TOMORROW starts here.

CISCO™

Cisco live!

Enable a rich conversation around content with anyone, anyhow, anywhere, any device, in a delightful way.

Video Usage is Exploding

87% of enterprises surveyed plan to add VC to their UC architecture by August of 2014.

The use of cloud video is on the rise: 22% have implemented video on a private cloud and 19% on public cloud.

Global VC and TP market totaled $735M in 2Q2013: up 6% Q/Q and 8% Y/Y.

PBX-based video system revenue doubled in 2Q13 from 2Q12, as businesses sought cost-effective ways to deploy multimedia communication.

Statistics from Infonetics Reports

Cisco Public

Cisco Success in Video

42 Million
WebEx Users with video capabilities

10 Million
Jabber video-capable clients licensed last year

$1 Billion
Cisco video business

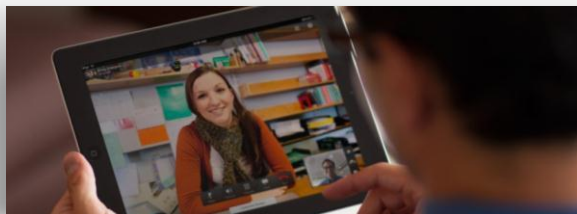**+12%**
Increase in video endpoint units sold

Cisco Public

Cisco *live!*

The Strategy to Move us Forward

As Easy as Voice

Accessible On Every Pane of Glass

Better than Being There

Cisco Public

Cisco live!

Collaboration Infrastructure
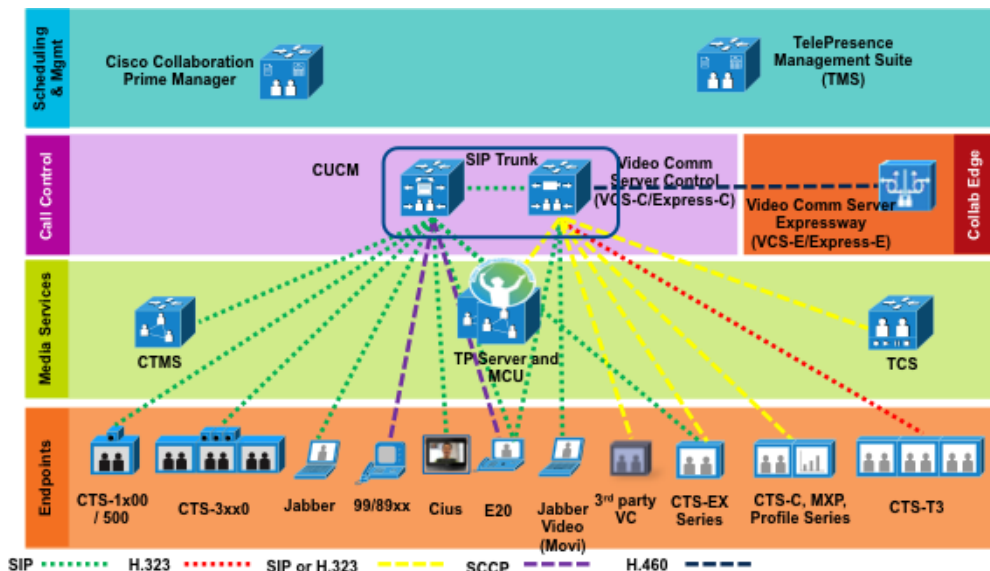
High Level Function Description
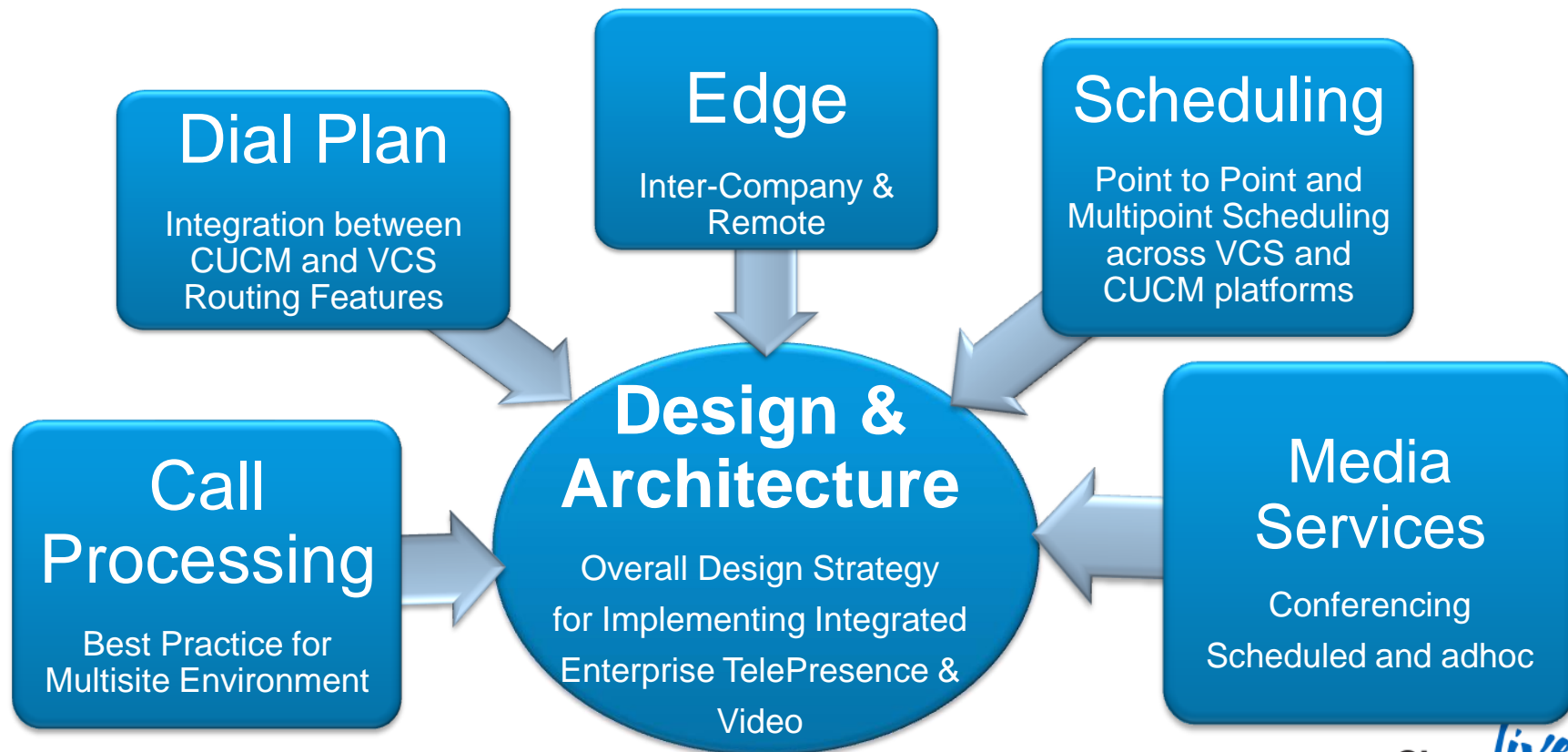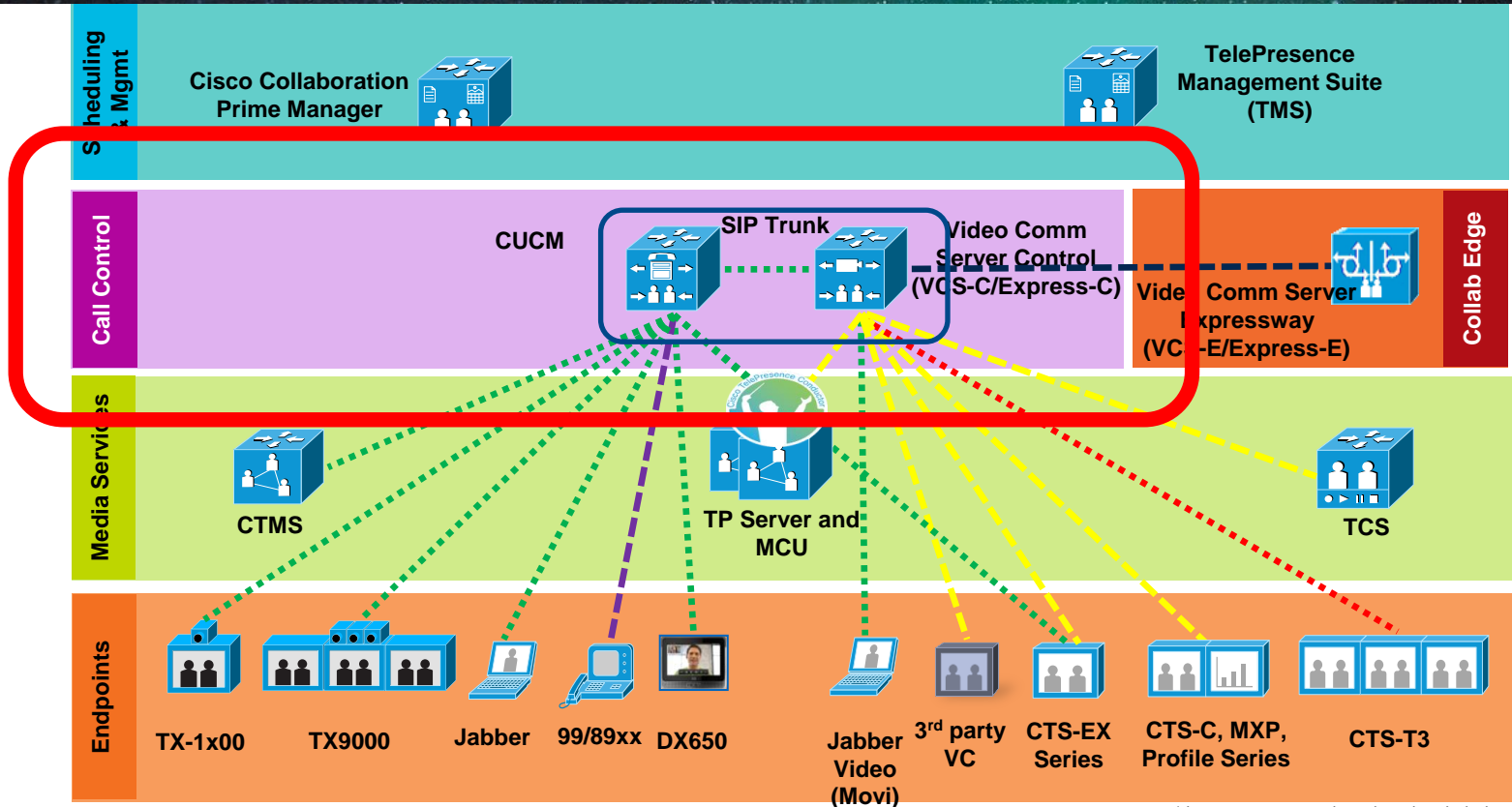
Dial Plan

Integration between CUCM and VCS Routing Features

Edge

Inter-Company & Remote

Scheduling

Point to Point and Multipoint Scheduling across VCS and CUCM platforms

Call Processing

Best Practice for Multisite Environment

Design & Architecture

Overall Design Strategy for Implementing Integrated Enterprise TelePresence & Video

Media Services

Conferencing Scheduled and adhoc

Cisco Public

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Architecture

Fundamentals – Key Infrastructure Pieces

VCS adds important TP enablement to UC collaboration

CUCM Family

VCS Family

Trunk Plus

- Registration and call control for CTS, IP phones, UC clients (Jabber) mobility clients, EX, MX, C Series Endpoints
- 60,000 lines per cluster, no real limitation on concurrent calls
- Supports a variety of voice and video protocols, SCCP, SIP, H.323 & MGCP
- Proven robustness, reliability and scalability

- **End Point management**
- **Centralised Dial Plans**
- **CDRs**
- **Security**

- Advanced video and telepresence capabilities
- Standards based registration, call control and firewall traversal for SIP & H.323 Devices and Infrastructure devices
- Capacity per appliance:
  - 2,500 registrations
  - Up to 500 non traversal calls
  - Up to 100 traversal calls
- Up to 6 VCS Control in a cluster
  (4 active, 2 standby)

UC Richness ← Dual Approach → **TP Richness**

Ongoing feature enhancement across the portfolio

Cisco *live!*

Evolution of Signalling & Call Control Architecture

TelePresence Application Servers

CUCM

SIP registrations

SIP trunk

SIP trunk

SIP trunk

CUCM 10 is here.

Expressway™ Firewall Traversal

Advanced Conferencing Services (TelePresence Conductor)

H.323 Gatekeeper H.323-to-SIP GW SIP grooming IP PBX trunking (video)

PBX, Mobile and Remote Worker

Distributed Conferencing Services

3rd Party/H.323 video endpoints
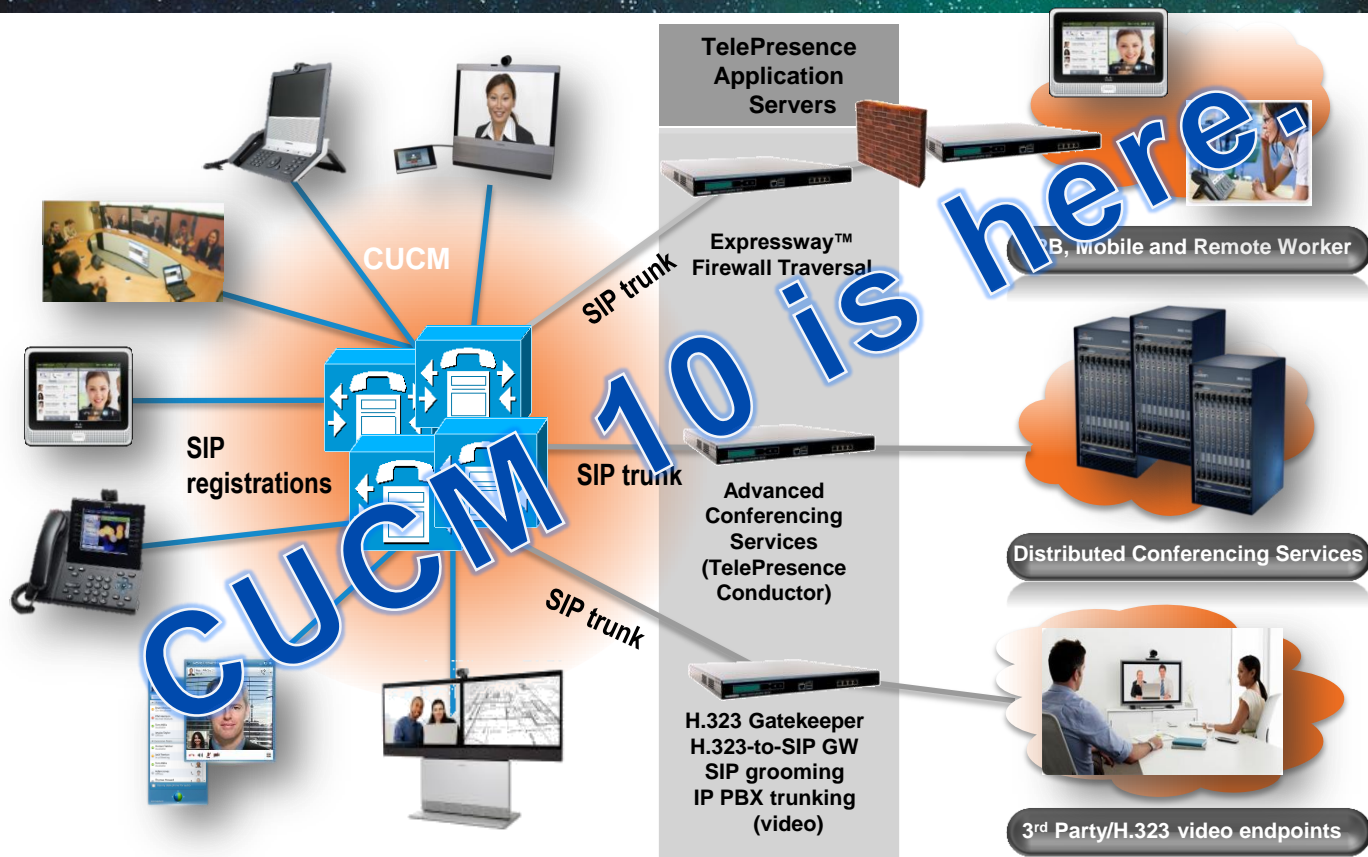
Where to Register? CUCM or VCS?

Register to VCS when these features are required

- Encryption

- Ad hoc conferencing using Multiway – Add Participant and Join features

- Alpha-numeric URI registration

- H.323 registration

- SIP/H.323 Interworking

- IPv6 (Roadmap)

- Secure Firewall Traversal using H.460.18/19
  (use Cisco 800 series IOS router Virtual Office solution for endpoints on UCM)

- TMS scheduling and management of EX/SX/MX/C Series on UCM

- Cisco Jabber Video (Movi) support

Cisco Public

Call Control
Terminology

CUCM	VCS
Directory Number (DN)	Device ID
Route Pattern	Search Rule
Translation Pattern	Search Rule or Transform
Trunk	Neighbour or DNS Zone
Cisco Unified Mobility	FindMe
Locations and Regions	Links and Pipes
Ad hoc Conferencing	Multiway and Conductor

Cisco Public

Call Control

Connecting CUCM and VCS Clusters
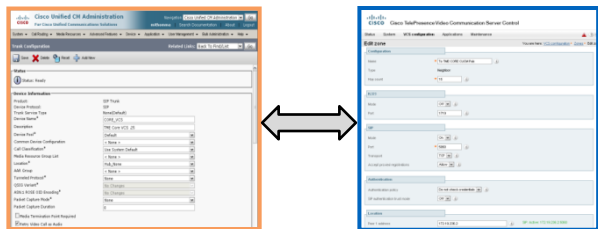
- SIP trunk connects CUCM call control with VCS call control
- H.323, SCCP, MGCP translated to SIP before being sent to VCS call control cluster
- Encryption supported (some dependence on where endpoints are registered)
- Some of the recent CUCM features which help functionality of SIP connection to VCS include:
  - Replace IP address with Organisational Top Level Domain in call signalling
  - Support of 80-bit authentication tag for encryption in addition to 32-bit

CTS 1100

CTS 3010

CUCM Cluster

VCS Cluster

SIP

Dual Profile 52

EX90

SIP

H.323
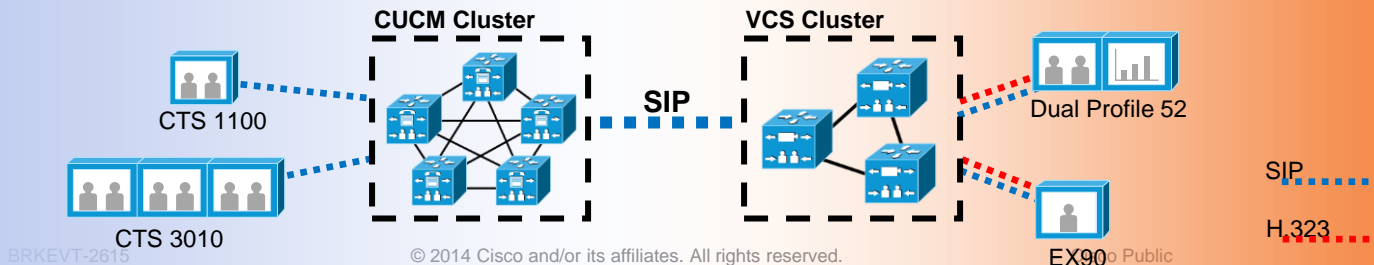
Call Processing
How to connect CUCM and VCS clusters

CUCM to VCS:
- **Intercluster SIP trunks using DNS SRV**
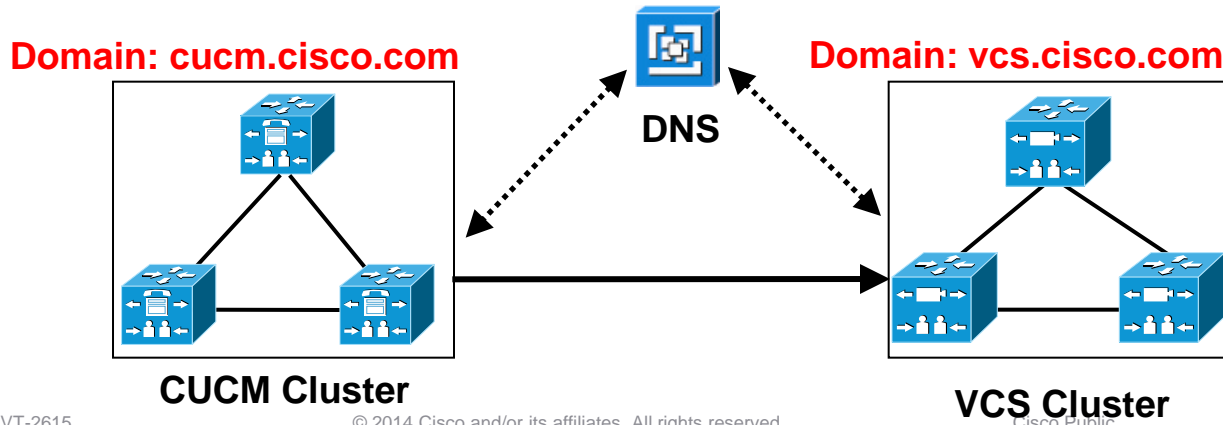- **Intercluster SIP trunks using IP addr**

VCS to CUCM:
- **Cluster trunking using DNS**
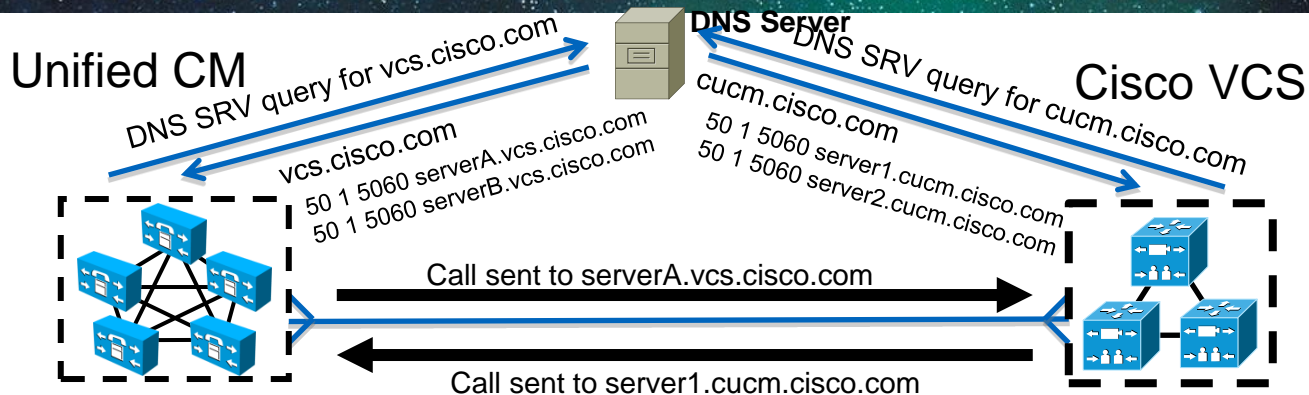- **Cluster trunking using neighbour zone**

Cisco Public

CUCM to VCS
Option 1: Cluster trunking using DNS SRV

- The VCS cluster needs to be addressable via a DNS SRV record

- Each peer should be set with an equal priority and weight in SRV

- Configure the SIP Trunk on the CUCM with following information:
  - Destination address: <Domain of VCS cluster> (defined as SRV)
  - Destination address is an SRV: Select this check box

Domain: cucm.cisco.com

DNS

Domain: vcs.cisco.com

CUCM Cluster

VCS Cluster

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SIP Trunk with DNS SRV

Unified CM

DNS SRV query for vcs.cisco.com

DNS Server

DNS SRV query for cucm.cisco.com

Cisco VCS

vcs.cisco.com
50 1 5060 serverA.vcs.cisco.com
50 1 5060 serverB.vcs.cisco.com

cucm.cisco.com
50 1 5060 server1.cucm.cisco.com
50 1 5060 server2.cucm.cisco.com

Call sent to serverA.vcs.cisco.com

Call sent to server1.cucm.cisco.com

```
_sip._tcp.cucm.cisco.com      IN  SRV  50  1  5060
server1.cucm.cisco.com
                              IN  SRV  50  1  5060
server2.cucm.cisco.com
_sip._tcp.vcs.cisco.com       IN  SRV  50  1  5060  serverA.vcs.cisco.com
                              IN  SRV  50  1  5060  serverB.v

server1.cucm.cisco.com        IN   A   10.10.10.1
server2.cucm.cisco.com        IN   A   10.10.10.2
serverA.vcs.cisco.com         IN   A   10.10.20.1
serverB.vcs.cisco.com         IN   A   10.10.20.2
```
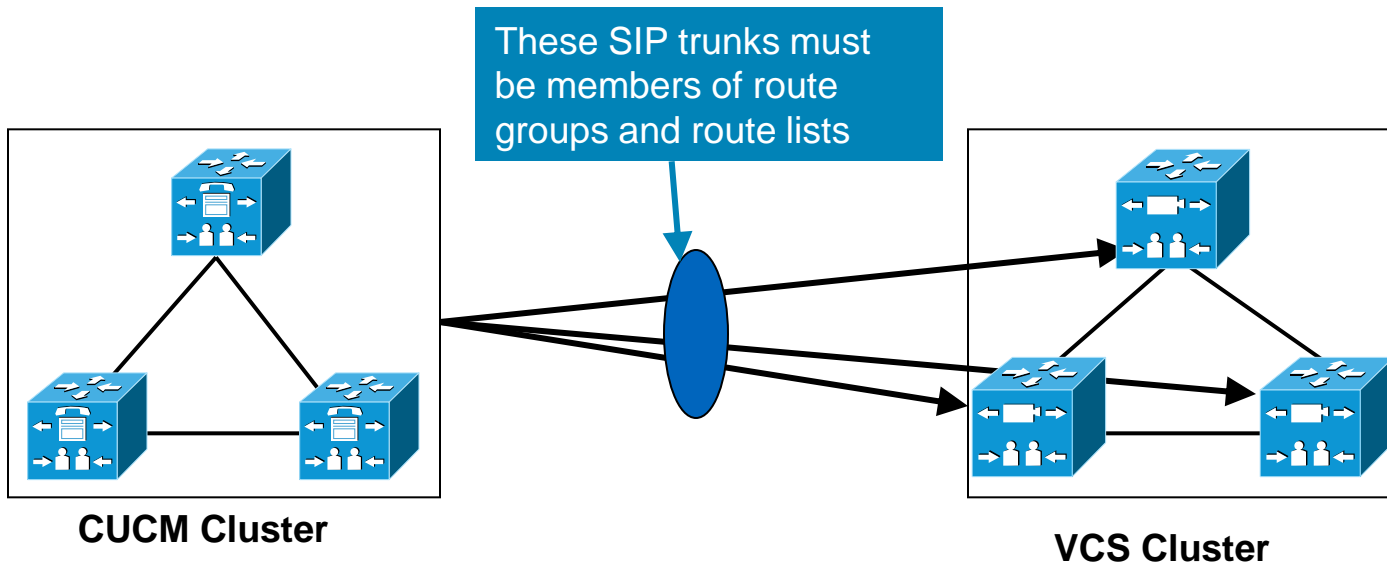
Weight

Priority

- SIPS or SIP service
- TCP or UDP protocol
- DNS SRV records provide load balancing and redundancy
- DNS server needs to be highly available
- Options ping for reachability

CUCM to VCS
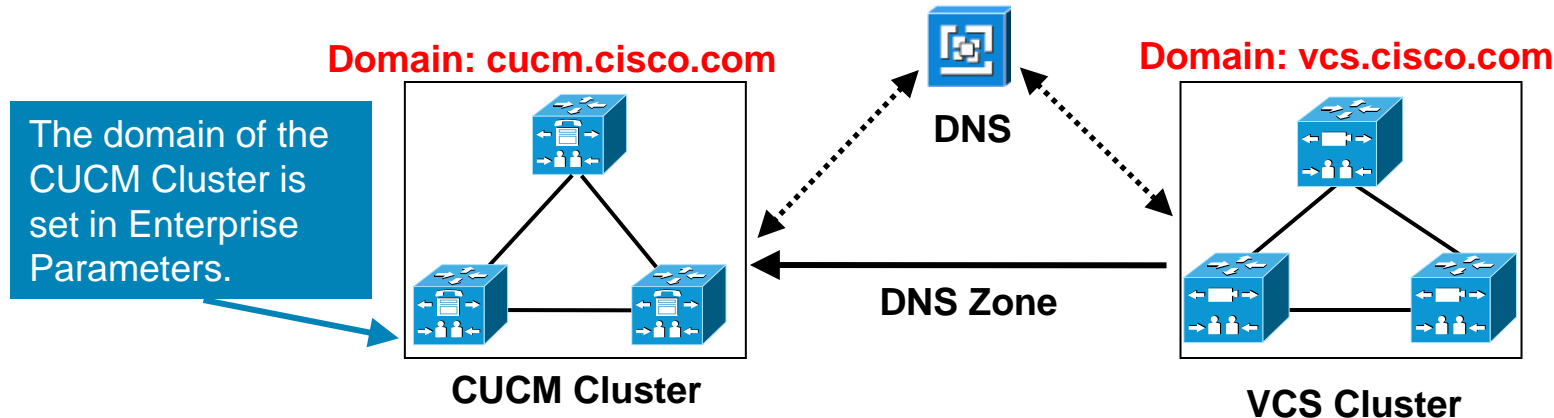Option 2: Cluster trunking using IP addresses

- Can also set up multiple SIP trunks to each peer in the VCS cluster.

- Configure the SIP Trunks on the CUCM with following information:
  - Destination address: <IP address of VCS> or <DNS address of VCS>

These SIP trunks must be members of route groups and route lists

CUCM Cluster

VCS Cluster

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VCS to CUCM
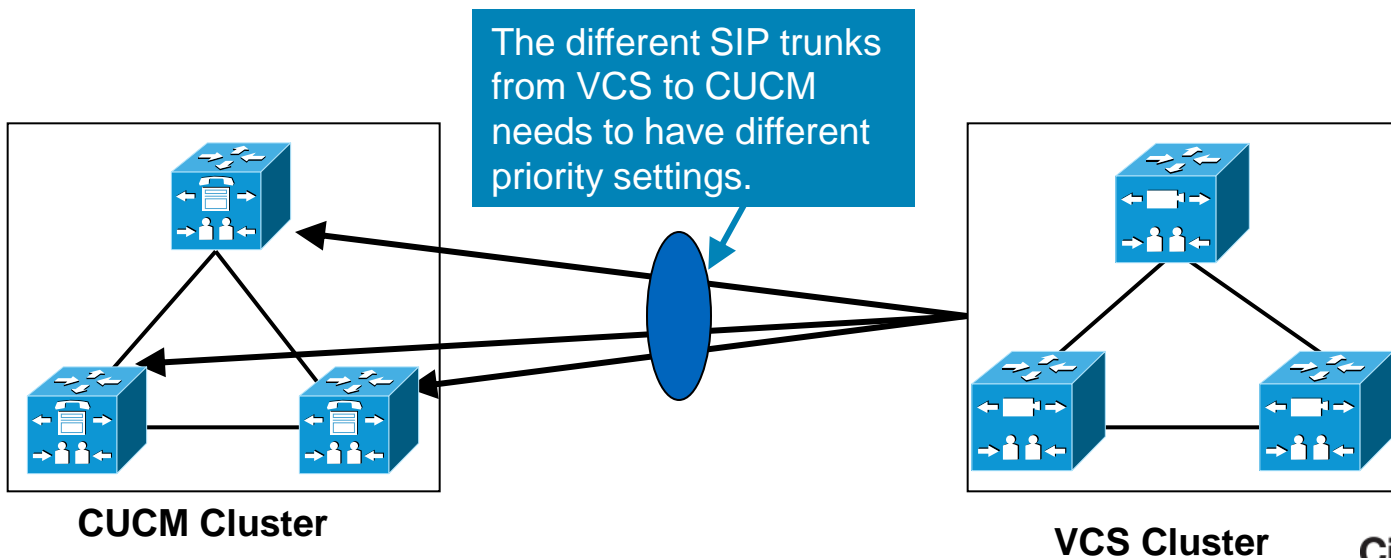## Option 1: Cluster trunking using DNS Zone

- Create a SIP DNS Zone from the VCS to the CUCM cluster.

- For routing of calls DNS and SRV lookups are utilised.

- The VCS and the CUCM can not be part of the same subdomain
    - Need to have different SRV records

Domain: cucm.cisco.com

DNS

Domain: vcs.cisco.com

The domain of the CUCM Cluster is set in Enterprise Parameters.

CUCM Cluster

DNS Zone
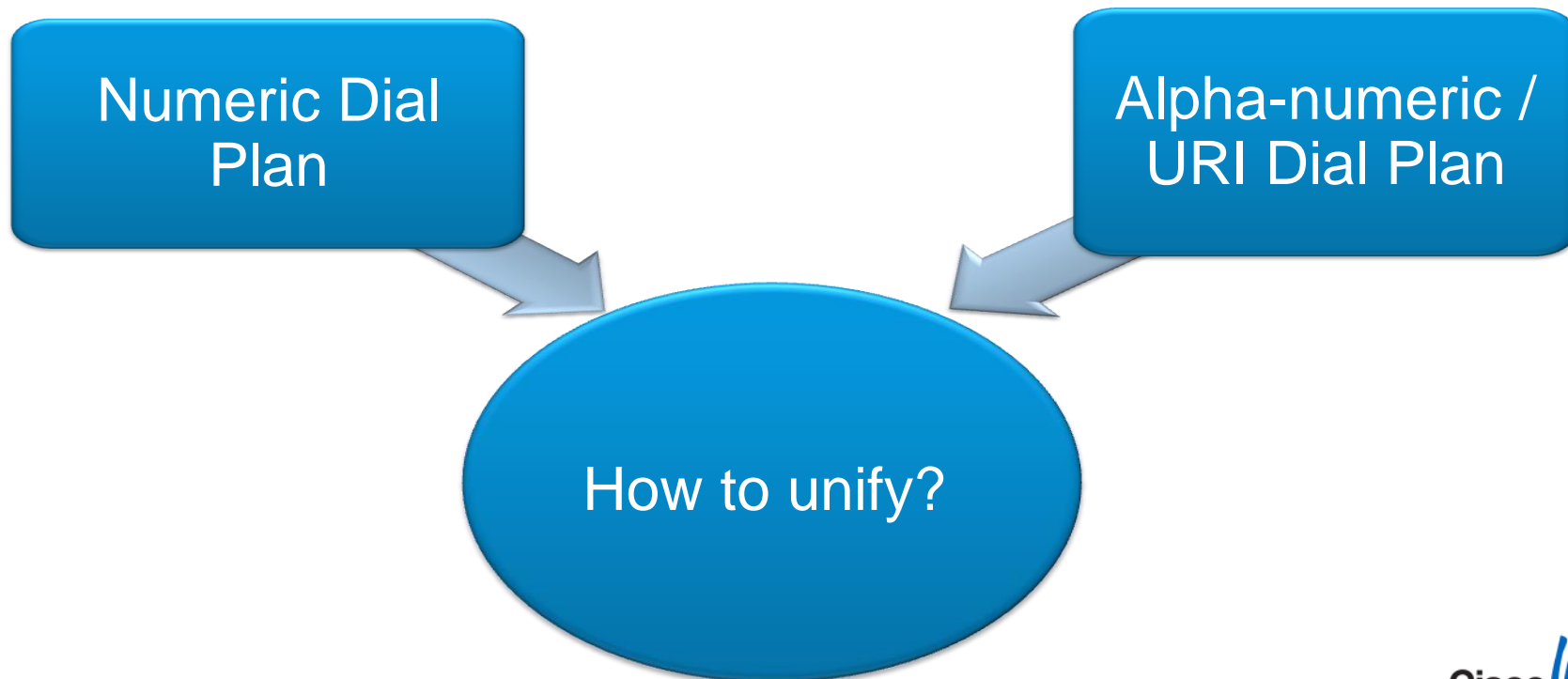
VCS Cluster

VCS to CUCM
Option 2: Cluster trunking user Neighbouring Zone

- Create a SIP trunk from the VCS to each CUCM in the CUCM cluster.

- Use search rules to query only one neighbour in a priority order
  - To avoid forking to all CUCMs

The different SIP trunks from VCS to CUCM needs to have different priority settings.

CUCM Cluster

VCS Cluster

Cisco Public

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Dial Plan

Two major dial plan types

Numeric Dial Plan

Alpha-numeric / URI Dial Plan

How to unify?

Cisco Public

Call Control

Dial Plan – E.164 and URI's

- Both are relevant
  - E.164 addresses allow easy integration with PSTN and audio-only endpoints
  - URI addresses allow easier B2B communications by using domain names and are generally more intuitive for end users to operate

- Past: E.164 is usually used in voice network and H.323, URI with SIP

- Future: Converges of collaboration services, IM, voice, video, social

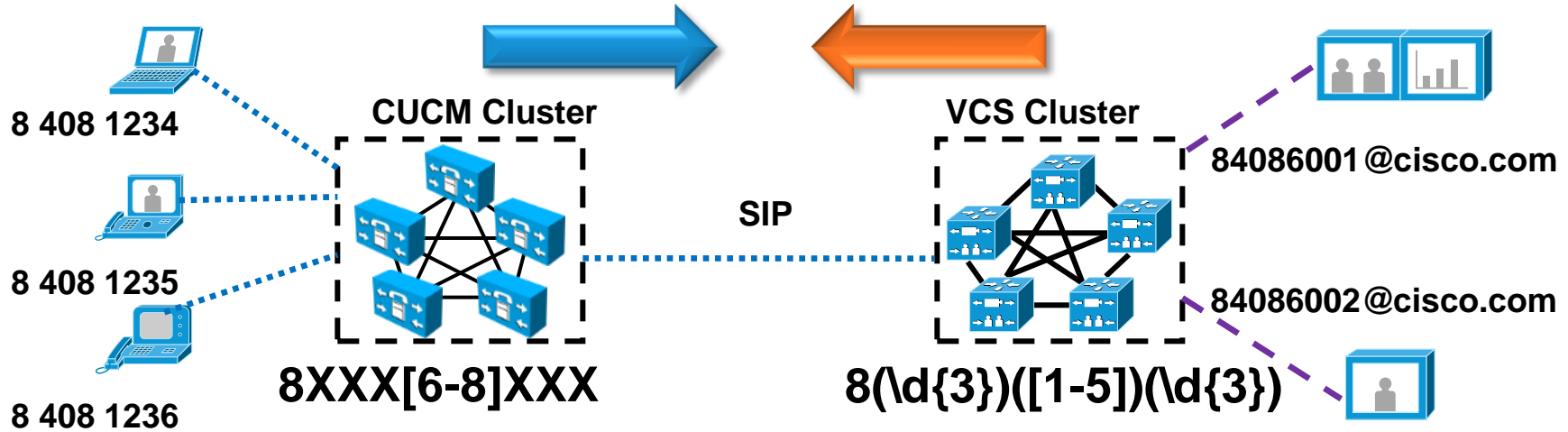- End point and infrastructure will need to support both address schemes.

Cisco Public

Call Control
Dial Plan – E.164 and URI's

Address Scheme	Example	Cisco Unified CM Registration	VCS Registration
E.164	14081234567	Supported as Directory Number (DN)	H.323 E.164 Registration
E.164 Based URI	14081234567@cisco.com	Supported from CUCM 9	Supported H.323id / SIP URI
Alphanumerical URI	john.doe@cisco.com	Supported from CUCM 9	Supported H.323id / SIP URI

Cisco Public

Dial Plan Between CUCM and VCS

San Jose CUCM Devices

San Jose VCS Devices

CUCM Cluster

VCS Cluster

SIP

8 408 1234

8 408 1235

8 408 1236

84086001@cisco.com

84086002@cisco.com

8XXX[6-8]XXX

8(\d{3})([1-5])(\d{3})

CUCM Route Pattern:

Called # with 8
+ site code
+ [6-8] as the starting digit in the 4 digit ext
= routed to the VCS

VCS Search Rule:

Called # with 8
+ site code
+ [1-5] as the starting digit in the 4 digit short code
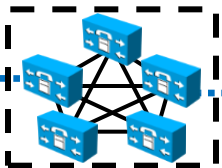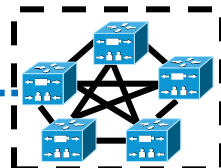= routed to the CUCM

Calling from CUCM to VCS

CUCM Cluster

VCS Cluster

8XXX[6-8]XXX

8 408 1235

84086001@cisco.com

Dials 84086001

1. The CUCM routes 8XXX[6-8]XXX to the VCS

2. The CUCM uses DNS to locate the destination address of the VCS Cluster

3. Called URI = 84086001@cisco.com, the CUCM adds the OTLD (@cisco.com)

1. VCS to transform called URI to 84086001@cisco.com

2. The VCS will find a local match and send the call to the VC endpoint.
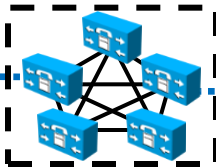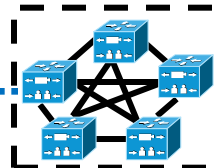
Cisco Public

Cisco live!

Calling from VCS to CUCM

CUCM Cluster

VCS Cluster

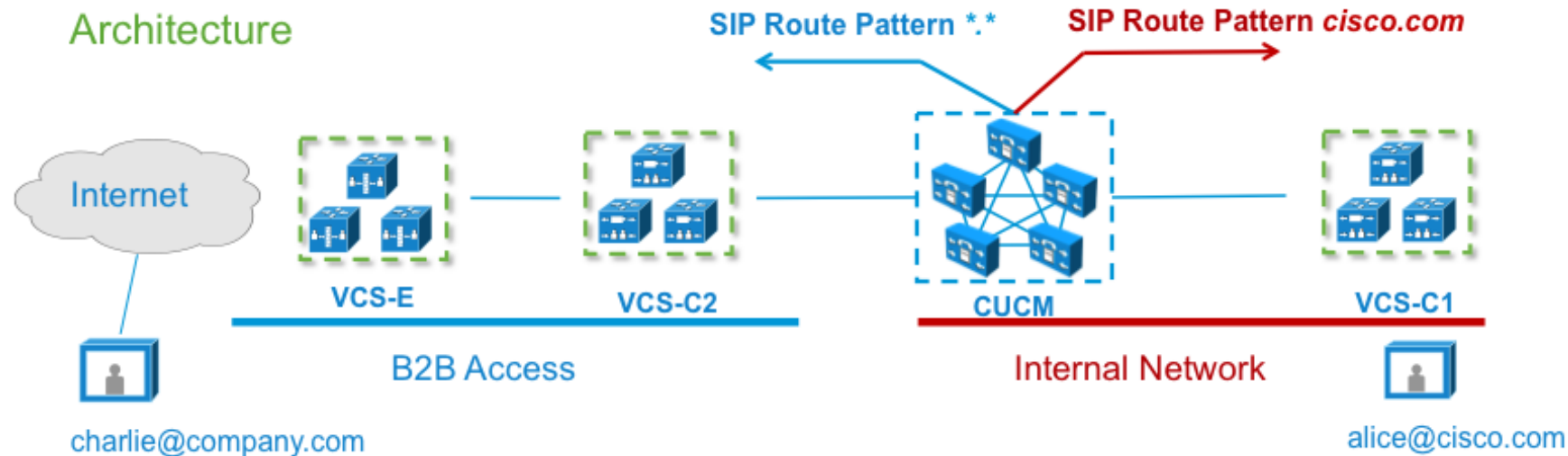**8(\d{3})([1-5])(\d{3})@cisco.com**

8 408 1235

84086001@cisco.com

Dials 84081235@cisco.com

1. No local match for this number on VCS.

2. Match found on the DNS Zone to the CUCM Cluster.

3. The VCS uses DNS to locate the destination address of the CUCM Cluster

1. The call will arrive at CUCM as 84081235@cisco.com

2. The CUCM will find a local match for 84081235

3. Call routed to the destination endpoint.

Cisco Public

CUCM 9+ and VCS Dial Plan

Architecture

SIP Route Pattern *.*

SIP Route Pattern *cisco.com*

Internet

VCS-E   VCS-C2   CUCM   VCS-C1

B2B Access   Internal Network

charlie@company.com   alice@cisco.com
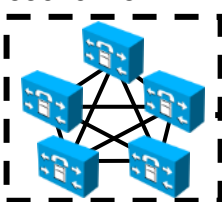
- CUCM will send <alias>@cisco.com to VCS-C1 only if it is not in its internal database

- CUCM will send <alias>@company.com to VCS-C2 for B2B

- If VCS-C1 and VCS-C2 are co-located, they might be substituted by a single VCS. In this case a single SIP Route Pattern *.* is needed

CUCM and VCS Dial Plan
Call from CUCM to VCS: Numbers with Route Pattern

+39020123XXXX

+39071012XXXX

User dials *+390710123456* or *+390710123456@cisco.com**
Route Pattern +39071012XXXX to VCS

VCS-C

SIP Information

Destination

☐ Destination Address is an SRV

	Destination Address	Destination Port
1*	vcs1.cisco.com	5060
2	vcs2.cisco.com	5060

+390710123456@vcs1.cisco.com:5060

SIP Information

Destination

☐ Destination Address is an SRV

	Destination Address	Destination Port
1*	10.10.10.10	5060
2	10.10.10.11	5060
3		

+390710123456@10.10.10.10:5060

SIP Information

Destination

☑ Destination Address is an SRV

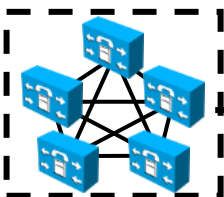|	Destination Address	Destination Port
1*	cisco.com	0

+390710123456@cisco.com:5060

* cisco.com is the OTLD

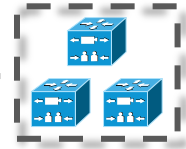Cisco Public

CUCM and VCS Dial Plan

Call from CUCM to VCS: Numbers with SIP Route Pattern

+39020123XXXX

User dials +390710123456@cisco.com*
SIP Route Pattern *cisco.com* to VCS
No Route Pattern configured!

+39071012XXXX

VCS-C

SIP Information

Destination

☐ Destination Address is an SRV

	Destination Address	Destination Port
1*	vcs1.cisco.com	5060
2	vcs2.cisco.com	5060

SIP Information

Destination

☐ Destination Address is an SRV

	Destination Address	Destination Port
1*	10.10.10.10	5060
2	10.10.10.11	5060

SIP Information

Destination

☑ Destination Address is an SRV

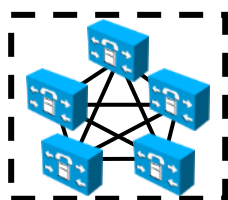|	Destination Address	Destination Port
1*	cisco.com	0

+390710123456@cisco.com:5060

* cisco.com is the OTLD

Cisco *live!*
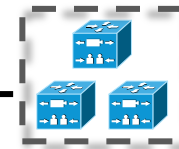
CUCM and VCS Dial Plan
Call from CUCM to VCS: External Numbers with SIP Route Pattern for B2B

+39020123XXXX

+39071012XXXX

User dials +440123456789@domain.com*
SIP Route Pattern *.* to VCS

VCS-C

```
┌─ SIP Information ─────────────────────────────────┐
│  ┌─ Destination ──────────────────────────────┐   │
│  │  ☐ Destination Address is an SRV            │   │
│  │       Destination Address    Destination Port│   │
│  │  1*  vcs1.cisco.com           5060           │   │
│  │  2   vcs2.cisco.com           5060           │   │
└──┴──────────────────────────────────────────────┴──┘
```

```
┌─ SIP Information ─────────────────────────────────┐
│  ┌─ Destination ──────────────────────────────┐   │
│  │  ☐ Destination Address is an SRV            │   │
│  │       Destination Address    Destination Port│   │
│  │  1*  10.10.10.10             5060            │   │
│  │  2   10.10.10.11             5060            │   │
└──┴──────────────────────────────────────────────┴──┘
```

```
┌─ SIP Information ─────────────────────────────────┐
│  ┌─ Destination ──────────────────────────────┐   │
│  │  ☑ Destination Address is an SRV            │   │
│  │       Destination Address    Destination Port│   │
│  │  1*  cisco.com                0             │   │
└──┴──────────────────────────────────────────────┴──┘
```
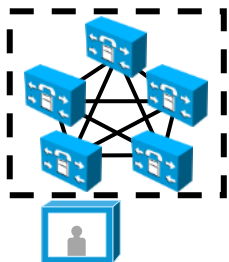
+440123456789@domain.com:5060

* domain.com is an external domain

CUCM and VCS Dial Plan
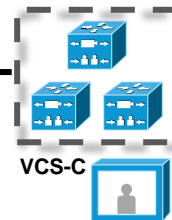Call from CUCM to VCS: Alphanumeric SIP URIs

+39020123XXXX

+39071012XXXX

vcs-c

alice@cisco.com

Alice dials bob@cisco.com* or bob
SIP Route Pattern *cisco.com* to VCS

bob@cisco.com

SIP Information

Destination

☐ Destination Address is an SRV

Destination Port

SIP Information

Destination

☐ Destination Address is an SRV

	Destination Address	Destination Port
1*		

SIP Information

Destination

☑ Destination Address is an SRV

	Destination Address	Destination Port
1*	cisco.com	0
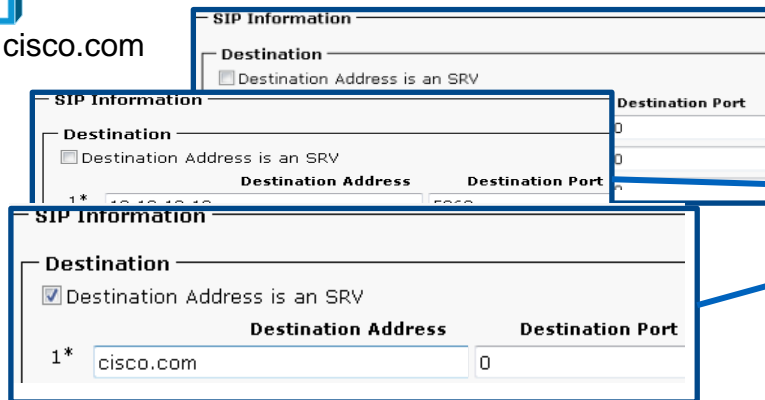
bob@cisco.com:5060

* cisco.com is the OTLD

CUCM and VCS Dial Plan
CUCM Routing Summary to non-local CUCM destinations

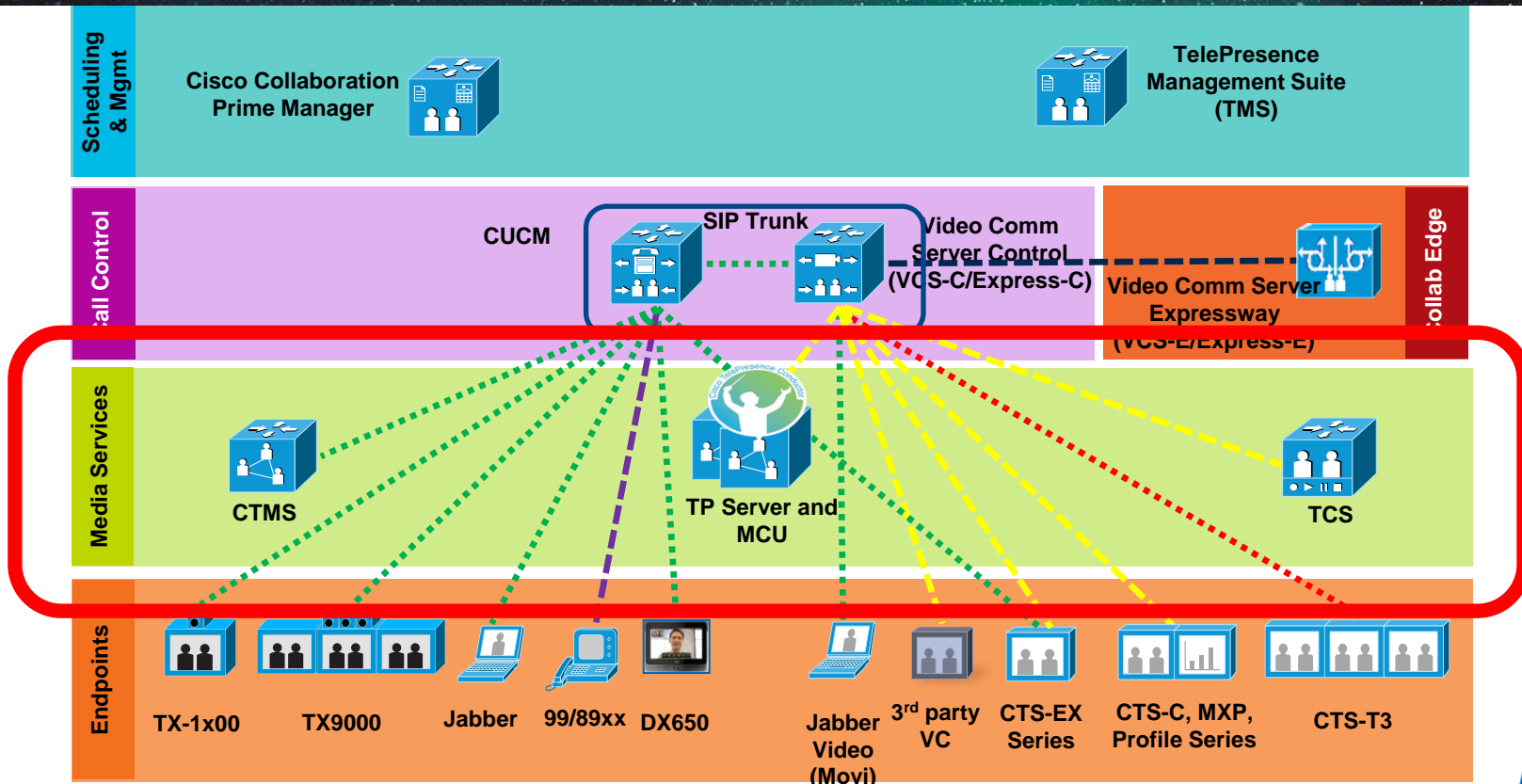|	Route Pattern	SIP Route Pattern	Result
Number **123**	Configured and matched	*Configured, but not matched*	Depends on trunk configuration **123@10.10.10.1:5060** **123@vcs1@cisco.com:5060** **123@cisco.com:5060**
Number@domain **123@cisco.com** **456@domain.com**	Configured and matched **123@cisco.com**	*Configured, but not matched*	Depends on trunk configuration **123@10.10.10.1:5060** **123@vcs1.cisco.com:5060** **123@cisco.com:5060**
	Not Configured	Configured and matched **123@cisco.com** **456@domain.com**	number@domain **123@cisco.com:5060** **456@domain.com:5060**
Alias **abc**	*Configured, but not matched*	Configured and matched	alias@domain.com **abc@cisco.com**
Alias@domain **abc@cisco.com**	*Configured, but not matched*	Configured and matched	alias@domain.com **abc@cisco.com**

Creating a Unified Call Platform

Endpoints Can Now Be Deployed…

UC endpoints

UC Manager

VCS Control

VCS Expressway

Internet

TX

here…

DX

EX

C-Series / MX200

here…

EX

E20

Movi

C-Series / MX200

and here…

DX

EX

Jabber
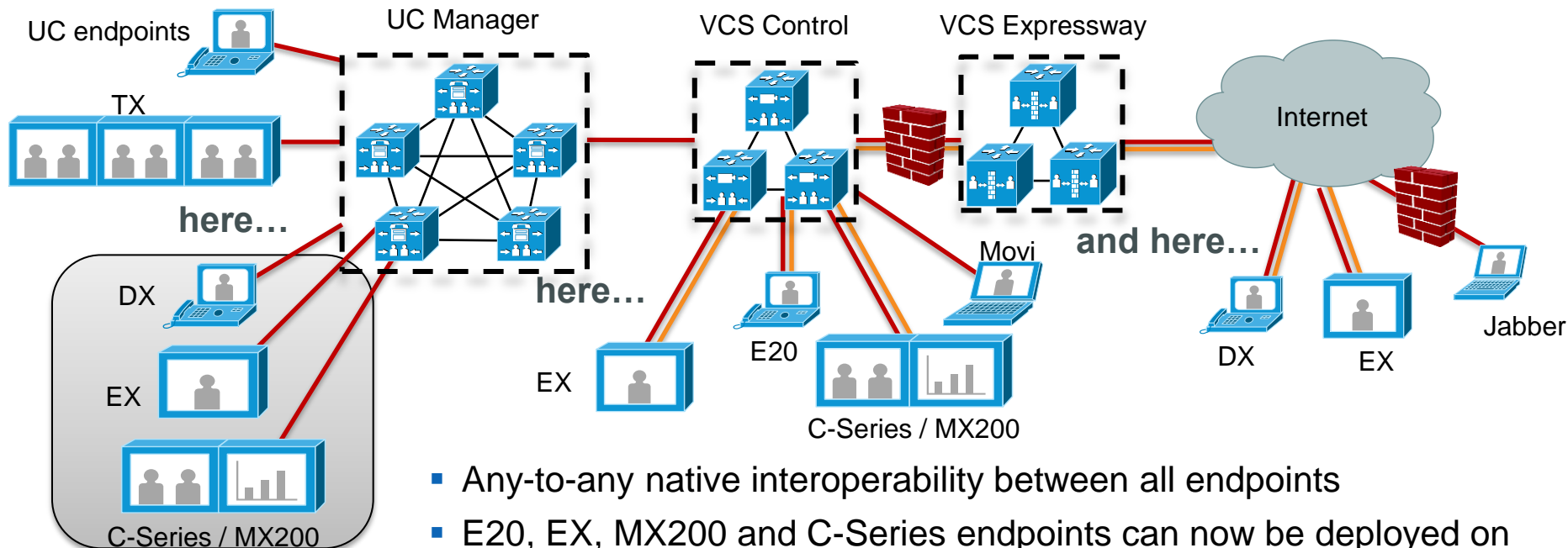
- Any-to-any native interoperability between all endpoints
- E20, EX, MX200 and C-Series endpoints can now be deployed on CUCM
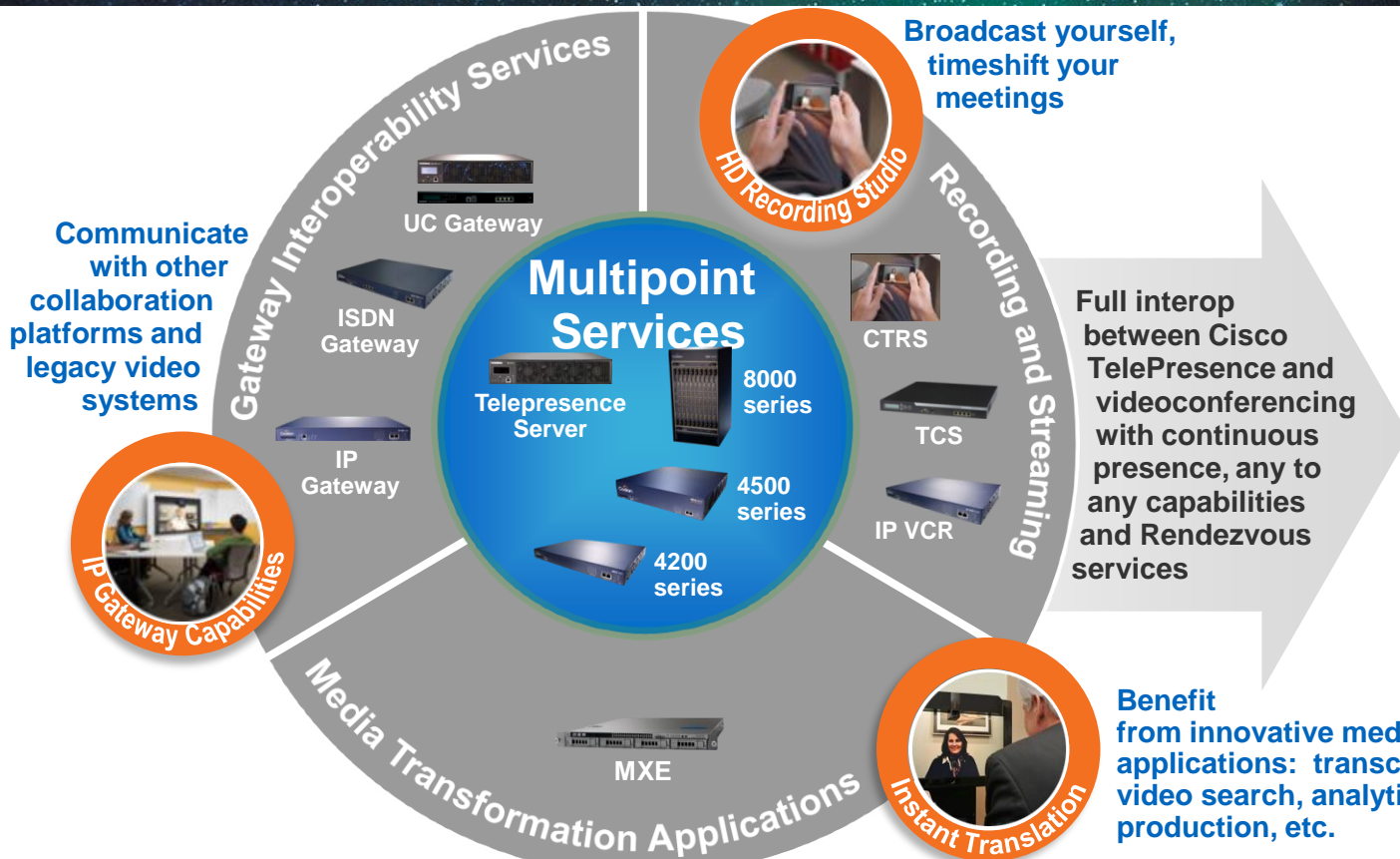- CUCM-VCS SIP Trunking enhancements for maximum interoperability

SIP
H.323

Cisco *live!*

Architecture

Scheduling & Mgmt

Cisco Collaboration Prime Manager

TelePresence Management Suite (TMS)

Call Control

CUCM

SIP Trunk

Video Comm Server Control (VCS-C/Express-C)

Video Comm Server Expressway (VCS-E/Express-E)

Collab Edge

Media Services

CTMS

TP Server and MCU

TCS

Endpoints

TX-1x00   TX9000   Jabber   99/89xx   DX650   Jabber Video (Movi)   3rd party VC   CTS-EX Series   CTS-C, MXP, Profile Series   CTS-T3

SIP	H.323	SIP or H.323	SCCP	H.460

*Icons are representative only and not inclusive of the full set of endpoints and infrastructure

Services Offered at Media Services Layer

Gateway Interoperability Services

Recording and Streaming

Media Transformation Applications

Multipoint Services

- Telepresence Server
- 8000 series
- 4500 series
- 4200 series

UC Gateway

ISDN Gateway

IP Gateway

CTRS

TCS

IP VCR

MXE

HD Recording Studio

IP Gateway Capabilities

Instant Translation

Communicate with other collaboration platforms and legacy video systems

Broadcast yourself, timeshift your meetings

Full interop between Cisco TelePresence and videoconferencing with continuous presence, any to any capabilities and Rendezvous services

Benefit from innovative media applications: transcoding, video search, analytics, post production, etc.

Cisco Public

Cisco live!

Conferencing

- Multipoint Meeting = Conference
- Used to connect if there are more than 2 participants
  - Most often just video terminals (endpoints)
  - Sometimes also used in other use cases (e.g. recording)
- Different Visual Experiences (ActivePresence, Advanced CP, Voice Switched)
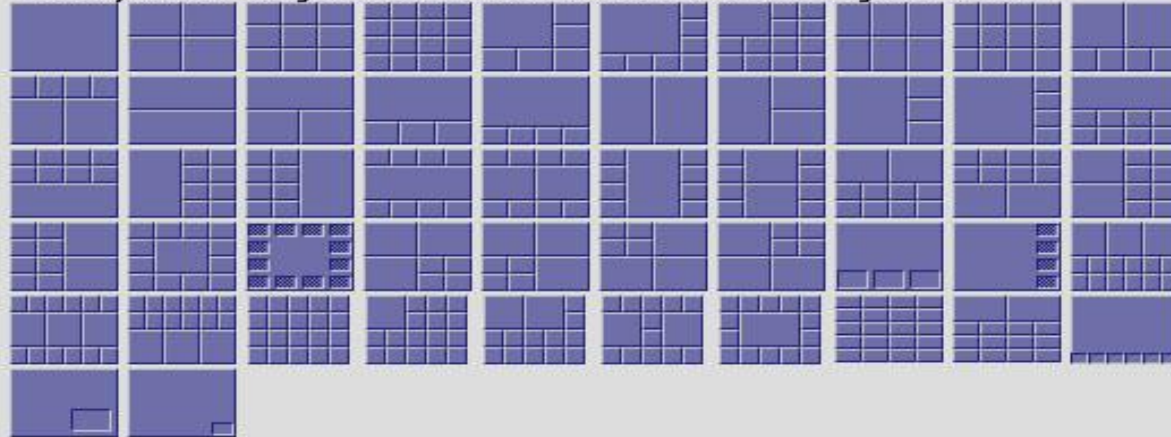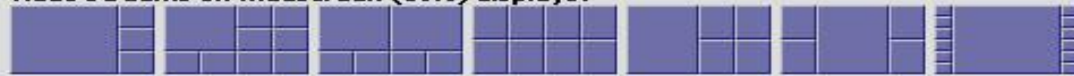- Different Conference types (Adhoc, Scheduled & Rendezvous)

    Cisco Public

Continous Presence Layouts

These layouts are designed to be suitable for all video conferencing situations.

These layouts are designed to be suitable for displaying composed views of standard (4:3) video streams on widescreen (16:9) displays.

Cisco Public

Issue

How do you maintain an immersive experience in a multipoint meeting with many endpoints?

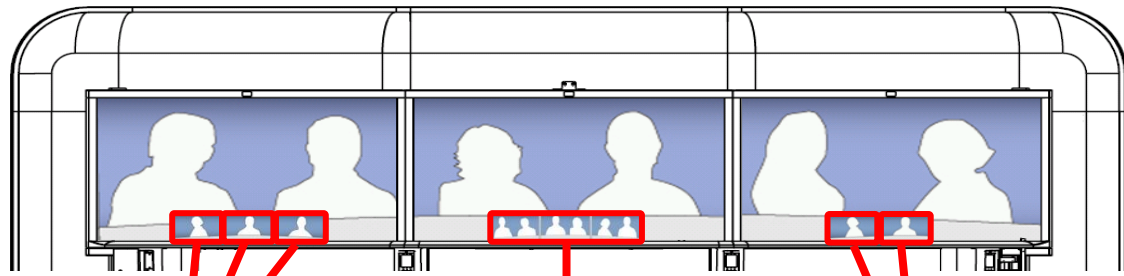As more endpoints join it becomes harder to maintain an immersive experience

Answer

ActivePresence: Preserve ability to see multiple endpoints, but show active speaker full-screen to maintain focus

ActivePresence

Conferencing – Different Visual Experiences
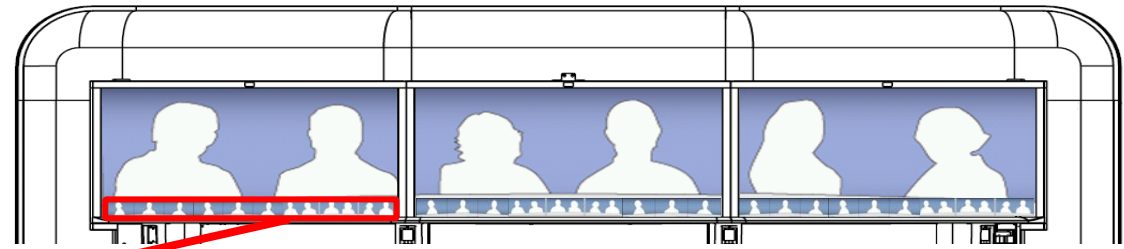## Cisco ActivePresence[TM]

Single Screen Endpoints

Multi-screen Endpoints

Single Screen Endpoints

Up to 9 Active Presence windows on a single screen at a time. (27 total on a triple screen)

Cisco Public

Cisco *live!*

Cisco Universal Encoding™

"The best experience possible for every participant"

Independent Port for Each User

- Active Presence / Advanced CP
- Optimal layout of multiple images
- Enabling "any to any" conferencing
- Mixed video and audio participants can join conferences
- Highest Multivendor Support

Cisco Public

Conferencing
Terminology – Conference Types

- **Ad hoc Conference**
  - Impromptu meetings, they are not scheduled beforehand ,nor require an administrator to initiate them. Suitable for smaller, on-the-fly, meetings. A point-to-point call escalated to a multipoint call is considered ad hoc.

- **Rendezvous Conference**
  - Also called meet-me/permanent/static conferences, requires endpoints to dial in to a pre-determined number. Often used for recurring group meetings which involve different endpoints each time.

- **Scheduled Conference**
  - Provides a guarantee that endpoints and multipoint resources will be available at a certain time. Endpoints join manually or are automatically connected by the multipoint resource.

Cisco Public

Multiparty Conferencing

- TelePresence Server together with Conductor form our Multiparty solution

  Any to any device connectivity, from mobile to immersive, bringing together video, web, voice conferencing

  Platforms to suit all deployment scenarios with a common application and industry leading user experience

- MCU Hardware platforms can run TelePresence Server software

  Customers migrate when appropriate
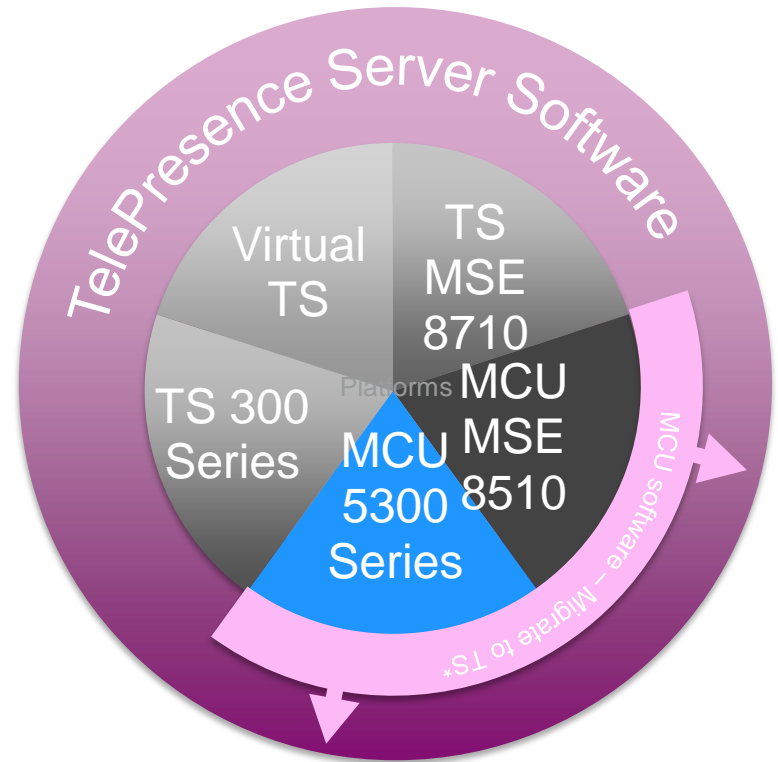
*Valid service contract require for Installation of TS software on platform, additional screen licenses may be required

TelePresence Conductor

Improved User Experience
Simple to Use,

Maximise Reliability
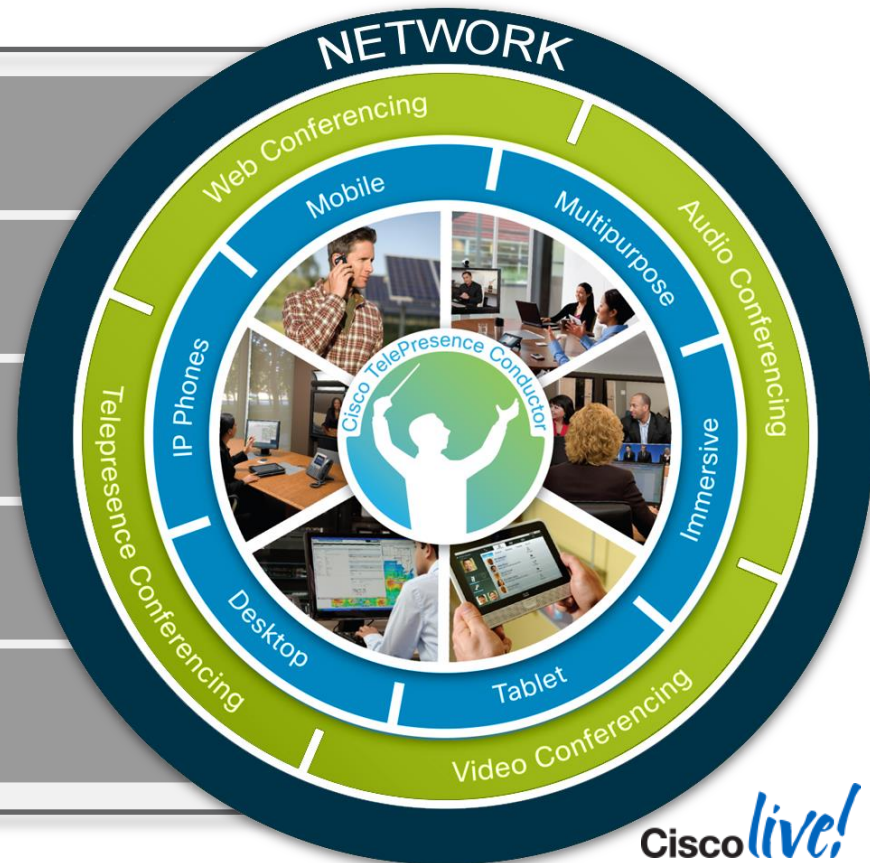Always Available, Zero Downtime

Extended Scale
Enhanced Conference Size, Intelligent Resource Usage
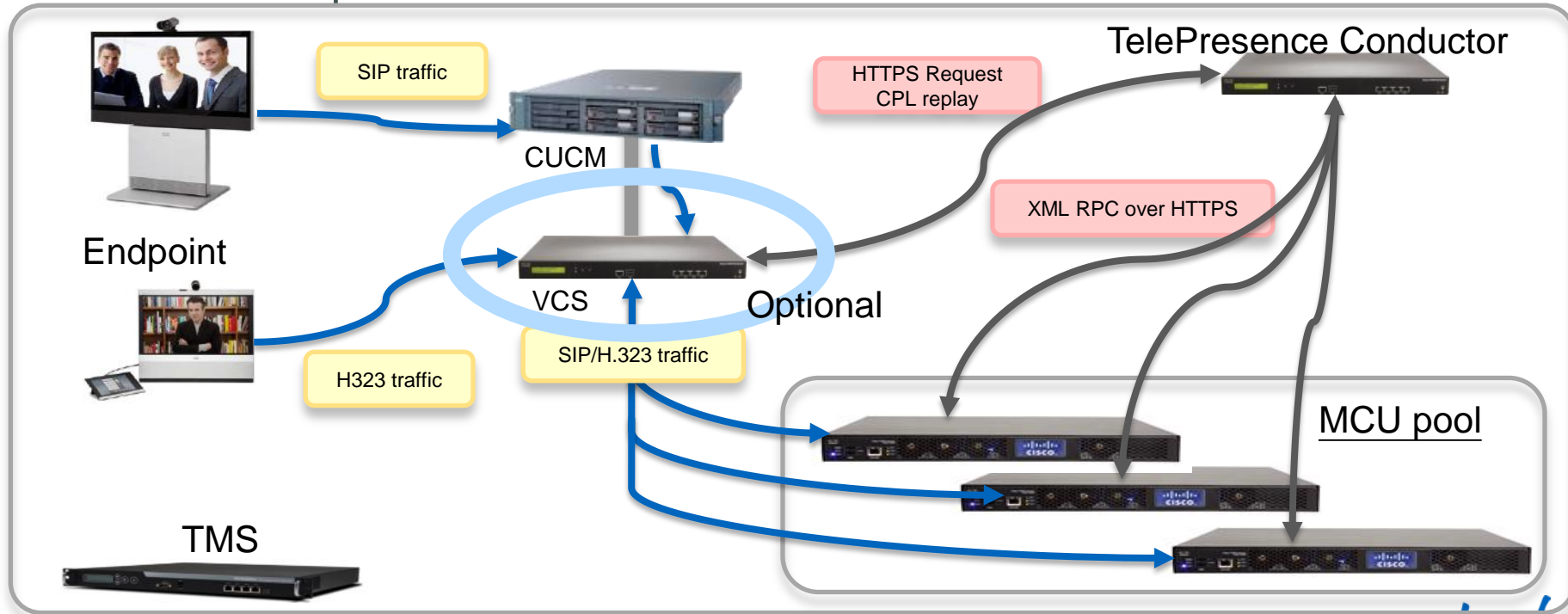
Any to Any Collaboration
Interoperable, Standards-Based

Highest Return on Investment
Minimal Operational Costs, No Forklift Upgrades

NETWORK

Web Conferencing
Mobile
Multipurpose
Audio Conferencing
IP Phones
Cisco TelePresence Conductor
Immersive
Telepresence Conferencing
Desktop
Tablet
Video Conferencing

Cisco Public

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How Cisco TelePresence Conductor Works

- Overall Concept

TelePresence Conductor

SIP traffic

CUCM

HTTPS Request
CPL replay

Endpoint

VCS

Optional

XML RPC over HTTPS

H323 traffic

SIP/H.323 traffic

MCU pool

TMS

Cisco Public
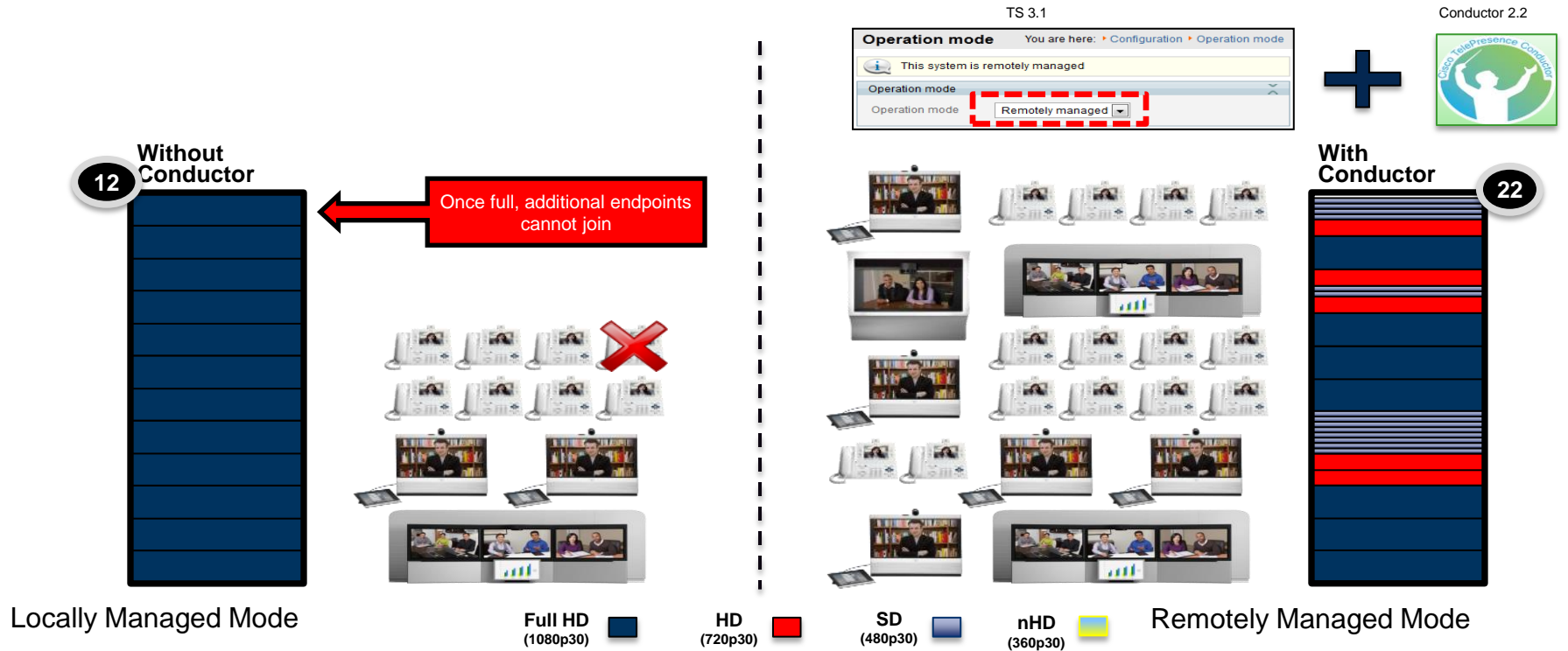
Cisco live!

Cisco TelePresence Conductor 2.2

ENABLING A HIGHLY EXTENDABLE ARCHITECTURE FROM INITIAL DEPLOYMENT

- Trial version of virtualised Conductor available at no additional charge
- Commence with the correct architecture from the first installation to enable easy scaling
- Mandatory for new Pervasive Conferencing platforms:
  - TelePresence Server on Virtual Machine
  - TelePresence Server on Multiparty Media 310/320
- Enables optimised conferencing, scaling the experience to mobile through support for SD and nHD and enabling mixed resolution conferencing, on all TelePresence Server platforms.

 Cisco Public

# Optimised Conferencing
TelePresence Server 3.1 and Conductor XC2.2

TS 3.1

Conductor 2.2

Operation mode You are here: ▸ Configuration ▸ Operation mode

This system is remotely managed

Operation mode

Operation mode Remotely managed ▾

Without Conductor 12

Once full, additional endpoints cannot join

With Conductor 22

Locally Managed Mode

Full HD (1080p30)	HD (720p30)	SD (480p30)	nHD (360p30)

Remotely Managed Mode

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Cisco Pervasive Conference Mixed Deployment

Cisco TelePresence Conductor
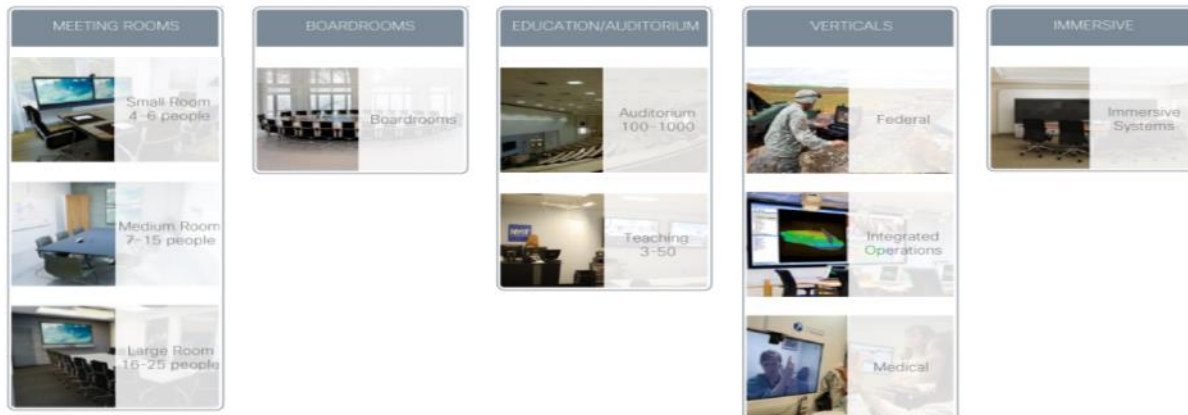
Personal 4-way Calling

User Pools
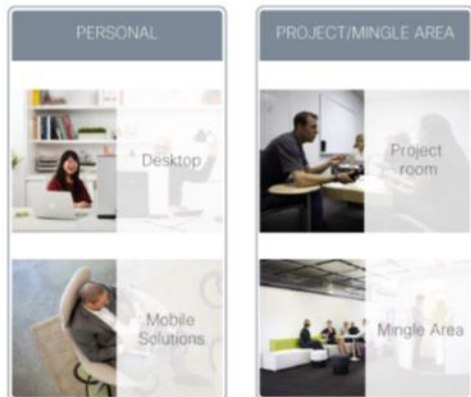
Personal & Spontaneous

Shared TP Conferencing

Shared Pools

Scheduled, Scalable & Managed

Cisco Public

New Offer - Personal Multiparty

Multiparty video for named host and up to three additional parties in CUWL Pro

- **Named host, 4 party license** for multiparty video and audio with content sharing
- **Flexible service levels** from 360p to HD 720p30
- **Ad-hoc or rendezvous** meetings.
- **Enabled by** Cisco TelePresence Server and Cisco TelePresence Conductor

Added value to existing UC Licensing
Extending high quality multiparty video collaboration for all employees (i.e. easily enable Jabber and users of desktop systems with multiparty conferencing)

Supporting strategic trends
towards increasing levels of personal ad-hoc conferencing and BYOD

Why Cisco?.

- **Business class quality** video, audio and content sharing.
- **Interoperability** – with full breadth of standards based endpoints.
- **Breadth of capability**- Enabling voice, IM, Presence as well as web conferencing
- **Breadth of porftolio –**networking, media optimisation and security industry leadership.
- **Investment protection:** extensive upgrade path.
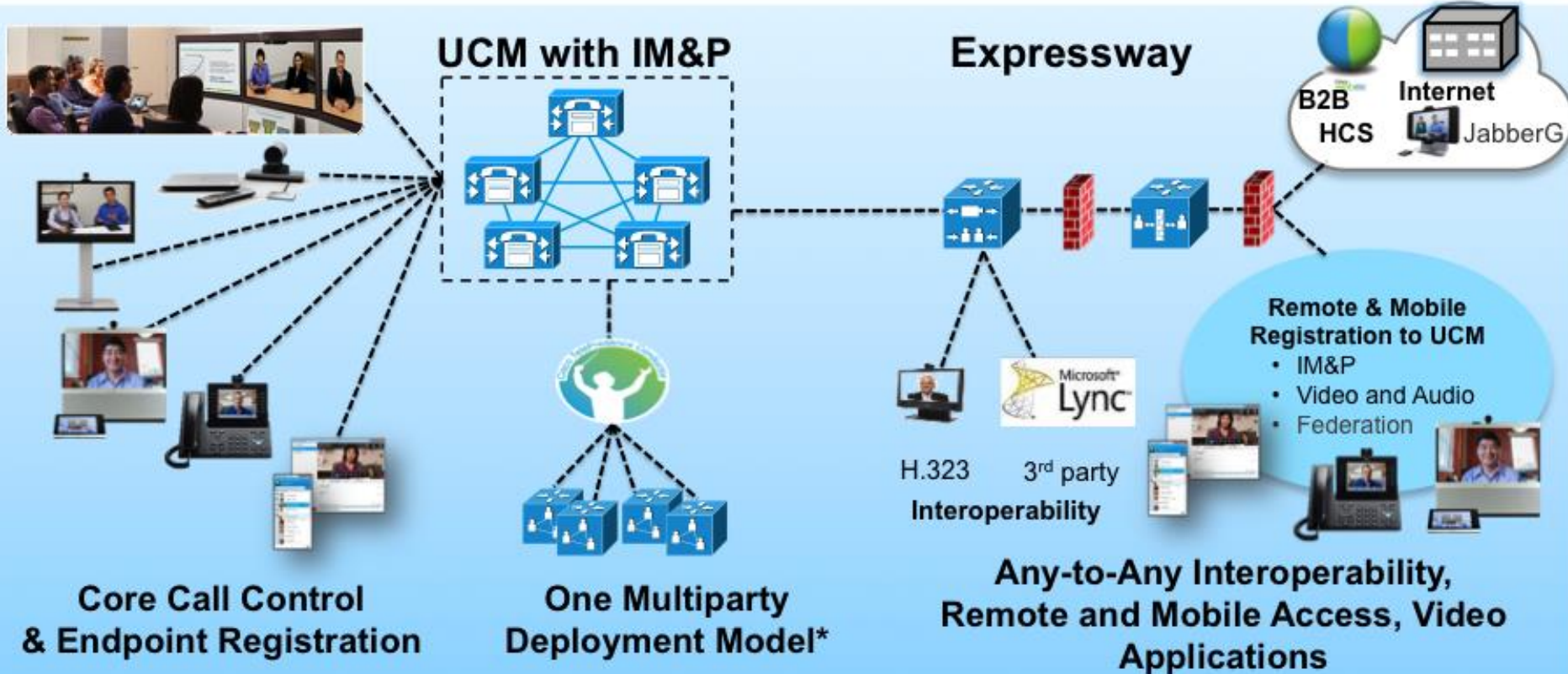
 Cisco Public

Cisco TelePresence Server Platform

- Compatible with UCS240 platform, or 3rd party spec hardware
- Native SIP support, H.323 enabled via interworking through Cisco TelePresence VCS

New

	TS on MPM 310/320	TS Virtual Machine	TS MSE 8710
Platform type	Stackable Appliance	Virtual	Large Chassis
Typical Deployment	Branch Office	Data Centre	Service Provider / Large Enterprise
HD Participants per unit/blade	10/20	12	24
Max Conference Size (HD)	40	12	96
Redundancy	Low	Configurable	High
Key differentiators	Small, low power	Total Virtual Solution	Scale, Resilience

Cisco *live!*

Deployment Simplification

Architecture

Scheduling & Mgmt

Cisco Collaboration Prime Manager

TelePresence Management Suite (TMS)

Call Control

CUCM

SIP Trunk

Video Comm Server Control (VCS-C/Express-C)

Video Comm Server Expressway (VCS-E/Express-E)

Collab Edge

Media Services

CTMS

TP Server and MCU

TCS

Endpoints

TX-1x00 TX9000 Jabber 99/89xx DX650 Jabber Video (Movi) 3rd party VC CTS-EX Series CTS-C, MXP, Profile Series CTS-T3

SIP ········ H.323 ········ SIP or H.323 ━ ━ ━ SCCP ━ ━ ━ H.460 ━ ━ ━

Icons are representative only and not inclusive of the full set of endpoints and infrastructure

TelePresence Management Suite With Extensions

Cisco TMS Core Platform

TelePresence Management Suite Core Platform (TMS)

TelePresence Management Suite Provisioning Extension (TMSPE)

TelePresence Management Suite Extension for Microsoft Exchange (TMSXE)

TelePresence Management Suite Analytics Extension (TMSAE)
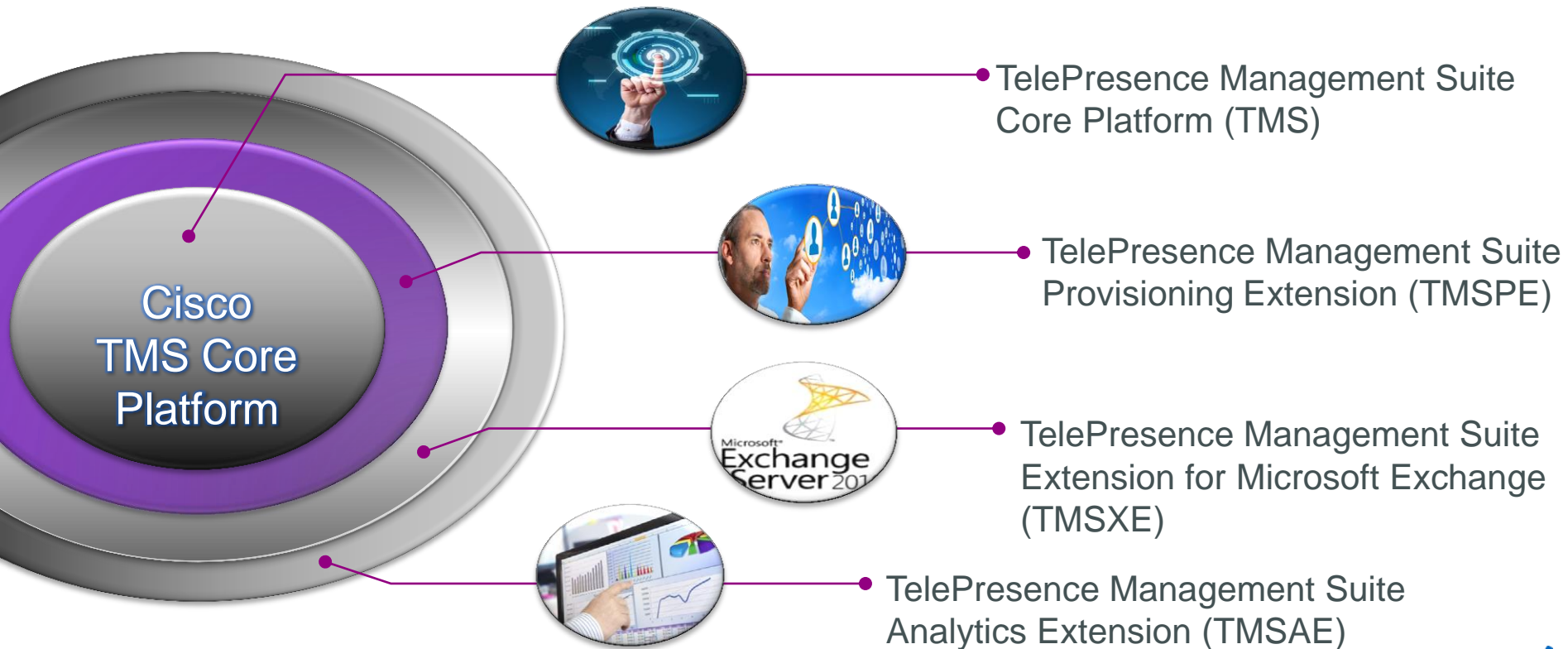
End User Creation Single Page

My Virtual Meeting Room

Personalize your video address

[   ] .room@cisco.com

Set your 4 digit PIN

[   ]

Select a default video layout

Equal	Prominent	Overlay	Single
☑	☐	☐	☐

Save   Cancel

Meet face to face in your Personal Video Room. Here's how:

1. Set up your Personal Meeting Room Details.

2. Make sure you have Jabber for Windows or Mac or a Cisco TelePresence system

3. Share your Personal Video Address.

4. When it's time for your call, Enter the room by dialing your Personal Video Address into Jabber or your Video Endpoint.

5. Enter your host PIN when prompted

6. Have a great call.

VMR Self-Care Portal View & Edit

Your VMR Details   Edit

📹 rbalikrishnan@meet.cdw.com

📞 1-800-867-5309 / ID: 12345

🔒 PIN: 8675

How do I start a video call?

Why do I need a PIN?

Why are video layouts important

Download Jabber Video

Copy   Copy your VMR details and paste them into your IM window to meet quickly.
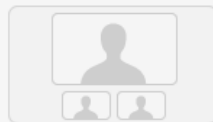
Email   Open an email window with your VMR details ready to send.

Settings

Default video layout

Equal   Prominant   Overlay   Single

TelePresence and WebEx Together Making Collaboration Easier

Schedule
Once

WebEx Meetings and/or TelePresence Conferences
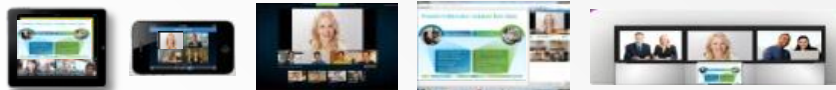

WebEx Productivity Tools

Launch
with a Click

Click to Join, One Button to Push

Meet
with Anyone, Anywhere

Seamless WebEx Meetings + TelePresence experience

Voice, Video and Content

End-to-end Security

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Cisco Prime Collaboration
Integrated Voice and Video Lifecycle Management

- One system to manage Cisco UC voice and video collaboration networks

- Single pane of glass for management over time

- Provisioning, assurance and analytics in a single, integrated product

- Reduces management complexity and Total Cost of Ownership

- Speeds site rollouts and reduces time required to add and change users and services

- Ensures high quality of service and timely issue resolution for a superior end user experience

 Cisco Public

Cisco Prime Collaboration
Unified, Simplified Management of Voice and Video Networks

Provisioning
Simplified deployment and configuration

Analytics
Long term trending and analytics

Assurance
Continuous monitoring and diagnostics

Packaging

- **Standard Prime Collaboration** : Provisioning & Assurance
  - Included with all UC 10.0 UCL and CUWL licenses at no additional charge
  - All UC 10.0 customers have the right to download and install the Standard Management
  - Standard is not supported for UC 8.x – 9.x
  - Cannot be used in a services/MSP offering

- **Advanced Prime Collaboration** : Provisioning, Assurance & Analytics
  - Can be offered to 100% of UC 8.x and above customers and is a chargeable add-on
  - Tiered pricing based on endpoint
  - Partners using Prime to provide a service must purchase the Advanced version

Standard & Advanced Feature Highlights

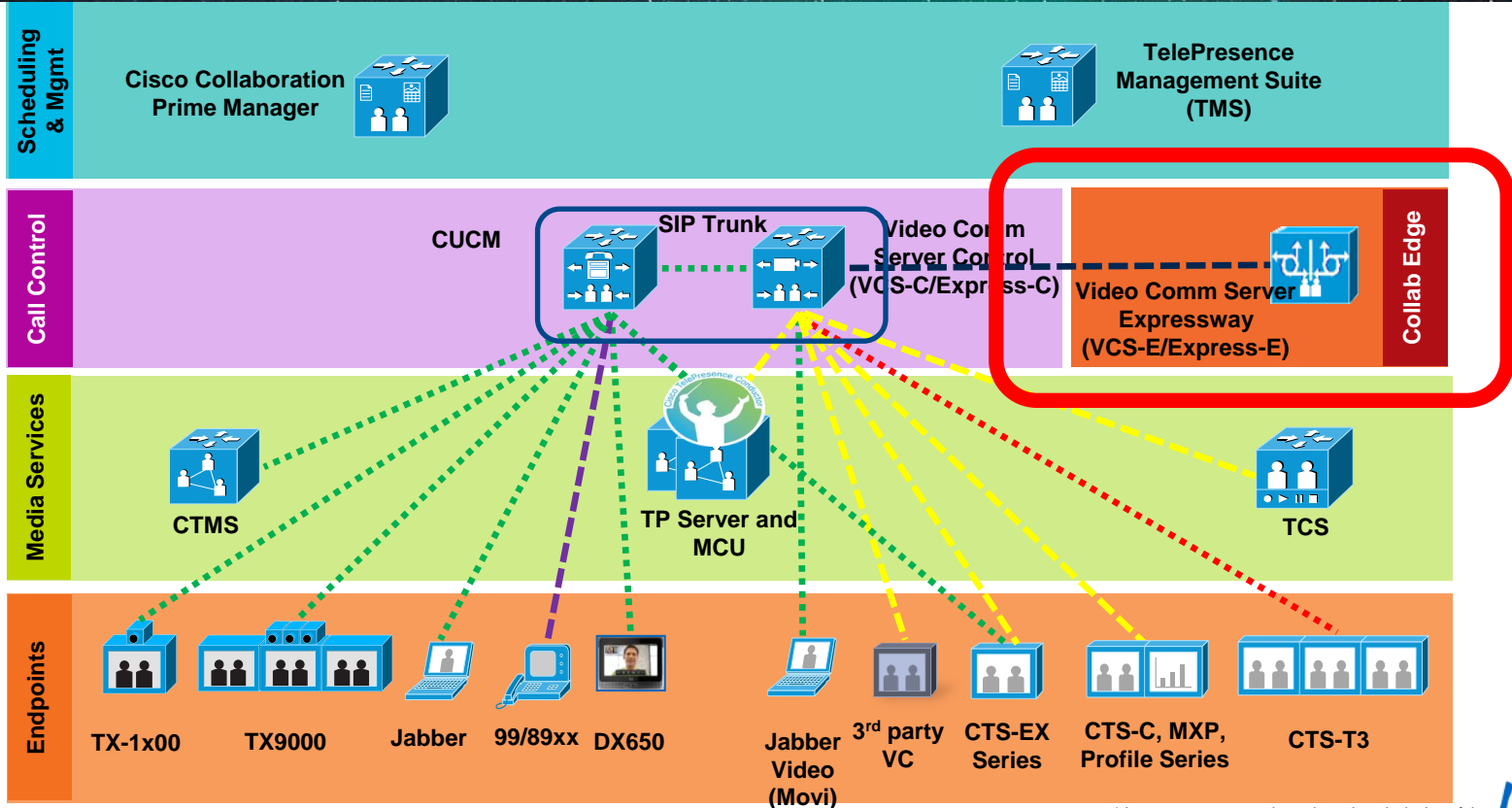|	Standard - included	Advanced - optional
Provisioning	✓ Single cluster ✓ Provisions all Collaboration Services ✓ 2-levels RBAC for delegation ✓ Audit log across multiple services ✓ Single cluster batch	Includes all Standard features+ ✓ Multi-cluster in a single instance ✓ APIs for integration ✓ Process workflow ✓ Advanced RBAC ✓ Infrastructure templates
Assurance	✓ Single cluster ✓ Voice & Video fault ✓ Performance metrics ✓ Email notifications ✓ Simple RBAC	Includes all Standard features+ ✓ Multi-cluster in a single instance ✓ Detailed endpoint monitoring ✓ Deep video session monitoring ✓ Multi-level RBAC & grouping ✓ Diagnostic tests **& more ….**
Analytics	NA – Advanced offer only	Long term reporting and analysis: ✓ Technology usage ✓ Traffic analytics ✓ Capacity planning ✓ Service usage ✓ Quality of service

Cisco *live!*

Architecture

Scheduling & Mgmt

Cisco Collaboration Prime Manager

TelePresence Management Suite (TMS)

Call Control

CUCM   SIP Trunk   Video Comm Server Control (VCS-C/Express-C)

Video Comm Server Expressway (VCS-E/Express-E)   Collab Edge

Media Services

CTMS   TP Server and MCU   TCS

Endpoints

TX-1x00   TX9000   Jabber   99/89xx   DX650   Jabber Video (Movi)   3rd party VC   CTS-EX Series   CTS-C, MXP, Profile Series   CTS-T3

SIP ·········   H.323 ·········   SIP or H.323 — — —   SCCP — — —   H.460 — — —

Icons are representative only and not inclusive of the full set of endpoints and infrastructure

What is Collaboration Edge?
Voice, Video, Messaging, Conferencing, & Social

Remote and Mobile Access
Multimodal collaboration without a VPN
Desktop, Mobile and Fixed endpoints

Business to Business
Secure communications with anyone
Enterprise Border

Consumer Services
An integrated / collaborative experience for customers

Cloud Services
Enterprise grade flexibility and scale
WebEx Integration

Proven Components & Technology

Widely Adopted Protocols

Open, Standards-based

Interoperability

Product Positioning – Major Edge Solutions

Device	Service Category	Type of Service	Service Delivery	Product Position
Jabber	Remote and Mobile	Line: Audio, Video, Directory Search, Visual Voicemail, Content Share	Internet or Private	Expressway (X8.1)
TelePresence DX 650	Remote Fixed	Line: Audio, Video, Directory Search, Content Share	Internet or Private	Expressway (X8.1)
69XX, 7XXX, 89XX, 99XX	Remote Fixed	Line: Audio	HCS	CUBE
			IPSec or TLS Proxy	VPN Phone, CVO, CUBE
SIP Trunk	PSTN	Trunk: Audio	Private SIP Trunk	CUBE
	Video	Trunk: Video, Conferencing	Private SIP Trunk	Expressway or CUBE
Microsoft® Lync	MSFT Interworking	Video/Audio	Internet or Private	Expressway (X8.1)

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Collaboration Edge

X8.1

VCS

"VCS Control"
No Change

"VCS Expressway"
No Change

- **Specialised video applications for video-only customer base (GK, SIP Proxy, interworking, traversal)**
- For customers that require endpoints to register to VCS
- Gateway 3rd party UC solutions (Lync, Polycom)
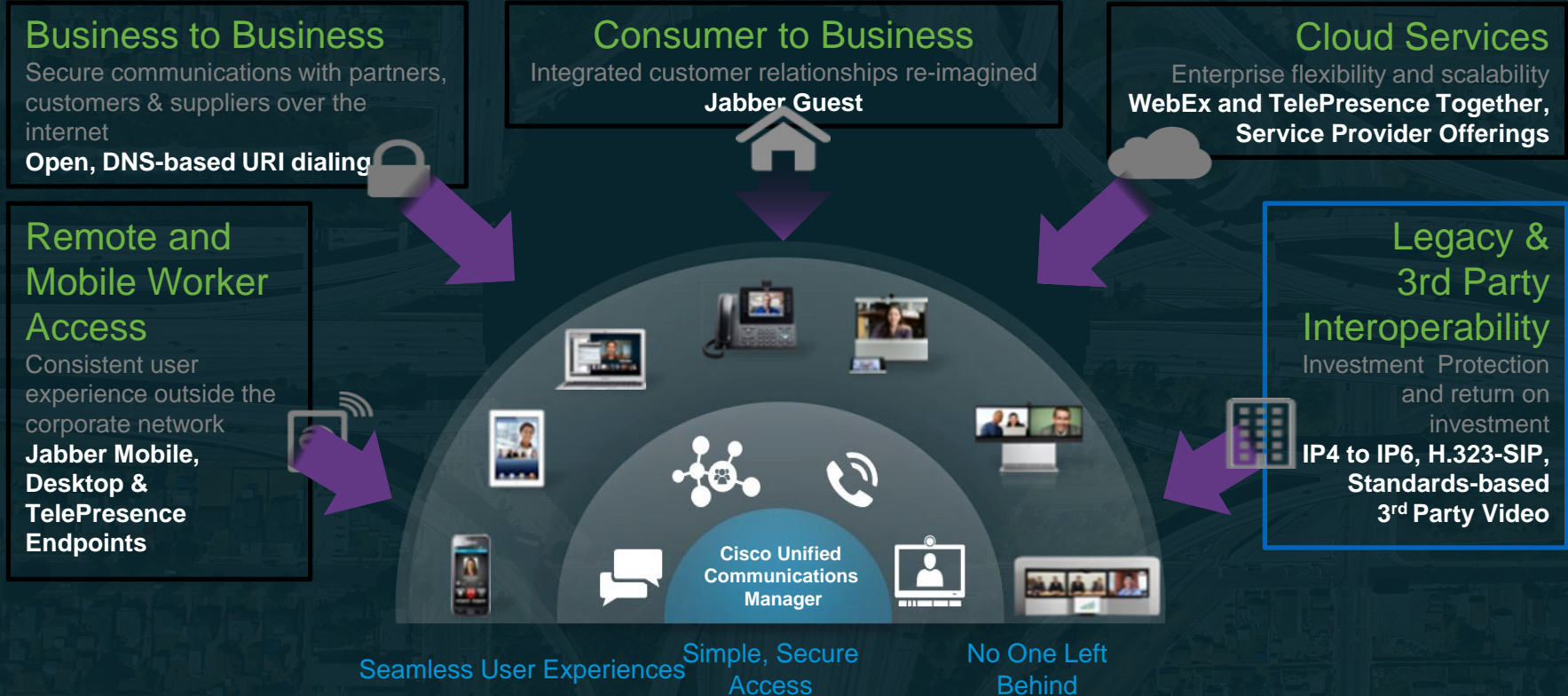
Expressway

New Offering

"Expressway C"
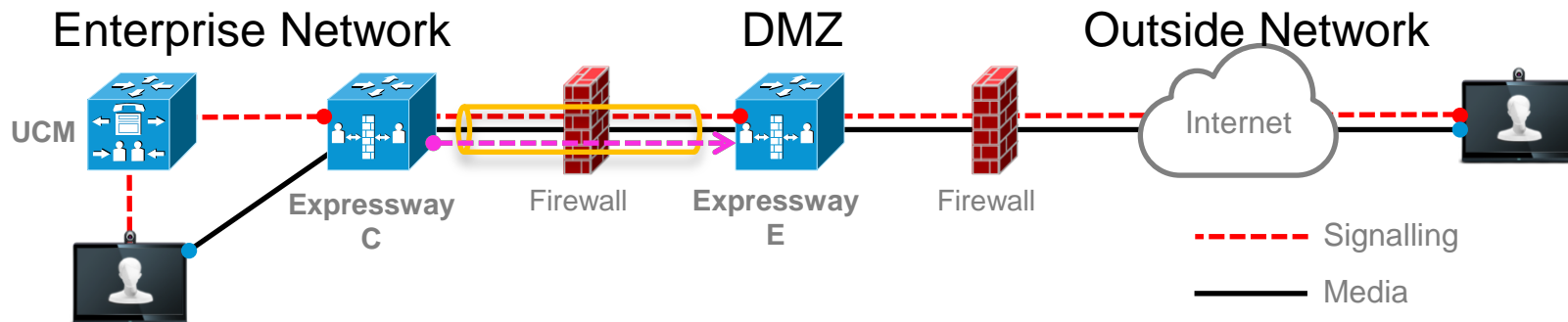**Or Core**

"Expressway E"
Or Edge

- **Solution designed for and sold exclusively with UCM 9.1 and above**
- Remote and mobile access for Jabber and fixed endpoints
- B2B Video and Audio for UC customers
- Jabber Guest
- Gateway 3rd party UC solutions (Lync, Polycom)

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Cisco Expressway Use Cases

Business to Business
Secure communications with partners, customers & suppliers over the internet
Open, DNS-based URI dialing

Consumer to Business
Integrated customer relationships re-imagined
Jabber Guest

Cloud Services
Enterprise flexibility and scalability
WebEx and TelePresence Together, Service Provider Offerings

Remote and Mobile Worker Access
Consistent user experience outside the corporate network
Jabber Mobile, Desktop & TelePresence Endpoints

Legacy & 3rd Party Interoperability
Investment Protection and return on investment
IP4 to IP6, H.323-SIP, Standards-based 3rd Party Video

Cisco Unified Communications Manager

Seamless User Experiences

Simple, Secure Access

No One Left Behind

How Expressway Traversal Works…

Enterprise Network   DMZ   Outside Network

UCM

Expressway C   Firewall   Expressway E   Firewall   Internet

- - - - - Signalling
———— Media
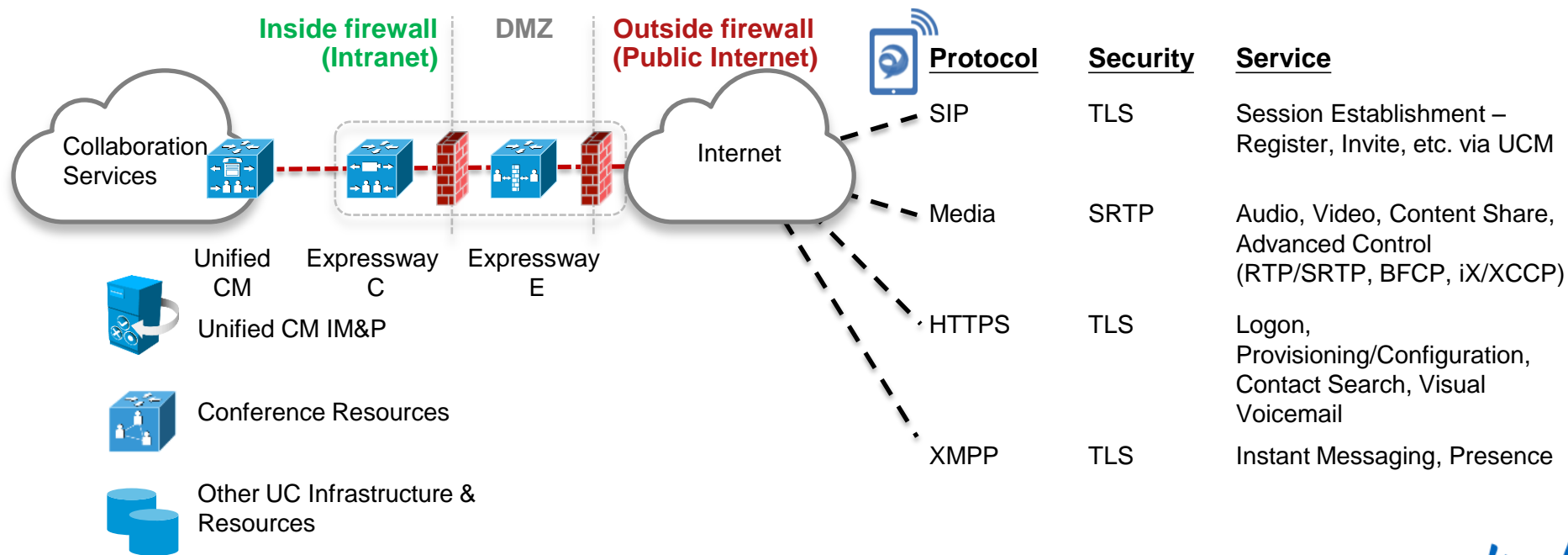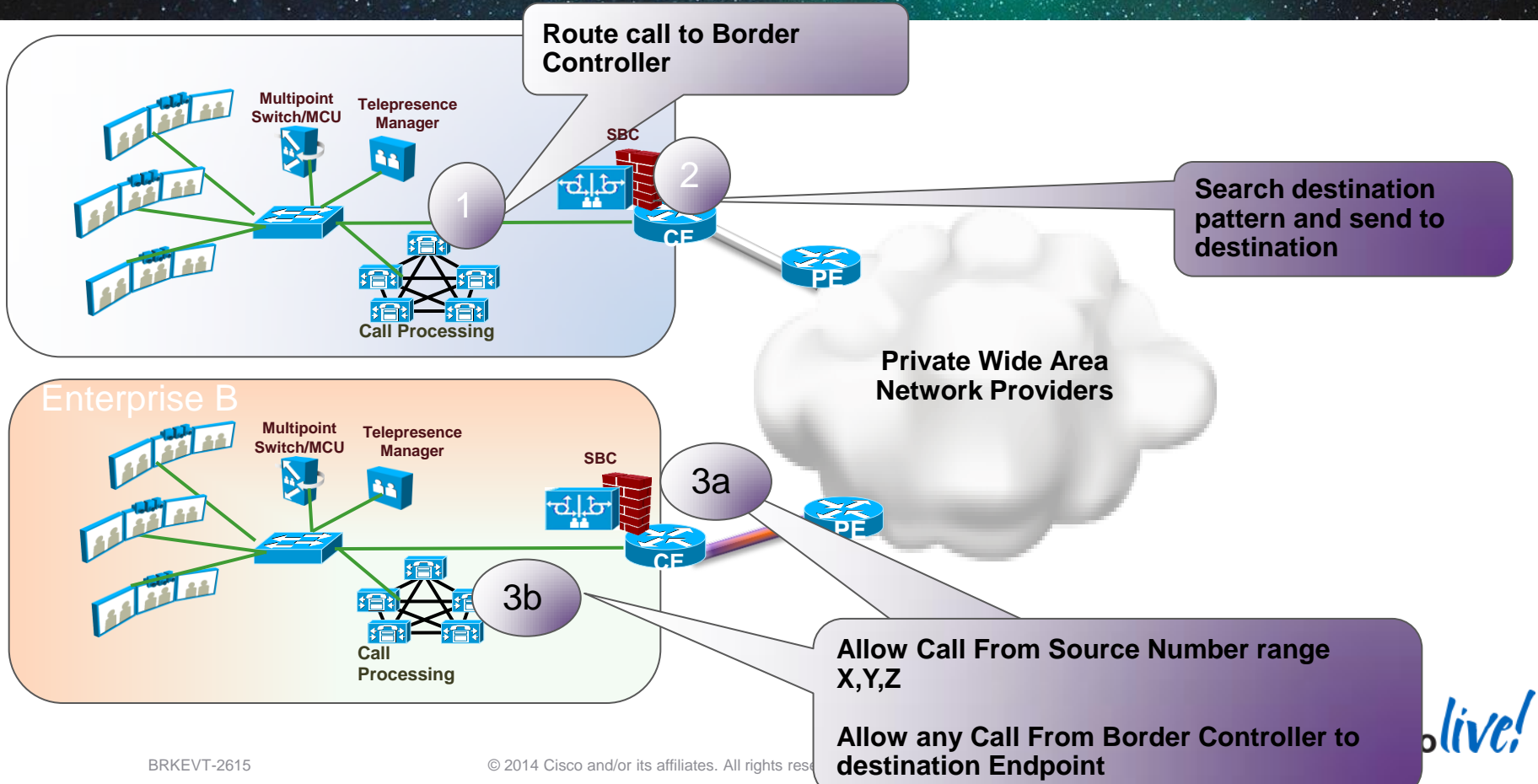
1. **Expressway E** is the traversal server installed in DMZ. **Expressway C** is the traversal client installed inside the enterprise network.

2. **Expressway C** initiates traversal connections outbound through the firewall to specific ports on **Expressway E** with secure login credentials.

3. Once the connection has been established, **Expressway C** sends keep-alive packets to **Expressway E** to maintain the connection

4. When **Expressway E** receives an incoming call, it issues an incoming call request to **Expressway C**.

5. **Expressway C** then routes the call to **UCM** to reach the called user or endpoint

6. The call is established and media traverses the firewall securely over an existing traversal connection
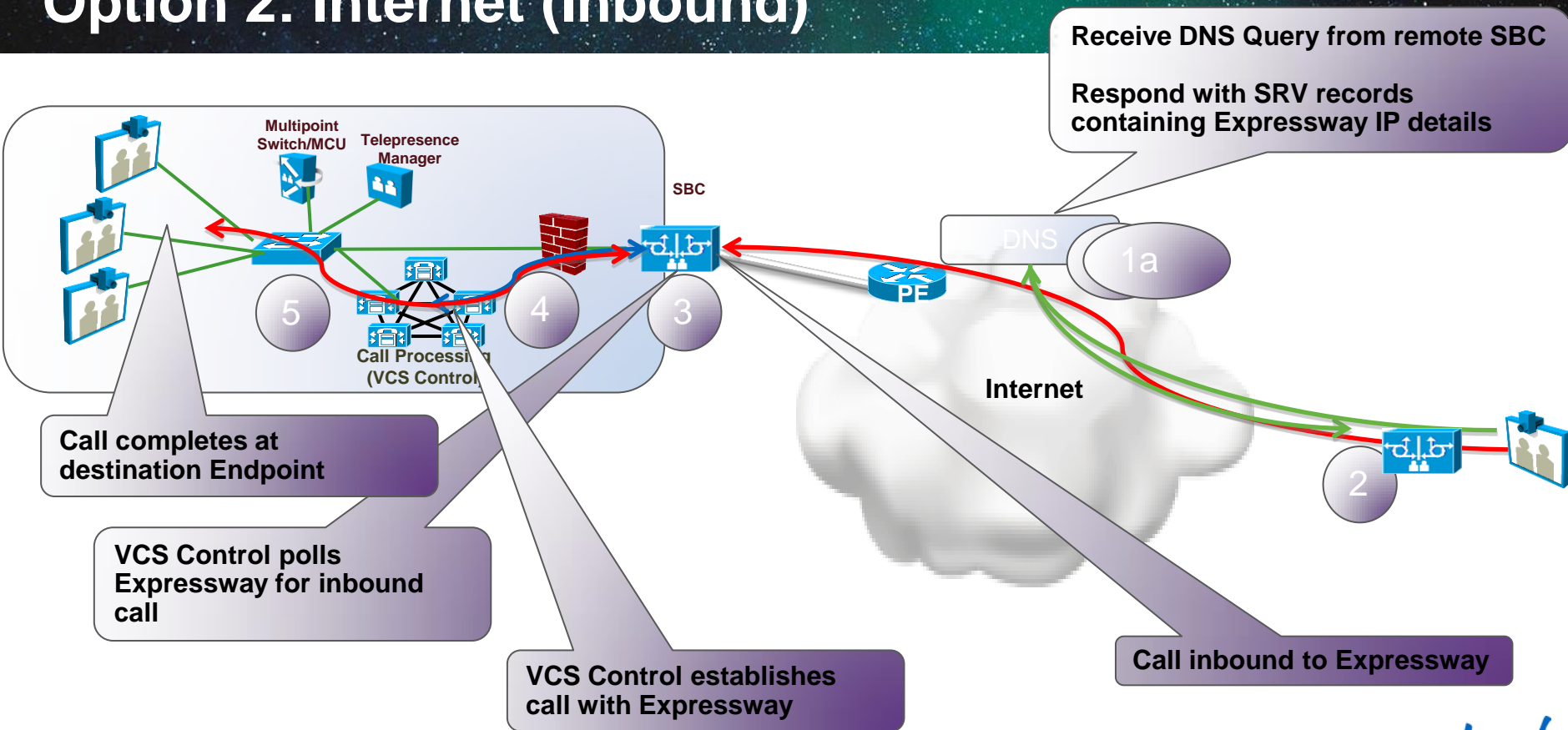
Protocol Workload Summary

	Protocol	Security	Service
	SIP	TLS	Session Establishment – Register, Invite, etc. via UCM
	Media	SRTP	Audio, Video, Content Share, Advanced Control (RTP/SRTP, BFCP, iX/XCCP)
	HTTPS	TLS	Logon, Provisioning/Configuration, Contact Search, Visual Voicemail
	XMPP	TLS	Instant Messaging, Presence

Inside firewall (Intranet) · **DMZ** · **Outside firewall (Public Internet)**

Collaboration Services · Internet

Unified CM · Expressway C · Expressway E

Unified CM IM&P

Conference Resources

Other UC Infrastructure & Resources

Option 1: IP VPN Network

Route call to Border Controller

Search destination pattern and send to destination

Multipoint Switch/MCU

Telepresence Manager

SBC

1

2

CE

PE

Call Processing

Private Wide Area Network Providers

Enterprise B

Multipoint Switch/MCU

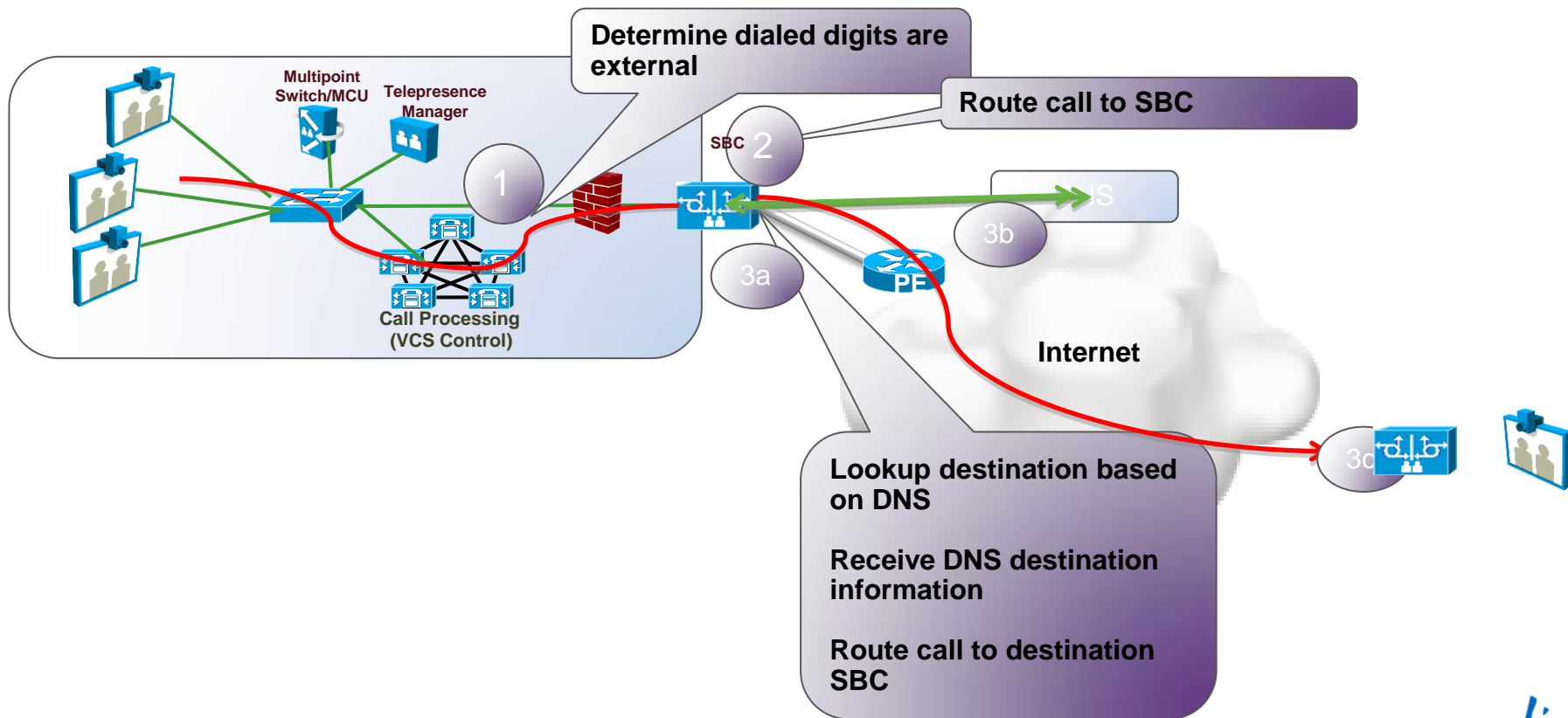Telepresence Manager

SBC

3a

PE

CE

3b

Call Processing

Allow Call From Source Number range X,Y,Z

Allow any Call From Border Controller to destination Endpoint

live!

Option 2: Internet (Inbound)

Receive DNS Query from remote SBC

Respond with SRV records containing Expressway IP details

Multipoint Switch/MCU

Telepresence Manager

SBC

DNS

PE

Internet

Call Processing (VCS Control)

5

4

3

1a

2

Call completes at destination Endpoint

VCS Control polls Expressway for inbound call

VCS Control establishes call with Expressway

Call inbound to Expressway

Cisco live!

Option 2: Internet (Outbound)

Multipoint Switch/MCU

Telepresence Manager

Determine dialed digits are external

Route call to SBC

SBC 2

1

3b

3a

PE

Call Processing (VCS Control)

Internet

Lookup destination based on DNS

Receive DNS destination information

Route call to destination SBC

3c

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Architecture

Scheduling & Mgmt
- Cisco Collaboration Prime Manager
- TelePresence Management Suite (TMS)

Call Control
- CUCM
- SIP Trunk
- Video Comm Server Control (VCS-C/Express-C)
- Video Comm Server Expressway (VCS-E/Express-E)
- Collab Edge

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- TCS

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- TX-1x00
- TX9000
- Jabber
- 99/89xx
- DX650
- Jabber Video (Movi)
- 3rd party VC
- CTS-EX Series
- CTS-C, MXP, Profile Series
- CTS-T3

SIP ········· H.323 ········· SIP or H.323 ········· SCCP – – – H.460 – – –

 Cisco Public

COMMON UNIFIED ARCHITECTURE

Simple - Consistent UI / UX / Design
Innovative – Integrated and proximity-aware, mobile and fixed
Common Services - SSO/SNR/Content Collaboration
Interoperable, Scalable, Manageable

…for an endpoint Portfolio – Hardware optimised, software driven

As Easy as Voice   **Every Pane of Glass**   **Better than Being There**

New Experiences Provided Through UCM

Unleashing New Opportunities with UC integration

Voice and video on 1 platform

Seamless Mobility

Shared Line Support

Remote Expert

Simplified Telephony
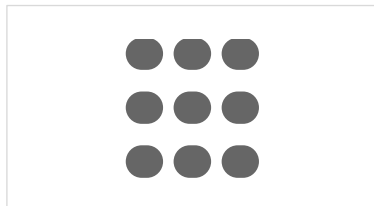
Voicemail Integration
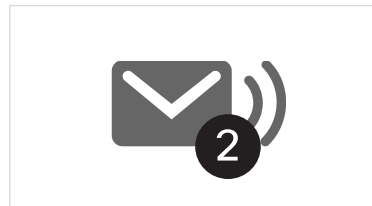
Ad-hoc Conferencing

Cisco Public
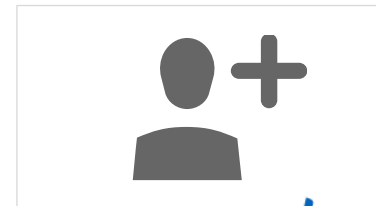
H.264, H.265, WebRTC - An architectural strategy with multi-stream SVC

H.265

WebRTC
HTML5, VP8/H.264

H.264 SVC

H.264

H.263

Present

Legacy

- Rigorous adherence to standards is critical
- But is not enough alone
- Requires an architectural strategy to manage the migration from today to the future
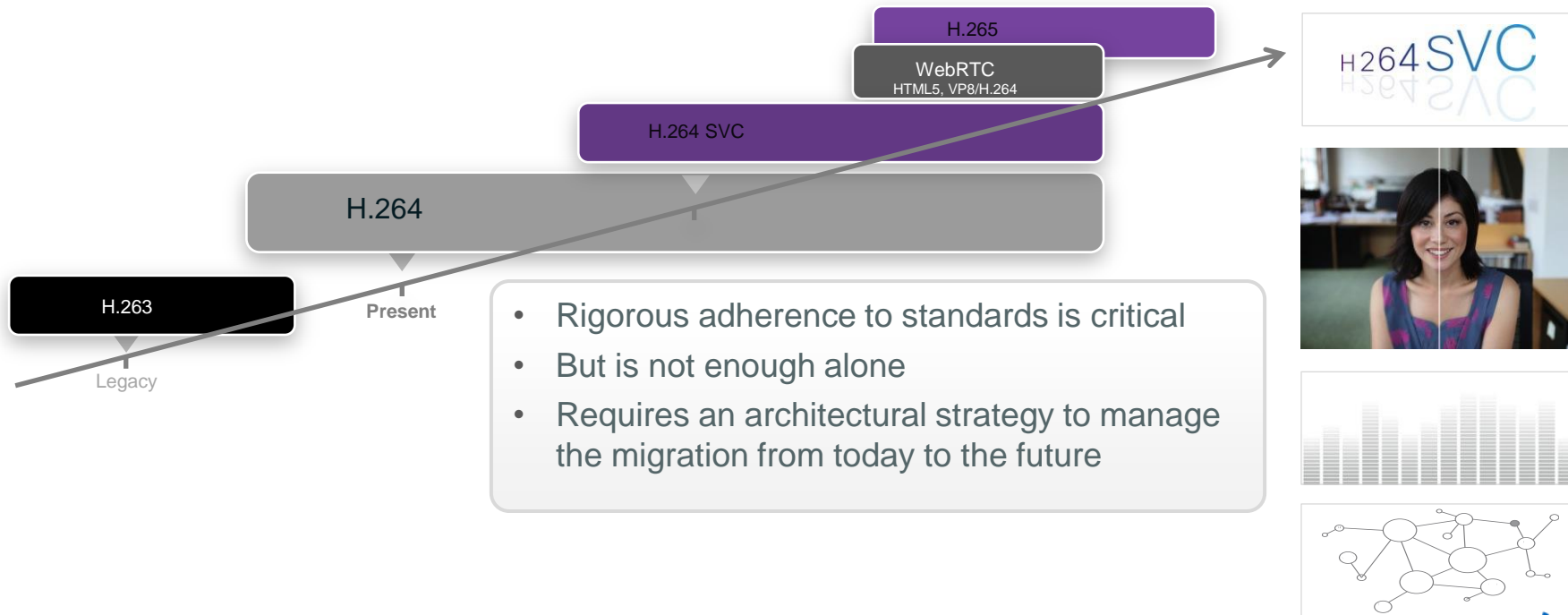
Endpoint Software – Latest Release

Products Supported:
C Series Codecs
SX20 Quick Set
Profile Series
MX Series
EX Series

Active Control

CUCM Redundancy

CUCM Provisioning

H264 SVC

SIP ICE
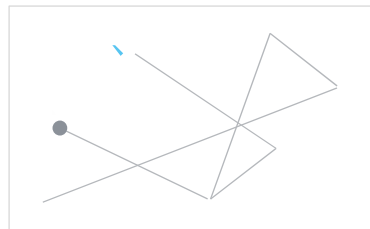
Portfolio Simplification

Phones

Personal

Solution Platform

Multipurpose

Immersive

Transition 12-24 months

IP Phones

Smart Desk Endpoints
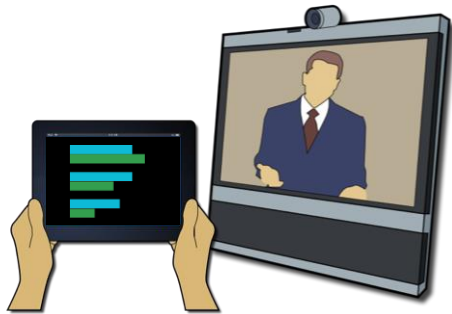
Collaboration Room Endpoints

Immersive TelePresence

Cisco Public

Mobility and Collaboration Endpoints
Integrated Experiences

MX Multipurpose

Desktop

TX Immersive

Collaboration Portfolio

- Content push and pull

- Video and content disaggregation

- Mobility call transfer / hot desk identity

- Control system / manage visualisation

- Personal information – content, directories, favorites

Simple pairing – control and content interaction at your fingertips

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Cisco Room System Innovations

MX300 G2

- Easy install (8 min)
- 55'' LED Display & dual display port
- 1080p60 Video + 1080 Content
- 4-way Embedded Multisite
- H.264 SVC

Speaker Track 60

- High quality HD – 1080p60, 10x optical / 20x digital
- Fast switching between active speakers
- Precision tracking and face detection
- Compatible with C Series and future

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Final Thoughts – Preferred Architecture

 Cisco Public
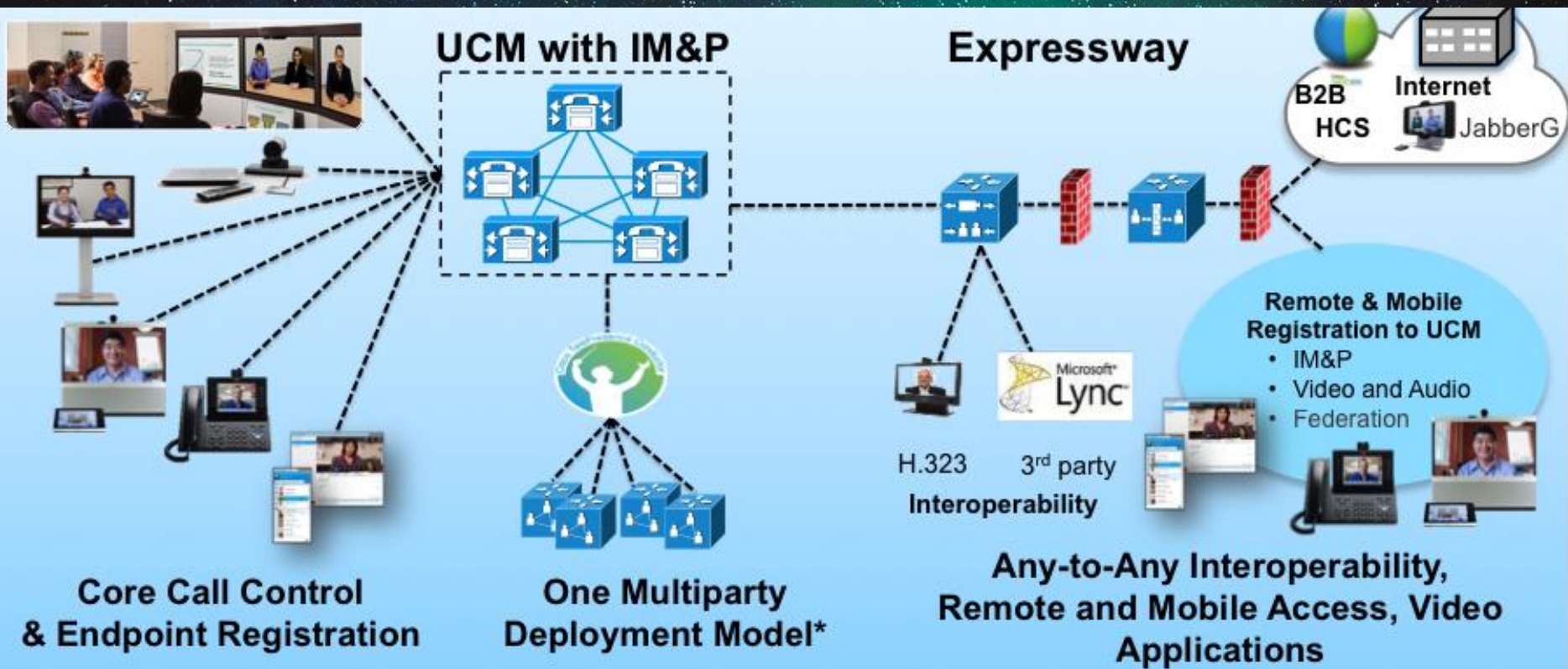
Q & A

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