Monitoring Cisco Unified Communications Manager IM and Presence, Release 9.1(1)

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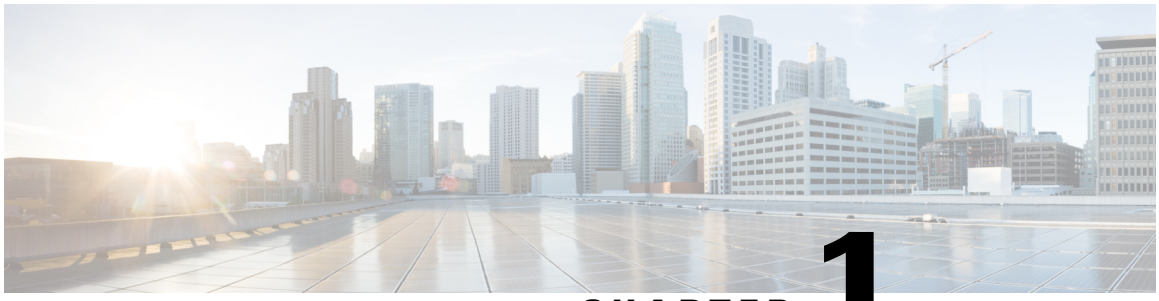
Preface

The following document details a series of best practices for monitoring a IM and Presence Service server.



CHAPTER 1

Alerts and alarms

Monitor alerts using Cisco Prime Unified Operations Manager

Cisco Prime Unified Operations Manager (Unified Operations Manager) 8.6 is capable of raising *system alerts only* for IM and Presence Service. Unified Operations Manager 8.7 and later include a custom syslog feature. This feature makes it possible to add syslog messages that are not in the Unified Operations Manager default list. These alerts will be raised based on their Cisco Unified Real-Time Monitoring Tool (Unified RTMT) default thresholds.

Complete the following procedure to monitor alerts using Unified Operations Manager.

Procedure

Step 1 First on IM and Presence.

a) On the IM and Presence Administration GUI navigate to **System** > **Enterprise Parameters**.

b) For **Remote Syslog Server Name**, add your Unified Operations Manager node name or IP address and click **Save**.

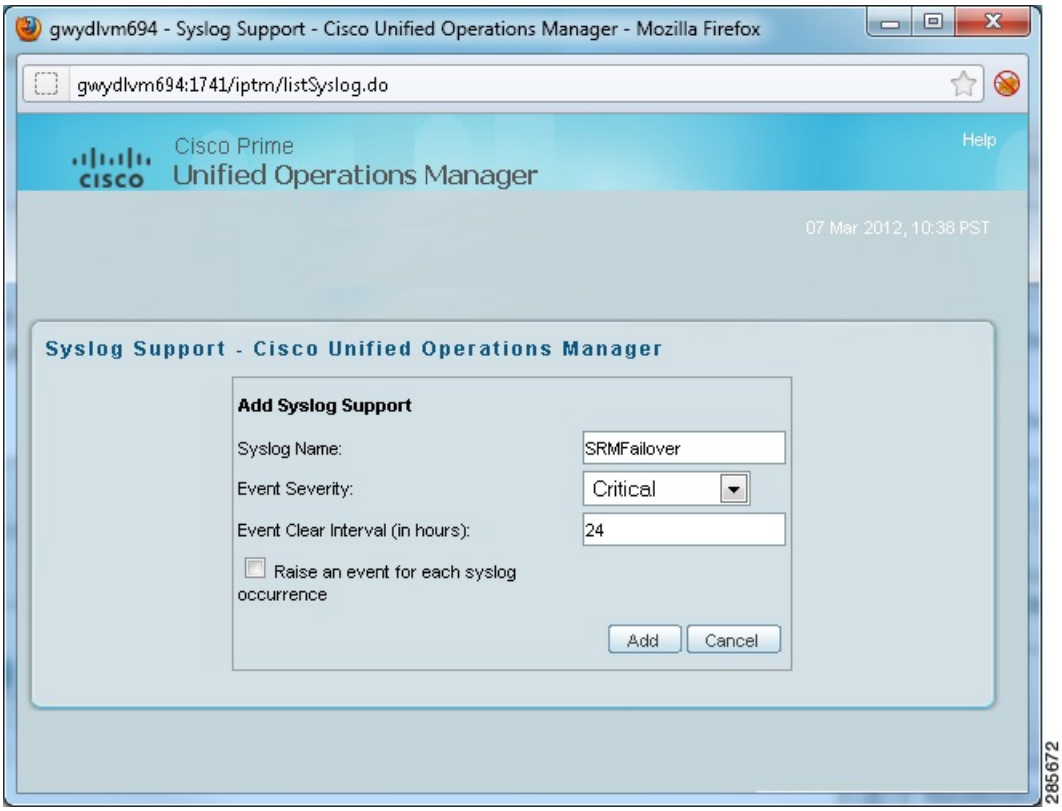
Step 2 Then on Unified Operations Manager.

a) On Unified Operations Manager, navigate to **Administration** > **System Settings** > **Syslog Support** and click **Add**.

b) Specify the name of the alert you wish to monitor in **Syslog Name**.
Here you can specify which IM and Presence alerts you want Unified Operations Manager to monitor.

Note Any of the alerts in this document should be considered of critical severity.

Figure 1: Syslog Support window



Monitor alerts using Unified RTMT

You can monitor both system and IM and Presence-specific alerts for an IM and Presence server using Cisco Unified Real-Time Monitoring Tool.

Procedure

Step 1 To monitor both System and IM and Presence Service-specific alerts on IM and Presence Service Server.

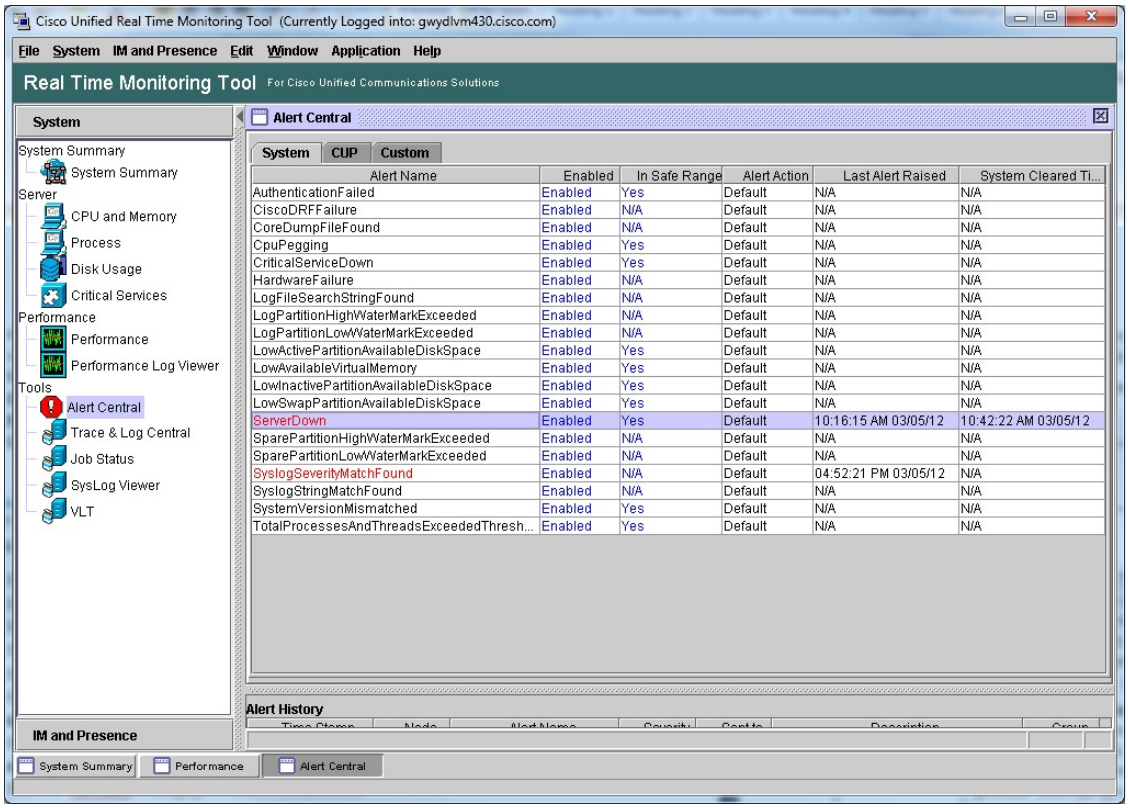
a) Choose **Tools** > **Alert Central**.

b) Right-click on each alert and choose **Set alert** > **Properties** to view alert descriptions, change default thresholds, and configure email notifications.

Step 2 To view the recent alarm history on the IM and Presence Service Server.

a) Choose **Tools** > **System summary**.

Figure 2: Real Time Monitoring Tool window



List of alerts

Alert messages are generated to notify administrators when a predefined condition is met, such as when an activated service goes from up to down. Cisco recommends that you monitor the following IM and Presence, Unified Operations Manager, and System alerts.

IM and Presence Service alerts

The following is a list of common IM and Presence Service alerts.

CTIGWProviderDown

Type

IM and Presence Service

Alert Description

This alert indicates that the CTI provider is currently unavailable.

Unified RTMT Default Threshold

Not Applicable

Recommended Actions

Check the connection to the configured Cisco Unified Communications Manager nodes and verify that the Cisco CTI Gateway application is enabled on the Administration GUI CTI Settings page.

CTIGWProviderFailedToOpen

Type

IM and Presence Service

Alert Description

This alert indicates that the CTI Provider failed to open due to a configuration error.

Unified RTMT Default Threshold

Not Applicable.

Recommended Actions

Verify the Cisco Unified Communications Manager addresses and application user credentials on the Administration GUI CTI Settings page.

DbmonQueueWorkerExistWithError

Type

IM and Presence Service

Alert Description

This alert indicates that the Cisco Sync Agent service is no longer processing change notifications from the Cisco Unified Communications Manager cluster. This error can cause the data on the IM and Presence Service cluster to get out of sync with the data on the Cisco Unified Communications Manager cluster.

Unified RTMT Default Threshold

Not Applicable

Recommended Actions

Verify that the Cisco Unified Communications Manager server is active. You might need to restart the Cisco Sync Agent service.

ESPSharedMemAllocFailed

Type

IM and Presence Service

Alert Description

This alert indicates that the Cisco SIP Proxy service failed to allocate shared memory segments while trying to initialize tables.

Unified RTMT Default Threshold

Not Applicable

Recommended Actions

Use Unified RTMT to check system shared memory, check the Cisco SIP Proxy service trace log file for any detailed error messages and contact Cisco TAC for assistance.

ESPSharedMemCreateFailed

Type

IM and Presence Service

Alert Description

This alert indicates that the Cisco SIP Proxy service failed to create shared memory segments while trying to initialize tables.

Unified RTMT Default Threshold

Not Applicable

Recommended Actions

Use Unified RTMT to check system shared memory, check the Cisco SIP Proxy service trace log file for any detailed error messages, and contact Cisco TAC for assistance.

ESPSharedMemSetPermFailed

Type

IM and Presence Service

Alert Description

This alert indicates that the Cisco SIP Proxy service failed to set permissions on shared memory segments while trying to initialize tables.

Unified RTMT Default Threshold

Not Applicable

Recommended Actions

Use Unified RTMT to check system shared memory, check the Cisco SIP Proxy service trace log file for any detailed error messages, and contact Cisco TAC for assistance.

ESPStopped

Type

IM and Presence Service

Alert Description

This alert indicates that the Cisco SIP Proxy service child process has stopped.

Unified RTMT Default Threshold

Not Applicable

Recommended Actions

If the administrator has not manually stopped the Proxy service, this may indicate a problem. Use Unified RTMT to check for any related alarms and contact Cisco TAC for assistance.

ICSACertificateFingerPrintMisMatch

Type

IM and Presence Service

Alert Description

This alert indicates that the Cisco Intercluster Sync Agent service detected a fingerprint mismatch on the certificate being processed.

Unified RTMT Default Threshold

Not Applicable

Recommended Actions

Use the IM and Presence Service OS Administration GUI to compare the certificates that are loaded on this server with the certificates on the source server. You might need to delete the problem certificates and reload them.

ICSACertificateValidationFailure

Type

IM and Presence Service

Alert Description

This alert indicates that the Cisco Intercluster Sync Agent service detected a validation error on the certificate being processed.

Unified RTMT Default Threshold

Not Applicable

Recommended Actions

Use the IM and Presence Service OS Administration GUI to compare the certificates that are loaded on this server with the certificates on the source server. You might need to delete the problem certificates and reload them.

InterclusterSyncAgentAXLConnectionFailed

Type

IM and Presence Service

Alert Description

This alert indicates that the Cisco Intercluster Sync Agent service failed authentication to the remote IM and Presence Service cluster and therefore is unable to connect.

Unified RTMT Default Threshold

Not Applicable

Recommended Actions

Verify that the AXL credentials are correct and whether the Cisco AXL Web service is running on the remote IM and Presence Service cluster.

InterclusterSyncAgentFailedToCleanUpPeer

Type

IM and Presence Service

Alert Description

This alert indicates that the Cisco Intercluster Sync Agent service failed to successfully clean up data after a peer was removed during a sync.

Unified RTMT Default Threshold

Not Applicable

Recommended Actions

Verify that the Cisco DB service is still up and accepting connections. See Cisco Inter Cluster Sync Agent logs for the root cause and contact Cisco TAC for assistance.

InterclusterSyncAgentFailedToSendCN

Type

IM and Presence Service

Alert Description

This alert indicates that the Cisco Intercluster Sync Agent service failed to send change notifications to the remote IM and Presence Service cluster.

Unified RTMT Default Threshold

Not Applicable

Recommended Actions

Verify that the AXL credentials are correct and whether the Cisco AXL Web service is running on the remote IM and Presence Service cluster.

InterclusterSyncAgentPeerDuplicate

Type

IM and Presence Service

Alert Description

This alert indicates that the Cisco Intercluster Sync Agent service failed to sync user location data from a remote peer. The remote peer is from an IM and Presence Service cluster which already has a peer in the local cluster.

Unified RTMT Default Threshold

Not Applicable

Recommended Actions

Verify that the hostname of the remote peer is not a secondary node from the identified existing peer. If the new peer is a secondary node, then remove this peer from the IM and Presence Service Administration GUI Inter-cluster details page. You can also run the System Troubleshooter for more details.

InterclusterSyncAgentPeerSyncFailed

Type

IM and Presence Service

Alert Description

This alert indicates that the Cisco Intercluster Sync Agent service failed to sync user location data from the remote IM and Presence Service cluster.

Unified RTMT Default Threshold

Not Applicable

Recommended Actions

Verify that the remote IM and Presence Service peer is not also configured as a node in the local cluster, and on the Administration GUI run the System Troubleshooter for more information about this issue.

NotInCucmAppServerListError

Type

IM and Presence Service

Alert Description

This alert indicates that the Cisco Sync Agent failed to start because the IM and Presence Service Server node is not in the application server list on the Cisco Unified Communications Manager publisher.

Unified RTMT Default Threshold

Not Applicable

Recommended Actions

Add IM and Presence Service Server node to the application server list on the Cisco Unified Communications Manager server and start the Cisco Sync Agent service.

PEConfigNotificationFailure

Type

IM and Presence Service

Alert Description

This alert indicates that the Cisco Presence Engine service cannot bind to the socket that is used for communication with the IM and Presence Service OAM Agent service through XML-RPC.

Unified RTMT Default Threshold

Not Applicable

Recommended Actions

Verify that the IM and Presence Service OAM Agent service listen interface is configured correctly on the IM and Presence Service Administration GUI Application Listener page. Verify that no other process is listening on the same port using netstat.

PEDatabaseError

Type

IM and Presence Service

Alert Description

This alert indicates that the Cisco Presence Engine service encountered an error while retrieving information from the database. This may indicate a problem with the Cisco DB service.

Unified RTMT Default Threshold

Not Applicable

Recommended Actions

Verify that the Cisco DB service is running. Use Unified RTMT to check the Cisco Presence Engine service logs for errors. Consult Cisco TAC for guidance.

PEIDSQueryError

Type

IM and Presence Service

Alert Description

This alert indicates that the Cisco Presence Engine service has detected an error while querying the IM and Presence Service database.

Unified RTMT Default Threshold

Not Applicable

Recommended Actions

Restart the Cisco Presence Engine service when convenient. See the associated error message and log files and consult Cisco TAC if the problem persists.

PEIDSSubscribeError

Type

IM and Presence Service

Alert Description

This alert indicates that the Cisco Presence Engine service was unable to subscribe for IM and Presence Service database change notifications.

Unified RTMT Default Threshold

Not Applicable

Recommended Actions

Restart the Cisco Presence Engine service when convenient. See the associated error message and log files and consult Cisco TAC if the problem persists.

PEIDStoIMDBDatabaseSyncError

Type

IM and Presence Service

Alert Description

This alert indicates that synchronization between the IM and Presence database and the Cisco Presence Engine and a database service has failed (Cisco Login Datastore, Cisco Route Datastore, Cisco Presence Datastore, and Cisco SIP Registration Datastore).

Unified RTMT Default Threshold

Not Applicable

Recommended Actions

Restart the Cisco Presence Engine service when convenient. See associated error message and log files and consult Cisco TAC if the problem persists.

PEOamInitialConfigFileError

Type

IM and Presence Service

Alert Description

This alert indicates that the Cisco Presence Engine service configuration file is missing or malformed.

Unified RTMT Default Threshold

Not Applicable

Recommended Actions

Verify that the IM and Presence Service OAM Agent service is running through the Serviceability GUI.

PEOamInvalidInitialConfigFile

Type

IM and Presence Service

Alert Description

This alert indicates that the Cisco Presence Engine service configuration file is missing or malformed.

Unified RTMT Default Threshold

Not Applicable

Recommended Actions

Verify that the OAM Agent service is running.

PEOamConfigFileError

Type

IM and Presence Service

Alert Description

This alert indicates that the Cisco Presence Engine service configuration file is missing or malformed.

Unified RTMT Default Threshold

Not Applicable

Recommended Actions

Verify that the IM and Presence Service OAM Agent service is running through the Serviceability GUI.

PEPeerNodeFailure

Type

IM and Presence Service

Alert Description

This alert indicates that Cisco Presence Engine service on the peer node of a subcluster has failed.

Unified RTMT Default Threshold

Not Applicable

Recommended Actions

Use Cisco Unified Serviceability to verify that the Cisco Presence Engine service is running. Consult Cisco TAC for further assistance

PESipSgHostUnavailable

Type

IM and Presence Service

Alert Description

This alert indicates that the Cisco Presence Engine service could not contact the indicated outbound proxy server group.

Unified RTMT Default Threshold

Not Applicable

Recommended Actions

Verify that the outbound proxy is configured correctly and listening on the configured ports.

PESipSocketBindFailure

Type

IM and Presence Service

Alert Description

This alert indicates that the Cisco Presence Engine service was unable to connect to the indicated configured interface. No SIP traffic can be processed on this interface.

Unified RTMT Default Threshold

Not Applicable

Recommended Actions

Verify that the Cisco Presence Engine service listen interface is configured correctly on the IM and Presence Service Administration GUI Application Listener page. Verify that no other process is listening on the same port using netstat.

SRMFailed

Type

IM and Presence Service

Alert Description

This alert indicates that the Server Recovery Manager is in the Failed state.

Unified RTMT Default Threshold

Not Applicable

Recommended Actions

When it is convenient restart the Server Recovery Manager.

SRMFailover

Type

IM and Presence Service

Alert Description

This alert indicates that the Server Recovery Manager is performing an automatic failover.

Unified RTMT Default Threshold

Not Applicable

Recommended Actions

Verify that the failed node is up and that critical services are running.

SyncAgentAXLConnectionFailed

Type

IM and Presence Service

Alert Description

This alert indicates that the Cisco Sync Agent service failed authentication to the remote Cisco Unified Communications Manager publisher and therefore is unable to connect.

Unified RTMT Default Threshold

Not Applicable

Recommended Actions

Verify that the AXL credentials are correct and whether the Cisco AXL Web service is running on the remote Cisco Unified Communications Manager publisher.

SyncAgentCucmDbmonConnectionFailed

Type

IM and Presence Service

Alert Description

This alert indicates that the Cisco Sync Agent service lost the connection to the Cisco Database Layer Monitor service. This error can cause the data on the IM and Presence Service cluster to get out of sync with the data on the Cisco Unified Communications Manager cluster.

Unified RTMT Default Threshold

Not Applicable

Recommended Actions

Verify that the Cisco Unified Communications Manager server is active and that the Cisco Unified Communications Manager publisher has opened port 8001.

XCPConfigMgrConfigurationFailure

Type

IM and Presence Service

Alert Description

This alert indicates that the Cisco XCP Config Manager failed to successfully update XCP configuration.

Unified RTMT Default Threshold

Not Applicable

Recommended Actions

See the Cisco XCP Config Manager logs for the root cause. Contact Cisco TAC for assistance.

XCPConfigMgrHostNameResolutionFailed

Type

IM and Presence Service

Alert Description

This alert indicates that the Cisco XCP Config Manager could not resolve a DNS name to allow Cisco XCP Routers to connect to that node.

Unified RTMT Default Threshold

Not Applicable

Recommended Actions

Verify DNS resolvability of all hostnames and FQDNs in both local and remote clusters. Restart the Cisco XCP Config Manager and then restart the Cisco XCP Router after DNS is resolvable.

XCPConfigMgrJabberRestartRequired

Type

IM and Presence Service

Alert Description

This alert indicates that the Cisco XCP Config Manager has regenerated XCP XML files after system halt due to buffer size. The Cisco XCP Router must now be restarted to apply changes.

Unified RTMT Default Threshold

Not Applicable

Recommended Actions

When it is convenient to do so, restart the Cisco XCP Router.

XCPConfigMgrQueueAtCriticalLevel

Type

IM and Presence Service

Alert Description

This alert indicates that the Cisco XCP Config Manager buffer has reached critical levels. The system will halt until configuration stabilizes, and then it will regenerate all files. The Cisco XCP Router will need to be restarted to apply these changes.

Unified RTMT Default Threshold

Not Applicable

Recommended Actions

Restart the Cisco XCP Router after the alarm is sent that indicates that configuration has been regenerated successfully.

XCPConfigMgrR2RPasswordEncryptionFailed

Type

IM and Presence Service

Alert Description

This alert indicates that the Cisco XCP Config Manager was unable to encrypt the password that is associated with an Inter-cluster Router-to-Router configuration.

Unified RTMT Default Threshold

Not Applicable

Recommended Actions

When it is convenient to do so, restart the Cisco XCP Config Manager and then restart the Cisco XCP Router.

XcpSIPGWStackResourceError

Type

IM and Presence Service

Alert Description

This alert indicates that the maximum supported concurrent SIP Federation subscriptions or SIP Federation IM sessions has been reached, and the Cisco XCP SIP Federation Connection Manager does not have the resources that are required to handle any addition subscriptions or IM sessions.

Unified RTMT Default Threshold

Not Applicable

Recommended Actions

Increase the Pre-allocated SIP stack memory Service Parameter for the Cisco XCP SIP Federation Connection Manager. Note: If you are changing this setting, make sure that you have the memory available. If you do not have enough memory, you may have reached the limit of your hardware capability.

Cisco Prime Unified Operations Manager Alerts

The following is a list of common Unified Operations Manager alerts.

Note Unified Operations Manager maintains its own set of alerts that are related to IM and Presence Service. Some of these mirror existing native alerts. For example, the native alert LowAvailableVirtualMemory and the Unified Operations Manager alert InsufficientFreeVirtualMemory both alert on the same item and are based on the same data, yet the default threshold is different on Unified Operations Manager (< 15%) and Unified RTMT (< 25%).

DevicePartiallyMonitored

Type

Unified Operations Manager

Alert Description

This alert is generated based on polling Unified RTMT precanned counters and is raised when Unified Operations Manager is not able to collect Unified RTMT data for Unified RTMT polling supported devices. Unified RTMT data collection can fail if there are HTTP communication failures or network issues or if the Unified RTMT application on the device has issues and is unable to provide the data to Unified Operations Manager.

Default Threshold

Not Applicable

Recommended Actions

- Check for any HTTP communication or network failures from the Operations Manager to the device.
- Check whether Cisco RIS Data Collector network service is running on the device. This service should be running in all the nodes of the cluster.

HighUtilization

Type

Unified Operations Manager

Alert Description

Current utilization exceeds the utilization threshold that is configured for this processor.

Default Threshold

> 90%

Recommended Actions

Identify the processes that are using excessive CPU space. You may want to take action, which may include restarting the identified process or processes.

HTTPInaccessible

Type

Unified Operations Manager

Alert Description

HTTP service cannot be used to communicate to all servers in the cluster. This might be due to one or both of the following:

- The Web Services for a server in the cluster is down.
- The credentials (HTTP username, password) for at least one of the running Web Services were not found or are incorrect.

Default Threshold

Not Applicable

Recommended Actions

Verify that all servers are accessible through Web Service with the credentials that are provided in Unified Operations Manager. Provide the correct username and password if the credentials are wrong. You might need to restart the web server if Web Service is down.

InsufficientFreeVirtualMemory

Type

Unified Operations Manager

Alert Description

System is running out of virtual memory resources. This may degrade the performance of the device.

Default Threshold

< 15%

Recommended Actions

Verify insufficient memory using the CPU and Memory tool in Unified RTMT. This alert may be due to a memory leak. It is important to identify which process is using excessive memory. This can be done using the Process tool. After the process is identified, if you suspect a memory leak (for example, if the memory usage for a process increases continually, or a process is using more memory than it should), you may want to restart that process.

ServerUnreachable

Type

Unified Operations Manager

Alert Description

Host is not reachable through Unified RTMT polling. This alert is generated based on polling Unified RTMT precanned counters.

Default Threshold

Not Applicable

Recommended Actions

Investigate whether the indicated host is running and whether a network problem exists.

Unresponsive

Type

Unified Operations Manager

Alert Description

Device does not respond to ICMP or SNMP requests. Probable causes are:

- On a system: ICMP ping requests and SNMP queries to the device timeout receive no response.
- On an SNMP Agent: Device ICMP ping requests are successful, but SNMP requests time out with no response.

A system might also be reported as unresponsive if the only link (for example, an interface) to the system goes down. Unified Operations Manager performs root cause analysis for any unresponsive events.

If Unified Operations Manager receives a device unresponsive event, it will clear any interface unresponsive events from that device until the device is recognized as responsive.

Default Threshold

Not Applicable

Recommended Actions

Check whether the device is reachable from Unified Operations Manager.

System Alerts

The following is a list of common System alerts.

CiscoDRFFailure

Type

System

Alert Description

This alert indicates that the Disaster Recovery Failure (DRF) backup or restore process encountered errors. The alert is generated by monitoring the syslog messages that are received from the IM and Presence Service Server.

Unified RTMT Default Threshold

Not Applicable

Recommended Actions

Verify whether /common/drf has the required permission and enough space for the DRF user. Check the application logs for further details. Consult Cisco TAC for assistance.

CpuPegging

Type

System

Alert Description

This alert occurs when the percentage of CPU load on a presence server is over the configured percentage for the configured period of time. This alert is generated based on polling Unified RTMT performance counters. To view the threshold, right-click the alert and select Set Alert/Properties.

Unified RTMT Default Threshold

99%

Recommended Actions

The most common reason for this alert is that one or more processes are using excessive CPU space. The alert has information about which process is using the most CPU. After the process is identified, you may want to take action, which could include restarting the process. You can also verify the current CPU usage of the problem process using the Process tool.

It is helpful to check the trace setting for that process. Using the detailed/debug trace level is known to take up excessive CPU space. If so, you may want to take more drastic measures, such as stopping nonessential services or scheduling a restart of IM and Presence Server during off hours.

CriticalServiceDown

Type

System

Alert Description

This alert is generated when one of the critical services (any of the services in the Critical Services tool in Unified RTMT) is not running. The problem could be due to someone manually stopping the service. If you intend to stop the service for a long period of time, you should deactivate it on the Serviceability GUI: **Cisco Unified Serviceability** > **Tools** > **Service Activation**.

Unified RTMT Default Threshold

Not Applicable

Recommended Actions

Identify which services are not running. You can start the service manually from the Serviceability GUI: **Cisco Unified Serviceability** > **Tools** > **Feature Services/Network Services**.

Also, check to see whether there are any core files. Download the core files, if any, as well as service trace files.

HardwareFailure

Type

System

Alert Description

This alert indicates that a hardware failure has occurred in a presence server. This event is generated by monitoring the syslog messages received from the IM and Presence server.

Unified RTMT Default Threshold

Not Applicable

Recommended Actions

Check the Unified RTMT Syslog Viewer tool for further details.

LogPartitionHighWaterMarkExceeded

Type

System

Alert Description

This alert indicates that the percentage of used disk space in the log partition has exceeded the configured high water mark. This alert is generated based on polling Unified RTMT performance counters. To view the threshold, right-click the alert and select Set Alert/Properties.

Unified RTMT Default Threshold

> 95%

Recommended Actions

Log partition usage can be monitored from the Unified RTMT Disk Usage page. It appears as Common Partition. Check trace settings and also check for core dump files. Note that core dump files are fairly large. Typically, a core dump file is 200 to 300 MB in size, but it can also be 1 GB or 2 GB.
Note that after the log partition disk usage goes above the high water mark threshold, Cisco Log Partition Monitoring Tool (LPM) starts deleting files to put log partition disk usage under the low water mark threshold. Because LPM may delete the trace/log/core dump files you want to keep, it is very important to act when you receive a LogPartitionLowWaterMarkExceeded alert. You can use Trace and Log Central (TLC) In Unified RTMT to download files and delete them from the server.

LogPartitionLowWaterMarkExceeded

Type

System

Alert Description

This alert indicates that the percentage of used disk space in the log partition has exceeded the configured low water mark. This alert is generated based on polling Unified RTMT performance counters. To view the threshold, right-click the alert and select Set Alert/Properties.

Unified RTMT Default Threshold

> 90%

Recommended Actions

See LogPartitionHighWaterMarkExceeded.

LowActivePartitionAvailableDiskSpace

Type

System

Alert Description

This alert indicates that the percentage of available disk space in the active partition is lower than the configured value. This alert is generated based on polling Unified RTMT performance counters. To view the threshold, right-click the alert and select Set Alert/Properties.

Unified RTMT Default Threshold

< 4%

Recommended Actions

Some of the symptoms of low active disk space are:

- Administration GUI does not operate correctly.
- Cisco Unified Communications Manager Bulk Administration Tool (BAT) does not operate correctly.
- Unified RTMT does not operate correctly.

Because there are no user-manageable files in Active Partition, check the alert threshold. If the alert threshold is at the Cisco default, contact Cisco TAC for guidance.

LowAvailableVirtualMemory

Type

System

Alert Description

This alert occurs when the percentage of available virtual memory is lower than the configured value. This alert indicates that the available virtual memory is running low. This alert is generated based on polling Unified RTMT performance counters. To view the threshold, right-click the alert and select Set Alert/Properties. A LowAvailableVirtualMemory alert generally means that the server has allocated all of its physical memory and has begun using its Swap Space on disk more intensively. This will lead to higher CPU usage and longer I/O wait times.

Unified RTMT Default Threshold

< 25%

Recommended Actions

Verify insufficient memory using the CPU and Memory tool in Unified RTMT. This alert may be due to a memory leak. It is important to identify which process is using excessive memory. This can be done using the Process tool. After the process is identified, if you suspect a memory leak (for example, if the memory usage for a process increases continually, or a process is using more memory than it should), you may want to restart that process.

LowSwapPartitionAvailableDiskSpace

Type

System

Alert Description

This alert occurs when the percentage of available disk space of the swap partition is lower than the configured value. This alert indicates that available swap partition is running low. Note that the swap partition is part of virtual memory. Therefore, low available swap partition disk space also means low virtual memory. This alert is generated based on polling Unified RTMT performance counters. To view the threshold, right-click the alert and select Set Alert/Properties.

Unified RTMT Default Threshold

< 10%

Recommended Actions

When you receive this alert, you should find out how much swap space and virtual memory are still available. You should also find out find out which process is using the most memory. This alert may be due to a memory leak. After you determine that there is a memory leak and virtual memory is running low, you may want to restart the service after saving the necessary troubleshooting information. Consult Cisco TAC for further information.

ServerDown

Type

System

Alert Description

This alert indicates that the host is not reachable through Unified RTMT polling. This alert is generated based on polling Unified RTMT performance counters.

Unified RTMT Default Threshold

Not Applicable

Recommended Actions

Investigate whether the indicated host is running and whether a network problem exists.

SystemVersionMismatched

Type

System

Alert Description

This alert occurs when there is a mismatch in the system version among all servers in the cluster. This alert is generated by monitoring the syslog messages that are received from the IM and Presence server.

Unified RTMT Default Threshold

Not Applicable

Recommended Actions

Make sure that all servers in the cluster are running the same system version.

TotalProcessesAndThreadsExceededThreshold

Type

System

Alert Description

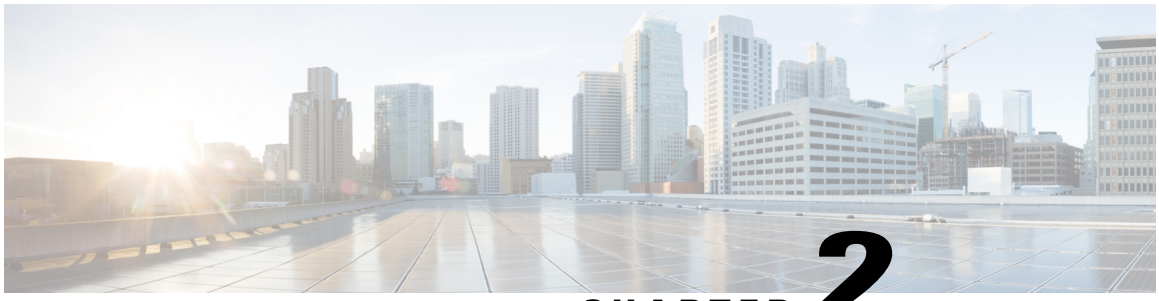
This alert indicates that the current total number of processes or threads has exceeded the maximum number of tasks. This situation could indicate that some processes or threads are not being shut down correctly. System access must stop thread counter update to avoid CPU pegging, and only provide process counter information for up to the maximum number of processes. This alert is generated by monitoring the syslog messages that are received from the IM and Presence Server.

Unified RTMT Default Threshold

Not Applicable

Recommended Actions

Check the alert detail for the process that has the highest number of threads and the process that has the most instances. If the process has an unusual number of threads or process instances, save the trace for the service and perhaps restart the service. Make sure to download trace files that are associated with the service. Note that the Cisco SIP Proxy process sipd and the Database process cmoninit can each have over 20 instances. This is expected behavior.



CHAPTER 2

High CPU and virtual memory issues

Monitor high CPU and virtual memory issues using Unified Operations Manager

Unified Operations Manager 8.6 and 8.7 provides an overview of CPU and virtual memory usage on your IM and Presence Service node. If usage is high, debug further using Unified RTMT.

Unified Operations Manager 9.0 reports on the memory usage of the IM and Presence Service node A Cisco DB service or cmoninit processes, the system overview, and also the CPU usage of the following services:

- Cisco Tomcat
- Cisco Presence Engine
- Cisco SIP Proxy
- Cisco XCP Router
- Cisco XCP Connection Manager
- Cisco XCP Web Connection Manager
- Cisco XCP SIP Federation Connection Manager
- Cisco XCP XMPP Federation Connection Manager

Monitor high CPU and virtual memory issues using Unified RTMT

Unified RTMT provides an overview of CPU and Virtual Memory usage using the CPU and Memory tool. This provides overall system usage statistics for all nodes in an IM and Presence cluster.

Unified RTMT allows monitoring of usage statistics, and individual processes using the Process tool. Every process on the server reports data for the following:

PID

The task's unique process ID, which periodically wraps, though never restarts at zero.

% CPU

The task’s share of the elapsed CPU time since the last update.

Status

The task's process status: 0 - Running, 1 - Sleeping, 2 - Uninterruptible disk sleep, 3 - Zombie, 4 - Traced or stopped (on a signal), 5 - Paging, 6 - Unknown.

Shared Memory (KB)

The amount of shared memory, in kilobytes (KB), that a task is using. Other processes could potentially share the same memory.

Nice (Level)

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 if the task can be dispatched.

VmRSS (KB)

The virtual memory (Vm) resident set size (RSS) that is currently in physical memory in KB, including Code, Data, and Stack.

VmSize (KB)

The total amount of virtual memory, in KB, that the task is using. It includes all code, data, shared libraries, and pages that have been swapped out: Virtual Image = swapped size + resident size.

VmData (KB)

The virtual memory usage of the heap for the task in KB.

Thread Count

The number of threads that are currently grouped with the task. The negative value -1 indicates that this counter is currently not available because thread statistics (including all performance counters in the Thread object as well as the Thread Count counter in the Process object) have been turned off because the system's total processes and threads have exceeded the default threshold value.

Data Stack Size

The stack size for task memory status.

Page Fault Count

The number of major page faults that a task encountered that required the data to be loaded into memory.

High CPU issues

On IM and Presence Service, when you experience high overall CPU usage, Cisco recommends that you check the usage of the following processes that have historically caused high CPU on IM and Presence:

Process	Service
tomcat	Cisco Tomcat
jabberd	Cisco XCP Router
pe	Cisco Presence Engine
cm	Cisco XCP Connection Manager
cm_web	Cisco XCP Web Connection Manager
cm_sip_fed	Cisco XCP SIP Federation Connection Manager
cm_xmpp_fed	Cisco XCP XMPP Federation Connection Manager
cmoninit	A Cisco DB
sipd	Cisco SIP Proxy

Note The cmoninit and sipd processes will both have 20+ individual instances, any one of which could be responsible for high CPU usage.

If the process consuming CPU is not in the preceding table, consult the following table for a list of other processes and their corresponding services. If the process causing high CPU is not in either table, the problem may reside with a system or platform service. Consult Cisco TAC for further assistance.

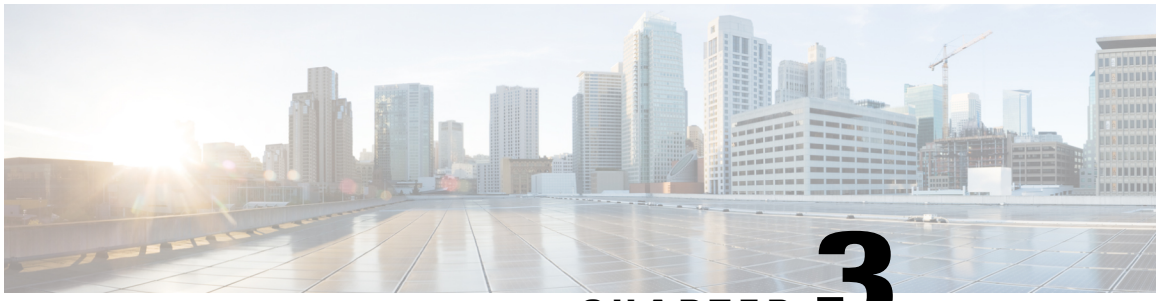
Process	Service
amc	Cisco AMC Service
AuditLog	Cisco Audit Event Service
auth	Cisco XCP Authentication Service
BPS	Cisco Bulk Provisioning Service
cdpd	Cisco CDP
cdpAgt	Cisco CDP Agent
certM	Cisco Certificate Expiry Monitor
CiscoDRFLocal	Cisco DRF Local

Process	Service
CiscoDRFMaster	Cisco DRF Master
CiscoLicenseMgr	Cisco License Manager
CiscoSyslogSubAgt	Cisco Syslog Agent
dblrpc	A Cisco DB Replicator
dbmon	Cisco Database Layer Monitor
EspConfigAgent	Cisco Config Agent
hostagt	Host Resources Agent
interClusterSyncAgent	Cisco Intercluster Sync Agent
jds	Cisco XCP Directory Service
LpmTool	Cisco Log Partition Monitoring Tool
ma	Cisco XCP Message Archiver
Mib2agt	MIB2 Agent
oamagent	Cisco OAM Agent
replWatcher	Cisco Replication Watcher
RisDC	Cisco RIS Data Collector
rtmtreporter	Cisco Serviceability Reporter
sappagt	System Application Agent
snmpdm	SNMP Master Agent
srm	Cisco Server Recovery Manager
syncAgent	Cisco Sync Agent
tc	Cisco XCP Text Conference Manager
tracecollectionservice	Cisco Trace Collection Service
ttlogin	Cisco Login Datastore
ttreg	Cisco SIP Registration Datastore
ttroute	Cisco Route Datastore
ttsoft	Cisco Presence Datastore
xcpConfigManager	Cisco XCP Config Manager

High virtual memory issues

When experiencing high Virtual Memory usage on IM and Presence, Cisco recommends that you monitor the VmSize of the following processes:

- tomcat
- jabberd
- pe
- all of the Connection Manager processes (cm, cm_web, cm_sip_fed & cm_xmpp_fed)
- all of the sipd processes
- all of the cmoninit processes



CHAPTER 3

Performance counters

Monitor performance counters using Unified Operations Manager

Unified Operations Manager 9.0 allows the monitoring of the following counters in the following categories.

Client connections

Counter Value	Counter Name	Folder Location	Default Alert Threshold
Number of connected XMPP clients	ConnectedSockets, on page 44	Cisco XCP CM	None
Number of connected CAXL clients	WebCMConnectedSockets, on page 44	Cisco XCP WebCM	None

Database

Counter Value	Counter Name	Folder Location	Default Alert Threshold
Database Space Used	CcmDbSpace_Used, on page 44	DB Local_DSN	Yes (> 90%)

Counter Value	Counter Name	Folder Location	Default Alert Threshold
Replication Status	Replicate_state, on page 44	Number of Replicates Created and State of Replication	None
Replication Queue Depth	ReplicationQueueDepth, on page 44	Enterprise Replication Perfmon Counters	None

Instant messaging

Counter Attribute	Counter Name	Folder Location	Default Alert Threshold
Number of Instant Message Sessions	JsmIMSessions, on page 46	Cisco XCP JSM	None
Total Instant Message Packets	JsmTotalMessagePackets, on page 47	Cisco XCP JSM	None
Instant Message Packets in the last 60 seconds	JsmMsgsInLastSlice, on page 45	Cisco XCP JSM	None
MessagePackets Received per Session	JsmSessionMessagesIn, on page 46	Cisco XCP JSM Session Counters	None
Messages Sent per Session	JsmSessionMessagesOut, on page 45	Cisco XCP JSM Session Counters	None
Per User/Per Session counters existing for the duration of an IM session or user login.	Cisco XCP JSM Session Counters, on page 46	Cisco XCP JSM Session Counters	None

Presence

Counter Attribute	Counter Name	Folder Location	Default Alert Threshold
Number of Active JSM Sessions	ActiveJsmSessions, on page 47	Cisco Presence Engine	None
Number of Active Calendar Subscriptions	ActiveCalendarSubscriptions, on page 47	Cisco Presence Engine	None

Process CPU usage

Counter Attribute	Counter Name	Folder Location	Default Alert Threshold
A Cisco DB CPU Usage	cmoninit	% CPU Time	Yes (CPU > 90%)
Cisco SIP Proxy CPU Usage	sipd	% CPU Time	Yes (CPU > 90%)
Cisco Tomcat CPU Usage	tomcat	% CPU Time	Yes (CPU > 90%)
Cisco Presence Engine CPU Usage	pe	% CPU Time	Yes (CPU > 90%)
Cisco XCP Router CPU Usage	jabberd	% CPU Time	Yes (CPU > 90%)
Cisco XCP Connection Manager CPU usage	cm	% CPU Time	Yes (CPU > 90%)
Cisco XCP SIP Federation Connection Manager CPU usage	cm#2	% CPU Time	Yes (CPU > 90%)
Cisco XCP XMPP Federation Connection Manager CPU usage	cm#3	% CPU Time	Yes (CPU > 90%)
Cisco XCP Web Connection Manager CPU usage	cm#1	% CPU Time	Yes (CPU > 90%)

Process Memory usage

Counter Attribute	Counter Name	Folder Location	Default Alert Threshold
Database Memory Usage	cmoninit	VmSize	None

SIP federation

Counter Attribute	Counter Name	Folder Location	Default Alert Threshold
Number of Active SIP Subscriptions	SIPS2SSubscriptionsOut, on page 48 SIPS2SSubscriptionsIn, on page 47	Cisco XCP SIP S2S Cisco XCP SIP S2S	Yes (> 260,000)
Number of Idle SIP Proxy Worker Processes	NumIdleSipdWorkers, on page 48	Cisco SIP Proxy	Yes (< 5 for 60 minutes)

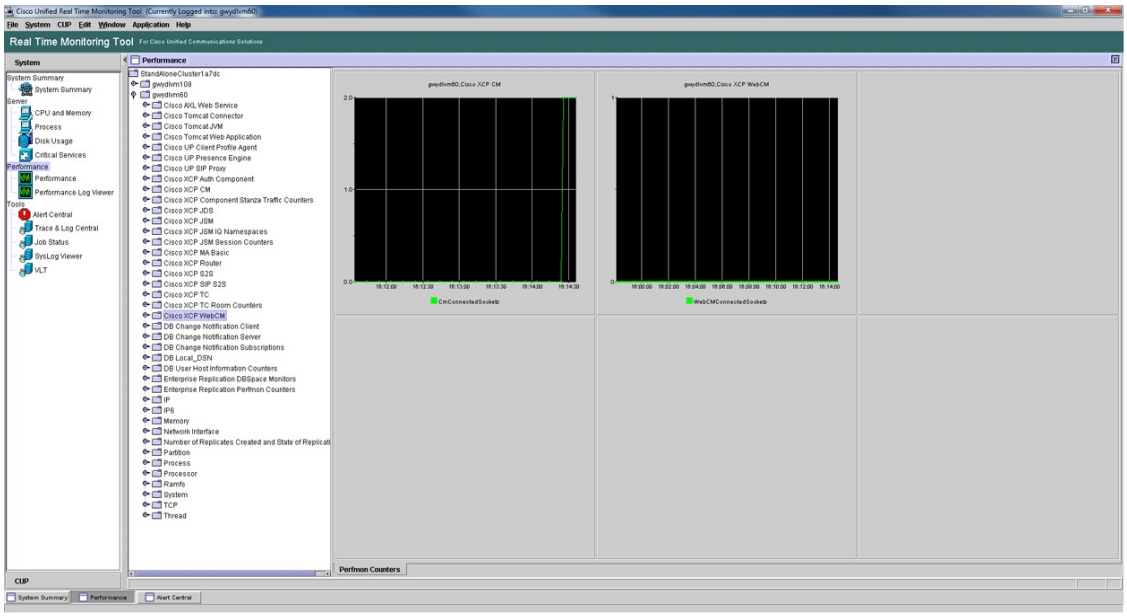
Text conferencing

Counter Attribute	Counter Name	Folder Location	Default Alert Threshold
Total Text Conferencing Rooms	TcTotalRooms, on page 52	Cisco XCP TC	None
Total AdHoc Group Chat rooms	TcAdHocRooms, on page 52	Cisco XCP TC	None
Total Persistent Chat Rooms	TcPersistentRooms, on page 52	Cisco XCP TC	None
Room Message Packets Received	TCRoomMsgPacketsRecv, on page 51	Cisco XCP TC Room Counters	None
Room Number of Occupants	TCRoomNumOccupants, on page 51	Cisco XCP TC Room Counters	None

Monitor performance counters using Unified RTMT

All IM and Presence Service counters are monitored in Unified RTMT through the **Performance** menu item, under the **System** tools:

Figure 3: Real Time Monitoring Tool window



Using Unified RTMT it is possible to create custom alerts based on the values of any Performance Counter. The following procedure is an example of creating a custom alert for Cisco SIP Proxy – NumIdleSipdWorkers.

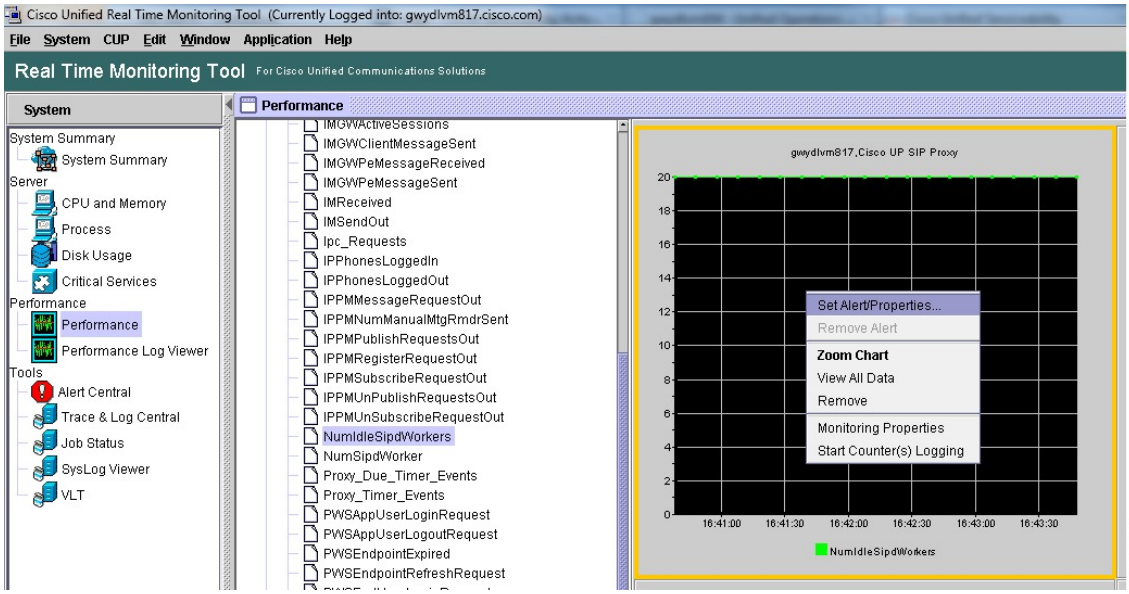
Procedure

Step 1 Select **Performance** from the **Performance** menu item in Unified RTMT.

Step 2 Double-click the **NumIdleSipdWorkers** counter.

Step 3 Select the counter graph in the main Unified RTMT pane.

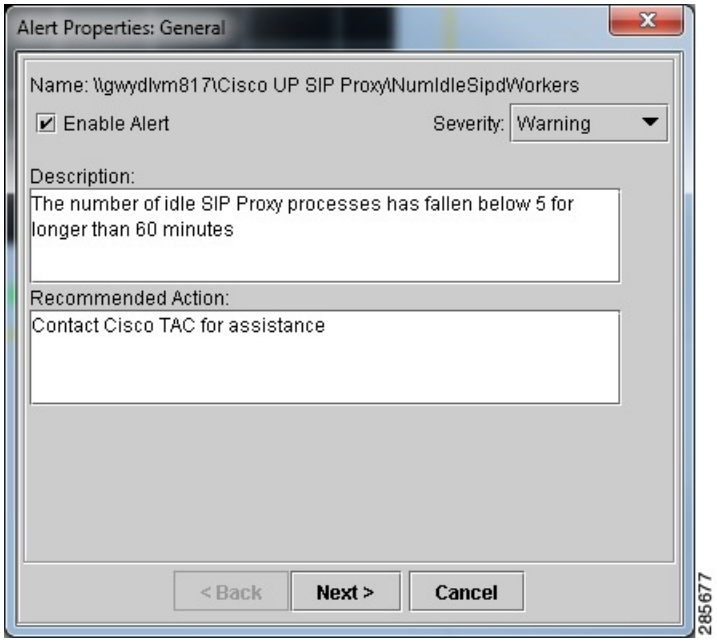
Figure 4: Counter graph



Step 4 Right-click, select **Set Alert/Properties**

The **Alert Properties: General** window opens.

Figure 5: Alert Properties: General window



Step 5 Ensure the **Enable Alert** check box is checked.

Step 6 In the **Description** field, enter a brief description for the alert.

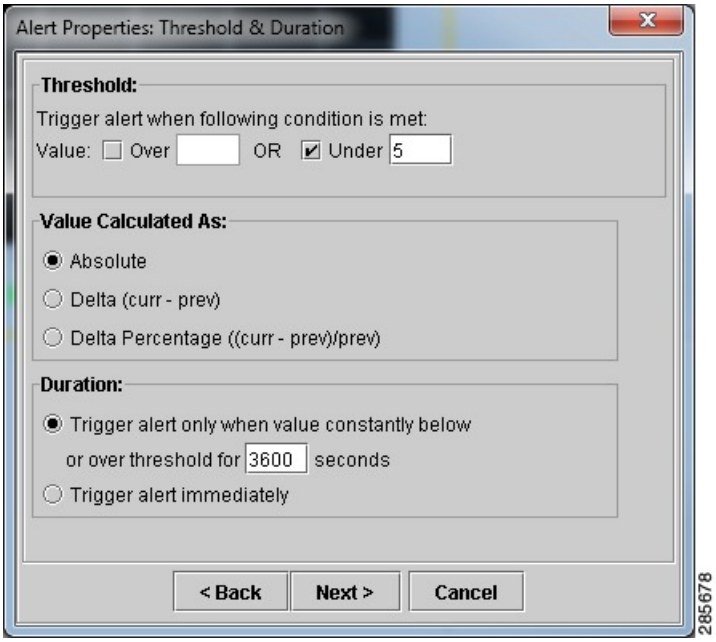
Step 7 In the **Recommended Action** field, enter a brief action for the alert.

Step 8 Choose a severity from the **Severity** drop-down menu.

Step 9 Click **Next**.

The **Alert Properties: Threshold & Duration** window opens.

Figure 6: Alert Properties: Threshold & Duration window



Step 10 In the **Threshold** field, specify the alerting threshold for the counter.

Step 11 In the **Value Calculated As** field, specify how this threshold is calculated.

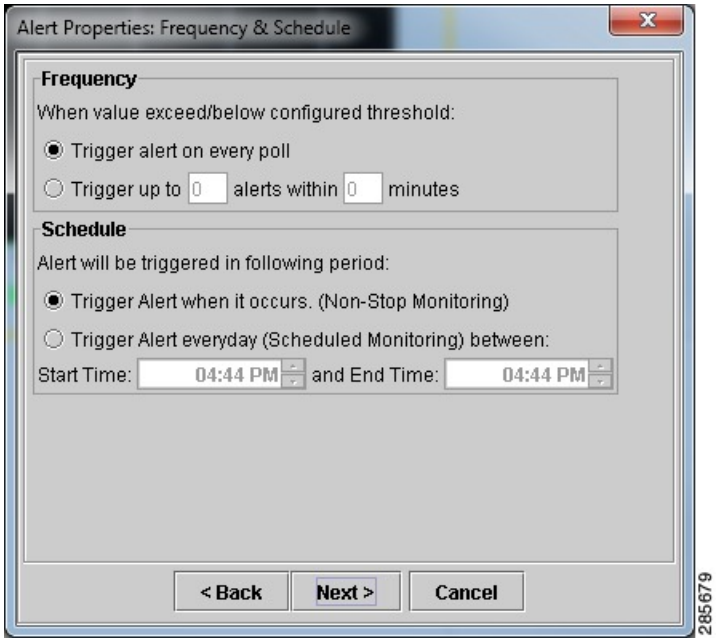
Step 12 In the **Duration** field, specify duration of time that the counter value must be above or below the specified threshold before the alert is triggered.

Note Cisco recommends that on IM and Presence Service this counter should not remain below a value of 5 for a period of 60 minutes (or 3600 seconds). For more details about this counter, see the List of recommended performance counters.

Step 13 Click **Next**.

The **Alert Properties: Frequency & Schedule** window opens.

Figure 7: Alert Properties: Frequency & Schedule window



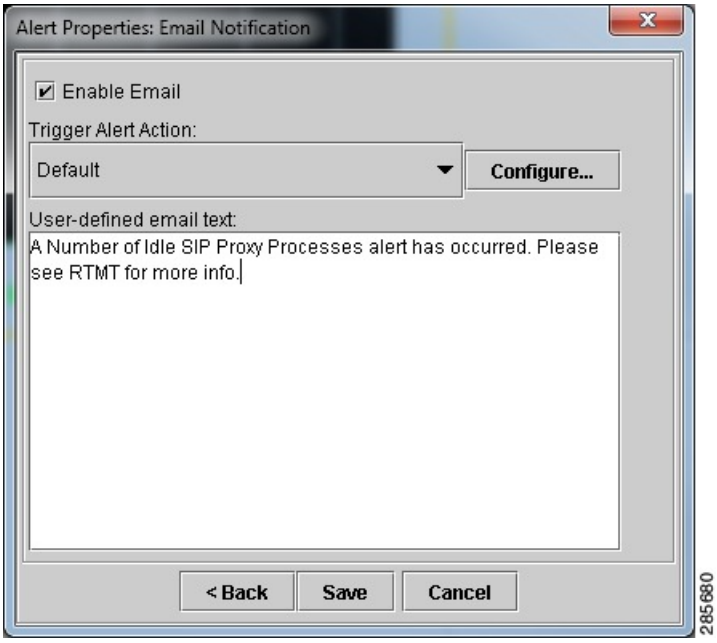
Step 14 In the **Frequency** field, specify the amount of times the custom alert is triggered.
The default is:
"Trigger alert on every poll."

Step 15 In the **Schedule** field, specify when the alert is triggered.
The default is:
"Trigger Alert when it occurs (Non-Stop Monitoring)."

Step 16 Click **Next**

The **Alert Properties: Email Notification** window opens.

Figure 8: Alert Properties: Email Notification window



Step 17 To receive email notifications, ensure the **Enable Email** check box is checked.

Note If you do not wish to receive email notifications, uncheck the **Enable Email** check box and proceed to Step 20, on page 40.

Step 18 In the **Trigger Alert Action** field, use the drop-down menu to select the profile this alert will use.

Step 19 In the **User-defined email text** field, enter a brief message for the alert.

Step 20 Click **Save**.

Archive performance counters in Unified RTMT

The Trace and Log Collection tool in Unified RTMT collects and pushes Perfmon Counter CSV files out to an external server. The following procedure describes how to archive Perfmon Counter CSV files using Cisco RIS Data Collector PerfMon Log.

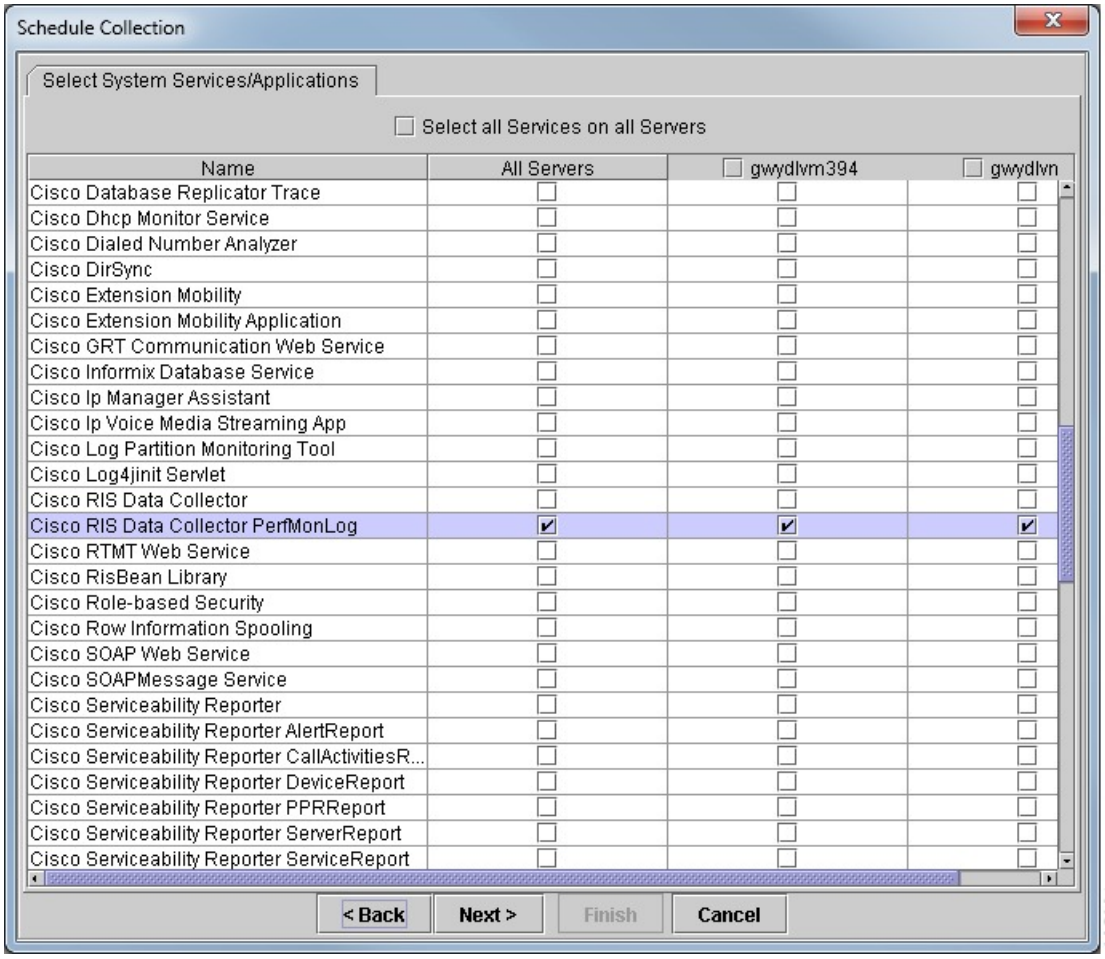
Procedure

Step 1 Open **Trace and Log Collection**.

Step 2 Double-click **Schedule Collection**.

The **Schedule Collection** window opens to the Select System Services/Applications table.

Figure 9: Schedule Collection window



Step 3 Choose the **Cisco RIS Data CollectorPerfMon Log** service.

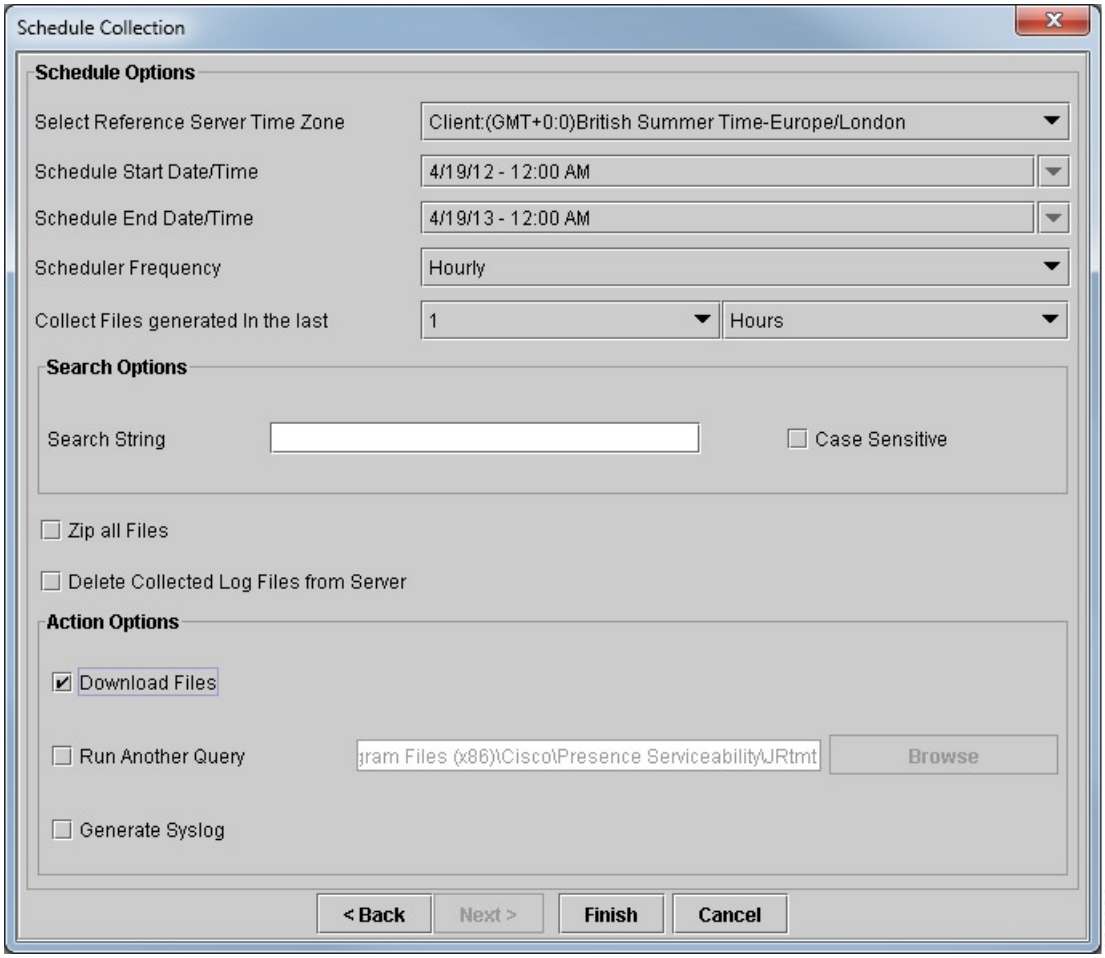
Step 4 To download the PerfMon logs:

From...	... take this action:
All nodes in the cluster	Check **All Servers**.
A single node	Select the node name.

Step 5 Choose **Next**.

The **Schedule Collection Options** window opens.

Figure 10: Schedule Collection Options window



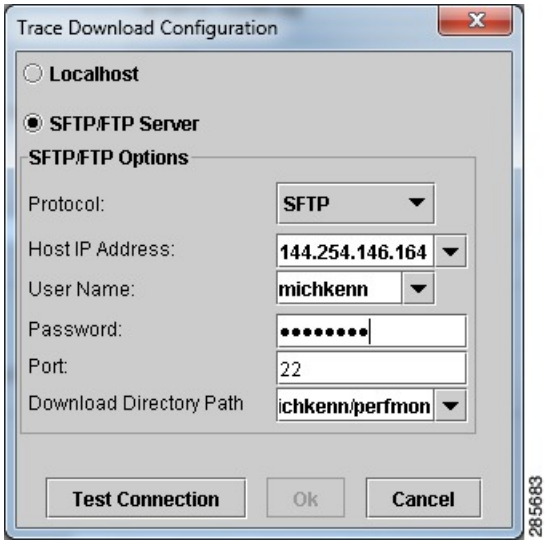
Step 6 In the **Schedule Options** field, configure the following drop-down menus, as desired:

- **Select task Server Time Zone**
- **Schedule Start Date/Time**
- **Schedule End Date/Time**
- **Scheduler Frequency**
- **Collect Files generated in the last**

Step 7 In the **Action Options** field, check the **Download Files** check box.

The **Trace Download Configuration** window opens.

Figure 11: Trace Download Configuration window



Step 8 Choose the archive location for the PerfMon logs.
The default is **Localhost**.

Note When choosing an SFTP/FTP server, you must choose **Test Connection** to ensure your setup is correct.

Step 9 Click **OK**.
The **Trace Download Configuration** window closes.

Step 10 Click **Finish**.
The **Schedule Collection** window closes.

Note You can find the CSV files by navigating down the directory structure to `cm/log/ris/csv`. This unusual directory structure is necessary as it is possible to use Unified RTMT to archive many different logs in one query. It is possible to use Trace and Log collection to archive every log the server generates. Each log will have its own specific path for the sake of organization.

List of recommended performance counters

Client connections

WebCMConnectedSockets

The WebCMConnectedSockets performance counter in the Cisco XCP WebCM folder contains the current number of CAXL web clients that are connected to the Cisco XCP Web Connection Manager on an individual IM and Presence Service server. This number rises and falls based on the usage patterns of your deployment. Further investigation may be required if this number is higher than expected for your user base.

ConnectedSockets

The ConnectedSockets performance counter in the Cisco XCP CM folder contains the current number of XMPP clients that are connected to the Cisco XCP Connection Manager on an individual IM and Presence Service server. This number rises and falls based on the usage patterns of your deployment. Further investigation may be required if this number is higher than expected for your user base.

Database

CcmDbSpace_Used

The Database Space Used performance counter contains the percentage of ccm dbspace used. Monitor this counter for an indication of when you will run out of database space.

ReplicationQueueDepth

The Replication Queue Depth performance counter contains the replication queue depth. A high value is an indication of replication issues.

Replicate_state

The Replication Status performance counter represents the current state of database replication. This is applicable for multinode IM and Presence Service Distributions. It has five potential values:

0

Initializing. The counter equals 0 when the server is not defined or when the server is defined but the realize template has not completed.

1

The system that is created replicates of some tables but not all tables. Cisco recommends that you run **utils dbreplication status** on the CLI to determine the location and cause of the failure.

2

Replication is good, replication is set up correctly, and most of the tables in the database should be in sync for all nodes of the cluster.

3

Bad replication. When the counter displays a value of 3, consider replication in the cluster as bad. It does not mean that replication failed on a particular node. Cisco recommends that you run **utils dbreplication status** on the CLI to determine the location and cause of the failure.

4

Replication set up did not succeed.

Instant messaging

JsmMsgsInLastSlice

The total number of IM packets handled by the IM and Presence Service node across all users in the past 60 seconds. This counter is reset to zero every 60 seconds. The same rules for counting IM packets apply as for TotalMessagePackets. Monitoring of this counter helps identify the busy IM hours in your organization.

JsmSessionMessagesOut

The IM Packets received per session performance counter contains the total number of IMs that are sent by the user from the user's IM client or session. Note that the term *SessionMessagesIn* is defined from the perspective of IM and Presence Service: the IM packet that was sent by the client is an *inbound* IM packet to IM and Presence Service. On large deployments of IM and Presence Service there can be many instances of this counter, and viewing individual counters in Unified RTMT can be time consuming. To get a long list of the value of this counter for every user on IM and Presence Service, use the CLI command:

show perf query counter "Cisco XCP JSM Session Counters" JsmSessionMessagesOut

JsmTotalMessagePackets, *JsmMsgsInLastSlice*, *JsmSessionMessagesIn* and *JsmSessionMessagesOut* each represent instant message packets being sent to IM and Presence Service and are not exact figures of Instant Messages on the system. The amount of IM packets that are sent to IM and Presence Service per IM can vary depending on the client in use.

Example

If Alice and Bob are both using Cisco Unified Personal Communicator 8.5, when Alice sends Bob a single instant message, Cisco Unified Personal Communicator 8.5 will send to IM and Presence Service:

- A composed packet to indicate Alice is typing a new message.
- The instant message packet containing the message body.
- A paused packet to indicate the end of the communication.

In this scenario JSM counters will increment by three.

JsmSessionMessagesIn

The IM Packets sent per session performance counter counts the total number of IM packets that are sent to the user on the user's IM client or session. Note that the term *SessionMessagesOut* is defined from the perspective of IM and Presence Service: the IM packet is sent to the client and is an *outbound* IM packet from IM and Presence Service. On large deployments of IM and Presence Service there can be many instances of this counter, and viewing individual counters in Unified RTMT can be time consuming. To get a long list of the value of this counter for every user on IM and Presence Service use the CLI command:

show perf query counter "Cisco XCP JSM Session Counters" JsmSessionMessagesIn

JsmIMSessions

The Number of IM Sessions performance counter contains the total number of IM sessions on the IM and Presence Service node across all users. The Cisco Presence Engine, which provides presence composition services and rich, always-on network presence, creates an IM session on behalf of all users at Presence Engine (PE) startup time. This is necessary so that network presence events such as Cisco Unified Communications Manager Telephony Presence and Exchange Calendar notifications are reflected in a user's presence even if that user is not logged in on any of their IM clients. Every licensed user that is assigned to an IM and Presence Service node will have one IM Session for PE rich presence composition in addition to one IM Session for any logged-in clients.

Example

If:

- 100 licensed users are assigned to the IM and Presence Service node.
- 50 users are not logged in.
- 40 users are logged in on one IM client.
- 10 users are logged in on two IM clients.

Then IM Sessions will total 160:

- 100 x 1 for rich Presence Engine sessions, *plus*
- 40 x 1 for users logged in on a single client, *plus*
- 10 x 2 for users logged in on two clients

Cisco XCP JSM Session Counters

The Per User/Per Session counters exist only for the duration of an IM session or user login. One set of these counters exists per Presence Engine network presence session, and one set of these counters exists per client login session. In the example given above for IM Sessions, 160 different sets of Cisco XCP JSM Session Counters would exist. When a user logs out, or when the Cisco Presence Engine is stopped, the associated Cisco XCP JSM Session Counters instance is deleted.

Administrators can use these counters to get a snapshot of all users that are currently logged in. These can be accessed by entering the following command on the CLI:

show perf list instances "Cisco XCP JSM Session Counters"

Every user that is assigned to an IM and Presence Service node that is logged in to the system will have a set of JSM session counters for their current logged-in client session and also their Presence Engine network session. On an IM and Presence Service node with 5000 users logged in, this would result in a minimum of 10,000 sets of JSM Session counters. Updating these counters with new values as they change would place the system under stress. To combat this problem, JSM Session counter values are cached locally by the system and are **only updated to Unified RTMT every 30 minutes.**

JsmTotalMessagePackets

The Total IM Packets performance counter gives the total number of IM packets that are handled by the IM and Presence Service node across all users.

Example

If user Alice sends an IM packet to user Bob, and both users are assigned to the same IM and Presence Service node, then this IM packet will be counted twice. This is because The Cisco XCP Router and Jabber Session Manager treat the two users separately. For example, Alice's privacy rules will be applied to the IM packet before it is delivered to Bob, and then Bob's privacy rules will be applied to the IM packet before it is delivered to Bob's client. Whenever IM and Presence Service handles an IM packet, it is counted once for the originator and once for the terminator.

If Alice and Bob are assigned to different IM and Presence Service nodes and Alice sends an IM packet to Bob, then the IM packet will be counted once on Alice's node and once on Bob's node.

Presence

ActiveCalendarSubscriptions

The Number of Active Calendar Subscriptions performance counter contains the number of calendar subscriptions that are currently active on the box.

ActiveJsmSessions

The Number of Active JSM Sessions performance counter contains the number of client emulation sessions between the Cisco Presence Engine and Cisco XCP Router. The value of this counter should always equal the number of licensed users on the box.

SIP federation

SIPS2SSubscriptionsIn

The Number of Active Inbound SIP Subscriptions performance counter contains the current number of active *inbound* SIP Subscriptions that are maintained by the Cisco XCP SIP Federation Connection Manager service on the IM and Presence Service server. Monitor this counter if the IM and Presence Service server is configured for SIP Interdomain Federation or SIP Intradomain Federation.

The total combined count of SubscriptionsOut and SubscriptionsIn must not rise above 260,000 on any single IM and Presence Service server.

SIPS2SSubscriptionsOut

The Number of Active Outbound SIP Subscriptions performance counter contains the current number of active outgoing SIP Subscriptions being maintained by the Cisco XCP SIP Federation Connection Manager service on the IM and Presence Service server. Monitor this counter if IM and Presence Service server is configured for SIP Interdomain Federation or SIP Intradomain Federation.

The sum of the values of the SubscriptionsOut and SubscriptionsIn performance counters must not rise above 260,000 on any single IM and Presence Service server.

NumIdleSipdWorkers

The Number of Idle SIP Proxy Worker Processes performance counter contains the current number of idle/free SIP worker processes on the IM and Presence Service SIP Proxy. This counter gives a good indication of the load being applied to the **Cisco SIP Proxy** on each IM and Presence Service server. Monitor this counter if IM and Presence Service server is configured for SIP Interdomain Federation or SIP Intradomain Federation.

The number of idle processes can drop to zero on occasion and is not a cause for concern. However, if the number of idle processes is consistently below five processes, then it is an indication that the IM and Presence Service Server is being heavily loaded and requires further investigation.

SIPInviteRequestIn

The Number of INVITE Requests Received performance counter is a cumulative count of the number of SIP INVITE requests arriving into the Cisco SIP Proxy service since the service was last started. Depending on the Role of the IM and Presence Service server, these SIP INVITE requests can come from multiple sources:

- On a Routing IM and Presence Service server this count captures outbound INVITE requests to federated SIP contacts from IM and Presence Service users.
- On an IM and Presence Service server with users provisioned, this count captures:
  - All inbound INVITEs from federated SIP contacts to users that are provisioned on the IM and Presence Service server.
  - All outbound INVITEs to federated SIP contacts from users that are provisioned on the IM and Presence Service server.
  - All outbound INVITEs to local SIP clients from users that are provisioned on the IM and Presence Service server.

SIPMessageRequestIn

The Number of MESSAGE Requests Received performance counter is a cumulative count of the number of SIP MESSAGE requests arriving into the Cisco SIP Proxy since the service was last started. This is useful on the Routing IM and Presence Service server in terms of understanding the rate of IMs that are associated with SIP and federated SIP conversations. Depending on the role of the IM and Presence Service server, these SIP MESSAGE requests can come from multiple sources.

- On a Routing IM and Presence Service server this count captures outbound MESSAGE requests to federated SIP contacts from IM and Presence Service users.
- On an IM and Presence Service server with users provisioned, this count captures:
  - All inbound MESSAGE requests from federated SIP contacts to users that are provisioned on the IM and Presence Service server.
  - All outbound MESSAGE requests to federated SIP contacts from users that are provisioned on the IM and Presence Service server.
  - All outbound MESSAGE requests to local SIP clients from users that are provisioned on the IM and Presence Service server.

SIPNotifyRequestIn

The Number of NOTIFY Requests Received performance counter is a cumulative count of the number of SIP NOTIFY requests arriving into the Cisco SIP Proxy service since the service was last started. Depending on the role of the IM and Presence Service server, these SIP NOTIFY requests can come from multiple sources:

- On a Routing IM and Presence Service server this count captures Outbound NOTIFY to federated SIP contacts from IM and Presence Service users.
- On an IM and Presence Service server with users provisioned, this count captures:
  - All inbound NOTIFY requests from federated SIP contacts to users that are provisioned on the IM and Presence Service server.
  - All outbound NOTIFY requests to federated SIP contacts from users that are provisioned on the IM and Presence Service server.
  - All outbound NOTIFY requests to local SIP clients from users that are provisioned on the IM and Presence Service server.

SIPS2SInviteIn

The Number of SIP INVITE Messages Received performance counter is a cumulative total of the number of SIP INVITE messages that were received by the Cisco XCP SIP Federation Connection Manager service since the service was last started. A SIP INVITE message arrives from each IM conversation that is initiated by a federated SIP user. So this count equates to the number of inbound IM conversations that were established since the Cisco XCP SIP Federation Connection Manager was last started.

SIPS2SInviteOut

The Number of SIP INVITE Messages Sent performance counter contains the total number of SIP INVITE messages that were sent out by the Cisco XCP SIP Federation Connection Manager since the service was last started. A SIP INVITE message is sent out for each IM conversation that is initiated by a Cisco Unified Personal Communicator user to a federated SIP user. So this count equates to the number of outbound IM conversations that were established since the Cisco XCP SIP Federation Connection Manager was last started.

Number of SIP MESSAGES Received (Cisco XCP SIP S2S - SIPS2SMessagesIn)

The Number of SIP MESSAGES Received performance counter contains the total number of SIP MESSAGE packets that were received by the Cisco XCP SIP Federation Connection Manager service since the service was last started. Each Instant Message is sent in a SIP MESSAGE packet. So this count equates to the number of inbound IMs since the Cisco XCP SIP Federation Connection Manager was last started.

SIPS2SMessagesOut

The Number of SIP MESSAGES Sent performance counter contains the total number of SIP MESSAGE packets that were sent out by the Cisco XCP SIP Federation Connection Manager since the service was last started. Each Instant Message is sent in a SIP MESSAGE packet. So this count equates to the number of inbound IMs since the Cisco XCP SIP Federation Connection Manager was last started.

SIPS2SNotifyIn

The Number of SIP NOTIFY Messages Received performance counter contains the total number of SIP NOTIFY messages that were received by the Cisco XCP SIP Federation Connection Manager service since the service was last started.

SIPS2SNotifyOut

The Number of SIP NOTIFY Messages Sent performance counter contains the total number of SIP NOTIFY messages that were sent out from the Cisco XCP SIP Federation Connection Manager service since the service was last started.

SIPSubscribeRequestIn

The Number of SUBSCRIBE Requests Received performance counter contains the total number of SIP SUBSCRIBE requests arriving at the Cisco SIP Proxy service since the service was last started. This counter captures all SUBSCRIBE requests, including refresh SUBSCRIBE requests (sent every 2 hours to keep a SIP Subscription alive) and unSUBSCRIBE requests (to terminate the subscription). Depending on the role of the IM and Presence Service server, these SIP SUBSCRIBE requests can come from multiple sources.

- On a Routing IM and Presenceserver, this count captures outbound SUBSCRIBE requests to federated SIP contacts from IM and Presence users.
- On an IM and Presence server with users provisioned, this count captures:
    - All inbound SUBSCRIBE requests from federated SIP contacts to users that are provisioned on the IM and Presence server.
    - All outbound SUBSCRIBE requests to federated SIP contacts from users that are provisioned on the IM and Presence server.
    - All outbound SUBSCRIBE requests to local SIP clients from users that are provisioned on the IM and Presence server.

Sip_Tcp_Requests

The Number of TCP Requests Received performance counter contains a time-sliced count of the number of generic SIP packets arriving per second at the Cisco SIP Proxy over TCP connections, regardless of type. This includes any SIP requests (SUBSCRIBE/INVITE/MESSAGE/NOTIFY/INFO, etc.) and any SIP responses (100: Trying, 200: OK, 404: Not Found, etc.). You can use it to check for spikes in activity on the IM and Presence Service SIP Proxy.

Text conferencing

TCRoomMsgPacketsRecv

The IMs received per room performance counter contains the number of IMs that are received by the room. On large deployments of IM and Presence Service there can be many instances of this counter, and viewing individual counters in Unified RTMT can be time consuming. To get a long list of the value of this counter for every user on IM and Presence Service, use the CLI command:

show perf query counter "Cisco XCP TC Room Counters" TCRoomMsgPacketsRecv

TCRoomNumOccupants

The Number of occupants per room performance counter contains the current number of occupants of the chat room. For Persistent Chat rooms, monitoring the Number of occupants per room performance counter will give an indication of the room's usage trend. On large deployments of IM and Presence there can be many instances of this counter and viewing individual counters in Unified RTMT can be time consuming. To get a long list of the value of this counter for every user on IM and Presence use the CLI command:

show perf query counter "Cisco XCP TC Room Counters" TCRoomNumOccupants

It is possible to have a maximum of 16,500 Text Conferencing rooms on a IM and Presence Service node. Each of these rooms will have its own set of Per Chat Room counters. In a similar fashion to JSM Session counters, updating these with new values as they change would place the system under stress. To reduce the stress, Per Chat Room counter values are cached locally by the system and **only updated to Unified RTMT every 30 minutes.**

Cisco XCP TC Room Counters

Per Chat Room performance counters only exist for the lifetime of a chat room. For ad hoc chat rooms, these counter instances will be destroyed when the ad hoc chat room is destroyed. For persistent chat rooms, the counter instances will also be destroyed when the persistent chat room is destroyed; however, persistent chat rooms are long lived, so they should rarely be destroyed.

Per Chat Room counters can be used to monitor the usage and participants in persistent (and ad hoc) chat rooms over their lifetime and can help identify persistent chat rooms that are no longer being used frequently.

Administrators can use Per Chat Room counters to get a snapshot of all rooms that are currently hosted on the node. These can be accessed by using the following CLI command:

show perf list instances "Cisco XCP TC Room Counters"

TcAdHocRooms

The Total ad hoc Group Chat Rooms performance counter contains the total number of ad hoc chat rooms that are currently hosted on the node. Note that ad hoc chat rooms are automatically destroyed when all users leave the room, so this counter should rise and fall in value regularly.

TcPersistentRooms

The Total Persistent Chat Rooms performance counter contains the total number of persistent chat rooms hosted on the node. Persistent chat rooms must be explicitly destroyed by the room owner. This counter can be monitored to identify if the total number of persistent chat rooms is very large and also to help identify if some persistent chat rooms are not being used regularly anymore.

TcTotalRooms

The Total Text Conferencing Rooms performance counter contains the total number of Text Conferencing rooms that are hosted on the node. This includes both ad hoc rooms and persistent chat rooms.