Cisco Collaboration Cloud

Presenter: Miro Polakovic
Title: Technical Marketing Engineer
Agenda

• Then and Now – New needs for collaboration
• WebEx Architecture overview
• High Availability and Performance
• Flexible Integrations
• Security overview
• Q & A
The Need for a New Approach
Traditional tools do not address these challenges

Market Trends
- Dispersed Workforces
- Video Proliferation
- Content/Device Explosion
- Social Media
- Cloud Services

Business Impact
- Opex/Capex Management
- Heterogeneous Environment
- Complex Deployments
- Soloed Tools, Applications & Organizations

Personal Factors
- Work Anywhere
- Device Flexibility
- Trust at a Distance
- Expertise/Info on Demand
### Essential Elements of Collaboration

<table>
<thead>
<tr>
<th></th>
<th>THEN</th>
<th>NOW</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PEOPLE</strong></td>
<td>Inside my organization</td>
<td>Dispersed mobile teams, outside my organization</td>
</tr>
<tr>
<td><strong>COMMUNITIES</strong></td>
<td>Defined by organizational hierarchy</td>
<td>Self-organizing</td>
</tr>
<tr>
<td><strong>CONTENT</strong></td>
<td>Primarily single source</td>
<td>Multiple sources &amp; applications, mobile and fixed devices</td>
</tr>
<tr>
<td></td>
<td>Largely asynchronous; text, email and voicemail</td>
<td>Non real-time and real time, interactive; video</td>
</tr>
<tr>
<td><strong>CONTEXT</strong></td>
<td>You find information, people</td>
<td>Right time, right people, right resource</td>
</tr>
<tr>
<td><strong>SECURITY</strong></td>
<td>Inside the firewall, walled off</td>
<td>Selective, policy-based, inter-company</td>
</tr>
<tr>
<td><strong>DEPLOYMENT</strong></td>
<td>Departmental, on premises</td>
<td>Enterprise-wide, choice of on premises or cloud-based</td>
</tr>
</tbody>
</table>
Cisco Collaboration Cloud

14 global collaboration hubs

6.2 million meetings/month

20+ million attendees/month

1.2 billion meeting minutes/month
Cisco WebEx Architecture Overview

- **Physical Layer**: Optical Fiber Links
- **Network Layer**: Over-provisioned IP Network, Global Watch, GSB, SLim, BLis
- **Meeting Zone**: Collaboration Switches, Collaboration, Session Managers, Application Program Interface WebEx and 3rd Party Apps
- **Operational Support System**: Application Program Interface WebEx and 3rd Party Apps

**Application Program Interface**:
- MEETING CENTER
- TRAINING CENTER
- EVENT CENTER
- SUPPORT CENTER

**Web Zone**:
- SESSION MGR

**Meeting Zone**:
- SESSION MGR
- SESSION MGR
- SESSION MGR
- COLLABORATION
- COLLABORATION
- COLLABORATION

**Network Layer**:
- DATA CENTERS
- DATA CENTERS
- DATA CENTERS

**Physical Layer**:
- Internet
Cisco Collaboration Cloud Differentiators

High Availability
- 99.99% historical uptime
- Seamless global failover for service continuity

Scalability and Performance
- Service oriented architecture
- Core-edge design
- Global Distributed Meeting (GDM) and Content Delivery Network (CDN)

Integration Flexibility
- High quality video/TelePresence
- Mobile devices and IP phone
- Meeting Place/WebEx node
- Client extensibility

Multi-Layer Security
- Secure in-meeting experience
- Encrypted data transport
- Data center security
- Rigorous 3rd-party audits
High Availability, Scalability, and Optimized Performance
Highly Resilient Infrastructure

- 100% redundancy for all clusters
- Real time data replication
- Seamless global failover – Global Site Backup
Service Level Architecture

- Scalable from single account to dedicated high volume clusters
- Up to 1,000 (Training Center) or 3,000 (Event Center) participants
- Up to 500 participants in a single HQ video meeting
- Service customization with branding
Core-Edge Design

- **Edge location duties:** proxy functions, static and dynamic caching, location and user aware, document shares
- **Core location duties:** heavy duty workloads, database, storage and analytics
Global Distribution Meeting (GDM) and Content Delivery Network (CDN) optimize user experience

Closest hub is selected with Global Distributed Meeting

GDM local switching eliminates traffic congestion to a single hub. Provides optimal in-meeting experience with low round trip time/latency and high bandwidth

Pre and post meeting experience enhanced by leveraging CDN
CDN enables WebEx to offer the fast join times

**East Coast**

<table>
<thead>
<tr>
<th>First-time Presenter</th>
<th>First-time Attendee</th>
</tr>
</thead>
<tbody>
<tr>
<td>WebEx</td>
<td>Citrix</td>
</tr>
<tr>
<td>30.8</td>
<td>54.2</td>
</tr>
<tr>
<td>24.6</td>
<td>41.9</td>
</tr>
</tbody>
</table>

**West Coast**

<table>
<thead>
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<tbody>
<tr>
<td>WebEx</td>
<td>Citrix</td>
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<tr>
<td>61.6</td>
<td>46</td>
</tr>
<tr>
<td>77.2</td>
<td>51.9</td>
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</table>

Non GDM Meeting Experience
All Users Connect to Primary Cluster Location in the region

Conference Bridge (CB) used for data sharing and Multi Media Platform (MPP) used for VOIP and Video

4 stream replicated over Public IP

High Latency
Multiple Fetches
GDM Optimized Meeting Experience
Users Connect to Closest GDM nodes in the region

Conference Bridge (CB) used for data sharing and Multi Media Platform (MPP) used for VOIP and Video

Single Stream Replication over high speed backbone

Primary Cluster In Meeting Experience Extended via GDM

Localized CB and MPP Data Movement

Primary Cluster Location

Meeting Zone(s)

GDM

Hong Kong users
GDM enables lowest desktop sharing latency

Source: Lab Testing Summary Report- Web Conferencing, Report # 100716, Miercom Sept 2010. Tests were conducted in 2 different locations with different network access points. Total latency was calculated over a 13 slide PPT deck with various animations and transitions.
Flexible Integration
Integration Flexibility

Collaboration Solutions

Video/TelePresence/Jabber for enhanced collaboration

Mobile Devices/IP Phones

Mobile/IP phones for ubiquitous access

On-Prem Audio and Cisco Network Devices

ASR/Third Party Audio/Medianet for lower TCO
Introducing High Quality Video

- Active speaker main video area – up to 360p (640x360 quality)
- Active speaker switching
- See up to 5 other participants at a time. Scroll to see more.
New UI with High Quality video
Two powerful solutions for compelling collaboration

Cisco TelePresence

- Live, face-to-face communication experience over the network
- Share content, create high-quality video recordings and events
- Connect up to 48 locations in one meeting

Cisco WebEx

- Meet anytime on virtually any computer or device
- Deliver presentations, share documents and videos, and demonstrate applications
- Add up to 1,000 meeting attendees
Cisco TelePresence One Touch

- Pushing one button on the Cisco IP phone simultaneously starts both Cisco TelePresence and the WebEx meeting
- Both the Cisco TelePresence room and WebEx attendees are connected to the WebEx audio bridge
- The Cisco WebEx web client is launched in the Cisco TelePresence Auto Collaborate presentation screen
Mobile client integration

- Audio-only or full voice and data
- iPhone, iPad, Blackberry & Windows Mobile
- Cius and Android support
Cloud Connected Audio for Enterprises

On-net Callers

Customer Network

WebEx iPoP

VoIP

Cisco Collaboration Cloud

Off-net Callers

PSTN to gateway

Media Gateway

SIP

Media Gateway
WebEx IP phone integration

• Start/join meetings from IP Phone
  Joins WebEx audio with one touch – no passcodes to type
  Automatically Launches WebEx session on PC
  Integrated audio and data experience

• Calendar view of WebEx scheduled meetings
Integration points

In-Meeting Integration
   Active Talker
   Mute/Un-mute
   Etc.

Provisioning & Usage Collection

Login/SSO
   Join/Start
   Meeting Page
   Authentication

TSP API

XML API

URL API

For more information
http://developer.webex.com

SAML is also available
In-Meeting integration TSP API architecture

XML Communication to take place between WebEx Telephony Server and TSP Partner Adaptor Server

Adaptor uses Bridge API to manage low level communication to audio bridge

Meeting Attendee

Data Conference

Audio Conference

INTERNET

Meeting Server

Telephony Server

WebEx Firewall

Partner Firewall

Audio Bridge

PSTN

TSP Partner

Hosted Adaptor Server
WebEx with Unified MeetingPlace

On-premises standards-based audio/video for WebEx meetings

**Simple**
- Integrated setup and attend
- Single sign-on
- Integrated controls

**Savings**
- Leverage internal VoIP architecture
- Reduce voice conferencing toll and services fees

**Flexible Deployment Options**
- Unified MeetingPlace or WebEx setup & attend
- Audio/video-only or Audio/video & Web

Combine on-premises audio for cost savings with SaaS Web for global reach and deployment ease
**WebEx Node for ASR 1000**

**Bandwidth**
- Cuts web meeting traffic on WAN, proxies and firewalls

**Performance**
- Improves user experience for WebEx web meetings, VoIP, and Video

- Shared port adapter for Cisco ASR router
- Extends the Cisco Collaboration cloud on-premise
- Not a full SaaS replacement: meeting front-end continues to reside in cloud
- Also in cloud: NBR, billing, reporting, and site administration

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Cisco ASR 1000 Series Routers

Accelerate services by offering outstanding performance and resiliency with optimized, intelligent services
Before and After WebEx Node

**Before WebEx Node**

- **ENTERPRISE**
  - A → Firewall
  - B → Firewall
  - C → Firewall
  - Firewall → 3 Meeting Streams to WebEx
  - Firewall → WebEx Data, VoIP, Video
  - WebEx Data, VoIP, Video → WAN

**INTERNET**

- WebEx User
- WebEx Data Center
- WebEx Data, VoIP, Video

**After with WebEx Node**

- **ENTERPRISE**
  - A → Firewall
  - B → Firewall
  - C → Firewall
  - Firewall → Single Meeting Stream to WebEx
  - Firewall → WebEx Data, VoIP, Video
  - WebEx Data, VoIP, Video → WAN

**INTERNET**

- WebEx User
- WebEx Data Center
- WebEx Data, VoIP, Video
Multi-Layer Security
# Cisco multi-layer security model

## MULTI-LAYER SECURITY MODEL

<table>
<thead>
<tr>
<th>Security Area</th>
<th>Controls</th>
<th>Third party Assessments</th>
</tr>
</thead>
<tbody>
<tr>
<td>In-meeting Controls</td>
<td>Access Controls, Privilege Controls</td>
<td></td>
</tr>
<tr>
<td>Site Security</td>
<td>Customer-Defined Policy Management</td>
<td>SAS-70 Type II Audit</td>
</tr>
<tr>
<td>Secure Access</td>
<td>SSL/AES Encryption, User Authentication</td>
<td>ISO 27001 in progress</td>
</tr>
<tr>
<td>Application Security</td>
<td>Secure App Development, Logical Controls for Multi-tenancy</td>
<td>Vulnnerability Assessment</td>
</tr>
<tr>
<td>Platform Security</td>
<td>Hardened Hosts, Protected Networks</td>
<td></td>
</tr>
<tr>
<td>Physical Security</td>
<td>Data Center, Secure Facility</td>
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Rigorous Audits by Independent Parties

- Customer/Site audits
  On an “as needed” basis
- Internal audits
  Performed “as needed” for Cisco’s internal audit group
- SAS70 Type II annual audit
  Report available upon request
  Moving to SSAE-16 this year
- ISO27001 compliance
  Targeted for completion end of 2011
- Application security assessments
  Code-assisted Pen tests by iSec Partners
Multi-tenancy isolation
Data in meetings are not persistent*

- The meeting experience consist of a series of separate, ephemeral streams (send/receive)
  - Voice stream
  - Video stream
  - Data stream
  - Graphic stream
- Shared documents and whiteboard exist from upload until un-share/clean or meeting end
  - Uploaded shared documents are encrypted with unique key generated for meeting
- IM exists for the duration of the meeting
- Upon meeting termination, all data are removed

*Unless a recording is created.
User Authentication

• Authentication required to use WebEx services
  User ID for starting and scheduling meetings
  Passwords for joining meetings
  User ID for using Connect IM and Spaces

• Administrators can manage accounts and password requirements
  Password strength
  Password aging
  Deactivate accounts

• Single Sign-On can be used to integrate corporate authentication processes with WebEx services
Secure Access

Data in Motion Protection for Conferencing and IM

- 128-bit TLS encryption standard
- 256-bit AES end-to-end encryption
- Support for customer PKI
Default TLS Encryption

- All WebEx meeting traffic is encrypted with 128-bit TLS encryption
- All traffic is secured and transported over HTTPS (port 443) while on the public network
- TLS-enabled meetings are implemented by default in the WebEx environment
End to end encryption

- Meeting data is encrypted using AES at the client
- Meeting data remains encrypted over the entire network
- 256 bit cipher strength
- High entropy key generation
- Key retained by endpoints
- Control data remains unencrypted to optimize switching of meeting traffic between attendees
PKI identity validation

- Use of PKI provides identify validation and authorization of attendees*
- AES encryption keys secured by digital certificates
- Certificate access support through Microsoft Cryptography Libraries or Apple Macintosh Key Chains
- Support for multiple certificate authorities for each site

*WebEx will not provide Certificate authority services
Site Security

COMPANY-WIDE POLICY MANAGEMENT

- **Individual**
  - Enable/Disable Features

- **Group**
  - Host & Attendee Privileges

- **Enterprise**
  - Restrict Site Access
Flexible Site Security Policies
Meeting Example

- Un-list meetings
- Meeting calendar access
- Set meeting password criteria
- Require accounts for attendees
- In-meeting features
- Site / content access control
Flexible Site Security Policies
User Management Example

- Self registration
- Password strength, aging & lockout
- User profile management
- Secure password reset & dissemination
- Configurable roles & meeting privileges
- SSO/SAML federation
- Awareness tools
In-Meeting Controls

- Set meeting password
- Lock down meeting
- Eject attendees
- Disable share
- Participant list view
- Assign presenter and annotation privileges
- Re-assign host role
- Audio dial-in/dial-out control
Key Takeaways

- Cisco is a Collaboration market leader
- Making Strong Investment in our Infrastructure for global scale
- We are committed to operational and service excellence