



CUCDM-HCS 8.1.4 Platform Build Process

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CUCDM-HCS 8.1.4 Platform Build Process

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Preface

This system supports various deployments/solutions including HCS and Large Enterprise (LE). This document describes the product in general and is not specific to a particular deployment/solution. Information may vary slightly depending on the installation environment.



CHAPTER 1

Unified CM Static Build

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Note

Due to API limitations, some static configuration is required on Unified CM.

Make sure that all applicable services have been activated by opening Cisco Unified Serviceability and browsing to *Tools > Control Center-Feature Services* and verifying the services are started. Repeat the process for the *Control Center-Network Services*.

Update Unified CM Server and Unified CM Name Settings

From the Unified CM admin page, go to *System > Server*, change the hostname to an IP address (avoids the requirement for DNS support).

Note

- The change of hostname to IP Address is only applicable to manage cases where there is no DNS in the system and is ONLY done on the Unified CM.
 - The Sample (best practice) loaders which are used to add the CUCM cluster to CUCDM maintain the correct hostname (not the IP Address). CUCDM hostname must be the same as the hostname given to the server when it is built. Otherwise, CUCDM Auto-Register will fail.
-

Place the VSphere Hostname in the Description field of the Servers. (This VSphere Hostname should match the Server Hostname in the CUCDM Network Element loader).

Verify that the Unified CM subscriber ip address is added under *System > Server* before installing the subscriber.

When the Unified CM software is installed, the Unified CM name is automatically pre-pended with a 'CM' prefix. However, CUCDM does not recognize the 'CM' prefix so it must be removed from the Unified CM Name.

Note

The Unified CM name must be modified to *exactly* match the server host name.

Procedure

To change the Unified CM Name:

- Step 1** Browse to *System > Cisco Unified CM > Cisco Unified Communications Managers*.
 - Step 2** Select the underlined *CM Name*.
 - Step 3** On the *Cisco Unified CM Configuration* page (under *Server Information > Cisco Unified Communications Manager Name**), remove the prefix from the existing name (for example, *CM_VSC-CLI-P* to *VSC-CLI-P*).
 - Step 4** Enter the IP address for the name; you can also enter the hostname of the server.
 - Step 5** Repeat the above steps on all Unified CM servers in the cluster.
-

Add NTP Settings

Add NTP reference: *System > Phone NTP Reference*; Enter NTP server address and *Mode* choice.

Add Date/Time Group Settings

From the Unified CM admin page, go to *System > Date/Time Group* and click **Add New**.

CUCDM uses the international standard zone info database (also called the tz database). In CUCDM, the time zone names are all in the Area/Location format:

- Area is the name of a continent, or ocean
- Location is the name of a specific location within an Area, for example America/New_York

Unified CM uses a different standard that requires time zone names in Unified CM to be in the format Area-Location, for example America-New_York. Therefore ensure that matching pairs of time-zones are added into the Unified CM cluster to pair with the time zone.

Procedure

To create a Date/Time Group:

- Step 1** Browse to *System > Date/Time Group > Add New*, and complete the following:
 - **Group Name:** Assign a name to the new date/time group, for example Europe-London, America-Denver
 - **Time Zone:** From the drop-down list, select the appropriate time zone for the group, for example GMT Europe/London
 - **Separator:** Select the '-' separator character to use between the date fields; do not use '/'
 - **Date Format:** Select the date format for the date that displays on IP Phones, for example D/M/Y
 - **Time Format:** Select a 12-hour or 24-hour time format

Step 2 Add the Phone *NTP Reference* for the Date/Time Group.

Step 3 Repeat this process for all required Date/Time Groups, for example:

In Unified CM	In CUCDM
America-New_York	America/New_York
America-Chicago	America/Chicago
America-Denver	America/Denver
America-Los_Angeles	America/Los_Angeles
America-Toronto	America/Toronto
Europe-Berlin	Europe/Berlin
Europe-Madrid	Europe/Madrid
Europe-Moscow	Europe/Moscow
Australia-Sydney	Australia/Sydney
and so on.	and so on.

Enterprise Parameters Configuration

Procedure

Step 1 Set *Advertise G.722 Codec* to *Disabled*. By default it is enabled; but the PGW and recording servers may require this feature to be disabled:

Browse to *System > Enterprise Parameters* and set *Enterprise Parameters Advertise G.722 Codec* to *Disabled*.

Step 2 Browse to *Enterprise Parameters* and update the *Services Provisioning* field to *BOTH*.

Step 3 First, create Feature Control Policy: FCP-All (enable all settings in it) (*Device > Device Settings > FCP*), then browse to *System > Enterprise Parameters*, and set *Enterprise Parameters Feature Control Policy* to *FCP-All*.

Step 4 Adjust Phone URL Parameters under *System > Enterprise Parameters* by browsing to *System > Enterprise Parameters > Phone URL Parameters* and modifying the following:

- **URL Authentication:** This parameter specifies the URL that points to a web page that resides in one of the Cisco CallManager Cisco IP Phone (CCMCIP) webs in the cluster (`http://<IP_address_of_Publisher_server>:8080/ccmcip/authenticate.jsp`)
- **URL Directories:** This parameter specifies the URL that is accessed when the Directory Button is pressed on an IP phone. If CUCDM is used for directory services, this URL must include the virtual IP address of the CUCDM cluster. For example: `http://<Natted IP_address_of_CUCDM_server>/bvsmweb/directoryservices.cgi`
- **URL Information:** This information displays when a user presses the **i** or **?** button on a phone: (`http://<IP_address_of_Publisher_server>:8080/ccmcip/GetTelecasterHelpText.jsp`)
- **URL Services:** This parameter specifies the URL that the secured Cisco IP phone call when the Services button is pressed `http://<IP_address_of_Publisher_server>:8080/ccmcip/getservicesmenu.jsp`

Note

Use **http**, not **https** for the secured services URL.

A sample is provided below:

Phone URL Parameters		
URL Authentication	http://10.6.10.3:8080/ccmcp/authenticate.jsp	
URL Directories	http://10.6.10.2/bvsmweb/directoryservices.cgi	
URL Idle		
URL Idle Time	0	0
URL Information	http://10.6.10.3:8080/ccmcp/GetTelecasterHelpText.jsp	
URL Messages		
IP Phone Proxy Address		
URL Services	http://10.6.10.3:8080/ccmcp/getservicemenu.jsp	
Secured Phone URL Parameters		
Secured Authentication URL	https://cucm9:8443/ccmcp/authenticate.jsp	
Secured Directory URL	http://10.6.10.2/bvsmweb/directoryservices.cgi	
Secured Idle URL		
Secured Information URL	https://cucm9:8443/ccmcp/GetTelecasterHelpText.jsp	
Secured Messages URL		
Secured Services URL	https://cucm9:8443/ccmcp/getservicemenu.jsp	

Update CUPS Service Parameter

From the Unified CM Admin page, go to *System > Service Parameters*:

- Select the Publisher.
- Select the Cisco CallManager service.
- Change the *Default Inter-Presence Group Subscription* to *Allow Subscription*.

Modify the User Credential Policy

Procedure

From the Unified CM Admin page:

- Step 1** Go to *User Management > User Settings > Credential Policy Default*.
- Step 2** Edit the *Application User* Default Credential Policy as follows:
- Deselect (uncheck) *User Must Change at Next Login* checkbox.

Disable Corporate Directory and Personal Directory

Procedure

From the Unified CM admin page:

- Step 1** Go to *Device > Device Settings > Phone Services > Corporate Directory*.
- Step 2** Deselect (uncheck) the *Enable* checkbox and then click **Save**.
- Step 3** Repeat for Personal Directory.

Add Application User (Optional)

Note

This is typically an optional step, but **is required** if CUPS will be used.

Procedure

From the Unified CM admin page:

- Step 1** Go to *User Management > Application User > Phone Services > Corporate Directory*.
- Step 2** Enter the mandatory and required fields in the *Application User Information*, *Device Information*, and *CAPF Information* areas of the screen.
- Step 3** Select the *Standard CCM Super Users* option in the *Permissions Information/Groups* area of the screen.
- Step 4** Click **Save**.
-

Add Phone Button Templates (Optional)

From the Unified CM admin page, browse to: *Device > Device Settings > Phone Button Templates > Add New*.

If new Phone 69XX, 89XX and 99XX phone types are being used, create Mobility Phone Button Templates for use in Default Device Profiles with Mobility set on the second line, for example:

- Mobility 6961 SCCP
- Mobility 8961 SIP
- Mobility 9971 SIP

Also, to allow Speed-Dial, BLF and URL testing on a number of phone types, add:

- Standard CIPC SCCP + IP Services (2 Lines + 2 SDs + SD-BLF+CP-BLF + 2 URLs)
- Standard 7961 SCCP+BLF+URLs (2 Lines +SD + SD-BLF+CP-BLF + URL)
- Standard 9971 SIPTEST (2 Lines + 4 SDs + SD-BLF +URL)

Add Soft key Templates (Optional)

Add custom Softkey Templates if required.

From the Unified CM admin page, browse to *Device > Device Settings > Softkey Template > Add New*.

Add Default Device Profiles (Optional)

From the Unified CM admin page, browse to *Device > Device Settings > Default Device Profiles*, and add default device profiles for 69XX, 89XX, and 99XX phone types, for example:

- 6961 SCCP
- 8961 SIP
- 9971 SIP

Be sure to select the associated *Mobility* phone button template; specify a default softkey template or *FCP-All* for 8961 and 9971.



CHAPTER 2

Unity Connection Static Build

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Note

Due to API limitations, some static configuration is required on CUC.

UCX Service Management

Procedure

- Step 1** Go to the *Cisco Unified Serviceability* page go to *Tools > Service Activation*.
 - Step 2** Select the Primary Unity Connection server and click *Go*.
 - Step 3** Select the *Check All Services* checkbox.
 - Step 4** Click *Save*.
-

Add Phone System

Procedure

- Step 1** On the CUC Server go to *Cisco Unity Connection Administration*.
 - Step 2** CUCX: *Telephony Integrations > Phone System* (Use default)
-

Add Port Group

Procedure

- Step 1** CUCX - *Telephony Integrations > Port Group > Add New*
 - Step 2** Choose default Phone System from drop-down.
 - Step 3** Create From - Choose SIP from drop-down.
 - Step 4** Display Name - for example VSC-UCX1-P.
 - Step 5** Authenticate with SIP server - Unchecked.
 - Step 6** Authentication username/password - blank
 - Step 7** Contact Line Name - blank.
 - Step 8** SIP Security Profile - 5060 from drop-down.
 - Step 9** SIP Transport Protocol - TCP from drop-down.
 - Step 10** Primary Server UPv4 Address - IP of Unified CM Publisher.
 - Step 11** Primary Server UPv6 Address - blank.
 - Step 12** Port 5060.
 - Step 13** Click **Save**.
-

Register with SIP Server

Procedure

- Check *Register with SIP Server* in the newly-created SIP group.
-

Edit Port Group

In case you have subscribers and/or TFTP server(s), they need to be registered with the Port Group. If your Unified CM does not have subscriber(s) and/or TFTP server(s), skip this section.

Procedure

- Step 1** CUCX - *Telephony Integrations > Port Group > choose the port group > Edit > Servers*.
 - Step 2** Add each Unified CM subscriber under SIP servers.
 - Step 3** Add each TFTP server under TFTP servers.
-

Add Ports

Procedure

- Step 1** CUCX - *Telephony Integrations > Port > Add New*.
- Step 2** Enable - Tick checkbox.
- Step 3** Number of ports - Number required for system.
- Step 4** Phone System - Created phone system from drop-down.
- Step 5** Port Group -Created port group from drop-down.

- Step 6** Server -Choose server for the port(s) from drop-down.
- Step 7** Answer Calls - Checked.
- Step 8** Perform Message Notification - Checked.
- Step 9** Send MWI Requests (may also be disabled by the port group): Checked.
- Step 10** Allow TRAP Connections - Checked.
- Step 11** Click **Save**.

(REPEAT AS NEEDED FOR REDUNDANCY)

Reset Port Group

Procedure

- CUCX - *Telephony Integrations* > *Port Group* > **Reset** button.
-

Create/Update UCX User Templates and Ensure Required Time-Zones are Set

Procedure

- CUCX - *Templates* > *User Templates* > *Add New*
-

Typically, the following are set, but settings could vary based on the end customer's requirements:

- Uncheck Set for Self-enrollment at Next Sign-In.
 - Edit > Password Settings and uncheck User Must Change at Next Sign-In for both Voice Mail and Web Application.
 - Edit > Phone Menu and under After Sign-In, Play, uncheck User's New Messages Automatically.
-

Important

UCX Templates names should correspond to the Service Types defined for these templates in the Base Data loader file.

If support for multiple time zones is required, a larger number of UCX templates should be added with the applicable time zone for each. For example:

NORTH-AMERICA

- UCX-Standard-CoS-EST
- UCX-Advanced-CoS-EST
- UCX-Standard-CoS-CST
- UCX-Advanced-CoS-CST
- UCX-Standard-CoS-MST
- UCX-Advanced-CoS-MST

- UCX-Standard-CoS-PST
- UCX-Advanced-CoS-PST

EUROPE

- UCX-Standard-CoS-GBR
 - UCX-Standard-CoS-CET
 - UCX-Advanced-CoS-GBR
 - UCX-Advanced-CoS-CET
-

Modify Authentication Rules

Both Unity Connection authentication rules need to be relaxed to match what CUCDM is sending. To modify the authentication rules, browse to *System Settings > Authentication Rules*:

- Recommended Voice Mail Authentication Rule:
- Recommended Web Application Authentication Rule

Only a few parameters in both application rule sets need to be modified:

- **Minimum Duration Between Credential Changes:** set to *zero (0)*
- **Credential Expires After:** set to *zero (0)* and *Never Expires*
- **Minimum Credential Length:** set to *4* (minimum voicemail pin length)
- **Stored Number of Previous Credentials:** set to *zero (0)*
- **Check for Trivial Passwords:** leave it *unchecked*

Note

When setting up a user's mailbox in CUCDM, if the above settings do not match what CUCDM is sending to Unity Connect server, you will get an error similar to the following:

Figure 1. Repeat steps above for Recommended Web Application Rule





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Add a CCMCIP Profile 17

Note

Due to API limitations, some static configuration is required on CUPS.

Initial Post-Install Wizard

Procedure

- Step 1** Enter Unified CM Hostname and IP in Post Install Setup wizard.
 - Step 2** Enter AXL Username and Password, i.e. AXLAdmin and password... (previously created in Unified CM with AXL rights). See [Add Application User \(Optional\) on page 9](#) for details.
 - Step 3** Enter Security Passphrase as it was entered during Unified CM Cluster installation. Entered during system Unified CM Install.
-

Activate all Services

Procedure

- Step 1** Under *Cisco Unified Serviceability*.
 - Step 2** Navigate to *Tools > Service Activation*.
 - Step 3** Select (check) the *Check All Services* checkbox and click **Save**.
-

Change hostname to IP Address for Publisher

Procedure

- Step 1** Under *Cisco Unified CM IM and Presence Administration*.
 - Step 2** Navigate to *System > Cluster Topology*.
 - Step 3** Select *Edit* under the server in the *DefaultCUPSubcluster* section.
 - Step 4** Change the Cisco Unified Presence server host name to an IP address in the *Node Configuration* section.
 - Step 5** Under *Cisco Unified and Presence Serviceability*.
 - Step 6** Menu: *Tools > Control Centre Network Services*.
 - Step 7** Restart Cisco UP XCP Config Manager and Cisco UP XCP Router services.
-

CUPS Subscriber Installation

Procedure

Before installing the CUPS subscriber server:

- Step 1** Add the IP address of subscriber from to *System > Cluster Topology > Add New Node*.
 - Step 2** Change the proxy domain from default DOMAIN.NOT.SET to domain name of customer. Customer needs to have DNS records for CUP and CUCM servers.
-

Enable Automatic Authorization for SIP Clients to view presence of others

Procedure

- Step 1** *CUPS - Presence > Settings*.
 - Step 2** Check enable availability sharing.
 - Step 3** Check allow users to view the availability of other users without being prompted for approval.
-

Configure Proxy Server Settings

Procedure

- Step 1** *CUPS - Presence > Routing > Settings*.
 - Step 2** Select On and then select Default Cisco SIP Proxy TCP Listener as the Preferred Proxy Listener.
-

Allow all SIP via Incoming ACL

Procedure

-
- Step 1** CUPS - *System > Security > Incoming ACL*.
- Step 2** Add New rule with pattern all.
-

Enable Legacy Client (CUPC v. 7/8) to download images from Unified CM via TFTP

Procedure

- Step 1** Application > Legacy Clients > Settings.
- Step 2** Enter Primary TFTP server address and a Backup TFTP (if required).
- Step 3** Click **Save**.
-

Add a CCMCIP Profile

Procedure

- Step 1** Application > Legacy Clients > CCMCIP Profile.
- Step 2** Enter primary and secondary CCMIP Hosts.
- Step 3** Server Certificate Verification: Any Certificate.
- Step 4** Select the Make this the default CCMCIP Profile for the system checkbox and click **Save**.
-



CHAPTER 4

CUCDM Static Configuration

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USCMCLI Health Check

Procedure

- Step 1 SSH to CUCDM system shell and Login with *usmcli /usmcli*
- Step 2 Run the health command:
- a Verify that there are 32Gb RAM and 7 virtual CPU for Production platforms.
 - b Service status is ok for all services and there's adequate hard disk space available.

```
->> health
Current time: 2012-09-13 16:39:09.965578 UTC

Versioning:
-----
Platform version:
  USM version:

Provisioning:
-----
  2 providers
  2 resellers
  2 customers
  2 locations
 10 subscribers
 29 phones
 29 devices

System status:
-----
  AVAIL CPUs=7 Memory=32243 MB

-----
eth0  Link encap:Ethernet HWaddr 00:50:56:a0:00:22
      inet addr: Bcast: Ma
lo     Link encap:Local Loopback
      inet addr:127.0.0.1 Mask:255.0.0.0

Disk status:
-----
      / using 20% ( 16G of 21G)
      /srv/VOSS/shared using 8% (4.4G of 5.0G)
      /srv/VOSS/estraier using 4% (4.6G of 5.0G)
      /srv/VOSS/postgresql using 1% (169G of 178G)
      /srv/VOSS/imap using 4% (3.7G of 4.0G)
      /srv/VOSS/glassfish using 26% (2.8G of 4.0G)

Service status:
-----
  Disaster Recovery : Disaster Recovery is not enabled
  AutoRegistration : OK
  Telephony : OK
  WebServices : OK
  Selfcare : OK
  AdminGUI : OK
  BulkLoaders : OK

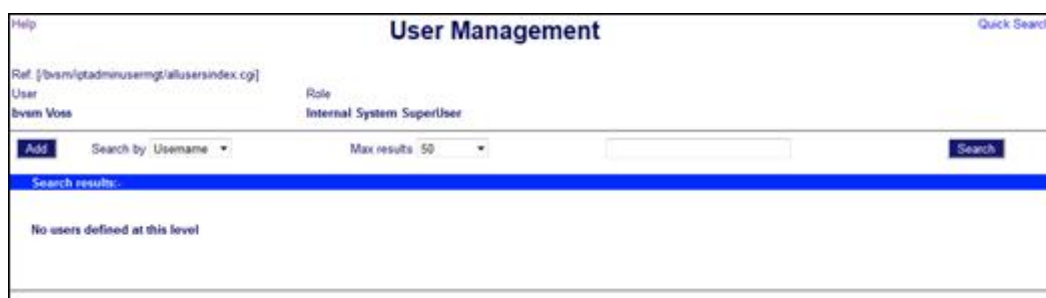
System summary:
-----
! Disaster Recovery is not enabled
! Shared filesystem sync has not taken place
! Backup has never taken place
! Time has not been synchronised with NTP server
[END]
```

Add System Admin

Procedure

- Step 1** Log into the UCDD GUI, initially with the default "bvsm" user and password.
- Do NOT use the "bvsm" user for regular access to the CUDD platform and ensure that each administrator has a personal administrator account.
- Step 2** Add a personal system administrator, for example jsmith_cisco, and then log in with this personal administrator before adding further CUDD transactions.
- Step 3** To add new System Admin: Go to: CUDD - *General Administration* > *Administration Users* > *Add*.

Figure 2. Log-out and log in again using the new personal administrator account.



Add Access Profiles

Note

This step is required as default access profiles cannot be changed in the future - whereas a custom access profile can be modified at will.

Procedure

- Create Access Profiles using the Admin Portal: *CUDD* > *Setup Tools* > *Access Profiles* > *Add*.

Table 1. Example

SystemAdmin-AP1	SystemAdmin Access Profile 1
ProviderAdmin-AP1	ProviderAdmin Access Profile 1
ResellerAdmin-AP1	ResellerAdmin Access Profile 1
CustomerAdmin-AP1	CustomerAdmin Access Profile 1
DivisionAdmin-AP1	DivisionAdmin Access Profile 1
LocationAdmin-AP1	LocationAdmin Access Profile 1
EndUser-AP-Standard	EndUser Standard Access Profile

Modify BVSM Account

Procedure

- Change password for "bvsm" to a secure *Support* password.

Important

Do *NOT* use the anonymous "bvsm" user to load the platform, and consider deleting this account once multiple personal administrator accounts have been added.

Import Brands

The branding functionality enables providers to customize the System Administration Graphical User Interface (GUI) to their own colors, labels, icons, logo and general styling. The system is supplied with a default GUI that you are free to use. However, most providers will want to customize the front-end to be more appropriate to their own organization's "look and feel".

The term *Brand* describes both a concept and an object. Branding includes all graphical elements of the system GUI. The elements making up a brand are contained in a ZIP file.

Brands can be added to your system in two ways: by importing a brand or by creating a new brand online using the brand editor.

Procedure

To import a brand:

- Step 1** Browse to *Setup Tools > Branding*.
 - Step 2** Click the **Import Brand** button.
 - Step 3** Click the **Browse** button and browse to the Brand file (ZIP file) that you would like to upload to the system.
 - Step 4** Once you have selected the file you would like to upload, click the **Upload file** button.
-

Note

When loading the VS-P1-HCS Reference Loaders, at a minimum import the following brands (as the reference loaders expect these brands to exist):

- Cisco
- VOSS-GS
- VSCorp
- GenCorp
- VOSS1

Set Cisco, VOSS-GS (or another SP/Corporate brand) as the default brand.

Click on the required brand and open up the brand editing page, and click on "Set as default system brand" and then select **Submit**.

Import SelfCare Themes

Import Required Self-Care Themes (for example , GenCorp_Theme, and Cisco_Theme, VOSS-Standard_Theme).

Procedure

- CUCDM: *Setup Tools > Themes > Add.*
-

Configure Audit Function

Procedure

- Step 1** Turn on and configure CUCDM Audit setting by going to *Setup Tools > Global Settings* and select the *AuditTransactions* option.
- Step 2** Then go to *Setup Tools > Global Settings* and set the required attributes on:
- Driver_AddVoiceMailAcct
 - Driver_ModMobilityFeature
 - Driver_ModPhoneFeature
 - Driver_ModVoiceMailAcct
-



CHAPTER 5

Preparation of Dialplan Models and Bulk Loaders

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HCS814 Model Loaders 22

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Reference Models and Loaders

This document is used in conjunction with a fully integrated set of HCS 9.2.1 reference loaders that have been adapted for use on an HCS Platform (HCS921-CUCDM814-VS-P1-ReferenceSet).

Note

Avoid mixing bulk loaders and models from multiple sources without first taking steps to ensure the loaders are fully aligned.

Here is a listing of the core loaders prepared for this VS-P1-HCS platform. It is recommended that these reference loaders are each converted and relabeled for use on a Service Provider's production platform.

HCS814 Model Loaders

HCS814-HCS-G1 (DN = SLC + EXT)

- 02-LeafCluster-814ER1-G1Modelv001
- CtryDP-LC-USA-814ER1-G1Modelv001
- CtryDP-LC-USA-CAN-814ER1-G1Modelv001

Optional

- 02-SME-814ER1-G1Modelv001
- 03-IOSDevice-IOS15X-814ER1-G1Modelv001
- 04-PGWmml-814ER1-G1Modelv001
- 05-PGWx10-814ER1-G1Modelv001
- IOS15X-USA-814ER1-G1Modelv001
- Additional Country Add-Ons

HCS814-HCS-G2 (DN = EXT-only)

- 02-LeafCluster-814ER1-G2Modelv001

- CtryDP-LC-USA-814ER1-G2Modelv001
- CtryDP-LC-USA-CAN-814ER1-G2Modelv001

Optional

- 02-SME-814ER1-G2Modelv001
- 03-IOSDevice-IOS15X-814ER1-G2Modelv001
- 04-PGWmml-814ER1-G2Modelv001
- 05-PGWx10-814ER1-G2Modelv001
- IOS15X-USA-814ER1-G2Modelv001
- Additional Country Add-Ons

HCS814-HCS-G3 (DN = EXT-only)(Multi-Tenant Dialplan)

- 02-LeafCluster814ER1Modelv001
- CtryDP-LC-USA-814ER1-G2Modelv001
- CtryDP-LC-USA-CAN-814ER1-G2Modelv001

Optional

- 02-SME-814ER1G3Modelv001
- 03-IOSDevice-IOS15X-814ER1G3Modelv001
- 04-PGWmml-814ER1G3Modelv001
- 05-PGWx10-814ER1G3Modelv001
- IOS15X-USA-814ER1G3Modelv001
- Additional Country Add-Ons

CUCDM814 Bulk Loaders

Platform-level Loaders

- 01-CUCDM814-VS-P1-BaseData-DialPlanSpecific-v1-14-HCS-G1-G2-G3
- 02-CUCDM814-VS-P1-BaseData-PlatformSpecific-v1.24
- 02-CUCDM814-VS-P1-RawData-OrderEntry-AddSystemAdmin-v1-5
- 02-CUCDM814-VS-P1-RawData-OrderEntry-ModPhoneType-v1-10
- 03-CUCDM814-VS-P1-ProviderReseller-v1-18
- 04-CUCDM814-VS-P1-NetworkElements-v1-16-ProviderLevel-VS-P1-HCS
- 04-CUCDM814-VS-P1-NetworkElements-v1-16-ProviderLevel-VS-P2-HCS
- 04-CUCDM814-VS-P1-NetworkElements-v1-16-ProviderLevel-VS-P3-HCS

Customer-level Loaders

- C1-CUCDM814-VS-P1-NetworkElements-v1-29-Single Customer-VSC-CL1-CL2
- C2-CUCDM814-VS-P1-Customers-Divisions-Locations-SingleCustomers-v1-30-VS-Corp
- C3-CUCDM814-VS-P1-LocationAdmin-Extended-Formula-Loader-v1-31-VS-Corp

- C4-CUCDM814-VS-P1-UnManaged-PBX-Locations-v1-26-VS-Corp
- C5-CUCDM814-VS-P1-HCS921-FCT-ENT-Loader-Set-v1-7-VS-Corp
- C6-CUCDM814-VS-P1-NetworkElements-v1-28-RG-RL-RP-Connections-VSC-CL1

Additional Customer-Level Loaders for use with Multi-Tenant-Clusters and the HCS-G3 Diaplan

- C7-CUCDM814-VS-P3-NetworkElements-MultiCustomerClusters-MCC-CL1-CL2-v1-29
- C8-CUCDM814-VS-P3-Customers-Divisions-Locations-MultiCustomerClusters-MCC-CL1v1-30
- C9-CUCDM814-VS-P3-LocationAdmin-Extended-Formula-Loaderv1-30-MCC-CL1
- C10-CUCDM814-VS-P3-NetworkElements-v1-27-RG-RL-RP-Connections-MCC-CL1



CHAPTER 6

Bulk Load System Level Settings

Bulk Load Dial Plan and Platform Base Data Settings 25

Hardware Set Modification 25

Bulk Load System Administrators 26

Bulk Modify Phone Type Settings (Optional) 26

Bulk Load Dial Plan and Platform Base Data Settings

To begin the initial system build, upload the Base Data loaders into CUCDM. Browse to *General Tools > Bulk Load Tools*; Select *Schedule New Job*

The screenshot shows the 'Bulk Load Tools' web interface. At the top, there's a 'Help' link and a 'Quick Search' button. Below that, the user information is displayed: 'Ref: [/basm/ptbulkloadmg/index.cgi]', 'User: bvsm Voss', and 'Role: Internal System SuperUser'. A 'Schedule new job' button is visible. Below this is a section for 'Previous jobs' with a search bar and a table with columns: Job, Scheduled Time, Username, File Name, Status, Errors, and Warnings. The 'Max results' are set to 50.

Browse to the folder containing the Base Data workbooks; load the following two files:

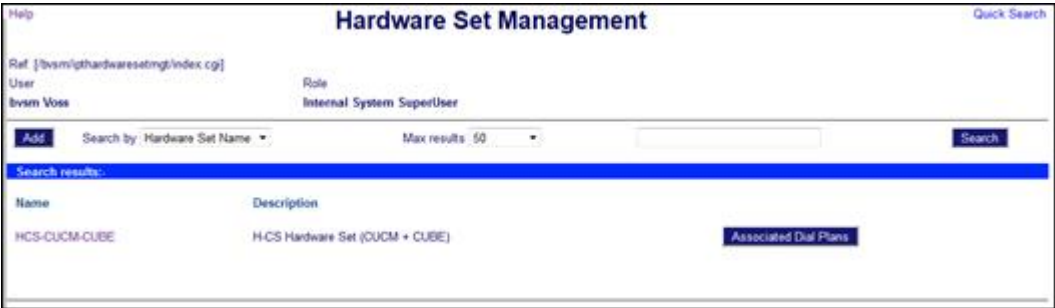
- 01-CUCDM814-VS-P1-BaseData-DialPlanSpecific-v1-14-HCS-G1-G2-G3
- 01-CUCDM814-VS-P1-BaseData-PlatformSpecific-v1.24

The screenshot shows the 'Bulk Load Tools' web interface. At the top, there's a 'Help' link and a 'Quick Search' button. Below that, the user information is displayed: 'Ref: [/basm/ptbulkloadmg/bulkloaduploadform.cgi]', 'User: bvsm Voss', and 'Role: Internal System SuperUser'. There's a 'Browse...' button for file selection. Below this, there's a 'Scheduled Date (yyyy-mm-dd)' field, a 'Time (hh:mm:ss)' field, and two checkboxes: 'Execute as soon as possible' (checked) and 'Execute immediately'. There's also a 'Select file encoding' dropdown menu set to 'Default Character Encoding'. A 'Submit' button is at the bottom. A 'Return to Bulk Load Tools' link is at the bottom left.

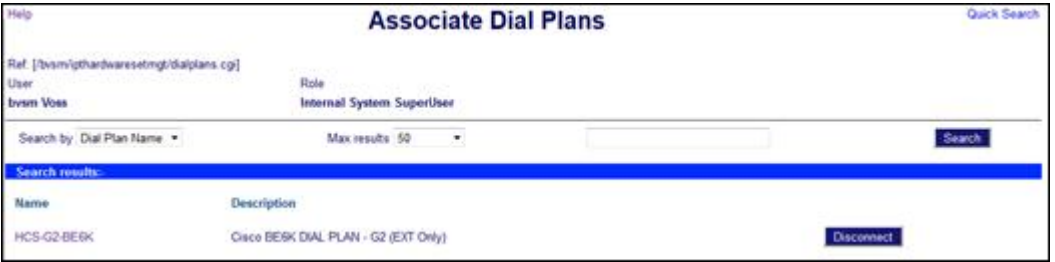
Hardware Set Modification

Next, modify the hardware set (if required). Normally the Hardware Set can be left unchanged (as set up in the Reference Loaders).

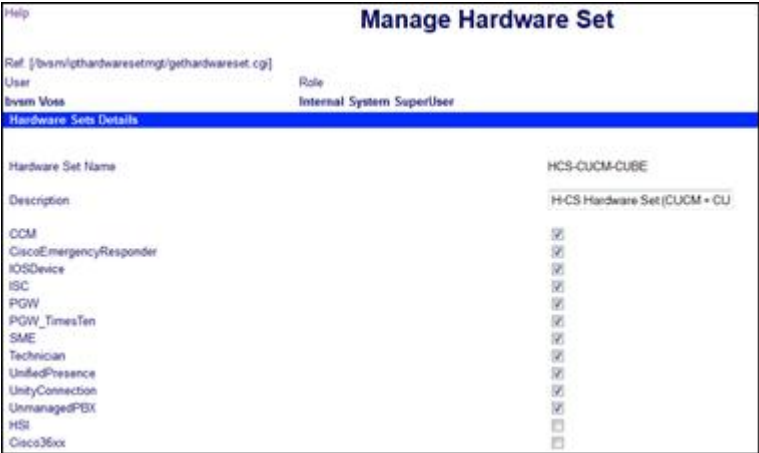
As required, add or remove devices. Browse to *CUCDM > Dial Plan Tools > Hardware Sets > Manage Hardware Sets*:



Click on *Associated Dial Plans*.



Disconnect the dial plan from the hardware set.



Select the appropriate checkboxes for the devices you require, and click **Modify** when finished.

Important

Be sure to reconnect the dial plan to the hardware set on completion.

Bulk Load System Administrators

As required, modify and load the following loader to load further System Administrator user accounts.

- 02-CUCDM814-VS-P1-RawData-OrderEntry-AddSystemAdmin-v1-5

Bulk Modify Phone Type Settings (Optional)

The following loader is only required if extra phone types are being added, or if there is requirement to modify phone types.

- 02-CUCDM814-VS-P1-RawData-OrderEntry-ModPhoneType-v1-10.



CHAPTER 7

Load Dial Plan Models

Bulk Load HCS Dial Plan Models 28

 HCS814-HCS-G1 (DN = SLC + EXT) 28

 HCS814-HCS-G2 (DN = EXT-only) 29

 HCS814-HCS-G3 (DN = EXT-only)(SMB Multi-Tenant Dialplan 29

Bulk Load HCS Dial Plan Models

Browse to the *Dial Plan Tools > Configuration Models > Model Loader*; select *Schedule New Job*. Click the **Browse** button, and upload the required set of dialplan loaders.

Help

Quick Search

Model Load Tools

Ref: [/bvs/mptmodelsmgt/modelload.cgi]

User

Role

bvsm Voss

Internal System SuperUser

Schedule new job

Previous jobs

Search by Job number

Max results: 50

Search

Job	Scheduled Time	Username	File Name	Status	Errors	Warnings
5	2013/03/26 08:39:14 EDT	bvsm	CtryDP-LC-USA-901G2V01L.xls	Completed	0	0
4	2013/03/26 08:33:03 EDT	bvsm	01-02-10SDevice-901G2V01L.xls	Completed	0	0
3	2013/03/25 17:27:44 EDT	bvsm	01-01-LeafCluster-901G2V01L.xls	Completed	0	1

- Note**
- Discuss the exact selection of HCS models with your HCS Platform dial team in advance, and check for any model updates.
 - Ensure the Base-Data loaders have been loaded BEFORE loading any dialplan models.
 - Ensure the loaders are added in the order shown.
 - If the main leaf-cluster model has to be reloaded, it will clear ALL the Unified CM model tables and all the Add-On Country dial plan loaders need to be reloaded.

HCS814-HCS-G1 (DN = SLC + EXT)

- 02-LeafCluster-814ER1-G1Modelv001
- CtryDP-LC-USA-814ER1-G1Modelv001
- CtryDP-LC-USA-CAN-814ER1-G1Modelv001

Optional

- 02-SME-814ER1-G1Modelv001
- 03-IOSDevice-IOS15X-814ER1-G1Modelv001
- 04-PGWmml-814ER1-G1Modelv001
- 05-PGWx10-814ER1-G1Modelv001
- IOS15X-USA-814ER1-G1Modelv001
- Additional Country Add-Ons

HCS814-HCS-G2 (DN = EXT-only)

- 02-LeafCluster-814ER1-G2Modelv001
- CtryDP-LC-USA-814ER1-G2Modelv001
- CtryDP-LC-USA-CAN-814ER1-G2Modelv001

Optional

- 02-SME-814ER1-G2Modelv001
- 03-IOSDevice-IOS15X-814ER1-G2Modelv001
- 04-PGWmml-814ER1-G2Modelv001
- 05-PGWx10-814ER1-G2Modelv001
- IOS15X-USA-814ER1-G2Modelv001
- Additional Country Add-Ons

HCS814-HCS-G3 (DN = EXT-only)(SMB Multi-Tenant Dialplan

- 02-LeafCluster814ER1Modelv001
- CtryDP-LC-USA-814ER1-G2Modelv001
- CtryDP-LC-USA-CAN-814ER1-G2Modelv001

Optional

- 02-SME-814ER1G3Modelv001
- 03-IOSDevice-IOS15X-814ER1G3Modelv001
- 04-PGWmml-814ER1G3Modelv001
- 05-PGWx10-814ER1G3Modelv001
- IOS15X-USA-814ER1G3Modelv001
- Additional Country Add-Ons



CHAPTER 8

Bulk-Load Provider-Reseller Settings

[Bulk Load Providers and Resellers and FG Templates](#) 30

[Bulk Load Provider-Level Network Elements](#) 30

Bulk Load Providers and Resellers and FG Templates

Browse to CUCDM - *General Tools* > *Bulk Load Tools* > *Schedule new job* > *Browse*.

Filename - 03-CUCDM814-VS-P1-ProviderReseller-v1-18.

Important

Ensure that the provider(s) have the correct Dialplan Name, hardware set and branding

Confirm feature group templates have been customized as required for the Provider.

For a generic HCS Service Provider, two Providers are normally recommended:

- VS-P1-HCS using the HCS-G1 dialplan
- VS-P2-HCS using the HCS-G2 dialplan

A third provider can be added if multi-tenant support is required for SMB customers: VS-P3-HCS using the HCS-G3 dialplan.

Bulk Load Provider-Level Network Elements

Depending on the platform installation requirements, modify and load the Provider-Level Network Elements loader that contains the transit switch, DHCP, and WebEx Services settings:

- Filename - 04-CUCDM814-VS-P1-NetworkElements-v1-16-ProviderLevel-VS-P1-HCS
- Filename - 04-CUCDM814-VS-P2-NetworkElements-v1-16-ProviderLevel-VS-P2-HCS
- Filename - 04-CUCDM814-VS-P3-NetworkElements-v1-16-ProviderLevel-VS-P3-HCS

Note

- Determine which countries need to be supported initially, and ensure the relevant "add-on" country dialplan models have already been added.
- If PGW or SME transit switches are being deployed, seek specialist advice on their static configuration set-up. A live or simulated PGW is a mandatory requirement if FMC dialplan support is required.

- If PGW transit switches are being used, ensure the country level SIP trunks are added in advanced.
- If SME transit switches are being used, ensure that the SIP trunks have been manually added in advance. Once the SME trunks have been manually added, CUCDM will automatically add the rest of the SME dialplan (for example Route Groups, Route Lists, Route Patterns and Translation Patterns).
- Ensure the PGW and SME Transit switches are initialized before the AddCountry step.
- Modify the Network Element loader so that only the required Provider-Countries are "unhashed".
- At the AddProviderCountry step, CUCDM will add the required country level dialplan to the PGW or SME transit switches if these are being used.

This completes the System and Provider level configuration of the HCS Platform. It is now ready to add Customer-level settings. The following section describes the procedure for adding as single HCS customer using the "Cx" set of bulk loaders. These procedural steps should be repeated each time another HCS customer is added.

The following procedure describes the addition of loaders for the reference customer "VS-Corp".

Important

STOP!!! Make sure Customer Unified CM, CUCX and CUPS static builds are completed before proceeding to add customer level network element settings.



CHAPTER 9

Bulk-Load Customer-Level Network Elements

Bulk Load Network Elements **33**

Bulk Load Unified CM Groups / Import Settings / IP Phone Services **33**

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Bulk Load MRGs/MRGLs, Regions/DevicePool Settings, Trunk Connections **35**

Bulk Load UCCE and CER Connections to Unified CM Clusters (Optional) **35**

Bulk Load EMCC Settings (Optional) **35**

Interconnect Unified CM Clusters (Optional) **36**

Edit CUPS Presence Settings (Optional) **37**

The Customer-Level Network Element loader set has been optimized for efficiently loading Customer-Level network element settings. It is described in more detail in CUCDM bulk loader and training documentation. Most of the input data is added via the Network Element "#CUSTOMER INPUT SHEET" with the follow-on loader worksheets configured via formulas. This input sheet has a number of bulk loading "hash" columns that allow the Customer's Network Elements to be loaded in a phased manner. It is recommended that the sections of the loader are added one step at a time, as described below.

File Name - C1-CUCDM814-VS-P1-NetworkElements-v1-29-Single Customer-VSC-CL1-CL2.

If shared Unified CM and CUCX clusters are being used to support SMB customers, use the following file as a starting point: File Name C7-CUCDM814-VS-P3-NetworkElements-MultiCustomerClusters-MCC-CL1-CL2-v1-29.

Important

- Ensure that the CUCDM Customer-Side IP address is set on the #CUSTOMER INPUT SHEET (cell G4). (This is required for loading IP Phone Service settings).
- Double-check the input settings in the input lines on #CUSTOMER INPUT SHEET lines 8/9 before you start loading. Avoiding data errors will save time!
- Double check that the correct version levels are set in the input sheet to ensure that CUCDM uses the correct version level driver when provisioning the Cisco UC App servers. For example, Dial-plan loading failures will occur if a Unified CM v9.1 cluster is loaded with CUCDM set to version 8.6 or 9.0.
- Double-check the Hardware Group settings are configured as required. For example Transit switch included or not? Multiple Unified CM clusters in the FNN Hardware groups or not? (recommended for multi-cluster deployments).

- The Reference loader is set up to load a USA Aggregation trunk and associated RGs, RLs and RPs. Amend the workbook if a different country is required. Alternatively ensure that the follow-on Multi-Country loader is added afterwards to add the Network Connectivity for other countries. See: C6-CUCDM814-VS-P1-NetworkElements-v1-28-RG-RL-RP-Connections-VSC-CL1 or C10-CUCDM814-VS-P3-NetworkElements-v1-27-RG-RL-RP-Connections-MCC-CL1.
- The extra example data in lines 21 and below on the input sheet is for reference and will not be loaded.
- Be careful not to accidentally "break" the formulas in the formula-driven worksheets. Keep backup versions of this loader when making amendments. Revert to an earlier (working) version of the loader if the workbook formulas are damaged.

Bulk Load Network Elements

Configure the #CUSTOMER INPUT SHEET as follows:

- Un-hash Load Flag Network Elements (Column A) on #CUSTOMER INPUT SHEET (lines 8 and 9 as required).
- Click **Save**.
- (CUCDM) - *General Tools > Bulk Load Tools > Schedule new job > Browse*, load the Network Elements loader.
- Monitor the CUCDM Transaction logs and check in *CUCDM > Network* menu that the required customer network elements have been loaded: For example Unified CM clusters, CUCX clusters, CUPS clusters, CUCCE clusters, Additional Conference resources, Authentication Servers, Cisco Emergency Responders, Hardware Groups.

Bulk Load Unified CM Groups / Import Settings / IP Phone Services

Re-configure the #CUSTOMER INPUT SHEET as follows:

- Hash column A.
- Un-Hash column B (Load Flag Unified CM Groups/Imports/IP Phones Services) (lines 8 and 9 as required).
- Leave column C and further columns hashed.
- Click **Save**.
- Take Unified CM out of manual mode:
 - *Network > PBX Devices > CUCM Cluster name*.
 - Click on server name for example - VSC-CL1.
 - Uncheck the *Manual Mode* checkbox.
- Click **Modify**.
- Check that CUCDM can connect to the cluster by running the import function on one Unified CM attribute for example *Date/Time Groups PBX Devices > Cluster Name > Import / Refresh Items > Select "Date/Time Groups" > Import*. If this transaction is not successful check the Unified UCM username and password has been correctly loaded into CUCDM. Also check

for network connectivity between CUCDM and the Unified CM publisher and that the correct NAT'd IP address has been added.

- Take Cisco Unity Connection out of manual mode:
 - *Network > Voicemail Servers > Server name.*
 - Click on server name for example VSC-UCX1.
 - Uncheck the *Manual Mode* checkbox.
 - Click **Modify**.
- Take CUPS out of manual mode:
 - *Network > Presence Servers > Server name.*
 - Click on server name for example VSC-CUPS1.
 - Uncheck the *Manual Mode* checkbox.
 - Click **Modify**.
- Re-run the Network Elements loader.
- Monitor the CUCDM Transaction Logs and Device Logs and check that the Unified CM Groups and IP Phone Services are loaded. Check that the Unified CM imports are successful. Note: the imports can take 5 minutes-plus to run.

Note

Only continue to the next step upon the successful import of Unified CM/CUC information. If some of the network elements are being simulated, leave these elements in "Manual Mode".

Initialize the Unified CM Clusters (InitIPPBX)

This step performs the InitIPPBX and AddProviderIPPBXCountry functions and pushes the cluster-wide and country-level dial plan models settings to the Unified CM cluster.

The InitIPPBX step can be run via the CUCDM GUI for each cluster. Go to *Network > PBX Devices > ClusterName*. Scroll to the bottom of the CCM Cluster Management Page and select "Load Static Configuration"

Alternatively, configure the #CUSTOMER INPUT SHEET as follows:

- Hash columns **A** and **B** .
- Un-Hash Column **C** (lines 8 and 9 as required).
- Click **Save**.
- Re-run the Network Elements loader.

Check the "InitIPPBX" transaction is successful and a message similar to the following is seen.
Unified CM 8.6.x: Driver load of cluster VSC-CL1 [192.168.14.67] completed ... [779]

As extra confidence check, review the "Device Log" for the InitIPBX transactions, or log in to the Unified CM cluster and verify that the cluster-wide and country-level dialplan has been loaded into the Unified CM cluster. For example check for addition of Partitions, CSSs, RPs, TPs, and so on.

Successful completion of the InitIPPBX step is an important milestone in configuring an HCS- Unified CM cluster, and indicates that the static configuration has been added correctly.

Bulk Load MRGs/MRGLs, Regions/DevicePool Settings, Trunk Connections

Configure the #CUSTOMER INPUT SHEET as follows:

- Verify that columns A, B and C are hashed.
- Un-hash column **D and E** (lines 8 and 9 as required).
- Click **Save**.
- Re-run Network Elements loader.
- Monitor the CUCDM Transaction logs and confirm the required Unified CM settings are added, for example:
 - Logical connection of UCX, CUPS, UCCE and Conference Servers
 - Addition of CUPS SIP trunk
 - MRGs, MRGLs,
 - CCM Audio Regions,
 - Device Pool Templates
 - Network Connections with Trunks, Route Groups, Route Lists and associated Route Patterns

Bulk Load UCCE and CER Connections to Unified CM Clusters (Optional)

This step should only be conducted AFTER the previous step has been successfully completed. Do not attempt to combine both steps.

Configure the #CUSTOMER INPUT SHEET as follows:

- Hash out columns **A, B, C, D, and E**.
- Un-hash column **F** (lines 8 and 9 as required).
- Click **Save**
- Re-run the Network Elements loader

Monitor the CUCDM Transaction logs and Device Logs and confirm the required UCCE and CER dialplan settings are added to the Unified CM cluster.

Bulk Load EMCC Settings (Optional)

This is an optional step and only required for the EMCC feature where a customer requires Extension Mobility Cross-Cluster support across multiple clusters, for example between VSC-CL1 and VSC-CL2.

Configure the #CUSTOMER INPUT SHEET as follows:

- Hash columns **A, B, C, D, E, and F**.
- Un-hash column **G** (lines 8 and 9 as required).
- Click **Save**.

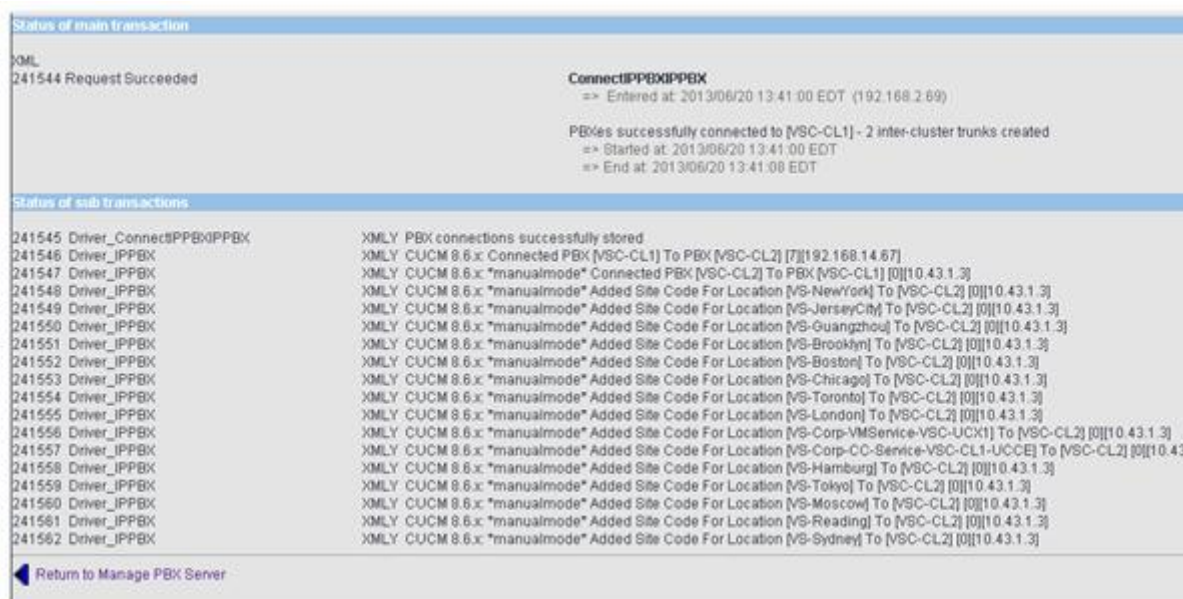
- Re-run the Network Elements loader.
- Monitor the CUCDM Transaction logs and Device Logs and confirm the required EMCC settings have been added, for example:
 - Addition of EMCC countries
 - Addition of EMCC Remote Clusters
 - Addition of GeoLocation Filters
 - Addition of EMCC Feature Parameters

Interconnect Unified CM Clusters (Optional)

This is only applicable where a customer has multiple clusters. Note this step can be added at a later date, when additional clusters are added.

Currently it is recommended to conduct this step via the CUCDM GUI:

- Go to *Network > PBX Devices > CUCM ClusterName > Connectivity > PBX=>PBX* for example select Connectivity for VSC-CL1.
- Select required extra clusters, for example VSC-CL2.
- Select Connect IPPBX.
- Select Trunk Protocol = SIP, and Topology Type = "Full Mesh" or "Star".
- Modify Trunk Descriptions, SIP Profile, Normalization Script and Script Parameters as required.
- Select "Confirm".
- Monitor the CUCDM Transaction logs and Device Logs and confirm that CUCDM creates the required InterClusterSIP trunk(s), Route Groups and Route Lists on each cluster, for example on VSC-CL1: ICT-SIP-1102, RG-IPPBX-SIP-1102, RL-IPPBX-1102 (where 1102 = CPID of VSC-CL2) on VSC-CL2: ICT-SIP-1101, RG-IPPBX-SIP-1101, RL-IPPBX-1101 (where 1101 = CPID of VSC-CL1).
- If customer locations already exist, when adding connections to another cluster confirm that CUCDM adds the required SLC Route Pattern routing in the remote clusters, for example as in screenshot below:



Edit CUPS Presence Settings (Optional)

In the Cisco CUPS server, Under *Presence > Settings*, the *Unified CM IM and Presence Publish Trunk* field needs to be set to the name of the SIP trunk created between CUPS and Unified CM, this will be of the form CUPSSIPx. Look at the CUCDM device log for the trunks in the Unified CM cluster to check what CUCDM has added.



The screenshot shows the 'Presence Settings' window in the Cisco CUPS configuration interface. It contains several checkboxes and input fields:

- ☒ Enable availability sharing
- ☒ Allow users to view the availability of other users without being prompted for approval
NOTE: this option must be turned on for SIP clients to function properly
- ☐ Enable use of Email Address when Federating
- ☐ Use DND status when user is on the phone
- ☐ Use DND status when user is in a meeting
- Maximum Contact List Size (per user)*: 200 (with a 'No Limit' checkbox)
- Maximum Watchers (per user)*: 200 (with a 'No Limit' checkbox)
- CUCM IM and Presence Publish Trunk: CUPSSIP1 (selected from a dropdown menu)

Under CUPS - *Presence > Gateways > Add New*, add a Presence Gateway for the SIP Trunk. Enter the IP address and description of the Unified CM publisher.



CHAPTER 10

Bulk Load Customer/Division/Locations Settings

[Bulk-Load Customer and Division-Level Settings](#) 39

[Bulk-Load Location Settings](#) 39

The Customer-Level Customer-Divisions-Locations bulk-loader set has been optimized for efficiently loading a Customer, with one or more Divisions and Multiple Locations. It is described in more detail in CUCDM bulk loader and training documentation. Most of the input data is added via the #CUSTOMER-LOCATIONS-INPUT input sheet with the follow-on loader worksheets configured via formulas. This input sheet has a two loading "hash" columns that allow the Customer and Division level settings to be loaded first, and then Location level settings to be loaded second.

File Name - C2-CUCDM814-VS-P1-Customers-Divisions-Locations-SingleCustomers-v1-30-VS-Corp

If shared Unified CM and CUCX clusters are being used to support SMB customers, use the following file as a starting point. In this case, multiple customers can be loaded from a single bulk-loader. File Name: C8-CUCDM814-VS-P3-Customers-Divisions-Locations-MultiCustomerClusters-MCC-CL1v1-30

Important

- Ensure that the CUCDM Customer-Side IP address is set on the #CUSTOMER INPUT SHEET (cell E8)(This is required for CUCDM Corporate Directory and Phone Services access).
 - CAREFULLY double-check the input settings in the input lines on #CUSTOMER INPUT SHEET before you start loading. Avoiding data errors will save time! Note: The Customer, Division and Location names cannot (easily) be changed after they have been loaded.
 - Currently the workbook can load up to 22 Locations. If more locations need to be loaded, the workbook formulas need to be extended. Or alternatively use additional workbooks.
 - Review the Associate HW Groups worksheet. This may need to be amended depending on the number of clusters and Hardware Groups that are in use.
 - Check the required set of Feature Groups are being added.
 - Check the Feature Groups in the Customer Preference settings are correct.
 - Check whether additional Media Services (and associated MRGLs) are needed. The default is a single cluster-wide Media Service and MRGL.
-

Bulk-Load Customer and Division-Level Settings

- Un-hash Column **A** (*Add Customer Flag*) in the #CUSTOMER-LOCATIONS-INPUT sheet (normally cell A20).
- Click **Save**.
- CUCDM - *General Tools* > *Bulk Load Tools* > *Schedule new job* > *Browse*.
- Load the Customer-Divisions-Locations loader.
- Monitor the CUCDM Transaction logs and Device Logs and confirm the required settings have been added, for example:
 - Customers and Divisions added
 - Customer and Division-level administrators added
 - Hardware Groups associated with Customer (Note: This will trigger AddCustomer dialplan loading in the PGW and SME transit switches if these are in use)
 - Customer Feature Groups added
 - Customer preference settings added
 - Customer Webex service added
 - Customer Media Service(s) added

Bulk-Load Location Settings

- Un-hash Column **B** (*Add Customer Flag*) in the #CUSTOMER-LOCATIONS-INPUT sheet (lines 20 to 41 as required).
- Click **Save**.
- CUCDM - *General Tools* > *Bulk Load Tools* > *Schedule new job* > *Browse*.
- Load the Customer-Divisions-Locations loader.
- Monitor the CUCDM Transaction logs and Device Logs and confirm the required settings have been added, for example:
 - Feature Configuration Templates added
 - All-Location InterSite and IntraSite ENT patterns loaded
 - Bandwidth Groups loaded (where sites are sharing CAC bandwidth)
 - Managed IP Subnets loaded. (Only for CUCDM-DHCP-managed subnets)
 - Site-Codes
 - PSTN Area Codes
 - PSTN Number(s) for Location Emergency Number
 - Directory Partition (for CUCDM Corporate Directory partitioning, if required)
 - Locations added plus associated Location-level dialplan
 - Location custom-device pools
 - Location preference settings
 - Location subnets (Unmanaged or Managed). (For HCS, this should normally be an "Unmanaged Subnet")

- Location PSTN Number association with Location extension (if required)
- GeoLocation added (recommended if multi-country call-routing control is required)
- Customer-Level Voicemail Service settings (when first location is added)
- Location-Level Voicemail settings
- Voicemail PSTN pilot numbers
- Customer Attendant Console and Contact Centre settings (as required)

On completion of loading the Customer, Division and Location level settings, the HCS platform will be primed and ready for the addition of users, phones and services into Customer-Locations. These can either be loaded via the CUCDM GUI or in bulk using the LocationAdmin loader.

The VS-P1 LocationAdmin loader provides reference examples of the loader worksheets:

C3-CUCDM814-VS-P1-LocationAdmin-Extended-Formula-Loader-v1-31-VS-Corp

If shared Unified CM and CUCX clusters are being used to support SMB customers, use the following file as a starting point. In this case, multiple customers can be loaded from a single bulk-loader. File Name: C9-CUCDM814-VS-P3-LocationAdmin-Extended-Formula-Loaderv1-30-MCC-CL1

Please see CUCDM Bulk loader and Training Documentation for further information on bulk loading user and phone services.



CHAPTER 11

Additional Customer-Level Bulk Loaders

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[Bulk-Loading Enhanced Number Translations](#) 41

[Bulk-Loading Multi-Country Network Connections](#) 42

A number of additional reference bulk loaders are required to support optional customer requirements:

Bulk-Loading UnManaged-PBX Locations

'UnManaged Locations' are customer locations that reside on third-party PBXs that are not directly managed by CUCDM as part of the HCS solution design. UnManaged Locations provides the context to allow H323 and SIP trunks to be configured from a CUCM cluster to these locations. Then SLCs can be assigned to these locations for inter-site routing and E164 numbers and internal extensions can be assigned. ENTs translation patterns can also be configured to route calls to these UnManaged Locations.

The UnManaged-PBX Location reference bulkloader provides a worked example for:

- Defining the UnManaged Location in an input sheet #CUSTOMER-LOCATIONS-INPUT
- Adding UnManaged PBX Servers
- Adding UnManaged PBX Hardware Groups
- Associating Customer Hardware Groups
- Adding Site Codes
- Adding UnManaged Locations (alongside Managed Locations)

See: C4-CUCDM814-VS-P1-UnManaged-PBX-Locations-v1-26-VS-Corp.

Note

Internal Extensions and PSTN Numbers can also be assigned to an Unmanaged Location as for a Managed Location. IOS Local Gateway ports can also be assigned to UnManaged Locations.

See Appendix A.1 for further guidance notes on configuring interworking with unmanaged PBXs.

Bulk-Loading Enhanced Number Translations

Enhanced Number Translations (ENTs) provide the functionality to load customizable Route Patterns and Translation Patterns for individual customers to allow customization of the foundation HCS-G1 and HCS-G2 dial plans. They provide a powerful way of meeting customer-specific

requirements, for example for Allowing and Blocking number ranges, supporting short-code dialing both at the Customer and Location level, routing calls to inter-cluster trunks, routing calls to third-party PBXs etc.

Before ENTs are loaded, ENT Feature Configuration Templates (FCTs) must first be loaded at the Customer level. Then ENTs can either be loaded at the Customer or Location level making use of these FCT templates.

The VS-P1 reference loader provides a set of FCT template examples together with translation patterns that use these FCT templates. Note that ENT translation patterns can load either Route Patterns or Translation Patterns. The FCT templates define whether the pattern creates a route pattern or a translation pattern.

Review and adjust the reference bulk loader as required.

C5-CUCDM814-VS-P1-HCS921-FCT-ENT-Loader-Set-v1-7-VS-Corp

It is recommended that the FCTs are loaded first (in combination with Route Pattern Element and Translation Pattern Elements). Then load the "Add Customer Number Translation Pattern" and "Add Location Number Translation Pattern" worksheet. (Unhash required FCTs and ENTs as required).

Bulk-Loading Multi-Country Network Connections

When a customer has sites in multiple locations there is normally a need to configure Aggregation Trunks at the country level to allow outbound routing to a country-specific trunk.

The NetworkElement Trunk-RG-RL-RP loader provides a framework for adding "Network Connectivity" for specific countries.

See: C6-CUCDM814-VS-P1-NetworkElements-v1-28-RG-RL-RP-Connections-VSC-CL1

This reference loader is already configured to load an illustrative set of countries; currently - USA, GBR, DEU, ESP, AUS, CHN, RUS, JPN, THA, CZE. It can be amended to allow loading of other country connections, applying the same principles.

When using this loader:

- Update the Provider Name and Cluster Name as required.
- Unhash lines in column A of the AddCCMLocation worksheet.
- The follow-on worksheets for Trunks, RouteGroups, RouteLists and RoutePatterns will then be automatically unhashed for the follow-on countries.

Note

In practice outbound routing requirements may vary depending on interconnect requirements. The settings in these loaders may therefore adjustment by the HCS dialplan specialist in the Service Provider's team.

Appendix A. Adding Unmanaged PBXs and Configuring Custom RPs and TPs

The following notes provide further guidance notes when needing to add inter-working with third-party PBXs.

PART1 - CONFIGURATION OF UNMANAGED PBXs PLUS ASSOCIATED GATEWAYS

These 'unmanaged' PBXs are set up logically in CUCDM together with associate gateways to model the routing of calls out to non-CiscoHCS PBXs.

The procedure varies depending on whether H323, MGCP or SIP connectivity is required.

Procedure

Unmanaged Location Build Steps

- Step 1** Add Unmanaged PBX in *Network > PBX Devices* for example VS-Corp-ACD-MGCP with a suitable CPID ID value, for example 4001.
 - Step 2** Add Unmanaged PBX Hardware Group in *Network > Hardware Group Management*, for example HG-VSC-ACD.
 - Step 3** Associate hardware group to customer via *Customer Management > Advanced Management > Hardware Group Association*.
 - Step 4** Add (dummy) site-codes to customer for unmanaged location via *Resources > Site Code Inventory*.
 - Step 5** Add Unmanaged Location using the associated hardware group and dummy site code, for example VS-Corp-ACD-PBX.
-

Note

These five steps can be added via the CUCDM GUI. Alternatively use the CUCDM UnmanagedPBX-Location workbook, to allow fast loading of multiple Legacy PBX/Locations.

For example, C4-CUCDM814-VS-P1-UnManaged-PBX-Locations-v1-26-VS-Corp

Having added the UnmanagedPBX location, then add an MGCP, H323 or SIP connection, plus the associated dialplan via CUCDM.

Procedure

Addition of associated MGCP IOS Gateway

- Step 1** Via *Network > IOS Device*, Add IOS Gateway using 'IPPBX Connected MGCP Legacy PBX Gateway' wizard (similar to adding an MGCP Local gateway), for example VS-Corp-ACD-MGCP-GW.
- Step 2** Configure gateway hardware (i.e. required MGCP port) (similar to adding an MGCP Local Gateway).

- Step 3** Allocate gateway port to UnmanagedPBX-Location for example to VS-Corp-ACD-PBX.
- Step 4** For the UnmanagedLocation, via *Location Administration > Telephony > Location Unmanaged Legacy Gateways*, select the MGCP gateway and activate the gateway.
-

Note

CUCDM will add the following elements in the Unified CM: (using settings in the HCS814 dialplan models)

- MGCP Gateway, for example VS-Corp-ACD-MGCP-GW (2821 Router)
 - MGCP Gateway ports, for example 0/0/0 T1
 - MGCP End-Point, for example S0/SU0/DS1-0@VS-Corp-ACD-MGCP-GW
 - Route Group, for example RG-LEGACY-40
 - RouteList, for example RL-UNMANPBX-MGCP-40
-

Procedure

Addition of H323 or SIP Gateways

This is a simpler process which does not require the addition of an IOS gateway. Instead a trunk is configured.

- Step 1** Via Network, PBX Devices, add an UnmanagedPBX, for example VS-Corp-NEC-H323, and VS-Corp-MP and check / add IP Address to unmanaged PBX and add CPID, for example 4002 and 4003.
- Step 2** Via Network, PBX Devices, select 'Connectivity menu' for UnmanagedPBX, for example VS-Corp-NEC-H323 or for VS-Corp-MP-SIP.
- Step 3** Select PBX=>PBX submenu.
- Step 4** For VS-Corp Unified CM cluster, that is VSC-CL1 , select 'Connect H323 trunk' or 'Connect H323 Trunk'.
-

Note

CUCDM will add the following elements in the Unified CM cluster (using settings in the HCS814 dial plan models):

- H323 or SIP Trunk, for example TR-UNMANPBX-H323-4002 or TR-UNMANPBX-SIP-4003.
 - Route Group, for example RG-UNMANPBX-H323-4002 or RG-UNMANPBX-SIP-4003.
 - Route List, for example RL-UNMANPBX-H323-4002 or RL-UNMANPBX-SIP-4003.
-

PART2 - ADD ROUTE LISTS & TRANSLATION PATTERNS FOR TIE-LINES (USING FCT/ENT LOADER)

Procedure

Where either a Translation Pattern or a Route Pattern is required to route to a single point, use the FCT Enhanced Number Translation (ENT) loader plus the following loading steps:

- Step 1** Review and add to the Feature Configuration Templates to include the required Route List, for example RL-UNMANPBX-H323-4002, RL-UNMANPBX-SIP-4003, RL-UNMANPBX-MGCP-40.
 - Step 2** Prepare the input data for the Customer Level, All Locations and Location-specific translations.
 - Step 3** Bulk load the required translation patterns.
-

Again refer to the FCT-ENT reference loader for examples of this.