that are available for use. This counter starts as 408 plus the number of configured half-duplex unicast connections and is reduced by 1 for each active stream that started. The counter gets reduced by 2 for each multicast audio source, multiplied by the number of MOH codecs that are configured. The counter gets reduced by 1 for each unicast audio source, multiplied by the number of MOH codecs configured.
MOHStreamsTotal	This counter represents the total number of simplex (one direction) streams that have connected to the MOH server since the Cisco IP Voice Media Streaming Application service started.
MTPConnectionsLost	This counter represents the total number of times since the last restart of the Cisco IP Voice Streaming Application that a Cisco Unified CallManager connection was lost.
MTPConnectionState	For each Cisco Unified CallManager that is associated with an MTP, this counter represents the current registration state to Cisco Unified CallManager; 0 indicates no registration to Cisco Unified CallManager; 1 indicates registration to the primary Cisco Unified CallManager; 2 indicates connection to the secondary Cisco Unified CallManager (connected to Cisco Unified CallManager but not registered until the primary Cisco Unified CallManager connection fails).
MTPConnectionsTotal	This counter represents the total number of MTP instances that have been started since the Cisco IP Voice Media Streaming Application service started.
MTPInstancesActive	This counter represents the number of active (currently in use) instances of MTP.
MTPStreamsActive	This counter represents the total number of currently active simplex (one direction) streams for all connections. Each stream direction counts as one stream.
MTPStreamsAvailable	This counter represents the remaining number of streams that are allocated for the MTP device that are available for use. This counter starts as 2 multiplied by the number of configured connections (defined in the Cisco IP Voice Media Streaming App service parameter for MTP, Call Count) and is reduced by one for each active stream started.
MTPStreamsTotal	This counter represents the total number of simplex (one direction) streams that connected to the MTP device since the Cisco IP Voice Media Streaming Application service started.

Cisco Messaging Interface

The Cisco Messaging Interface object provides information about the Cisco Messaging Interface (CMI) service. Table 23-16 contains information on Cisco Messaging Interface (CMI) counters.

Table 23-16 Cisco Messaging Interface

Counters	Counter Descriptions
HeartBeat	This counter represents the heartbeat of the CMI service. This incremental count indicates that the CMI service is up and running. If the count does not increase (increment), the CMI service is down.
SMDIMessageCountInbound	This counter represents the running count of inbound SMDI messages since the last restart of the CMI service.
SMDIMessageCountInbound24Hour	This counter represents the rolling count of inbound SMDI messages in the last 24 hours.
SMDIMessageCountOutbound	This counter represents the running count of outbound SMDI messages since the last restart of the CMI service.
SMDIMessageCountOutbound24Hour	This counter represents the rolling count of outbound SMDI messages in the last 24 hours.
StartTime	This counter represents the time in milliseconds when the CMI service started. The real-time clock in the computer, which simply acts as a reference point that indicates the current time and the time that has elapsed, in milliseconds, since the service started, provides the basis for this time. The reference point specifies midnight, January 1, 1970.

Cisco MGCP FXO Device

The Cisco Media Gateway Control Protocol (MGCP) Foreign Exchange Office (FXO) Device object provides information about registered Cisco MGCP FXO devices. Table 23-17 contains information on Cisco MGCP FXO device counters.

Table 23-17 Cisco MGCP FXO Device

Counters	Counter Descriptions
CallsCompleted	This counter represents the total number of successful calls that were made from the port on an MGCP FXO device.
OutboundBusyAttempts	This counter represents the total number of times that a call through the port on this MGCP FXO device was attempted when no voice channels were available.
PortStatus	This counter represents the status of the FXO port associated with this MGCP FXO device.

Cisco MGCP FXS Device

The Cisco MGCP Foreign Exchange Station (FXS) Device object provides information about registered Cisco MGCP FXS devices. One instance of this object gets created for each port on a Cisco Catalyst 6000 24 port FXS Analog Interface Module gateway. For example, a fully configured Catalyst 6000 Analog Interface Module would represent 24 separate instances of this object. Table 23-18 contains information on Cisco MGCP FXS device counters.

Table 23-18 Cisco MGCP FXS Device

Counters	Counter Descriptions
CallsCompleted	This counter represents the total number of successful calls that were made from this port on the MGCP FXS device.
OutboundBusyAttempts	This counter represents the total number of times that a call through this port on the MGCP FXS device was attempted when no voice channels were available.
PortStatus	This counter represents the status of the FXS port that is associated with a MGCP FXS device.

Cisco MGCP Gateways

The Cisco MGCP Gateways object provides information about registered MGCP gateways. Table 23-19 contains information on Cisco MGCP gateway counters.

Table 23-19 Cisco MGCP Gateways

Counters	Counter Descriptions
BRIChannelsActive	This counter represents the number of BRI voice channels that are currently active in a call in the gateway
BRISpansInService	This counter represents the number of BRI spans that are currently available for use in the gateway.
FXOPortsActive	This counter represents the number of FXO ports that are currently active in a call in the gateway.
FXOPortsInService	This counter represents the number of FXO ports that are currently available for use in the gateway.
FXSPortsActive	This counter represents the number of FXS ports that are currently active in a call in the gateway.
FXSPortsInService	This counter represents the number of FXS ports that are currently available for use in the gateway.
PRIChannelsActive	This counter represents the number of PRI voice channels that are currently active in a call in the gateway.
PRISpansInService	This counter represents the number of PRI spans that are currently available for use in the gateway.
T1ChannelsActive	This counter represents the number of T1 CAS voice channels that are currently active in a call in the gateway.
T1SpansInService	This counter represents the number of T1 CAS spans that are currently available for use in the gateway.

Cisco MGCP PRI Device

The Cisco MGCP Primary Rate Interface (PRI) Device object provides information about registered Cisco MGCP PRI devices. Table 23-20 contains information on Cisco MGCP PRI device counters.

Table 23-20 Cisco MGCP PRI Device

Counters	Counter Descriptions
CallsActive	This counter represents the number of calls that are currently active (in use) on this MGCP PRI device.
CallsCompleted	This counter represents the total number of successful calls that were made from this MGCP PRI device.
Channel 1 Status through Channel 15 Status (consecutively numbered)	This counter represents the status of the indicated B-Channel that is associated with a MGCP PRI device. Possible values: 0 (Unknown) indicates that the status of the channel could not be determined; 1 (Out of service) indicates that this channel is not available for use; 2 (Idle) indicates that this channel has no active call and is ready for use; 3 (Busy) indicates that an active call exists on this channel; 4 (Reserved) indicates that this channel has been reserved for use as a D-Channel or for use as a Synch-Channel for E-1.
Channel 16 Status	This counter represents the status of the indicated B-Channel that is associated with a MGCP PRI Device. Possible values: 0-Unknown, 1-Out of service, 2-Idle, 3-Busy, 4-Reserved, for an E1 PRI Interface, this channel is reserved for use as a D-Channel.
Channel 17 Status through Channel 31 Status (consecutively numbered)	This counter represents the status of the indicated B-Channel that is associated with the MGCP PRI Device. 0-Unknown, 1-Out of service, 2-Idle, 3-Busy, 4-Reserved.
DatalinkInService	This counter represents the state of the Data Link (D-Channel) on the corresponding digital access gateway. This value will be set to 1 (one) if the Data Link is up (in service) or 0 (zero) if the Data Link is down (out of service).
OutboundBusyAttempts	This counter represents the total number of times that a call through an MGCP PRI device was attempted when no voice channels were available.

Cisco MGCP T1 CAS Device

The Cisco MGCP T1 Channel Associated Signaling (CAS) Device object provides information about registered Cisco MGCP T1 CAS devices. Table 23-21 contains information on Cisco MGCP TI CAS device counters.

Table 23-21 Cisco MGCP T1 CAS Device

Counters	Counter Descriptions
CallsActive	This counter represents the number of calls that are currently active (in use) on this MGCP T1 CAS device.
CallsCompleted	This counter represents the total number of successful calls that were made from this MGCP T1 CAS device.

Table 23-21 Cisco MGCP T1 CAS Device (continued)

Counters	Counter Descriptions
Channel 1 Status through Channel 24 Status (consecutively numbered)	This counter represents the status of the indicated B-Channel that is associated with an MGCP T1 CAS device. Possible values: 0 (Unknown) indicates the status of the channel could not be determined; 1 (Out of service) indicates that this channel is not available for use; 2 (Idle) indicates that this channel has no active call and is ready for use; 3 (Busy) indicates that an active call exists on this channel; 4 (Reserved) indicates that this channel has been reserved for use as a D-Channel or for use as a Synch-Channel for E-1.
OutboundBusyAttempts	This counter represents the total number of times that a call through the MGCP T1 CAS device was attempted when no voice channels were available.

Cisco Music On Hold (MOH) Device

The Cisco Music On Hold (MOH) Device object provides information about registered Cisco MOH devices. Table 23-22 contains information on Cisco MOH device counters.

Table 23-22 Cisco MOH Device

Counters	Counter Descriptions
MOHHighestActiveResources	This counter represents the largest number of simultaneously active MOH connections for an MOH server. This number includes both multicast and unicast connections.
MOHMulticastResourceActive	This counter represents the number of currently active multicast connections to multicast addresses that are served by an MOH server. Each MOH multicast resource uses one stream for each audio source and codec combination. For example, if the default audio source is configured for multicast, G.711 mu-law and wideband codecs, two streams get used (default audio source + G.711 mu-law and default audio source + wideband).
MOHMulticastResourceAvailable	This counter represents the number of multicast MOH connections to multicast addresses that are served by an MOH server that are not active and are still available to be used now for the MOH server. Each MOH multicast resource uses one stream for each audio source and codec combination. For example, if the default audio source is configured for multicast, G.711 mu-law and wideband codecs, two streams get used (default audio source + G.711 mu-law and default audio source + wideband).
MOHOutOfResources	This counter represents the total number of times that the Media Resource Manager attempted to allocate an MOH resource when all available resources on all MOH servers that are registered with a Cisco Unified CallManager were already active.
MOHTotalMulticastResources	This counter represents the total number of multicast MOH connections that are allowed to multicast addresses that are served by an MOH server. Each MOH multicast resource uses one stream for each audio source and codec combination. For example, if the default audio source is configured for multicast, G.711 mu-law and wideband codecs, two streams get used (default audio source + G.711 mu-law and default audio source + wideband).

Table 23-22 Cisco MOH Device (continued)

Counters	Counter Descriptions
MOHTotalUnicastResources	This counter represents the total number of unicast MOH connections that are allowed by an MOH server. Each MOH unicast resource uses one stream.
MOHUnicastResourceActive	This counter represents the number of active unicast MOH connections to an MOH server. Each MOH unicast resource uses one stream.
MOHUnicastResourceAvailable	This counter represents the number of unicast MOH connections that are not active and are still available to be used now for an MOH server. Each MOH unicast resource uses one stream.

Cisco MTP Device

The Cisco Media Termination Point (MTP) Device object provides information about registered Cisco MTP devices. Table 23-23 contains information on Cisco MTP device counters.

Table 23-23 Cisco MTP Device

Counters	Counter Descriptions
OutOfResources	This counter represents the total number of times that an attempt was made to allocate an MTP resource from an MTP device and failed; for example, because all resources were already in use.
ResourceActive	This counter represents the number of MTP resources that are currently in use (active) for an MTP device. Each MTP resource uses two streams. An MTP in use represents one MTP resource that has been allocated for use in a call.
ResourceAvailable	This counter represents the total number of MTP resources that are not active and are still available to be used now for an MTP device. Each MTP resource uses two streams. An MTP in use represents one MTP resource that has been allocated for use in a call.
ResourceTotal	This counter represents the total number of MTP resources that an MTP device provides. This counter equals the sum of the counters ResourceAvailable and ResourceActive.

Cisco Phones

The Cisco Phones object provides information about the number of registered Cisco Unified IP Phones, including both hardware-based and other station devices.

The CallsAttempted counter represents the number of calls that have been attempted from this phone. This number increases each time that the phone goes off hook and on hook.

Cisco Presence Feature

The Cisco Presence object provides information about presence subscriptions, such as statistics that are related to the speed dial or call list Busy Lamp Field (BLF) subscriptions. Table 23-24 contains information on Cisco Presence feature.

Table 23-24 Cisco Presence

Counters	Counter Descriptions
ActiveCallListAndTrunkSubscriptions	This counter represents the active presence subscriptions for the call list feature as well as presence subscriptions through SIP trunk.
ActiveSubscriptions	This counter represents all active incoming and outgoing presence subscriptions.
CallListAndTrunkSubscriptionsThrottled	This counter represents the cumulative number of rejected call list and trunk side presence subscriptions due to throttling for the call list feature.
IncomingLineSideSubscriptions	This counter represents the cumulative number of presence subscriptions that were received on the line side.
IncomingTrunkSideSubscriptions	This counter represents the cumulative number of presence subscriptions that were received on the trunk side.
OutgoingTrunkSideSubscriptions	This counter represents the cumulative number of presence subscriptions that were sent on the trunk side.

Cisco QSIG Features

The Cisco QSIG Feature object provides information regarding the operation of various QSIG features, such as call diversion and path replacement. Table 23-25 contains information on the Cisco QSIG feature counters.

Table 23-25 Cisco QSIG

Counters	Counter Descriptions
CallForwardByRerouteCompleted	This counter represents the number of successful calls that has been forwarded by rerouting. Call forward by rerouting enables the path for a forwarded call to be optimized (minimizes the number of B-Channels in use) from the originator perspective. This counter gets reset when the Cisco Unified CallManager service parameter Call Forward by Reroute Enabled is enabled or disabled, or when the Cisco CallManager service restarts.
PathReplacementCompleted	This counter represents the number of successful path replacements that have occurred. Path replacement in a QSIG network optimizes the path between two edge PINX (PBXs) that are involved in a call. This counter resets when the Cisco CallManager service parameter Path Replacement Enabled is enabled or disabled, or when the Cisco CallManager service restarts.

Cisco SIP

The Cisco Session Initiation Protocol (SIP) object provides information about configured SIP devices. Table 23-26 contains information on the Cisco SIP counters.

Table 23-26 Cisco SIP

Counters	Counter Descriptions
CallsActive	This counter represents the number of calls that are currently active (in use) on this SIP device.
CallsAttempted	This counter represents the number of calls that have been attempted on this SIP device, including both successful and unsuccessful call attempts.
CallsCompleted	This counter represents the number of calls that were actually connected (a voice path was established) from a SIP device. This number increases when the call terminates.
CallsInProgress	This counter represents the number of calls that are currently in progress on a SIP device, including all active calls. When all calls that are in progress are connected, the number of CallsInProgress equals the number of CallsActive.
VideoCallsActive	This counter represents the number of video calls with streaming video connections that are currently active (in use) on this SIP device.
VideoCallsCompleted	This counter represents the number of video calls that were actually connected with video streams for this SIP device. This number increments when the call terminates.

Cisco SIP Stack

The Cisco SIP Stack object provides information about Session Initiation Protocol (SIP) stack statistics that are generated or used by SIP devices such as SIP Proxy, SIP Redirect Server, SIP Registrar, and SIP User Agent. Table 23-27 contains information on Cisco SIP Stack counters.

Table 23-27 Cisco SIP Stack

Counters	Counter Descriptions
AckIns	This counter represents the total number of ACK requests that the SIP device received.
AckOuts	This counter represents the total number of ACK requests that the SIP device sent.
ByeIns	This counter represents the total number of BYE requests that the SIP device received. This number includes retransmission.
ByeOuts	This counter represents the total number of BYE requests that the SIP device sent. This number includes retransmission.
CancelIns	This counter represents the total number of CANCEL requests that the SIP device received. This number includes retransmission.
CancelOuts	This counter represents the total number of CANCEL requests that the SIP device sent. This number includes retransmission.
GlobalFailedClassIns	This counter represents the total number of 6xx class SIP responses that the SIP device has received. This number includes retransmission. This class of responses indicates that a SIP device, that is providing a client function, received a failure response message. Generally, the responses indicate that a server had definitive information on a particular called party and not just the particular instance in the Request-URI.

Table 23-27 Cisco SIP Stack (continued)

Counters	Counter Descriptions
GlobalFailedClassOuts	This counter represents the total number of 6xx class SIP responses that the SIP device sent. This number includes retransmission. This class of responses indicates that a SIP device, that is providing a server function, received a failure response message. Generally, the responses indicate that a server had definitive information on a particular called party and not just the particular instance in the Request-URI.
InfoClassIns	This counter represents the total number of 1xx class SIP responses that the SIP device received. This includes retransmission. This class of responses provides information on the progress of a SIP request.
InfoClassOuts	This counter represents the total number of 1xx class SIP responses that the SIP device sent. This includes retransmission. This class of responses provides information on the progress of processing a SIP request.
InfoIns	This counter represents the total number of INFO requests that the SIP device has received. This number includes retransmission.
InfoOuts	This counter represents the total number of INFO requests that the SIP device has sent. This number includes retransmission.
InviteIns	This counter represents the total number of INVITE requests that the SIP device received. This number includes retransmission.
InviteOuts	This counter represents the total number of INVITE requests that the SIP device has sent. This number includes retransmission.
NotifyIns	This counter represents the total number of NOTIFY requests that the SIP device has received. This number includes retransmission.
NotifyOuts	This counter represents the total number of NOTIFY requests that the SIP device has sent. This number includes retransmission.
OptionsIns	This counter represents the total number of OPTIONS requests that the SIP device received. This number includes retransmission.
OptionsOuts	This counter represents the total number of OPTIONS requests that the SIP device has sent. This number includes retransmission.
PRAckIns	This counter represents the total number of PRACK requests that the SIP device has received. This number includes retransmission.
PRAckOuts	This counter represents the total number of PRACK requests that the SIP device has sent. This number includes retransmission.
RedirClassIns	This counter represents the total number of 3xx class SIP responses that the SIP device has received. This number includes retransmission. This class of responses provides information about redirections to addresses where the callee may be reachable.
RedirClassOuts	This counter represents the total number of 3xx class SIP responses that the SIP device has sent. This number includes retransmission. This class of responses provides information about redirections to addresses where the callee may be reachable.
ReferIns	This counter represents the total number of REFER requests that the SIP device has received. This number includes retransmission.

Table 23-27 Cisco SIP Stack (continued)

Counters	Counter Descriptions
ReferOuts	This counter represents the total number of REFER requests that the SIP device has sent. This number includes retransmission.
RegisterIns	This counter represents the total number of REGISTER requests that the SIP device has received. This number includes retransmission.
RegisterOuts	This counter represents the total number of REGISTER requests that the SIP device has sent. This number includes retransmission.
RequestsFailedClassIns	This counter represents the total number of 4xx class SIP responses that the SIP device has received. This number includes retransmission. This class of responses indicates a request failure by a SIP device that is providing a client function.
RequestsFailedClassOuts	This counter represents the total number of 4xx class SIP responses that the SIP device has sent. This number includes retransmission. This class of responses indicates a request failure by a SIP device that is providing a server function.
RetryByes	This counter represents the total number of BYE retries that the SIP device has sent. To determine the number of first BYE attempts, subtract the value of this counter from the value of the sipStatsByeOuts counter.
RetryCancels	This counter represents the total number of CANCEL retries that the SIP device has sent. To determine the number of first CANCEL attempts, subtract the value of this counter from the value of the sipStatsCancelOuts counter.
RetryInfo	This counter represents the total number of INFO retries that the SIP device has sent. To determine the number of first INFO attempts, subtract the value of this counter from the value of the sipStatsInfoOuts counter.
RetryInvites	This counter represents the total number of INVITE retries that the SIP device has sent. To determine the number of first INVITE attempts, subtract the value of this counter from the value of the sipStatsInviteOuts counter.
RetryNotify	This counter represents the total number of NOTIFY retries that the SIP device has sent. To determine the number of first NOTIFY attempts, subtract the value of this counter from the value of the sipStatsNotifyOuts counter.
RetryPRAck	This counter represents the total number of PRACK retries that the SIP device has sent. To determine the number of first PRACK attempts, subtract the value of this counter from the value of the sipStatsPRAckOuts counter.
RetryRefer	This counter represents the total number of REFER retries that the SIP device has sent. To determine the number of first REFER attempts, subtract the value of this counter from the value of the sipStatsReferOuts counter.
RetryRegisters	This counter represents the total number of REGISTER retries that the SIP device has sent. To determine the number of first REGISTER attempts, subtract the value of this counter from the value of the sipStatsRegisterOuts counter.
RetryRel1xx	This counter represents the total number of Reliable 1xx retries that the SIP device has sent.
RetryResponsesFinal	This counter represents the total number of Final Response retries that the SIP device has sent.
RetryResponsesNonFinal	This counter represents the total number of non-Final Response retries the SIP device has sent.

Table 23-27 Cisco SIP Stack (continued)

Counters	Counter Descriptions
RetrySubscribe	This counter represents the total number of SUBSCRIBE retries that the SIP device has sent. To determine the number of first SUBSCRIBE attempts, subtract the value of this counter from the value of the sipStatsSubscribeOuts counter.
RetryUpdate	This counter represents the total number of UPDATE retries that the SIP device has sent. To determine the number of first UPDATE attempts, subtract the value of this counter from the value of the sipStatsUpdateOuts counter.
ServerFailedClassIns	This counter represents the total number of 5xx class SIP responses that the SIP device has received. This number includes retransmission. This class of responses indicates that failure responses were received by a SIP device that is providing a client function.
ServerFailedClassOuts	This counter represents the total number of 5xx class SIP responses that the SIP device has sent. This number includes retransmission. This class of responses indicates that failure responses were received by a SIP device that is providing a server function.
StatusCode1xxIns	This counter represents the total number of 1xx response messages, including retransmission, that the SIP device has received. This count includes the following 1xx responses: • 100 Trying • 180 Ringing • 181 Call is being forwarded • 182 Queued • 183 Session Progress
StatusCode1xxOuts	This counter represents the total number of 1xx response messages, including retransmission, that the SIP device has sent. This count includes the following 1xx responses: • 100 Trying • 180 Ringing • 181 Call is being forwarded • 182 Queued • 183 Session Progress
StatusCode2xxIns	This counter represents the total number of 2xx response messages, including retransmission, that the SIP device has received. This count includes the following 2xx responses: • 200 OK • 202 Success Accepted
StatusCode2xxOuts	This counter represents the total number of 2xx response messages, including retransmission, that the SIP device has sent. This count includes the following 2xx responses: • 200 OK • 202 Success Accepted

Table 23-27 Cisco SIP Stack (continued)

Counters	Counter Descriptions
StatusCode3xxins	This counter represents the total number of 3xx response messages, including retransmission, that the SIP device has received. This count includes the following 3xx responses: • 300 Multiple Choices • 301 Moved Permanently • 302 Moved Temporarily • 303 Incompatible Bandwidth Units • 305 Use Proxy • 380 Alternative Service
StatusCode302Outs	This counter represents the total number of 302 Moved Temporarily response messages, including retransmission, that the SIP device has sent.

Table 23-27 Cisco SIP Stack (continued)

Counters	Counter Descriptions
StatusCode4xxIns	This counter represents the total number of 4xx response messages, including retransmission, that the SIP device has received. This count includes the following 4xx responses: • 400 Bad Request • 401 Unauthorized • 402 Payment Required • 403 Forbidden • 404 Not Found • 405 Method Not Allowed • 406 Not Acceptable • 407 Proxy Authentication Required • 408 Request Timeout • 409 Conflict • 410 Gone • 413 Request Entity Too Large • 414 Request-URI Too Long • 415 Unsupported Media Type • 416 Unsupported URI Scheme • 417 Unknown Resource Priority • 420 Bad Extension • 422 Session Expires Value Too Small • 423 Interval Too Brief • 480 Temporarily Unavailable • 481 Call/Transaction Does Not Exist • 482 Loop Detected • 483 Too Many Hops • 484 Address Incomplete • 485 Ambiguous • 486 Busy Here • 487 Request Terminated • 488 Not Acceptable Here • 489 Bad Subscription Event • 491 Request Pending

Table 23-27 Cisco SIP Stack (continued)

Counters	Counter Descriptions
StatusCode4xxOuts	This counter represents the total number of 4xx response messages, including retransmission, that the SIP device has sent. This count includes the following 4xx responses: • 400 Bad Request • 401 Unauthorized • 402 Payment Required • 403 Forbidden • 404 Not Found • 405 Method Not Allowed • 406 Not Acceptable • 407 Proxy Authentication Required • 408 Request Timeout • 409 Conflict • 410 Gone • 413 Request Entity Too Large • 414 Request-URI Too Long • 415 Unsupported Media Type • 416 Unsupported URI Scheme • 417 Unknown Resource Priority • 420 Bad Extension • 422 Session Expires Value Too Small • 423 Interval Too Brief • 480 Temporarily Unavailable • 481 Call/Transaction Does Not Exist • 482 Loop Detected • 483 Too Many Hops • 484 Address Incomplete • 485 Ambiguous • 486 Busy Here • 487 Request Terminated • 488 Not Acceptable Here • 489 Bad Subscription Event • 491 Request Pending

Table 23-27 Cisco SIP Stack (continued)

Counters	Counter Descriptions
StatusCode5xxIns	This counter represents the total number of 5xx response messages, including retransmission, that the SIP device has received. This count includes the following 5xx responses: • 500 Server Internal Error • 501 Not Implemented • 502 Bad Gateway • 503 Service Unavailable • 504 Server Timeout • 505 Version Not Supported • 580 Precondition Failed
StatusCode5xxOuts	This counter represents the total number of 5xx response messages, including retransmission, that the SIP device has sent. This count includes the following 5xx responses: • 500 Server Internal Error • 501 Not Implemented • 502 Bad Gateway • 503 Service Unavailable • 504 Server Timeout • 505 Version Not Supported • 580 Precondition Failed
StatusCode6xxIns	This counter represents the total number of 6xx response messages, including retransmission, that the SIP device has received. This count includes the following 6xx responses: • 600 Busy Everywhere • 603 Decline • 604 Does Not Exist Anywhere • 606 Not Acceptable
StatusCode6xxOuts	This counter represents the total number of 6xx response messages, including retransmission, that the SIP device has sent. This count includes the following 6xx responses: • 600 Busy Everywhere • 603 Decline • 604 Does Not Exist Anywhere • 606 Not Acceptable
SubscribeIns	This counter represents the total number of SUBSCRIBE requests that the SIP device has received. This number includes retransmission.
SubscribeOuts	This counter represents the total number of SUBSCRIBE requests that the SIP device has sent. This number includes retransmission.

Table 23-27 Cisco SIP Stack (continued)

Counters	Counter Descriptions
SuccessClassIns	This counter represents the total number of 2xx class SIP responses that the SIP device has received. This includes retransmission. This class of responses provides information on the successful completion of a SIP request.
SuccessClassOuts	This counter represents the total number of 2xx class SIP responses that the SIP device has sent. This includes retransmission. This class of responses provides information on the successful completion of a SIP request.
SummaryRequestsIn	This counter represents the total number of SIP request messages that have been received by the SIP device. This number includes retransmissions.
SummaryRequestsOut	This counter represents the total number of SIP request messages that the device sent. This number includes messages that originate on the device and messages that are being relayed by the device. When a particular message gets sent more than once, each transmission gets counted separately; for example, a message that is re-sent as a retransmission or as a result of forking.
SummaryResponsesIn	This counter represents the total number of SIP response messages that the SIP device received. This number includes retransmission.
SummaryResponsesOut	This counter represents the total number of SIP response messages that the SIP device sent (originated and relayed). This number includes retransmission.
UpdateIns	This counter represents the total number of UPDATE requests that the SIP device has received. This number includes retransmission.
UpdateOuts	This counter represents the total number of UPDATE requests that the SIP device has sent. This number includes retransmission.

Cisco SW Conf Bridge Device

The Cisco SW Conference Bridge Device object provides information about registered Cisco software conference bridge devices. Table 23-28 contains information on the Cisco software conference bridge device counters.

Table 23-28 Cisco SW Conf Bridge Device

Counters	Counter Descriptions
OutOfResources	This counter represents the total number of times that an attempt was made to allocate a conference resource from a SW conference device and failed because all resources were already in use.
ResourceActive	This counter represents the number of resources that are currently in use (active) for a SW conference device. One resource represents one stream.
ResourceAvailable	This counter represents the total number of resources that are not active and are still available to be used now for a SW conference device. One resource represents one stream.
ResourceTotal	This counter represents the total number of conference resources that a SW conference device provides. One resource represents one stream.This counter equals the sum of the ResourceAvailable and ResourceActive counters.

Table 23-28 Cisco SW Conf Bridge Device (continued)

Counters	Counter Descriptions
SWConferenceActive	This counter represents the number of software-based conferences that are currently active (in use) on a SW conference device.
SWConferenceCompleted	This counter represents the total number of conferences that have been allocated and released on a SW conference device. A conference starts when the first call connects to the bridge. The conference completes when the last call disconnects from the bridge.

Cisco TFTP Server

The Cisco Trivial File Transfer Protocol (TFTP) Server object provides information about the Cisco TFTP server. Table 23-29 contains information on Cisco TFTP server counters.

Table 23-29 Cisco TFTP Server

Counters	Counter Descriptions
BuildAbortCount	This counter represents the number of times that the build process aborted when it received a Build all request. This counter increases when building of device/unit/softkey/dial rules gets aborted as a result of group level change notifications.
BuildCount	This counter represents the number of times since the TFTP service started that the TFTP server has built all the configuration files in response to a database change notification that affects all devices. This counter increases by one every time the TFTP server performs a new build of all the configuration files.
BuildDeviceCount	This counter represents the number of devices that were processed in the last build of all the configuration files. This counter also updates while processing device change notifications. The counter increases when a new device is added and decreases when an existing device is deleted.
BuildDialruleCount	This counter represents the number of dial rules that were processed in the last build of the configuration files. This counter also updates while processing dial rule change notifications. The counter increases when a new dial rule is added and decreases when an existing dial rule is deleted.
BuildDuration	This counter represents the time in seconds that it took to build the last configuration files.
BuildSignCount	This counter represents the number of security-enabled phone devices for which the configuration file was digitally signed with the Cisco Unified CallManager server key in the last build of all the configuration files. This counter also updates while processing security-enabled phone device change notifications.
BuildSoftKeyCount	This counter represents the number of softkeys that were processed in the last build of the configuration files. This counter increments when a new softkey is added and decrements when an existing softkey is deleted.
BuildUnitCount	This counter represents the number of gateways that were processed in the last build of all the configuration files. This counter also updates while processing unit change notifications. The counter increases when a new gateway is added and decreases when an existing gateway is deleted.

Table 23-29 Cisco TFTP Server (continued)

Counters	Counter Descriptions
ChangeNotifications	This counter represents the total number of all the Cisco Unified CallManager database change notifications that the TFTP server received. Each time that a device configuration is updated in Cisco Unified CallManager Administration, the TFTP server gets sent a database change notification to rebuild the XML file for the updated device.
DeviceChangeNotifications	This counter represents the number of times that the TFTP server received database change notification to create, update, or delete configuration files for devices.
DialruleChangeNotifications	This counter represents the number of times that the TFTP server received database change notification to create, update, or delete configuration files for dial rules.
EncryptCount	This counter represents the number of configuration files that were encrypted. This counter gets updated each time a configuration file is successfully encrypted
GKFoundCount	This counter represents the number of GK files that were found in the cache. This counter gets updated each time a GK file is found in the cache
GKNotFoundCount	This counter represents the number of GK files that were not found in the cache. This counter gets updated each time a request to get a GK file results in the cache not finding it
HeartBeat	This counter represents the heartbeat of the TFTP server. This incremental count indicates that the TFTP server is up and running. If the count does not increase, this means that the TFTP server is down.
HttpConnectRequests	This counter represents the number of clients that are currently requesting the HTTP GET file request.
HttpRequests	This counter represents the total number of file requests (such as requests for XML configuration files, phone firmware files, audio files, and so on.) that the HTTP server handled. This counter represents the sum total of the following counters since the HTTP service started: RequestsProcessed, RequestsNotFound, RequestsOverflow, RequestsAborted, and RequestsInProgress.
HttpRequestsAborted	This counter represents the total number of HTTP requests that the HTTP server. canceled (aborted) unexpectedly. Requests could get aborted if the requesting device cannot be reached (for instance, the device lost power) or if the file transfer was interrupted due to network connectivity problems.
HttpRequestsNotFound	This counter represents the total number of HTTP requests where the requested file was not found. When the HTTP server does not find the requested file, a message gets sent to the requesting device.
HttpRequestsOverflow	This counter represents the total number of HTTP requests that were rejected when the maximum number of allowable client connections was reached. The requests may have arrived while the TFTP server was building the configuration files or because of some other resource limitation. The Cisco TFTP advanced service parameter, Maximum Serving Count, sets the maximum number of allowable connections.
HttpRequestsProcessed	This counter represents the total number of HTTP requests that the HTTP server. successfully processed.
HttpServedFromDisk	This counters represents the number of requests that the HTTP server completed with the files that are on disk and not cached in memory.

Table 23-29 Cisco TFTP Server (continued)

Counters	Counter Descriptions
LDFoundCount	This counter represents the number of LD files that were found in the cache. This counter gets updated each time a LD file is found in cache memory.
LDNotFoundCount	This counter represents the number of LD files that were not found in cache memory. This counter gets updated each time a request to get an LD file results in the cache not finding it.
MaxServingCount	This counter represents the maximum number of client connections that the TFTP can serve simultaneously. The Cisco TFTP advanced service parameter, Maximum Serving Count, sets this value.
Requests	This counter represents the total number of file requests (such as requests for XML configuration files, phone firmware files, audio files, and so on.) that the TFTP server handles. This counter represents the sum total of the following counters since the TFTP service started: RequestsProcessed, RequestsNotFound, RequestsOverflow, RequestsAborted, and RequestsInProgress.
RequestsAborted	This counter represents the total number of TFTP requests that the TFTP server canceled (aborted) unexpectedly. Requests could be aborted if the requesting device cannot be reached (for instance, the device lost power) or if the file transfer was interrupted due to network connectivity problems.
RequestsInProgress	This counter represents the number of file requests that the TFTP server currently is processing. This counter increases for each new file request and decreases for each file request that is completed. This counter indicates the current load of the TFTP server.
RequestsNotFound	This counter represents the total number of TFTP requests where the requested file was not found. When the TFTP server does not find the requested file, a message gets sent to the requesting device.
RequestsOverflow	This counter represents the total number of TFTP requests that were rejected because the maximum number of allowable client connections was exceeded, because requests arrived while the TFTP server was building the configuration files, or because of some other resource limitation. The Cisco TFTP advanced service parameter, Maximum Serving Count, sets the maximum number of allowable connections.
RequestsProcessed	This counter represents the total number of TFTP requests that the TFTP server successfully processed.
SegmentsAcknowledged	This counter represents the total number of data segments that the client devices acknowledged. Files get sent to the requesting device in data segments of 512 bytes, and for each 512-byte segment, the device sends the TFTP server an acknowledgment message. Each additional data segment gets sent upon receipt of the acknowledgment for the previous data segment until the complete file is successfully transmitted to the requesting device.
SegmentsFromDisk	This counter represents the number of data segments that the TFTP server reads from the files on disk, while serving files.
SegmentSent	This counter represents the total number of data segments that the TFTP server sent. Files get sent to the requesting device in data segments of 512 bytes.
SEPFoundCount	This counter represents the number of SEP files that were successfully found in the cache. This counter gets updated each time a SEP file is found in the cache.

Table 23-29 Cisco TFTP Server (continued)

Counters	Counter Descriptions
SEPNotFoundCount	This counter represents the number of SEP files that were not found in the cache. This counter gets updated each time a request to get a SEP file produces a not found in cache memory result.
SIPFoundCount	This counter represents the number of SIP files that were successfully found in the cache. This counter gets updated each time a SIP file is found in the cache
SIPNotFoundCount	This counter represents the number of SIP files that were not found in the cache. This counter gets updated each time a request to get a SIP file produces a not found in cache memory result.
SoftkeyChangeNotifications	This counter represents the number of times that the TFTP server has received database change notification to create, update, or delete configuration files for softkeys.
UnitChangeNotifications	This counter represents the number of times that the TFTP server received database change notification to create, update, or delete gateway-related configuration files.

Cisco Tomcat Connector

The Tomcat Hypertext Transport Protocol (HTTP)/HTTP Secure (HTTPS) Connector object provides information about Tomcat connectors. A Tomcat HTTP connector represents an endpoint that receives requests and sends responses. The connector handles HTTP/HTTPS requests and sends HTTP/HTTPS responses that occur when Cisco Unified CallManager related web pages are accessed. The Secure Socket Layer (SSL) status of the URLs for web applications provides the basis for the instance name for each Tomcat HTTP Connector. For example, https://<IP Address>:8443 for SSL or http://<IP Address>:8080 for non-SSL. Table 23-30 contains information on the Tomcat HTTP connector counters.

Table 23-30 Cisco Tomcat Connector

Counters	Counter Description
Errors	This counter represents the total number of HTTP errors (for example, 401 Unauthorized) that the connector encountered. A Tomcat HTTP connector represents an endpoint that receives requests and sends responses. The connector handles HTTP/HTTPS requests and sends HTTP/HTTPS responses that occur when Cisco Unified CallManager related windows are accessed. The Secure Socket Layer (SSL) status of the URLs for the web application provides basis for the instance name for each Tomcat HTTP connector. For example, https://<IP Address>:8443 for SSL or http://<IP Address>:8080 for non-SSL.
MBytesReceived	This counter represents the amount of data that the connector received. A Tomcat HTTP connector represents an endpoint that receives requests and sends responses. The connector handles HTTP/HTTPS requests and sends HTTP/HTTPS responses that occur when Cisco Unified CallManager related windows are accessed. The Secure Socket Layer (SSL) status of the URLs for the web application provides basis for the instance name for each Tomcat HTTP connector.For example, https://<IP Address>:8443 for SSL or http://<IP Address>:8080 for non-SSL.

Table 23-30 Cisco Tomcat Connector (continued)

Counters	Counter Description
MBytesSent	This counter represents the amount of data that the connector sent. A Tomcat HTTP connector represents an endpoint that receives requests and sends responses. The connector handles HTTP/HTTPS requests and sends HTTP/HTTPS responses that occur when Cisco Unified CallManager related windows are accessed. The Secure Socket Layer (SSL) status of the URLs for the web application provides basis for the instance name for each Tomcat HTTP connector. For example, https://<IP Address>:8443 for SSL or http://<IP Address>:8080 for non-SSL.
Requests	This counter represents the total number of request that the connector handled. A Tomcat HTTP connector represents an endpoint that receives requests and sends responses. The connector handles HTTP/HTTPS requests and sends HTTP/HTTPS responses that occur when Cisco CallManager related windows s are accessed. The Secure Socket Layer (SSL) status of the URLs for the web application provides basis for the instance name for each Tomcat HTTP connector. For example, https://<IP Address>:8443 for SSL or http://<IP Address>:8080 for non-SSL.
ThreadsTotal	This counter represents the current total number of request processing threads, including available and in-use threads, for the connector. A Tomcat HTTP connector represents an endpoint that receives requests and sends responses. The connector handles HTTP/HTTPS requests and sends HTTP/HTTPS responses that occur when Cisco Unified CallManager related windows are accessed. The Secure Socket Layer (SSL) status of the URLs for the web application provides basis for the instance name for each Tomcat HTTP connector. For example, https://<IP Address>:8443 for SSL or http://<IP Address>:8080 for non-SSL.
ThreadsMax	This counter represents the maximum number of request processing threads for the connector. Each incoming request on a Cisco Unified CallManager related window requires a thread for the duration of that request. If more simultaneous requests are received than the currently available request processing threads can handle, additional threads will be created up to the configured maximum shown in this counter. If still more simultaneous requests are received, they accumulate within the server socket that the connector created, up to an internally specified maximum number. Any further simultaneous requests will receive connection refused messages until resources are available to process them. A Tomcat HTTP connector represents an endpoint that receives requests and sends responses. The Connector handles HTTP/HTTPS requests and sends HTTP/HTTPS responses that occur when Cisco Unified CallManager related windows are accessed. The Secure Socket Layer (SSL) status of the URLs for the web application provides basis for the instance name for each Tomcat HTTP connector. For example, https://<IP Address>:8443 for SSL or http://<IP Address>:8080 for non-SSL.
ThreadsBusy	This counter represents the current number of busy/in-use request processing threads for the connector. A Tomcat Connector represents an endpoint that receives requests and sends responses. The connector handles HTTP/HTTPS requests and sends HTTP/HTTPS responses that occur when web pages that are related to Cisco Unified CallManager are accessed. The Secure Sockets Layer (SSL) status of the URLs for the web application provides the basis for the instance name for each Tomcat connector. For example, https://<IP Address>:8443 for SSL or http://<IP Address>:8080 for non-SSL.

Cisco Tomcat JVM

The Cisco Tomcat Java Virtual Machine (JVM) object provides information about the Tomcat JVM, which represents, among other things, a pool of common resource memory that Cisco Unified CallManager related web applications such as Cisco Unified CallManager Administration, Cisco Unified CallManager Serviceability, and more use. Table 23-31 contains information on the Tomcat JVM counters.

Table 23-31 Tomcat JVM

Counters	Counter Description
KBytesMemoryFree	This counter represents the amount of free dynamic memory block (heap memory) in the Tomcat Java Virtual Machine. The dynamic memory block stores all objects that Tomcat and its web applications such as Cisco Unified CallManager Administration and Cisco Unified CallManager Serviceability create. When the amount of free dynamic memory is low, more memory gets automatically allocated, and total memory size (represented by the KbytesMemoryTotal counter) increases but only up to the maximum (represented by the KbytesMemoryMax counter). You can determine the amount of memory in use by subtracting KBytesMemoryFree from KbytesMemoryTotal.
KBytesMemoryMax	This counter represents the amount of free dynamic memory block (heap memory) in the Tomcat Java Virtual Machine. The dynamic memory block stores all objects that Tomcat and its web applications such as Cisco Unified CallManager Administration and Cisco Unified CallManager Serviceability create.
KBytesMemoryTotal	This counter represents the current total dynamic memory block size, including free and in-use memory, of Tomcat Java Virtual Machine. The dynamic memory block stores all objects that Tomcat and its web applications such as Cisco Unified CallManager Administration and Cisco Unified CallManager Serviceability create.

Cisco Tomcat Web Application

The Cisco Tomcat Web Application object provides information about how to running Cisco Unified CallManager web applications. The URLs for the web application provide basis for the instance name for each Tomcat Web Application. For example, Cisco Unified CallManager Administration (https://<IP Address>:8443/ccmadmin) gets identified by ccmadmin, Cisco Unified CallManager Serviceability gets identified by ccmservice, Cisco Unified CallManager User Options gets identified by ccmuser, and URLs that do not have an extension, such as https://<IP Address>:8443 or http://<IP Address>:8080), get identified by _root. Table 23-32 contains information on the Tomcat Web Application counters.

Table 23-32 Tomcat Web Application

Counters	Counter Description
Errors	This counter represents the total number of HTTP errors (for example, 401 Unauthorized) that a Cisco Unified CallManager related web application encountered. The URLs for the web application provide the basis instance name for each Tomcat Web Application. For example, Cisco Unified CallManager Administration (https://<IP Address>:8443/ccmadmin) gets identified by ccmadmin, Cisco Unified CallManager Serviceability gets identified by ccmservice, Cisco Unified CallManager User Options gets identified by ccmuser, and URLs that do not have an extension, such as https://<IP Address>:8443 or http://<IP Address>:8080), get identified by _root.
Requests	This counter represents the total number of requests that the web application handles. Each time that a web application is accessed, its Requests counter increments accordingly. The URLs for the web application provide the basis instance name for each Tomcat Web Application. For example, Cisco Unified CallManager Administration (https://<IP Address>:8443/ccmadmin) gets identified by ccmadmin, Cisco Unified CallManager Serviceability gets identified by ccmservice, Cisco Unified CallManager User Options gets identified by ccmuser, and URLs that do not have an extension, such as https://<IP Address>:8443 or http://<IP Address>:8080), get identified by _root.
SessionsActive	This counter represents the number of sessions that the web application currently has active (in use). The URLs for the web application provide the basis instance name for each Tomcat Web Application. For example, Cisco Unified CallManager Administration (https://<IP Address>:8443/ccmadmin) gets identified by ccmadmin, Cisco Unified CallManager Serviceability gets identified by ccmservice, Cisco Unified CallManager User Options gets identified by ccmuser, and URLs that do not have an extension, such as https://<IP Address>:8443 or http://<IP Address>:8080), get identified by _root.

Cisco Transcode Device

The Cisco Transcode Device object provides information about registered Cisco transcoding devices. Table 23-33 contains information on Cisco transcoder device counters.

Table 23-33 Cisco Transcode Device

Counters	Counter Descriptions
OutOfResources	This counter represents the total number of times that an attempt was made to allocate a transcoder resource from a transcoder device and failed; for example, because all resources were already in use.
ResourceActive	This counter represents the number of transcoder resources that are currently in use (active) for a transcoder device. Each transcoder resource uses two streams.
ResourceAvailable	This counter represents the total number of resources that are not active and are still available to be used now for a transcoder device. Each transcoder resource uses two streams.
ResourceTotal	This counter represents the total number of transcoder resources that a transcoder device provided. This counter equals the sum of the counters ResourceActive and ResourceAvailable.

Cisco Video Conference Bridge

The Cisco Video Conference Bridge object provides information about registered Cisco video conference bridge devices. Table 23-34 contains information on Cisco video conference bridge device counters.

Table 23-34 Cisco Video Conference Bridge

Counters	Counter Descriptions
ConferencesActive	This counter represents the total number of video conferences that are currently active (in use) on a video conference bridge device. The system specifies a conference as active when the first call connects to the bridge.
ConferencesAvailable	This counter represents the number of video conferences that are not active and are still available on a video conference device.
ConferencesCompleted	This counter represents the total number of video conferences that have been allocated and released on a video conference device. A conference starts when the first call connects to the bridge. The conference completes when the last call disconnects from the bridge.
ConferencesTotal	This counter represents the total number of video conferences that are configured for a video conference device.
OutOfConferences	This counter represents the total number of times an attempt was made to initiate a video conference from a video conference device and failed because the device already had the maximum number of active conferences allowed (as specified by the TotalConferences counter).

Table 23-34 Cisco Video Conference Bridge (continued)

Counters	Counter Descriptions
OutOfResources	This counter represents the total number of times that an attempt was made to allocate a conference resource from a video conference device and failed, for example, because all resources were already in use.
ResourceActive	This counter represents the total number of resources that are currently active (in use) on a video conference bridge device. One resource gets used per participant.
ResourceAvailable	This counter represents the total number of resources that are not active and are still available on a device to handle additional participants for a video conference bridge device.
ResourceTotal	This counter represents the total number of resources that are configured on a video conference bridge device. One resource gets used per participant.

Cisco WebDialer

The Cisco WebDialer object provides information about the Cisco Unified WebDialer application and the Redirector servlet. Table 23-35 contains information on the Cisco WebDialer counters.

Table 23-35 Cisco WebDialer

Counters	Counter Descriptions
CallsCompleted	This counter represents the number of Make Call and End Call requests that the Cisco Unified WebDialer application successfully completed.
CallsFailed	This counter represents the number of Make Call and End Call requests that were unsuccessful.
RedirectorSessionsHandled	This counter represents the total number of HTTP sessions that the Redirector servlet handled since the last service startup.
RedirectorSessionsInProgress	This counter represents the number of HTTP sessions that are currently being serviced by the Redirector servlet.
RequestsCompleted	This counter represents the number of Make Call and End Call requests that the WebDialer servlet has successfully completed.
RequestsFailed	This counter represents the number of Make Call and End Call requests that failed.
SessionsHandled	This counter represents the total number of CTI sessions that the Cisco WebDialer servlet handled since the last service startup.
SessionsInProgress	This counter represents the number of CTI sessions that the Cisco WebDialer servlet is currently servicing.

Cisco WSM Connector

The WSM object provides information on WSMConnectors that are configured on Cisco Unified CallManager. Each WSMConnector represents a physical Motorola WSM device. Table 23-36 contains information on the Cisco WSM Connector counters.

Table 23-36 Cisco WSM Connector

Counters	Counter Description
CallsActive	This counter represents the number of calls that are currently active (in use) on the WSMConnector device.
CallsAttempted	This counter represents the number of calls that have been attempted on the WSMConnector device, including both successful and unsuccessful call attempts.
CallsCompleted	This counter represents the number of calls that are connected (a voice path was established) through the WSMConnector device. The counter increments when the call terminates.
CallsInProgress	This counter represents the number of calls that are currently in progress on the WSMConnector device. This includes all active calls. When the number of CallsInProgress equals the number of CallsActive, this indicates that all calls are connected.
DMMSRegistered	This counter represents the number of DMMS subscribers that are registered to the WSM.

Database Change Notification Client

The Database Change Notification Client object provides information on change notification clients. Table 23-37 contains information on the Database Change Notification Client counters.

Table 23-37 Database Change Notification Client

Counters	Counter Descriptions
MessagesProcessed	This counter represents the number of database change notifications that have been processed. This counter refreshes every 15 seconds.
MessagesProcessing	This counter represents the number of change notification messages that are currently being processed or are waiting to be processed in the change notification queue for this client. This counter refreshes every 15 seconds.
QueueHeadPointer	This counter represents the head pointer to the change notification queue. The head pointer acts as the starting point in the change notification queue. To determine the number of notifications in the queue, subtract the head pointer value from the tail pointer value. By default, this counter refreshes every 15 seconds.
QueueMax	This counter represents the largest number of change notification messages that will be processed for this client. This counter remains cumulative since the last restart of the Cisco Database Layer Monitor service.
QueueTailPointer	This counter represents the tail pointer to the change notification queue. The tail pointer represents the ending point in the change notification queue. To determine the number of notifications in the queue, subtract the head pointer value from the tail pointer value. By default, this counter refreshes every 15 seconds
TablesSubscribed	This counter represents the number of tables in which this client has subscribed.

Database Change Notification Server

The Database Change Notification Server object provides information on different change-notification-related statistics. Table 23-37 contains information on the Database Change Notification Server counters.

Table 23-38 Database Change Notification Server

Counter	Counter Descriptions
Clients	This counter represents the number of change notification clients (services/servlets) that have subscribed for change notification.
QueuedRequestsInDB	This counter represents the number of change notification records that are in the DBCNQueue (Database Change Notification Queue) table via direct TCP/IP connection (not queued in shared memory). This counter refreshes every 15 seconds.
QueuedRequestsInMemory	This counter represents the number of change notification requests that are queued in the DBCNQueue (Database Change Notification Queue) table in shared memory (rather than via direct TCP/IP connection).

Database Change Notification Subscription

The Database Change Notification Subscription object displays the names of tables where the client will receive Change Notifications.

The SubscribedTable object displays the table with the service or servlet that will receive change notifications. Because the counter does not increment, this display occurs for informational purposes only

Database Local DSN

The Database Local Data Source Name (DSN) object and LocalDSN counter provide the DSN information for the local machine. Table 23-39 contains information on the Database local DSN.

Table 23-39 Database Local Data Source Name

Counters	Counter Descriptions
CcmDbSpace_Used	This counter represents the amount of Ccm DbSpace that is being consumed
CcmtempDbSpace_Used	This counter represents the amount of Ccmtemp DbSpace that is being consumed.
LocalDSN	This counter represents the data source name (DSN) that is being referenced from the local machine.
RootDbSpace_Used	This counter represents the amount of RootDbSpace that is being consumed.

DB User Host Information Counters

The DB User Host Information object provides information on DB User Host.

The DB:User:Host Instance object displays the number of connections that are present for each instance of DB:User:Host.

Enterprise Replication DBSpace Monitors

The enterprise replication DBSpace monitors object displays the usage of various ER DbSpaces. Table 23-40 contains information on the enterprise replication DB monitors.

Table 23-40 Enterprise Replication DBSpace Monitors

Counters	Counter Descriptions
ERDbSpace_Used	This counter represents the amount of enterprise replication DbSpace that was consumed.
ERSBDbSpace_Used	This counter represents the amount of ERDbSpace that was consumed.

Enterprise Replication Perfmon Counters

The Enterprise Replication Perfmon Counter object provides information on the various replication counters.

The ServerName:ReplicationQueueDepth counter displays the server name followed by the replication queue depth.

IP

The IP object provides information on the IP statistics on your system. Table 23-41 contains information on the IP counters.

Table 23-41 IP

Counters	Counter Descriptions
Frag Creates	This counter represents the number of IP datagrams fragments that have been generated at this entity.
Frag Fails	This counter represents the number of IP datagrams that were discarded at this entity because the datagrams could not be fragmented, such as datagrams where the Do not Fragment flag was set.
Frag OKs	This counter represents the number of IP datagrams that were successfully fragmented at this entity.
In Delivers	This counter represents the number of input datagrams that were delivered to IP user protocols. This includes Internet Control Message Protocol (ICMP).

Table 23-41 IP (continued)

Counters	Counter Descriptions
In Discards	This counter represents the number of input IP datagrams where no problems were encountered, but which were discarded. Lack of buffer space provides one possible reason. This counter does not include any datagrams that were discarded while awaiting reassembly.
In HdrErrors	This counter represents the number of input datagrams that were discarded with header errors. This includes bad checksums, version number mismatch, other format errors, time-to-live exceeded, and other errors that were discovered in processing their IP options.
In Receives	This counter represents the number of input datagrams that were received from all network interfaces. This counter includes datagrams that were received with errors
In UnknownProtos	This counter represents the number of locally addressed datagrams that were received successfully but discarded because of an unknown or unsupported protocol.
InOut Requests	This counter represents the number of incoming IP datagrams that were received and the number of outgoing IP datagrams that were sent.
Out Discards	This counter represents the number of output IP datagrams that were not transmitted and were discarded. Lack of buffer space provides one possible reason.
Out Requests	This counter represents the total number of IP datagrams that local IP user-protocols (including ICMP) supply to IP in requests transmission. This counter does not include any datagrams that were counted in ForwDatagrams.
Reasm Fails	This counter represents the number of IP reassembly failures that the IP reassembly algorithm detected, including time outs, errors, and so on. This counter does not represent the discarded IP fragments because some algorithms, such as the algorithm in RFC 815, can lose track of the number of fragments because it combines them as they are received.
Reasm OKs	This counter represents the number of IP datagrams that were successfully reassembled.
Reasm Reqds	This counter represents the number of IP fragments that were received that required reassembly at this entity.

Memory

The memory object provides information about the usage of physical memory and swap memory on the server. Table 23-42 contains information on memory counters.

Table 23-42 Memory

Counters	Counter Descriptions
% Mem Used	This counter displays the system physical memory utilization as a percentage. The value of this counter equals (Total KBytes - Free KBytes - Buffers KBytes - Cached KBytes + Shared KBytes) / Total KBytes, which also corresponds to the Used KBytes/Total KBytes.
% Page Usage	This counter represents the percentage of active pages.
% VM Used	This counter displays the system virtual memory utilization as a percentage. The value of this counter equals (Total KBytes - Free KBytes - Buffers KBytes - Cached KBytes + Shared KBytes + Used Swap KBytes) / (Total KBytes + Total Swap KBytes), which also corresponds to Used VM KBytes/Total VM KBytes.
Buffered KBytes	This counter represents the capacity of buffers in your system in kilobytes.
Cached KBytes	This counter represents the amount of cached memory in kilobytes.
Free KBytes	This counter represents the total amount of memory that is available in your system in kilobytes.
Free Swap KBytes	This counter represents the amount of free swap space that is available in your system in kilobytes.
Pages	This counter represents the number of pages that the system paged in from the disk plus the number of pages that the system paged out to the disk.
Pages Input	This counter represents the number of pages that the system paged in from the disk.
Pages Output	This counter represents the number of pages that the system paged out to the disk.
Shared KBytes	This counter represents the amount of shared memory in your system in kilobytes.
Total KBytes	This counter represents the total amount of memory in your system in kilobytes.
Total Swap KBytes	This counter represents the total amount of swap space in your system in kilobytes.
Total VM KBytes	This counter represents the total amount of system physical and memory and swap space (Total Kbytes + Total Swap Kbytes) that is in use in your system in kilobytes.
Used KBytes	This counter represents the amount of system physical memory that is in use on the system in kilobytes. The value of the Used KBytes counter equals Total KBytes - Free KBytes - Buffers KBytes - Cached KBytes + Shared KBytes. The Used KBytes value differs from the Linux term that displays in the top or free command output. The Used value that displays in the top or free command output equals the difference in Total KBytes - Free KBytes and also includes the sum of Buffers KBytes and Cached KBytes.
Used Swap KBytes	This counter represents the amount of swap space that is in use on your system in kilobytes.
Used VM KBytes	This counter represents the system physical memory and the amount of swap space that is in use on your system in kilobytes. The value equals Total KBytes - Free KBytes - Buffers KBytes - Cached KBytes + Shared KBytes + Used Swap KBytes. This corresponds to Used Mem KBytes + Used Swap KBytes.

Network Interface

The network interface object provides information about the network interfaces on the system. Table 23-43 contains information on network interface counters.

Table 23-43 Network Interface

Counters	Counter Descriptions
Rx Bytes	This counter represents the number of bytes, including framing characters, that were received on the interface.
Rx Dropped	This counter represents the number of inbound packets that were chosen to be discarded even though no errors had been detected. This prevents the packet from being delivered to a higher layer protocol. Discarding packets to free up buffer space provides one reason.
Rx Errors	This counter represents the number of inbound packets (packet-oriented interfaces) and the number of inbound transmission units (character-oriented or fixed-length interfaces) that contained errors that prevented them from being deliverable to a higher layer protocol.
Rx Multicast	This counter represents the number of multicast packets that were received on this interface.
Rx Packets	This counter represents the number of packets that this sublayer delivered to a higher sublayer. This does not include the packets that were addressed to a multicast or broadcast address at this sublayer.
Total Bytes	This counter represents the total number of received (Rx) bytes and transmitted (Tx) bytes.
Total Packets	This counter represents the total number of Rx packets and Tx packets.
Tx Bytes	This counter represents the total number of octets, including framing characters, that were transmitted out from the interface.
Tx Dropped	This counter represents the number of outbound packets that were chosen to be discarded even though no errors were detected. This action prevents the packet from being delivered to a higher layer protocol. Discarding a packet to free up buffer space represents one reason.
Tx Errors	This counter represents the number of outbound packets (packet-oriented interfaces) and the number of outbound transmission units (character-oriented or fixed-length interfaces) that could not be transmitted because of errors.
Tx Packets	This counter represents the total number of packets that the higher level protocols requested for transmission, including those that were discarded or not sent. This does not include packets that were addressed to a multicast or broadcast address at this sublayer.
Tx QueueLen	This counter represents the length of the output packet queue (in packets).

Number of Replicates Created and State of Replication

The Number of Replicates Created and State of Replication object provides information about the replication state on the system. Table 23-44 contains information on replication counters.

Table 23-44 Number of Replicates Created and State of Replication

Counters	Counter Descriptions
Number of Replicates Created	This counter represents the number of replicates created by Informix database for the DB tables. There should be one replicate for every table.
Replicate_State	This counter represents the state of replication. Possible values includes: • 0 (Not Started)—No Subscribers exist, or the Database Layer Monitor service is not running and has not been running since the subscriber was installed. • 1 (Started)—Replication is currently being setup. • 2 (Finished)—Replication setup was completed and is working. • 3 (Broken)—Replication failed during setup and is not working.

Partition

The partition object provides information about the file system and its usage in the system. Table 23-45 contains information on partition counters.

Table 23-45 Partition

Counters	Counter Descriptions
% CPU Time	This counter represents the percentage of CPU time that is dedicated to handling I/O requests that were issued to the disk.
% Used	This counter represents the percentage of disk space that is in use on this file system.
Await Read Time	This counter represents the average time, measured in milliseconds, for Read requests that are issued to the device to be served.
Await Time	This counter represents the average time, measured in milliseconds, for I/O requests that were issued to the device to be served. This includes the time spent by the requests in queue and the time spent servicing them.
Await Write Time	This counter represents the average time, measured in milliseconds, for write requests that are issued to the device to be served.
Queue Length	This counter represents the average queue length for the requests that were issued to the disk.
Read Bytes Per Sec	This counter represents the amount of data in bytes per second that was read from the disk.
Total Mbytes	This counter represents the amount of total disk space that is on this file system in megabytes.

Table 23-45 Partition (continued)

Counters	Counter Descriptions
Used Mbytes	This counter represents the amount of disk space that is in use on this file system in megabytes.
Write Bytes Per Sec	This counter represents the amount of data that was written to the disk in bytes per second.

Process

The process object provides information about the processes that are running on the system. Table 23-46 contains information on process counters.

Table 23-46 Process

Counters	Counter Descriptions
% CPU Time	This counter, which is expressed as a percentage of total CPU time, represents the tasks share of the elapsed CPU time since the last update.
% MemoryUsage	This counter represents the percentage of physical memory that a task is currently using.
Data Stack Size	This counter represents the stack size for task memory status.
Nice	This counter represents the nice value of the task. A negative nice value indicates that the process has a higher priority while a positive nice value indicates that the process has a lower priority. If the nice value equals zero, do not adjust the priority when you are determining the dispatchability of a task.
Page Fault Count	This counter represents the number of major page faults that a task encountered that required the data to be loaded into memory.
PID	This counter displays the task-unique process ID. The ID periodically wraps, but the value will never equal zero.
Process Status	This counter displays the process status: • 0—Running • 1—Sleeping • 2—Uninterruptible disk sleep • 3—Zombie • 4—Stopped • 5— Paging • 6—Unknown
Shared Memory Size	This counter displays the amount of shared memory (KB) that a task is using. Other processes could potentially share the same memory.
STime	This counter displays amount of system time (STime), measured in jiffies, that this process has scheduled in kernel mode. A jiffy corresponds to a unit of CPU time and gets used as a base of measurement. One second consists of 100 jiffies.

Table 23-46 Process (continued)

Counters	Counter Descriptions
Thread Count	This counter displays the number of threads that are currently grouped with a task. A negative value (-1) indicates that this counter is currently not available. This happens when thread statistics (which includes all performance counters in the Thread object as well as the Thread Count counter in the Process object) are turned off because the system total processes and threads exceeded the default threshold value.
Total CPU Time Used	This counter displays the total CPU time in jiffies that the task used in user mode and kernel mode since the start of the task. A jiffy corresponds to a unit of CPU time and gets used as a base of measurement. One second consists of 100 jiffies.
UTime	This counter displays the time, measured in jiffies, that a task has scheduled in user mode.
VmData	This counter displays the virtual memory usage of the heap for the task in kilobytes (KB).
VmRSS	This counter displays the virtual memory (Vm) resident set size (RSS) that is currently in physical memory in kilobytes (KB) This includes the code, data, and stack.
VmSize	This counter displays the total virtual memory usage for a task in kilobytes (KB). It includes all code, data, shared libraries, and pages that have been swapped out: Virtual Image = swapped size + resident size.

Processor

The processor object provides information on different processor time usage in percentages. Table 23-47 contains information on processor counters.

Table 23-47 Processor

Counters	Counter Descriptions
% CPU Time	This counter displays the processors share of the elapsed CPU time, excluding idle time, since the last update. This share gets expressed as a percentage of total CPU time.
Idle Percentage	This counter displays the percentage of time that the processor is in the idle state and did not have an outstanding disk I/O request.
IOwait Percentage	This counter represents the percentage of time that the processor is in the idle state while the system had an outstanding disk I/O request.
Irq Percentage	This counter represents the percentage of time that the processor spends executing the interrupt request that is assigned to devices, including the time that the processor spends sending a signal to the computer.
Nice Percentage	This counter displays the percentage of time that the processor spends executing at the user level with nice priority.
Softirq Percentage	This counter represents the percentage of time that the processor spends executing the soft IRQ and deferring task switching to get better CPU performance.

Table 23-47 Processor (continued)

Counters	Counter Descriptions
System Percentage	This counter displays the percentage of time that the processor is executing processes in system (kernel) level.
User Percentage	This counter displays the percentage of time that the processor is executing normal processes in user (application) level.

System

The System object provides information on file descriptors on your system. Table 23-48 contains information on system counters

Table 23-48 System

Counters	Counter Descriptions
Allocated FDs	This counter represents the total number of allocated file descriptors.
Being Used FDs	This counter represents the number of file descriptors that are currently in use in the system.
Freed FDs	This counter represents the total number of allocated file descriptors on the system that are freed.
Max FDs	This counter represents the maximum number of file descriptors that are allowed on the system.
Total CPU Time	This counter represents the total time in jiffies that the system has been up and running.
Total Processes	This counter represents the total number of processes on the system.
Total Threads	This counter represents the total number of threads on the system.

TCP

The TCP object provides information on the TCP statistics on your system. Table 23-49 contains information on the TCP counters.

Table 23-49 TCP

Counters	Counter Description
Active Opens	This counter displays the number of times that the TCP connections made a direct transition to the SYN-SENT state from the CLOSED state.
Attempt Fails	This counter displays the number of times that the TCP connections have made a direct transition to the CLOSED stated from either the SYN-RCVD state or the SYN-RCVD state, plus the number of times TCP connections have made a direct transition to the LISTEN state from the SYS-RCVD state.
Curr Estab	This counter displays the number of TCP connections where the current state is either ESTABLISHED or CLOSE- WAIT.

Table 23-49 TCP (continued)

Counters	Counter Description
Estab Resets	This counter displays the number of times that the TCP connections have made a direct transition to the CLOSED state from either the ESTABLISHED state or the CLOSE-WAIT state.
In Segs	This counter displays the total number of segments that were received, including those received in error. This count only includes segments that are received on currently established connections.
InOut Segs	This counter displays the total number of segments that were sent and the total number of segments that were received.
Out Segs	This counter displays the total number of segments that were sent. This count only includes segments that are sent on currently established connections, but excludes retransmitted octets.
Passive Opens	This counter displays the number of times that TCP connections have made a direct transition to the SYN-RCVD state from the LISTEN state.
RetransSegs	This counter displays the total number of segments that were retransmitted because the segment contains one or more previously transmitted octets.

Thread

The Thread object provides a list of running threads on your system. Table 23-50 contains information on the Thread counters.

Table 23-50 Thread

Counters	Counter Description
% CPU Time	This counter displays the threads share of the elapsed CPU time since the last update. This counter expresses the share as a percentage of the total CPU time.
PID	This counter displays the threads leader process ID.

Using RTMT for Performance Monitoring

RTMT displays performance information of all Cisco Unified CallManager components in a cluster. The tool integrates with Cisco Unified CallManager administration and serviceability software. RTMT provides alert notification for troubleshooting performance. It also monitors various aspects of Cisco Unified CallManager performance by periodically polling performance counter values. Refer to "Displaying a Counter Description" section in the *Cisco CallManager Serviceability Administration Guide, Release 5.0(4)*, for examples on displaying perfmon counters in a chart or table format.

Perfmon monitoring allows you to perform the following tasks:

- From the Cisco Unified CallManager cluster, monitor performance counters including Cisco Unified CallManager nodes, TFTP servers, and database servers.
- Continuously monitor a set of preconfigured objects and receive notification in the form of an e-mail message.

- Associate counter threshold settings to alert notification. An e-mail or popup message provides notification to the administrator.
- Save and restore settings, such as counters being monitored, threshold settings, and alert notifications, for customized troubleshooting tasks.
- Display up to six perfmon counters in one chart for performance comparisons.

RTMT displays performance counters in chart or table format. Chart format looks like a miniature window of information. Up to six charts display in the RTMT performance monitoring pane for each category tab that you create. You can display a particular counter by double clicking the counter in the perfmon monitoring pane. Because chart view represents the default, you configure the performance counters to display in table format when you create a category.

You can remove a counter chart (table entry) with the Remove Chart/TableEntry menu item in the Perfmon menu in the menu bar.

Tip The polling rate in each precanned monitoring window remains fixed, and the default value specifies 30 seconds. If the collecting rate of the AMC (Alert Manager and Collector) changes for Cisco Unified CallManager Administration service parameters, the polling rate in the precanned window also updates. In addition, the local time of the RTMT client application and not the backend server time, provides the basis for the time stamp in each chart.

See the following sections for configuration options in the RTMT perfmon monitoring pane:

- Category Tabs, page 23-60
- Sample Rate, page 23-61
- Adding Counters to Monitor, page 23-61
- Alert Notification for Counters, page 23-61

Category Tabs

A category comprises monitored performance counters. A tab in the RTMT monitoring pane contains the category name. All performance counters that are monitored in this tab belong to a category. The system polls the performance counters in the tab at the same rate, with each category configured to have its own polling rate.

You can create custom categories in the RTMT monitoring pane to view information that helps you troubleshoot specific performance or device problems. If your Cisco Unified CallManager system is experiencing performance problems with specific objects, create custom categories to monitor the performance of the counters within the object. If the system is experiencing problems with specific devices, create custom categories to monitor the devices within the cluster. In addition, you can create alert notifications for counters and gateways in these custom categories.

To create custom categories, you add a new category tab. When the tab is created, you specify the specific performance counters, devices, and alerts within that tab and then save your custom category by using Profile.

Sample Rate

The Cisco Unified CallManager software polls counters, devices, and gateway ports to gather status information. In the RTMT monitoring pane, you configure the polling intervals for the performance counters, devices, and gateway ports for each category tab that you create.

Note High-frequency polling rate affects Cisco Unified CallManager performance. The minimum polling rate for monitoring a performance counter in chart view equals 5 seconds; the minimum rate for monitoring a performance counter in table view equals 1 second. The default for both specifies 10 seconds.

Adding Counters to Monitor

To troubleshoot system performance problems, you add the counter that is associated with the perfmon object to the RTMT performance monitoring pane, which displays a chart for the counter. Before you add counters, see the "Category Tabs" section on page 23-60.

Category tabs contain up to six perfmon counter charts.

Alert Notification for Counters

Using the alert notification feature, Cisco Unified CallManager notifies you of system problems. Perform the following configuration setup to activate alert notifications for a system counter:

- From the RTMT Perfmon Monitoring pane, choose the system perfmon counter.
- Set up an e-mail or a message popup window for alert notification.
- Determine the threshold for the alert (for example, an alert activates when calls in progress exceed the threshold of over 100 calls or under 50 calls).
- Determine the frequency of the alert notification (for example, the alert occurs once or every hour).
- Determine the schedule for when the alert activates (for example, on a daily basis or at certain times of the day).

Zoom Counter

To get a closer look at performance monitors, zoom the monitor counter in the RTMT perfmon monitoring pane by highlighting the counter chart and choosing Zoom Chart in the Perfmon menu.

Counter Properties

Counter properties allow you to display a description of the counter and configure data-sampling parameters.

The Counter Property window contains the option to configure data samples for a counter. The performance counters that display in the RTMT performance monitoring pane contain green dots that represent samples of data over time. You can configure the number of data samples to collect and the

number of data points to show in the chart. After the data sample is configured, view the information by using the View All Data/View Current Data menu option to view all the data that a perfmon counter collected.

Understanding Perfmon Logs

The system logs the perfmon data whenever RTMT calls the LogPerfMon API. You can open the file log, which is compatible with the Windows Performance tool csv format, by using the Performance tool for analysis.

When you add new counters, RTMT changes the header to accommodate the new counters and logs the values correspondingly. When data is unavailable for an already existing counter (already added to header), RTMT inserts blank values in the file. If the character length of the new counters that are added is greater than 2000, the new file gets generated with all the counters.

The following file name format for the PerfMon Log applies: PerfMonLog_<NodeName>_MM_DD_YYYY_hh_mm.csv.

The following lists comprises the perfmon counters that RTMT logs:

At System level

- Cisco Unified CallManager System Performance\QueueSignalsPresent 1-High
- Cisco Unified CallManager System Performance\QueueSignalsPresent 2-Normal
- Cisco Unified CallManager System Performance\QueueSignalsPresent 3-Low
- Cisco Unified CallManager System Performance\QueueSignalsPresent 4-Lowest
- Cisco Unified CallManager System Performance\QueueSignalsProcessed 1-High
- Cisco Unified CallManager System Performance\QueueSignalsProcessed 2-Normal
- Cisco Unified CallManager System Performance\QueueSignalsProcessed 3-Low
- Cisco Unified CallManager System Performance\QueueSignalsProcessed 4-Lowest

For each process that is running on the system

- Process\% Processor Time
- Process\ID Process
- Process\Private Bytes
- Process\Virtual Bytes

Additional Cisco Documentation

Troubleshooting Guide for Cisco Unified CallManager, Release 5.0(4)

Where to Find More Information

Related Topics

- Real-Time Monitoring Tool, *Cisco Unified CallManager New and Changed Information Guide, Release 5.1(1)*
- Real-Time Monitoring Configuration, *Cisco Unified CallManager New and Changed Information Guide, Release 5.1(1)*
- Trace Collection and Log Central in RTMT, *Cisco CallManager Serviceability Administration Guide, Release 5.0(4)*