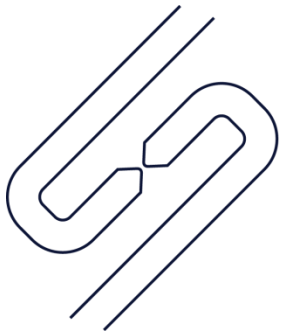

SCOPSERV
INTERNATIONAL INC.

ScopTEL Cisco SIP Phone Integration

ScopTEL IP PBX ™

Cisco Phone Background

- Cisco is known for their SCCP Protocol, however they have acquired several companies over the years and have developed SIP firmware for use in their proprietary call control platforms and Third Party Call Control (3PCC).
- One of their acquisitions included Sipura/Linksys (Cisco SPA-Series SIP Phones) and has since been sold to Belkin. The SPA-Series has been supported by ScopTEL for many years. This document does not pertain to these existing devices.
- Cisco Phones such as the 39XX, 69XX, 78XX, 79XX models have been developed internally by Cisco and ScopTEL support for these models has been previously limited to SIP Line and Directory support.
- This document details ScopServ's enhanced support for the 39XX, 69XX, 78XX, 79XX models and provides clarity on which Cisco IP Phones are supported by ScopServ.

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Cisco Phone Integration – Cisco Firmware Pre-Requisites and Enhanced Support

- ScopServ will only support Cisco Phones as documented in Table 1: ScopTEL Cisco APS Support List
- You must have a valid Cisco Support Login in order to obtain these releases from Cisco and you must upload the required firmware images to the /tftpboot/ folder in your ScopTEL installation.
- A Cisco device running firmware with Call Manager support will have access to the following features in addition to SIP Line and Directory support when the pre-requisite ScopServ packages are also installed:
  - Busy Lamp Field (BLF)
  - BLF Pickup (Invoked by Pressing the Blinking BLF Soft Key)
  - Cisco Fwd All Integration with ScopTEL Call Forwarding Features
  - SIP Lines
  - Directories

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Cisco Phone Integration – ScopServ Minimum Package Pre-Requisites

- Use the ScopTEL package manager to update to these minimum software requirements
  - scopserv-telephony25-5.8.47.0.20160927-1
  - scopserv-network-5.1.3.17.20160812-1
  - asterisk11-11.24.0-1

ScopTEL IP PBX ™

Cisco Phone Integration – Cisco Support Summary

Table 1: ScopTEL Cisco APS Support

Model	Lines	image_version	File Type	Notes
3905	1	CP3905.9-4-1SR2-2	SEPMAC.cnf.xml	
3911				Not Supported
3951				Not Supported
6901	1	SIP6901.9-3-1-SR2-3	SEPMAC.cnf.xml	
6911	1	SIP6911.9-3-1-SR2-4	SEPMAC.cnf.xml	
6921	2	SIP69xx.9-4-1-3SR2	SEPMAC.cnf.xml	
6941	4	SIP69xx.9-4-1-3SR2	SEPMAC.cnf.xml	
6945	4	SIP69xx.9-4-1-3SR2	SEPMAC.cnf.xml	
6961	12	SIP69xx.9-4-1-3SR2	SEPMAC.cnf.xml	
7811	1	sip78xx.10-3-1-11-3PCC	SEPMAC.cnf.xml	
7821	2	sip78xx.10-3-1-11-3PCC	SEPMAC.cnf.xml	
7841	4	sip78xx.10-3-1-11-3PCC	SEPMAC.cnf.xml	
7861	16	sip78xx.10-3-1-11-3PCC	SEPMAC.cnf.xml	
7905		CP7905080000SIP060111A	SIPMAC.cnf	End Of Life
7906	1	SIP11.9-4-2SR2-2S	SEPMAC.cnf.xml	
7911	1	SIP11.9-4-2SR2-2S	SEPMAC.cnf.xml	
7912	1	CP7912010301SIP050608A	SIPMAC.cnf	End Of Life
7931	24	SIP31.9-4-2SR2-2S	SEPMAC.cnf.xml	
7940	2	P0S3-07-5-00	SIPMAC.cnf	No Call Manager Support
7941	2	SIP41.9-4-2SR2-2S	SEPMAC.cnf.xml	
7961	6	SIP41.9-4-2SR2-2S	SEPMAC.cnf.xml	
7942	2	SIP42.9-4-2SR2-2S	SEPMAC.cnf.xml	
7945	2	SIP45.9-4-2SR2-2S	SEPMAC.cnf.xml	
7960	2	P0S3-07-5-00	SIPMAC.cnf	No Call Manager Support
7962	6	SIP42.9-4-2SR2-2S	SEPMAC.cnf.xml	
7965	6	SIP45.9-4-2SR2-2S	SEPMAC.cnf.xml	
7970	8	SIP70.9-4-2SR2-2S	SEPMAC.cnf.xml	
7971	8	SIP70.9-4-2SR2-2S	SEPMAC.cnf.xml	
7975	8	SIP75.9-4-2SR2-2S	SEPMAC.cnf.xml	

Note: Cisco Phones with Model G variants are Gigabit phones and are also supported

ScopTEL IP PBX ™

Cisco Phone Integration – Cisco 3905

- http://bit.ly/cisco_3905
- SIP Line and Directory Supported
- Firmware Requirement: CP3905.9-4-1SR2-2
- ScopTEL APS Supported
- NOTE: You must enable Use Call Manager Options to support BLF, Fwd All, Pickup

Display	128 x 32 pixel, monochrome, graphical, non-backlit
Integrated Switch	10/100
Number of Line Keys	1
speakerphone	Yes
Fixed Feature Keys	8
IEEE Power over Ethernet Classification	Class 1

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Cisco Phone Integration – Cisco 3911

- Not Supported

ScopTEL IP PBX

Cisco Phone Integration – Cisco 3951

- Not Supported

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Cisco Phone Integration – Cisco 69XX

- http://bit.ly/cisco_69xx
- Cisco Unified IP Phone 6901 (trimline)
- Cisco Unified IP Phone 6911 (one -line)
- Cisco Unified IP Phone 6921 (two-line)
- Cisco Unified IP Phone 6941 (four-line)
- Cisco Unified IP Phone 6945 (four -line)
- Cisco Unified IP Phone 6961 (twelve-line)
- SIP Line and Directory Supported
- ScopTEL APS Supported
- Firmware Requirement: SIP69xx.9-4-1-3SR2
- NOTE: You must enable Use Call Manager Options to support BLF, Fwd All, Pickup

ScopTEL IP PBX

Cisco Phone Integration – Cisco 78XX

- http://bit.ly/cisco_78xx
- SIP Line and Directory Supported
- ScopTEL APS Supported
- Firmware Requirement: sip78xx.10-3-1-11-3PCC
- NOTE: You must enable Use Call Manager Options to support BLF, Fwd All, Pickup

	7811	7821	7841	7861
Display	384 x 106 pixel-based, graphical monochrome display	396 x 162 pixel-based, graphical monochrome display with white backlight	396 x 162 pixel-based, graphical monochrome display with white backlight	396 x 162 pixel-based graphical monochrome display with white backlight
Wideband Audio	Optional	✓	✓	✓
Integrated HD Video	No	No	No	No
Programmable Line Keys	0	2	4	16
Ethernet Switch	10/100	10/100	10/100/1000	10/100
Headset Port	N/A	✓	✓	✓
Full Duplex Speakerphone	✓ (Narrowband)	✓	✓	✓
Wall Mountable	✓	✓	✓	✓

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Cisco Phone Integration – Cisco 7905

- SIP Line Supported
- ScopTEL APS Supported
- Firmware Requirement: CP7905080000SIP060111A
- Cisco and ScopTEL End Of Life

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Cisco Phone Integration – Cisco 7906 7911

- http://bit.ly/cisco_7906_7911
- 7906 1 Line
- 7911 1 Line
- SIP Line and Directory Supported
- ScopTEL APS Supported
- BLF, Pickup, Fwd All: Supported
- Firmware Requirement: SIP11.9-4-2SR2-2S
- NOTE: You must enable Use Call Manager Options to support BLF, Fwd All, Pickup

ScopTEL IP PBX ™

Cisco Phone Integration – Cisco 7912

- http://bit.ly/cisco_7912
- SIP Line Supported
- ScopTEL APS Supported
- Firmware Requirement: CP7912010301SIP050608A
- Cisco and ScopTEL End Of Life

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Cisco Phone Integration – Cisco 7931

- http://bit.ly/cisco_7931
- 24 Lines
- SIP Line and Directory Supported
- ScopTEL APS Supported
- BLF, Pickup, Fwd All: Supported
- Firmware Requirement: SIP31.9-4-2SR2-2S
- NOTE: You must enable Use Call Manager Options to support BLF, Fwd All, Pickup

ScopTEL IP PBX ™

Cisco Phone Integration – Cisco 7940 7960

- http://bit.ly/cisco_7940_7960
- 7940 2 Lines
- 7960 6 Lines
- SIP Line and Directory Supported
- ScopTEL APS Supported Using Firmware Version 7.X Drop List
- BLF, Pickup, Fwd All: Not Supported due to Unsupported Firmware stream
- Firmware Requirement: P0S3-07-5-00
- NOTE: Do not enable the Use Call Manager options when configuring these phones

ScopTEL IP PBX ™

Cisco Phone Integration – Cisco 7942 7962

- http://bit.ly/cisco_7942_7962
- 7942 2 Lines
- 7962 6 Lines
- SIP Line and Directory Supported
- ScopTEL APS Supported
- BLF, Pickup, Fwd All: Supported
- Firmware Requirement: SIP42.9-4-2SR2-2S
- NOTE: You must enable Use Call Manager Options to support BLF, Fwd All, Pickup

ScopTEL IP PBX ™

Cisco Phone Integration – Cisco 7941 7961

- http://bit.ly/cisco_7941_7961
- 7941 2 Lines
- 7961 6 Lines
- SIP Line and Directory Supported
- ScopTEL APS Supported
- BLF, Pickup, Fwd All: Supported
- Firmware Requirement: SIP41.9-4-2SR2-2S
- NOTE: You must enable Use Call Manager Options to support BLF, Fwd All, Pickup

ScopTEL IP PBX ™

Cisco Phone Integration – Cisco 7945 7965

- http://bit.ly/cisco_7945_7965
- 7942/7945 2 Lines
- 7962/7965 6 Lines
- SIP Line and Directory Supported
- ScopTEL APS Supported
- BLF, Pickup, Fwd All: Supported
- Firmware Requirement: SIP45.9-4-2SR2-2S
- NOTE: You must enable Use Call Manager Options to support BLF, Fwd All, Pickup

ScopTEL IP PBX ™

Cisco Phone Integration – Cisco 7970 7971

- http://bit.ly/cisco_7970_7971
- 8 Lines
- SIP Line and Directory Supported
- ScopTEL APS Supported
- BLF, Pickup, Fwd All: Supported
- Firmware Requirement: SIP70.9-4-2SR2-2S
- NOTE: You must enable Use Call Manager Options to support BLF, Fwd All, Pickup

ScopTEL IP PBX ™

Cisco Phone Integration – Cisco 7975

- http://bit.ly/cisco_7975
- 8 Lines
- SIP Line and Directory Supported
- ScopTEL APS Supported
- BLF, Pickup, Fwd All: Supported
- Firmware Requirement: SIP75.9-4-2SR2-2S
- NOTE: You must enable Use Call Manager Options to support BLF, Fwd All, Pickup

ScopTEL IP PBX ™

Cisco Phone Integration – Cisco 88XX Series

- http://bit.ly/cisco_88xx
- Not Supported
- Contact ScopServ Product Management if you require APS support

Integral Switch	10/100/1000
Display	Standard Definition, 640 x 480 pixel, 24-bit color
Codecs	G.711a, G.711u, G.729a, G.729ab, G.722, iSAC and Internet Low Bitrate Codec (iLBC
KEM Support	2 modules
Programmable Soft Keyes	4
Line Keys	9951 – 5; 9971 - 7
Fixed Keys	12 (all models)

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Cisco Phone Integration – Cisco 8941

- http://bit.ly/cisco_8941_8945
- Firmware Stream Supported
- ScopTEL APS Not supported
- Contact ScopServ Product Management if you require APS support
- The phone supports four lines and four context-sensitive soft keys

ScopTEL IP PBX ™

Cisco Phone Integration – Cisco 8945

- http://bit.ly/cisco_8941_8945
- Firmware Stream Supported
- ScopTEL APS Not supported
- Contact ScopServ Product Management if you require APS support
- 4 Lines

ScopTEL IP PBX ™

Cisco Phone Integration – Cisco 8961

- http://bit.ly/cisco_8961
- Firmware Stream Supported
- ScopTEL APS Not supported
- Contact ScopServ Product Management if you require APS support
- 5 Lines
- 41 Programmable Keys with corresponding Key Expansion Module

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Cisco Phone Integration – Cisco 9951 9971 Video Phone

- http://bit.ly/cisco_9951_9971
- Firmware Stream Supported
- ScopTEL APS Not supported
- Contact ScopServ Product Management if you require APS support

Integral Switch	10/100/1000
Display	Standard Definition, 640 x 480 pixel, 24-bit color
Codecs	G.711a, G.711u, G.729a, G.729ab, G.722, iSAC and Internet Low Bitrate Codec (iLBC
KEM Support	2 modules
Programmable Soft Keyes	4
Line Keys	9951 – 5; 9971 - 7
Fixed Keys	12 (all models)

ScopTEL IP PBX ™

Cisco Phone Configuration

- It is highly recommended you use the DHCP Server in your ScopTEL Server to deploy Cisco phones, however if you are using a third party DHCP server you must configure your DHCP Server's Scope Option 150 ASCII string to the IP address of your ScopTEL server. This setting instructs the phone to download its configuration files from the ScopTEL server as it acquires an IP address
- If you are using the native ScopTEL DHCP Server to provide DHCP to the phones then proceed with the following information.

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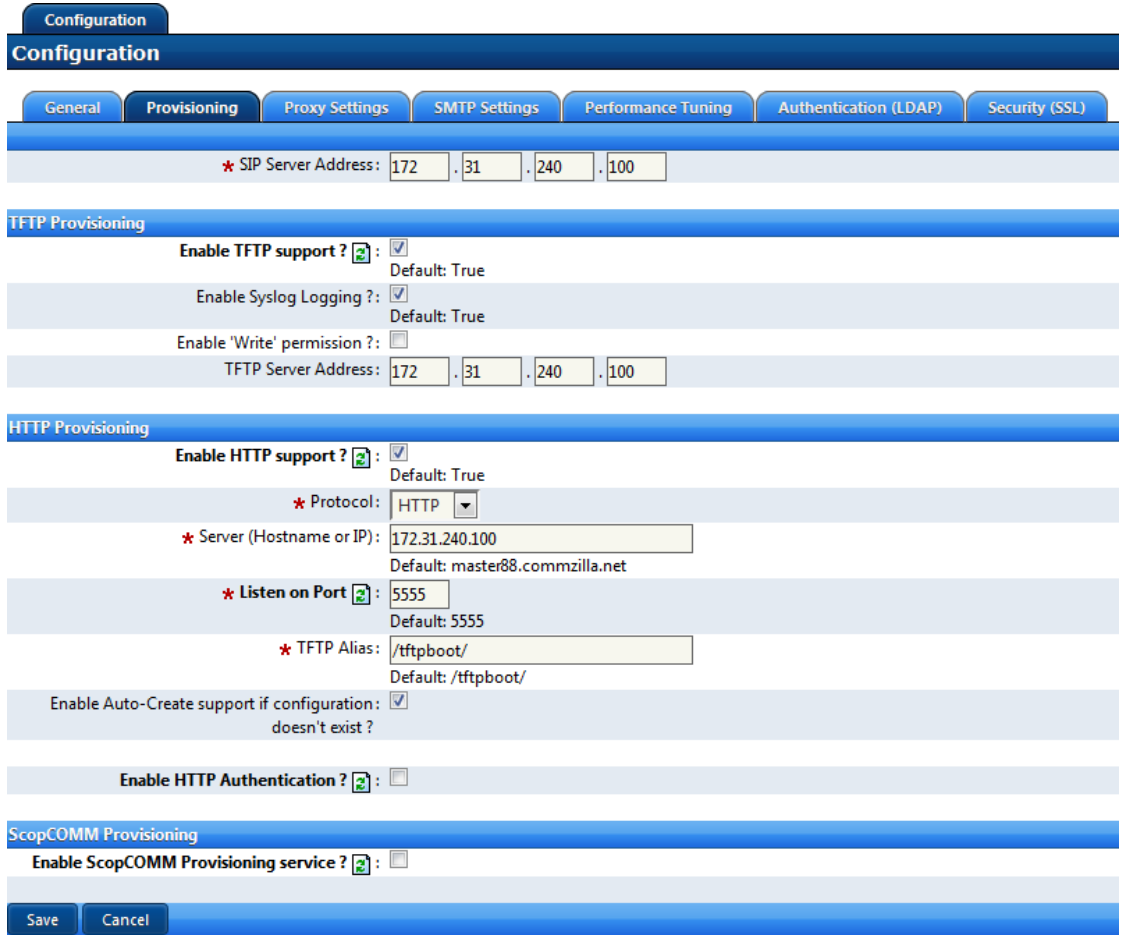
Server – Provisioning

- This configuration sets the required variables for the DHCP server when adding Phone Classes
- Edit the SIP Server Address so that it matches the local LAN IP address of the ScopTEL server
- Edit the same for TFTP Provisioning and HTTP Provisioning and save your settings
- The Web service will restart automatically



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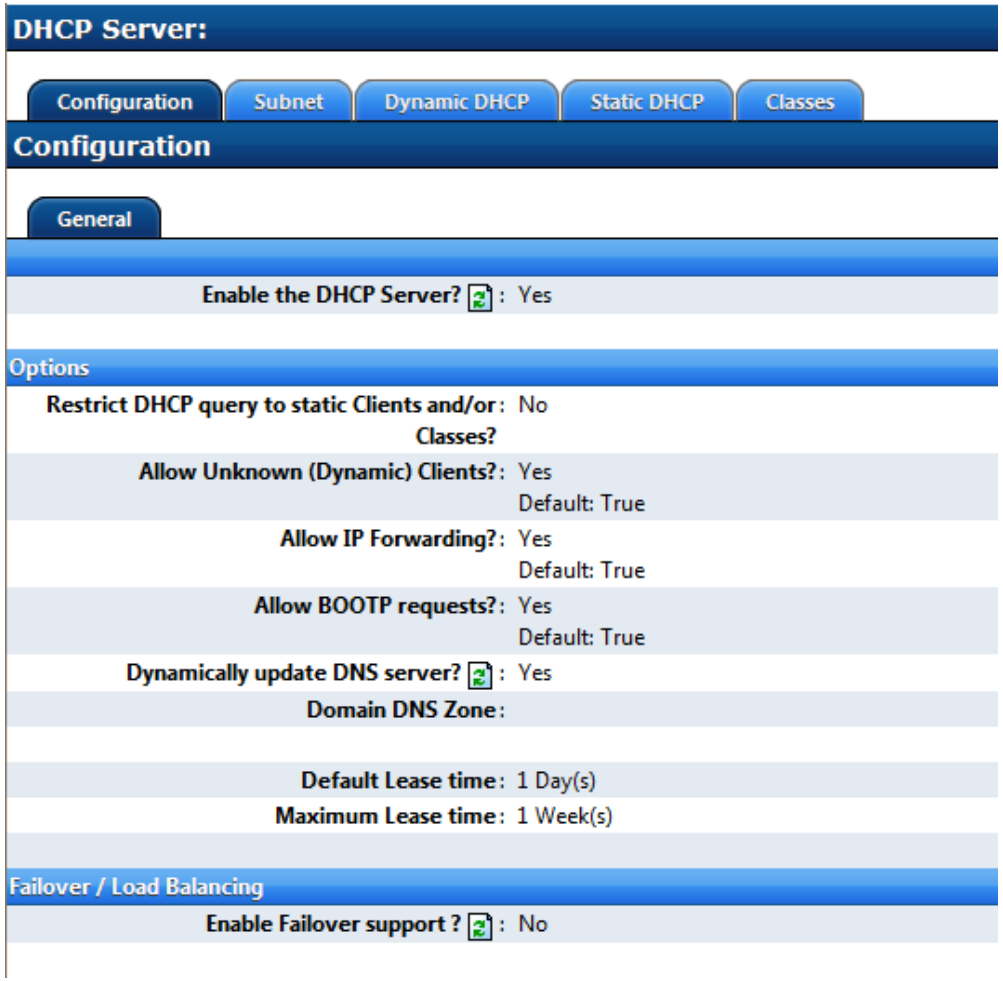
Network – DHCP Server - Classes

- Enable the DHCP Server
- Click on Classes



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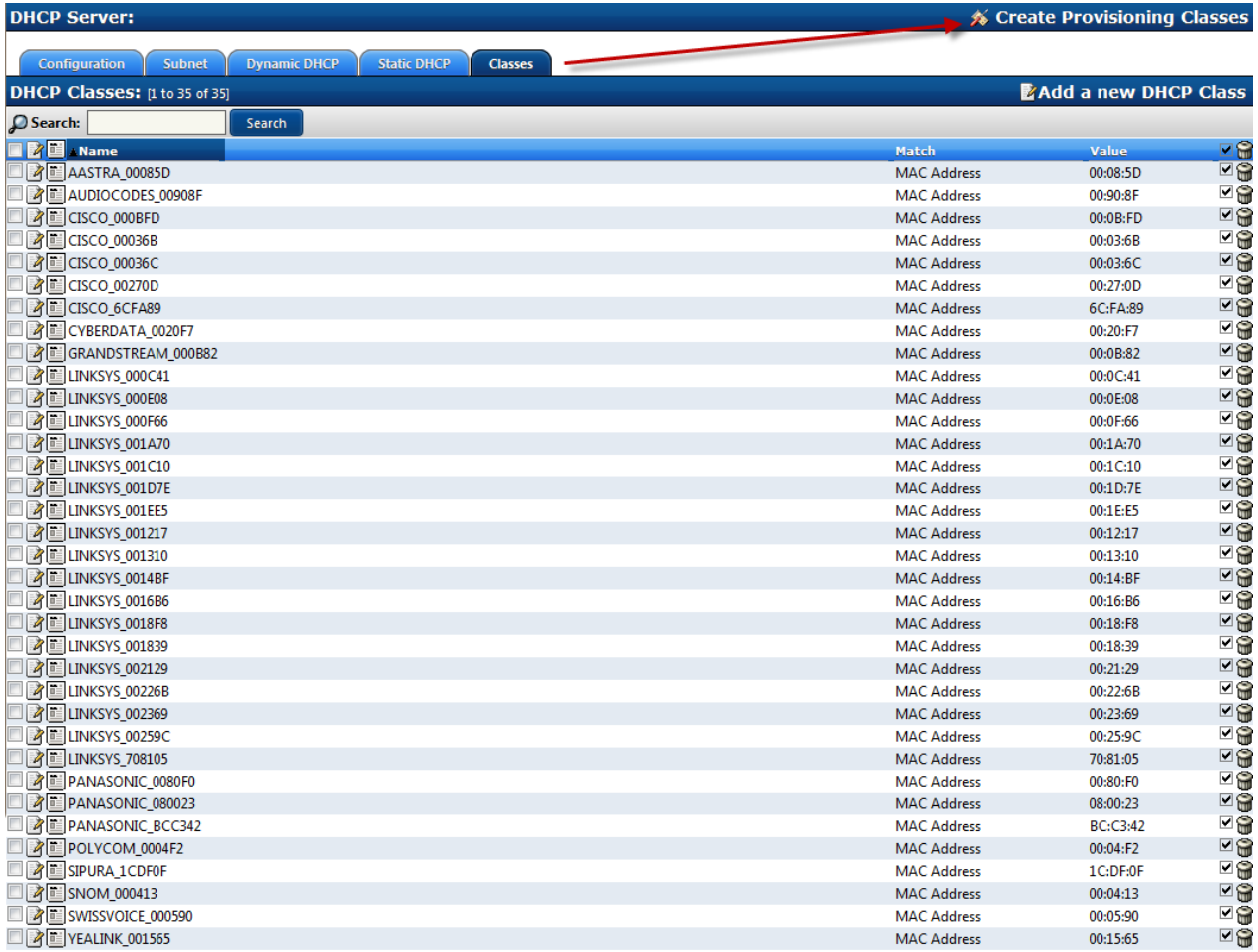
Network – DHCP Server - Classes

- Click on Create Provisioning Classes
- This will add a MAC address Class for each Cisco model and set the correct TFTP Path for Option 150



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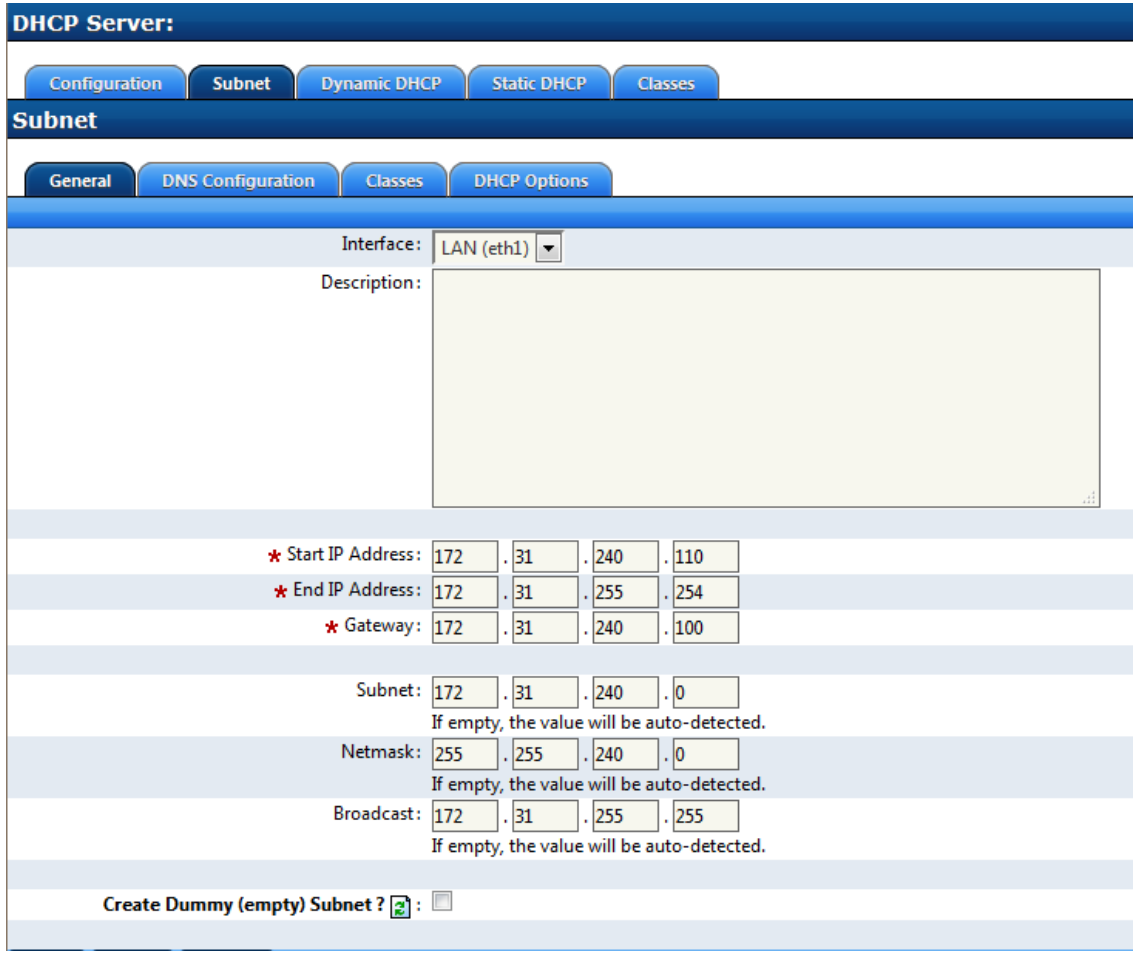
Network – DHCP Server - Classes

- Click Add to add a new subnet
- Enter the required Scope Range and configurations for your Network and click on the Classes tab



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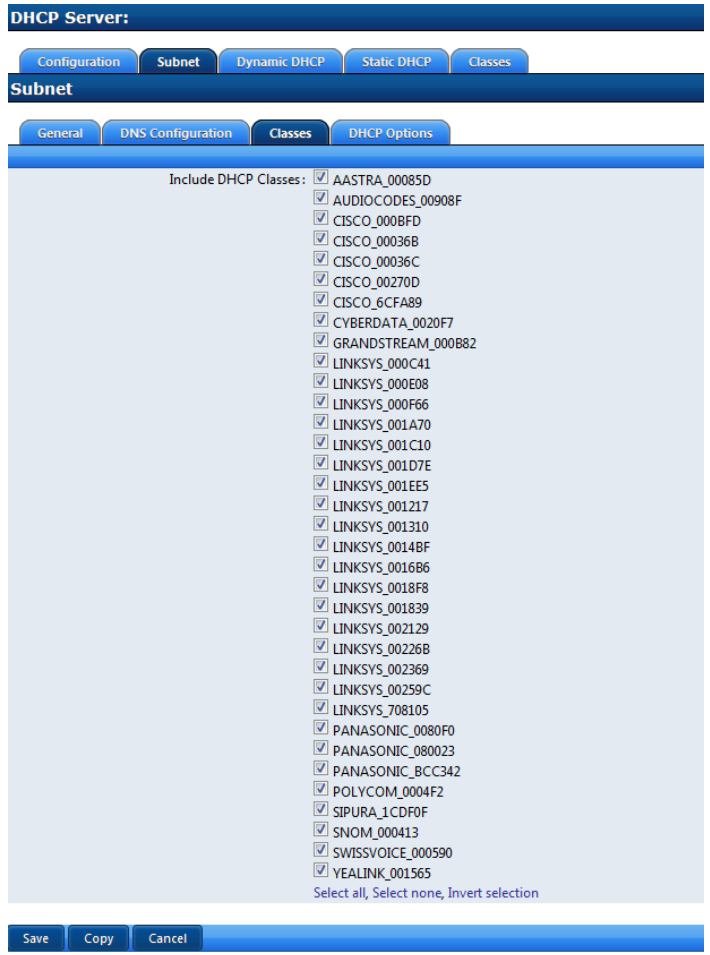
Network – DHCP Server - Classes

- Select all Classes and Add your DHCP configuration
- Commit your Network Changes
- Restart the DHCP Service from the Network General Tab



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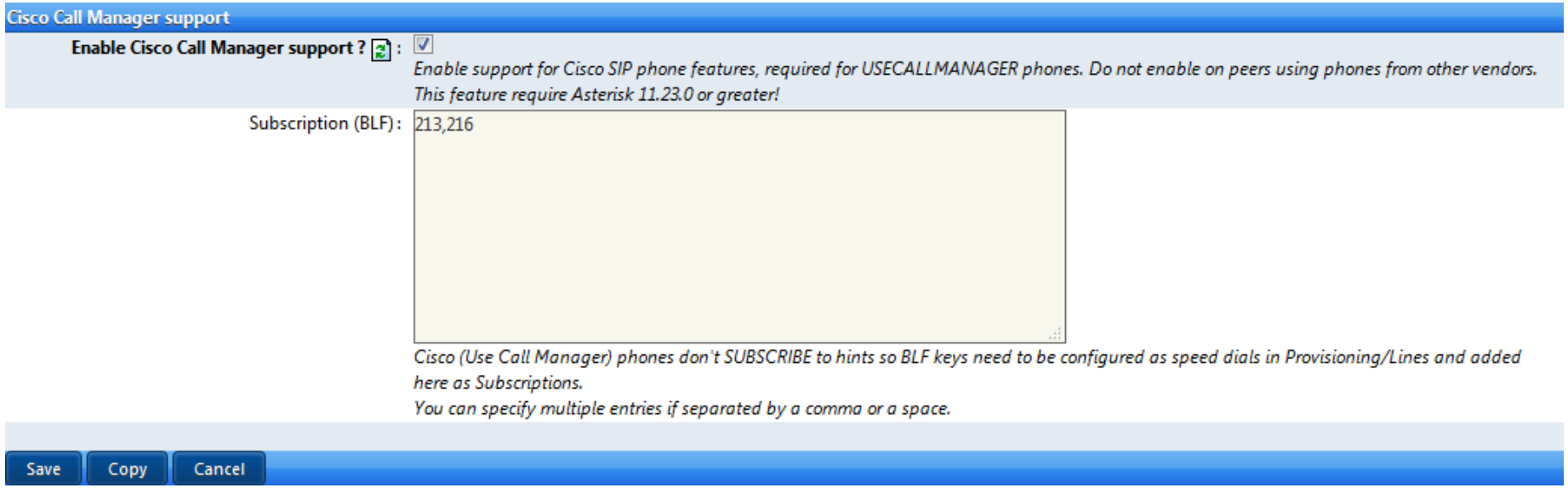
Telephony – Extensions – Phone Options

- Edit the Extension's Phone Options tab for the required Cisco Phone
- Enable Cisco Call Manager support
- The Subscriptions (BLF) list must be populated with each extension you wish to monitor with a BLF soft key via Provisioning
- When done Save your changes



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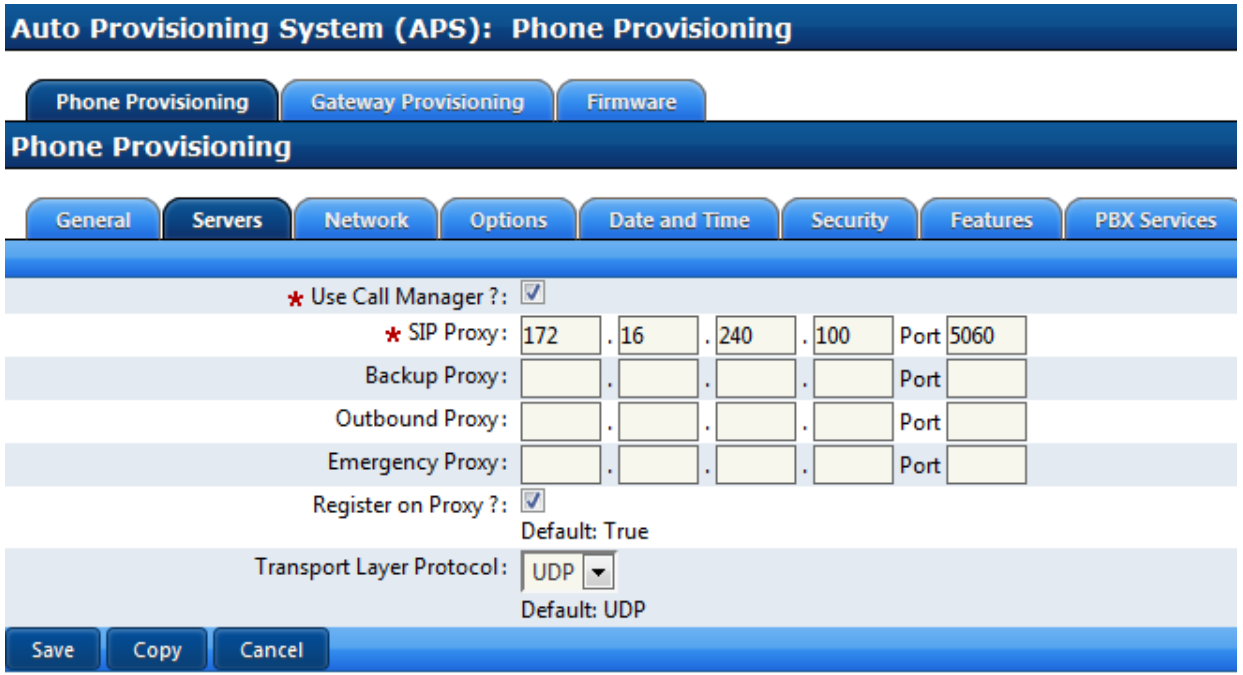
Telephony – Auto Provisioning – Servers Tab

- Cisco phones are provisioned like other supported SIP devices in the APS but with a few additional requirements.
- On the Servers tab you must Enable Use Call Manager
- The SIP Proxy must be on the same subnet as the phone



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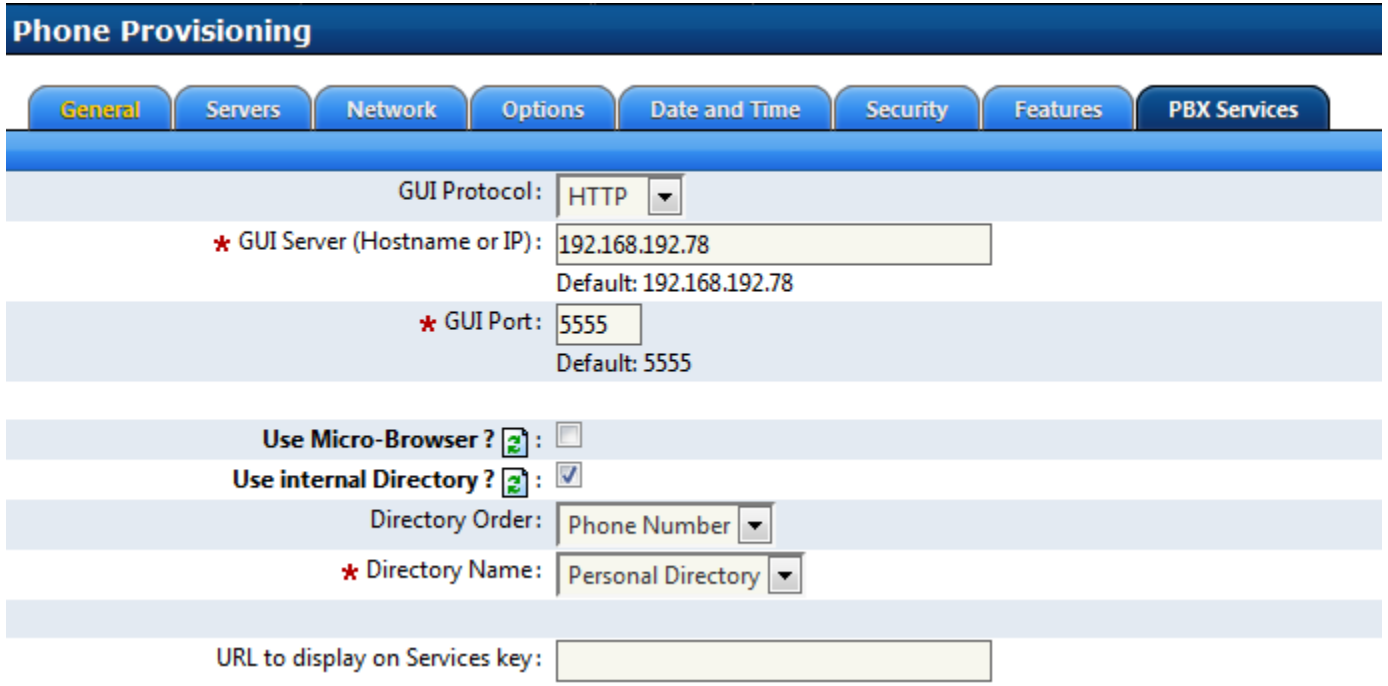
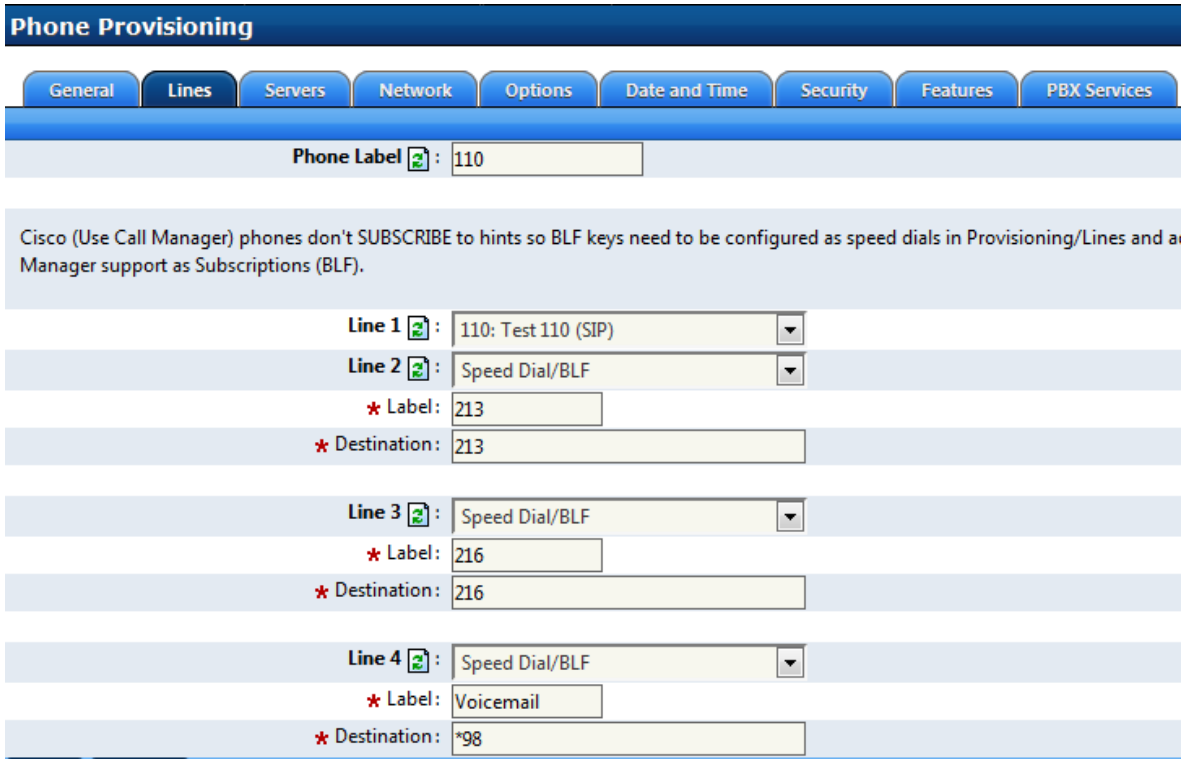
Telephony – Auto Provisioning – PBX Services

- You may add a directory to each phone or template by configuring the internal Directory feature on the PBX Services Tab



Telephony – Auto Provisioning – Lines Tab

- Add an Extension to Line 1 (other lines are optional). This is the primary Line and handles all speech paths for the phone.
- Change other Lines to Speed Dial/BLF in order to assign Speed Dials or Busy Lamp Fields to available soft keys
- In this example 213 and 216 match the subscriptions assigned to the Extension's Phone Options. This is the requirement in order for the proper indication of BLF soft keys.
- Line 4 is assigned the Voicemail Login Feature code for Message Waiting Indication and to Speed Dial the Voicemail Login code.
- Save or Add your changes when done
- Commit Telephony changes
- Commit APS changes
- You have successfully configured an Extension and provisioned a phone for this user.
- Reboot the Phone so it can download its configuration files.



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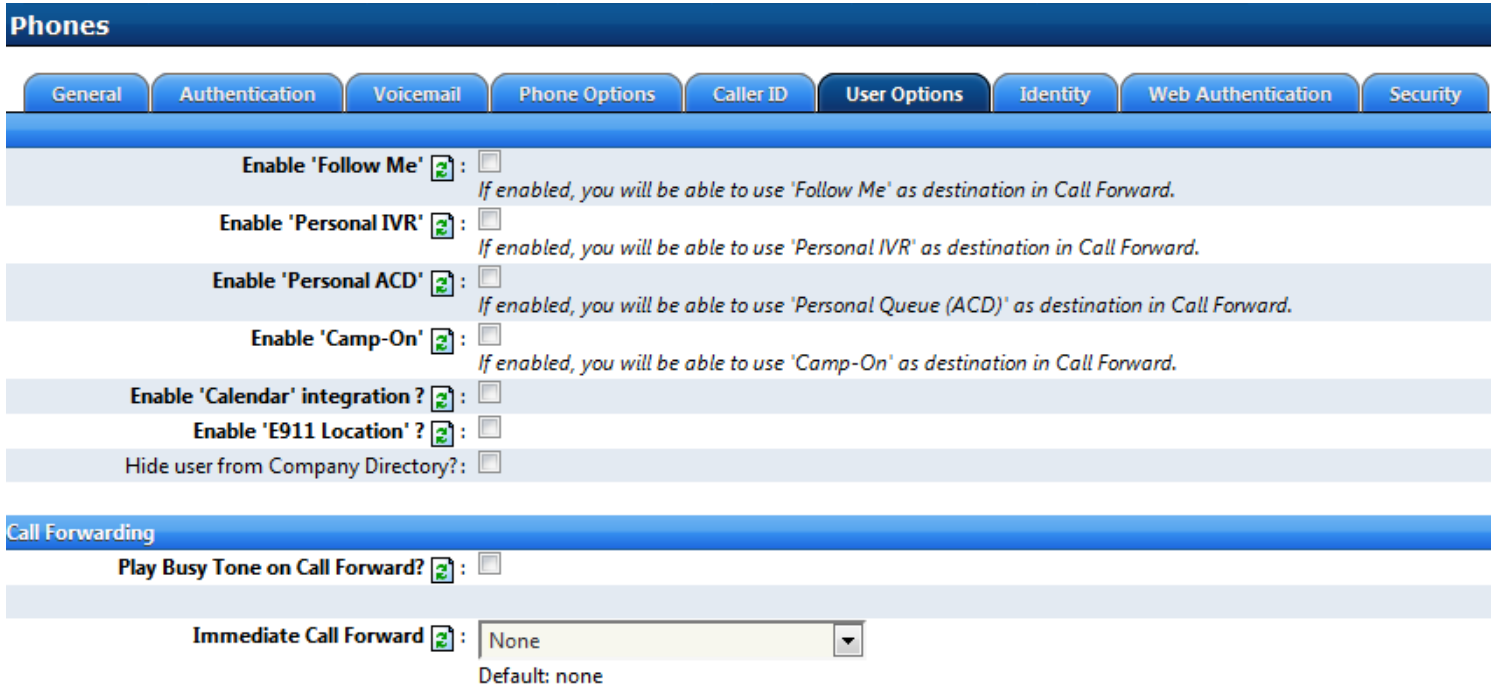
Cisco Phone – Fwd All Soft Key

- Depending on the model of Cisco SIP Phone you may have a ‘Fwd All’ Soft Key
- Once you press this key you will be prompted for an Immediate Call Forward Destination
- The allowed destinations are as follows and are allowed or disallowed per Extension in User Options:

1. Voicemail
2. Follow Me
3. Personal Ivr
4. Local Extension
5. External Number
6. Camp-On
7. Personal ACD
8. Deactivate



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Nous vous remercions pour votre intérêt envers nos solutions.

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