

*TOMORROW starts here.*



Cisco *live!*

# Understanding Cisco Hosted Collaboration Solution

BRKCOL-2315

Jeff Wang

Technical Solutions Architect

# Agenda

- Cisco Collaboration Overview
  - Cisco collaboration portfolio
  - What is HCS?
- HCS Partner Perspective
  - Architecture overview
  - HCS deployment models
  - Adding video, contact centre, and WebEx as a service to HCS
- HCS End Customer Perspective
  - Why HCS?
  - Choosing HCS partners
  - Design considerations
  - Onboarding considerations

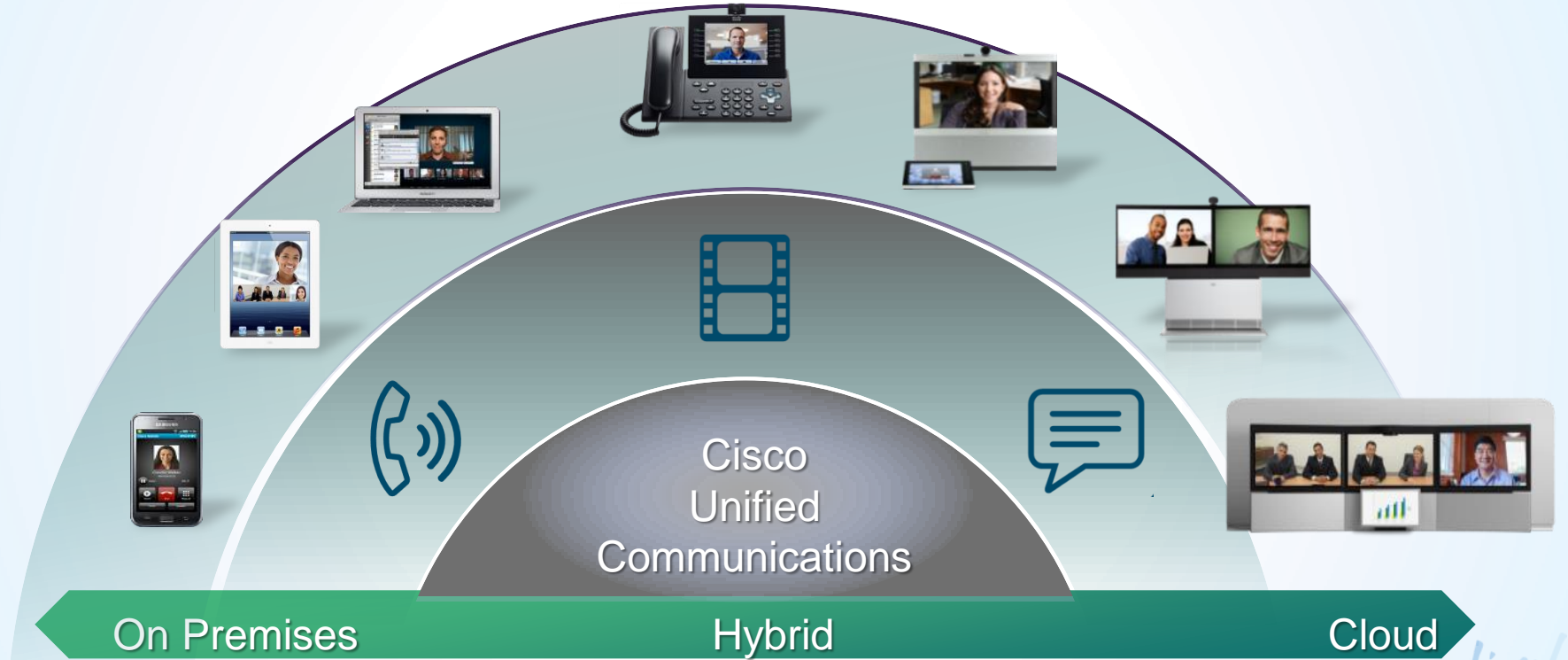


# Cisco Collaboration Overview

# Cisco Collaboration Architecture



# Cisco UC – Deploy the way you need



# Cisco's Cloud Collaboration Strategy

## Private Cloud

Cisco HCS for Large Enterprise

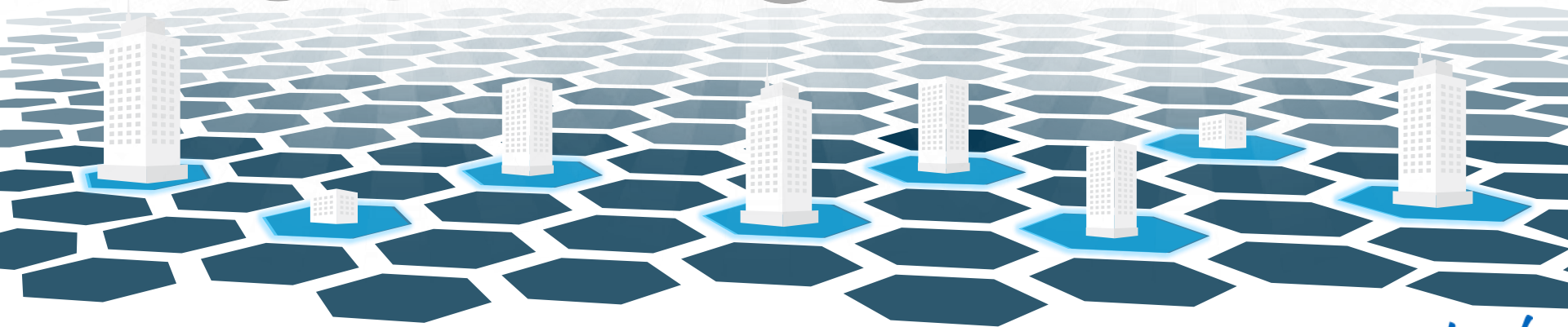
## Public Cloud

Cisco Powered Cloud Service  
(powered by Cisco HCS partners)

Cisco WebEx Cloud

## Hybrid

Public Cloud integrated with  
On-Premise



# What is HCS?

## HCS offers Cisco Customers a new Consumption Model

- Cisco UC applications delivered in a per user per month cost model
- Rapid and flexible deployments
- Focused at average customer size of 100 users and above

## HCS is delivered only through Cisco Certified Partners

- Over 55+ Cisco HCS Partners Worldwide



**Delivery of private cloud solutions for large enterprises**



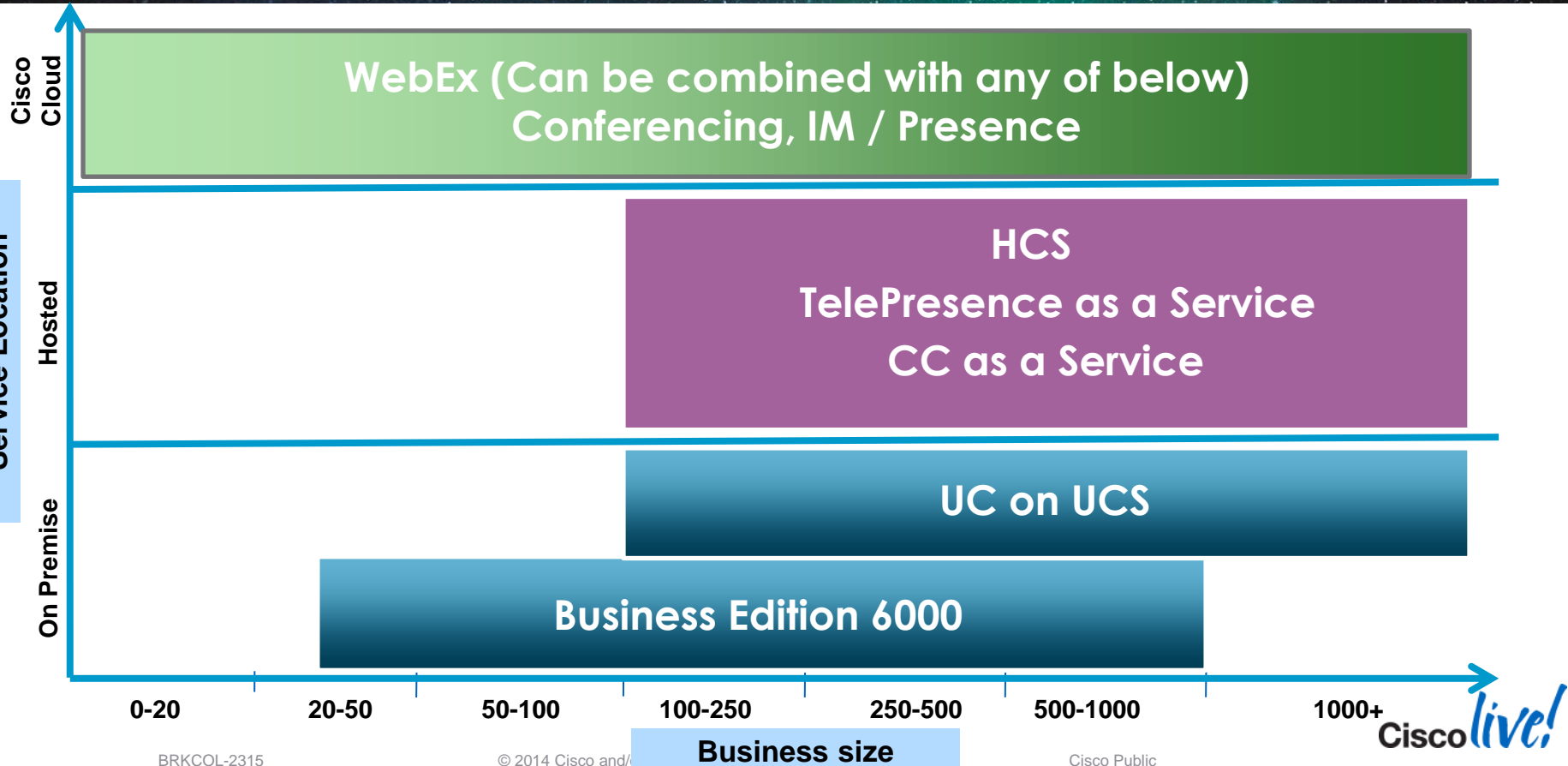
**Build cloud platform to take cloud collaboration to market**



**Sell another cloud provider's offers**



# Cisco Collaboration Portfolio and Positioning



# Whether DIY or as-a-Service, It is about the user experience!



You can do



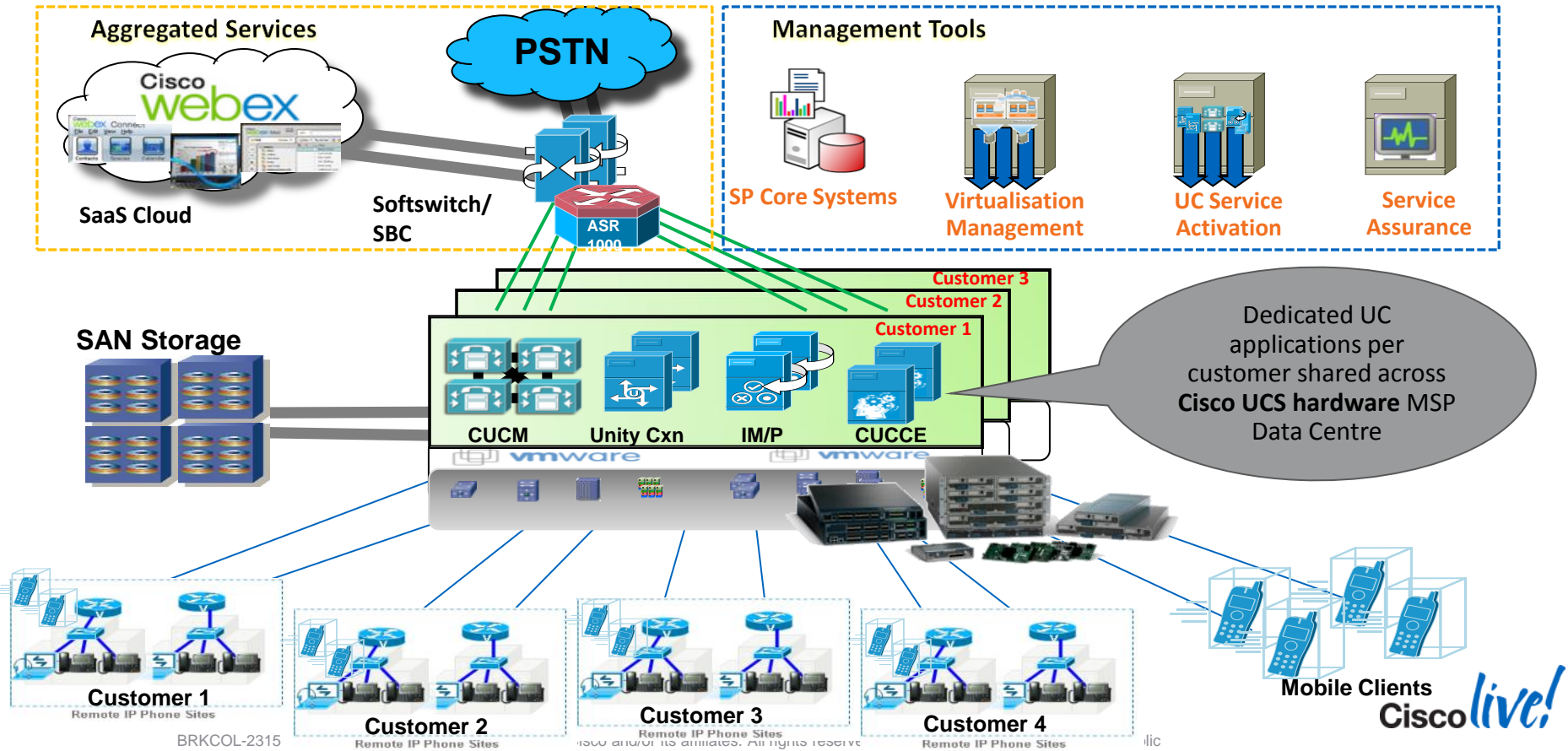
ce model”

**It's all about the user experience!**

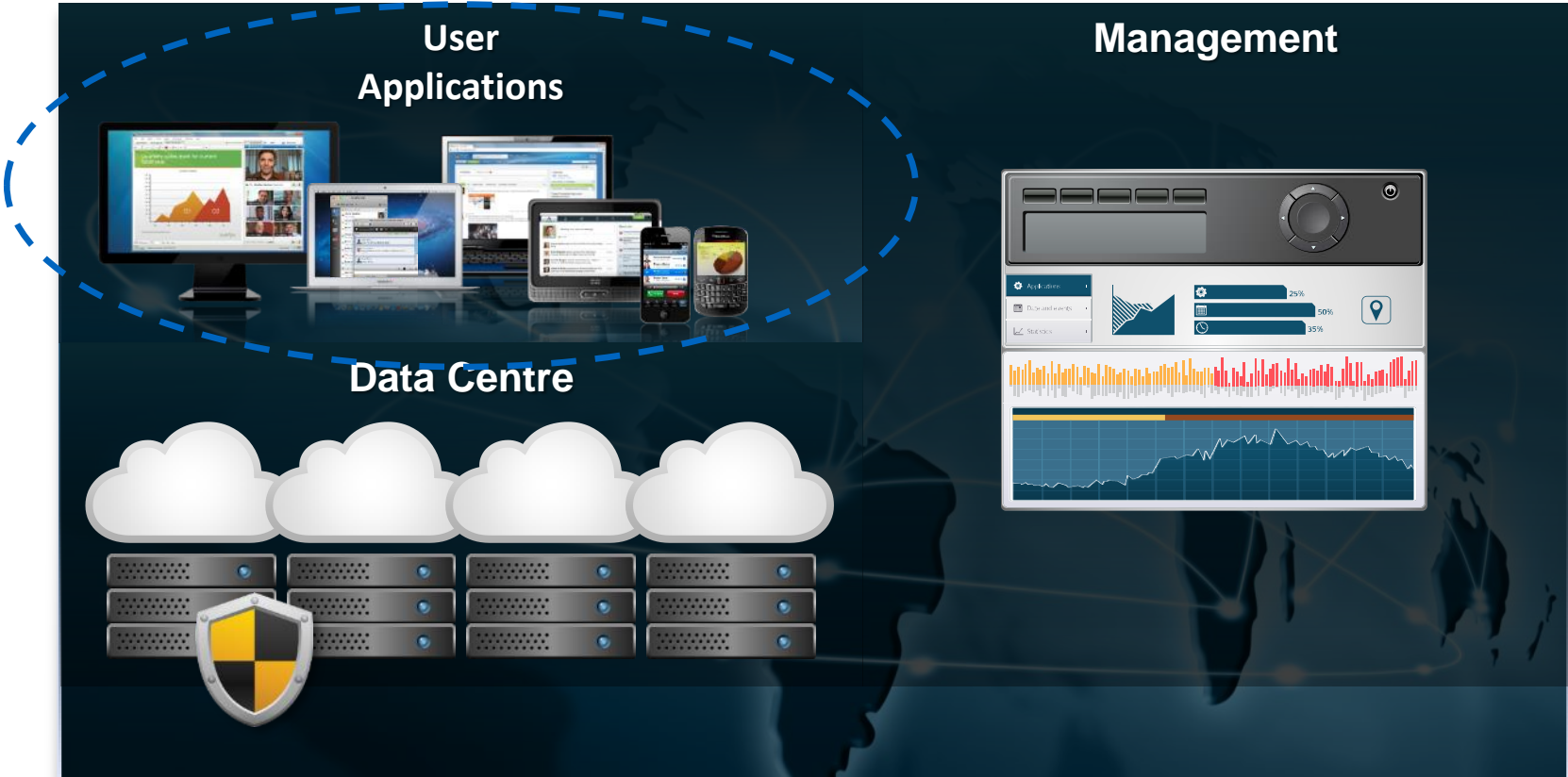
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# Cisco's Hosted Collaboration Solution



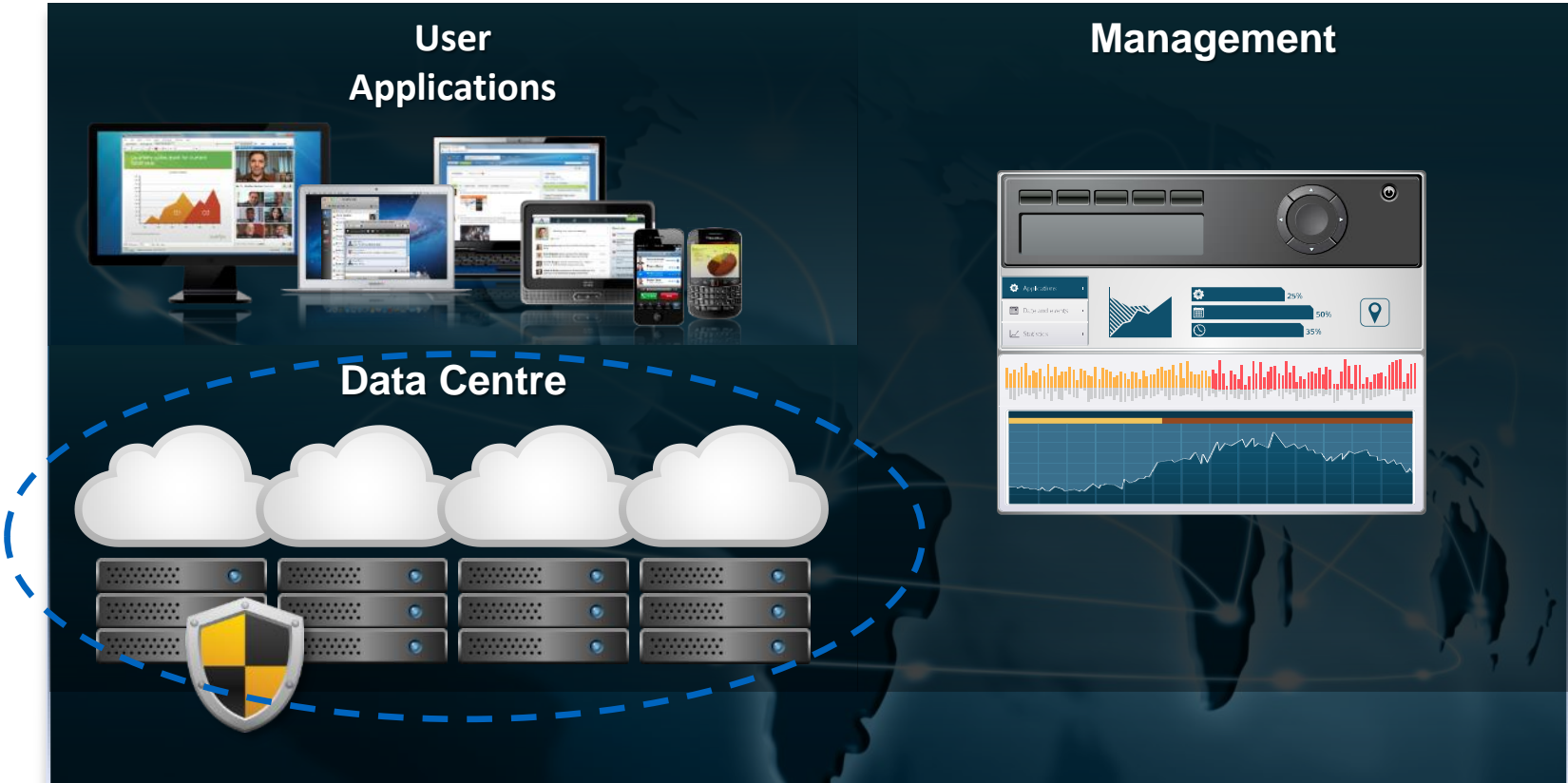
# HCS Major Elements



# Cisco HCS Applications

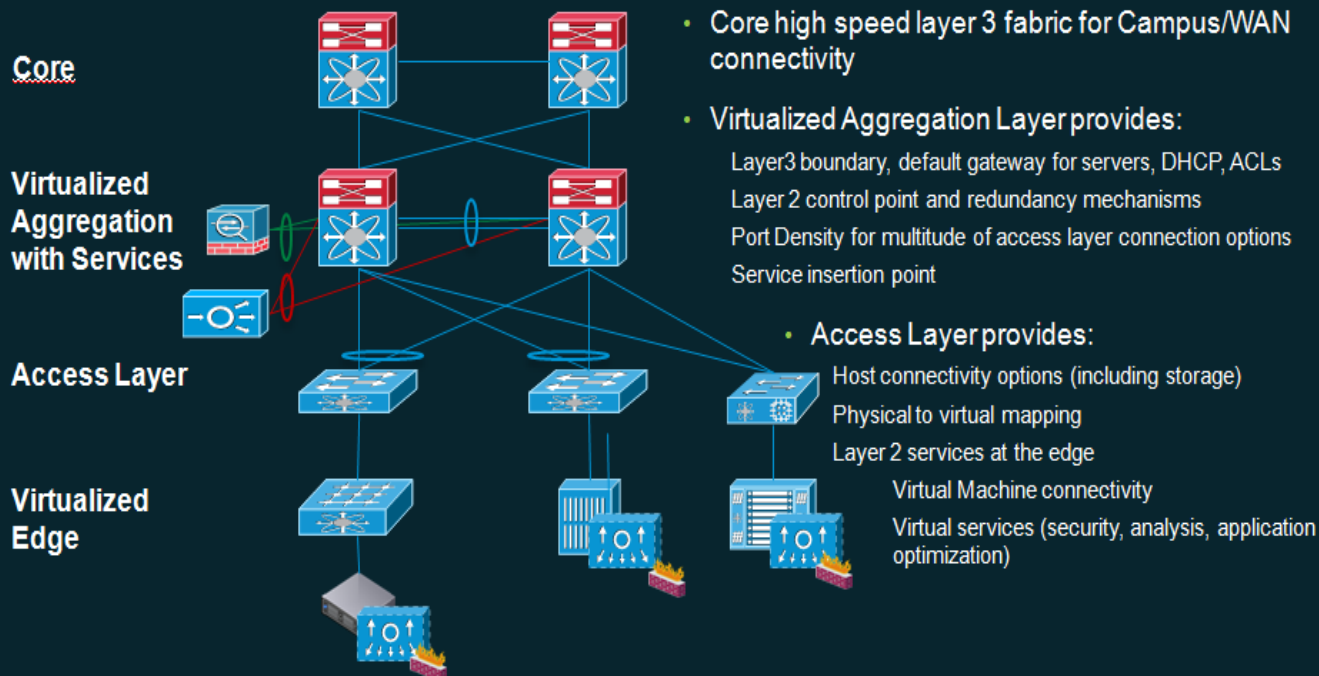
Services	Product	Support
Voice & Video 	Unified Communications Manager, Unified IP Phones, Jabber	Full
Voice Mail & Integrated Messaging 	Unity Connection	Full
Presence & Instant Messaging 	Instant Message and Presence Service, Jabber	Full
Mobility Services 	Unified Mobility, Mobile Clients	Full
Web Collaboration 	WebEx Meeting Center (SaaS)	Full
Attendant Console 	Cisco Unified Enterprise Attendant Console	Full
Video Conference 	Cisco TelePresence (Point-to-Point)	<b>TPaaS</b>
Contact Centre 	HCS for Contact Centre (based on UCCE & CVP)	<b>CCaaS</b>

# HCS Major Elements



# Virtualised Multi-Services Data Centre (VMDC)

## VMDC Architecture

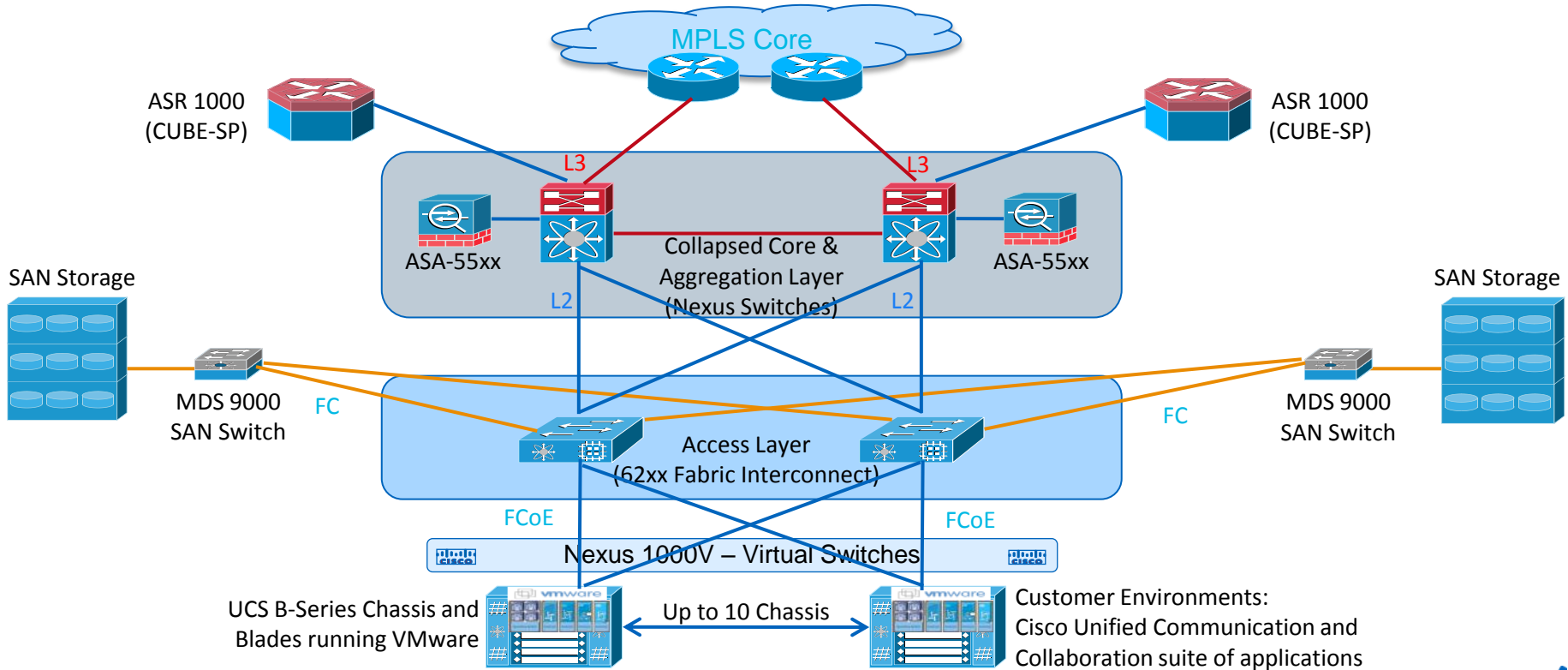


## HCS based on VMDC 2.3

- Reduced time to deployment
- Reduced risk
- Increased flexibility
- Improved operational efficiency



# Typical HCS Datacentre Architecture



# HCS DC Compute Requirements

## ■ UCS B-series blades

- Multiple B-Series blades supported (follows UC on UCS)
- Intel 5600, 7500, and E7 series
- 1066MHz DDR3 ECC RAM or better
- Typically using B200M3 or M230M2 blades in quotes today



## ■ vSphere 5.1 Required for HCS 9.2.1

- VSPM model is required for HCS offerings
- VMWare typically delivers direct or via VCE/other



## ■ SAN storage

- SAN must be on VMware's hardware compatibility list and UCS list and support require TBs and IOPS
- Fibre Channel (FC/FCoE) only (NAS and iSCSI are not supported)

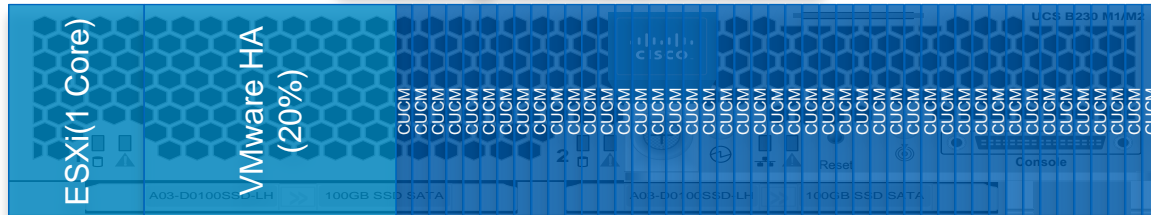
# UC on UCS with Over-subscription for HCS

Application	CPU	RAM (GB)	HD(GB)
UC Manager – 2,500 Users (Limited)	800 MHz	3	60
UC Manager – 2,500 Users	800 MHz	4	80
UC Manager – 7,500 Users	2 Cores	6	2 x 80
UC Manager – 10,000 Users	4 Cores	6	2 x 80
Unity Connection – 1000 Users	1 Core	4	160
Unity Connection – 5,000 Users	2 Cores	6	200
Unity Connection – 10,000 Users	4 Cores	6	2 x 146
Unity Connection – 20,000 Users	7 Cores	8	2 x 300
Instant Message / Presence – 1,000 Users	800 MHz	2	80
Instant Message / Presence – 2,000 Users	1500 MHz	4	80
Instant Message / Presence – 5,000 Users	2 Cores	4	2 x 80
Instant Message / Presence – 15,000 Users	4 Cores	6	2 x 80
CER – 20,000 Users	800 MHz	4	80
CER – 30,000 Users	2 Cores	6	2 x 80
Session Manager – 40 CPS	2 Cores	6	2 x 80
Session Manager – 50 CPS	4 Cores	6	2 x 80
Cisco UEAC – 25 Consoles	1 Core	4	40

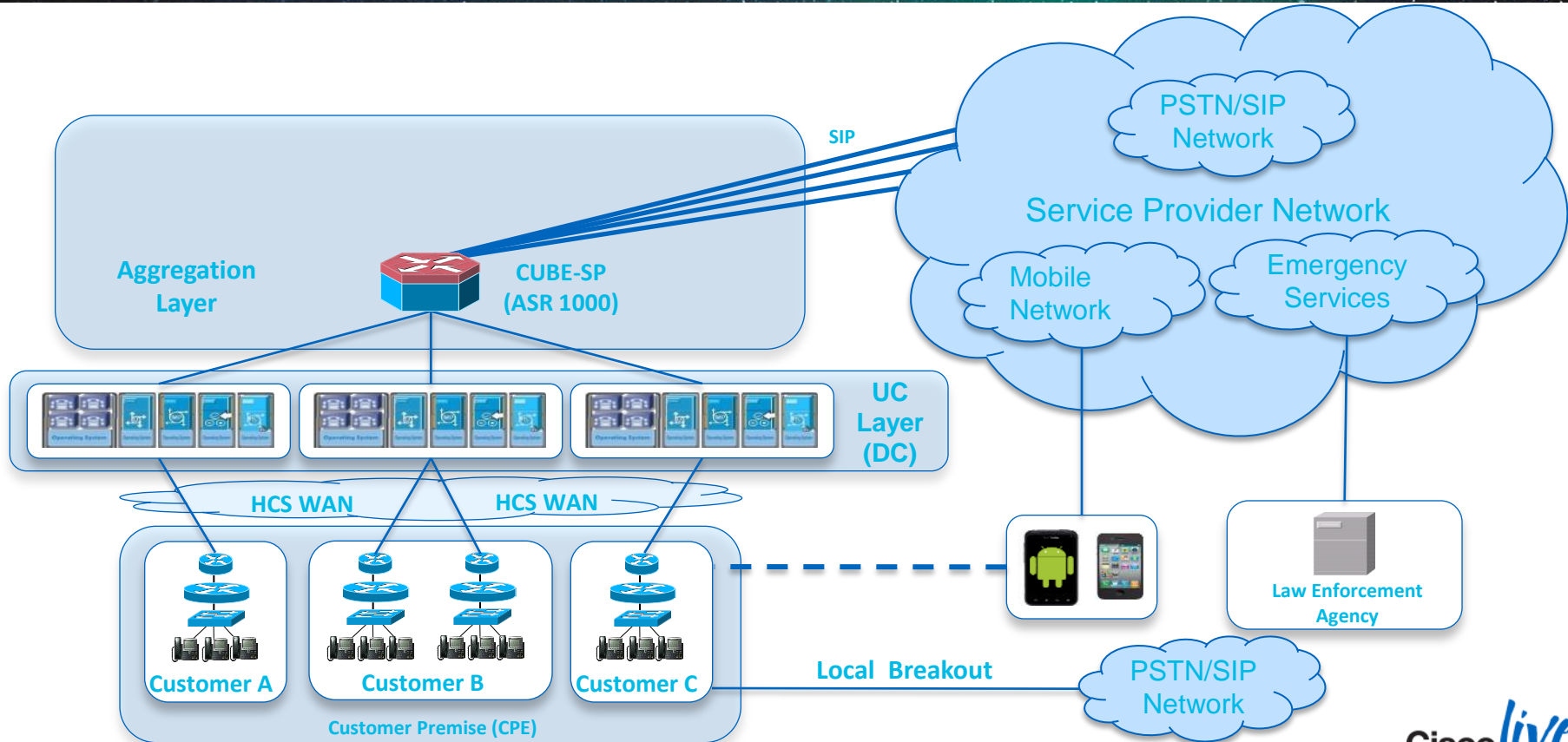
# Application Distribution Example

- B230 M2 Blade
  - 2 x 2.4GHz 10-Core Intel Xeon E7-2870 CPUs
  - 20 cores x 2400 MHz = 48000 MHz
  - 256GB of RAM
- CUCM 2500 User OVA
  - 1x vCPU with 800MHz Reservation
  - 4GB of Memory

45 CUCM Instances  
using 180GB RAM

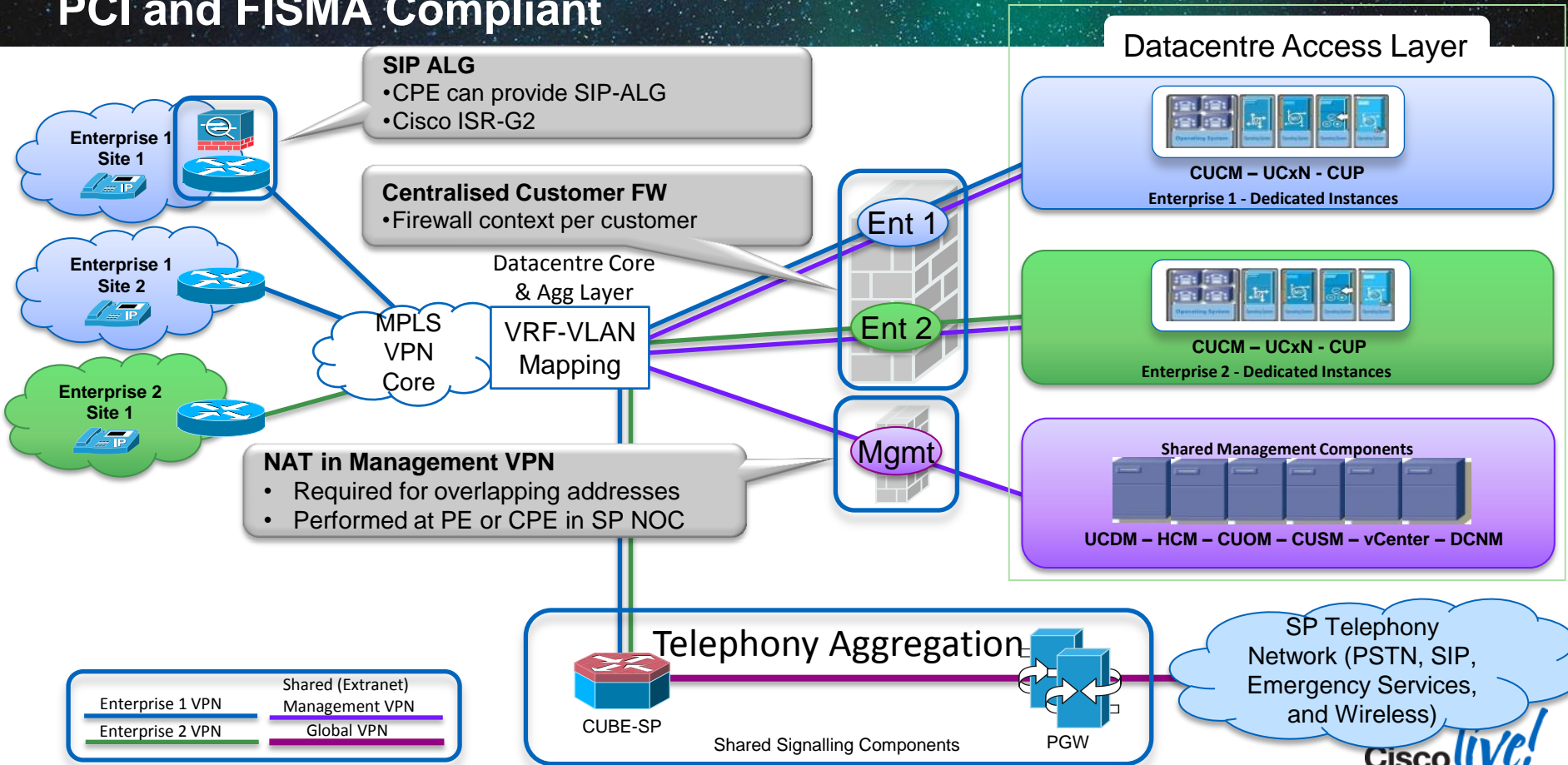


# HCS Telephony Architecture Model

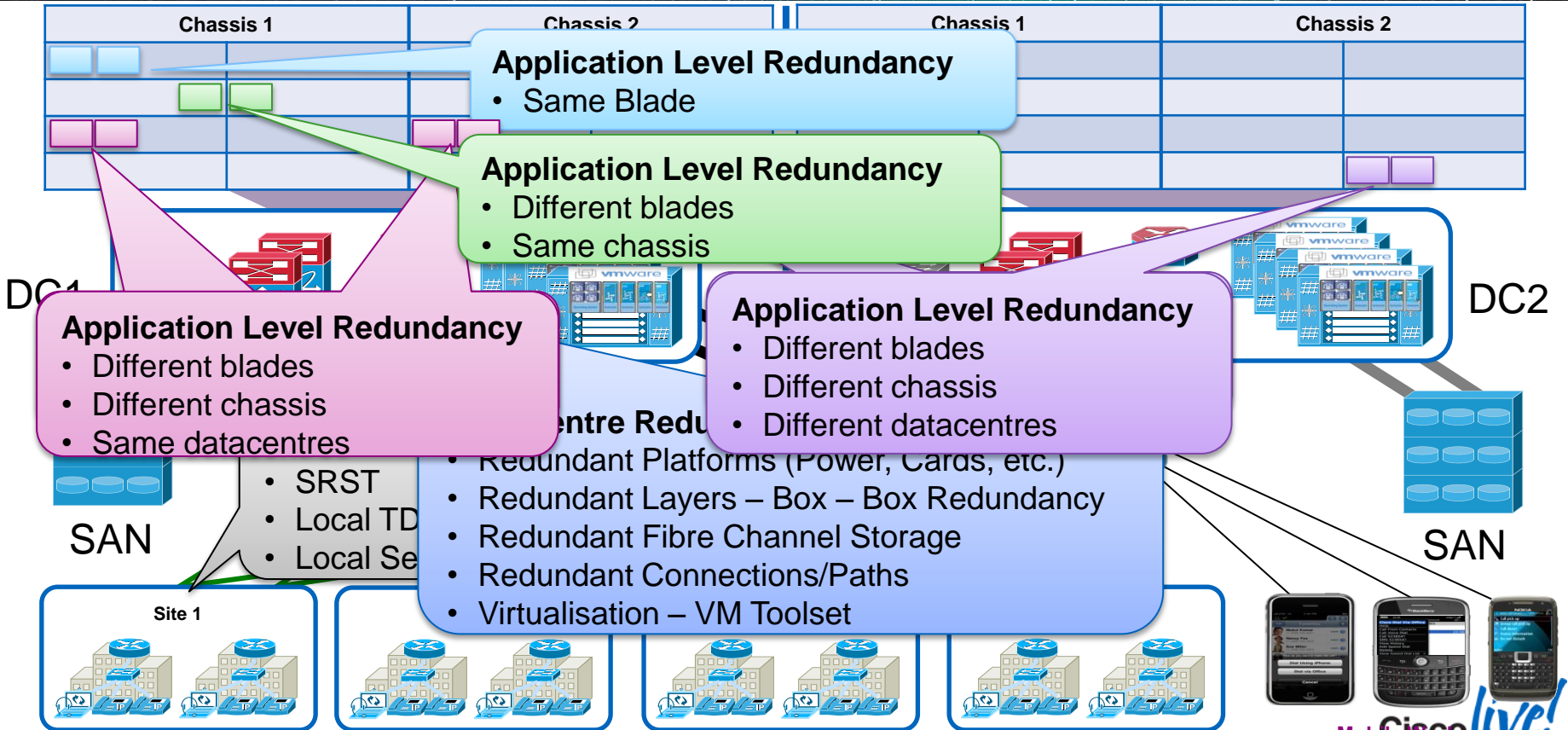


# HCS Security Model

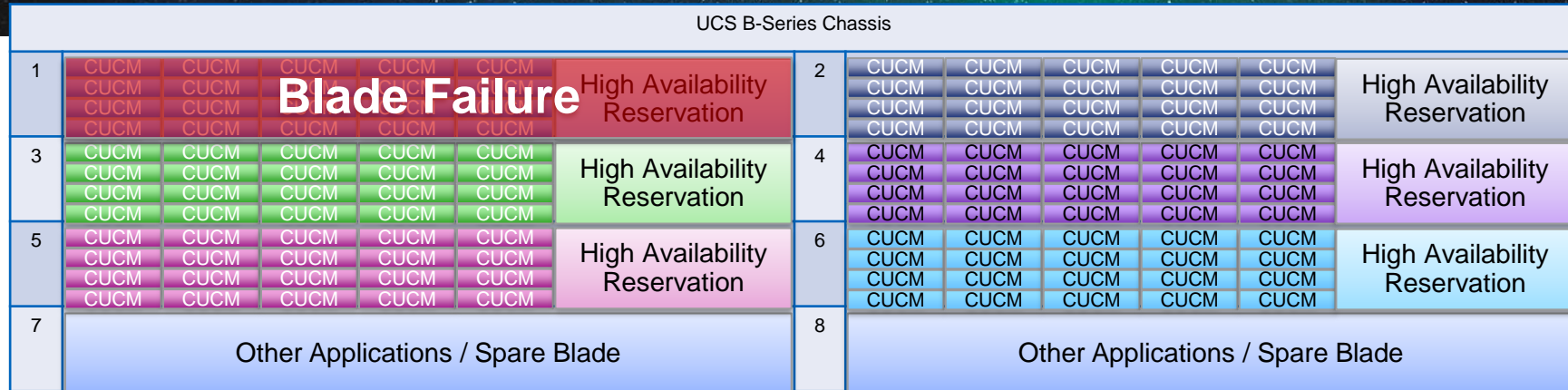
## PCI and FISMA Compliant



# HCS Redundancy



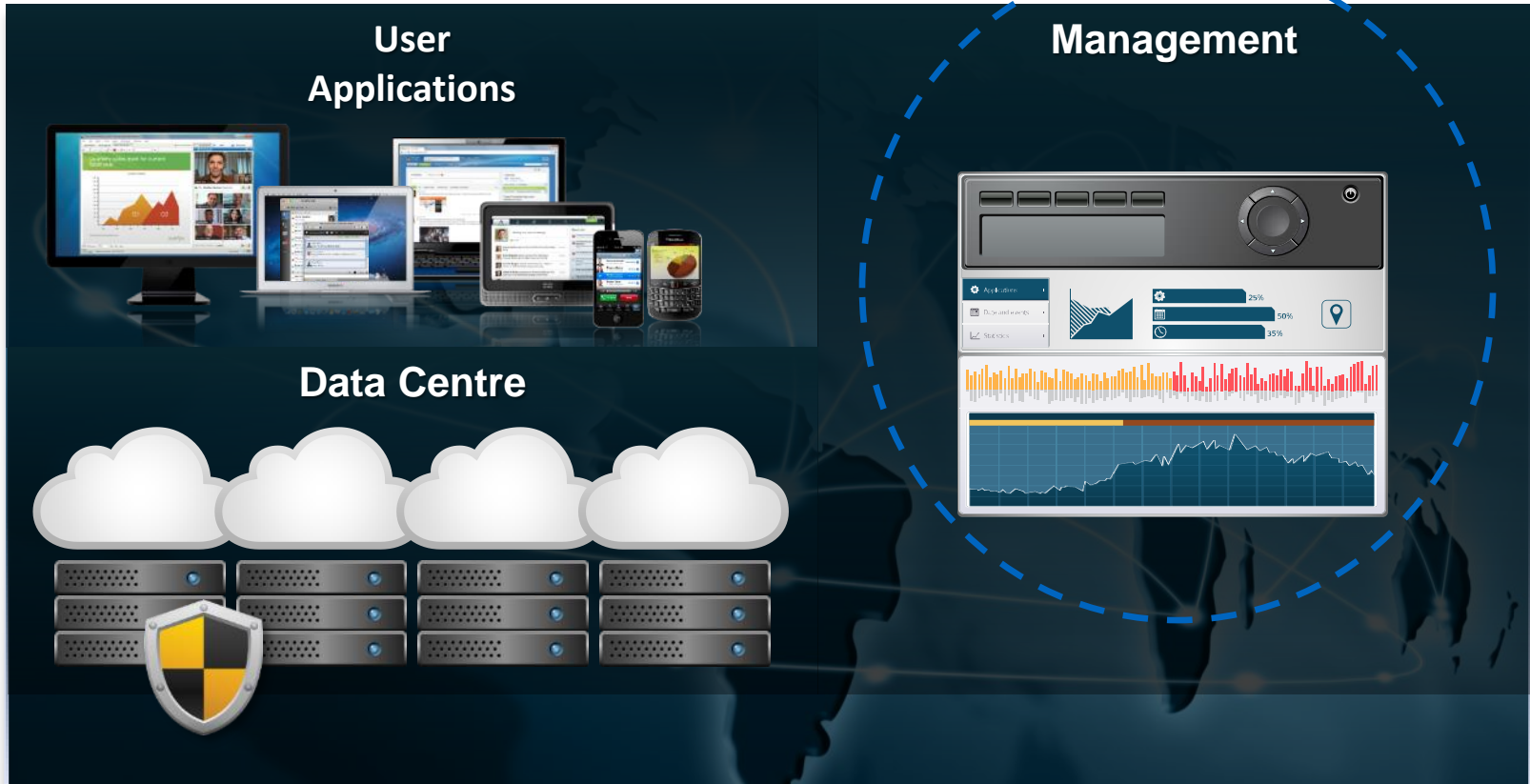
# VMware High Availability



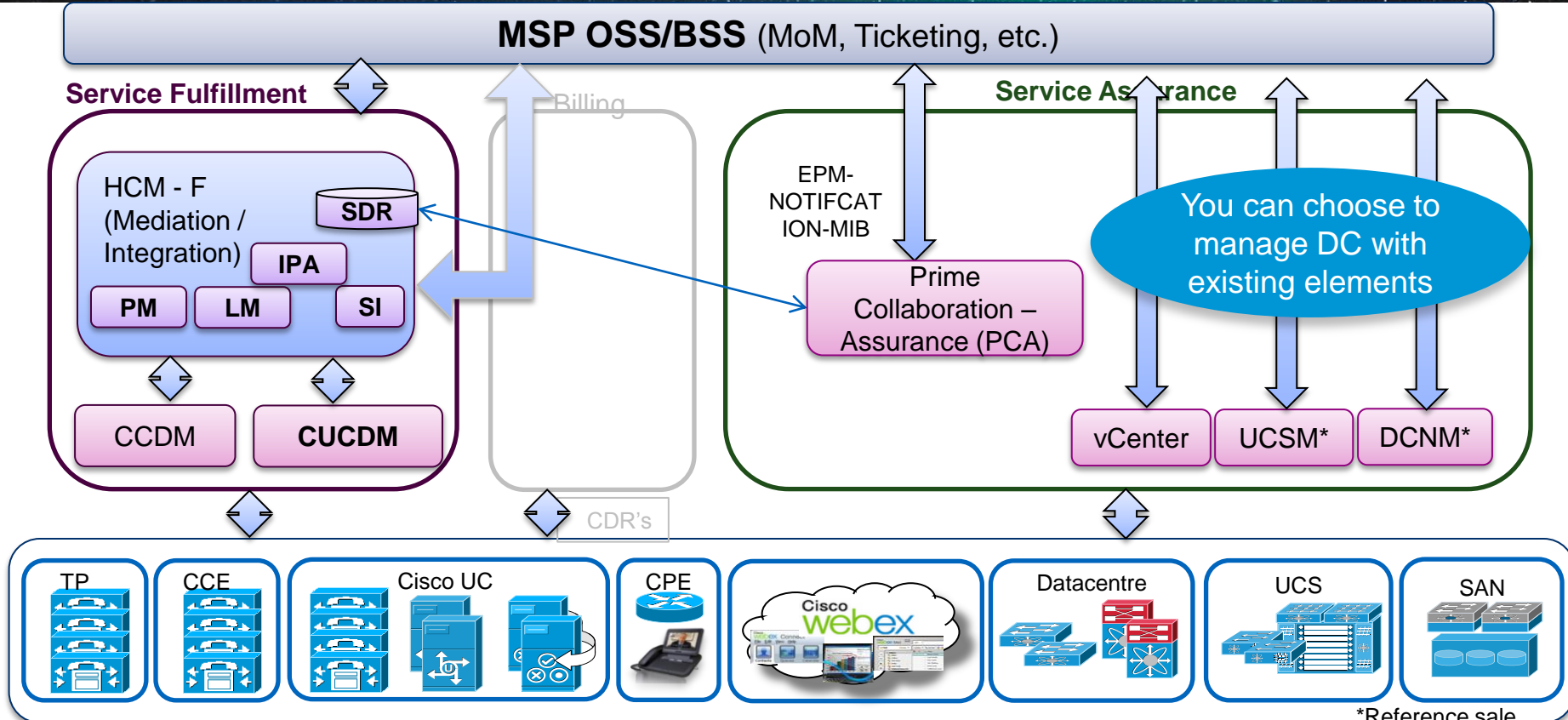
- Each blade (1-6) belongs to the same VMware HA Cluster
- Each blade has a HA reservation setup to absorb application relocations
- Each blade in the HA cluster has similar performance profiles
- Upon blade failure, applications are reassigned compute resources
  - Manually or Automatically
  - Applications must boot after compute resource assignment
- **VMware tool support follows the UC-on-UCS guidelines**



# HCS Major Elements

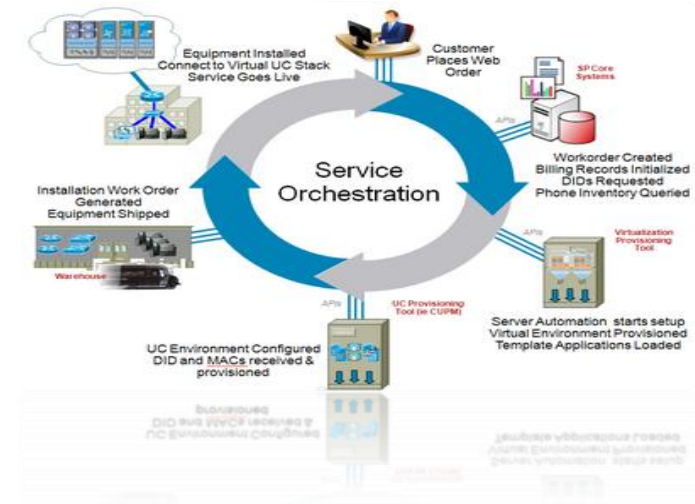


# HCS Service Fulfillment and Service Assurance



# HCS Fulfillment Overview

- HCS Fulfillment includes:
  - **Domain Manager(s)** specialising configuring/managing specific set of applications (e.g. CUCDM, CCDM)
  - **Utilities** specialising in providing specific function to ease management operation cost at system level (e.g. LM, SI, PM etc)
  - **Interfaces** such as admin and end user portals to support human interaction with the system and API interface for OSS integration



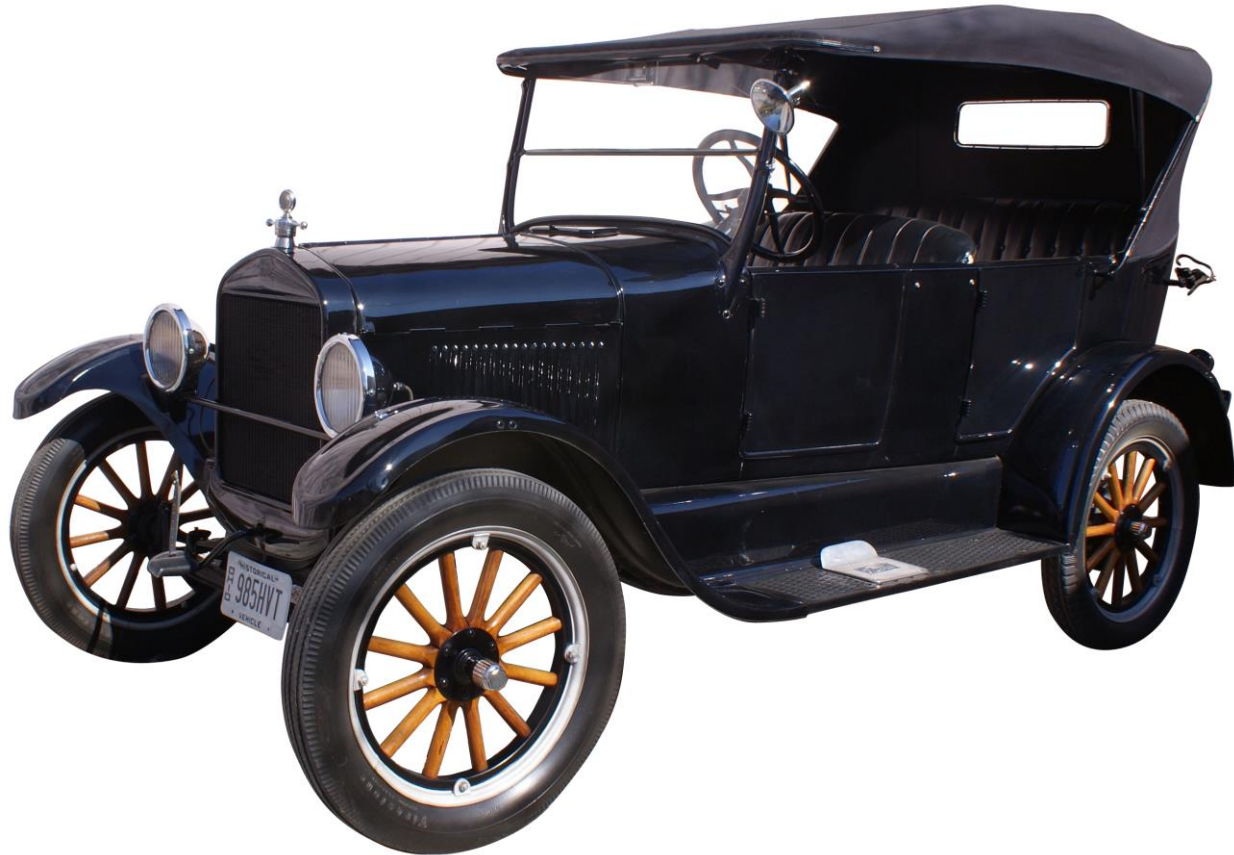
# HCS Management Acronym Decoder Ring

- HCM-F – Hosted Collaboration Mediation – Fulfillment
  - PM – Platform Manager (used for upgrading UC applications)
  - SI – Service Inventory (file used for bundle-based billing)
  - SDR – Shared Data Repository (which customer in which virtual machine)
  - HLM – HCS License Manager (keeps track of which ELM serving which customers)
  - IPA – Infrastructure Provisioning Assistant (interacts with DC orchestration)
- ELM – Enterprise License Manager (Manages licenses at cluster level)
- CCDM – Contact Centre Domain Manager (CC Apps provisioning)
- CUCDM – Cisco UC Domain Manager (UC Apps provisioning)
- PCA – Prime Collaboration Assurance
- DCNM – Data Centre Network Manager (Nexus/MDS assurance)
- UCSM – UCS Manager (UCS Blade Server assurance)

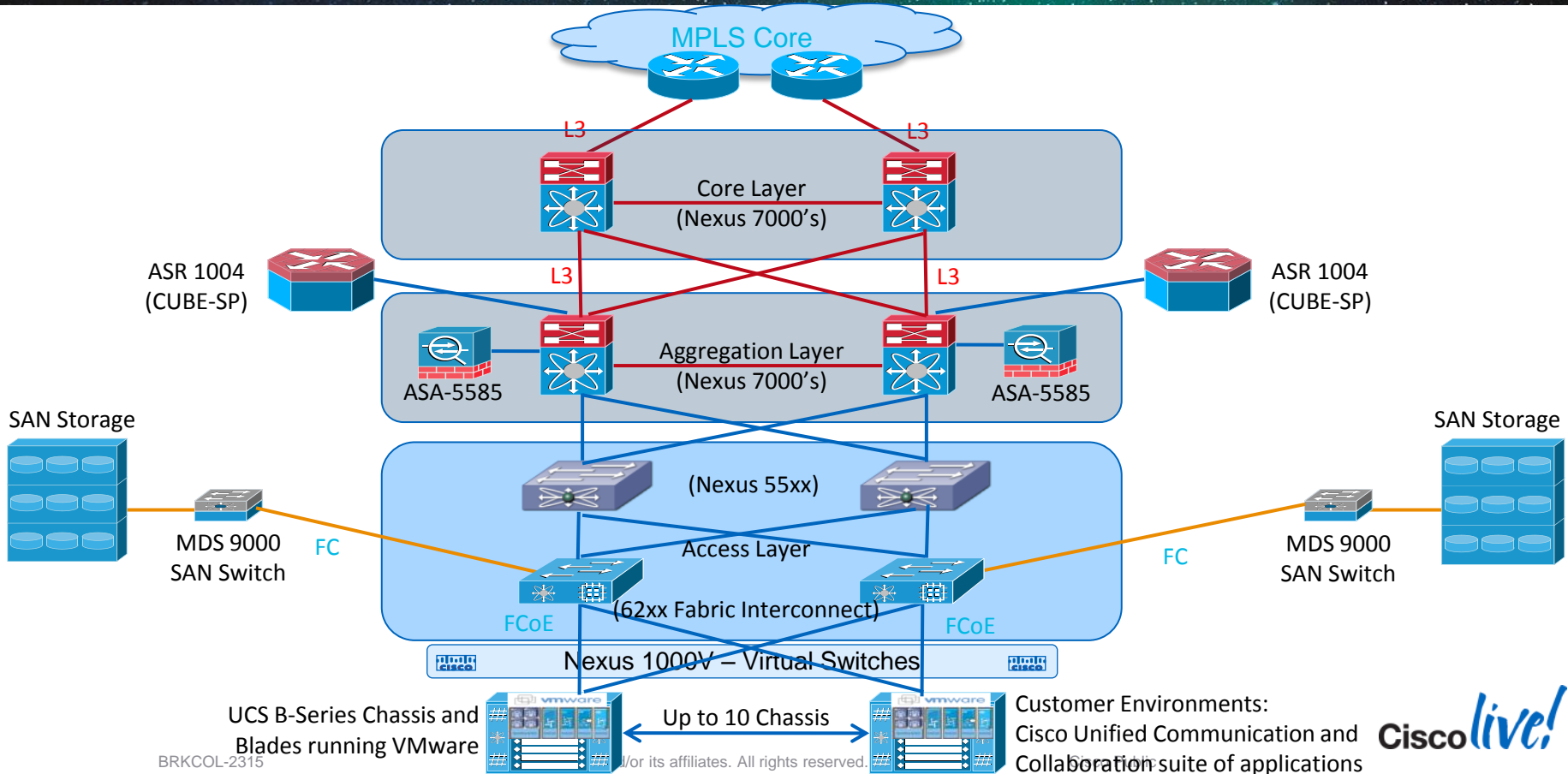
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You can have any Colour as Long as it's Black



# Initial Release of HCS Architecture



# HCS Data Centre Deployment Models

## More Flexible DC Deployment Options

	Large Pod	Small Pod	Micro Node
Number of Users	>100K	50K	20K
Number of Customers (# HCS Instances)	~230	~50	~20
Collapsed Core & Aggregation Layer	Nexus 7000	Nexus 5500	Nexus 5500
Firewall	ASA 5585-X	ASA 5555-X	ASA 5555-x
SBC/CUBE	ASR 1004 CUBE(SP)	ASR 1002-X CUBE(SP)	C2921 CUBE(ENT)
IPSec/VPN Concentrator	ASR 1006	ASR 1002-X	ASR 1002-X
Access Layer	Nexus 5500	Collapsed	Collapsed
Distributed vSwitch / Nexus 1000v	Yes	Yes	No
Storage	SAN/NAS	SAN/NAS	DAS (local)
VMware HA	Full	Full	Limited
VMware vMotion	Yes	Yes	No
UCS Manager	Yes	Yes	No
UCS Compute	B-series	B-series	C-series
Vblock/Flexpod/VSPEX	Yes	No	No



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# HCS TPaaS Hybrid Cloud Deployment

Over and Above the Base HCS Point-to-Point Video Capability

Small Local Meeting



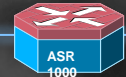
Large B2B Meeting

## HCS Cloud

Unified CM



CTX



Dedicated Enterprise Conferencing Services

Optimal Resource Selection  
Overflow Services  
Increased SP value  
Increased Reach  
Feature Velocity

VMR & Cloud Conferencing Services

# Cisco Contact Centre Portfolio and Positioning

High Touch

Cisco® Unified  
Contact Centre  
Enterprise (CCE)



Packaged CCE



Hosted  
Collaboration Solution for  
Contact Centre (HCS-CC)

+ CCDM (Contact Centre  
Domain Manager)

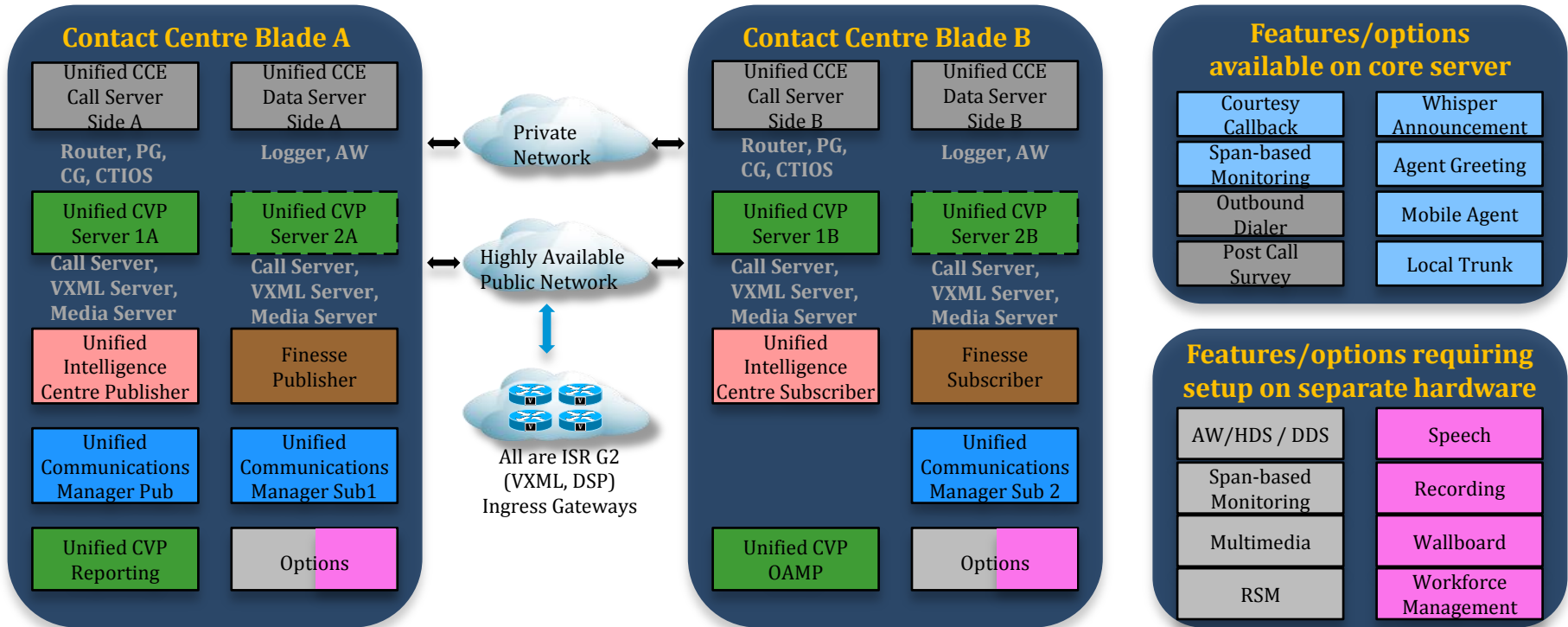
Mid Market

Small (Attach) Market

Cisco Unified  
Contact Centre Express (CCX)



# 500 and 1000 CC Seat High Level Topology



Only required for the 1000-agent deployment model

Core component integrated options

Optional Cisco components

Optional third-party components

# HCS 9.2.1 Key Contact Centre Features

## Agent and Supervisor Capabilities

- CTIOS or Finesse desktop
- Outbound
- **Multi-Channel support (EIM/WIM)**
- Agent Greeting
- Whisper Announcement
- CUCM-based Silent Monitoring
- **Remote Silent Monitor**
- CUIC Premium Reporting
- Mobile Agent



## Third-Party Integration

- Recording
- Wallboards
- Workforce Management
- Database Integration
- CRM Integration



## IVR / Carrier Integration

- Queuing
- Self-Service
- ASR/TTS
- Report Server
- DTMF
- Carrier integration
  - G.711 ulaw
  - G.711 alaw (native)
  - G.729a Codec



# WebEx SaaS Integration



## Over the Top (OTT) WebEx SaaS Integration into HCS

- Video and web via customer's existing Internet gateway
- Voice via CUBE-SP into PSTN or VoIP

## WebEx API integration

- CUCDM able to provision WebEx users via WebEx API
  - WebEx site needs to be set up in the first place
  - Available in 13 languages
- Cisco WebEx Meeting Server (CWMS) not supported



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# HCS for End Customers

## Why HCS?



# Demand for Cloud Continues to Reach Expectations

## Applications Most Likely Moving to Cloud



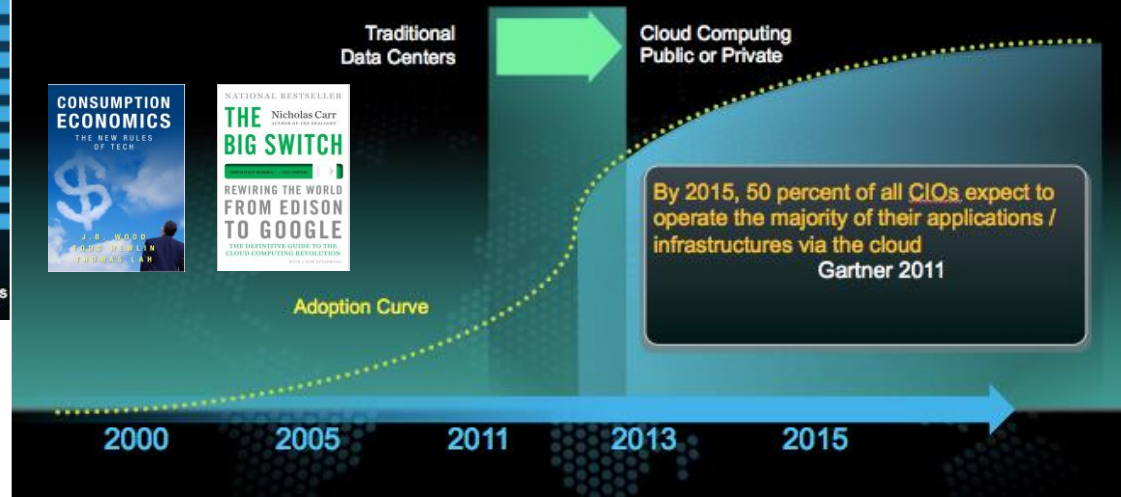
By 2016 over **50%** of all net new deployments of video infrastructure will be delivered from the cloud or as software-as-a-service (SaaS)

Gartner

**25%** of surveyed companies utilise hosted services, of non-users **47%** likely to use hosted services within next 12 months

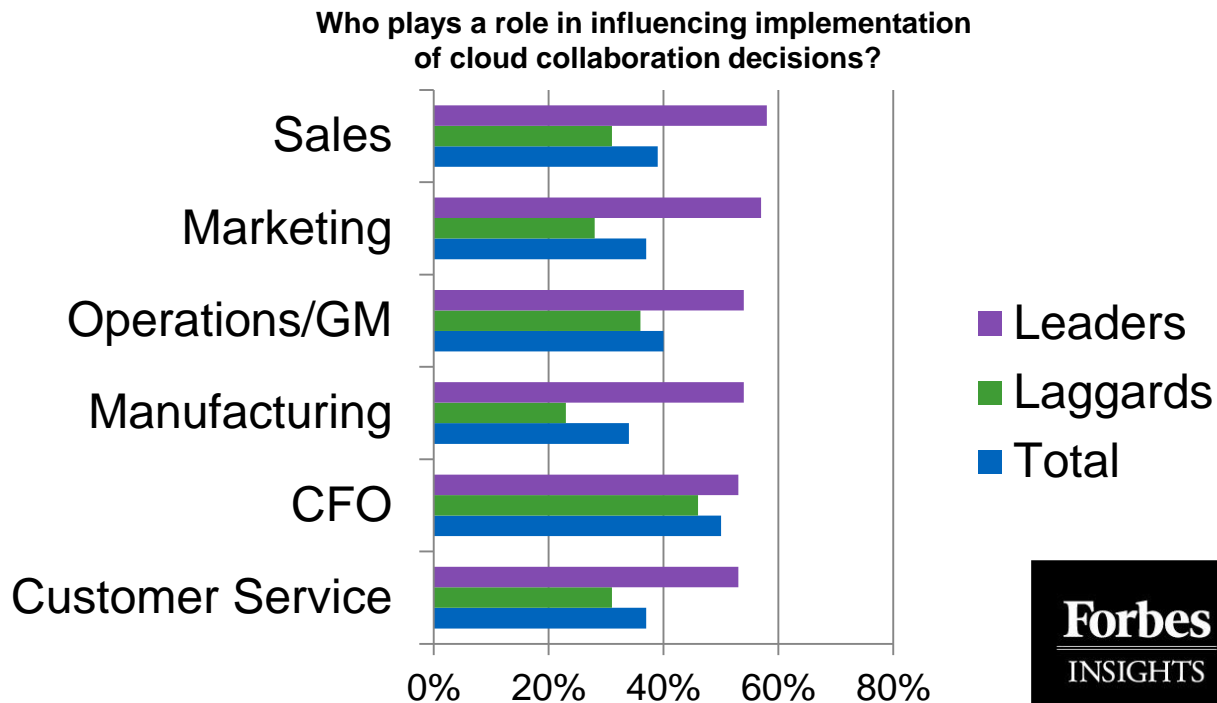
Frost and Sullivan

## We Are at the Beginning of a Major Shift



# “Leaders” Say Cloud Collaboration Decisions are More Inclusive and Strategic

- **Not just an IT discussion – a broader business discussion**
- **Include department heads in decision making, today**



Base: all respondents; N = 532

Question: In choosing to implement cloud-resident applications, are the following executives most likely to exert influence, play a lead role, or play no role? (Chart includes just 'influence' responses.)

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# Lots of Partners – Which one Fits your Business?

- Geographical Reach/Locations
- Current Relationship with Partner?
  - SIP Trunking / UC
  - WAN
- Application Requirements (UC, Video, CC, etc.)
- Unique Integrations (some partners may be more flexible than others)
- Pricing/Bundles Offered



# Cisco Sells HCS Licenses to the Partner.....

Functionality	Collaboration Apps	Essential	Basic	Foundation	Standard
Basic Call Control	3905, 6901, or Analog	✓	✓	✓	✓
Full Voice/Call Control	Enhanced UCL		✓	✓	✓
# of Devices		1	1	1	10
Mobility (SNR)	Cisco Unified Mobility		✓	✓	✓
Native Video	Video Endpoint(s)			✓	✓
Messaging	Unity Connection		○	○	✓
IM & Presence	Cisco Jabber IM		✓	✓	✓
Desktop Softphone	Cisco Jabber (Full UC)			✓	✓
Smartphone Client	Cisco Jabber (Full UC)			✓	✓
Immersive Video	Cisco TelePresence rooms			○	○
Web Conferencing	Cisco WebEx Meetings		○	○	○
Contact Center Agent	Cisco Unified CC Enterprise		○	○	○

HCS licenses allow a partner to move and reassign them from customer to customer as needed



# Each Creates their Own Service Name and Bundles....



























## What Does CDW Cloud Collaboration Offer?

We offer several packages from standard to premium. Discover which one is right for you.

Licensing Packages (min. 99 total users)

INCLUDED   
OPTIONAL 

FUNCTIONALITY & DETAILS	ESSENTIAL	BASIC	FOUNDATION	STANDARD
<b>Basic Call Control, Non-User</b> Common Area Non-User, Analog, 3901 or 6901 only				
<b>Full Call Control</b> Analog, 3901, 6901, 6911, 6921 phones only				
<b>Full Call Control</b> All Cisco phone models				
<b>Total # of Devices</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>10</b>
<b>Single Number Reach</b>				
<b>IM &amp; Presence</b> Cisco Jabber IM				
<b>Native Video</b>				
<b>Desktop Softphone</b> Cisco Jabber (Full UC). CUCI Integration for Microsoft Lync also supported				
<b>Smartphone Client</b> Cisco Jabber Clients for iPhone, iPad, Android (BlackBerry requires separate MVS solution)				
<b>Unified Voice Messaging</b> Cisco Unity Connection				

A device consists of IP Phone, desktop client, mobile client, analog device, lobby or conference room device.



# Partners Create their Own Services and Bundles and Sell them to End Customers

user profiles	IP telephony 	integrated messaging 	IM & presence 	Web conferencing 	mobility 	operator console 	contact center 
Basic	✓						
Standard	✓	✓					
Business	✓	✓	✓				option
Collaborative	✓	✓	✓	✓			option
Business attendant	✓	✓	✓			✓	
Business Contact Center	✓	✓	✓				✓

easily adjusted

# What's in a Partner's Offering/Price?

- Partner owns the Cisco Licensing and creates their own bundles and offering, so end customer no longer worries about licensing, UCSS and ESW
- Partner bundles are priced per/user per/month
- Phones and other CPE may be included or can be purchased separately
- Some partners bundle SIP Trunking, Mobile Integration or other network services into their bundles
- Initial site surveys, design and installation may be included or one-time costs
- Once bundles/pricing/other understood, partner can develop quotes
- Recommend mapping your users' "personas" to the partner bundles



# Price Comparisons – What not to do.....

## Premise-Based UC BOM



## HCS Service Offering



### Mow Your Own Lawn

- Mower - \$5000
- Running over dog chain - \$250.00
- Ongoing Gas & Oil
- Maintenance
- More Grass = More Time
- More Services = More Time
- More = \$\$\$\$
- Kids/Wife Angry

### Lawn Service \$200.00 Per Month

- Lawn mowed/trimmed every two weeks
- Everything included, no surprises
- Options to scale up/down
- Trade-in Options
- Focus on the important things in life

# What Control Does Customer Have? Customer & Location Administration

## Customer Admins

- Control inventory
- Customise feature packages
- Standardise the organisation
- Determine numbering plans
- Map internal numbers to E164

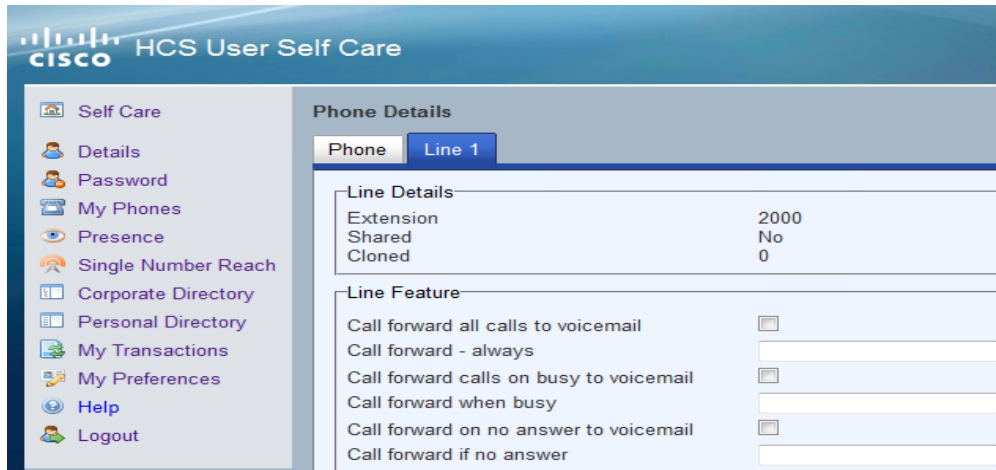
## Location Admins

- Activate Services for end users
- Manage site phone inventory
- Place phones in service
- Associate phones to end users
- Create hunt and pickup groups
- Reset passwords and PINs
- Setup SNR and Ext. Mobility

Phone Type	Device Name	FIRST LINE Ext/Label	Reseller	Customer	Division	Location	Device Group	Service Status
7975	SEP001E4A926A9C		HCS-SP-RSLR	Cust2	Headquarters	Building 30		In service
7945	SEP001F6C7FF199		HCS-SP-RSLR	Cust2	Headquarters	Building 30		In service
9951 SIP	SEP1C17D3407FFC		HCS-SP-RSLR	Cust2	Headquarters	Building 30		In service
Standard CIPC	SEPAJTEST1	2000	HCS-SP-RSLR	Cust2	Headquarters	Building 30		In service
Standard CIPC	SEPAJTEST2		HCS-SP-RSLR	Cust2	Headquarters	Building 30		In service

# What Control Does Customer Have? End User Self-Care

- Allow users to manage their own UC settings
- Promote discovery of UC features
- Customise End User Self Care appearance



The screenshot displays the Cisco HCS User Self Care interface. The left sidebar contains a navigation menu with the following items: Self Care, Details, Password, My Phones, Presence, Single Number Reach, Corporate Directory, Personal Directory, My Transactions, My Preferences, Help, and Logout. The main content area is titled "Phone Details" and has two tabs: "Phone" and "Line 1". The "Line 1" tab is active, showing "Line Details" and "Line Feature" sections.

Line Details	
Extension	2000
Shared	No
Cloned	0

Line Feature	
Call forward all calls to voicemail	<input type="checkbox"/>
Call forward - always	<input type="text"/>
Call forward calls on busy to voicemail	<input type="checkbox"/>
Call forward when busy	<input type="text"/>
Call forward on no answer to voicemail	<input type="checkbox"/>
Call forward if no answer	<input type="text"/>

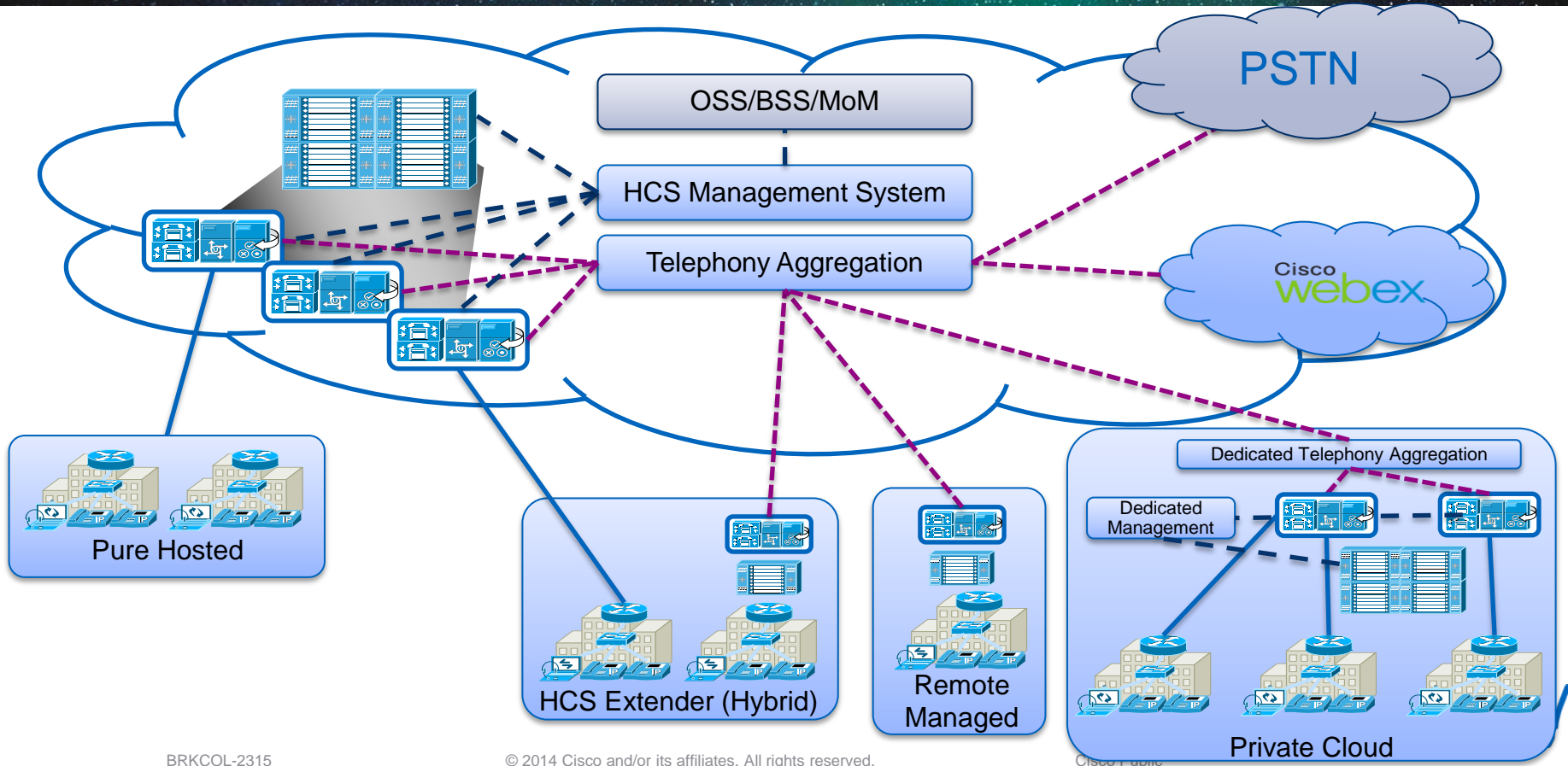
## View & Change

- Telephony Settings
- Passwords & PINs
- Speed Dials
- Presence Monitoring
- Single Number Reach Profiles
- Corporate Directory
- Personal Address Book
- Previous Actions

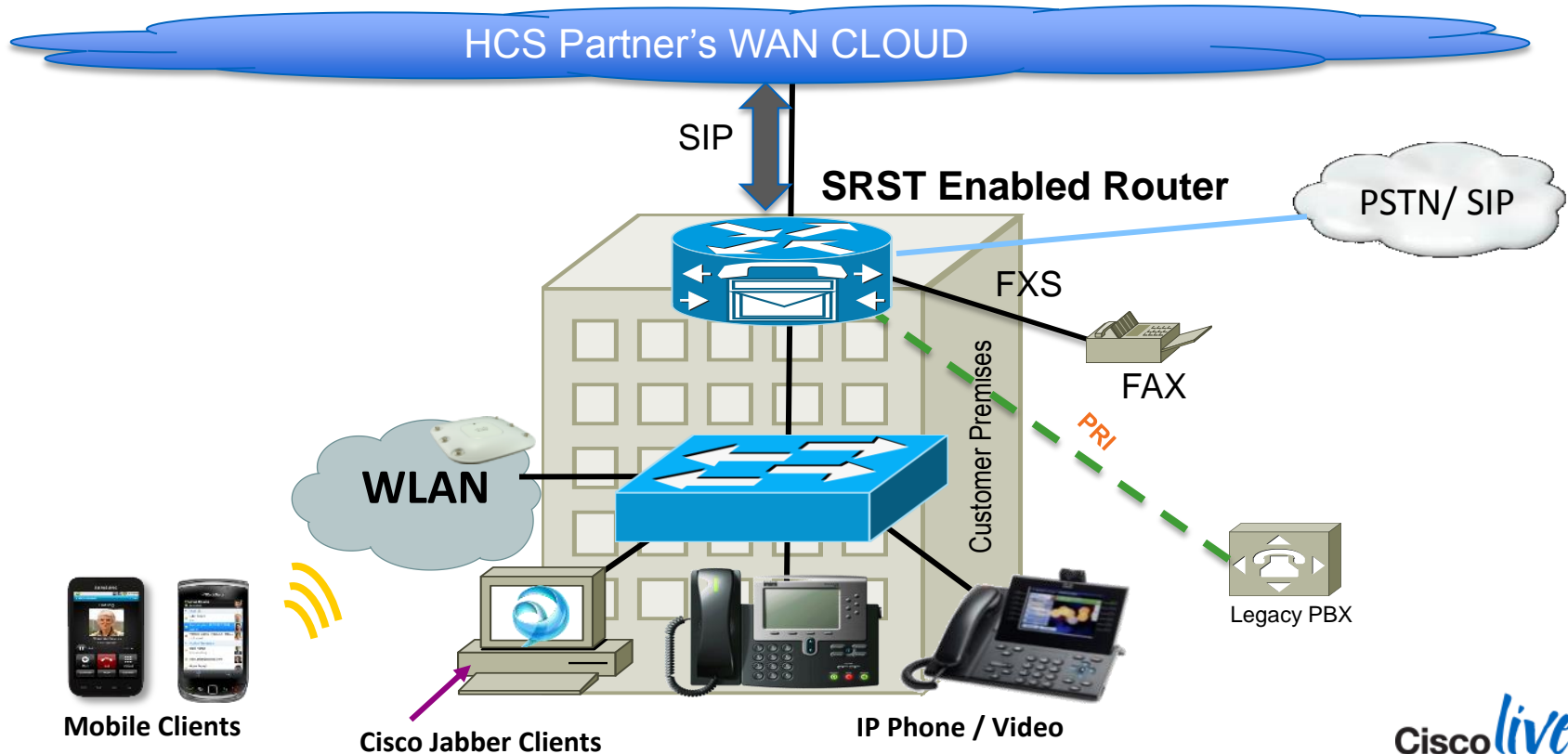
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# HCS Deployment Models



# Customer Premise - Pure Hosted

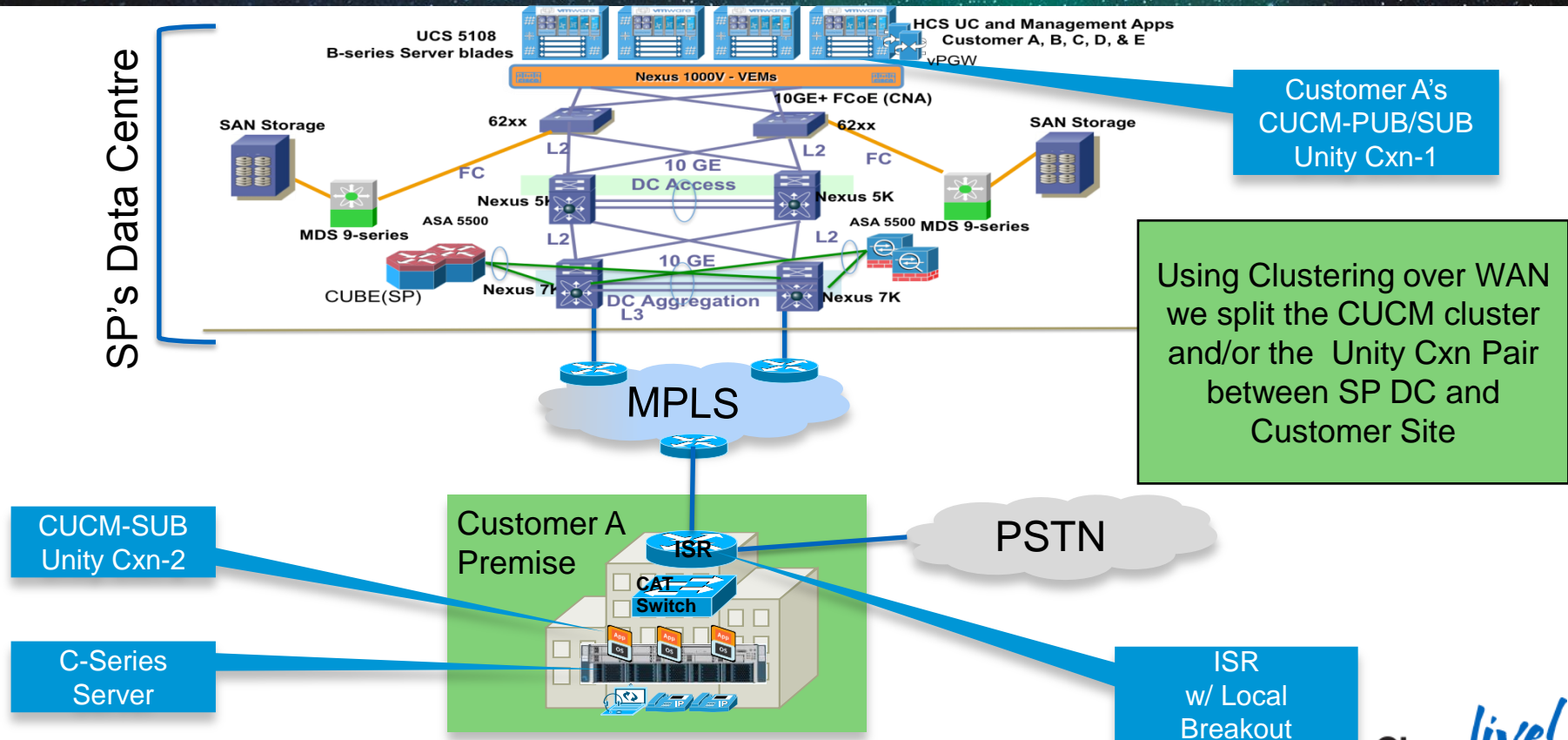


# HCS Extender – Customer Premise

- How to deploy HCS Extender / Hybrid deployment
  - HCS Extender = Clustering over WAN
  - RTT < 80ms between DC and customer premise
- Why would a customer want to use it?
  - Large customer sites that exceed SRST limit
  - Customers wishing to maintain full UC capability when DC is down (SRST features insufficient)
  - Customers wishing to retain confidential voicemail on premises



# Architecture for HCS Extender Deployment

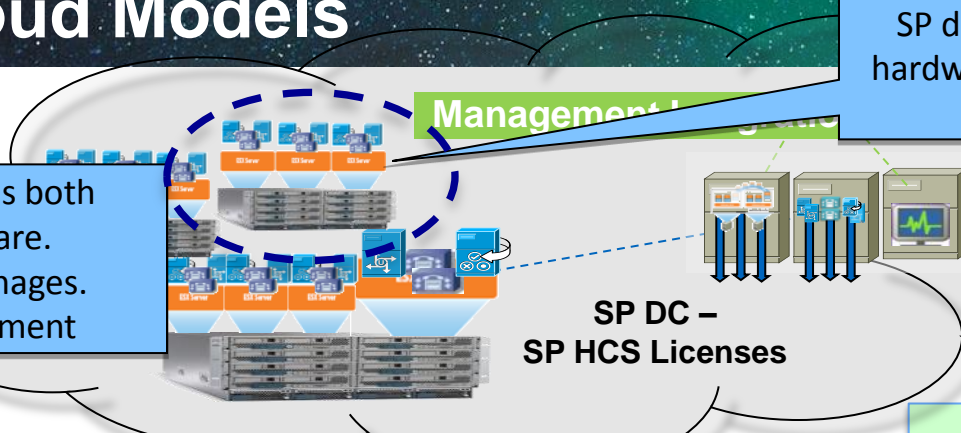




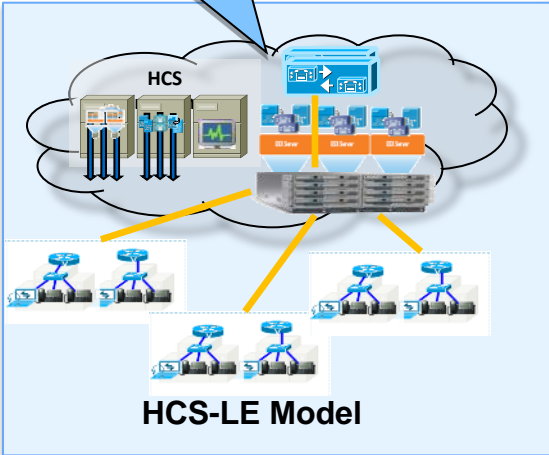
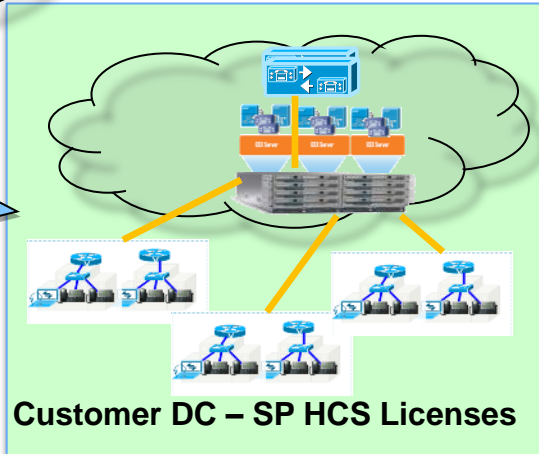
# Private Cloud Models

SP dedicates both software and hardware for specific customer. SP hosts and manages

Customer typically owns both hardware and software.  
Customer typically manages.  
Options for SP involvement



SP owns software.  
SP or Customer own Hardware.  
Leverage customer DC.  
SP Manages.  
Need Clear SLAs and Services Packages to Support.



# Deployment Model Drives Bandwidth Calculation

- From the HCS SRND on CCO ([http://docwiki.cisco.com/wiki/Cisco\\_Hosted\\_Collaboration\\_Solution](http://docwiki.cisco.com/wiki/Cisco_Hosted_Collaboration_Solution))
- 1,000 users = 19.1 Mbps    10,000 users = 191 Mbps

**Table 2: Bandwidth usage for UC applications on UCS hardware**

<b>Numbers of phones (subscribers)</b>	<b>BHCA (calls per phone per hour)</b>	<b>Bandwidth SP Control Traffic with Encryption</b>	<b>Total bandwidth</b>
1000 phones	10	619 bps (includes register type messages and call-specific data)	619 kbps Approximately 0.62 Mbps
10% phones using voicemail	2	91.56 Kbps (6.711 codec)	9156 Kbps Approximately 9.2 Mbps
10% phones using MOH service (software base)	1	91.56 Kbps (6.711 codec)	9156 Kbps Approximately 9.2 Mbps
5 contact center phones	30	1.53 Kbps	7.695 Kbps
10% phones using shared line	4	343 bps	34.3 Kbps

# Dial Plan – Time to Fix?



## Hunt Groups



# Dial Plan Considerations

- Different digit extension lengths at different sites vs. structured (E.164)
- Hunt groups vs. smarter schemes (SNR<sup>^</sup> or ToD\* routing, etc.)
- Country specific dial plan needs
- Clean up call forwarding scenarios
- Simpler the dial plan, the simpler it is to add new things and keep current
- Where and how do I route calls to PSTN? Local breakout or SIP Trunking

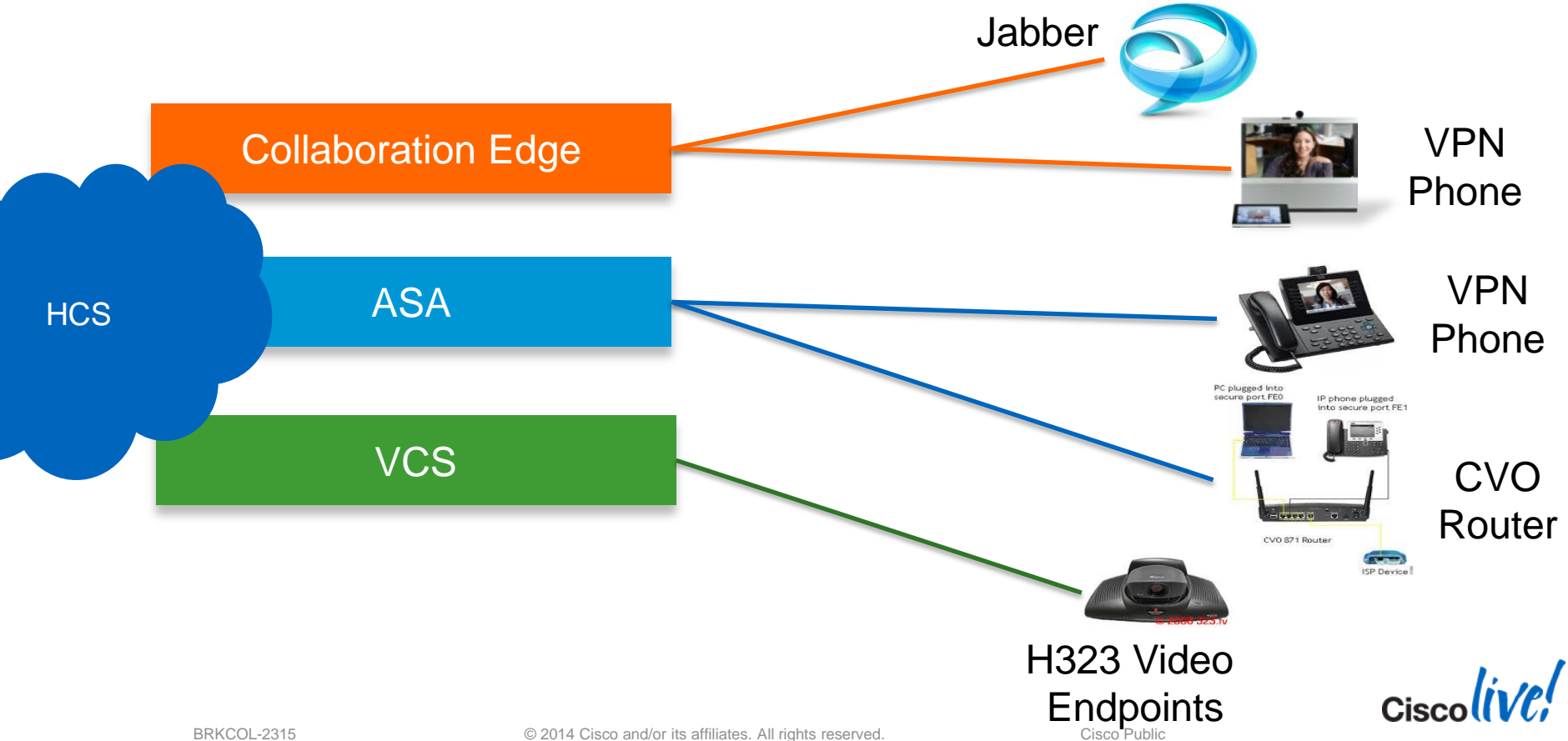
<sup>^</sup>SNR (Single Number Reach)

\*ToD (Time of Day)

# UC Manager Design Considerations

- Cluster guidelines:
  - Above 1,250 users, recommend a dedicated publisher, with call processing handled by primary and backup subscribers only
  - A regular UCM cluster can contain up to a max of 8 subs
  - Each cluster can support 40,000 secured or unsecured SIP/SCCP phones
  - A cluster can support a max of 2,000 locations and 2,100 gateways
  - As you approach 40,000 phones, might consider adding a second UCM cluster, or megacluster
- Some notes around megacluster:
  - 21 servers: 1 pub, 16 subs, 2 MoH, 2 TFTP
  - Up to 80,000 devices
  - Must go through Cisco's A2Q (Assessment to Quality) process

# Remote Access – Hosted? Or Customer Controlled?



# Third Party Application Integrations Considerations



Existing Phone System



CDN Solutions

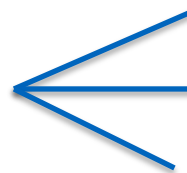


Microsoft®  
Exchange

Directory Integrations



Google Apps /  
Gmail



Direct SIP? CUCI?

Remote Access?

Office365 vs On-Premise

# HCS Other SLA Considerations

- Upgrades
  - Notification/Communication of available upgrades
  - Frequency of upgrade (e.g. must be within 1 release within a specified time frame)
  - Change window
  - Any 3rd-Party Integrations that need coordinated upgrade
- Security
  - Voice Signalling and/or RTP Encryption & Type Required
  - Security Updates/Patches – Methods and Procedures
  - Messaging and/or IM Retention & Security Requirements
- Portals
  - Administrator and User Provisioning Portal Requirements
  - Visibility of Assurance and Performance Reporting & Metrics
  - Billing





## Summary

# Summary

HCS is a new consumption model for Cisco Collaboration

Feature parity with on-premise Cisco UC solution

Understand the partner offers and document and agree on your needs

As you move to hosted, consider simplifying your architecture and design

HCS offer a fully redundant & scalable architecture

Newer services like video and contact centre are being introduced

Flexible deployment models for different customer sizes and requirements

# And Once Again, It is all about the User Experience!





Q & A

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