



Cisco TelePresence Video Communication Server to Cisco Unified Communications Manager

Migration Overview Guide

Unified CM 10.x or 9.1

Version 1.3
September 2014

Contents

Introduction	3
Target Audience.....	3
The Benefits.....	4
Preferred Architectures	5
The Roles of Unified CM and VCS	6
The role of Unified CM (UCM).....	6
The role of Video Communication Server (VCS).....	6
Migrating Licenses	7
Migration Overview	8
Migration Summary.....	8
Migration Descriptions.....	8
Unified CM Software Compatibility Matrix	14
Compatibility Verification.....	14
Phone Firmware Versions.....	14
Software Downloads.....	14
Migration - Scenarios	15
VCS only Scenarios.....	15
VCS with Unified CM Scenarios.....	15
Migration Consideration	20
Unified CM.....	20
Endpoints Registration.....	20
Endpoint Migration Commands.....	21
Caveats / Known Issues and Limitations.....	22
Other Considerations.....	22
Reference	23
VCS and Unified CM - Comparable Terminology.....	23
Acronyms / Definitions.....	23

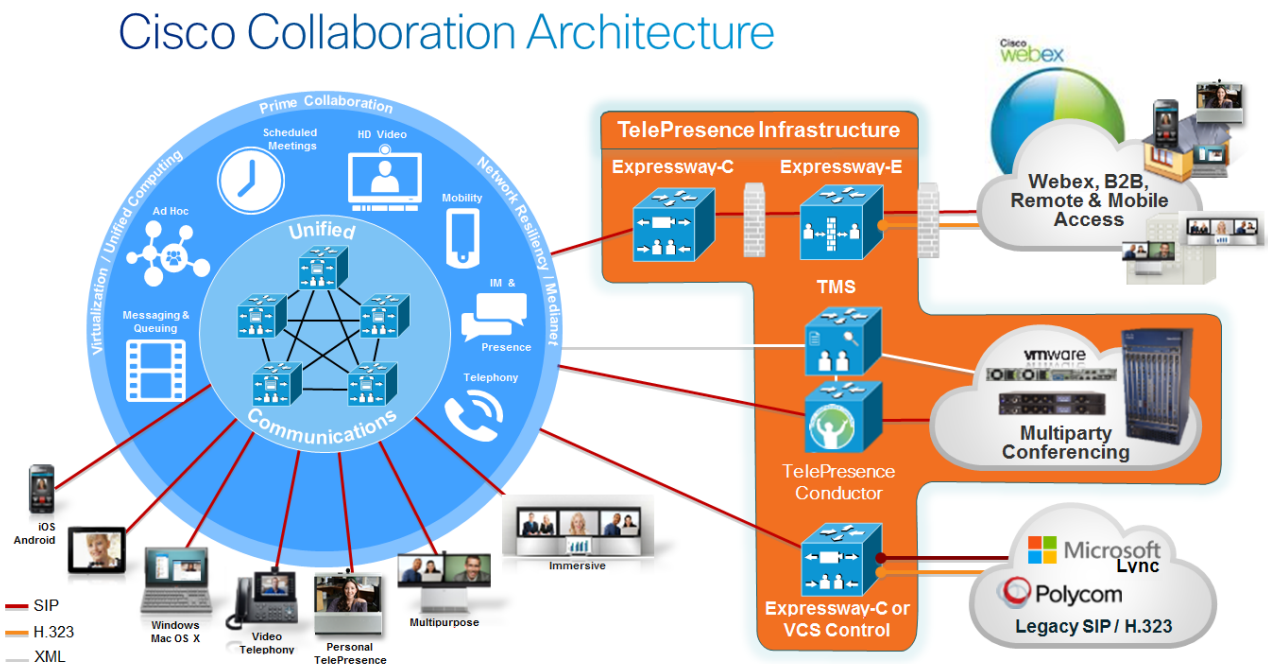
Introduction

The Cisco **Drive to Collab** initiative has encouraged customers to move from older Unified CM (UCM) versions to the latest 9.x or 10.x versions. Cisco has since added a new promotion allowing customers to migrate registration, and call control, from VCS to UCM, as part of the initiative for the 2015 fiscal year. The **VCS to UCM Migration** program objective is to help customers unlock their collaboration potential, bring simplification to their video & collaboration networks, and to enable the next generation collaboration experiences by migrating to Cisco Unified Communications Manager 10.5.

This migration guide provides a high level overview of the process and considerations. Aimed at customers that have decided to migrate between the two systems, this document provides a summary of the prerequisites, comparisons, roles, migration steps, and caveats.

Cisco VCS (along with TMS) is a platform that continues to deliver video call control and registration services where appropriate, but it has become increasingly important to transition endpoints to Unified CM for customers to take full advantage of new features, capabilities, and endpoints introduced. Unified CM is the strategic call control platform of the Cisco collaboration architecture. The VCS has shifted roles but is an integral part of that architecture as a media services gateway. It has also evolved into a new product called Cisco Expressway Series.

For details on the **VCS to UCM Migration** program, please refer to www.cisco.com/go/drivetocollab



The Cisco Collaboration Architecture of today with Unified CM as the central component.

Target Audience

This overview guide is intended to be used by teams or individuals with experience configuring and administering VCS, TMS, and Unified CM. There are links to other documentation to assist as a reference. However, as a follow up to this guide there is a detailed migration guide, in development, which will go into technical detail, with screenshots, command references, and recommendations. That guide is planned for release mid calendar year 2015.

The Benefits

With UCM as the unified, feature-rich, call control platform, end-users can experience all the new endpoint innovations across the entire range, from the browser to the boardroom, with a consistent user experience. It enables collaboration-edge (remote and mobile access without VPN), and reach ability on all devices (Single Number Reach), but it also brings enhanced features to video such as Click-to-Call from Desktop, Hot-desking, Instant Messaging and presence, escalation to Web Conferencing, Video Greetings and Video on Hold.

Benefits to the IT manager include:

- Single cluster for voice or video device
- Single point of Dial Plan Administration
- Single Call Admission Control Domain
- Geographic redundancy
- Scale to 30k devices in single a cluster, with ability for 60k in a super-cluster
- Integrated provisioning, management, phonebooks, and conferencing
- Flexible connectivity outside the private network for Video, Voice and IM&P
- Hunt Groups / Busy Lamp Fields / Call Forward All / Consultative Transfer / Ad Hoc Video Conferencing
- Voice Mail indicator / Music on Hold / Announcements / Video Greetings
- Shared Lines / Single Number Reach (SNR) / CTI Control
- Legacy and 3rd party endpoint integration via VCS (registered or trunked) or Expressway (trunked)
- Ability to scale, as the business grows, to larger deployments
- Deployable TODAY

Preferred Architectures

To help Cisco customers and partners understand and deploy Cisco's Collaboration architecture, documents have been created known as the Cisco Preferred Architectures and Cisco Validated Designs.

Cisco Preferred Architectures (PAs) provide recommended deployment models for specific market segments based on common use cases. They incorporate a subset of products from the total Cisco Voice, Video, and Collaboration portfolio. The deployment models are prescriptive, out-of-the-box, and built to scale with an organization as its business needs change. This prescriptive approach simplifies the integration of multiple system-level components and enables an organization to select the deployment model that addresses its business needs. The documents are typically a pre-sales resource.

Cisco Validated Designs (CVDs) provide the foundation for systems design based on common use cases or current engineering system priorities. CVDs include guides that provide details about validated products and software, screenshots, step-by-step deployment information, and best practices for specific types of technology. They provide a tested starting point for Cisco partners or customers to begin designing and deploying systems using their own setup and configuration. These documents are typically a post-sales resource.

The **Cisco Preferred Architectures** and **Cisco Validated Designs**, located at the following link, are an excellent place to start new, and to validate existing deployments with Cisco's current architectural recommendations.

<http://www.cisco.com/go/cvd/collaboration>

The Roles of Unified CM and VCS

It is important to understand after the migration the roles that the two components will adopt:

The role of Unified CM (UCM)

Unified CM is Cisco's strategic call control platform, Unified CM is the Single cluster for voice or video device, including legacy and 3rd party endpoints. Unified CM provides the integrated provisioning, management, phonebooks, and conferencing.

The role of Video Communication Server (VCS)

Cisco VCS provides media services to Unified CM and the Collaboration architecture including firewall traversal B2B, H.323 to SIP interworking, Mobile and Remote endpoint proxy registration, URI normalization, and Lync interop, as well as legacy video and 3rd party endpoint registration support.

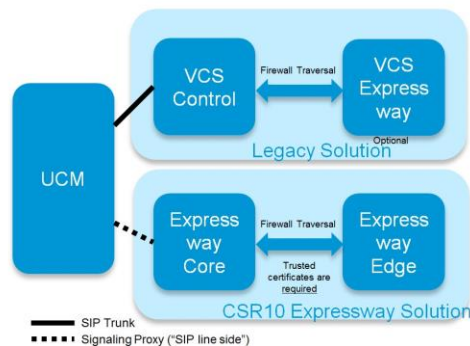
After the migration of endpoints, VCS is no longer the video endpoint registration and call control for Cisco SIP endpoints (the exceptions are legacy, H323, and 3rd party endpoints). Due to the change in roles there has been a new variation of the VCS introduced called Expressway Series. This new product is different in that it does not provide registration and call control services, but is also different in that its license model is through the Unified Communications Manager user centric license model, making it an included application in the architecture. The Expressway Series has no license cost for the software or Remote and Mobile access feature it brings to the solution. It does require separate licenses for Interop and Firewall Traversal, and Lync Interop.

Based on the license keys deployed there are now four possible operating modes of the VCS:

- VCS-Control
- VCS-Expressway
- Expressway-Core (new)
- Expressway-Edge (new)

Customers who choose to can still deploy maintain VCS for firewall traversal and the remote and mobile functionality of "Expressway" Core and Edge.

In the VCS Legacy mode, VCS "Control" version is still supported for registering H.323, legacy Tandberg, and 3rd party endpoints, that are not supported on Unified CM. The legacy VCS-Expressway is also still supported for B2B, Jabber Video for TelePresence (a.k.a. Movi) and WebEx Enabled TelePresence. VCS-Control and VCS- Expressway work as a strict pairing, as do Expressway-Core and Expressway-Edge solutions.



Migrating Licenses

The **Drive To Collab: Cisco VCS to UCM Migration Program** provides investment protection, reassurance, and flexibility in migrating customers from their Video Communication Server Call Control to Unified CM version 9.1 or 10.5+. It replaces the previous **Cisco Converged Call Control Investment Protection Plan** for UCM version 8.6+.

Unified CM is licensed based on users. Personal devices can be tied to users and leverage their license when configured in Unified CM. Shared systems or room based endpoints utilize a “TelePresence Room” license. Below is a chart showing the 7 different license types.

Collaboration Systems Release 10 Licensing Device Support



Following are the licenses that can be obtained through the **VCS to UCM Migration** program. A customer will get the following Unified CM licenses based on their VCS/TMS deployment.

The customer will be required to purchase necessary Unified Communications Software Subscription (UCSS) for each device migrated.

- **UCL Enhanced** – For every user that has only one device, either a hardware (such as EX90) or software client device (such as Movi). The admin may also choose a UCL Enhanced Plus if desired.
- **UCL Enhanced Plus** – For every user that has two devices, whether hardware, software or both, for example 1 EX90 and 1 Movi client.
- **CUWL Standard or Pro** – An optional, reduced priced, upgrade for users that have three or more devices, hardware or software.
- **TelePresence Room** – For every room based endpoint (such as shared Profile 55 or MX-300).

License SKUs are available for partners today. See ordering guide at the following link.

communities.cisco.com/docs/DOC-55043

Migration Overview

Migration Summary

Below is a summary of items to consider when performing the migration of endpoints, conference bridges, and address books to the Cisco Unified Communications Manager (Unified CM). Some items are optional and may be performed in a different order, depending on the customer's deployment.

Pre-Migration:

- Update infrastructure components to recommended versions of software.
- Update all the endpoints to the recommended versions of firmware.
- Obtain licenses for Unified CM, based on existing video deployment, and install them into the applicable license manager.
- Deploy Remote and Mobile Access on VCS or Expressway
- Identify and record endpoint numbers, and alias
- Identify conference bridges, numbers, and aliases tied to VCS

Migration:

- Migrate Conference Bridges
- Sync LDAP users from AD into UDS or add as end users
- Add endpoints into Unified CM (Consider using Cisco Prime Collaboration Provisioning Standard to bulk import endpoints)
- Apply URIs to the Unified CM Directory Number Configuration
- Configure Unified CM Shared Lines and SNR to match VCS FindMe settings
- Configure SIP registration or enable CDP on endpoints
- Change Endpoint Provisioning Mode in TMS
- In TMS change directly managed endpoints to Unified CM endpoints
- Migrate TMS phonebooks to Unified CM directory

Post-Migration:

- Clean-up unneeded configurations in VCS
- Migrate VCS C&E to Expressway C&E (Optional)

Migration Descriptions

Following are the details of items to consider when performing the migration.

Update Infrastructure Components:

Update infrastructure components to recommended versions of software. If Unified CM is not yet on version 9.1/10.5 consider the "Drive to Collab" migration program to leverage offers and promotions.

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

Product	Product Description	Software
Cisco Unified CM and IM and Presence Service	Call control, instant messaging, and presence services	9.1+ or 10.5
Cisco VCS-C and VCS-E or Expressway Core and Expressway Edge	Mobile and remote access and business-to-business communications	8.2+
Cisco Prime Collaboration Standard	Provisioning and monitoring services for voice and video deployments.	10.0+
Cisco TelePresence Conductor	Video conferencing resource management	2.3
Cisco TelePresence Server	Video conferencing resource	4.0
Cisco TelePresence ISDN Gateway	H.320 gateway	2.2

Update Endpoints:

- Upgrade video endpoints software to version desired
- Update release keys and option keys

Update endpoints the recommended versions of firmware in the table below. If endpoint version is TC6 or previous obtain and update the release keys for TC6.

Product	Product Description	Software
Cisco Jabber	Soft client with integrated voice, video, voicemail, and instant messaging and presence functionality for mobile devices and personal computers	Jabber Windows: 9.7 Jabber Mac: 9.6 Jabber iOS: 9.6.1 Jabber Android: 9.6
Cisco TelePresence System EX Series	Personal TelePresence endpoint for the desktop	TC7.1
Cisco TelePresence MX Series	TelePresence multipurpose room endpoint	TC7.1
Cisco TelePresence SX Series	Integrator Series TelePresence endpoint	TC7.1
Cisco TelePresence C Series and Profiles	Integrator Series & multipurpose room endpoint	TC7.1

Obtain Licenses for Unified CM:

Obtain Unified CM licenses from your partner/supplier utilizing the migration program (mentioned in the [Migrating Licenses \[p.7\]](#) section). Order licenses based on your current VCS/TMS deployment.

- Determine the current distribution of users and their personal devices as well as the number of room based endpoints managed by TMS and or registered to VCSs. (Endpoint information can also be read from TMS and VCS using the CUCM Upgrade Central iPad app, available on the Apple App Store).
- For every user that has a single device order a UCL Enhanced license. The device can be either a personal hardware device such as an EX90, or a software device such as Movi, or Jabber Video for TelePresence.
- For every user that has two devices order a UCL Enhanced Plus license.
- For users that have more than two devices, consider ordering a Cisco Workspace License, Standard or Professional

- For every room based system order a TelePresence Room license.

After receiving license load them into applicable license manager. Details on licensing can be found via the following links:

Enterprise License Manager for Unified CM 9.x

http://www.cisco.com/c/en/us/td/docs/voice_ip_comm/cucm/elmuserguide/9_0_1/CUCM_BK_E596FD72_00_enterprise-license-manager-user-90/CUCM_BK_E596FD72_00_enterprise-license-manager-user-90_chapter_01.html

Prime License Manager for Unified CM 10.x

<http://www.cisco.com/c/en/us/support/cloud-systems-management/prime-license-manager/tsd-products-support-series-home.html>

Deploy Remote and Mobile Access on VCS or Expressway

- Refer to the Collaboration Edge CVD for step-by-step deployment instructions.

<http://www.cisco.com/c/dam/en/us/td/docs/solutions/CVD/Collaboration/Feb2014/CVD-CollabEdgeUsingBE6000-Apr14.pdf>

Identify endpoint numbers, alias, and URIs:

Record the current endpoint numbers and or URIs for each user and room based endpoints. These will be used to populate the DN page in the Unified CM.

Identify numbers and aliases tied to Conference Bridges:

- Record the current conference bridge numbers and aliases to be used for creating or redirecting Route Patterns in Unified CM.

Migrate Conference Bridges:

To migrate a conference bridge from either Rendezvous, Ad Hoc or Scheduled conference, the following actions need to be taken:

Rendezvous

- VCS Search rule to Unified CM for Multiway numbers
- Configure route pattern on Unified CM for Multiway numbers
- Move registration of the MCUs to the Unified CM/Conductor

Ad Hoc

- Move and attach the TelePresence Server or MCUs to the Unified CM via a SIP Trunk to Conductor

Scheduled conferences

- Move and attach the TelePresence Server or MCUs to the Unified CM via a SIP Trunk (not using Conductor for scheduled resources).
- Map DN to Alias conferences

Sync LDAP users from AD into UDS or add as new end users

- Add users to the Unified CM User Data Service (UDS) directly through “User Management” or when using LDAP through “System/LDAP”.

Add endpoints into Unified CM

- Create the endpoints to be migrated in Unified CM. Assign personal endpoints to existing or the newly created users. Assign room based endpoints the owner Anonymous (Public/Shared Space), as shared endpoints. For more than a few endpoints or for ongoing provisioning of users and endpoints consider using Cisco Prime Collaboration Provisioning. The Standard version is included with Unified CM 10.0 and higher.

Unified CM Directory Number (DN)

- Mapping between DN and URI (Uniform Resource Identifier)
- Unified CM DN maps up to 5+1 URIs
- Allow for multiple URIs under one primary – Useful if endpoint under VCS had several profiles
- Primary URI can be synced directly from LDAP in Unified CM

The image shows two screenshots from the Cisco Unified CM administration interface. The top screenshot is the 'Directory Number Information' form, where the 'Directory Number' field is highlighted with a blue callout box labeled 'Primary DN'. A blue arrow points down from this field to the 'Directory URIs' table below. The 'Directory URIs' table has columns for 'Primary', 'URI', 'Part', and 'Edit/Remove'. The first row is marked as 'Primary' and has the URI 'AprilGray@tmetest.sjctme.net'. Other rows include 'aprilgrey@tmetest.sjctme.net', 'april.grey@tmetest.sjctme.net', 'aprilgrey.office.ex90@tmetest.sjctme.net', 'aprilgrey.movi@tmetest.sjctme.net', and 'aprilgrey.mobile@tmetest.sjctme.net'. Blue callout boxes point to these URIs with labels: 'Primary URI' (pointing to the first row), 'Email ID' (pointing to 'aprilgrey@tmetest.sjctme.net'), 'Office device' (pointing to 'aprilgrey.office.ex90@tmetest.sjctme.net'), 'Mobile' (pointing to 'aprilgrey.mobile@tmetest.sjctme.net'), and 'Jabber ID' (pointing to 'aprilgrey.movi@tmetest.sjctme.net').

Primary	URI	Part	Edit/Remove
<input checked="" type="checkbox"/>	AprilGray@tmetest.sjctme.net	Directory URI	Edit End User
<input type="checkbox"/>	aprilgrey@tmetest.sjctme.net	< None >	
<input type="checkbox"/>	april.grey@tmetest.sjctme.net	< None >	
<input type="checkbox"/>	aprilgrey.office.ex90@tmetest.sjctme.net	< None >	
<input type="checkbox"/>	aprilgrey.movi@tmetest.sjctme.net	< None >	
<input type="checkbox"/>	aprilgrey.mobile@tmetest.sjctme.net	< None >	

Apply URIs to the Unified CM Directory Number Configuration - Dial Plan

URI

- Identify the URIs that are to be migrated
- If ILS is being used delete the URI entries from the ILS catalog

DNs

- Update the Unified CM route patterns that point to the VCS

Configure Unified CM Shared Lines and SNR to match VCS FindMe settings

VCS FindMe configurations may be moved to Shared line feature in Unified CM. As part of migration, consider making the migrated device a shared line with other phones for the DN. For example, If you had a Unified CM cluster with a device for a user on both UCM and VCS, you can migrate the VCS device to UCM, and give the migrated device a shared line with the user's existing UCM DN.

Below are the things to consider for Migrating to Shared Line Feature.

- Associate user with device
- Update the Primary DN (Direct Number) in the end user configuration
- In DN configure the alias for the user
- Enable SNR functionality if needed

Configure SIP registration or enable CDP on endpoints

- If Protocol is changed from H.323 to SIP, then update protocol configuration and default call protocol configuration
- Access the endpoint using browser or SSH and change the provisioning mode and the VLAN mode to auto.
- This enables CDP and uses option 150 to register with the Unified CM.
- If setting VLAN is not possible, then configure SIP information and configure Unified CM as registrar

Change Provisioning Mode in TMS

- If endpoints are "provisioned" change the endpoint's provisioning mode to Unified CM in TMS. (TMS maintains the scheduling responsibility for migrated endpoints.)

In TMS change directly managed endpoints to UCM endpoints

- Mode must set to "Cisco Unified CM" for UCM registered endpoints.
- Unified CM registered systems are added to TMS using the Add from List option in Add Systems.
- For Cisco EX/C/SX/MX series endpoints registered to Cisco Unified CM, username and password information configured in Cisco Unified CM is not enforced onto the endpoint. Please ensure that the username and password configured on Cisco Unified CM matches the configuration on the actual endpoint.

Migrate TMS phonebooks to Unified CM directory

- Directory synchronized with LDAP

- User Data Service (UDS) provides phone directory for Unified CM registered endpoints
- UDS supports blended addresses, that send DN and URI information to display and use for history and redial/missed call lists
- Address book is automatically configured for C-series endpoints and points to UDS TMS supports Unified CM directory for phonebooks
- Note that Address books for TC endpoints can be provided through Unified CM UDS or through TMS for tiered phonebooks and phonebook ACLs.

Clean-up unwanted configuration in VCS

- Review Search Rules, Transforms and any other VCS configuration that is no longer needed once devices have been migrated

Migrate VCS C&E to Expressway C&E (virtual)

- Details to convert VCS to Expressway, along with applicable license transfers, is planned to be available by Nov/Dec 2014.

Unified CM Software Compatibility Matrix

Cisco highly recommends that you review the list of open caveats for your intermediate and targeted Unified CM releases that may impact functionality or integration with other applications. You can find the list of open caveats in the Release Notes at the following location:

Cisco Unified Communications Manager Release Notes

<http://www.cisco.com/c/en/us/support/unified-communications/unified-communications-manager-callmanager/products-release-notes-list.html>

Compatibility Verification

To determine if the versions of the devices and applications in use in your organization—such as endpoints, gateways, voicemail, presence, or other applications—are supported by Unified CM.

Release 10.x, review the following link: [Unified Communications Manager Software Compatibility Matrix](http://www.cisco.com/c/en/us/td/docs/voice_ip_comm/uc_system/unified/communications/system/versions/IPTMtrix.html)
http://www.cisco.com/c/en/us/td/docs/voice_ip_comm/uc_system/unified/communications/system/versions/IPTMtrix.html

Phone Firmware Versions

The Cisco Unified Communications System Release Summary Matrix for IP Telephony summarizes the phone firmware version recommended with all Cisco Unified Communications Manager releases http://www.cisco.com/c/en/us/td/docs/voice_ip_comm/uc_system/unified/communications/system/versions/IPTMtrix.html

Software Downloads

To prepare for the upgrade, download all of the software listed below:

Cisco Unified Communications Manager Release 9.1(2)/10.5 upgrade image -
<http://software.cisco.com/download/navigator.html?mdfid=268439621&flowid=37562>

Bootable version (fresh install) of Unified CM Release 9.1(2)/10.5 -
<http://tools.cisco.com/gct/Upgrade/jsp/index.jsp>

To obtain software that is not available at this URL, contact TAC.

Migration - Scenarios

The following section provides a series of before and after scenarios showing how the solution might be deployed.

VCS only Scenarios

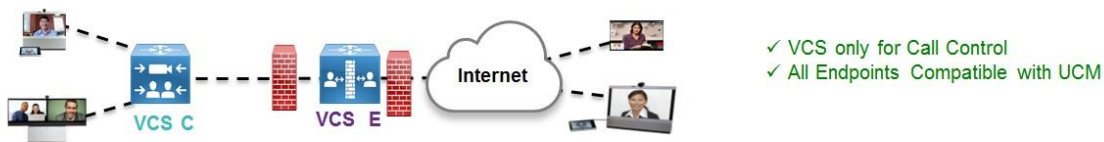
Scenario	Description
1a	UCM Compatible endpoints / VCS migrates to Expressway
1b	UCM Compatible endpoints / VCS upgraded
2a	Mixed endpoints upgraded to Cisco / VCS migrates to Expressway
2b	Mixed endpoints upgraded to Cisco / VCS upgraded
3	Mixed endpoints retained / VCS upgraded

VCS with Unified CM Scenarios

Scenario	Description
4	Compatible endpoints to converged UCM / VCS upgraded
5	Compatible endpoints trunked to separate UCM / VCS upgraded
6	Mixed endpoints to converged UCM / VCS upgraded
7	Mixed endpoints trunked to separate UCM / VCS upgraded

Scenario 1a - VCS Only: UCM Compatible endpoints / VCS migrates to Expressway

Video Call Control Architecture Today:

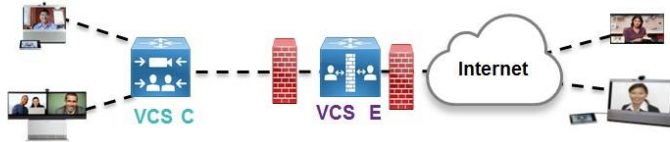


Recommended Call Control Architecture:



Scenario 1b - VCS Only: UCM Compatible endpoints / VCS upgraded

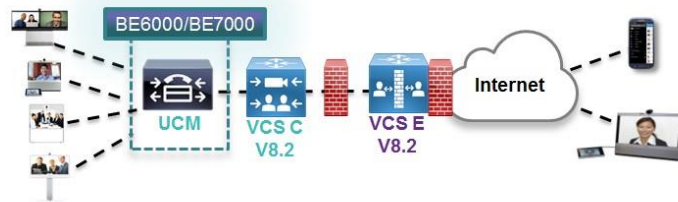
Video Call Control Architecture Today:



- ✓ VCS only for Call Control
- ✓ All Endpoints Compatible with UCM

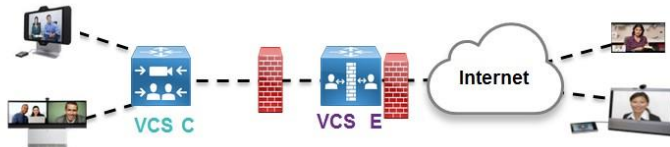
Recommended Call Control Architecture:

- ✓ Add BE6000 or BE7000 (UCM)
- ✓ Upgrade VCS C & E to Version 8.2
- ✓ Migrate SIP Endpoints from VCS to UCM
- ✓ Leverage existing TP server/MCU & TMS
- ✓ Leverage Prime Collab for Management



Scenario 2a - VCS Only: Mixed endpoints upgraded to Cisco / VCS migrates to Expressway

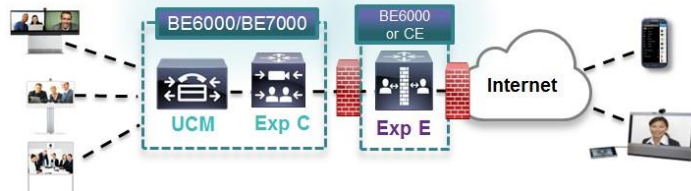
Video Call Control Architecture Today:



- ✓ VCS only for Call Control
- ✓ Some Endpoints Compatible with UCM
- ✓ Some Legacy H.323 Endpoints

Recommended Call Control Architecture:

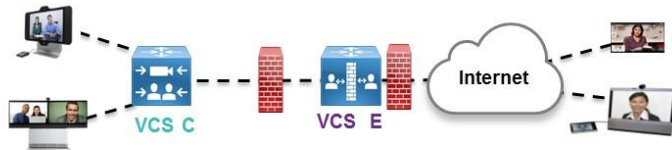
- ✓ Add BE6000 or BE7000 (UCM & Exp C)
- ✓ Add BE6000 (Exp E)
- ✓ Refresh H.323 EP with new low cost EP
- ✓ Leverage existing TP server/MCU & TMS
- ✓ Leverage Prime Collab for Management



Virtual Exp C & E could reside in the same server

Scenario 2b - VCS Only: Mixed endpoints upgraded to Cisco / VCS upgraded

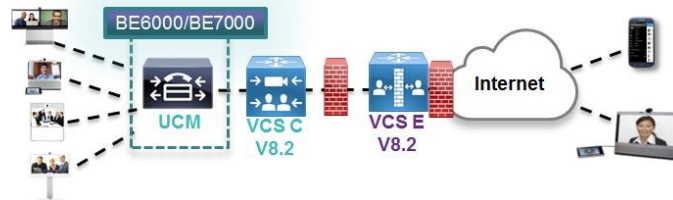
Video Call Control Architecture Today:



- ✓ VCS only for Call Control
- ✓ Some Endpoints Compatible with UCM
- ✓ Some Legacy H.323 Endpoints

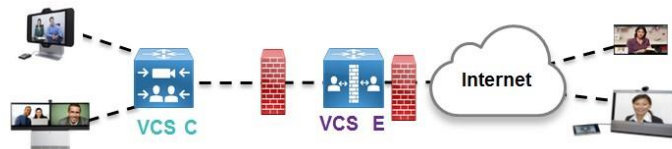
Recommended Call Control Architecture:

- ✓ Add BE6000 or BE7000 (UCM)
- ✓ Upgrade VCS C & E to Version 8.2
- ✓ Refresh H.323 EP with new low cost EP
- ✓ Leverage existing TP server/MCU & TMS
- ✓ Leverage Prime Collab for Management



Scenario 3 - VCS Only: Mixed endpoints retained / VCS upgraded

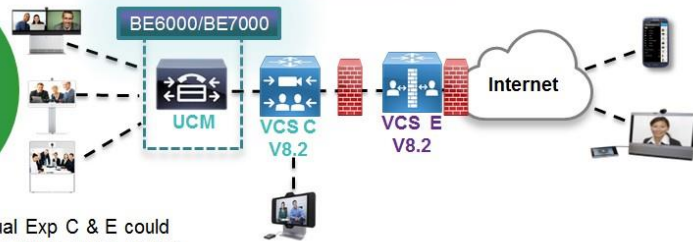
Video Call Control Architecture Today:



- ✓ VCS only for Call Control
- ✓ Some Endpoints Compatible with UCM
- ✓ Some Legacy H.323 Endpoints

Recommended Call Control Architecture:

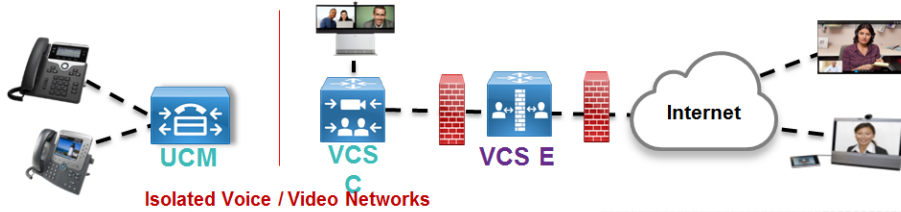
- ✓ Add BE6000 or BE7000 (UCM)
- ✓ Upgrade VCS C & E to Version 8.2
- ✓ Migrate SIP Endpoints from VCS to UCM
- ✓ Leave H.323 EP with VCS C
- ✓ Leverage existing TP server/MCU & TMS
- ✓ Leverage Prime Collab for Management



Virtual Exp C & E could reside in the same server

Scenario 4 - VCS with UCM: Compatible endpoints to converged UCM / VCS upgraded

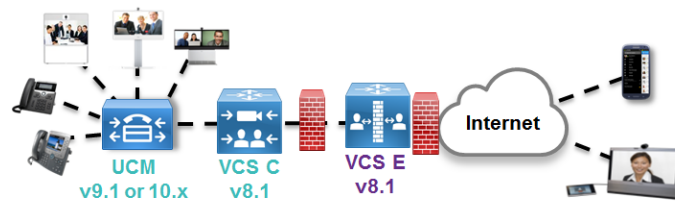
Video Call Control Architecture Today:



- ✓ VCS for Video Call Control & Virtual UCM 9.1 or 10.0 for Voice
- ✓ All Endpoints Compatible with UCM

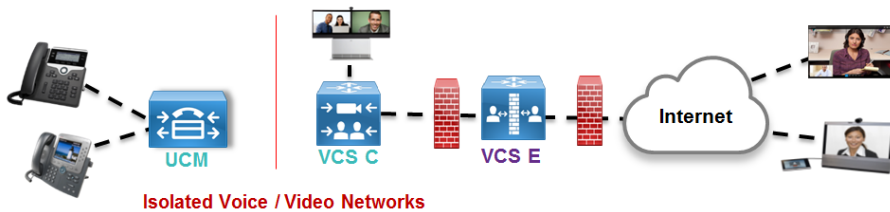
- ✓ Migrate all Endpoints from VCS to UCM
- ✓ Upgrade VCS C & E to version 8.2 to enable Mobile & remote Access
- ✓ Add Exp @ no cost to scale if need be
- ✓ Add BE6000 (Exp E)
- ✓ Leverage existing TP server/MCU & TMS
- ✓ Option of moving from VCS C&E to Exp C&E

Recommended Call Control Architecture:



Scenario 5 - VCS with UCM: Compatible endpoints trunked to separate UCM / VCS upgraded

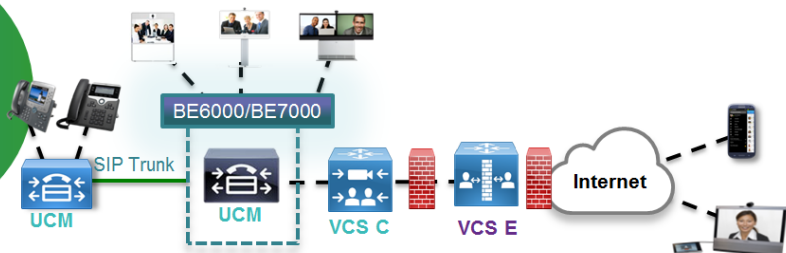
Video Call Control Architecture Today:



- ✓ VCS for Video Call Control & Virtual UCM 9.1 or 10.0 for Voice
- ✓ All Endpoints Compatible with UCM

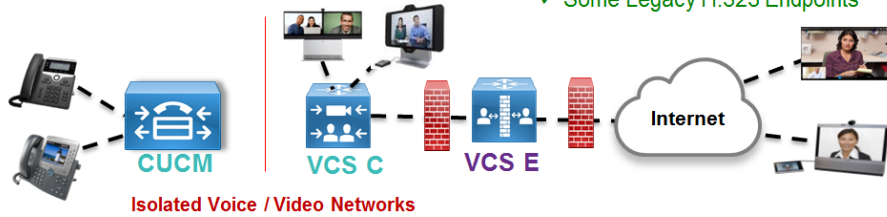
- ✓ Add BE6000 or BE7000 (UCM)
- ✓ Migrate all Endpoints from VCS to BE
- ✓ Upgrade VCS C & E to version 8.2 to enable Mobile & remote Access
- ✓ Add Exp @ no cost to scale if need be
- ✓ Add SIP Trunk between Voice & Video UCM
- ✓ Leverage existing MCU & TMS
- ✓ Option of moving from VCS C&E to Exp C&E

Recommended Call Control Architecture:



Scenario 6 - VCS with UCM: Mixed endpoints to converged UCM / VCS upgraded

Video Call Control Architecture Today:

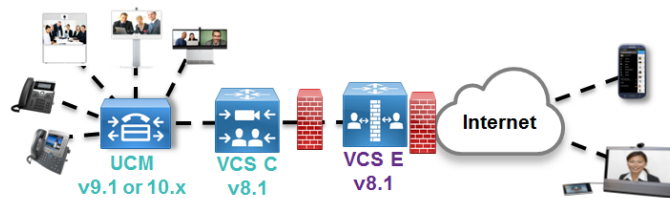


- ✓ VCS for Video Call Control & UCM (bare metal with version pre 9.x)
- ✓ Some Endpoints Compatible with UCM
- ✓ Some Legacy H.323 Endpoints

Isolated Voice / Video Networks

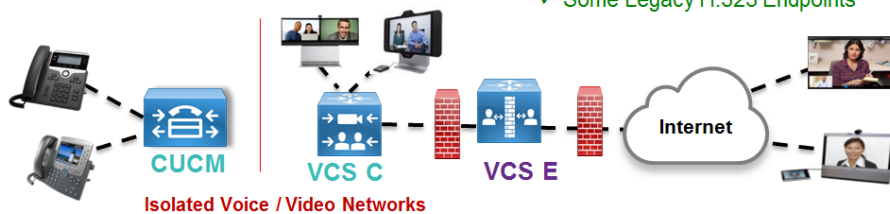
- ✓ Upgrade UCM to 9.1 or 10.5 and virtualize or Refresh servers to BE6000/BE7000
- ✓ Upgrade VCS C & E to version 8.2 to enable Mobile & remote Access
- ✓ Migrate all Endpoints from VCS to UCM
- ✓ Refresh H.323 EP with new low cost EP
- ✓ Leverage existing TP server/MCU & TMS

Recommended Call Control Architecture:



Scenario 7 - VCS with UCM: Mixed endpoints trunked to separate UCM / VCS upgraded

Video Call Control Architecture Today:

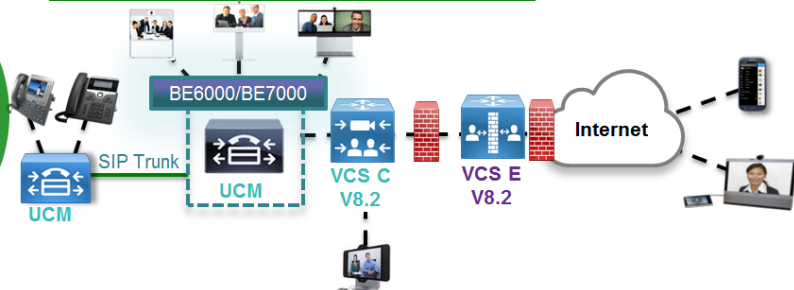


- ✓ VCS for Video Call Control & UCM (bare metal with version pre 9.x)
- ✓ Some Endpoints Compatible with UCM
- ✓ Some Legacy H.323 Endpoints

Isolated Voice / Video Networks

- ✓ Add BE6000 or BE7000 (UCM)
- ✓ Upgrade VCS C & E to version 8.2 to enable Mobile & remote Access
- ✓ Add Exp @ no cost to scale if need be
- ✓ Migrate all Endpoints from VCS to BE
- ✓ Leave H.323 EP with VCS C
- ✓ Add SIP Trunk between Voice & Video UCM
- ✓ Leverage existing TP server/MCU & TMS
- ✓ Option of moving from VCS C&E to Exp C&E

Recommended Call Control Architecture:



Migration Consideration

The following section outlines considerations that should be made when migrating from VCS to Unified CM.

Unified CM

Endpoint Registration on Unified CM

- Key factors in this decision are the endpoint type/model and how they connect to the call control network- Directly via L2/L3?, WAN/VPN? Internet?
- **Unified CM 10.5 makes it easier to register endpoints on Unified CM, and fully manage them, no matter how they are networked (VPN or Expressway)!**

Registration	Device Provisioning	Device Management	Endpoint OBTP TMS scheduling*	Directories/ Phone Books	VOIP	Jabber	Immersive (CTS/TX)
On-Net to UCM	UCM/Prime	UCM/Prime	TMS	UCM/UDS or TMS (14.4 with IP endpoints only)	√	√	√
Expressway to UCM	UCM/Prime	UCM/Prime	No IP access to the device	UCM/UDS	√	√	√
On-Net to VCS Control	TMS	TMS	TMS	TMS	Not supported	Not supported	Not supported
VCS Expressway to VCS Control	TMS(PE)	No IP access to the device	No IP access to the device	TMS	Not supported	Not supported	Not supported

- With Expressway x8.1, Jabber 9.6 and TC 7.1 devices can now register to Unified CM via Expressway.
- Unified CM's directories/phone books are provided by its User Data Services (UDS).
- TMS provides endpoint "one button to push" conference scheduling in all "on-net" cases only.
- All "in-life" endpoints are now supported natively on Unified CM. Some of the new endpoints such as DX650, DX70 and DX80 are only supported on Unified CM and cannot be used with VCS as the only call control.

Endpoints Registration

Here are the various activities you need to plan when migrating from VCS to Unified CM, and the things to consider under each section.

- Endpoint Registration
 - Common configuration and management as Unified CM phone device with support for MIC and signed images and signed configuration files.
 - Common configuration and management as Unified CM phone device with support for MIC and signed images and signed configuration files.
 - Image upgrades for endpoints are handled through Unified Communications Manager.
 - Make use of Common profile with Device pool and MRGLs.
 - Make use of Support for Ad-hoc conferencing using Unified Communications Manager as well as multisite.

- Dial Plan Migration
 - As part of migration, consider making the migrated device a shared line with other phones for the DN. For example, If you had a Unified CM cluster with a device for a user on both UCM and VCS, you can migrate the VCS device to UCM, and make the migrated device to be a shared line with the user's existing UCM DN.
 - URI dialing
- Call bandwidth
 - Endpoint bandwidth policy controlled through the Unified CM
 - Common CAC through locations or through RSVP agents
 - Downspeed on call setup to voice only
 - Supplementary calls follow Unified CM policies
- Applications
 - CTI full support for use with video contact center applications
 - Click to call from Jabber soft clients
 - Support for voicemail and MWI
 - Support for TMS supported one button to push

Endpoint Migration Commands

Although it is always better to factory reset each endpoint before re-provision it, below are the minimum commands we need to execute in each endpoints:

```
xConfiguration Provisioning ExternalManager Address: 10.35.48.106 (or other UCM IP address)
```

```
xConfiguration Provisioning Mode: CUCM
```

```
xConfiguration Provisioning ExternalManager Protocol: http
```

```
xConfiguration Provisioning ExternalManager Path: ""
```

```
xConfiguration H323 Profile 1 H323Alias ID: ""
```

```
xConfiguration H323 Profile 1 H323Alias E164: ""
```

```
xConfiguration H323 Profile 1 Gatekeeper Address: ""
```

```
xConfiguration H323 Profile 1 Gatekeeper Discovery: Manual
```

```
xconfig SystemUnit Name: ""
```

```
xConfiguration SystemUnit ContactInfo Type: Auto
```

```
xConfiguration Conference 1 DefaultCall Protocol: Sip
```

```
xcommand SystemUnit AdminPassword set Password: cisco
```

(This command is used to change the admin password to "cisco" to prevent the risk warning message for empty default password)

```
xCommand boot action: restart
```

Caveats / Known Issues and Limitations

- Extensive changes to configuration such as adjusting gain, camera source etc. cannot be configured through the Unified CM. Such changes can be made via the endpoints web or ssh interfaces. Starting with version 10.5, Unified CM will upload attribute changes from the endpoint.
- If a video call requires a retry due to lower bandwidth requirements, the Unified CM retries the call as audio.
- Address books from the Unified CM are flat. Tiered address books are available from TMS for TC endpoints only.

Other Considerations

- Release Key is not required when migrating from VCS.
- Consider making the directory/phone book in Unified CM similar to that in VCS, via setting up the Active Directory integration in Unified CM and importing the users regularly.
- Enable Active Directory authentication in Unified CM so that Jabber for Windows, Mac and iPad will use single sign-on.
- "Cisco TelePresence Profile 52 (C60)" fails to register in Unified CM unless the device type changed to "Cisco TelePresence Codec C60". Setup the exact device type in Unified CM match the output of SSH command "xstatus SystemUnit ProductId".
- TC4 and older software doesn't support Unified CM provision mode. Need to upgrade the endpoint to TC5 or TC6 (with appropriate Release Key) before switching from VCS to Unified CM.
- Unified CM AD integration is not on by default.

Reference

VCS and Unified CM - Comparable Terminology

The following table compares the terminology used between VCS and Unified CM.

Transforms	Translation pattern/ Transformation
Call Policy	Call Search spaces / Partitions
Search Rules	Route pattern / Route lists / Route groups
Zones	Trunks
Links	Regions
Pipes	Locations

Acronyms / Definitions

The following acronyms have been used within this document:

BAT tool	Unified CM Bulk Administration Tool
BLF	Busy Lamp Field
CPL	Class-based Policy Language
CTG	Collaboration Technology Group
CUCM (UCM)	Cisco Unified Communications Manager
DN	Direct Number
SNR	Single Number Reach
MCU	Multipoint Control Unit
TLS	Transport Layer Security
TMS	TelePresence Management Suite
UCSS	Unified Communications Software Subscription
UDS	User Data Service
URI	Uniform Resource Identifier
VCS	Video Communications Server

THE SPECIFICATIONS AND INFORMATION REGARDING THE PRODUCTS IN THIS MANUAL ARE SUBJECT TO CHANGE WITHOUT NOTICE. ALL STATEMENTS, INFORMATION, AND RECOMMENDATIONS IN THIS MANUAL ARE BELIEVED TO BE ACCURATE BUT ARE PRESENTED WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED. USERS MUST TAKE FULL RESPONSIBILITY FOR THEIR APPLICATION OF ANY PRODUCTS.

THE SOFTWARE LICENSE AND LIMITED WARRANTY FOR THE ACCOMPANYING PRODUCT ARE SET FORTH IN THE INFORMATION PACKET THAT SHIPPED WITH THE PRODUCT AND ARE INCORPORATED HEREIN BY THIS REFERENCE. IF YOU ARE UNABLE TO LOCATE THE SOFTWARE LICENSE OR LIMITED WARRANTY, CONTACT YOUR CISCO REPRESENTATIVE FOR A COPY.

The Cisco implementation of TCP header compression is an adaptation of a program developed by the University of California, Berkeley (UCB) as part of UCB's public domain version of the UNIX operating system. All rights reserved. Copyright © 1981, Regents of the University of California.

NOTWITHSTANDING ANY OTHER WARRANTY HEREIN, ALL DOCUMENT FILES AND SOFTWARE OF THESE SUPPLIERS ARE PROVIDED "AS IS" WITH ALL FAULTS. CISCO AND THE ABOVE-NAMED SUPPLIERS DISCLAIM ALL WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING, WITHOUT LIMITATION, THOSE OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NON-INFRINGEMENT OR ARISING FROM A COURSE OF DEALING, USAGE, OR TRADE PRACTICE.

IN NO EVENT SHALL CISCO OR ITS SUPPLIERS BE LIABLE FOR ANY INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES, INCLUDING, WITHOUT LIMITATION, LOST PROFITS OR LOSS OR DAMAGE TO DATA ARISING OUT OF THE USE OR INABILITY TO USE THIS MANUAL, EVEN IF CISCO OR ITS SUPPLIERS HAVE BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

Cisco and the Cisco Logo are trademarks of Cisco Systems, Inc. and/or its affiliates in the U.S. and other countries. A listing of Cisco's trademarks can be found at www.cisco.com/go/trademarks. Third party trademarks mentioned are the property of their respective owners. The use of the word partner does not imply a partnership relationship between Cisco and any other company. (1005R)

Any Internet Protocol (IP) addresses and phone numbers used in this document are not intended to be actual addresses and phone numbers. Any examples, command display output, network topology diagrams, and other figures included in the document are shown for illustrative purposes only. Any use of actual IP addresses or phone numbers in illustrative content is unintentional and coincidental.

© 2014 Cisco Systems, Inc. All rights reserved.