

Cisco Configuration Assistant 1.8 Out-of-Band Configuration Guidelines

This application note provides guidelines on how to configure advanced UC500 features outside Cisco Configuration Assistant (CCA), using tools such as the Cisco IOS command-line interface (CLI) and Cisco Unity Express (CUE) GUI.

These provisioning methods are collectively referred to as out-of-band (OOB) configuration. This application note also outlines OOB configurations that can be recognized and read in by CCA. The information in this document applies to CCA Version 1.8 and Cisco SBCS software package version 4.2.9 or below.

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Scope and Assumptions

The information in this application note is intended for use by Cisco SMB Select-certified partners. It is assumed that administrator users are familiar with configuration of voice, wireless, routing, switching, and security features on the Cisco Smart Business Communications System (SBCS) using CCA and are also familiar with the Cisco IOS command-line interface and Cisco Unity Express (CUE) Graphical User Interface.

The information in this document applies to CCA Version 1.8 and Cisco SBCS software package version 4.2.9 and below.

Note: In general, configuration on the UC500 using IOS CLI for features already supported in CCA is not recommended. For a list of features supported in CCA, refer to the *Cisco Smart Business Communications Systems 1.3 Feature Reference Guide*, available on Cisco.com at the following location:

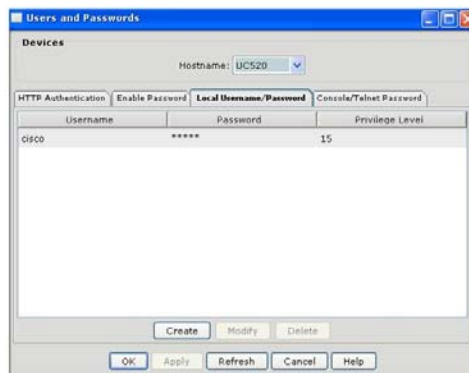
http://www.cisco.com/web/partners/downloads/sell/smb/sbcs_cg.pdf

Accounts and Logins

The Cisco IOS CLI shares the same username and password as the CCA administrator account.

On the UC500, the default administrator username is **cisco** and the default password is **cisco** for both the IOS CLI and Cisco Unity Express GUI.

The UC500 administrator user account and password should only be changed through CCA. This can be done through the **Device Properties > Users and Passwords** window, as in the following figure. A new administrator account must be assigned a level 15 privilege level to be able to use CCA for configuration. Users with lower level privilege will only have read-only access through CCA.



Voice Parameters

This section covers out-of-band configuration guidelines that apply to voice parameters that are configurable via CCA.

Dial Plan — Configuring Dial Peers

Dial-peers are used to define the dial plan on the UC500. Administrators should not edit or remove dial-peers reserved for CCA. Administrators can use dial-peers in the OOB range to apply custom dial-peer configurations using IOS CLI. Dial-peers created in the OOB range will not be overwritten or altered by CCA.

The following table lists dial-peer tag ranges that are reserved for use by CCA.

OOB dial-peers should be created in the **5000 - 5999** range.

Description	Dial-peer Tags
FXS STCAPP	1 - 4
MOH Livefeed	5
Inbound Dial Plan	6 - 49
Outbound Dial Plan	50 - 999
SIP Trunk	1000 - 1099
Inbound FXS	1100 - 1999
Cisco Unity Express	2000 - 2500
Legacy OOB Range	2501 - 2999
Inbound Call routing	3000 - 4999

For more information on IOS CLI dial-peer configuration, visit the following URL:

http://www.cisco.com/en/US/docs/ios/voice/dialpeer/configuration/guide/12_4t/vd_12_4t_book.html

Translation Profiles and Rules for Digit Manipulation

Translation profiles and rules are used for digit manipulation. These translations are typically associated with dial-peers.

The following table lists translation profiles that are created by CCA:

- Translation profiles that do not match the names below can be created using OOB tools without impacting CCA.
- Translation profiles that match the names listed below are reserved for CCA and must not be modified using OOB tools.

Voice Translation Profile Name	Description
OUTGOING_TRANSLATION_PROFILE	Translating outgoing digits from PSTN
CALLER_ID_TRANSLATION_PROFILE	Translating Caller-ID
CallBlocking	Call blocking
AA_Profile	Translating Auto Attendant PSTN number
VM_Profile	Translating Voicemail PSTN number

The following voice translation rules are reserved for CCA and must not be modified or deleted using Cisco IOS CLI.

Voice Translation Rule	Tag
Outgoing Dial Plan Caller ID translation	1111
Outgoing Dial Plan SIP Trunk Access Code Strip	1112
Voicemail PSTN Translation	2000
AA PSTN Translation	2001
Call Block	2222

Voice translation rules from 10001 and above can be added through IOS CLI without impacting CCA. Voice translation rules in this range will not be deleted or overwritten by CCA.

For more information on IOS CLI voice translation profile configuration, visit the following URL:

http://www.cisco.com/en/US/tech/tk652/tk90/technologies_configuration_example09186a00803f818a.shtml

Configuring SCCP/SPCP Phone and System Extensions (ephone-dn)

ephone-dn's are used to define SCCP/SPCP phone extensions as well as system extensions for features such as call park, conferencing, intercom, paging, and voicemail MWI.

The reserved ranges of ephone-dn's vary according to the number of users your UC500 supports.

The following chart lists the reserved CCA ephone-dn ranges according to the number of user licenses applied to the UC500.

Features	Reserved CCA ephone-dn Ranges According to Number of Licensed Users					
	8	16	24	32	48	64
Paging	1 - 4	1 - 4	1 - 4	1 - 4	1 - 4	1 - 4
FXS	5 - 8	5 - 8	5 - 8	5 - 8	5 - 8	5 - 8
MOH	9	9	9	9	9	9
User extensions	10 - 19	10 - 27	10 - 37	10 - 45	10 - 61	10 - 77
CO trunk lines	21 - 28	41 - 48	59 - 70	83 - 94	131 - 142	179 - 190
Unassigned	-	-	71 - 78	95 - 102	143 - 150	191 - 198
Conferencing / Park / Intercom	25 - 54	49 - 86	79 - 126	103 - 158	151 - 222	199 - 286
MWI OFF	55	87	127	159	223	287
MWI ON	56	88	128	160	224	288

For UC500 platforms that support 24 or more users:

- OOB ephone-dn's should be created in the **Unassigned** range, as shown in the above table.

For UC500 platforms that support 16 or fewer users:

- If the system is in PBX mode, the OOB ephone-dn should be created in the CO trunk range.
- If the system is in Key system mode, the OOB ephone-dn should be created in the **Conferencing/Park/Intercom** range.

CCA can import ephone-dn configurations only if the ephone-dn is assigned to an ephone AND the exact CLI convention shown below is followed. ephone-dn's that are not assigned to an ephone are not recognized by CCA.

```
ephone-dn xx dual
number yyy no-reg primary
description firstname lastname
name firstname lastname
```

Where **xx** is the ephone-dn tag and **yyy** is the extension number.

The following example shows a sample configuration for an ephone-dn that can be imported into CCA.

```
ephone-dn 20 dual
  number 277 no-reg primary
  description Jane Smith
  name Jane Smith
ephone 5
  button 1:20
```

Configuring SCCP/SPCP Phone Parameters (ephone)

ephones are used to define parameters for an SCCP/SPCP IP phone. CCA does not reserve ephones for specific use. In general, CCA will be able to import ephone configuration, with the following caveats:

1. Cisco 7931G IP phones are configured by default with ephone-template 15, which is reserved for 7931 phones.
 - ephone-template 15 can be modified with OOB settings.
 - CCA allows Cisco 7931G phones to be configured with an ephone-template with a tag other than 15.
2. CCA always allocates button 2 for an intercom. If button 2 on an ephone is allocated for a different function using CCA or OOB configuration, an intercom button cannot be configured through CCA for that phone.
3. CCA does not support multiple ephones with the same ephone-dn configured on the 1st button.

For example, the following ephone configuration is not supported with CCA.

```
ephone 1
  button 1:10

ephone 2
  button 1:10
```

Defining SIP Phone Extensions (Voice Register DNs)

Voice Register DNs are used to define SIP phone extensions. The reserved ranges for voice register DNs vary according to the number of users your UC500 supports.

The following chart lists CCA voice register dn ranges according to the number of user licenses applied to the UC500. OOB voice register DNs should be created in the **Unassigned** range, as shown in the table.

	Voice Register DN Ranges by Number of User Licenses					
	8	16	24	32	48	64
Reserved by CCA	1 - 46	1 - 78	1 - 118	1 - 150	1 - 214	1 - 278
Unassigned	47 - 56	79 - 88	119 - 128	151 - 160	215 - 224	279 - 288

Configuring SIP Phone Parameters (Voice Register Pool)

Voice register pools are used to define parameters for a SIP IP phone. CCA does not reserve voice register pools for specific use.

- CCA will enable SIP CUCME only if a supported SIP phone is configured in CCA.
- Model 3911 and 3951 are the only SIP phones supported by CCA.
- Generic SIP phones configured using OOB methods are recognized and their configuration is read-in by CCA, but will not be configurable in CCA. As shown below, their configuration is read-only in CCA:

Mac Addr	Phone T...	Primary ...	LastName	FirstName	UserID	Password	More...
B8FA.CDC8.000C	anl	301	Analog	PhoneA	ana	***	More...
B8FA.CDC8.0001	anl	302	Analog	PhoneB	anb	***	More...
B8FA.CDC8.0002	anl	303	Analog	PhoneC	anc	***	More...
B8FA.CDC8.0003	anl	304	Analog	PhoneD	and	***	More...
0012.0034.847C	7912	202	a	ip	aip	***	More...
001D.E5EA.A50A	521G	201	b	ip	bip	***	More...
0017.5A85.0AD0	7941	204	d	ip	cip	***	More...
0018.1815.8DCB	7931	222	d	ip	dip	***	More...
001E.4A3F.6886	7921	205	e	ip	eip	***	More...
AAAA.BBBB.CCCC		256	a	bb	as		More...
0000.0000.0001	3911	255	a	bb	as		More...

For more information on IOS CLI SCCP/SPCP/SIP IP phone and directory number configuration, visit the following URL:

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

Configuring Hunt Groups (ephone-hunt)

ephone-hunt is used to configure hunt-groups. The following table shows which ephone-hunt tag ranges are reserved by CCA and which are not.

Hunt Group Configuration (ephone-hunt)	Tag Range
Reserved by CCA	1 - 19
Unassigned	20 - 49
Reserved by CCA	50-100

As shown in the above table, ephone-hunt tags in the open range (20 - 49) can be added through IOS CLI without impacting CCA. ephone-hunt tags in this range will not be deleted or overwritten by CCA.

Configuring Parallel Hunt Groups (voice hunt-group)

Use voice hunt-group to configure parallel hunt groups (“call blast” groups). The following table shows which voice hunt-group tags are reserved by CCA and which are not.

Parallel Hunt Group Configuration (voice hunt-group)	Tag Range
Reserved by CCA	1 - 90
Unassigned	91 - 100

voice hunt-group tags in the unassigned range (91 - 100) can be added through IOS CLI without impacting CCA; voice hunt-group tags in this range will not be deleted or overwritten by CCA.

For more information on IOS CLI hunt-group configuration, visit the following URL:

http://www.cisco.com/en/US/docs/voice_ip_comm/cucme/admin/configuration/guide/cmecover.html#wp1118926

Cisco Unity Express (CUE) — Configuring Voicemail and Auto Attendant

Cisco Unity Express (CUE) is the application that resides on the UC500 that provides voicemail and Auto Attendant (AA functionality).

The following guidelines apply when combining CCA configuration with OOB management through Cisco IOS CLI:

- User and mailbox add/delete/modify must be performed through CCA only.
- CCA creates a GDM (general delivery mailbox) for each hunt group configured through CCA that is configured to forward to voice mail.

The following screen shows the hunt group configuration screen in CCA where Call Forward is set (Configure > Telephony, Voice Features tab).

Pilot #	Hunt Type	Forward to
1: 501	sequential	Voicemail
2: 502	sequential	Voicemail
3: 503	sequential	None
4: 504	sequential	None

- CCA creates groups named hunt1, hunt2, hunt3, or hunt4 for hunt groups that have GDM (general delivery mailbox) enabled, as shown in the following example CUE screen.

Group ID	Description	Primary Extension
Administrators		
Broadcasters		
hunt1		501
hunt2		502
IMAPgrp		

- The following built-in Auto Attendant scripts should be edited ONLY through CCA:
 - Default AA
 - AA_Transfer
- General delivery mailboxes (GDMs) created for other purposes, such as shared line and non-CCA hunt groups, can be configured using OOB methods.
- Custom AA scripts may be added or modified through OOB methods
- Cisco Unity Express features currently not supported by CCA, such as fax and message notification, may be configured using OOB methods.

For more information on CUE configuration, visit the following URL:

http://www.cisco.com/en/US/docs/voice_ip_comm/unity_exp/roadmap/cuedocs.html#wp1044964

Security Parameters — Configuring Access Control Lists (ACLs)

ACLs are used to define the security settings on SR500 on UC500 devices. The following guidelines apply to OOB configuration of ACLs:

- Users must not edit or remove numbered ACLs reserved for CCA.
- Users can use numbered ACLs in the OOB range to apply custom ACL configurations using OOB tools.
- Numbered ACLs created in the OOB range will not be overwritten or altered by CCA.

The following table lists ACL tag ranges reserved for use by CCA.

Description	CCA-Reserved ACL Tag Range
Standard ACL	1 - 49
Extended ACL	100 - 149

The following guidelines apply to tag ranges used for OOB ACLs:

- New OOB Standard ACLs should be created in the 50 - 99 range.
- New OOB Extended ACLs should be created in the 150 - 199 range.
- IOS also allows ACLs to be named. The following named ACLs are used by CCA


```
ip access-list extended dhcp-req-permit
ip access-list extended dhcp-resp-permit
```
- Named ACL using the `ip access-list` command will not be overwritten or altered by CCA.

For more information on ACL configuration using IOS CLI, visit the following URL:

http://www.cisco.com/en/US/docs/ios/security/configuration/guide/sec_acl_ov_guideline_ps6350_TSD_Products_Configuration_Guide_Chapter.html

Wireless Parameter Configuration

The information in this section applies to OOB configuration of wireless parameters.

Configuring Service Set Identifiers (SSIDs)

SSID are used to define the wireless parameters for SR500 and UC500. The following SSID are configured by default on SR500 and UC500 platforms. CCA can be used to delete or modify these SSIDs.

Platform	SSID Name	Description
UC500	uc520-data	UC500 Data
	uc520-voice	UC500 Voice
SR500	sr520	SR500 Data

Configuring Bridge-Group Virtual Interfaces (BVI)

BVIs are used to bind wireless and wired networks on SR500 and UC500 platforms with integrated wireless access points (AP). The following BVIs are configured by default on SR500 & UC500. BVI 1 on UC500 and BVI 75 on SR500 are used for system management and must NOT be deleted. CCA can be used to modify all other BVIs.

Platform	BVI number	Description
UC500W	1	UC500 Data
	100	UC500 Voice
SR500W	75	SR500 Data

For more information on IOS CLI wireless configuration, visit the following URL:

http://www.cisco.com/en/US/products/hw/routers/ps380/products_configuration_example09186a00808a8d80.shtml

Routing and Switching Configuration

The information in this section applies to OOB configuration of routing and switching parameters.

Configuring Virtual LAN (VLAN)

The following VLAN IDs are configured by default on SR500 and UC500 platforms.

Platform	VLAN ID	VLAN name	Description
UC500	1	default	UC500 Data
	100	Cisco-Voice	UC500 Voice
SR500	75	VLAN0075	SR500 Data

VLAN 1 on the UC500 and VLAN 75 on SR500 are used for system management and should NOT be deleted.

CCA can be used to modify all other VLANs.

For more information on VLAN configuration using IOS CLI, visit the following URL:

http://www.cisco.com/en/US/docs/ios/lanswitch/configuration/guide/lsw_hwic_ethsw_ic_ps6350_TSD_Products_Configuration_Guide_Chapter.html

Configuring IP Addresses

The following IP addresses are configured by default on SR500 and UC500 platforms.

Platform	Interface	IP Address	Subnet Mask	Description
UC500	Loopback 0	10.1.10.2	255.255.255.252	UC500 loopback
	VLAN 100 or BVI100	10.1.1.1	255.255.255.0	UC500 voice
	VLAN 1 or BVI1	192.168.10.1	255.255.255.0	UC500 data
	Integrated-Service-Engine 0/0	10.1.10.1	255.255.255.252	Cisco Unity Express
SR500	VLAN 75 or BVI75	192.168.75.1	255.255.255.0	SR500 data

CCA can be used to modify these IP addresses, with the following caveats:

- IP addresses for VLAN 1/BVI1 on UC500 and VLAN 75/BVI75 on SR500 can be changed only through the device setup wizard for the respective platform.
- On UC500 Integrated-Service Engine 0/0 and Loopback interfaces, IP addresses should NOT be changed; these IP addresses are required for maintaining CCA interoperability with CUE.

For more information on IP address configuration using IOS CLI, visit the following URL:

http://www.cisco.com/en/US/docs/ios/ipaddr/configuration/guide/iad_config_ipadd_ps6350_TSD_Products_Configuration_Guide_Chapter.html

Configuring Static IP Routes

The following static IP routes are configured by default on SR500 and UC500 platforms.

Platform	Destination Network	Network Mask	Outgoing Interface	Description
UC500	10.1.10.1	255.255.255.255	Integrated-Service-Engine 0/0	Route to CUE
SR500	10.1.10.0	255.255.255.252	192.168.75.2	Route from SR500 to UC500 loopback & CUE
	192.168.10.0	255.255.255.0	192.168.75.2	Route from SR500 to UC500 Data network
	10.1.1.0	255.255.255.0	192.168.75.2	Route from SR500 to UC500 voice network
	0.0.0.0	0.0.0.0	FastEthernet4 (for FastEthernet WAN platforms) Dialer 0 (for ADSL WAN platforms)	SR500 default route to WAN

CCA can be used to modify these static routes, with the following caveat:

- 10.1.10.1 must NOT be deleted or modified; this IP address is required for maintaining CCA interoperability with CUE.

For further information on static route configuration using IOS CLI, visit the following URL:

http://www.cisco.com/en/US/docs/ios/iproute/configuration/guide/irp_ip_prot_indep_ps6350_TSD_Products_Configuration_Guide_Chapter.html#wp1056183

For More Information

SBCS marketing information:

<http://www.cisco.com/go/sbcs>

Cisco Partner tools:

<http://www.cisco.com/go/partners>

SBCS Support Wiki:

<http://supportwiki.cisco.com/sbcs>

Cisco.com Technical Support page:

<http://www.cisco.com/en/US/support/index.html>

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