Unified Call Control for Voice, Video & IM

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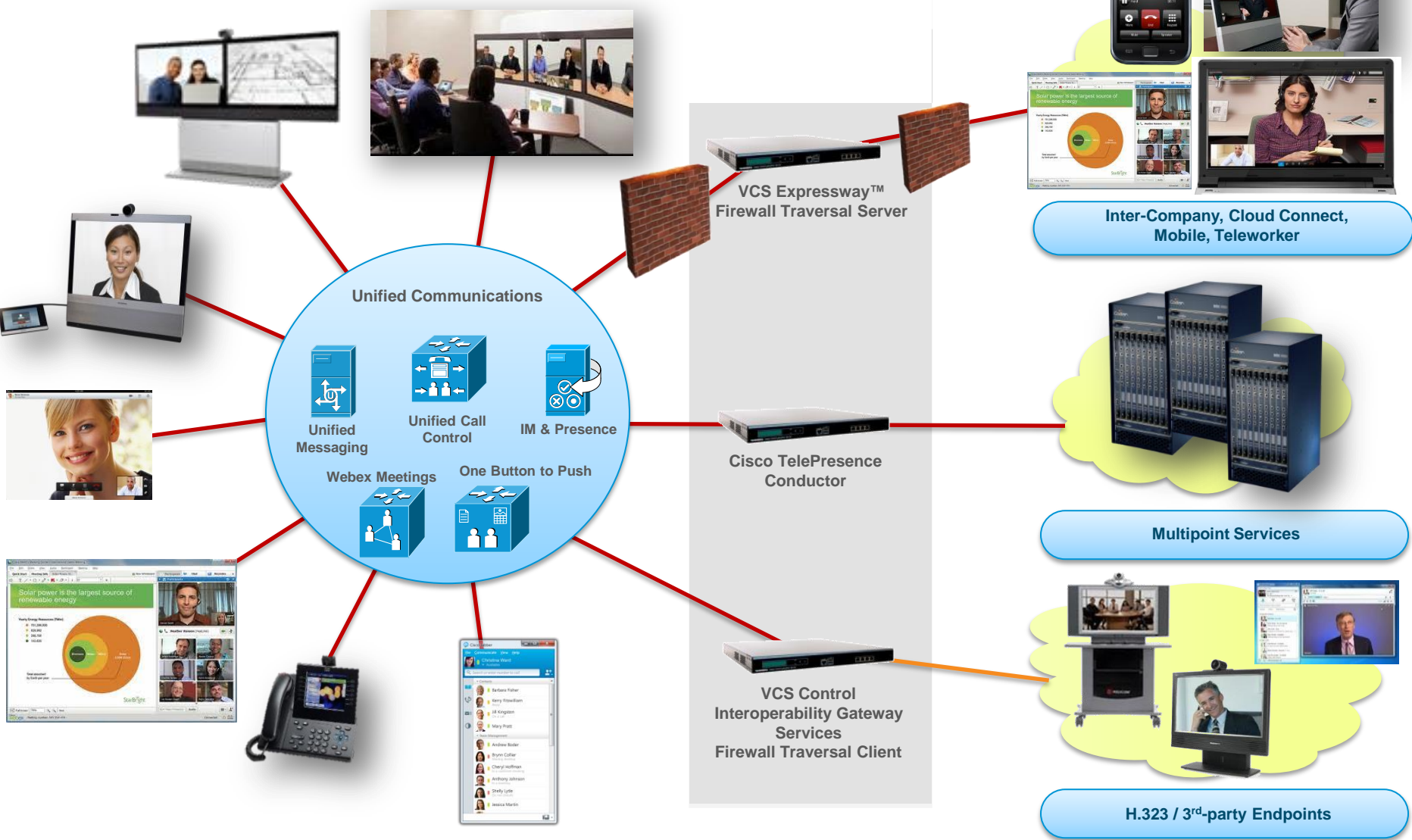
Partner System Engineer

Bulgaria, Macedonia, Montenegro & Serbia

Agenda

- Native Queuing

- Extend & Connect

- Deskphone Video

- Video Integration

- UC Virtualization

- Business Edition 6000

Unified Call Control Design

Unified Communications

Unified Messaging

Unified Call Control

IM & Presence

Webex Meetings

One Button to Push

**VCS Expressway™
Firewall Traversal Server**

**Cisco TelePresence
Conductor**

**VCS Control
Interoperability Gateway
Services
Firewall Traversal Client**

**Inter-Company, Cloud Connect,
Mobile, Teleworker**

Multipoint Services

H.323 / 3rd-party Endpoints

CUP Rebranded to CUCM IM & Presence

- Solution release 9.0, CUCM and CUP will start integration to be one product

- Client configuration moved to CUCM

- Includes common release and upgrade process

- Centralize administration

- Simplify licensing, now included as part of CUCM user licensing

- Deprecating IP Phone Messenger (IPPM) and CUPC 7.0

Native Queuing

Hunt Pilot Queuing

- Queue (hold) callers while they wait for an employee to become available

- Play Announcements & Music in Queue

- Longest call waiting distribution

- Login/logout of queues and view queue information on Cisco IP Phones

- Enhanced call detail records and monitoring tools

- Enhances Unified CM Hunt Group feature

*"Thank you for calling"*

"Please hold a moment"

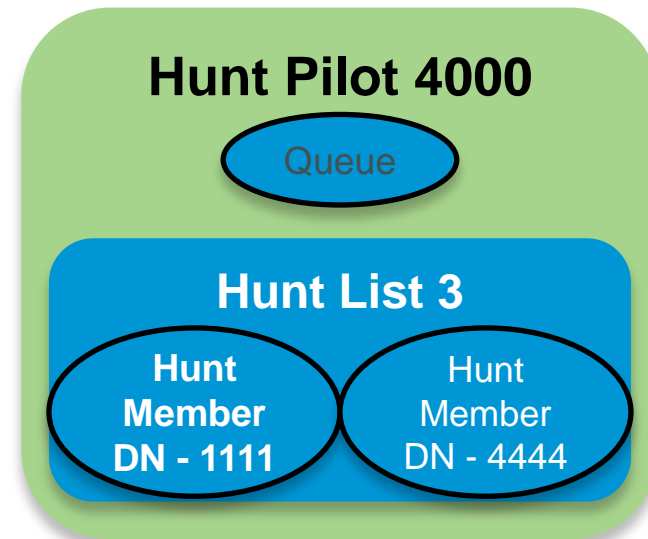*"Your call will be answered in the order in which it was received"*
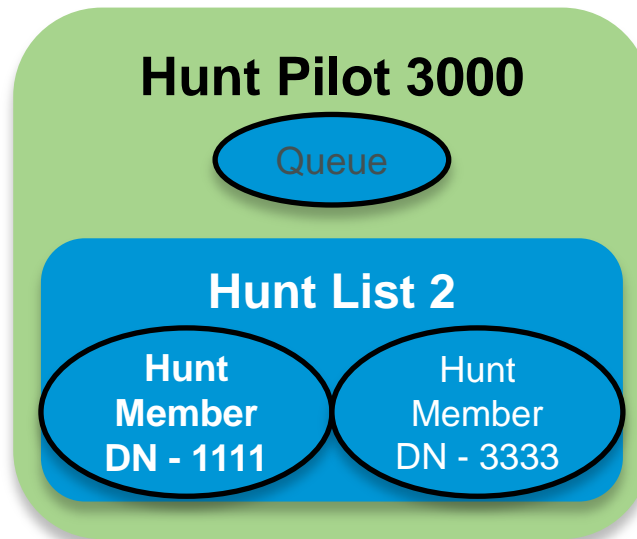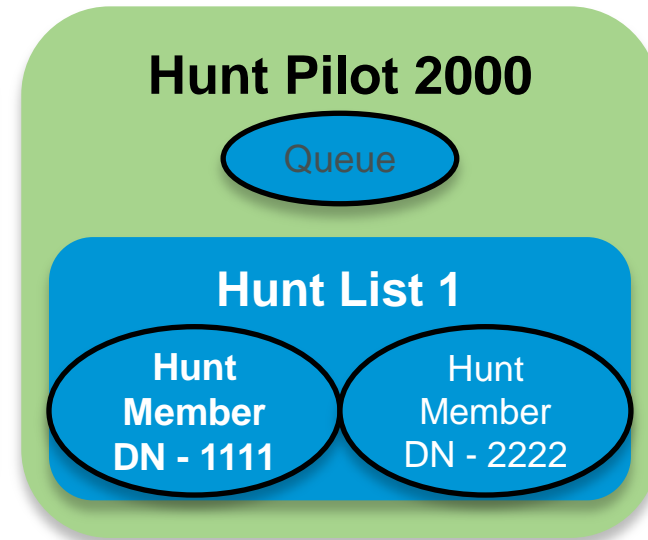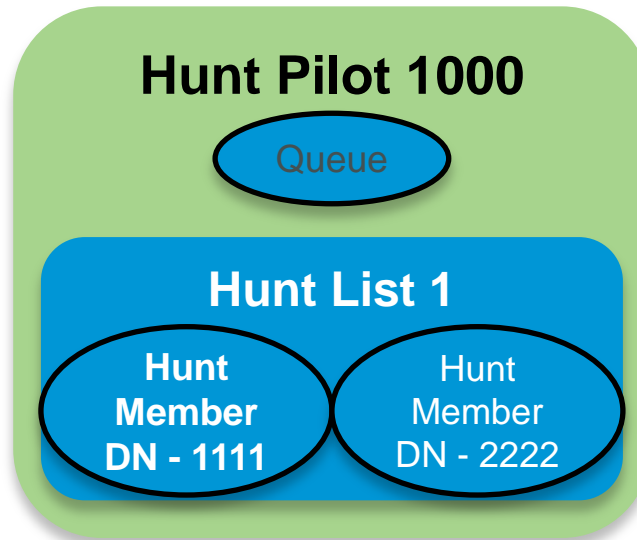
Unified CM

Terminology & Definitions

- **Hunt Pilot** – a special type of directory number used to distribute calls to Cisco IP Phones.

- **Queue** – parking lot where incoming Callers wait to be connected to Hunt Members

- **Hunt List** – a logical group of one or more Hunt Members eligible to receive calls.

- **Hunt Member** – any DN eligible to receive hunt pilot calls.

- **DN** - directory number assigned to one or more Cisco IP Phones.

Hunt Pilot - 1000

Queue

Hunt List

Hunt Member
DN - 1111

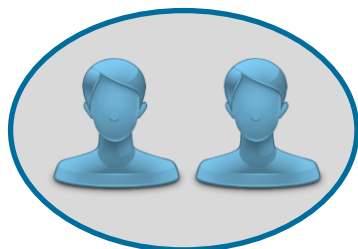**Hunt Member**
DN - 2222

1111
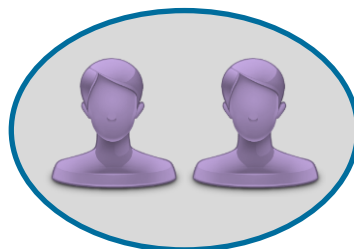
2222
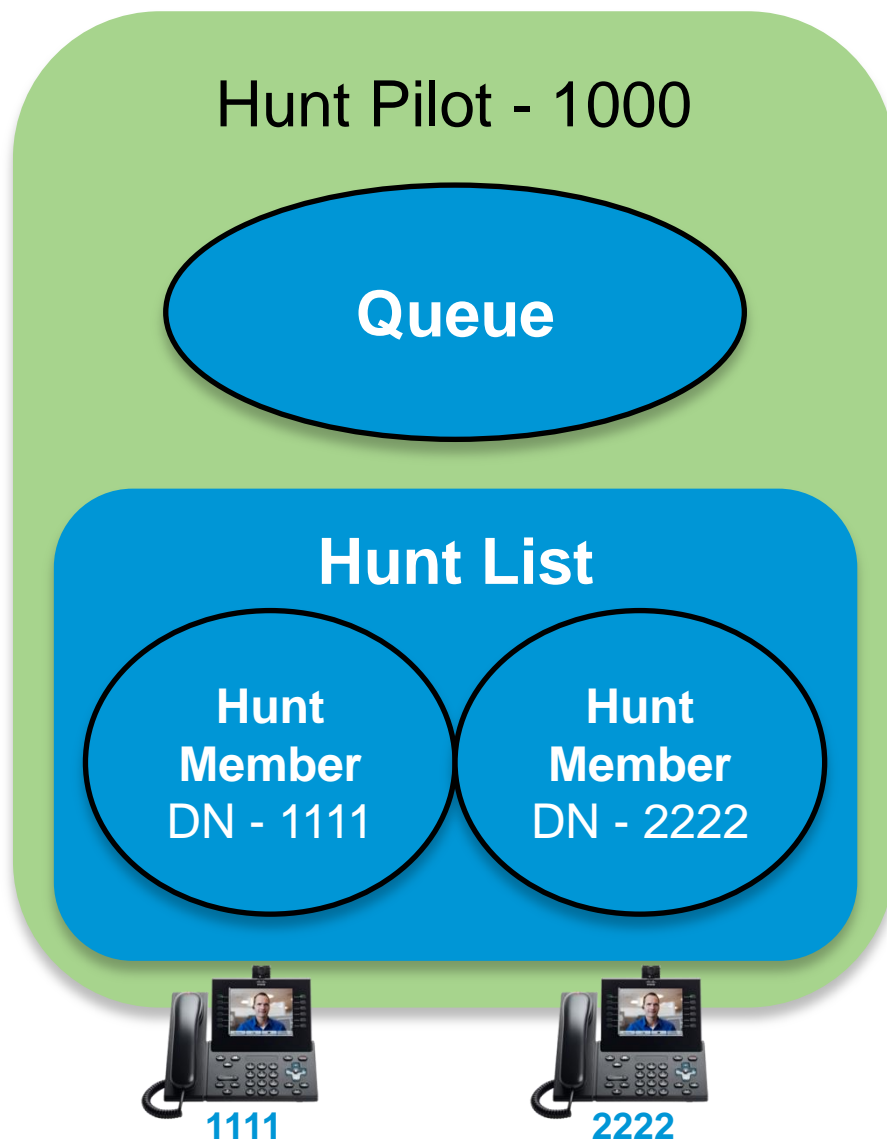
Hunt Members & Hunt Lists

- Hunt Lists can be assigned to one or more Hunt Pilots

- Hunt Members can be assigned to one or more Hunt Lists

- Multiple combinations of assignments is supported

Hunt Pilot 1000

Queue

Hunt List 1

Hunt Member DN - 1111

Hunt Member DN - 2222

Hunt Pilot 2000

Queue

Hunt List 1

Hunt Member DN - 1111

Hunt Member DN - 2222

Hunt Pilot 3000

Queue

Hunt List 2

Hunt Member DN - 1111

Hunt Member DN - 3333

Hunt Pilot 4000

Queue

Hunt List 3

Hunt Member DN - 1111

Hunt Member DN - 4444

Queued Caller Selection

Hunt Pilot: 1000
Longest call waiting:
2 minutes

Hunt Pilot: 2000
Longest call waiting:
3 minutes

Hunt Pilot: 3000
Longest call waiting:
4 minutes

Longest
Caller
Waiting

- Callers are distributed to hunt members based on the longest caller waiting in queue

- When the hunt member is eligible to receive calls from multiple hunt pilot queues, the longest caller waiting across all eligible queues is routed to the hunt member first

Hunt Member Selection

- Hunt Members are selected to receive calls based on the algorithm selected by the Administrator. Available algorithms include:

- **Longest-Idle** – selects the hunt member who has not received a hunt call for the longest amount of time.

- **Circular** – selects hunt members based on the order in which they appear in the hunt list; starting with the first member. When the next call is received, the next hunt member listed is selected.

- **Top-Down** – always attempts to select the first hunt member and continues attempting hunt members based on the order in which they appear in the list.

- **Broadcast** – selects all hunt member devices simultaneously for each call.

Announcements & Music/Tone on Hold

- Announcements can be played to both callers on Hold and/or callers in Queue

- MOH Sources can be assigned to any directory number

- Unicast/Multicast MOH options are supported (same options available in previous releases)

- Unified CM includes two sample announcements:

  Initial Announcement – Welcome message, typically played once

  Periodic Announcement – Holding message, typically played every X seconds; default is 30 seconds

- Up to 50 custom announcements can be uploaded and assigned to Music on Hold and Fixed MOH Sources

- When MOH is not configured, callers hear tone on hold

Cisco IP Phone Integration

- Control eligibility to receive Hunt Group calls using Hlog (login/logout)

- Hunt Members who do not answer hunt group calls are automatically logged out

- Queue Status displays real-time information for each Hunt Pilot based on Hunt Member configuration
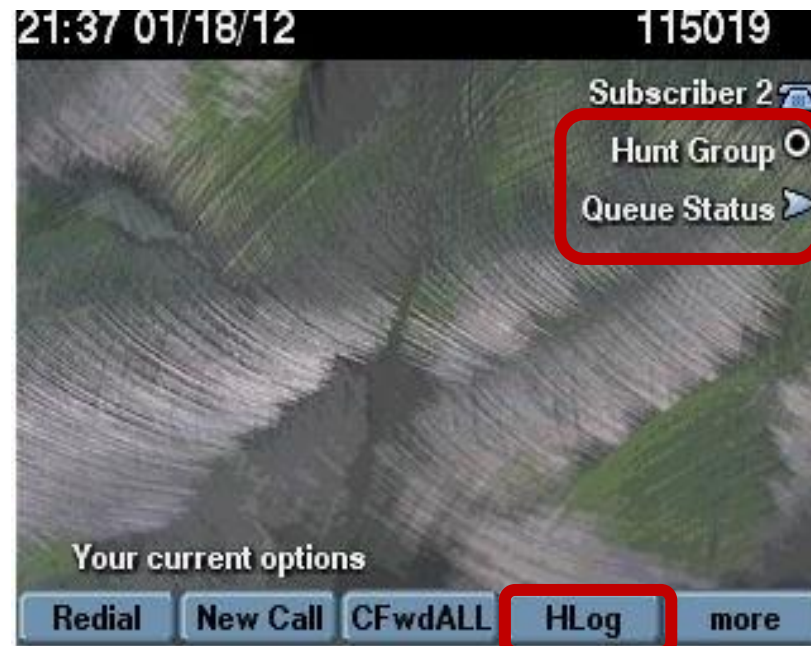
Native Queuing Performance

- A single Unified CM Cluster supports a maximum of 15,000 hunt list devices

- Hunt list devices may be a combination of 1500 hunt lists with 10 IP phones in each hunt list, 750 hunt lists with 20 IP phones in each hunt list, or similar combinations thereof.

- A single Unified CM Subscriber supports a maximum of 100 Hunt Pilots with call queuing enabled per node

- The maximum # of simultaneous callers in queue for each Hunt Pilot is configurable from 1-100 (default 32)

- The maximum wait time in queue for each hunt pilot is configurable from 0-3600 seconds (default 900)

Extend & Connect
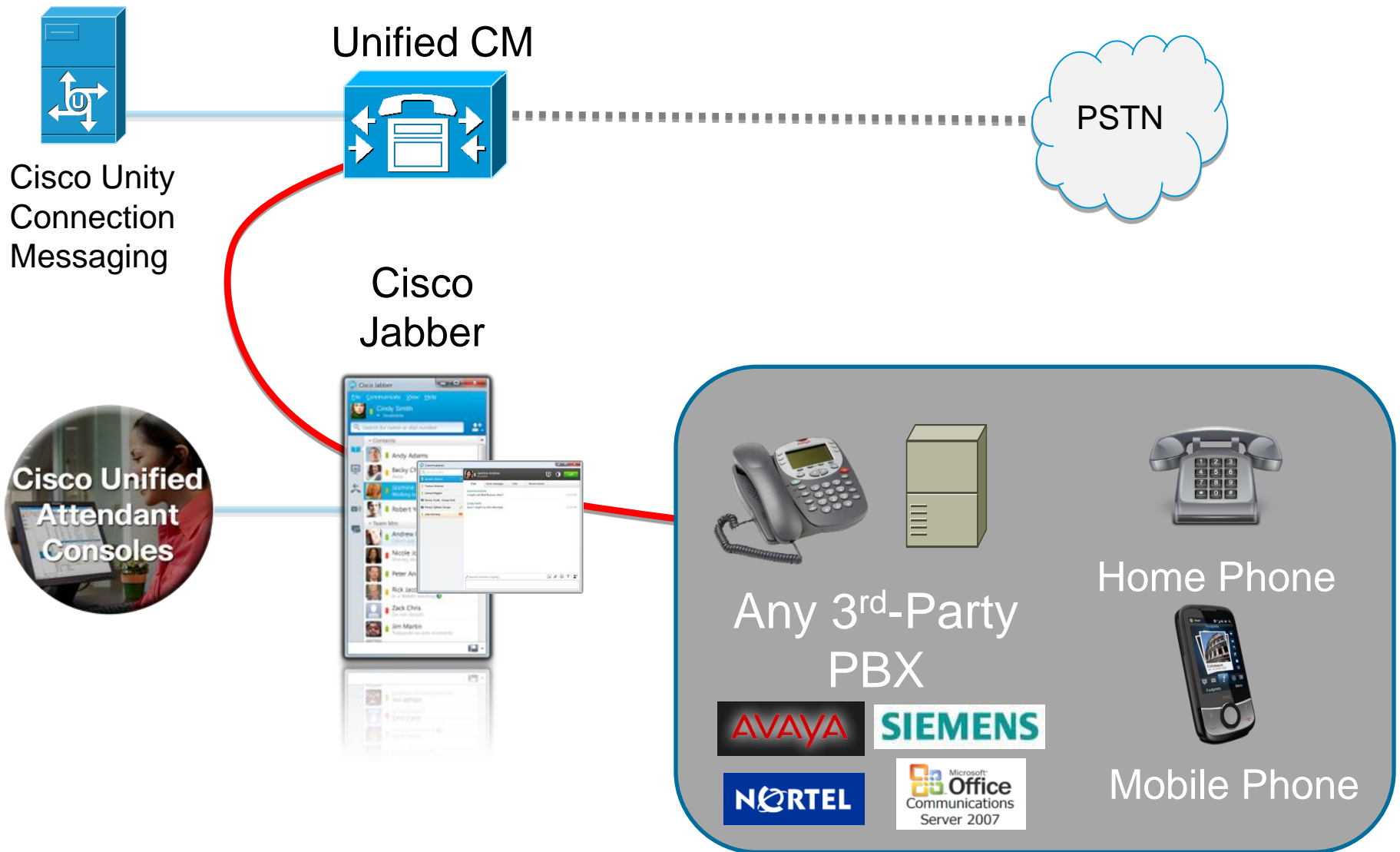
Common Use Cases

Cisco Jabber with 3rd-party PBX

- Customer wants to deploy Cisco Jabber as the desktop standard for IM & Presence, but has not yet decided to adopt Cisco IP Devices, plans to migrate to Cisco IP Devices over time, or needs to maintain a hybrid device environment.

Cisco Jabber for Mobile Worker

- User wants to use Jabber to make and receive calls using a home or hotel phone because their PC hardware or available network connection does not support VoIP or they want the convenience of Jabber click-to-call features to work with the device they are sitting next to at that moment.

- User already has a Cisco IP Phone, Jabber Softphone, or both, but wants to also use Jabber with a home or hotel phone.

Cisco Extend & Connect – Unified CM

Unified CM

PSTN

Cisco Unity
Connection
Messaging

Cisco
Jabber

Cisco Unified
Attendant
Consoles

Any 3rd-Party PBX

AVAYA   SIEMENS

NØRTEL   Microsoft Office Communications Server 2007

Home Phone

Mobile Phone

Calling Features

- Receive Incoming enterprise calls
- Make Call
- Disconnect
- Hold/Retrieve
- Redirect/Forward
- Call Forward All
- Do Not Disturb
- Play DTMF (out-of-band)
- Consult Transfer, Conference
- Add/Edit/Delete Remote Destinations
- Set Remote Destination as 'Active'/'Inactive'

Architecture

CTI Remote Device is registered to Unified CM. Directory Number 2000 is the User's internal/external extension, represented as +1 408 200 2000 or 2000
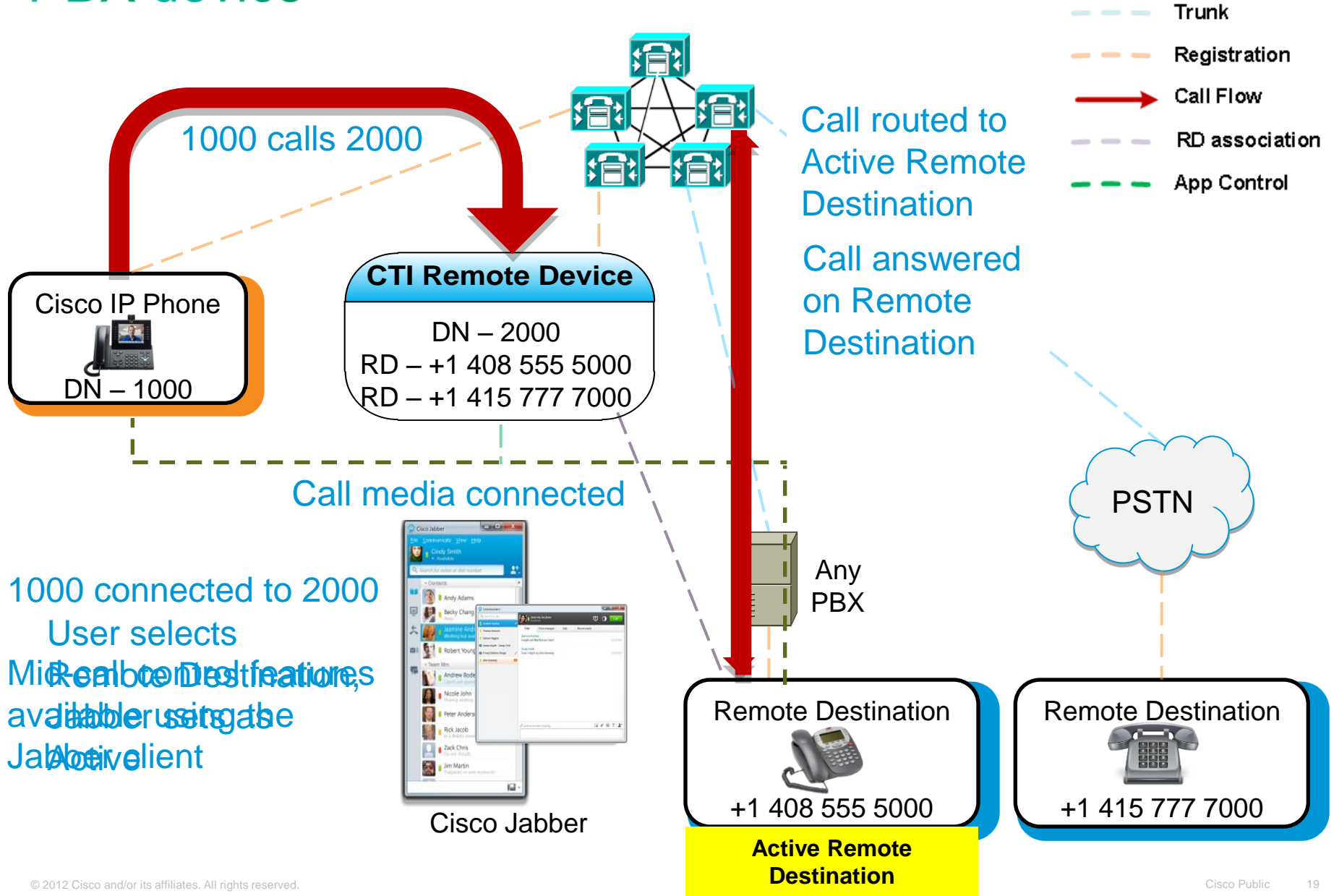
CTI applications receive call events and may perform call operations
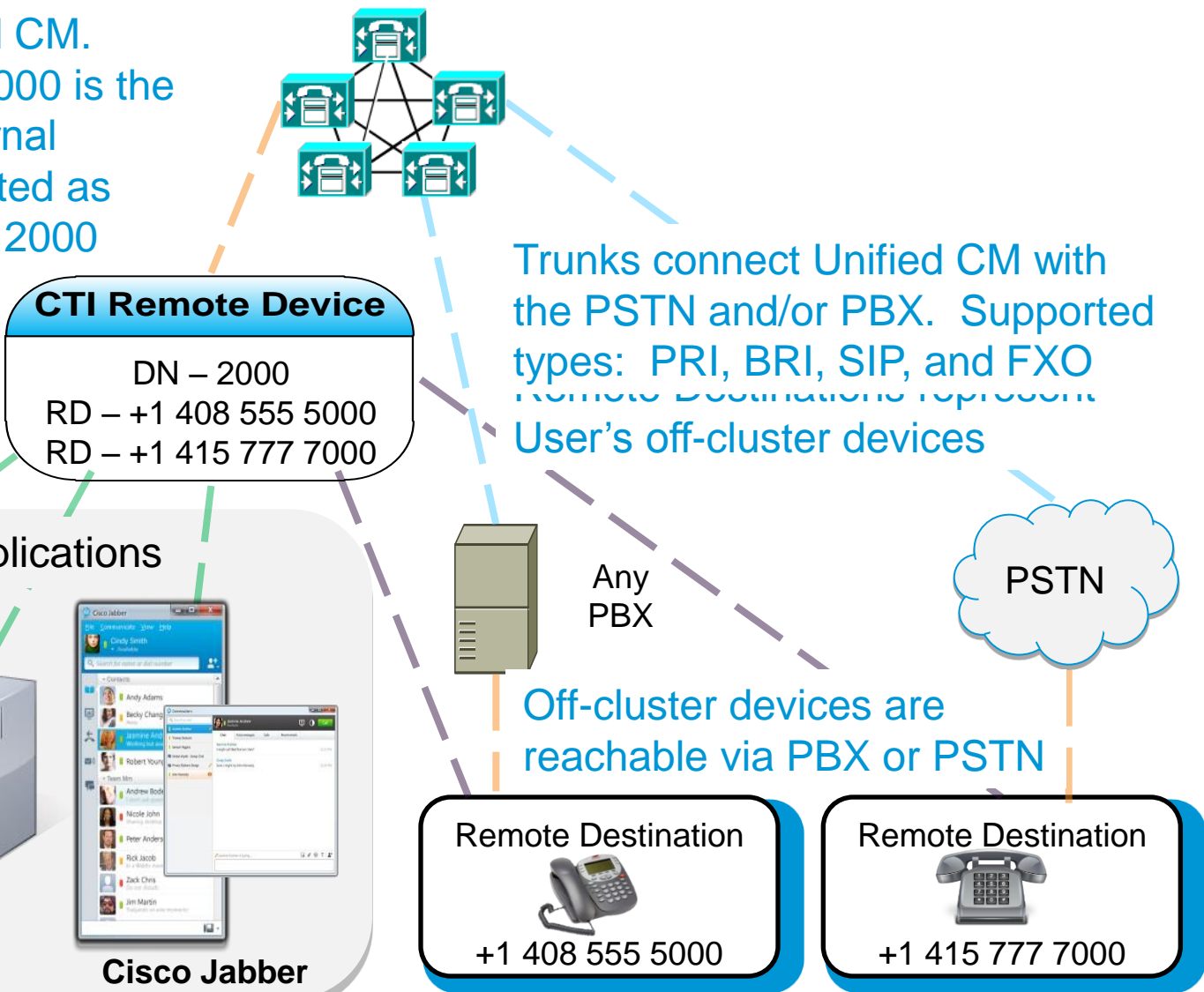
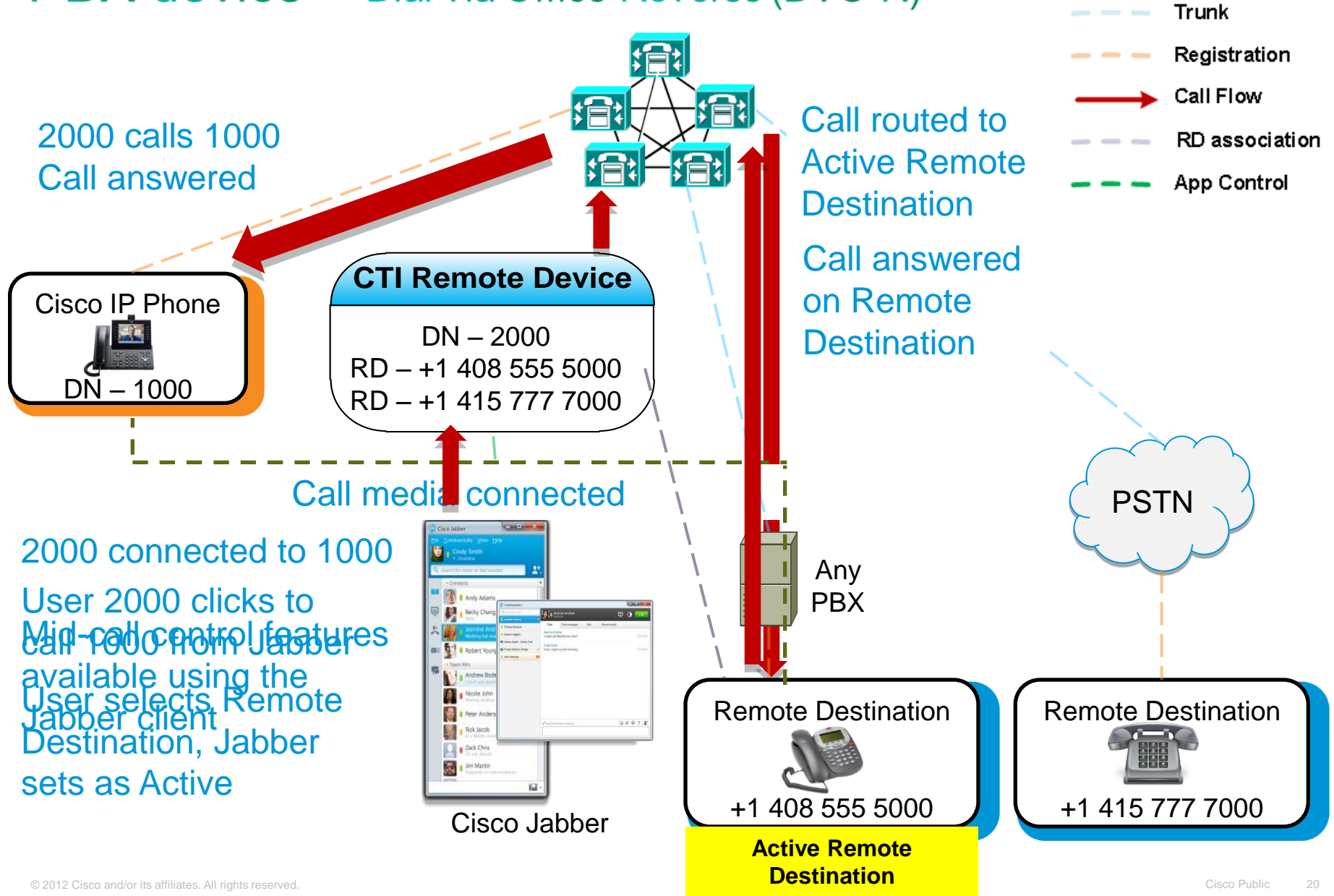Trunks connect Unified CM with the PSTN and/or PBX. Supported types: PRI, BRI, SIP, and FXO

Remote Destinations represent User's off-cluster devices

CTI Remote Device

DN – 2000
RD – +1 408 555 5000
RD – +1 415 777 7000

CTI Applications

Cisco Unified Attendant Consoles

Cisco Jabber

Any PBX

PSTN

Off-cluster devices are reachable via PBX or PSTN

Remote Destination

+1 408 555 5000

Remote Destination

+1 415 777 7000

Incoming Call – Active Remote Destination PBX device

1000 calls 2000

CTI Remote Device

DN – 2000
RD – +1 408 555 5000
RD – +1 415 777 7000

Cisco IP Phone

DN – 1000

Call routed to Active Remote Destination

Call answered on Remote Destination

Call media connected

PSTN

1000 connected to 2000

User selects
Remote Destination,
available using the
Jabber client

Micro controls feature
available using the
Jabber client

Cisco Jabber

Any PBX

Remote Destination

+1 408 555 5000

Active Remote Destination

Remote Destination

+1 415 777 7000

Outgoing Call – Active Remote Destination
PBX device – Dial via Office-Reverse (DVO-R)

Trunk
Registration
Call Flow
RD association
App Control

2000 calls 1000
Call answered

Call routed to
Active Remote
Destination

Call answered
on Remote
Destination

Cisco IP Phone

DN – 1000

CTI Remote Device

DN – 2000
RD – +1 408 555 5000
RD – +1 415 777 7000

Call media connected

2000 connected to 1000

User 2000 clicks to
Mid-call control features
call 1000 from Jabber
available using the
User selects Remote
Jabber client
Destination, Jabber
sets as Active

Cisco Jabber

Any
PBX

PSTN

Remote Destination

+1 408 555 5000

**Active Remote
Destination**

Remote Destination

+1 415 777 7000

URI assigned to Remote Destination
PBX Device – Incoming Call

Legend:
- - - - Trunk
- - - - Registration
→ Call Flow
- - - - RD association
- - - - App Control

bob@cisco.com calls joe@cisco.com

Call routed to Active Remote Destination Jblog@work.com

Call answered on Remote Destination

Cisco IP Phone
DN – 1000
bob@cisco.com

CTI Remote Device
DN – 2000
joe@cisco.com
RD – **Jblog@work.com**
RD – +1 415 777 7000

Call media connected

1000 connected to 2000
User selects
Microsoft Destination,
Remote Destination features
available, using the
Jabber client
Active
Jabber

Cisco Jabber

Any PBX

PSTN

Remote Destination
Jblog@work.com

Active Remote Destination

Remote Destination
+1 415 777 7000

Desk Phone Video

Cisco Jabber for Windows
Desk Phone Video
Audio on your handset, Video on your PC

Audio

Video

- **Use Case: Bring video to non-video phones and leverage video on preferred screens and leverage legacy investments**

- Desk Phone Video provides high definition video for Cisco telephony endpoints that don't already provide a video function.

- Audio is terminated on the handset / Video is displayed on the workstation screen

Cisco Jabber for Windows
Desk phone Video

Router

Switch

802.1q
VLAN Tagging
(optional)

Data
VLAN

Voice
VLAN

CDP &
CAST

Cisco IP
Phone

Associated
Camera/Phone

Jabber for
Windows
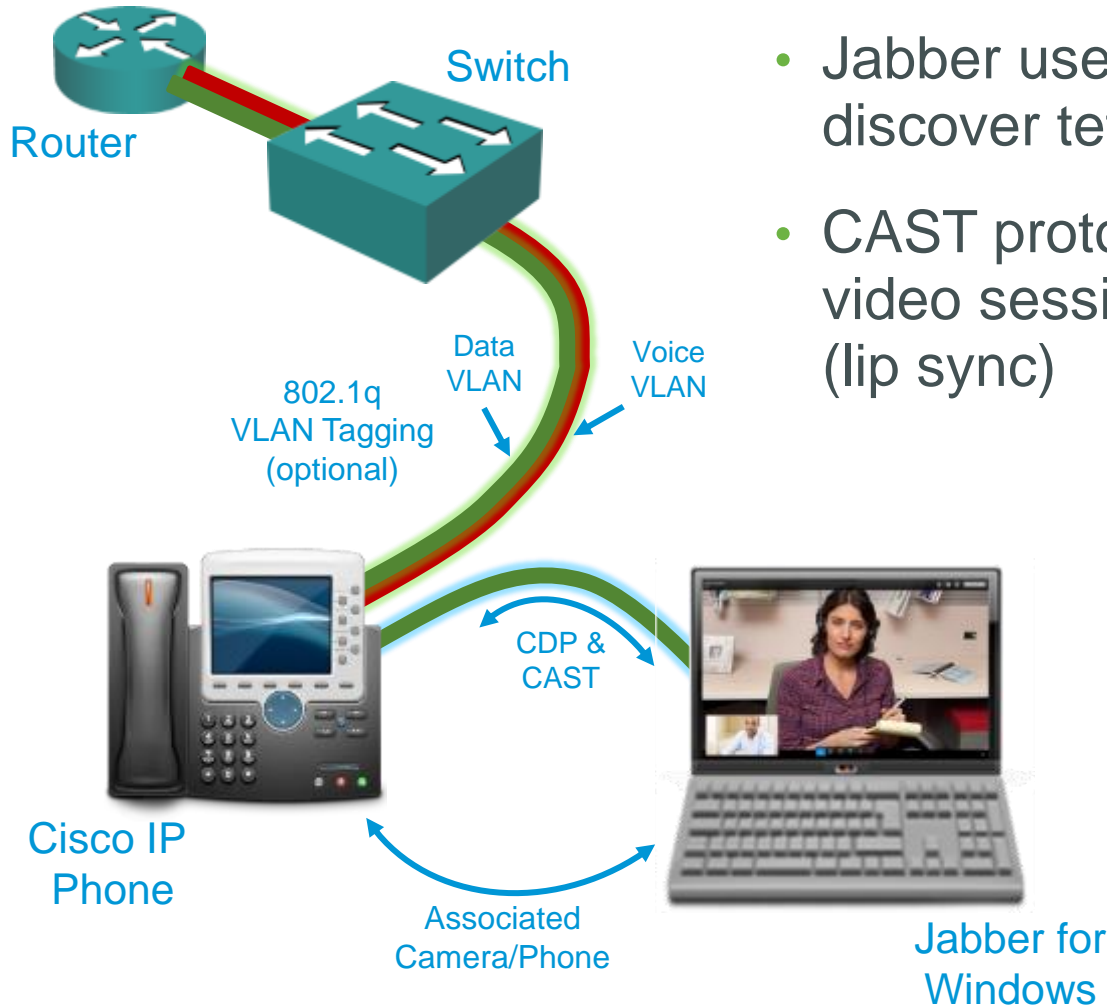
- Jabber uses CDP protocol to discover tethered Cisco Phone.

- CAST protocol is used to negotiate video sessions based on call setup (lip sync)

- Jabber controls the phone using CTI protocol in desk phone mode

- CDP/CAST support is provided by Cisco Medianet MSI installer. (must be present)

Cisco Jabber for Windows
Desk phone Video

- Supported Phones/Firmware

    Cisco 69xx Series phone running SIP firmware

    Cisco 79xx Series phone running SCCP firmware

    Cisco 89xx Series phone running SIP firmware

    Cisco 99xx Series phone running SIP firmware

- Prerequisites

    Jabber for Windows 9.1 on Workstation

    Cisco Medianet Media Services Interface (MSI) – provides CDP/CAST

    Supported phone with video enabled

        89/99xx phones must have local USB camera removed.
        Cisco phones with a fixed camera do not supported this feature(i.e. 8945)
        Installed camera will disable feature

- Desk phone video is enabled in Jabber full UC mode.

Video Integration

Video Integration on CUCM

- SIP Video Endpoints on CUCM

    EX, MX, SX, TX and C-Series endpoints can now be deployed natively on CUCM

- Security enhancements for Video Endpoints Registered to CUCM

    Encryption (signaling and media) on CUCM

- Desktop Sharing in Video Call

    Support for standard BFCP protocol for SIP endpoints

- New CUCM Features for Personal Video Endpoints EX60 & EX90

    Encryption in CUCM Environment

    Basic CTI/JTAPI support

    Shared Lines support

    Call Forward All support

    Voice mail support and message waiting indication.

    SIP URI dialing

- TelePresence Conferencing on CUCM

    CUCM endpoints can now use TelePresence MCU as ad hoc conferencing resource

    MCU and TPS can now be directly trunked off of CUCM

- Standards-based H.264 support on CTS endpoints

    CTS endpoints now natively compatible with standards-based H.264 endpoints and MCUs

- TIP and One Button to Push scheduling extended to ex-Tandberg and new video endpoints

    EX, MX, SX and C-Series interoperable with CTMS and schedule'able by CTS-Manager

    CTS endpoints schedule'able by TMS

- Schedulling

    TMS 13.2 can now schedule CTS, EX, MX, SX and C-Series endpoints registered to CUCM

URI Dialing
Simplify your reachability

Any Addressing Scheme

Product Manager
My Company

johns@mycompany.com
**Email, Jabber ID/IM**

John Smith

408-555-1212

Office

Enhanced Locations Based CAC

- CUCM 9.0 enables the following features:
    - Efficient bandwidth management for clusters that share physical sites
    - Allow administrator to model complex topologies including multi hop WAN
    - Multiple CUCM clusters can share end to end BW deductions
    - Configure independent bandwidth for voice, video, and immersive calls
    - Support for intra-location bandwidth limits
    - Introduce weighting attribute for redundant links to influence path selection

Multi-Cluster SME Design
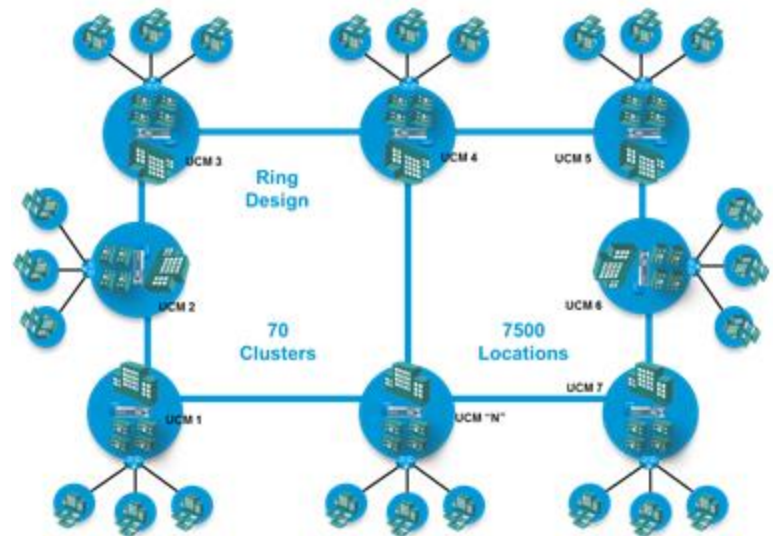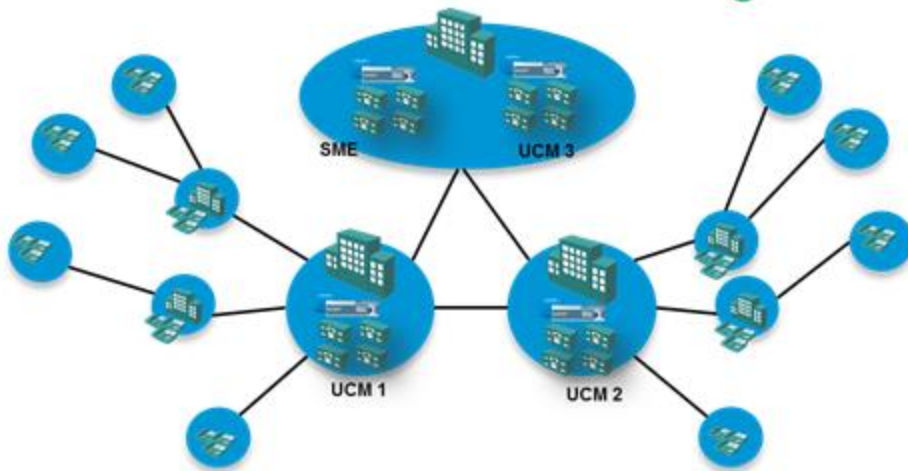
UC Virtualization

Virtualized Offers

Preferred (for same reasons as MCS 7800)
- Faster / easier / "safer"
- Doesn't require vCenter
- Avoid deal stall from engaging server field/practice/IT dept.

…but we still need this..why?
- Customers want to protect their current investments in servers
- In some cases Spec-based might be better fit for customers

Tested Reference Configuration (TRC)

Specs-based

Business Edition 6000

UC on UCS

UC on UCS

3rd-Party

| More | "Assurance" "Simplicity" | Less |

"Tell me what to do…"

"I know what I'm doing…"

| Less | "Choices" Existing Investment Leverage | More |

Value of Tested Reference Configuration

Configuration
- Collab BU did the Design and BOM for me.
- Don't need help from DC team/practice.
- Server Buyer/Dept. "keep-away"
- Easier for partner to ID what a customer has

Reference
- Guaranteed application performance.
- "One size fits all" for all the Collab apps.
- Known data point if I want to "roll my own"

Tested
- Collab BU did "solution joint validation" for me.
- More on Collab BU, less on me.

Efficiency
- Optimal R&D: ↑UCS portfolio + ↓TTM + ↓CAPEX/OPEX
- "80% scenario" coverage with rationalize-able price/perf
- Faster to design/quote (partner profitability)

CONTENT

RESOURCES SCHEDULE

Value of Specs-based Configuration

E.g. C220 M3S TRC#1

Use Specs-based instead for…
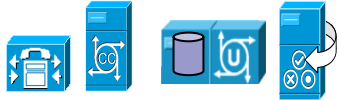
Examples of what this TRC can run
- ~4 apps for 7.5K user deployment
- ~6-8 apps for 1K user deployment

"I need a different app count than your TRCs"
- More apps/users than your biggest TRC
- Less apps/users than your smallest/cheapest TRC (and I don't want BE)

"Cheap & Cheerful" VMware OEM
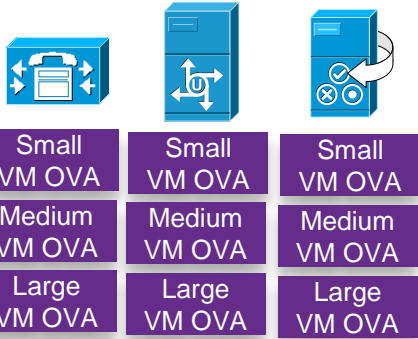- Cisco UC Virtualization Foundation 5.0

"Hardcoded" Specs and BOM
- Vendor = Cisco
- Server Model = C220 M3S
- CPU = dual 4-core E5-2643
- RAM = 64GB
- Storage = 8x 300 GB disks with RAID5
- 6x 1GbE NIC ports
- "Super-set" to handle all app mixes. Not necessarily cheapest for your particular app mix.

"I want different hardware than your TRC"
- different vendor (HP, IBM, Dell,…)
- different server model (UCS C460)
- different CPU (e.g. dual 6-core)
- Your TRC is too expensive for my VM count
- I want to use SAN or NAS instead of DAS
- I want to use 10GbE, FC, FCoE, not 1GbE
- I want to "tune" to my specific app mix since none of your TRCs are a perfect fit

What does UC Virtualization look like?

Small VM OVA
Medium VM OVA
Large VM OVA

Small VM OVA
Medium VM OVA
Large VM OVA

Small VM OVA
Medium VM OVA
Large VM OVA

Supported Apps & Versions
Virtual Machine Templates (OVAs) for different CPU types
Sizing & Co-residency Rules

Virtualization Software

CISCO
Cisco UC Virtualization Hypervisor
(BE 6000 only)

or

CISCO
Cisco UC Virtualization Foundation

or

vmware
vSphere ESXi
Various "Editions"
vCenter for Specs-based

Compute Hardware

Network Hardware

Storage Hardware

Various support models:

CISCO
UC on UCS TRC
UC on UCS Specs-based

hp invent

IBM
3rd Party Specs-based

DELL

Support for DAS, Diskless, SAN/NAS, Adapters also varies for TRC vs. Specs-based.

Business Edition 6000

Cisco Business Edition 6000 - Where Sophistication Meets Simplicity

Affordable

- Lowers TCO with server consolidation for reduced hardware footprint, power, and cooling; serves up to 1,000 users, 1200 endpoints and 50 sites

Interoperable

- Links multiple 3rd party and legacy TelePresence devices seamlessly together to form a true Collaboration platform

Simple

- Streamlines operations, administration, and management with deployment flexibility through unified provisioning

Highly-Available

- Offers optional server redundancy and Survivable Branch (SRST) providing peace of mind

Scalable

- Increases ROI with agility and 99% investment protection; grows with the company

Cisco Business Edition 6000

Enterprise-Class Collaboration for Small & Midsize Companies

Cisco Business Edition 6000
Integrated Collaboration Platform with Embedded Application Options from the Factory

Cisco Unified Communication Manager
for call control

Cisco Paging Server
For point- to-point, group paging

Cisco Prime Collaboration
For day 1, day 2+ management

Cisco TelePresence® Video Communication
For H.323 interoperability, B2B

Server Virtualization

Cisco Jabber
For instant messaging, presence

Cisco Unified Contact Center Express
For customer care

Cisco Unified Attendant Console
For call routing, distribution

Cisco Business Edition 6000
on Cisco UCS® 220 M3 TRC #3
Rack-mount Server

Cisco WebEx Meetings
For web conferencing

Cisco Unity® Connection
For voicemail, automated attendant

Cisco Emergency Responder
For emergency services

All virtual machine servers can be managed by their individual native GUIs.
Cisco UC Virtualization Hypervisor is included for free

Cisco IP Endpoint and Client Portfolio

From basic to high-quality, multi-media communications enhanced viewing, streamlined user experience.

Basic Voice Communications Endpoints

3900 Series

Business Communication Endpoints

6900 Series

Advanced Business Communication Endpoints

7900 Series

Advanced Professional Media Endpoints

8900 Series

Advanced Collaborative Media Endpoints

9900 Series

Video Personal & Immersive Media Endpoints

EX Series and CTS Systems

Cisco Jabber On Any Device

Virtualization Experience Clients

Unified Messaging with Unity Connection

Manage your messages: by listening or reading, at your desk or on the go, on a phone or on a PC.

- ✓ Access voicemail anytime, anywhere.
- ✓ With voicemail access from desktop, web browser, email, phone, mobile phone.
- ✓ Intelligently route incoming calls using call transfer rules.
- ✓ Single Inbox with Exchange unified messaging.
- ✓ Intelligent Voicemail Notification with HTML Marked-up Messages: delivered via SMTP (email agnostic) & provides actionable links to act on specific message

Video Communication Server Control

Extend video experience to transform business, visually.

Advanced Video and TelePresence management
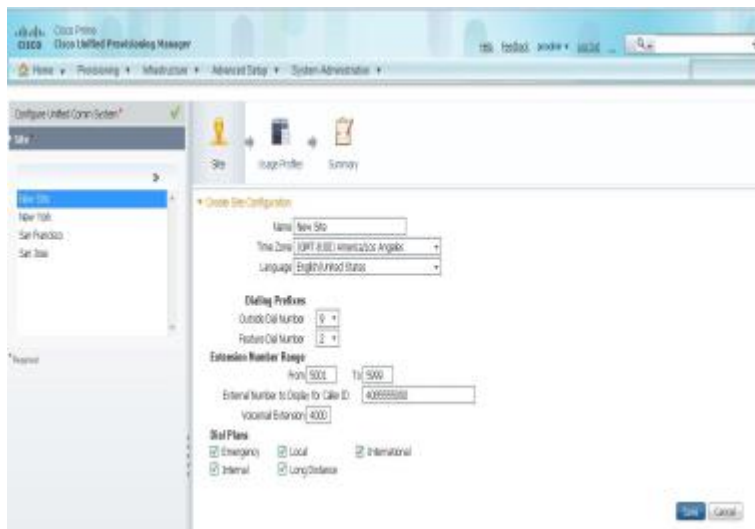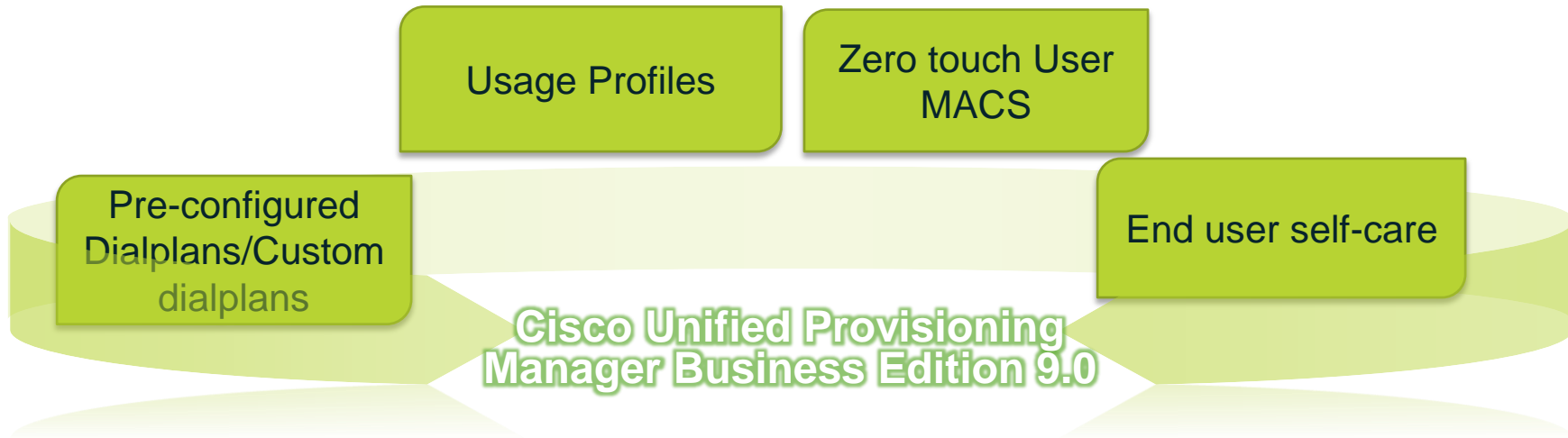
Bandwidth Management

Firewall Traversal and B2B

Content sharing

Any-to-any interoperability

- ✓ Intelligent TelePresence and Video call control and management
- ✓ Mission critical video that scales with ease
- ✓ Video communication outside the firewall (requires VCS- Expressway)
- ✓ Protecting investments in third party video and voice assets through standards

  - ▪SIP- H.323 Interworking
  - ▪3rd party PBX Video Gateway

Unified Provisioning Manager BE 9.0 or Cisco Prime Collaboration with BE6k 9.1

Usage Profiles

Zero touch User MACS

Pre-configured Dialplans/Custom dialplans

End user self-care

Cisco Unified Provisioning Manager Business Edition 9.0

UCCX 9.0 with BE6k

5 Enhanced Seat Bundle Included for Free

- Standard CUCM promotion offer, OS/DB entitlement is required

Next Generation Web 2.0 Reporting

- Cisco Unified Intelligent Center support all existing out-of-the-box reports

- Included with CCX Standard, Enhanced and Premium at no cost

- Fully integrated database, install and admin

- Customized views, thresholds on reporting data & dashboard capability

- Permalinks enable one-click access to reporting data Wallboards, Digital Signage

- Custom report development opportunity for partners and advanced customers

- Scheduling enables report and data distribution via email

Upgrade to Premium Agent license enables Web Chat

- Integrated Entry Level Web Chat

- New historical and real time reports
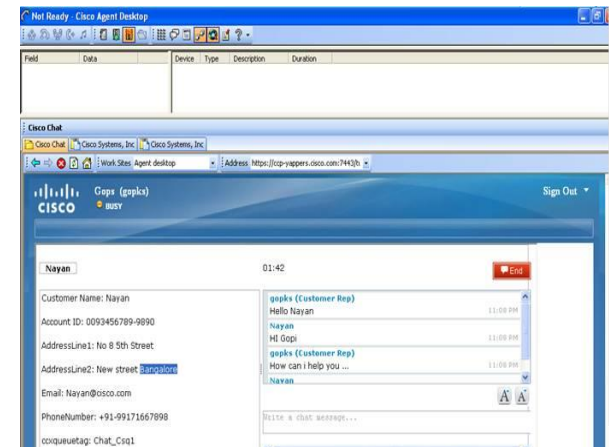
UCS C220 Server

- 1RU Square rack mountable

- 2 quad-core 2.4 GHz E5-2609 processor

- 4 x 8 GB RAM

- 4 x 500 GB 7200 RPM SATA disks, RAID-10 configuration

- Integrated dual-port Gigabit Ethernet

- 1 Gigabit Ethernet management port,

- Redundant power supply option

- UC Virtualization Hypervisor (VMware Hypervisor 5.X) pre-installed

    2 CPU sockets, 16G of vRAM entitled.

- Option to upgrade to UC Virtualization Foundation with vCenter compatibility.

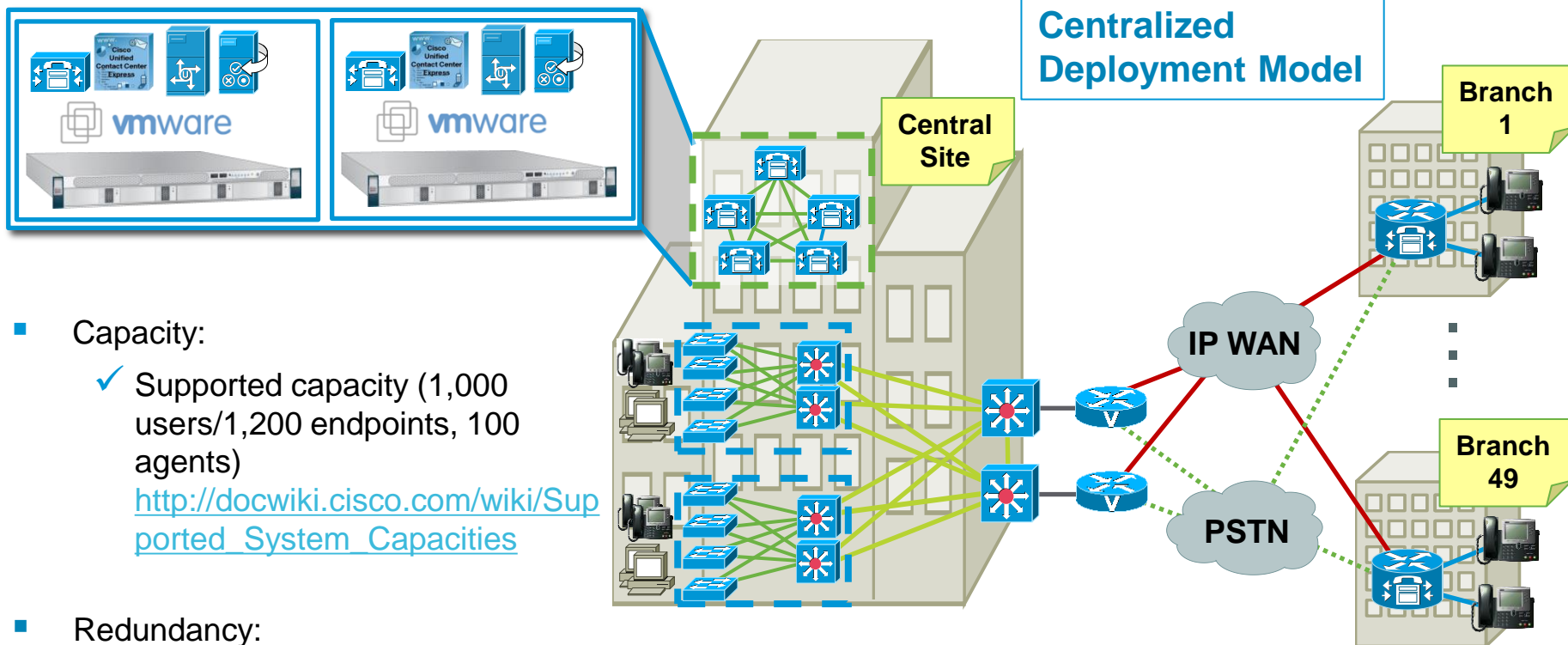   2 CPU sockets, 32G of vRAM entited

    Requires services

Flexible Application Redundancy
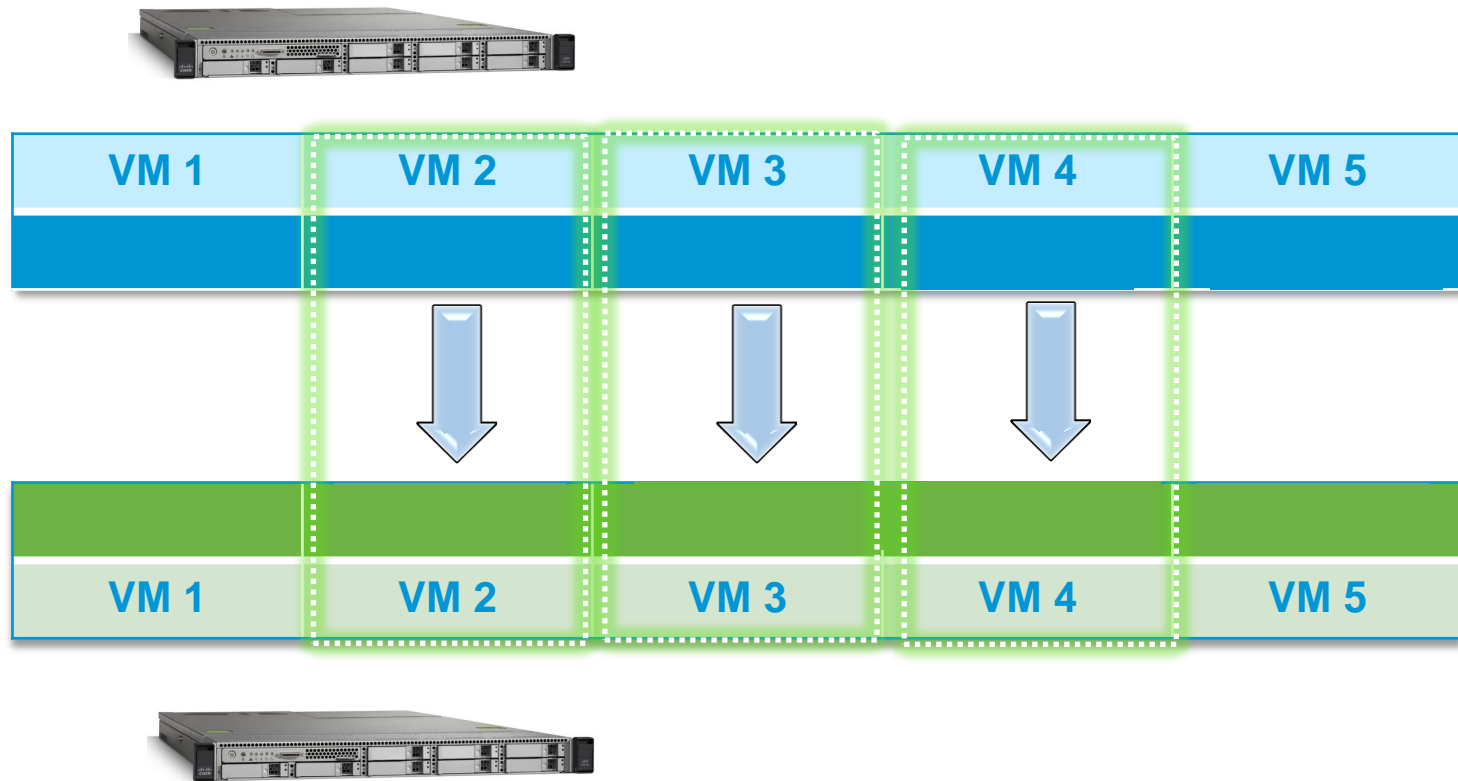
Cisco Business Edition 6000
Centralized Deployment Model

Centralized Deployment Model

Central Site

Branch 1

Branch 49

IP WAN

PSTN

- Capacity:
  - ✓ Supported capacity (1,000 users/1,200 endpoints, 100 agents) http://docwiki.cisco.com/wiki/Supported_System_Capacities

- Redundancy:
  - ✓ Two UCS C220 nodes may be deployed for redundancy/high availability

- Sites:
  - ✓ Up to 50 total sites (central site and up to 49 branch/remote sites)
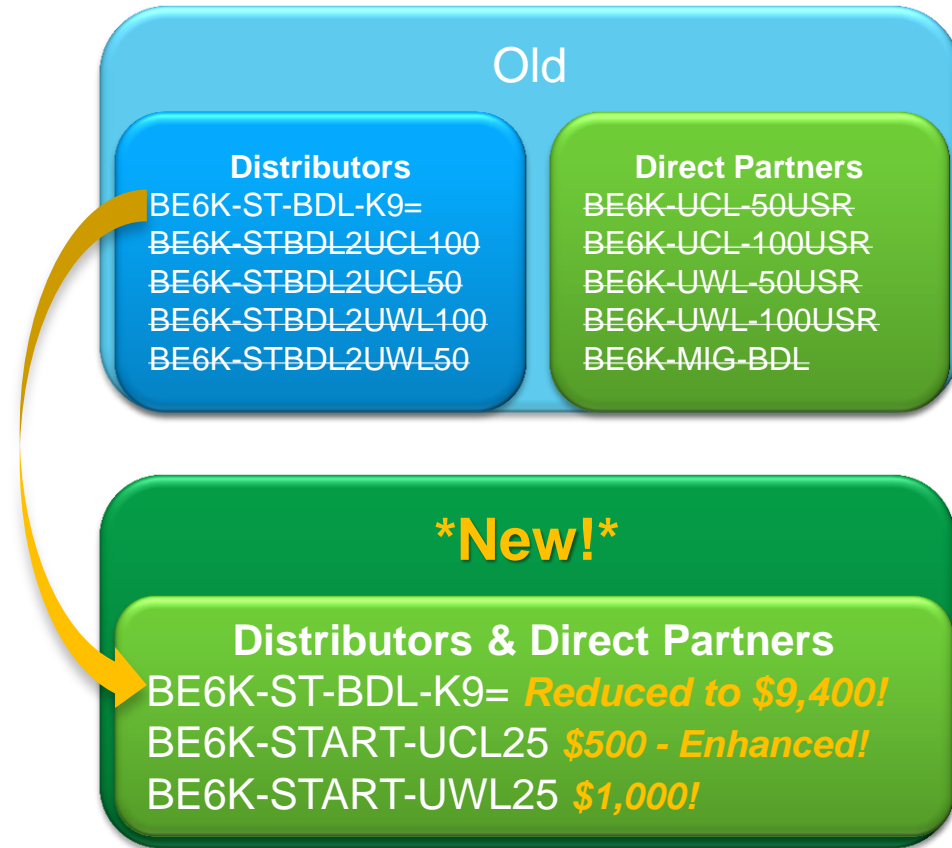
Business Edition 6000 Licensing

Improved User Licensing & Ordering

Right-size, Right-price

- Small Bundles
  25-users + Reduced Price
  *Software Starter Bundle=25 CUCM Enhanced
  User licenses + 25 Unity Connection licenses*

- *50 & 100 Users bundles are EoS*

What can be included for free?

- ✓ IM/Presence

- ✓ 5 Enhanced Seat UCCX Bundle, OS/DB entitlement required

- ✓ VCS Control with 10 concurrent nontraversal and 5 concurrent traversal licenses

- ✓ Cisco Prime Collaboration

- ✓ Cisco Paging Server with basic features

- ✓ Cisco UC Virtualization Hypervisor is always included for free

Old

Distributors
BE6K-ST-BDL-K9=
BE6K-STBDL2UCL100
BE6K-STBDL2UCL50
BE6K-STBDL2UWL100
BE6K-STBDL2UWL50

Direct Partners
BE6K-UCL-50USR
BE6K-UCL-100USR
BE6K-UWL-50USR
BE6K-UWL-100USR
BE6K-MIG-BDL

New!

Distributors & Direct Partners
BE6K-ST-BDL-K9= *Reduced to $9,400!*
BE6K-START-UCL25 *$500 - Enhanced!*
BE6K-START-UWL25 *$1,000!*

Useful Links

CUCM Release Notes:

http://www.cisco.com/en/US/products/sw/voicesw/ps556/prod_release_notes_list.html

TC6.0 Release Notes:

http://www.cisco.com/en/US/docs/telepresence/endpoint/software/tc6/release_notes/tc_software_release_notes_tc6.pdf

TE6.0 Release Notes:

http://www.cisco.com/en/US/docs/telepresence/endpoint/software/te6/release_notes/te_software_release_notes_te6.pdf

Unified Communications Virtualization Supported Applications:

http://docwiki.cisco.com/wiki/Unified_Communications_Virtualization_Supported_Applications

UC Virtualization Supported Hardware:

http://docwiki.cisco.com/wiki/UC_Virtualization_Supported_Hardware

Cisco Business Edition 6000 9.1:

http://www.cisco.com/en/US/prod/collateral/voicesw/ps6788/vcallcon/ps11369/data_sheet_c78-717454.html

Thank you.