

VoIP Integration

Background Deployment 3.1



Installation and Administration Guide



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Product Overview

VoIP Integration Background Deployment is a utility which allows you to deploy background images to Cisco phones from anywhere with network connectivity.

The Background Deployment Tool provides the ability to create groups of phones to receive images. Groups can encompass individual devices, device pools, locations, partitions, calling search spaces and extensions or extension ranges.

A simple image editing interface lets you crop and zoom, flip and rotate any image to the correct file format and dimensions for the different phone models. Easily integrate your images into the server list.xml file with the ability to upload the list and images built into Background Deployment.

An advanced scheduling engine allows you to deploy the image to thousands of phones as fast as your network will allow.

Personalization

The personalization method is a non-intrusive method that forces the IP phones to request a background image from the HTTP server that runs in Background Deployment. This means that the IP Phones must have network connectivity to the PC running Background Deployment to download the new image. Using the personalization method, the background images do not need to be uploaded to the TFTP server, this means that you can test images that other users cannot deploy to their phones.

The personalization method is the recommended method to use with Background Deployment for Call Manager servers starting at version 6.0(1)

Key Press

The key press method is a slightly more intrusive method that imitates a user pressing the required keys on the phone to change the background image. The images must be placed on the TFTP server before using this method as the phones get the image directly from the Call Manager server. This method can be interrupted if a user presses any keys while the image is being deployed.

The key press method is the recommended method for deploying background images before Call Manager 6.0(1)

Requirements

Application Requirements

- Windows PC with Microsoft Dot Net 3.5 or greater

Note: Windows emulation on Macintosh is not supported

Call Manager

- Call Manager 5+ (Tested on Call Manager 5 through 9)
- Call Manager user with AXL, RIS and User Admin permissions
- AXL Service activated and running on Call Manager Server.

Network Connectivity

The PC running Background Deployment must be able to connect to the phone on a TCP 80.

The PC running Background Deployment must be able to connect to the Call Manager on TCP port 8443

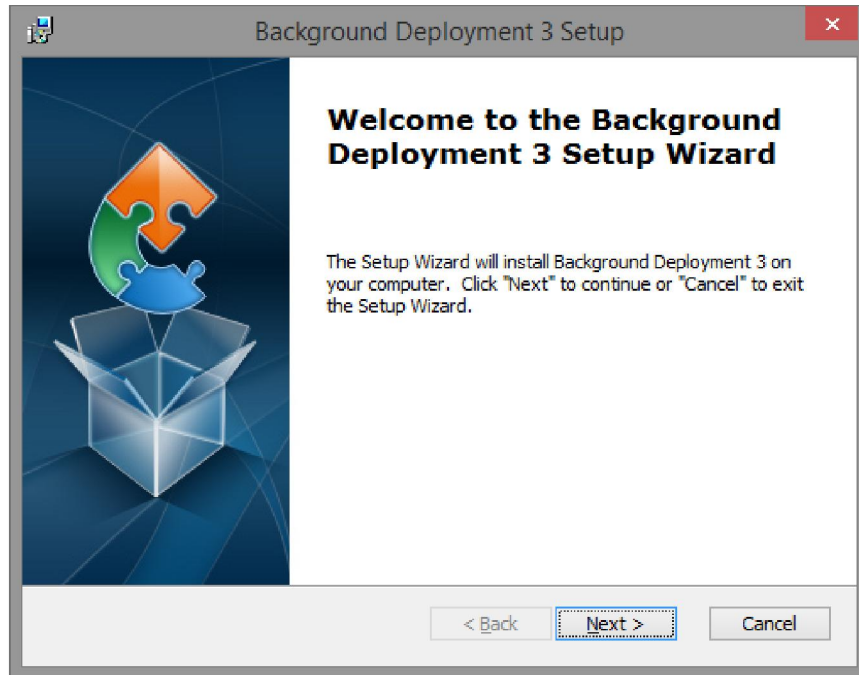
The phone must be able to reach its Authentication URL and the PC running Background Deployment on a port that the user can choose. The default port is 80 (See the troubleshooting section for more information)

Background Deployment should work through NAT and over VPN. If using NAT you must know your NAT address the phones can reach your PC.

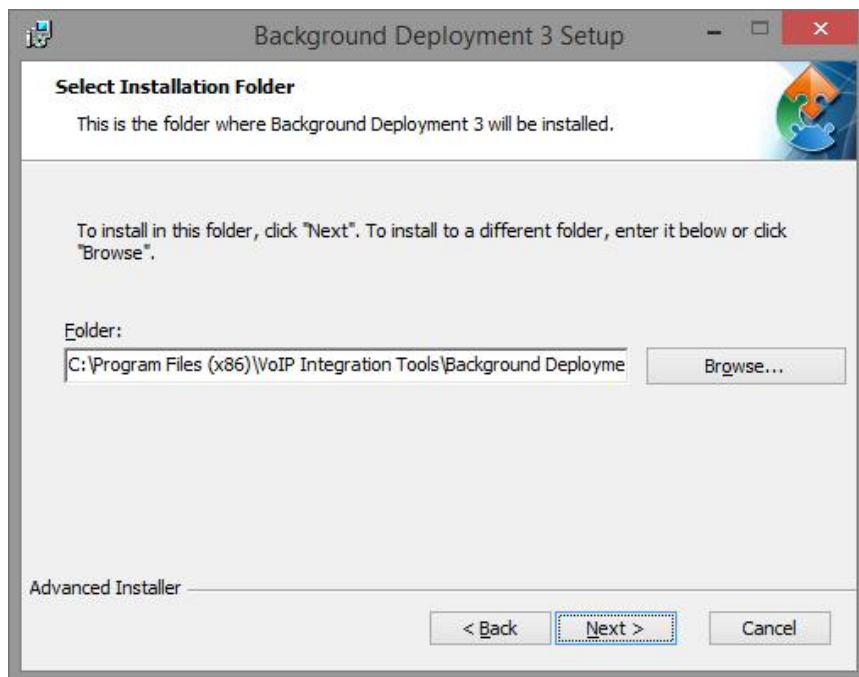
Installation Process

Loading Background Deployment

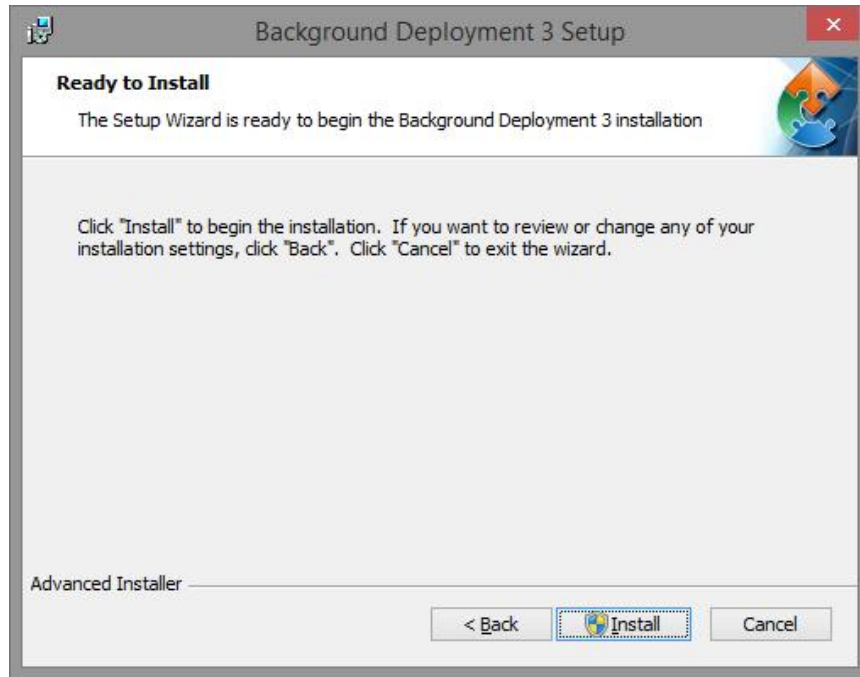
To begin the installation, download the installer from our website at <http://www.voipintegration.com>. Then double-click the saved file.



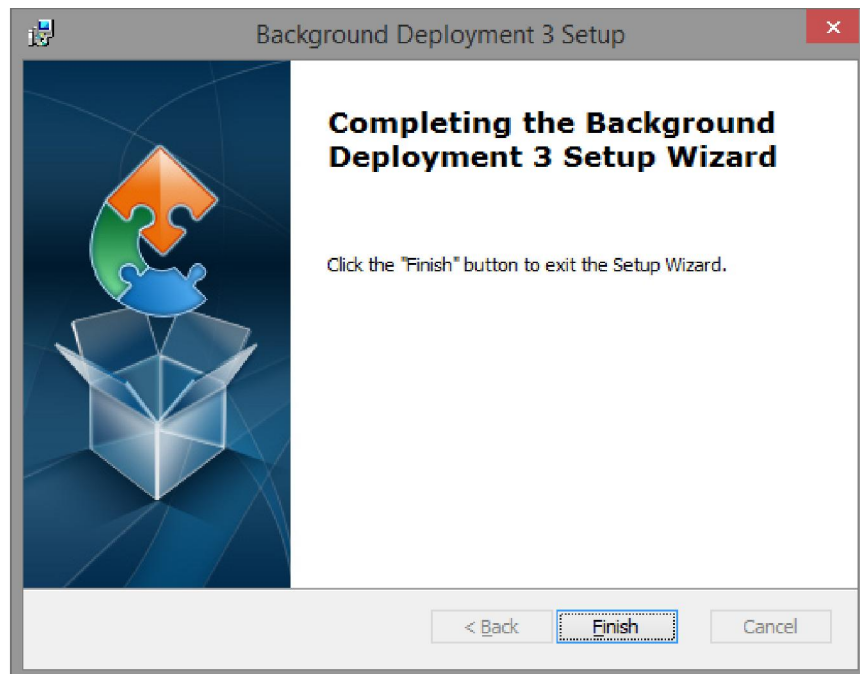
Click "Next>".



Enter the installation path you would like Background Deployment installed in and click "Next>".



To complete the installation click *“Install”*.



When the install has completed, click *“Finish”* to close the installer.

Application Use

Deployment Method Comparison

	Local Image (Personalization)	Call Manager TFTP (Personalization)	Call Manager TFTP (Key Press)
Image Hosted on Local PC (Requires Network Connectivity from Phone to PC)	✓	✓	
Image Hosted from CM Server			✓
Images Available for End Users through Phone Settings	✓ *	✓	✓
Does Not Require TFTP Server Restart after Editing Images	✓	✓	
Non-Invasive to phone operation	✓	✓	
Great for Image Perfecting	✓		
Local Editing of Images Before Deployment	✓	✓	
Images do not need to be located on the Call Manager TFTP Server	✓		
Supported on all version of Call Manager			✓

* Requires the images and list.xml to be uploaded to the TFTP server (which can be done with Background Deployment 3.1)

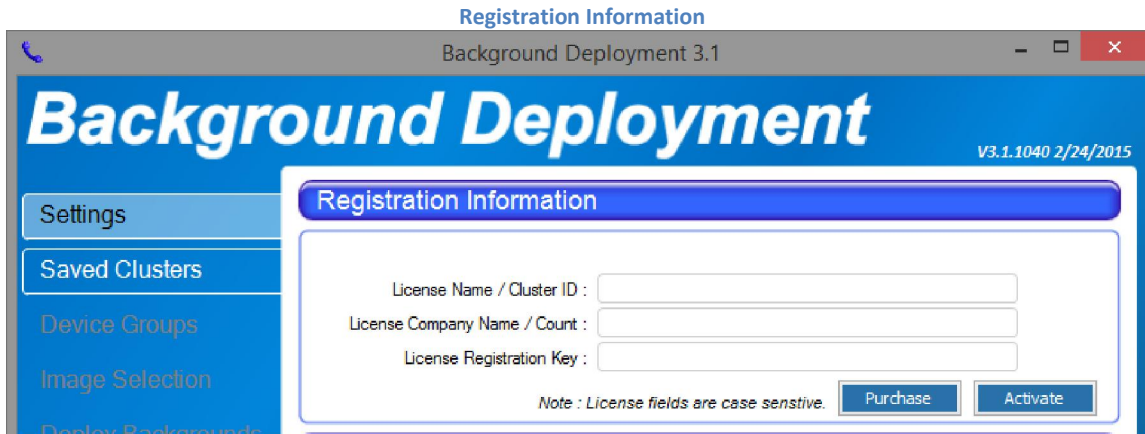
Launching Background Deployment

Navigate through Windows Start -> Programs -> VoIP Integration Tools -> Background Deployment 3 and select "Background Deployment".

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

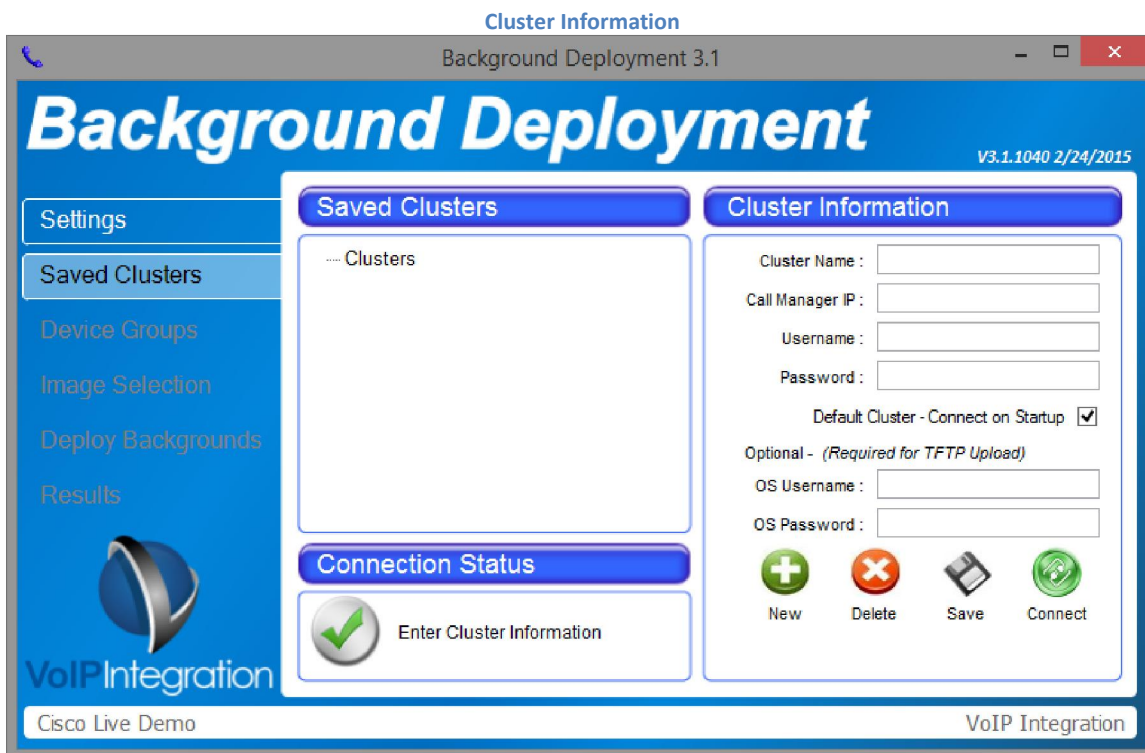
Loading your License Key

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 License Name / Cluster ID and License Company Name / Count are case sensitive.



Clusters – Connecting to and Saving

In order to use Background Deployment you must first connect to a cluster. The cluster information is saved for future use. If you do not want to save the password field for security purposes you may leave it blank and you will be prompted for the password each time you connect to the cluster.



Call Manager Administration User

Optional Password Query

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

- Enter a Cluster Name to describe the Cluster.
- In the Username field, enter the username with Admin/AXL permissions.
- In the Password field, enter the password.
- Click the Default Cluster option to connect to this Cluster at startup. (optional)
- Enter the OS Username and Password. (optional for uploading to the TFTP server on the Call Manager servers)
- Click Save or Connect.

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

Use of Background Deployment Features

Settings

The Settings page contains the following sections...

The screenshot shows the Settings page with three main sections:

- Registration Information:** Contains three input fields for "License Name / Cluster ID", "License Company Name / Count", and "License Registration Key". Below these fields is a note: "Note : License fields are case sensitive." and two buttons: "Purchase" and "Activate".
- User Feedback:** Contains a question: "Have you come across a bug you would like to report or feature request?" followed by a "Submit User Feedback" button. Below this is a statement: "We appreciate all feedback and feature requests as it helps make the program better for everyone!"
- Program Version:** Shows the current version as "V3.1.1040 2/24/2015" and a checked checkbox for "Check for upgrade on start". A "Check for Upgrade" button is also present.

- Registration Information**
This area allows you to enter your registration information to unlock all of the features in Background Deployment.
- User Feedback**
The feedback form can be used to notify us of feature requests or software bugs. Please include as much detail as possible in bug reports including what you were doing, how the application reacted and anything else that you think might be relevant.
- Program Version**
The Program Version section shows you what version of Background Deployment you are running and allows you to shut off the upgrade check at program startup. You can also do a manual upgrade check here.

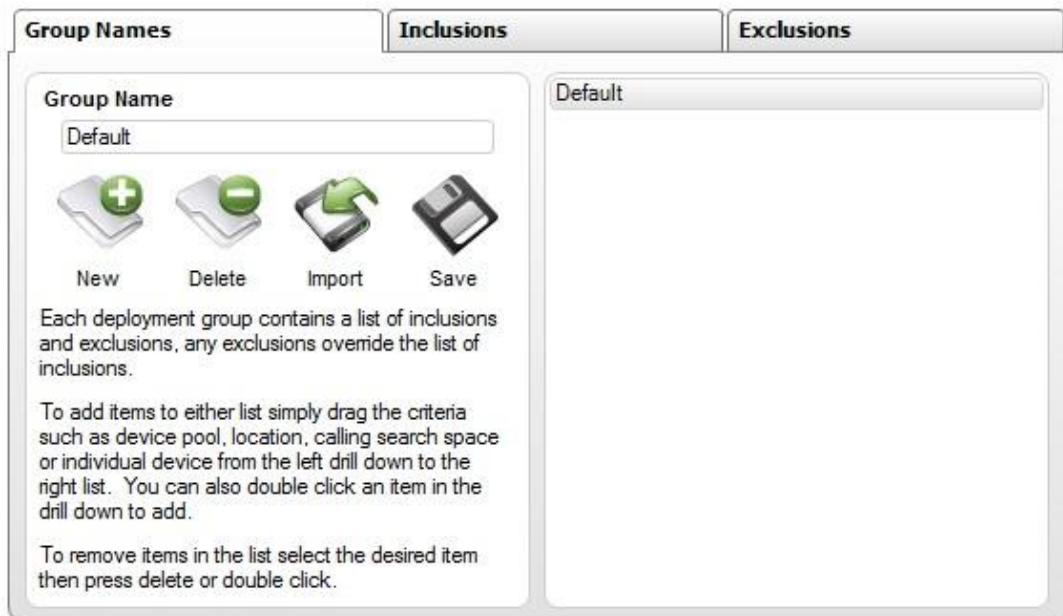
The screenshot shows a "Feedback Form" dialog box titled "Report Feedback". The text inside reads: "You have either chosen to send feedback to VoIP Integration about this product or you have encountered a serious error that is keeping this application from continuing. You can help make this application better by telling us your ideas for features and functionality or by telling us what you were doing at the time of the error. Please include as much information as you think might be relevant to the problem experienced or feature desired." Below the text is a large empty text area for input. At the bottom, there are "Send" and "Cancel" buttons and the VoIP Integration logo.

Device Groups

Groups

Background Deployment allows you deploy background images with ease by grouping your phones by different sets of criteria. To start categorizing your phones you need to add a group.

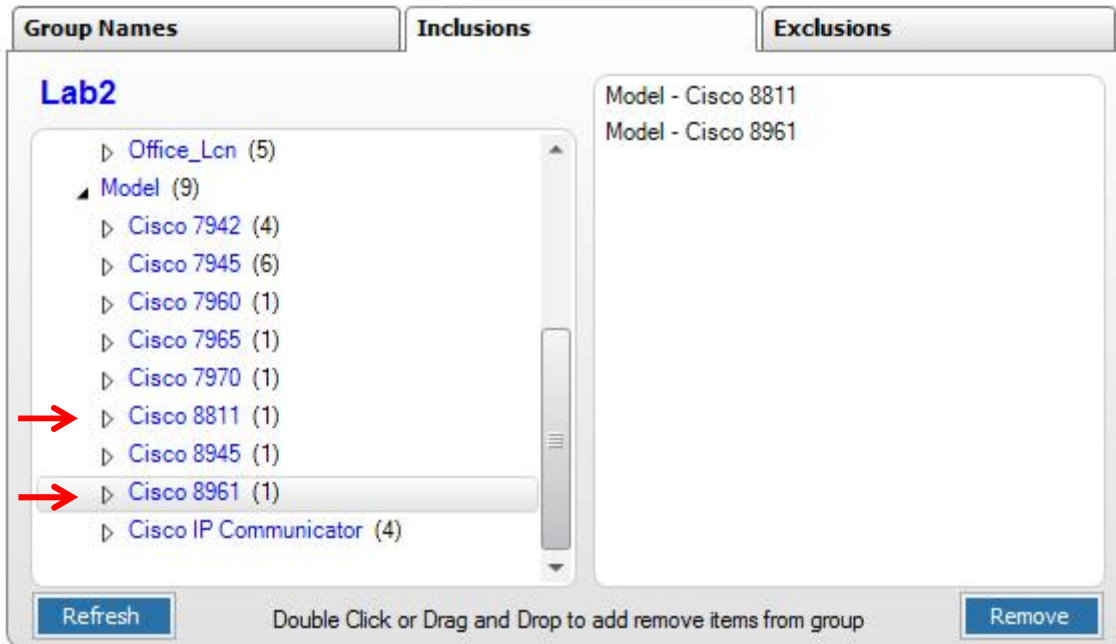
Click on the “New” button. You can also import phones into a group by clicking on the Import button. From here you can import a batch of devices from a CSV file. The list does not exist by default, so you would need to create a CSV file yourself. The CSV file must contain the device name followed by a comma after each device.



Inclusions

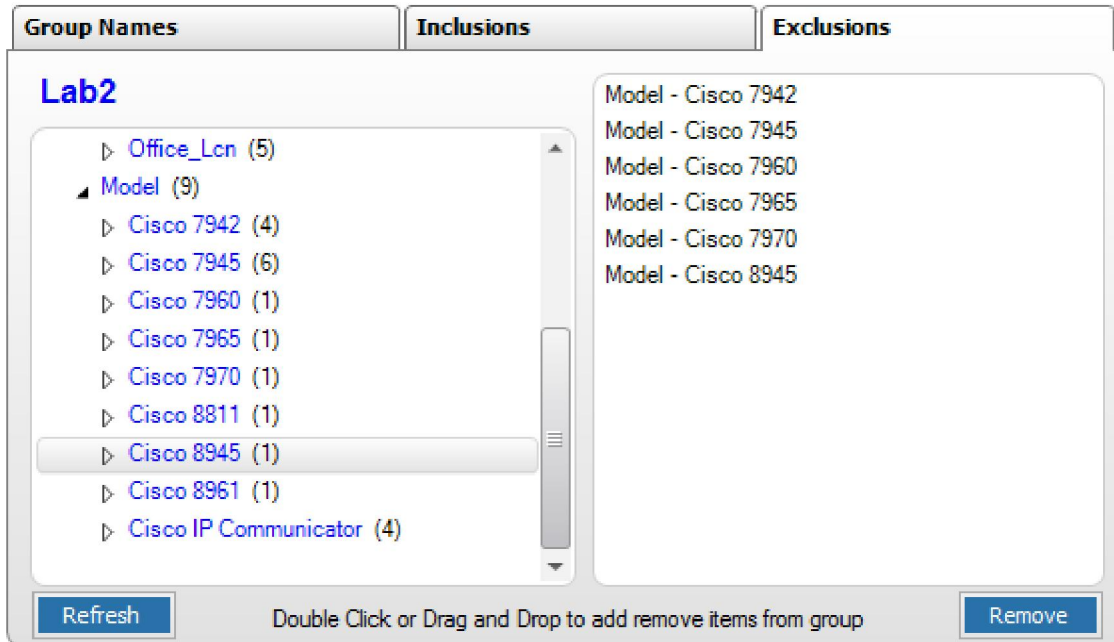
The “*Inclusions*” tab is where you add criteria that will include phones into the group. Use the Call Manager tree on the left to drill down and add the rules that encompass all of the criteria you want to deploy to in a single group.

To add criteria, double click on the item or drag it into the list on the right. To remove items that have been added to the inclusion criteria, simply double click the item, select the item and press the delete key, or select the item and click on the “*Remove Button*”.



Exclusions

The Exclusions tab is where you add rules that will exclude phones from the group of inclusions that have been configured. This gives you the ability to add an entire device pool and exclude an individual device instead of trying to add all of the phones individually. To add rules either double click on the device or drag it into the list on the right.



Refresh

A refresh button is found on the inclusion and exclusion tabs. The refresh button will poll the cluster to update the devices in the lists.

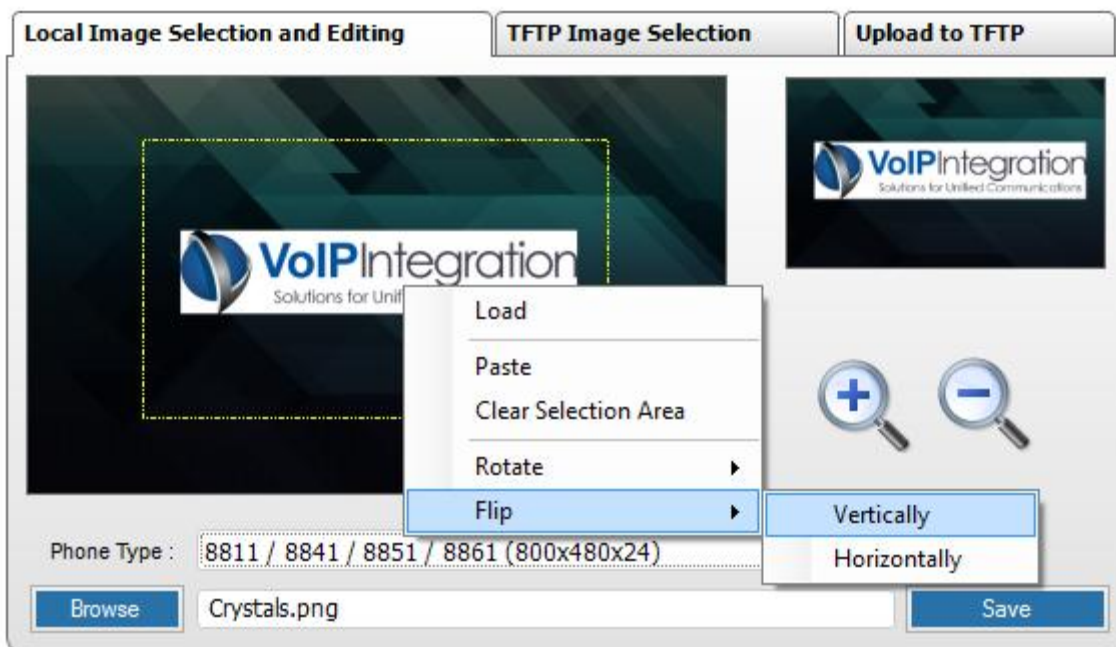
Image Selection and Editing

Background Deployment has two methods of selecting an image to deploy to the phones. You can select an image from your local PC/network location or you can select an image from the TFTP sever on the Call Manger Cluster.

Local Image Selection and Editing

The “Local Image Selection” and “Editing” tab allows you to browse for an image on your local PC or network location and edit the selection area of the image to deploy out to the phones.

If the image is not perfect you can use the mouse to select an area to use as a selection to deploy to the phone. The upper right hand corner displays and example of the exact image that will display on the devices that will be deployed to. If you selected the wrong area you can zoom in or out or move the selection area to suit your needs.



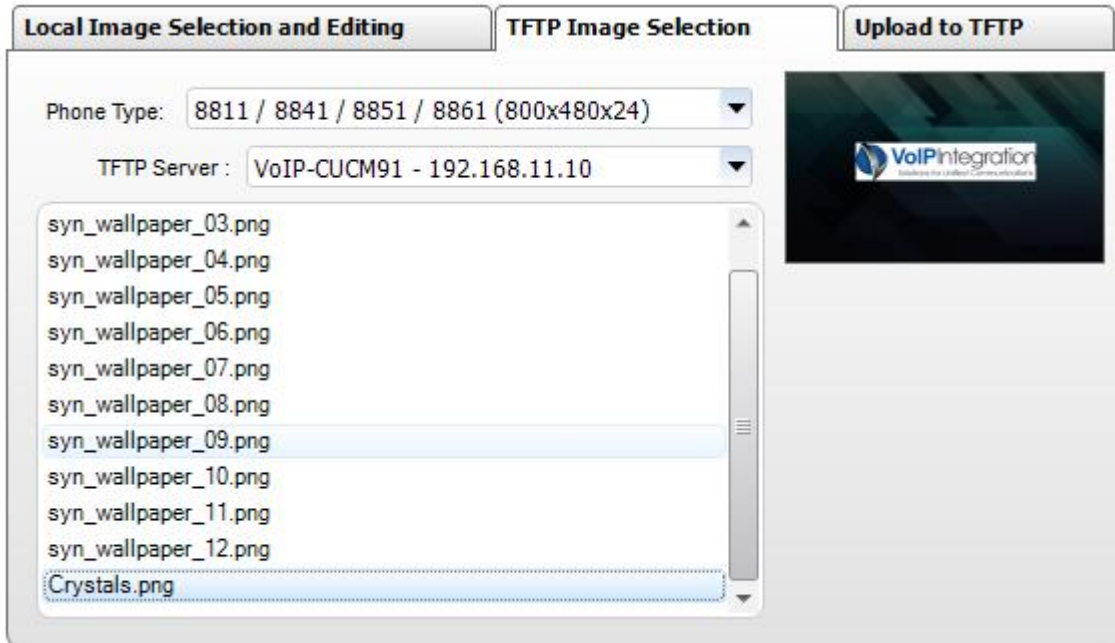
By clicking outside of the selection area you can clear the selection. By right clicking on the picture you can flip or rotate the image if necessary.

Image files can also be dragged and dropped directly from the desktop or from web browsers directly onto the source image location.

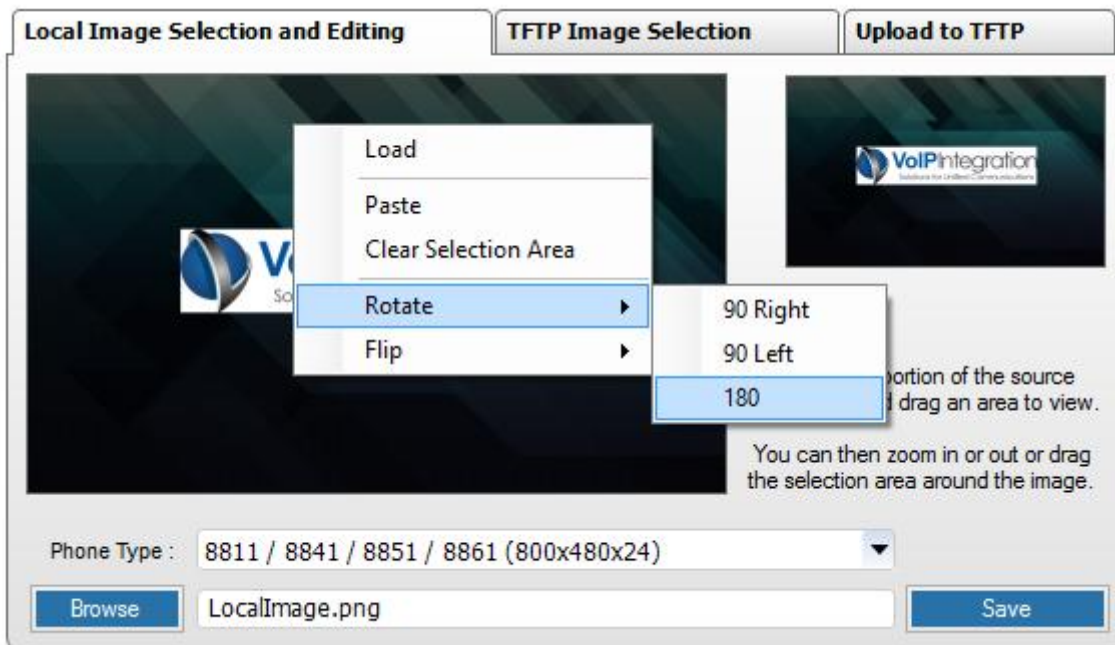
Images can also be copied and pasted directly into Background Deployment.

TFTP Image Selection

The TFTP Image Selection tab allows you to select an image that is located on the TFTP server. First select the phone type and then select the image to deploy out to the phones.

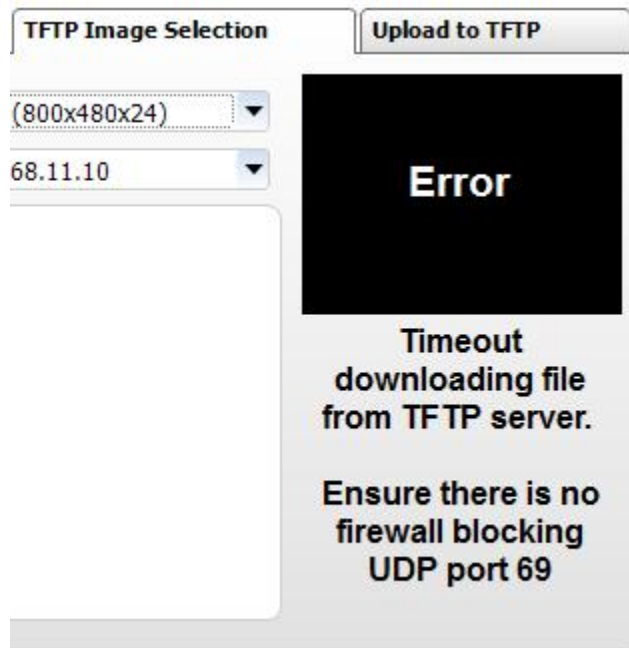


After selecting the image from the TFTP server you can also choose to edit the image and deploy out the image using the personalization method.



You can also upload the edited image to the TFTP server for the key press option.

NOTE: If you get the image below, please check your firewall settings and make sure that the firewall is not blocking access to and from the TFTP Server.

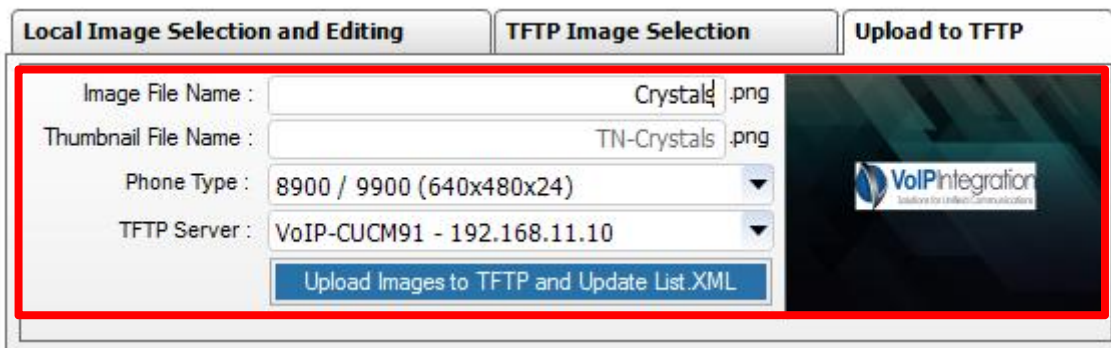


Upload to TFTP

Upload

Background Deployment can upload your images directly to the TFTP server and add the required configuration to the “List.xml” file so that users can select the images manually or allowing you to use the key press option.

After selecting and editing an image you will need to choose a file name for the full size image and the thumbnail image to be uploaded to the TFTP server. The images can be uploaded to any server in the cluster but should be uploaded to every server that is configured as TFTP sources for your phones.



Edit List XML

Items may be removed from the List.xml file for each TFTP Directory. To remove one or more records from a list file select the TFTP server and Directory to download the file. Once the file contents have been displayed select the records for deletion and then click save.

The screenshot shows the 'TFTP Image Selection' tab of the VoIP Integration software. It features several input fields: 'Image File Name' (Crystals.png), 'Thumbnail File Name' (TN-Crystals.png), 'Phone Type' (dropdown), and 'TFTP Server' (VoIP-CUCM91 - 192.168.11.10). A blue button labeled 'Upload Images to TFTP and Update List.XML' is present. Below these fields is a list of items with checkboxes for selection. Item 2 is checked. A red box highlights the list and the 'Save' button.

To remove records from a List.xml file choose the server and directory, then mark the items for deletion and save.

- Item 1 - Default Image from Cisco - Can not be removed
- Item 2 - <ImageItem Image="TFTP:Desktops/640x480x24/Kubrick_dark_2_thumb.png" URL="TFTP:
- Item 3 - <ImageItem Image="TFTP:Desktops/640x480x24/Kubrick_light_2_thumb.png" URL="TFTP:I
- Item 4 - <ImageItem Image="TFTP:Desktops/640x480x24/green_9836_thumb.png" URL="TFTP:Des

Server: VoIP-CUCM91 - 192.168. Directory: 8900 / 9900 (640x480x24) Save

NOTE: You will need to restart each TFTP server that has any file uploaded or edited before the changes will take effect on the server.

Deploy Backgrounds

To deploy an image to a group of phones you need populate all of the fields on the deployment page. These fields will determine the method of deployment, image, and phones that will be used in the process. The Cluster Name, Phone Type, and Image Name are populated from selections made in different areas of the software.

Once a Phone Type and Deployment Group have been chosen, the number of devices that match the selected criteria will be displayed under the sample deployment image.

Local Image Deployment Configuration

Deploy Backgrounds

Cluster Name :

Deployment Type : Deploy Reset to Default

Deployment Method :

Phone Type :

Image Name :


Deployment Group :

Source IP (Needed for Personalization) :

Source Port (Needed for Personalization) :

Exclude EM Profiles

Deploy Backgrounds



Phones in Group : 1
EM Profiles in Group : 0

Call Manager Image Deployment Configuration

Deploy Backgrounds

Cluster Name :

Deployment Type : Deploy Reset to Default

Deployment Method :

Phone Type :

Image Name :


Deployment Group :

Source IP (Needed for Personalization) :

Source Port (Needed for Personalization) :

Exclude EM Profiles

Deploy Backgrounds



Phones in Group : 1
EM Profiles in Group : 0

Complete

Results

The results tab displays information from the last or current deployment. It is divided into three sections, Summary, Completed, and Failures.

Summary

The Summary page shows the overall statistics of the deployment in progress or that has just completed.

Deployment Results

Summary	Completed	Failures Create Group
Cluster Name	Call Manager	
Deployment Method	Local Image (Personalization)	
Phone Type	8811 / 8841 / 8851 / 8861 (800x480x24)	
Image Name	LocalImage.png	
Deployment Group	Lab	
Devices in Group	1	
1 Complete	0 Failures	Deployment Time 00:00:07

Complete

Completed

The Completed page displays the devices that reported to have successfully updated their background image.

Summary	Completed	Failures Create Group
----------------	------------------	--

	Name	IP Address
▶	SEP346F9016E214	192.168.10.133

Failures

The Failure page displays the devices that Background Deployment was unable to update the background image. The list will contain the device name, the device IP address if we were able to determine it and the reason for the failure.

Summary		Completed		Failures	Create Group
	Name	IP Address	Message		
▶	SEP348F9016E214	192.168.10.133	Phone Reported : Unable to connect to http://192.168.10.171...		

Appendix A: Call Manager Pre Requisite Configuration

AXL Service

For Background Deployment 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

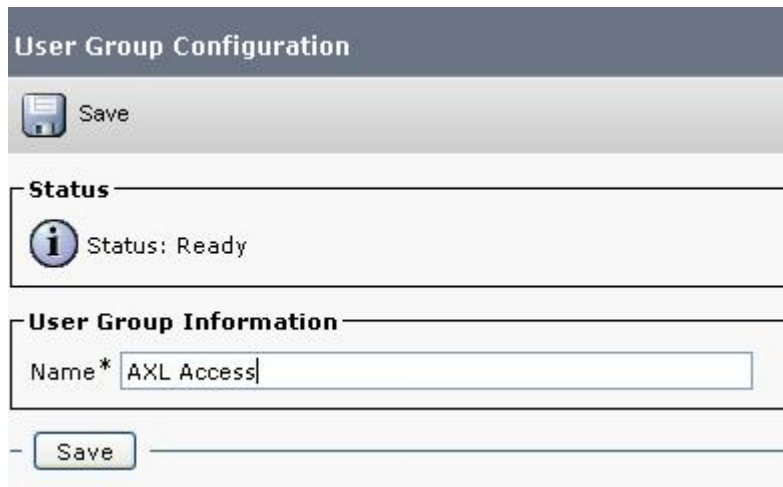
You may choose to use a Call Manager administrator username and password with Background Deployment or assign the required permissions to new or existing users.

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

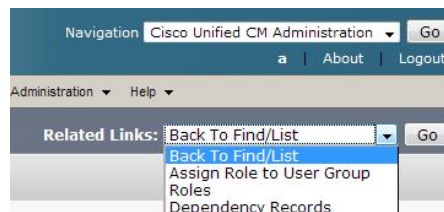
If you choose to add a user new group for permissions and want to restrict permissions to the minimum required. You will need to work through the following process. This new group can then be added to new or existing end users in Call Manager.

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

- 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 Background Deployment 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/getservicesmen"/>	

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.