



**Phone Remote 2.3 (1015)
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.

Requirements

Application Requirements

- Windows PC with Microsoft Dot Net 3.5 or greater

Note : Windows on VM Ware in not supported

Call Manager

When using Call Manager Administration User

- Call Manager 5+ (Tested on Call Manager 5 through 8)
- 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

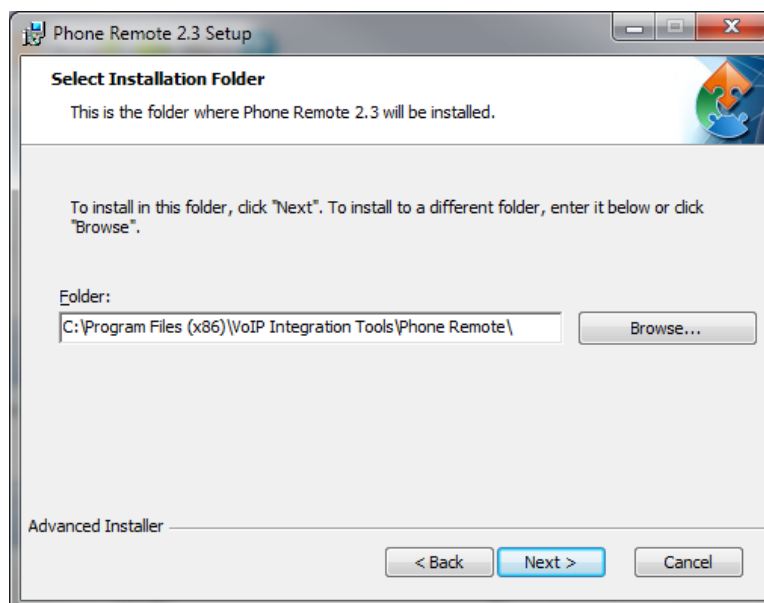
Loading Phone Remote

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

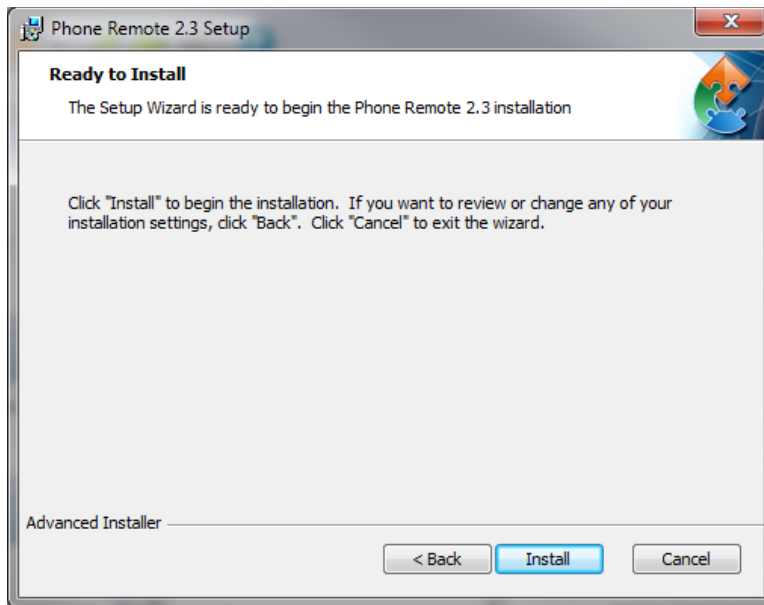
Then double-click the saved file.



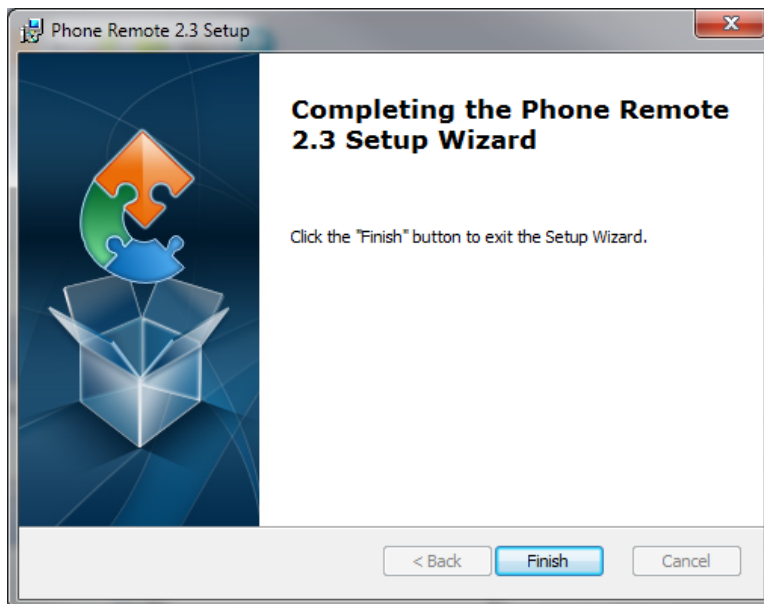
Click *Next*>



Enter the installation path you would like Phone Remote installed in and click *Next*>.



To complete the installation click *Install*.



When the install 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.

Loading your License Key

To enter your license key information, click on the Settings tab and locate the *Registration Information* section. Enter your Name, Company and Registration Key exactly as you receive them in the registration email. The Registered user name and company are case sensitive.

The screenshot shows the 'Registration Information' window in the Cisco IP Phone application. The window has three tabs: 'Clusters', 'Devices', and 'Settings'. The 'Settings' tab is selected. Under the 'Settings' tab, there are three sections: 'Program Settings', 'Registration Information', and 'Report Feedback'. The 'Registration Information' section is highlighted with a red box and a red arrow pointing to it. This section contains three input fields: 'Registered User Name', 'Registered Company Name', and 'Registration Key'. Below these fields are two buttons: 'Purchase' and 'Activate'. There is also a note: 'Note : User Name and Company are case sensitive' and a link: 'Request Corporate Evaluation License'. The 'Report Feedback' section contains a text area and an 'Open Feedback Form' button. The 'Program Version' section shows 'Version : 2.3.1006 02/15/2011' and a 'Check for Upgrade' button. The bottom of the window shows 'Version 2.3.1006' and 'TRIAL MODE'.

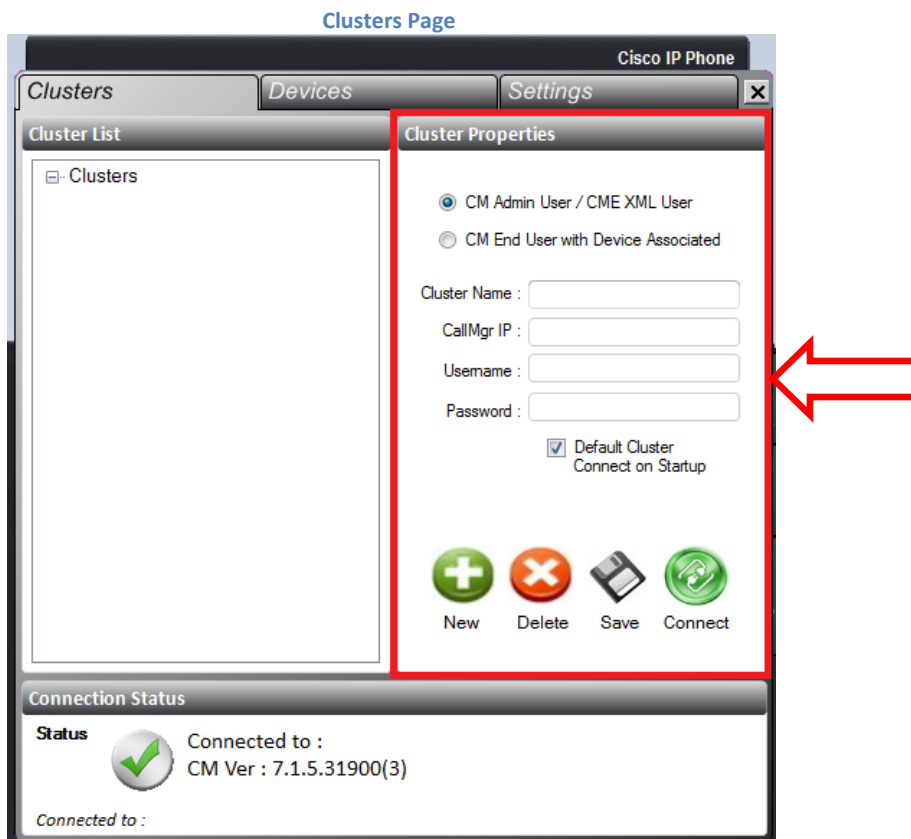
Selecting Methods of Phone Control

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 cluster Phone Remote will connect automatically on startup and go directly to the Devices search page.



Call Manager Administration User

Ensure you have met the requirements for enabling AXL and assigning permission 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 End User with device association

Connecting to a phone with End User credentials requires that you know the phone 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

Call Manager Express / UC 500 XML User

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.
- Click Save to add it to the list of clusters for future use. (optional)
- Click Connect

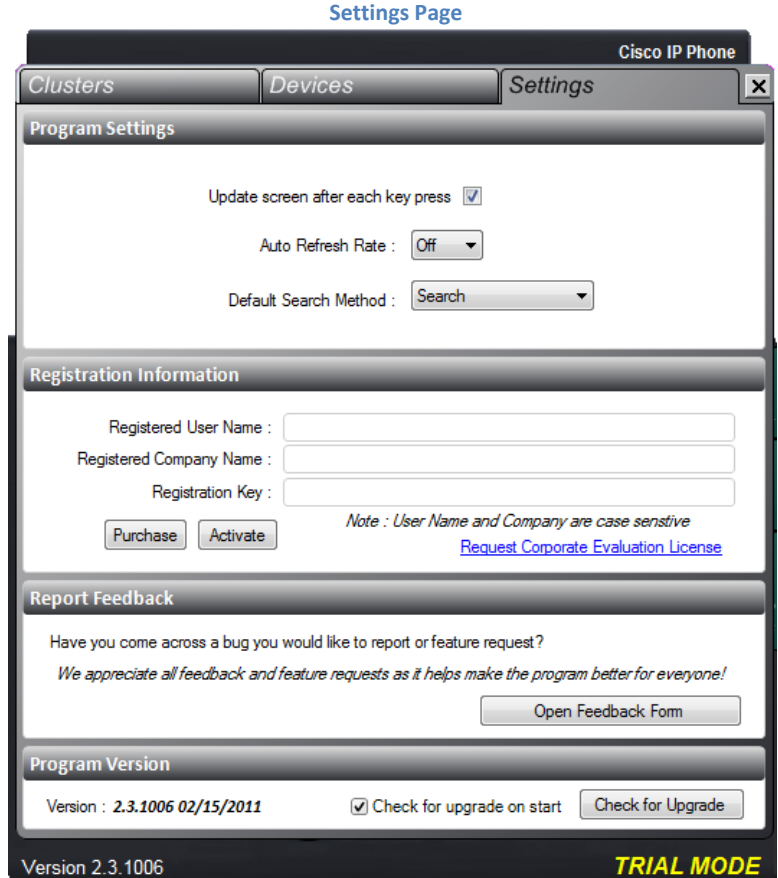
The status will indicate a successful connection to the Call Manager Express /UC500 router.

Use of Remote Control Features

Settings

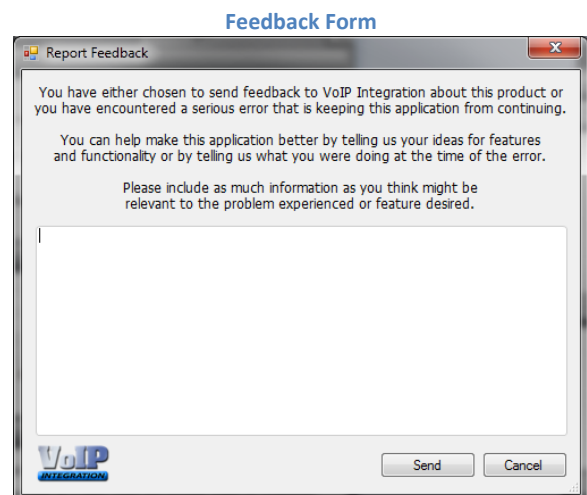
The Settings page contains the following options...

- 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.

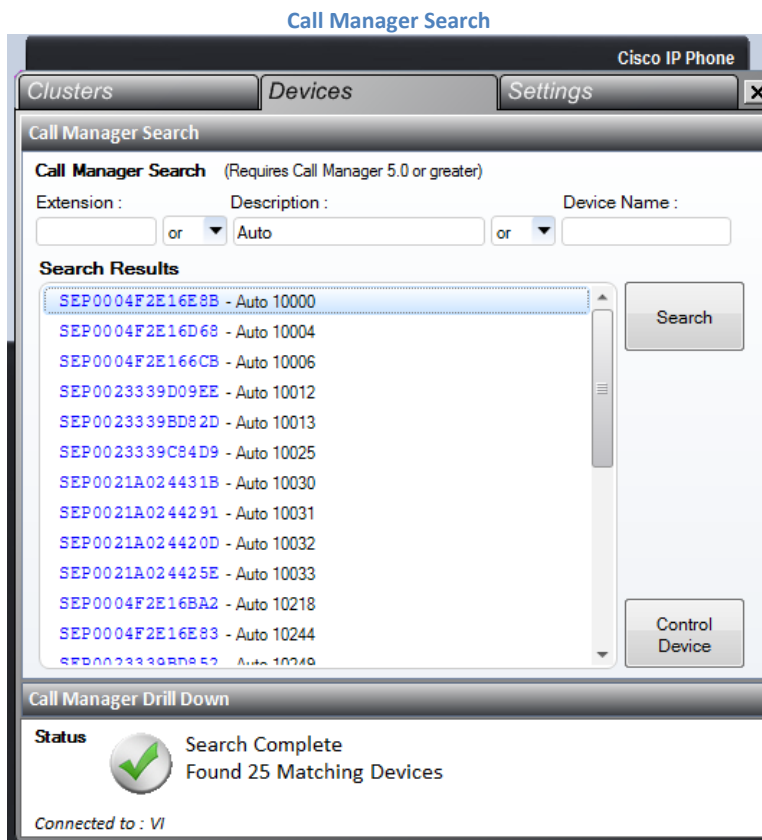
- Version information and Manual Upgrade Check
The Program Version section shows you what version of Phone Remote you are running and allows you to shut off the upgrade check at program startup. You can also do a manual upgrade check here.



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.



Enter the search criteria for the phone you want to control,
Extension (Begins With)
Description (Contains)
Device Name (Contains)
and then click search.

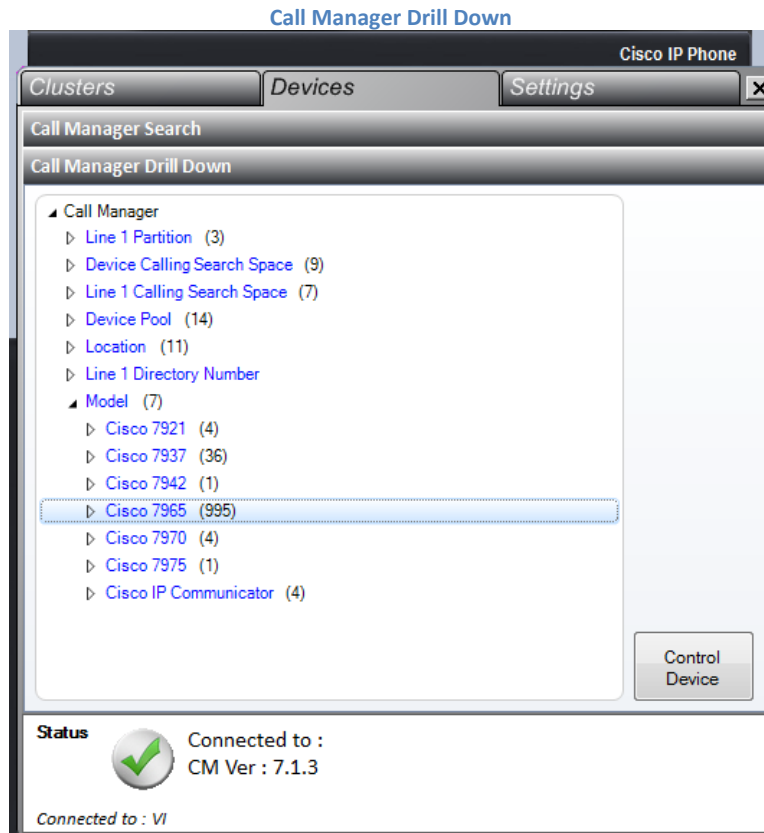
Note: You may click on the **OR** to toggle the search criteria between **OR / AND**.

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

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

Remote Phone Screen Layout (7940-7975 series skin)



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	Search Button	Opens the Search screen
9	Macro Tab	Shows the Macro tools tab
10	Stats Tab	Shows the Phone stats tab
11	History Tab	Shows the Phone Remote Keystroke History tab

Phone Skins

Several new device skins have been added to Phone Remote to cover all supported Cisco IP Phone Models.

- 8961 – 9971
- 7940 – 7975
- 6921 – 6961
- 7920 – 7926

Sending Key Strokes

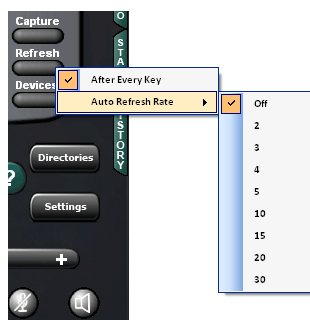
Once connected to a phone keys may be sent to the phone the phone will act as if the end user pressed the key, click on the on-screen key or press one of the following keyboard shortcuts.

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 *

* On phones models with Navigation Select button enter is select, on older phones without a select button enter functions as speaker.

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.

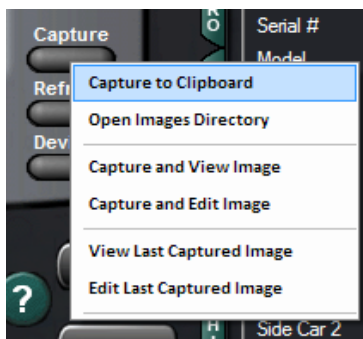
CAUTION

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 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

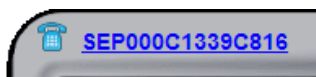
Task	Description
Capture to Clipboard	Captures the currently displayed image on the Phone Remote screen to the windows clipboard.
Open Image Directory	Opens a new explorer window into the screen captures directory
Capture and View Image	Captures the currently displayed image on the Phone Remote screen. 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.

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

Keystroke Macros

Clicking on the Macro tab will reveal the available macro options.

Record / Stop Recording - Starts and stops recording the macro.

Send - Sends the macro

Help – Displays macro options.

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

?? – Sends ?? to phone to get call stats on screen.

Settings#****, Sends keys to reset 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.

Send Keys while recording – toggle the sending of keys while recording a macro.

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

Programmable Macro Buttons

10 User configurable Macro buttons are available which are saved for future use.

To save a macro enter the sequence in the box, click the **Save to** button followed by one of the user defined macro buttons.

To recall a saved macro click on the **View** option followed by one of the user defined macro buttons.

To send a saved macro click on the **Send** option followed by one of the user defined macro buttons.

Send Text Message

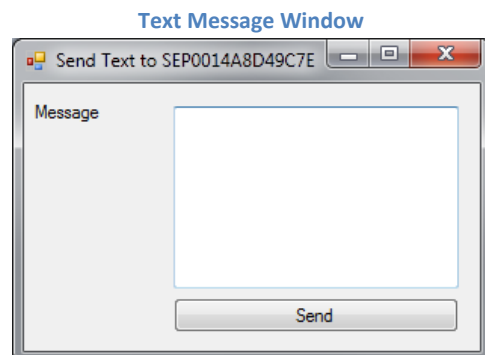
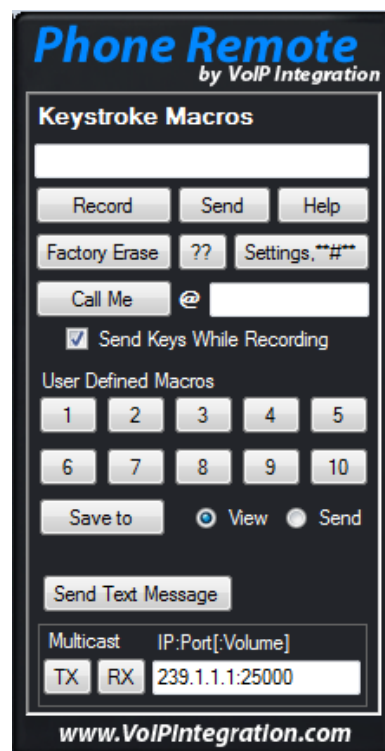
This feature allows you to send a text message to the phone you are connected to.

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 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.

The image displays three screenshots of the Phone Remote interface, each showing a different tab: PHONE, NET, and STREAM. The interface is titled "Phone Remote by VoIP Integration" and includes a "Refresh" button and a "Rate: Manual" indicator.

PHONE Tab:

MAC Addr	0014A8D49C7E
Serial #	INM09262E07
Model	7970G
HW Version	1.1
SW Version	SCCP70.8-5-2SR1S
TimeZone	Pacific Standard/Dayligh
CM 1	192.168.11.10 Active
CM 2	192.168.11.1 Standby
CM 3	
Side Car 1	
Side Car 2	

NET Tab:

MAC Addr	0014A8D49C7E
DHCP Enabled	Yes
IP Addr	192.168.11.26
Mask	255.255.255.0
Gateway	192.168.11.1
Voice VLAN	11
PC VLAN	
Alt TFTP	Yes
TFTP 1	192.168.11.10
TFTP 2	
PC Port	Enabled
SW Port Setting	Auto Negotiate
PC Port Setting	Auto Negotiate
Span to PC	Yes

STREAM Tab:

Status	Last Stream
Local IP	192.168.11.26
Local Port	31622
Remote IP	192.168.11.1
Remote Port	16898
Tx Codec	G.711u 20 ms
Tx Packets	0
Rx Codec	G.711u 20 ms
Rx Packets	19
Conceal Secs	0
Jitter	0 avg / 1 max
Lost Packets	0
MOS Avg	0.0000
MOS Range	0.0000 / 0.0000

History

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

The screenshot shows the History tab of the Phone Remote interface, displaying a log of keys sent to the phone. The log includes the following entries:

- 10:57:39 - Sent Speaker
- 10:57:35 - Sent KeyPad0
- 10:57:32 - Sent KeyPad0
- 10:57:31 - Sent KeyPad0
- 10:57:30 - Sent KeyPad1
- 10:11:47 - Connect 192.168.11.25

Below the log is a section labeled "Pending" which is currently empty.

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 PhoneRemote.exe -e 54521	Search for phones with extension <i>54521</i>
PhoneRemote.exe -desc bob PhoneRemote.exe -d bob	Search for phones with description containing <i>bob</i>
PhoneRemote.exe -name D541 PhoneRemote.exe -n D541	Search for phones with the Name containing <i>D541</i>
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.

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 and will need.

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

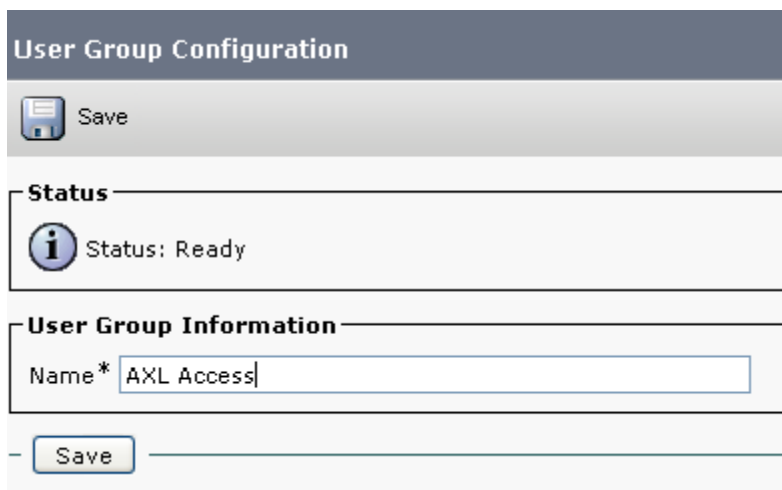
You may choose to use a Call Manager administrator username and password with Phone Remote or assign the required permissions to new or existing users.

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.

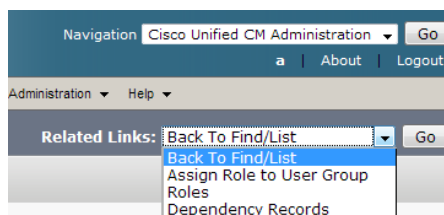
If you choose to add a user new group for permissions and want to restrict permissions to the minimum required. You will need to work through the following process. This new group can then be added to new or existing end users in Call Manager.

From within Call Manager Administration

- Select User Management
- Select User Groups
- 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

Status
i Status: Ready

User Group Information
 Name* AXL Access

Role Assignment
 Role Standard AXL API Access

Assign Role to Group
 Delete Role Assignment

Save

- 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.

Permissions Information

Groups
 AXL Access
 Standard CCM Admin Users
 Standard RealtimeAndTraceCollection

Roles
 Standard CCM End Users
 Standard CCMUSER Administration

Add to User Group
 Remove from User Group

[View Details](#)
[View Details](#)

- Click Save.

Using Phone Remote with Call Manager 8 and above

Call Manager 8 introduced the ability to connect to the phone using https on secure phones.

The Authorization URL (found under system -> Enterprise Parameters) should be reachable from the phone.

If you have any https setting in the **Secure Authentication URL** field, the phone will use this over the **URL Authentication** setting.

If the phone is not configured for CAPF (Certification Authority Proxy Function) then the phone will fail when attempting to access the configured HTTPS Authentication URL.

If not using encryption within your cluster then it is recommended to clear out the default setting under System -> Enterprise Parameters -> Secured Phone Parameters .

Phone URL Parameters	
URL Authentication	<input type="text" value="http://192.168.10.70:8080/ccmciip/authenticate.jsp"/>
URL Directories	<input type="text" value="http://192.168.10.70:8080/ccmciip/xmldirectory.jsp"/>
URL Idle	<input type="text"/>
URL Idle Time	<input type="text" value="0"/> 0
URL Information	<input type="text" value="http://192.168.10.70:8080/ccmciip/GetTelecasterHelpText"/>
URL Messages	<input type="text"/>
IP Phone Proxy Address	<input type="text"/>
URL Services	<input type="text" value="http://192.168.10.70:8080/ccmciip/getservicesmenu.jsp"/>

Secured Phone URL Parameters	
Secured Authentication URL	<input type="text"/>
Secured Directory URL	<input type="text"/>
Secured Idle URL	<input type="text"/>
Secured Information URL	<input type="text"/>
Secured Messages URL	<input type="text"/>
Secured Services URL	<input type="text"/>

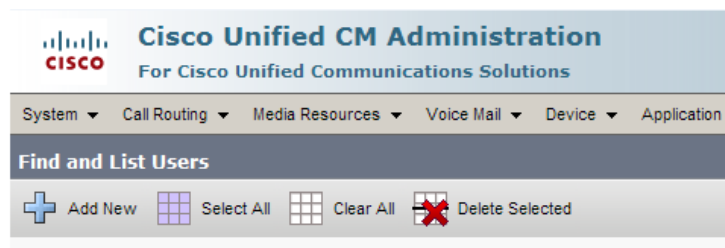
Appendix B: Cisco Call Manager Configuration for End User Control

Adding a New User

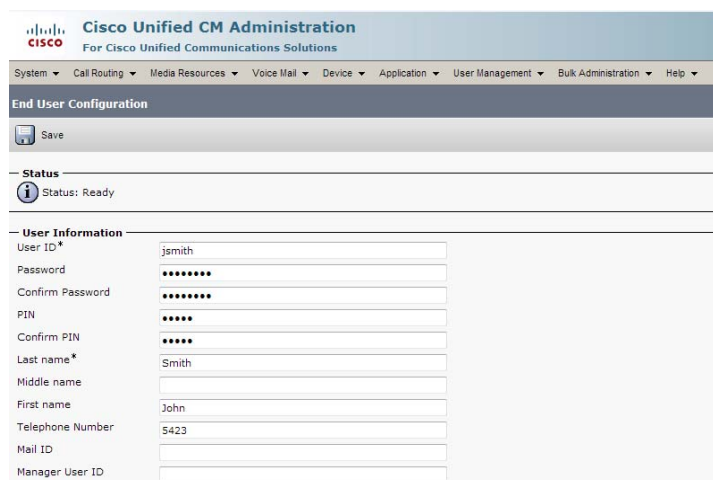
Use the following steps to create a user in Call Manager that has the ability to use the end user credentials.

Log in to your call manager with administrator rights.

- Select User Management
- Select End User



- Click Add New

The screenshot displays the 'End User Configuration' form. It includes a 'Save' button at the top left. Below it, the 'Status' is shown as 'Ready'. The 'User Information' section contains several input fields: 'User ID*' (filled with 'jsmith'), 'Password' (masked with dots), 'Confirm Password' (masked with dots), 'PIN' (masked with dots), 'Confirm PIN' (masked with dots), 'Last name*' (filled with 'Smith'), 'Middle name' (empty), 'First name' (filled with 'John'), 'Telephone Number' (filled with '5423'), 'Mail ID' (empty), and 'Manager User ID' (empty).

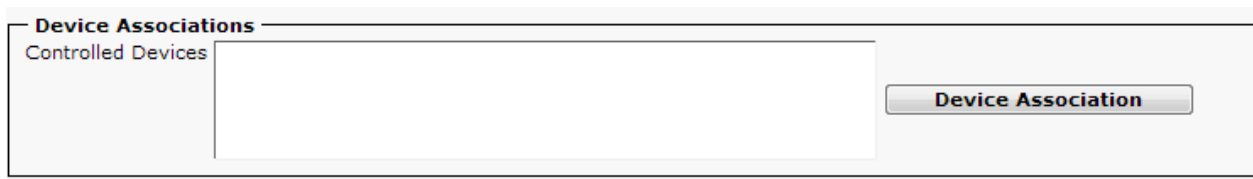
At a minimum enter the following:

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

Click the Save button.

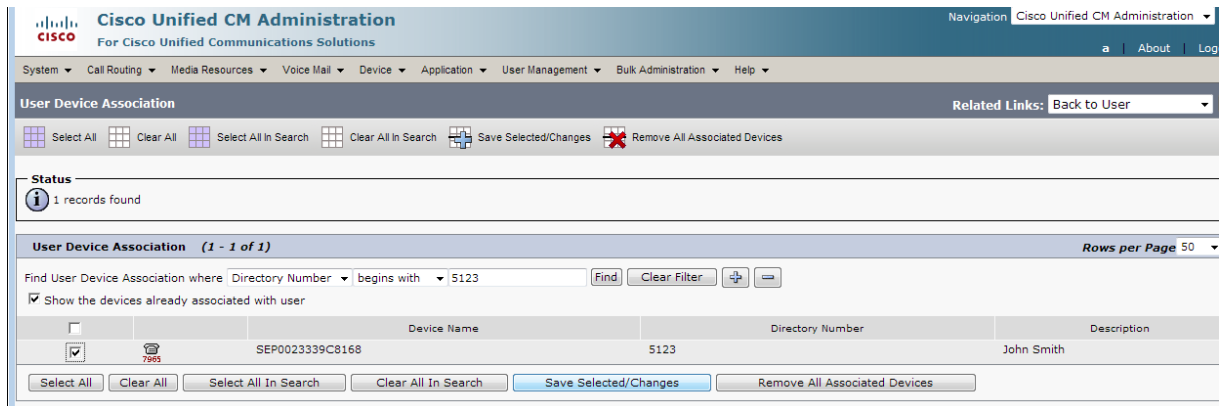
Once the user is saved, the device association section will have the Association button enabled.

Associate Device



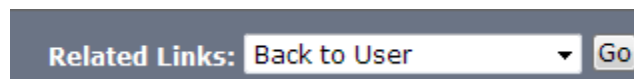
Click the Device Association button

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



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>
```

Note : The URL Authentication and Log password must be the same
Service phone webAccess is needed on phone firmware 9+

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 username/password as configured above on the router.