
TOMORROW starts here.
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Communications Manager for Video Call Control (Unified Call Control)

BRKUCC-2665

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CCIE 2727

Cisco live!

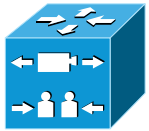
Abstract

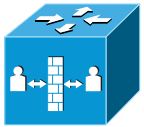
- This 90 minute session is aimed at video and telephony architects and administrators who are considering, or planning to deploy TelePresence and Video endpoints on Unified Communications Manager
- The first section provides background on the architectural evolution of the Cisco TelePresence and Unified Communications portfolios from the close of the TANDBERG acquisition in April 2010 until now, and reviews the network topologies, connectivity models and provisioning methods available today[1] for deploying TelePresence and Video endpoints and bridge resources on UC Manager, using Expressway for firewall traversal, TelePresence Management Suite (TMS) for scheduling and Prime Collaboration for provisioning and monitoring
- The second section focuses in on the fundamentals of administering these types of endpoints on UC Manager and enabling extended features and functionality (over and above basic registration and calling)

Icons Used In This Presentation

For Your Reference


Unified Communications Manager


Expressway Core (formerly VCS Control)


Expressway Edge or Unified Border Element (CUBE)

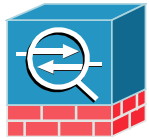

TelePresence Management Suite or Prime Collaboration


TelePresence Server or MCU

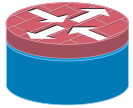

TelePresence Conductor

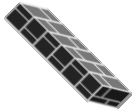

Directory Server or Phone Book


AnyConnect VPN Client


Advanced Security Appliance (ASA)


Generic DHCP Server


Cisco IOS Router with VPN Client


Generic Firewall / NAT


Immersive TelePresence System (CTS / TX Series)


Multipurpose TelePresence System (Profile, MX, SX, C Series)


Personal TelePresence System (EX Series)

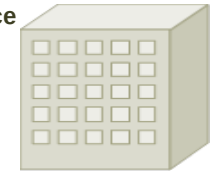

Unified IP Video Phone (8900, 9900, DX 650 Series)


PC client (Jabber for Windows / Mac)


BYOD client (Jabber for IOS / Android)


Network


Home Office


Branch Office

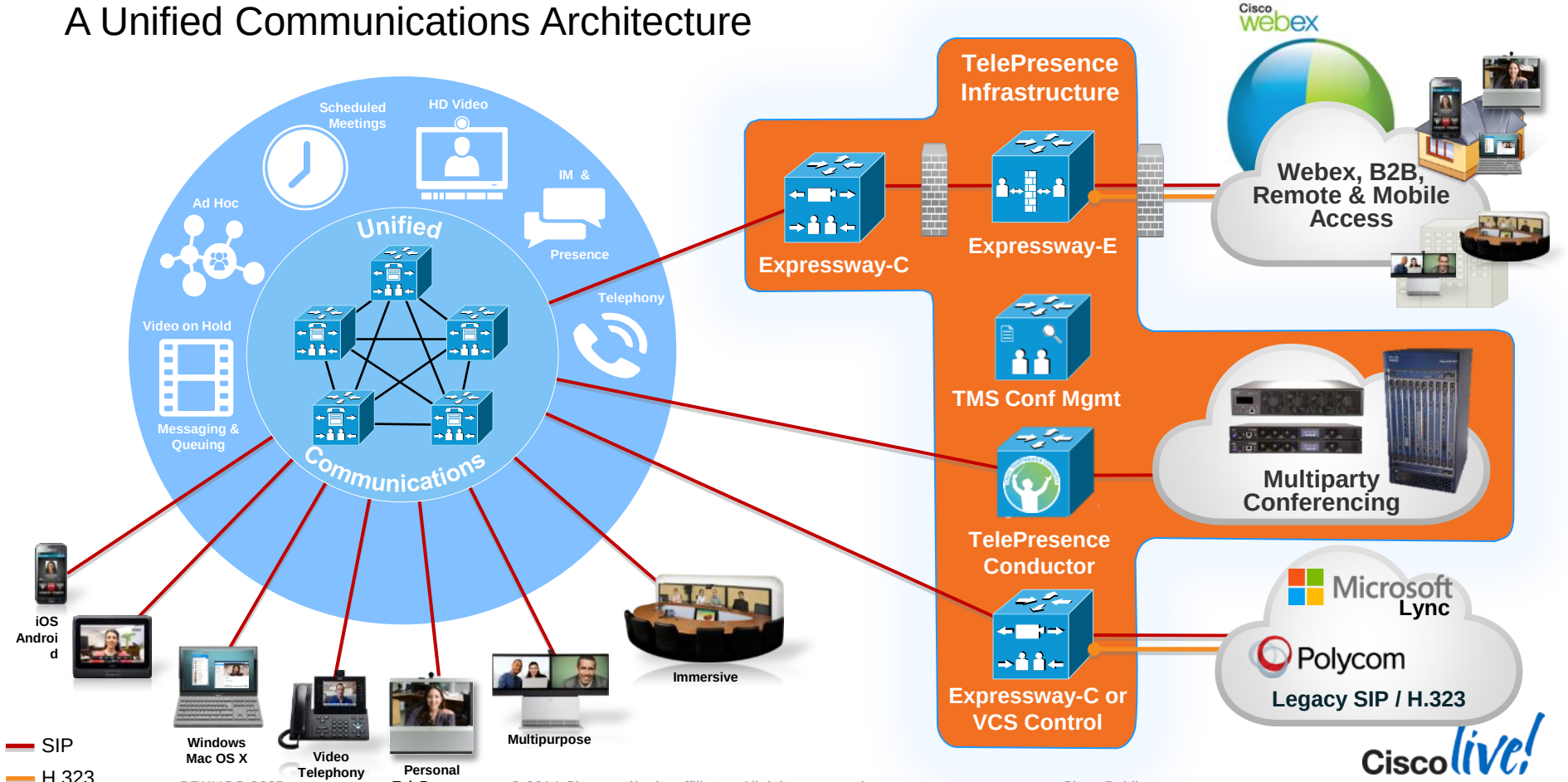

Large Office




Target Architecture and a Quick Historical Review 2010 – Today

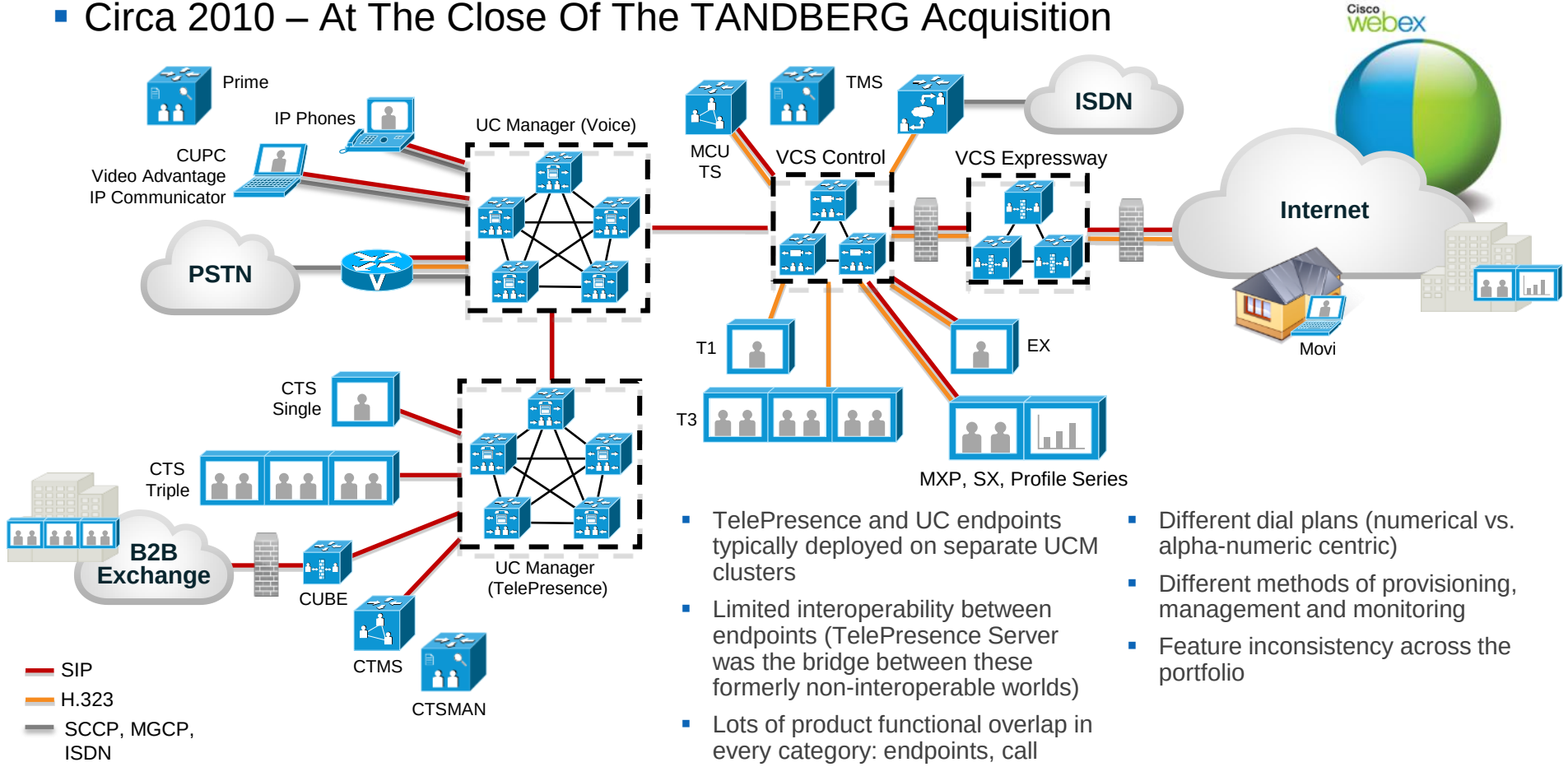
TelePresence, Video and UC

A Unified Communications Architecture



Architectural Evolution

- Circa 2010 – At The Close Of The TANDBERG Acquisition

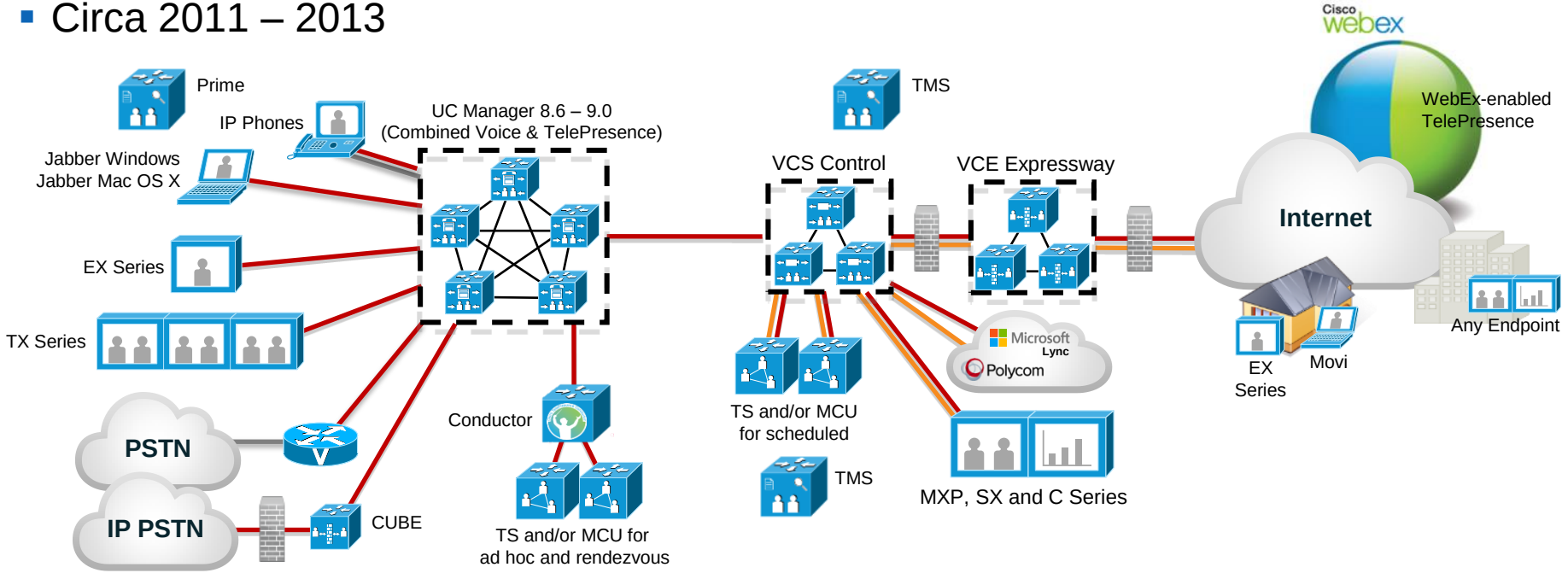


- TelePresence and UC endpoints typically deployed on separate UCM clusters
- Limited interoperability between endpoints (TelePresence Server was the bridge between these formerly non-interoperable worlds)
- Lots of product functional overlap in every category: endpoints, call control, B2B connectivity, bridging, scheduling and management

- Different dial plans (numerical vs. alpha-numeric centric)
- Different methods of provisioning, management and monitoring
- Feature inconsistency across the portfolio

Architectural Evolution

- Circa 2011 – 2013

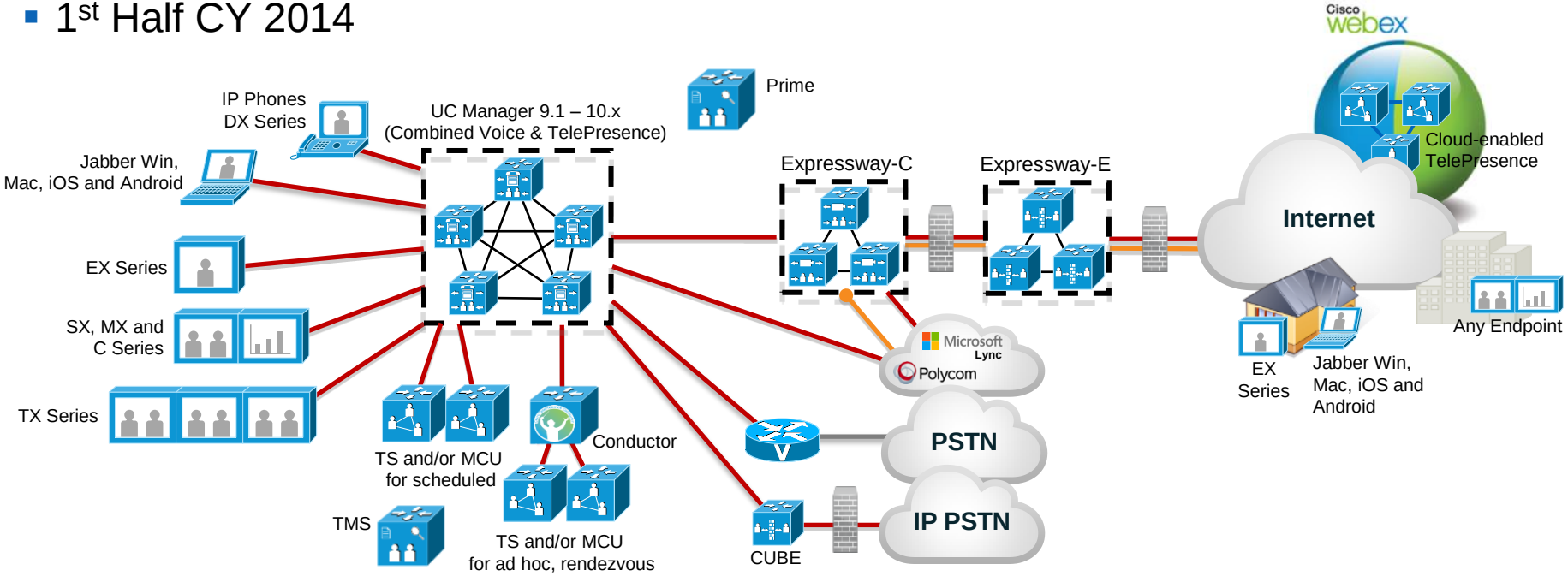


- TelePresence and traditional UC (telephony and SD video) all collapsed on a converged UC Manager cluster. Former TANDBERG endpoints predominantly still on VCS Control
- Full native any-to-any interoperability between all endpoints and bridges. Ad hoc bridges under Conductor on UCM, scheduled bridges still on VCS Control
- Product functional overlap diminished; roles clarified but not all consolidation fully realised yet

- Homogenised dial plans: both numeric and alphanumeric now fully supported across most of the portfolio
- Provisioning, management, monitc
  Prime Collaboration growing in fun
- Feature and User Experience cons
  getting better and better
- New compelling solutions like Wel

Architectural Evolution

- 1st Half CY 2014

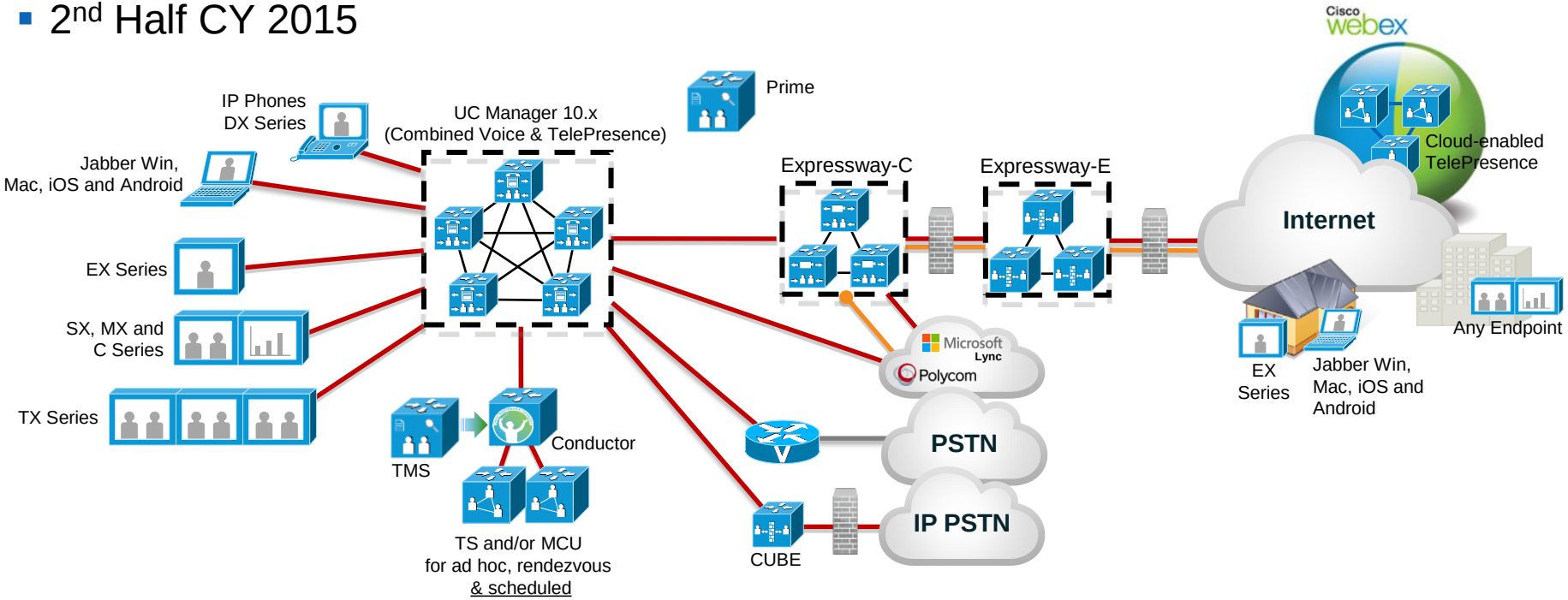


SIP
H.323
SCCP, MGCP, ISDN

- All endpoints and infrastructure collapsed onto a converged UC Manager call control with Expressway (C&E) for Remote & Mobile Access to UCM, B2B and WebEx/Cloud-enabled TelePresence connectivity and 3rd-party interworking
- Multiparty bridging for audio and video, for all types of conferences now trunked through UC Manager (TMS scheduled resources still separate from Conductor ad hoc resources)
- Jabber now available on Windows, Mac, iOS and Android using Expressway for VPN-less access to UC Manager and related UC services (directories, presence, visual voicemail)
- Video now a table-stakes feature: infused in a growing number of applications like Cloud-enabled TelePresence, Unity messaging, Contact Centre with new enabling technologies like Jabber Guest and WebRTC, H.265 and Scalable Video Coding (SVC)

Architectural Evolution

- 2nd Half CY 2015



SIP
H.323
SCCP, MGCP, ISDN

- Multiparty bridging for audio and video, for all types of conferences now consolidated under Conductor with TMS for scheduling and meeting management
- Lots more exciting things in the pipeline but this isn't meant to be a roadmap presentation ☺

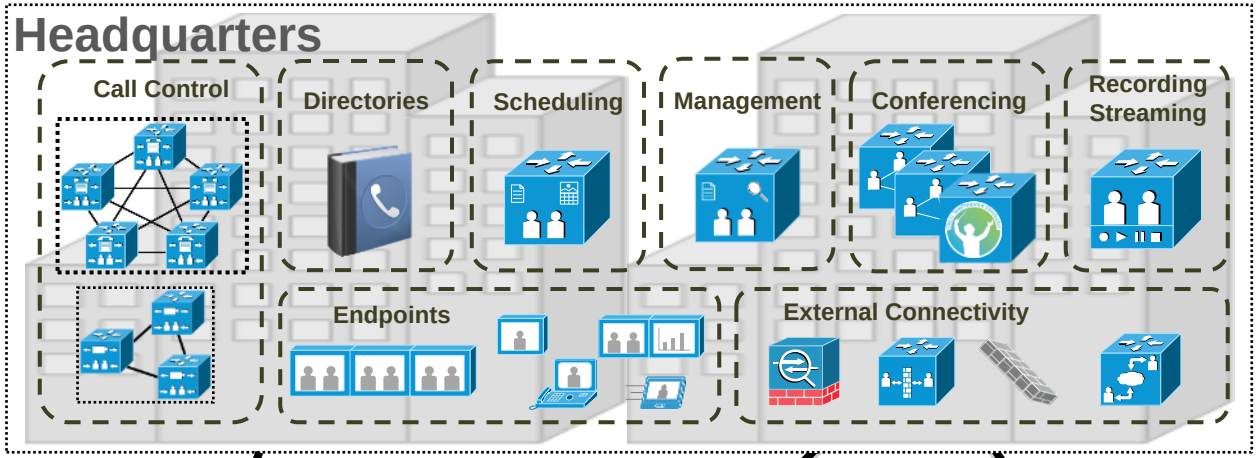
Enterprise Network Topologies and Associated Provisioning, Management and Firewall Traversal Methods

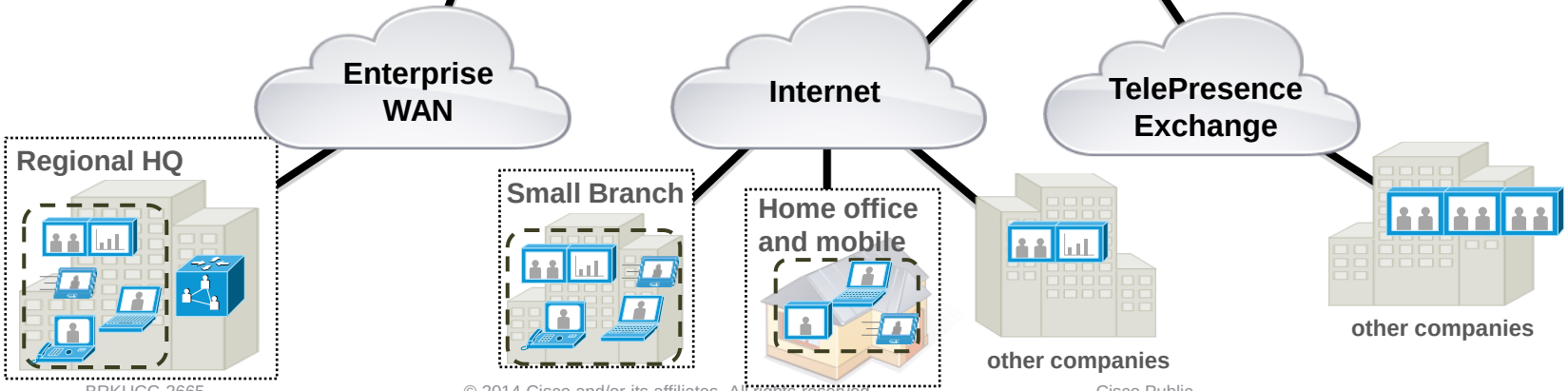
TelePresence Network Topologies

Endpoint Location and Connectivity Scenarios

Connectivity Scenarios:

- **Campus (LAN)**
- **Regional HQ and Branch (WAN)**
- **Branch (VPN)**
- **Home and Mobile (VPN or Expressway)**
- **B2B (MPLS or Over-the-Top)**



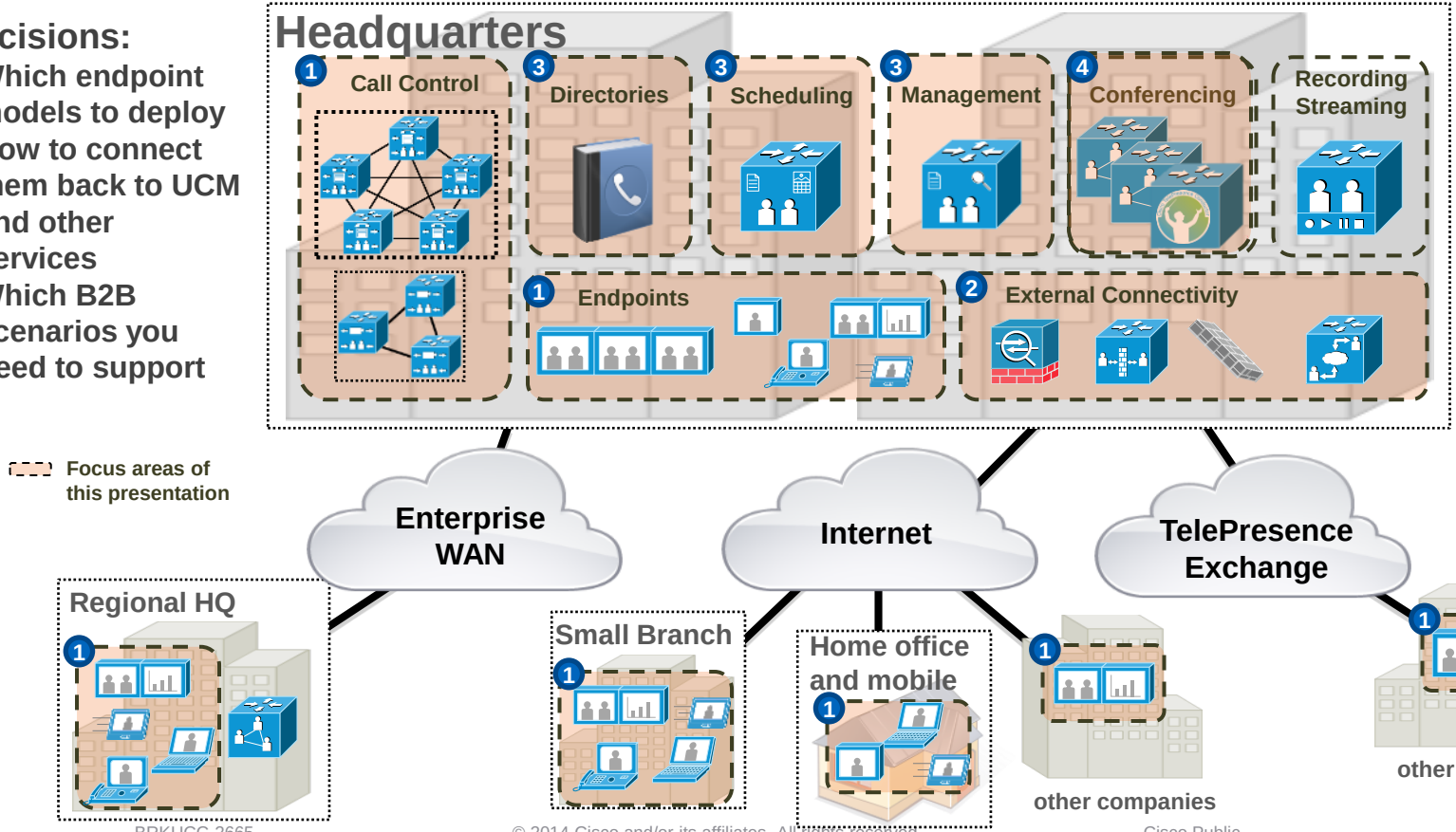


TelePresence Network Topologies

Endpoint Location and Connectivity Scenarios

Decisions:

1. Which endpoint models to deploy
1. How to connect them back to UCM and other
1. services
   - Which B2B scenarios you need to support



Factors that influence those decisions:

2. Layer-3 connectivity (WAN, VPN or Expressway)
3. Management (provisioning, monitoring, diagnostics)
3. Directories
3. Scheduling
4. Conferencing

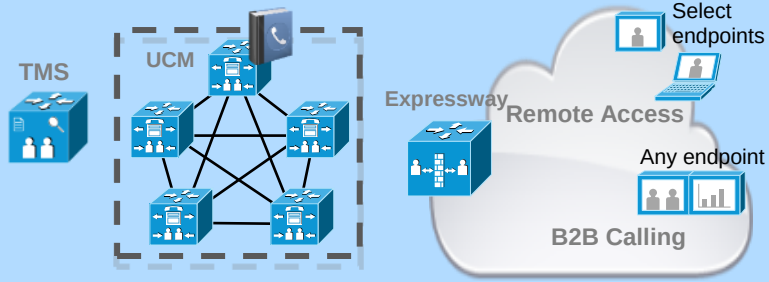
External Connectivity Scenarios

and Associated Provisioning, Management, Directories and Scheduling Methods

As of UC Manager 9.1, Expressway 8.1, Jabber 9.7, TC 7.1 and TMS 14.4

- Can now register through Expressway to UC Manager for remote access for home & mobile clients
- Can now use TMS phonebooks (only for TC-series endpoint models) registered to UC Manager (only for LAN, WAN or VPN endpoints. TMS phonebooks will not work through Expressway)
- Note: Remote management/diagnostics is not possible through Expressway. VPN recommended if remote management is required

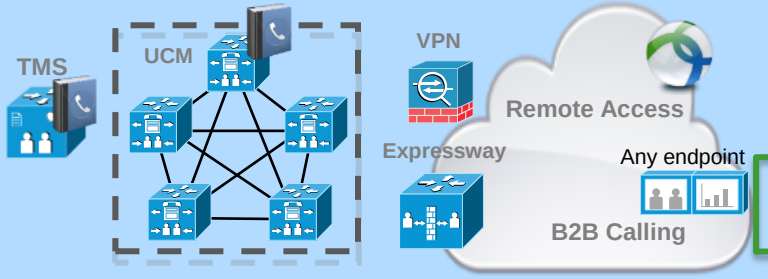
Expressway



- ✓ UC Manager registration and call control
- ✓ UC Manager directories
- X ~~TMS phone books~~
- ✓ Expressway B2B calling
- ✓ VPN for remote access
- ✓ Expressway remote & mobile access
- X ~~TMS scheduling~~
- X ~~Remote management~~

New! in Expressway x8.1, Jabber 9.7 and TC7.1

VPN

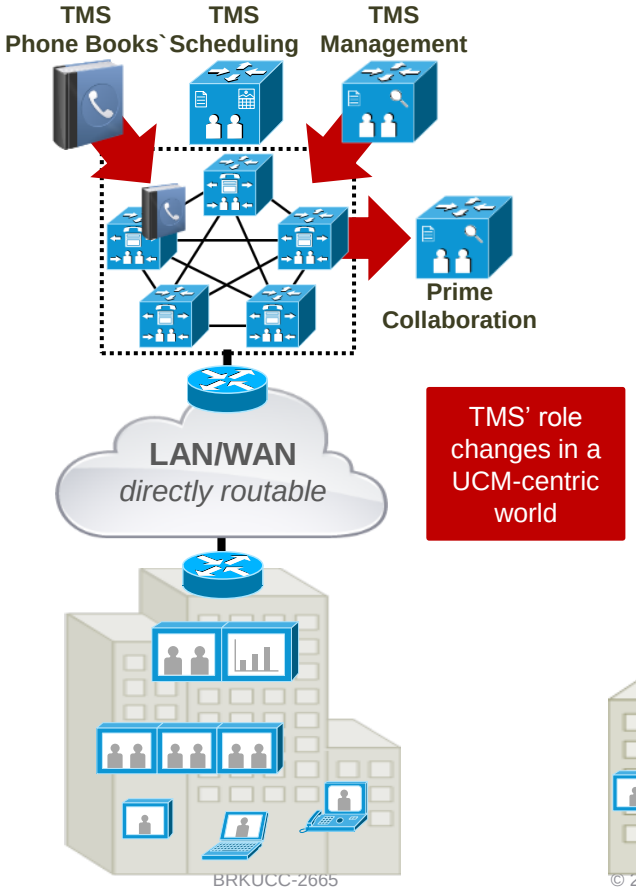


- ✓ UC Manager registration and call control
- ✓ UC Manager directories
- ✓ TMS phone books
- ✓ Expressway B2B calling
- ✓ VPN for remote access
- X ~~Expressway remote & mobile access~~
- ✓ TMS scheduling
- ✓ Remote management

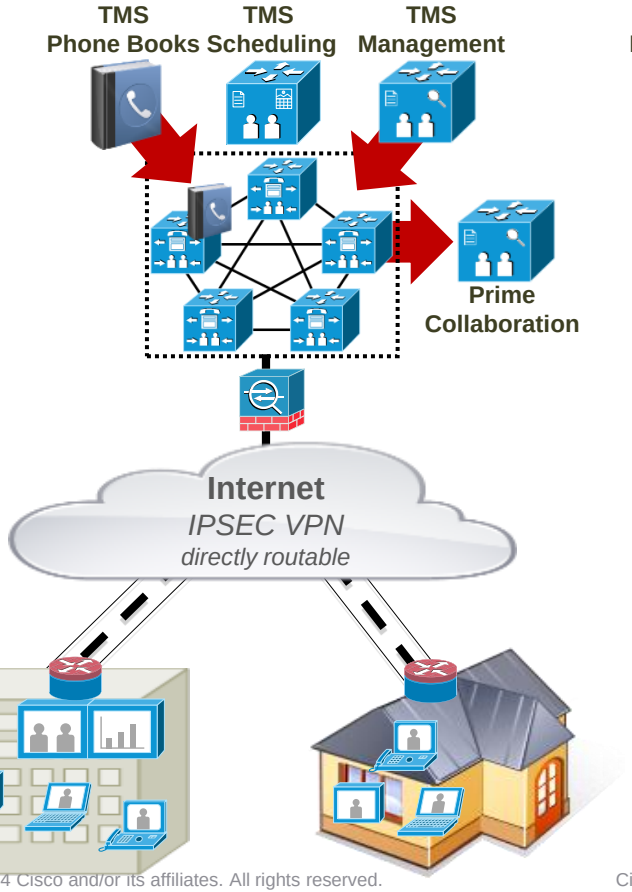
New! in TMS 14.4 and TC 7.1

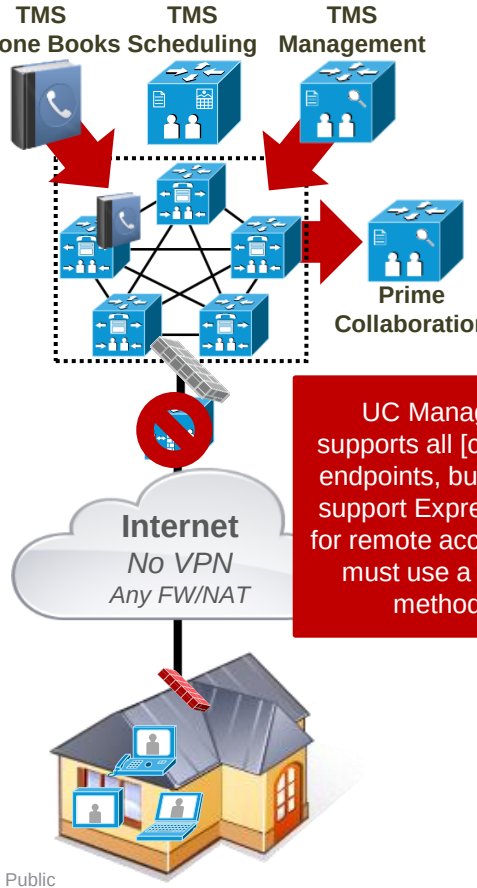
Endpoint Registration Connectivity Models

UC Manager Supported Network Topologies (prior to Expressway x8.1)



TMS' role changes in a UCM-centric world

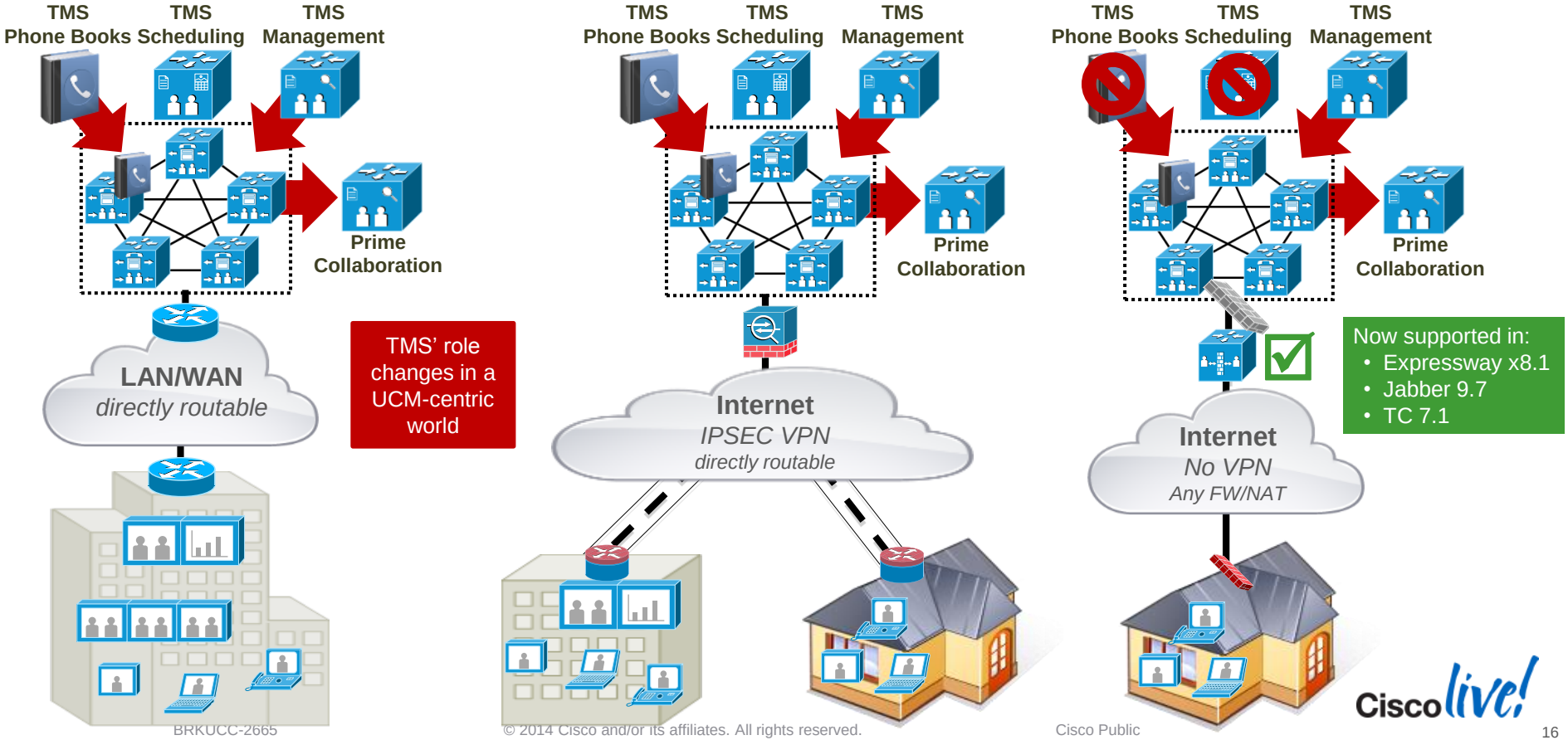




UC Manager supports all [current] endpoints, but didn't support Expressway for remote access, so must use a VPN method

Endpoint Registration Connectivity Models

UC Manager Supported Network Topologies (now with Expressway x8.1)



Prime Collaboration Manager 10.0

BRKUCC-2670- Accelerate and Assure Collaboration deployments with Prime Collaboration

Cisco Prime Collaboration

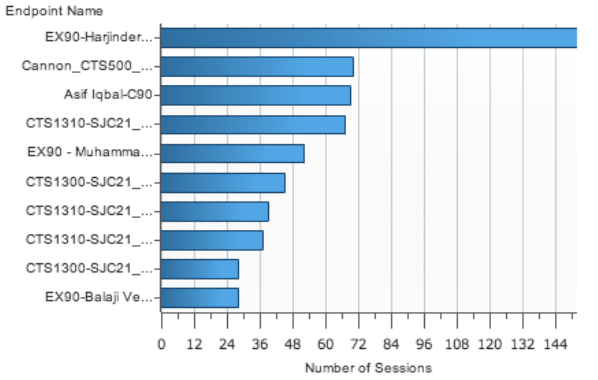
kevinmcm | Log Out | Find Users

Home | Operate | Report | Upgrade

End-Users Impact | Endpoints Utilization | Infrastructure | UC Performance Monitor | Topology

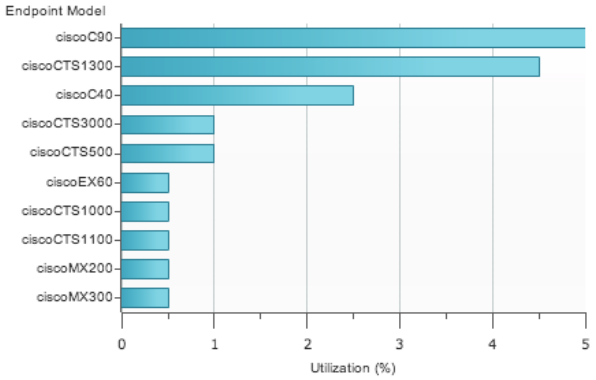
Top 10 Utilized Telepresence Endpoints

By Duration | By Sessions | 1d | 1w | 4w



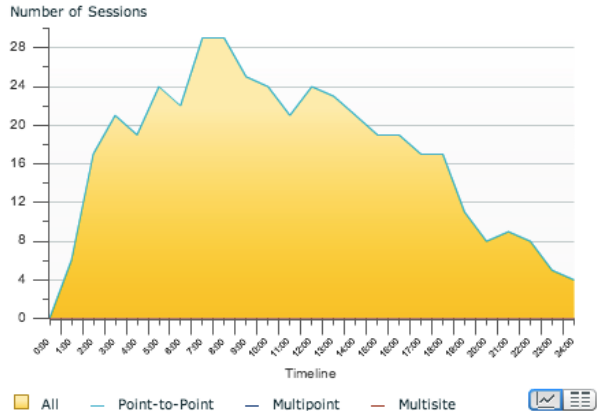
Top 10 Utilized Telepresence Endpoint Models

1d | 1w | 4w



Number of Telepresence Sessions

Session Structure | Session Type | 1d | 1w | 4w



Least 10 Utilized Telepresence Endpoints

By Duration | By Sessions | 1d | 1w | 4w

Endpoint Name	Usage (Hours)
Gregory Fujii (gfujii)-RV-EX90	0.00
EX90-Cynthia Lee (cyntlee)-Demo	0.00
Sandeep Singh (sansing3)-RV-EX90	0.00
Kevin McMenamy (kevinmcm) Office	0.00
(tompric)-RV-EX90	0.00

Least 10 Utilized Telepresence Endpoint Models

1d | 1w | 4w

Endpoint Model	Utilization (%)
ciscoEX90	0.00
ciscoMXP1700	0.00
ciscoProfile65	0.00
ciscoC60	0.00
ciscoProfile52-Dual	0.00

Top 10 No Show Telepresence Endpoints

1d | 1w | 4w

Endpoint Name	Number of No Show Sessions

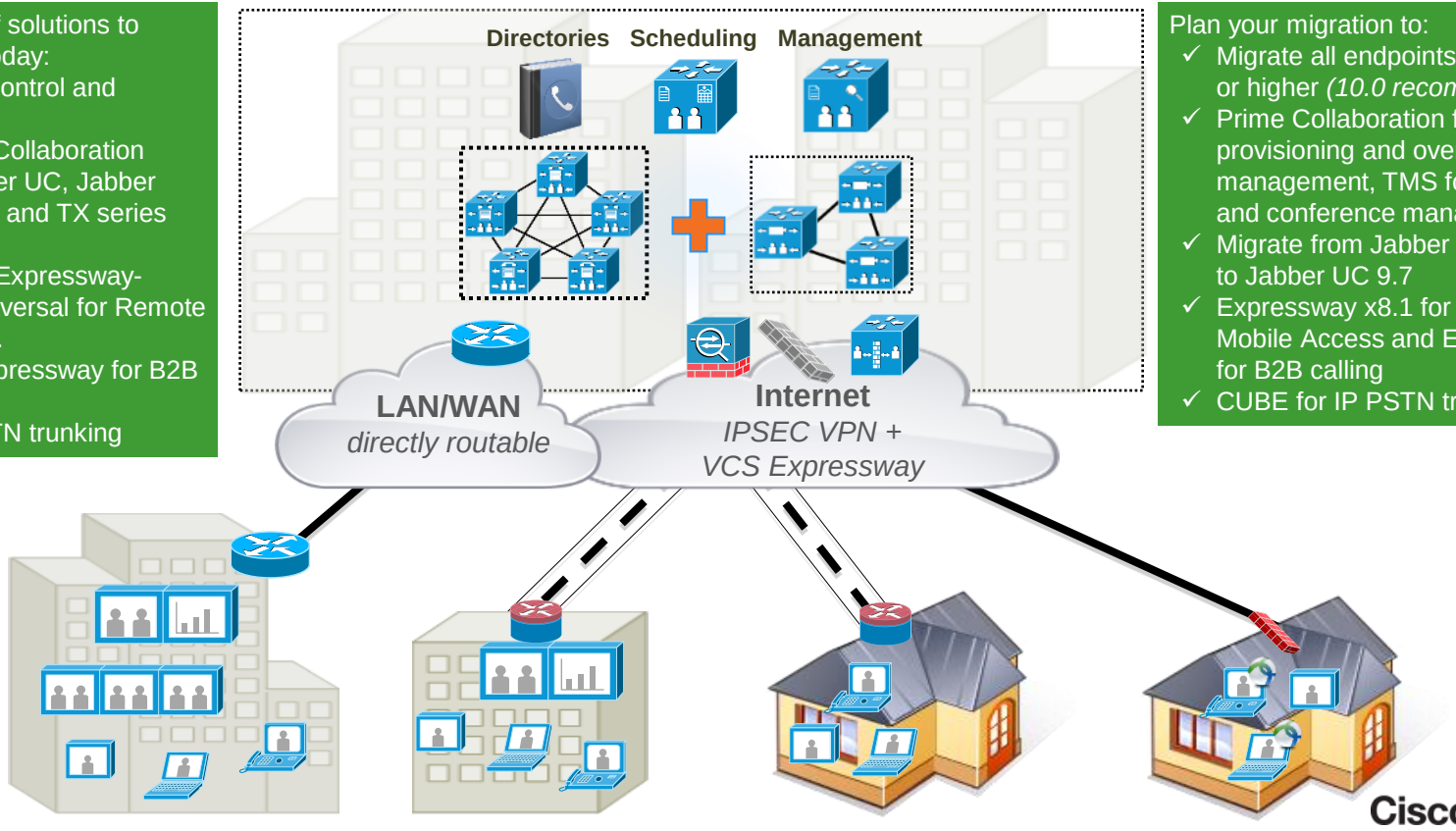
Support Cases | Assurance Inventory Summary | Alarm Browser | Alarm Summary 30 22 13 30

Combined Models / Methods

Combine Techniques to Achieve Your Goals

Use a combination of solutions to achieve your goals today:

- ✓ UCM and VCS Control and Expressway
- ✓ TMS and Prime Collaboration
- ✓ IP Phones, Jabber UC, Jabber Video (Movi), TC and TX series endpoints
- ✓ VPN-based and Expressway-based firewall traversal for Remote & Mobile Access.
- ✓ CUBE and/or Expressway for B2B calling
- ✓ CUBE for IP PSTN trunking



Plan your migration to:

- ✓ Migrate all endpoints to UCM 9.1 or higher *(10.0 recommended)*
- ✓ Prime Collaboration for endpoint provisioning and overall management, TMS for scheduling and conference management
- ✓ Migrate from Jabber Video (Movi) to Jabber UC 9.7
- ✓ Expressway x8.1 for Remote & Mobile Access and Expressway for B2B calling
- ✓ CUBE for IP PSTN trunking

Deploying TelePresence Endpoints on UC Manager – Best Practices

Deployment Best Practices – Topics Covered

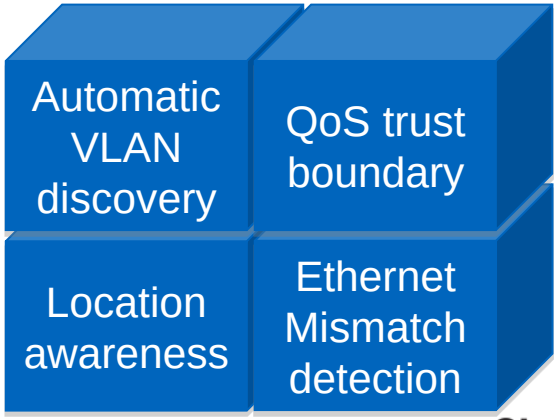
Basic layer-2/3 networking and boot up	UC Manager provisioning	Extended features
▪ CDP and 802.1Q ▪ DHCP Option 150 device-based provisioning or DNS SRV user-based provisioning ▪ Auto-Registration or manual/bulk provisioning by MAC address ▪ Quality of Service (essentials)	▪ Firmware and Feature .cop files ▪ Device-Specific Parameters and SIP Profile settings ▪ Redundancy ▪ Multipoint mode: Multisite or UCM MRGL ▪ Encryption ▪ Dial plan: Directory Numbers and Alphanumeric URIs ▪ End user association	▪ Directories / Phone Books ▪ Shared Line Appearances ▪ Single-Number Reach ▪ Extension Mobility ▪ Music / Video on Hold ▪ Voicemail / Video Greetings ▪ CTI applications ▪ TMS scheduling

Cisco Discovery Protocol (CDP)

Automatic VLAN Discovery, Quality of Service and More…

- VLANs allow endpoints to be deployed without re-subnetting existing data VLANs
- Prior to CDP, TE and TC Series endpoints supported 802.1Q but had to be manually configured
- CDP introduced in TE release 4.1 and TC release 5.0. However, default is off to preserve legacy behavior for installed base customers
- CDP also allows for other benefits such as Quality of Service trust, detecting and alarming on ethernet speed/duplex misconfigurations, and location awareness

Previous Setting	New Setting	Definition
	Auto	Use VLAN ID provided by CDP
Tagged	Manual	Manually specify VLAN ID
Untagged (default)	Off (default)	Don't use VLAN tagging, even if CDP advertises one

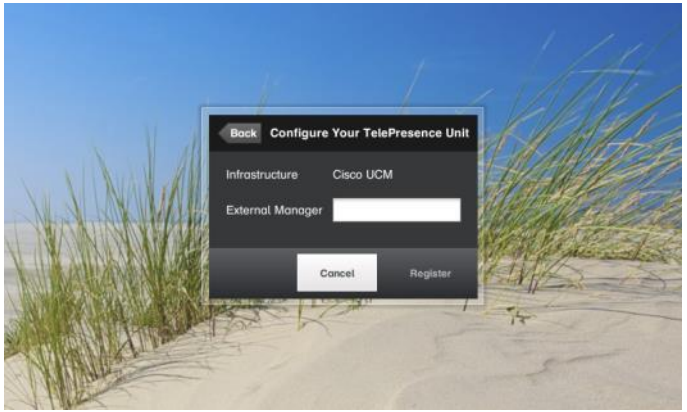


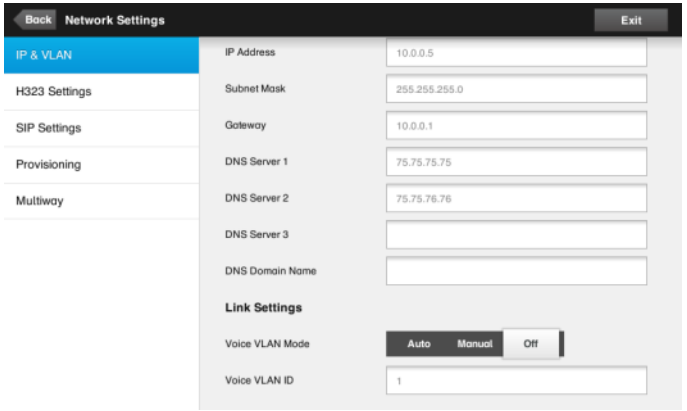
Cisco Discovery Protocol (CDP)

Enabling VLAN Discovery on TE and TC Series Endpoints

Upon bootup from factory default: VLAN mode = Off

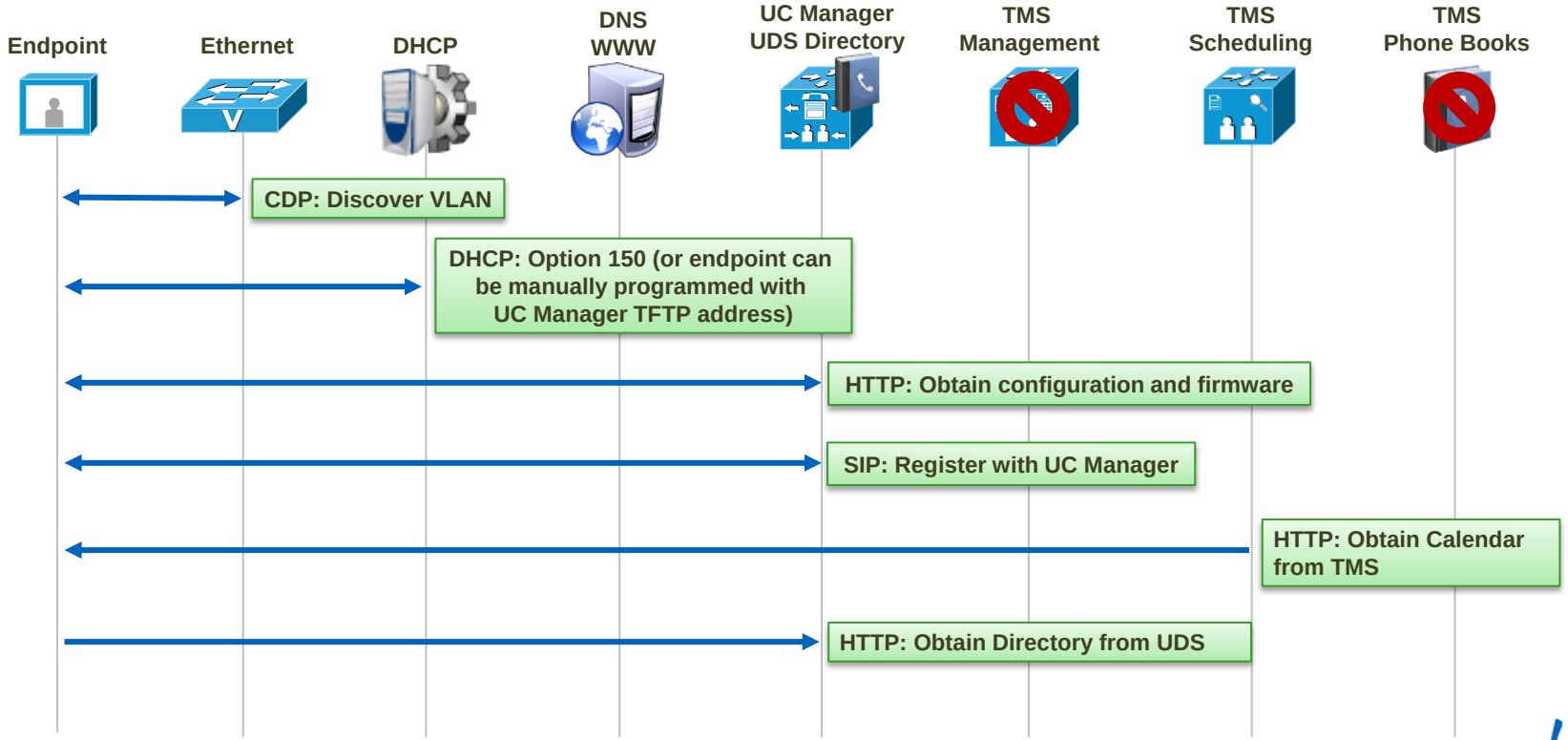
1. Do an untagged DHCP request[1], receive an address in the Native VLAN
2. Prompt the user for language choice and provisioning mode
3. If UCM mode selected, set VLAN mode = Auto, restart network stack, and do a tagged DHCP request with option 150[1] to receive a new address in the Auxiliary VLAN
4. Look for Option 150 in DHCP Offer[1]. If present, proceed to step 5, otherwise prompt user for UC Manager address
5. Download configuration and firmware from UCM via HTTP port 6970, upgrade firmware and reboot if necessary, and proceed to register with UC Manager
6. VLAN mode can be changed anytime if desired





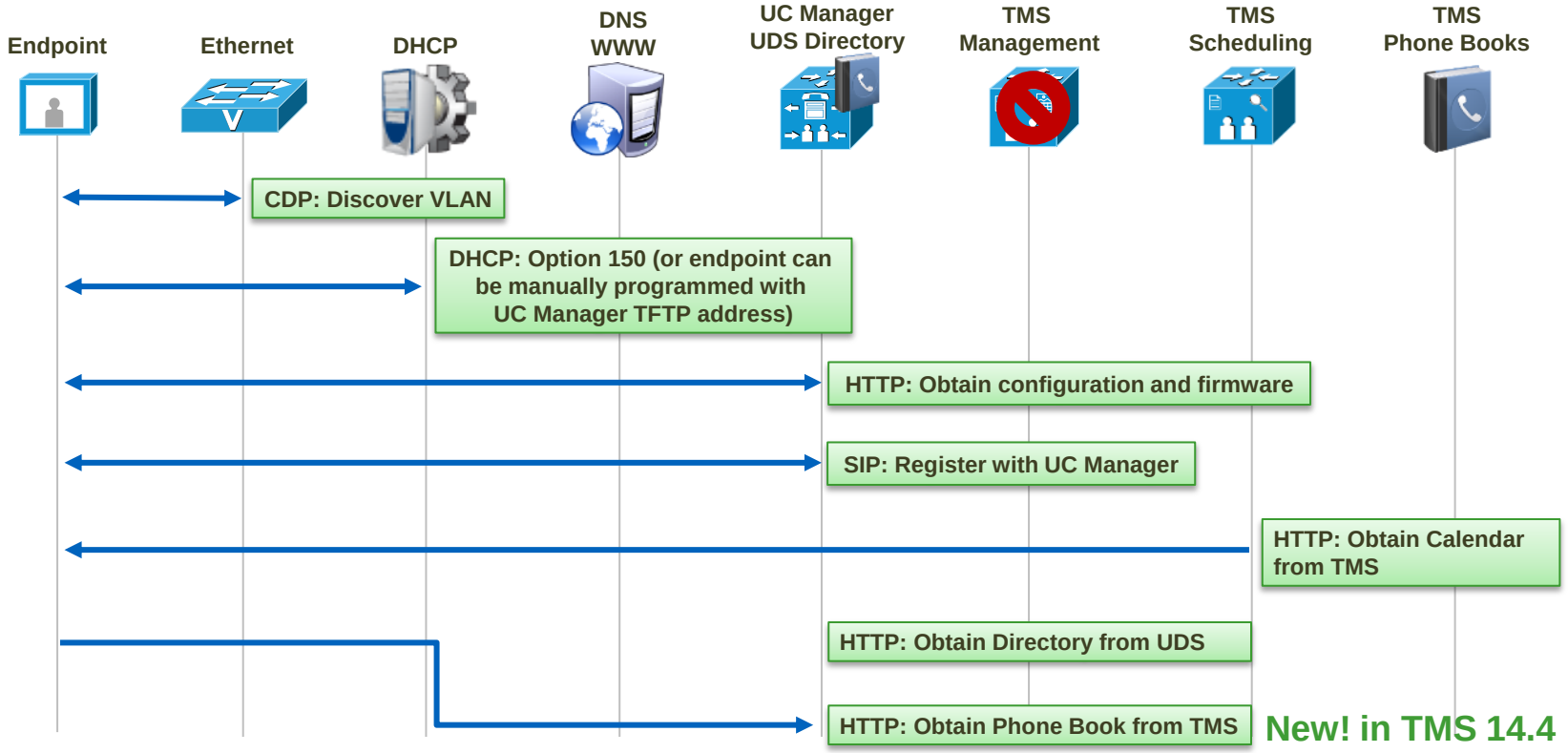
Boot Strapping Process

CUCM Provisioning – High Level Sequence (prior to TMS 14.4)



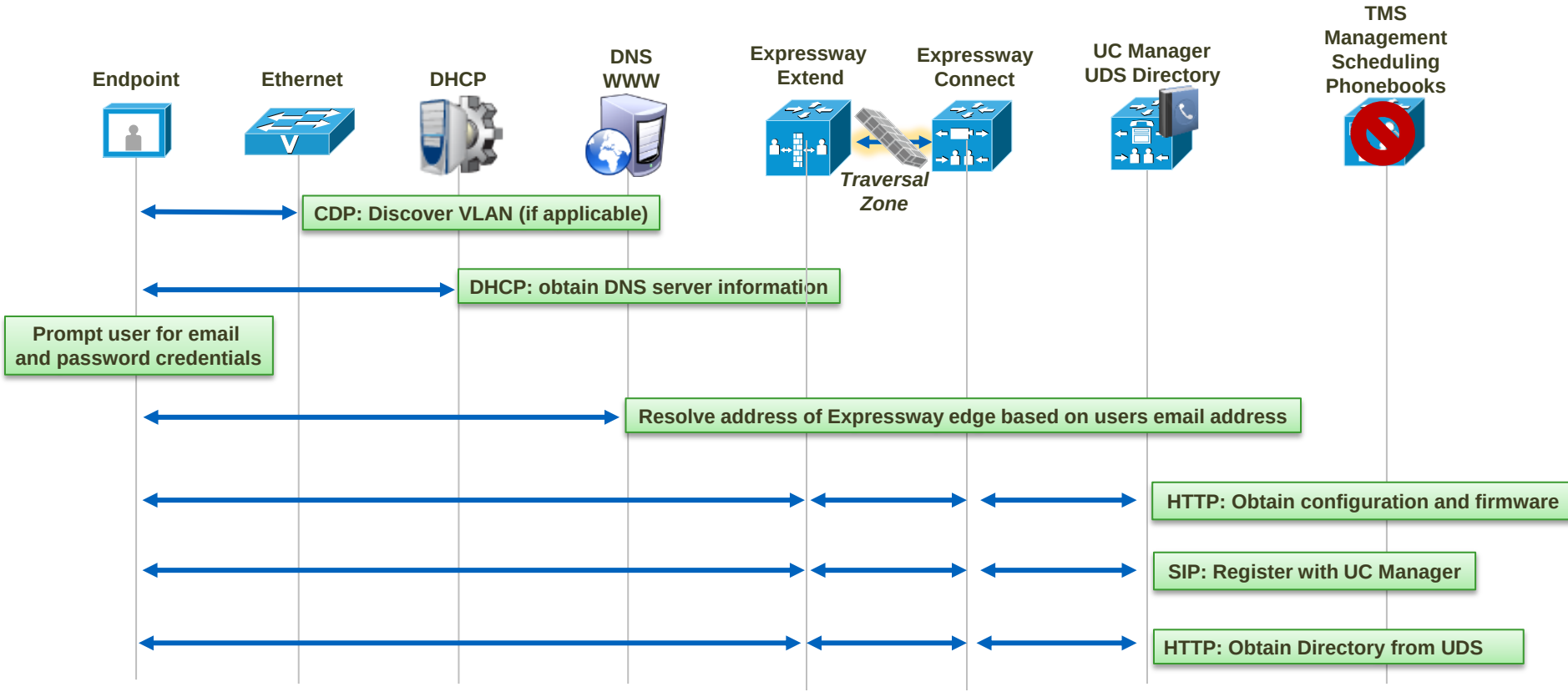
Boot Strapping Process

CUCM Provisioning – High Level Sequence (now with TMS 14.4)



Boot Strapping Process

CUCM Provisioned – High Level Sequence (CUCM via Expressway Mode)



Administering TC Series Endpoints on UC Manager

Firmware and Feature .cop Files (a.k.a. Device Packs)

- Cisco Options Pack (.cop) files are installed on UC Manager and contain either firmware, new features / models, or both. COP files are specific to a UC Manager release train (e.g. 8.6.x, 9.0.x, 9.1.x, etc.)
- For TelePresence endpoints, new feature definitions COP files are not distributed directly, but instead rolled into the next regularly scheduled UC Manager release (device packs, service updates, minor and major releases). TelePresence endpoint firmware is not included in UC Manager releases and device packs, but rather posted separately to cisco.com for download

Not an exhaustive list, just a sample of some of the most recent enhancements so you get an idea of how device packs are used.
http://www.cisco.com/en/US/docs/voice_ip_comm/cucm/compat/devpack_comp_mtx.html

UC Manager Device Pack / Release	New features introduced
9.1(2.11006-1) / September 2013 8.6(2.24097-1) / September 2013	Added Extension Mobility, Services and User Localisation support on the TC 6.2 series endpoints
8.6(2.24093-2) / August 2013	Added UCM failover/fallback, call preservation, config file encryption, and several device-specific parameters on the TC 6.2 series endpoints
9.1(1.21010-1) / March 2013 8.6(2.23071-1) / March 2013	Added “multipoint mode” device-specific parameter on TC 6.0 series endpoints
9.0(1.11013-1) / December 2012	Added alpha-numeric URI support and “Bandwidth Allocation Weights” device-specific parameter on CTS 1.10 and TX 6.0 series endpoints
9.0(1.11003-1) / September 2012	Added UCM encryption support (CAPF, CTL, ITL, TLV) and “multipoint mode” device-specific parameter on TC 6.0 series endpoints

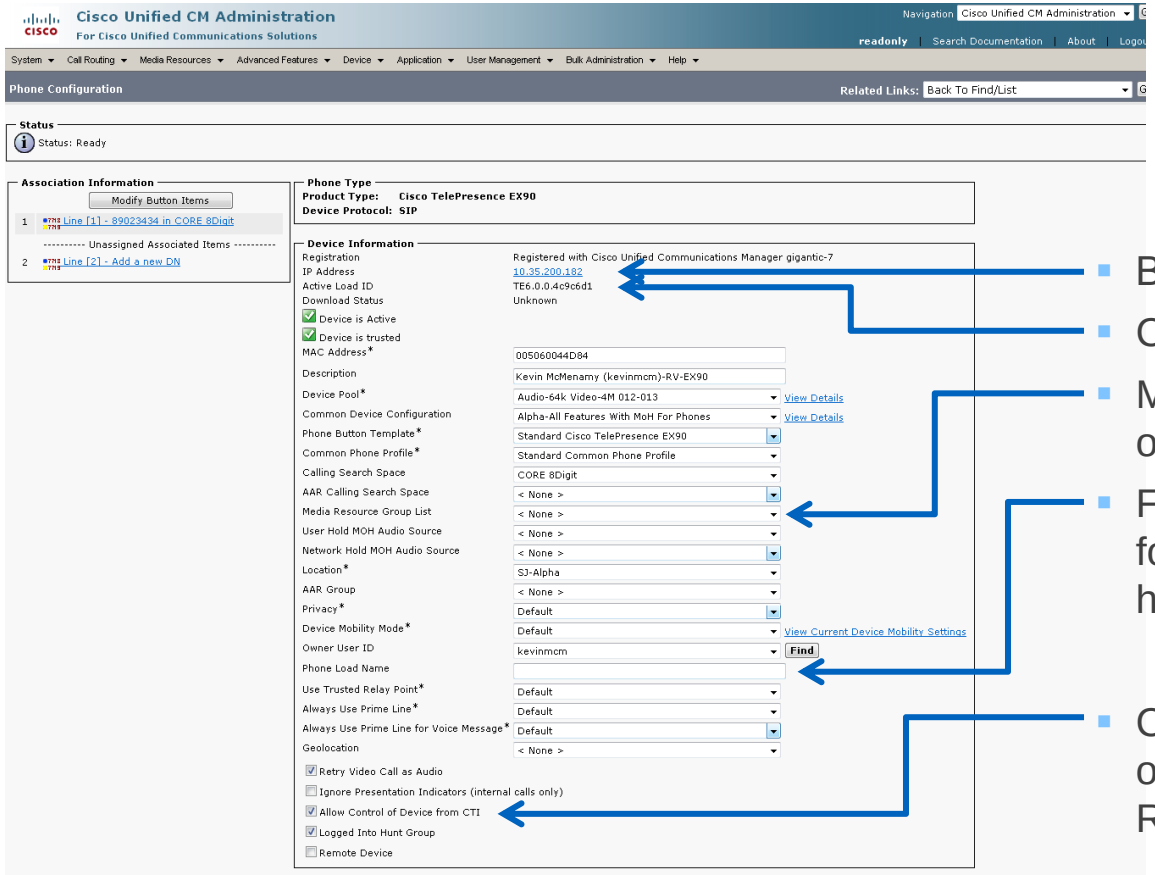
Administering TC Series Endpoints on UC Manager

Auto, Manual and Bulk Provisioning

- TC Series endpoints support Auto-Registration as of TC 6.0
- Auto-Reg assigns a numeric Directory Number to the endpoint. For Alpha-Numeric URIs you must add those manually once the endpoint is defined in UC Manager (after manually defining it or after it auto-registers)
- Use the Bulk Administration Tool to add/change/delete endpoints in bulk and to take backups of endpoint configs (device > export)
- You may use Prime Collaboration Provisioning instead of UC Manager's native admin UI for add/change/delete operations

Administering TC Series Endpoints on UC Manager

Configuring the Endpoints

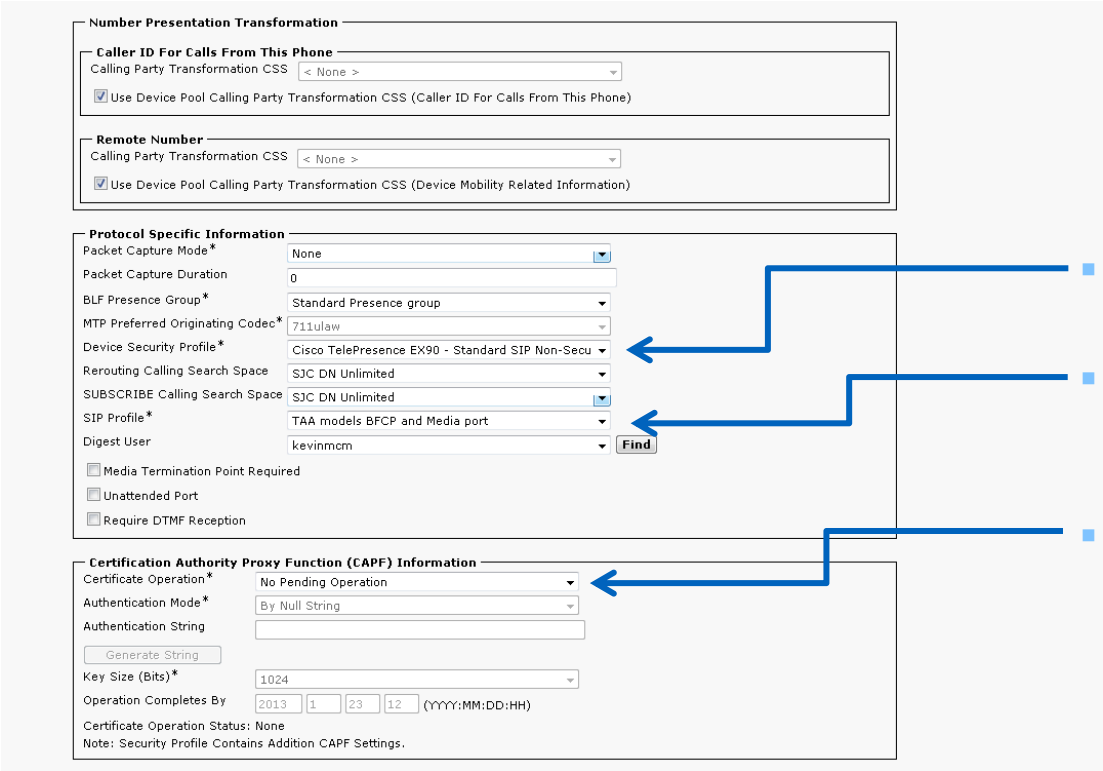


Device Page 1 of 3

- Browse to endpoint's web interface
- Current firmware load displayed
- Media Resource Group List for MCU or TelePresence Server w/Conductor
- Firmware loads distributed in .cop file format for installation on UCM. Set here or in Device Defaults page
- CTI control is limited and is only officially support for Contact Centre Remote Expert solution

Administering TC Series Endpoints on UC Manager

Configuring the Endpoints

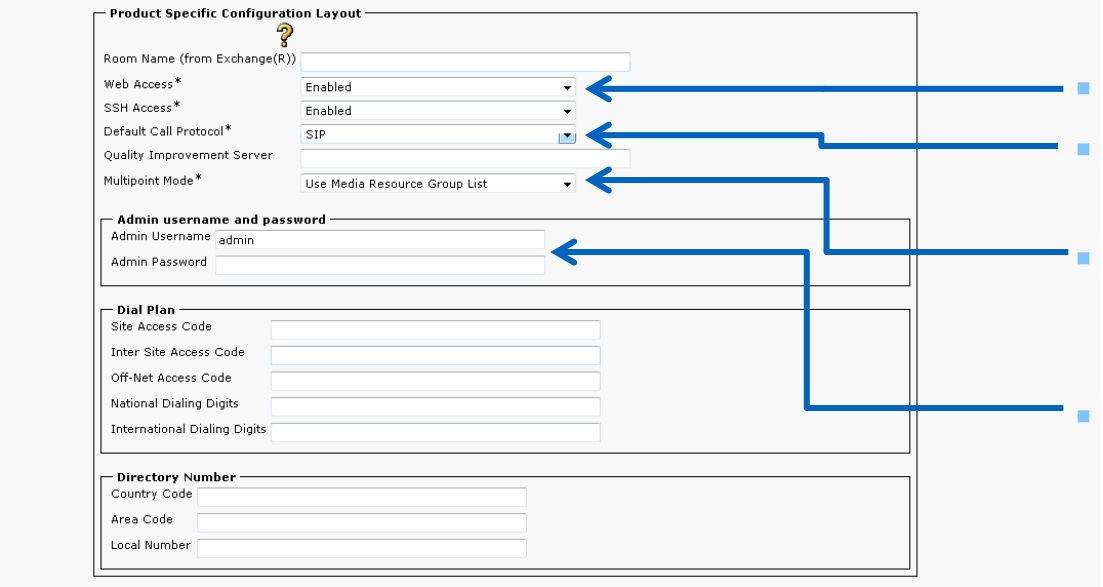


Device Page 2 of 3

- Enable TLS and sRTP (as of TC 6.1 release)
- Enable Fully Qualified Domain, and customise Start/Stop Media Ports[1]
- Upgrade/Install/Delete Locally Significant Certificate (LSC) (as of TC 6.1 release)

Administering TC Series Endpoints on UC Manager

Configuring the Endpoints

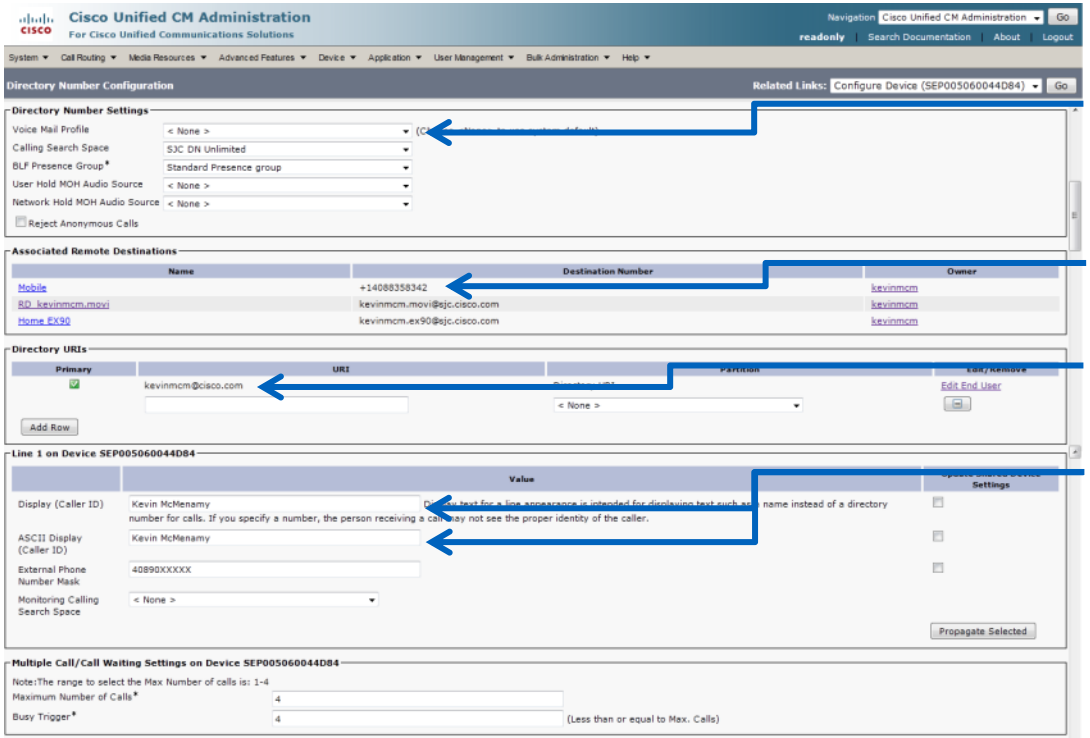


Device Page 3 of 3

- Enable Web and SSH Access
- SIP is the only supported protocol UC Manager
- Use Embedded Multisite or enable ad hoc escalation to MCU or TS w/Conductor
- Password synchronisation requires encrypted configuration files (as of TC 6.2 release)

Administering TC Series Endpoints on UC Manager

Configuring the line on the endpoint

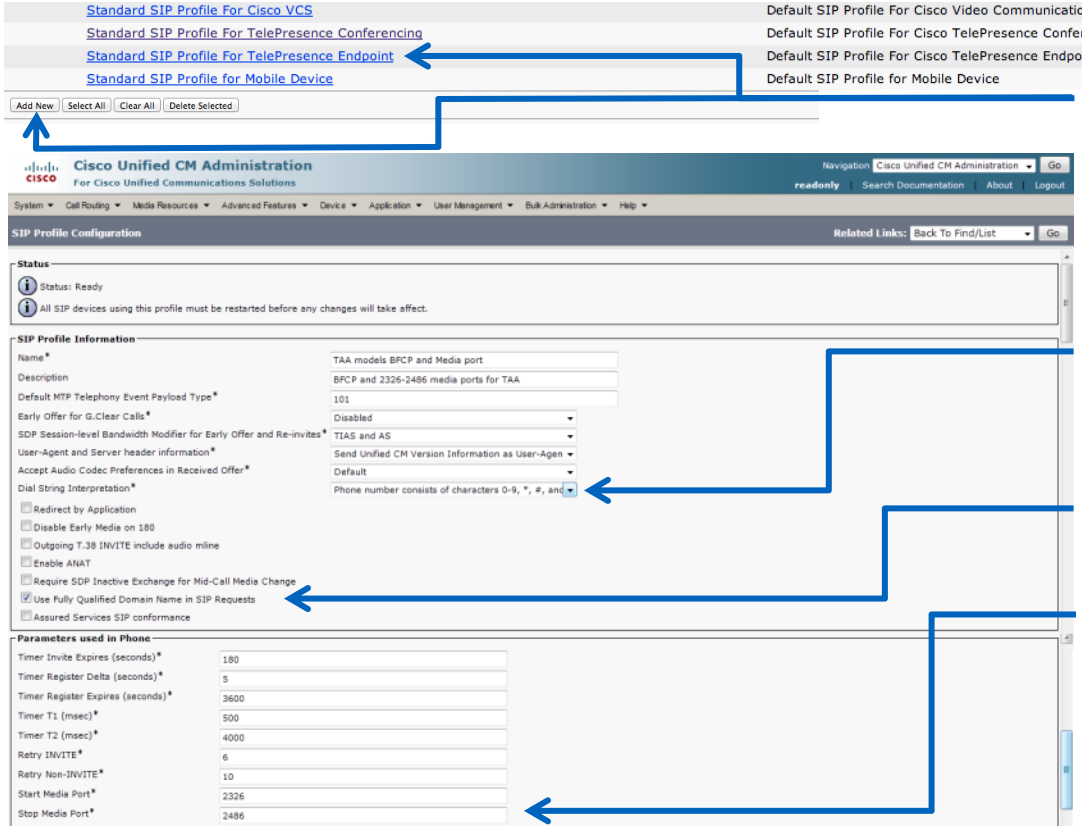


Directory Number Page

- Voicemail and Message Waiting Indication (MWI) (on E20 and TC Series)
- Unified Mobility / Reach Me Anywhere
- Alpha-numeric URIs added in UC Manager 9.0
- Display Name is displayed on top left corner of endpoint Touch user interface and also is displayed as the participant name on multipoint meetings, caller ID on pt-to-pt calls, etc.

Administering TC Series Endpoints on UC Manager

Configuring SIP Profiles

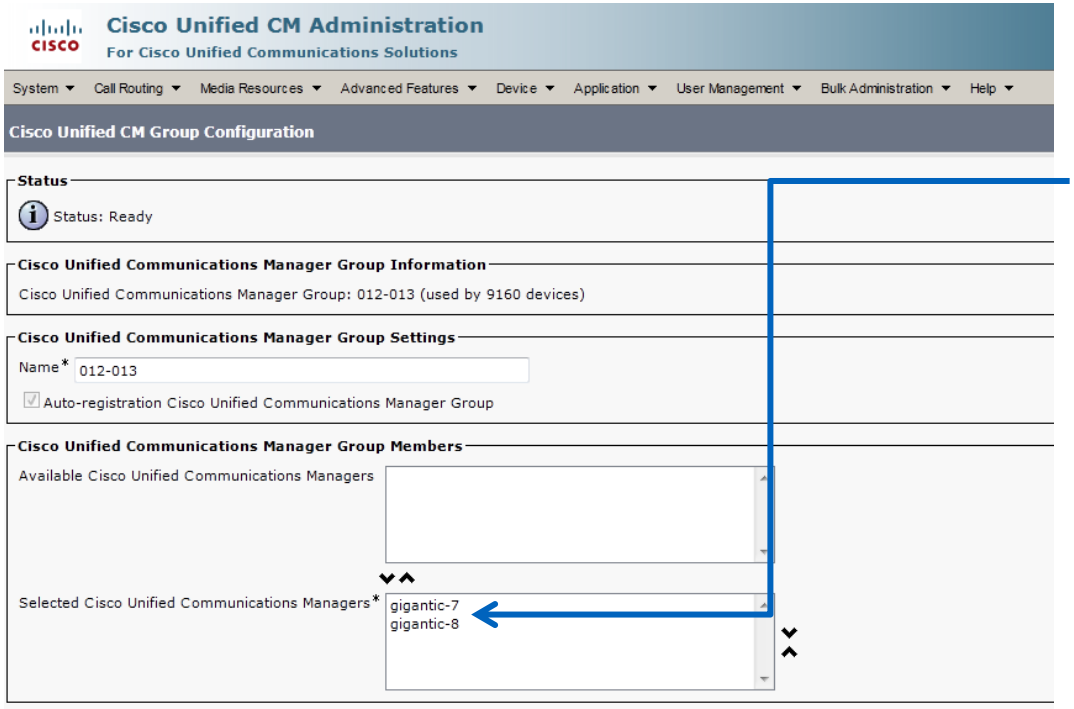


SIP Profile Page

- Use the provided Standard SIP Profile for TelePresence Endpoints profile, or copy it and create your own customised profile
- Disambiguates alpha-numeric URIs that contain only numeric characters
- Enable Use FQDN for alpha-numeric URI support
- Adjust RTP ports to historical TANDBERG defaults of 2326-2486 if desired

Administering TC Series Endpoints on UC Manager

Configuring Which UCM The Endpoints Should Register To



Unified CM Group Page

- TC support for UCM failover/fallback added in TC 6.2
- TelePresence endpoints do not support SRST

Quality of Service

DiffServ Configuration on Cisco TelePresence Endpoints

- Endpoints on UCM derive their QoS values from the SEP[MAC_addr].cnf.xml config file they download from UC Manager
- UC Manager 8.0 introduced a new “DSCP for TelePresence Calls” parameter to differentiate “TelePresence” calls from traditional (Standard Def) “Video” calls

Clusterwide Parameters (System - QOS)

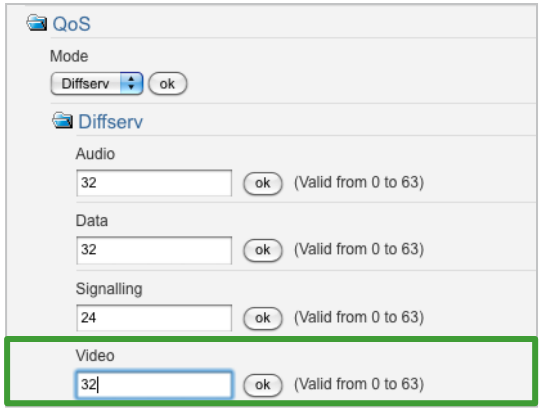
DSCP for Audio Calls *	46 (101110)	46 (101110)
DSCP for Video Calls *	34 (100010)	34 (100010)
DSCP for TelePresence Calls *	32 (100000)	32 (100000)

- You can verify QoS setting on the system’s web interface

Configuration > Telephony Settings

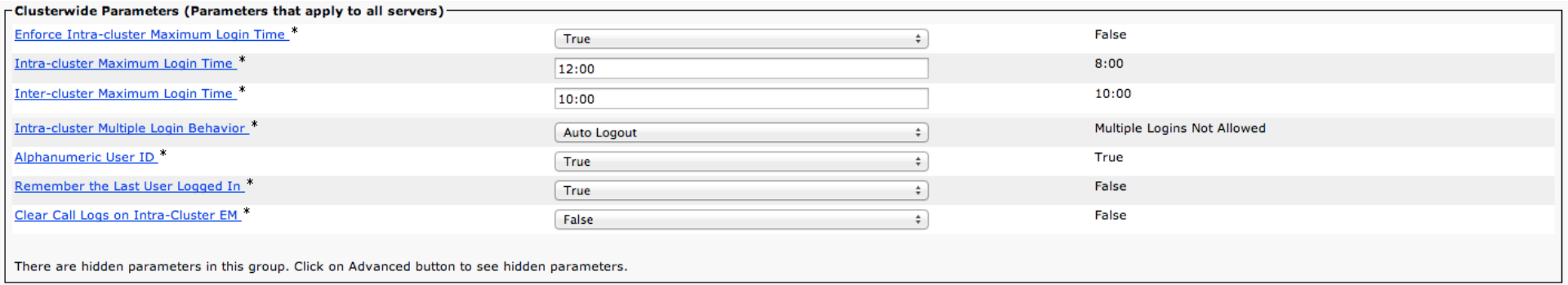
Auto Answer:	No
Maximum Call Length (mins):	0
DSCP For Audio:	EF DSCP (101110)
DSCP For TelePresence:	CS4(precedence 4) DSCP (100000)
Start Media Port:	16384
End Media Port:	32766

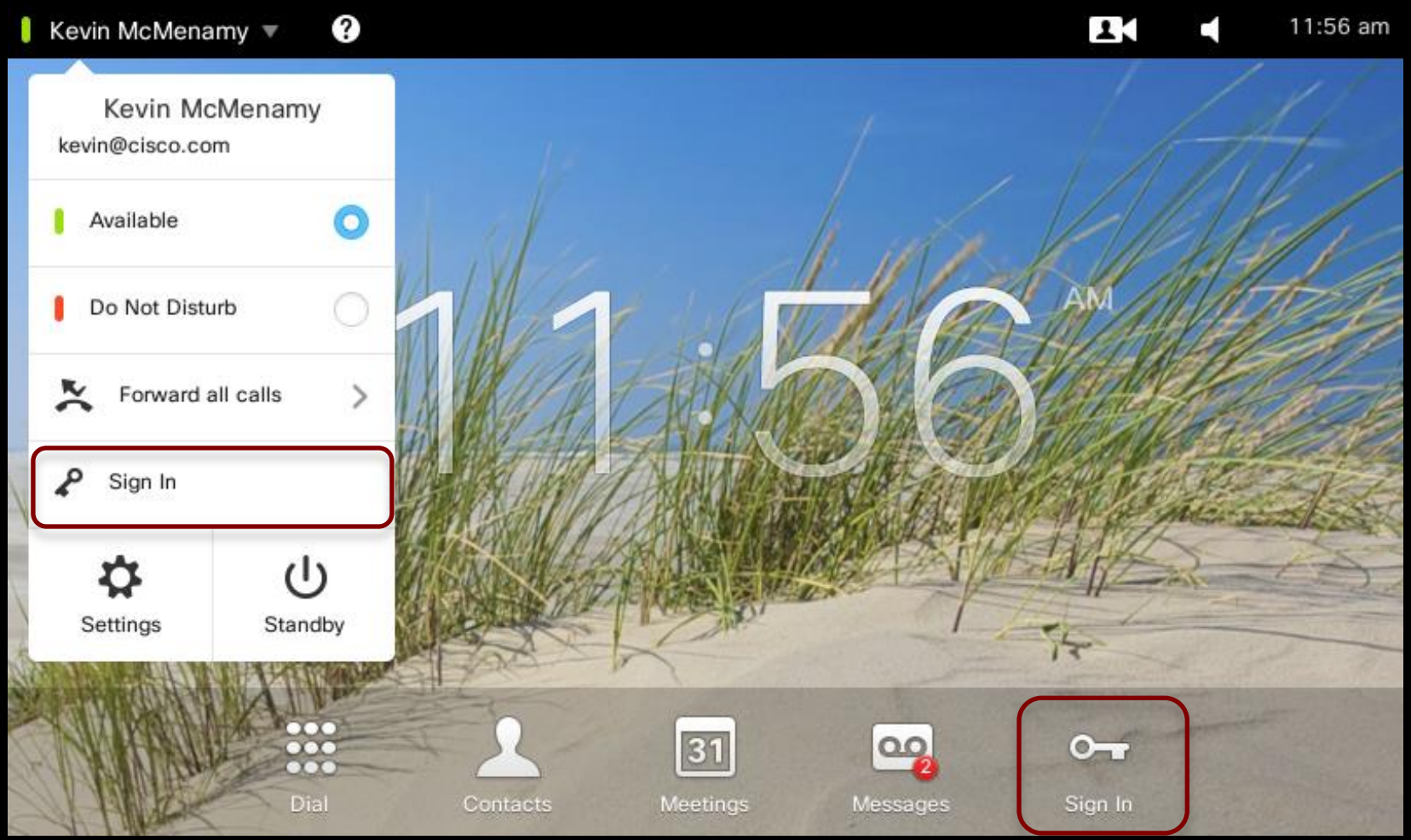
Note: Use Unified CM to change these settings.



Extension Mobility on TC Endpoints

- Extension Mobility now supported on TC 6.2 series endpoints
- Great for shared workspaces, hot-desking applications
- Sign in using your UC Manager userid and Extension Mobility PIN
- Manually sign out, or UC Manager can automatically sign you out after [Maximum Login Time]




Kevin McMenamy
11:56 am
Kevin McMenamy
kevin@cisco.com
Available
Do Not Disturb
Forward all calls
Sign In
Settings
Standby
11:56 AM
Dial
Contacts
Meetings
Messages
Sign In

Administering TC Series Endpoints on UC Manager

User Localisation

For Your Reference

User Local can be configured on the device and on Extension Mobility user profiles

The CUCM supported languages are mapped to the languages on the Cisco TelePresence Touch 8, as follows:

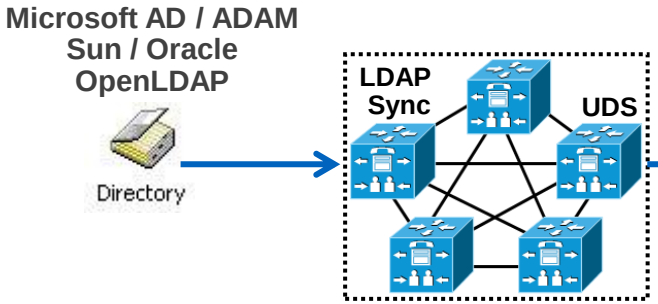
- Arabic (Algeria, Bahrain, Jordan, Kuwait, Lebannon, Morocco, Oman, Qatar, Saudi Arabia, Tunisia, United Arab Emirates, Yemen) = Arabic
- Chinese (China) = ChineseTraditional
- Chinese (Taiwan) = ChineseSimplified
- Czech (Czech Republic) = Czech
- Danish (Denmark) = Danish
- Dutch (Netherlands) = Dutch
- Finnish (Finland) = Finnish
- French (France) = French
- German (Germany) = German
- Hebrew (Israel) = Hebrew
- Hungarian (Hungary) = Hungarian
- Italian (Italy) = Italian
- Japanese (Japan) = Japanese
- Korean (Korea Republic) = Korean
- Norwegian (Norway) = Norwegian
- Polish (Poland) = Polish
- Portugese (Brazil) = PortugeseBrazilian
- Russian (Russia) = Russian
- Spanish (Colombia) = Spanish
- Spanish (Spain) = Spanish
- Swedish (Sweden) = Swedish
- Turkish (Turkey) = Turkish

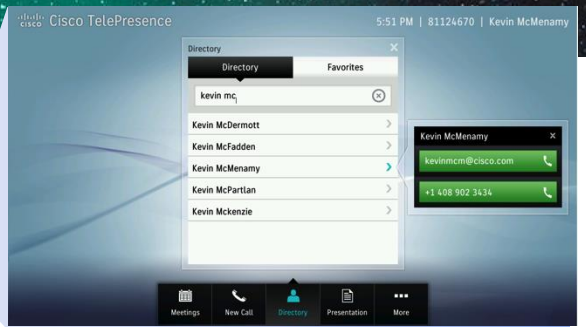
The CUCM languages not listed are mapped to English.

Note: User Localisation and Extension Mobility are not supported on CTS and TX series endpoints. Only on TC series

TelePresence Endpoints on UC Manager

Directory Lookups (a.k.a. Phone Books)






```
- <user uri="https://172.19.236.46:8443/cucm-uds/user/kevinmcm">
    <userName>kevinmcm</userName>
    <firstName>Kevin</firstName>
    <lastName>McMenamy</lastName>
    <middleName>R</middleName>
    <nickName />
    <phoneNumber>+1 408 902 3434</phoneNumber>
    <homeNumber />
    <mobileNumber>+1 408 835 8342</mobileNumber>
    <mobileConnect>false</mobileConnect>
    <userLocale xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:nil="true" />
    <email>kevinmcm@cisco.com</email>
    <msUri>kevinmcm@cisco.com</msUri>
    <department>020042546</department>
    <manager>skaleem</manager>
    <title>PRINCIPAL ENGINEER.ENGINEERING</title>
    <pager />
    <directoryUri>kevinmcm@cisco.com</directoryUri>
  </user>
```

UDS Search Result

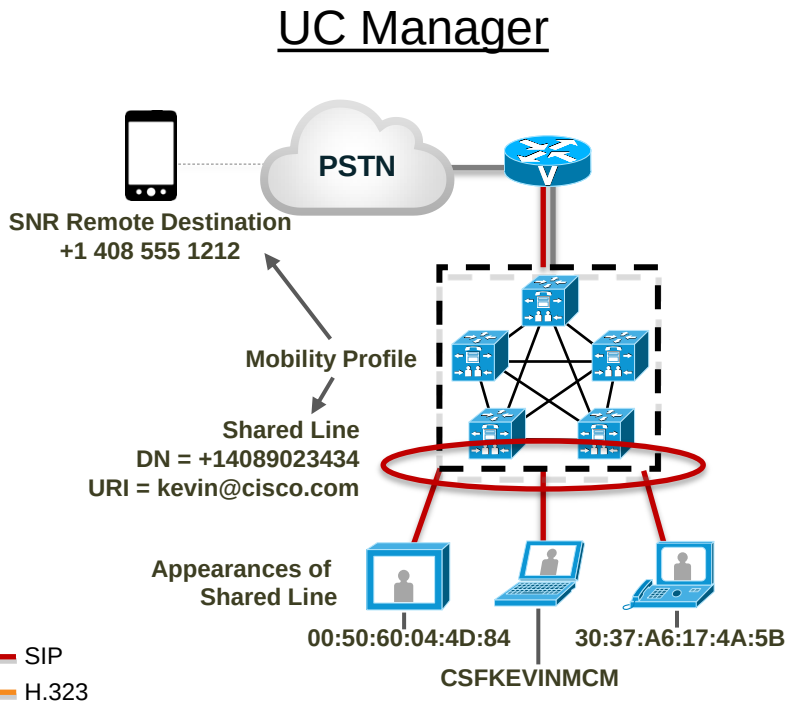
Dial'able contact methods

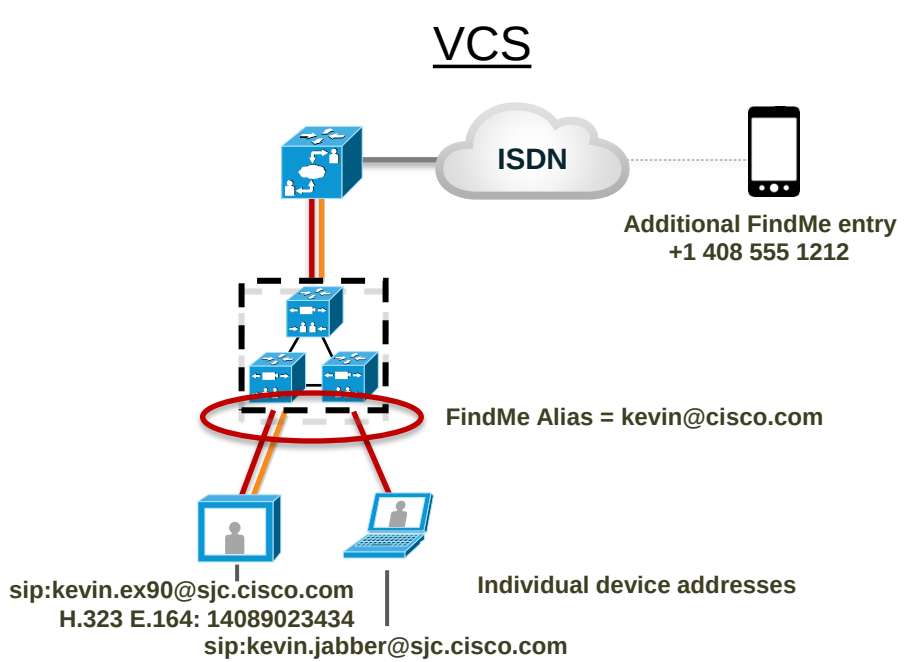
- Office number
- Mobile number
- Alpha-numeric URI

- UDS provides one flat searchable directory. No partition'able / hierachical phone books like TMS has

Shared Lines and Single Number Reach

- A simple comparative view for VCS customers who are still getting familiar with UCM

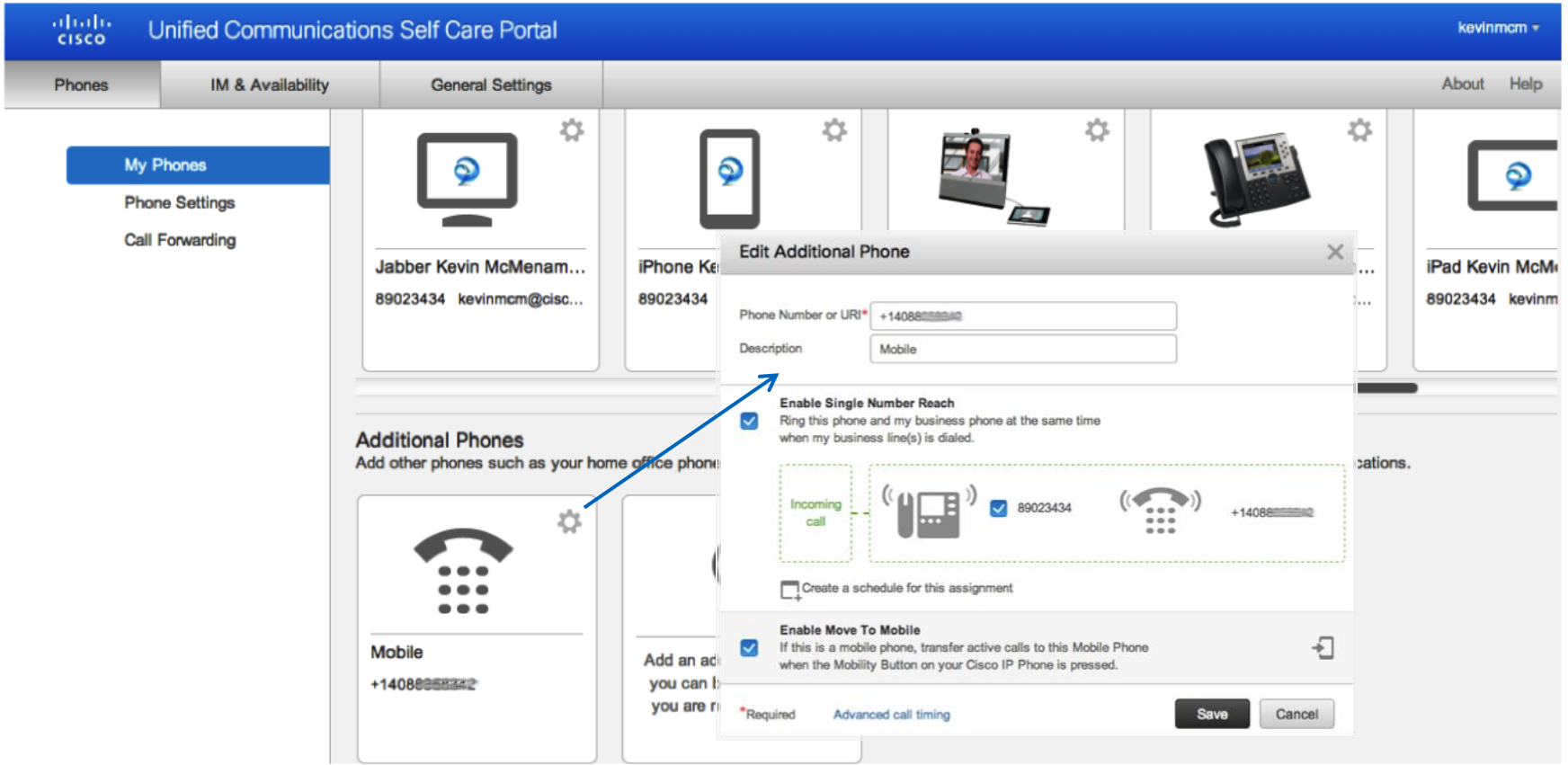




Shared Lines and Single Number Reach

User Portal

For Your Reference



MediaSense

Video On Hold, Video in Queue and Video Greetings in Unity Connection Voicemail

Video on Hold (VoH)

- In UC Manager, MediaSense server(s) can be defined as Video on Hold resources and assigned to Media Resource Groups and used with Native Hunt Groups queuing

Video Greetings

- In Unity Connection, MediaSense server(s) can be defined as storage/playback servers
- When a call is forwarded (busy / no answer) to Unity voicemail caller will now “see” your voicemail greeting
- Recording of video messages is planned for a future release

Video in Queue (ViQ)

- In Contact Centre (Express and Enterprise editions), MediaSense server(s) can be defined as Video on Hold and Video in Queue servers and integrate into the Finesse agent desktop
- When a caller is in queue waiting for an agent
- When an agent places a customer on hold

Find out more at
http://www.cisco.com/en/US/docs/voice_ip_comm/cust_contact/contact_center/mediasense/10/srnd/CUMS_BK_MC36D963_00_mediasense-srnd.html

TC Series Endpoints on UC Manager

Functionality Supported / Not Supported (as of TC 7.0) 1 of 2

For Your Reference

- TC 7.0 Series endpoints registered to UC Manager

Functionality	Status	
Calling features	✓ Alpha-numeric URI dialing ✓ +, * and # character dialing ✓ Hold / Resume ✓ Transfer	✓ Call Forwarding ✓ Music on hold (unicast only) ✓ BFCP (presentation sharing)
Encryption	✓ CAPF, CTL, LSC × MIC ✓ sRTP (audio + video)	✓ Signed configuration files ✓ Encrypted configuration files ✓ TVS
Conferencing	✓ Multisite (embedded) ✓ Ad hoc conference escalation to MCU or Conductor with MCU or TS on UC Manager	
CTI Support	✓ CTI Monitoring of device availability ✓ CTI Remote Call Control (remote-cc) limited to Remote Expert support	x Jabber Desk Phone Control Mode x Attendant Console x Other CTI applications
Shared Lines	✓ Holde / Resume ✓ cBarge ✓ Hand-off from mobile to desk	x Hand-off from desk to mobile (“Go Mobile” softkey)

TC Series Endpoints on UC Manager

Functionality Supported / Not Supported (as of TC 7.0) 2 of 2

For Your Reference

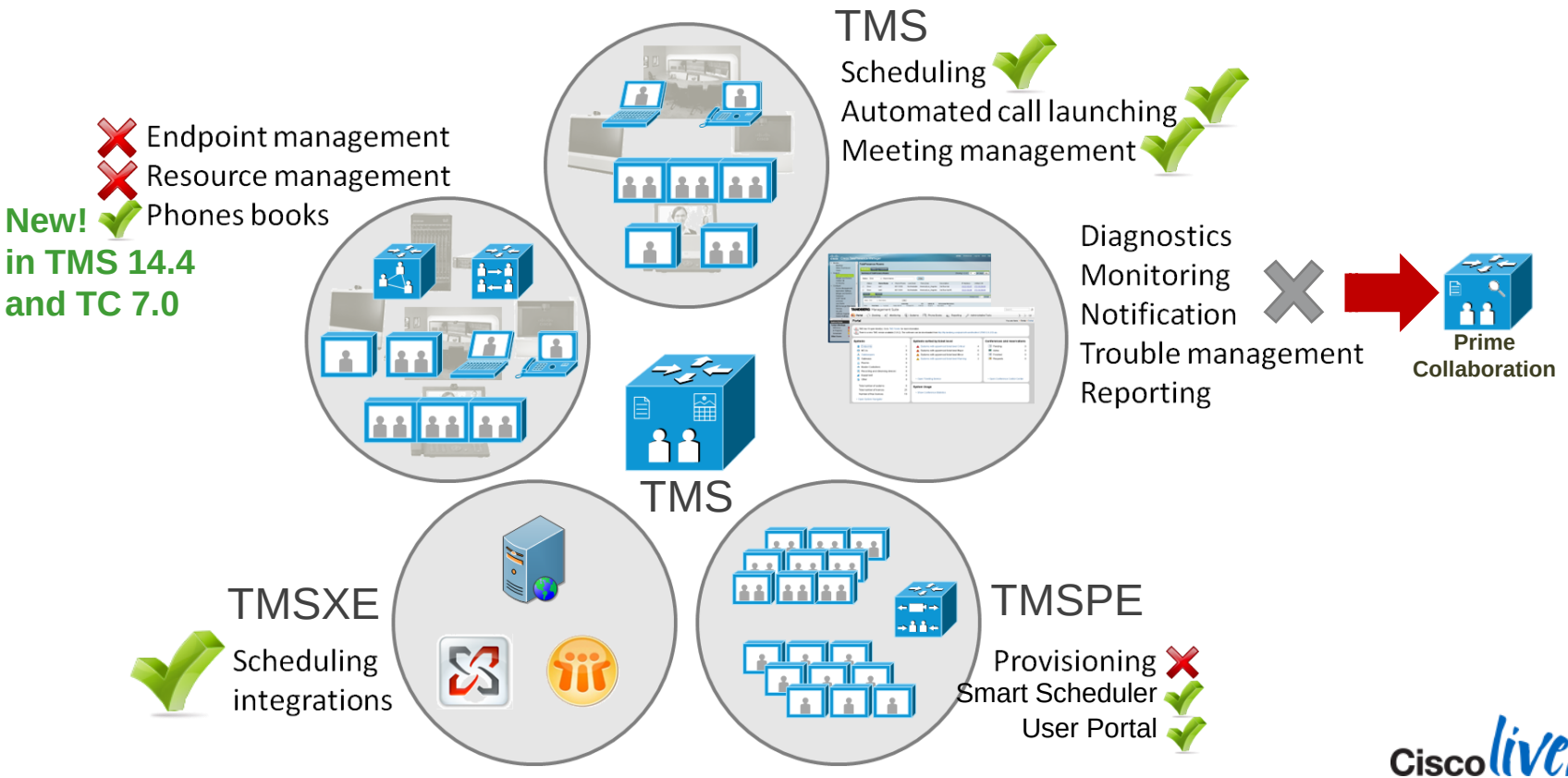
- TC 7.0 Series endpoints registered to UC Manager

Functionality	Status	
Redundancy	✓ Primary, Secondary, Tertiary UCM node failover/fallback	✓ Fallback includes UDS directories × SRST
Extension Mobility	✓ Within a cluster	✓ Across clusters
Localisation	✓ on Device Profile ✓ on User Device Profile (used with Extension Mobility)	× Network Locals (tones)
UDS Service Discovery and Self Provisioning	✓ Cluster discovery ✓ Profile discovery	× Self-provisioning
Voicemail	✓ Message Waiting Indication (MWI) ✓ Message softkey	× Visual Voicemail

TMS Scheduling on UC Manager

TMS Features Available for Endpoints on UC Manager

BRKEVT-2664 – Implementing Video Scheduling and Webex Enabled Telepresence



TMS Conference Scheduling

TMS Scheduled Call Launch Methods

- **OBTP:** The user dials *in* from the endpoint by simply pressing a Start or Join button on the endpoint
- **Automatic Connect:** The main participant (also called video conferencing master) will automatically dial *out* to scheduled endpoints upon conference start time. The main participant is a scheduled endpoint for point-to-point conferences, and it is a conferencing platform (e.g. MCU) for multipoint conferences
- **Manual Connect:** The participants manually dial *in*
- **Reservation Only:** TMS only reserves the room(s) and will not reserve any multipoint resources nor will initiate any connections

TMS Scheduling

TMS One Button to Push

- OBTP is available on the Cisco Touch 8”, Touch 12”, 797x IP phone MIDlet and the On Screen Display (OSD) with remote control.
- TC Series endpoints may be registered to UC Manager as of TMS 13.2
- Minimum release of firmware on the endpoints listed below

TC 5.0
TE 6.0

CTS 1.8

CTS 1.7

TC 5.0

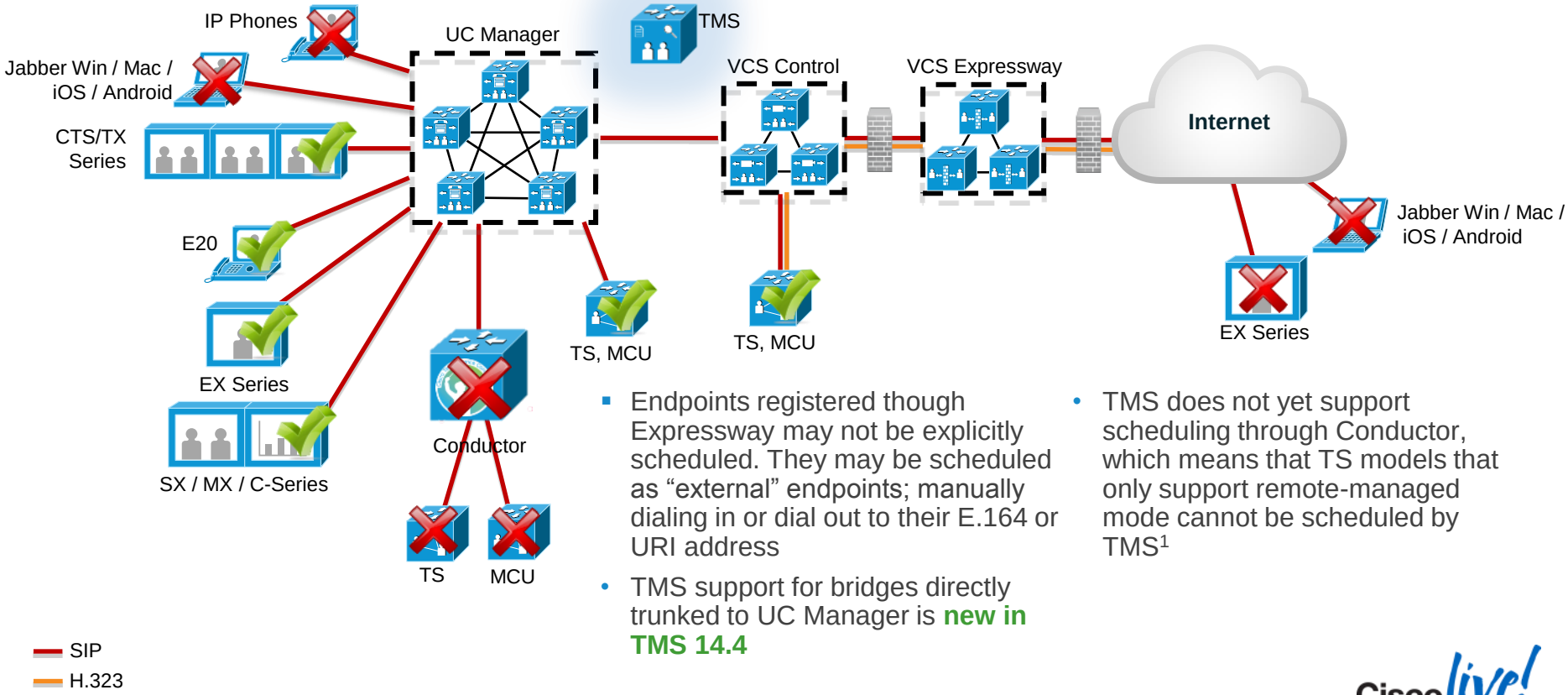
TMS Conference Scheduling Types

TMS Scheduled Call Launch Methods Supported by Endpoint Type

Endpoint Type	One Button to Push	Automatic Connect	Manual Dial In	External Dial In/Out	Notes
MXP Series	✗	✓	✓	✓	
E20	✗	✓	✓	✓	
TC Series	✓	✓	✓	✓	▪ OBTP introduced in 13.1 ▪ Support for TC series on UC Manager introduced in 13.2
CTS and TX Series	✓	✓	✓	✓	▪ Support for CTS series and OBTP introduced in 13.1 ▪ Support for TX series introduced in 13.2
Jabber	✗	✗	✗	✓	
IP Phones	✗	✗	✗	✓	
TMSPE and Expressway endpoints	✗	✗	✗	✓	▪ TMSPE provisioned endpoints and endpoints registering through Expressway can only be scheduled as “external” dial in / dial out participants

TMS Conference Scheduling Scenarios

TMS Supported Connectivity Methods and Deployment Models



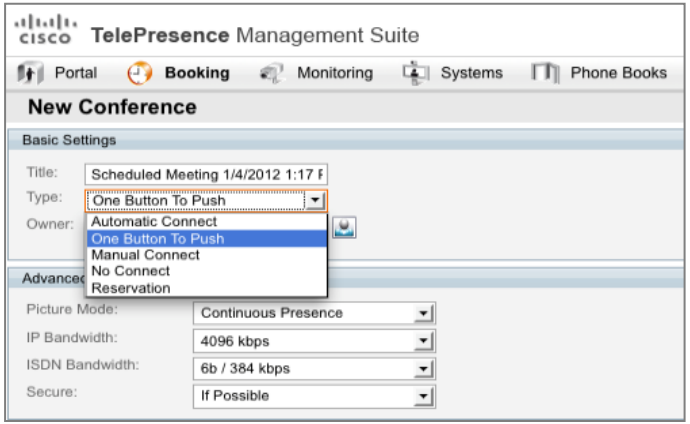
- Endpoints registered though Expressway may not be explicitly scheduled. They may be scheduled as “external” endpoints; manually dialing in or dial out to their E.164 or URI address
- TMS support for bridges directly trunked to UC Manager is **new in TMS 14.4**

- TMS does not yet support scheduling through Conductor, which means that TS models that only support remote-managed mode cannot be scheduled by TMS[1]

TMS Scheduling on UC Manager

CTS / TX Series Endpoint Support in TMS

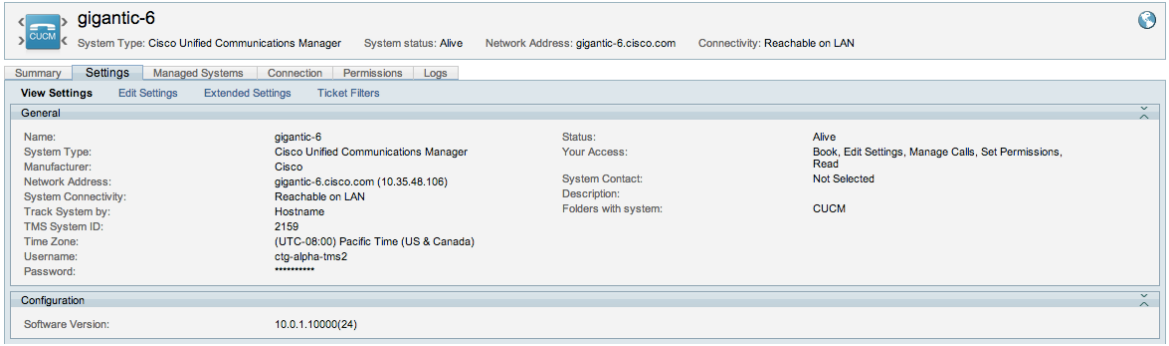
- TMS 13.1 added support for CTS Series endpoints and the One Button to Push call launch method. TMS 13.2 added support for TX Series endpoints and for CTS Native Interop Call Routing. For CTS and TX Series endpoints, which require the TelePresence Interoperability Protocol for triple-screen meetings, the following connectivity methods are applied by TMS:
  - CTS/TX to CTS/TX (direct TIP connection)
  - CTS/TX to non-TIP (standard SIP or H.323) systems will be assigned a TelePresence Server if Native Interop = No If = Yes then TMS will allow it to go direct point-to-point
  - CTS/TX in a call with more than one system will be assigned a TelePresence Server. If no TS is available, TMS will fallback to assigning an MCU
  - A TelePresence Server will always be preferred over an MCU for triple-screen systems, regardless of the **Preferred MCU Type in Routing** parameter



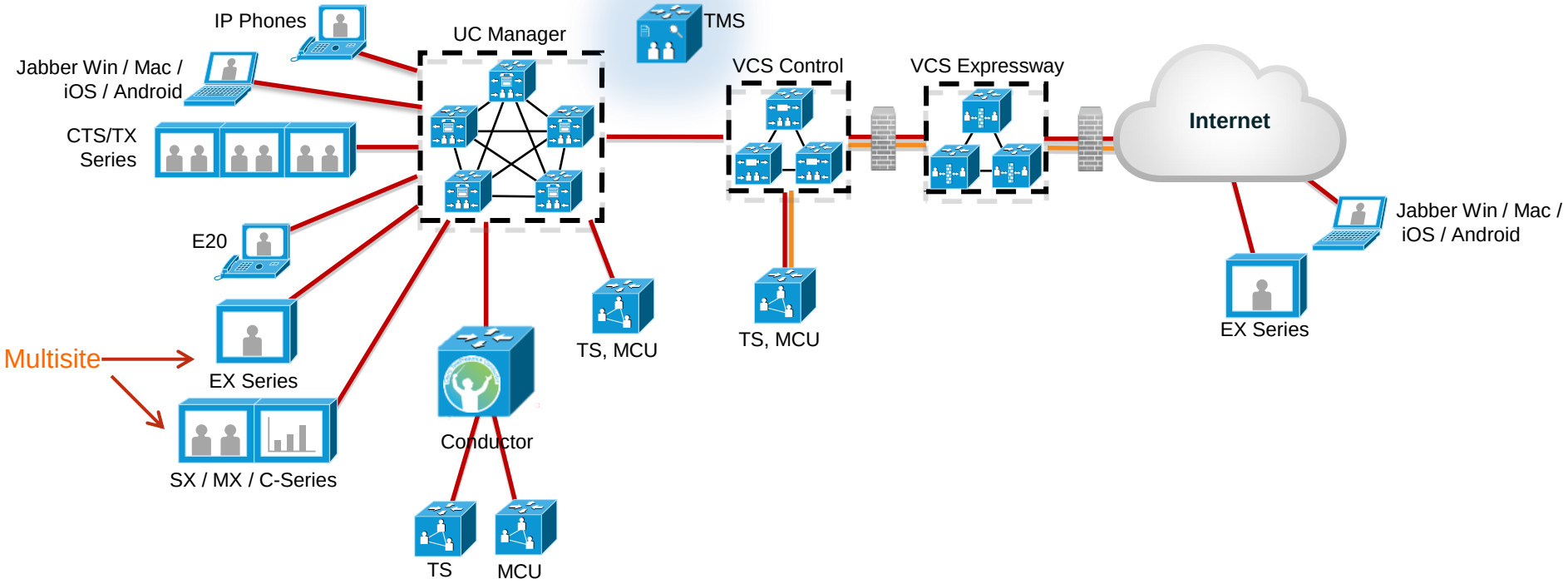
TMS Scheduling on UC Manager

TMS support for UC Manager

- To add UC Manager registered endpoints to TMS, add UC Manager to TMS first, and then discover the endpoints registered to it *(i.e. do **not** add the endpoints directly into TMS)*
- CUCM 8.6 or later is required. TMS will log into CUCM with AXL API Access permissions and return all endpoints associated with its Application User account
- CTS 1.7.0 or later is required for TMS scheduling
- When a CTS system is added to TMS, TMS can provide the following functions:
  - OBTP with TelePresence Server (or MCU if TIP is not required)
  - Schedule P2P calls
  - Read system information
  - Monitor response status and call status
  - OBTP or Auto Connect automated dial out from endpoint

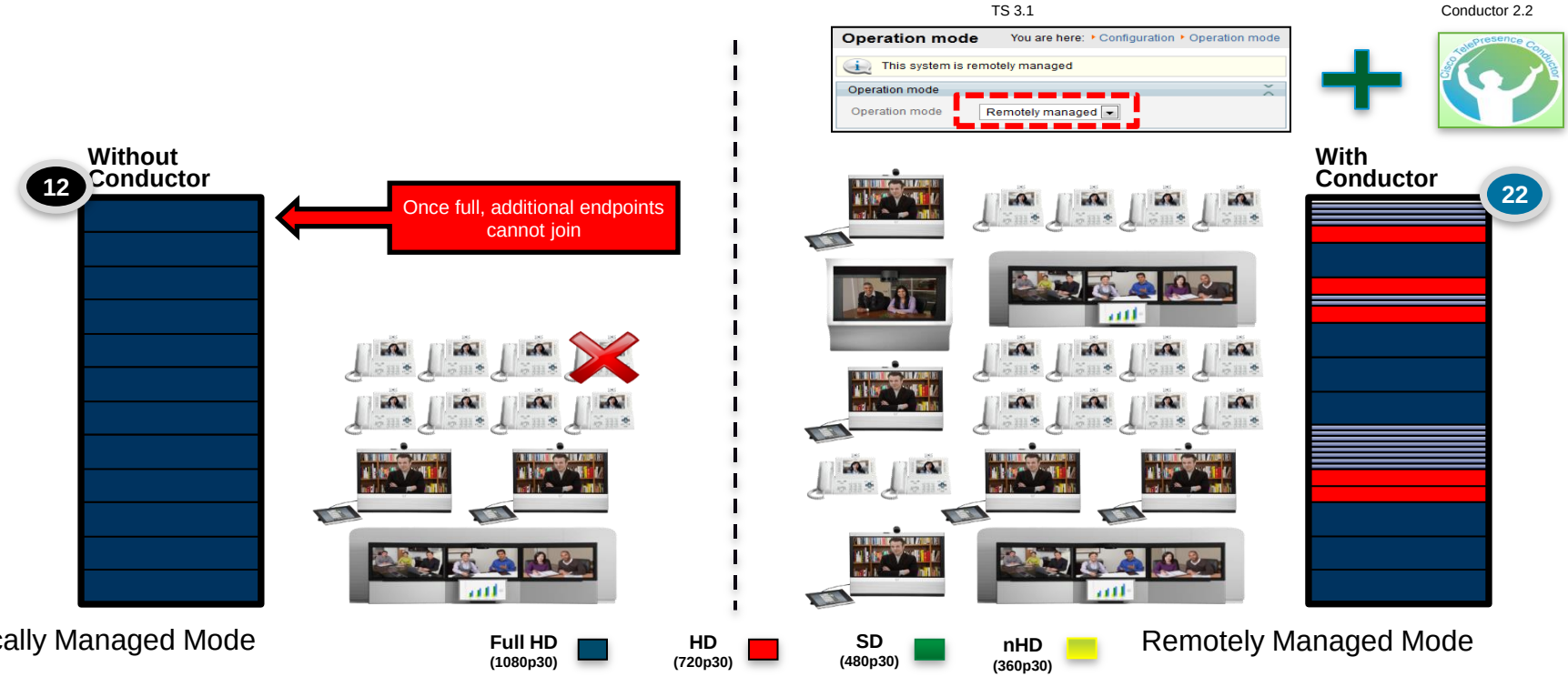


Ad Hoc / Rendezvous - Conference's



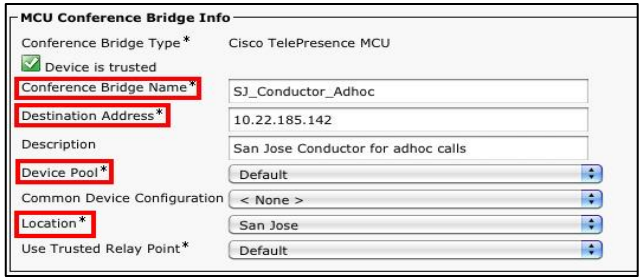
Optimised Conferencing

TelePresence Server 3.1 and Conductor XC2.2

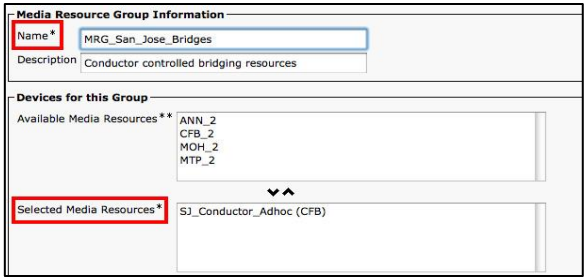


UCM Configuration – Ad Hoc

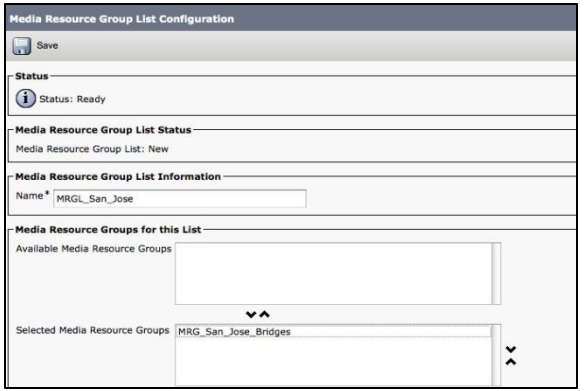
1. Add Conference Bridge



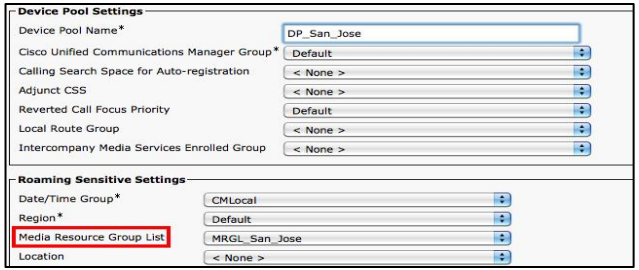
2. Add Conference Bridge To MRG



3. Add MRG to MRGL

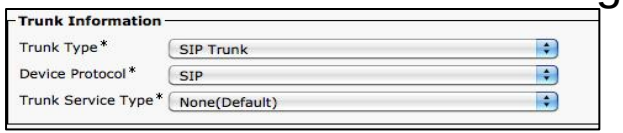


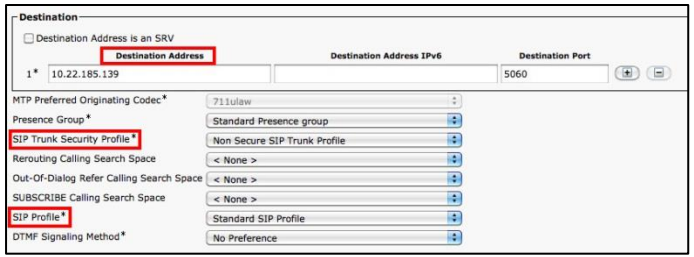
4. Add MRGL to Device Pool



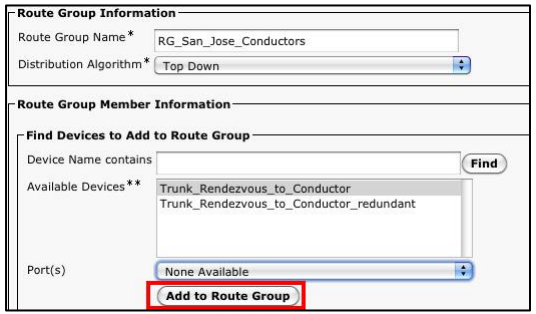
UCM Configuration – Rendezvous with Conductor

1. Add SIP trunk to the Bridge

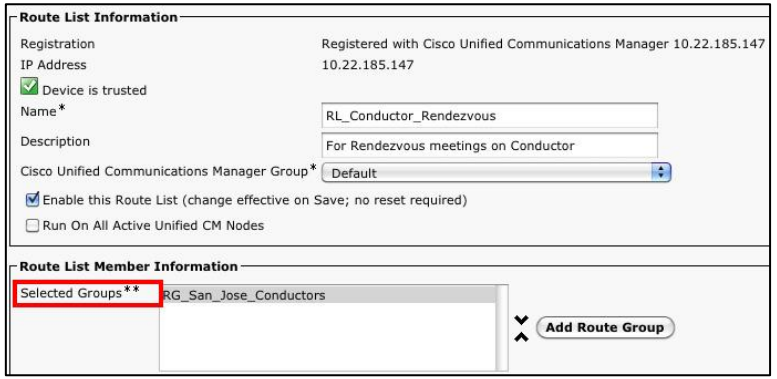




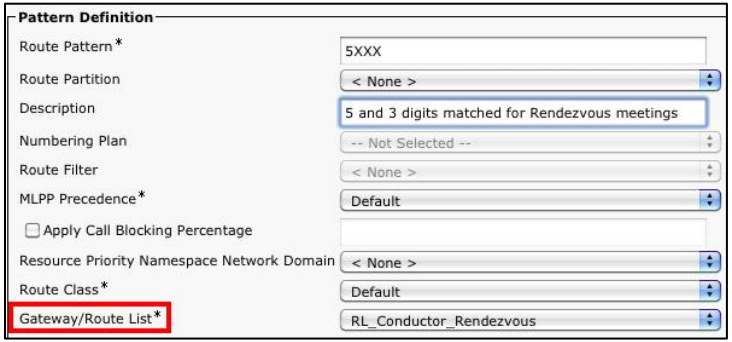
2. Add trunk to Route Group



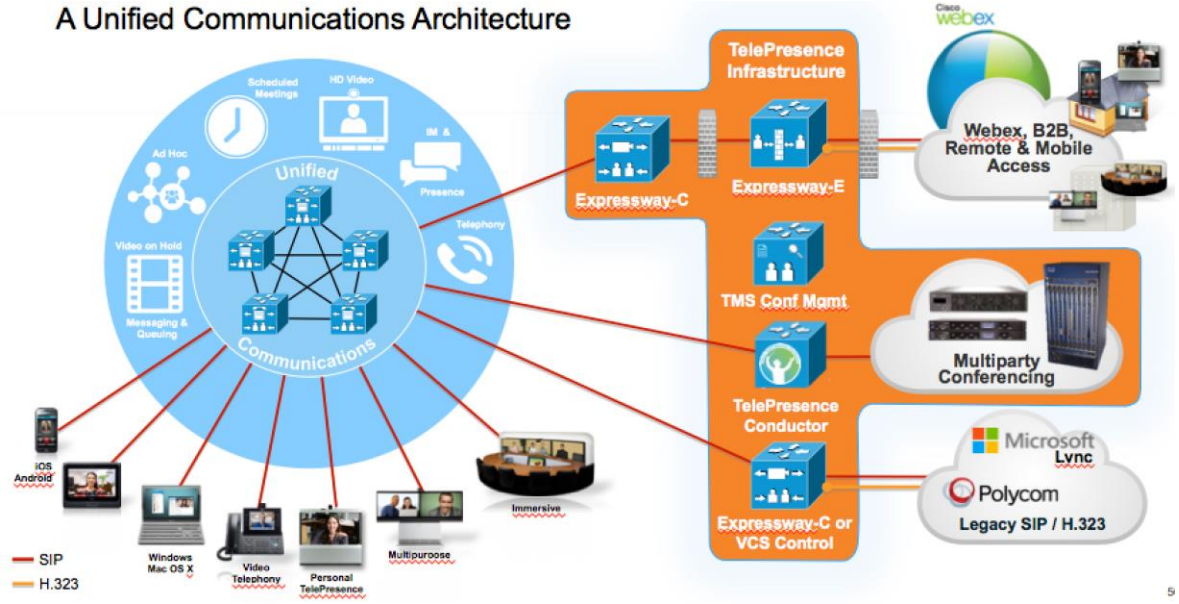
3. Add Add Route Groups to Route List



4. Add Route List for this Route Pattern



Key Takeaways



- UC Manager is Cisco's strategic call control platform for all UC, video and TelePresence endpoints and bridge resources moving forward, with Expressway providing firewall traversal and interoperability gateway functionality
- UC Manager release 8.6 is the minimum release required for most TelePresence-related features added since 2010. 9.1 or higher is strongly recommended
- VCS+TMS are still needed for older TANDBERG SIP and H.323 endpoints (such as the Classic and MXP series) and 3rd party video endpoint registration
- Different FW/NAT traversal and provisioning methods have an affect on what management and scheduling features are available. Use the right combination of methods to achieve your goals

- When using UC Manager, TMS' role is primarily for scheduling and conference coordination. Endpoint provisioning and management functionality is read only on TMS for UC Manager endpoints and TMS customers are encouraged to start using Prime Collaboration for management

Come see it in action




Many of concepts and features described in this session are being demonstrated in the **Collaboration Area** in the **World of Solutions**

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