

Microsoft Office Communications Server 2007 R2 Enterprise Edition to Cisco Unified Presence 7.0(3) and Cisco Unified Communications Manager 7.0(2) / Remote Call Control

Table of Contents

Introduction	1
Network Topology	2
Limitations	
System Components	∠
Hardware Requirements	
Software Requirements.	
Features	
Features Supported	∠
Features Not Supported	
Configuration	4
Configuration Sequence and Tasks	4
Configuring Microsoft OCS 2007 R2 Enterprise Edition	
Configuring Cisco Unified Communications Manager	38
Configuring Cisco Unified Presence server.	74
Acronyms	88

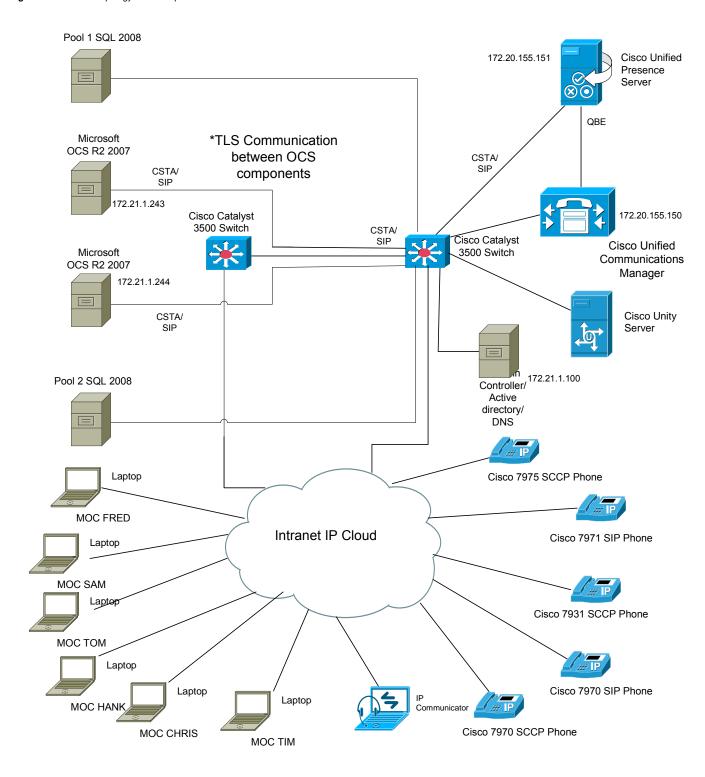
Introduction

- This document describes feature interoperability and documents the steps and configurations necessary for Cisco Unified Communications Manager (Cisco UCM) 7.0(2) and Cisco Unified Presence (CUP) 7.0(3) to interoperate with Microsoft Office Communications Server (OCS) 2007 R2 Enterprise Edition. These features include Microsoft Office Communicator (OC) features, Desktop (DTP) or IP Phone features, Cisco UCM administration, configuration and provisioning and CUP device identification. It aims to provide a good understanding of what works and what does not work in terms of the feature interaction between various components of the Cisco UCM, CUP and OCS. It also provides guidance to deployment participants of the limitations, expected behaviors as well as known issues. Please note that this document does not address performance and scalability, which are part of broader criteria for a deployment-ready solution (for more details refer to 7.0 SRND:
 - http://www.cisco.com/en/US/docs/voice ip comm/cucm/srnd/7x/uc7 0.html or http://www.cisco.com/en/US/docs/voice ip comm/cucm/srnd/7x/presence.html#wp1085051).
- As of the release of this document, CUP 7.0(3) does not guarantee full support of OCS 2007 R2 as this document does not address the broader support required for multi-cluster and full redundancy deployments. Full support is planned for CUP in the 2nd half of 2009.
- As shown in the Network Topology diagram, interoperability testing was performed between the CUP and the OCS 2007 R2 using
 multiple OCS 2007 R2 pools. Please note the absence of a CSS11501 Load Balancer. This hardware component is not required for OCS
 2007 R2 Enterprise Edition deployments with only one Front End Server per pool. Multiple Front End Servers installed for performance
 or redundancy, per pool, will still require a load balancer.
- This document represents the first testing performed with Microsoft OCS 2007 R2 utilizing E.164 numbering throughout. This matches the Microsoft numbering philosophy for the OCS 2007 R2 environment.



Network Topology

Figure 1. Network Topology/Test Setup





Limitations

- Conferencing: OCS 2007 R2 does not support call conferencing through remote call control. Conferencing is available in IP Phone
 only or OC only call scenarios.
- Call forward setting on IP phone: Call forward setting made on the Cisco IP phone (desktop), using its soft key button or the Cisco UCM phone configuration page, is not reflected by the Microsoft OC GUI. As of Microsoft OCS 2007 release, this feature is not supported. The Microsoft OC can override any call forward setting manually configured on the IP Phone and vice versa.
- Call Forward Setting from OC: Call forward setting from the OC through remote call control (RCC) fails on the IP Phone when the IP Phone is initially configured with an E.164 DN. If the IP Phone is reconfigured to a non-E.164 DN then back to the E.164 DN, the call forward setting from OC through RCC will work. This is a known issue on Cisco UCM 7.0(2) and has been documented in CDETS CSCsy62620 to be fixed in a future release.
- Do Not Disturb (DND): DND is an unsupported feature with respect to CUP integration. Thus, any OC client with DND feature enabled, will still have any received calls routed to its controlled IP Phone.
- Multiple Point of Presence (MPOP): As of the CUP release 6.0(1), the MPOP feature where a Microsoft OC user is logged in from
 more than one location is not supported by CUP. Support for this feature affects other interoperability features between the Cisco
 CUP and the Microsoft OCS. The affected features include basic placement and teardown of calls and locations-based call forwarding.
 These features are inherent to MPOP and without support for this feature, the user experiences loss of device and call control when
 logged in multiple locations.
- Transport Layer Security (TLS) connection between CUP and OCS: this feature was not tested in this release.



System Components

Hardware Requirements

- Cisco MCS 7825H servers
- Cisco Catalyst 3560
- 1 Cisco 7975 IP Phone (SCCP)
- 1 Cisco 7971 IP Phone (SIP)
- 1 Cisco 7931 IP Phone (SCCP)
- 1 Cisco 7970 IP Phone (SCCP)
- 1 Cisco 7970 IP Phone (SIP)
- DELL notebook computers running Windows XP Professional version 2002 with SP2 (for OC)

Software Requirements

- Cisco Unified Communications Manager Release 7.0(2)
- Cisco Unified Presence Release 7.0(3) with E.164 patch for RCC
- Microsoft Office Communications Server 2007 R2 Enterprise Edition, Windows Server 2008 x64 Enterprise Edition OS
- Windows Active Directory/DNS/Cert Server Enterprise Edition for OCS 2007 R2, Windows Server 2008 x64 Enterprise Edition OS
- Windows SQL Server 2008 Enterprise Edition, Windows Server 2008 x64 Enterprise Edition OS
- Microsoft Office Communicator 2007 R2 version

Features

Features Supported

- Basic Call Placement/Clearing
- · Basic Call Forwarding
- Call Hold/Retrieval
- Call Transfer (Unannounced or Blind, Announced or Consultation)
- Meet-Me
- DTMF
- Call Alternate
- Call Deflect
- Do Not Disturb
- Call per line limit
- Reverse Number Lookup
- Dial Rule Configuration
- Shared Line
- Extension Mobility



Features Not Supported

- Microsoft OC logon from two locations
- · Call Forwarding
 - Location Based
 - Phone Settings
- Conferencing through remote call control

Configuration

Configuration Sequence and Tasks

The integration of Cisco UCM and CUP to Microsoft OCS 2007 R2 is very similar to that of Microsoft OCS 2007. The differences, if any, might involve the look and feel of some of the configuration windows (refer to the captured screenshots), however the information entered is still the same. The main differences were seen during the deployment of the OCS 2007 R2 environment itself and how its own components connected to each other. Those differences include, the use of 64-bit servers for each component (refer to Software Requirements section), the need for an interface module (automatically downloaded during installation) on the Front End Servers to enable communication with SQL 2008 (refer to the Microsoft deployment and installation guides for more information, links included below), and finally the configuration of the certificate authority server (refer to the Microsoft deployment and installation guides for more information, links included below).

Additionally, the CUP has a new feature that allows Mutli-Device Remote Call Control. It requires the installation of a Phone Selection plug-in on OC clients. The plug-in appears within the OC and allows the user to choose which device they want to control via RCC. Please refer to the CUP release notes for more information (see links below).

A. OCS Enterprise Edition Configuration

- 1. Domain Name Server Configuration
- 2. Front End Server Configuration
- 3. Active Directory User Configuration
- 4. Office Communicator Configuration

B. Cisco Unified Communications Manager Configuration

- 1. Cisco Unified Communications Manager Version
- 2. SIP Trunk Configuration
- 3. CTI Application User Configuration
- 4. Cisco IP Phone Configuration
- 5. End User Configuration
- 6. License Capabilities Assignment
- 7. Meet-Me Number Configuration
- 8. Call per line limit Configuration
- 9. Application Dial Rules Configuration
- 10. Phone selection plug-in
- 11. Extension Mobility Configuration

C. Cisco Unified Presence Configuration

- 1. Cisco Unified Presence Version
- 2. Cisco Unified Communications Manager Publisher Information
- 3. Incoming and Destination ACL Entries
- 4. Deskphone Control Settings Configuration



- 5. End user Information
- 6. Deskphone Control User Assignment
- 7. Presence Settings Configuration

For more Cisco deployment and installation guides, go to:

http://www.cisco.com/en/US/docs/voice_ip_comm/cucm/srnd/7x/uc7_0.html

http://www.cisco.com/en/US/docs/voice ip comm/cups/7 0 3/rel notes/cup7xrn.html

http://www.cisco.com/en/US/docs/voice_ip_comm/cups/7_0/english/doc_guide/documentation/guide/dgcup.html

http://www.cisco.com/en/US/partner/products/ps6837/

For more Microsoft deployment and installation guides, go to:

http://social.technet.microsoft.com/Search/en-US/?query=office%20communications%202007%20r2%20server&ac=8

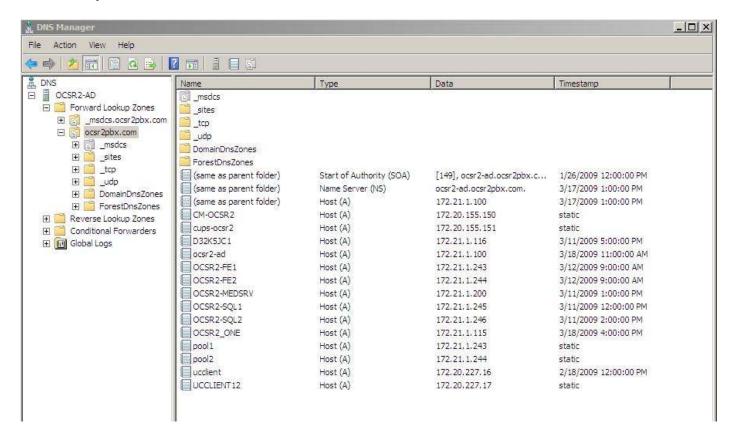
http://www.microsoft.com/downloads/details.aspx?familyid=F19AE8E0-311C-4CE1-BBA2-5702F32F5409&displaylang=en



Configuring Microsoft OCS 2007 R2 Enterprise Edition

Domain Name Server Configuration

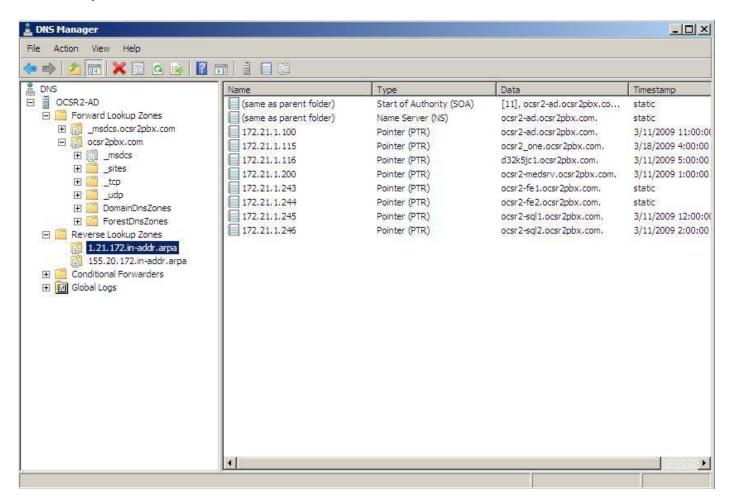
Forward Lookup Zone



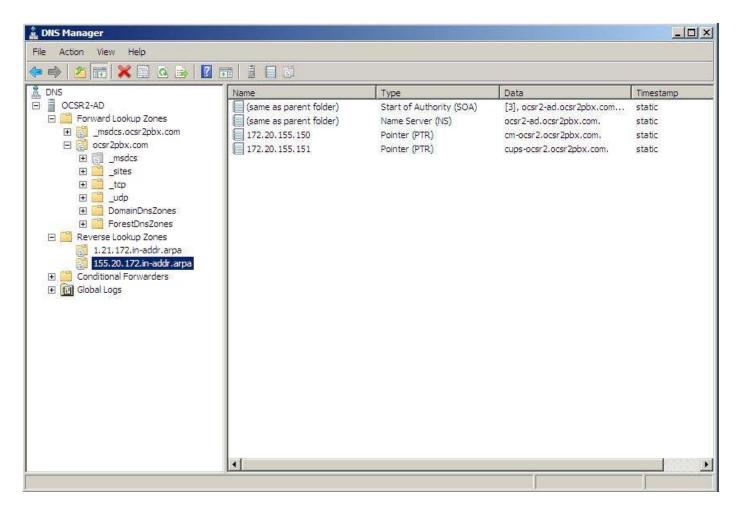
Host Records added for CUP, CUCM, OCS Pools



Reverse Lookup Zone



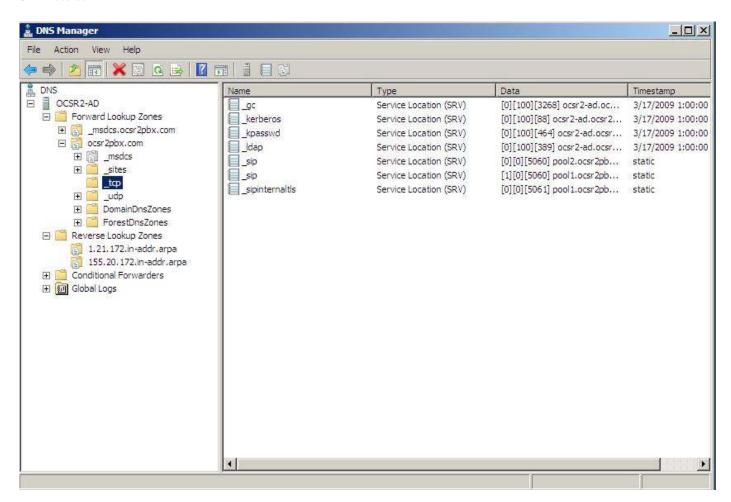




PTR Records were added for CUP, CUCM and OCS Pools.



SRV Records

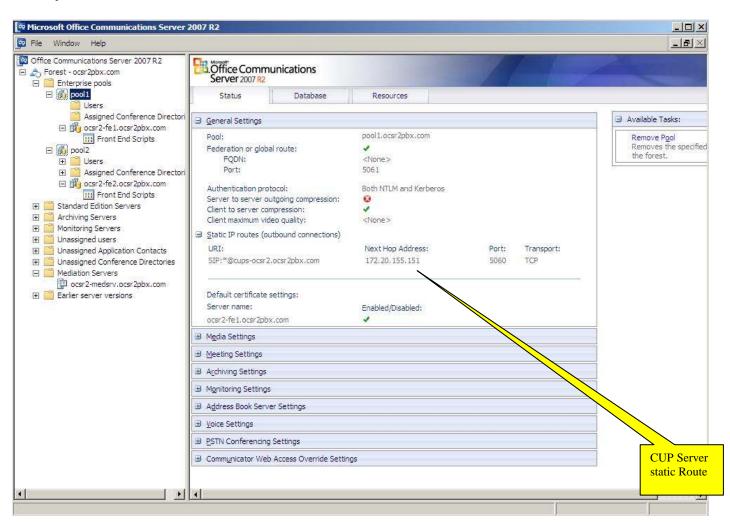


SRV Records added for the OCS Front End Pools

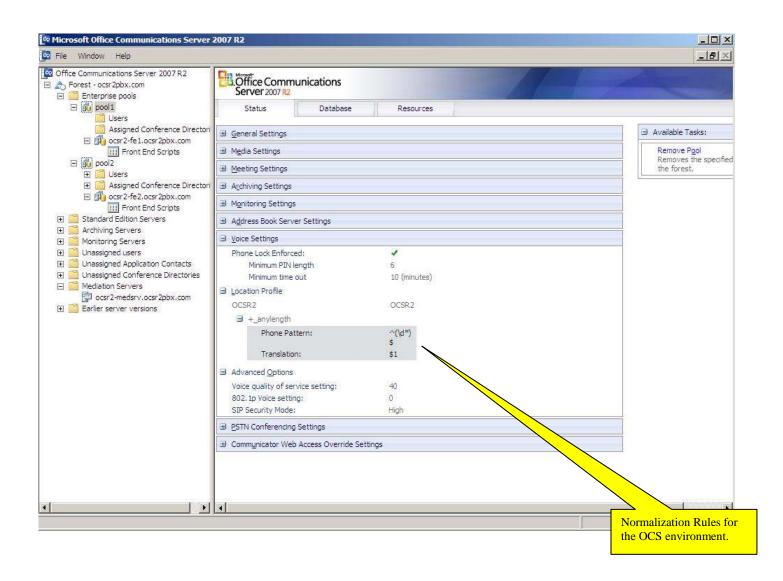


Front End Server Configuration

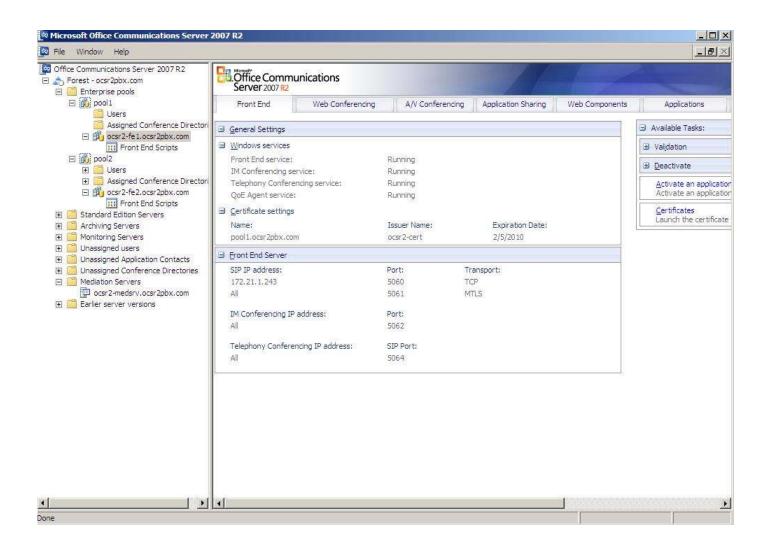
Pool Properties



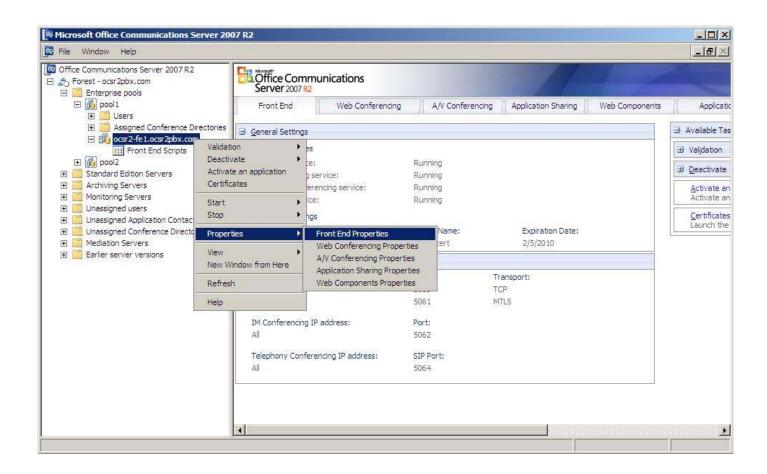




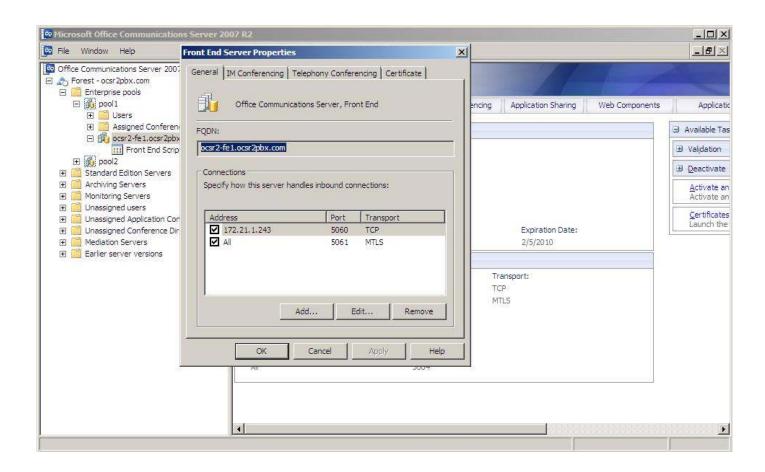




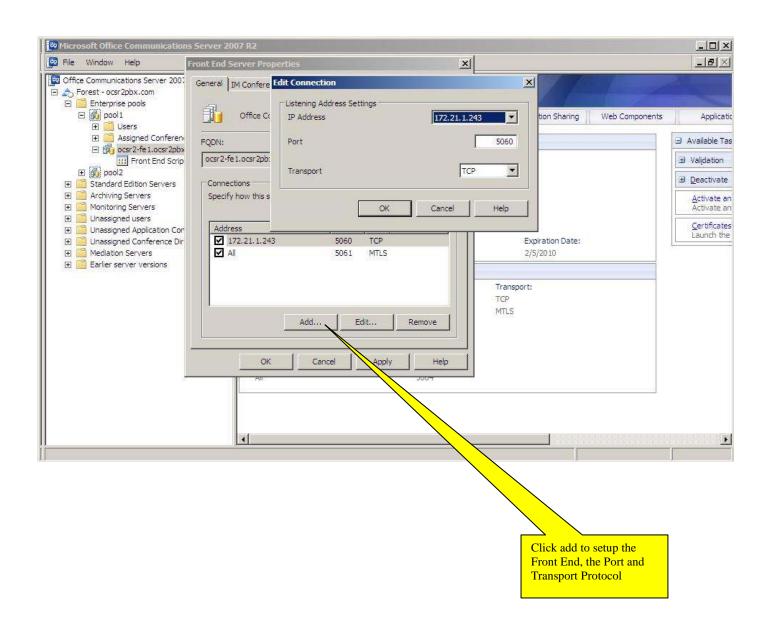




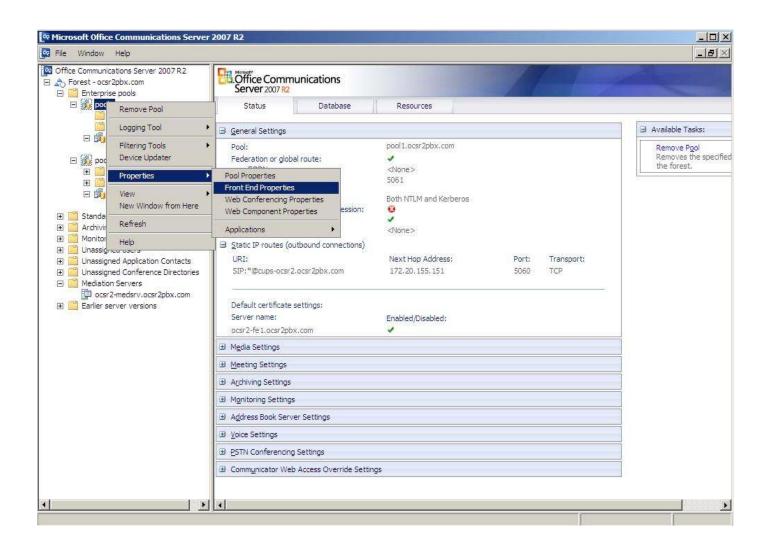




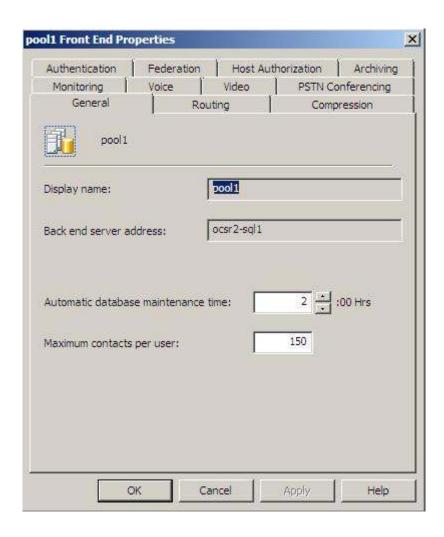




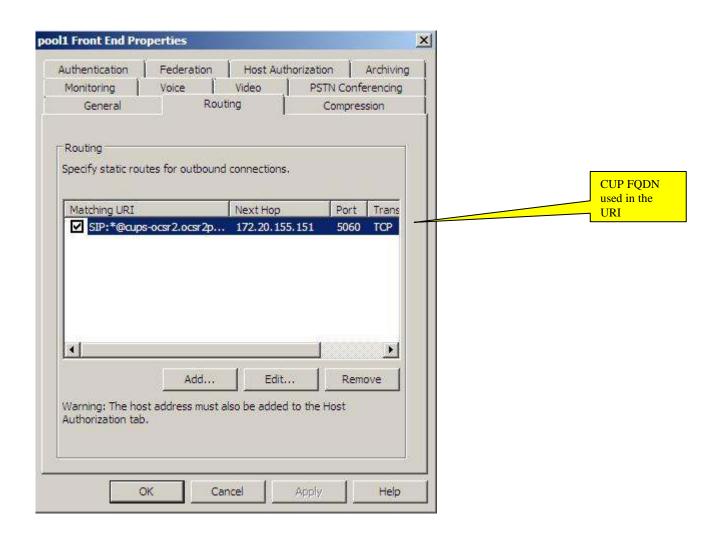




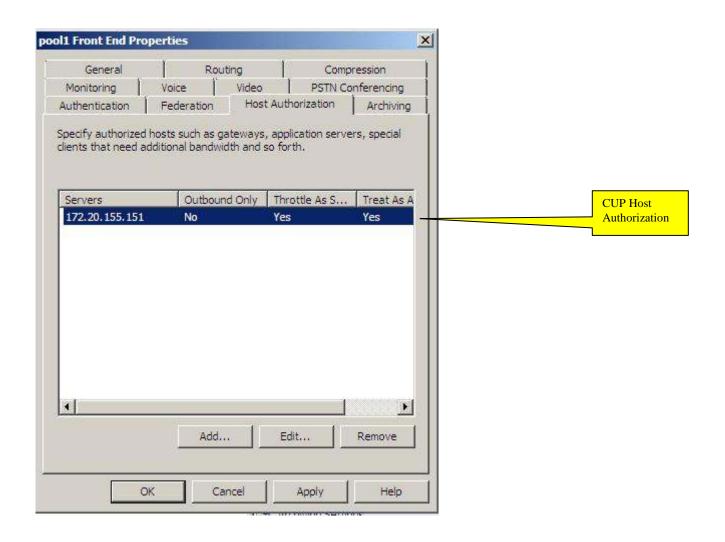




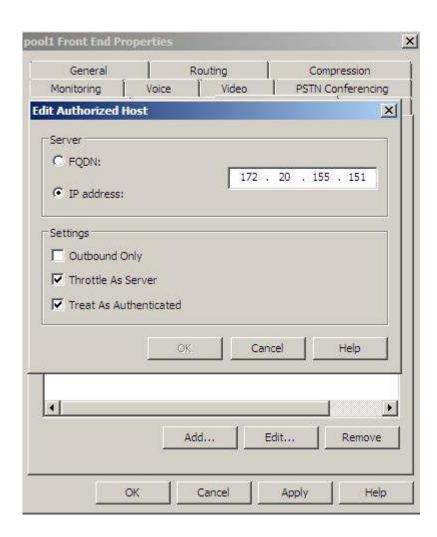






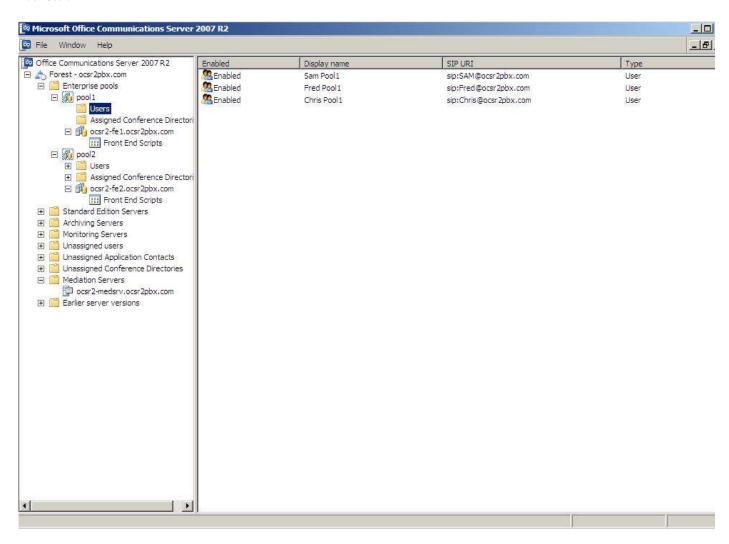




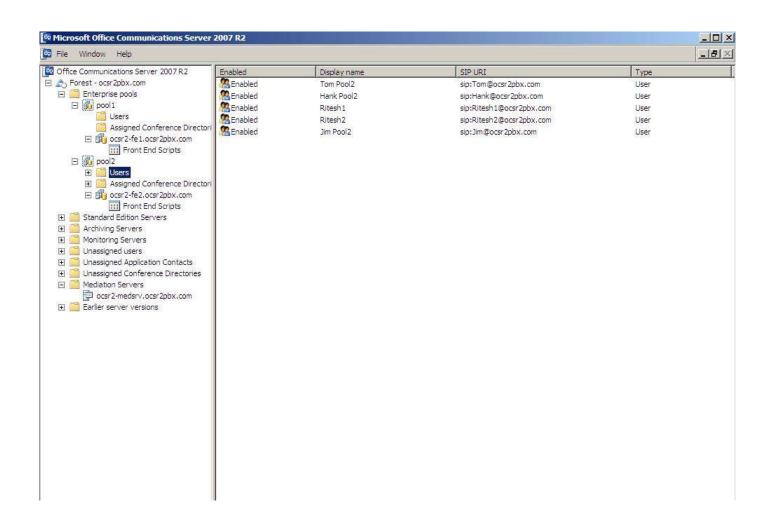




Pool Users

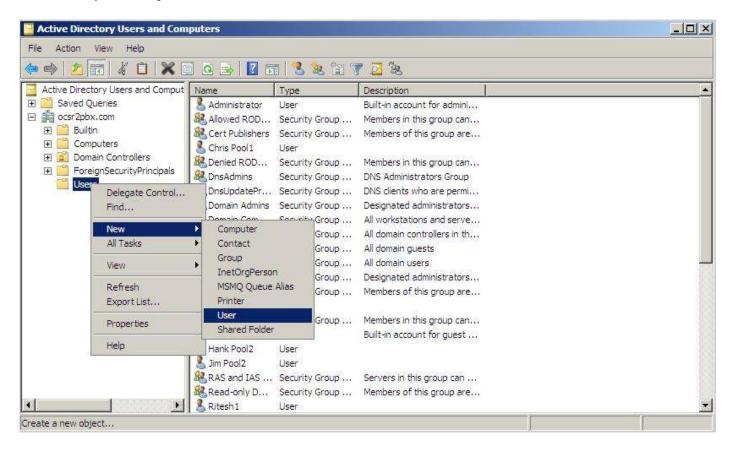




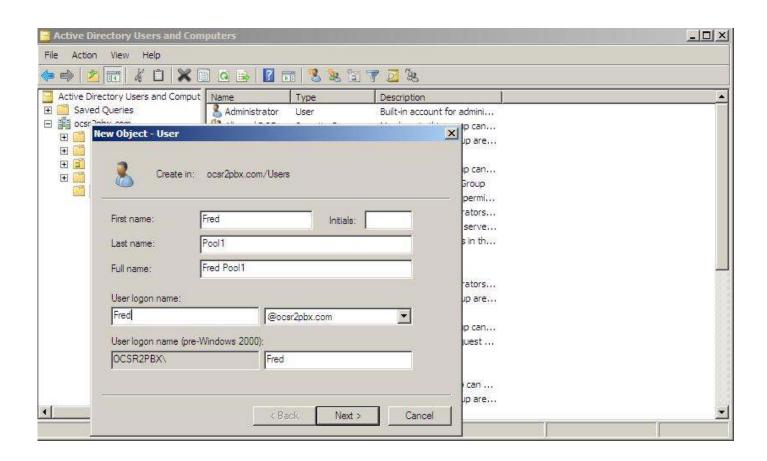




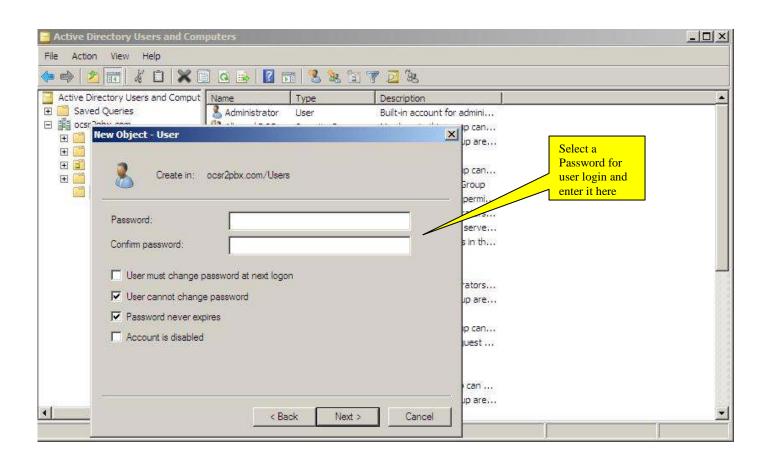
Active Directory User Configuration



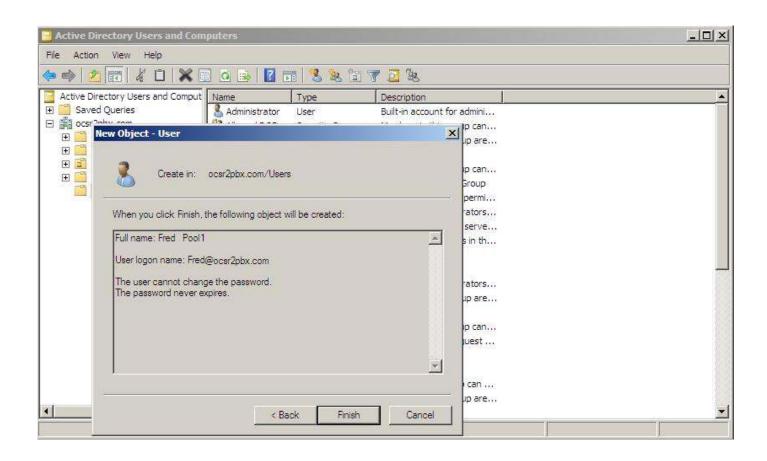




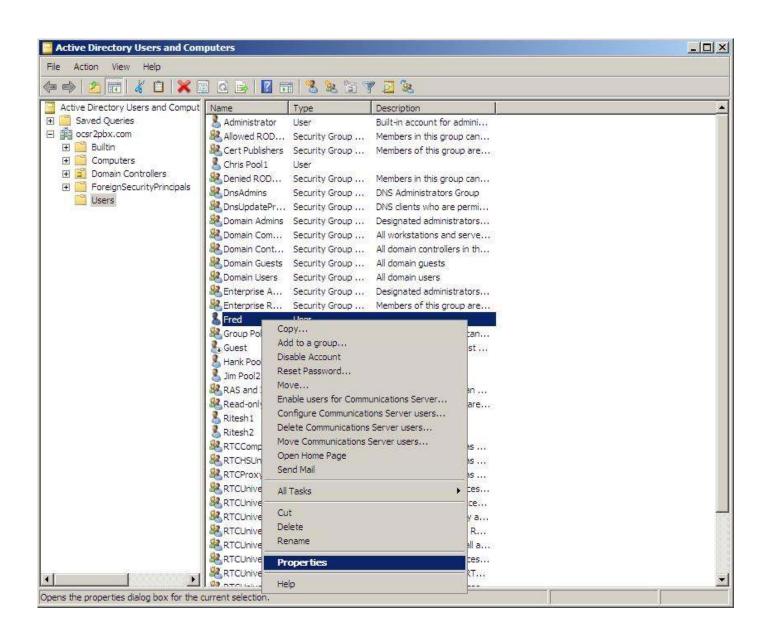




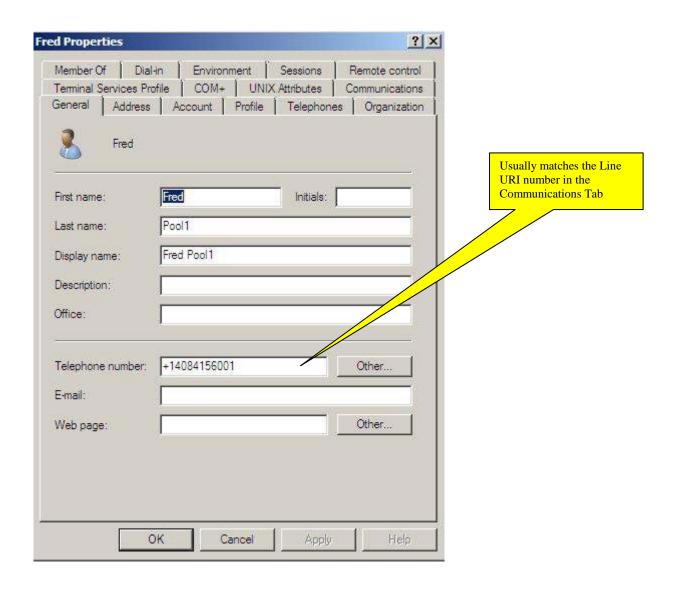




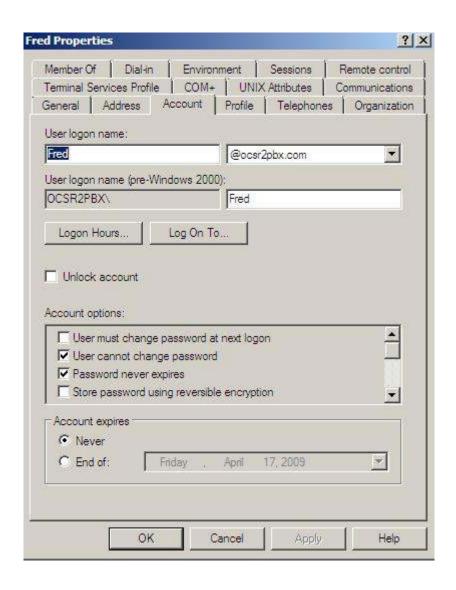




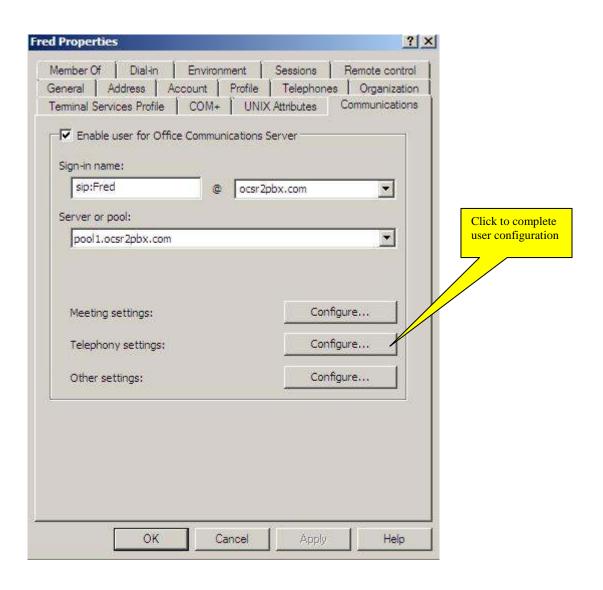




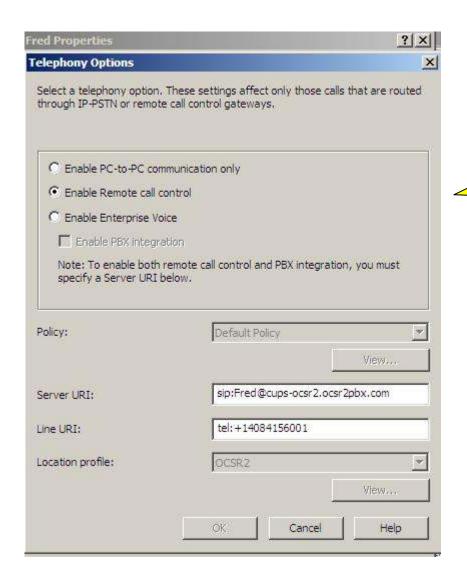








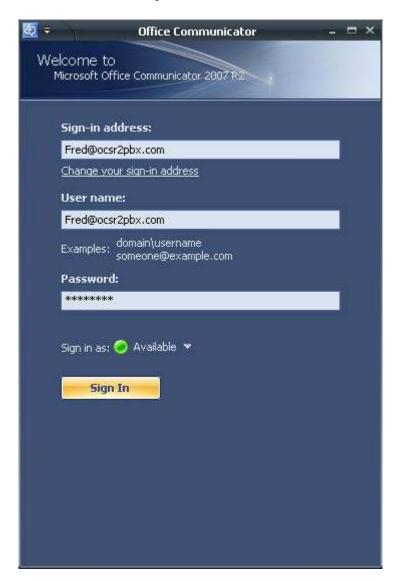




Enable Remote call control. Enter the FQDN of the CUP in the Server URI section. All RCC clients MUST have the same configuration for the Domain name. Obviously, different users ID's.



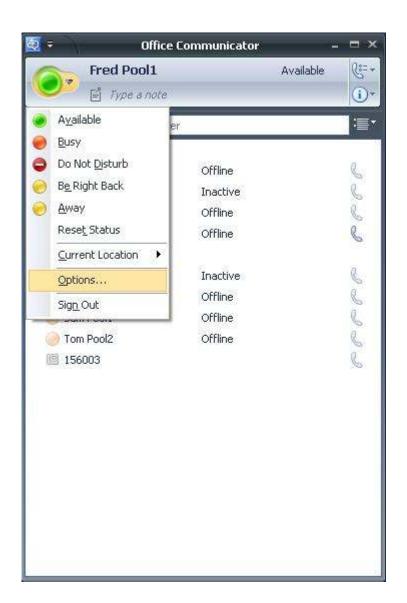
Office Communicator Configuration



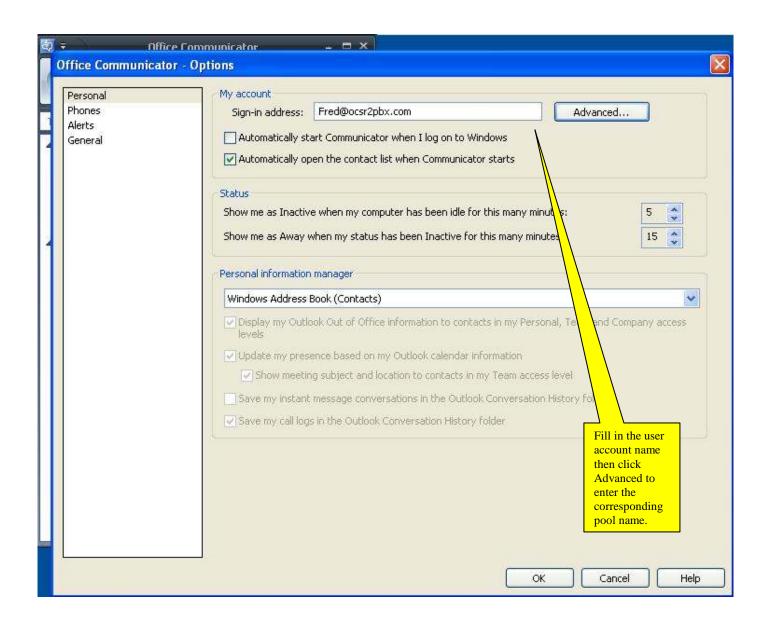




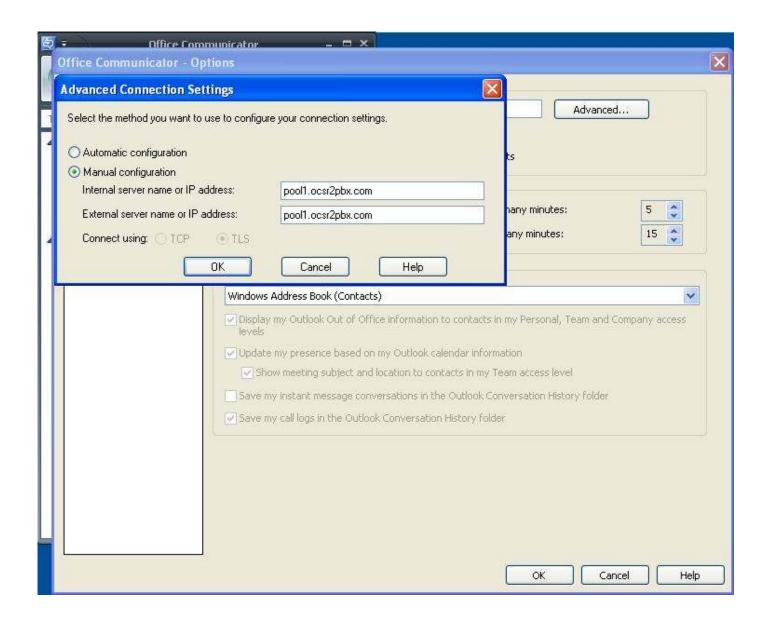














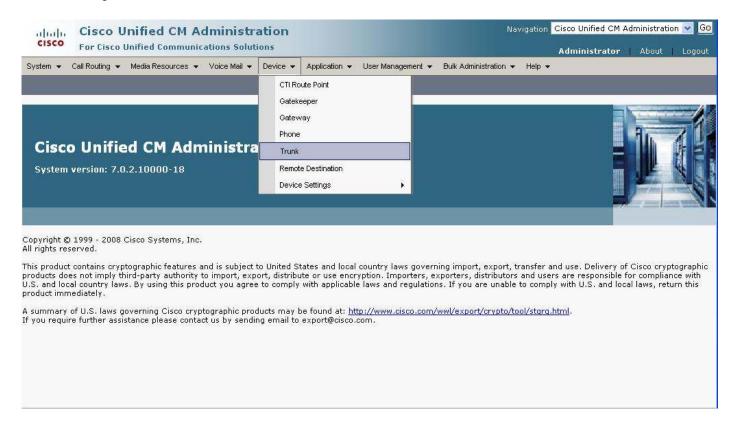
Configuring Cisco Unified Communications Manager

Cisco Unified Communications Manager Version

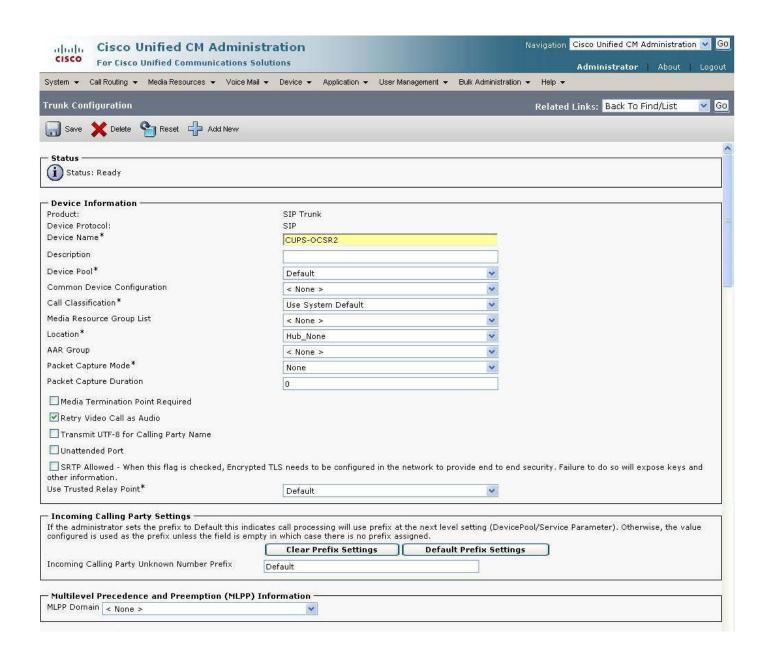




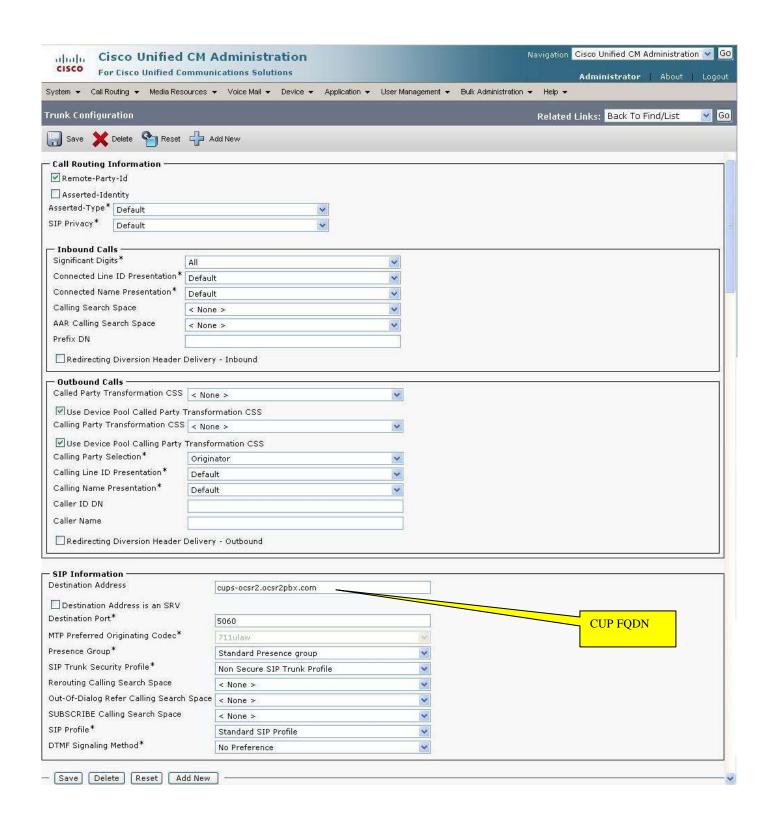
SIP Trunk Configuration





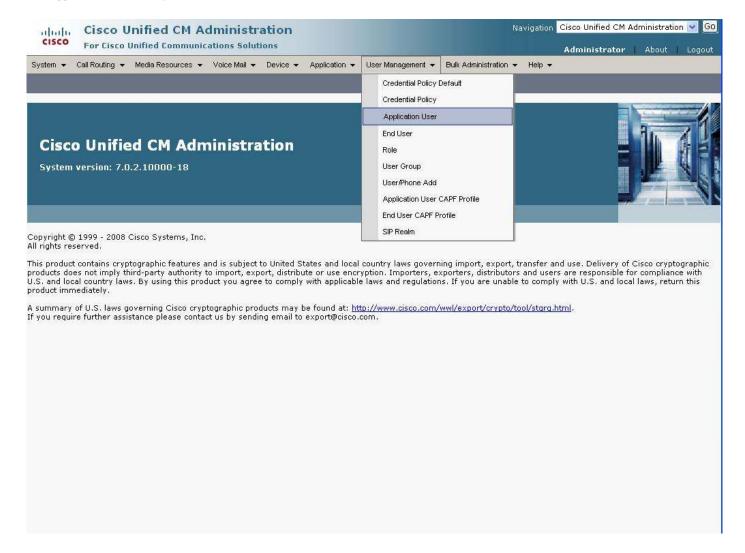




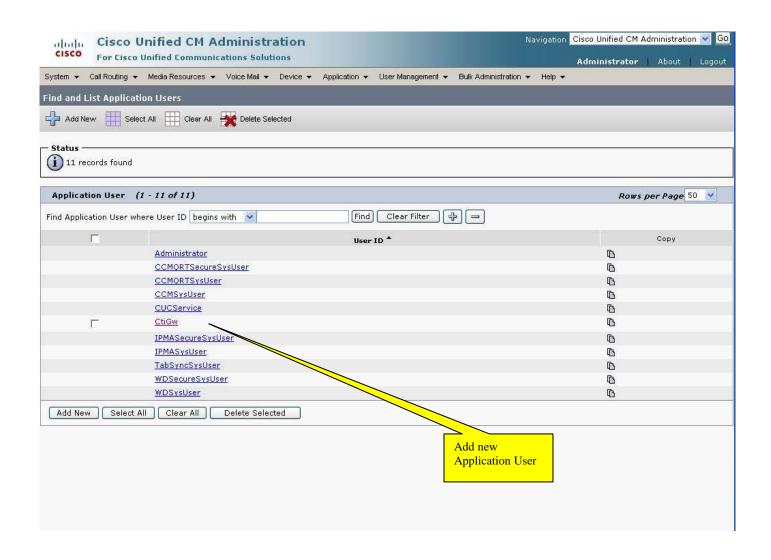




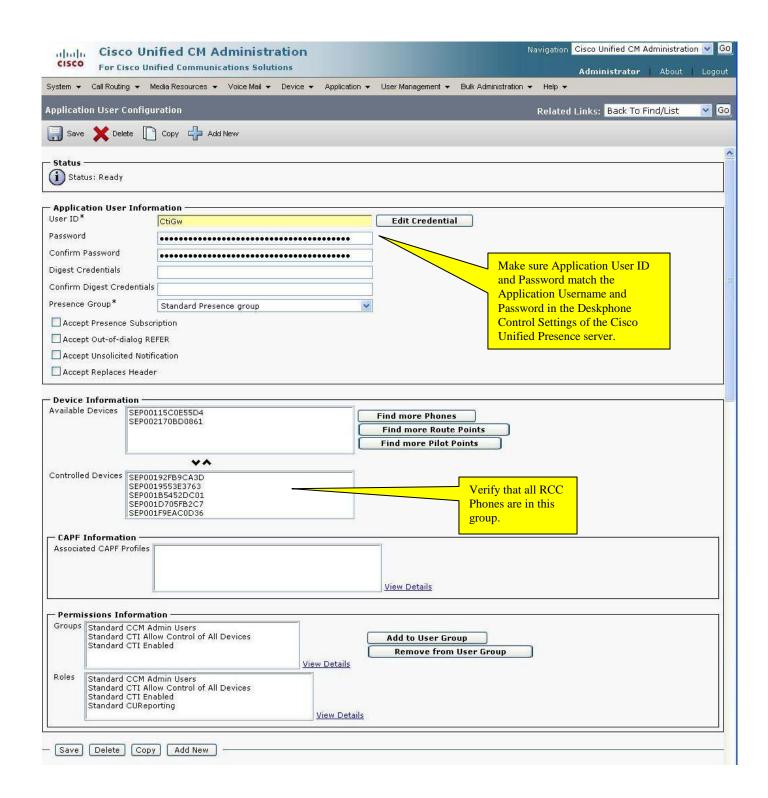
CTI Application User Configuration





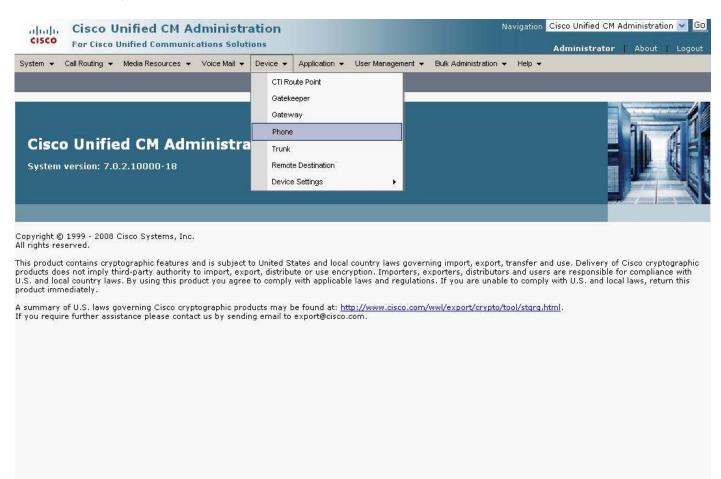




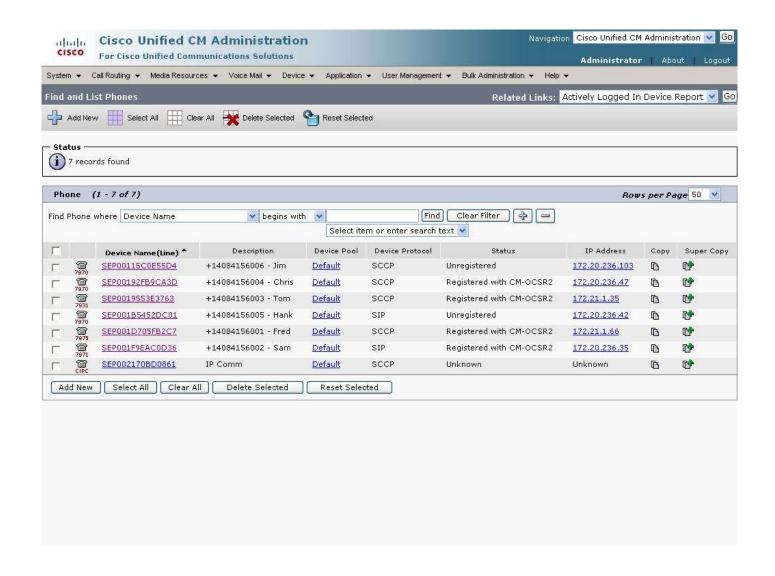




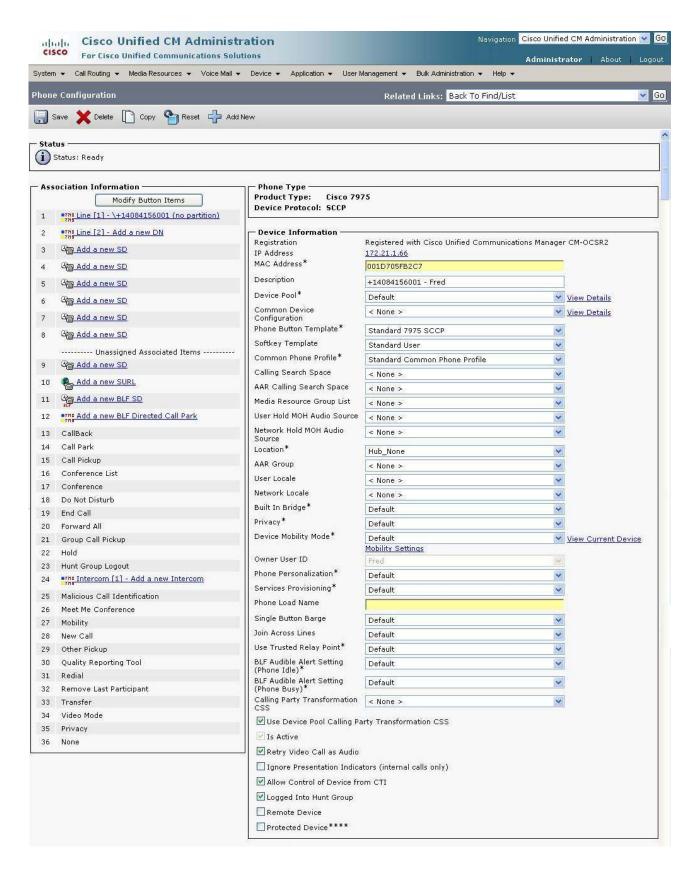
Cisco IP Phone Configuration



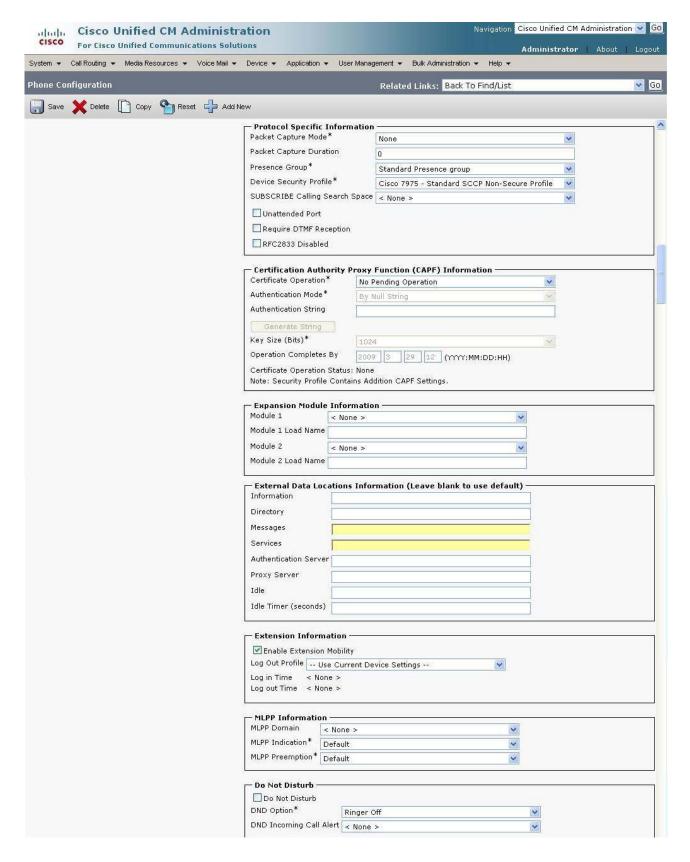




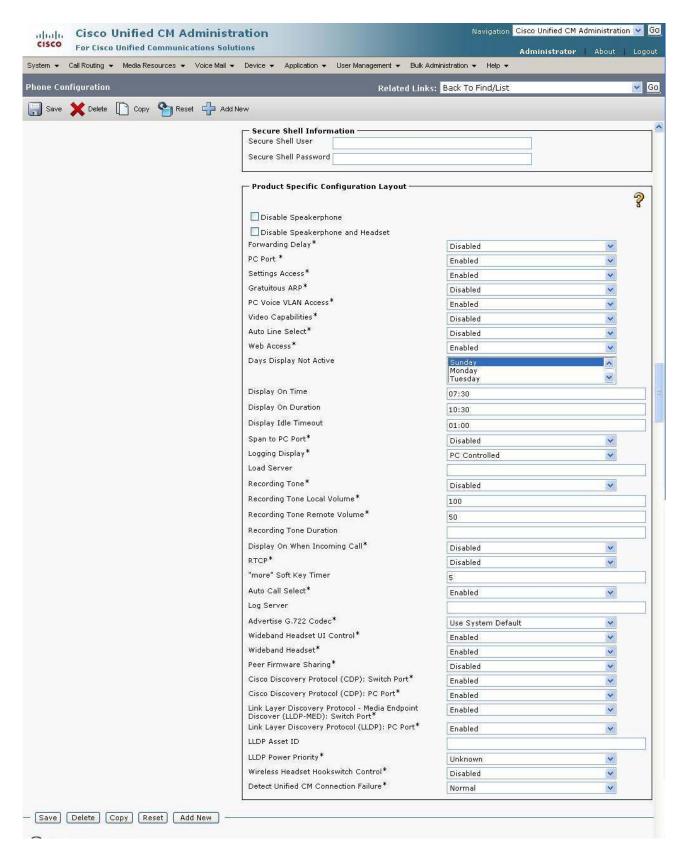




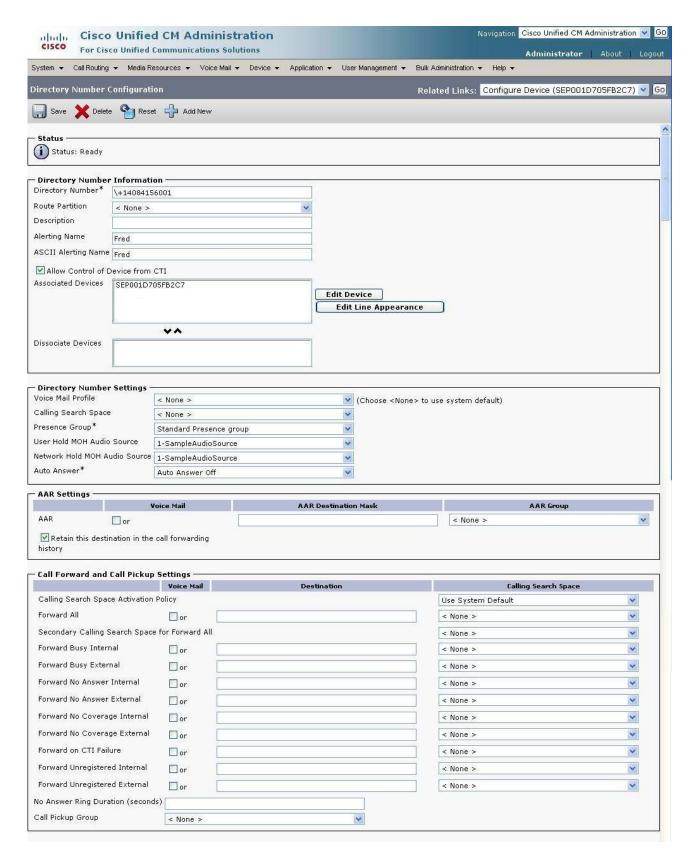










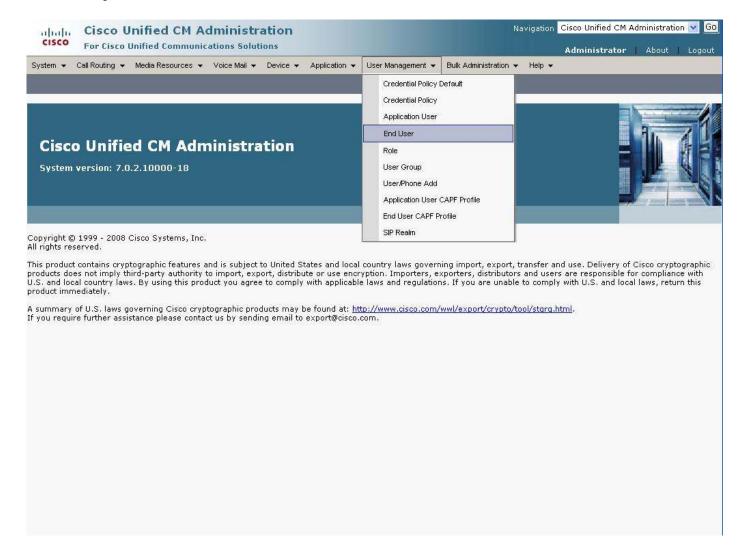




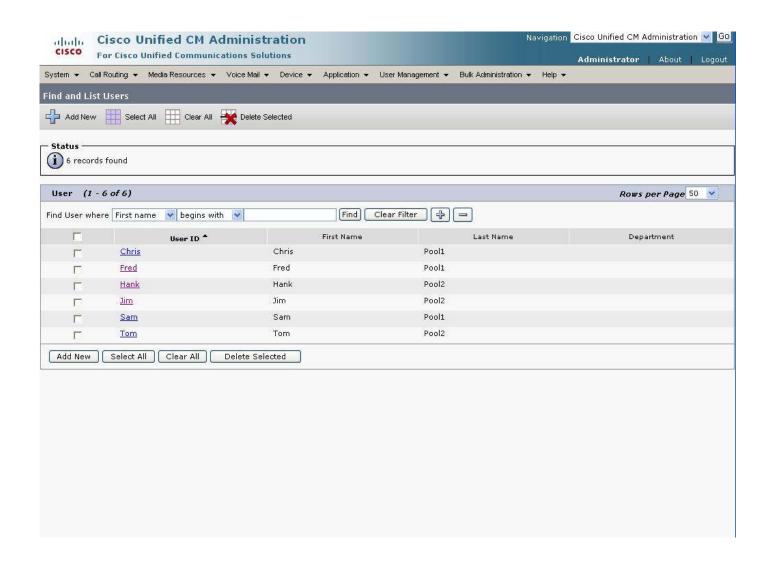
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Policy*	Armo							
Ring Setting (Phone Idle)*	Ring		*					
Ring Setting (Phone Active)	Use System Def	ault	Applies to this line when any line on the phone has a call					
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Audio Alert Setting (Phone Idle)		35-35-35						
Call Pickup Group	Use System Def	ault	¥					
Audio Alert Setting (Phone Active)								
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☑ Caller Number								
☑ Redirected Number								
☑ Dialed Number								



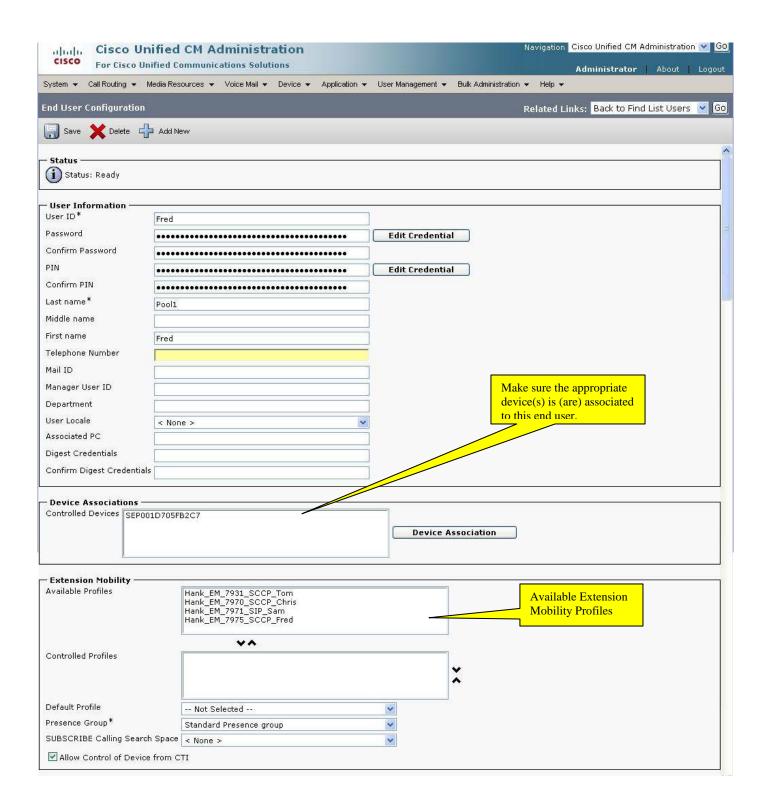
End User Configuration



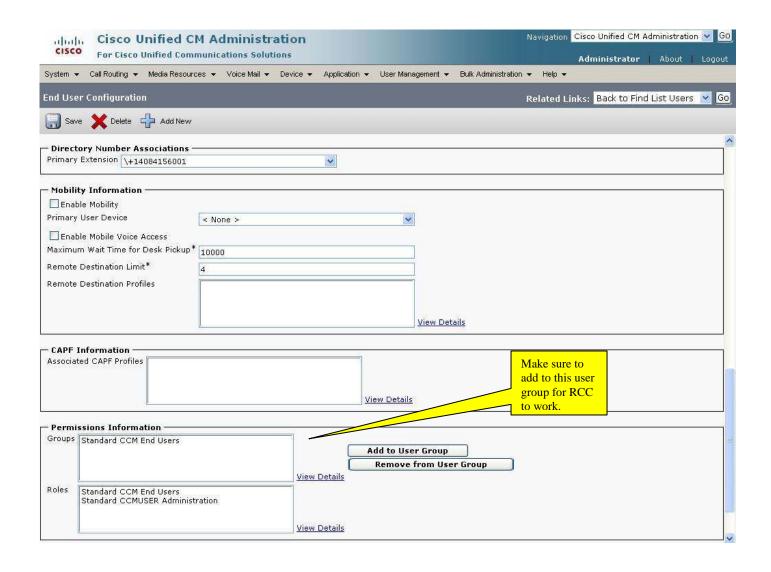






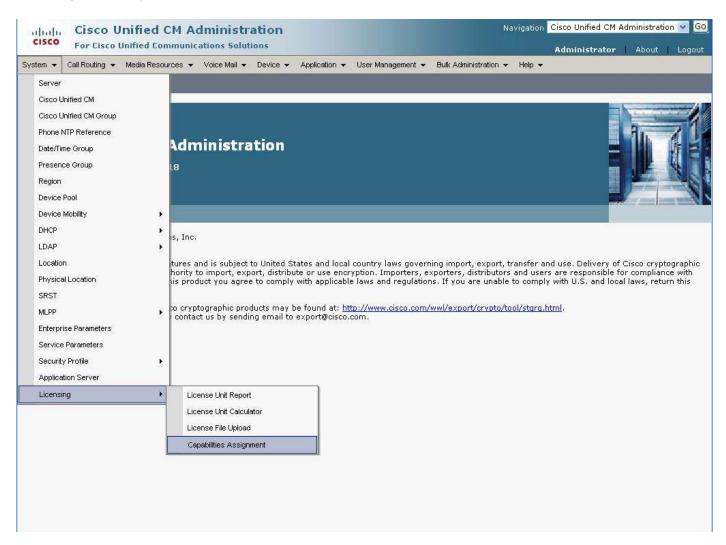




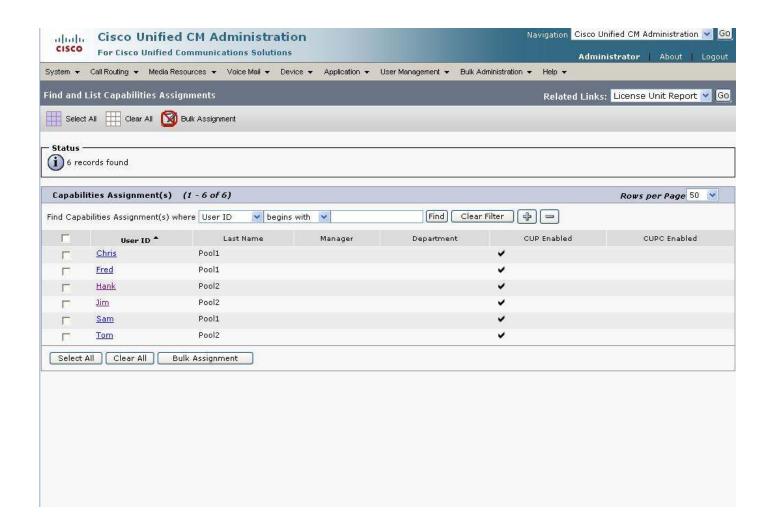




License Capabilities Assignment

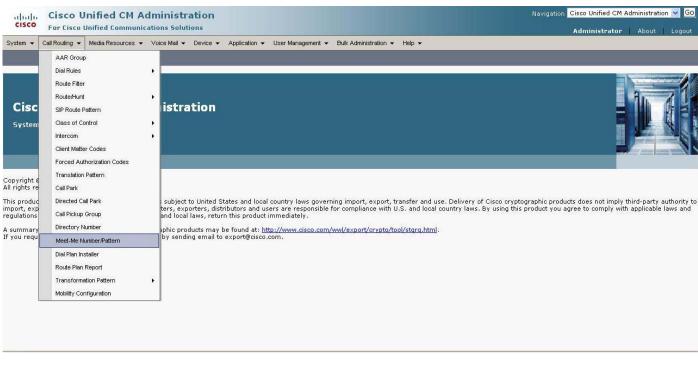


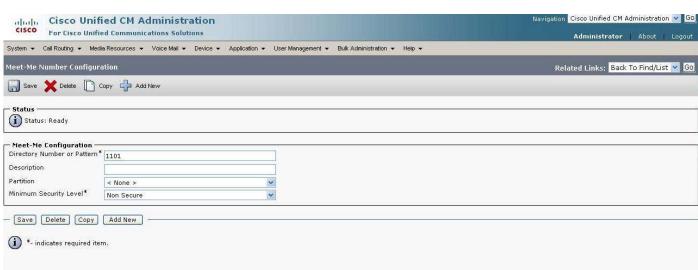






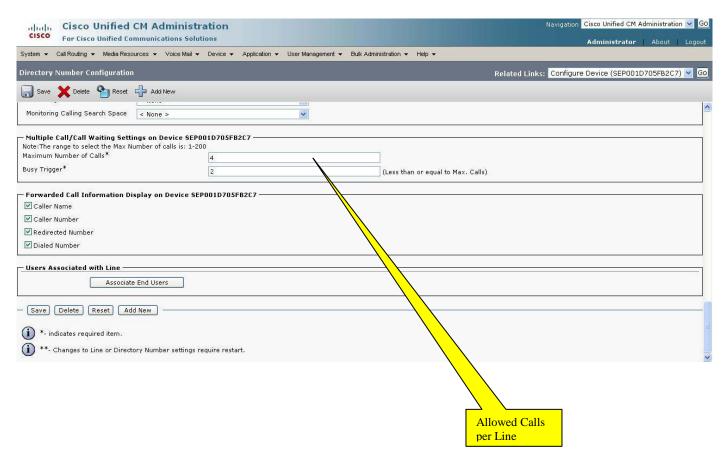
Meet-Me Number Configuration







Call per Line Limit Configuration

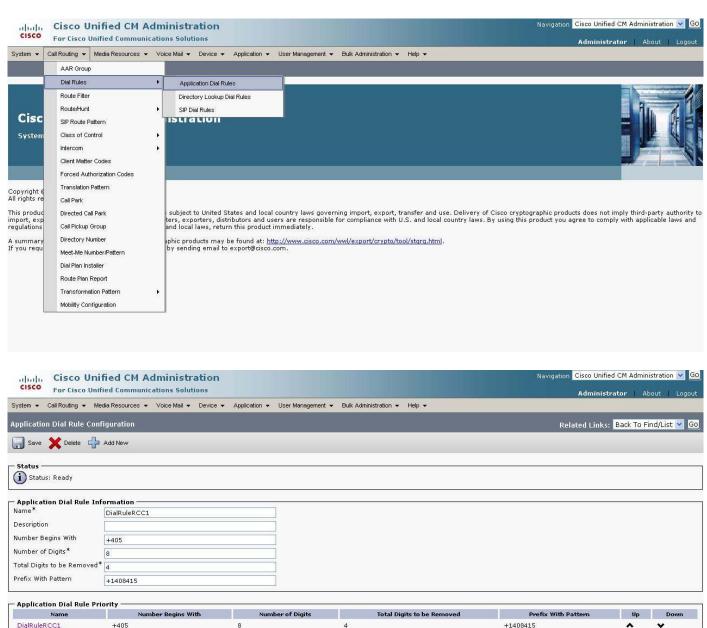




— Save Delete Add New

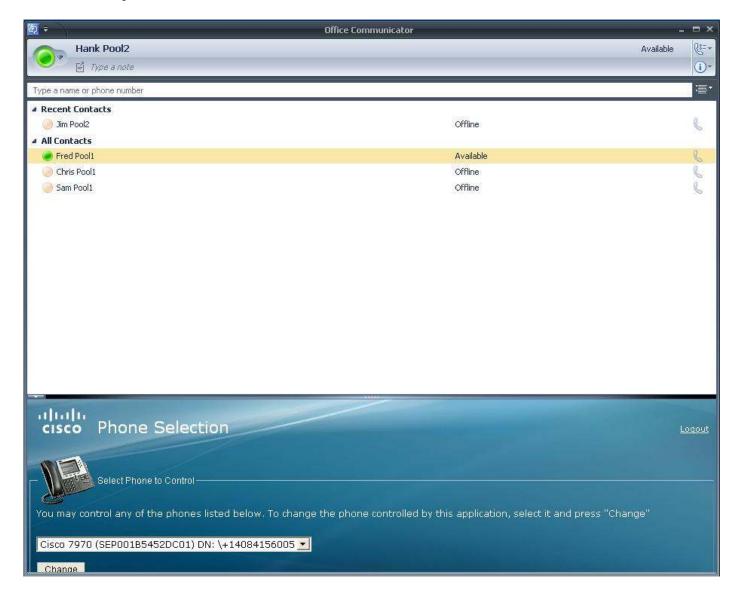
i *- indicates required item.

Application Dial Rules Configuration





Phone Selection Plug-in



Refer to the following link for steps to download the plug-in:

http://www.cisco.com/en/US/docs/voice_ip_comm/cups/7_0_3/rel_notes/cup7xrn.html#wp2526163

Refer to the following link for steps to install the plug-in:

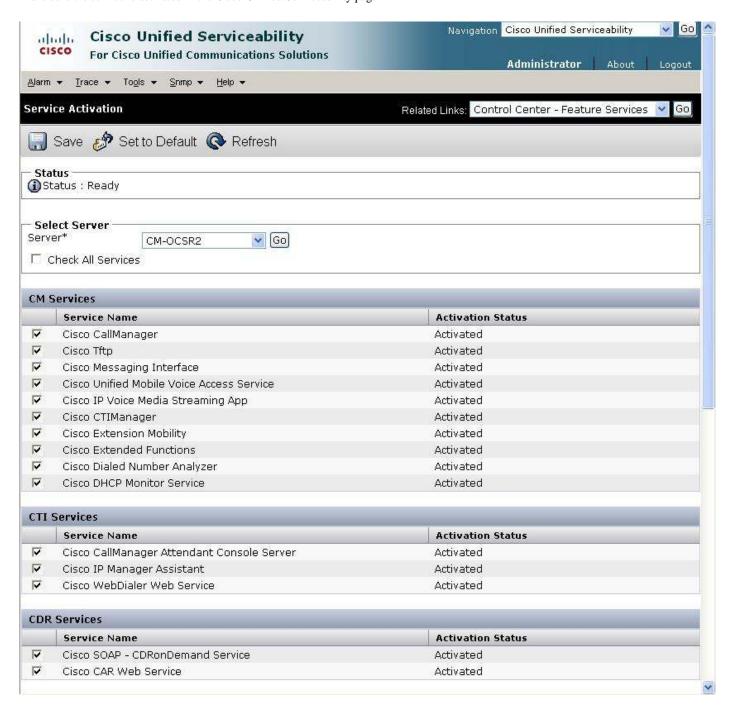
 $http://www.cisco.com/en/US/docs/voice_ip_comm/cups/7_0/english/integration_notes/IntegrationNoteOCS_CUP70_MOCCallControl.html\#wp53643$

Use the "Tab" key to navigate within the plug-in if necessary. This might occur due to the window size limitations of the Microsoft OC.



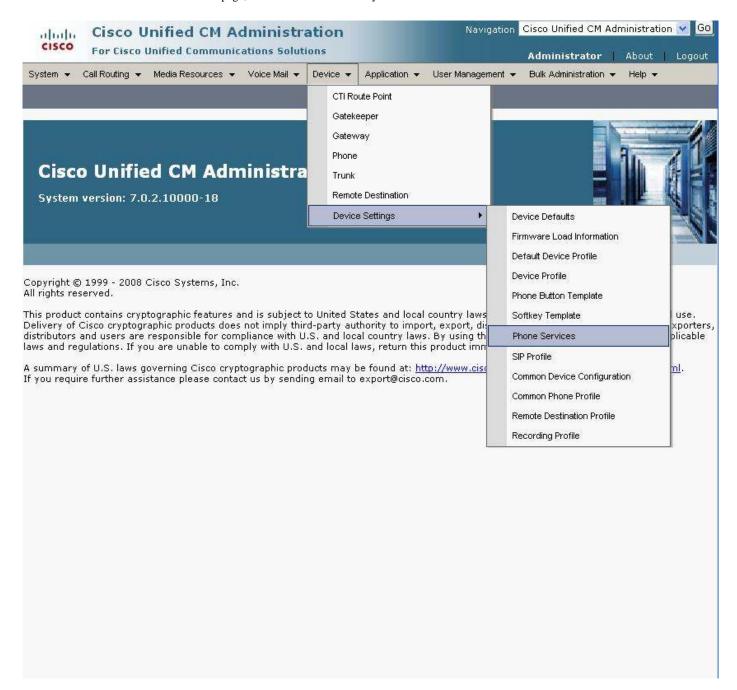
Extension Mobility Configuration

Make sure the service is activated in the Cisco Unified Serviceability page.

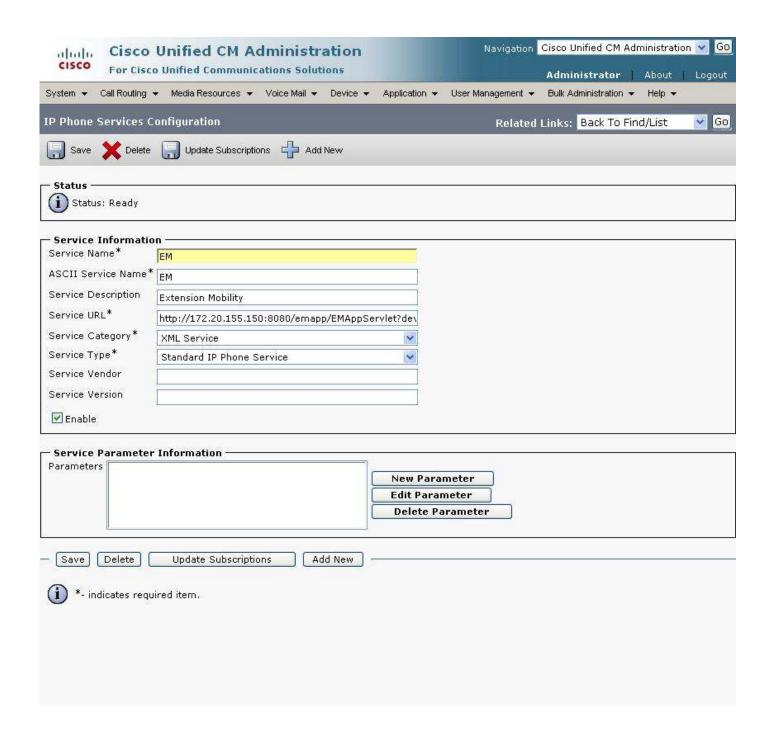




In the Cisco Unified CM Administration page, add the extension mobility IP Phone Service.

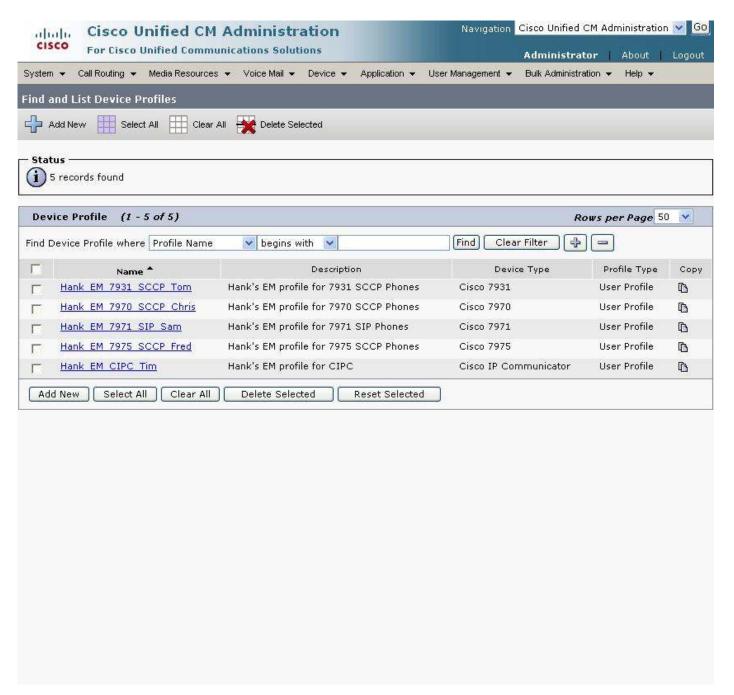




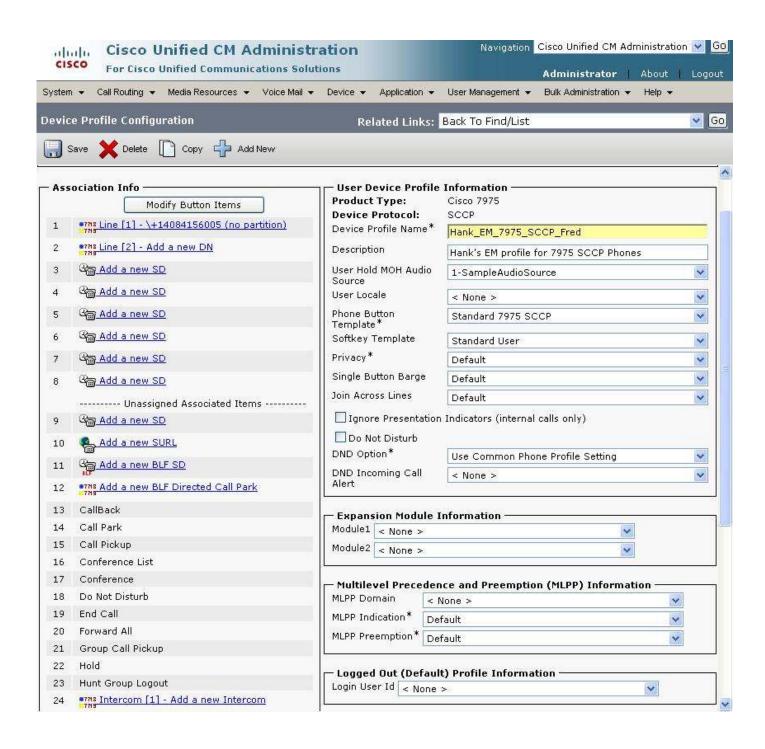




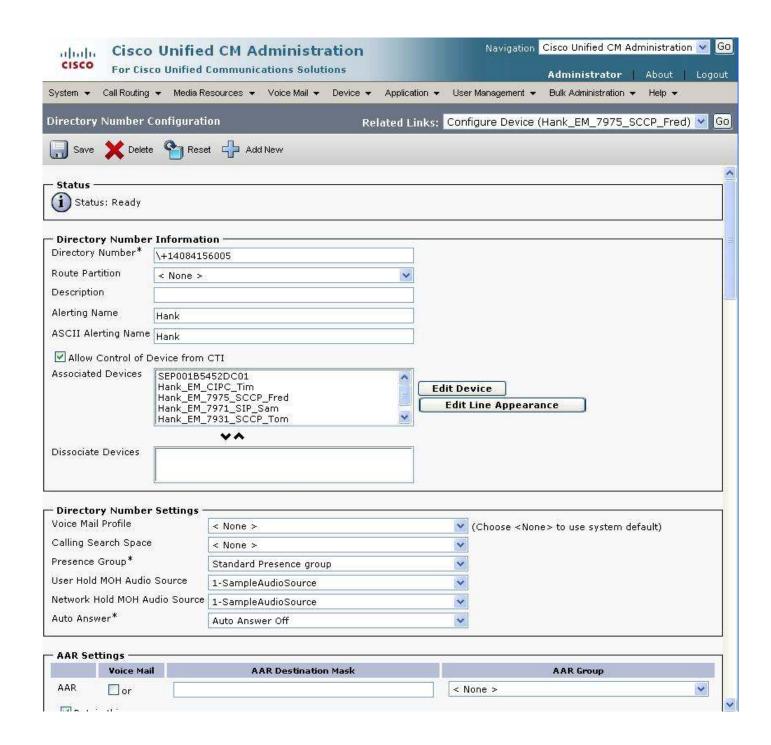
Configure user Device Profiles for every IP Phone the user wants to log into. The Device Profiles should include the DN associated with that user.





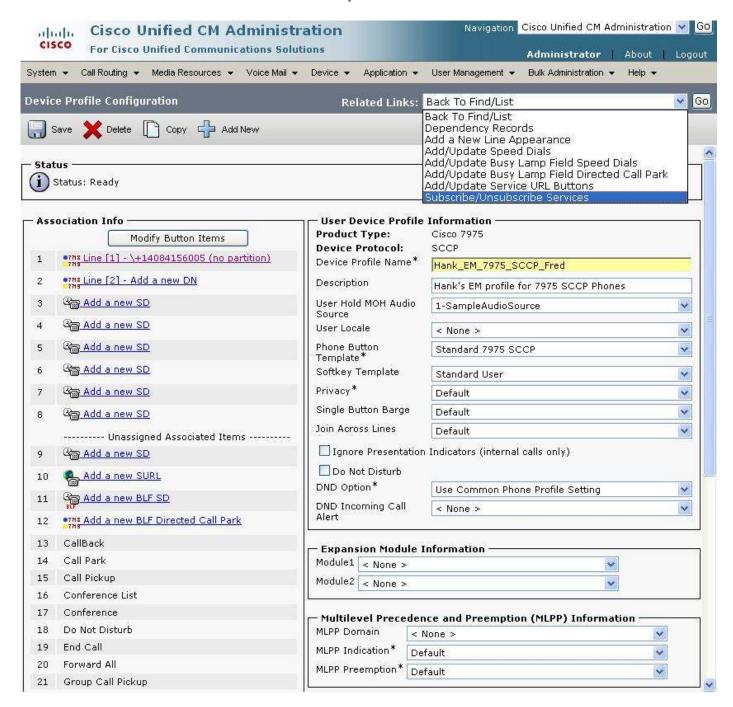




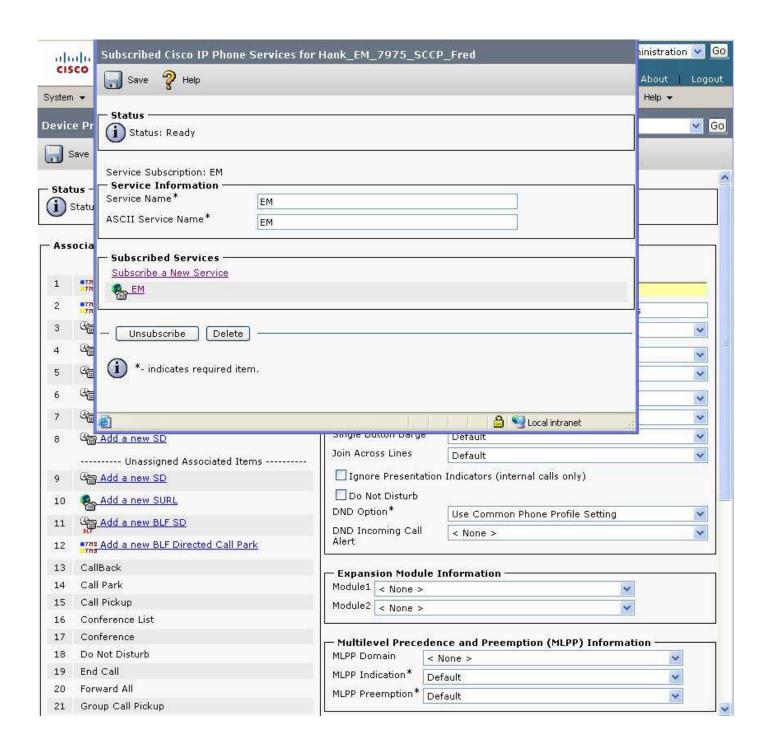




Make sure the Device Profile is subscribed to the Extension Mobility Service added earlier.







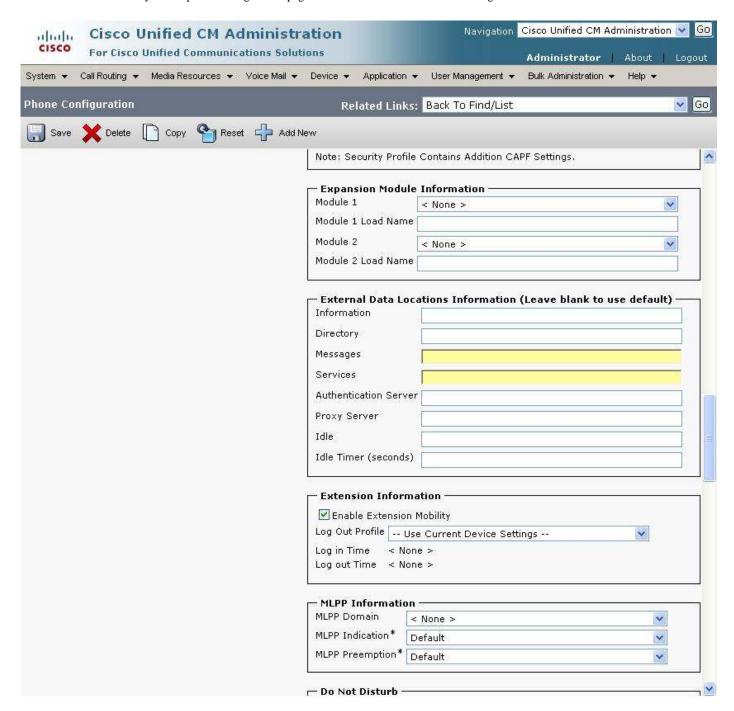


Add the created Device Profile(s) to Controlled Profiles in the end user Extension Mobility.

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Controlled Devices SEP001B5452			Device	Association	
Extension Mobility Available Profiles Controlled Profiles	∀ ♠ Hank_EM_7931_SCCP_Tom Hank_EM_7970_SCCP_Chris Hank_EM_7971_SIP_Sam Hank_EM_7975_SCCP_Fred		Device	Association	
Extension Mobility Available Profiles Controlled Profiles	Hank_EM_7931_SCCP_Tom Hank_EM_7970_SCCP_Chris Hank_EM_7971_SIP_Sam Hank_EM_7975_SCCP_Fred Hank_EM_CIPC_Tim			Association	
Extension Mobility Available Profiles	Hank_EM_7931_SCCP_Tom Hank_EM_7970_SCCP_Chris Hank_EM_7971_SIP_Sam Hank_EM_7975_SCCP_Fred Hank_EM_CIPC_Tim Not Selected			Association	

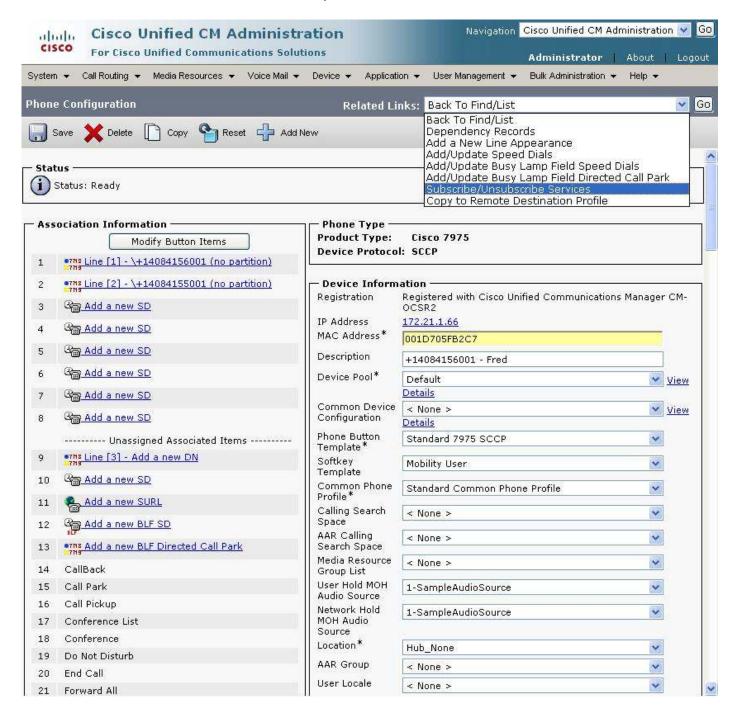


Enable Extension Mobility on the phone configuration page for the IP Phone that the user will log into.

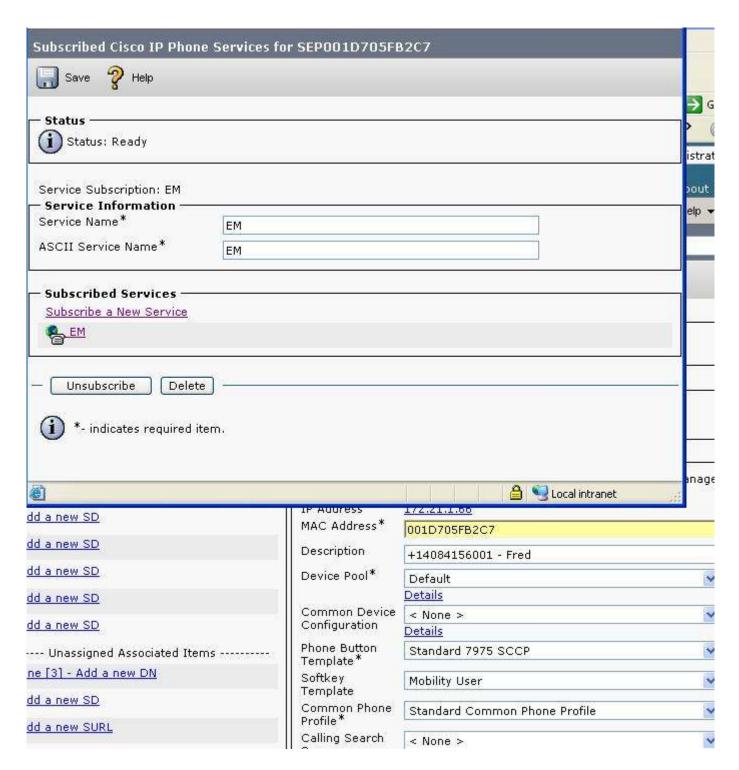




Make sure the IP Phone is subscribed to the Extension Mobility Service added earlier.





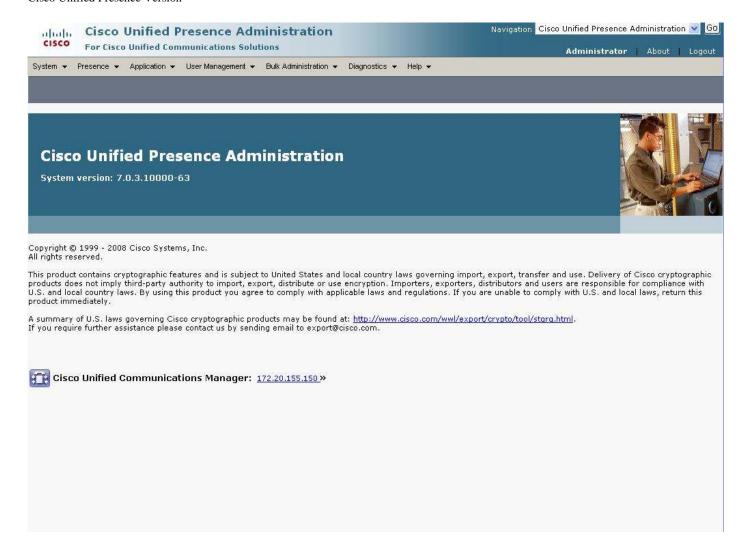


Log into the IP Phone by pressing the Globe button and then entering the end user UserID and PIN, the IP phone should now have the same DN as the one specified in the extension mobility profile.



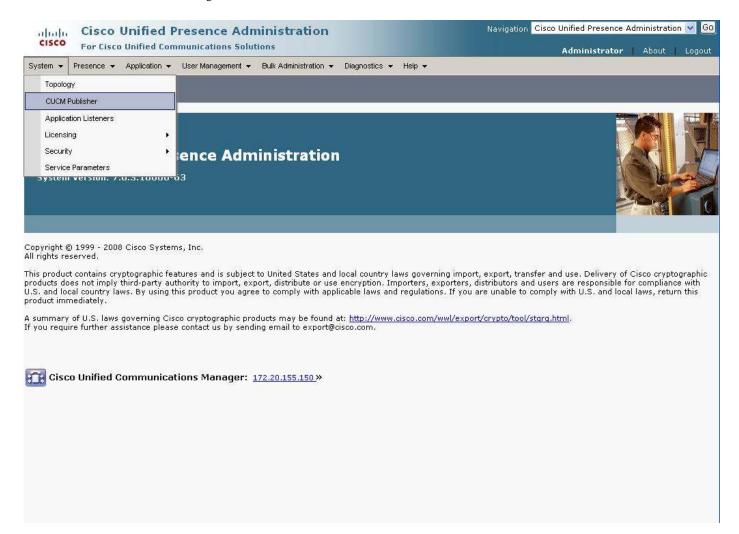
Configuring Cisco Unified Presence server

Cisco Unified Presence Version

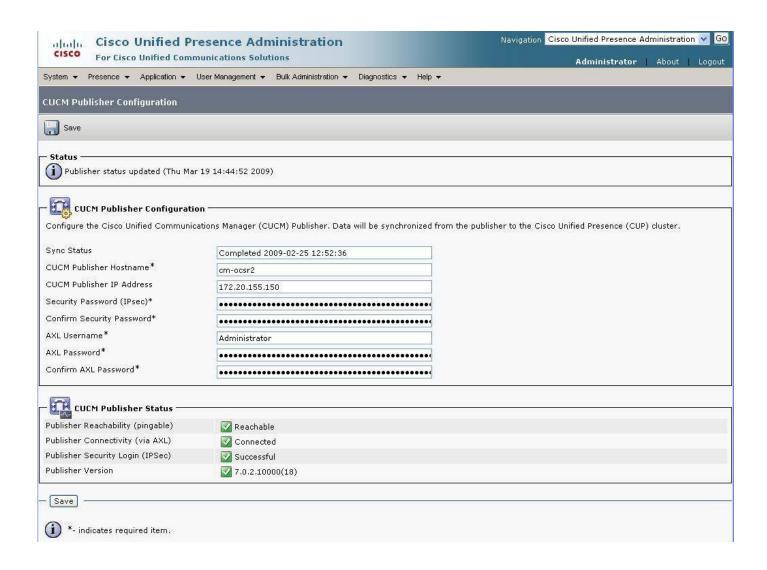




Cisco Unified Communications Manager Publisher Information

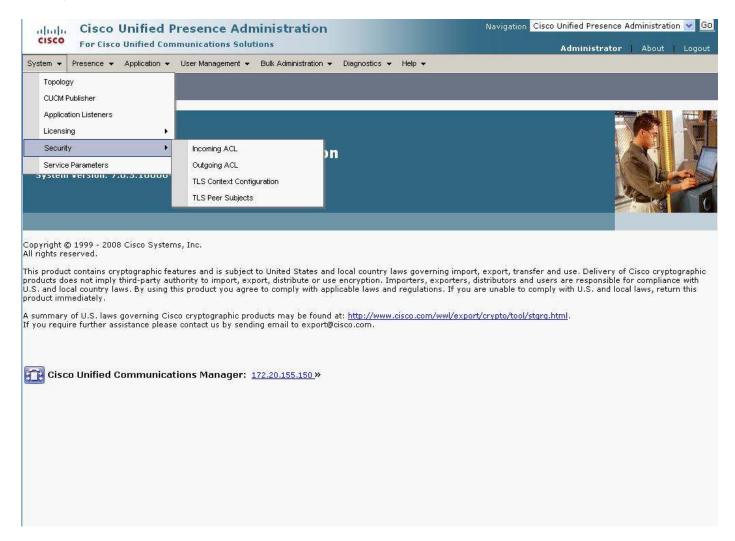




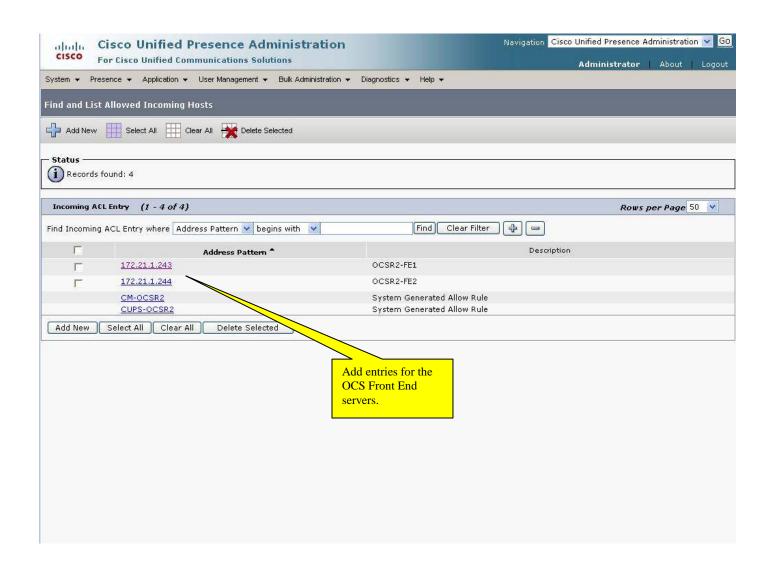




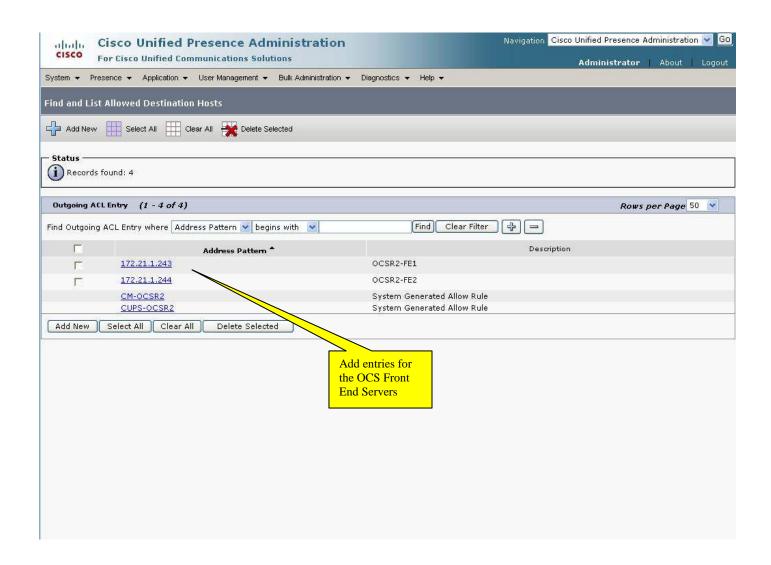
Incoming and Destination ACL Entries





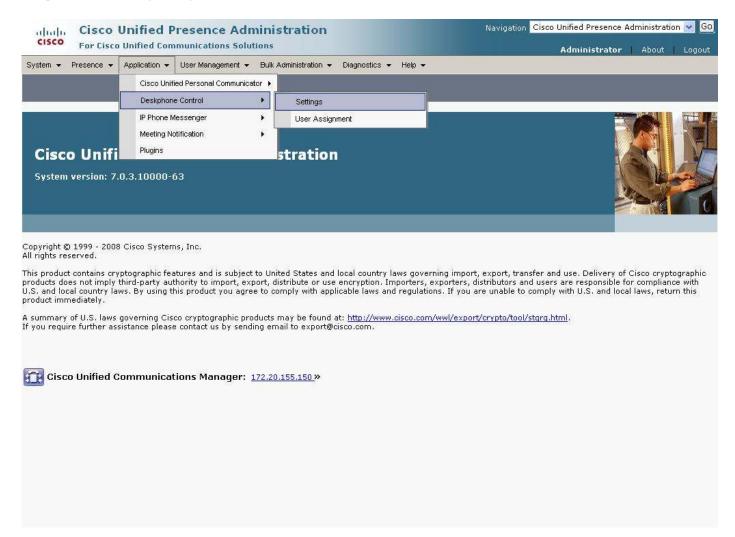




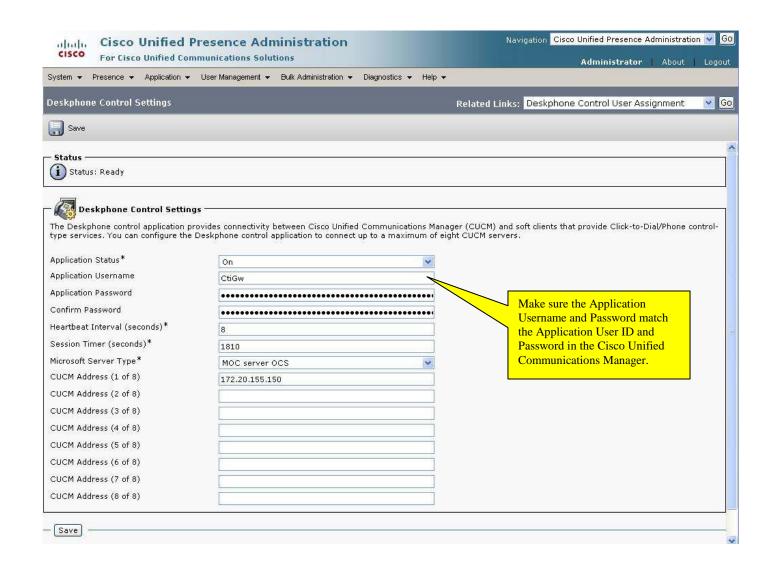




Deskphone Control Settings Configuration

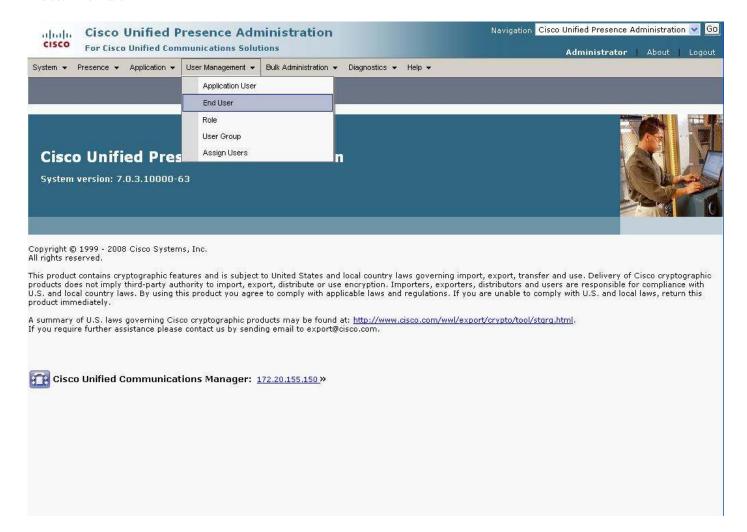




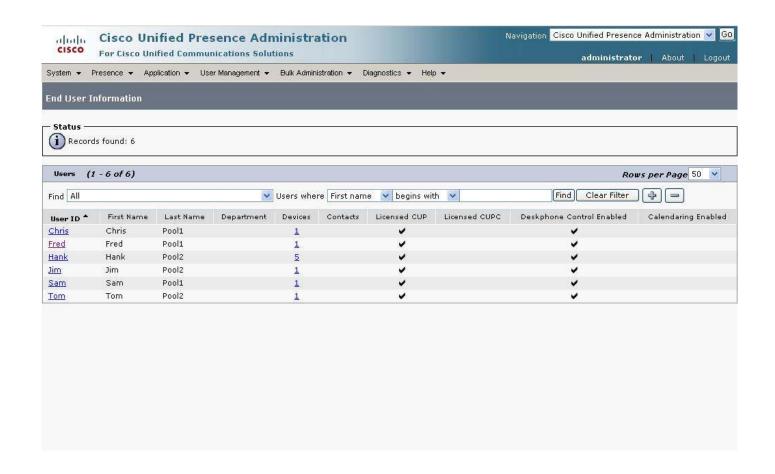




End user Information

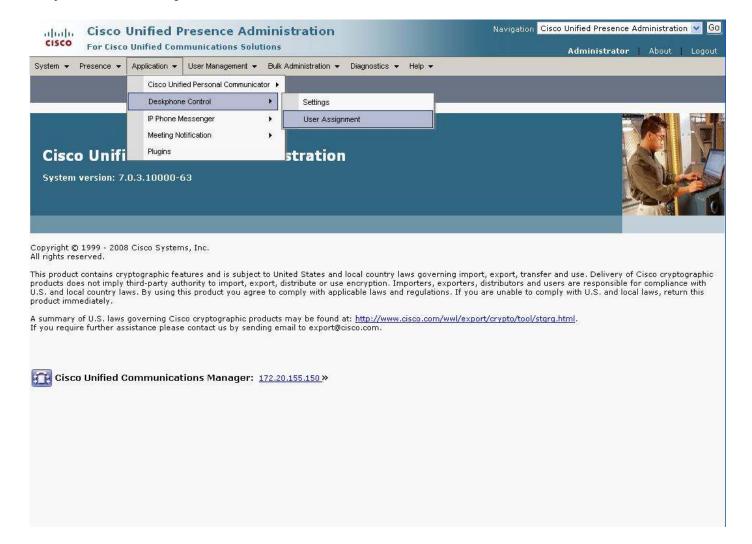




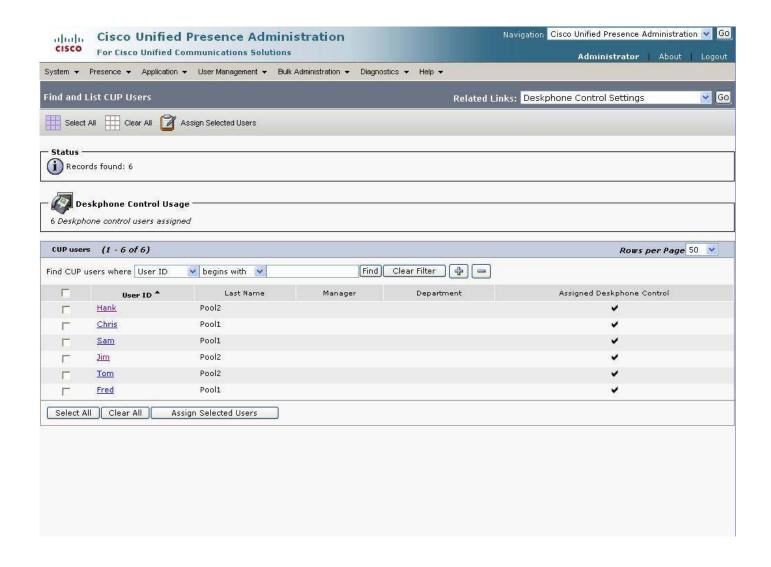




Deskphone Control User Assignment

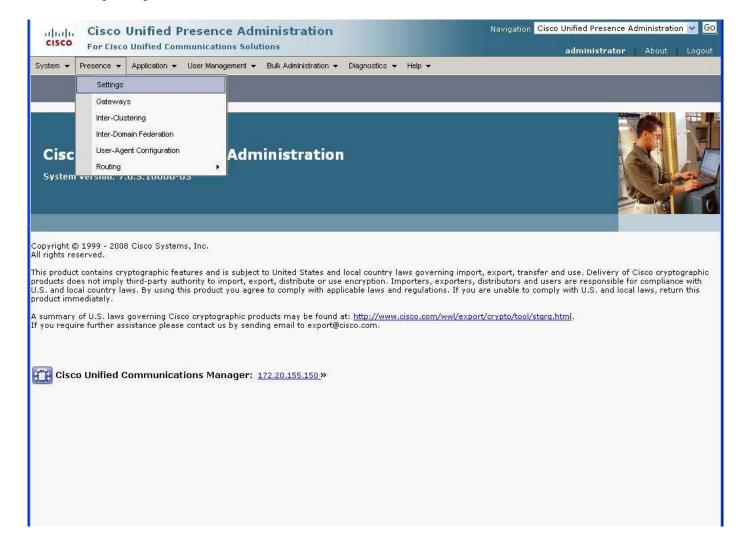




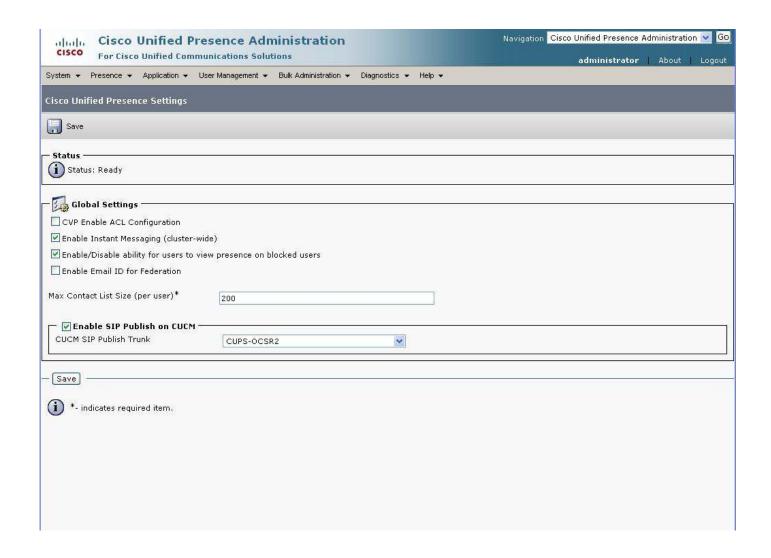




Presence Settings Configuration









Acronyms

CSTA	Commenter Commented Telecommunications Applications
	Computer-Supported Telecommunications Applications
Cisco UCM	Cisco Unified Communications Manager
CTI	Computer Telephony Interface
CUP	Cisco Unified Presence
DND	Do-Not-Disturb
DTMF	Dual Tone MultiFrequency
DTP	DeskTop Phone
GUI	Graphical User Interface
IETF	Internet Engineering Task Force
IM	Instant Messaging
IPPM	Internet Protocol Phone Messenger
MS OCS	Microsoft Office Communications Server
MCS	Multimedia Communication Server
MSN	Microsoft Network
MPOP	Multiple Point Of Presence
SCCP	Skinny Protocol
SIMPLE	SIP Instant Messaging and Presence Levering Extensions
SIP	Session Initiation Protocol
SNMP	Simple Network Management Protocol
TCP	Transmission Control Protocol
TLS	Transport Layer Security
XML	Extensible Markup Language
MOC	Microsoft Office Communicator
QoS	Quality of Service
GW	Gateway
S/W	Software
QBE	Quick Buffer Encoding, Protocol
DB	Database



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