IPCommute

Phone Operations Manager

User Guide

Version 1.2.300
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Introduction

This is the public BETA version of Phone Operations Manager. Support is available from support@ipcommute.co.uk.

Workstation Requirements

Based purely in Java, the only client PC requirement is a Java-capable system. This version has however currently only been tested and is only supported when running on a Windows platform. A future version will support Mac and Linux platforms as well.

Login Changes in Version 1.2

In this version, the login procedures have changed – see the later sections of this document. If you are upgrading from a previous version, or from Phone Customization Manager, and wish to use the same account you used previously, you must:

- Specify the user account as normal

- Uncheck 'Automatically Manage the Phone Management User'

- Enter the same user account as the 'Phone Management' user

- Uncheck 'Automatically Associate Phones to this User'

Terminology and Acronyms

Throughout this document, the following acronyms are used:

CUCM – Cisco Unified Communications Manager; formerly known as Cisco CallManager.

AXL – Administrative XML Layer; a configuration API on CUCM used to gather system and phone data.

RIS – Realtime Information Service; a CUCM subsystem that provides realtime information such as phone registration status and IP addressing.

EM – Extension Mobility, the feature that allows you to log in to a handset to move your extension and configuration to it.

CCMAdmin – The CUCM Administration pages.

CUCM Configuration Requirements

The Communications Manager system must have the following services activated in your cluster:

Cisco AXL Web Service : The CUCM system must have the 'Cisco AXL Web Service' activated on the server you use for the initial connection.

Extension Mobility : Must be enabled on at least one server in the cluster to use EM related features.

Phone Web Access : You must have the 'Web Access' parameter set to 'Enabled' on phones in order to view the phone screens and use functions such as phone messaging. On CUCM 8.x and newer, the Secure-by-Default changes mean that this is disabled.

Background deployment also requires this setting, in addition to the 'Phone Personalization' setting.

Please see the 'Configuring Phones for Full Functionality' section of this document.

Network Connectivity Requirements

You must have the following connectivity:

TCP 8080, 8443 from your workstation to the Communications Manager cluster

TCP 80 from your workstation to the IP phones on your cluster

TCP 8080 (by default) from your IP Phones to your workstation for background image deployment

Installation

To install the application, simply run the downloaded executable file and follow the wizard to select the target directory (by default, c:\Program Files\IPCommute\Phone Operations Manager for UCM, or on a Windows 64-bit system c:\Program Files(x86)\IPCommute\Phone Operations Manager for UCM).

Once installed, run the application from the Start menu; by default the short cut will be in the 'IPCommute\Phone Operations Manager for CUCM' folder.

Licensing and Application Modes

If you have downloaded the Evaluation version of this product, you **do not require a license** to access the Demo (Premium) or the Free (Basic) modes of the product..

To access those modes, simply select the appropriate mode after connecting to your CUCM cluster. The modes operate as follows:

Free EM and Inventory – you may access **basic** (non-customisable) inventory information, including serial number collection. You may also use Extension Mobility functions; e.g. logging in/out handsets individually, exporting current login state to CSV format, and importing logins from CSV. These functions are enabled for all phones in your inventory.

Premium Evaluation – you may access the **FULL** functionality of the program, however it is limited to a maximum of 50 phones on your cluster. To enable you to conveniently test the application with a specific handset (e.g. the phone on your desk, or another specific test phone on a cluster with more than 50 phones) you may specify the full device name (for example SEP00141234FFEE) whilst logging in and this phone will also be manageable. Note that in addition to the 50 phone limit, any images deployed to handsets will contain a watermark; this will be removed in the full licensed version.

Full Licensed Version - If you have purchased the application, when you connect to your cluster please click 'Request License'. You will be presented with information required by us to issue your license; you may click 'Send Email...' to generate an email template, or you may copy the information to the clipboard and send this to us manually.

Once we have issued your license, you may use the 'Install License' option presented at login, or from the Help/About menu to install the license file.

Quick Start Guide

1. When using the application, you log in with a user account from your Cisco phone system. With the default connection settings, the application will automatically create an 'Application User' based on the CUCM user you log into the application with. For example, if you log in as 'ccmadmin', the application will create an application user named 'ccmadmin-ipcommute-user'. This new user account will automatically have all devices on the system associated to it so that actions such as gathering screen shots or performing other tasks can be completed.

   For this to work, the user you log in with a user that has the following permissions:

For Login/General Use	'Standard CCM Super User' membership
For Extension Mobility features	'Standard EM Authentication Proxy Rights' membership

   Additionally, configure the following settings to enable full phone feature capability, or see the detailed configuration section later in this document.

Premium Demo or Full Licensed modes	Phone Personalization	Set 'Phone Personalization' to 'Enabled' in the System/Enterprise Parameters menu.
All modes	Web Access	Set 'Web Access' to Enabled in the System/Enterprise Phone Configuration menu, and ensure 'Override Common Settings' is checked.

   Finally, ensure that the AXL service is running on at least one server in your cluster – you must connect to that specific server when running the application.

2. Install and launch the application as described in the 'Installation' section. Either install a license as detailed above or run in Premium Demo or Free modes.

3. Once the application is launched, you will be presented with a 'Getting Started' tab displaying brief instructions and notes.

4. Click 'Connect to CUCM' on the upper right of the Getting Started tab. Enter a valid username and password with the rights detailed above, and the IP address or host name of a Communications Manager server that is running the **AXL** service.

5. If you are using the Premium Demo mode, and your cluster has more than 50 phones, specify the test phone that you wish to use for the evaluation. This phone will appear in the list of phones in addition to the first 50 phones found; if you do not do this you may not see the phone that you wish to test with. You must specify the full device name, typically SEP<MAC Address> e.g. SEP00171234FFEE.

6. Once Connected, click the 'Cluster View' tab to view information about devices on the cluster.

7. Most features are available by right clicking a handset and selecting the operation from the menu that appears. The following are common tasks:

Gather Serial numbers (Free, Demo or Licensed Versions)	Click the 'Retrieve Phone Info' button to begin collection; this may take some time on large clusters.
Extension Mobility Login/Out (Free, Demo or Licensed Versions)	To log in a phone to EM, right click it and select 'EM Log In This Phone'. Type the name of a user and then high login. To log out, simply right click the phone and click 'EM Log Out this Phone'.
Bulk Extension Mobility Login/Out (Free, Demo or Licensed Versions)	You may use the 'Extension Mobility'/Export menu to save the current state of EM logins to a CSV file. The 'Extension Mobility'/Logout All Phones option will log out all users on the cluster. You will be prompted to save the current logins before doing this. The 'Extension Mobility'/'Login Phones from File' option will import a saved CSV file to log in users. These functions can be useful during upgrades or when applying bulk changes to user profiles.
Screen View (Demo/Licensed Versions)	As an alternative to the table data view of the phones, you may select the 'Screen View' tab of the 'Background Deployment' tab to see the screens of each phone. This allows you to verify whether backgrounds are properly deployed and re-deploy them if they are changed by users. You can deploy images to a single phone at a time from the Screen View tab by right clicking the phone screen.
Export Screenshots (Demo/Licensed Versions)	You may right click a phone and select this option to export a screenshot to your PC as an image file; useful for documentation etc.

Gather Serial numbers (Free, Demo or Licensed Versions)	Click the 'Retrieve Phone Info' button to begin collection; this may take some time on large clusters.
Image Deployment (Demo/Licensed Versions)	To import an image, select the Customization/Background Image Management menu. You may import one or more images; select the Preview model type to make adjustments to the image for each model type. On the 'View Style' option, select 'Background Deployment'. This view displays the permissions state and other related information. To deploy an image, right click a phone or use shift/ctrl to multi select phones and then right click them – select the 'Instant Deploy' option and the image you wish to deploy. Note that 7911/7906 images must be imported separately. Due to the extremely limited display space available, the program will not deploy an automatically resized image to these phones, as these rarely display well. We recommend you create a small image matching the available space (95x34 pixels, monochrome) and import this.
Remote Control (Demo/Licensed Versions)	Right click a phone, and select 'Remote Control' to interact directly with the phone.
Messaging (Demo/Licensed Versions)	Right click one or more phones and select 'Send Text Message' to send a message to the phone screen.
Administer a Phone (Demo/Licensed Versions)	Right click a phone and select 'Administer Phone via CCM Administration' to directly go to this phone's configuration page.
Customise Views (Demo/Licensed Versions)	Use the File/Preferences menu and select the 'Cluster Views' tab. Select the view to customise and use the buttons to re-order or add/remove columns in the view.

Login User Permissions Requirements

The user that is specified when connecting to the CUCM cluster is required to have permissions to access the AXL API and (optionally) the EM API. To assign these permissions, you may either use a 'Super User' or assign the following 'Roles' to the user:

- •Standard CCM Admin Users

- •Standard CCMADMIN Read Only

- •Standard SERVICEABILITY

- •Standard AXL API Access

- •Standard EM Proxy Authentication Rights (for Extension Mobility features if required)

Phone Management User Permissions Requirements

Automatically Managed Phone Management User

When connecting to the CUCM cluster, the default option of 'Automatically Manage the Phone Management User' will use your 'Login User' to create a second account which will have phones associated to it. This is to avoid problems with use of the default system administrator account (which cannot have phones associated) and to prevent your user account being associated to all phones, causing problems with other applications such as Jabber or CCMUser. This account will be generated from your username, and will be an 'application user', for example:

Login Username: aharrison

Generated User: aharrison-ipcommute-user

The application will automatically ensure that this user is associated to all phones on the system, simplifying administration. This REQUIRES your account to be a member of the 'Standard CCM Super User' group.

Manually Specified Phone Management User

If you uncheck the default 'Automatically Manage the Phone Management User', you may enter a specific username/password pair which will be used to manage the phones. This user may be the same as the login user (unless that user is a default system administrator, as that user may not have phones associated to it in CUCM).

The system will still automatically associate devices to this user, unless you uncheck the 'Automatically Associate Phones to this User' option. If you do this, you will need to manually associate all phones to this user account.

Configuring Phones for Full Functionality

The Web Access Parameter

The 'Web Access' parameter determines whether the phones run a web server which provides device diagnostic information and functions such as screen shots. Functions such as remote control and screen shots are username/password protected, but Cisco have (on 8.x CUCM systems and higher) disabled the functionality by default in order to increase the default security level of the system.

To get the most from this product, it must be enabled for the phones you wish to manage; most likely this is all phones on the cluster.

It can be achieved in several ways – system-wide, through a group (Phone Profile), or per-phone.

1) System-Wide : The System/Enterprise Phone Configuration menu in CCMAdmin contains default, system-wide settings. If 'Web Access' is set to 'Enabled' here, and the corresponding 'Override Common Settings' box is checked, all phones will have the feature enabled. This is the **recommended** configuration.

2) Group : A 'Common Phone Profile' can be defined in Device/Device Settings/Common Phone Profile in CCMAdmin with 'Web Access' set to Enabled. If assigned to the phones, the settings on this Profile will override those configured in the Enterprise Phone Configuration if the 'Override Common Settings' box is checked; if not checked, the setting has no effect..

3) Per-Phone: The Product Specific Configuration section of the phone configuration page in CCM Administration can have the 'Web Access' parameter set to 'Enabled'. Note the 'Override Common Settings' box:

   • If checked, the setting on this specific phone will override the Enterprise Phone Configuration and the Common Phone Profile configuration.

   • If this is not checked, the setting will not take effect, and the configuration of the Common Phone Profile (if one is assigned) or the Enterprise Phone Configuration will take effect.

   • If neither the Common Phone Profile or Enterprise Phone Configuration have the 'Override Common Settings' option checked, the setting on this phone will take effect.

The Phone Personalization Parameter

Similar to the web access parameter, this setting is required only for deployment of background images/wallpaper. It can be configured system-wide, for a group of phones, or on specific phones.

1) System-Wide : In the System/Enterprise Parameters menu, the 'Phone Personalization option may be set to enabled to permit the function for all phones. We **recommend** you set this, and that the Phone Profile and Phone-specific options are left at 'Default'.

2) Group : A 'Common Phone Profile' may be defined and assigned to the phones. The 'Phone Personalization' setting has three options – Default (Inherit the default from the Enterprise Parameters menu), Disabled, or Enabled.

3) Per-Phone : Phones that support the feature have a 'Phone Personalization' option in the 'Device Information' section of the device configuration page. Again, this may be Default (inherit), Enabled or Disabled. Note the following regarding inheritance/Default:

   1. If set to 'Default' (the default setting for new phones), the setting will be inherited from the Common Phone Profile.

   2. If the Common Phone Profile is also set to Default, then the Enterprise Parameter will take effect.

Phone Association Configuration

CUCM allows you to carry out actions on phones only to phones that are 'associated' to the account that you connect to the CUCM system as. Therefore, your account must have all phones associated.

We recommend that you carry out the following:

1) Create a specific End User or Application User for this application. This should NOT be the default system administrator, as that user cannot have phone associations.

2) Associated all phones on the system to that user, through the 'Device Association' section of the user configuration page.

3) Assign the user as a member of the 'Super Users' group, or see the 'Detailed User Permissions Requirements' section of this document.

Troubleshooting

Common Issues Table

Problem	Solution
The application fails to launch	Check the 'Log' folder (typically found in your 'home' directory on Linux, or in under the main program directory on Windows) which contains further debugging information. For further assistance, please contact us at support@ipcommute.co.uk
The application fails to connect to the CUCM cluster	Verify your username and password are valid by logging into the CCMUser or CCMAdmin web pages. Verify your user account has the correct permissions as specified in the 'Advanced User Permissions Requirements' section and that the AXL service is running on the Communications Manager server you specify.
Some/all devices show a status of 'Could not Connect'	Verify whether you can browse to the IP address of the device. The application connects directly to the device to collect information, so if there are security restrictions or other network issues preventing direct communication to the phones, some information cannot be captured.
When I deploy an image, IPPhoneError:0 is returned.	This error typically means that the phone experienced errors when authenticating the user to the CUCM system. Verify: The user is associated to this phone • Web Access' should be enabled, see the 'Configuring Phones for Full Functionality' section of this document. • Also see the 'Troubleshooting the Phone Personalisation Setting' and 'Troubleshooting Phone Authentication'
When I deploy an image, IPPhoneError:4 is returned.	Typically this indicates an authentication failure. Check you have the phone associated to the application user correctly.

Problem	Solution
ScreenView shows 'IO Error' for some/all phones	ScreenView retrieves images from the phone from the phone web server. Verify you can browse to the phone by IP address. If successful, check that the phone is associated to the account you are using to log in to the application. If it still fails, supply a ZIP of the 'log' sub-folder of the installation directory to IPCommute support.
Background image/wallpaper will not deploy to 7911 or 7906 model handsets	These models have very small displays (95x34 pixels) which can display only very simple images. Any image that looks good on any other model of handset will look extremely poor on these models. Therefore, for an image to be deployed you must use select the '7911/06 – Small Monochrome' option in Background Import for your chosen image set, then use the 'Import Model-Specific Image' button to import an image that matches the 95x34/monochrome specification as closely as possible.
Background image/wallpaper does not look good on a particular phone model	When you import an image, it is resized (maintaining the aspect ratio of the image) for the size of the screen on each phone model. The screens have roughly similar relative dimensions, however occasionally an image may not fit comfortably on a screen, or an image suitable for a colour display may display poorly on a monochrome screen. To resolve this, you can select a particular phone model (e.g. select the '7941/42, 7961/62 – Grayscale' from the Phone Preview Model box) and the use the 'Import Model-Specific Image' to import a separate image you have designed specifically for these models. This forms part of the selected 'Image Set', so when you deploy this image set the other handsets will get the default image, and only the grayscale models will get this new image.

Troubleshooting the Phone Personalization Setting

To verify if this is the issue, you can run this command from a Windows PC to obtain the phone configuration file. Use the IP of your CallManager TFTP server, and the name of the handset to which you cannot deploy an image in place of the examples here:

tftp 1.1.1.1 get SEP123412341234.cnf.xml

If successful, the TFTP configuration file (SEP123412341234.cnf.xml in this example) will be in the current directory. On Windows 7, 'TFTP Client' must be installed from the Add/Remove Windwos Features control panel. Launch the downloaded file in NotePad like so:

notepad SEP432123443212.cnf.xml

In this document there should be a line like so :

<phonePersonalization>1</phonePersonalization>

If this reads '0' then the phone is not enabled for personalisation. Check the following settings:

Phone Configuration Page – 'Phone Personalization' is either 'Enabled' (or 'Default' to use the system-wide setting)

Common Phone Profile – If the handset has a Common Phone Profile assigned, it must have 'Phone Personalization' set to 'Enabled' (or 'Default' to use the system wide setting)

Enterprise Parameters – If the above settings are set to 'Default', then the 'Phone Personalization' Enterprise Parameter must be set to 'Enabled'.

If you change any of the above settings, repeat the TFTP check above to verify that the configuration file is updated. You must also reset the phones from the Communications Manager administration pages to have the configuration files updated.

Troubleshooting Phone Authentication

Another common issue is authentication. The username and password is checked at login, but the permissions assigned to the user are not checked.

A quick test is to browse to the 'screen shot' page of an IP Phone. Browse to this URL (inserting a valid phone IP address, and ensuring it is typed correctly with matching case) and enter the username and password to be used with the Phone Customization Manager application:

http://phoneip/CGI/Screenshot

If you get a screenshot of the phone display, the test is successful. If you get an IPPhoneError or other response, then check:

– Phones are associated correctly to the user used with this application.

– On a CUCM8.0 or higher system, the default is to use SSL and a hostname (rather than IP address) to reach the 'Authentication' URL. Check the URL listed in the Enteprise Parameters for Authentication is valid, and is reachable by the IP phones which may not be in the same subnet as your PC, and therefore may not be properly configured with DNS servers etc.

– A test for the validity of the SSL/hostname related to the Authentication URL is to simply delete the value of the 'Secured Authentication URL' from the Enterprise Parameters menu, and then reset your test phone; once restarted test the screenshot URL again. We do not recommend you leave the 'Secured Authentication URL' blank, as this results in clear-text transmission of authentication credentials from the handset to the Communications Manager server.

– Note that the 'URL Authentication' Enterprise Parameter also contains a hostname by default; if this is not resolveable by the phones the hostname should be replaced with the a CUCM server IP address; typically the publisher address.

Note that it is often necessary to close all browser instances to clear cached authentication failures after an initial failure.

Troubleshooting the Screen View

Screen View requires that the user you are logged in as is associated to the phones. If you have a properly configured user for background deployment, then the screen view should work. However, note the following errors that might be displayed:

IO Error – Check you can browse to the IP Address of the phone. If you cannot browse to the phone, verify 'Web Access' is enabled on the phone in CCMAdmin, and that you can ping the phone.

Phone Not Associated – This phone is not associated to the user account that you are logged in as.

Screen View Not Supported – Some models do not support screen grabs, notably Cisco IP Communicator. Some versions of CIPC crash when a screen grab is attempted, and others simply fail the screen grab operation.

In addition to the above errors, you the small bullet icon on the lower left of each screen displays the result of the last attempted screen grab. You can hover the cursor over this bullet to see more detailed information.

Getting Further Assistance

For any problems relating to the operation of this product, contact support@ipcommute.co.uk or visit our website www.ipcommute.co.uk

If you suspect your problem is due to a configuration or other issue relating to Communications Manager or your network, you should deal with Cisco Systems or your Channel Cisco partner organisation. Alternatively we highly recommend the community-based assistance available at supportforums.cisco.com.