



Configure Unified CVP Logging and Event Notifications

Unified CVP provides information about component device status and interaction through

- Logs, which are presented in text format and can be viewed using Cisco serviceability tools
- Statistics, which can be viewed using the Unified CVP Operations Console

This chapter also provides information about [Unified CVP SNMP-Raise/Clear Mappings](#), and contains the following topics:

- [Using Syslog, on page 1](#)
- [Using Logs to Interpret Events, on page 1](#)
- [VoiceXML Logs, on page 4](#)
- [About Event Statistics, on page 7](#)
- [Unified CVP SNMP-Raise/Clear Mappings, on page 22](#)

Using Syslog

Unified CVP allows you to configure the primary and backup syslog servers with the forked primary and forked backup servers. Failover from primary to backup server is not guaranteed. When the primary syslog server goes down (the entire machine, not just the syslog receiver application), Unified CVP relies on the host operating system and the Java Runtime Environment for notification that the destination is not reachable. Because the semantics of this notification do not guarantee delivery, Unified CVP cannot guarantee failover.

Using Logs to Interpret Events

You can use the **CVPLogMessages.xml** file to help interpret events. This file contains all messages (or notifications) on SNMP events and/or through Syslog.



Note The **CVPLogMessages.xml** file applies to all Unified CVP Services.

Each event in the **CVPLogMessages.xml** field containing information that must be useful for correcting any problems indicated by the event.



Note Be aware that the <resolution> field might not always contain as much information as the [Troubleshooting Guide for Cisco Unified Customer Voice Portal](#) or other Unified CVP documentation, and should be considered with all other resources when troubleshooting a problem.

The sections that follow provide information about editing, uploading, and downloading the CVPLogMessages.xml file from the Operations Console.

Editing the Log Messages XML File

The log messages XML file, `CVPLogMessages.xml`, defines the severity, destination (SNMP management station or Syslog server) and possible resolution for Unified CVP log messages. This file also identifies an event type identifier and message text identifier for each event. The text for these identifiers is stored in the resource properties file, `CVPLogMessagesRes.properties`.

Each Unified CVP Call Server, VXML Server, and Reporting Server has a log messages XML file and log message file. You can edit the `CVPLogMessages.xml` file on a particular Unified CVP server to customize the severity, destination and possible resolution for each event that the server generates. You can also edit the `CVPLogMessagesRes.properties` file to change the text of the message that is generated when an event occurs on that server.

Use any plain-text editor (one that does not create any markup) or XML editor to edit the `CVPLogMessages.xml` file. Use a resource file editor to edit the `CVPLogMessagesRes.properties` file. If a resource file editor is not available, use a text editor.

Message Element	Possible Values	What it Means
Name	Resource="identifier"	Identifies the event type described in the <code>CVPLogMessagesRes.properties</code> file.
Body	Resource="identifier"	Identifies the message text described in the <code>CVPLogMessagesRes.properties</code> file.
Severity	0 to 6	Identifies the Unified CVP Event Severity Levels of the event.
SendToSNMP	True or false	Set to true, to send this message, when logged, to an SNMP manager, if one is configured.
SendToSyslog	True or false	Set to true to send this message, when logged, to a Syslog server, if one is configured.

Message Element	Possible Values	What it Means
SNMPRaise	True or false	<p>Set to true to identify this message, when logged, as an SNMP raise event, which the SNMP management station uses to initiate a task or automatically take an action.</p> <p>Set to false to identify this message as an SNMP clear when sent to an SNMP management station. An SNMP clear event usually corresponds to an SNMP raise event, indicating that the problem causing the raise has been corrected. An administrator on an SNMP management station can correlate SNMP raise events with SNMP clear events.</p>

Save the file and restart the CVP server to implement the changes.

Unified CVP Event Severity Levels

The following table describes the available severity levels for Unified CVP events. You can set the severity level for an event by editing the log messages XML file, CVPLogMessages.xml, on the server that generates events. For instructions on editing this file, see [Editing the Log Messages XML File](#).

Level	Severity	Purpose
EMERGENCY	0	System or service is unusable
ALERT	1	Action must be taken immediately
CRITICAL	2	Critical condition, similar to ALERT, but not necessarily requiring an immediate action
ERROR	3	An error condition that does not necessarily impact the ability of the service to continue to function
WARN	4	A warning about a bad condition, which is not necessarily an error
NOTICE	5	Notification about interesting system-level conditions, which are not errors
INFO	6	Information about internal flows or application or per-request information, not system-wide information

VoiceXML Logs

About VoiceXML Logs

VoiceXML logs record Unified CVP system-specific information, such as heartbeat status. By default, VoiceXML logs are stored in the \Cisco\CVP\logs\VXML folder.

The table that follows describes the logs that VoiceXML creates.

Log Type	Log Name	Description
Infrastructure	CVP.<timestamp>.log	Unified CVP logs for the VoiceXML Service: This includes Notice, Info, and Debug logs. With Debug turned on, you can also see Call, Message, and Method trace types of logs.
Error messages	Error.<timestamp>.log	Unified CVP error log: This contains any error that Unified CVP Services and message layer has generated.

Correlate Unified CVP/Unified ICME Logs with VXML Server Logs

When using the VXML Server option in the Unified CVP solution, you can correlate Unified CVP/Unified ICME logs with VoiceXML logs. Pass the Call ID to the VXML Server by URL. Building upon the URL used in the previous example, the URL is as follows: *http://VXML Server IPAddress:7000/CVP/Server?application=Chapter1_HelloWorld&callid=XXXXXX-XXXXX-XXXXXXX-XXXXXX*



Note Unified CVP VXML Server (by default) receives callid (which contains the call GUID), _dnis, and _ani as session variables in comprehensive mode even if the variables are not configured as parameters in the ToExtVXML array. If the variables are configured in ToExtVXML then those values are used. These variables are available to VXML applications as session variables, and displayed in the Unified CVP VXML Server log. This change is backwards compatible with the following script. That is, if you have added the following script, you do not change it. However, if you remove this script, you save an estimated 40 bytes of ECC variable space.

The following procedure describes how to configure logging.

Procedure

In the Unified ICME script, use the formula editor to set ToExtVXML[1]. Set the value of ToExtVXML[1] variable to `concatenate("callid=", Call.user.media.id)`

Note

- Always include Call ID when sending the call to the Unified CVP VXML Server using the Compress flow model. The Call ID can also be used in Unified CVP VXML Server (standalone) solutions.
- When you concatenate multiple values, use a comma for the delimiter.
- The value of ICMInfoKeys must contain RouterCallKey, RouterCallDay, and RouterCallKeySequence separated by a “-”.

For example,

```
concatenate("ICMInfoKeys=",Call.RouterCallKey,"-",Call.RouterCallDay,"-",Call.RouterCallKeySequence
```

About Unified CVP VXML Server Logs

Unified CVP VXML Server logs record interactions between the Unified CVP VXML Server and the server that hosts the VoiceXML applications. By default, Unified CVP VXML Server logs are stored in the /Cisco/CVP/VXMLServer/logs folder.

The following table describes the logs that Unified CVP VXML Server creates:

Log Type	Log Name	Description
Unified CVP VXML Server Call Log	call_log<timestamp>.txt	Records a single line for every application visit handled by the Unified CVP VXML Server.
Unified CVP VXML Server Call Error Log	error_log<timestamp>.txt	Records errors that occur outside the realm of a particular application.
Unified CVP VXML Server Administration History Log	admin_history<timestamp>.txt	Records information from Unified CVP VXML Server administration scripts.

The Unified CVP VXML Server Call Error Log contains the following error codes:

- Error Code 40 -- System Unavailable

This is returned if the application server is unavailable (shutdown, network connection disabled, and so forth)

- Error Code 41 -- App Error

This is returned if some Unified CVP VXML Server-specific error occurs (For example, java exception).

- Error Code 42 -- App Hangup

This is returned to Unified CVP if the Hang Up element is used without being preceded by a Subdialog_Return element.



Note If the application is configured correctly, this does not occur.

- Error Code 43 -- Suspended

This is returned if the Unified CVP VXML Server application is suspended.

- Error Code 44 -- No Session Error

This is returned when an emergency error occurs (for example, an application is called that has not been loaded in the Unified CVP VXML Server application).

- Error Code 45 -- Bad Fetch

This is returned when the Unified CVP VXML Server encounters a bad fetch situation. This code is returned when a .wav file or an external grammar file is not found.

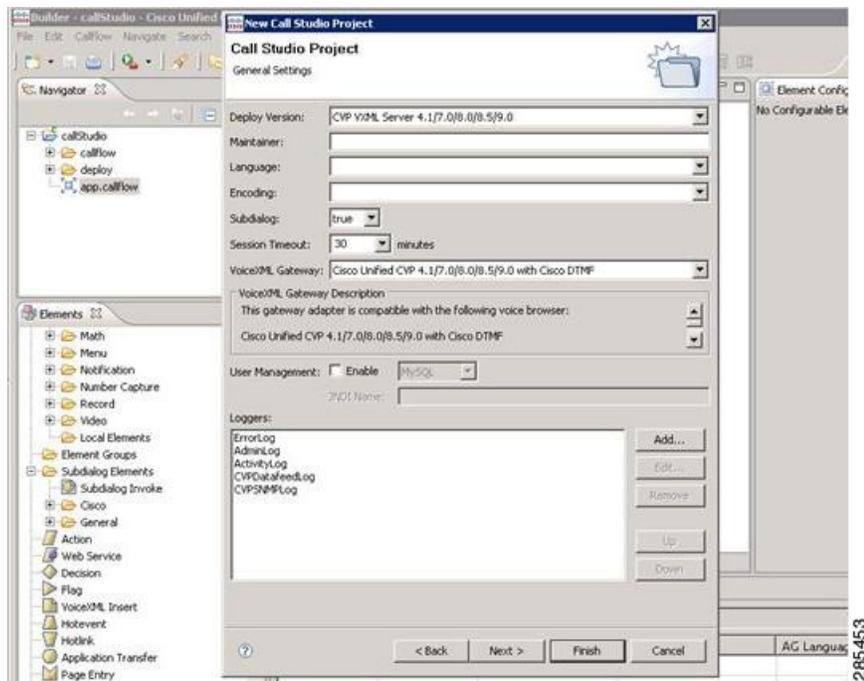
About VoiceXML Application Logging

The Unified CVP VXML Server creates several logs for each individual VoiceXML application. By default, these application logs - with the exception of CVPDatafeedLog and CVPSNMPLog - are stored in the /Cisco/CVP/VXMLServer/applications/<NAME of APPLICATION>/logs folder.



Note Application developers have to use the above folder for application and custom logs.

Configure these logs using Call Studio:



Note See [Element Specifications for Cisco Unified CVP Unified CVP VXML Server and Unified Call Studio](#) for information about configuring loggers.

The following table describes the logs that are created for each application:

Application Logger Type	Log Name	Description
ActivityLog	activity_log<timestamp>.txt Note Log files are stored in the ActivityLog directory.	Records all application activity, showing which elements are entered and exited during a call. Default setting: on
ErrorLog	error_log<timestamp>.txt Note Log files are stored in the ErrorLog directory.	Records all error messages for the application. Default setting: on
AdminLog	admin_history<timestamp>.txt Note Log files are stored in the AdminLog directory.	Records information from application-specific administration scripts. Default setting: on
CVPPDatafeedLog	CVPPDatafeed.log. Note This log is stored in /Cisco/CVP/logs/VXML folder.	Listens for logging events and provides Unified CVP VXML Server and VoiceXML Service data to the Unified CVP Reporting Server. The Unified CVP Reporting Server stores this information in a reporting database so that it is available for later review. One CVPPDatafeedLog is created per application. Default setting: on Note The VoiceXML Service can be started by adding this logger in the VoiceXML application.
CVPSNMPLog	CVPSNMP.log. Note This log is stored in /Cisco/CVP/logs/VXML folder.	Listens for a set of events and sends information about these events to the SNMP log, Syslog, or Unified CVP log. Default setting: on
DebugLog	debug_log<timestamp>.txt. Note Log files are stored in the DebugLog directory.	Creates a single file per call that contains all HTTP requests and responses that occurred between a IOS Gateway and Unified CVP VXML Server during the call session. Default setting: off

About Event Statistics

You can monitor the following statistics through the Operations Console Control Center:

- Device statistics
- Infrastructure statistics
- ICM Service call statistics
- IVR Service call statistics
- SIP Service call statistics
- Gateway statistics
- VXML Server statistics
- Reporting Server statistics

Infrastructure Statistics

Unified CVP infrastructure statistics include realtime and interval data on the Java Virtual Machine (JVM), threading, and Licensing.

You can access these statistics by choosing Control Center from the System menu and then selecting a device. See the Operations Console topic *Viewing Infrastructure Statistics* for more information.

Access infrastructure statistics either by:

- Selecting **System > Control Center**, selecting a device, clicking the Statistics icon in the toolbar, and then selecting the **Infrastructure** tab.
- Selecting a device type from the **Device Management** menu, selecting a device, clicking the Statistics icon in the toolbar, and then selecting the **Infrastructure** tab.

The following table describes Licensing statistics.

Table 1: Licensing Statistics

Statistic	Description
Realtime Statistics	
Port Licenses Available	The number of port licenses available for the processing of new calls. Exactly one port license is used per call, independent of the call's traversal through the individual Call Server services.
Current Port Licenses in Use	The number of port licenses currently in use on the Call Server. One port license is used per call, independent of the call's traversal of the individual Call Server services.
Current Port Licenses State	There are four threshold levels of port license usage: safe, warning, critical and failure. An administrator may set the required percentage of port licenses in use needed to reach a given threshold level, with the exception of the failure level which is reached when the number of ports checked out is equal to the number of licenses ports.
Interval Statistics	

Statistic	Description
Start Time	The time the system started collecting statistics for the current interval.
Duration Elapsed	The amount of time that has elapsed since the start time in the current interval.
Interval Duration	The interval at which statistics are collected. The default value is 30 minutes.
Total New Port License Requests	The number of port license checkout requests made in the current interval. For each port license checkout request, this metric is increased by one, regardless of whether it checks out a new port license.
Average License Requests/Minute	The average number of port license checkout requests made per minute in the current interval. This metric is calculated by dividing the port license requests metric by the number of minutes elapsed in the current interval.
Maximum Port Licenses Used	The maximum number of port licenses used during this time interval.
Aggregate Statistics	
Start Time	The time the service started collecting statistics.
Duration Elapsed	The amount of time that has elapsed since the service start time.
Total New Port License Requests	The number of port license checkout requests made since the system was started. For each port license checkout, this metric is increased by one, regardless of whether it checks out a new port license.
Average License Requests /Minute	The average number of port license checkout requests made per minute since the system was started. This metric is calculated by dividing the aggregate port license requests metric by the number of minutes elapsed since the system was started.
Peak Port Licenses Used	The peak number of simultaneous port licenses used since the start of the system. When a port checkout occurs, this metric is set to the current port licenses in use metric if that value is greater than this metric's current peak value.
Total Denied Port License Requests	The number of port license checkout requests that were denied since the start of the system. A port license checkout request is denied if the number of port licenses checked out at the time of the request is equal to the total number of port license available. When a port license checkout is denied, the call does not receive regular treatment (the caller may hear a busy tone or an error message).

The following table describes thread pool system statistics. The thread pool is a cache of threads, used by Unified CVP components only, for processing relatively short tasks. Using a thread pool eliminates the waste of resources encountered when rapidly creating and destroying threads for these types of tasks.

Table 2: Thread Pool Realtime Statistics

Statistic	Description
Realtime Statistics	
Idle Threads	The number of idle threads waiting for some work
Running Threads	The number of running thread pool threads currently processing some work.
Core Threads	The number of thread pool threads that will never be destroyed no matter how long they remain idle
Maximum Threads	The maximum number of thread pool threads that will ever exist simultaneously
Peak Threads Used	The peak number of thread pool threads ever simultaneously tasked with some work to process

The following table describes Java Virtual Machine statistics.

Table 3: Java Virtual Machine (JVM) Realtime Statistics

Statistic	Description
Realtime Statistics	
Peak Memory Usage	The greatest amount of memory used by the Java Virtual machine since startup. The number reported is in megabytes and indicates the peak amount of memory ever used simultaneously by this Java Virtual Machine.
Current Memory Usage	The current number of megabytes of memory used by the Java Virtual Machine.
Total Memory	The amount of memory in megabytes available to the Java Virtual Machine. The number indicates how much system memory is available for the Java Virtual Machine.
Available Memory	The amount of available memory in the Java Virtual Machine. The number reported is in megabytes and indicates how much of the current system memory claimed by the Java Virtual Machine is not currently being used.
Threads in Use	The number of threads currently in use in the Java Virtual Machine. This number includes all of the Unified CVP standalone and thread pool threads, and those threads created by the Web Application Server running within the same JVM.
Peak Threads in Use	The greatest amount of threads used simultaneously in the Java Virtual Machine since startup. The peak number of threads used by the Java Virtual Machine includes all Unified CVP standalone and thread pool threads, and threads created by the Web Application Server running within the same JVM.

Statistic	Description
Uptime	The time that the Java Virtual Machine has been running. This time is measured in hh:mm:ss and shows the amount of elapsed time since the Java Virtual Machine process began.

ICM Service Call Statistics

The ICM Service call statistics include data on calls currently being processed by the ICM service, new calls received during a specified interval, and total calls processed since start time.

Access ICM Service statistics either by:

- Selecting **System > Control Center**, selecting a CVP Call Server, clicking the **Statistics** icon in the toolbar, and then selecting the **ICM** tab.
- Selecting **Device Management > CVP Call Server**, selecting a Call Server, clicking the **Statistics** icon in the toolbar, and then selecting the **ICM** tab.

The following table describes ICM Service call statistics.

Table 4: ICM Service Call Statistics

Statistic	Description
Realtime Statistics	
Active Calls	The current number of calls being serviced by the Unified Intelligent Contact Management (Unified ICM) Server for a Unified CVP Call Server. This value represents the calls currently being serviced by the Unified ICM for the Unified CVP Call Server for follow-on routing to a Contact Center agent.
Active SIP Call Legs	The ICM Server can accept VoIP calls that originate using either the Session Initiation Protocol (SIP). Active SIP Call Legs indicates the number of calls received by the Unified ICM Server from the Unified CVP Call Server using the SIP protocol.
Active VRU Call Legs	The current number of calls receiving Voice Response Unit (VRU) treatment from the Unified ICM Server. The VRU treatment includes playing pre-recorded messages, asking for Caller Entered Digits (CED) or Speech Recognition Techniques to understand the customer request.
Active ICM Lookup Requests	Calls originating from an external Unified CVP VXML Server need call routing instructions from the Unified ICM Server. Active Lookup Requests indicates the current number of external Unified CVP VXML Server call routing requests sent to the ICM Server.
Active Basic Service Video Calls Offered	The current number of simultaneous basic service video calls being processed by the Unified ICM service where video capability was offered.

Statistic	Description
Active Basic Service Video Calls Accepted	The current number of simultaneous calls that were accepted as basic service video calls and are being processed by the Unified ICM service.
Interval Statistics	
Start Time	The time at which the current interval began.
Duration Elapsed	The amount of time that has elapsed since the current interval began.
Interval Duration	The time interval at which statistics are collected. The default value is 30 minutes.
New Calls	The number of new calls received by the Unified ICM application for follow-on Voice Response Unit (VRU) treatment and routing to a Contact Center agent during the current interval.
SIP Call Legs	The Unified ICM application accepts VoIP calls that originate from the Session Initiation Protocol (SIP) Protocol. Interval SIP Call Legs is an interval specific snapshot metric indicating the number of calls received by the ICM application from SIP during the current interval.
VRU Call Legs	The number of calls receiving VRU treatment from the Unified ICM application. The VRU treatment includes playing pre-recorded messages, asking for Caller Entered Digits (CED) or speech recognition techniques to understand the customer request during the current interval.
ICM Lookup Requests	Calls originating in an external Unified CVP VXML Server need call routing instructions from the Unified ICM application. Interval Lookup Requests is an interval specific metric indicating the number of external Unified CVP VXML Server call routing requests sent to the Unified ICM application during the current interval.
Basic Service Video Calls Offered	The number of offered basic service video calls processed by the Unified ICM service during the current interval.
Basic Service Video Calls Accepted	The number of basic service video calls accepted and processed by the Unified ICM service during the current interval.
Aggregate Statistics	
Start Time	The time the service started collecting statistics.
Duration Elapsed	The amount of time that has elapsed since the service start time.
Total Calls	The total number of new calls received by the Unified ICM application for follow-on VRU treatment and routing to a Contact Center agent since system start time.

Statistic	Description
Total SIP Call Legs	The Unified ICM application can accept VoIP calls that originate from the Session Initiation Protocol (SIP) Protocol. Total SIP Switch Legs is a metric indicating the number of calls received by the ICM application by SIP since system start time.
Total VRU Call Legs	The number of calls that have received VRU treatment from the Unified ICM application since system start time. The VRU treatment includes playing pre-recorded messages, asking for Caller Entered Digits (CED) or Speech Recognition Techniques to understand the customer request.
Total ICM Lookup Requests	Calls originating in an external Unified CVP VXML Server need call routing instructions from the Unified ICM application. Total Lookup Requests is a metric indicating the total number of external Unified CVP VXML Server call routing requests sent to the Unified ICM application since system start time.
Total Basic Service Video Calls Offered	The number of newly offered basic service video calls processed by the Unified ICM service since system start time.
Total Basic Service Video Calls Accepted	The number of new basic service video calls accepted and processed by the Unified ICM service since system start time.

IVR Service Call Statistics

The IVR service call statistics include data on calls currently being processed by the IVR service, new calls received during a specified interval, and total calls processed since the IVR service started.

Access IVR Service statistics either by:

- Selecting **System > Control Center**, selecting a Call Server, clicking the **Statistics** icon in the toolbar, and then selecting the **IVR** tab.
- Selecting **Device Management > CVP Call Server**, selecting a Call Server, clicking the **Statistics** icon in the toolbar, and then selecting the **IVR** tab.

The following table describes the IVR Service call statistics.

Table 5: IVR Service Call Statistics

Statistic	Description
Realtime Call Statistics	
Active Calls	The number of active calls being serviced by the IVR service.
Active HTTP Requests	The number of active HTTP requests being serviced by the IVR service.
Interval Statistics	

Statistic	Description
Start Time	The time the system starts collecting statistics for the current interval.
Duration Elapsed	The amount of time that has elapsed since the start time in the current interval.
Interval Duration	The interval at which statistics are collected. The default value is 30 minutes.
Peak Active Calls	Maximum number of active calls handled by the IVR service simultaneously.
New Calls	Metric that counts the number of New Call requests received from the IOS Gateway. A New Call includes the Switch leg of the call and the IVR leg of the call. This metric counts the number of New Call Requests received by the IVR Service.
Calls Finished	Metric that counts the number of Unified CVP Calls that have finished during this interval. A Call, for the purpose of the Call Finished metric, includes both the Switch leg and the IVR leg of the Unified CVP call. When both legs of the call are finished, the <i>Calls Finished</i> metric increases.
Average Call Latency	The average amount of time in milliseconds that it takes the IVR Service to process a New Call or Call Result Request.
Maximum Call Latency	The maximum amount of time in milliseconds that it has taken for the IVR Service to process a New Call Request or a Request Instruction Request.
Minimum Call Latency	The minimum amount of time in milliseconds it took for the IVR Service to process a New Call Request or a Request Instruction Request.
Peak Active HTTP Requests	Active HTTP Requests is a metric that indicates the current number of simultaneous HTTP requests being processed by the IVR Service. Peak Active Requests is a metric that represents the maximum simultaneous HTTP requests being processed by the IVR Service.
Total HTTP Requests	The number of HTTP Requests received from a client by the IVR Service.
Average HTTP Requests/second	The average number of HTTP Requests the IVR Service receives per second.
Peak Active HTTP Requests/second	HTTP Requests per Second is a metric that represents the number of HTTP Requests the IVR Service receives each second from all clients. Peak HTTP Requests per Second is the maximum number of HTTP Requests that were processed by the IVR Service in any given second. This is also known as high water marking.

Statistic	Description
Aggregate Statistics	
Start Time	The time the service started collecting statistics.
Duration Elapsed	The amount of time that has elapsed since the service start time.
Total New Calls	Metric that counts the number of New Call requests received from the IOS Gateway Using Unified ICME Warm. A New Call includes the Switch leg of the call and the IVR leg of the call. Total New Calls is a metric that represents the number of new calls received by the IVR Service since system startup.
Peak Active Calls	The maximum number of simultaneous calls processed by the IVR Service since the service started.
Total HTTP Requests	Metric that represents the number of HTTP Requests received from all clients. This metric is the total number of HTTP Requests received by the IVR Service since system startup.
Peak Active HTTP Requests	Peak Active HTTP Requests is a metric that indicates the current number of simultaneous HTTP requests processed by the IVR Service. Maximum number of active HTTP requests processed at the same time since the IVR service started. This is also known as high water marking.
Total Agent Video Pushes	The number of videos pushed by agents since system start time.
Total Agent Initiated Recordings	The number of video recordings by agents since system start time.
Total Agent VCR Control Invocations	The number of video VCR controls invoked by agents since system start time.

SIP Service Call Statistics

The SIP service call statistics include data on calls currently being processed by the SIP service, new calls received during a specified interval, and total calls processed since the SIP service started.

Access SIP Service statistics either by:

- Selecting **System > Control Center**, selecting a Call Server, clicking the **Statistics** icon in the toolbar, and then selecting the **SIP** tab.
- Selecting **Device Management > CVP Call Server**, selecting a Call Server, clicking the **Statistics** icon in the toolbar, and then selecting the **SIP** tab.

The following table describes the SIP Service call statistics.

Table 6: SIP Service Call Statistics

Statistic	Description
Realtime Statistics	
Total Call Legs	The number of SIP call legs being handled by the SIP service. A call leg is also known as a SIP dialog. The metric includes incoming, outgoing and ringtone type call legs. For each active call in the SIP service, there is an incoming call leg, and an outgoing call leg to the destination of the transfer label.
Active Basic Service Video Calls Offered	The number of basic service video calls in progress where video capability was offered.
Active Basic Service Video Calls Answered	The number of basic service video calls in progress where video capability was answered.
Interval Statistics	
Start Time	The time the system started collecting statistics.
Duration Elapsed	The amount of time that has elapsed since the start time.
Interval Duration	The interval at which statistics are collected. The default value is 30 minutes.
New Calls	The number of SIP Invite messages received by Unified CVP in the current interval. It includes the failed calls, and calls rejected due to the SIP service being out of service.
Connects Received	The number of CONNECT messages received by SIP service to perform a call Transfer, in the last statistics aggregation interval. Connects Received includes the regular Unified CVP transfers, and Refer transfers. Any label coming from the ICM service is a CONNECT message, whether it is a label to send to the VRU or a label to transfer to an agent.
Avg Latency Connect to Answer	The period of time between the CONNECT from ICM and when the call is answered. The metric includes the average latency computation for the calls that have been answered in the last statistics aggregation interval.
Failed SIP Transfers (Pre-Dialog)	The number of failed SIP transfers since system start time. When Unified CVP attempts to make a transfer to the first destination of the call, it sends the initial INVITE request to set up the caller with the ICM routed destination label. The metric does not include rejections due to the SIP Service not running. The metric includes failed transfers that were made after a label was returned from the ICM Server in a CONNECT message.

Statistic	Description
Failed SIP Transfers (Post-Dialog)	The number of failed re-invite requests on either the inbound or outbound legs of the call during the interval. After a SIP dialog is established, re-INVITE messages perform transfers. Re-invite requests can originate from the endpoints or else be initiated by a Unified CVP transfer from the Unified ICME script. This counter includes failures for both kinds of re-invite requests.
Basic Service Video Calls Offered	The number of basic service video calls offered in the current interval.
Basic Service Video Calls Answered	The number of basic service video calls answered in the current interval.
Aggregate Statistics	
Start Time	The time the service started collecting statistics.
Duration Elapsed	The amount of time that has elapsed since the service start time.
Total New Calls	The number of SIP Invite messages received by Unified CVP since system start time. It includes the failed calls, and calls rejected due to the SIP service being out of service.
Connects Received	The number of Connect messages received by SIP service to perform a Unified CVP Transfer, since system start time. Connects Received includes the regular Unified CVP transfers, and Refer transfers. Any label coming from the ICM service is a Connect message, whether it is a label to send to the VRU or a label to transfer to an agent.
Avg Latency Connect to Answer	The time between the Connect from ICM and when the call is answered. The metric includes the average latency computation for all the calls that have been answered since system start up time.
Failed SIP Transfers (Pre-Dialog)	The total number of failed transfers on the first CVP transfer since system start time. A SIP dialog is established after the first CVP transfer finishes. The metric does not include rejections due to SIP being out of service. The metric includes failed transfers that are after a label is returned from the ICM in a CONNECT message.
Failed SIP Transfers (Post-Dialog)	The number of failed re-invite requests on the inbound or outbound legs of the call since start time. After a SIP dialog is established, re-INVITE messages perform transfers. Re-invite requests can originate from the endpoints or initiated by a Unified CVP transfer from the Unified ICME script. This counter includes failures for re-invite requests.
Total Basic Service Video Calls Offered	The number of basic service video calls offered since system start time.
Total Basic Service Video Calls Answered	The number of basic service video calls answered since system start time.

Gateway Statistics

Gateway statistics include the number of active calls, available memory, and CPU utilization.

Procedure

To obtain gateway statistics:

Procedure

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- Step 1** Choose **System > Control Center**.
- Step 2** Select the **Device Type** tab in the left pane, then select **Gateways**.
Gateways are listed in the right pane.
- Step 3** Select the gateway by clicking on its link under the Hostname column.
the Edit Gateway Configuration window opens.
- Step 4** Select the Statistics icon in the toolbar.
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What to do next

See *Administration Guide for Cisco Unified Customer Voice Portal* for device statistics.

Gateway Statistics

The following table describes gateway statistics.

Statistic	Description
Active Calls	Number of currently active calls handled by the gateway. For example, Total call-legs: 0 no active calls
Free Memory	Free memory, for example: Processor memory free: 82% I/O memory free: 79%
CPU Utilization	CPU utilization, for example: CPU utilization for five seconds: 3%/3%; one minute: 3%; five minutes: 4%

Trunk Utilization Reporting

You can configure IOS gateways to report on trunk utilization. The configuration involves two pieces:

- Configuring the Call Server using the Operations Console to request reporting from a given gateway.

- Configuring the gateway to respond to trunk utilization reporting requests.

To configure Unified CVP to provide trunk utilization reporting, complete these steps:

1. In the Operations Console, select: **Device Management** > **Call Server** > **ICM (tab)** > **Advanced Configuration**.
2. Under *Trunk Utilization*, select **Enable Gateway Trunk Reporting**
3. In the same section, associate the gateway(s) that you want to send truck information to the Call Server.
4. Add the following configuration to the gateway configuration:

```
voice class resource-group 1
resource cpu 1-min-avg threshold high 80 low 60
resource ds0
resource dsp
resource mem total-mem
periodic-report interval 30

sip-ua
rai target ipv4:10.86.129.11 resource-group 1
rai target ipv4:10.86.129.24 resource-group 1
```

RAI Information on SIP OPTIONS (CVP Server Group Heartbeats)

If a resource availability indicator (RAI) is desired on SIP OPTIONS, the option override host setting can be used with server group heartbeating. When one or more Unified CVPs are sending OPTIONS heartbeats to the gateway, RAI trunk utilization information is not ordinarily sent in the 200 OK response, unless an RAI target is configured.

CLI like the following can be added in IOS to have RAI information sent to CVP in the response:

```
sip-ua
rai target dns:cvp.cisco.com resource-group 1
```



Note Trunk Utilization data is only written to the Unified CVP database when RAI OPTIONS are sent from the gateway to Unified CVP targets. When Unified CVP is using server group heartbeats to the gateway, the RAI data in the response is only marks the element as UP or DOWN (overloaded resources) in the server group.

Unified CVP VXML Server Statistics

The Operations Console displays realtime, interval, and aggregate Unified CVP VXML server statistics.

Access Unified CVP VXML server statistics either by:

- Selecting **System** > **Control Center**, selecting a Unified CVP VXML server, and then clicking the Statistics icon in the toolbar.
- Selecting **Device Management** > **VXML Server** (or Unified CVP VXML server (Standalone)), selecting a Unified CVP VXML server, and then clicking the Statistics icon in the toolbar.

The following table describes the statistics reported by the Unified CVP VXML server.

Table 7: Unified CVP VXML Server Statistics

Statistic	Description
Real Time Statistics	
Active Sessions	The number of current sessions being handled by the Unified CVP VXML server.
Active ICM Lookup Requests	The number of current ICM requests being handled by the Unified CVP VXML server.
Interval Statistics	
Start Time	The time when the current interval began.
Duration Elapsed	The time that has elapsed since the start time in the current interval.
Interval Duration	The interval at which statistics are collected. The default is 30 minutes.
Sessions	The number of sessions in the Unified CVP VXML server.
Reporting Events	The number of events sent to the Reporting Server from the Unified CVP VXML server.
ICM Lookup Requests	The number of requests from the Unified CVP VXML server to the ICM Service.
ICM Lookup Responses	The number of responses to failed and successful ICM Lookup Requests that the ICM Service sends to the Unified CVP VXML server. In the case that multiple response messages are sent back to the Unified CVP VXML server to a single request, this metric increases per response message from the ICM Service.
ICM Lookup Successes	The number of successful requests from the Unified CVP VXML server to the ICM Service in the current interval.
ICM Lookup Failures	The number of requests from the Unified CVP VXML server to the ICM Service in the current interval. This metric increases when an ICM failed message is received or when the Unified CVP VXML server generates the failed message.
Aggregate Statistics	
Start Time	The time when the current interval has begins.
Duration Elapsed	The time since the current interval began.
Total Sessions	The number of sessions in the Unified CVP VXML server since startup.

Statistic	Description
Total Reporting Events	The number of reporting events sent from the Unified CVP VXML server since startup.
Total ICM Lookup Requests	The number of requests from the Unified CVP VXML server to the ICM Service. For each ICM lookup request (successful or failed), this metric increases by one.
Total ICM Lookup Responses	The number of responses the ICM Service has sent to the Unified CVP VXML server since startup. For each ICM lookup request (successful or failed), this metric increases by one. When multiple response messages are sent back to the Unified CVP VXML server to a single request, this metric increases per response message from the ICM Service.
Total ICM Lookup Success	The number of requests from the Unified CVP VXML server to the ICM Service since startup. For each ICM lookup request that succeeded, this metric increases one.
Total ICM Lookup Failures	The number of requests from the Unified CVP VXML server to the ICM Service since startup. For each ICM lookup request that failed, this metric increases by one. This metric will increase when an ICM failed message was received or in the case the Unified CVP VXML server generates a failed message.

See the *Administration Guide for Cisco Unified Customer Voice Portal* for Infrastructure Statistics and Device Statistics.

Reporting Server Statistics

Reporting Server statistics include the total number of events received from the IVR, SIP, and VoiceXML services.

Access Reporting Server statistics either by:

- Selecting **System > Control Center**, selecting a Reporting Server, and then clicking the **Statistics** icon in the toolbar.
- Selecting **Device Management > CVP Reporting Server**, selecting a Reporting Server, and then clicking the Statistics icon in the toolbar.

The following table describes the Reporting Server statistics.

Table 8: Reporting Server Statistics

Statistic	Description
Interval Statistics	
Start Time	The time the system began collecting statistics.
Duration Elapsed	The amount of time that has elapsed since the start time.

Statistic	Description
Interval Duration	The interval at which statistics are collected. The default value is 30 minutes.
VXML Events Received	The number of reporting events received from the VoiceXML Service. For each reporting event received from the VoiceXML Service, this metric increases by one.
SIP Events Received	The number of reporting events received from the SIP Service during this interval. For each reporting event received from the SIP Service, this metric increases by one.
IVR Events Received	The number of reporting events received from the IVR service in the interval. For each reporting event received from the IVR service, this metric increases by one.
Database Writes	The number of writes to the database made by the Reporting server during the interval. For each write, this metric increases one.
Aggregate Statistics	
Start Time	The time the service started collecting statistics.
Duration Elapsed	The amount of time that has elapsed since the service start time.
VXML Events Received	The number of reporting events received from the VoiceXML Service since the service started. For each reporting event received from the VoiceXML Service, this metric increases by one.
SIP Events Received	The number of reporting events received from the SIP Service since the service started. For each reporting event received from the SIP Service, this metric increases by one.
IVR Events Received	The number of reporting events received from the IVR Service since the service started. For each event received, this metric increases by one.
Database Writes	The number of writes to the database made by the Reporting server during since startup. For each write, this metric increases by one.

Unified CVP SNMP-Raise/Clear Mappings

The following log messages are SNMP-enabled by default. Administrators can define a unique alarm within their SNMP management station for all SNMP Raise events emitted by a system. These alarms are usually cleared automatically using one or more corresponding SNMP Clear events when the condition is resolved. The tables below list a mapping of Unified CVP SNMP Raise events with their corresponding SNMP Clears.



Note Raises are listed first, with their corresponding clears below them.

Table 9: Messaging Layer

Raise ID	Clear ID	Event Name
7		ADAPTER_INITIALIZATION_FAILURE
	8	ADAPTER_INITIALIZATION_SUCCESS
9		PLUGIN_INITIALIZATION_FAILURE
	10	PLUGIN_INITIALIZATION_SUCCESS
15		SEND_QUEUE_THRESHOLD_REACHED
	20	SEND_QUEUE_SIZE_CLEAR

Table 10: Infrastructure

Raise ID	Clear ID	Event Name
9005		LICENSING
	1003	[AUDIT] "The system has started up."
9007		PORT_THRESHOLD
	9008	PORT_THRESHOLD
9014		SHUTDOWN
	1003	[AUDIT] "The system has started up."
	1004	[AUDIT] "The system has completely shutdown."
9016		SERVER_SETUP - "CCBUSNMPAgent Server setup failed because XXX"
	9015	SERVER_SETUP - "CCBUSNMPAgent Server setup on port YYY"
1011		HEARTBEATS_STOPPED - "Heartbeats from XXX stopped..."
	1014	RECEIVED_STATE_MSG - "StateManager: Subsystem [XXX] reported change to..."
1012		STATE_MANAGER_STARTUP_FAILURE
	1003	[AUDIT] "The system has started up."
1020		STARTUP
	1003	[AUDIT] "The system has started up."
1024		SERVLET_STARTUP

Raise ID	Clear ID	Event Name
	1003	[AUDIT] "The system has started up."
1025		START - "Could not start XXX due to: YYY"
	1003	[AUDIT] "The system has started up."
1033		START - "No Subsystems have been started..."
	1026	START - "All Subsystems have been started."
1035		LICENSE_EXPIRATION
	1003	[AUDIT] "The system has started up."

Table 11: Unified ICME

Raise ID	Clear ID	Event Name
2001		LOGMSG_ICM_SS_MSGBUS_SHUTDOWN
	2003	LOGMSG_ICM_SS_MSGBUS_ACTIVE
2002		LOGMSG_ICM_SS_PIM_SHUTDOWN
	2004	LOGMSG_ICM_SS_PIM_ACTIVE
2005		LOGMSG_ICM_SS_HEARTBEAT_FAILURE
	2012	LOGMSG_ICM_SS_INSERVICE_STATE
2006		LOGMSG_ICM_SS_STATE
	2012	LOGMSG_ICM_SS_INSERVICE_STATE

Table 12: Reporting

Raise ID	Clear ID	Event Name
4005		REPORTING_SS_ERROR_RAISE
	1026	START - "All Subsystems have been started."
4006		REPORTING_DB_PURGE_FAILED
	4007	REPORTING_DB_PURGE_COMPLETED
4010		REPORTING_DB_BACKUP_FAILED
	4011	REPORTING_DB_BACKUP_COMPLETED
4014		REPORTING_DB_ALERT_MSG
	N/A	Not applicable

Raise ID	Clear ID	Event Name
4017		REPORTING_DB_STARTING_PURGE
	4007	REPORTING_DB_PURGE_COMPLETED
	4009	REPORTING_DB_EMERGENCY_PURGE_COMPLETED
4018		REPORTING_DB_REMAINDER_DATA
	4019	REPORTING_DB_NO_REMAINDER_DATA

Table 13: IVR

Raise ID	Clear ID	Event Name
3002		STATE_CHANGED
	3001	STATE_CHANGED_IN_SERVICE
3000		SHUTDOWN_NOTICE
	3001	STATE_CHANGED_IN_SERVICE

Table 14: SIP

Raise ID	Clear ID	Event Name
5001		SS_STATE; The SIP subsystem changed state to something other than the <i>in service</i> state.
	5002	SS_STATE; The SIP subsystem changed state to the <i>in service</i> state.

Table 15: VoiceXML

Raise ID	Clear ID	Event Name
6012		VXML_SERVER_APP_SHUTDOWN_ALERT
	6011	VXML_SERVER_APP_STARTUP_CLEAR
6013		VXML_SERVER_APPADMIN_ERROR
	1003	[AUDIT] "The system has started up."
	1004	[AUDIT] "The system has completely shutdown."
6014		VXML_SERVER_SYSTEM_ERROR
	1003	[AUDIT] "The system has started up."
	1004	[AUDIT] "The system has completely shutdown."

Raise ID	Clear ID	Event Name
6024		VXML_LICENSE_ALERT
	6025	VXML_LICENSE_ALERT_CLEAR



Note VXML_LICENSE_ALERT is raised when the VXML Port license utilization exceeds 90% of the total deployed license ports and the VXML_LICENSE_ALERT_CLEAR is raised when the VXML port license utilization drops below 70% of the total deployed license ports.
