IPCommute

Phone Customization Manager

User Guide

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Introduction

Phone Customization Manager is a tool for the rapid preparation, adjustment and bulk deployment of images to Cisco IP Phones capable of supporting background image display.

Workstation Requirements

Based purely in Java, the only client PC requirement is a Java-capable system. This version has however only been tested and is only supported when running on a Windows platform.

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

Licensing Requirements

On the first execution you will be prompted to install the license file. The program will present to you the 'Server Name' that you should supply to support@ipcommute.co.uk in order to obtain a license. We aim to supply a license to you within 24-48 hours.

Please note that in version 5.0, a new licensing system was introduced. If you are running a pre-5.0 license, this will continue to work with this release, but you should contact support@ipcommute.co.uk to obtain an updated license. Version 7.0 releases will not function on pre-5.0 licenses. The application will warn you if you are running an old license.

Login Changes in Version 4.3+

In version 4.3 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 'Primary' user account as previously used

- Uncheck 'Automatically Create and Manage the Phone Management User'

- Check 'Use the Account Specified Above to Manage Phones'

- Optionally set the 'Automatically Associate Phones to this User' to maintain associations automatically; in previous version this association was a manual task.

New users of the application should specify a 'Primary' account (this is a CUCM user account, and may be an End User or an Application User) that has either:

- (SIMPLE) Membership of the 'Standard CCM Super Users' group on CUCM

- (ADVANCED) Membership of groups that are assigned the following Roles:

    - Standard CCM Admin Users

    - Standard CCMADMIN Read Only

    - Standard SERVICEABILITY

    - Standard AXL API Access

We recommend that those new users accept the default of 'Automatically Create and Manage the Phone Management User' option; see the 'Phone Management User Permissions Requirements' for details of what this means, or proceed with the next page for installation and quick start guidance.

Installation

To install the application, simply run the downloaded executable file and follow the wizard to select the target directory.

Once installed, run the application from the Start menu; by default the shortcut will be in the 'IPCommute' folder.

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 many functions such as phone messaging or background deployment. On CUCM 8.x and newer, the Secure-by-Default changes mean that this is disabled.

Phone Personalization: This must be enabled on the cluster, or on the phones or Common Phone Profile. Please see the 'Configuring Phones for Full Functionality' section of this document.

Quick Start Guide

1. Install and launch the application as described in the 'Installation' section. Either install a license as detailed above or run in demo mode.

2. 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, or see the :

For Login/General Use	'Standard CCM Super User' membership

   Additionally, configure the following settings to enable full feature capability:

Phone Personalization	Set 'Phone Personalization' to 'Enabled' in the System/Enterprise Parameters menu.
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.

3. Click 'Connect to CUCM' on the lower right of the Getting Started tab. Enter the application user created above, password and the IP address or host name of a Communications Manager server that is running the AXL service.

4. The program will retrieve a list of all devices on the CUCM cluster. It will display registration status and IP address information along with the basic device details.

5. On the left hand side is a status column with a red cross or green tick. A green tick means that the phone has passed the permissions validation; a red cross means that the phone is either not associated to your account, is unregistered, or does not have Personalization enabled.

6. In order to deploy an image, you must first import it. Go to the 'Background Import' tab, and click the 'New Image Set' button. Import any .jpg or .png picture. From the 'Preview Phone Model' drop-down, select one of the phone models you use in your enterprise. The application will display a preview of how the image will look when sized to fit that phone model. You may use the provided controls to adjust the placement and size of the image and apply a background colour to fill any empty space. If more advanced modification of the image is needed, perform these modifications before importing to this program. Repeat the process of selecting a different preview and adjusting the image for each phone category.

7. 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.

8. Return to the 'Background Deployment' tab, and right click on a test handset to view the pop-up menu. Click 'Instant deploy image to selected phone..' then your imported image name.

9. The status of the test will be displayed in the 'Status' column. If the deployment fails, the software will verify the firmware version on the IP Phone and report the status code returned by the phone – if this happens, see the Troubleshooting section of this document. You can deploy to the rest of the phones by multi-selecting (shift or ctrl clicking the phones, or click and drag) and then right clicking the selection. You may select all phones with CTRL+A.

10. New in R3 is 'Screen View'. 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.

Phone Management User Permissions Requirements

Automatically Managed Phone Management User

When connecting to the CUCM cluster, the default option of 'Automatically Create and Manage the Phone Management User' will use your 'Login User' to create a second account which will have phones associated to it. A second account is used 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, thereby simplifying administration.

Manually Specified Phone Management User

If you uncheck the default 'Automatically Create and Manage the Phone Management User', you must either:

- Enter a specific username/password to be used to manage phones; for example if you want all users of this application to use the specified account

- Select the 'Use the Account Specified Above to Control Phones' to use the same account as the Primary account. Note that you cannot use a built-in administrator for this, as the built-in administrator (commonly ccmadmin, ccmadministrator, or administrator) cannot have device associations

- Finally, with either of the two above options you can select 'Automatically Associate Phones to this User' to keep the user associated to all devices. If you do not select this (or the 'Automatically Create and Manage the Phone Managemnt User' option) you must associated the phones to the user yourself in order to use many features.

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: '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.

Frequently Asked Questions

Q: Why does my image not deploy to 7911 or 7906 model handsets

A: 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.

Q: My image doesn't look good on a particular phone model – what can I do?

A: 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.

Q: I get an 'IPPhoneError:0' message – why?

A: Typically this is due to the phone not being enabled for personalisation, or due to the phone failing to authenticate against Communications Manager. See the 'Troubleshooting ' section of this document for more information.

Q: ScreenView shows 'IO Error' for some/all phones – why?

A: 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.

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, contact 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 set to enabled for this handset in the 'Product Specific' configuration section in CUCM Administration. This may also be configured on the 'Common Phone Profile' configured for this handset. - 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.

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 Enterprise 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 resolvable 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.