

VoIP Integration Phone Remote 4



Installation and Administration Guide



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Product Overview

VoIP Integration Phone Remote allows you to take control of a Cisco phone from anywhere with network connectivity.

Key strokes are sent to the phone which is interpreted as if the user had pressed the key on the actual phone. Screen updates show the screen as displayed on the device.

System Requirements

Application Requirements

- Windows PC with Microsoft Dot Net 4.0 or greater

Call Manager

When using Call Manager Administration User:

- Call Manager 5+ (Tested on Call Manager 5 through 10)
- Call Manager user with AXL, RIS and User Admin permissions
- AXL Service activated and running on Call Manager Server.

When using End User with Device Association:

- Any version of Call Manager with functional Phone Authentication
- Call Manager /End User name and password or...
- Call Manager Express URL Authentication Username and Password

Call Manager Express

Phone Remote supports Call Manager Express for searching and controlling phones.

- Call Manager Express version 4+ / UC 500
- Requires XML username and password & URL Authentication

Network Connectivity

- The PC running phone remote must be able to connect to the phone on TCP port 80
- The PC running phone remote must be able to connect to the Call Manager on TCP port 8443 (For control with CM Admin user).
- The phone must be able to reach its Authentication URL (See the troubleshooting section for more information).
- Phone remote should work through NAT and over VPN.

Installation Process

Overview: Loading Phone Remote

Step 1 – To begin the installation, download the installer from our website at <http://www.voipintegration.com>.

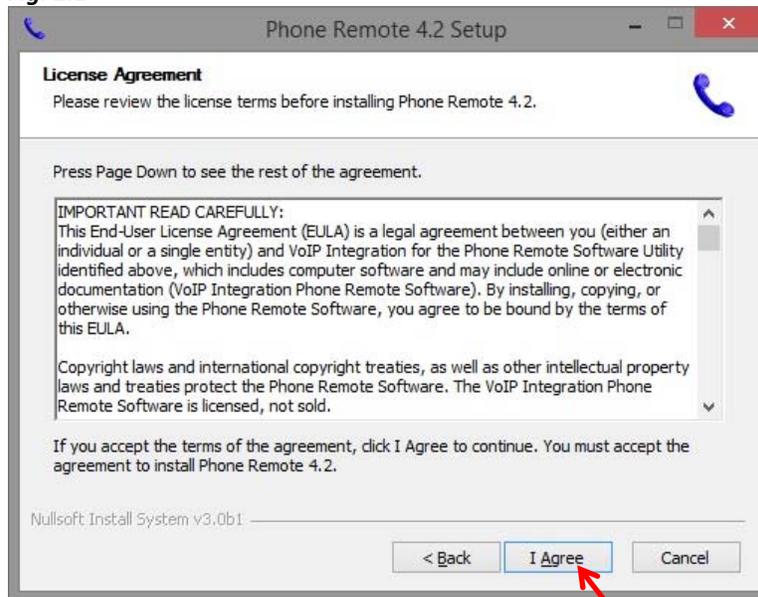
Step 2 – Then double-click the saved file.

Fig. 1.0



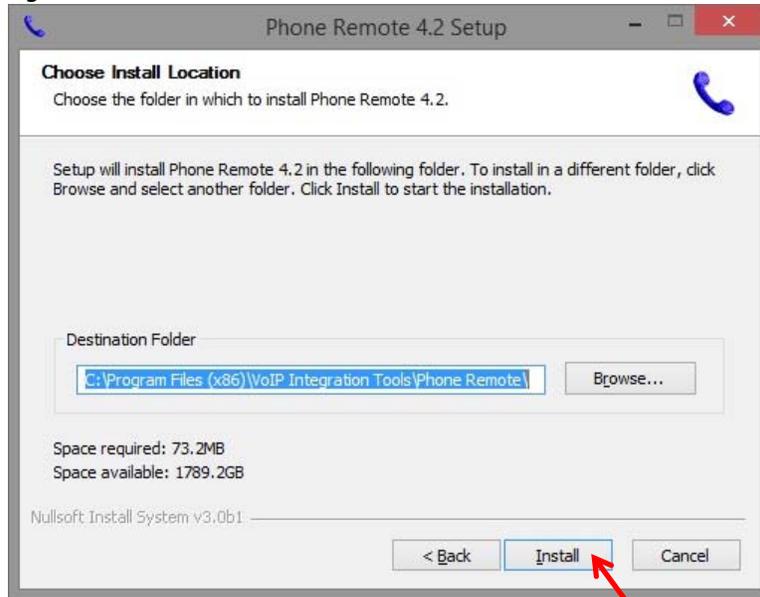
Step 3 – Click “Next >”. See Fig 1.0

Fig. 1.1



Step 4 – Click on “I Agree” to accept the EULA.

Fig. 1.2



Step 5 – Enter the installation path you would like Phone Remote installed in and click “Install”.

Fig. 1.3



Step 6 – When the installation has completed, click “Finish” to close the installer.

Application Use

Launching Phone Remote

Navigate through **Windows Start -> Programs -> VoIP Integration Tools -> Phone Remote** and select **Phone Remote**.

Phone remote will start up and check for an upgrade, it is strongly recommended that you click yes to download the upgrade if any are found.

Once started, Phone Remote will prompt for connection information or if you have previously saved login information it will attempt to connect.

Software Licensing Activation Process

VoIP Integration uses software license files for software activation. In order to use Phone Remote, you must have a valid license file installed. You can obtain a license file by going to www.voipintegration.com or contacting Support@voipintegration.com.

Step 1 – Once you obtain a license file you can begin the activation process. At the window below, click on *“Install License File”*.

VoIP Integration Phone Remote

✕

Phone Remote requires a valid software license.
We offer several licensing models to accommodate different requirements, including a free student and 30 day corporate evaluation license.

	CME	CUCM	Terminal Server / RDP	Installations
Student	< 10 Phones	< 25 Phones	1 User	1 Computer
Single User	Yes	Yes	1 User	1 Computer
Corporate Eval	Yes	Yes	Unlimited	Unlimited
Cluster	Yes	1 Cluster	Unlimited	Unlimited
Server	Yes	Yes	License Limited	1 Server

VoIP Integration
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[Request Free Student / Lab License](#)

[Request Corporate Evaluation License](#)

Purchase License

Install License File

Step 2 – Click on the Browse button and navigate to the location where the license file was saved. Once the location is entered, click on the “Next” button.



Step 3 – Once the license has successfully loaded, you will need to activate the software for use on the local computer. Here you also have three methods to active the software for use: *Automatic Online, Web Browser, and via Telephone.*



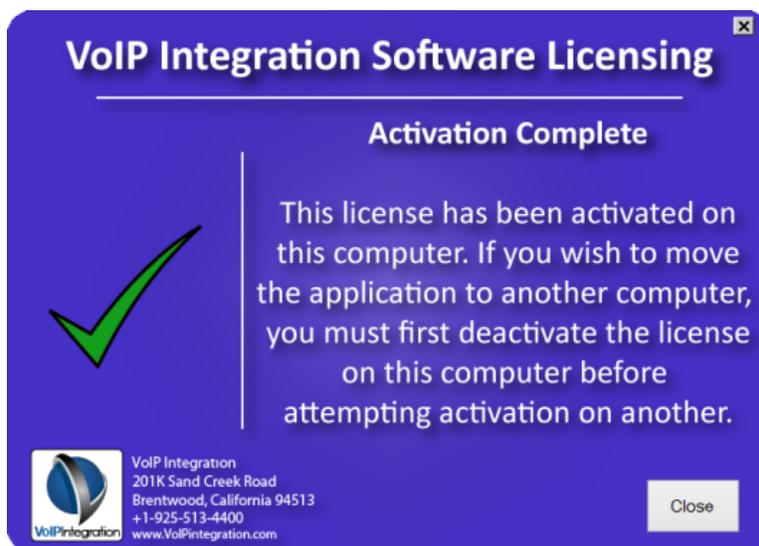
Automatic Online Activation

Step 1 – Click on the “Automatic Online” button. That will begin the activation process.



Automatic activation will complete the entire process. No additional steps are needed.

If activation is successful, you will get the window below stating that activation has been completed.



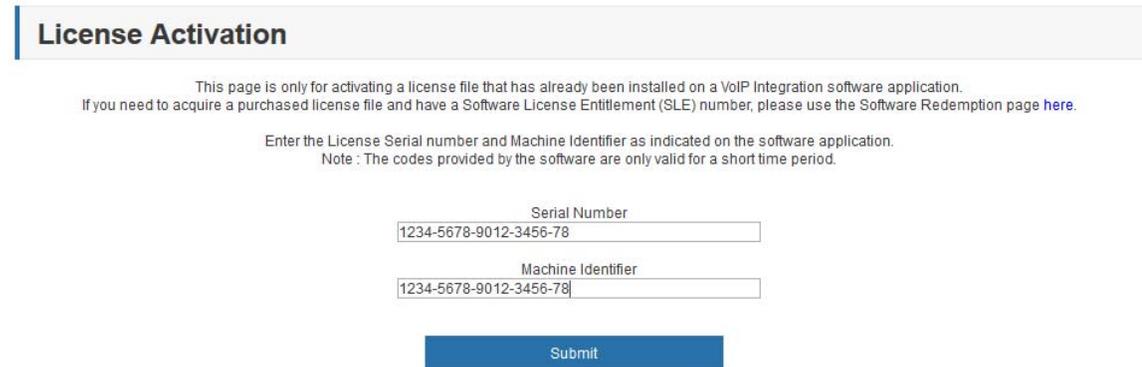
Step 2 – Click on the “Close” button to finish and exit the activation process.

Web Browser Activation

Step 1 – Click on the “Web Browser” button. This will take you to the following page:



In addition to the window above, an internet browser window will open up with the following page:



Step 2 – Click on the “Submit” button to get an Activation Code.

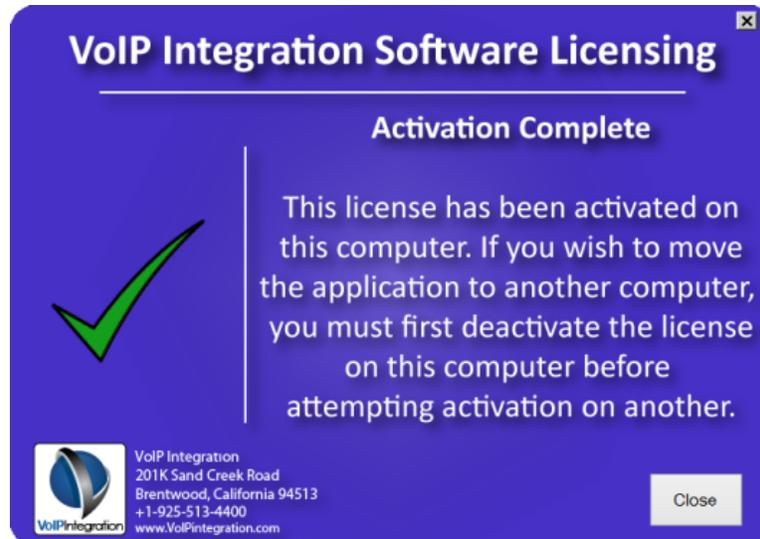


Step 3 – Enter the Activation Code into the Activation Code Field on the *Web Browser Activation Page*.



Step 4 – Click on the “Next” button to submit the Activation Code.

If activation is successful, you will get the window below stating that activation has been completed.



Step 5 – Click on the “Close” button to finish and exit the activation process.

Activation by Phone

Step 1 – To activate over the phone, click on the “*Telephone*” button. The following window will appear.

The screenshot shows a blue window titled "VoIP Integration Software Licensing". On the left, there is a section for "Manual Hardware Activation" with an icon of a server and a green plus sign. The main area contains instructions: "Open a web browser to http://www.VoIPIntegration.com/go/license or call +1-925-513-4400 (9am - 5pm Monday-Friday, GMT-8). Be prepared to enter the following information to receive your activation code." Below this are three input fields: "Serial Number" with the value "1234-5678-9012-3456-78", "Machine ID" with the value "1234-5678-9012-3456-78", and "Activation Code" which is empty. At the bottom, there are buttons for "Copy to Clipboard", "Copy to E-Mail", "Back", and "Next". A logo and contact information for VoIP Integration are in the bottom left corner.

Step 2 – Dial +1 (925) 513-4400. Select “*Option 3*” to activate a license.

Step 3 – You will be asked to enter the Serial Number, then the Machine ID. It will take a few moments for the activation system to provide an Activation Code.

Step 4 – Once you are given the activation code, enter the code in the section that says “*Activation Code*”, then click the “*Next*” button.

If activation is successful, you will get the window below stating that activation has been completed.

The screenshot shows a blue window titled "VoIP Integration Software Licensing" with the subtitle "Activation Complete". On the left, there is a large green checkmark. The main text reads: "This license has been activated on this computer. If you wish to move the application to another computer, you must first deactivate the license on this computer before attempting activation on another." At the bottom right, there is a "Close" button. A logo and contact information for VoIP Integration are in the bottom left corner.

Step 5 – Click on the “*Close*” button to finish and exit the activation process.

Selecting Methods of Phone Control

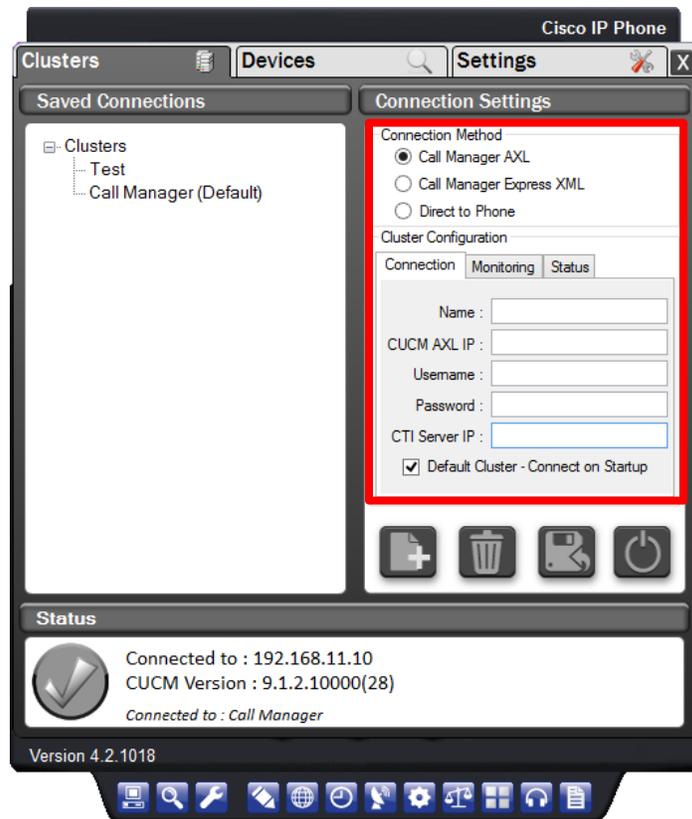
Phone remote provides for two mechanisms of phone control;

1. Connect to Call Manager and search for the phone you want to control by its extension, description or MAC address.
2. Connect directly to the Phone via its known IP Address with Call Manager end user credentials that is associated with the device.

The connection settings can be saved for multiple clusters or phones for faster connecting. If the *Default Cluster* setting is turned on for a specific cluster, Phone Remote will connect automatically on startup and go directly to the “Devices” search tab. (Default Cluster - Connect on Startup)

Call Manager Administration User (Call Manager AXL)

Ensure you have met the requirements for enabling AXL and assigning permissions described in *Appendix A*.



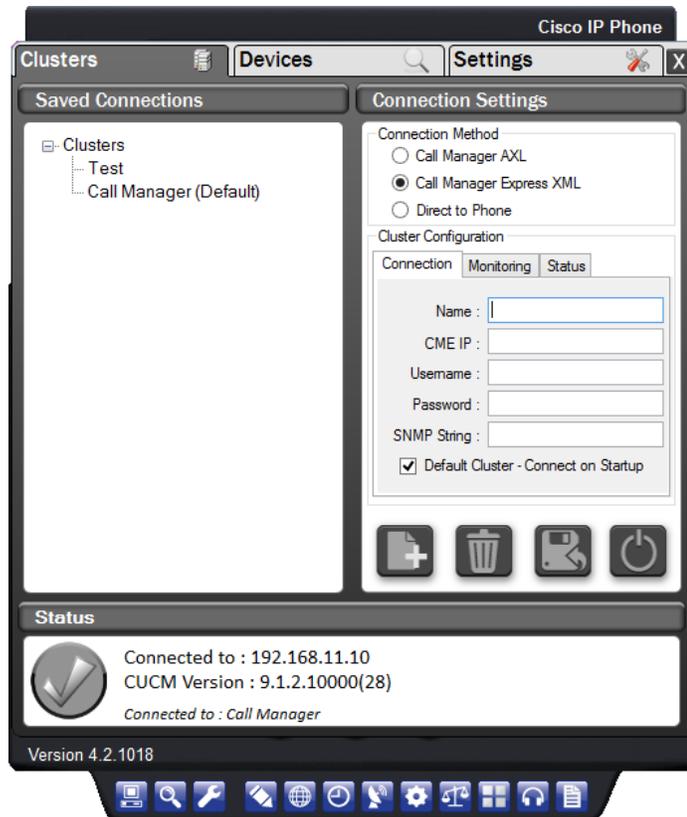
- Click the CM Admin User / CME XML User option
- In the in the Username field, enter the username with Admin/AXL permissions
- In the Password field, enter the password
- Click Save to add it to the list of clusters for future use. (optional)
- Click Connect

The status will indicate a successful connection and display the version of the connected Call Manager.

Call Manager Express / UC 500 XML User (Call Manager Express XML)

Connecting to a phone with Call Manager Express XML credentials requires that CME be configured with the URL Authentication and XML username and password the same.

See the *Appendix C* for required CME configuration.



To connect using CME XML user credentials

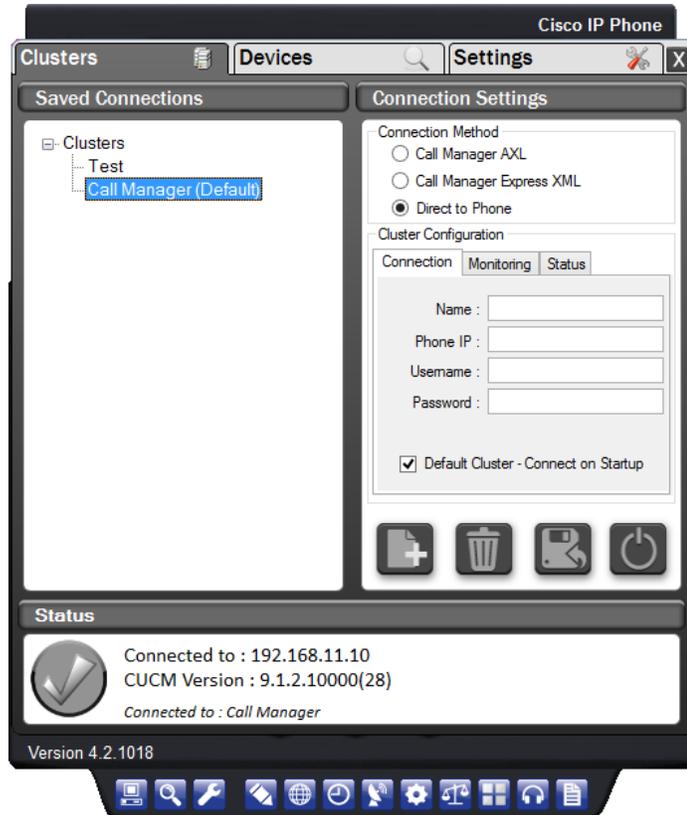
- Click the CM Admin User / CME XML User option
- In the Username field, enter the end user username
- In the Password field, enter the end user password.
- In the SNMP String field, enter an SNMP community string. This is required in order to connect to SIP phones
- Click Save to add it to the list of clusters for future use. (optional)
- Click Connect

The status will indicate a successful connection to the Call Manager Express /UC500 router.

Call Manager End User with device association (Direct to Phone)

Connecting to a phone with End User credentials requires that you know the phone's IP address and have a Call Manager End User with the correct Device Associations.

*See the *Appendix B* for steps to associate a phone with an end user.



To connect using end user credentials

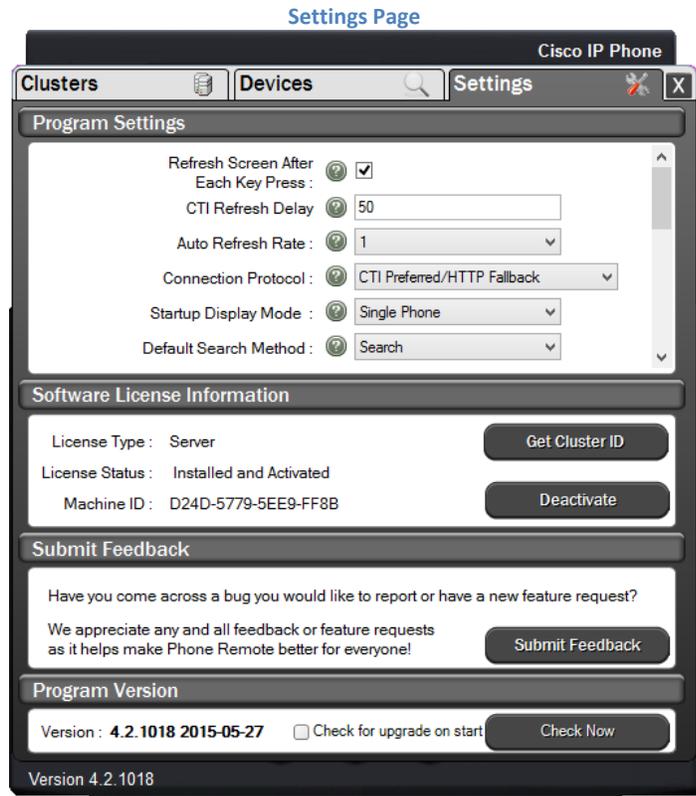
- Click the CM End user with Device Associated option
- In the Username field, enter the end user username
- In the Password field, enter the end user password.
- Click Save to add it to the list of clusters for future use. (optional)
- Click Connect

Use of Remote Control Features

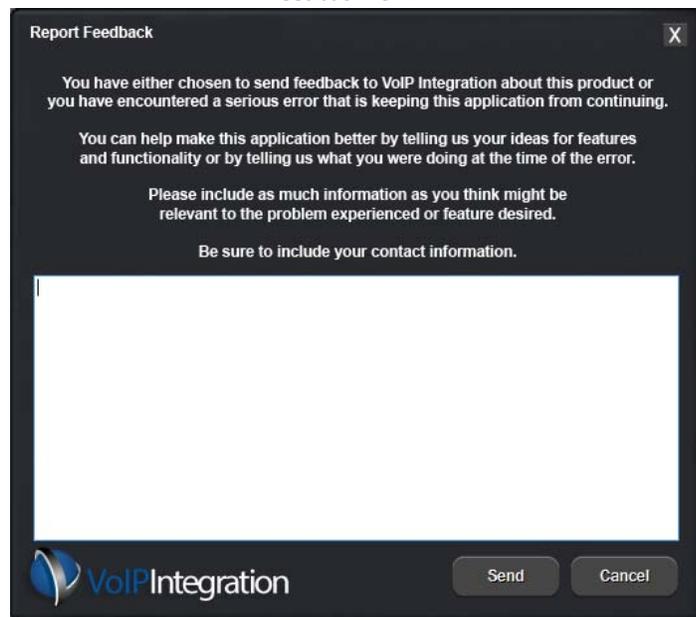
Settings

The Settings page contains the following options...

- Screen updates on key press:**
This setting will enable or disable Phone Remote retrieving a screenshot after every key press.
- Screen Auto Refresh Rate:**
This setting will enable or disable and set the interval of automatic screen updates.
- Default Search Method:**
This setting will select the default search page that appears on the Devices page, either Search or Call Manager Drill Down.
- Registration Information:**
This is where you can activate a purchased registration key or request a full feature evaluation key.
- Report Feedback:**
The feedback form can be used to notify us of feature requests or software bugs. If it's your software you should have the ability to make it even better.
- Version information and Manual Upgrade Check:**
The Program Version section shows you what version of Phone Remote you are running and allows you to shut off the upgrade check at program startup. You can also do a manual upgrade check here.



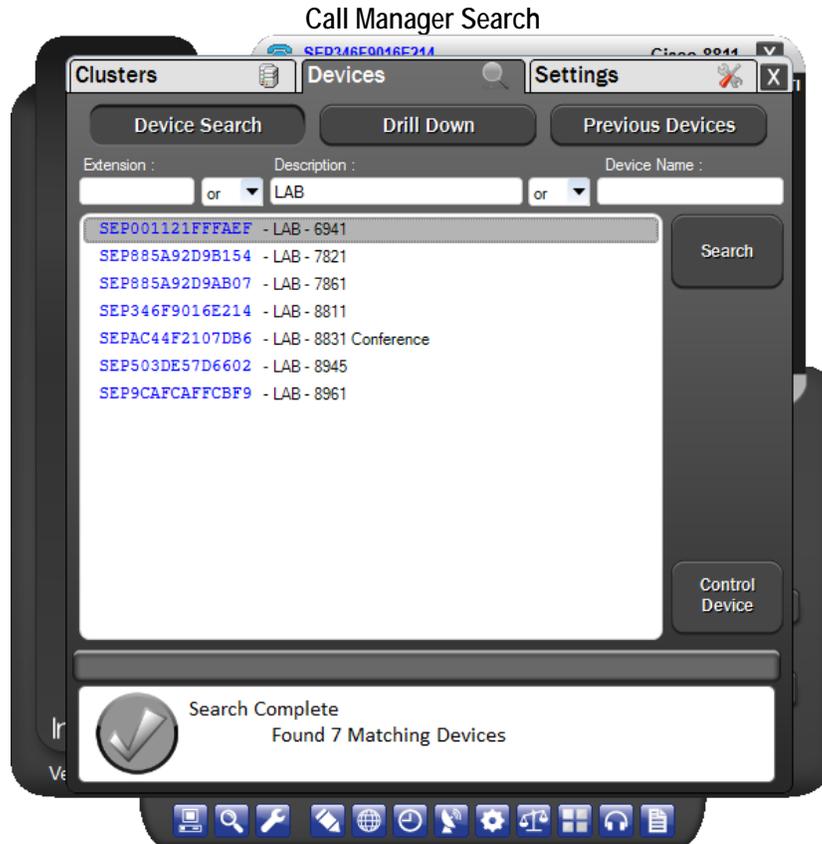
Feedback Form



Devices

Call Manager Search

The *Call Manager Search* section allows you to search Call Manager for a specific device or devices based on 3 search criteria, extension, description or device name.



- Step 1** – Enter the search criteria for the phone you want to control,
 Extension (Begins With)
 Description (Contains)
 Device Name (Contains)

Step 2 – Click search.

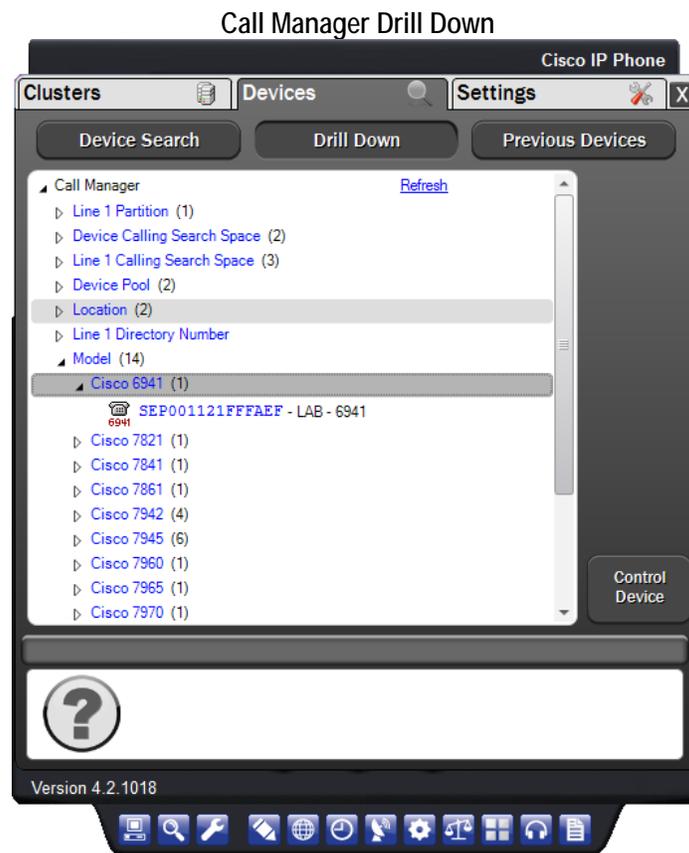
Note: You may click on the **OR** to toggle the search criteria between **OR / AND**.

The results of the search are available in the list of devices.

Step 3 – Select the desired device and click the “*Control Device*” button.

Call Manager Drill Down

The Call Manager Drill Down section allows you to search for a phone by selecting it from specific groups of Call Manager settings and device characteristics.



The search window displays the count of phones in each criterion and can be expanded to show the individual devices.

Once you have found the device you want to control just double click on the device or highlight and click the *Control Device* button.

The list of groups is as follows...

- Line 1 Partition
- Device Calling Search Space
- Line 1 Calling Search Space
- Device Pool
- Location
- Line 1 Directory Number
- Model

Previous Devices

The previous devices section shows any recent devices that have been connected to. It is sorted by devices controlled within the last 24 hours and 7 days.



Controlling a Remote Device

The following sections will explain how to control a device that has been connected to with Phone Remote.

Device Skins

Several new device skins have been added to Phone Remote to cover all supported Cisco IP Phone models and include:

- 8961, 9951, 9971
- 8941, 8945
- 78xx – 88xx
- 8831
- 7940 – 7975
- 6921 – 6961
- 7920 – 7926

Remote Phone Screen Layout (89xx/99xx series skin)



Phone Button Map

Item	Description	Feature
1	Phone Screen	Actual screen as displayed on remote phone
2	MWI Indicator	Indicates phone currently has Message Waiting Indicator on
3	Link to Phone Web Page	Opens a browser window to the remote phone
4	Link to Device Settings Page	Opens a browser window to Call Manager Administration on the device settings page for this phone.
5	Phone Model	Displays model of remote phone
6	Capture Button	Captures displayed screen image and saves to a local jpg file.
7	Refresh Button	Retrieves and displays screen of remote phone
8	Clusters Button	Opens the cluster connect screen
9	Device Search Button	Opens the device search screen
10	Settings Button	Opens the settings screen
11	Macro Tab Button	Opens the Macro tools tab
12	Stats Tab Button	Opens the Device stats tab
13	History Tab Button	Opens the Phone Remote Keystroke History tab
14	Ping and Trace Button	Opens the Ping and Trace Tool
15	Edit Phone Settings Button	Opens the Edit Phone Settings Tool
16	Compare Settings Button	Opens the Compare Settings Tool
17	Multi Phone Button	Opens Multi Device screen (Version 3.1 and higher)
18	Audio Monitor / Record	Enables/Disables Monitoring and/or Recording
19	Call History Button	Opens call history screen

Sending Key Strokes

Once connected to a phone, key strokes may be sent to the phone. The phone at the end user’s location will act as if the end user pressed the key. Click on the on-screen key or press one of the following keyboard shortcuts.

Keyboard Shortcut	Key Pressed on Phone
F1	Soft Key 1
F2	Soft Key 2
F3	Soft Key 3
F4	Soft Key 4
F5	Soft Key 5
0,1,2,3,4,5,6,7,8,9, *, #	0,1,2,3,4,5,6,7,8,9, *, #
Shift 1	Line 1
Shift 2	Line 2
Shift 3	Line 3
Shift 4	Line 4
Shift 5	Line 5
Shift 6	Line 6
Shift 7	Line 7
Shift 8	Line 8
h	Headset
m	Mute
S	Speaker
?	?
Up, Down, Left, Right	Up, Down, Left, Right
Enter	Select / Speaker *

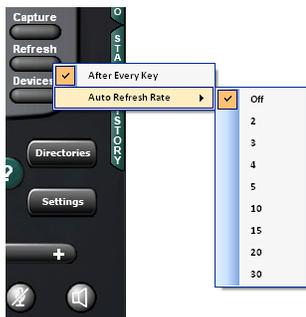
 **NOTE:** “?” button available on 794x, 796x, and 797x models only.



NOTE: On phones models that contain a Navigation Select button (), the Navigation Select button registers as the “Enter” button. On older phones without a “Navigation Select” button, the “Speaker” button () registers as the “Enter” button.

Screen Updates

Screen updates may be configured either when selecting the device to control on the Connections page or once connected by right clicking on the refresh button.



The option to “*refresh after every key*” will download the screen capture from the phone after each key is sent to the phone.

The auto refresh rate will update the screen at the selected interval. The number indicates how often a request is sent to the phone. Depending on your network and how busy the phone is, the screen may not update at the same rate.

You may also left click on the refresh button at any point to retrieve the current screen capture.

CAUTION

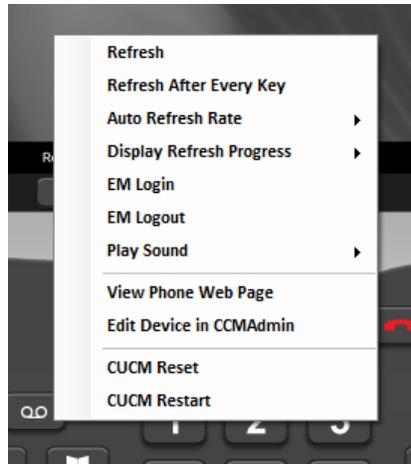
The phone's ability to respond to requests for screen captures may affect current call quality on some slower model phones. Care should be taken with rapid screen captures on phones in use. It is not recommended to add additional processing load to phone if troubleshooting QOS issues.

Phone Remote Features

The next sections will go over the many features of Phone Remote. These include items like Phone Screen Captures, Ping and Trace, Compare Phone Settings, and even Edit Phone Settings. One feature in particular can make configuring and administering many devices at once a whole lot easier. (See Multi Device / Multi View Screen).

General Screen Options

Right clicking on the phone screen will bring up some general features.



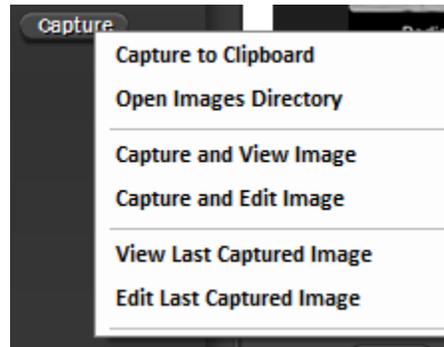
Task	Description
Refresh	Refreshes the current image on the phone screen.
Refresh After Every Key	Refresh the phone screen after every button press. This function toggles on and off.
Auto Refresh Rate	Refresh the phone screen after the set time. Time is in seconds.
Display Refresh Progress	Displays a progress bar along the bottom of the phone screen when the image is refreshing. This function toggles on and off.
Enable EM	Enable Extension Mobility for the controlled phone.
EM Login	*Search for users with Extension Mobility profiles to log in to the controlled phone.
EM Logout	*Log out the current Extension Mobility profile.
Play Sound	Plays a sound on the device being controlled.
View Phone Web Page	Opens a browser window to the controlled device's web page.
Edit Device in CCMAdmin	Opens a browser window to the device settings page for the phone being controlled in Call Manager Administration.
CUCM Reset	Instructs Call Manager to Reset the device being controlled.
CUCM Restart	Instructs Call Manager to Restart the device being controlled.

* EM Login and EM Logout are only present when Extension Mobility is enabled on controlled device.

Phone Screen Captures

The Capture button takes the screen as currently displayed on Phone Remote and saves the image as jpg in the “ScreenCaptures” directory. (default c:\program files\voip integration\phone remote\screencaptures\)

Right click on the capture button to access the capture menu.



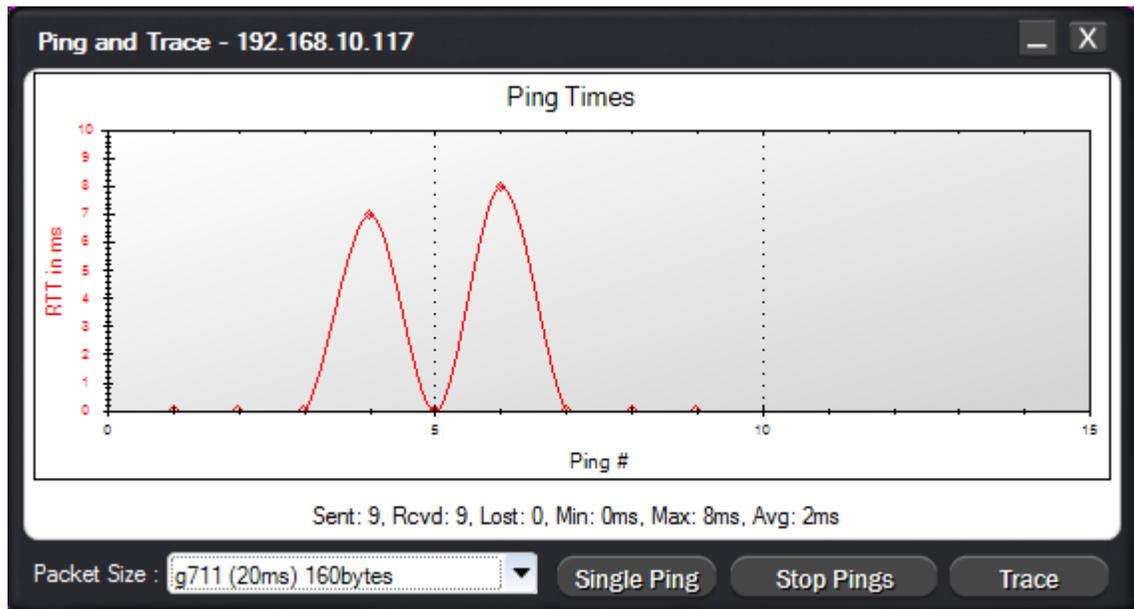
From the menu you have the following tasks:

Task	Description
Capture to Clipboard	Captures the currently displayed image on the Phone Remote screen to the windows clipboard.
Open Image Directory	Opens a new explorer window into the screen captures directory
Capture and View Image	Captures the currently displayed image on the Phone Remote screen. Image is viewed in your default picture viewing software.
Capture and Edit Image	Captures the currently displayed image on the Phone Remote screen. Image is opened in Microsoft Paintbrush for editing.
View Last Image	Last screen capture is shown in your default picture viewing software.
Edit Last Image	Last screen capture is opened in Microsoft Paintbrush for editing.

Ping and Trace Tool

The Ping and Trace Tool is a network testing and verification tool. The ping tool allows you to ping the phone that you are connected to with either a group of 5 pings or a string of continuous pings.

The trace tool will show you the network path between the PC running Phone Remote and the device that you are connected to.



Edit Phone Settings Tool

The Edit Phone Settings tool allows the user to edit basic Call Manager settings on the device and lines directly from Phone Remote.

Call Manager Settings Refresh [X]

Device | **Lines**

Line: 1 (3082 - Internal_PT)

DN: 3082

Partition: Internal_PT

Description: []

Alerting Name: []

ASCII Alerting Name: []

VoiceMail Profile: <None>

Line CSS: <None>

CFwdAll CSS: <None>

CFwdAll CSS 2nd: <None>

CFwdAll to Voice Mail:

CFwdAll Destination: []

Display Name: []

ASCII Display Name: []

Line Text: []

ASCII Line Text: []

External Mask: []

Busy Trigger: 2

Maximum Calls: 6

Save Reset Restart Apply

Call Manager Settings Refresh [X]

Device | **Lines**

Description: LAB - 8811

Device Pool: Office

Common Device Config: <None>

Phone Buttons: Standard 8811 SIP

Softkeys: <None>

Common Phone Profile: Standard Common Phone Profile

Device CSS: Device_Routes_Office_CSS

AAR CSS: <None>

MRGL: <None>

Location: Hub_None

Personalization: Default

Always Use Prime Line: Default

Prime Line for VM: Default

Subscribe CSS: <None>

Special Load Info: []

Allow Control from CTI:

Logged Into Hunt Grp:

Save Reset Restart Apply

Compare Settings Tool

The Compare Settings tool allows you to compare the device or line settings of the device you are connected to with any other phone on the same cluster.

You can choose to compare all of the settings for the selected devices or limit the view to only the configuration settings that are different.

You also have the option of exporting this data to a CSV file. Simply click on “Export to CSV” and select a location to save the file.

The screenshot shows a 'Compare Devices' window with the following configuration:

- Source Device:** SEP346F9016E214
- Comparison Device:** SEP001121FFFAEF
- Source Extension:** line 1 - 3082
- Comparison Extension:** line 1 - 3081
- Show:** Differences Only Show All

Buttons include 'Compare Device', 'Compare Line', and 'Export to CSV'.

Device Settings	SEP346F9016E214	SEP001121FFFAEF
Description	LAB - 8811	LAB - 6941
Model	Cisco 8811	Cisco 6941
Protocol	SIP	SCCP
Load Information	sip88xx.10-2-2-16	SCCP69xx.9-2-1-0
Security Profile Name	Cisco 8811 - Standard SIP Non-Secure Profile	Cisco 6941 - Standard SCCP Non-Secure Profile
Sip Profile Name	Standard SIP Profile	
Number Of Buttons	5	10
Phone Template Name	Standard 8811 SIP	Standard 6941 SCCP
Require Off Premise Location	false	

Additional Settings Options

Link to Phone Web Page



Clicking on the phone icon on the top left of the screen will open a web browser to the Phone's web page.

Link to Call Manager Device Settings Page



If connected to the phone via the Call Manager connection method the device name in the top left of the phone screen will become a link to the device settings page within Call Manager Administration.



NOTE: Note: Option not available when connecting directly to the phone IP.

Keystroke Macros

Clicking on the Macro tab will reveal the available macro options. Phone Remote comes preconfigured with four Macros functions. They Include

- CUCM Reset
- CUCM Restart
- Factory Erase
- Erase ITL

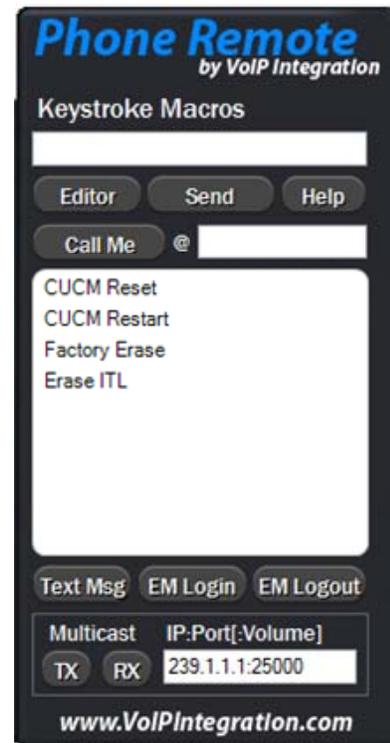
CUCM Reset – Shuts down the phone completely and reboots it.

CUCM Restart – Restarts the phone without shutting it down.

Factory Erase – Sends key strokes to phone to perform factory erase

Erase ITL – Erases the ITL file from the phone

Call Me @ – Allows you to specify a phone number to be called at. Clicking on the call me button or pressing enter when entering phone number will dial on speakerphone.



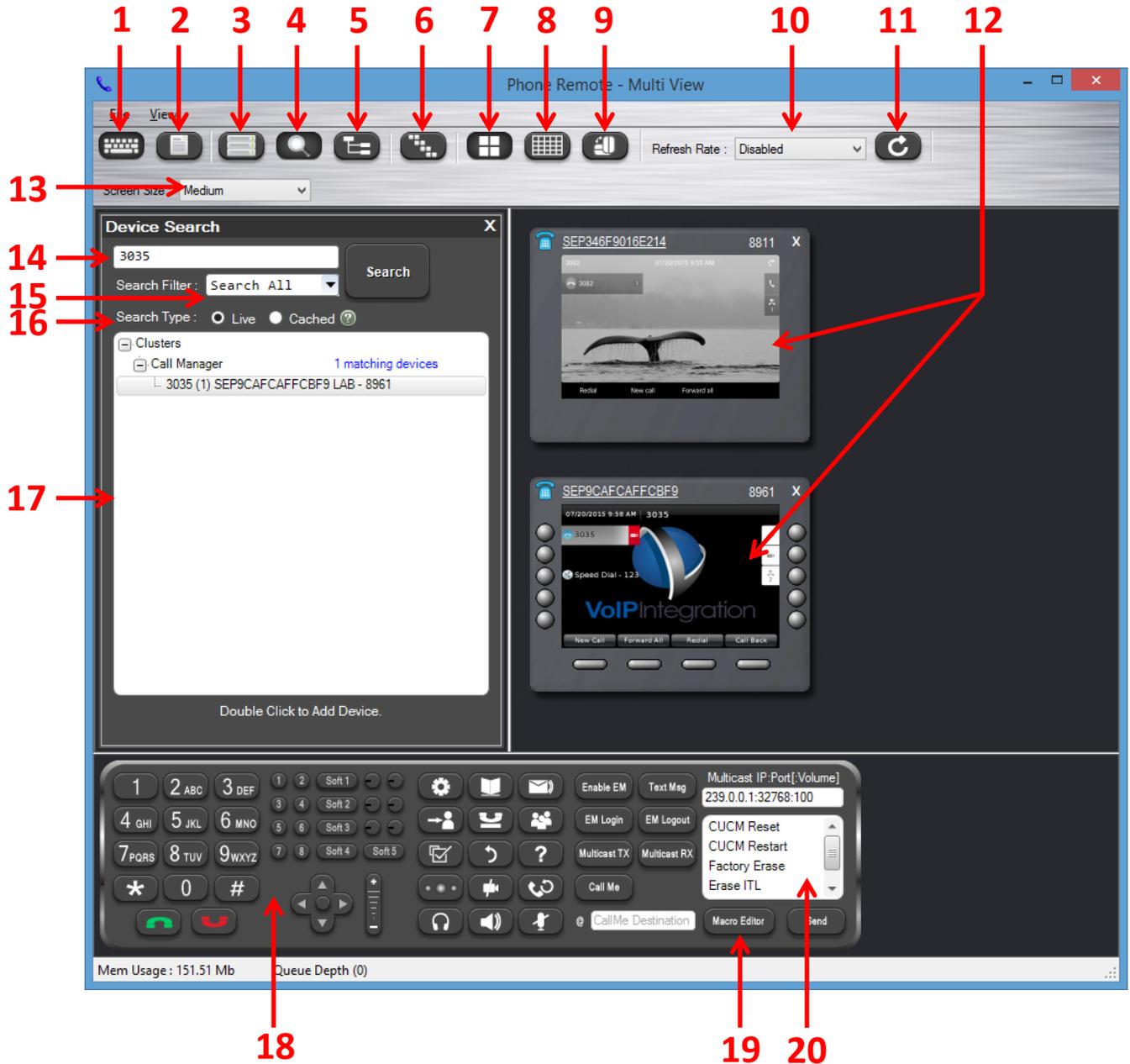
Valid Macro commands are: 0-9, *, #, ?, Speaker, Headset, Mute, SoftKey1 – 5, Line1-8, Up, Down, Left, Right, Select, Messages, Directories, Settings and Services.

Each non-numeric key must be separated by a comma. e.g. 1234, Speaker, SoftKey3, 1000, SoftKey3.

Multi Device/Multi View Screen

Multi Device/Multi View is a feature that is available on versions 3.1 and newer. This feature enables users to view multiple screens at once. Users can also send commands to a single phone or multiple phones at time.

To launch the Multi Device Screen, click on the “Multi Phone” button () located along the bottom of the Phone remote window.



Multi View Button Map

Item	Description	Feature
1	Keyboard	Toggles the keyboard on/off.
2	Command History	Toggles the Command History pane on/off.
3	Clusters	Toggles the Clusters Pane on/off.
4	Device Search	Toggles the Device Search pane on/off
5	Device Drill Down	Toggles the Drill Down Search pane on/off. Allows you to search for devices using the drill down method.
6	Macro Form	Brings up the Macros Editor.
7	View Phone Screens	Allows the user to bring up the Phone screens. If the phone screens are blocked from view, i.e. another pane is hiding the view, this button will bring the phone screens to the top.
8	View Phone Settings	Toggles the Phone settings Horizontal pane on/off.
9	View Phone Settings	Toggles the Phone settings Vertical pane on/off.
10	Refresh Rate Dropdown	Allows the user to choose a refresh rate for the screens currently connected.
11	Refresh	Manually refreshes the images from all of the connected phones.
12	Connected Phone Screens	Screens for the devices that are currently connected.
13	Screen Size	Allows the users to change the size of the screens.
14	Device Search Field	User search for any device on a connected cluster.
15	Search Filter	User can filter search results.
16	Search Type	The "Live" selection runs the query against CUCM in real time. The "Cached" selection searches against the last capture of the CUCM config. (Either on connect or last refresh)
17	Available Devices	Current devices which are available to connect to.
18	Input Keyboard	This is a universal keyboard where the user can enter keystrokes that will go to any connected device the user specifies.
19	Macro Editor	Brings up the "Macro Editor" tool.
20	Existing Macros	Displays all existing Macros.

Controlling Multiple Devices in Multi View

Phone remote has the ability to control multiple devices while viewing devices in multi view. Users can choose which devices they can send commands to. For example, a user can connect to three different phones, but they only want to send a command for two of the phones. This can be easily done in Multi View.

Step 1 – Make sure that Phone Remote is connected to the devices.

Step 2 – Select the devices that are to be controlled. Confirm that the selection is highlighted in white.

Note: Even though Phone Remote is connected to the devices shown in Multi View, the devices that are to be controlled need to be selected by the user. A device that has a white highlight in the back indicates that the device is ready to be controlled. (See notations on the image below.)

Step 3 – Once the desired devices are highlighted, the user can send keystrokes, macros, and other commands to the highlighted devices.



The green arrows point to the devices that are highlighted in a white outline. This indicates that the phones are ready to be controlled and any keystrokes and commands can be sent to both devices. Note how the device on the bottom is not highlighted. This device will not receive any keystrokes or commands despite being connected to Phone Remote.

Multi View is useful for viewing and controlling multiple devices at a time. This feature can be useful when configuring a large quantity of similar model phones that will have similar settings.

Macro Editor

The Macros Editor allows you to create customized Macros. The list on the left side displays all custom Keystroke Macros currently available. You can add new custom macros.

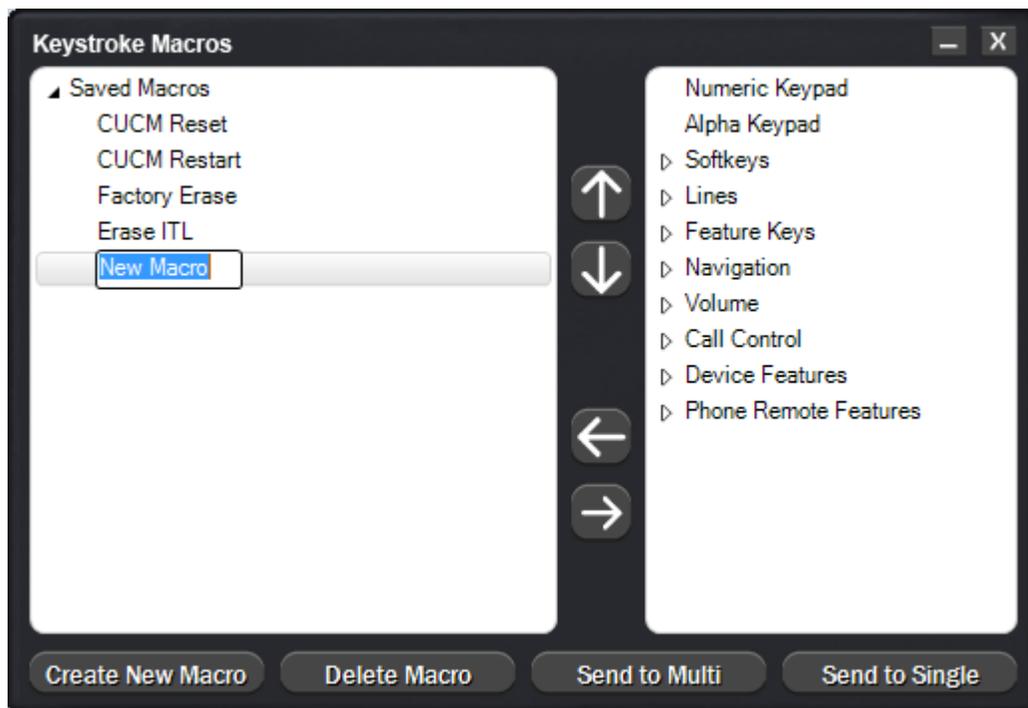
To Create a new Macros:

Step 1 – Click on the “Create New Macro” button.

Step 2 – Name your Keystroke Macro in the new field that shows in the Keystroke Macros.

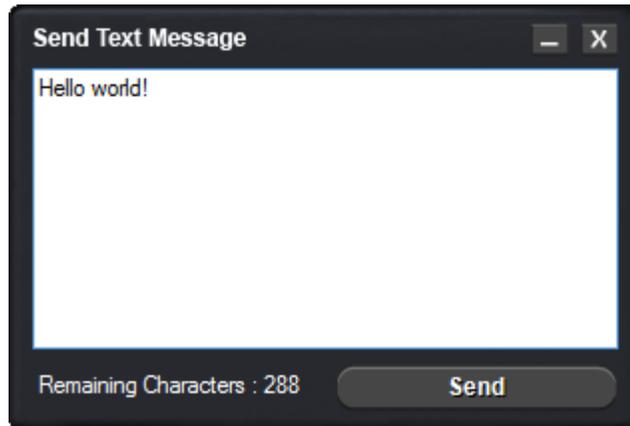
Step 3 – You can begin to add Keystrokes from the list on the right. The list contains all buttons available on the phone. You can double click on the Key or use the Left/Right Directional buttons located in the middle of the two lists to move the keys back and forth between lists. You can use the Up/Down Buttons to change the sequence of the Macros Keystrokes.

Step 4 – When finished adding your keystrokes, you can test the Keystroke Macros by clicking on the “Send to Single” button. If you currently have Multi View open, you can click on the “Send to Multi” button and it will send the Macro Keystrokes to all phones that are highlighted in white.



Send Text Message

This feature allows you to send a text message to the phone you are connected to.



Multicast

The multicast macros allow you to cause a phone to begin transmitting or receiving multicast audio.

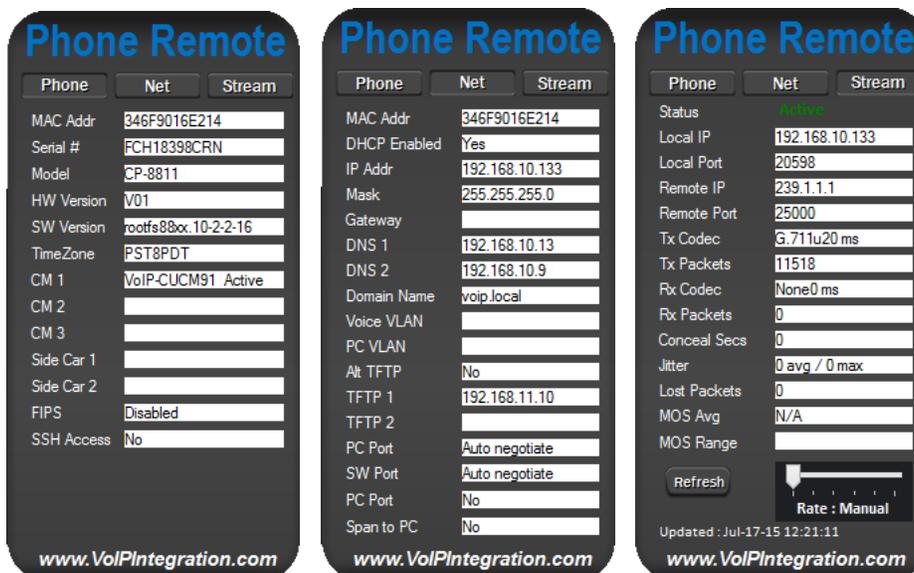
This is a useful feature to assist in troubleshooting multicast issues across the network.

The Multicast address and port must be specified as <IP Address>:<Port>[:<Volume>] within the multicast range. Note that volume is for receiving multicast only.

Stats

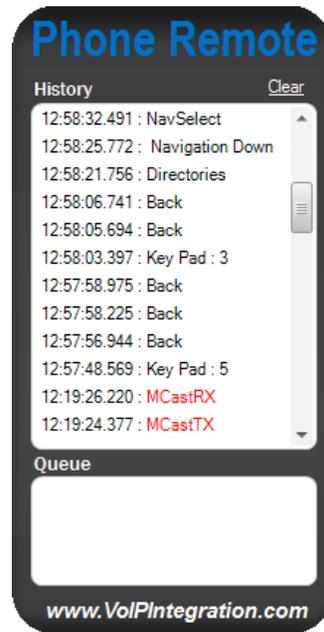
The stats tab shows phone, network and RTP Stream information.

The Stream option allows for manual or automatic refresh of call stats.



History

The History tab shows a log of keys sent to the phone along with any pending keys still waiting to be sent.



Command Line Options

Phone remote can be invoked with several command line options.

Command Line Option	Required Value
-extn or -e	<extension>
-desc or -d	<description>
-name or -n	<device name>
-phoneip	<Phone IP Address >
-cmip	<Call Manager IP Address>
-u	<username>
-p	<password>

Option must have a space between selected option and value.

Using command line options require either that the connection be saved or that the phone or call manager IP address, username and password be specified.

If cluster settings have been saved any command line connection options (-phoneip, -cmip, -u or -p) will override the saved settings for the single connection only.

Examples :

Command Line	Result
PhoneRemote.exe -extn 54521	Search for phones with extension <i>54521</i>
PhoneRemote.exe -e 54521	
PhoneRemote.exe -desc bob	Search for phones with description containing <i>bob</i>
PhoneRemote.exe -d bob	
PhoneRemote.exe -name D541	Search for phones with the Name containing D541
PhoneRemote.exe -n D541	
PhoneRemote.exe -cmip 10.10.10.10 -u ccmadministrator -p cisco -e 54321	Connect to Call Manager server at IP address 10.10.10.10 with username ccmadministrator, password cisco and search for phone with extension 54321.
PhoneRemote.exe -d bob -e 1001	Search for all phones with description containing bob who has extension 1001 on the phone

If a single device matches the search criteria Phone Remote will automatically connect to that device.

Monitoring for Phone Remote (Add-on Feature)

Phone Remote has an add-on feature (Available as a separate license) that can allow you to listen to audio from the remote device. You can choose to play the audio through your computer speakers or at a local phone.

Overall Monitoring Requirements

In order to have the ability to monitor audio on phones via phone remote, you need to do the following:

- Obtain a Remote Audio Monitoring License
- Enable Application-based monitoring / Built In Bridge. (Per Phone or Entire Cluster)
- Configure Monitoring Destination (Phone or CTI Port)

Enable Application-based Monitoring / Built In Bridge for Single Devices

1. In **Call Manager**, go to the Phone Configuration page on the phone you want to monitor.
2. Scroll down and locate **“Built In Bridge”** in the Device Information section.

Device Information

Registration: Registered with Cisco Unified Communications Manager VoIP-CUCM91

IP Address: [192.168.10.184](#)

Active Load ID: sip88xx.10-2-2-16

Inactive Load ID: cert.os.mfg.drop

Download Status: Unknown

Device is Active

Device is trusted

MAC Address*: 346F9016E214

Description: Manny - 8811

Device Pool*: Office [View Details](#)

Common Device Configuration: < None > [View Details](#)

Phone Button Template*: Standard 8811 SIP

Softkey Template: < None >

Common Phone Profile*: Standard Common Phone Profile

Calling Search Space: Device_Routes_Office_CSS

AAR Calling Search Space: < None >

Media Resource Group List: < None >

User Hold MOH Audio Source: < None >

Location*: Hub_None

AAR Group: < None >

User Locale: < None >

Network Locale: < None >

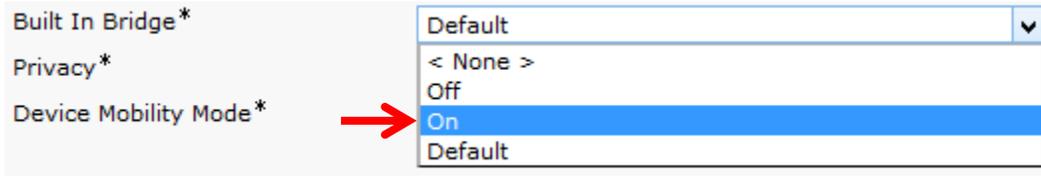
Built In Bridge*: Default

Privacy*: Default

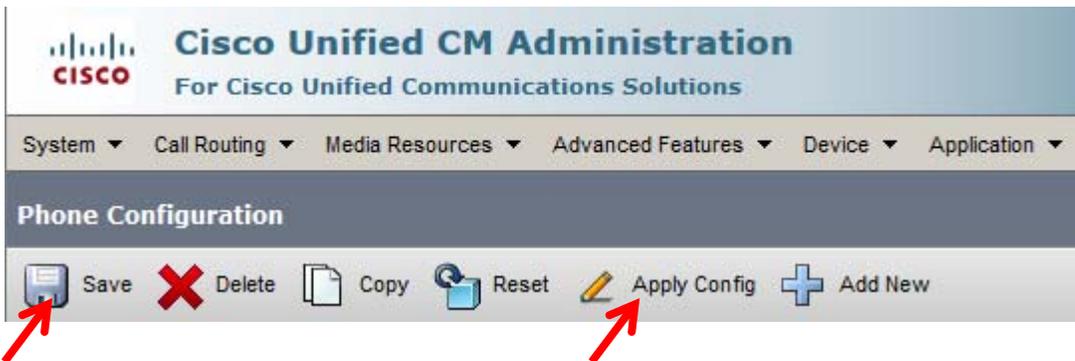
Device Mobility Mode*: Default [View Current Device Mobility Settings](#)

Owner: User Anonymous (Public/Shared Space)

3. Change the settings in the drop-down from “Default” to “On”.

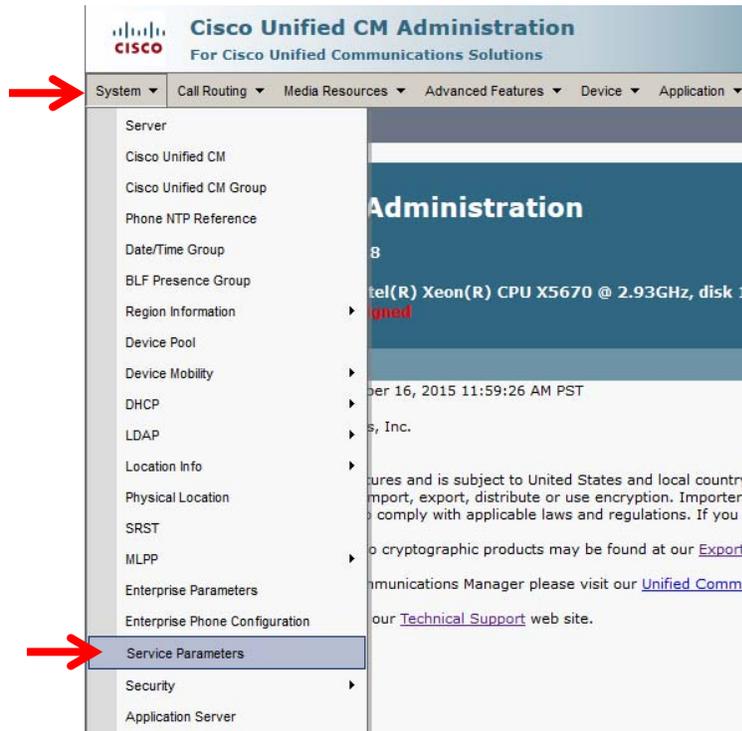


4. Click on the “Save” button, then click on the “Apply Config” button.

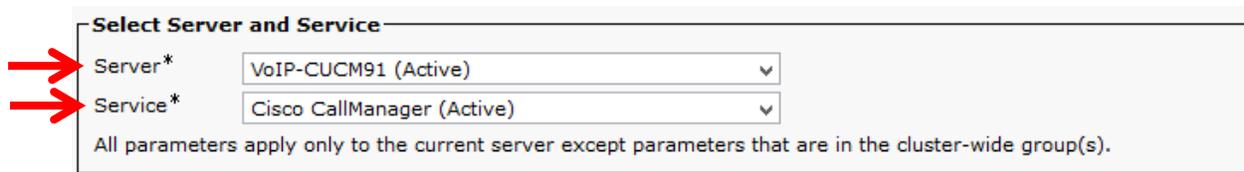


Enable Application-based Monitoring / Built In Bridge for the Entire Cluster

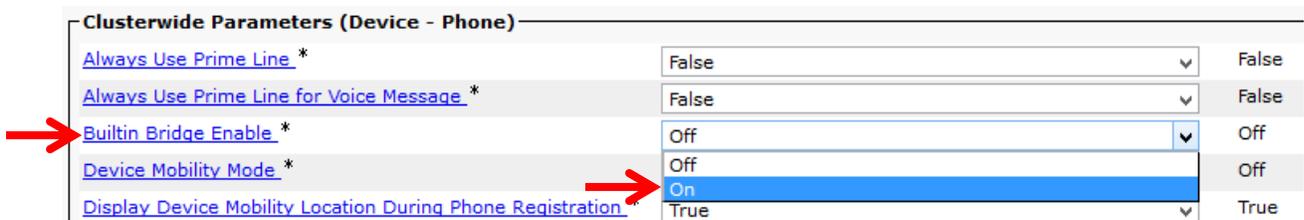
1. In Call Manager, go to **“System”** and click on **“Service Parameters”**.



2. Under the **“Select Server and Service”** section, select the Cluster you want to enable audio monitoring for from the **“Server”** dropdown, then on the **“Service”** dropdown, look for and select the **“Cisco CallManager”** service.



3. Scroll down and find the section that says **“Clusterwide Parameters Configuration (Device – Phone)”**. Locate **“Builtin Bridge Enable”** and change the setting in the dropdown from **“Off”** to **“On”**. Then click on the **“Save”** button on the top.

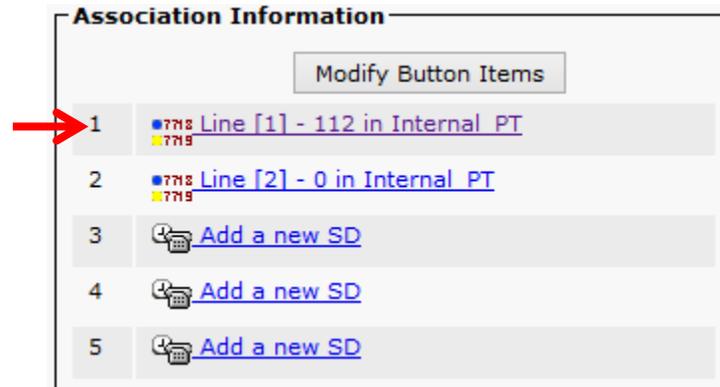


Once the previous steps are completed, **“Built In Bridge”** will be enabled on all newly registered devices by default. However, for the configuration to take effect on phones that were registered before making the change, the phones will need to be reset.

Playing Monitored Audio via a Desk Phone

To have the monitored audio play from a desk phone, you will need to set the “Monitoring Calling Search Space” (CSS) on the phone’s line to a calling search space that can access the phone you want to monitor.

1. In **Call Manager**, from the Phone Configuration page of the phone you want to monitor from, click on the line that is going to be used for monitoring. The lines are located in the “**Association Information**” section on the left side. This will bring up the Directory Number Configuration page.



2. Locate the **“Monitoring Calling Search Space”** dropdown on the **“Directory Number Configuration”** page. Set that option to a Calling Search Space that can access the extension of the phone you want to monitor.

Line 1 on Device SEP346F9016E214

	Value	Update Shared Device Settings
Display (Caller ID)	Manny <small>Display text for a line appearance is intended for displaying text such as a name instead of a directory number for calls. If you specify a number, the person receiving a call may not see the proper identity of the caller.</small>	<input type="checkbox"/>
ASCII Display (Caller ID)	Manny	<input type="checkbox"/>
Line Text Label	Manny - 112	<input type="checkbox"/>
ASCII Line Text Label	Manny - 112	<input type="checkbox"/>
External Phone Number Mask	9255134400	<input type="checkbox"/>
Visual Message Waiting Indicator Policy*	Use System Policy	<input type="checkbox"/>
Audible Message Waiting Indicator Policy*	Default	<input type="checkbox"/>
Ring Setting (Phone Idle)*	Ring	<input type="checkbox"/>
Ring Setting (Phone Active)	Use System Default <small>Applies to this line when any line on the phone has a call in progress.</small>	<input type="checkbox"/>
Call Pickup Group Audio Alert Setting(Phone Idle)	Use System Default	<input type="checkbox"/>
Call Pickup Group Audio Alert Setting(Phone Active)	Use System Default	<input type="checkbox"/>
Recording Option*	Call Recording Disabled	<input type="checkbox"/>
Recording Profile	< None >	<input type="checkbox"/>
Monitoring Calling Search Space	< None >	<input type="checkbox"/>
<input checked="" type="checkbox"/> Log Missed Calls		<input type="checkbox"/>

Monitoring Calling Search Space

Log Missed Calls

< None >

< None >

Device_Routes_Office_CSS

3. Click on the **“Save”** button at the top to apply the settings.

Playing Monitored Audio via PC Speakers

To have the monitored audio play on a PC via its speakers, you will have to create a new CTI Port and configure an extension on that CTI Port. You will also need to set the Monitoring CSS on the extension to a CSS that can access the extension of the phone you would like to monitor.

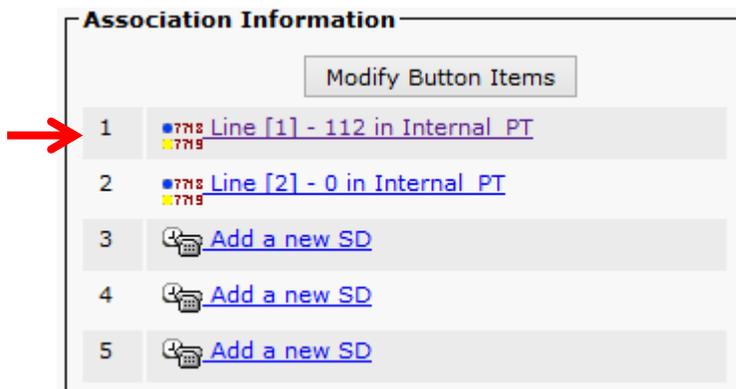
1. In Call Manager, go to **“Device”** then click on **“Phone”**.



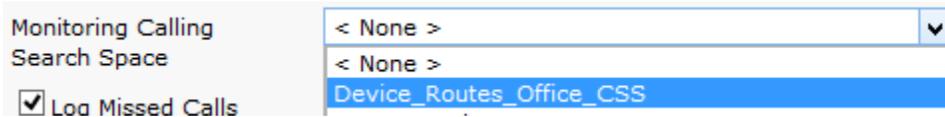
2. In the **“Find and List Phones”** page, click on the **“Add New Phone”** button on the top.
3. Under the **“Select the type of phone you would like to create”** section, set the phone type to **“CTI Port”**. Then click on the **“Next”** button.



4. Enter in the required information in the fields and finish creating the new CTI Port by clicking the **“Save”** button.
5. Configure an extension on the newly created CTI Port. Go to the **“Association Information”** section on the left side. Click on **“Add a new DN”** This will bring up the Directory Number Configuration page.



6. Locate the **“Monitoring Calling Search Space”** dropdown. Set that option to a Calling Search Space that will be able to access the extension on the phone that is to be monitored.

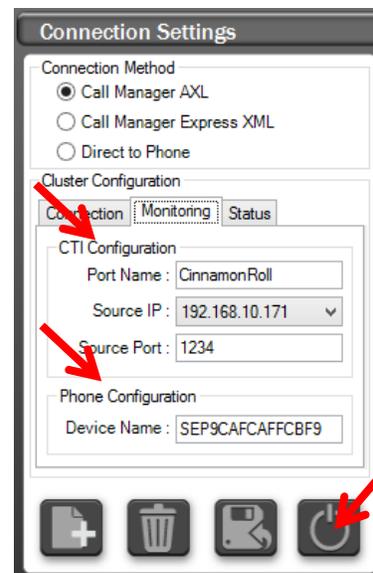


7. Click on the **“Save”** button at the top to apply the settings.

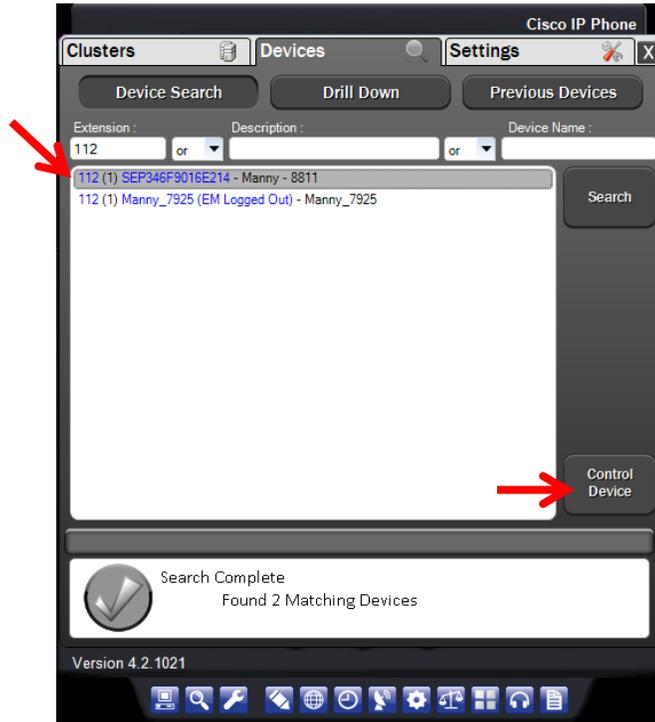
Setting Up Phone Remote for Monitoring

Once you have CUCM configured for monitoring, (Enabling Built In Bridge/New CTI Port/Config Phone Line for Monitoring) you can add the Phone and or CTI Port names into Phone Remote. After you have added the device names to Phone Remote, you will need to re-connect to the cluster.

1. In the Monitoring Tab, set the CTI Configuration by entering the Port Name, and Source Port that you previously created, **OR...**
2. In the Monitoring Tab, set the Phone Configuration by entering in the Device Name of the phone that you set up to receive the audio.
3. Click on the Disconnect button on the bottom-right to disconnect from the cluster, click it again to re-connect to the cluster. You may need to re-start Phone Remote if the Connection and Monitoring Statuses do not re-connect.
4. Once the connection to the cluster is back up, you can search for the device that you want to monitor in the devices tab.



- Click on the device you would like to monitor and click on “Control Device” to connect to it.



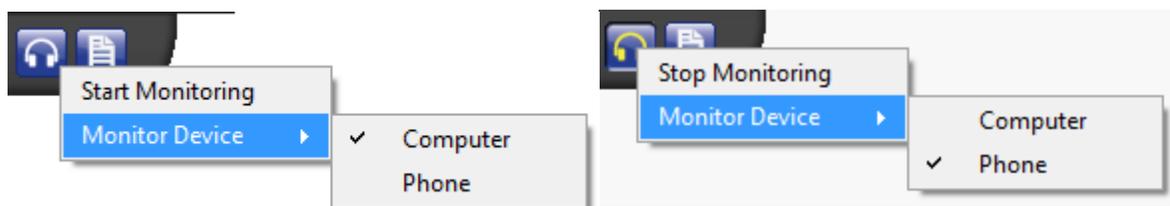
- Once Phone Remote is connected to the phone you want to monitor, click on the “Remote Audio” icon on the bottom. The icon will turn yellow indicating that monitoring is currently active on the phone.



Any calls that come in through the phone will now be monitored. The audio from those calls will now go to the phone or the computer that you have set up to receive it.

Changing the Remote Destination

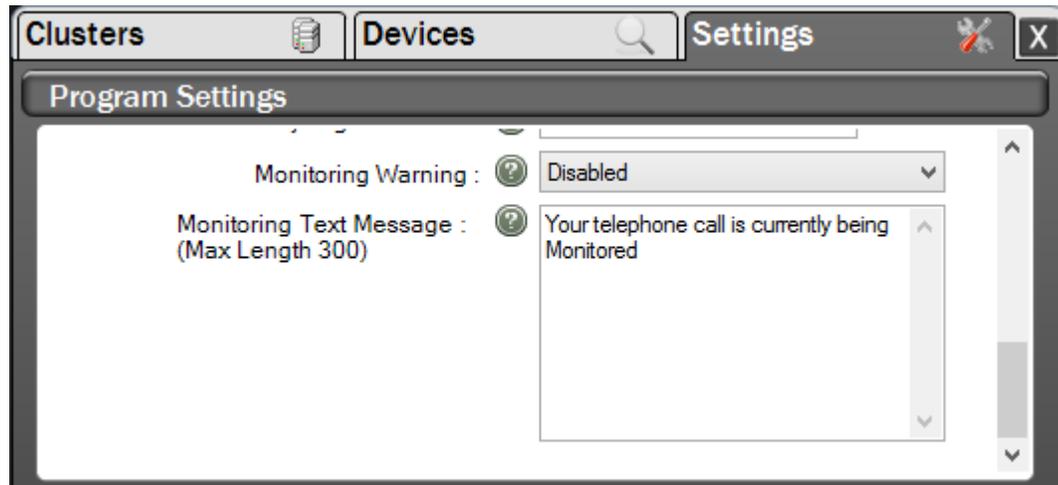
To change your monitoring destination, right click on the “Remote Audio” icon. You can change the destination back and forth between Computer and Phone.



Monitor Warning Alert

The Audio Monitoring feature in Phone Remote comes with a setting to notify users that their phone is being monitored. The monitoring notification has a visual and audio portion that can be enabled or disabled.

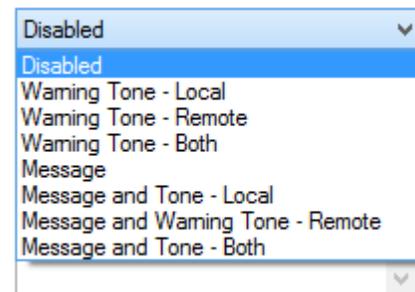
1. In the Settings Tab, scroll down and find the section that says “**Monitoring Warning**”.



2. Click on the Drop down and choose any of those methods to alert the end user.
3. Once you select one of the notification methods, you can then edit the Monitoring Text Message that is sent to the phone that will be monitored. Note that the maximum length is 300 characters.

The notification will be sent to the phone the moment that you click on the “Remote Audio” button when you are connected to the phone via Phone Remote.

By default the notification is set to Message only.



Appendix A: Call Manager Pre Requisite Configuration

AXL Service

For Phone Remote to function with Call Manager, you will need to ensure you have the AXL service active and running on your server.

To Validate you have the AXL service running:

- Use a web browser to access the Call Manager Serviceability web page.
- <https://<Call Manager>/ccmservice>
- Select the **Tools > Service Activation** menu
- Under the Database and Admin Section
- Ensure that the Cisco AXL Web Service is activated. If not, click the checkbox and then click the save button at the top of the page.
- Select **Tools > Control Center - Feature Services** menu
- Ensure that the Cisco AXL Web Service is running. If not, click the radio button and then click the start service button at the top of the page.

Service Activation

Database and Admin Services		
	Service Name	Activation Status
<input checked="" type="checkbox"/>	Cisco AXL Web Service	Activated
<input type="checkbox"/>	Cisco UXL Web Service	Activated
<input type="checkbox"/>	Cisco Bulk Provisioning Service	Activated
<input type="checkbox"/>	Cisco TAPS Service	Deactivated

Control Center – Feature Services

Database and Admin Services					
	Service Name	Status	Activation Status	Start Time	Up Time
<input type="radio"/>	Cisco AXL Web Service	Started	Activated	Mon Feb 15 13:38:55 2010	20 days 20:56:57
<input type="radio"/>	Cisco UXL Web Service	Started	Activated	Mon Feb 15 13:38:55 2010	20 days 20:56:57
<input type="radio"/>	Cisco Bulk Provisioning Service	Started	Activated	Mon Feb 15 13:37:17 2010	20 days 20:58:35
<input type="radio"/>	Cisco TAPS Service	Not Running	Deactivated		

AXL User

You may choose to use a Call Manager administrator username and password with Phone Remote or assign the required permissions to new or existing users.

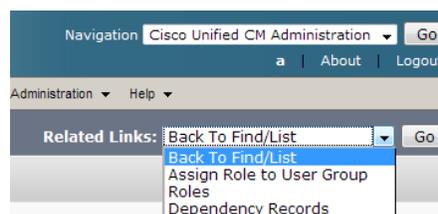
Any user who has the group membership of **Standard CCM Super Users** will be able to use phone remote to search and control phones without adding the following process.

If you choose to add a user new group for permissions and want to restrict permissions to the minimum required. You will need to work through the following process. This new group can then be added to new or existing end users in Call Manager.

From within Call Manager Administration

- Select User Management
- Select User Groups (or Access Control Group)
- Click Add New

- Enter a Group Name such as (AXL Access)
- Click Save
- Select the Assign Role to User Group from the related links



- Click Assign Role to Group button
- Add the following Role:

Standard AXL API Access (See Fig. 3.3)

Fig. 3.3

- Click Save

Now find your user in Call Manager Administration, User Management, End Users and add the group created above, the Standard CCM Admin Users group and the Standard RealtimeAndTraceCollection group. This will allow the user to access the AXL service but no access to any of the Call Manager Admin web pages.

- Click Save.

Using Phone Remote with Call Manager 8 and above

With the release of Call Manager 8, Cisco introduced “Security by Default” and the ability to connect to the phone using https on secure phones. These security features have added another layer of complexity when accessing the phones.

Authentication URL

The Authorization URL (found under system -> Enterprise Parameters) is the URL where requests to the phones are validated. Phones that have the ability to communicate over HTTPS will take the Secured Phone URL Parameters over the non-secure URLs.

The secure URLs need to be configured in a way that passes the Trust Verification Service.

Phone URL Parameters		
URL Authentication	<input type="text" value="http://1.2.3.4/ccmcp/authenticate.jsp"/>	
URL Directories	<input type="text" value="http://1.2.3.4/ccmcp/xmldirectory.jsp"/>	
URL Idle	<input type="text"/>	
URL Idle Time	<input type="text" value="0"/>	0
URL Information	<input type="text" value="http://1.2.3.4/ccmcp/GetTelecasterHelpText.jsp"/>	
URL Messages	<input type="text"/>	
IP Phone Proxy Address	<input type="text"/>	
URL Services	<input type="text" value="http://1.2.3.4/ccmcp/getservicesmenu.jsp"/>	

Secured Phone URL Parameters		
Secured Authentication URL	<input type="text" value="https://CUCM.VoIPInt.local:8443/ccmcp/authenticate.jsp"/>	
Secured Directory URL	<input type="text" value="https://CUCM.VoIPInt.local:8443/ccmcp/xmldirectory.jsp"/>	
Secured Idle URL	<input type="text"/>	
Secured Information URL	<input type="text" value="https://CUCM.VoIPInt.local:8443/ccmcp/GetTelecasterHe"/>	
Secured Messages URL	<input type="text"/>	
Secured Services URL	<input type="text" value="https://CUCM.VoIPInt.local:8443/ccmcp/getservicesmeni"/>	

Trust Verification Service (TVS)

The trust verification service is the remote certificate store for the IP Phones. When a phone attempts to connect via HTTPS it first checks with the TVS to validate the certificate of the remote connection is valid. If the destination is not found within the certificates on the TVS, the HTTPS connection will fail.

By default, the only certificates that are in the TVS are those of the CUCM servers. Additionally, the certificates only contain the fully qualified domain name (FQDN) of the servers.

This means that the Secured Phone URL Parameters must reference the FQDN of the CUCM servers.

Appendix B: Cisco Call Manager Configuration for End User Control

Adding a New User

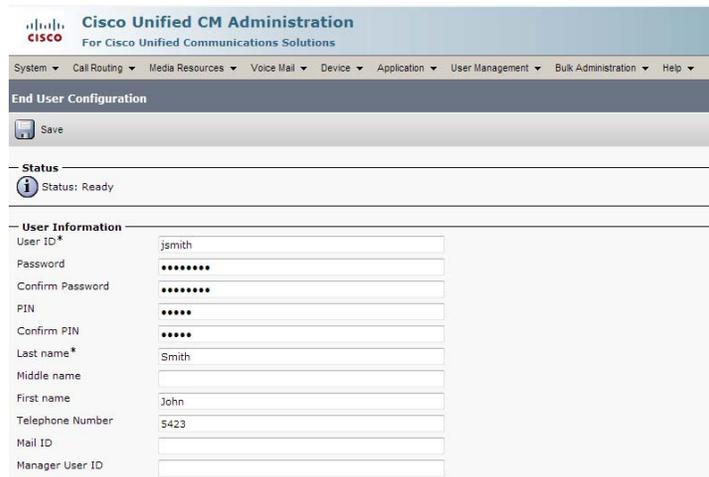
Use the following steps to create a user in Call Manager that has the ability to use the end user credentials.

Log in to your call manager with administrator rights.

- Select User Management
- Select End User



- Click Add New



At a minimum enter the following:

- User ID
- Password
- Confirm Password
- PIN
- Confirm PIN
- Last Name

When finished, click the Save button.

Once the user is saved, the device association section will have the Association button enabled.

Associate Device

Click the Device Association button

Using the following window, search for the device you want the user to be able to control

	Device Name	Directory Number	Description
<input checked="" type="checkbox"/>	SEP0023339C8168	5123	John Smith

Once you locate the desired device click the checkmark and select Save Selected/Changes

Click on the Go button in the upper right of the search form to return to the user.

The user device associations sections should now include the device just added

Click the Save button.

You should now be able to control a phone by its IP Address with this username/password.

Appendix C: Integrated Call Manager Express / UC 500 configuration

The following commands are required in Call Manager Express to allow use of Phone Remote to search and control phones.

Replace the <CME IP ADDRESS>, <username> and <password> fields with your specific values without the <>'s

```
ip http server

ixi transport http
response size 64
no shutdown

ixi application cme
no shutdown

telephony-service
url authentication http://<CME IP ADDRESS>/CCMCIP/authenticate.asp <username> <password>
service phone webAccess 0
xml user <username> password <password> 15
log password <password>

snmp-server community <SNMPCommunity> RO
```



NOTE: The URL Authentication and Log password must be the same. Service phone webAccess is needed on phone firmware 9+. The ephone “type” is required for the Authentication URL to be set on the devices.

Reference :

Configuring the XML API Chapter of the
Cisco Unified Communications Manager Express System Administrator Guide
http://www.cisco.com/en/US/docs/voice_ip_comm/cucme/admin/configuration/guide/cmeapi.html

If for some reason you are unable to run IP HTTP Server or XML Services on the router use the end user device method along with the URL Authentication as specified in Appendix D.

Appendix D: Direct Phone Call Manager Express / UC 500 Configuration

If you wish to be able to control CME/UC500 phones using the end user method you must have the minimum of the following configuration on the router.

There will be no ability to search for the phone and you must know the phone IP Address

```
telephony-service
url authentication http://<CME IP ADDRESS>/CCMCIP/authenticate.asp <username> <password>
```

You should then control the phone by specifying the phone IP Address and the username/password as configured above on the router. The ephone “type” must be specified in order for the authentication URL to be set on the phone.