TOMORROW starts here.
Telepresence Infrastructure Update

Alin David
Systems Engineer
Agenda

- Conferencing Solution and Design Update
- Telepresence server Update
- Personal Multiparty Licensing
- Cisco Support Services for Collaboration (SWSS)
Collaboration Architecture Overview

- Conferencing
- Call Control
- Edge
- UC Applications
- Gateway
- Management
- Prima Collaboration
- TMS
- Conductor
- TS
- TMS
- Endpoints
- Prime Collaboration
- Expressway-C
- Unified CM
- Expressway-E
- CUBE
- ISR
- ISR
- ISR
- TS
- TS
- TS
- PSTN / ISDN
- SIP Trunk(s)
- Internet
- MPLS WAN
- Mobile Worker
- Remote Site
- Headquarters
Conferencing Solution and Design Update
Pre-CSR 10.6 Conferencing Architecture

Unified CM

Expressway-C

Expressway-E

Internet

Conductor

TS for scheduling

TMS

TS Pool for non-scheduling

SIP

SIP and API control
CSR 10.6 Conferencing Architecture

Shared Pool of TS Resources

Unified CM

Expressway-C

Expressway-E

Internet

Conductor

TMS

SIP

SIP and API control

Requirements:
TMS 14.6
TS 4.1
Conductor XC3.0
### What does TelePresence Conductor do?

<table>
<thead>
<tr>
<th>What does this mean?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conference Virtualisation</td>
</tr>
<tr>
<td>What does this mean?</td>
</tr>
<tr>
<td>Resource Management/Conference Bridge Selection</td>
</tr>
<tr>
<td>What does this mean?</td>
</tr>
<tr>
<td>Centralised Conference Provisioning and Administration</td>
</tr>
</tbody>
</table>

#### What does this mean?

- **Consistent User Experience**
- **Whether using a Adhoc Conferences or Rendezvous Conferences**
- **Knocks all the available and used ports**
- **Intelligent Bridge selection**
- **Automatic cascading of MCUs**
- **Single configuration applied to any conferencing resource**
- **Ad Hoc and Rendezvous Conference support**
# Conductor Platforms

<table>
<thead>
<tr>
<th>Variant</th>
<th>Conductor Clustering</th>
<th>Capacity</th>
<th>Price (Part number)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Free TelePresence Conductor [Essentials]</td>
<td>✗</td>
<td>1 x standalone MCU or TS</td>
<td>Free (Download .OVA)</td>
</tr>
<tr>
<td>(VM only)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mid-Market TelePresence Conductor [Select]</td>
<td>✓</td>
<td>Variable # of standalone/clustered</td>
<td>R-VMCNDRTRM-K9</td>
</tr>
<tr>
<td>(VM only)</td>
<td>(2)</td>
<td>MCUs and/or TSs (50 Call sessions)</td>
<td></td>
</tr>
<tr>
<td>Full TelePresence Conductor (VM or appliance)</td>
<td>✓</td>
<td>30 x standalone/clustered MCUs</td>
<td>R-VMCNDRTR-K9</td>
</tr>
<tr>
<td></td>
<td>(3)</td>
<td>and/or TSs (2400 Call sessions)</td>
<td></td>
</tr>
</tbody>
</table>

- Able to upgrade from Free Conductor -> Midmarket Conductor -> Full Conductor
- Same software shared across all variants. Option keys used to differentiate types of Conductor.
Conferencing Deployment Recommendations

- Use Unified CM for call control
- Put bridges behind Conductor for all conferences (single deployment model)
- All bridges within the same pool should have the identical capacity
- Enable “Best Effort Early Offer” on all SIP trunks
- Deploy components in cluster wherever possible for redundancy
- Configure a host PIN for all Personal CMR
- Ensure “Optimize Resources” and “Active Control” are turned on (they are enabled by default)
Collaboration Preferred Architectures & CVDs
Available at www.cisco.com/go/cvd/collaboration

Pre-Sales Process
- Design Overview Document
- Targeted to Presales
- What (w/ Some Why)!

Post-Sales Process
- Detailed Design and Deployment Guidance
- Post Sales Design and Deployment
- What, Why, and How!
- Process Driven Guide

PA Overview

PA CVD
Cisco Validated Design

Cisco Validated Design
Applications

- Detailed, Deployment Guidance
- Post Sales Design and Deployment
- What, Why, and How!
- Process Driven Guide
- Plugs into the PA CVD

Available at www.cisco.com/go/cvd/collaboration

Collaboration Preferred Architectures & CVDs
Available at www.cisco.com/go/cvd/collaboration
# Mid Market PA/CVD Document Mapping

Available at [www.cisco.com/go/cvd/collaboration](http://www.cisco.com/go/cvd/collaboration)
And [www.cisco.com/go/ucsrnd](http://www.cisco.com/go/ucsrnd)

<table>
<thead>
<tr>
<th>Use Case</th>
<th>PA Overview</th>
<th>CVD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voice Only</td>
<td>PA for Midmarket Voice</td>
<td>Unified Comm. using BE6000 CVD</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Collaboration Edge Using BE6000 CVD</td>
</tr>
<tr>
<td>Standalone Video</td>
<td>* PA for Video</td>
<td>Video Conferencing using BE6000 CVD</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Collaboration Edge Using BE6000 CVD</td>
</tr>
<tr>
<td>Full Collaboration</td>
<td>PA for Midmarket Collaboration</td>
<td>Unified Comm. using BE6000 CVD</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Video Conferencing using BE6000 CVD</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Collaboration Edge Using BE6000 CVD</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Helpdesk using Cisco UCCX CVD</td>
</tr>
</tbody>
</table>

* Fits both Mid-Market and Enterprise
Enterprise PA/CVD Document Mapping

Available at [www.cisco.com/go/cvd/collaboration](http://www.cisco.com/go/cvd/collaboration)
And [www.cisco.com/go/ucsrnd](http://www.cisco.com/go/ucsrnd)

<table>
<thead>
<tr>
<th>Use Case</th>
<th>PA</th>
<th>CVD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standalone Video *</td>
<td>PA for Video</td>
<td>Video Conferencing using BE6000 CVD</td>
</tr>
<tr>
<td>Full Collaboration</td>
<td>PA for Enterprise Collaboration</td>
<td>PA for Enterprise Collaboration CVD</td>
</tr>
</tbody>
</table>

* Fits both Mid-Market and Enterprise
Telepresence Server 4.1 Update
**TelePresence Server**

**TS 2.3**  
Aug 2012  
- Increased HD capability  
- New resource allocation model  
- Directional audio  
- Optimized single screen layouts  
- Conference PINs  
- TCP Signaling with Encrypted Media  
- Display icon when any participants are not encrypted  
- API additions

**TS 3.0**  
Dec 2012  
- Remotely managed operation mode  
- Advanced Remote Management API  
- Dynamic optimization of resources SD licensing model  
- FullHD content  
- Chair and guests in conferences  
- Automatic disconnection

**TS 3.1**  
Aug 2013  
- ActiveControl  
- PSTN Audio for WeT Meetings  
- Improved room switching  
- Clearpath  
- Automatic Gain Control (AGC)  
- 1080p content to CTS/TX  
- Disconnection of inactive calls

**TS 4.0**  
Aug 2014  
- Segment-switched  
- Video announce  
- Mixed IP (IPv4 and IPv6) deployments  
- 3rd Party Interop Key activated by default  
- Increased calls per unit  
- Improved Optimized Conferencing  
- Cascaded conferences  
- Additional vTS platforms  
- ESXi 5.5 support

**TS 4.1**  
Jan 2015  
- Capacity increases  
- Multistreaming  
- Layout improvements  
- Single URI with separate PINs for guest/chair  
- Participant overflow icon  
- Name label improvements and audio avatars  
- Improved logging  
- ActiveControl enabled by default
## TelePresence Server Platforms

<table>
<thead>
<tr>
<th>TelePresence Server on VMWare (specs based)</th>
<th>TelePresence Server on VMWare (dedicated)</th>
<th>Appliances</th>
<th>Blade</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>8-core</strong></td>
<td><strong>400v / 410v</strong></td>
<td><strong>310</strong></td>
<td><strong>8710</strong></td>
</tr>
<tr>
<td>1 to 10 ports at 720p</td>
<td>1 to 54 ports at 720p</td>
<td>1 to 12 ports at 720p</td>
<td>1 to 24 ports at 720p</td>
</tr>
<tr>
<td><strong>30vCPU</strong></td>
<td></td>
<td><strong>320</strong></td>
<td></td>
</tr>
<tr>
<td>1 to 20 ports at 720p</td>
<td></td>
<td>1 to 24 ports at 720p</td>
<td></td>
</tr>
</tbody>
</table>

Note: For simplicity, only capacity for 720p is shown. TS is capable of many other resolutions and frame rates with differing limits on capacity. All numbers represent remotely managed mode (Conductor required) capability. See release notes for further detail.
TelePresence Server
TelePresence Server on Virtual Machine (vTS)

Three variants of vTS:

**Multiparty Media 400v**
- Only supported on specific UCS platform
- Up to 18 screen licenses (36 HD ports)
- Co-residency not supported (ships as dedicated UCS box)

**Multiparty Media 410v**
- Only supported on specific UCS platform
- Up to 27 screen licenses (54 HD ports)
- Co-residency not supported (ships as dedicated UCS box)

**30vCPU High Density VM**
- Previous to 4.1 was referred to as 16-core
- Up to 10 screen licenses (20 HD ports)
- Supported on BE6K, BE7K and specs-based
- Co-residency not supported

**8-core vTS**
- Supported in TS release 3.1 and later
- Up to 5 screen licenses (10 HD ports)
- Supported on BE6K, BE7K, and specs-based
- Can be co-resident with other apps

TelePresence Server Platforms (TS 4.1 MR)

Increased Scale

HD port capacity with content

<table>
<thead>
<tr>
<th>Platform</th>
<th>Q3 CY14</th>
<th>Q4 CY14</th>
<th>Q4 CY14</th>
<th>Q2 CY15</th>
</tr>
</thead>
<tbody>
<tr>
<td>BE6000 HD / BE7000 + co-res apps</td>
<td>+25%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BE6000 HD</td>
<td></td>
<td>+20%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dedicated BE6000 HD</td>
<td>16</td>
<td>20</td>
<td>+25%</td>
<td></td>
</tr>
<tr>
<td>Multiparty Media 310</td>
<td>8</td>
<td>10</td>
<td>12</td>
<td>10</td>
</tr>
<tr>
<td>Multiparty Media 320</td>
<td>16</td>
<td>20</td>
<td>24</td>
<td>20</td>
</tr>
<tr>
<td>Multiparty Media 400v</td>
<td>20</td>
<td>24</td>
<td>+20%</td>
<td>28</td>
</tr>
<tr>
<td>Multiparty Media 410v*</td>
<td>28</td>
<td>36</td>
<td>+28%</td>
<td>54*</td>
</tr>
<tr>
<td>Multiparty Media 410v*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* MM410v & TS 4.1 MR SW planned for Q2CY15, and 54 HD ports is only an estimate – subject to change.
New Experience

- Improved graphics and user interface during conferences
- Multistreaming / Hybrid Conferencing on newer endpoints
Improved user interface

- Transparent name labels
- Active Speaker Indicator
- Overflow indicator
- Audio participant avatar
- Recording Indicator
Best Dual Screen Viewing Experience

Experimental in TC 7.3
Best Single Screen Experience
‘Transcoded only’ Video
TS 4.0 and older

- In previous releases of TS, every call would be transcoded
- Each video stream is:
  - Decoded by the TS
  - Scaled as appropriate
  - Composited into a layout
  - Re-encoded into single video stream

**Benefits**

<table>
<thead>
<tr>
<th>Benefits</th>
<th>Drawbacks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Greatest possible interoperability</td>
<td>Increased latency due to decode/re-encode</td>
</tr>
<tr>
<td>No need for participants to drop to highest common resolution</td>
<td>A limited layout options on receiving endpoint</td>
</tr>
</tbody>
</table>

TelePresence Server

- Decoders
- Compositor
- Scalers
- Encoder

H.264 AVC

TelePresence Server Diagram:

- Decoders
- Compositor
- Scalers
- Encoder

H.264 AVC
‘Multistream only’ Video

- Endpoints have the capability to send multiple video streams to a bridge
  - This can include multiple copies of the same stream, but at different resolutions
    - 1080p, 720p and 360p
  - The bridge can then forward on (switch) the different resolutions to each endpoint depending on which streams they request
  - The endpoint can locally compose these streams in a wide variety of combinations

<table>
<thead>
<tr>
<th>Benefits</th>
<th>Drawbacks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low latency, better video quality due to no decode/re-encode</td>
<td>Requires endpoint support</td>
</tr>
<tr>
<td>Wider variety of layout options for endpoint</td>
<td>Requires higher bandwidth in certain situations</td>
</tr>
<tr>
<td></td>
<td>In a multistream only environment many endpoints would not be supported…</td>
</tr>
</tbody>
</table>

The best answer is…
Hybrid Conferencing

- Best of both worlds, combining benefits of multistreaming with the interoperability of transcoding

- **Experimental feature in TC7.3. Full support expected in next endpoint software release**

- As of TS 4.1, support on Multiparty Media 310, 320, 400v, and vTS platforms

- Multistream is available only on certain Cisco video endpoints

- Support via SIP only (not H.323 or TIP)

- TS must be configured in remotely managed mode (requires Conductor)

- TS will continue to transcode video to/from legacy endpoints, and use multistream switching wherever possible (Hybrid Conferencing)

- No change in TS scale, initial release will consume same amount of resources for multistream calls as transcoded calls

- **Note:** Multistream applies to main video but content and audio streams remain fully transcoded
Hybrid Conferencing
TS 4.1 and later

Experimental in TC 7.3

TelePresence Server

Switching Fabric

LD (ex. 180p, 360p)

HD (ex. 1080p, 720p)

Encoder

Decoder

Scaler

LD (ex. 180p, 360p)

HD (ex. 1080p, 720p)

Endpoints

H.264 SVC

H.264 AVC

H.264 SVC

H.264 AVC

Encoder
Hybrid Conferencing
Endpoints Capable of Multistreaming

SX20/MX200 G2/
MX300 G2
Max of 4 streams
Max of 16 streams

SX80
MX700/800
Max of 4 streams
Max of 16 streams

Required Infrastructure
- Unified CM 10.5(2) or later
- Conductor XC3.0 or later
- TC 7.3 or later (experimental)
- TelePresence Server 4.1 on
  310, 320, 400v, or vTS
New Licensing Model
Personal Multiparty
TelePresence Server Licenses

- Moving towards user based licensing

- Traditional licensing enables a number of ports on the bridge **(Screen Licenses)**

- Moving towards user based licensing **(Personal Multiparty)** allows for a more flexible multiparty deployment at a significantly lower cost

- Customers have a choice of licensing every TelePresence Server either with traditional port based model or with the user based model
# Multiparty Licensing offers

<table>
<thead>
<tr>
<th>Scheduling</th>
<th>Separate licenses required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experience</td>
<td>Full HD (1080p30)</td>
</tr>
<tr>
<td>Max participants per named host</td>
<td>Based on purchased licenses</td>
</tr>
<tr>
<td>Licenses included</td>
<td></td>
</tr>
<tr>
<td>• TelePresence Server</td>
<td></td>
</tr>
<tr>
<td>Services</td>
<td>12% SWSS</td>
</tr>
</tbody>
</table>

**New Pricing**

**Screen Licenses**
## Multiparty Licensing offers

<table>
<thead>
<tr>
<th></th>
<th>New Pricing Screen Licenses</th>
<th>Existing Personal Multiparty Basic</th>
<th>New Personal Multiparty Advanced</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Scheduling</strong></td>
<td>Separate licenses required</td>
<td>Ad-hoc/Rendezvous only</td>
<td>Ad-hoc, Rendezvous and/or Scheduled</td>
</tr>
<tr>
<td><strong>Experience</strong></td>
<td>Full HD (1080p30)</td>
<td>HD (720p30) Single screen endpoints ONLY</td>
<td>Full HD (1080p30) Single and Multi-screen endpoints</td>
</tr>
<tr>
<td><strong>Max participants per named host</strong></td>
<td>Based on purchased licenses</td>
<td>4</td>
<td>Unrestricted (fair usage)</td>
</tr>
<tr>
<td><strong>Licenses included</strong></td>
<td>• TelePresence Server</td>
<td>• TelePresence Server</td>
<td>• TelePresence Server</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• TelePresence Conductor</td>
<td>• TelePresence Conductor</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• TMS base license</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Expressway Rich Media Sessions</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Expressway Lync Interop License Key</td>
</tr>
<tr>
<td><strong>Services</strong></td>
<td>12% SWSS</td>
<td>16% SWSS</td>
<td>16% SWSS</td>
</tr>
</tbody>
</table>
# Multiparty Licensing offers

<table>
<thead>
<tr>
<th>Activations included</th>
<th>Personal Multiparty Basic</th>
<th>Personal Multiparty Advanced</th>
</tr>
</thead>
<tbody>
<tr>
<td>TelePresence Screen License</td>
<td>8 Screen Licenses on first order + 1 Screen License for every 30 users</td>
<td>11 Screen Licenses on first order + 1 Screen License for every 15 users</td>
</tr>
<tr>
<td>Example: First customer order for minimum of 25 licenses: Customer is provided with 9 screen licenses. Follow up order for a further 30 host licenses: Customer is provided with one additional screen license.</td>
<td>Example: First customer order for minimum of 25 licenses: Customer is provided with 13 screen licenses. Follow up order for a further 30 host licenses: Customer is provided with two additional screen licenses.</td>
<td></td>
</tr>
<tr>
<td>Conductor License</td>
<td>1 Full Conductor License</td>
<td>2 Full Conductor Licenses</td>
</tr>
<tr>
<td>Lync Interop License</td>
<td>None</td>
<td>1 Lync interop license on first order 1 Lync interop license per 300 users</td>
</tr>
<tr>
<td>Expressway Rich Media Sessions (RMS)³</td>
<td>None</td>
<td>5 RMS licenses on first order + 1 RMS licenses per 15 users</td>
</tr>
<tr>
<td>TMS Managed Devices</td>
<td>None</td>
<td>Starter quantity of 25 device licenses provided with first order, additional device licenses purchased à la carte</td>
</tr>
</tbody>
</table>

³ Note: A pair of RMS licenses (one loaded on Expressway-C and one on Expressway-E) are needed for each B2B Call. Only one RMS license is needed on Expressway-C for each concurrent Lync call.
Personal Multiparty Licensing
- Multiparty Video Ordering made easy – One Meeting License

As Easy as 1, 2, 3

**Step 1**
Select Endpoint type (Jabber through Immersive)
- Personal use
- Shared System

**Step 2**
Select License
- Personal Multiparty
  - Advanced or Basic

**Step 3**
Select Number of Servers
What is Cisco Software Support Service?
Cisco Services Can Help You Get the Most from Collaboration

In a dynamic environment, keeping your collaboration up to date is key

Services are essential to get the most ROI

Cisco Services help you:
- Stay up to date
- Stay protected
- Stay cost-effective
- Stay productive
- Stay ahead
- Stay in touch
- Stay knowledgeable
Cisco Software Support Service: One Complete Offering

- One service contract
- Support and upgrades
- Minimum one year service with your solution

Technical Service Replacing UCSS & ESW

- Assured service entitlement
- Simplified renewals
- Easier to order

Orderable as of 22 September 2014
What’s In It for You

One service contract

- Includes software support and major software upgrades under a single service offer

Simplified renewals

- Streamlines ordering and renewing services

Investment Protection

- Assures full service entitlement with a minimum of one year of service at point of sale

Standardized discounts

- Simplifies doing business with Cisco; Easier to plan and budget

SWSS Benefits

- Assures full service entitlement with a minimum of one year of service at point of sale

- Simplifies doing business with Cisco; Easier to plan and budget

- Includes software support and major software upgrades under a single service offer

- Streamlines ordering and renewing services
### What is Included in SWSS?

Software Support Service includes all of the items previously found in UCSS and ESW, in one offering.

<table>
<thead>
<tr>
<th></th>
<th>Registered Access to Cisco.com</th>
<th>TAC Technical Support 24x7x365</th>
<th>Maintenance Releases and Patches x.x.X</th>
<th>Minor Update Releases x.X.x</th>
<th>Major Upgrade Releases X.x.x</th>
</tr>
</thead>
<tbody>
<tr>
<td>Essential Operate Services (ESW)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Unified Communications Software Subscription (UCSS)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Cisco Software Support Service (SWSS)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

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Treasure hunt code