# Cisco Connect

Toronto, Canada
May 30, 2013

# Deploying WebEx between cloud and on premise for Canadian customers

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# Agenda

**Cisco WebEx overview**

In the cloud versus on premise

Canadian WebEx data Center and Cloud Connected Audio

Cisco WebEx Meeting Server (CWMS)

# Cisco WebEx Web Conferencing

## WebEx Meetings

WebEx Meetings

## WebEx Meetings Server

## WebEx Centers

Training Center

Event Center

Support Center

## Audio & Video

Custom er Network

Cisco WebEx

Integrated audio, HD video, Cloud Connected Audio

Cisco WebEx-enabled TelePresence

Integration with the Cisco Collaboration Portfolio

Consistent user experience between WebEx solutions

Supports multiple platforms, mobile devices and deployment models

# Cisco WebEx Meetings

## An Entirely New Way to Collaborate and Share from the Cloud

**1 | PREPARE**

**2 | MEET**

**3 | FOLLOW UP**



Complete Meeting Lifecycle

| | | |
|---|---|---|
| **Attendee Organization** | **HD Conferencing** | **Related Documents** |
| **Documents Distribution** | **Real-time Screen Sharing** | **Recordings and Discussions** |
| **Integrated IM and Presence** | **Mobile Meetings** | **File Sharing** |

# Cisco WebEx Meeting Center

- Documents, applications, desktop sharing

- Multi-point HD video

- On-demand record, edit and playback

- Chat, polls, notes, annotation tools

- Whiteboarding and  file transfer

- Integrated audio options with ActivePresence

- Integrated scheduling with Outlook, Lotus Notes

- Integration with Jabber client

- Available in 13 languages
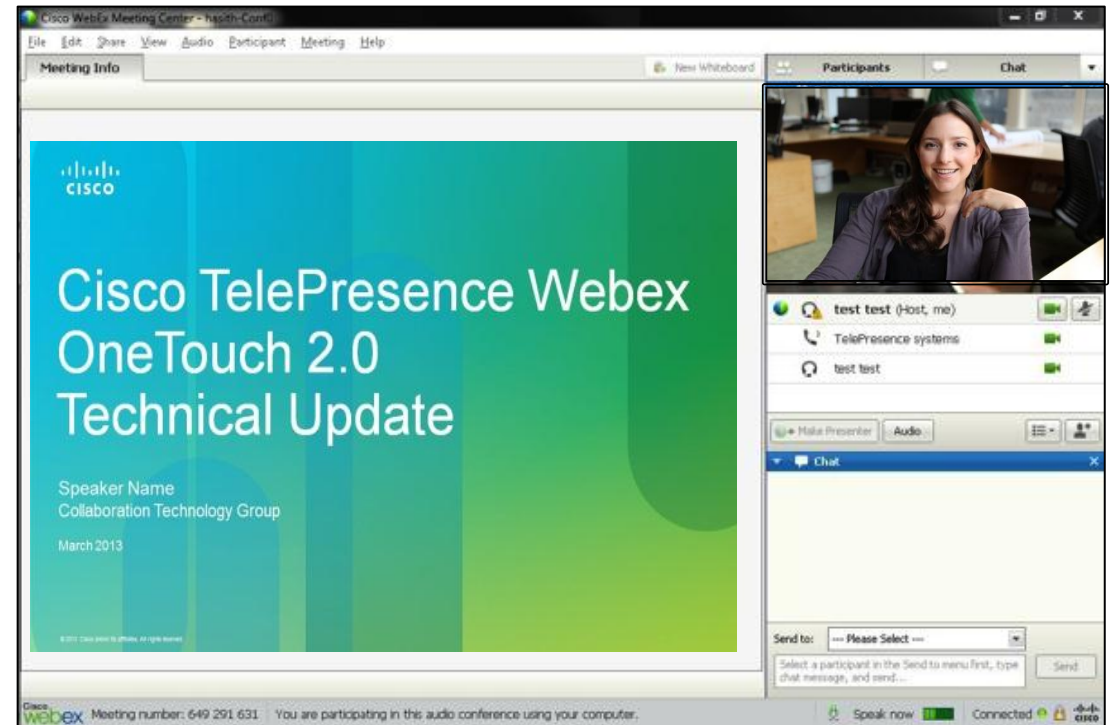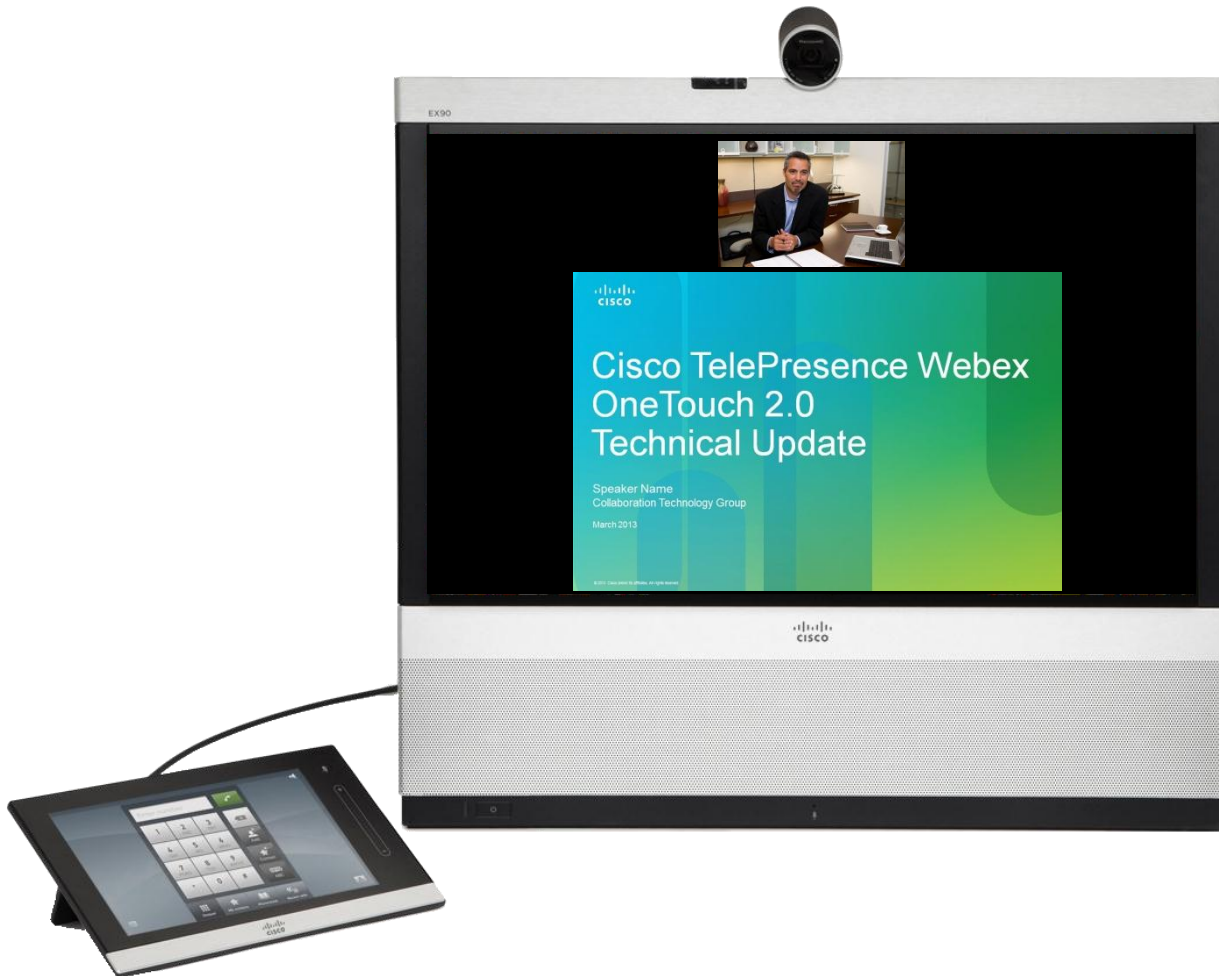
# Cisco WebEx Mobile

- Single app for classic WebEx Meeting Center and new WebEx Meetings

- Consistent in-meeting experience + new functionality including Agenda and Invitee list

- 2-way video and VoIP on iPhone, iPad

- 2-way video and VoIP on Android

- Spaces available from a browser

- Support for BB10

# WebEx to Telepresence Integration

# Any to Any Meetings
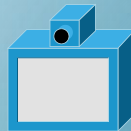## Optimized Conference experiences offered on the device of choice



**TelePresence Meetings**

Standards Based
3rd party Video Systems

**Person to Person**

Personal TelePresence
IP Phones & Jabber

**Unified Communications Manager**

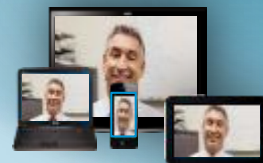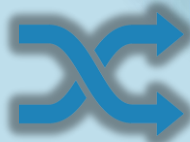*ActivePresence®
and multiple Continuous
Presence layouts*

**WebEx-enabled TelePresence**

**NEW** Apr'13

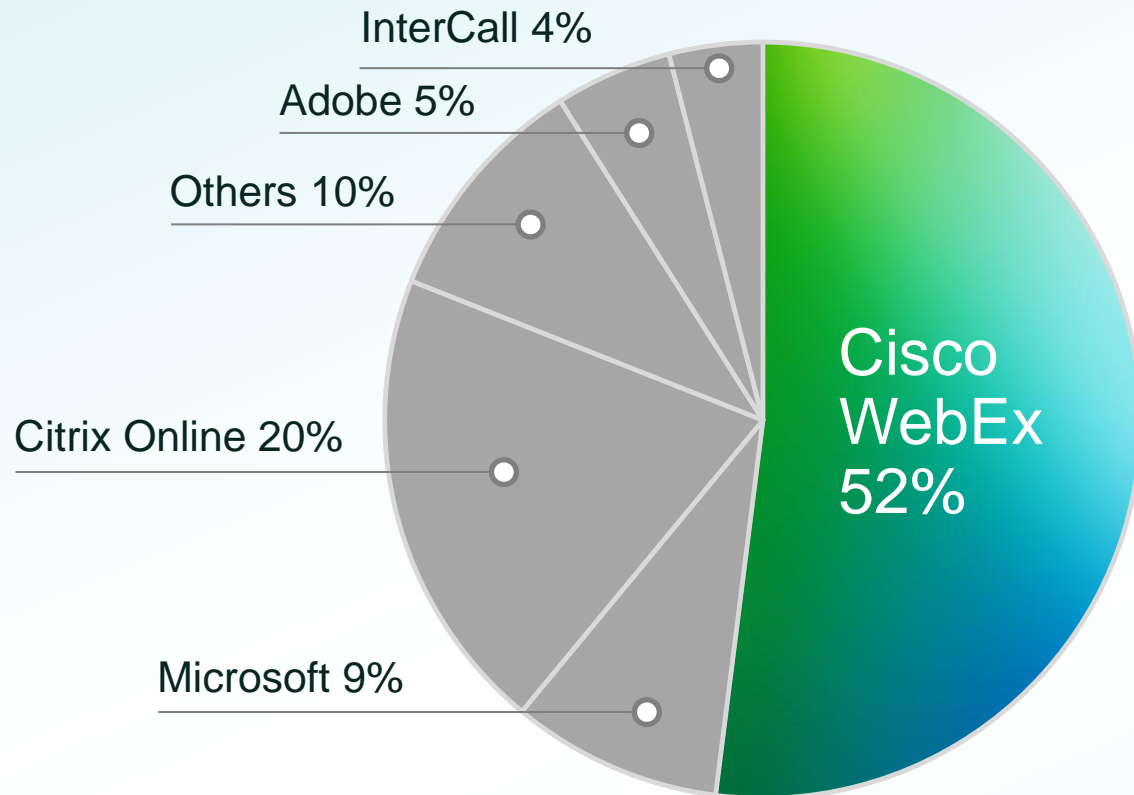Capture – Transform - Share

**WebEx Meetings**

# Magic Quadrant for Web Conferencing
## 2011



To read the Gartner Magic Quadrant Report.
Select [MQ Full Note](#)

Source: Gartner's *Magic Quadrant for Web Conferencing.*
2/5/2011.

# WebEx Market Share Leader for Global SaaS Web Conferencing

InterCall 4%

Adobe 5%

Others 10%

Citrix Online 20%

Microsoft 9%

Cisco WebEx 52%

## 52% Market Share

Cisco WebEx Leads the Market

# The Power of Meetings to Collaborate

Participants from over 225 countries

6.8 million registered hosts worldwide

7.6 million WebEx meetings run each month

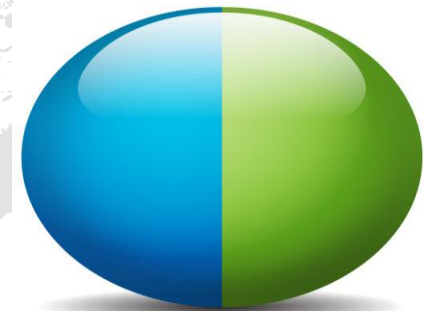26 million meeting attendees each month

1.5+ billion meeting minutes per month

1,065,886 WebEx iPhone Downloads Since Launch

761,882 WebEx iPad Downloads Since Launch

273,748 WebEx Android Downloads Since Launch

242,430WebEx BlackBerry Downloads Since Launch

# Agenda

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Cisco WebEx Meeting Server (CWMS)

# Peace of Mind

## Your Cisco WebEx Meeting Is Safe, Secure, and Seamless

| | |
|---|---|
| **Most Secure** | 128-Bit SSL and 256-Bit AES Encryption, SAS70 Type II Audit Completed and ISO27001 in Progress |
| **Most Reliable** | 99.99% Uptime with Automatic Failover to Hot Backup Sites |
| **Best Performing** | Cisco Collaboration Cloud Designed for Real-Time Collaboration with Global Data Centers to Deliver World-Class Performance |
| **Maintenance free** | No need to worry about upgrade, backup and support |
| **Simple Setup** | Browser-Based and Firewall Friendly |

# Cisco Collaboration Cloud

Multilayered
Security Model

SAS70 Type II
Audit Completed
ISO27001 (in Progress)

Intelligent Routing
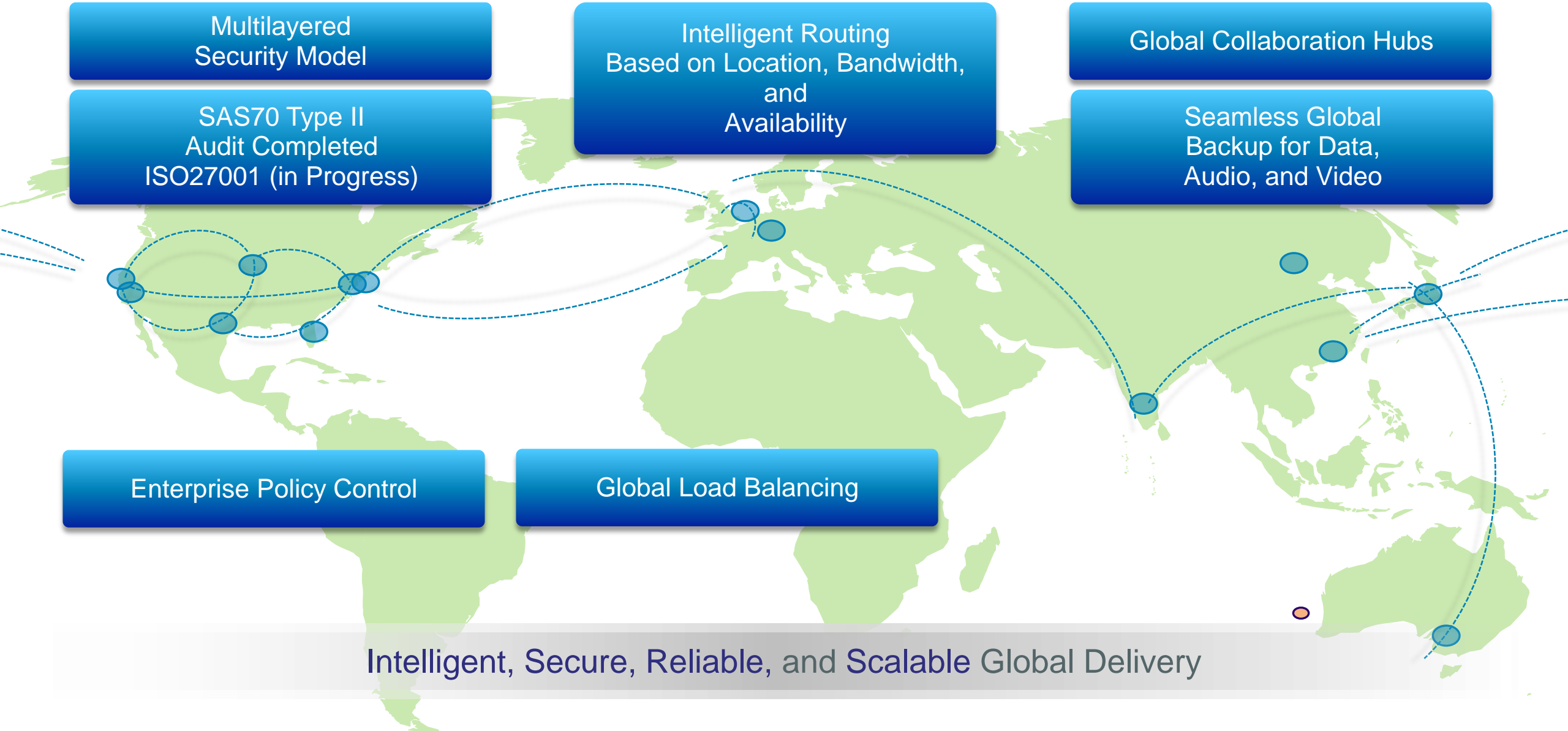Based on Location, Bandwidth,
and
Availability

Global Collaboration Hubs

Seamless Global
Backup for Data,
Audio, and Video

Enterprise Policy Control

Global Load Balancing

Intelligent, Secure, Reliable, and Scalable Global Delivery

# Canadian Customers cloud challenges

Patriot acts

Canadian Government - Data Sovereignty policy

Customers needs tightened security and better application performance

Ensure security and policy control

Reduce outsourced OpEx audio conferencing costs

Get more value out of existing Cisco Unified Communications investments

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# Introducing WebEx Canadian data center

Fall of 2012 – Cisco Canada commits to building a Canadian WebEx Data Centre

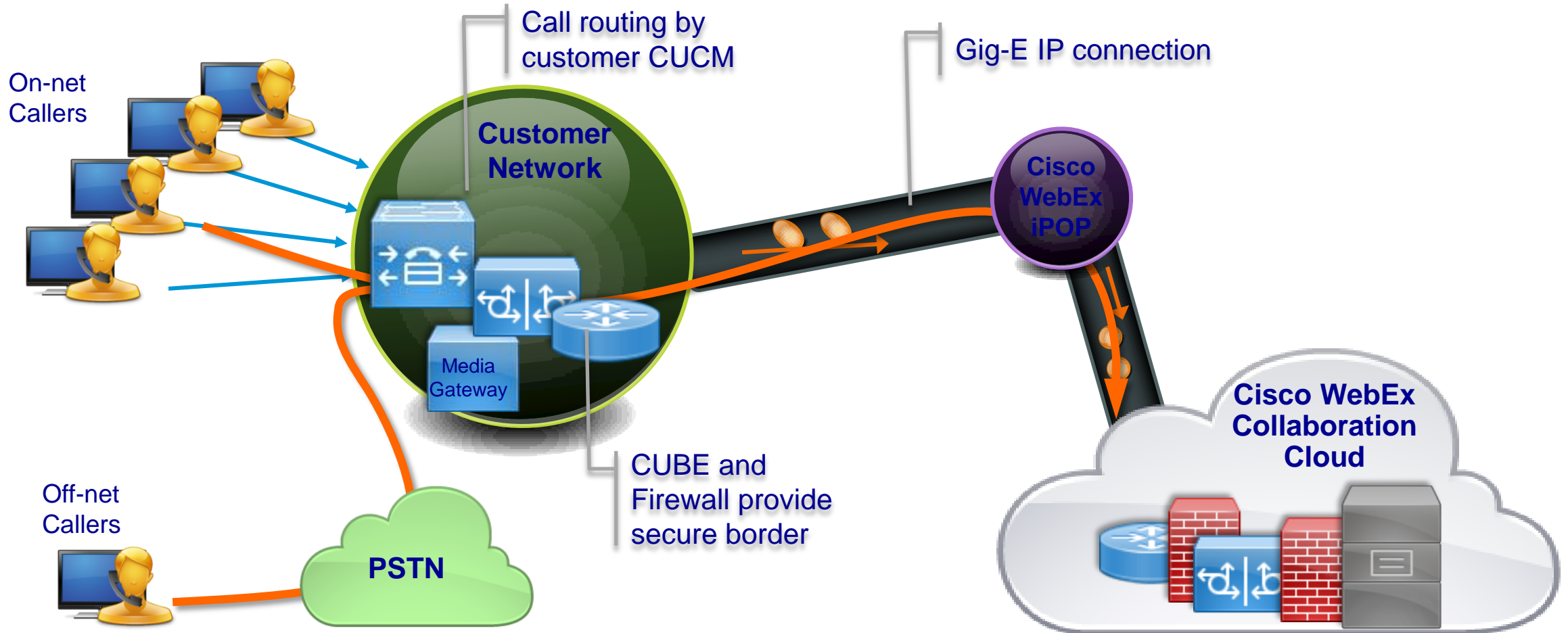March 2013 – delivery of equipment to the data center in Toronto

April – June 2013 – Installation and configuration of data center

July, 2013 – Production of the data center

First Half 2014 – Plan, design, and  build redundancy site

# Cloud-Connected Audio



On-net Callers

Call routing by customer CUCM

Gig-E IP connection

**Customer Network**

**Cisco WebEx iPOP**

Media Gateway

CUBE and Firewall provide secure border

**Cisco WebEx Collaboration Cloud**

Off-net Callers

**PSTN**

Through CCA, all calls are routed by the customer's CUCM into the WebEx cloud infrastructure (or out from the WebEx cloud infrastructure to CUCM for call-back)

# Agenda

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**Cisco WebEx Meeting Server (CWMS)**

# Target Markets

Customers that want full in house control of their IT applications

Organizations with mandated compliance requirements

Public Sector, defense departments and contractors, intelligence agencies, etc.

Companies particularly concerned about data privacy and data security

Finance / banking, Healthcare, Insurance etc.

Cisco Unified MeetingPlace install base

# WebEx User Experience
## Industry-Leading Web Conferencing Solution

Comprehensive conferencing solution that includes audio, web and video

Rich set of real-time collaboration tools and features, as found in Meeting Center

- Document, applications, and desktop sharing

- Annotation and collaboration tools

- Integrated audio—participant list, active talker, video switching etc.

- Host controls—effectively manage meetings

- Recording and Playback

- Scheduling integration with Outlook 2007 and 2010

- Consistent, cross-platform experience on Windows, Mac, Smartphones and tablets

# Mobile Device Support
## Anywhere, anytime collaboration

Meeting clients for mobile devices

    iPhone and iPad

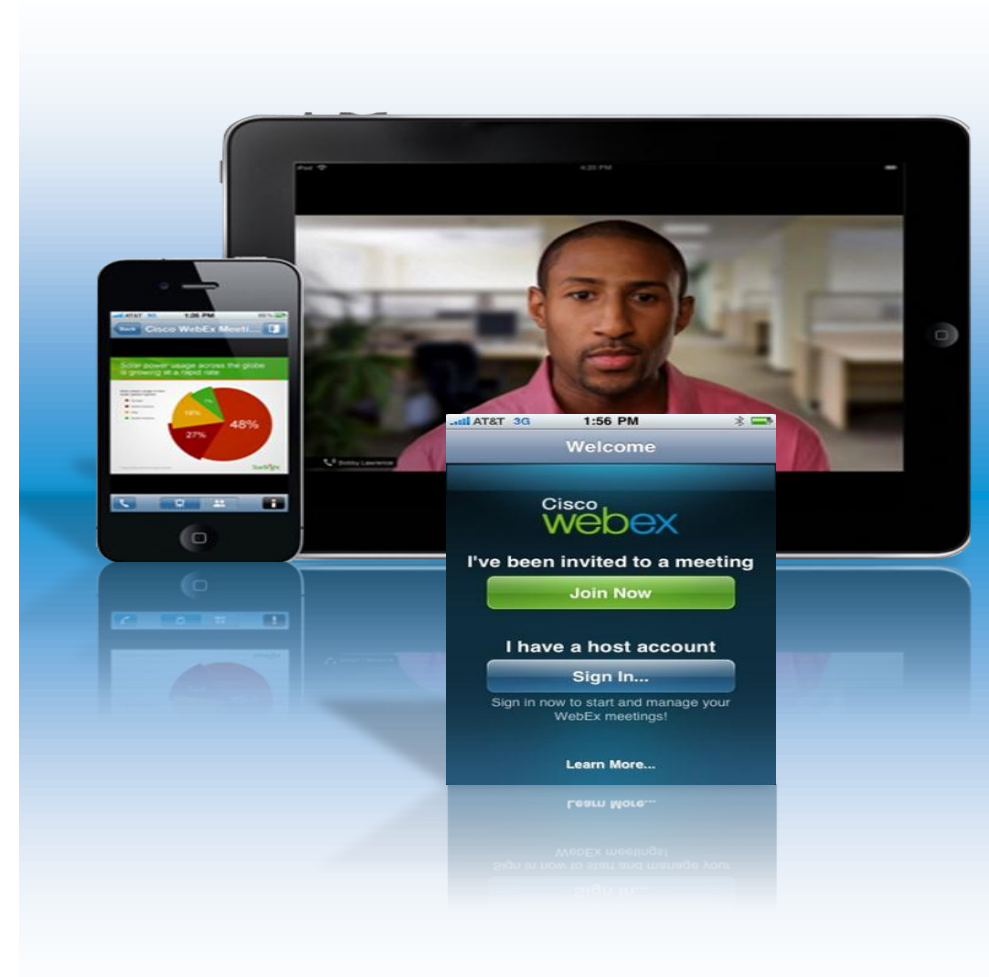    Android: planned by 1H 2014

Key features

    Start, Join, Schedule and Attend meetings

    Chat, Audio, Call Me, Calendar, Pass Presenter

    Two-way video on iPad 2.0 and beyond

    Voice over Wi-Fi on iPad

# High-Quality Video
## A natural, face-to-face experience

Engaging video experience
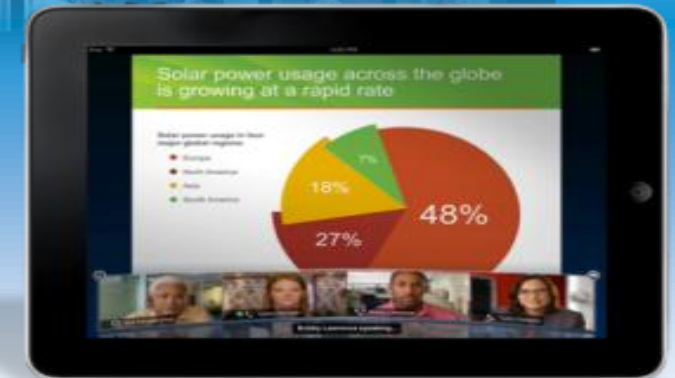
    High Quality (HQ) video: 360p resolution

    Active speaker switching

    Full-screen video

    Share content and view video

Mobile video experience on iPad and iPhone

# Audio Conferencing Features
## Integrate with your Cisco UC Infrastructure

SIP Trunk link between Cisco WebEx Meetings Server and Cisco Unified Communications Manager

- Built on top of UCM v. 7.1, 8.6, 9.0 and 9.1

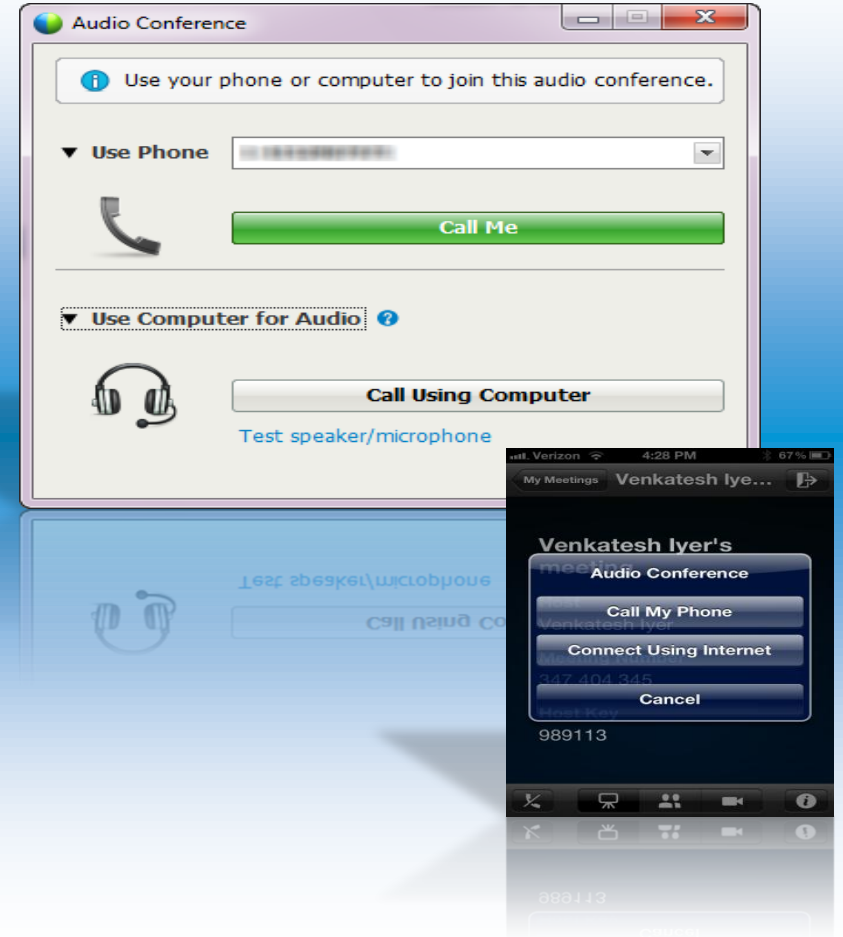- Call-In and Call-Me Teleconferencing

- Mute / Unmute / Eject / Restrict Access

- Join WebEx Meeting on Teleconference only (approximates an audio-only meeting)

  - VoIP audio support, join directly from PC using headset – no phone required

  - Hybrid Audio support – PSTN and VoIP in same meeting

- IPv6 Support for teleconferencing

# Secure
## Designed for Customers with High Security Requirements

Behind the firewall installation

100% 128 and 256 Bit SSL encrypted online meetings

Industry-standard 2048 Bit encryption keys

Wild-card and SAN SSL certificate support

Optional TLS/SRTP SIP teleconferencing encryption

Hardened 'Virtual Appliance' with SE/Linux extensions

NIST FIPS 140-2 approved cryptographic algorithms supported

# Manageable
## Designed for Next Generation Private Clouds

Virtualized

Designed for VMware 5.0 / 5.1

Rapid 'Virtual Appliance' Install

Runs on Cisco UCS Servers

UCS C-220 for smaller systems
(50 and 250 Users)

UCS C-460 for larger ones
(800 and 2,000 Users)

Simplified system capacity model

50 → 250 → 800 → 2,000 concurrent user
configurations

Each 'port' supports all features across the single port

No need to reserve certain ports for video, some for audio
etc.

500 – 40,000* employee companies

\* Can deploy separate systems to serve more users

# Advanced Administration

Benefits

Securely manage inter-company collaboration

Ease of administration and system manageability

Reduced total cost of ownership

Feature highlights

Step-by-step guided install

View system status at a glance

Web based, real time system dashboard

Easy user management—Single Sign on (SSO), import users

Pdf reports to track usage, licenses etc.
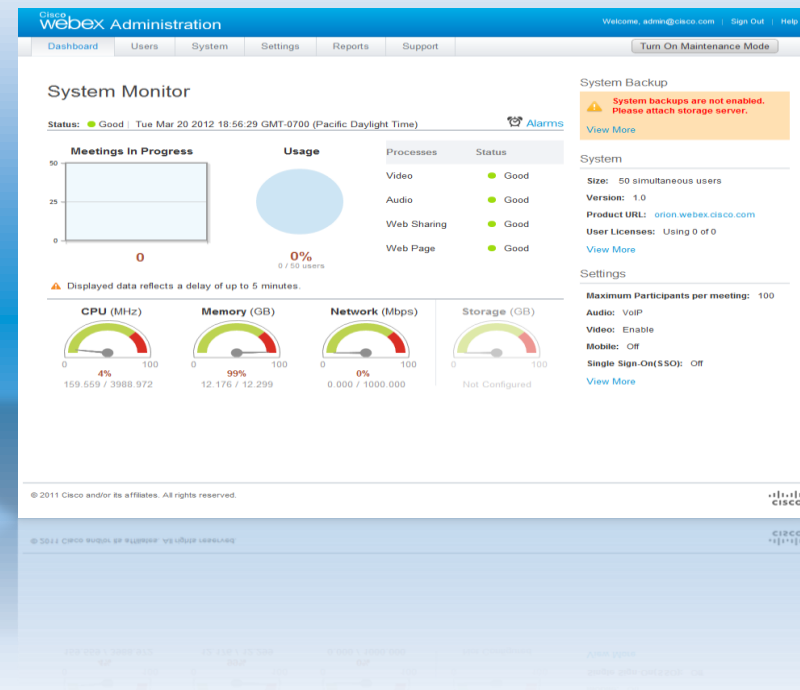
# Cisco WebEx Meetings Server

**Jabber Integration**

Display scheduled WebEx meetings in Jabber "Meetings Tab"
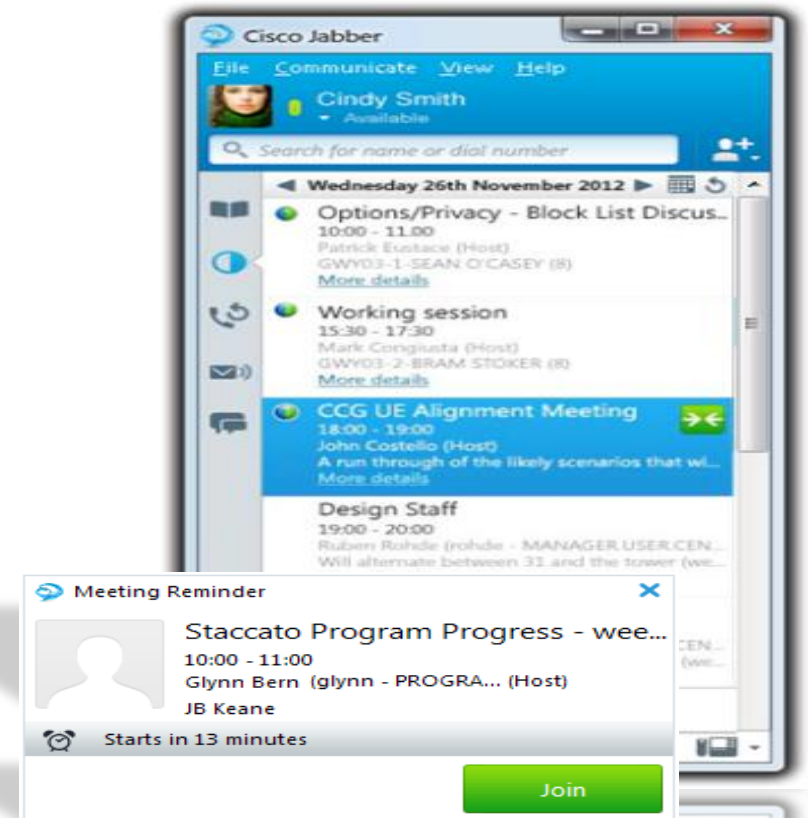
Start /Join WebEx meeting from Jabber "Meetings Tab"

Start instant WebEx meeting from Jabber Client

Escalate IM Session to a full WebEx meeting

Launch WebEx meeting from daily calendar

Meeting Reminders

# Localized
## Designed for customers worldwide

Support for 13 Languages

English (with Audio Prompts in US English and UK English)

Simplified and Traditional Chinese

Japanese

Korean

German

French (France)

Italian

Dutch*

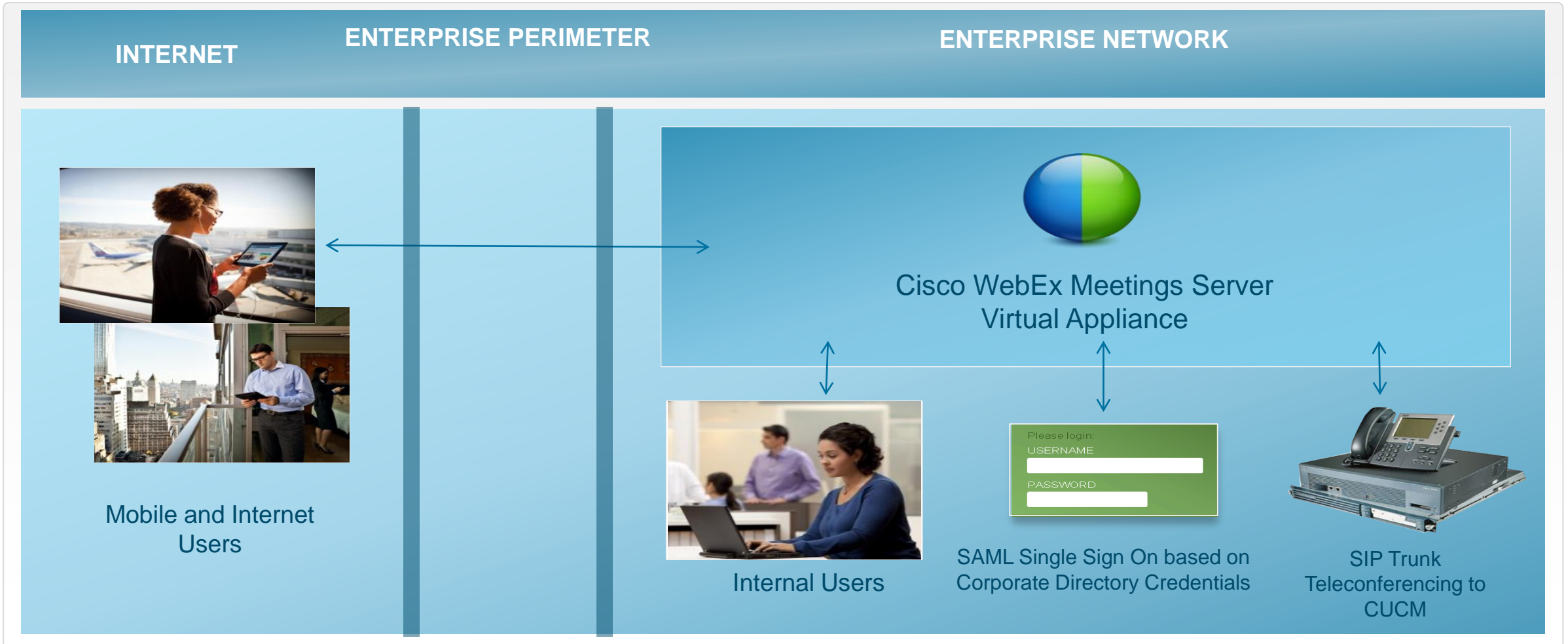Spanish (Spain)*

Spanish (Latin America)

Portuguese (Brazil)

Russian*

* These languages supported on Windows only. Mac road-mapped but not committed.
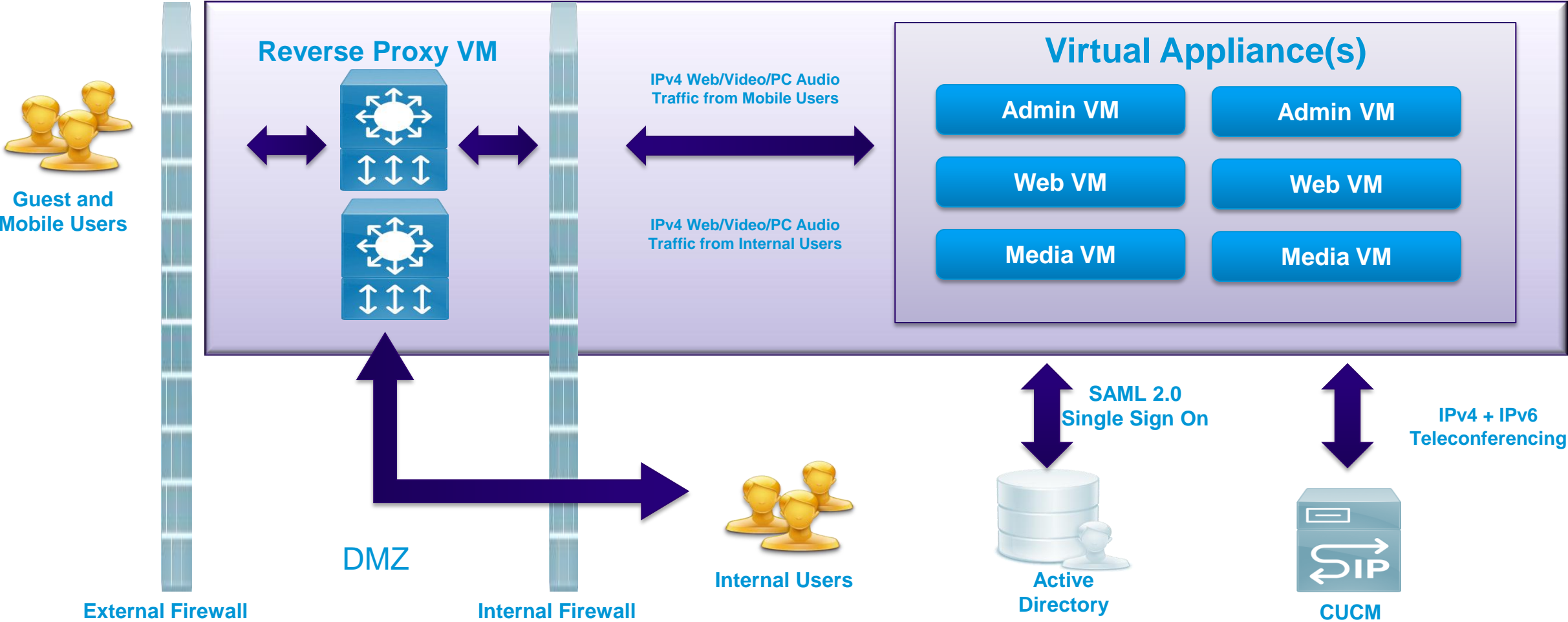
# High-Level System Architecture

**INTERNET**  **ENTERPRISE PERIMETER**  **ENTERPRISE NETWORK**



Cisco WebEx Meetings Server
Virtual Appliance

Mobile and Internet
Users

Internal Users

Please login:
USERNAME

PASSWORD

SAML Single Sign On based on
Corporate Directory Credentials

SIP Trunk
Teleconferencing to
CUCM

Optimized for 100% Secure, behind-the-firewall VPN-less Access that integrates with your Corporate User
Management and  UC Infrastructure

# CWMS High-Level System Architecture



Reverse Proxy VM

Virtual Appliance(s)

Admin VM    Admin VM

Web VM    Web VM

Media VM    Media VM

Guest and Mobile Users

IPv4 Web/Video/PC Audio Traffic from Mobile Users

IPv4 Web/Video/PC Audio Traffic from Internal Users

DMZ

Internal Users

Active Directory

CUCM

SAML 2.0 Single Sign On

IPv4 + IPv6 Teleconferencing

External Firewall

Internal Firewall

# High Availability

The goal of adding a redundant system is to provide "no single point of failure".

The redundant systems for Micro, Small and Medium are exactly same as the primary systems in terms of VMs/nodes.

The Large redundant system has one each of the Admin, Media, Web and DMZ on the redundant side.
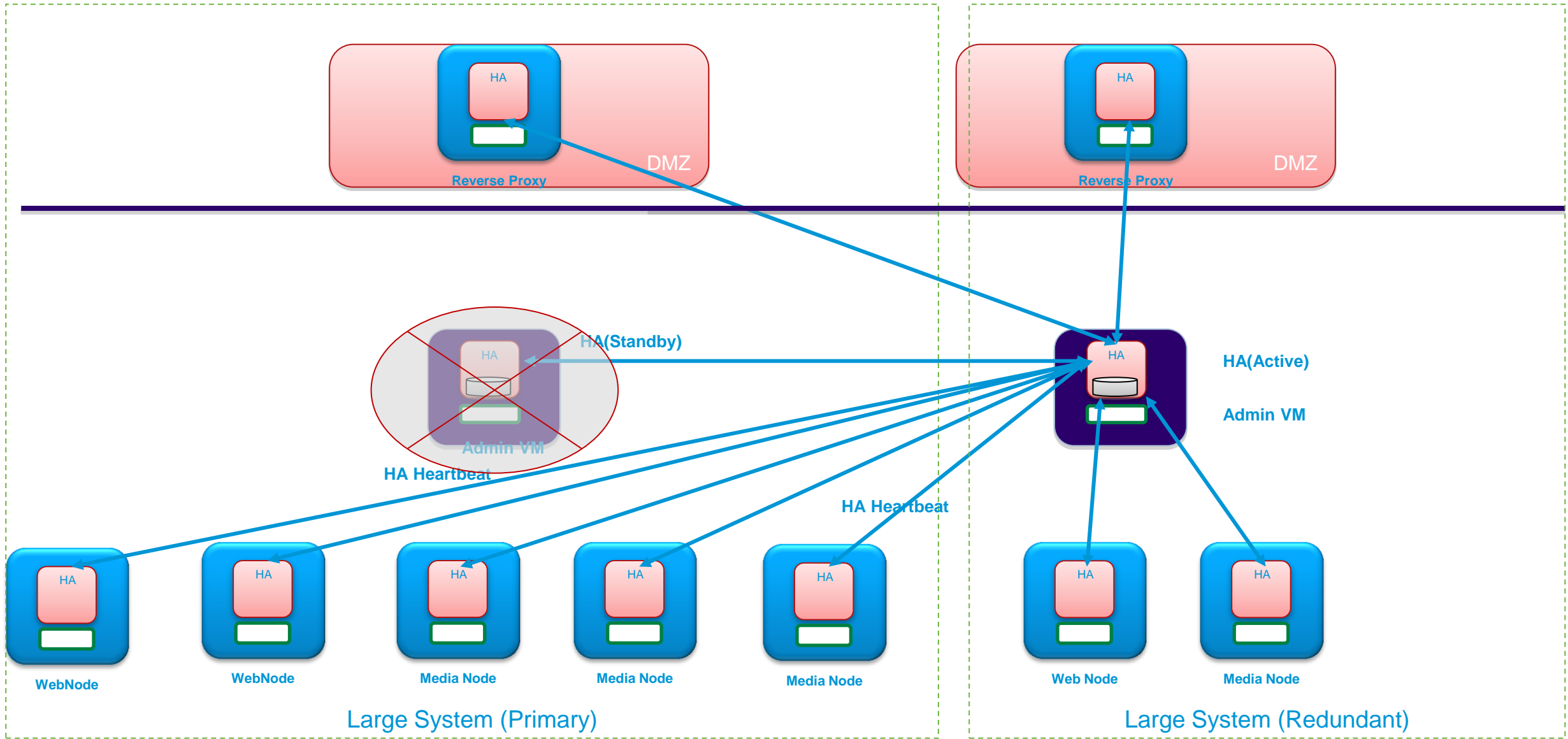
In case of failure of the 'Active HA' on the primary Admin VM, the 'Active HA' can failover to the redundant Admin VM.

There is no failback of HA to the Primary Admin VM unless there is a failure on the redundant Admin VM.

# Redundant System
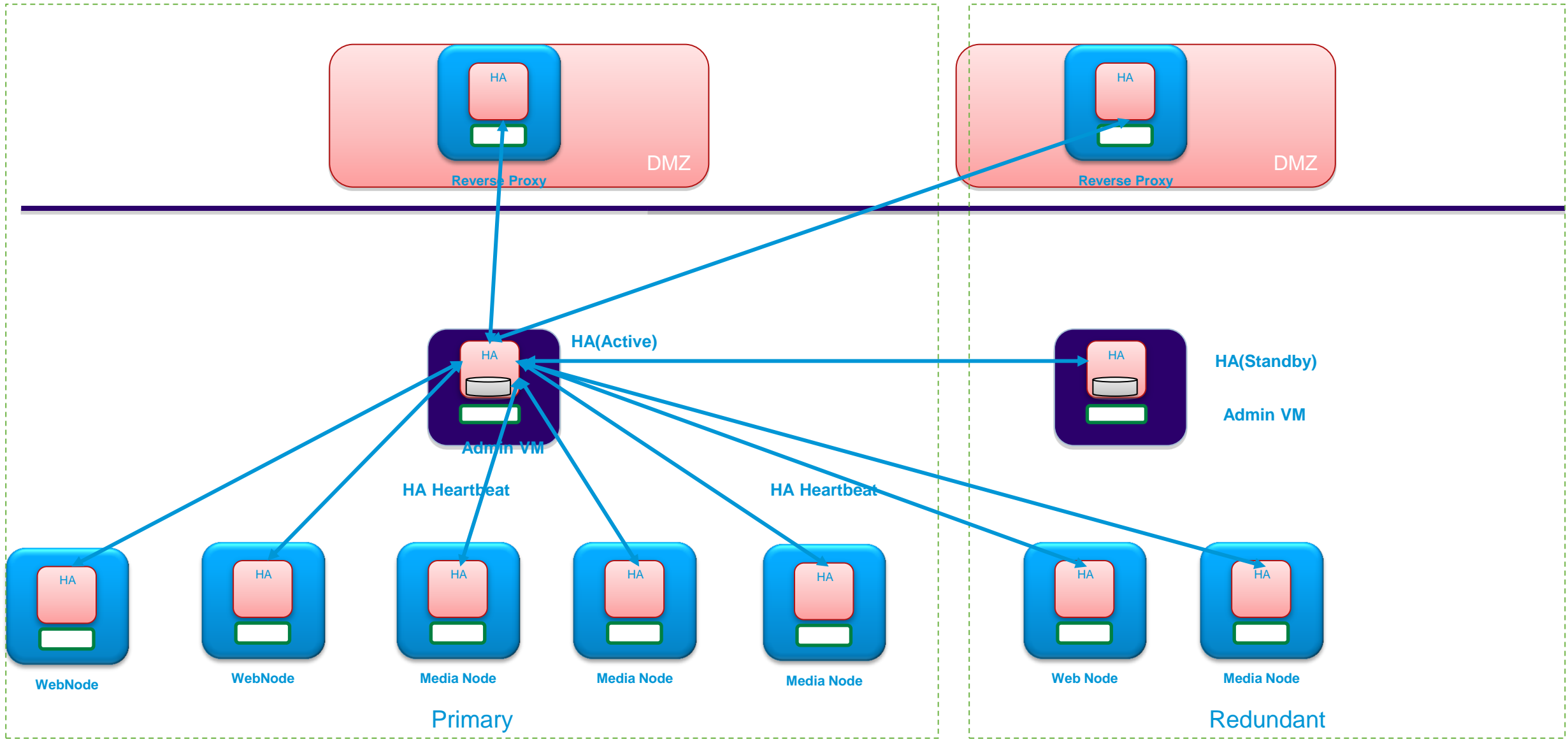
# Redundant System

# CWMS Deployment Models – 3 options

**Non-redundant Centralized (Recommended for initial deployment)**

    **No redundant components**

    **Single Data center only**

    **With Internet Reverse Proxy (IRP) for External Access or without IRP**

    **1 hr to restore on same UCS Hardware in VMWare**

**Level 1:  High Availability (HA) (Optional, Can be added on after initial deployment)**

    **Centralized Single Data Center – multiple servers/blades (N+1)**

    **Active/Active resiliency – load sharing between all like VM's**

    **No Latency between VMs**

    **With Internet Reverse Proxy (IRP) or without IRP (no external web access)**

**Level 2:  Disaster Recovery (DR) – (Optional , Can be added on after initial deployment)**

    **Centralized, Dual Data Center model – "cold standby" mode**

    **Multiple ways to "enable" this site**

    **Requires IT Manual intervention to use DR Site system**

    **Restore DB, Change DNS routing, Change UC Manager SIP Routing     (checklist)**

# System Capacities

| Media Type | 50 Port | 250 Port | 800 Port | 2000 Port |
|---|---|---|---|---|
| 100% SIP/PC Audio | 50 | 250 | 800 | 2000 |
| Encrypted Audio (sRTP) * | 50 | 250 | 800 | 2000 |
| Secured MC Web (SSL) | 50 | 250 | 800 | 2000 |
| 50% HQ Video (SSL) | 25 | 125 | 400 | 1000 |
| Single Meeting Max Size** | 50 | 100 | 100 | 100 |
| Recorded Meetings Max at Peak | 5% of Ports or 10% of Maximum meetings | | | |

*Includes high fidelity Codecs E.g. G722

**For larger Meetings customer can order Events Center Directly

# Deployment layouts

## 50 Port

**Internal**        **DMZ**

| Primary+vCenter | IRP |

or

**Internal**        **DMZ**

| Primary+vCenter | IRP |

or

Primary & vCenter CoResident – IRP separate UCS
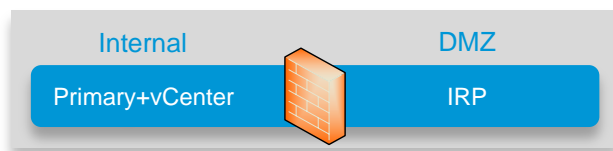
Primary, vCenter, IRP CoResident – Dual homed

**Internal**        **DMZ**

| Primary+vCenter | IRP |
| HA Primary | HA IRP |

or

**Internal**        **DMZ**

| Primary+vCenter | IRP |
| HA Primary | HA IRP |

### High Availability Options
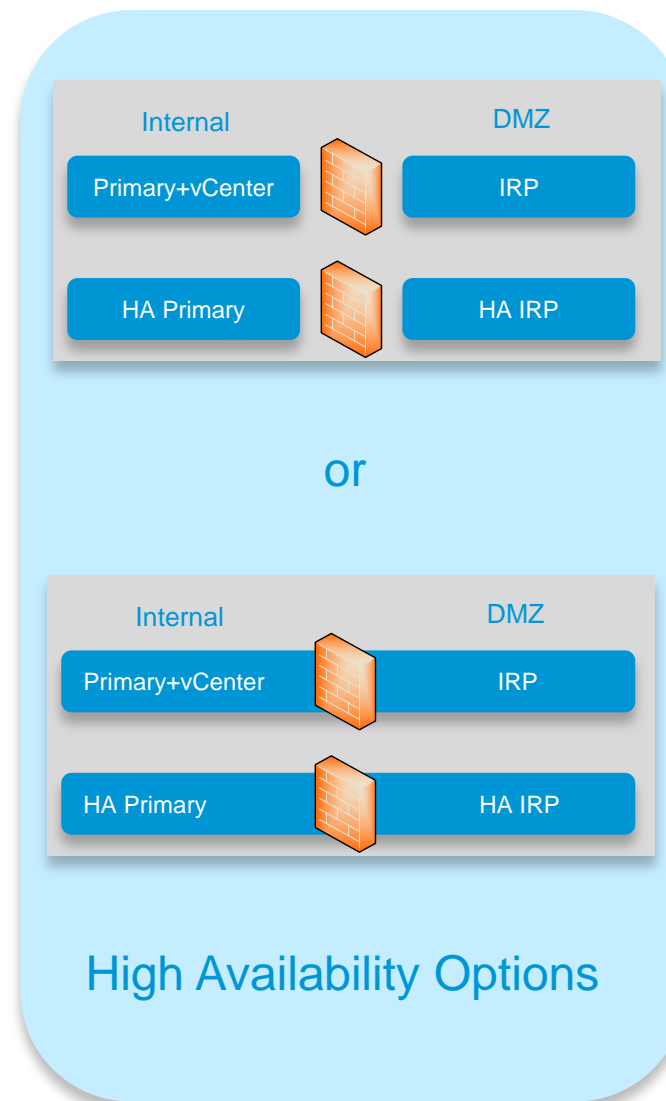
Data Center    ESXi Host

# Deployment layouts

## 250 Port



Internal — Primary+vCenter
DMZ — IRP

Primary & vCenter CoResident – IRP separate UCS

**or**
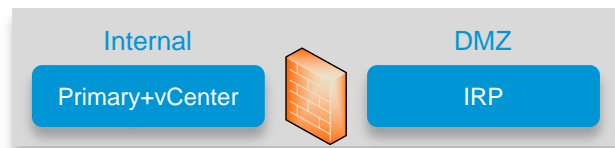
Internal — Primary+vCenter
DMZ — IRP
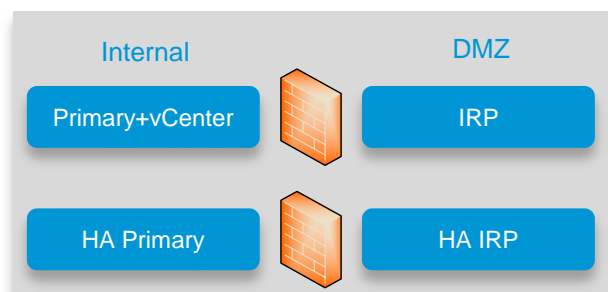
HA Primary
HA IRP

High availability – single DC
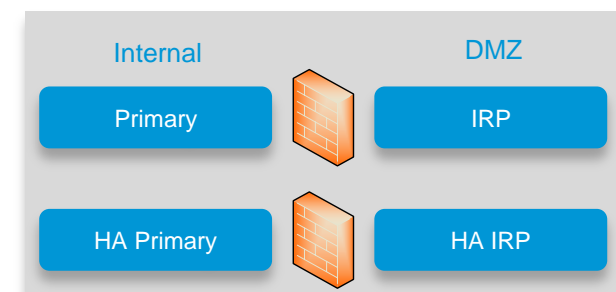• Primary can be reside with vCenter

**For DR - mirror layout in second DC**

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**For DR - mirror layout in second DC**

## 800 Port

Internal — Primary
DMZ — IRP
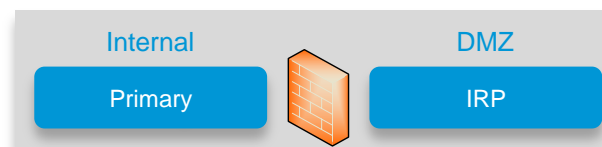
Primary – IRP separate UCS
vCenter still required cannot be CoResident

**or**

Internal — Primary
DMZ — IRP

HA Primary
HA IRP

High availability – single DC
vCenter still required cannot be CoResident

Data Center    ESXi Host

# Deployment layouts

## 2000 Port



Internal | DMZ

| Admin/Media |
| Web/Media | IRP |
| Web/Media |

or



Internal | DMZ

| Admin/Media |
| Web/Media | IRP |
| Web/Media |
| HA Admin/Media |
| HA Web | IRP |
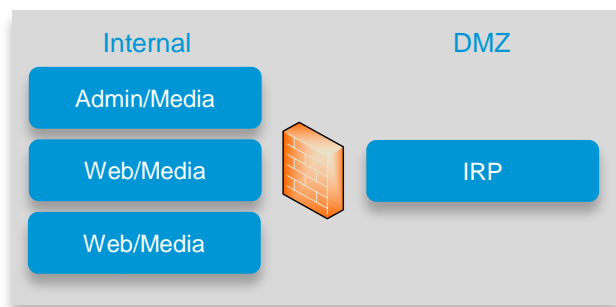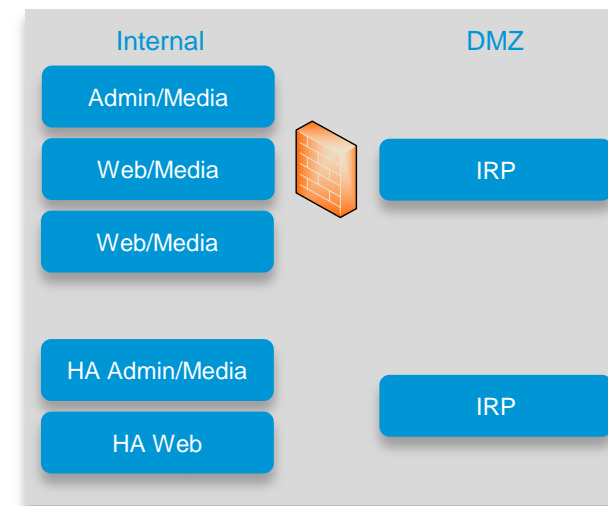
**High Availability Option**

**For DR - mirror layout in second DC**

Data Center | ESXi Host

# Call Control – Inbound/Outbound

Call-back Teleconferencing

Best End User experience to Join Web session first, then use Callback

Controlled via SIP trunk outbound to UC Manager/Session Manager Edition

Most efficient call processing methodology

Can be disabled

Dial In Operations

UC Manager /Session Manager Edition -  SIP Trunks

Tested with MGCP Trunks end to end

Tested with SIP Telco Trunks end to end

Inbound Calling can be from unlimited number of UC Manager clusters OR via intercluster trunks (ICT) between all clusters to a centralized UC Manager

Normal customers deploy with 3 phone numbers:  toll free, toll and internal dial numbers pointed to SIP trunks inbound to Cisco Webex Meetings Server system.

Uses SIP Refer to provide load balancing across redundant systems

# Audio Parameters

There is no loss in capacity when using complex/low bitrate codecs – For the best user experience we recommend g.722 for the best quality audio

No echo cancellation built into Webex Server

- ISR Voice Gateway use DSP Echo Cancellation modules
- CUBE can also be used for Echo cancellation
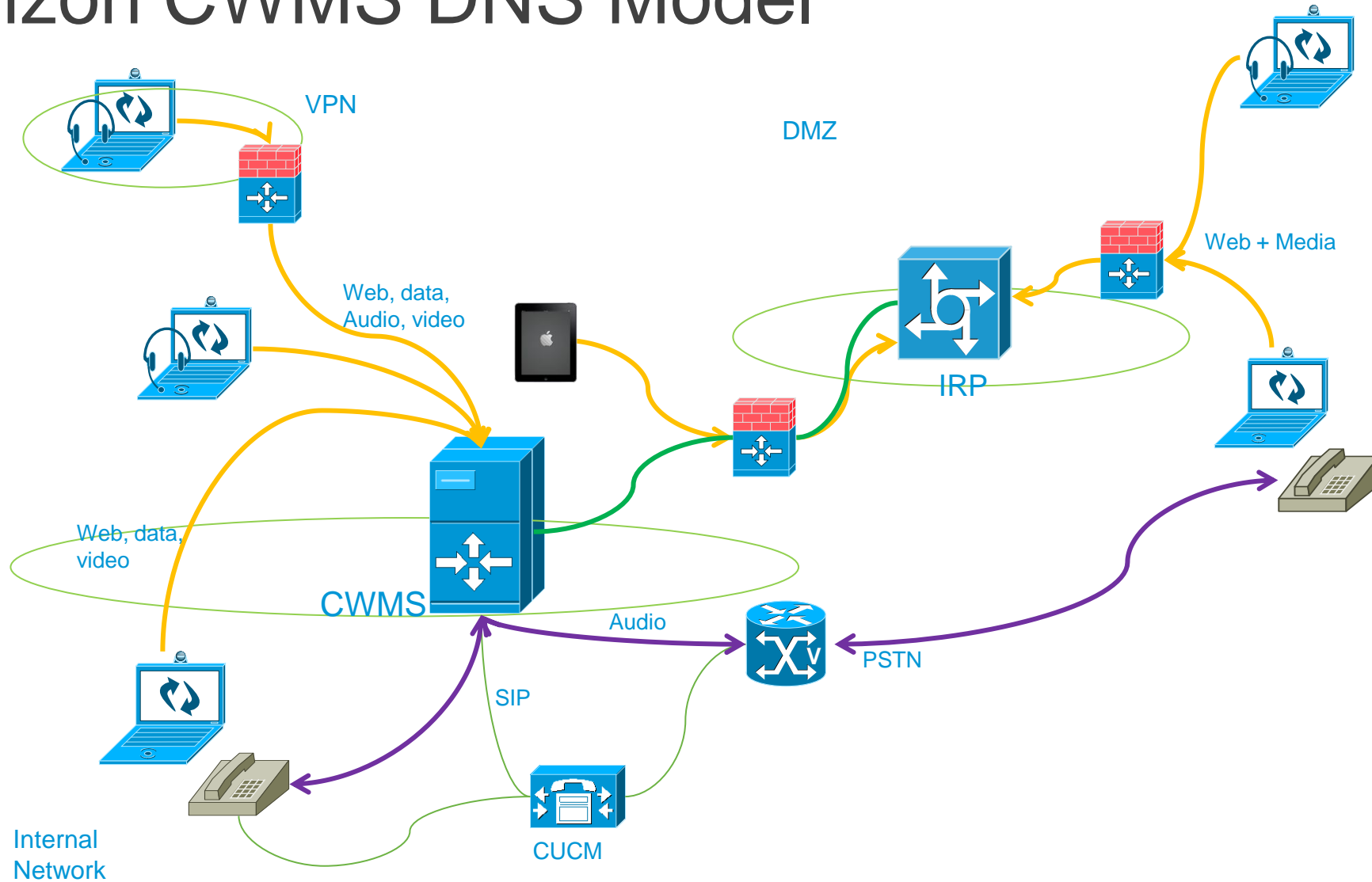
Can set QoS for SIP Audio – outbound Call-back

The most commonly purchased edition of CWMS has TLS/SRTP audio encryption avalable

- Turkish and Russian customers may only purchase the "-AU" edition which lacks TLS/SRTP and is thus compliant with Russian / Turkish import laws

# CWMS DNS Model
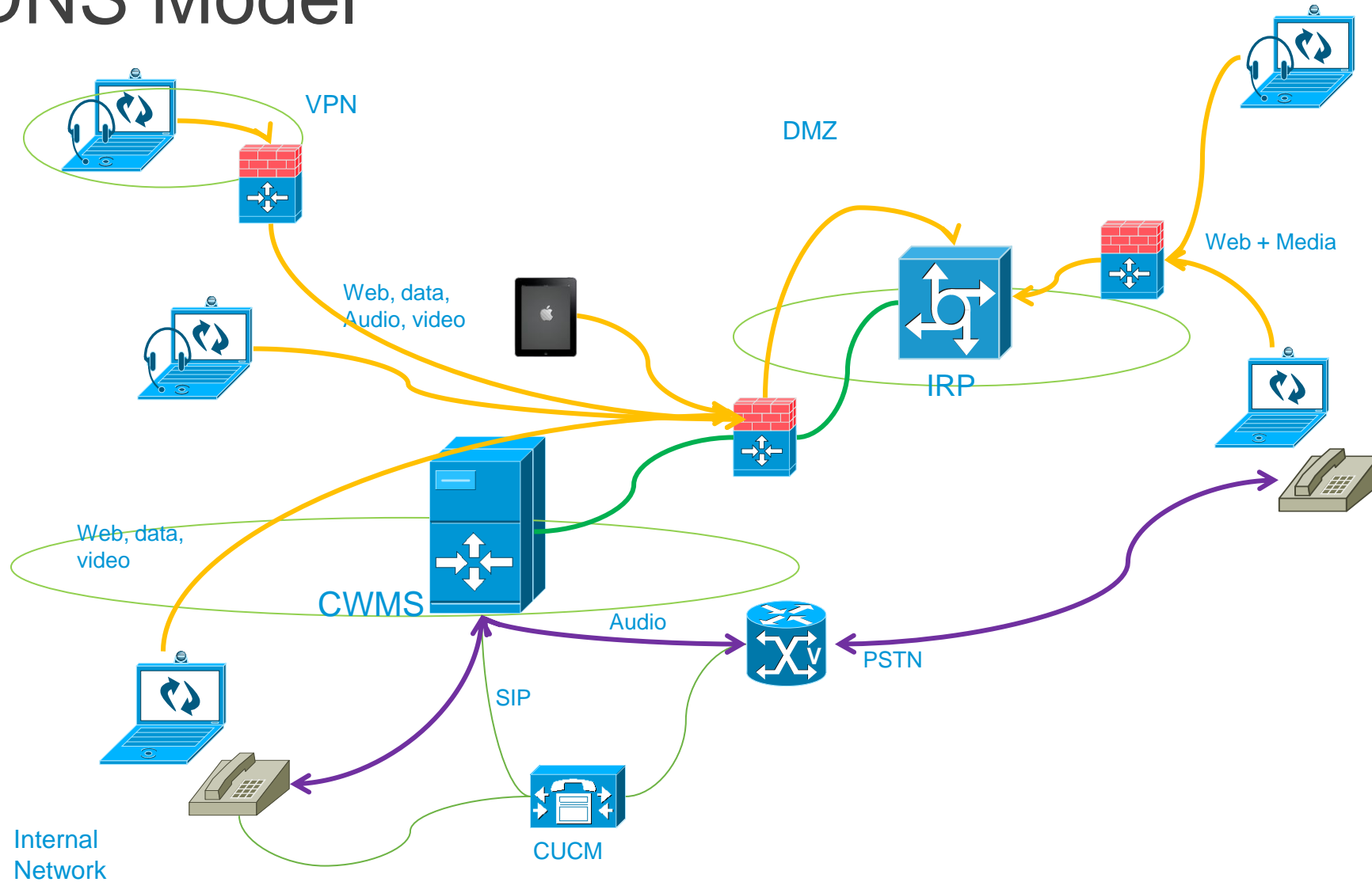
# Split-Horizon CWMS DNS Model

# Webex Meetings Server Sizing Guidelines

**Actual Usage may vary based on conferencing add growth**

| Model Size Simultaneous Users | Company Knowledge Workers based on usage | | Average Minutes Per Month Ranges |
|---|---|---|---|
| 50 Ports | ~ 500 heavy<br>~ 1,000 avg.<br>~ 1,500 light | (10 to 1)<br>(20 to 1)<br>(30 to 1) | 50-125 K<br>(2500 min/port) |
| 250 Ports | ~ 2,500 heavy<br>~ 5,000 avg.<br>~ 7,500 light | (10 to 1)<br>(20 to 1)<br>(30 to 1) | 130-750 K<br>(3000 min/port) |
| 800 Ports | ~ 8,000 heavy<br>~ 16,000 avg.<br>~ 24,000 light | (10 to 1)<br>(20 to 1)<br>(30 to 1) | 1000 K - 2.8 M<br>(3500 min/port) |
| 2000 Ports | ~ 20,000 heavy<br>~ 40,000 avg.<br>~ 60,000 light | (10 to 1)<br>(20 to 1)<br>(30 to 1) | 3-8 M<br>(4000 min/port) |

# Network Bandwidth Sizing

1 Mb per use base assumption (Audio/Web/Video)

Typical Enterprise Usage 80% Internal/20% External

Actual customer usage may vary on how they use conferencing and their business practices…some enterprises may be 60/40 or 70/30 or 90/10

800 Port system  - Assume 80% internal/20% External

**Internal = 800 x 80% = 640 x 1 MB = 640 MB on LAN/WAN maximum**

**External 800 x 20% = 160 x 1 MB = 160 Mb on Internet Proxies/Firewalls maximum**

Webex Network Bandwidth White Paper

http://www.cisco.com/en/US/prod/collateral/ps10352/ps10362/ps10409/webex_video_bandwidth_guide.pdf

# Storage Sizing

Customer Provided NFS

Recording

Average Daily Meetings(AVG)

Business Days per Month(BDM)          22 weekdays, 30 weekends

% of meetings recorded per month(MR)  5% Max

Application Sharing(AS)                36MB/HR

Audio(A)                              30MB/HR

Video(V)                              104MB/HR

Retention in Months(R)

AVG x BDM x MR x (AS x % of meetings using app sharing) x (A x % or meetings using audio(100%)) x (V x % of meetings using Video) x R

NFS also used to store system backup (~400MB)

# General Requirements

| Category | System Requirements |
|---|---|
| VMware | • VMware 5.0<br>   • vSphere 5.0 Standard for lower scale deployments<br>   • vSphere 5.0 Enterprise Plus for higher scale deployments<br>   • vCenter mandatory<br>   • One License per socket |
| Networking | • LAN<br>   • DNS must be configured prior to deployment<br>   • NTP required on ESXi Host<br>   • Redundant configurations must have all NIC interfaces duplicated and connected to independent switching fabric to support LAN Fault tolerance<br>• WAN<br>   • Similar to SaaS WebEx for HQ Video, Web Share etc.<br>   • Plan assuming 70-30 distribution in-company users (LAN) and internet users (WAN) |
| Storage (Network Attached Storage) | • Needed only if customer wants to record meetings and keep system snapshots (for DR) |
| Teleconferencing | • CUCM 7.1, 8.6, 9.0 for SIP Trunk based Teleconferencing |
| SSO (Single Sign On) | • If using ADFS 2.0 as iDP then customer needs AD (Active Directory) 2010<br>• Other SAML 2.0 SSO Compliant iDP also supported – same as SaaS WebEx<br>• PingFederation V6.5.2, ADFS V2, OpenAM V9.5.4 |

# End User Requirements

| Category | System Requirements |
|---|---|
| Web User Interface | Browsers<br>• Internet Explorer 8+ (32-bit/64-bit)<br>• Firefox 9+ (Mac/Windows)<br>• Safari for Snow Leopard and Lion, Mountain Lion (Mac)<br>• Chrome Latest Releases (Mac/Windows) |
| Desktop Operating Systems | • Windows XP SP3 and later<br>• Windows Vista (32-bit/64-bit)<br>• Windows 7 (32-bit/64-bit)<br>• Windows Server 2008 (64-bit)<br>• Mac OS 10.6 Snow Leopard, 10.7 Lion, and 10.8 Mountain Lion |
| Calendaring Interfaces | • PC: Microsoft Outlook 2007 SP2+ and 2010 SP1+ (32-bit/64-bit)<br>• PC & Mac: Web Calendaring<br>• Mobile: iOS WebEx App |
| Mobile Platform | • iOS v5.1 or later (iPhone and iPad) – same Mobile Meeting Center Client download as SaaS WebEx<br>• Android Planned |

# Complete Your Paper "Session Evaluation"

Give us your feedback and you could win
1 of 2 fabulous prizes in a random draw.

Complete and return your paper
evaluation form to the room attendant
as you leave this session.

Winners will be announced today.
You must be present to win!

**..visit them at BOOTH# 100**

# Thank you.

Be sure to follow us on Twitter at *#CiscoConnect_TO*

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