



Technical White Paper

Cisco Unified CallConnector Mobility Solution - SBCS

July 8, 2008
Cisco

Revision History

Revision	Date	Author	Comments
1.0	6/06/2008	Tony Huynh	Initial Draft

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1 Introduction

1.1 Objective

The objective of this Technical White Paper is to provide Systems Engineers (SE)s and Value Added Resellers (VAR)s a step-by-step configuration guide to deploy the Cisco Unified CallConnector Mobility solution across multiple UC500 sites.

1.2 Scope

This Technical White Paper provides configuration instructions on how to integrate multiple UC500 systems with a single UCC Server/Mobility solution. The paper assumes that the UC500 systems are already pre-configured with ephones and mailboxes are already set up on the Cisco Unity Express (CUE) systems. Detailed configuration steps for advanced CME/CUE features on the UC500 and VPN configuration for site to site connectivity are outside the scope of this paper.

1.3 Audience

This document is targeted at Cisco SEs and other personnel who assist in pre-sales design of SMB voice solutions.

2 Cisco Unified CallConnector Overview

The Cisco Unified CallConnector Solution is comprised of 3 software solution components which work together to provide desktop integration with telephony service, presence and location information, instant messaging, calls logs and mobility with Single Number Reach (SNR).

The 3 components of the Cisco Unified CallConnector solution are: Cisco Unified CallConnector Client, Cisco Unified CallConnector Server, and Cisco Unified CallConnector Mobility Solution.

2.1 Cisco Unified CallConnector Personal Client

The Cisco Unified CallConnector Personal Client provides a user the ability to integrate their desktop with their IP Phone. Cisco Unified CallConnector Personal is installed and configured on each Windows workstation associated with a Cisco Unified IP phone. Cisco Unified CallConnector Personal delivers all the call control features listed below and is supported by any PC running Microsoft Windows XP or Windows Vista.

2.1.1 Cisco Unified CallConnector Personal Features

- Call Control toolbars within Microsoft Outlook and Internet Explorer
- Cisco Unified CallConnector Contacts (brings together all personal, corporate, and Outlook contacts.)
- Quick Dial from any contact
- Quick Transfer, Hold, or Conference
- Quick Search through contacts
- Speed dial
- New Call popup window with Outlook Caller ID Lookup
- Quick Dial from any application
- Cisco Unified CallConnector Call Logs

For more information on each of the features listed above, please refer to the following link:

http://www.cisco.com/en/US/prod/collateral/voicesw/ps6789/ps7046/ps7274/ps7067/product_data_sheet0900aecd8053c8ad.html

2.2 Cisco Unified CallConnector Server

Another component of the Cisco Unified CallConnector solution is the Cisco Unified CallConnector Server. The Cisco Unified CallConnector Server can support up to 10 CME systems with up to 250 users across the multiple CME sites. The Cisco Unified CallConnector Server application delivers the features described previously with the added benefit of presence and instant messaging. Cisco Unified CallConnector Server provides information about colleagues' locations, availability, and phone status using the same Cisco Unified CallConnector toolbars from within Outlook and Internet Explorer. Using simple icons and colors to show location and availability, users can reach colleagues quickly the first time and reduce phone tag, thereby increasing productivity.

2.2.1 Cisco Unified CallConnector Server Features

- Dynamic presence information
- Location (user selectable)
- Availability (user selectable)
- Dynamic IP phone status
- Instant messaging
- Quick Search with presence information

2.3 Cisco Unified CallConnector Mobility Solution

The Cisco Unified CallConnector Mobility upgrade provides Single Number Reach (SNR) functions that are fully integrated with the presence features of Cisco Unified CallConnector for Windows, thereby enabling you to set up SNR rules that fit your unique needs. With the Cisco Unified CallConnector Mobility upgrade, even when a user is away from the office, the user can enable the following features:

2.3.1 Cisco Unified CallConnector Server Features

- Receive important business calls that are routed through your office Cisco Communications Manager Express
- Define rules to select which calls should be routed and where to reach you (home phone, cell phone, or other phone)
- Access any unconnected calls, because they are returned to your voice mailbox
- Perform mid-call functions, when connected through the SNR rules, including transfer or conference, to other users on the same Cisco Communications Manager Express system
- Cisco Unified CallConnector Mobility is an optional upgrade to Cisco Unified CallConnector for Windows. Cisco Unified CallConnector Mobility must be installed along with Cisco Unified CallConnector Server on a customer-provided PC or Cisco Media Convergence Server running Windows XP or 2003 Server Software.

2.4 Cisco Unified CallConnector Release Notes

In order to determine compatible CME and CUE versions that have been tested with the Cisco Unified CallConnector solution, please refer to the release notes.

http://www.cisco.com/en/US/docs/voice_ip_comm/cucallconnectors/1.4/UCCRelNt_14.html

2.5 Cisco Unified CallConnector Hardware

The hardware components required for the Cisco Unified CallConnector solution are outlined on the following page:

http://www.cisco.com/en/US/prod/collateral/voicesw/ps6789/ps7046/ps7274/ps7067/product_data_sheet0900aecd8053c8ad.html

3 Deployment Model

In this Technical White Paper, we will cover the configuration steps required to deploy a single Cisco Unified CallConnector Server/Mobility solution with multiple UC500s. There are several requirements for this type of deployment - the requirements are outlined below in section 3.1.

3.1 Requirements

In order to deploy a single UCC Server to service multiple CME sites, the following requirements need to be met:

- IP Connectivity between the UC500 sites and the UCC Server
- Quality of Service (QOS) should be configured to prioritize Voice over IP (VOIP) traffic over normal data traffic
- Dial-peers need to be configured so that site to site dialing is available
- At each CME/UC500 site, there needs to be a CUE deployed at the same site
- In the case that mid-call or DISA features are required, additional Digital Signal Processors (DSP)s need to be provisioned to enable hardware conferencing
- The UCC solution does not support connectivity through NAT. Therefore each of the UC500 sites needs to have a direct VPN connection to the UC500 site with the UCC server.

3.2 Components

The components used to create this Technical White Paper include the following:

- Cisco UC520 router, IOS 12.4.11-XW8 - San Jose Site
- Cisco UC520 router, IOS 12.4.11-XW8 - Irvine Site
- Cisco 7825 MCS – Cisco Unified CallConnector Server/Mobility Solution version 1.4
- Cisco Unified CallConnector Client version 1.4

3.3 Site Dial-plan

This document uses the dial-plan outlined below. Please note that this configuration was created in a lab environment with the UC500 sites located on the same LAN. In a real-world deployment, the UC500 sites will be connected across the WAN by various WAN connections. All the configuration scenarios have the following general characteristics:

- Multiple site Cisco UC500 system
- PSTN trunks integrated onto the UC500 systems
- Each site defines a 3-digit internal extension and 10-digit dialing plan.
- The UCC Server will be co-located at the San Jose site.
- PSTN access is defined by access-code “9” for both CME sites

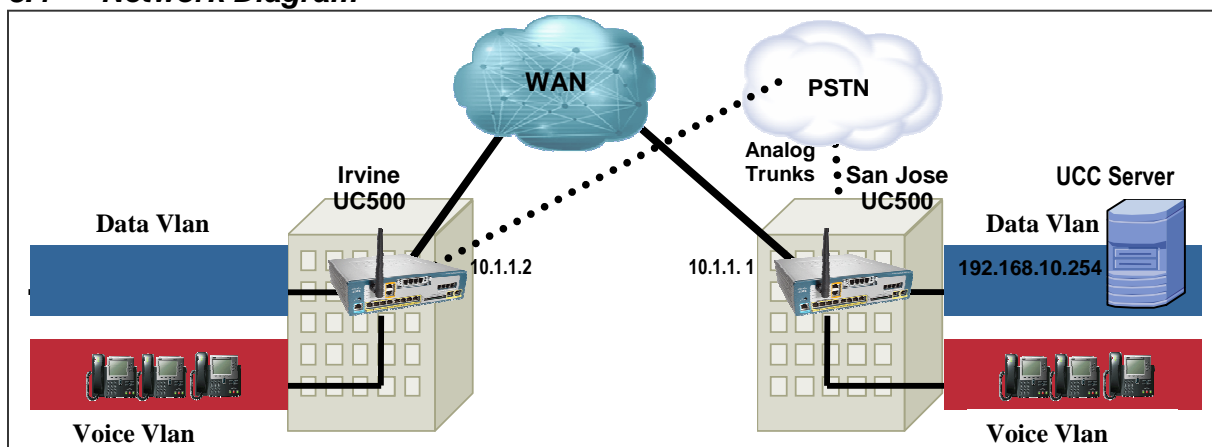
3.3.1 San Jose Dial-plan

Extensions	E164	Voicemail Pilot	Direct Transfer to voicemail
301 – 303	4084441301 - 4084441303	600	699

3.3.2 Irvine Dial-plan

Extensions	E164	Voicemail Pilot	Direct Transfer to voicemail
201 – 203	9495551201 - 9495551203	700	799

3.4 Network Diagram



3.4.1 IP Addressing Scheme

Irvine		San Jose	
CME IP Address	10.1.1.2	CME IP Address	10.1.1.1
Voice VLAN	20.20.20.0/24	Voice VLAN	10.10.10.0/24
Data VLAN	192.168.20.0/24	Data VLAN	192.168.10.0/24
CUE IP Address	20.1.20.1	CUE IP Address	10.1.10.1

Cisco Unified CallConnector Server:

In the above diagram, the UCC Server is co-located at the San Jose UC500 site. The Cisco UCC Server is assigned an IP Address of 192.168.10.254.

3.5 UC500 Supported Notes

As a general deployment guideline, for any UC500 deployments, the following guidelines apply:

- Up to 5 - UC500 sites can be networked together
- Additional sites require that CME on ISRs be used
- When networking UC500 sites, VPN connectivity needs to be configured between the sites
- Each of the sites need to be configured so that they have unique IP Addressing schemes – this needs to be done via IOS Command Line Interface (CLI)

3.5.1 Cisco Configuration Assistant

Cisco Configuration Assistant (CCA) can be used to configure many of the features available on the UC500. However, some of the more advanced features require that the system administrator configure the UC500 using IOS CLI. In this Technical White Paper, we will be using IOS CLI to configure the following:

- Ephone username/password
- Radius Configuration
- CME hardware conferencing
- Mobility and DISA ephones
- Dial-peer for Direct Transfer to Voicemail

For more information on CCA, please refer to the following link:

http://supportwiki.cisco.com/ViewWiki/index.php/Category:Cisco_Configuration_Assistant_Support_-_Cisco_Smart_Business_Communication_Systems

4 CME Configuration Steps

This Technical White Paper assumes that the system administrator has already setup the UC500s for basic voice functionality – this includes using CCA to configure ephones, assign extensions and create voicemail boxes. Additionally, the system administrator will have to use IOS CLI to configure a unique IP addressing scheme on the 2 UC500 systems – referenced in section 3.4.1.

4.1 Username/Password

4.1.1 Abstract

The first step required to add CME ephones onto the Cisco Unified CallConnector Server is to configure a username/password under each ephone that will be added to the Cisco Unified CallConnector Server. The username/password configured under each ephone allows the Cisco Unified CallConnector Server to integrate and control each Cisco IP Phone. **[Required]**

4.1.2 San Jose Configuration

```
ephone 1
 mac-address 0017.5A75.76C7
 username "sjuser1" password cisco
 type 7941
 button 1:1
 !
 ephone 2
 mac-address 0014.6948.1C48
 username "sjuser2" password cisco
 type 7960
 button 1:2
 !
 ephone 3
 mac-address 0007.5052.80B4
 username "sjuser3" password cisco
 type 7960
 button 1:3
```

4.1.3 Irvine Configuration

```
ephone 1
 mac-address 000B.BE37.1A51
 username "irvineuser1" password cisco
 type 7960
 button 1:1
 !
 ephone 2
 mac-address 0017.5A85.096C
 username "irvineuser2" password cisco
 type 7941
 button 1:2
 !
 ephone 3
 mac-address 0013.196E.D74F
 username "irvineuser3" password cisco
 type 7960
 button 1:3
```


4.2 Radius Configuration

4.2.1 Abstract

It is necessary to configure radius functionality on each of the CME systems that integrate with the UCC Server. When events such as Offhook/Onhook events occur on the CME system, it is necessary for CME to send these events to the UCC server (which acts as a radius server). The UCC server uses this information to update the status (presence) information for each user on the UCC system. **[Required]**

4.2.2 San Jose Radius Configuration

```
aaa new-model
aaa group server radius uccserver
  server 192.168.10.254 auth-port 1645 acct-port 1646
aaa accounting update newinfo
aaa accounting connection h323 start-stop broadcast group uccserver
aaa session-id common
gw-accounting syslog
gw-accounting aaa
radius-server host 192.168.10.254 auth-port 1645 acct-port 1646
radius-server key cisco
radius-server vsa send accounting
radius-server vsa send authentication
ip radius source-interface GigabitEthernet 0/0
```

NOTES:

- 192.168.10.254 is the IP address of the UCC server
- In the command “radius-server key **cisco**”, make sure that the key matches the key you will configure in **step 5.1.2 – Step 3**.
- In the configuration above, “acct-port 1646” is used. Be sure to use this same acct-port number in 5.1.2 – Step 3.
- If you have multiple interfaces on your CME system, you must define the source interface on which the radius packets will be sent. Use the command “ip radius source-interface <interface>”
- For more information on the radius configuration, please refer to the configuration guide at the following link (page 104) - http://www.cisco.com/en/US/docs/voice_ip_comm/cucallconnectors/UCC_for_MS_Windows/Rel_10/server/administrator/guide/AGsrv517.pdf

4.2.3 Irvine Radius Configuration

```
aaa new-model
aaa group server radius uccserver
  server 192.168.10.254 auth-port 1645 acct-port 1646
aaa accounting update newinfo
aaa accounting connection h323 start-stop broadcast group uccserver
aaa session-id common
gw-accounting syslog
gw-accounting aaa
radius-server host 192.168.10.254 auth-port 1645 acct-port 1646
radius-server key cisco
radius-server vsa send accounting
radius-server vsa send authentication
ip radius source-interface GigabitEthernet 0/0
!
```

NOTES:

- Note that the radius configuration for the Irvine site is exactly the same as the San Jose configuration. Since both UC500 sites use the same radius server (UCC server) the configuration is the same.
- Additionally, since you can only configure 1 radius-server key on the UCC server, all UC500 sites that wish to integrate with the same UCC server have to use the same “radius-server key”.
- The only thing that may change is the “ip radius source-interface <interface>” command.

5 Cisco Unified CallConnector Server Configuration

5.1 Install UCC server software

5.1.1 Abstract

When a system administrator is installing the Cisco Unified CallConnector Server software for the first time, they need to perform the following steps. Please note that this section is **ONLY** for the Cisco Unified CallConnector Server configuration. **The Cisco Unified CallConnector Mobility configuration will be addressed in another section. [Required]**

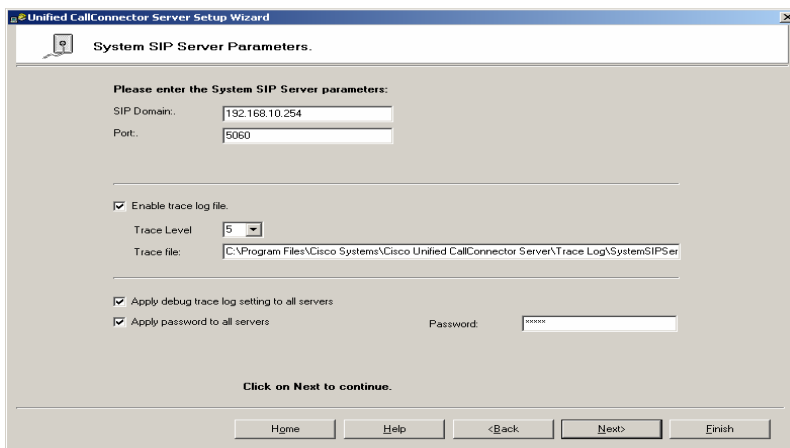
5.1.2 Step 1 - Install UCC server software

Step1: Double-click on the UCC server executable to begin installing the software



- Enter your PAK-ID or Serial Number
- Enter the company name
- Enter email address
- Once you have entered all the required fields, click on “Activate”

Step 2: On the following screen, enter a password and check the box to “Apply password to all servers”. It is recommended that you keep the passwords consistent on all the following configuration pages.



Do the same for 3 following screens.

Unified CallConnector Server Setup Wizard

✓ System Tracker Parameters

Please enter System Tracker Parameters:

SIP Server Address: 192.168.10.254

Port: 5071

User Name: ccSystemTracker

Password: *****

Enable trace log File

Trace Level: 5

Trace File: C:\Program Files\Cisco Systems\Cisco Unified CallConnector Server\Trace Log\SystemTrack

Click on Next to continue.

Home Help <Back Next> Finish

Unified CallConnector Server Setup Wizard

✓ Database Server Parameters

Please enter Database SIP Server Parameters:

SIP Server Address: 192.168.10.254

Port: 5061

User Name: ccDatabaseServer

Password: *****

Enable trace log file.

Trace Level: 5

Trace File: C:\Program Files\Cisco Systems\Cisco Unified CallConnector Server\Trace Log\DatabaseSer

Click on Next to continue.

Home Help <Back Next> Finish

Unified CallConnector Server Setup Wizard

✓ Presence Server Parameters

Please enter Presence SIP Server Parameters:

SIP Server Address: 192.168.10.254

Port: 5062

User Name: ccPresenceServer

Password: *****

Enable trace log file (when requested by TAC)

Trace Level: 5

Trace File: C:\Program Files\Cisco Systems\Cisco Unified CallConnector Server\Trace Log\PresenceServ

Click on Next to continue.

Home Help <Back Next> Finish

Step 3: On the following page, enter the **“Authentication Key (Password)”**. Be sure to use the **SAME** radius key as configured in **step 4.2.2 and 4.2.3.**

The screenshot shows the 'Presence Server Radius Parameters' page of the Unified CallConnector Server Setup Wizard. The page is titled 'Presence Server Radius Parameters' and has a checkmark icon. It contains the following fields and options:

- Radius Parameters:**
 - Authentication Key (Password): [Redacted]
 - Radius Accounting Port: 1646
 - View Radius Messages button
- Note: The RADIUS Accounting service on the router need to be enabled. In addition:
 - Radius-server host ip-address = This PC ip-address
 - Radius-server acct-port = Accounting Port (above)
 - Radius-server key = Authentication Key (above)
- Use this network adaptor for RADIUS
 - Network adaptor IP-Address: 192.168.10.254 (Only required for PCs with multiple network cards)
- Enable Trace log file
 - Trace Level: 5
 - Trace File: C:\Program Files\Cisco Systems\Cisco Unified CallConnector Server\Trace Log\RadiusServer

Click on Next to continue.

Buttons: Home, Help, <Back, Next>, Finish

NOTE: If your PC has more than 1 NIC card, be sure to check the **“Use this network adaptor for RADIUS”** and then specify the IP address of the of the Radius server (192.168.10.254).

Step 4: On the following page, configure the following parameters:

- Password field: set it the same as all the other passwords (cisco)
- If your PC has more than 1 NIC card, be sure to check the **“Use this network adaptor for RADIUS”** and then specify the IP address of the of the Radius server (192.168.10.254)

The screenshot shows the 'CallController Server Parameters' page of the Unified CallConnector Server Setup Wizard. The page is titled 'CallController Server Parameters' and has a checkmark icon. It contains the following fields and options:

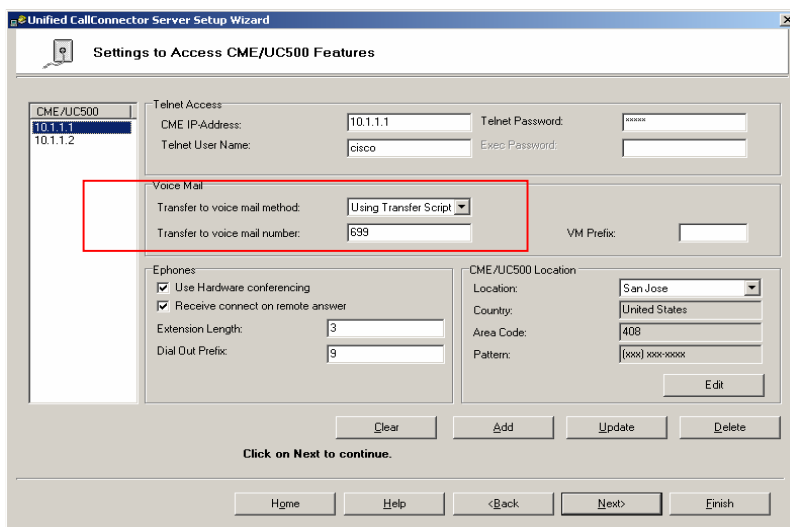
- Please enter CallController SIP Server Parameters:**
 - SIP Server Address: 192.168.10.254
 - Port: 5063
 - User Name: ccCallController
 - Password: [Redacted]
- Use this Network Adaptor to connect to CME
 - Network adaptor IP-Address: 192.168.10.254 (Only required for PCs with multiple network cards)
- Enable speaker when placing or answering a call
- Publish call information shared lines
- Publish call information monitored lines
- Enable trace log file
 - Trace Level: 5
 - Trace File: C:\Program Files\Cisco Systems\Cisco Unified CallConnector Server\Trace Log\CallController

Click on Next to continue.

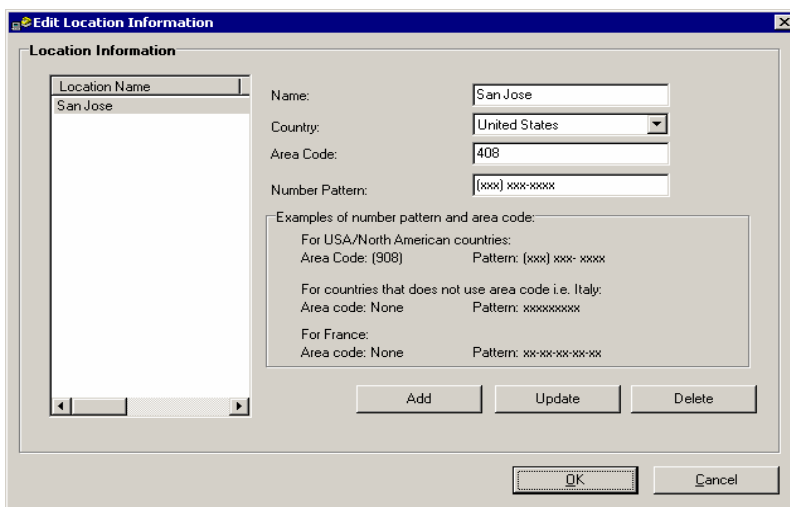
Buttons: Home, Help, <Back, Next>, Finish

Step 5: Configure Access to the UC500 systems. In this case, you have to set up 2 UC500 systems since you will be integrating the UCC server with 2 UC500s. Be sure you specify the following parameters:

- Under **Voice Mail**, be sure to select **“Using Transfer Script”** for **“Transfer to voice mail method**. This tells the system that you will be using the **“directxfer.aef”** script to transfer a call directly to the users voicemail box on CUE in case a SNR call out to the PSTN is not picked up.
- Also under the Voice Mail window, be sure to specify the **“Transfer to voice mail number”** for each UC500 site that you add. San Jose – 699, Irvine - 799
- Under Ephones, be sure to specify **“Extension Length”** as 3 and **“Dial-out Prefix”** as 9.

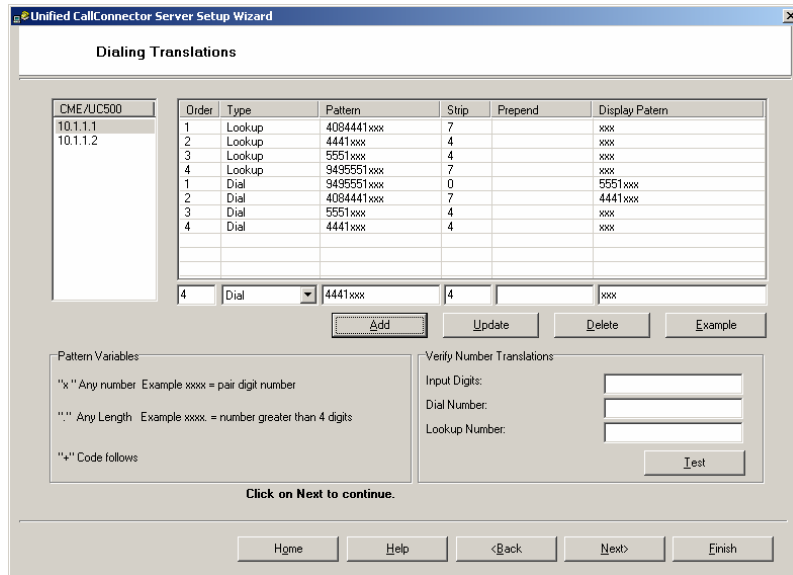


- Under **CME/UC500 location**, add a location for each UC500 site you are going to integrate with the UCC server. In this example, I have configured 2 UC500 sites: San Jose and Irvine. In order to add a new site, click on the **“Edit”** button in the CME/UC500 Location section. Sample for adding San Jose site is below:



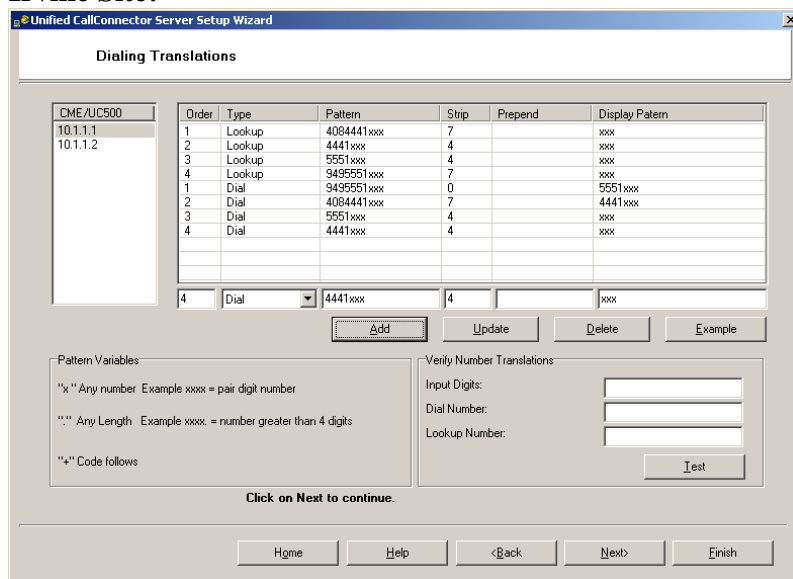
Step 6: Configure Dialing Translations for the UCC Server. It is necessary to configure this page so that when the UCC server does a lookup, it knows which numbers to look for specifically. For example, if user1 at San Jose (301) dials 4084441302, the UCC server knows to translate the number 4084441302 and basically look only at 302 during a dial or lookup.

San Jose Site:



You must perform this step for each site that you add to the UCC server. Please keep in mind that if different sites have different extension lengths, then you will have to adjust the dialing translations for DIAL and LOOKUP accordingly.

Irvine Site:



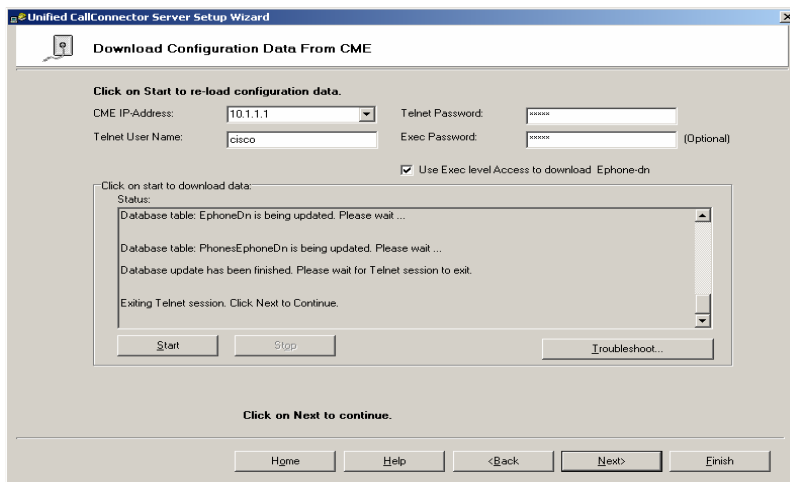
For more information on the Dialing Translations, please refer to the following link (page 88) – http://www.cisco.com/en/US/docs/voice_ip_comm/cucallconnectors/1.4/mobility_admin.pdf

Step 7: Download configuration from UC500 onto the UCC server. This page is used to allow the system administrator to automatically download ephone and ephone-dn information from the UC500 systems onto the UCC server.

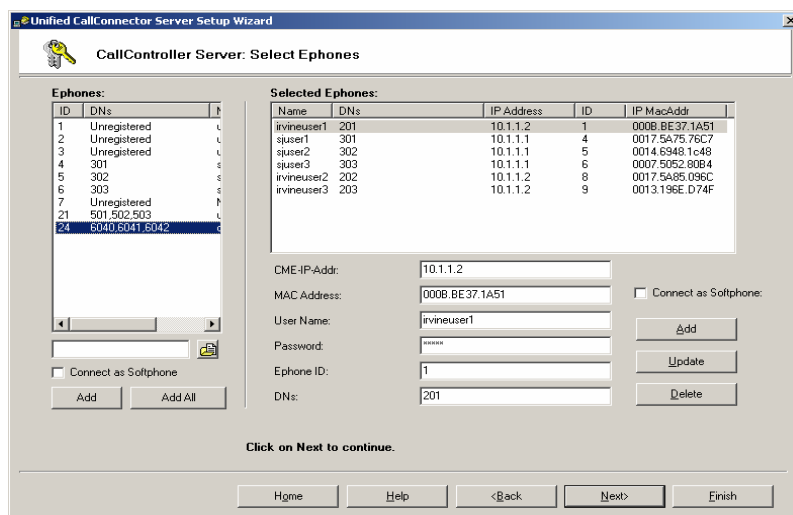
On the following page:

- Enter the IP-Address for each UC500 system you wish to collect information from.
- Enter the telnet username and password
- Enter the enable password

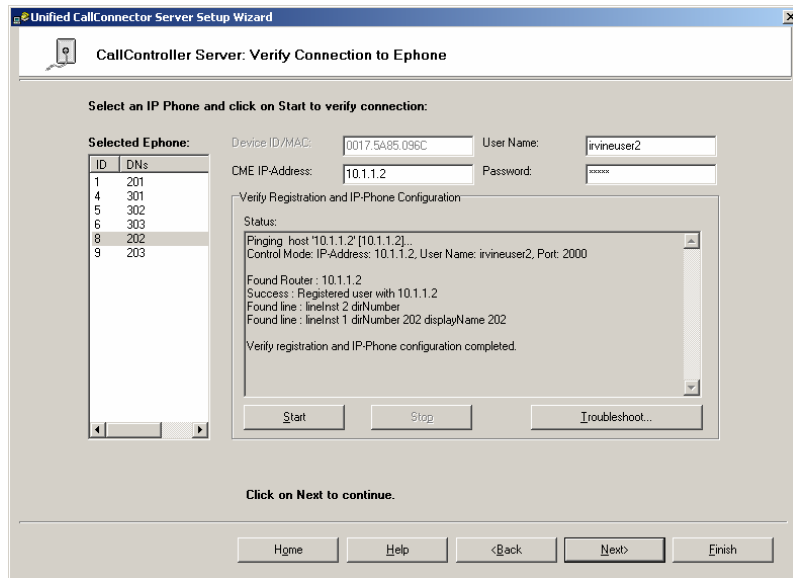
Then click “**Start**” to begin downloading the UC500 configuration onto the UCC server.



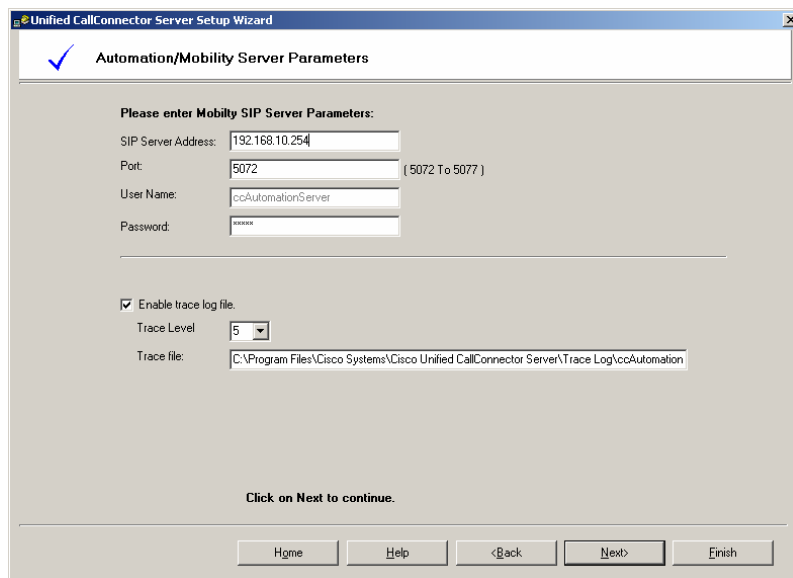
Step 8: On the following page, select which ephones you wish to import onto the UCC server from the UC500 system. If you didn't import the UC500 configuration in the previous step, you will not have any ephones to add on the following page. Thus you would have to manually add the ephones manually.



Step 9: On the following page, verify that the UCC server can establish control to add the ephones onto the UCC server. Simply highlight any ephone on the left window and click on the “Start” tab.



Step 10: Configure the “Automation/Mobility Server Parameters”. On the following page, simply verify that the SIP Server Address field is the correct IP address and enter a password in the password field. It is recommended that you configure the SAME password for all the services running on the UCC server.



Step 11: Click “Next” until you see the following page. On this page, you can configure your holiday schedule for your UCC system.

The screenshot shows the 'Holiday Schedule' configuration page in the Unified CallConnector Server Setup Wizard. The window title is 'Unified CallConnector Server Setup Wizard'. The page has a blue header with a checkmark and the text 'Holiday Schedule'. Below the header, there is a table for 'Holidays' with columns 'Date' and 'Description'. The table contains one entry: '7/4/2008' and 'July 4th'. To the right of the table, there are input fields for 'Date' (7/4/2008) and 'Description' (July 4th), along with 'Clear', 'Add', 'Update', and 'Delete' buttons. Below the table, there are dropdown menus for 'Work Day Start Time' (08:30) and 'Work Day End Time' (18:30). Underneath, there are checkboxes for 'Working Days': Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, and Sunday. Monday, Tuesday, Wednesday, Thursday, and Friday are checked. At the bottom, there is a 'Click on Next to continue.' instruction and a set of navigation buttons: Home, Help, <Back, Next>, and Finish.

Step 12: On the following page, add or delete any groups that you wish. For the purpose of this document, I have created 2 groups and labeled them **San Jose** and **Irvine**. The groups are used to assign UCC users into common groups (either by function or location).

The screenshot shows the 'Data Configuration - Update Group' page in the Unified CallConnector Server Setup Wizard. The window title is 'Unified CallConnector Server Setup Wizard'. The page has a blue header with a book icon and the text 'Data Configuration - Update Group'. Below the header, there is a 'Groups' table with columns 'Name'. The table contains two entries: 'Irvine' and 'San Jose'. To the right of the table, there is a 'Group Name' input field (Irvine), and checkboxes for 'Publish Caller-id Information' and 'Publish Status Information', both of which are checked. Below the table, there are 'Clear', 'Add', 'Update', and 'Delete' buttons. Below the 'Groups' table, there are two more tables: 'Restricted Groups' and 'Available Groups', both with a 'Name' column. The 'Available Groups' table contains one entry: 'San Jose'. Below the 'Restricted Groups' table, there is a 'Delete' button. Below the 'Available Groups' table, there is an 'Add' button. At the bottom, there is a 'Click on Next to continue.' instruction and a set of navigation buttons: Home, Help, <Back, Next>, and Finish.

Step 13: On the following page, you need to now add users onto the UCC server. In this step, you configure contact and group details for each UCC user that will be added to the system. Be sure to configure the required fields, which are indicated by “*”. The **login name/password** credentials defined here are the credentials that will be entered into the UCC Client – step 8.1.

User Table:

User ID	Display Name
189	Irvine User1
188	Irvine User2
185	SJ User1
186	SJ User2
187	SJ User3
182	user1 one

Users Default:

User ID: 189

* First Name: Irvine

* Last Name: User1

* Login Name: irvineuser1

* Password: *****

Company: Cisco

* User Type: User

* Group: Irvine

Serial No: UCCS-0100-xxxxxxxxxx

Users Contacts:

Business: 201

Business2:

Home:

Mobile:

Email: irvineuser1@email.com

SMS:

IM: irvineuser1

Voice mail: 201

Tel PIN:

DISA PIN:

Buttons: Refresh, Clear, Add, Update, Delete

Click on Next to continue.

Home Help <Back Next> Finish

Important: For each user that will have SNR services, be sure to configure the “**Tel PIN**” field on the page above. For each user that will be using DISA features, be sure to configure the “**DISA PIN**” field.

Step 14: On the following page, you will map the ephones added in step 8 with the UCC users that you added in step 13.

Users:

User ID	Display Name
189	Irvine User1
188	Irvine User2
190	Irvine User3
185	SJ User1
186	SJ User2
187	SJ User3

Users Phones:

Phone ID	Phone Name
1	irvineuser1

Phones:

Phone ID	Phone Name	Number
1	irvineuser1	201
4	suser1	301
5	suser2	302
6	suser3	303
8	irvineuser2	202
9	irvineuser3	203

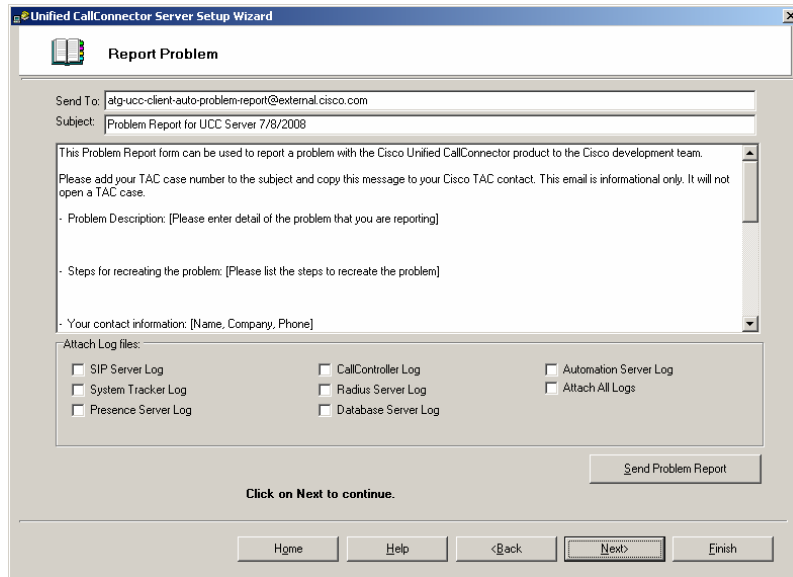
Update User Contact

Click on Next to continue.

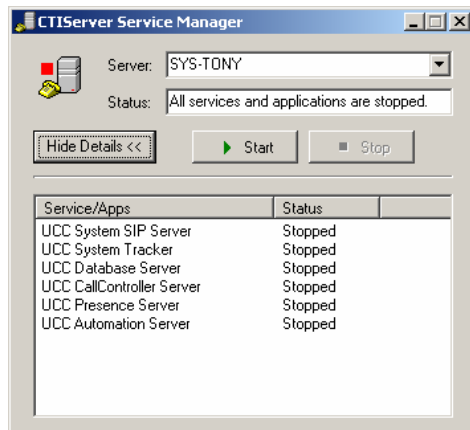
Home Help <Back Next> Finish

Important: Be sure that each USER is mapped to a PHONE.

Step 15: Click “**Next**” until you see the following page. Then click on the “**Finish**” tab. At this point, the UCC server will ask you to reboot in order to finish the install.



Step 16: After the UCC reboots, click on **Start > Program Files > Cisco Systems > Cisco Unified CallConnector Server > CallConnector Service Manager**. This will launch the following window.



In order to start the UCC server services, click on the “**Start**” option.

6 Configuration steps for UCC Mobility Solution

6.1 Direct Transfer to Voicemail

In the event that the UCC Mobility Server has forwarded a SNR call out to the PSTN, the UCC Mobility Server will need to be able to recall the forwarded call in case the PSTN user does not answer the call. In this case, the SNR call will be recalled and sent to the IP Phone user's voicemail box on CUE. In order to do so, the system administrator needs to configure settings on the UC500 and CUE. **[Required]**

6.1.1 Configure Dial-Peers on UC500

As referenced in section 3.3.1 (for San Jose site), the direct transfer to voicemail pilot number is 699. Therefore, the system administrator has to configure a dial-peer so that the UC500 system can route the call to CUE to transfer calls to the user's voicemail box.

San Jose Site:

```
dial-peer voice 699 voip
description ucc-mobility transfer to voicemail
destination-pattern 699
session protocol sipv2
session target ipv4:10.1.10.1 // CUE IP Address
dtmf-relay sip-notify
codec g711ulaw
no vad
```

Irvine Site:

```
dial-peer voice 799 voip
description ucc-mobility transfer to voicemail
destination-pattern 799
session protocol sipv2
session target ipv4:20.1.20.1 // CUE IP Address
dtmf-relay sip-notify
codec g711ulaw
no vad
```

In the above configuration, you need to configure a dial-peer on each UC500 system that uses the direct transfer to voicemail script.

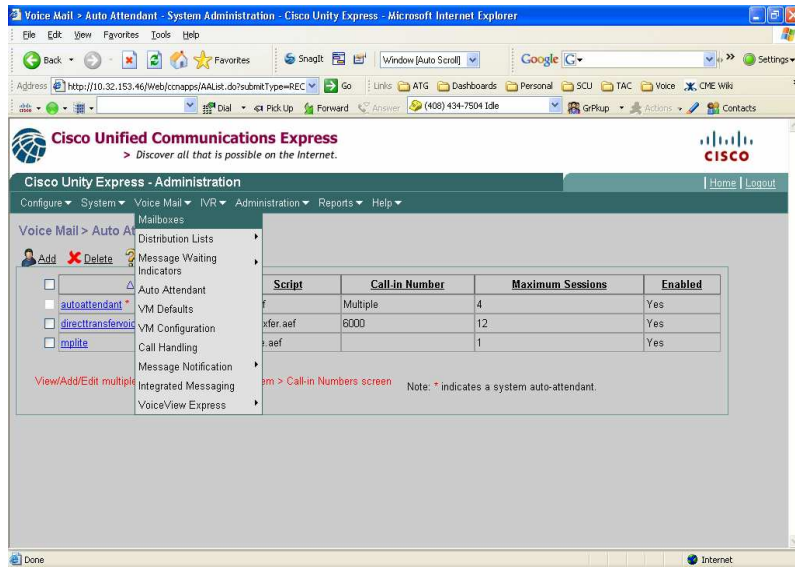
6.1.2 Configure Direct Transfer to voicemail pilot on CUE

The system administrator also needs to load the “**directxfer.aef**” script onto CUE and define the “**Direct Transfer to Voicemail**” pilot number.

Step 1: Go to the following website and download the “**directxfer.aef**” script.
<http://www.cisco.com/cgi-bin/tablebuild.pl/callconnector-ms>

Step 2: Load the “**directxfer.aef**” script onto CUE. Open up Internet Explorer and http into the CUE IP address: <http://10.1.10.1/> . Once you access the CUE GUI page, enter the **Username** and **Password**.

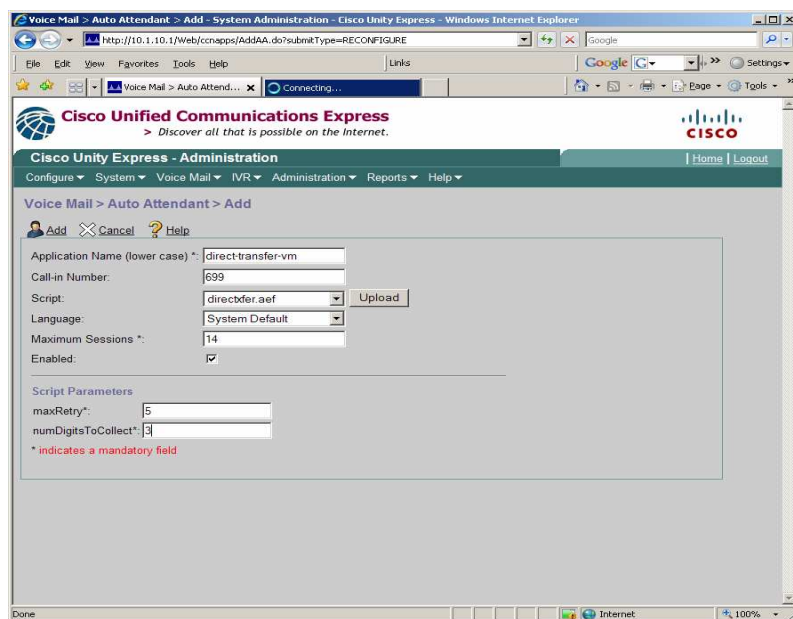
Step 3: Click on the **Voicemail > Auto Attendant** drop-down menu



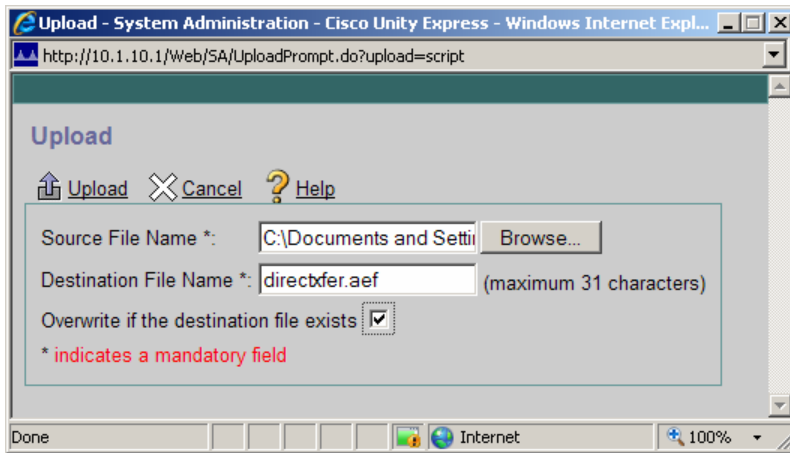
Step 4: On the following page, enter an application name, such as “**direct-transfer-vm**” and then configure the “**Call-in Number**”. The “**Call-in Number**” should be the direct transfer to voicemail pilot number specified in **table 3.3.1** and **table 3.3.2**.

San Jose Site: 699

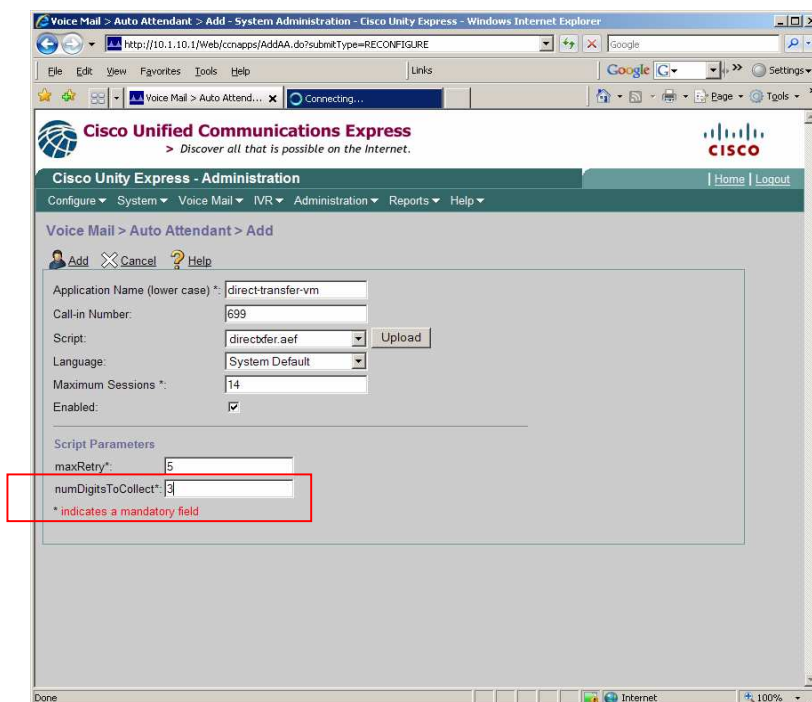
Irvine Site: 799



Step 5: Next click on the “**Upload**” tab and the following page will appear. Use the “**Browse**” tab to browse to the folder where your “**directxfer.aef**” scripts resides on your PC. Once you have selected the “**directxfer.aef**” script, enter a “**Destination File Name**” and then click “**Upload**”.



Step 6: After the “**Directxfer.aef**” script is done uploading, you will be taken back to the following page. In the field “**numDigitsToCollect**”, configure the “**3**” since your internal extensions are 3 digits long. Click on the “**Add**” link to finish adding the script to the CUE service.



For more on configuring direct transfer to voicemail, please refer to the following link (page 69) - http://www.cisco.com/en/US/docs/voice_ip_comm/cucallconnectors/1.4/mobility_admin.pdf

6.2 Configure Mobility ephones for SNR

If a system administrator has purchased the UCC Mobility solution and wishes to enable Single Number Reach (SNR) functionality on the system, the administrator must configure mobility ephones on the UC500 system and then add these mobility ephones to the UCC server. **[Required]**

San Jose Site:

```
ephone-dn 11
  number 361
  !
ephone-dn 12
  number 362
  !
ephone-dn 13
  number 363
  !
ephone 7
  mac-address AAAA.BBBB.CCC1
  username "sj-mobility" password cisco
  type 7960
  button 1:11 2:12 3:33
```

NOTE: Please note that each of these ephone-dns are single line (not dual-line) – this is a requirement.

Irvine Site:

```
ephone-dn 11
  number 261
  !
ephone-dn 12
  number 262
  !
ephone-dn 13
  number 263
  !
ephone 7
  mac-address AAAA.BBBB.CCC2
  username "irvine-mobility" password cisco
  type 7960
  button 1:11 2:12 3:13
```

Please note that when you try to import ephones onto the UCC Server, the UCC server can not accept ephones with identical mac-addresses. Thus when you add softphones, please use unique mac-addresses.

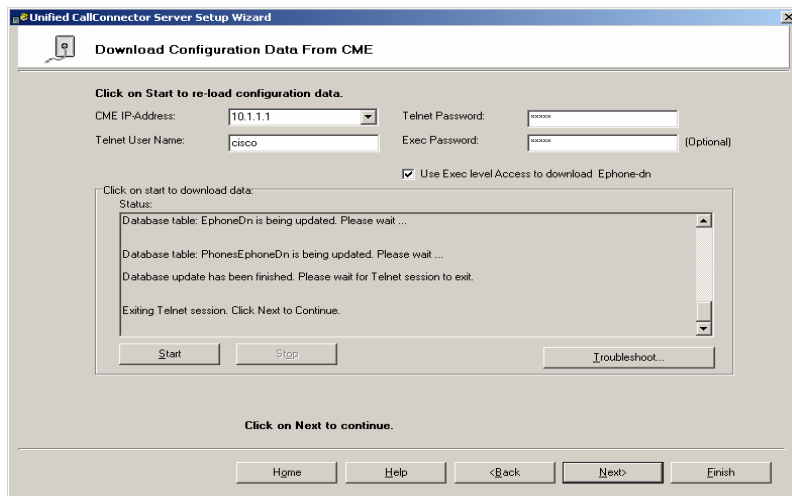
To calculate how many mobility ephones you need to configure, refer to the following link (page 57) -

http://www.cisco.com/en/US/docs/voice_ip_comm/cucallconnectors/1.4/mobility_admin.pdf

6.3 Add Mobility ephones to the UCC server

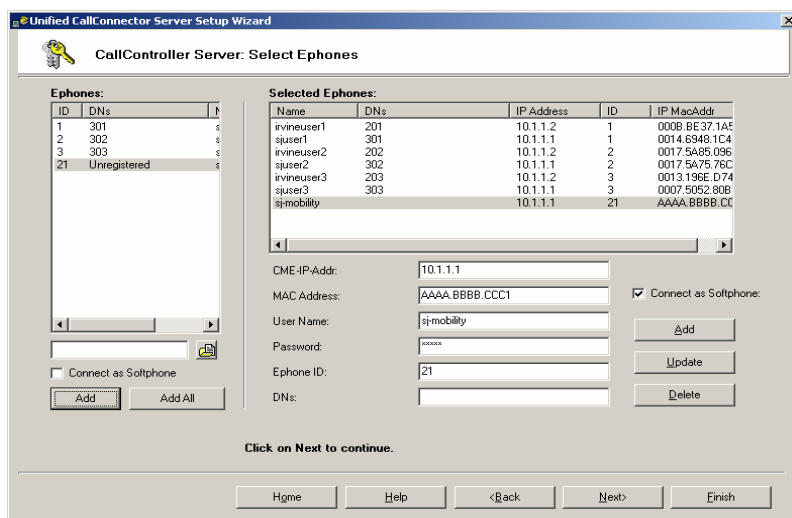
Now that you have created mobility ephones for the UCC server to use, you need to add the mobility ephones to the UCC server database. **[Required]**

Step 1: On the UCC Server, click on **Start > Program Files > Cisco Systems > Cisco CallConnector Server Wizard**. Click “**Next**” until the screen below. On the following screen, select the CME IP address (be sure do to this for both UC500s), enter the telnet info and “**Enable Password**” and then click “**Start**”. This will instruct the UCC server to log onto the CME and import the new softphones you just created onto the UCC server database. When you have finished, click on the “**Next**” button.

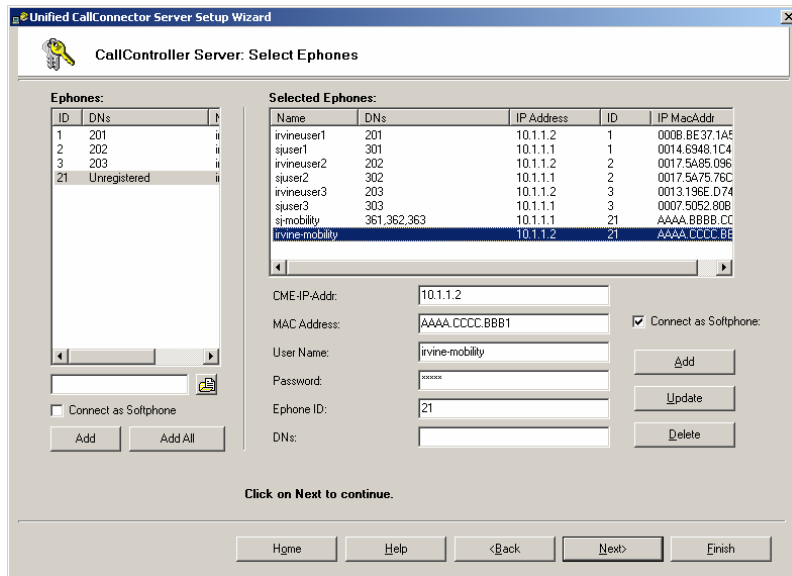


Step 2: On the following screen, select the new mobility ephone in the left pane and then click on the “**Add**” tab. Once the mobility ephone is added to the “**Selected Ephones**” window, highlight the mobility ephone and check the box “**Connect as Softphone**”. Then be sure to click on the “**Update**” tab and then click on the “**Next**” tab

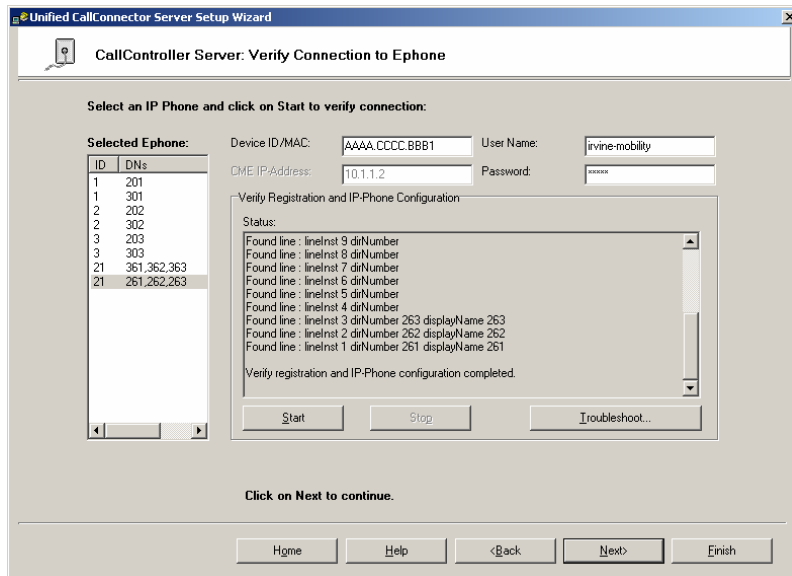
San Jose Site:



Irvine Site:



Step 3: On the following screen, highlight the new mobility ephones and click on the “Start” tab to make sure that UCC server can establish a TAPI session underneath the ephone.

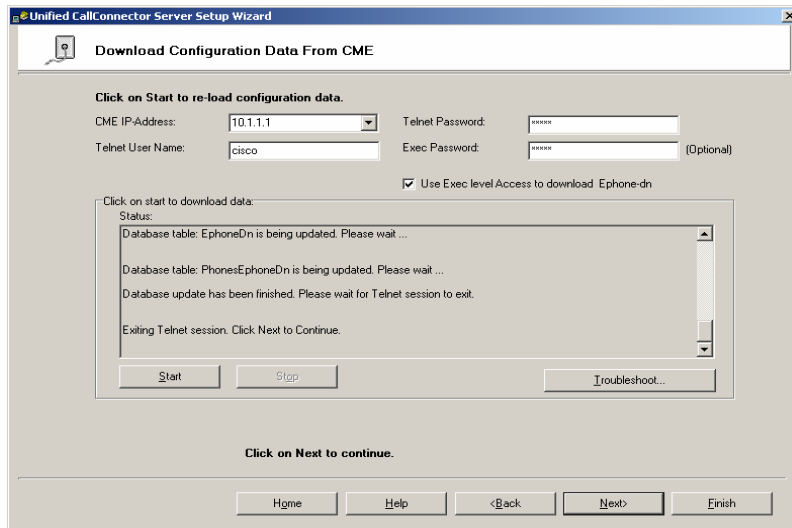


At this point, you are done importing the SNR mobility ephones onto the UCC server. Click “Finish” to apply the changes.

6.4 Configure SNR Ephone Pools

In addition to configuring mobility ephones on the UC500 system and adding them to the UCC server, the system administrator must also configure SNR Ephone pools on the UCC Server. The SNR Ephone pools are configured to allow the UCC server to use a set of mobility ephones to initiate outbound calls on behalf of the UCC server. **[Required]**

Step 1: On the UCC Server, click on **Start > Program Files > Cisco Systems > Cisco CallConnector Server Wizard**. Click “**Next**” until the screen below.

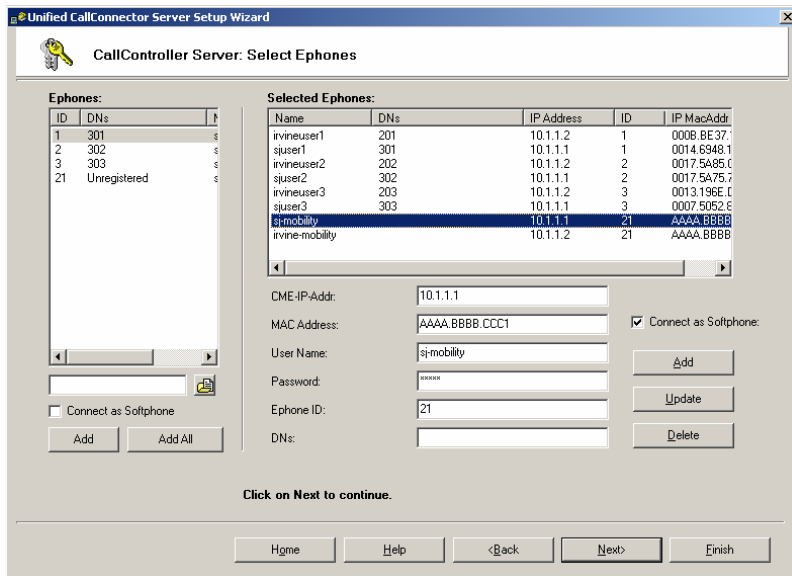


In the above page:

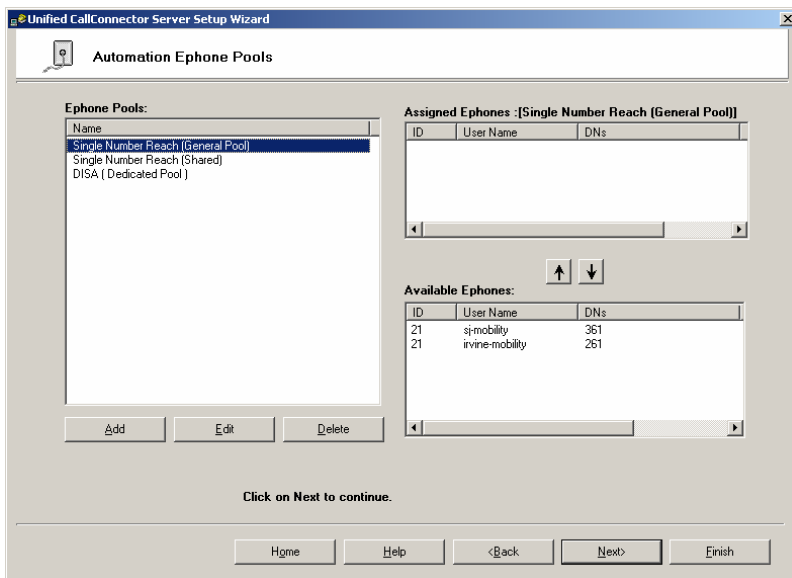
- Enter the IP-Address for each UC500 system you wish to collect information from.
- Enter the telnet username and password
- Enter the enable password

Then click “**Start**” to begin downloading the UC500 configuration onto the UCC server. Then click on the “**Next**” button.

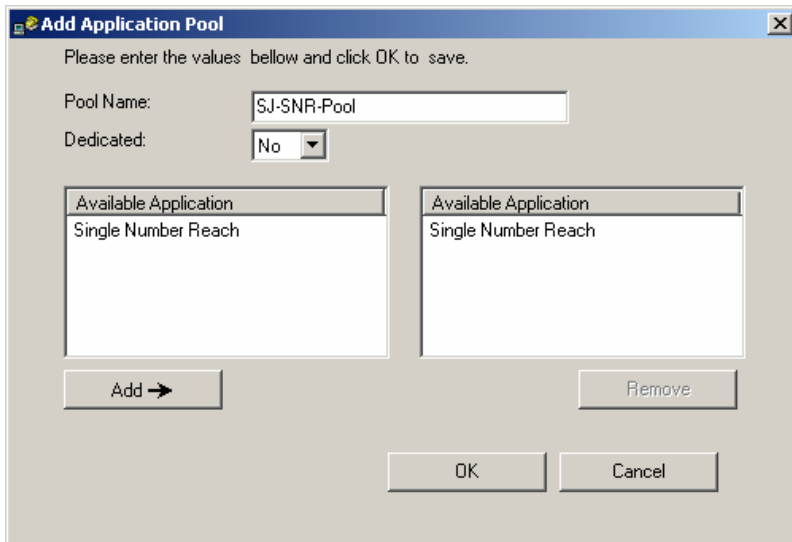
Step 2: On the screen below, highlight the newly added mobility ephones in the left pane and click on the “**Add**” button. Once the mobility ephone is added into the “**Selected Ephone**” pane, highlight the mobility ephone and check the box “**Connect as Softphone**” and then click “**Update**”.



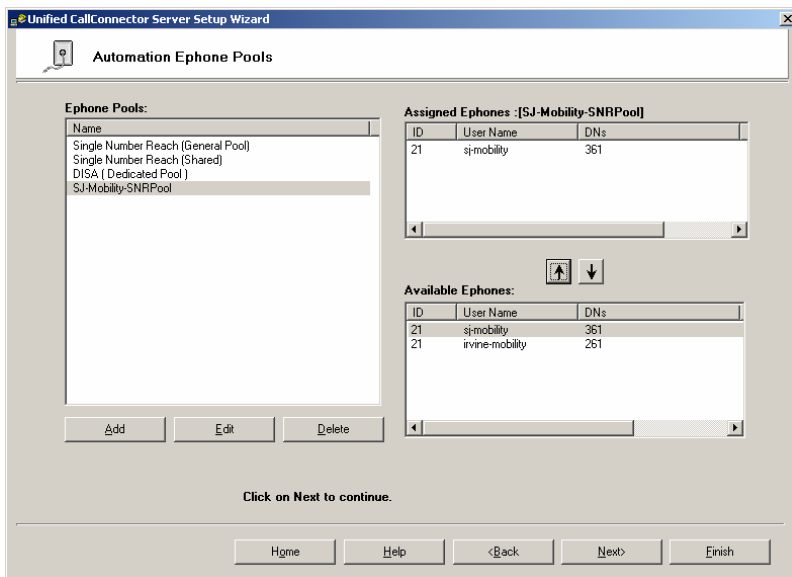
Step 3: Click on the “**Next**” button until you see the following page. In order to create a new Automation Ephone Pool, click on the “**Add**” button.



Step 4: After you click on the “**Add**” button, you will see the following page. Configure a Pool Name, select “**No**” for the "Dedicated" field, and then in the left window, select “**Single Number Reach**” and click on the “**Add**” button to make the Single Number Reach application available in the “**Available Application**” window. Then click “**OK**”.



Step 5: On the following page, select the newly created Ephone Pool in the left pane and then in the “**Available Ephones**” window, select the mobility ephone you created and click on the UP ARROW to add the mobility ephone into the “**Assigned Ephones**” window. Click “**Finish**” to apply the configuration.



For more information on the above configuration steps, please refer to the following link (page 101) - http://www.cisco.com/en/US/docs/voice_ip_comm/cucallconnectors/1.4/mobility_admin.pdf

7 Enabling Mid-Call and DISA Features

If the system administrator wishes to enable Mid-call or DISA features on the UCC Server system, the administrator will have to configure additional dedicated softphones for each ephone that wishes to use mid-call features. For the DISA functionality, the system administrator has to configure DISA pools to answer inbound DISA calls. **[Required]**

Mid-call Features:

- Allow a user to transfer a call to voicemail or IP Phone
- Park a call
- Set up a conference
- Change presence and location dynamically

DISA Features:

- Allow users to remote make business calls that are initiated from the CME system
- System conferences
- Change presence and location dynamically

7.1 CME Hardware Conferencing configuration

7.1.1 Abstract

In order for UCC users to have access to mid-call or Dial-in System Access (DISA) features, CME hardware conferencing has to be configured on the UC500 system. The UCC server uses CME hardware conferencing to set up a conference and keep the CME conferenced in during SNR calls.

For more information on how to set up CME hardware conference, please refer to the following links:

http://www.cisco.com/en/US/docs/voice_ip_comm/cucme/admin/configuration/guide/cmeconf.html#wp1020601

Cisco Configuration Assistant:

CCA can be used to configure hardware conferencing on the UC500. For more information on CCA, please refer to the following link:

http://www.cisco.com/en/US/partner/docs/net_mgmt/cisco_configuration_assistant/version1_0/release/notes/OL12783.html

7.2 Mid-Call Feature

7.2.1 Abstract

Each ephone user that wishes to use mid-call features has to have a shared mobility ephone. This shared mobility ephone will be added to the dedicated SNR pool and used to keep the CME conferenced in during a SNR call.

7.2.2 Shared Mobility Ephone

In the following configuration, we will configure a shared mobility ephone for the following ephone (sj-user1).

San Jose Site:

```
ephone-dn 21
  number 371
  !
ephone-dn 22
  number 372
  !
ephone-dn 23
  number 373
  !
ephone 8
  mac-address aaaa.cccc.fff1
  username "sjuser1-share" password cisco
  type 7960
  button 1:21 2:22 3:23 4:1
```

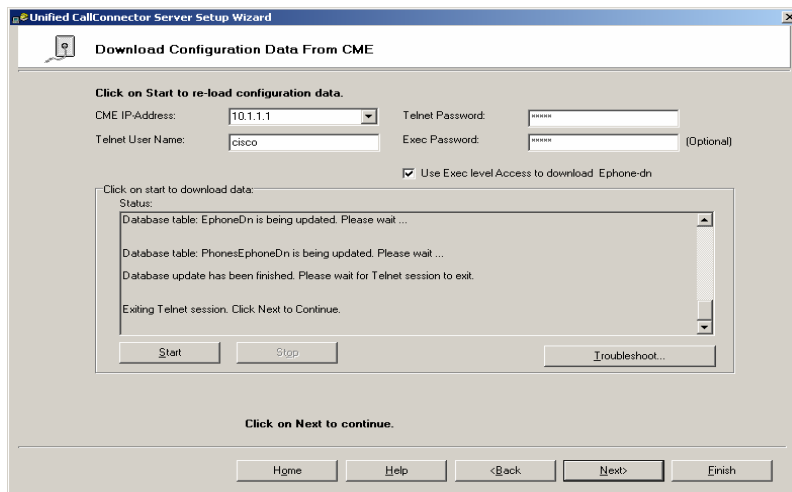
NOTE: In the above config, the shared mobility ephone has unique ephone-dns on button 1, 2, 3. However, on button 4, it shares the same ephone-dn (1) as sj-user1 – referenced in **configuration step 4.1.2**. Also, please note that you do this for every ephone user who wishes to use the mid-call features.

For more information on shared mobility ephone, please refer to the following link (page 60) - http://www.cisco.com/en/US/docs/voice_ip_comm/cucallconnectors/1.4/mobility_admin.pdf

7.2.3 UCC Server - Mobility Ephone Pool

After you have configured the shared mobility ephone, you must now add the shared mobility ephone into the dedicated SNR pool.

Step 1: On the UCC Server, click on **Start > Program Files > Cisco Systems > Cisco CallConnector Server Wizard**. Click “Next” until the screen below.

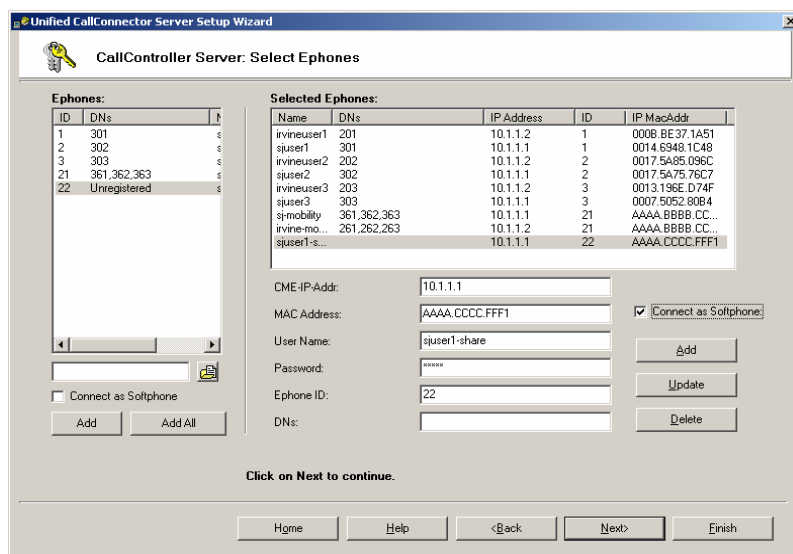


On the above page:

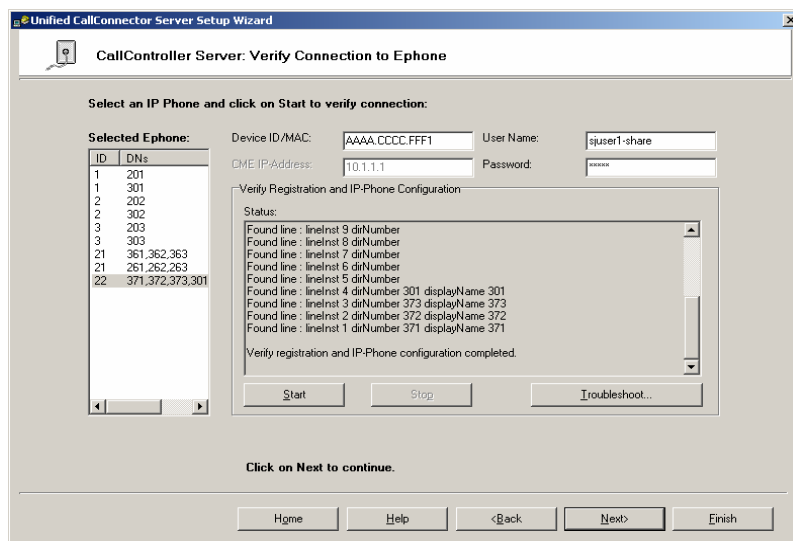
- Enter the IP-Address for each UC500 system you wish to collect information from.
- Enter the telnet username and password
- Enter the enable password

Then click **“Start”** to begin downloading the UC500 configuration onto the UCC server.

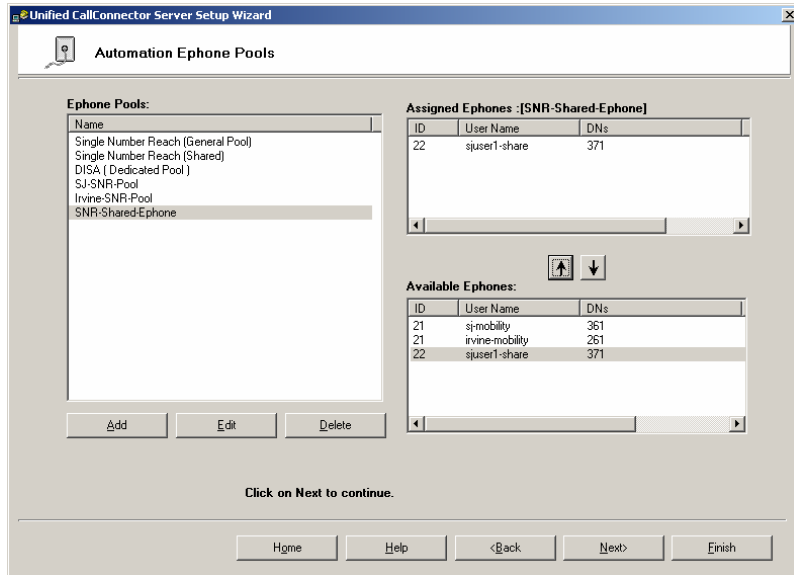
Step 2: On the following page, in the left hand window, select the new mobility ephone and click on the **“Add”** button. Once the new mobility ephone is added into the right hand window, highlight the mobility ephone and check the box **“Connect as Softphone”** and then click **”Update”**. Then click on the **“Next”** button.



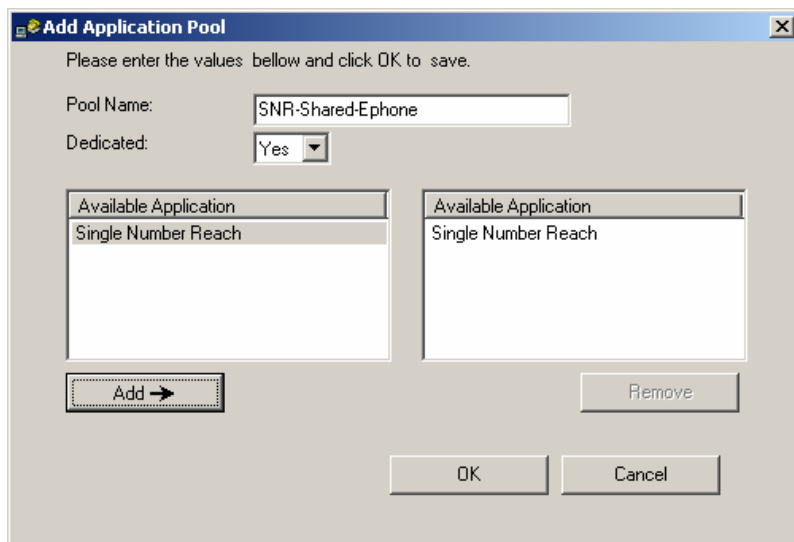
Step 3: On the following page, select the newly imported mobility ephone and then click on the **“Start”** button.



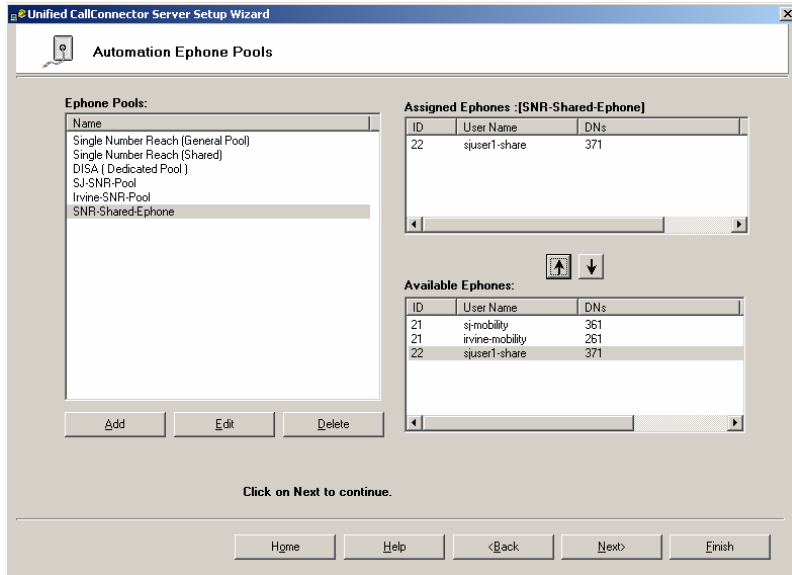
Step 4: Click next until you see the following page. Then click on the “Add” button.



Step 5: You should see the following screen open. Configure a pool name, and then set the DEDICATED field to YES. Highlight the “Single Number Reach” application and then click on the “Add” button to add it to the “Available Application” window. Next click “OK”.



Step 6: On the following screen, highlight the new “SNR-Shared-Ephone” pool and then in the “**Available Ephones**” window, highlight the shared mobility ephone and then click on the UP ARROW to add it to the “**Assigned Ephones**” window.



At this point, click on the “**Finish**” button to complete the shared mobility ephone config.

For more information on setting up mobility ephones with Shared DN to a Dedicated Ephone Pool, please refer to the following link (page 101) -

http://www.cisco.com/en/US/docs/voice_ip_comm/cucallconnectors/1.4/mobility_admin.pdf

7.3 DISA Functionality

7.3.1 Abstract

In order to enable DISA functionality on the UCC system, the system administrator must configure a DISA ephone and configure a hunt-group to answer incoming calls on behalf of the DISA functionality – keep in mind that the pilot number needs to be reachable on an inbound call.

7.3.2 DISA ephone Configuration

In the following configuration, we will configure a DISA ephone that will be used by the UCC server to answer inbound DISA calls.

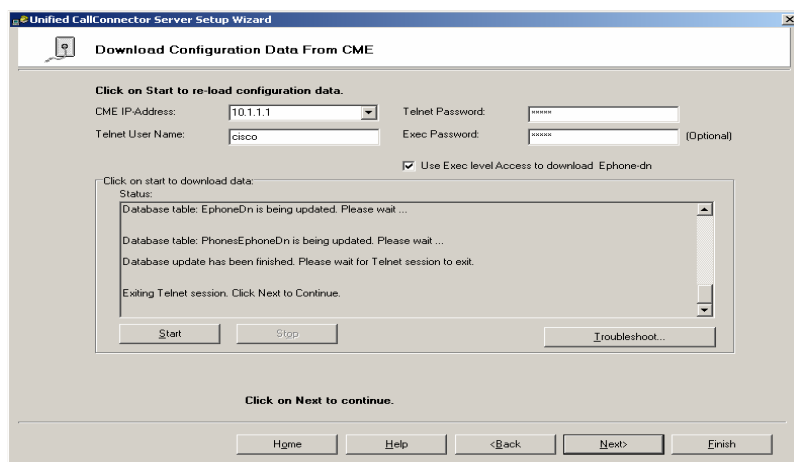
```
ephone-dn 31
  number 381
  !
ephone-dn 32
  number 382
  !
ephone-dn 33
  number 383
  !
ephone 9
  mac-address aaaa.ddd.fff1
  username "sj-disa1" password cisco
  type 7960
  button 1:31 2:32 3:33
  !
ephone-hunt 1 sequential
  pilot 4084441300
  list 381, 382, 383
  description UCC-DISA
```

For more information on the above configuration, refer to the following link (page 73) - http://www.cisco.com/en/US/docs/voice_ip_comm/cucallconnectors/1.4/mobility_admin.pdf

7.3.3 UCC Server - DISA Pool

After you have configured the DISA ephones in the previous step, you must now add the ephones into the dedicated DISA pool on the UCC server.

Step 1: On the UCC Server, click on **Start > Program Files > Cisco Systems > Cisco CallConnector Server Wizard**. Click **“Next”** until the following screen.

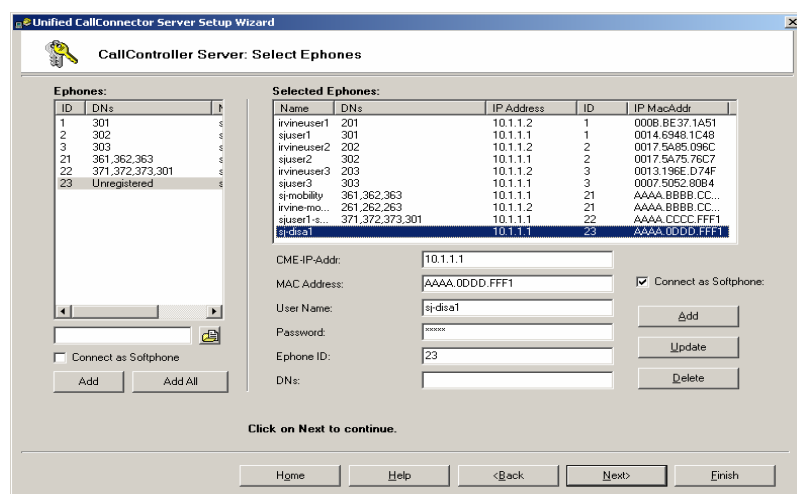


On the above page:

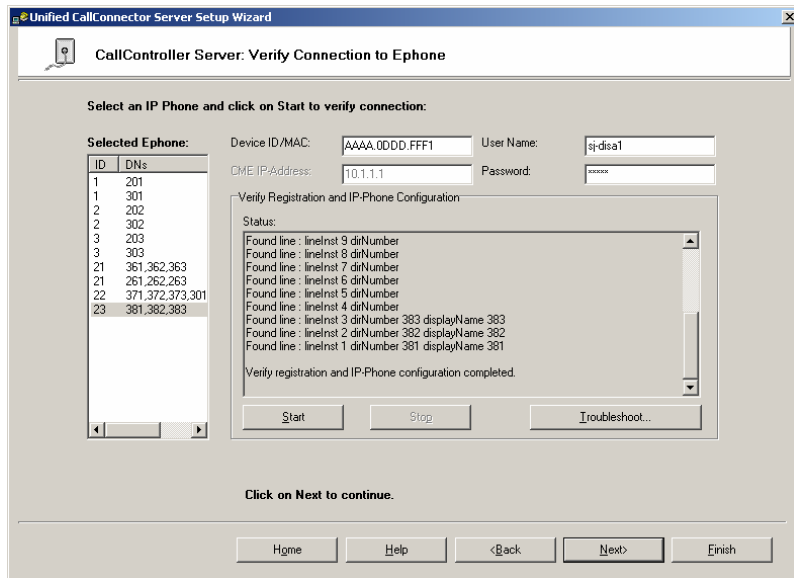
- Enter the IP-Address for each UC500 system you wish to collect information from.
- Enter the telnet username and password
- Enter the enable password

Then click **“Start”** to begin downloading the UC500 configuration onto the UCC server.

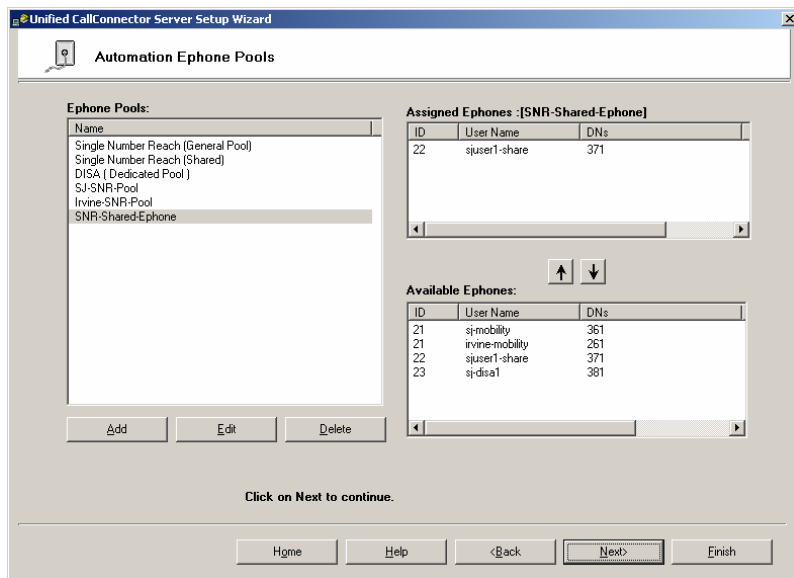
Step 2: On the following page, in the left hand window, select the new DISA ephone and click on the **“Add”** button. Once the new DISA ephone is added into the right hand window, highlight the DISA ephone and check the box **“Connect as Softphone”** and then click on the **“Update”** button. Then click on the **“Next”** button.



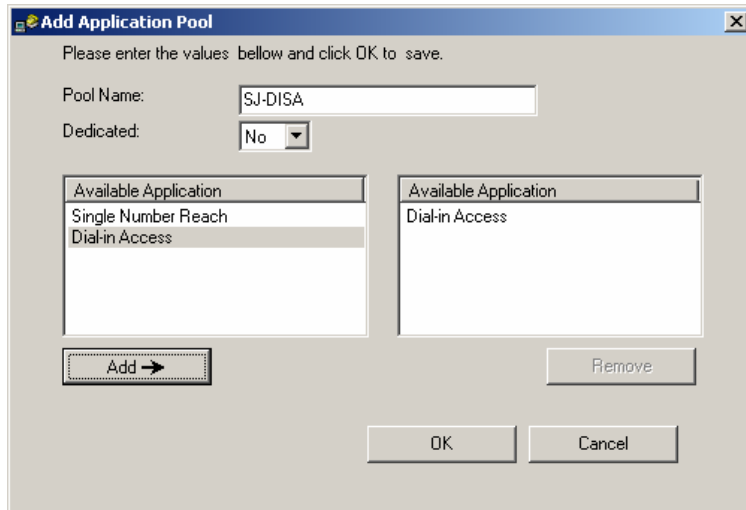
Step 3: On the following page, select the newly imported DISA ephone and then click on the “**Start**” button.



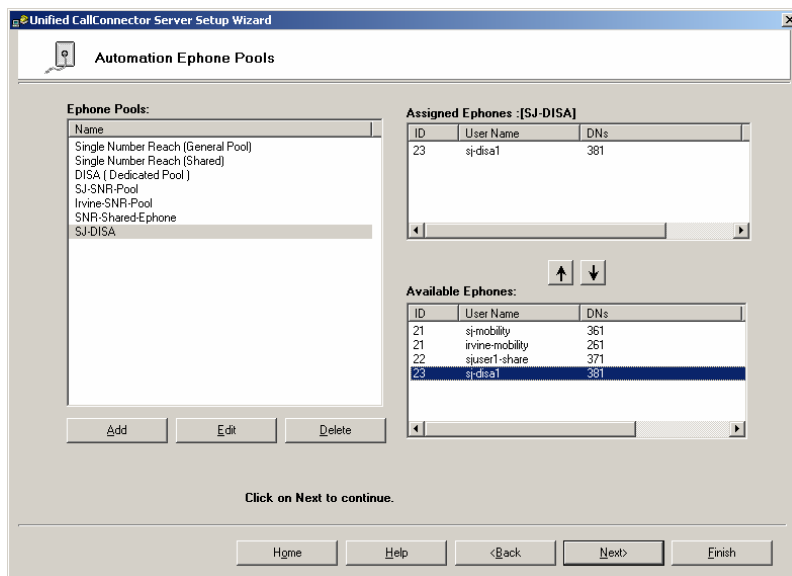
Step 4: Click next until you see the following page. Then click on the “**Add**” button.



Step 5: You should see the following screen open. Configure a pool name, and then set the DEDICATED field to NO. Highlight the “Dial-in Access” application and then click on the “Add” button to add it to the “Available Application” window. Next click “OK”.



Step 6: On the following screen, highlight the new SJ-DISA pool and then in the “Available Ephones” window, highlight the DISA mobility ephone and then click on the UP ARROW to add it to the “Assigned Ephones” window.



At this point, click on the “Finish” button to complete the DISA Pool config.

For more information on DISA configuration, please refer to the following link (page 102) - http://www.cisco.com/en/US/docs/voice_ip_comm/cucallconnectors/1.4/mobility_admin.pdf

7.4 Mid-call and DISA Options

After the system administrator has enabled SNR, Mid-Call and DISA features on the system, the system administrator can also configure the following options:

- Enable or disable mid-call features
- Enable or disable DISA features
- Maximum number of concurrent calls to locate user
- Maximum number of SNR sessions
- Enable or disable authentication for DISA calls

Step 1: On the UCC Server, click on **Start > Program Files > Cisco Systems > Cisco CallConnector Server Wizard**. Click “Next” until the following screen.

The screenshot shows the 'Automation Mobility Service' configuration window. It is divided into several sections:

- Single Number Reach Options:** Includes checkboxes for 'Allow mid-call to features access' (checked) and 'Hide User Phone Number' (checked). It also has input fields for 'Maximum number of calls to locate user' (4), 'Max wait time for user answer(seconds):' (20), and 'Maximum number of SNR session:' (15).
- Dial-in-Access Options:** Includes 'Allow Dial-in access' (checked) and 'Authentication Type' (Unrestricted Access). A dropdown menu is open showing options: 'Unrestricted Access', 'Restricted # and password', and 'Restricted Numbers'. There is also a 'DNs' field and radio buttons for 'Use Dial-in Pool' (selected) and 'Enter Number'. An 'Edit' button is present.
- Transmit Caller Phone Number:** Includes a checked checkbox 'Show caller number for Mobility Service Calls'. Below it, there is a section for 'Select an IP to update caller id forwarding settings' with a list containing 'CME', '10.1.1.1', and '10.1.1.2'. An 'Update' button is below this list. To the right, there is a field for 'If caller number is less than 3 digits then send' and a checkbox for '(as prefix)'. Another 'Update' button is below this section.
- Voice Prompt:** A dropdown menu showing 'US English-Female'.

At the bottom, there is a 'Click on Next to continue.' instruction and a row of buttons: Home, Help, <Back, Next>, and Finish.

For more information on each of the following options, please refer to the following link (page 102) -

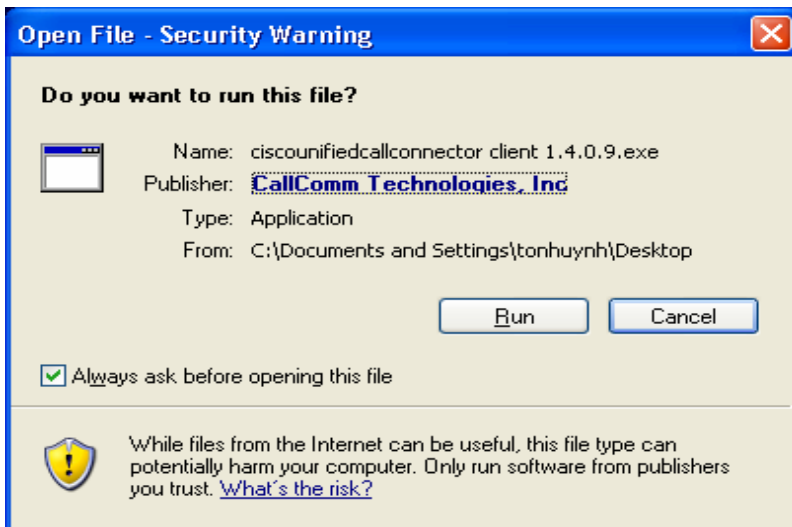
http://www.cisco.com/en/US/docs/voice_ip_comm/cucallconnectors/1.4/mobility_admin.pdf

8 Installing UCC client

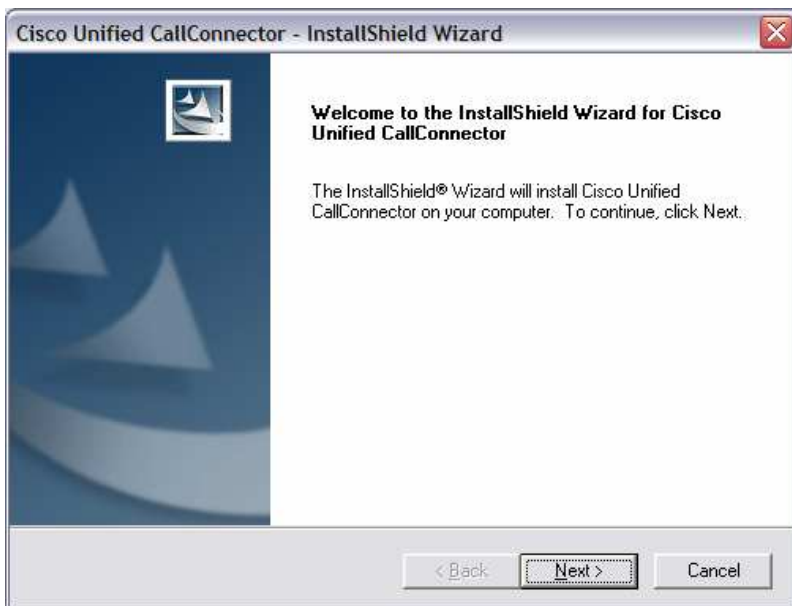
In this section, the system administrator will learn how to install and configure the Cisco Unified CallConnector Client to register with the Cisco Unified CallConnector Server. As mentioned earlier, when the Cisco UCC client operates with the UCC server, it gains access to presence, location, and instant messaging functionality.

8.1 Install the UCC Client

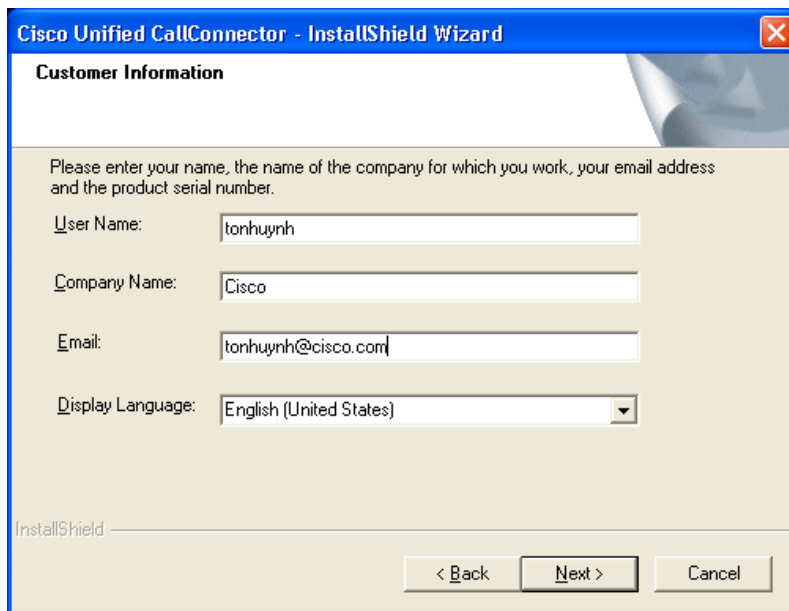
Step 1: In order to install the UCC client, double-click on the UCC client executable file.



On the following screen, click “Next”.



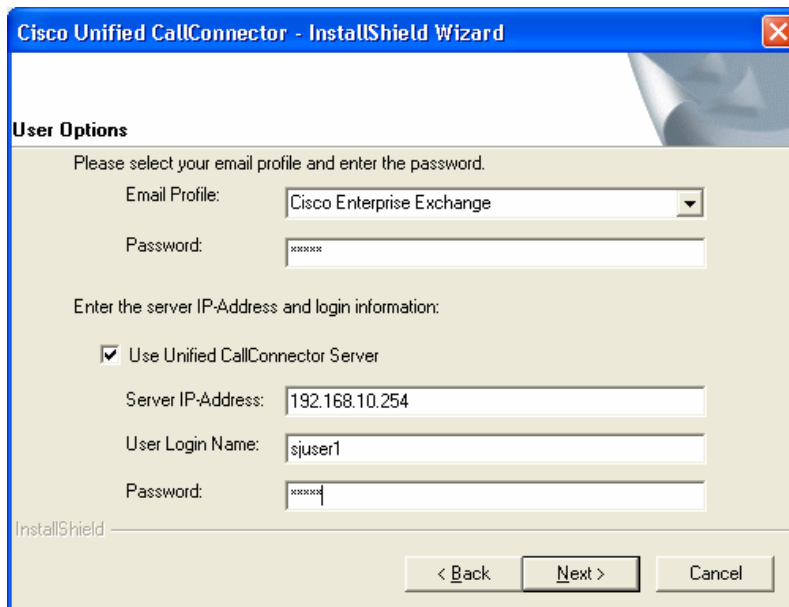
On the following screen, enter your *Username*, *Company Name* and *Email address*. Then click “**Next**”.



The screenshot shows the 'Customer Information' screen of the Cisco Unified CallConnector - InstallShield Wizard. The window title is 'Cisco Unified CallConnector - InstallShield Wizard'. The main heading is 'Customer Information'. Below the heading, there is a prompt: 'Please enter your name, the name of the company for which you work, your email address and the product serial number.' There are four input fields: 'User Name' with the value 'tonhuynh', 'Company Name' with the value 'Cisco', 'Email' with the value 'tonhuynh@cisco.com', and 'Display Language' with a dropdown menu set to 'English (United States)'. At the bottom, there are three buttons: '< Back', 'Next >', and 'Cancel'. The 'InstallShield' logo is visible in the bottom left corner.

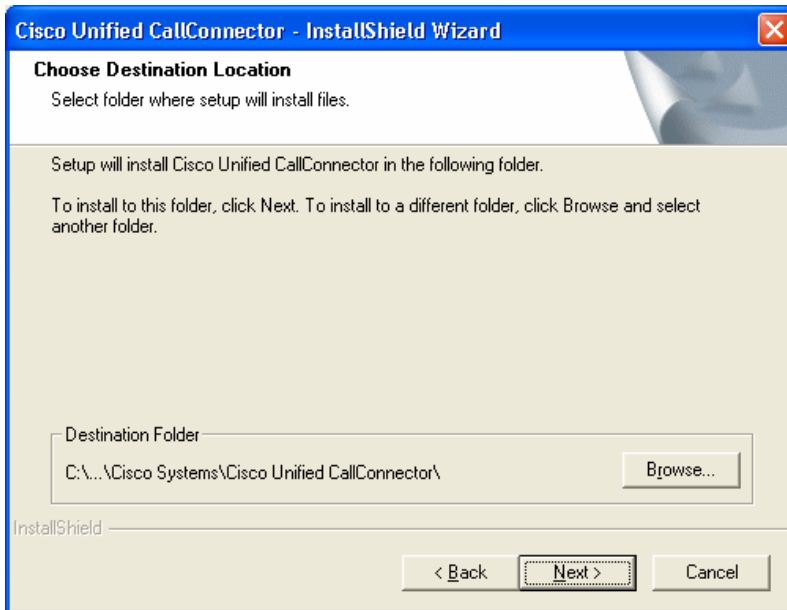
On the following screen, select your “**Email profile**” and enter the email profile password. Since you will be registering the Cisco Unified CallConnector client with the Cisco Unified CallConnector server, fill out the following fields:

- **Server IP-Address:** 192.168.10.254 (since the UCC server IP address in this deployment has this address)
- **Username:** sjuser1 (this is the username defined underneath the ephone)
- **Password:** cisco (this is the password defined underneath the phone)

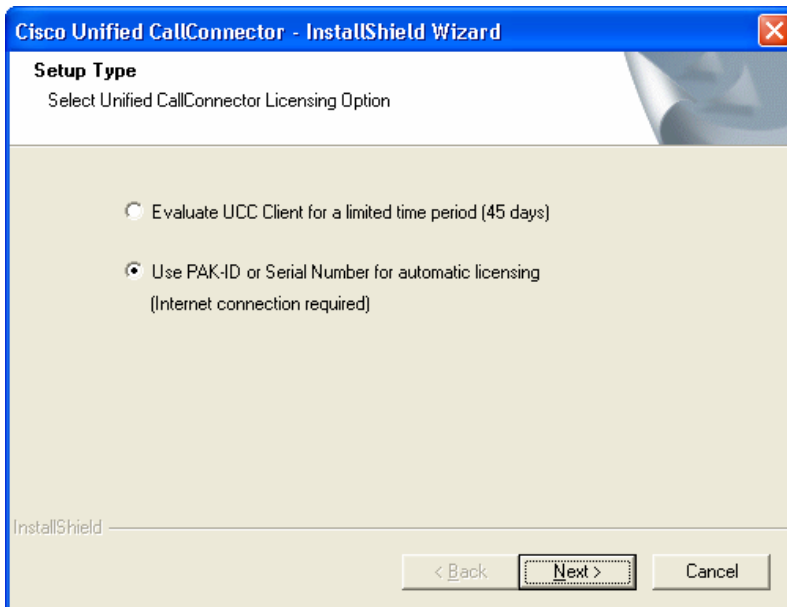


The screenshot shows the 'User Options' screen of the Cisco Unified CallConnector - InstallShield Wizard. The window title is 'Cisco Unified CallConnector - InstallShield Wizard'. The main heading is 'User Options'. Below the heading, there is a prompt: 'Please select your email profile and enter the password.' There are two input fields: 'Email Profile' with a dropdown menu set to 'Cisco Enterprise Exchange' and 'Password' with a masked field (*****). Below this, there is a prompt: 'Enter the server IP-Address and login information:'. There is a checked checkbox labeled 'Use Unified CallConnector Server'. Below the checkbox, there are three input fields: 'Server IP-Address' with the value '192.168.10.254', 'User Login Name' with the value 'sjuser1', and 'Password' with a masked field (*****). At the bottom, there are three buttons: '< Back', 'Next >', and 'Cancel'. The 'InstallShield' logo is visible in the bottom left corner.

On the following screen, click on “Next”.



Step 2: If you are going to run the UCC client in TRIAL mode, then select “**Evaluate UCC Client for a limited time period (45 days)**”. If you have a valid PAK-ID, then select “**Use PAK-ID or Serial Number for automatic licensing (internet connection is required).**” Then click “Next”.



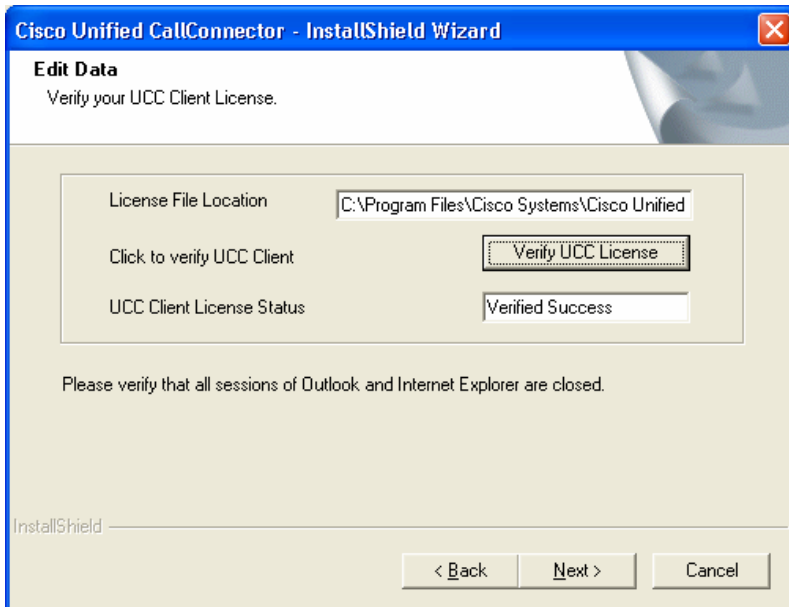
On the following screen, fill out the following fields: *Name*, *Company*, and *Email*. Then click on the “**Advanced Option**” tab if you already have a valid PAK-ID.

The screenshot shows the 'Activation Utility' window. It contains a text area with instructions: 'Please enter PAK-ID or serial number and email and then click to activate.' Below this is a paragraph explaining the license activation process. There are five input fields: 'PAK-ID or Serial number:', 'Name: tonhuynh', 'Company: Cisco', 'Email: tonhuynh@cisco.com', and 'Result:'. An 'Activate' button is located below the 'Result' field. At the bottom, there are four buttons: 'Advanced Option', '< Back', 'Next >', and 'Cancel'.

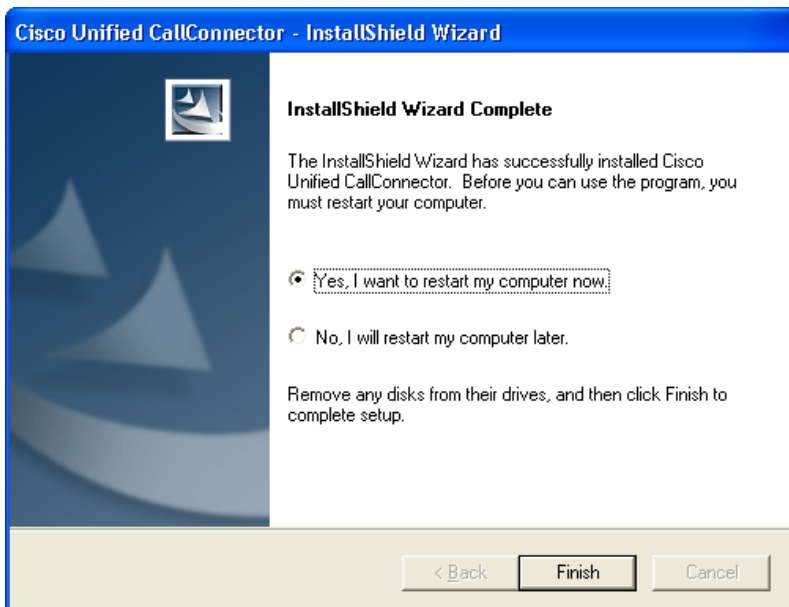
If you click on the “**Advanced Option**” tab in the previous step, you should see the following screen. On the following screen, click on the “**Browse**” tab and browse to the folder where your UCC PAK-ID resides. Then click on the “**Next**” tab.

The screenshot shows the 'Customer Information' window. It contains a text area with instructions: 'Register with Cisco System to obtain a License File'. Below this is a paragraph explaining the registration process. There are six numbered steps: 1. Click on the Registration button. (A 'Cisco Registration Site' button is visible). 2. Log in using your Cisco.com account. (If you do not have an account, you will need to create one). 3. Enter your PAK number. You will see the list of UCC licenses that you have purchased. 4. Select the SW-UCC-CLIENT-1 and enter QUANTITY ONE ONLY. 5. Copy and paste UCC Machine ID: 3CA1086F0147 and CPU ID: 0123456789abcdef. 6. A license file will be emailed to you. Save it on your PC. Below step 6, there is a text field for 'Browse and select the file location:' with the path 'C:\Documents and Settings\to' and a 'Browse...' button. At the bottom, there are three buttons: '< Back', 'Next >', and 'Cancel'.

On the following screen, click “**Verify UCC License**” to verify that the PAK-ID you have is valid. If the UCC Client License Status returns “**Verified Success**”, then you are done with the registration process. Please note that you will need internet access when you activate the license PAK.



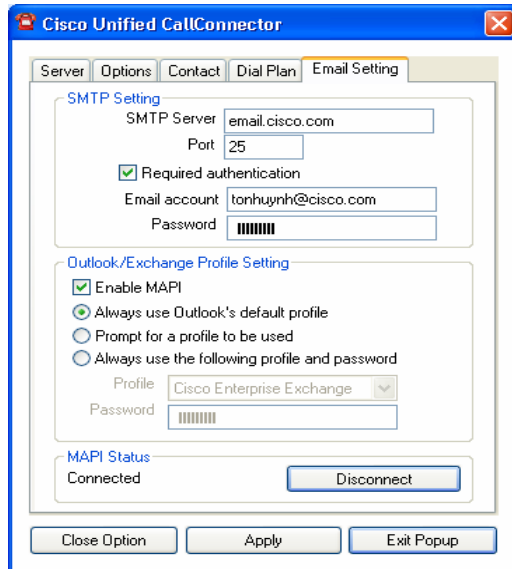
On the following screen, select “**Yes, I want to restart my computer now**” to reboot your PC and finish the installation process.



8.2 Configure the UCC Client settings

In the following section, the system administrator needs to configure the UCC client settings to enable the UCC user to use the client.

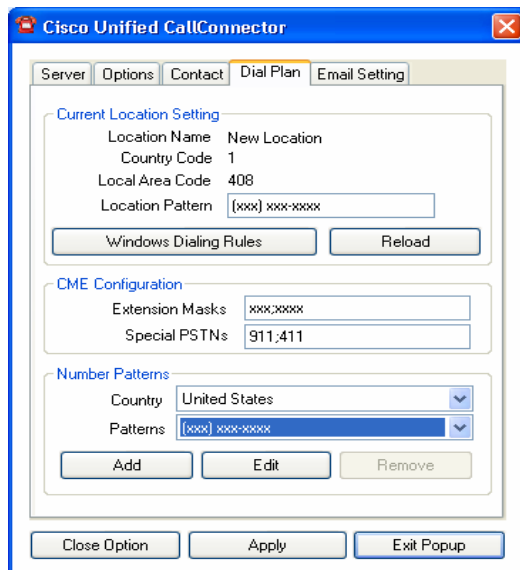
Step 1: Configure Email settings for the UCC Client



On the above screen, configure the following:

- SMTP Server
- Email account / password
- Check “Enable MAPI”
- Enter your Profile and Password

Step 2: Click on the “Dial Plan” tab to configure Dial Plan settings for the UCC client



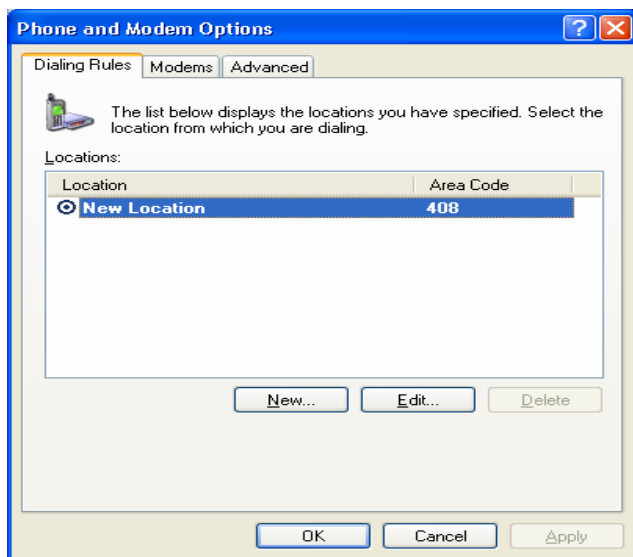
On the above screen, configure the following and then click “**Apply**”

- Extension Masks
- Special PSTN Numbers
- Select Country
- Select “Patterns”

For more detailed information on each of the above parameters, please refer to the following link (page 119 – 125)

http://www.cisco.com/en/US/docs/voice_ip_comm/cucallconnectors/1.4/client_admin.pdf

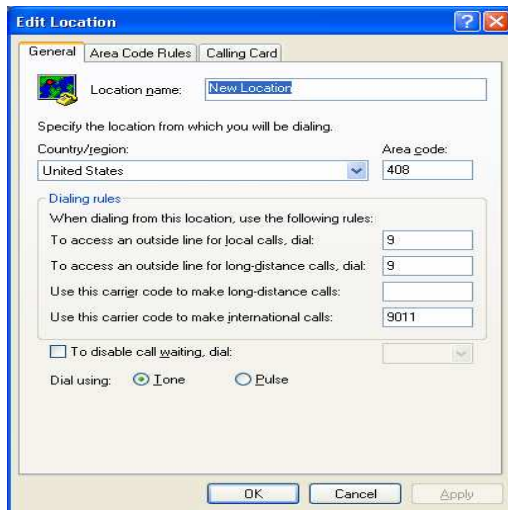
After you are done configuring the above parameters, click on the “**Windows Dialing Rules**” – this will bring up the following window. Once you see the following window, click on “**Edit**” if you have previous dialing rules or “**New**” if you don’t have any previous dialing rules.



The following window will appear. In this window, configure the following parameters:

- “Area Code”
- “To access an outside line for local calls, dial”
- “To access an outside line for long-distance calls, dial”
- “Use this carrier code to make international calls”

After you have finished configuring the above parameters, click “OK”.



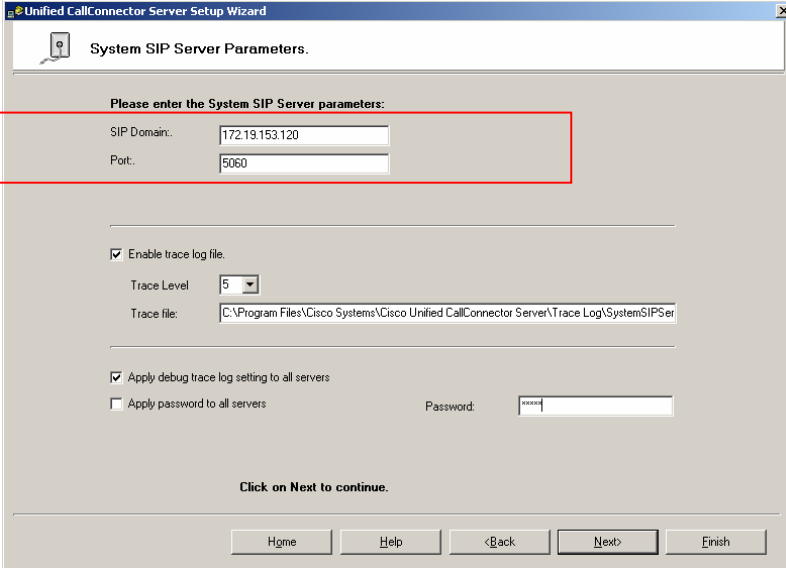
At this point, you have finished configuring the required UCC client options.

9 Common mis-configurations

9.1 Configuring the wrong IP address for UCC services

If you happen to configure the incorrect IP address on any of the services page on the UCC server configuration wizard, the services may fail to start or may start but not work. For example, in the example used in this technical white paper, the IP address of the UCC server is 192.168.10.254. However, on the following service configuration page on the UCC server, the wrong ip address is configured.

Example of wrong IP address:



The screenshot shows the 'System SIP Server Parameters' window of the Unified CallConnector Server Setup Wizard. The 'SIP Domain' field is highlighted with a red box and contains the IP address '172.19.153.120'. The 'Port' field contains '5060'. Below these fields, there are checkboxes for 'Enable trace log file', 'Apply debug trace log setting to all servers', and 'Apply password to all servers'. The 'Trace Level' is set to '5' and the 'Trace file' is 'C:\Program Files\Cisco Systems\Cisco Unified CallConnector Server\Trace Log\SystemSIPSer'. The 'Password' field is empty. At the bottom, there are buttons for 'Home', 'Help', '<Back', 'Next>', and 'Finish'. The text 'Click on Next to continue.' is displayed above the 'Next>' button.

In the above example, the IP address of the SIP domain is configured to be 172.19.153.120. However, the UCC server IP Address is 192.168.10.254. Thus the IP address needs to be changed to 192.168.10.254.

9.2 Forgetting to specify source interface for radius packets

When you add a CME system to the UCC server, you have to configure an IP address and assign it to a specific CME system. A potential problem may exist if the CME system has multiple interfaces which it may use to send the radius packets out of. In the example in this paper, the IP addresses of the 2 CME systems integrated with the UCC server are 10.1.1.1 and 10.1.1.2.

If however, the San Jose CME sources radius packets out to the UCC server from an IP address that is not recognized by the UCC server, the UCC server will ignore the radius packets. If this occurs, functionality such as presence, location and Single Number Reach (SNR) will fail.

Solution:

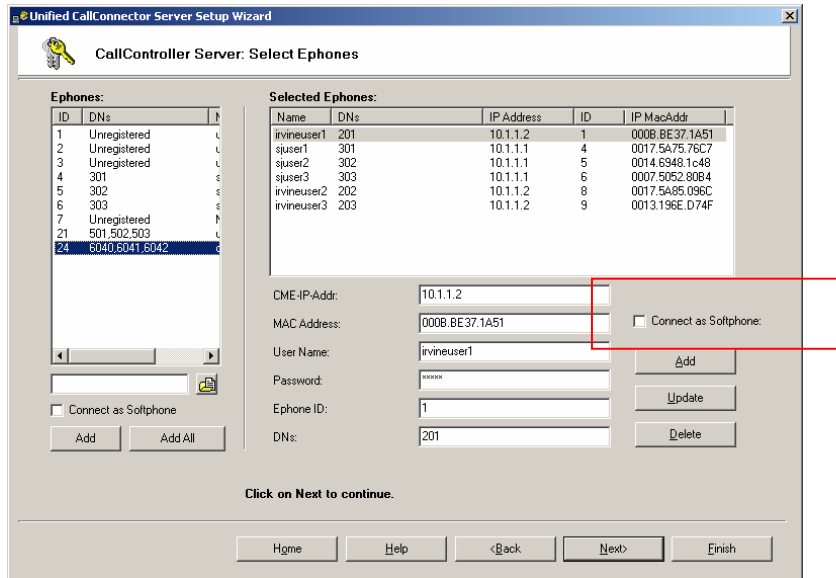
In order to force the CME to source radius packets from a certain IP Address/interface, use the following command:

```
ip radius source-interface GigabitEthernet 0/0
```


NOTE: The above command forces radius packets to be sourced from Gigabit Ethernet 0/0 (assuming that gigabit Ethernet 0/0 has IP address of 10.1.1.1)

9.3 Configuring regular phones as soft phones on the UCC server

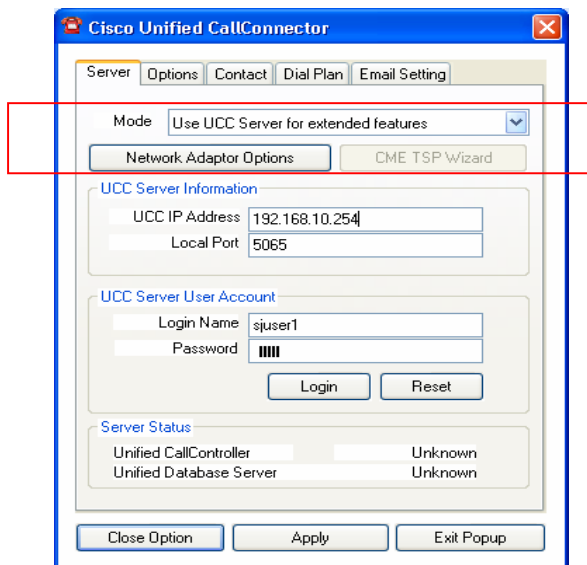
When a system administrator adds ephones onto the UCC server, the administrator needs to make sure that they are NOT added as softphones. If the regular ephones are configured as softphones, the ephones may intermittently un-associate from the UCC server.



In the above screen, when you add a regular ephone, be sure **NOT** to check the box “**Connect as Softphone**”.

9.4 Configuring wrong operation mode on UCC Client

When a system administrator installs a UCC client to operate with a UCC Server, the UCC client needs to be set to operate in the correct mode. For the UCC client to register with the UCC server, the system administrator needs to configure the mode to “**Use UCC server for extended features**”.



10 Frequently Asked Questions

The following section provides a guideline for a system administrator to use when configuring mobility ephones and hardware conferences for Single Number Reach on a UC500 system.

1. For hardware conferencing, you need a conference directory number (DN) for each SNR/DISA session. This DN needs to have enough channels to support max number of parties in conference. For example, if there are going to be 8 parties in a conference, there needs to be 4 ephone-dn (dual-line).
2. For software conferencing (without Midcall/DISA enabled), the UCC server can support as many simultaneous SNR calls as possible with the condition that CME has enough mobility ephones configured.
3. For a SNR rule, how many mobility ephones are required? For each SNR session, you need to configure a mobility ephone – thus for 4 reached numbers configured, the system administration would have to configure 4 mobility ephones.
4. As of July 2008, the UCC client doesn't operate in a NATTED environment and won't be able to connect to the UCC Server.

11 References

1. Cisco Communications Manager Express Administrators Guide
http://www.cisco.com/en/US/docs/voice_ip_comm/cucme/admin/configuration/guide/cmoadm.html
2. Cisco Unified CallConnector Server/Mobility Configuration Guide
http://www.cisco.com/en/US/docs/voice_ip_comm/cucallconnectors/UCC_for_MS_Windows/Rel_10/server/administrator/guide/AGsrv517.pdf
3. Cisco Unified CallConnector Quick Reference
http://www.cisco.com/en/US/docs/voice_ip_comm/cucallconnectors/1.4/Client_QRC.html
4. Cisco Unified CallConnector for Microsoft Windows 1.4 Mobility Service Quick Reference Guide
http://www.cisco.com/en/US/docs/voice_ip_comm/cucallconnectors/mobility_QRC.html
5. Cisco Unified CallConnector Software Download
<http://www.cisco.com/cgi-bin/tablebuild.pl/callconnector-ms>
6. Cisco Unified CallConnector Mobility Technical Guide
http://www.cisco.com/en/US/docs/voice_ip_comm/cucallconnectors/1.4/mobility_admin.pdf
7. How to configure Cisco Unified CallConnector Mobility Rules
http://www.cisco.com/en/US/docs/voice_ip_comm/cucallconnectors/mobility_QRC.html
8. External Partner Wiki Page – Cisco Unified CallConnector
http://supportwiki.cisco.com/wiki/index.php/Category:Cisco_Unified_CallConnector_for_Microsoft_Office_-_Cisco_Unified_CallConnectors_Support_-_Cisco_Smart_Business_Communication_Systems#Configuration_Guides

9. UC500 External Wiki Page

[http://supportwiki.cisco.com/ViewWiki/index.php/Category:Cisco Unified Communications 500 Series Support - Cisco Smart Business Communication Systems#Voice](http://supportwiki.cisco.com/ViewWiki/index.php/Category:Cisco_Unified_Communications_500_Series_Support_-_Cisco_Smart_Business_Communication_Systems#Voice)

10. Cisco Configuration Assistant download

<http://tools.cisco.com/support/downloads/pub/Redirect.x?mdfid=281010085>