

Cisco Unified Communications Manager (CUCM) 8.x

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Agenda

- **Software Releases**
- **Enhancements to CUCM 8.x**
- **Upgrade Paths**
- **Key Takeaways**

Q&A Policy

- **Please hold questions until the end of the presentation**



CUCM 8.x

SOFTWARE RELEASE STATUS

Release Status for CUCM 8.x

- **8.0(1) – Feb 2010**
- **8.0(2c) – May 2010**
- **8.0(3) – July 2010**
 - Several subsequent releases
 - Latest is 8.0(3a)SU2 – March 2011
- **8.5(1) – Nov 2010**
 - Latest is 8.5(1)SU1 – Feb 2011
- **UC 8.6 Beta Trial**
 - Various UC products including CUCM
 - In progress

CUCM 8.x

NEW FEATURES / ENHANCEMENTS

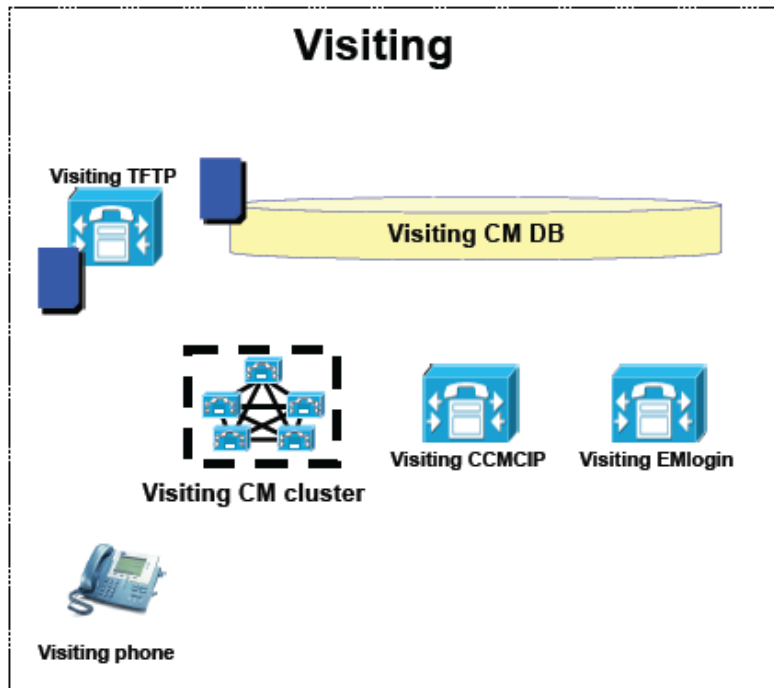
Cross-Cluster Extension Mobility

- **EM traditionally limited to intra-cluster users/devices**
- **Customers may have more than one CUCM cluster**
 - **Want to have the same features and services no matter where they log in**
- **Technical challenges**
 - **Cross-cluster functionality**
 - **Security**
 - **Call Routing**

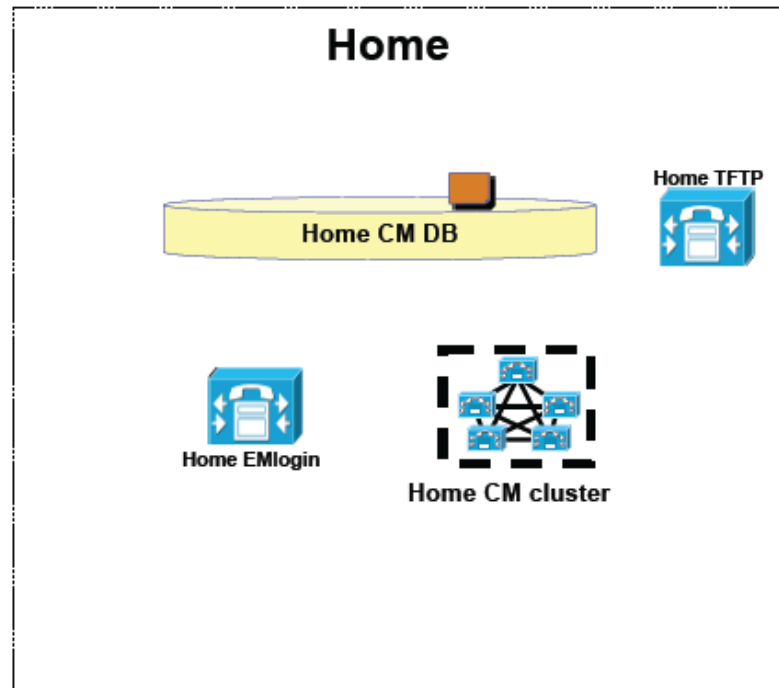
Cross-Cluster Extension Mobility

- **Registration Process**
 - High-Level
 - Home vs. Visiting cluster
 - Relative to the EM user
 - Login to phone on Visiting cluster
 - Home cluster receives device information and builds temporary device profile
 - Home cluster TFTP builds configuration file
 - After login, Visiting cluster directs phone to Home cluster TFTP server to download configuration
 - Phone cross-registers with Home cluster

Cross-Cluster Extension Mobility



Phone geographically present here
Phone's configuration resides here: Device Table
Resources the phone needs here—gateways, RSVP agents
Phone normally associated with a call agent that manages this geographic location



User configuration resides here.
Lines, Speed Dials, Features, many more
User's dialing habits make sense in this context
Cross-registration is the process of importing the device data into the home cluster and building a device record with user's EM profile in the home cluster, then directing the phone to register directly with home cluster CUCM.

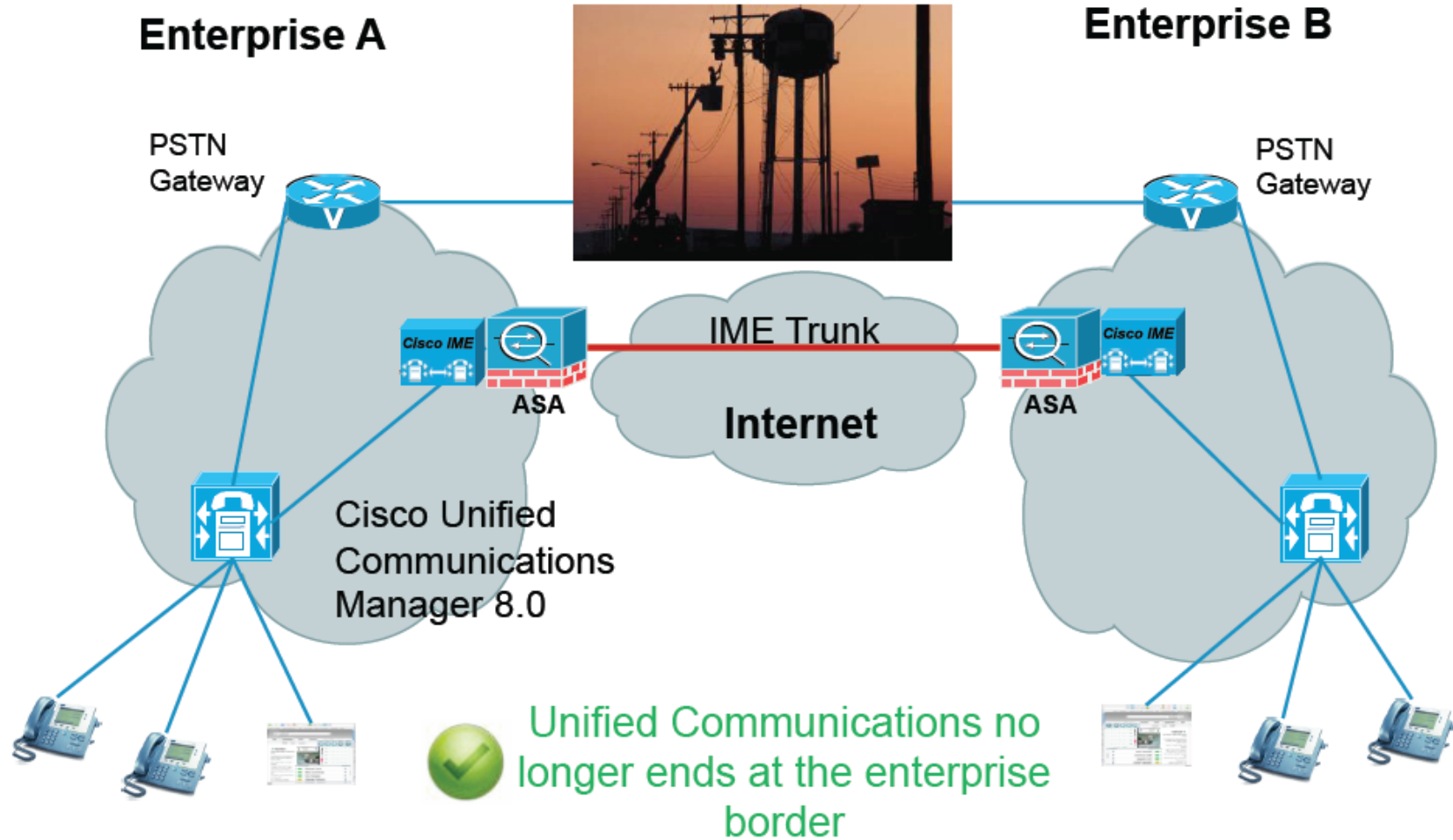
Cross-Cluster Extension Mobility

- **Configuration**
 - **Basic EM configuration**
 - **Service activation, phone service, profiles, etc.**
 - **EMCC configuration**
 - **Need to specify a common SFTP server that all clusters can access**
 - **Service Parameters**
 - **Cluster ID, CSS settings, etc.**
- **Enhanced Mobility and “Unified” Communications**

Intercompany Media Engine (IME)

- **Enhance B2B communications**
- **Interconnect with other companies via the Internet using SIP trunks**
- **IME moves calls from the PSTN to the Internet**
 - **Join IME network and CUCM enrolls DIDs**
 - **IME servers publish DIDs to IME network**
 - **First call to an enrolled DID is placed via the PSTN**
 - **Routes are learned so that subsequent calls to an enrolled DID are routed as IME SIP calls**

Intercompany Media Engine (IME)



Intercompany Media Engine (IME)

- **Components**
 - **CUCM 8.0**
 - Enrolls DIDs to IME server
 - Updates IME routes sent from IME server
 - **IME Server**
 - Participates in IME network
 - Publishes DIDs
 - IME routing validation
 - Sends learned routes (SIP) to CUCM

Intercompany Media Engine (IME)

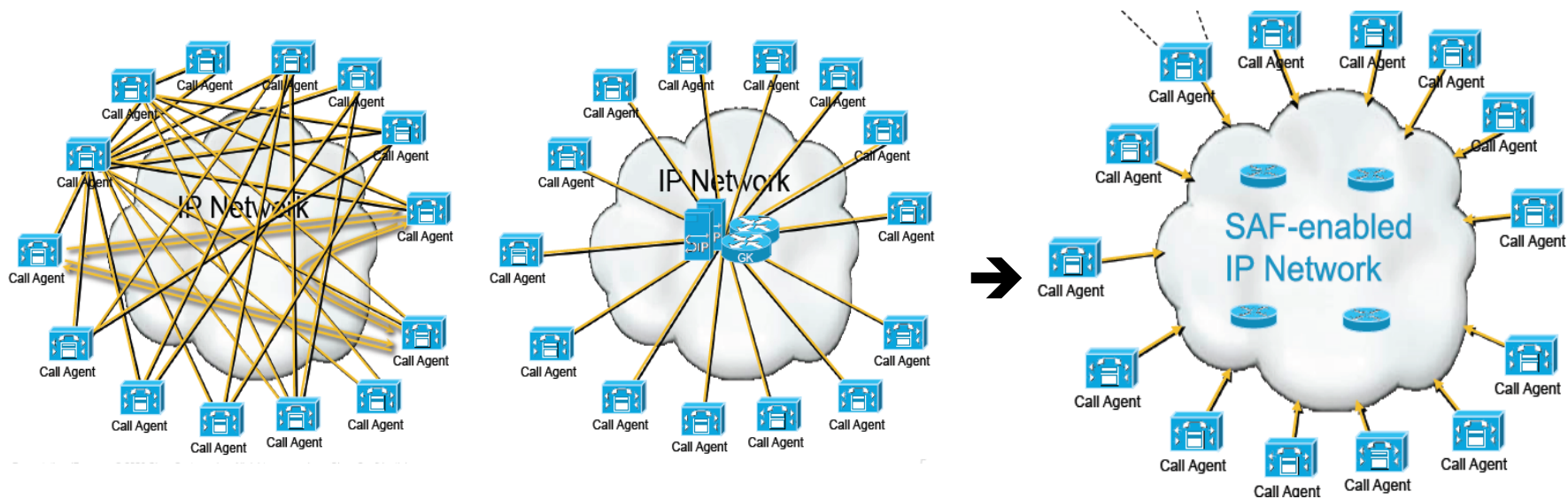
- **Components**
 - **ASA 500**
 - **Signaling and media security**
 - **Blocks unauthorized calls**
 - **Enrollment Server**
 - **Hosted by GoDaddy**
 - **CA for IME servers**

Service Advertisement Framework (SAF)

- **Reduce complexity of large voice deployments**
 - No full-mesh configurations
- **Dynamic sharing of call routing data**
- **2 major components**
 - **Service Advertisement Framework (SAF)**
 - Network protocol modeled after EIGRP to enable sharing of call routing data
 - **Call Control Discovery (CCD)**
 - Client-side service that advertises/requests call routing data to/from SAF networks
 - Devices running CCD are SAF Clients

Service Advertisement Framework (SAF)

- Hosted DN ranges are advertised to the SAF network
- Call Agents subscribe to Hosted DN service and learn routes from SAF network



Service Advertisement Framework (SAF)

- **Configuration Components**
 - **SAF Forwarder**
 - **Shares call routing data between SAF clients and amongst neighbors**
 - **Maintains call routing DB**
 - **Configured in IOS**
 - **SAF Client**
 - **Runs CCD services**
 - **External clients vs. Internal clients**
 - **Configured in CUCM**

Virtualization

- **Introduced in 8.0**
 - Supported with UC on UCS
 - Mixed install support for clustering
 - Clustering
 - Prefer HW redundancy
 - Server roles should factor into redundant design
- **8.5 brings new overlays and HW support**
 - Added support for B-Series configurations as well as updated C200/C210 M2 configurations

TFTP-HTTP

- **TFTP server hosts files for devices**
- **Previously, TFTP UDP port 69 only**
 - Now supported via HTTP
 - TCP port 6970
 - Endpoints will prefer HTTP over TFTP
 - Currently, 89XX/99XX phones only
- **Benefits of TFTP-HTTP**
 - QoS classification (TFTP = Scavenger)
 - Smaller payloads (1500 vs. 500 bytes)
 - Connection-oriented
 - Speed improvements on WAN and LAN

DST and Time Zone Changes

- **DST changes often come as a “surprise”**
 - Regardless of purpose, changes can be problematic
- **Previously, updating DST and Time Zone required installation of CUCM release and firmware updates**
 - Time Zone definition removed from CUCM DB
- **DST and Time Zone Updates now done at OS**
 - Post 8.x, install a single COP file
 - Changes are automatically picked up by the DB, RTMT, and phones
 - Ease of administration

LDAP Enhancements

- **Support creating custom LDAP filters via CUCM Admin interface**
 - Formerly only done via AXL or SQL DB
 - See Bill Bell's blog on AXL SQL Toolkit
 - Now done directly within GUI
 - **System > LDAP > LDAP Custom Filter**
 - Previously modified default filters become “Custom Filter”
- **Updated LDAP integration support**

CODEC Support and Selection

- **Continue to update CODEC support**
 - Internet-based CODEC Internet Speech Audio CODEC (iSAC)
 - Device-specific support
 - 8961, 9951, 9971
- **Region Configuration updates**
 - Audio CODEC renamed to Max Audio Bit Rate
 - Video Call Bandwidth renamed to Max Video Call Bit Rate (Includes Audio)
- **Audio CODEC Selection Logic**
 - CUCM now prefers BEST sounding CODEC as opposed to higher bit rate vs. lower bit rate

SIP Trunk Early Offer

- **Previously required MTP for Early Offer on SIP Trunk**
- **SIP Trunk can be configured to provide Early Offer for outgoing voice/video calls**
 - **Default is delayed offer**
 - **Checkbox on SIP Profile**
 - **Only applies to SIP trunks**
 - **No change to CUCM line side signaling**
 - » **SIP phones use delayed offer**
- **May still need an MTP in some cases**
 - **Ex: CODEC mismatch**
- **Ties into increased focus on video and interoperability**

Video Interoperability

- **Emphasis on video continues to increase**
- **Official support and testing of interoperability between CUCM and 3rd-party video endpoints using SIP**
 - CUCM unable to pick the right payload for optimal resolution OR may simply not provide video due to incompatibility in payloads
 - Treat all SIP endpoints using the standard SIP protocols
 - Support High Definition (HD, 720/1080p) negotiation between UC endpoints and 3rd-party in H.264 CODEC
- **Wide scope of interoperability testing**
 - UC, CTS, 3rd-party, etc.

Mobility Enhancements

- **Feature updates for CUCM-based mobility**
 - e.g., Mobile Connect
- **Unified Mobile Communicator (CUMC) clients now register directly with CUCM**
 - Goodbye, Unified Mobile Advantage (CUMA)
- **Increased focus on Mobility client(s)**
 - Ex: Cisco Mobile for iPhone

CTI Scalability Improvements

- **Increased CTI Scalability per server**
 - 7825 → 900/subscriber vs. 800
 - 7835 → 1000/subscriber vs. 800
 - 7845 → 3375/subscriber vs. 2500
- **Cluster limitations increased accordingly**
 - **Single server limit x 4 = Cluster Total**
 - **4 = Max # of Active Subscribers in Cluster**

MGCP FXO Caller ID

- **Previously, no Caller ID information such as party number or name reported**
 - Required H.323
- **Enabled via checkbox on gateway port in CUCM**
 - Enable Caller ID
- **Ability to globalize numbers**



CUCM 8.x UPGRADE PATH(S)

Upgrade Path(s) to CUCM 8.5

FROM CUCM Version	To CUCM 8.5
3.x/4.x	Multi Hop thru 6.1(x)/7.1(x)
5.1(2)	Multi Hop thru 6.1(x)/7.1(x)
5.1(3)	2 Hop thru 7.1(3)
6.1(1)	2 Hop thru 6.1(x)/7.1(x)
6.1(2)	2 Hop thru 6.1(x)/7.1(x)
6.1(3)	2 Hop thru 6.1(x)/7.1(x)
6.1(4)	Single Hop
6.1(5)	Single Hop
7.0(1)	2 Hop thru 7.1(x)
7.1(2)	2 Hop thru 7.1(x)
7.1(3)	Single Hop
7.1(5)	Single Hop
8.0(1)	Single Hop
8.0(2) / 8.0(3)	Single Hop

CUCM 8.x

KEY TAKEAWAYS

Key Takeaways

- **Virtualization**
 - Key addition for UC 8.x
- **Overall, CUCM 8.x brings lots of administrative-facing features**
- **Cross-Cluster EM is now possible**
- **IME and SAF are intriguing**
- **TFTP-HTTP development could provide additional benefits with further development**
- **Focus on Video and Mobility continues to increase**



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