

PhoneView Installation Guide

VERSION: 3.0
STATUS: Final



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Introduction

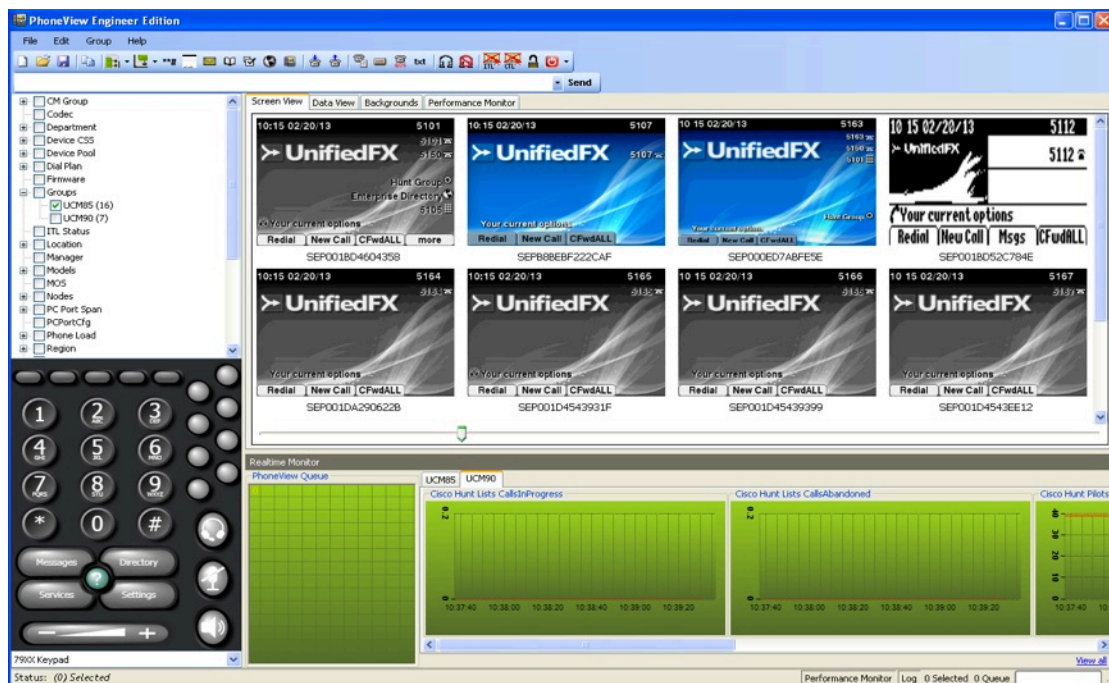
This guide provides instructions for installing the **PhoneView** Cisco IP telephony utility application.

PhoneView provides a real-time remote view of all your IP phones and allows you to group, filter and control the states of those phones, all from the **PhoneView** console.

It provides an industry-first intuitive interface with your enterprise telephony environment that will save time and provide a more efficient and flexible way to interact with your users.

PhoneView simplifies management of Cisco IP Phones; in particular it provides an intuitive graphical display of multiple IP phones' screens and allows you to manage them *either individually or in sensible groups*.

For example, you can quickly filter and select groups of phones (e.g. every handset at one site/subnet or firmware version) then log users in or out, update their firmware or their background image, all with one command. The graphical and tabular views allow you to instantly verify that every phone's update was successful.



With **PhoneView** you can:

- Remotely control one many or all IP phones at the same time
- Group and filter your phones by multiple inclusive or exclusive criteria
- Manage the selected phones' states, either singly or in groups
- Capture and manage phone information
- View real-time cluster information

Critically, most phone-related issues (other than physical phone faults) that would previously have required a site visit can now be handled *remotely*, eliminating around 90% of site call-outs and therefore providing unparalleled return on investment (ROI).

Document Conventions

- Text shown in **bold** type indicates an object on the screen, whether a menu or menu option, shortcut, button, tab or field.
- Text in *italics* indicates data to be input by the user.
- Text inside **[square brackets]** indicates a text button (not an icon), e.g. **[Save]**.
- Menu commands and selections in a tree structure are described as follows:
menu > sub-menu > command.
- 'Select' in the context of this document means 'click with the left mouse-button'.
- Keyboard keys are designated by UPPER-CASE, e.g. 'press the TAB key'.

Configuring the Cluster for use with PhoneView

Services

PhoneView populates its list of IP Phones by extracting a list of phone devices from the cluster. In addition to populating the list of phones, **PhoneView** can use the Extension Mobility API to log users in and out of phones without the need for their password. Therefore the following services need to be enabled on the server **PhoneView** is configured to use:

- Cisco AXL Web Service
- Cisco Extension Mobility
- Cisco CTI Manager (if using CTI for remote control or Remote Audio Monitoring)

User Accounts/Permissions

PhoneView requires two user accounts to be configured as follows:

Admin User

The Admin User is used to extract a list of phones from the UCM system and some basic information such as the Phones IP Address, in addition to logging users in and out using Extension Mobility. It is recommended to create the admin users as an application user with the following Standard Groups:

- Standard CCM Server Monitoring
- Standard EM Authentication Proxy Rights
- Standard Tab Sync User

Note: The permission names listed above are for UCM Version 8.5, some older UCM versions use a slightly different name. However the minimum roles required are:

- Standard AXL API Access
- Standard EM Authentication Proxy Rights
- Standard SERVICEABILITY

Phone User

The Phone User is used to remotely control the IP phones and push phone backgrounds using the Phone Personalisation method. The Phone User should be created as an end user and requires the following:

- Standard CTI Enabled
- Standard CTI Allow Control of Phones supporting Connected Xfer and conf
- Device Association with all physical IP Phones

Note: The following additional permissions are required if the Remote Audio Monitoring feature is used:

- Standard CTI Allow Call Monitoring
- Device Association with the CTI Port configured for use by PhoneView as per item 5a. above (Default CTI Port name is PHONEVIEW)

Note: If multiple instances of PhoneView are used on the same cluster for Remote Audio Monitoring then a unique CTI Port is required per instance of PhoneView.

Note: The Phone User needs to be created as an End User if the ability to push phone backgrounds is required.

Note: It is technically possible to use the same user account for the admin and phone user as long as they have the appropriate configuration above. However on some older UCM versions there are restrictions that do not allow the use of a single user account, hence the reason PhoneView can use two separate user accounts if necessary.

Enterprise Parameters

The following Enterprise Parameters need to be set in order for authentication of the remote control requests and the ability to push backgrounds to the phone:

- Phone Personalization = Enabled
- 'URL Authentication' and/or 'Secured Authentication URL' configured correctly (i.e. uses an IP Address or a hostname that can be resolved from the IP Phone)

Remote Audio Configuration

The following is additional configuration required if the Remote Audio feature has been licensed for use within PhoneView:

1. Create a CTI Port, Select the **[Device] > Phone** menu option.
2. Click the **[Add New]** button
3. Specify the following parameters:
 - a. **Phone Type** = **[CTI Port]**
 - b. **Device Name** (default is *PHONEVIEW*)
 - c. **Device Pool**
 - d. **Device Security Profile**
4. Click **[Add a new DN]** and then specify the following parameters:
 - a. **Directory Number**
 - b. **Route Partition**
 - c. **Monitoring Calling Search Space**
5. Click **[Save]**
6. Enable built-in Bridge, Click **[System] > Service Parameters**
7. Select a **Server** (i.e. publisher)
8. Select the **[Cisco CallManager]** Service
9. Goto the **Clusterwide Parameters (Device - Phone)** section
10. Set the **Builtin Bridge Enable** to **On**
11. Click **[Save]**

Note: By default there is no tone played when a call is being monitored remotely, if this is desirable it can be set under the **Clusterwide Parameters (Feature - Monitoring)** of the Cisco CallManager Service Parameters.

Note: In some scenarios it will be necessary to configure the **Monitoring Calling Search Space** of the CTI Port (default name PHONEVIEW) to provide reachability to the Directory Numbers of the device(s) to be monitored. Please refer to the following document on CCO for detailed information of the Silent Monitor feature:

http://www.cisco.com/en/US/docs/voice_ip_comm/cucm/admin/6_0_1/ccmfeat/fsmr.html

Note: The built-in bridge can be enabled on a per phone basis if it is undesirable to enable this cluster wide.

Note: The CTI Port used by PhoneView needs to be associated to the Phone User configured on the Group Properties page as per item 2f.

Note: The Remote Audio feature uses the built-in bridge of the IP Phone, some of the older phone models (i.e. 7940 & 7940) do not have this capability and therefore cannot be monitored remotely.

Note: If using the **Admin Phone** feature to send the audio stream to a physical phone, the primary line of the Admin Phone needs to have the **Monitoring Calling Search Space** configured to use a Calling Search Space with reachability of the phone being monitored.

Note: The CTI Port within PhoneView can only accept G.711 calls, therefore it may be necessary to assign the CTI Port to a region that only permits G.711 in order to force the remote phone to transcode accordingly.

Configuring UCME for use with PhoneView

User Accounts/Permissions

PhoneView requires two user accounts to be configured as follows:

Admin User

The Admin User is used to extract a list of phones from the UCME system and some basic information such as the Phones IP Address, in addition to logging users in and out using Extension Mobility.

Phone User

The Phone User is used to remotely control the IP phones.

UCME Configuration

The configuration example uses the following credentials:

Admin User: pvadmin

Admin Password: cisco

Phone User: pvphone

Phone Password: cisco

Example UCME Configuration:

```
ip http server
voice register global
mode cme
url authentication http://[UCME IP Address]/CCMCIP/authenticate.asp
ixi transport http
response size 64
no shutdown
request outstanding 1
ixi application cme
no shutdown
telephony-service
xml user pvadmin password cisco 15
url authentication http://[UCME IP Address]/CCMCIP/authenticate.asp pvphone cisco
```

Note: The current CCIE lab IOS version of UCME has a bug that prevents **PhoneView** from automatically extracting the IP Address of SIP Phones registered to a CME system, so for those phones you can go to the DataView and enter the IP Address manually against the corresponding phone.

Note: The Phone IP Address can only be changed in the Lab Edition of PhoneView

PhoneView TCP & UDP Port Usage

Ports between PhoneView and UCM

From (Sender)	to (Listener)	Destination Port	Purpose
PhoneView	UCM	80/TCP	HTTP API Interface
PhoneView	UCM	8080/TCP	HTTP API Interface
PhoneView	UCM	443/TCP	HTTPS API Interface
PhoneView	UCM	8443/TCP	HTTPS API Interface
PhoneView	UCM	6970/TCP	HTTP API Interface
PhoneView	UCM	2748/TCP	CTI API Interface
PhoneView	UCM	2789/TCP	CTI API Interface

Ports between PhoneView and IP Phones

From (Sender)	to (Listener)	Destination Port	Purpose
PhoneView	IP Phone	80/TCP	HTTP Web Interface
PhoneView	IP Phone	443/TCP	HTTPS Web Interface
PhoneView	IP Phone	16384-32768/ UDP	RTP Stream
IP Phone	PhoneView	9090/TCP	HTTP Web Interface

Installing PhoneView

Downloading PhoneView

1. Double-click on the link for the correct version of **PhoneView** on the Unified FX downloads page (<http://www.unifiedfx.com/downloads>).

Note: Only users [registered](#) on the Unified FX website can download the software or licenses.

Prerequisites

Before installing **PhoneView**, ensure that these minimum installation conditions are met:

- User is logged in with administrative (software installation) privileges.
- Client PC has *minimum* specification as follows:
 - Windows XP SP3 (any other newer version of Windows, including Windows 7 & 8, Server 2003, 2008, 2012)
 - Microsoft .Net 4.0 Full
 - 2GB RAM
 - 1.6 GHz CPU
 - Network connectivity to the Cisco UCM/UCME system and the IP phones
- User has downloaded the **PhoneView** application from <http://www.unifiedfx.com>
Note that you must register on the website before you can download the software.

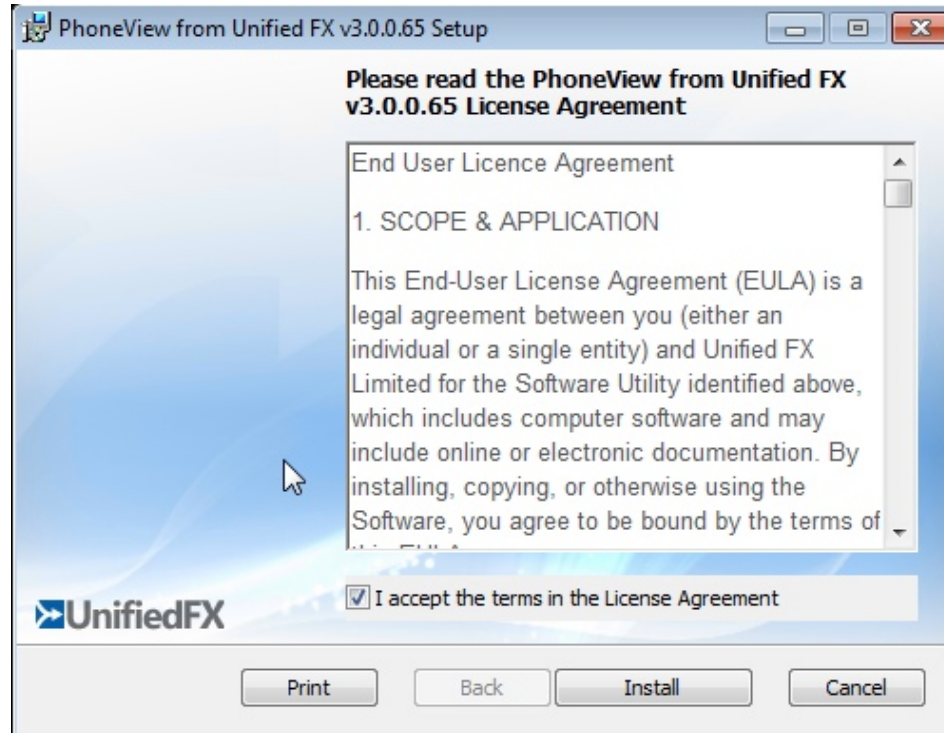
Note: Microsoft .Net 4.0 Full can be downloaded from:
<http://www.microsoft.com/download/en/details.aspx?id=17718>

Installing PhoneView on a Client PC

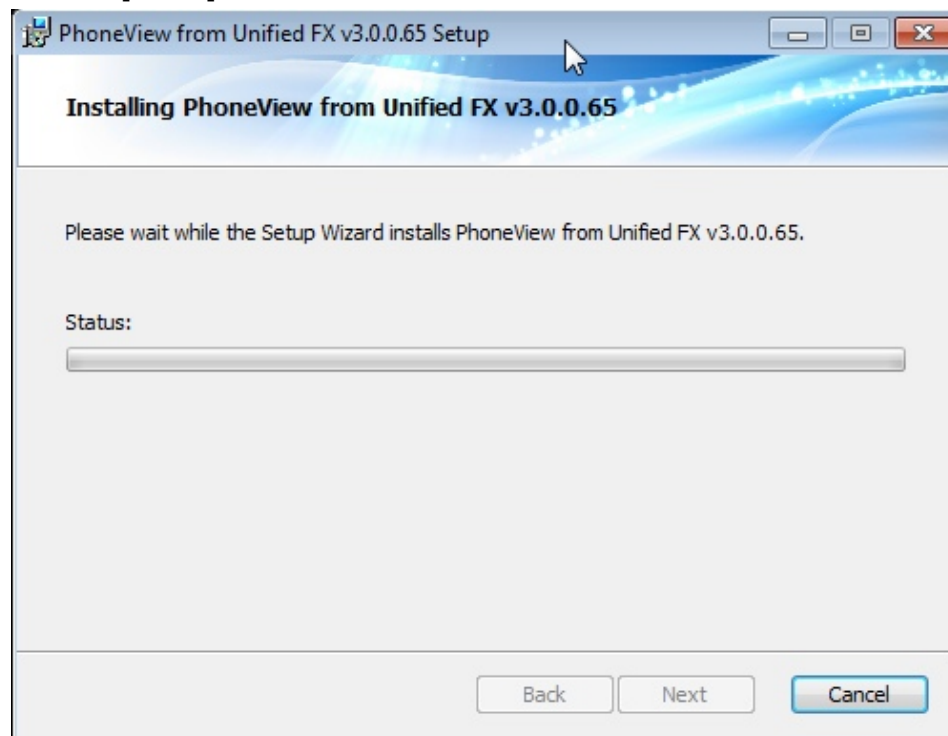
Once you've downloaded the software, install it as follows:

1. Double-click on the **PhoneViewsetup_version.msi** file.

The **PhoneView** setup wizard opens.

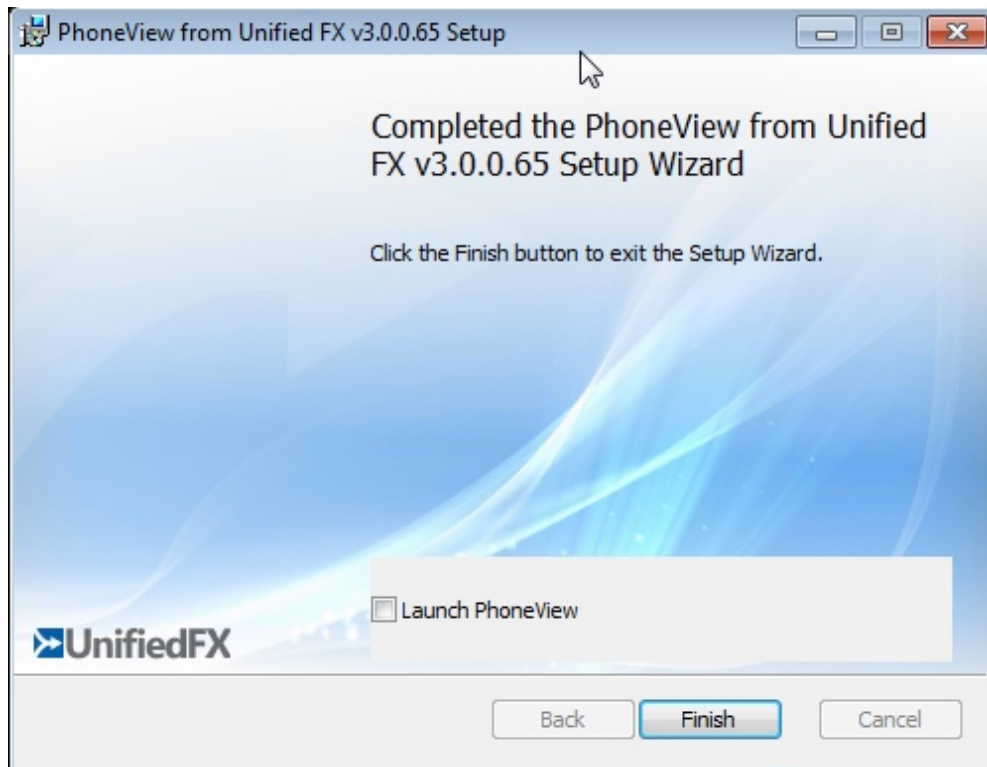


2. Review the license agreement and click to select the **I Accept** radio button to proceed.
3. Click the **[Install]** button.



4. The application will install and provide feedback on the installation progress.

5. A progress bar is displayed, then the **Installation Complete** window appears.



6. Click the **[Finish]** button.
PhoneView has installed successfully.

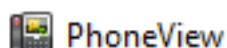
Running PhoneView

To use **PhoneView** you must launch the program, add one or more groups of IP phones then if required activate licenses for those clusters.

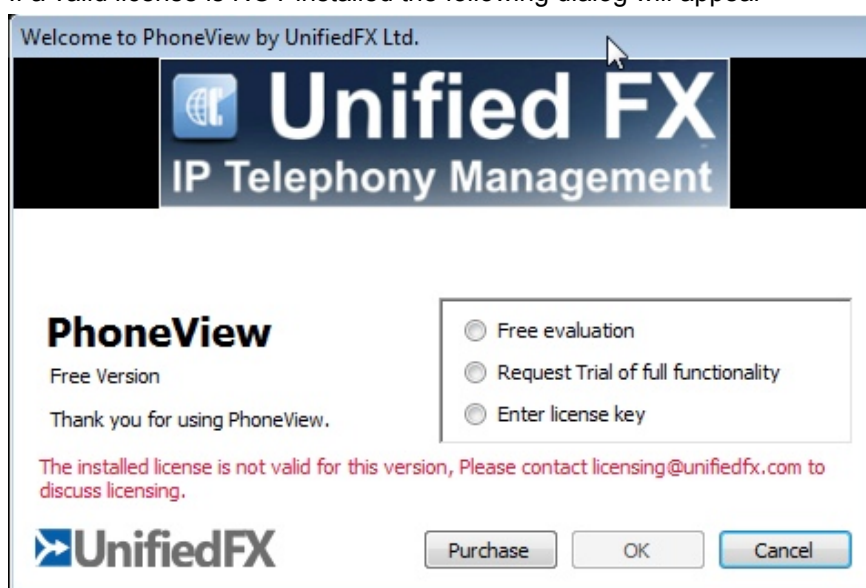
Launching PhoneView

Once installed, launch **PhoneView** as follows:

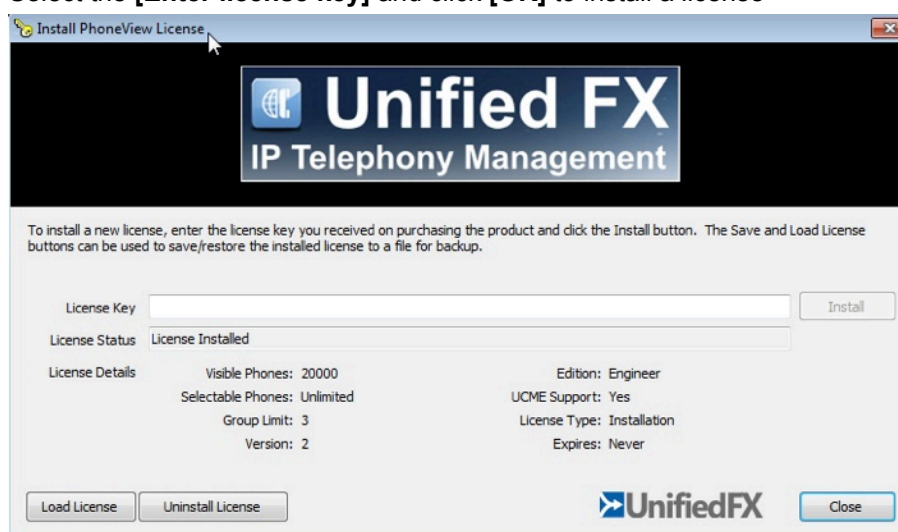
1. Click the Windows **[Start]** button and navigate through the programs menus to the **PhoneView** application:
 - a. In Windows XP, **[Start] > All Programs > Unified FX > PhoneView**.
 - b. In Windows 7, ... > **PhoneView**.
2. Click the **PhoneView** icon to launch the program.



3. If a valid license is NOT installed the following dialog will appear



4. Select the **[Enter license key]** and click **[OK]** to install a license



5. Enter/Paste the License string and click **[Install]** to activate the license
6. Click **[Close]** to close the license dialog and start to use PhoneView

Adding a Group

Once **PhoneView** is installed you can activate one or more Group (dependent on your license).

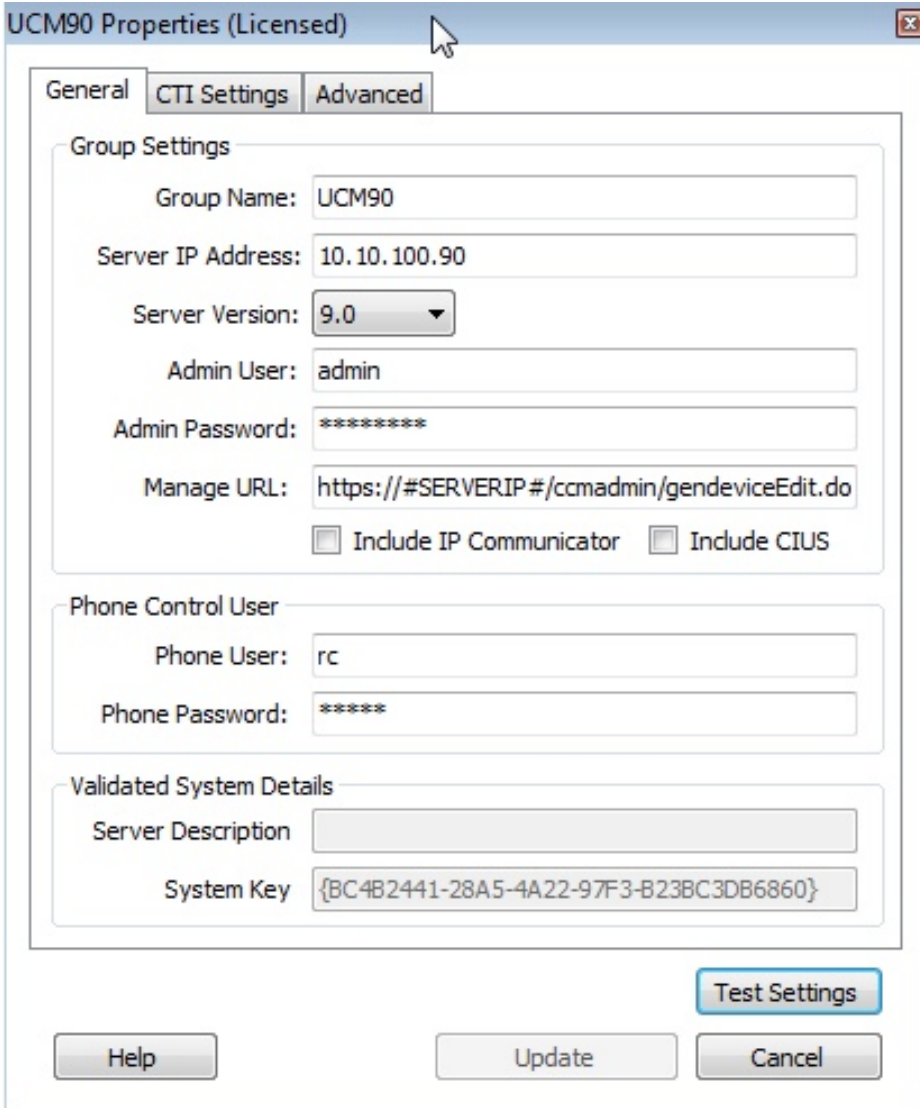
Note: A group of phones relates to either a cluster or a UCME system with one or more phones configured.

Note: the free version of **PhoneView** supports a single group of up to 50 phones.

To add a group:

1. Select the **[Group] > Add** menu option.

The **Group Properties** dialogue opens (the name of this dialogue is updated dynamically to match the group name you enter).



UCM90 Properties (Licensed)

General CTI Settings Advanced

Group Settings

Group Name: UCM90

Server IP Address: 10.10.100.90

Server Version: 9.0

Admin User: admin

Admin Password: *****

Manage URL: https://#SERVERIP#/ccmadmin/gendevicedit.do

☐ Include IP Communicator ☐ Include CIUS

Phone Control User

Phone User: rc

Phone Password: *****

Validated System Details

Server Description

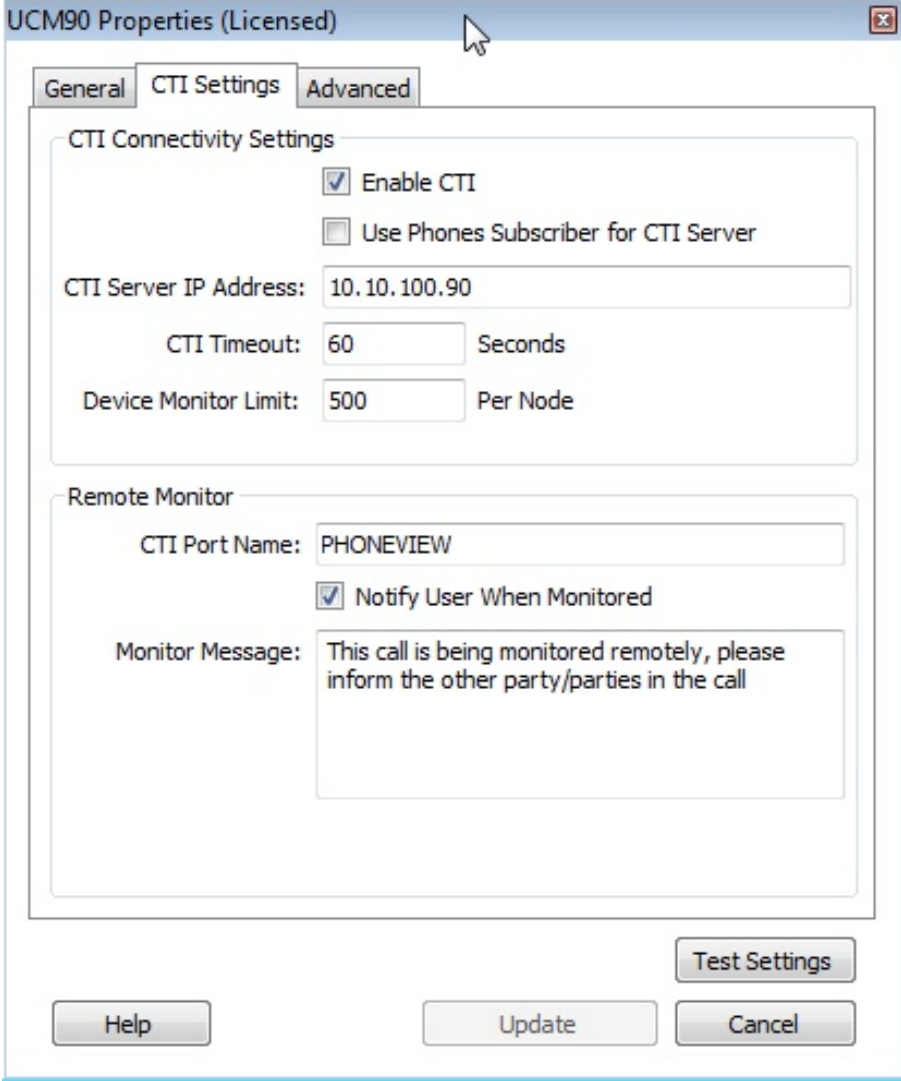
System Key {BC4B2441-28A5-4A22-97F3-B23BC3DB6860}

Test Settings

Help Update Cancel

2. Enter the following details:
 - a. **Group Name**
 - b. **Server IP Address** (the UCM or UCME target system)
 - c. **Server Version** (Select Express for UCME systems)
 - d. **Admin User**
 - e. **Admin Password**
 - f. **Phone User**
 - g. **Phone Password**

3. Click on the **[CTI Settings]** Tab



The screenshot shows the 'UCM90 Properties (Licensed)' dialog box with the 'CTI Settings' tab selected. The dialog has three tabs: 'General', 'CTI Settings', and 'Advanced'. The 'CTI Settings' tab contains two sections: 'CTI Connectivity Settings' and 'Remote Monitor'. In the 'CTI Connectivity Settings' section, 'Enable CTI' is checked, 'Use Phones Subscriber for CTI Server' is unchecked, 'CTI Server IP Address' is '10.10.100.90', 'CTI Timeout' is '60' seconds, and 'Device Monitor Limit' is '500' per node. In the 'Remote Monitor' section, 'CTI Port Name' is 'PHONEVIEW', 'Notify User When Monitored' is checked, and the 'Monitor Message' is 'This call is being monitored remotely, please inform the other party/parties in the call'. At the bottom are buttons for 'Help', 'Update', 'Test Settings', and 'Cancel'.

4. Enter the following **CTI Connectivity Settings**:
- a. **Enable CTI**
 - b. **Use Phones Subscriber for CTI Server**
 - c. **CTI Server IP Address**
 - d. **CTI Timeout**
 - e. **Device Monitor Limit**
5. Enter for following settings for **Remote Monitor**:
- a. **CTI Port Name**
 - b. **Notify User When Monitored**
 - c. **Monitor Message**

Note: The **Remote Monitor** feature will not be visible/available unless specifically licensed.

Note: The CTI Settings tab will only be available if the appropriate Group Version is selected as per 2c. Currently CTI is supported on CUCM Version 7.0 and above.

The following table describes the CTI Settings:

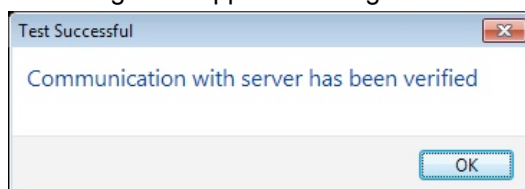
Setting	Description
Enable CTI	To enable the use of CTI to send key presses and other actions to the phone enable this setting. Note: This needs to be enabled if the Remote Audio Monitoring feature is used
Use Phones Subscriber for CTI Server	For large clusters with 2000 or more phones this setting may need to be enabled. When enabled multiple CTI Instances are created, one for each subscriber that a phone is registered too. Note: If in doubt, or troubleshooting CTI Connectivity disable/clear this setting
CTI Server IP Address	This is the IP Address of the node with the CTI Manager service enabled to create the CTI Connection with
CTI Timeout	This is the number of seconds before timing out the creation of the CTI Connection
Device Monitor Limit	The number of devices (Phones) to actively CTI Monitor simultaneously. For CTI Scaling and performance reasons different CUCM Server platforms support between 500 and 2000 active devices to be monitored via CTI. If in doubt leave the value at it's default of 500
CTI Port Name	This is the name of the CTI Port configured in CUCM that PhoneView will register to receive Audio from the Remote Phone being monitored Note: If multiple instances of PhoneView are running (including terminal/virtual instances) a different CTI Port name is required for each instance/user
Notify User When Monitored	When the Audio on a remote phone is Monitored the user is notified with a text message to their IP Phone. The message is sent by default, by unchecking this setting a message will no longer be sent to the phone
Monitor Message	If the Notify User When Monitored setting is enabled this text will be sent to the IP Phone when the Audio is remotely Monitored

6. Click on the **[Advanced]** Tab



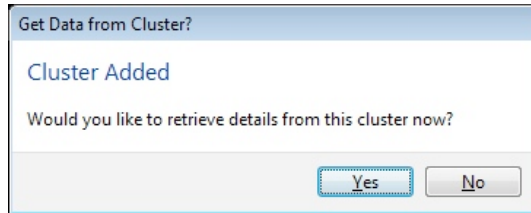
7. Enter the following advanced information
- Perform TFTP server queries
 - TFTP Server Address
8. Once the administrator account details are entered you can test connectivity to the server by clicking the **[Test Settings]** button.

A message box appears stating whether the test was successful.



9. If the test was not successful, see the configuration and troubleshooting sections of this document for further information. If the problem is still unresolved, [contact Unified FX](#).
10. Click the **[Add]** to add the group
11. Once the group is added, you will be prompted to extract a list of phones from the group. Click **[Yes]** and PhoneView will download a list of phones from the relevant group

Note: Before adding any phones to the cluster, it is a good idea to save the cluster information by selecting the **[File] > Save** menu option



12. If you clicked **[No]** in step 9, you can manually update the list of phones at any time by selecting the **[Group] > Update > *yourgroupname*** menu option.
Each phone in the cluster appears in the **Screen View** tab.

Device/User Information Details

PhoneView Queries multiple sources for Phone related information and combines all information to a single "DataView". This provides an extensive record of phone information as well as the user assigned or logged into the IP Phone. All of this information can be saved to a file using **[File > Export]**

The following tables detail the Device and User information gathered, in particular the owner of the device is used to combine the phone and user information together for the consolidated view. The phone **Owner** is either the statically set "Owner User ID" on the device page in UCM or the currently logged in user. So if either method (Extension Mobility or statically configured devices) is used PhoneView can combine the relevant user information against the device.

Device Information

Data	Source	Update	Description
Name	UCM	Group	Device Name
IP Address	UCM	Group	Device IP Address
DN	UCM	Group	Directory Number
Description	UCM	Group	Description
User	EM API	Group	Logged in EM User
Device Pool	UCM	Group	Device Pool
Location	UCM	Group	Location
Region	UCM	Group	Region
CM Group	UCM	Group	Call Manager Group
Device CSS	UCM	Group	Device Calling Search Space
Phone Load	UCM	Group	Phone Load Name
EM Enabled	UCM	Group	Extension Mobility Enabled
Login Time	UCM	Group	EM User Login Time
Last Change	UCM	Group	When the device was last changed in UCM
Status	UCM	Group	Registration Status
ActiveServer	UCM	Group	Registered Subscriber
Model	UCM	Group	Phone Model

Data	Source	Update	Description
Group	PhoneView	Group	Name of Cluster/Group
SSHEnabled	TFTP	Device	SSH Access Enabled
SSHUsername	TFTP	Device	SSH User ID
WebServer Enabled	TFTP	Device	Phone Web Server Enabled
PC Port SPAN	TFTP	Device	SPAN to PC Port Enabled
Settings Access	TFTP	Device	Phone Settings Access
LLDP Asset ID	TFTP	Device	Phone LLDP Asset ID
SerialNumber	Phone	Device	Phone Serial Number
ITL Status	Phone	Device	ITL Update Status
Firmware	Phone	Device	Phone Firmware Version
FirmwareModule1	Phone	Device	Sidecar1 Firmware Version
FirmwareModule2	Phone	Device	Sidecar2 Firmware Version
AltTFTP	Phone	Device	Alternate TFTP Enabled
TFTPServer1	Phone	Device	Configured TFTP Server
SecurityMode	Phone	Device	Phone Security Mode
VideoCapability	Phone	Device	Video Enabled
MWI	Phone	Device	Message Waiting Status
SwitchPortCfg	Phone	Device	Switch Port Speed
PCPortCfg	Phone	Device	PC Port Speed
VoiceVLAN	Phone	Device	Switch Voice VLAN Number
SwitchName	Phone	Switch	Connected Switch Name
SwitchIPAddress	Phone	Switch	Connected Switch IP
SwitchPort	Phone	Switch	Connected Switch Port
MOS	Phone	Call	Current/Last MOS Score
Codec	Phone	Call	Current/Last call Codec

Note: The update column represents how that information is updated as follows:

- **Group** - Group Update, performed by [**Group > Update > ClusterName**]
- **Device** - Device Information, performed by selecting the phone(s) to update and then the [**Phone DeviceInfo**] Icon on the toolbar
- **Switch** - Switch Information, performed by selecting the phone(s) to update and then the [**Phone SwitchInfo**] Icon on the toolbar
- **Call** - Call Information, performed by selecting the phone(s) to update and then the [**Phone Call Stats**] Icon on the toolbar

User Information

Data	Source	Update	Description
Owner	UCM	Group	Device Owner
Email	UCM	Group	Email Address
First Name	UCM	Group	First Name
Middle Name	UCM	Group	Middle Name
Last Name	UCM	Group	Last Name
Manager	UCM	Group	Manager UserID
Telephone Number	UCM	Group	Number from Directory
Department	UCM	Group	Department

Note: All user information for the owner of the device is updated as part of a Group Update, not as part of a Extension Mobility login or logout command

Note: If the UCM System is integrated with Active Directory this information will exactly match the mapped AD fields from AD to UCM's End Users

Troubleshooting PhoneView Installation

The following table lists a number of common problems and solution when installing and using **PhoneView** for the first time:

Problem	Solution
Phones do not have any IP Addresses after performing group update	<p>Check both of the following:</p> <ol style="list-style-type: none"> 1. The Admin User configured for PhoneView has the 'Standard CCM Server Monitoring' group 2. Microsoft .Net 4 Full is installed <p>Note: To check the .Net version installation, enter the following in the address bar of Internet Explorer 'javascript:alert(navigator.userAgent)' and compare against the following: •Microsoft .Net 4 Full = .NET4.0E</p> <p>Microsoft .Net 4 Full Profile can be downloaded from here: http://www.microsoft.com/download/en/details.aspx?id=17718</p>
Unable to push Phone Backgrounds	<p>Make sure Phone Personalization is enabled for the phone, or the cluster. The Cluster setting can be found in Enterprise Parameters. Note: UCM 6.x or above is required</p>
Unable to remotely control any Phone	<p>This is typically an authentication issue, when remote control commands are sent to the phone or a screenshot is taken the authenticated the Phone User credentials. Check the following:</p> <ul style="list-style-type: none"> • Make sure the Phone User configured in PhoneView has device association with all IP phones • Make sure the Authentication URL used by the phone uses an IP Address or can resolve the hostname. <p>To test the operation of authenticating remote control, you can try to manually view the phone screen by browsing to the following URL: http://[Phone IP Address]/CGI/Screenshot</p> <p>Note: With the release of UCM 8.x Cisco have introduced Security by Default functionality. As part of this the phone may now use the secure Authentication URL (using HTTPS). It is necessary for the ITL file on the phone to trust the cluster TVS service for the authentication to continue to work on the phone</p>

For further troubleshooting refer to the FAQ page: <http://www.unifiedfx.com/phoneview/faq>