



Cisco Serviceability Tools

This chapter presents an overview of Cisco serviceability tools, including the tools available with Unified CVP solutions running on Windows environments. It also presents the serviceability tools that use the Web Services Manager (WSM).

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Web Services Manager

Unified CVP supports a new service layer called the Web Services Manager (WSM). WSM interacts with various subsystems and infrastructure handlers, consolidates the responses, and publishes an XML result. The Web Services Manager supports HTTPS requests and sends a predefined XML response. WSM is installed on each Unified CVP device and runs automatically as a Windows service. For a device to be managed by WSM, the device must be deployed from the Operations Console.



Note System CLI uses WSM to collect and present the data available to WSM from the various Unified CVP components.

Create a WSM User

When Unified CVP is installed, a new user called `wsmadmin` is created with the same password as the Operations Console user. You can create and manage additional WSM users using the Operations Console.

When you have devices deployed in the Operations Console, log on to any server where WSM is installed and access the System CLI. See [Unified System CLI](#).

Procedure

- Step 1** Log into the Unified CVP Operations Console and select **User Management > Users**.
- Step 2** Click **Add New**.

- Step 3** Provide a **Username** and **Password**.
- Step 4** Click the **User Groups** tab.
- Step 5** In the **Available** panel, highlight **ServiceabilityAdministrationUserGroup**, then click the right arrow to move that group to the **Selected** panel.
- Step 6** Click **Save**.
-

Unified System CLI

Unified CVP supports a new serviceability CLI called Unified System CLI (System CLI). The System CLI lets you collect diagnostic information (health and status) on Unified CVP servers and collect device-specific information from each supported node connected to the Unified CVP server from which you are using System CLI. The System CLI accesses a new web services layer in Unified CVP called the Web Services Manager. You can run System CLI commands on a local server, or a remote server. You can obtain information from all the devices in your CVP system by switching to *system* mode. (Devices must first be configured and deployed in the Operations Console.)



Note To quickly access and use the System CLI, see [Access Unified System CLI and Its Help](#)



Note In addition to the System CLI, which is automatically installed with the Unified CVP installation, you can also obtain a GUI-based client, . This client is called the Analysis Manager, and it is part of Unified CM. For more information on the Analysis Manager, refer to [Cisco Unified Communications Analysis Manager User Guide](#). For instructions specific to configuring Analysis Manager with Unified CVP, see [Configure Analysis Manager with Unified CVP, on page 10](#)

The System CLI is installed on all CVP servers. You can leverage the WSM and CLI functionality to collect diagnostic details such as server map, version information, licenses, configuration, components, sessions, logs, traces, performance factors, and platform information for each Unified CVP Device, on a component and sub-component level. You can also set or reset debug levels using CLI on a component and sub-component level.

The System CLI provides a local mode and a system mode:

- The local mode accesses data about the devices associated with the server that you are logged into. Local mode is the default mode accessed automatically when you log into the Unified CLI.
- The system mode, accessed by typing the system command at the CLI prompt, provides access to all the devices in your Unified CVP deployment solution. In system mode, the System CLI automatically detects the Operations Console and extracts solution topology based on the devices configured in the Operations Console. Based on options you enter for a given command, System mode can be limited to a certain device group or list of servers.



Note Before you can use the system CLI to obtain information about a device, that device must be listed in and deployed by the Operations Console.

The System CLI commands (for example `show all` and `show component`) enable you to view and zip necessary logs or configurations on a specific server, servers, or groups of servers, and store that data on a local disk.

Access Unified System CLI and Its Help

The Unified System CLI is installed on all Unified CVP Servers. Using the CLI client on a Unified CVP device enables you to connect to the local server or a remote server. You can also connect to servers defined and deployed in the Operations Console when using system mode.

To launch Unified System CLI on any CVP server, log into a Unified CVP server through windows. You can use tools such as VNC or Remote Desktop console.



Note To be able to log in to the System CLI on Unified CVP, the WSM service must be up and running. By default WSM service is always running.



Note The System CLI only provides information on devices that have been configured, saved, and deployed in the Operations Console. If you change the configuration of a device, you must save and deploy the revised configuration before it is available to the System CLI.

Complete the following example session to quickly learn how to use Unified System CLI.

Procedure

- Step 1** Launch Unified System CLI.
- Select **Start > Programs > Cisco Unified Customer Voice Portal > Unified System CLI**.
- A CMD window displays with an Enter Username prompt.
- Step 2** Log into the Unified System CLI by entering the default username, **wsmadmin**, or a username and password that you created. See [Create a WSM User](#).
- After logging, in you see the following message and prompt:
- ```
Welcome to the Platform Command Line Interface
admin:
```
- Step 3** You can now receive Web Services Manager data from the local machine using the system CLI commands. The following CLI Usage example shows a user issuing the **show tech-support** command.

```
Enter username[wsmadmin]: wsmadmin
```

```

Enter password:

Welcome to the Platform Command Line Interface

admin: show tech-support
Warning: Because running this command can affect system performance,
Cisco recommends that you run the command during off-peak hours.
Do you want to continue? [y/n]: y

Retrieving [version] data from device [localhost] ProductType [cvp] ...
Retrieving [component] data from device [localhost] ProductType [cvp] ...
Retrieving [log] data from device [localhost] ProductType [cvp] ...
Default time range is last 24 hours.
...
Output is saved to "C:\Cisco\CVP\wsm\CLI\download\clioutput0.zip"

```

**Note** The **show tech-support** command creates a single zip file in the directory `%CVP_HOME%\wsm\CLI\download`.

**Note** By default, this command collects the traces for the last 24 hours. Use the **reltime** parameter to change the time period. For example, if you want to pull traces for the last three days, use the following command: **show tech-support reltime 3 days**.

**Step 4** Each System CLI command has a set of **command options**. Each option consists of a keyword and set of values. The following is an example of how to use a command with options.

In this example, the keyword *component* has a value *cvp:CallServer* and the keyword *subcomponent* has a value *cvp:ICM*. The following command tells the System CLI to get the configuration data for component *CallServer* and subcomponent *ICM* in the Unified CVP deployment.

```

admin: show config component cvp:CallServer subcomponent cvp:ICM
Downloading Configuration file: [ICM: icm.properties] ...
ICM.icmGarbageCollectorInterval : 120
ICM.locationDelimiter : --
ICM.icmHeartbeatInterval : 5000
...
ICM.preRoutedCallServiceID : 2
ICM.icmVxmlIdleTimeout : 30

```

**Step 5** Almost all commands have a *redirect* option. This option tells the System CLI to redirect the command output to a directory (or a file). If the output is saved in a directory, it is saved in a zip file in that specific directory. The following example saves the zip file to `c:\temp\clioutput.zip`:

```
admin: show version redirect dir c:\temp
```

The output zip file provides a consistent directory structure when you save to a directory. When unzipped, the directory structure enables you to find the required diagnostic data quickly.

If you redirect the output to a file, the information is stored in the form of a "flat" file similar to what you see for the window output. An example of redirecting to a file is:

```
admin: show version redirect file <filename>
```

**Step 6** To obtain information from the Web Services Managers that are part of your Unified CVP environment, you can change to *system* mode to issue system-wide commands.

To enable system mode, type *system* at the prompt.

**Note** See [Unified System CLI](#).

## Unified System CLI: System Mode

Enter the CLI system mode by typing **system** at the command prompt and then execute the commands exactly like the local version of the CLI for interactive mode.

In system mode, the Unified System CLI automatically detects the Operations Console, which acts as a seed device, and extracts the solution topology automatically based on devices configured in the Operations Console. System mode enables the System CLI to iteratively go to each supported box in the background and run the command that was executed by you in system mode.



**Note** System CLI initialization for the first system mode command execution, or for the **system init** command, may take a few minutes to complete, especially when there are a lot of devices in a Unified CVP solution, or if devices are unreachable, or network timeouts are involved.

Optionally, you can limit the system command to execute only on a certain device group or list of servers.

Device group is automatically populated based on:

- Device type (Unified CVP, Unified ICM, IOS Firewall , Unified CM as an example)
- Device IP/hostname wildcard (LOC-1\*, 10.86.129.\* as an example for branch office deployments)
- Device pool (defined within the Operations Console)

When the System CLI executes the *system* command, the System CLI queries each device in the list and caches the responses locally during its first time initialization process, or when **system init** is executed. The cache enables the system command to be executed quickly for subsequent sessions.

If an error is reported due to an unreachable destination or incorrect credentials for a specific device during the execution of a system command , then the device is marked OFFLINE in the System CLI cache. Use *system init* to retry this device.

The most common command to receive all information from all the components in a Unified CVP solution deployment is:

```
system show tech-support dtcomponent "ucm:Cisco CallManager|cusp:Cisco Unified SIP Proxy"
```

This command collects everything from all device types except the devices *ucm* and *cusp*. For *ucm*, it applies the device type filter *Cisco CallManager* and for the device *cusp* it applies the device type filter *Cisco Unified SIP Proxy*.

## System CLI Automated Execution

To automatically execute Unified System CLI commands, create a plain text file with the .bat extension as shown in the example below and replace the <password> as highlighted with the Operations Console password.

```
REM TECH-SUPPORT-COLLECTION
echo show tech-support > clicmds.txt
echo exit >> clicmds.txt
```

```
type clicmds.txt | systemcli.bat inplace nointeractive novalidation user:wsmadmin
passwd:<password>
```

In a batch file, the system command can also be executed by prefixing *system* on any regular command. For example, **system show tech-support**, the entire example is:

```
REM SYSTEM-TECH-SUPPORT-COLLECTION
echo system show tech-support > clicmds.txt
echo exit >> clicmds.txt
type clicmds.txt | systemcli.bat inplace nointeractive novalidation user:wsmadmin
passwd:<password>
```

The most commonly used command in a Unified CVP solution deployment, to get data from all solution components, is given below:

```
REM SYSTEM-TECH-SUPPORT-COLLECTION
echo system show tech-support dtcomponent "ucm:Cisco CallManager\|cusp:Cisco Unified SIP
Proxy"> clicmds.txt
echo exit >> clicmds.txt
type clicmds.txt \| systemcli.bat inplace nointeractive novalidation user:wsmadmin
passwd:<password>
```

This command collects everything from all device types except for the device *ucm* and the device *cusp*. For the *ucm* device, it applies the device type filter *Cisco CallManager* and for the device *cusp*, it applies the device type filter *Cisco Unified SIP Proxy*.




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**Note** You can run a Windows scheduled job and collect traces periodically from one or multiple servers using a schedule. See [How to Schedule Tasks in Windows XP](#) for information about scheduling a Windows job.

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## System CLI Remote Execution

To launch System CLI remotely from your laptop, (or any Windows system), to connect to any Unified CVP server or other solution component box (for example, Unified CM, ICM, IOS, CUSP Server, etc.), complete the following procedure:

1. Install Unified CVP Remote Operations, if no other CVP software is installed.  
For information about only installing the Remote Operations feature of Unified CVP, see [Installation and Upgrade Guide for Cisco Unified Customer Voice Portal](#).
2. In the Operations Console, complete the following steps:
  - a. Select **System > Web Services > Remote Operations Deployment (tab)**.
  - b. Enter the IP address, hostname, and description information for the remote device.
  - c. Click **Add** to add the device and click **Save & Deploy** to make this device available for remote operations.
3. Start the System CLI on the remote system.



**Note** You can also run a Windows scheduled job and collect traces periodically from one or multiple servers, using a schedule from a remote system.

## Help for the System CLI

The following types of help are available:

- For an overview of the CLI system help, type `help` at the admin prompt and press enter.

```
admin:help<enter>
```

- For a list of main commands, enter "?" at the admin prompt.

```
admin:?<enter>
```

- To obtain the syntax of the command, type a "?" at the end of the current syntax. For example:

```
admin: capture start ?
```

The preceding entry then informs you that there are two options in the syntax: **duration** and **<cr>**

- To obtain detailed help, enter a portion of the command preceded by the word `help`. For example:

```
admin: help show version
```

That command provides information about additional options both local and system modes.

The following entries show an example of "drilling down" to obtain more detailed help. At the option level, placing *help* in front of the command, provides detailed information, as in the example. Because this command can be used in "local" mode and in "system" mode, the detailed help also gives information about how to limit the command when using system mode.

```
admin: show version ?
Options: redirect
<cr>

show version redirect ?
Options: dir
file
```

The help system displays the actual components for your Cisco Unified product as shown in the following example for Unified CVP using system mode of the System CLI.

```
admin(system):show log component ?
Options:cvp:CallServer
cvp:OAMP
cvp:ORM
cvp:Reporting
cvp:VXMLServer
```

## System CLI Troubleshooting

The System CLI shows two types of errors:

- Errors from servers (displayed unchanged)
- Errors from the System CLI for which you need to check the log files in the System CLI directory

Sometimes it is necessary to change the System CLI debug level to "debug" to collect more data about a System CLI error.

1. Open CLI\conf\cli\_log4j.xml and change the word "info" to "debug".
2. Restart the System CLI to reproduce the error.

See the Doc Wiki troubleshooting page for more CLI troubleshooting information: [System CLI troubleshooting tips](#).

## System CLI Commands and Parameters

The Unified System CLI is designed to work across multiple Cisco Unified products. The meanings of some of the parameters for commands such as *show* vary from product to product. An example is the *components* parameter which vary because the components of systems such as Unified CVP and Unified ICM are different.

The CLI online help provides product-specific information for each command's parameters. Type the command and its parameter, followed by the "?" symbol. An example of this mechanism is given in [Help for the System CLI](#).

The following table provides information about the Unified System CLI commands.

| Command or Parameter | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| capture              | <p>Sets up, starts, and stops, a network packet capture.</p> <p>Capturing network packets with the System CLI can be performed in either local mode (to run on a single machine), or system mode (to run across several machines simultaneously). The capture start command has an optional duration parameter, while the capture stop command has no parameters. The duration parameter indicates when the capture should stop. If no duration is provided, the capture process stops after one day.</p> <p>The capture command starts the packet capture on a single Unified CVP device or multiple devices. The capture operation defaults to the interface card that is receiving packets and is used for the Unified CVP server socket and IP address binding. The default setting of the capture command will capture the network packets and save the capture information in the Unified CVP logs folder which can be retrieved using the regular CLI trace command.</p> |
| help                 | Accesses the online help system overview. Use the "?" character to access command-specific and parameter-specific help. See <a href="#">Help for the System CLI</a> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| exit                 | Exits the CLI.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| show                 | Accesses, displays and saves (to a file) data about system configuration and operation. See the next table for descriptions of the sub-level show commands.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| system               | Enter system mode, which provides access to all the devices in your Unified CVP deployment solution. Use the exit command to return to local mode.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |

The following table describes the variations of the *show* command.



| Show Commands     | Descriptions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| show all          | Shows all available information in all sub-categories listed in this table. However, you can still enter qualifying parameters to restrict the information retrieved.                                                                                                                                                                                                                                                                                                                                                                             |
| show component    | Shows component-specific information. Available components are based on the Cisco Unified product type and can be listed by entering the command: show component ?                                                                                                                                                                                                                                                                                                                                                                                |
| show config       | Displays the application configuration.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| show debug        | Shows the current debug level.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| show devices      | Shows a list of the devices in your deployment (system mode only).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| show license      | Shows license information.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| show log          | Shows log contents. You can narrow this command to specific logs.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| show perf         | Shows system performance statistics.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| show platform     | Shows platform information.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| show sessions     | Shows the current active sessions or calls.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| show tech-support | Shows information to help tech support in solving issues. This command is equivalent to show all.<br><br><b>Note</b> When you issue the show tech-support command, the System CLI issues the other show commands needed to provide all of the system information. During the process of executing the other show commands, the System CLI passes component and sub-component parameters to the show trace command, but does not include component and sub-component parameters when it executes commands such as show configuration and show log. |
| show trace        | Shows trace file information.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| show version      | Shows Unified CVP component version information.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

## Details for Specific Options

This section provides detailed information of certain options that require additional explanations.

### Results of the *match* Option when Information is Sent to a Directory Instead of a File

You can use the *match* option with the *show trace* and the *show log* commands to send selected output to a directory. This option enables you to specify text that the CLI should match when examining data in text files. The output is then limited to log information that matches the specified criteria. However, because the system cannot perform a text match to include or exclude information in binary files such as .zip files, these files are *included* in your *show* command execution, since they may contain pertinent information.

If you send the output of the *match* selection process to a file instead of a directory, the output only includes the actual text the CLI command would return to the screen.

### Comparison of the *component* Option with the *dtcomponent* Option

The *component* limits the output of a command to the results from specific system components.

Using the command **show trace component ucm:CallManager** and the system components shown in the following list, you receive the following information:

- Unified CVP Call Server: No Information Returned
- Unified Call Manager: Information Returned
- Unified CM Tomcat Server: No Information Returned

The command **show trace component ucm:CallManager** only returns information from the Call Manager.

The option *dtcomponent* (device type component option) only restricts the information from the given device type, while allowing data to be returned from other device types.

Using the above system and the command **show trace dtcomponent ucm:CallManager** would restrict its *ucm* component output to just the Call Manager, but returns information for other device types. In this example, it returns the following information for the Unified CVP Call Server and the Call Manager, but not the Unified CM Tomcat Server:

- Unified CVP Call Server: **Information Returned**
- Unified Call Manager: **Information Returned**
- Unified CM Tomcat Server: **No Information Returned**

## Configure Analysis Manager with Unified CVP

To configure Analysis Manager with Unified CVP, follow this procedure:

### Procedure

- 
- Step 1** From the **Unified Analysis Manager** menu, choose **Inventory > Node**.  
The Node window appears.
- Step 2** Click **Add** to add a node or select a node from the list. Click **Edit** to edit an existing configuration.  
The Add or Edit Node window appears.
- Note** Fields on this window that are marked with an asterisk (\*) are required fields.
- Step 3** From the Product Type drop-down list box, select **CVP**.
- Step 4** In the IP/Host Name field, enter the host name or the IP address of the Unified CVP OAMP box.
- Step 5** In the Transport Protocol field, select the protocol you want to use. Use the default value populated (HTTPS).
- Step 6** In the Port Number field, enter the port number of the node you are using.
- Note** Use the default value populated (8111).

- Step 7** Enter the user name as **wsmadmin** and enter the OAMP password. Re-enter the password in the Confirm Password field.
- Step 8** In the Description field, you can optionally provide a brief description of the node you are adding.
- Step 9** In the Associated Call Record Server and Associated Trace File Server fields, use the drop-down list to select the respective servers you want to use for the node.
- Step 10** To add a node to an existing group, check the **Associated Group** check box.
- Step 11** If you have a NAT or Terminal Server configuration, use the Advanced button to display the Add Node-Advanced screen. Enter the appropriate information in the Alternate IP/Hostname and Alternate Port fields.
- Step 12** Click **Save** to save the node to the list. Click **Cancel** to end the operation without adding the node.

## System CLI Commands Map to IOS CLI Commands

The following table maps the System CLI commands to their corresponding IOS CLI commands:

| System CLI Commands | IOS CLI Commands                                                                                                                                                          |
|---------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| show config         | show running-config                                                                                                                                                       |
| show version        | show version<br>show clock                                                                                                                                                |
| show license        | show license                                                                                                                                                              |
| show perf           | show call resource voice stat<br>show memory statistics<br>show processes cpu history<br>show processes memory sorted<br>show voice dsp group all<br>show voice dsp voice |
| show debug          | show debug                                                                                                                                                                |
| show log            | N/A                                                                                                                                                                       |
| show sessions       | show call active voice compact<br>show voice call status   inc calls<br>show voip rtp connections   inc connect<br>sh sip-ua calls   inc calls                            |
| show tech-support   | show tech-support<br><Everything else given above>                                                                                                                        |
| show trace          | show logging                                                                                                                                                              |

|               |                                                                                                                                                                                                                                                                                                                                              |
|---------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| show platform | <pre>show diag sh inventory sh int   inc media type Ethernet address sh controllers T1   inc T1 sh controllers E1   inc E1</pre>                                                                                                                                                                                                             |
| debug         | <pre>0 no debug all 1 - deb ccsip err deb cch323 err deb voip app vxml err deb http client err deb mrcp err deb rtsp err deb h225 asn1 err deb h245 asn1 err 2 - debug isdn q931 debug h225 events debug h245 events debug voip ccapi inout debug vtsp events 3 - debug ccsip messages debug h225 q931 debug h225 asn1 debug h245 asn1</pre> |