Cisco Mobile 8.1 for iPhone Deployment Guide

What You Will Learn

You will learn how to enable your Apple iPhone to use Cisco® Mobile 8.1 within your wireless LAN and Cisco Unified Communications Manager infrastructure. This document should help you avoid some common areas of confusion, and will provide you with an overview of what to expect from the solution when properly deployed. This document is not to be used as a substitute to existing product documentation, but is intended to be used as a supplementary guide.

Introduction

The pervasive availability of wireless LANs (WLANs) and introduction of IP Telephony greatly improved productivity in the enterprise. WLANs provide you with much better access to key network resources that can lead to substantial productivity gains. Similarly, the IP Telephony evolution led by Cisco has changed the world of communications. The Cisco Unified Communications platform allows businesses to communicate in ways never before imagined and has created a momentous shift in the telephony market away from traditional PBX systems to more flexible IP-based architectures. At the junction of these two trends are mobile devices, with the potential of connecting to the enterprise over WLAN as well as cellular technologies, while integrating into your organization's unified communications infrastructure.

Many WLAN deployments as well as WLAN-enabled mobile devices have focused on data traffic such as email and webpage access. Voice traffic is of a different nature from data traffic and is more sensitive to packet delay and packet loss. Similarly, mobile workers behave in ways that computer users may not - they roam hallways while using their devices, and they may wander into areas where wireless coverage previously was not required, entering and leaving buildings at will, often while in the middle of a call.

Cisco has addressed all of these requirements by incorporating the latest advances in Quality of Service (QoS), seamless fast roaming across Layer 2 and Layer 3 boundaries, centralized management, and support for a broad range of security types into the Cisco Unified Wireless Network.

However, an additional challenge of deploying voice over WLAN (VoWLAN) on mobile devices centers around the differences of protocol implementation on various mobile platforms. Many of these platforms were optimized for data transmission, but are now used for VoWLAN communications. Although these device limitations cannot be addressed, WLANs can be optimized to minimize the impact of differences of WLAN implementation between various mobile devices.

VoWLAN deployments today must cover the needs of a variety of voice endpoints, including soft phones running on desktops, designated VoWLAN phones such as the Cisco Unified Wireless IP Phone, and more recently, soft phones running on a variety of mobile devices. Administrators need to design the WLAN in such a way as to optimize performance of any of these devices, preferably by designing for the most capable device first, since less-capable devices will ultimately benefit from such an optimized network. Two key design elements that must be considered when designing a voice-ready WLAN are adequate call capacity and signal strength and coverage for mobile wireless devices.

This guide will provide an introduction of WLAN design for voice as well as an overview of deploying Apple iPhones in a WLAN environment.

When to Use Cisco Mobile 8.1 vs. Cisco Mobile 8.0

Cisco Mobile 8.1 takes advantage of the multitasking capabilities introduced in Apple iOS 4, providing you with two key enhancements to your experience:

- The ability to navigate to other applications on the iPhone while on a VoIP call. Once a call has been established, you can run Cisco Mobile 8.1 in the background while checking email or calendars or use any other application on the iPhone (with the exception of placing or receiving a GSM call).
- The ability to receive calls when Cisco Mobile 8.1 is running in the background

Note: Cisco Mobile 8.1 puts the VoIP call on hold when the iPhone receives a GSM call. This necessity is independent of iOS or the Cisco Mobile application because the GSM call takes over the microphone before you answer the call. Users are advised to decline the GSM call if they wish to remain on the VoIP call with minimum disruption. If you choose to accept the GSM call, the VoIP call will be put on hold until you disconnect the GSM call.

Because these are key enhancements to your experience, it is generally advisable to roll out Cisco Mobile 8.1 in favor of Cisco Mobile 8.0. However, you should deploy Cisco Mobile 8.0 under the following circumstances:

- The deployment is based on Cisco Unified Communications Manager 6.1(5), 7.1(3), 8.0(1), and 8.0(2). (Cisco recommends that you upgrade to a supported version of Cisco Unified Communications Manger in order to take advantage of the advanced feature set in Cisco Mobile 8.1.)
- You use the iPhone 3G (deploy Cisco Mobile 8.0 for the iPhone 3G, and Cisco Mobile 8.1 for the newer iPhone models such as iPhone 3GS and 4 models)

Table 1. iOS and iPhone/iPad/iPod support

	Cisco Mobile 8.0 (nonmultitasking)	Cisco Mobile 8.1 (multitasking)
iOS 3	Supported	Not Supported
iOS 4	Supported (with feature limitations because Cisco Mobile 8.0 will not run in the background)	Supported
iPhone models supported	3G, 3GS, 4	3GS (requires iOS 4.2 upgrade), 4
iPod Touch models supported	Not Supported	3rd & 4th Generation (require iOS 4.2 upgrade)
iPad	Not Supported	Supported (requires iOS 4.2 upgrade)

Apple allows keepalive timer values of 10 minutes for applications running in the background. As 10 minutes tend to be too long for many devices within a Cisco Unified Communications Manager cluster, support of Cisco Mobile 8.1 required changes to Cisco Unified Communications Manager in order to be able to support iPhones without modifying the keepalive value for the rest of the cluster. The following versions of Cisco Unified Communications Manger are supported:

Table 2. Cisco Unified Communications Manager support

	Cisco Mobile 8.0 (nonmultitasking)	Cisco Mobile 8.1 (multitasking)
6.1(5)	Supported	Not Supported
7.1(3)	Supported	Not Supported
7.1(5)	Supported	7.1.5 (SU required, see release notes for details)
8.0(1)	Supported	Not Supported
8.0(2)	Supported	Not Supported
8.0(3)	Supported	8.0.3 (SU required, see release notes for details)
8.5	Not Supported	Supported

Voice-Ready WLAN Design and Site Survey Requirements

This section will provide an overview of key design concepts for deploying a voice-ready WLAN. Further discussion of the topic can be found at:

"VoWLAN Design Recommendations" section in the Enterprise Mobility Design Guide at: http://www.cisco.com/application/pdf/en/us/guest/netsol/ns279/c649/ccmigration_09186a00808d9330.pdf.

If designing an 802.11g network, the following document provides an overview of Capacity Coverage & Deployment Considerations: http://www.cisco.com/en/US/products/hw/wireless/ps4570/products_white_paper09186a00801d61a3.shtml.

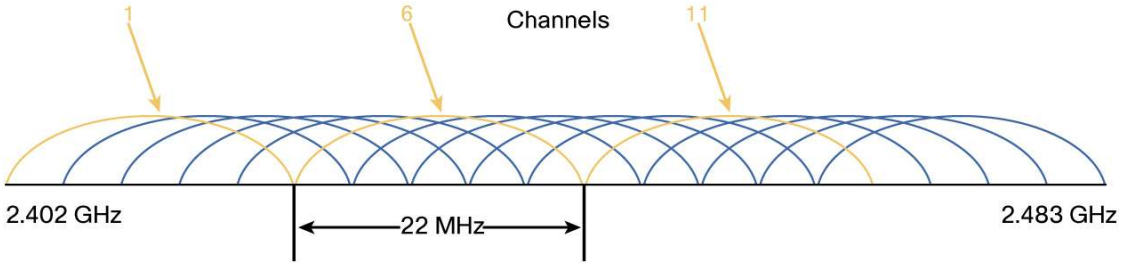
An excellent discussion of the topic is also available in the Cisco Unified Wireless IP Phone 7925G Deployment Guide at: http://www.cisco.com/en/US/docs/voice_ip_comm/cuipph/7925g/7_0/english/deployment/guide/7925dply.pdf.

The iPhone, iPod touch and iPad support WLAN in the 2.4-GHz spectrum. The previously referenced documents also cover WLAN deployments supporting other WLAN standards. This section will summarize key concepts required to deploy iPhones in a Cisco Unified WLAN network.

Voice-Ready WLAN Design

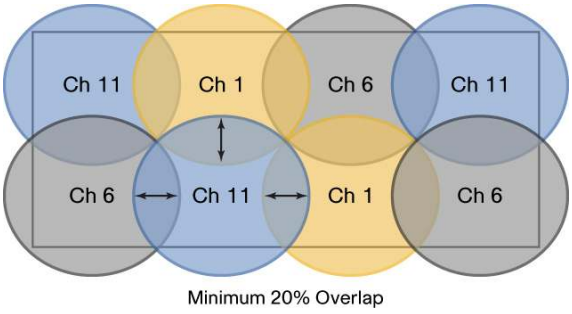
802.11b/g uses the 2.4-GHz band which is shared with many other technologies, including existing WLANs, Bluetooth devices (including Bluetooth headsets), microwave ovens, and surveillance video, to name a few. Because of the crowded nature of the 2.4-GHz band, it is important that the WLAN be carefully designed.

It is especially important to carefully allocate nonoverlapping channels when designing a voice-ready WLAN network. In order to avoid overlapping channels, 5-channel separation, which allows for 3 active channels per deployment, is required. Specifically, in the U.S., the channels 1, 6, and 11 are the only nonoverlapping channels available when using 802.11b/g access points:

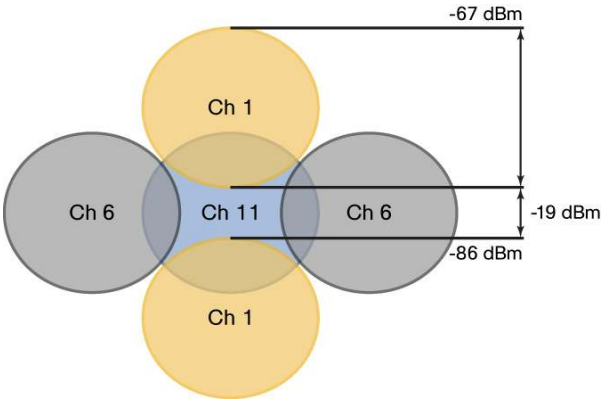


In Europe, channels 3, 8, and 13 could be used, and finally, in Japan, channels 4, 9, and 14 could be used.

In addition to selecting nonoverlapping channels, voice-ready WLAN networks require higher WLAN Access Point density than data-only WLAN networks. In order to obtain good voice coverage, you must also allow for at least 20% overlap with adjacent channels in order to provide adequate voice coverage:



Furthermore, it is important to ensure that the same channels have power adjusted so that they are separated by 19 dBm in order to reduce the size of the collision domain, and to reduce the noise floor effect that like channels will have on each other.



Also ensure that the wireless LAN deployment provides adequate coverage throughout the building/floor. Often areas such as elevators, staircases, and corridors are not considered for data coverage, but are essential for voice traffic.

Cisco recommends that you disable the 1-, 2-, and 5.5-Mbps data rates when installing a VoWLAN in order to ensure sufficient capacity. With typical Bluetooth coexistence, call capacity per access point is reduced to 4 streams on 802.11b/g networks at data rates of 11 Mbps and above.

In addition, in order to obtain the best possible experience when using VoWLAN with the iPhone, we recommend that:

- The IP address assigned to the iPhone does not change when you roam between access points (calls will be dropped if the IP address changes).
- All access points have the same SSID (hand-off may be much slower if the SSIDs don't match).
- Access points broadcast their SSID (otherwise the iPhone may bring up a prompt to join another Wi-Fi network, interrupting the call).

Finally, Cisco recommends that all indoor installations use diversity antennas that tend to improve throughput by reducing retries. Antennas should be placed so that they are not near metal objects to eliminate possible multipath problems.

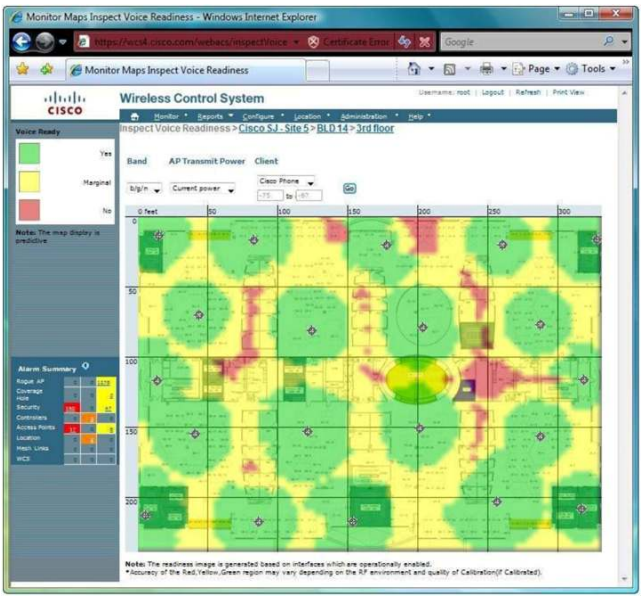
WLAN Deployment Tools and Site Survey

It is highly recommended that you perform a site survey in order to verify coverage, quality, and configuration of the WLAN. Site surveys should be repeated on a regular basis in order to determine if new sources of interference have emerged. Cisco provides several tools that help with site surveys.

Cisco Wireless Control System (WCS) for Unified Wireless LAN management is a postdeployment tool that helps network designers validate voice readiness of a WLAN and correct any deficiencies if necessary.

Other tools include Cisco Wireless LAN Solution Engine (WLSE) for Autonomous Wireless LAN management, Cisco Spectrum Expert, and AirMagnet (Survey, WLAN Analyzer, VoFi Analyzer, and Spectrum Analyzer).

However, because of the unique characteristics of each wireless device, it is highly recommended that administrators perform a site survey using Cisco Mobile 8.1 on an iPhone to determine if network coverage is adequate.



Cisco Mobile and Apple iPhone Caveats Within Ideal VoWLAN Environments

Caveats:

- The iPhone supports 802.11b/g at the 2.4-GHz frequency range, the same range used for Bluetooth. Note: Only Cisco Mobile 8.1 supports the use of Bluetooth headsets. Cisco Mobile 8.0 does not support Bluetooth headsets for VoIP calls.
- The iPhone does not support all Cisco Compatible Extensions, some of which were designed to improve voice quality. Of particular interest is:
  - Wireless Multimedia Extensions (based on ratified IEEE 802.11e) adds basic QoS features to WLAN networks. Without this support, traffic may not be properly categorized into voice, video, best-effort, and background, which may have a negative impact on voice quality when using Cisco Mobile.
- In order for you to receive calls via VoWLAN, Cisco Mobile must be running on the iPhone.
- Cisco Mobile does not have control of the microphone when a GSM call is active.

Although proper WLAN design has a significant impact on your experience, quality of voice cannot be guaranteed and may vary between sites and device types. For instance, it is possible that employees that use a Cisco Unified Wireless IP Phone 7921 or 7925 model will have a different perception of voice quality than with the iPhone. Furthermore, when you connect to the network from remote locations, voice quality will depend on the remote WLAN network as well as the Internet connection.

Important: Use the native phone application when using the mobile or cellular network when placing an emergency call so that emergency personnel may locate you. When you place calls over the Wi-Fi network, emergency services cannot get an accurate reading of your location, a situation that may result in delayed arrival of help.

Using Cisco Mobile 8.1 with Bluetooth Headsets

Users of Cisco Mobile 8.1 can participate in VoIP calls via a Bluetooth headset when using an iPhone. Bluetooth is disabled by default because there is a risk of reduced call quality due to interference between Bluetooth and Wi-Fi. However, with a well-designed Wi-Fi network with minimal additional interference, Bluetooth headset connectivity is provided as an option for your convenience.

Note: Bluetooth headsets (hands-free profile) are currently not supported on iPod touch and iPad devices. For additional information, refer to: http://support.apple.com/kb/HT3647.

Cisco Unified Communications Manager Installation

When adding devices to Cisco Unified Communications Manager, it is sometimes necessary to add a .cop file to the Cisco Unified Communications Manager database. This step is generally required for devices that are not natively present in the Cisco Unified Communications Manager device list.

Detailed instructions are covered in the Administration Guide for Cisco Mobile 8.0/8.1 for iPhone: http://www.cisco.com/en/US/products/ps7271/prod_installation_guides_list.html.

Adding the .cop file is straightforward process; however, the following caveats should be considered:

- Check to see that your Cisco Unified Communications Manager version requires the installation of the .cop file.
- You should install the .cop file onto all servers in the Cisco Unified Communications Manager cluster.
- After installing, you should reboot the Cisco Unified Communications Manager server.
- After upgrading the version of Cisco Unified Communications Manager, you should reinstall the .cop file (unless that version of Cisco Unified Communications Manager does not require the installation of the .cop file).
- Reboot all TomCat services on all nodes in order to clear the web cache.

Below is a table outlining the Cisco Unified Communications Manager versions that require the installation of the .cop file.

Cisco Unified Communications Manager Release	Is this process required?
6.1.5	Yes (Note: 6.1.5 is not supported for deployments with Cisco Mobile 8.1)
7.1.3	Yes (Note: 7.1.3 is not supported for deployments with Cisco Mobile 8.1)
7.1.5	No
8.0.1	Yes (Note: 8.0.1 is not supported for deployments with Cisco Mobile 8.1)
8.0.2	Yes (Note: 8.0.2 is not supported for deployments with Cisco Mobile 8.1)
8.0.3	No
8.5	No

Obtaining the .cop File

To get the .cop file, go to the following location: http://tools.cisco.com/support/downloads/go/ImageList.x?relVer=8.0%281%29&mdfid=281001428&sftType=Unified+Mobile+Communicator+%28CUMC%29+System+Software&optPlat=&nodecount=13&edesignator=null&modelName=Cisco+Unified+Mobile+Communicator&treeMdfId=278875240&modifmdfid=null&imname=&treeName=Voice+and+Unified+Communications&hybrid=null&imst=null.

Download the file and copy to an SFTP location or to a CD/DVD for local installation.

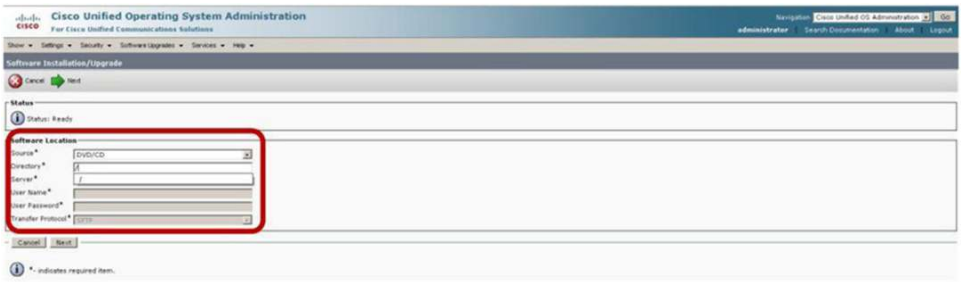
Installing the .cop File

To install the .cop file, you will need to do the following:

Step 1. Browse to the Cisco Unified OS Administration page.

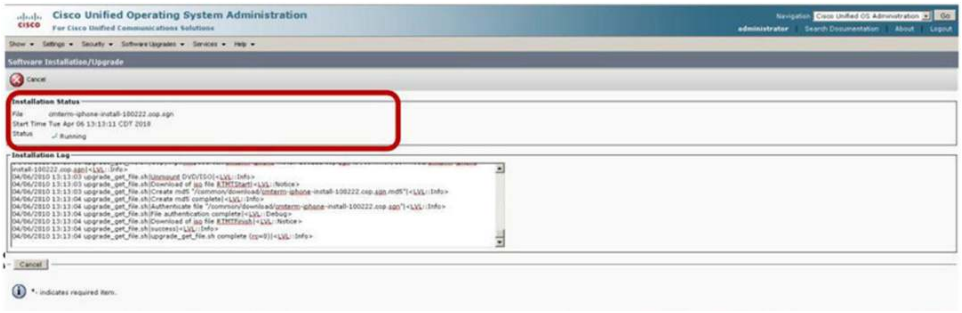
Step 2. Browse to Software Upgrades > Install / Upgrade.

Step 3. Select the location of the .cop file - in this case it is locally in the CD/DVD drive.

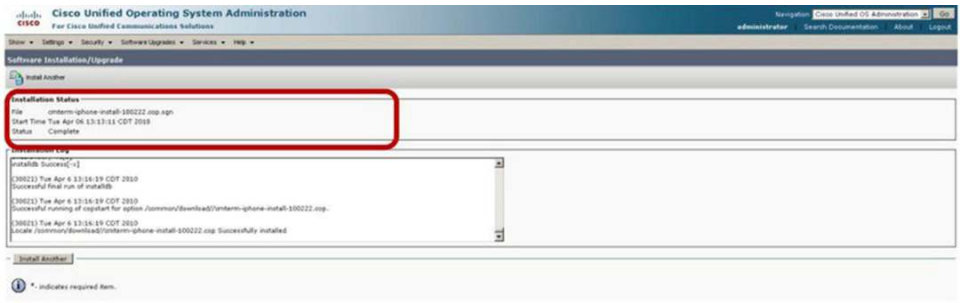


Step 4. Click “Next” and select the file to be installed. In this case make sure it is the iPhone file.

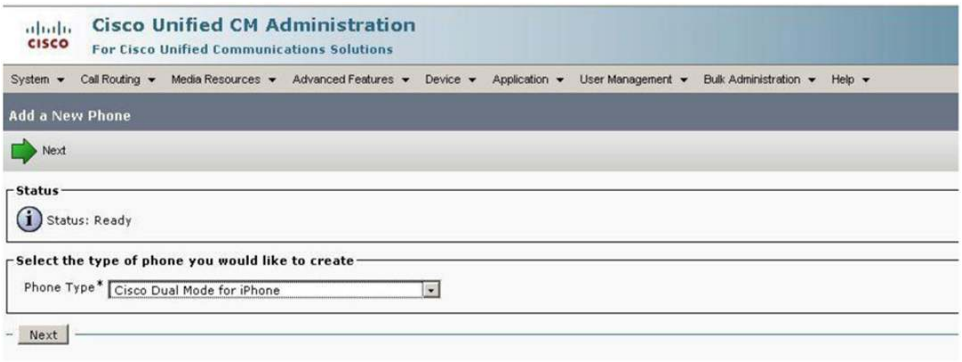
Step 5. Click “Next” and the installation begins.



Step 6. When finished the status will show “Complete”. You can now reboot the server.



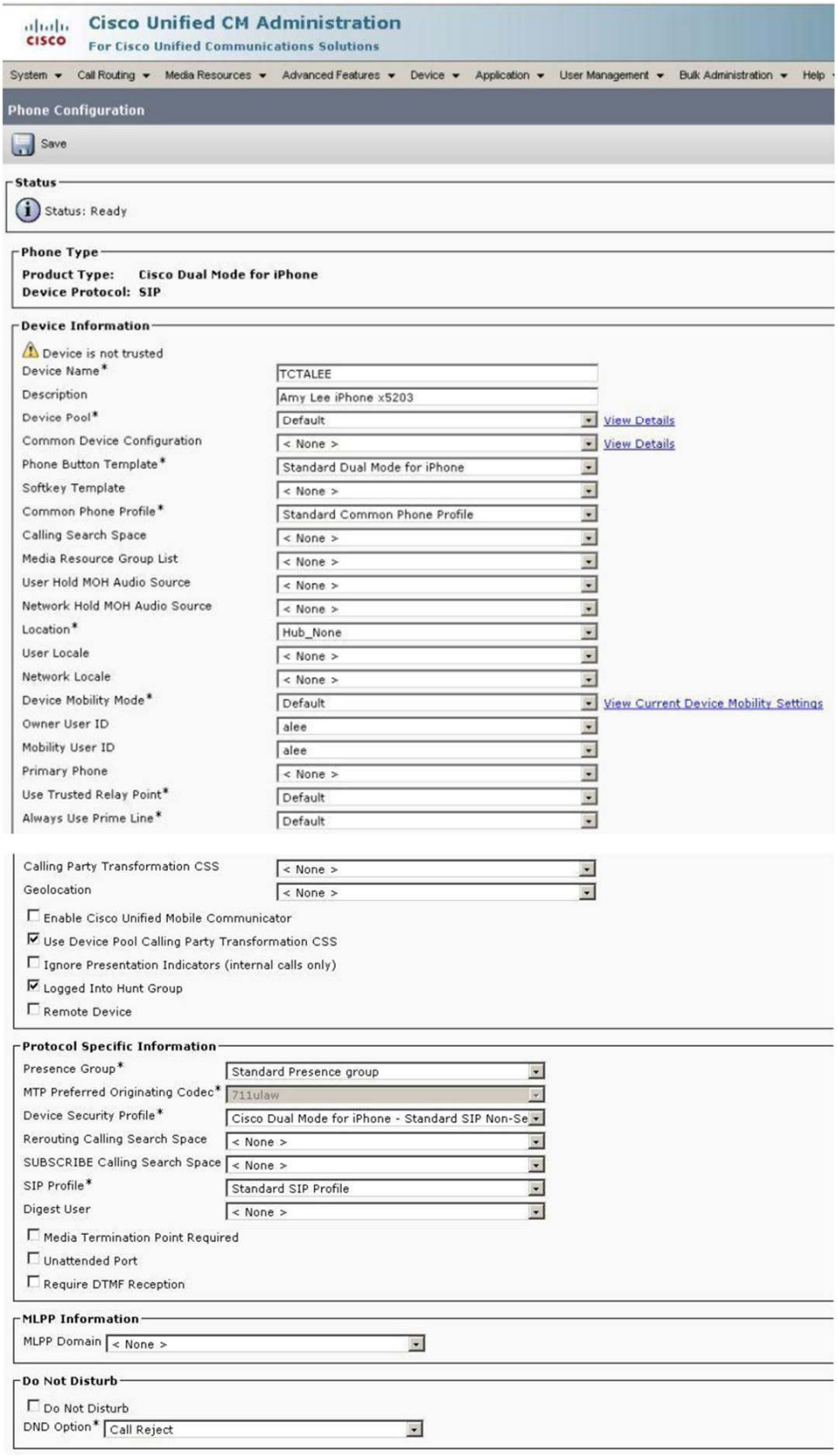
Step 7. After the server is up, you can add the new Cisco Mobile device.



Step 8. Click “Next” for the Phone Configuration page.

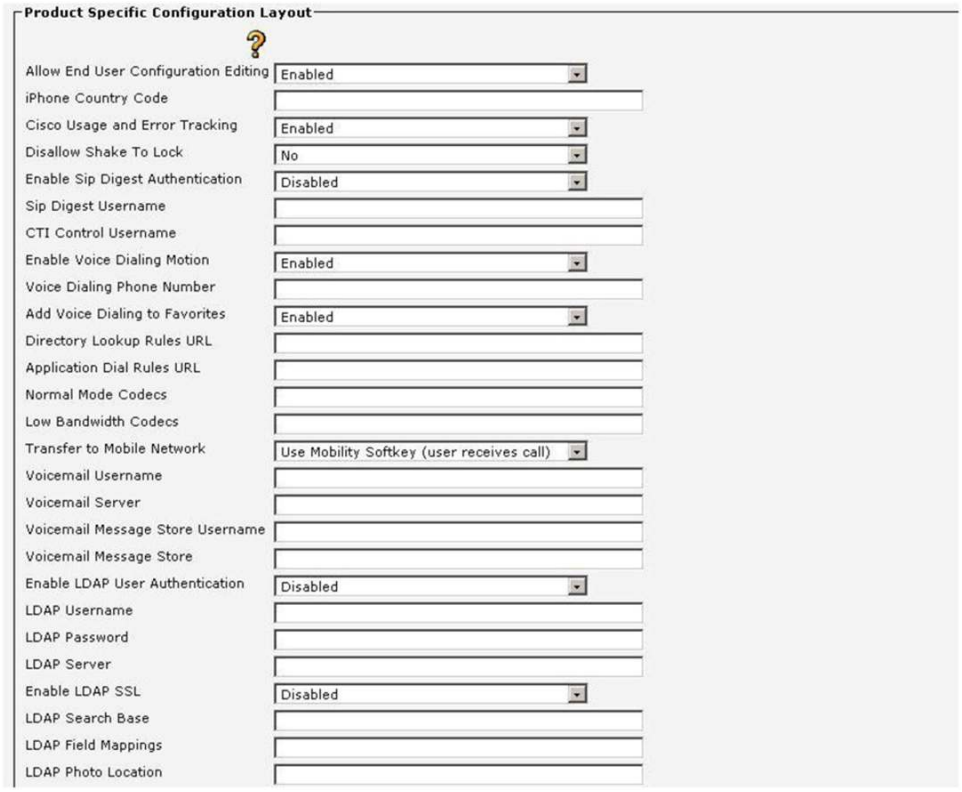
Note: You must configure the device name to begin with “TCT” and the device name must be in all uppercase letters.

Note: You need to configure the owner and mobility user ID. Users will show in the list only after you have provisioned them for mobility from the End User page.



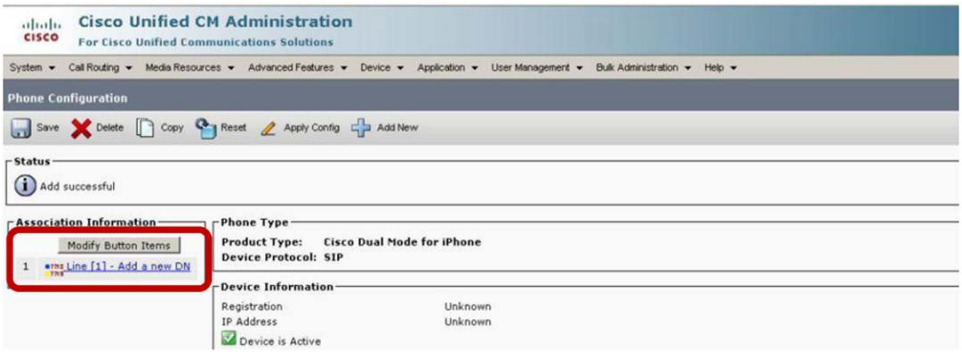
Note: Applicable to Cisco Mobile Connect if your Cisco Unified Communications Manager has custom partitions and multiple calling search spaces: Use Remote Calling Search Space to determine how calls to remote destinations/mobility identities on the PSTN are routed.

Note: If using Cisco Mobile 8.1, you must create a dedicated SIP Profile in order to set the keepalive timer to the iPhone supported value of 660. To create, select Device > Device Settings > SIP Profile. Create a new profile and set the Timer Register Expires, Timer Keep Alive Expires, and Timer Subscribe Expires to 660.

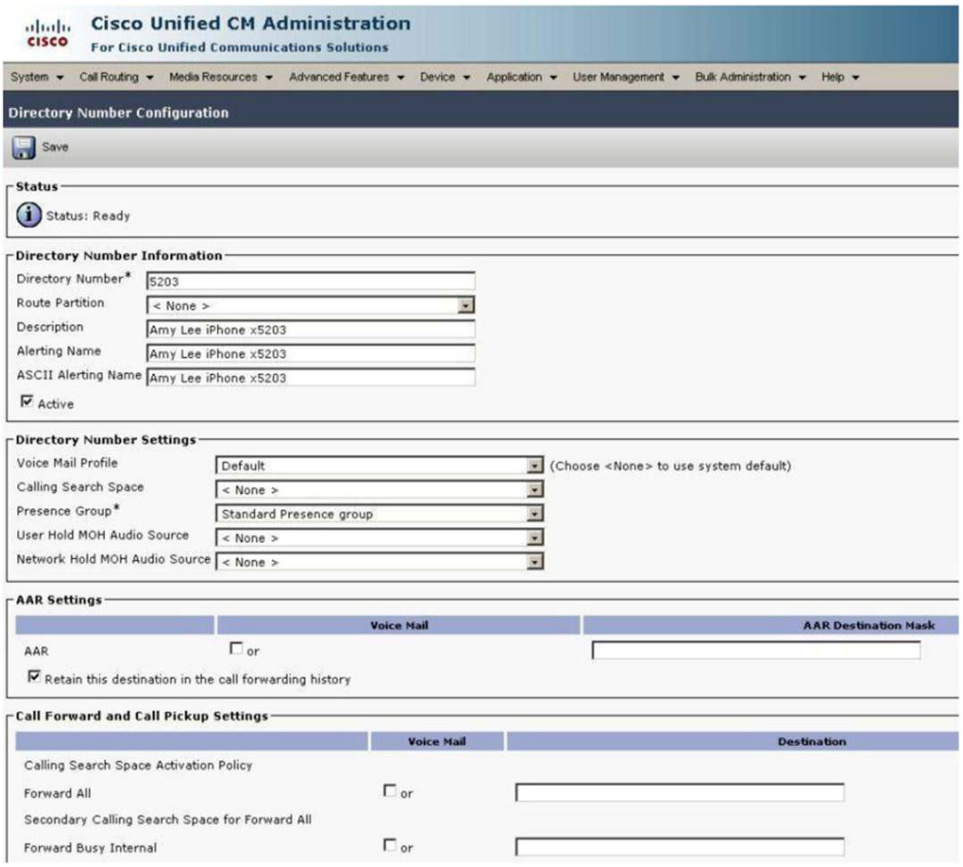


Note: Product-Specific Configuration allows device-specific configuration fields. For details on fields that are not currently used, see “Limitations and Restrictions” in Cisco Mobile 8.0 / Cisco Mobile 8.1 Release Notes: http://www.cisco.com/en/US/products/ps7271/prod_release_notes_list.html.

Step 9. Add a directory number by clicking on Line [1] Add a new DN.

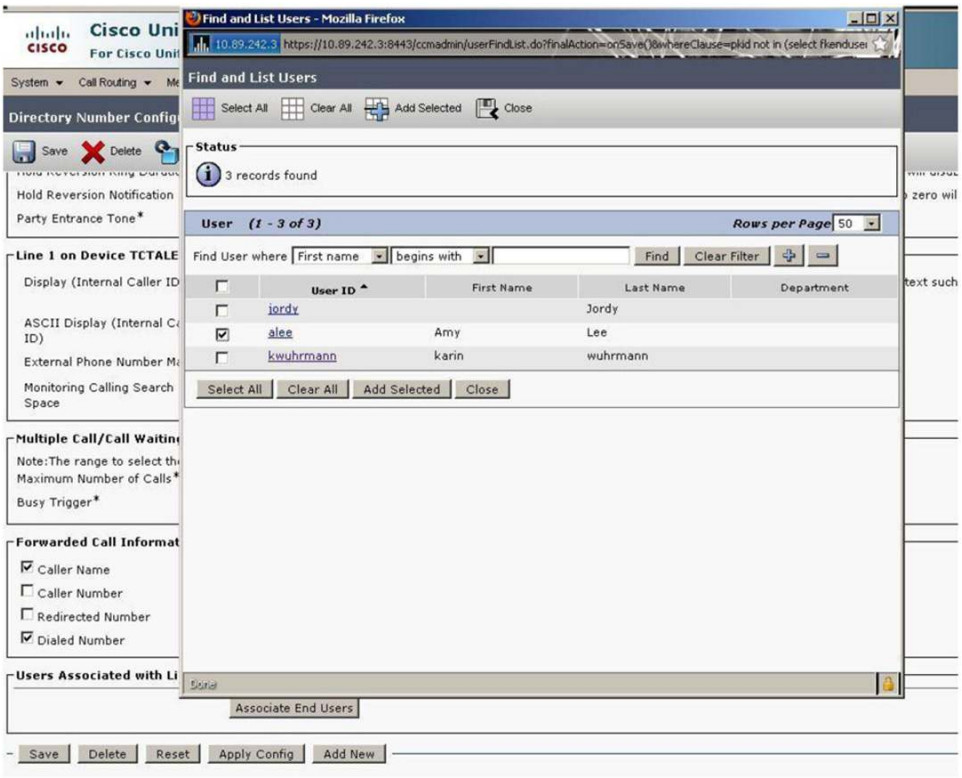


Step 10. Configure the directory number of the iPhone.



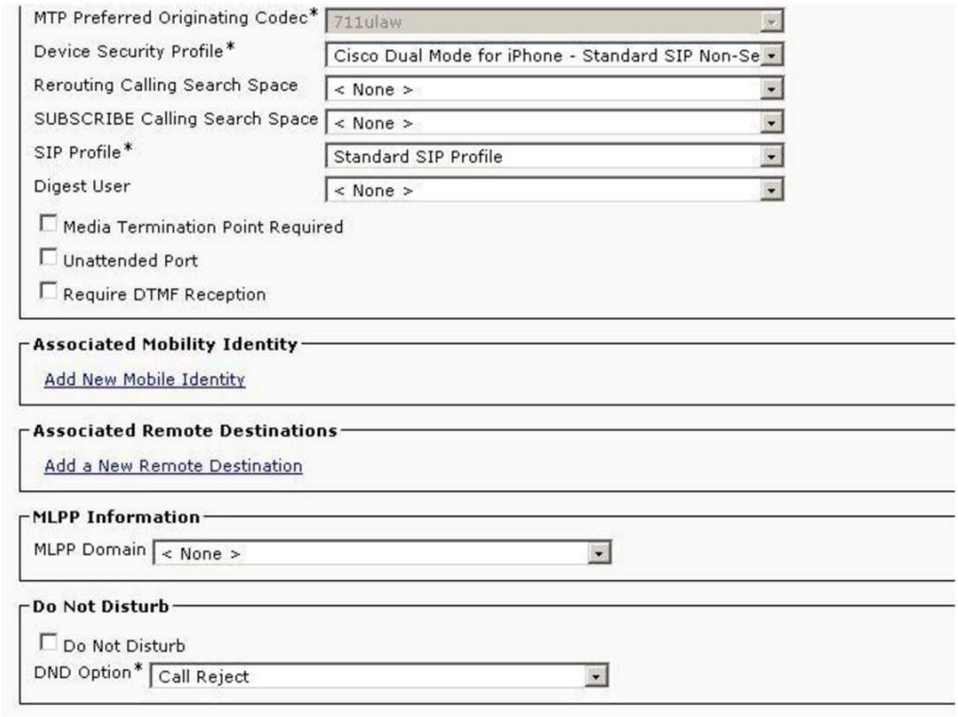
Note: The line configuration for the iPhone is the same as configuration for a Cisco desk phone.

Step 11. Associate the line to the user.



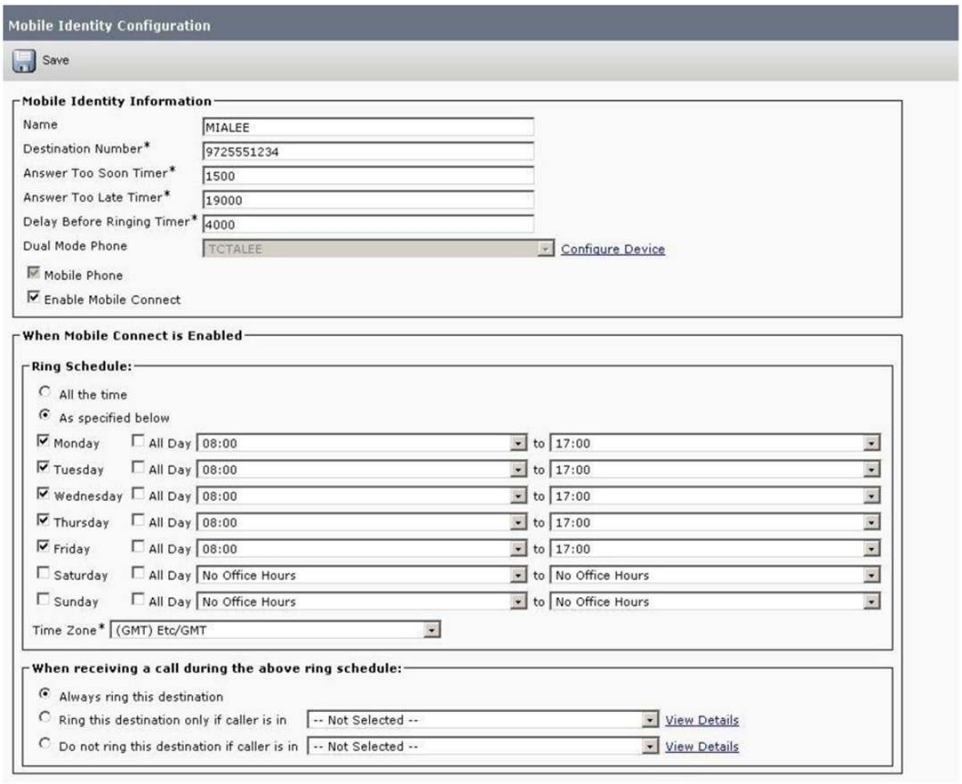
To configure the iPhone for Unified Mobility (also known as single number reach), you will want to configure the iPhone device with a Mobility Identity. Do not use the Remote Destination configuration.

Step 12. From the Phone Configuration page, scroll down to the Mobility Identity section.



Step 13. Add the iPhone mobile phone number.

Note: You can configure time-of-day settings, which control what times a call can be extended to the mobile device. If you are registered over the WLAN, calls will not be extended. Checking the “Enable Mobile Connect” field enables the single-number-reach functions.



The Bulk Administration tool offered for Cisco Unified Communications Manager can be used to set up multiple users and devices: http://www.cisco.com/en/US/products/sw/voicesw/ps556/prod_maintenance_guides_list.html.

Cisco Mobile Handoff Considerations

There are two recommended methods for handing calls from the Wi-Fi network to the mobile network (GSM), referred to as the Mobility Softkey method and the Handoff DN method. Which method you choose will depend on billing plans; you can configure it via the “Transfer to Mobile Network” setting on the Cisco Dual Mode for iPhone device configuration page.

With the Handoff DN method, the dual-mode device places a call into Cisco Unified Communications Manager. In order to properly connect the two call legs, Cisco Unified Communications Manager relies on inbound caller ID; please make sure your users have the native caller ID setting turned to ON, and configure a DID number on Cisco Unified Communications Manager. Because no additional interaction is required with the Handoff DN method, it is generally the preferred method.

The Mobility Softkey method results in a call generated from your Cisco Unified Communications Manager to your mobile phone, requiring you to pick up the call before handoff can be completed.

Install and Configure Cisco Mobile 8.0 on the iPhone

In order to install Cisco Mobile, visit the Apple iTunes App Store:

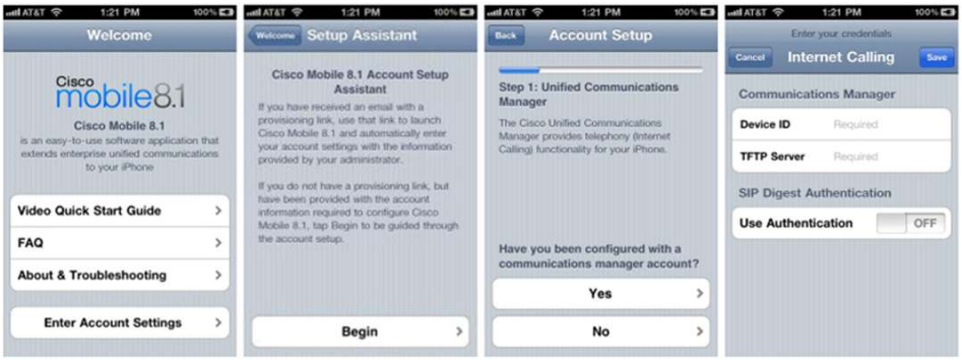
For Cisco Mobile 8.0: http://itunes.apple.com/us/app/cisco-mobile-8-0/id364383393?mt=8.

For Cisco Mobile 8.1: http://itunes.apple.com/us/app/cisco-mobile-8-1/id407180698?mt=8.

After Cisco Mobile is installed, you will be asked to provision the application. You will need the following information to provision Cisco Mobile:

- Device ID: Must start with TCT and typically includes a user ID. For instance, John Smith's username is jsmith, and his Cisco Mobile device ID would be TCTJSMITH.
- TFTP server address

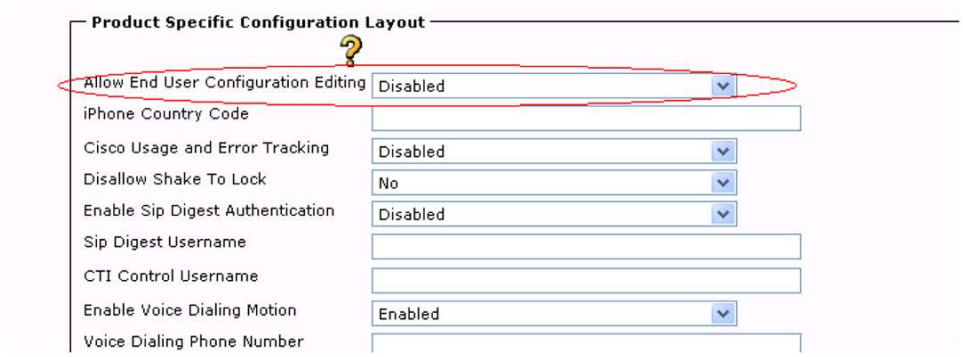
When first launching Cisco Mobile, you will be presented with the following screens:



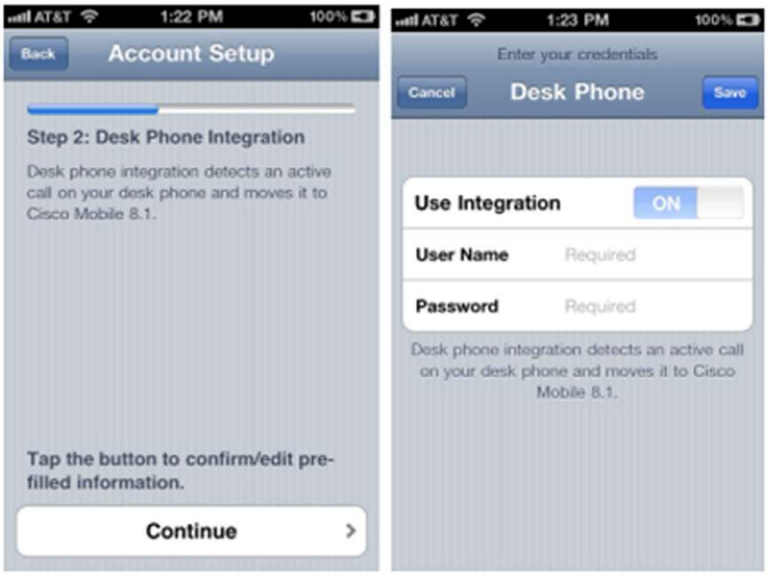
Users enter their Device ID and TFTP Server information in order to configure their connection to Cisco Unified Communications Manager.

Note: When connected to the right TFTP server, you generally do not have to enter any additional information (with the exception of username/password). The administrator has the option to disable editing of any subsequent fields. Cisco highly recommends that the admin disable end-user editing configurations except for possibly small pilot deployments.

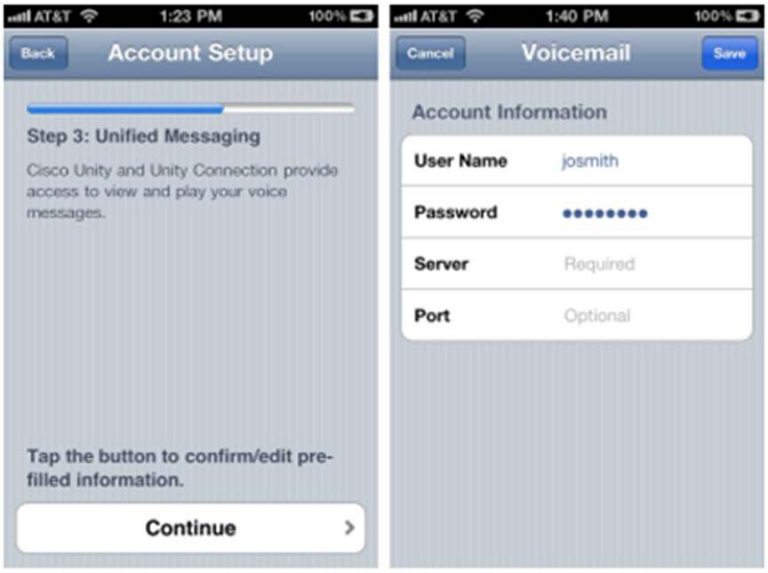
Note: If editing of end-user settings is enabled, any changes that the administrator makes to the settings will not propagate to end users.



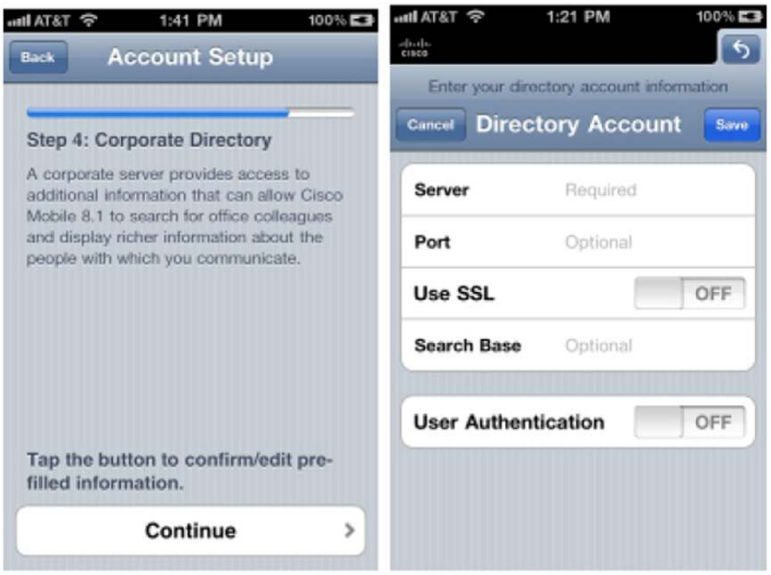
Next is desk phone integration - you can configure Cisco Mobile to be able to transfer calls to and from your Cisco Unified IP Phone. You need your Cisco Unified Communications Manager username and password (typically the same information used for Active Directory login).



Optionally, you can also configure visual voicemail (Cisco Unity® Connection). You will be promoted for your username and password (most likely the same as what you used for desk phone integration). The server information should automatically populate when you connect to the TFTP server:



Finally, configure Cisco Mobile for Directory Access. The fields for Directory Access should be prepopulated by accessing the user account on the TFTP server, they are presented only for verification.



Email Provisioning Tool for Cisco Mobile

The Email Provisioning Tool allows administrators to send a provisioning email to users, facilitating installation and configuration of Cisco Mobile. Users download Cisco Mobile from the app store, open the email created by this tool, and click a link contained in the email; users do not have to enter any settings other than possibly their password.

The Email Provisioning Tool is an open source tool, and it must be customized for use in each installation. The tool and detailed instructions are available at: https://www.myciscocommunity.com/docs/DOC-19884.

Battery Life Impact of Running Cisco Mobile for iPhone

The following testing was completed with an iPhone 4 running iOS 4.2:

Condition	Battery Reading
Cisco Mobile 8 .0 **Connected via Wi-Fi (no VPN)** **1-hr WebEx® call**	92%
Cisco Mobile 8 .1 **Connected via Wi-Fi (no VPN)** **1-hr WebEx call**	92%
No Cisco Mobile (call placed over 3G) **1-hr call**	82%
Cisco Mobile 8.1 **Connected via Wi-Fi (no VPN), no calls placed (application running in background)** **100% to battery drain**	5 days

Understanding Key Differences Between Cisco Mobile for iPhone, Nokia Call Connect, and Cisco Wireless IP Phones

Cisco Wireless IP Phones, the Nokia Call Connect client, and the iPhone Cisco Mobile client have many similarities, but several key differences must also be considered:

Feature	Cisco Mobile for iPhone	Nokia Call Connect	Cisco Wireless IP Phones
Signaling Protocol Support	SIP	SCCP	SCCP
QoS	Not Supported	WMM	WMM
WLAN Call Admission Control	Not Supported	Not Supported	TSPEC, QBSS
802.11b/g	Supported	Supported	Supported

Feature	Cisco Mobile for iPhone	Nokia Call Connect	Cisco Wireless IP Phones
802.11a	Not Supported	Not Supported	Supported
Roaming	Signal strength	Signal strength and packet loss	Signal strength, packet loss, and QoS
TFTP configuration	Supported	Supported	Supported
Handoff to GSM	Manual	Manual and Automatic	N/A (Cisco Wireless IP Phones are "single-mode" devices and don't support cellular services)

Understanding Differences Between Cisco Mobile and Cisco Unified Mobile Communicator 7.1

Cisco Mobile is a dual-mode client and is primarily focused on employees who have access to WLAN infrastructure, either at work or at various remote sites. You will need VPN on the iPhone to connect to the office when using Wi-Fi from a remote location, such as a public hotspot or home. Cisco Unified Mobile Communicator 7.1 provides VPN-less remote access to Cisco Unified Communications, and therefore is best for workers who spend most of their time away from the office and other reliable data networks.

	Cisco Unified Mobile Communicator 7.1	Cisco Mobile (Dual-Mode client)
Architecture	Requires Cisco Unified Mobility Advantage and Cisco ASA	Direct connection to unified communications services; VPN required when off premises
Inbound GSM Calls (using Cisco Mobile Connect)	Yes	Yes (when Cisco Mobile is not connected to Cisco Unified Communications Manager)
Inbound Voice over WLAN calls	No	Yes (Cisco Mobile is connected to Cisco Unified Communications Manager)
Outbound Calls	Dial via Office (GSM call)	Voice over WLAN / VPN
Midcall (conference, transfer, hold, park)	Yes if call is anchored on Cisco Unified Communications Manager (DTMF invoked only)	Yes (Voice over WLAN only)
Cisco Mobile Connect on/off setting	Yes	No
Move calls to/from desk phone (differences in implementation apply)	Yes	Yes
Voice Dialing	No	Yes
Visual Voicemail	Yes	Yes
Directory Search	Yes	Yes
Cisco Unified MeetingPlace® Support	Yes	No
Remote Access / Firewall Traversal	ASA Mobility Proxy	VPN

Important Note: Installation of Cisco Mobile and Cisco Unified Mobile Communicator on the same iPhone is generally not recommended because of overlapping functions. However, some customers wish to enable the Dial via Office feature and Dual Mode on the same iPhone. If that is the case, the deployment must be based on Cisco Unified Communications Manager 7.1(5). If your deployment consists of another version of Cisco Unified Communications Manager, you must disable Dial via Office (either on Cisco Unified Mobility Advantage for all users or on Cisco Unified Communications Manager for specific users) before enabling users for dual-mode functions.

Other Cisco iPhone Applications

The following Cisco iPhone applications may also be of interest:

- Cisco: Interact with Cisco.
- Cisco AnyConnect: Cisco AnyConnect provides reliable and easy-to-deploy encrypted network connectivity from any Apple iOS 4 device by delivering persistent corporate access for mobile employees.
- Cisco Mobile Supervisor: An extension to the Cisco Supervisor Desktop, Cisco Mobile Supervisor enables supervisors to receive real-time performance metrics on their iPhone and iPod Touch devices.
- Cisco Pulse® Mobile: Find experts in your organization from the iPhone.

- Cisco WebEx™ Meeting Center: Attend WebEx Meetings on the iPhone (full meeting experience with native 3G or Wi-Fi support). You can attend, schedule, start, and cancel WebEx meetings.

For More Information

Cisco Mobile Documentation:

Admin Guide: http://www.cisco.com/en/US/products/ps7271/prod_installation_guides_list.html

Release Notes: http://www.cisco.com/en/US/products/ps7271/prod_release_notes_list.html

End-User Documentation:
http://www.cisco.com/en/US/docs/voice_ip_comm/cumc/cisco_mobile/iPhone/8_1/Cisco_Mobile_8_1_chapter1.html

iPhone OS Enterprise Deployment Guide: http://support.apple.com/manuals/#iphone

iPhone in Business website: http://www.apple.com/iphone/business/

Enterprise Mobility Design Guide:
http://www.cisco.com/application/pdf/en/us/guest/netsol/ns279/c649/ccmigration_09186a00808d9330.pdf

Capacity Coverage and Deployment Considerations:
http://www.cisco.com/en/US/products/hw/wireless/ps4570/products_white_paper09186a00801d61a3.shtml

Cisco Unified Wireless IP Phone 7925G Deployment Guide:
http://www.cisco.com/en/US/docs/voice_ip_comm/cuipph/7925g/7_0/english/deployment/guide/7925dply.pdf

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