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The bridge to possible

CUCM Roadmap

For On Prem and Dedicated Instance Deployments

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CCP-1204

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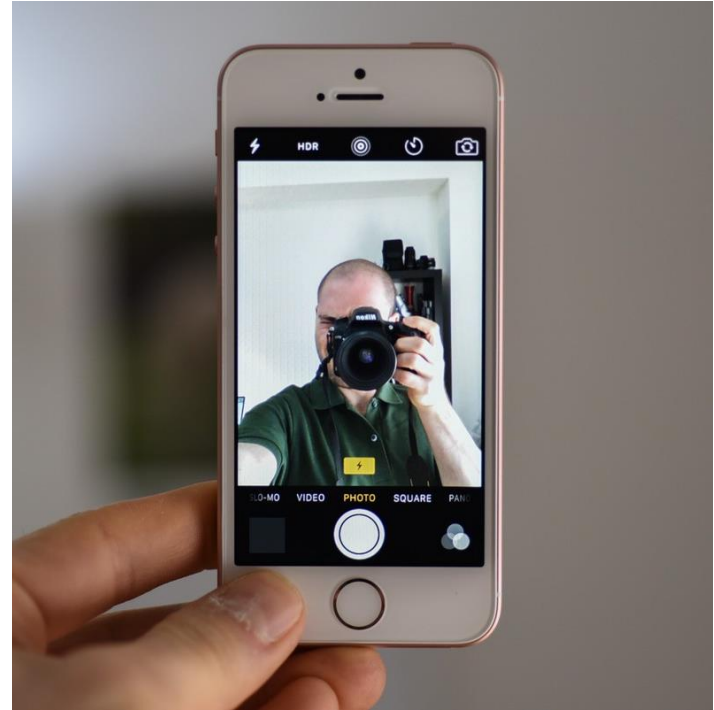
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PHOTOS**

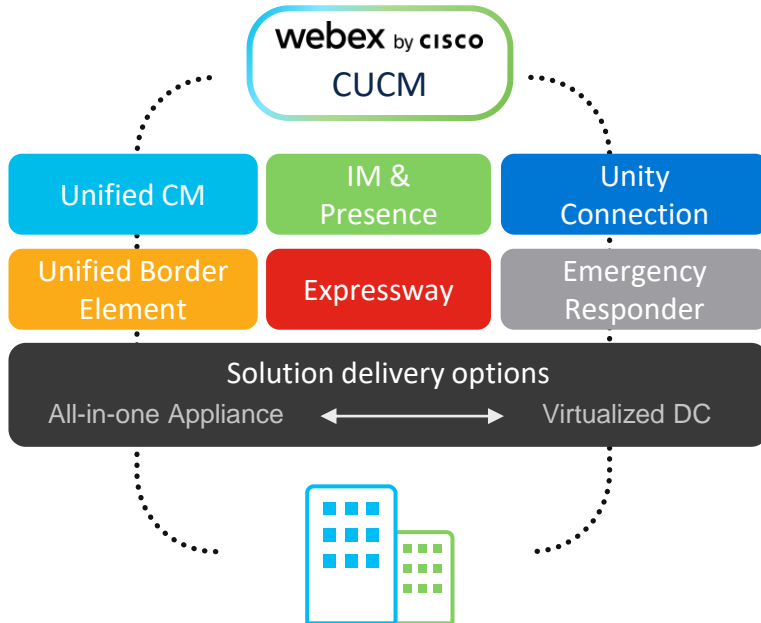
**NO
RECORDING**



Cisco Unified Communications Manager (CUCM)

The most complete and flexible enterprise-grade calling experience is now part of the Webex Suite

Delivered on-premises



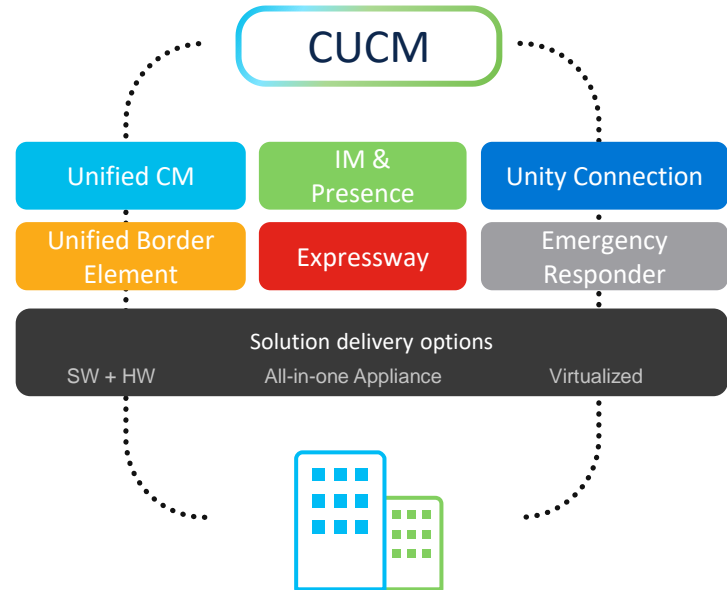
Delivered partially or wholly in the cloud



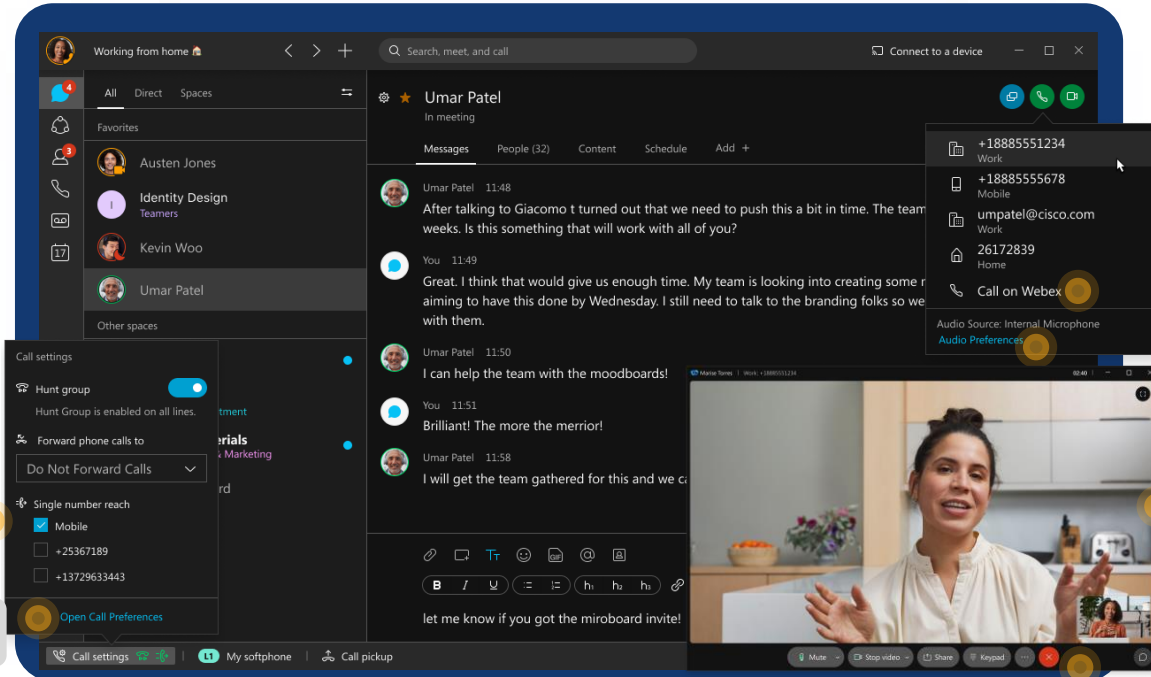
Unified Communication Manager

The “glue” that binds it all together

- Unified delivery of calling, meetings, and messaging, with 1:1 redundancy
- Rich IM, presence and unified messaging
- Integrated contact center
- Centralized dial plan authority
- Centralized SIP endpoint registration
- Firewall traversal and mobile and remote access
- Rich APIs enabling management and interop
- LDAP/Azure AD provisioning and authentication
- Emergency communications services
- Remote site survivability



Webex App: everything you need, available anywhere



Call-forwarding,
single number reach

Open call preferences

Optional call on
Webex App

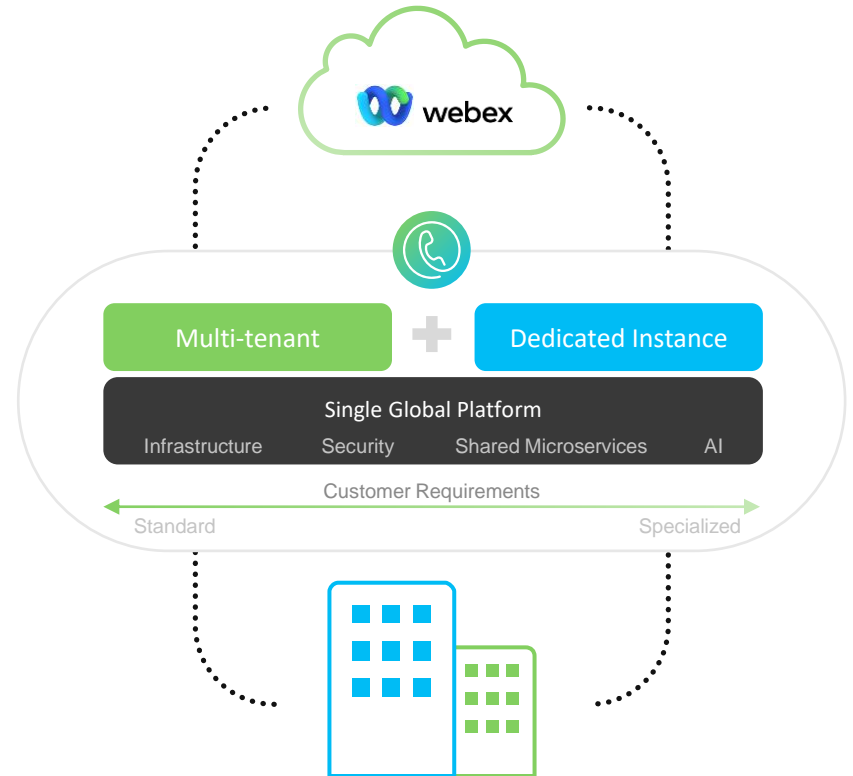
Desk phone & room device
pairing and control

Audio and video
calls with sharing

Hold / resume, transfer, merge /
conference, elevate to meeting

Dedicated Instance for Webex Calling

- Dedicated cloud instance
- Based on CUCM
- Integrated into Webex Calling leveraging Webex platform services
- Delivers cloud innovation / enhanced experience for customers who need
 - Support for older Cisco endpoints
 - Local survivability
 - Existing business integrations and workflows
- Extends familiar features and calling capabilities for customers who want to preserve their UCM experience



Dedicated Instance

What UCM customers can expect when moving to the cloud



No disruptions supports the same rich set of UCM features



Robust API platform for deep third-party app integrations



Compatible with Cisco's full endpoint portfolio



Familiar user experience facilitates swift employee migration



Cisco contact center interoperability



Security built in supporting all employee workflows



Webex Suite EA

With on-premises calling

One offer, two calling deployment options



Calling



Messaging



Meetings



Polling



Events



Future Offerings

* Cisco suggested retail price of \$11.95 USD is based on a 3-year Enterprise Agreement (EA) commitment.

New!

On-premises calling available within Webex Suite EA

Benefits:

- Full value of Suite EA w/ on-prem calling
- One price; **mix & match** cloud and on-premises calling
- 15% Growth Allowance – same as cloud
- 20% Downturn for Cloud Calling & Meetings only
- Flexible migration from prem to cloud via Control Hub

Details:

- Only EA Suite
- Allow for split on-premises and cloud calling deployment
- Must adopt Cloud Connected UC (CCUC) with on-premises calling

Webex Suite EA

Calling deployment scenarios



Fully On-premises

Customers that aren't ready to move to the cloud, but still want the benefits of the Suite with Meetings, Events, Polling and more!



Fully Cloud

This is the Suite you know and love with all the benefits of the cloud



Mixed Deployment

- Customer has a mix of on-prem and cloud calling users
- Customers can begin on prem and migrate to the cloud in Control Hub at will
- Migrations True Forwarded on contract anniversary



Mixed EA

- Customer has a different number of users for each workload (meeting & calling)
- Allows Calling EA mixed with Suite EA
- Note: Mixed EA requires 1000 KW with 20% on Suite, minimum

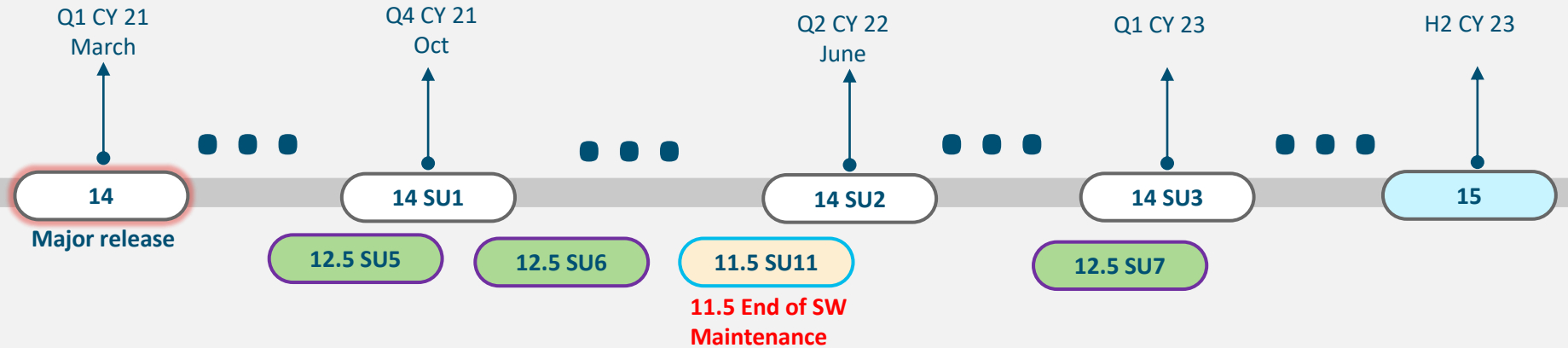
CUCM 14 Roadmap



Cisco® Unified Communications Manager

Release timeline

Potential plan
subject to change
without notice



Available releases
for Unified Communications Manager
(including IM&P) and Cisco®
Emergency Responder

10.5

(end of Support
– July 2022)

11.0

(end of Support –
July 2020)

11.5

(End of SW
Main - May 2022)

12.0

(end of support
Aug 2023)

12.5

(currently
shipping)

14

(Currently
Shipping)

Continued investment in CUCM

Unified Communications Manager Development Themes



Simplifying UC
administration



Enhancing security
and compliance



Delivering the best
user experiences



Connections to Cloud

CUCM Solution – 14

User Experience



Unified App Integration

- MRA registration failover
- LTE to WIFI failover
- AV1 codec support
- Jabber zero downtime for IM&P
- Shared line presence with centralized IM&P cluster
- iOS13 APNS support
- Android Push Notification*
- Message Push Notification for Jabber® on Mobile Application Management (MAM)
- UDS performance improvements (bulk search, cluster HA)*

Headset Integration

- Headset based EM Login*

Admin Simplicity



Phone Refresh

- Phone replacement self-provisioning*
- Simple phone security (OAuth)

Admin Experience

- Simplified certificate mgmt. (CCUC)
- Web RTMT (CCUC)
- Auto-Provisioning of Webex App for Calling in Webex (CCUC)
- Webserver redesign
- Increased cluster scale
- EMCC capacity improvements
- Flexible hardware support
- Fresh install w/ data import
- Switch refresh, tooling (CER)
- CER / CUC config APIs*

Security & Compliance



Security & Compliance

- E911 regulatory
 - Kari's law*
 - RAY BAUM'S Act
- SRC, PSB compliance
- Certificate revocation (OCSP)
- Secure VM notifications
- Federal certification
- Accessibility improvements

Key Customer Asks

- Share for audio only call*
- Secure AXL port, DB access
- Rank based control enhancement

Business Continuity

- 3rd party library updates
- TPSD, GIT migration
- Release validations
- Shift left automation

Bridges to the Cloud



Webex Cloud-Connected UC

- Analytics
- Operations (certificates, troubleshooting)

Customer Ecosystem

- Scale improvement for UM with Office 365 (CUC)
- Unified Messaging with Google Workspace (CUC)
- SIP Open Federation (IM&P)*

• * - Included also in 12.5 SU3

CUCM Solution – 14SU1

User Experience

Unified App Integration

- Transfer ownership of persistent chat room
- User and device provisioning for Webex app Self provisioning
- IPv6 Support over MRA
- SSO Redirect URI support for MRA
- OPUS transcoding

Admin Simplicity

- Limiting persistent chat rooms creation
- Support download of large files from CUCM TFTP
- BAT Support for VG420 Gateway
- PAWS API to trigger data export (for Fresh Inst w/ Data Import migration)
- Serviceability enhancement for Jabber over MRA registrations

Security & Compliance

Security & Compliance

- E911 Support for Remote Teleworker over MRA
- Support for Meraki access points
- TFTP proxy support for OAuth
- Secure onsite phone alert
- PLR support

Key Customer Asks

- SHA-2 support for SCCP FXS and SCCP conference bridge

Business Continuity

- 3rd party library updates
- TPSD, GIT migration
- Release validations
- Shift left automation

Bridges to the Cloud

CUCM Solution – Roadmap 14SU2

User Experience

- Borderless CTI (CCUC)
- Accessibility Enhancements

Admin Simplicity

- Cluster Software Location
- Windows authentication with MS SQL database for Persistent Chat
- Switch Support : 9200CX
- CER support for Touchless Install + Answer File Generator
- Expressway Smart Licensing (PLR & SLR)

Security & Compliance

- Security & Compliance
- National Suicide Prevention Hotline (988)
- RedSky E911 Location service
- OU non mandatory for CSR
- Enrollment over Secure Transport Identity cert enrolment
- External Phone Number Mask multi line enhancement
- RAY BAUM'S Act: CER Routing Logic support
- UCMC-G:FIPS Mode for National E911 SP (like RedSky)
- CUC : Authenticated SMTP Client
- RSA 4096 cert key length
- Call Queuing ParkingLotD support for crypto
- MoH support in case of Cipher mismatch

Bridges to the Cloud

- Webex Cloud-Connected UC
- Directory Services (Azure AD support) – Limited Availability
- Secure SMTP support for WebRTMT

CUCM Solution – Roadmap 14SU3

Not committed Subject to change

User Experience

- Phone presence in Webex® App (CCUC)
- Webex App DND Sync to IP Deskphone
- iOS Local Push Notification support
- Centralized Call History

Admin Simplicity

- Survivable Node for Webex Calling dedicated instance

Security & Compliance

Key Customer Asks

- MTP supporting DTMF Interworking for secure media
- SSOSP enhancement – Refresh token dependency on CUCM publisher
- Expressway CE1300 - M6-based appliance

Bridges to the Cloud

- Webex Cloud-Connected UC
- Directory Services (Azure AD support) – Group filters, enhanced resiliency
- MS Teams Integration

CUCM Solution – Roadmap CY2023 & Beyond

Not committed Subject to change

User Experience

- Centralized Voice Mail
- Support Device Mobility for Webex app on VDI
- EWS to Graph API Migration – UM with O365
- Voicea / BabbleLabs – Speech Connect / Speech View replacement

Admin Simplicity

- Consolidated real time Endpoint Status in Control Hub
- VG410 support
- ControlCenterService Support in CER - API for Service Status
- Synchronize Infrastructure details from CER to RedSky Wiremap(Like Switch Port , IP Subnet etc)
- Multiple Emergency Call Number Support
- Variable Length ELIN Call Back Number support

Security & Compliance

- Alma Linux and 64-bit App support
- FIPS 140-3
- TLS 1.3
- Disable port 69 and 5060 on CUCM

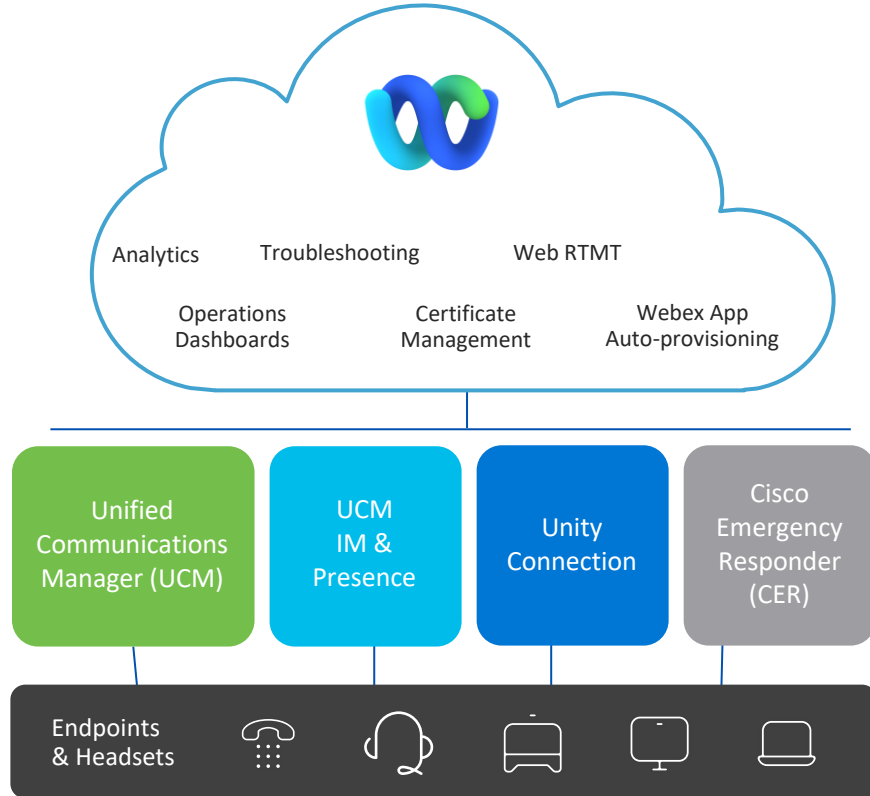
Bridges to the Cloud

- Azure AD Integration
- Delta sync based on CINS Client approach
 - RBAC: CH Read only & Full admin checks

Connections to the Cloud



Webex Cloud-Connected UC



A suite of Webex® cloud services that provide enhanced business and operational insights to improve administrative productivity

For customers who:

- Want the centralized administrative workflow experience of the cloud, while keeping their UC services on-premises
- Need a single global view to manage on-premises UC, along with any Webex cloud, or hybrid services
- Desire efficient, cloud-based admin services (delivered by partner) for an on-premises CUCM deployment

Webex Cloud-Connected UC (cont'd) – Key Features

Service Management

Changes to these settings will take a short time to take effect.

Analytics	<input checked="" type="checkbox"/>	Enabled
Directory Service	<input checked="" type="checkbox"/>	Enabled
Certificate Management	<input checked="" type="checkbox"/>	Enabled
Operational Metrics	<input checked="" type="checkbox"/>	Enabled
Webex app Provisioning for Unified CM Calling	<input type="checkbox"/>	Disabled
Deployment Insights	<input checked="" type="checkbox"/>	Enabled
Borderless CTI	<input checked="" type="checkbox"/>	Enabled
Rich Presence	<input checked="" type="checkbox"/>	Enabled

Analytics

(call quality, traffic analysis, trunk usage, device usage)

Directory Service

(UCM to WxIdentity for AzureAD etc.)

Certificate Management

(central view/distribute across apps/clusters)

Ops Dashboard with WebRTMT

(near-real-time view in CH not thick-client of last hour's call status & audio quality for top 5 UCM clusters)

Troubleshooting

(CX CSA integration for SDL logs in CH)

Also requires Webex Serviceability Connector

Touchless WxApp (auto-)provisioning

(enduser self-provision via just login to WxApp with UCM calling)

"Migration" to Webex

(understand Jabber usage, enable wizards under CH->Migration)

Borderless CTI

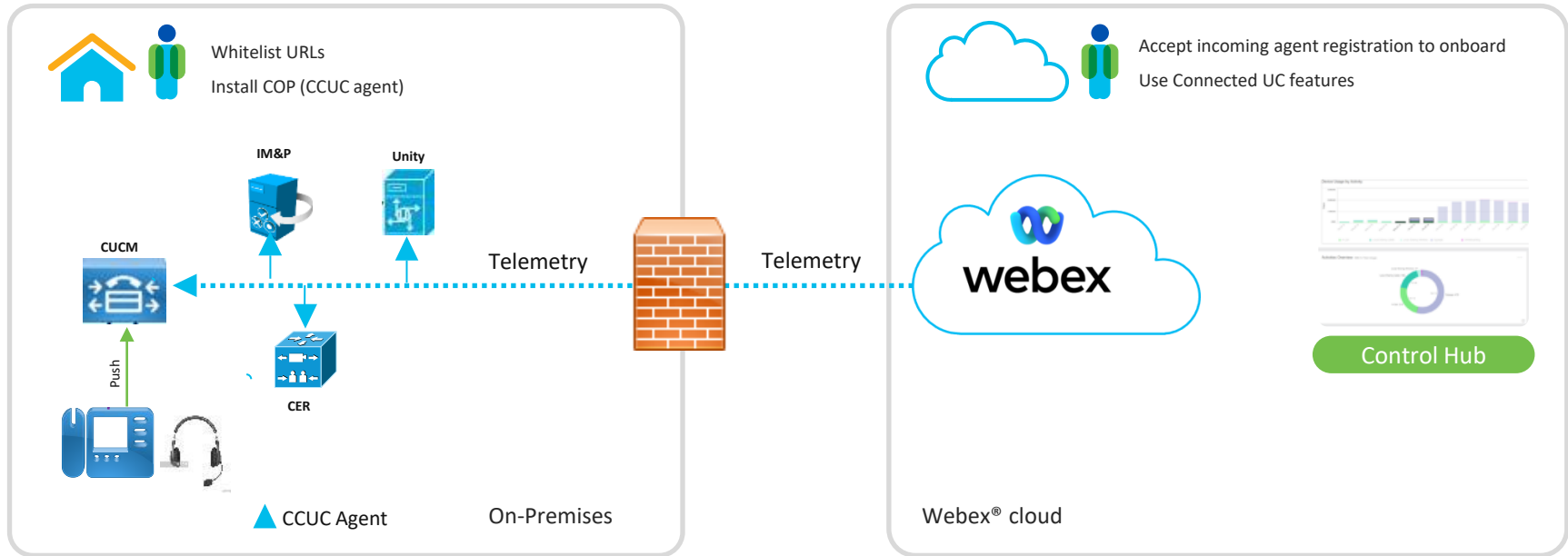
(enduser controls IP phone via WxApp CTI over MRA not VPN)

Rich Presence

(UCM-registered in-call phone status synced to WxApp presence)

Cloud-Connected UC deployment

Easy onboarding of clusters guided through Control Hub



Solution benefits for customers



Global operations view

Single pane for UC management in Webex® Control Hub, multi-cluster visibility



Automated admin experience

Cloud managed automatic updates, modular services in the cloud



Lower TCO

Cost optimized insights & increased admin productivity through automated workflows



Actionable insights

Analytics for broad business and operational insights for collaboration products



Security, privacy and reliability

Industry leading Webex security and privacy, with disaster recovery and redundancy

Analytics features

Quality of experience

- Call success & failures
- Call quality metrics

Traffic Analysis

- Number of calls by CAC
- Locations & Call Types

Capacity analysis

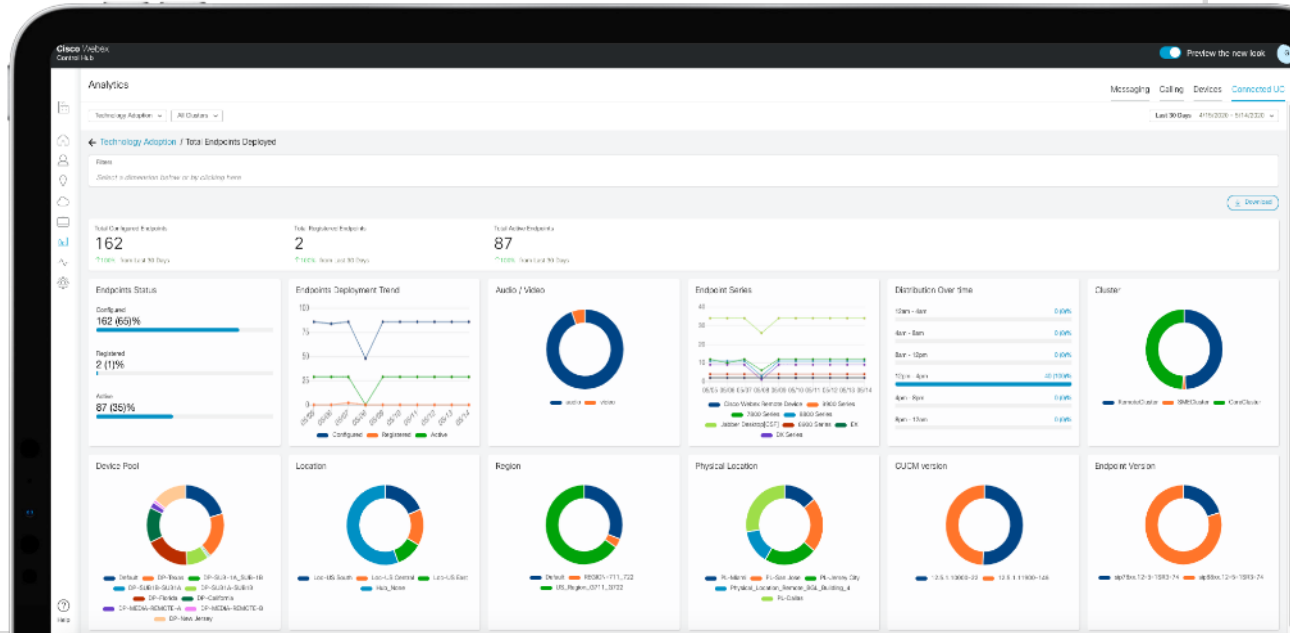
- Trunk usage

Asset usage and inventory

- Number of calls, talk time
- Endpoints & headset usage

User filters

Export Data



Certificate Management

- Single place to view and manage certificates of CUCM, IM&P, Unity Connection and CER across multiple clusters
- Easily distribute certificates across trust stores within a cluster and across the clusters
- Quick dashboard to view expired or about to expire certificates
- Insights for certificate consolidation and out of compliance

The screenshot shows the 'Certificate Management' page in the webex Control Hub. It features a search bar, a 'Filter Product' dropdown, and a table listing 13 clusters. The table columns are Cluster Name, Status, Product, and Profile. The status column uses color-coded indicators: red for 'Expired', yellow for 'Expiring Soon', and green for 'Valid'.

Cluster Name	Status	Product	Profile
StandAloneCluster - ccm218	Expired (1)	Unified CM	12.5 Custom
RemoteCluster - ucm2-pub.ciscoctg.com	Expired (2)	Unified CM, UNKNOWN	STANDARD
StandAloneCluster - c220m4-cma1.cisco.com	Expired (4)	Unified CM, IM & Presence	STANDARD
StandAloneCluster - ucba-aricent-vm423.cisco.com	Expired (6)	Unified CM	STANDARD
StandAloneCluster - mshrai-74.cisco.com	Expiring Soon (1)	Unified CM	STANDARD
StandAloneCluster - ccm203	Expiring Soon (4)	Unified CM, IM & Presence	STANDARD
MRA2-PUB-DMZ - mra2-pub-dmz.mra.cisco-uctg.com	Valid	Unified CM, IM & Presence	STANDARD
StandAloneCluster - ucba-aricent-vm421.cisco.com	Valid	Unity Connection	12.5 Custom
MRA1-PUB-DMZ - mra1-pub-dmz.mra.cisco-uctg.com	Valid	Unified CM, IM & Presence	STANDARD
StandAloneCluster - ucba-aricent-vm421.cisco.com	Valid	Unity Connection	12.5 Custom

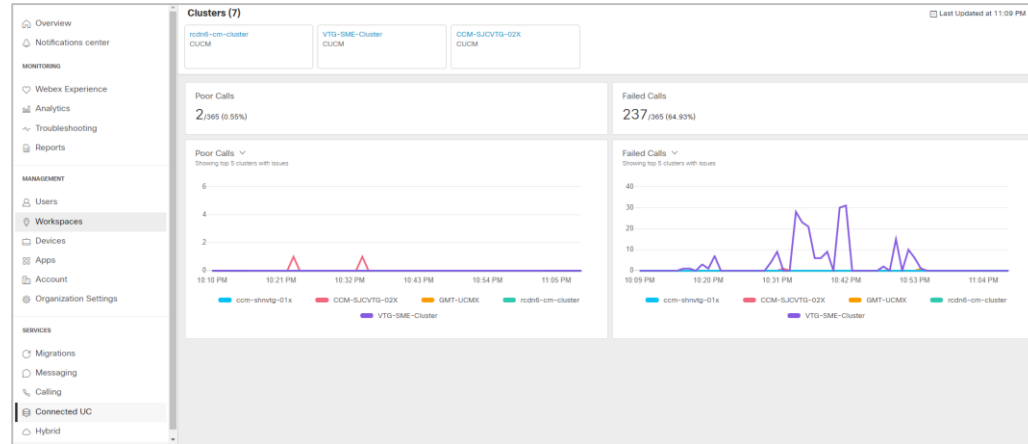
The screenshot shows the 'StandAloneCluster - c220m4-cma1.cisco.com' page. It includes summary cards for 'Identity Certificates' (17 total: 17 Valid, 0 Expires Soon, 0 Expired) and 'Trust Certificates' (22 total: 18 Valid, 0 Expires Soon, 4 Expired). Below these are 'Recent Jobs' and a table of certificates.

Identity Certificates	Trust Certificates	Recent Jobs
17 total	22 total	
Valid: 17	Valid: 18	Total: 0
Expires Soon: 0	Expires Soon: 0	Current Month: Pending: 0
Expired: 0	Expired: 4	Completes: 0

Certificate	Server Name	Common Name	Type	Status	Expiration
CallManager	c220m4-cma1	c220m4-cma1.cisco.c...	Self Signed	Valid	01/25/2026 5:56 PM
CallManager-ECCDSA	c220m4-cma1	c220m4-cma1-EC.cis...	Self Signed	Valid	01/25/2026 5:56 PM
ipsec	c220m4-cma1	c220m4-cma1.cisco.c...	Self Signed	Valid	01/25/2026 6:01 PM
cup	c220m4-cma2	c220m4-cma2.cisco.c...	Self Signed	Valid	01/30/2026 11:32 PM
cup-ECCDSA	c220m4-cma2	c220m4-cma2-EC.cis...	Self Signed	Valid	01/30/2026 11:32 PM
cup-xmpp-s2s	c220m4-cma2	c220m4-cma2.cisco.c...	Self Signed	Valid	01/30/2026 11:35 PM
cup-xmpp-ECCDSA	c220m4-cma2	c220m4-cma2-EC.cis...	Self Signed	Valid	01/30/2026 11:35 PM
cup-xmpp-s2s-ECCDSA	c220m4-cma2	c220m4-cma2-EC.cis...	Self Signed	Valid	01/30/2026 11:35 PM
ipsec	c220m4-cma2	c220m4-cma2.cisco.c...	Self Signed	Valid	01/30/2026 11:36 PM

Operations Dashboard

- Near-real time view of on-premises network call traffic
- Launchpad for Web RTMT
- PView of the previous 1-hour call status (successful, failed, dropped)
- Call audio quality (good, acceptable poor) for the top 5 UCM clusters in the network

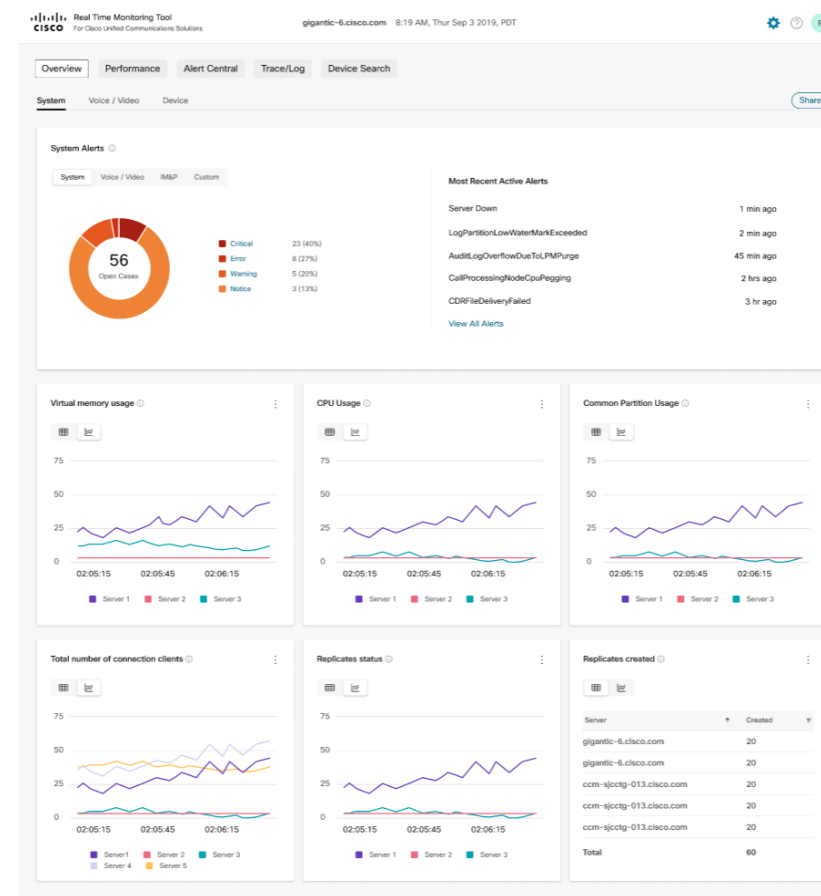


Web RTMT

Real Time Monitoring Tool

Enhance and simplify admin and troubleshooting:

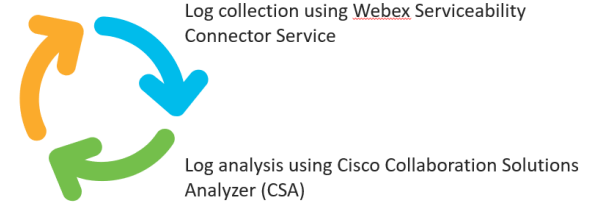
- Web-based app monitors real-time behavior of UCM, IM&P and Unity Connection
- Access via Webex® Cloud-Connected UC Operations Dashboard to access UC infrastructure at an individual cluster-level
- No dependency on Java and OS platform
- Supported Releases: 11.5 SU9, 12.5 SU4 and 14+



Troubleshooting

- Collect call logs and analyze them at the click of a button.
- Drill down into call signalling issues with help of SIP ladder diagram and more.

Call Details from Webex Cloud-Connected UC



webex Control Hub

Troubleshooting

Call log info Signaling Ladder diagram Digit analysis

allow horizontal scroll Download ladder

06:41:48.492 NOTIFY (101 NOTIFY)

06:41:48.493 200 OK (101 NOTIFY)

06:41:48.497 INVITE (101 INVITE)

06:41:48.497 100 TRYING (101 INVITE)

06:41:48.504 183 SESSION IN PROGRESS (101 INVITE)

06:41:48.508 StartMediaTransmissionAck

06:41:55.832 484 ADDRESS INCOMPLETE (101 INVITE)

06:41:55.834 ACK (101 ACK)

webex Control Hub

Troubleshooting

Filter

Calling number	Log analysis	Called number	First called number	Call status	Reason for failure	Call quality	Start time	Duration	End time
4905129904	Collect logs	4905129902	4905129902	Success	N/A	Poor	Jul 16, 2021 08:07 pm	31 sec	Jul 16, 2021 08:07 pm
4905129902	Collect logs	4905129903	4905129903	Success	N/A	Poor	Jul 16, 2021 08:06 pm	31 sec	Jul 16, 2021 08:06 pm
4905129904	Collect logs	4905129902	4905129902	Success	N/A	Poor	Jul 16, 2021 08:04 pm	31 sec	Jul 16, 2021 08:04 pm
4905129902	Collect logs	4905129903	4905129903	Success	N/A	Poor	Jul 16, 2021 08:03 pm	31 sec	Jul 16, 2021 08:03 pm
4905129903	Collect logs	4905129904	4905129904	Failed	Invalid number fo...	Unusable	Jul 16, 2021 08:03 pm	0 sec	Jul 16, 2021 08:03 pm
4905129903	Collect logs	4905129904	4905129904	Failed	Number changed	Unusable	Jul 16, 2021 08:03 pm	0 sec	Jul 16, 2021 08:03 pm
4905129902	Collect logs	4905129904	4905129904	Failed	Call rejected	Unusable	Jul 16, 2021 08:03 pm	0 sec	Jul 16, 2021 08:03 pm
4905129904	Collect logs	4905129902	4905129902	Success	N/A	Poor	Jul 16, 2021 07:37 pm	31 sec	Jul 16, 2021 07:37 pm
4905129902	Collect logs	4905129903	4905129903	Success	N/A	Poor	Jul 16, 2021 07:36 pm	31 sec	Jul 16, 2021 07:36 pm
4905129904	Collect logs	4905129902	4905129902	Success	N/A	Poor	Jul 16, 2021 07:34 pm	31 sec	Jul 16, 2021 07:34 pm
4905129902	Collect logs	4905129903	4905129903	Success	N/A	Poor	Jul 16, 2021 07:33 pm	30 sec	Jul 16, 2021 07:33 pm
4905129903	Collect logs	4905129904	4905129904	Failed	Invalid number fo...	Unusable	Jul 16, 2021 07:33 pm	0 sec	Jul 16, 2021 07:33 pm
4905129903	Collect logs	4905129904	4905129904	Failed	Number changed	Unusable	Jul 16, 2021 07:33 pm	0 sec	Jul 16, 2021 07:33 pm
4905129902	Collect logs	4905129904	4905129904	Failed	Call rejected	Unusable	Jul 16, 2021 07:33 pm	0 sec	Jul 16, 2021 07:33 pm

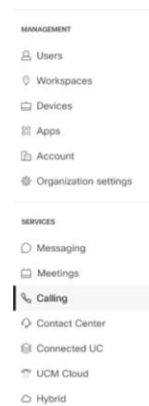
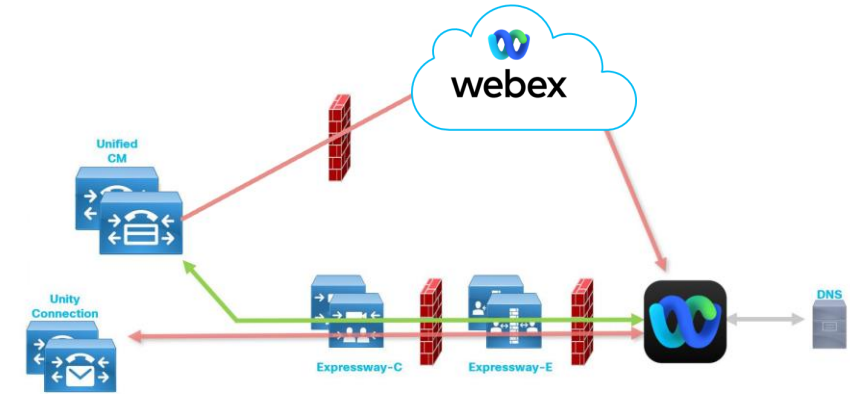
Filter calls by Call Status, Call ID, Cluster Name, Calling/Called Number, Calling/Called UserID, Calling/Called URI, Source/Destination Device

Touchless Webex App Provisioning for UCM

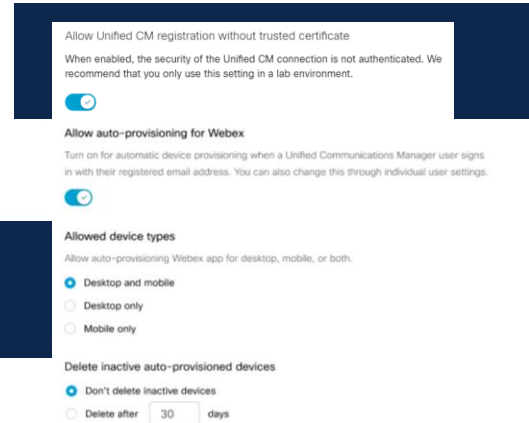
User can self-provision the Webex® App in UCM

- No admin intervention required
- Avoids over provisioning of Webex app devices
- Minimizes impact on cluster scale & licensing
- Control Hub based policy control
- Enable Jabber® to Webex App migration

Webex Cloud-Connected UC (CCUC) required



Unified CM Settings



Cloud migrations are easy

webex Control Hub 🔔⁵¹ ? AC

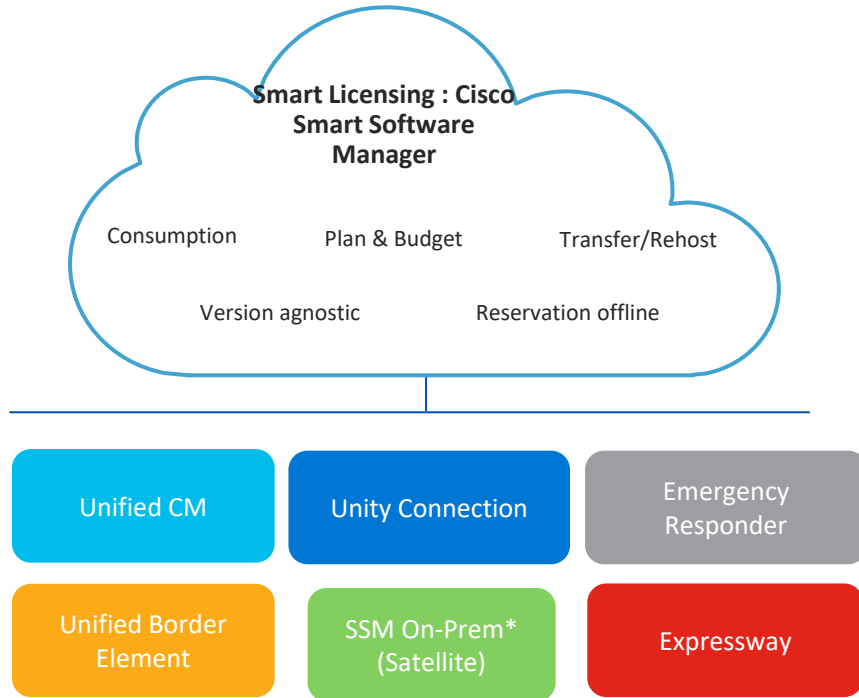
Updates & Migrations

Update to the new Webex

- Migrate Jabber to the new Webex**
Enable Jabber users with Unified CM calling for Webex app.
How this works
 - ✓ Enable messaging via Webex app. (Only applies to users with Unified CM calling)
 - ✓ Auto assign user with calling behavior and UC manager profile.
 - ✓ Continue using calling on your enterprise.[Get Started](#)
- Migrate Calling from on-prem UCM to Cisco Webex Cloud**
Move your users, numbers, phones and Jabber messaging to Webex.
How this works
 - ✓ Transform and import your UCM configuration to Webex Calling.
 - ✓ Enable users with Webex app for messaging and Webex Calling.
 - ✓ Automate phone migration license creation and delivery.
 - ✓ Auto-register your devices to Webex Calling.[Get Started](#)
- Migrate Enterprise phones to Multiplatform (MPP) firmware**
Convert and assign your Enterprise phones to existing Webex users/workspaces.
How this works
 - ✓ Automate phone migration license creation and delivery.
 - ✓ Auto-register your devices to Webex calling.[Get Started](#)
- Migrate Personal Contacts to Webex App**
Move any personal contacts saved on your user's Jabber contact list.
How this works
 - ✓ Encrypted personal contacts will be migrated for users already added to Webex.[Get Started](#)

Navigation: Overview, Alerts center, MONITORING (Webex Experience, Analytics, Troubleshooting, Reports), MANAGEMENT (Users, Workspaces, Devices, Apps, Account, Organization Settings), SERVICES (Updates & Migrations, Messaging, Meeting, Calling), Acme Inc.

Cloud connected License Management



Smart Licensing Enabled CUCM Suite

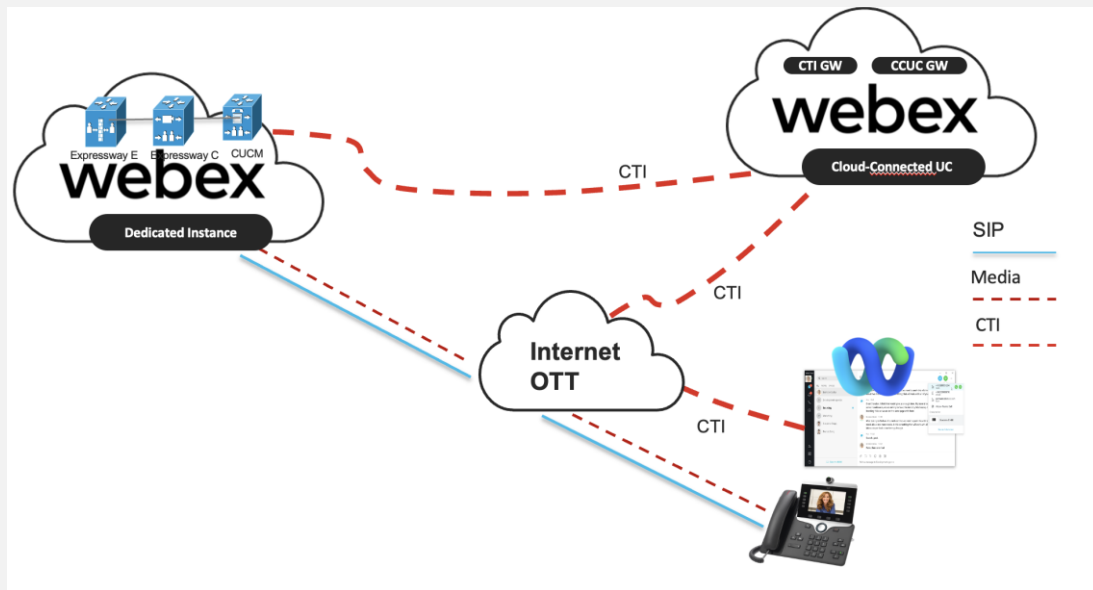
- Empower Administrators to perform many of the license management operation
- Different Deployment methods to choose from as it fits :
 - Direct Connectivity to CSSM
 - HTTPS Proxy
 - Mediated through SSM On-Prem(Satellite)
 - Reservation : SLR / PLR
- Version agnostic licensing allow products across v12.5 or v14 to consume universal license

User Experience



Borderless CTI

Enable agent logon from anywhere without VPN



Key Features

- Deskphone control of 88xx/7xx, CE, DX from Webex App remotely
- CTI applications such as receive incoming enterprise calls, make/disconnect/Hold/Retrieve calls among other applications.
- Webex® Cloud-Connected UC (CCUC) required for CTI workload in UCMC/DI
- SIP and media continue to use UCM/Expressway

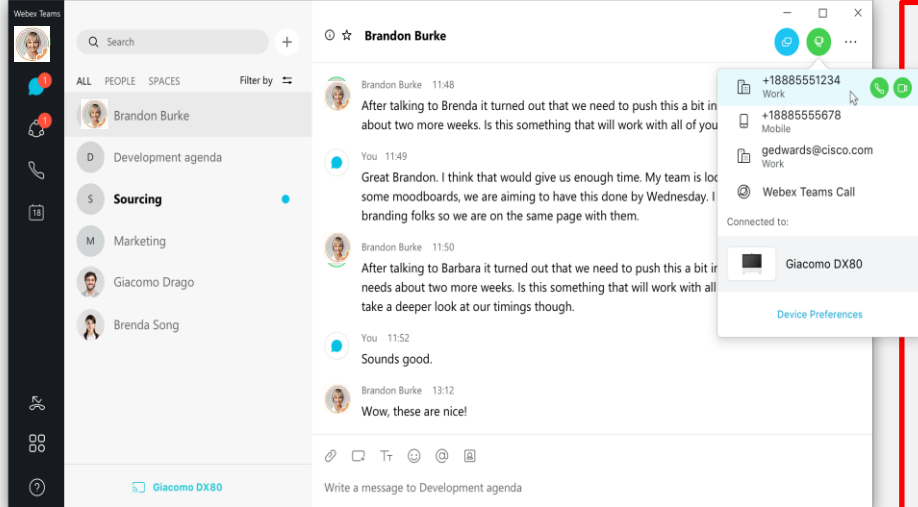
Supported Releases:

- Cisco UCM: 14SU2+
- Webex App Jun 2022
- Webex CCUC Q2 2022



Rich Presence

User's phone presence in Webex App

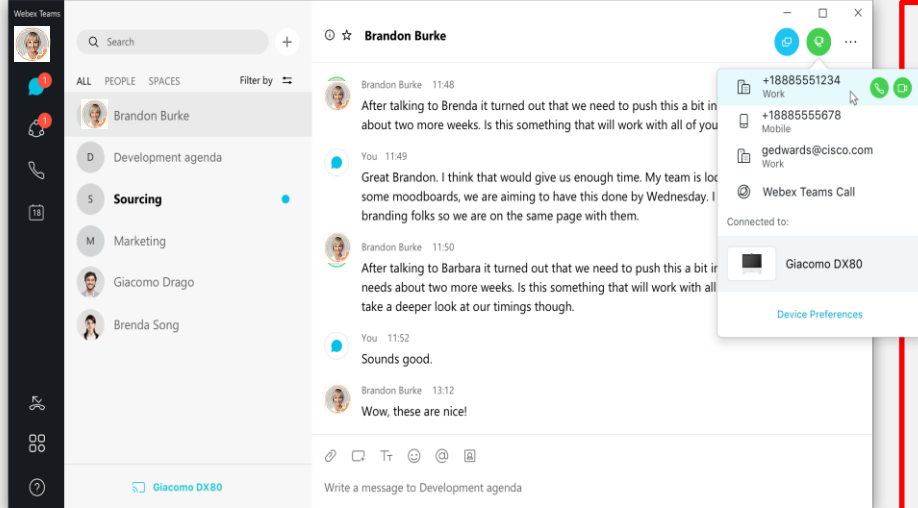


- Integrate user's IP phone off-hook/on-hook status with Webex App presence
- Accurate real-time presence information for contacts
- Enables users to determine best communication mode
- Webex Cloud-Connected UC (CCUC) required
- Minimum release support:
 - Cisco UCM: 12.5 SU4+, 14+
 - Webex App: all releases
 - Webex CCUC : Q3 2022



DND Sync

Sync DND from Webex app to IP Phone



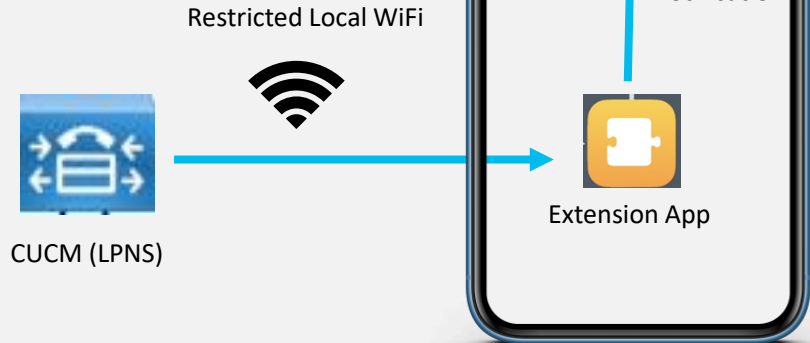
- Sync User's IP phone DND status with Webex app and vice-versa
- DND status is cleared on all devices when DND expires
- Supported on CTI mode and Shared lines
- Webex Cloud-Connected UC (CCUC) required
- Minimum release support:
 - Cisco UCM: 12.5 SU4+, 14+
 - Webex app: all releases
 - Webex CCUC : Q1 CY2023



iOS14 Local Push Connectivity for calls (LPNS)

Supported Releases:

- Cisco UCM: 14SU3+
- Webex App Q1 2023



Benefits

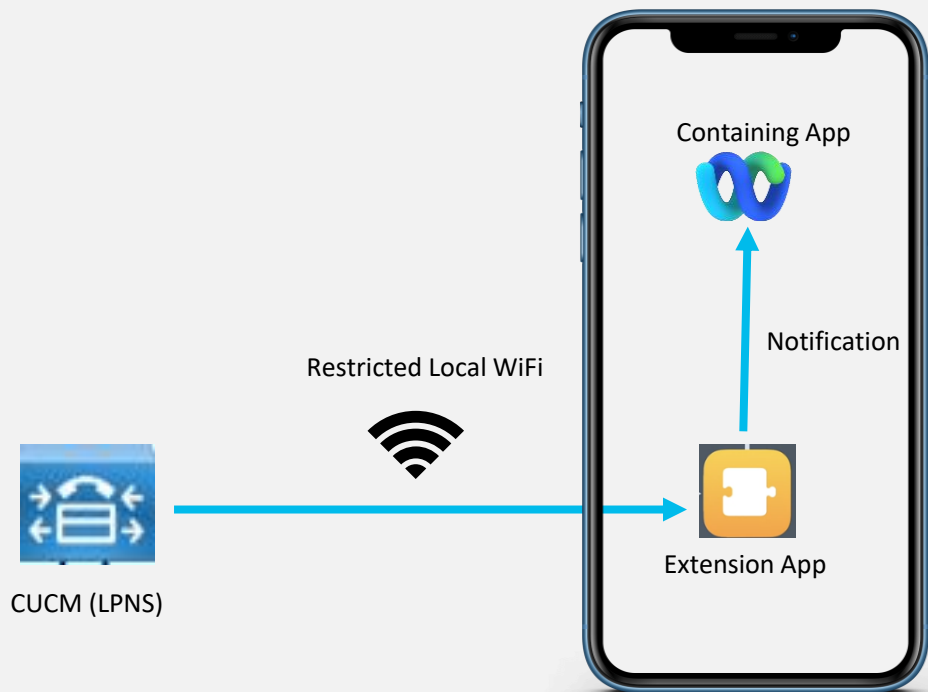
- **Reliable & Secure** way to notify Webex App users on iOS devices of incoming VoIP call and messages
- Works in a WiFi constrained network when there is no internet connection with no access to APNS

Key Features

- Identical user experience to APNS
- Critical notifications get delivered when App is suspended and running in background
- Persistent connectivity to LPNS service



iOS14 Local Push Connectivity for calls (LPNS)



- App Extension communicates directly with CUCM via WiFi
- Notifications sent between CUCM and App Extension via Web Socket Protocol
- App user select WiFi network offering local push connectivity
- After connecting to the WiFi network, the App extension maintains connection with CUCM
- App extension runs in background, it is associated to the specified WiFi network



Accessibility Enhancements

- Strong compliance to Section 508 Federal laws
- Accessibility enhancements in 14SU2
 - CCMAAdmin: secondary navigation items, tabular data, changes to Help pages and focus indications are made compatible with assistive technology programs
 - SelfCare: sub-headings, call forward settings, Tab status, focus indications and alignments on Phone pages are now made compatible with assistive technology programs
- Additional experience gaps in Self Care, OS Admin, Serviceability areas planned in 14SU3 and 15

Security and Compliance



CUCM security - Not built in a day...

This content covered in
April CCP Session

CSR 11.x:

- LSC management
- Next-gen encryption
- Single SAML agreement
- Mixed mode auto-reg

CSR 12.5:

- TLS cipher suite control
- ECDSA endpoint certificates
- SIP OAuth for Jabber
- Secure phone onboarding
- Expwy-E automatic certificates
- Automatic phone cert enrollment

CSR 10.x:

- SAML SSO
- Cluster-wide certs
- MRA

CSR 12.0-12.1:

- OAuth with refresh
- Jabber MRA improvements
- ITLRecovery trust anchor
- TLS 1.2

CSR 14:

- Always-secure phones with OAuth
- Server cert reduction
- Centralized cert mgmt



Continued Security Progress

Release 14

- Centralized Certificate Management via CCUC (also added to 11.5 and 12.5)
- Certificate Count Reduction (multi-SAN cert, tomcat certs reused for CallManager, remove unnecessary certs)
- SIP OAuth for Hardware Endpoints with Zero touch onboarding (7800 & 8800 only, no CE)
- Mismatched ITL Checksum Report
- Certificate Management APIs

14 SU1
Oct 2021

- TFTP proxy support with SIP OAuth
- PLR support in Federal accounts only
- Enhanced ciphers for E911 Audio Notification*
- Secure SHA-2 for SCCP gateways and Conference bridges*
- Cisco SRC: PSB work
- Accessibility Enhancements for Sec 508 compliance

14 SU2
June 2022

- EPNM multi line enhancement
- EST Identity cert enrolment
- OU as non mandatory part of CSR
- CiscoSSL 7 upgrade (Federal compliance)
- Q1CY22: CCUC directory sync to UCM (Azure AD integration)
- Handling of SRTP cipher mismatch
- Secure call support for ParkingLot-D
- RedSky E911 location services

Centralized certificate management

Single pane of glass

Monitoring

- Dashboard (multi-cluster and individual cluster)
- Alerts
- Notification

Management

- Certificate view, download, delete
- Certificate renewal and CSR generation
- Trust store certificate operations (upload/replace/remove/copy to)
- Profile and insights
- Bulk certificate exchange

The screenshot displays the Cisco Webex Control Hub interface for Certificate Management. The main content area shows a table of certificates with the following columns: Cluster Name, Status, Product, and Profile. The status column includes indicators for 'Expired', 'Up to date', and 'Expiring Soon'. There are also callout boxes indicating 'Certificates not in compliance with profile' and 'Migration opportunities have been found for Identity certificates.'

Cluster Name	Status	Product	Profile
sanjos3-vm03-07.cisco.com	Expired (2)	CUCM	Default
sanjos3-vm03-08.cisco.com	Up to date	Unity	Default
richard2-vm01-02.cisco.com	Expired (3)	CER	Custom pr..1
richard2-vm01-03.cisco.com	Up to date	CER	Default
rtp-vm01-01.cisco.com	Up to date	CUCM	Custom pr..1
rtp-vm01-02.cisco.com	Expiring Soon (3)	Unity	Default
nyc-vm01-02.cisco.com	Up to date	Unity	Custom pr..1
nyc-vm02-02.cisco.com	Expired (4)	CUCM	Custom pr..1
rtp-vm01-01.cisco.com	Up to date	CUCM	Custom pr..1
rtp-vm01-01.cisco.com	Up to date	CUCM	Custom pr..1
rtp-vm01-02.cisco.com	Expiring Soon (3)	Unity	Default
rtp-vm01-01.cisco.com	Up to date	CUCM	Custom pr..1
rtp-vm01-01.cisco.com	Up to date	CUCM	Custom pr..1
rtp-vm01-01.cisco.com	Up to date	CUCM	Custom pr..1
nyc-vm02-02.cisco.com	Expired (4)	CUCM	Custom pr..1

Certificate management simplifications

Certificate Reduction

- The introduction of multi-server (SAN) self-signed certificates allows nodes in clusters (that will require different hostnames) to use the same certificates, this is a huge reduction in certificate management overhead
- The Tomcat certificate can now be copied to CallManager (replacing it) to further reduce the certificate management overhead
- CAPF certificate will now only exist on the Publisher node

Certificate	Pre 14	Post 14
Tomcat	8	1
Tomcat-ECDSA	8	1
CallManager	8	0
CallManager-ECDSA	8	0
TVS	8	1
CAPF	8	1
IPSec*	8	0
ITLRecovery	1	1
	57	5

← Worst case example: Cisco® UCM 8 node cluster with all self-signed certificates

Up to a 90% reduction in certificates to manage*

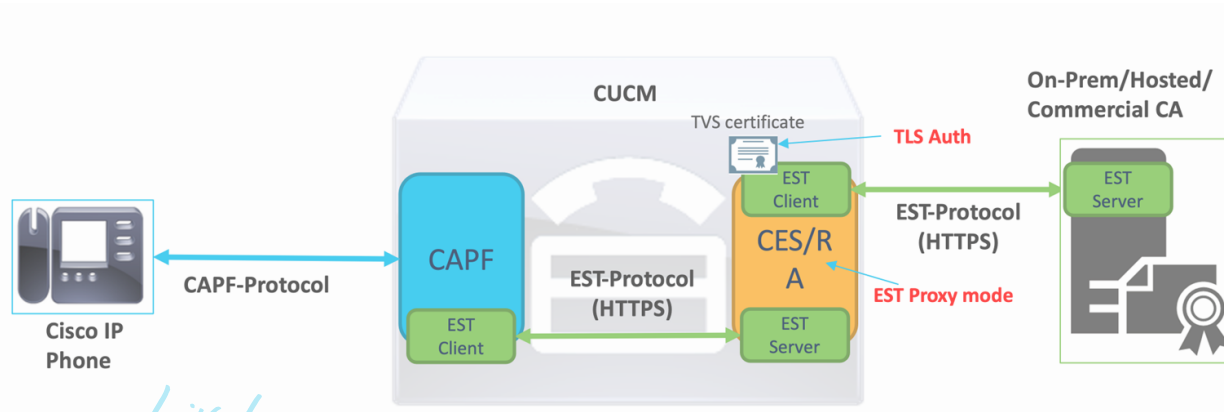
Synergistic with CCUC certificate management

Enrollment over Secure Transport (EST) CAPF → Internal EST → Remote EST

Available in
UCM 14 SU2

Implement Online CA functionality in UCM that uses EST

- Standards based Certificate Enrolment protocol
- More secure than Microsoft Online CA & SCEP (SCEP not supported in UCM)
- TLS (HTTPS) based
- The solution will work in FIPS or CC mode
- Phones that support CAPF/Online CA are supported



Enrollment over Secure Transport (EST)
Certificate Authority Proxy Function (CAPF)
Registration Authority (RA)
Certificate Enrollment Service (CES)

External Phone Number Mask (EPNM) displayed on handset for non-primary lines

Available in
UCM 14 SU2

Requirements

- External Phone Number Mask is configurable on primary and secondary lines, but only the EPNM of Primary line was being picked by TFTP when building configuration file.
- EPNM for primary line displayed on the phone.
- EPNM for secondary lines is not displayed on the phone.
- New capability to display EPNM for all lines

Solution

- New tag in the config file with EPNM details for secondary lines.
- Updates to 78xx and 88xx phones to pick these new fields and display EPNM for secondary lines.

OU as non mandatory part of CSR

Requirements

- Comply with new standards regarding organizationalUnitName
 - CAs MUST NOT include the organizationalUnitName field in the Subject
 - CA will either not sign CSR which contains OUs OR sign certificates without considering OU field.
- Compliance date 2022-09-01
- Impact depends on CA's implementation for this change

Solution

- In UCM 14SU2, a UI option is provided to include/exclude OU from CSR
- Default option – Exclude OU from CSR

Generate Certificate Signing Request

Generate Close

Status

Warning: Generating a new CSR for a specific certificate type will overwrite the existing CSR for that type

Generate Certificate Signing Request

Certificate Purpose** tomcat

Distribution* cucm-13.cisco.com

Common Name* cucm-13.cisco.com

Include OU in CSR

Subject Alternate Names (SANs)

Parent Domain cisco.com

Key Type** RSA

Key Length* 2048

Hash Algorithm* SHA256

Generate Close

i * - indicates required item.

i **When the Certificate Purpose ending with '-ECDSA' is selected, the certificate/key type is Elliptic Curve (EC). Otherwise, it is RSA.

SHA-2 support for Analog endpoints

- Support for SHA-2 crypto suits for analog endpoints and hardware conference bridge resources
- New minimum encryption require SHA-2 crypto suits for analog endpoints and hardware conference bridge.
- CUCM 14 SU2 supports SHA-2 crypto suite along with SHA-1.

Benefits

- More secure crypto suits supported
- Compliance with security standard
- More secure SHA-2 used for TLS and SRTP negotiations

SHA-2
256-bit key
encryption

SHA-1
160-bit key
encryption

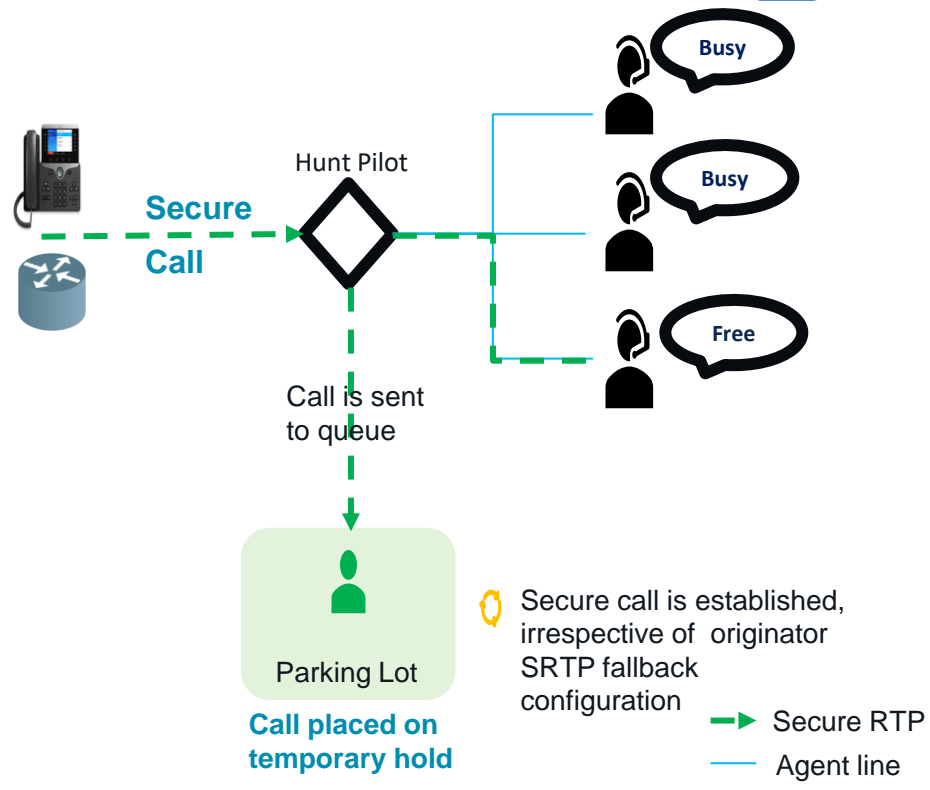
Secure call support for Native Call Queuing

Problem Statement:

- Native Call Queuing does not provide full SRTP support for the calls placed in queue.
- If all the agents are busy, secure calls originating from Phone/Gateway which does not support fallback to non-secure will fail.

Solution:

- 14SU2 will allow Native Call Queuing to support SRTP during the queue.
- CUCM can handle an originating SRTP only call as secure call throughout, irrespective of the SRTP fallback option status.



Industry and government certification

Industry and government certification programs for Cisco® UCM 14 (Achieved and in progress)

- FIPS 140-2
- Common Criteria
- Commercial Solutions for Classified Program (CSfC)
- DoDIN APL (DOD, JITC)
- FedRAMP Moderate
- FedRAMP IL-5
- USGv6



FedRAMP

14SU3 Security Updates

OAuth enhancement

- OAuth tokens can be issued by any node, either Pub or Sub
- Tokens are stored in database
- Currently tokens can be stored in database only by publisher node
- If Publisher is not available, users are not able to get new refresh tokens
- In 14SU3 dependency on CUCM publisher eliminated

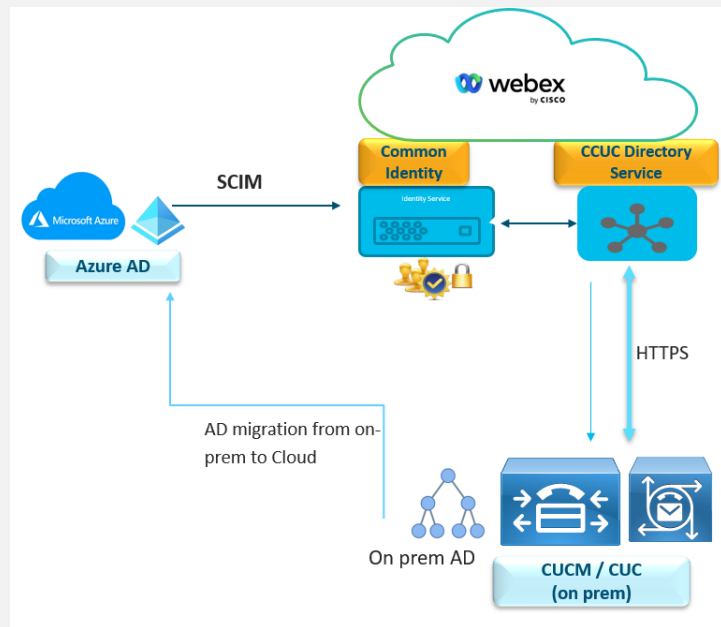
Support DTMF interworking for secure media

- DTMF interwork will work from both RFC2833 and Out Of Band (OOB) side with SRTP call and MTP in passthrough mode
- DTMF can work across secure media
- Enables Native CUCM support for DTMF Interworking, eliminating need for inserting a CUBE.

Admin Simplicity



CCUC Directory Service (Azure AD integration)



Synchronize users from cloud-based directory into UCM (on-premises or Dedicated Instance)

- Webex CI integrates with Azure AD using SCIM to sync the users
- CCUC Directory Service syncs users from Webex CI into CUCM and Unity Connection
- Webex Cloud-Connected UC (CCUC) Required

Benefits

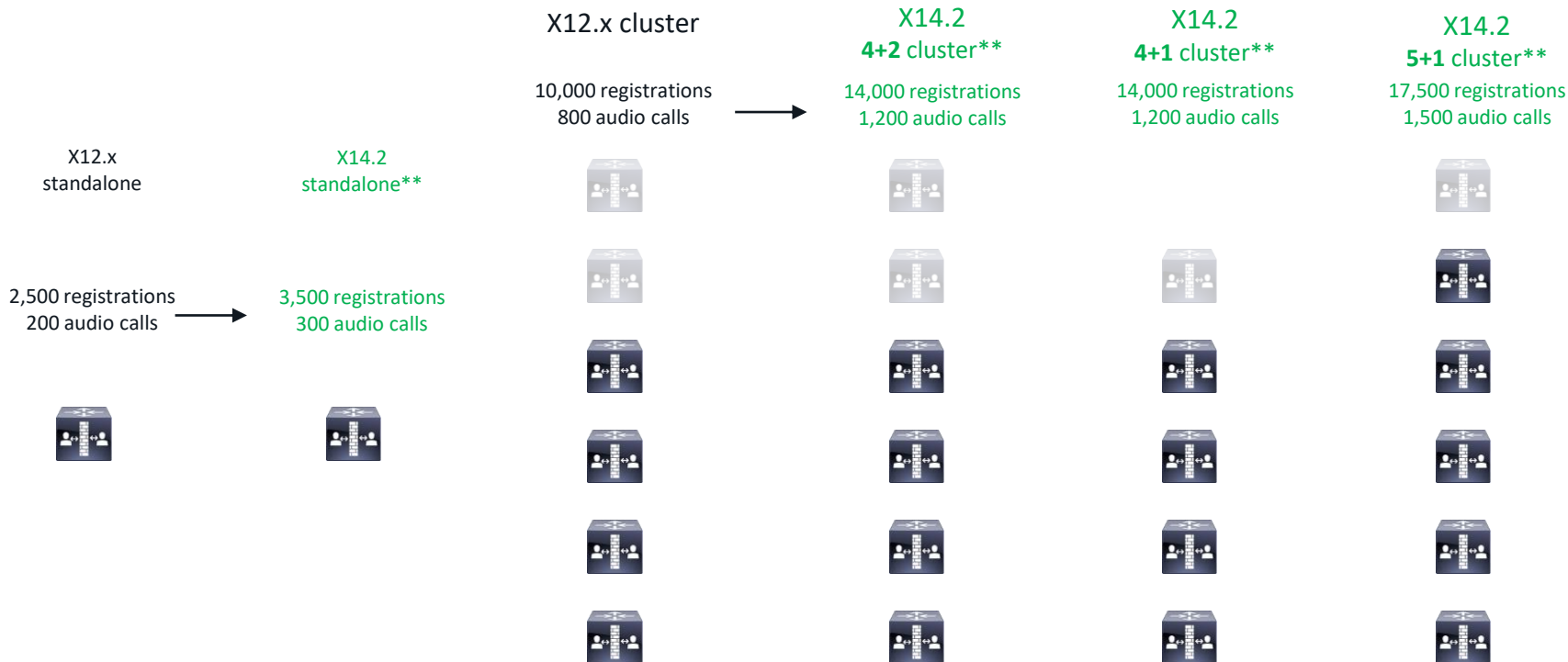
- Sync UCM with Azure AD
- Ubiquitous Identity and Access Management while moving directory to cloud
- Reduction in TCO
- Enables migration options – incremental to full cloud native



Expressway X14.2 MRA performance improvements (medium OVA*)

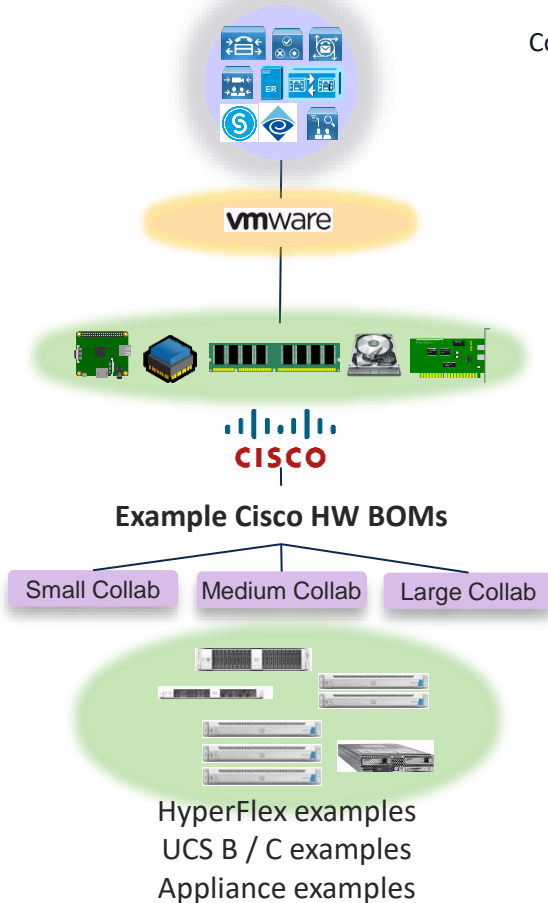
40% increase in MRA registrations - 50% increase in MRA calls

75% increase in registrations and 87.5% increase in calls over X12.x



Improved Hardware Support (builds)

Improvements through UCM 14 SU3



Collab System Release	X-App Release Set	
SRND/CST PA/CVD Sizing Guides	Per-app Architecture for Capacity/Scale & Redundancy	UCM 14 scale/density improvements
X-app tech docs or QuoteCollab	Derive VM Count+Specs	UCM 14 flexible Virtual Machine specs
	x-App->ESXi compatibility	QuoteCollab "Build my own" hardware
	x-App VM Placement rules	UCM 14 flexible min CPU spec
	x-App min HW specs rules	Limited AMD support (UCM/CUC/CER 14+12.5)
E.g. UCS HCL Tool	ESXi->HW compatibility	Simplified support policy in CSR 14 or ESXi 7.0
Spec Sheets, Sizers Example HW BOMs	HW-specific BOM rules	Example Cisco HW BOMs by T-shirt size

More choices & re-use, simpler spec-ing & policy.

https://www.cisco.com/c/dam/en/us/td/docs/voice_ip_comm/uc_system/virtualization/cisco-collaboration-infrastructure.html
(accessed from home page www.cisco.com/go/virtualized-collab, then pick an app, then pick a version)

Get current if not going cloud: Planning HW/SW compatibility & support

Good to go...

Complications...

Something's NOT supported!

	CSR 10.6	CSR 11.6		CSR 12.8		CSR 14		
UCM 10.5 eoSupp JulCY22 11.5 eoMaint MayCY22	10.5	11.5		12.5 (shipping)		12.5 SU5 (shipping)	14 (shipping)	14 SU2 (shipping)
VMware ESXi 6.0/older eoSupp MarCY22 6.5/6.7 eoGS OctCY22	6.5	6.5	6.7	6.5	6.7	7.0	6.7	7.0
UCS M6 Ice Lake (+Milan select apps)								
UCS M5 CascadeLake / Skylake								
UCS M4 Broadwell / Haswell BE6K/7K M4 eoSupp JunCY23								
UCS M3 Sandy Bridge / Ivy Bridge BE6K/7K M3 eoSupp CY20 C220/C240 M3 eoSupp CY21								

Get current or go cloud

We've simplified the transition



Get current or go cloud

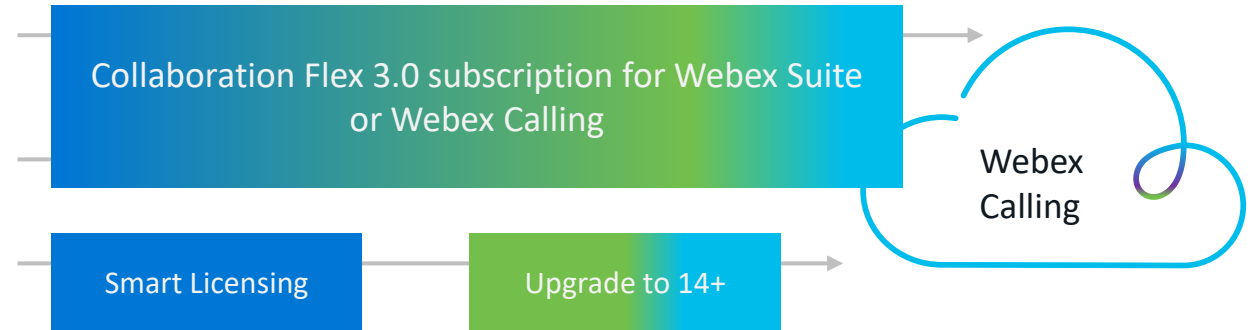
Offers licensing contracts



Perpetual licenses
EOS Q2 21

SWSS non-renewable
Q3 21

11.5 last release
PAK+PLM license



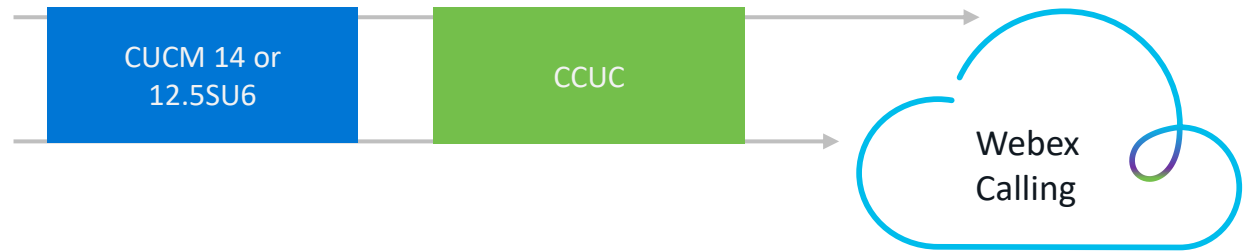
Get current or go cloud

Application releases



11.5 End of Bug/
Security Fix – May 2022

10.5/older End of Support
July 2022



Get current or go cloud

VMWare Support



ESXi 6.5/6.7 End of Bug/
Security Fix – Oct 2022

ESXi 6.0 End of Support -
March 2022



Get current or go cloud

Hardware

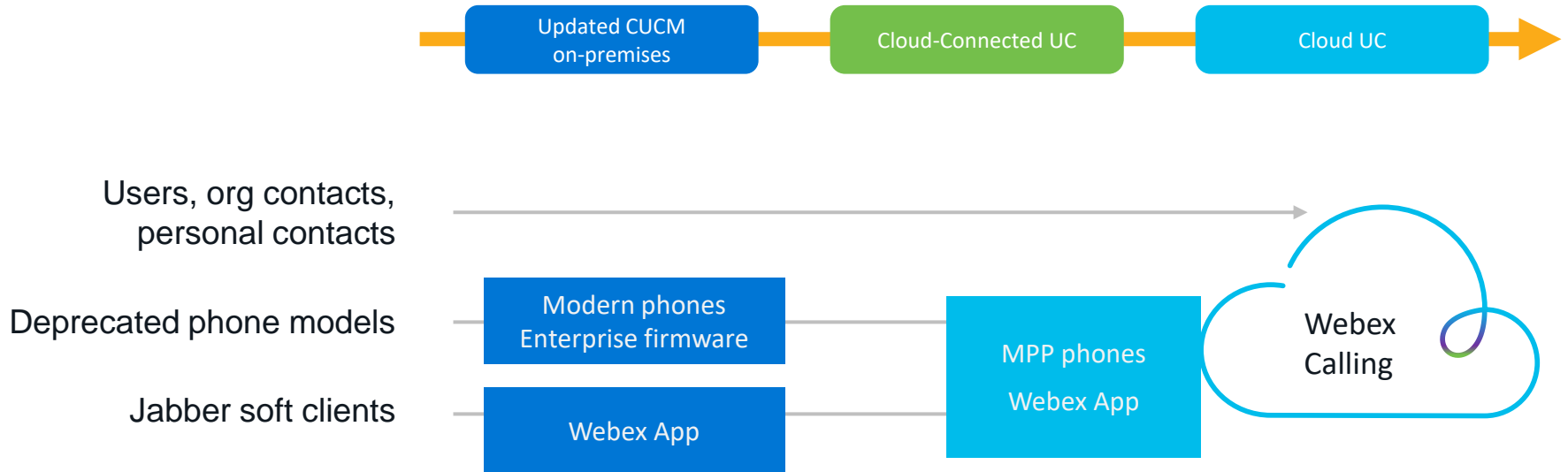


UCS M3/older End of Support – Dec 2021

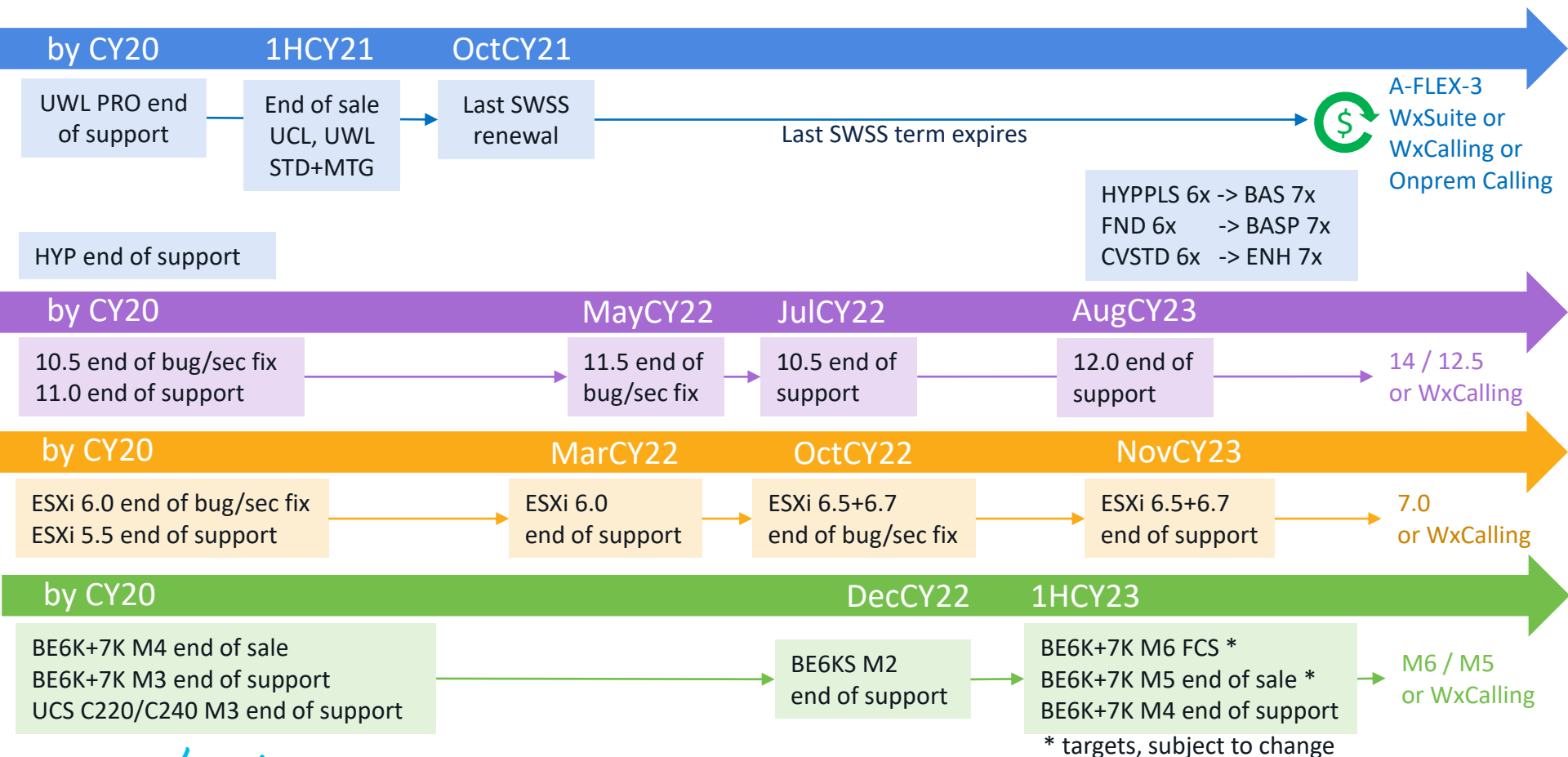


Get current or go cloud

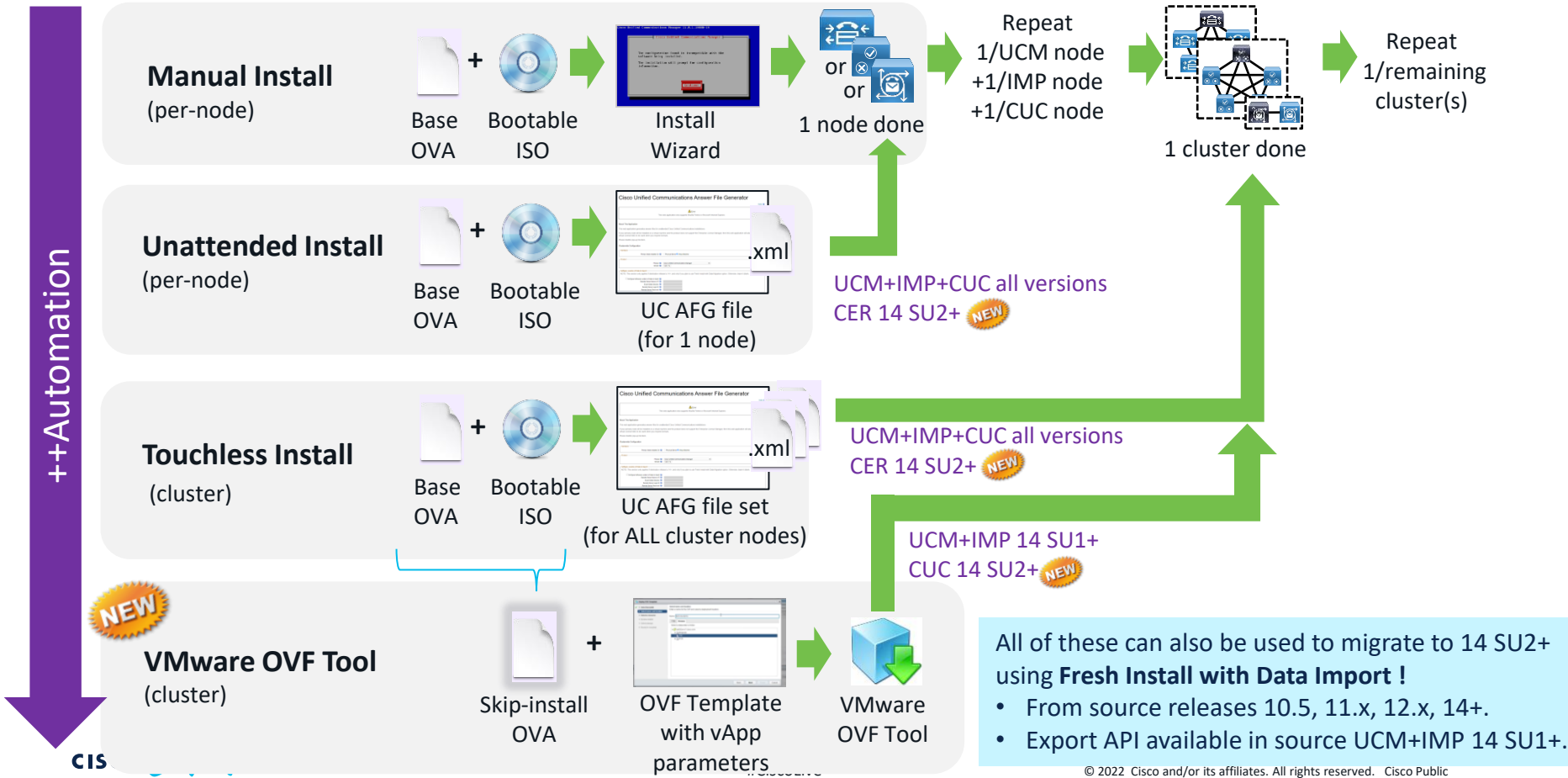
Users, contacts, endpoints



Summary of Resulting Compelling Events (Refresh/Upgrade, Expiry/Renewal)

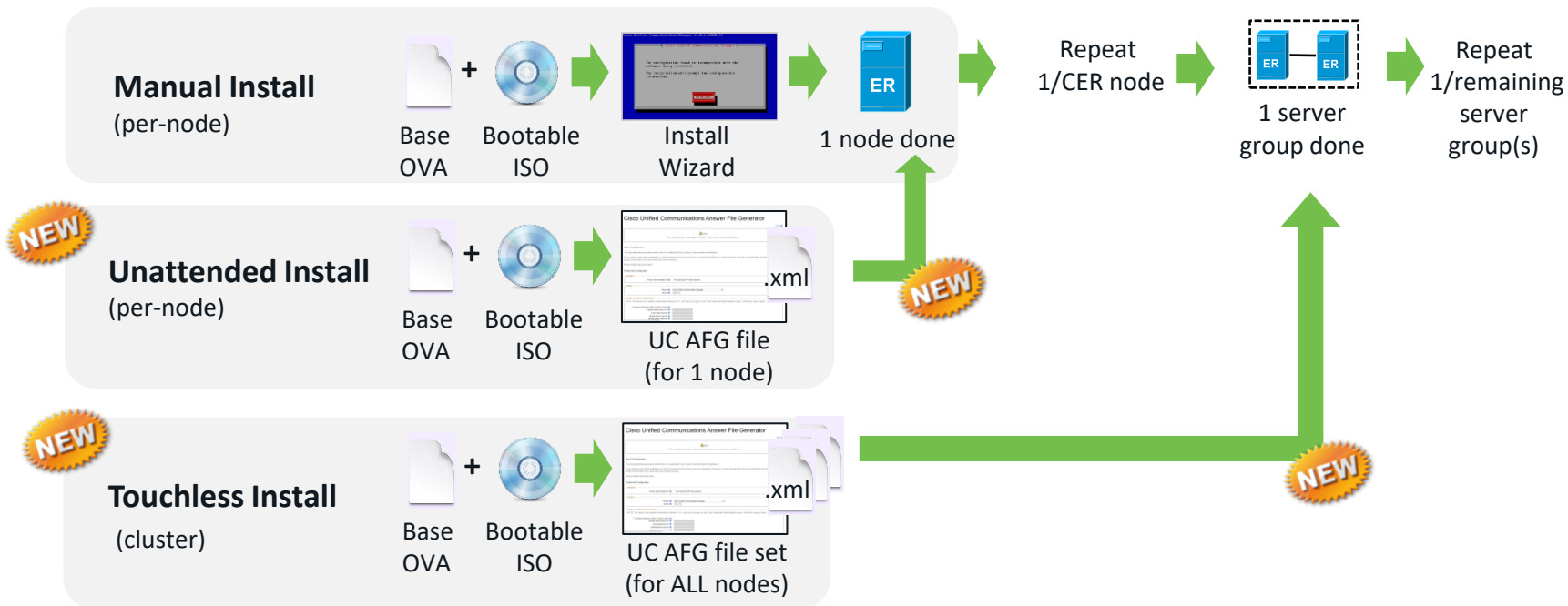


Install Automation Options (builds)



New Install Automation options for CER 14 SU2+ (builds)

- Theme = automation for WxC dedicated instance + catchup CER install options to UCM.
- Start with AFG and Touchless options.
- Considering Fresh Install with Data Import.



Simple Upgrades Enhancement: Cluster Software Location for UCM+IMP

Software Location

Source*

Directory*

Server*

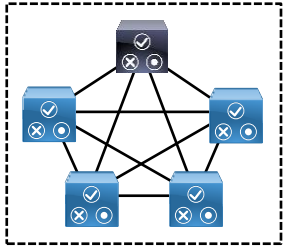
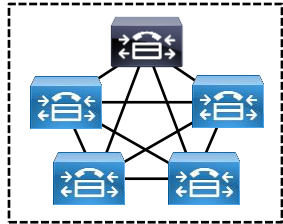
User Name*

User Password*

Transfer Protocol*

SMTP Server

Email Destination



Software Location = where each UCM/IMP node will look for its ISO+COP files.

Reduce effort to view & edit these settings across all cluster nodes for various scenarios:

- Single-site with static Location (set all nodes to X once & never again)
 - Variable locations like CoW (set some nodes to X, some to Y, some to Z...)
 - Quick check of what all nodes are using (e.g. prior to an upgrade run, especially if frequent changes)
 - Apply a file “just this one time” to “just this node”
-
- **Pre-12.5**, admin had to enter Software Location on every node, every upgrade run.
 - **12.5 FCS to SU5 / 14 SU1**, options to pre-download / remember file and visit each node’s local GUI/CLI to configure Software Location as “use UCM Pub’s” or “use your own”.
 - **12.5 SU6 / 14 SU2**: add cluster-wide management via UCM Pub (all other nodes are read-only). 14 SU2 also adds “test access to Software Location” button (checks IP, credentials, folder with actionable error messages).
 - **12.5 SU7 / 14 SU3**: add read-write on non-UCM-Pub nodes to support single-node / ad hoc use cases.

First time setup:

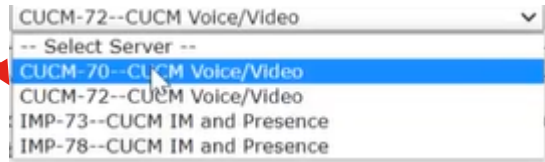
1. from UCM Pub, can see all cluster nodes (UCM Pub+Subs, IMP Pub+Subs) and Software Location of each.
2. from UCM Pub, select each cluster node & define its Software Location.

Before upgrade:

1. if 12.5 SU7 / 14 SU3+, admin can edit either via UCM Pub or via each node’s local GUI/CLI.
2. if 14 SU2+, admin can run a "test access to SW location" from each node, then a cluster upgrade download-only task to define target ISO/COP and check file is present & usable.

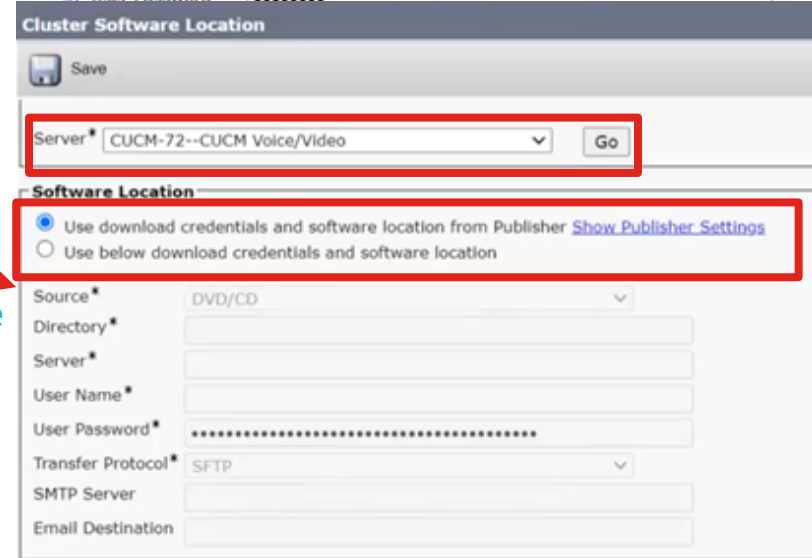
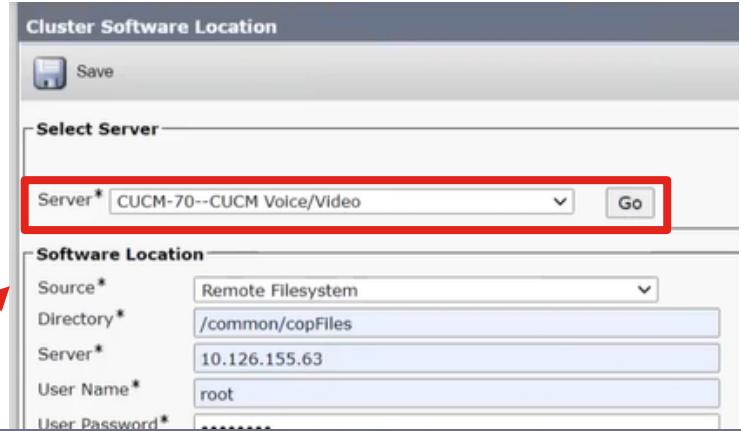
Cluster Software Location (cont'd)

New menu option
on UCM Pub



New pulldown on UCM Pub to
pick a cluster node (UCM Pub,
a UCM Sub, IMP Pub, an IMP
Sub)

If UCM Pub
is selected...



If any other node
is selected...

CUCM Future



CUCM Solution – Potential Roadmap 15

Potential Roadmap. Content likely to change

User Experience

- To Be Determined. Future Planning

Admin Simplicity

- Core Linux Transition
- Higher scale/density (via 64-bit-app)
- Support for VG410
- Megacluster Survivability via Higher Node Count.
- Extension Mobility Licensing
- Network Infrastructure update from CER to RedSky wiremap

Security & Compliance

- FIPS 140-3 support
- TLS 1.3
- Disable port 69 and 5060
- Customer Private Key on CSR Applications

Bridges to the Cloud

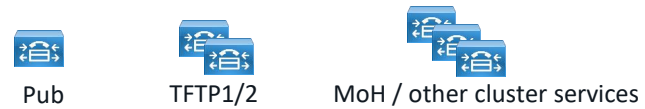
Webex Cloud-Connected UC

- Directory Services (Azure AD support) – near real-time delta sync based on Webex CI Notification services

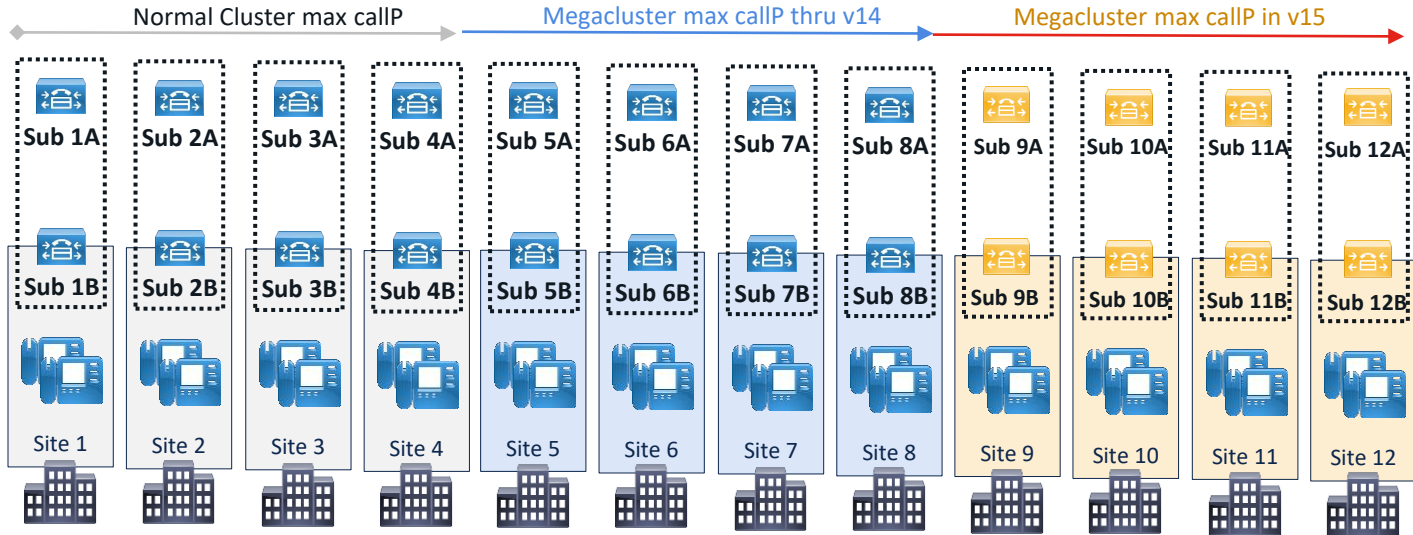
These items are top candidates for UCM 15. Many may be delivered in 15 SUs. Eg. 15SU3

Megacluster survivability via higher node count

- Scale-out ... cover more sites/buildings with “Local Subs” for full UCM features during WAN outage.
- +50% callP node count (max callP node pairs increased from 8 to 12, total 30 UCM cluster nodes).

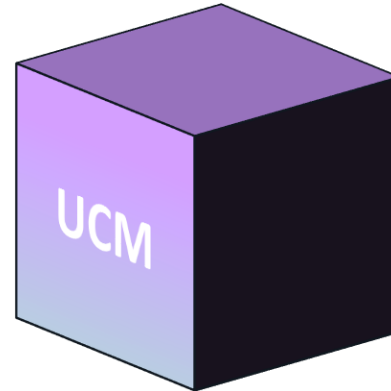
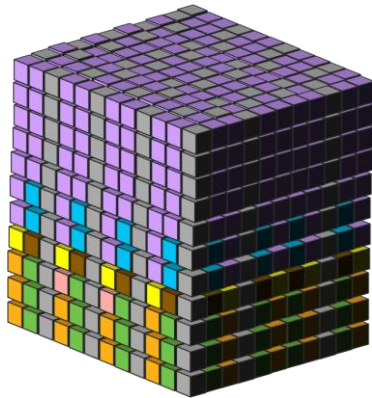


- Until v15 scale quantified, assume cluster max scale same as v14; this is just for more site coverage.
- 1:1 redundancy shown. 2:1 reduces #sites.
- 1 Sub per site shown. 2+ Subs per site reduces #sites.
- For more geo redundancy, could put Local Sub B at Site Y instead of at Site X.
- More info on megacluster in the [Cisco Collaboration Sizing Guide for CSR 14](#).



Core Linux Transition

The native OS = big dependency



1000's of "raw" SW components

- **Cisco-provided** (Libraries, scripts, config files, custom kernel modules, Cisco Security Modules, etc.)
- **3rd-party leveraged** (core native OS, RDBMS, runtimes, web server, crypto libs, drivers, vmtools, etc.)

Built into UCM closed-system:

- **Simple** (monolithic = no moving parts to manage, just bug fixes and PSIRTs)
- **Stable** (no oops on config changes or uploaded code)
- **Secure** (extremely low attack surface, strong posture)

Core Linux Transition (cont'd)

Impact of Industry changes (builds)

Open-source communities
(not "OS Vendors" like VMware or Microsoft)

Curated and/or Commercially Supported

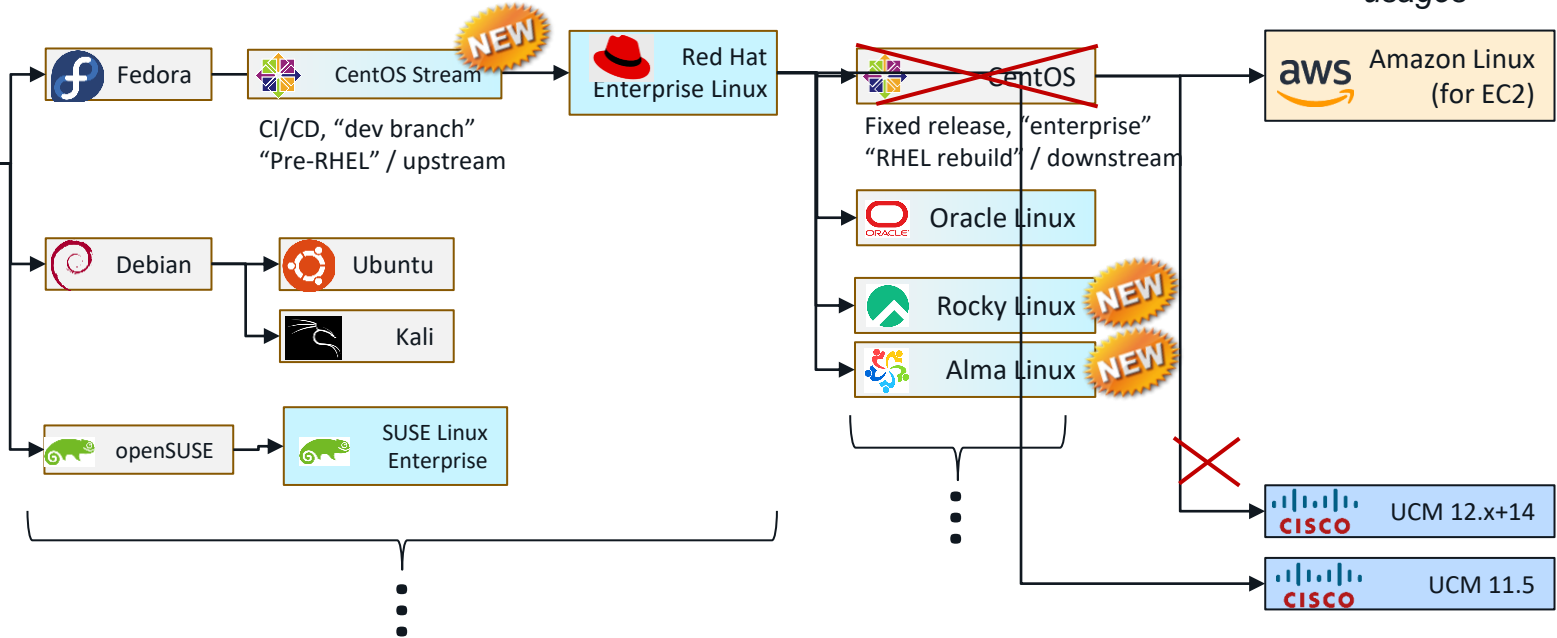
"Linux"
(strictly speaking)

Some of the literally 100s of various "Linux-based distros" out there...

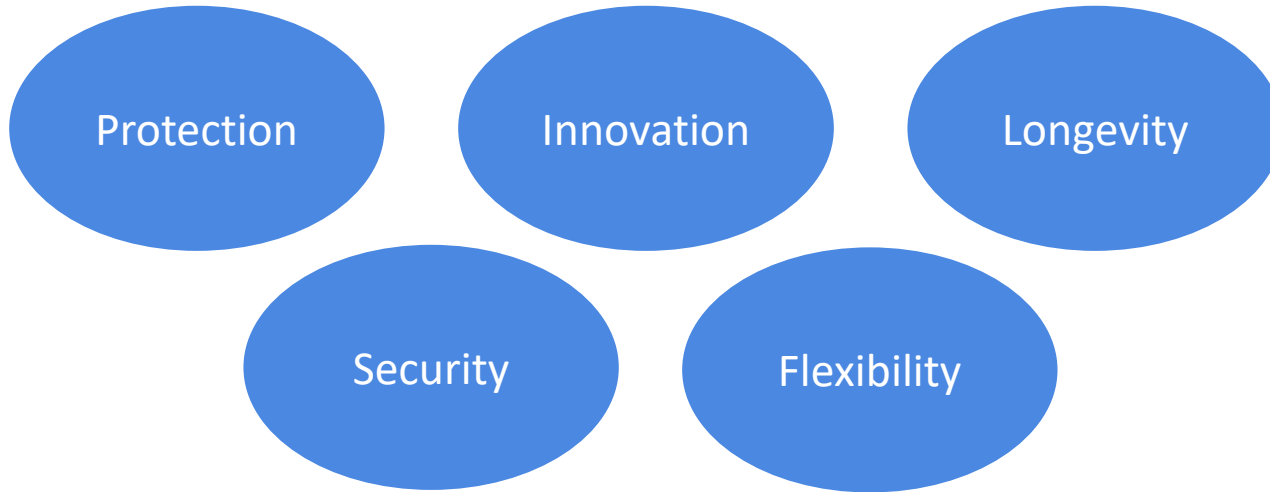
Some
vendor-proprietary
usages

**Kernel.org
Linux.org**

- Linux kernel
- GNU tools & libs
- Additional for "complete OS"

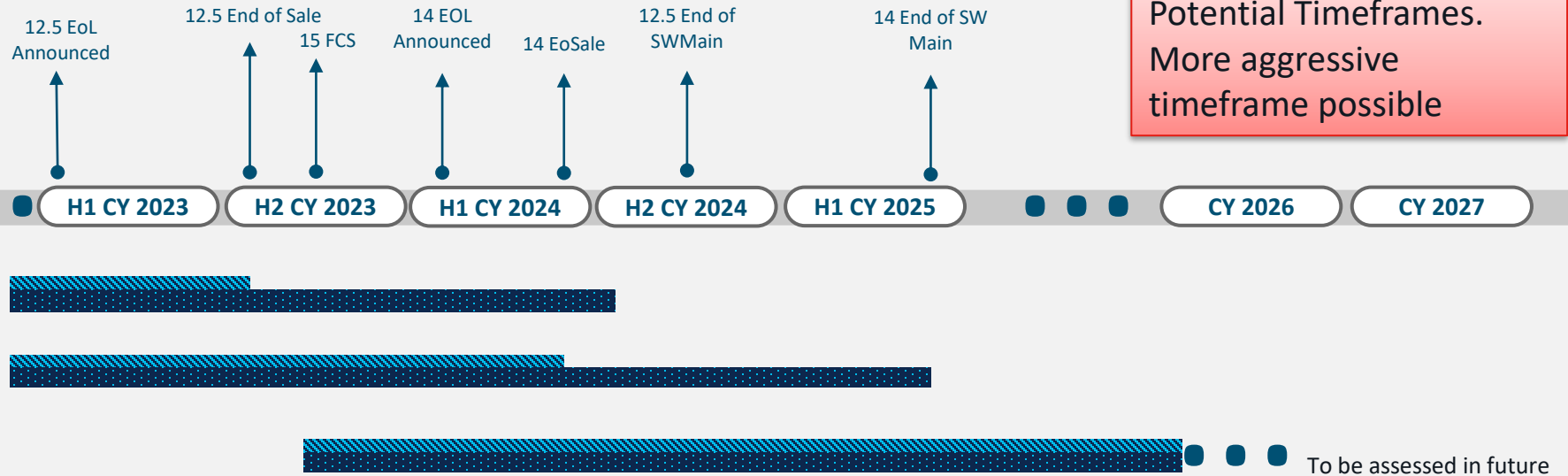


Benefits of new Linux transition



Planned End of Sale for CUCM 12.5 and 14

- CentOS v7 End of Life: June 2024
- CUCM 15 new Linux transition enabling a long-life supported release



Take aways and next steps

- Continued investment in CUCM innovation
- CUCM remains strategic – part of on-premises and cloud future
- Webex is now part of the CUCM experience
- Release 15 and with Linux OS transition coming in H2CY23
- Choose your brightest collaboration future
 - Webex Calling
 - CUCM on-premises, with Webex Suite and CCUC

Technical Session Surveys

- Attendees who fill out a minimum of four session surveys and the overall event survey will get Cisco Live branded socks!
- Attendees will also earn 100 points in the Cisco Live Game for every survey completed.
- These points help you get on the leaderboard and increase your chances of winning daily and grand prizes.



Cisco Learning and Certifications

From technology training and team development to Cisco certifications and learning plans, let us help you empower your business and career. www.cisco.com/go/certs

Pay for Learning with Cisco
Learning Credits

(CLCs) are prepaid training vouchers redeemed directly with Cisco.



Learn

Cisco U.
IT learning hub that guides teams and learners toward their goals

Cisco Digital Learning
Subscription-based product, technology, and certification training

Cisco Modeling Labs
Network simulation platform for design, testing, and troubleshooting

Cisco Learning Network
Resource community portal for certifications and learning



Train

Cisco Training Bootcamps
Intensive team & individual automation and technology training programs

Cisco Learning Partner Program
Authorized training partners supporting Cisco technology and career certifications

Cisco Instructor-led and Virtual Instructor-led training
Accelerated curriculum of product, technology, and certification courses



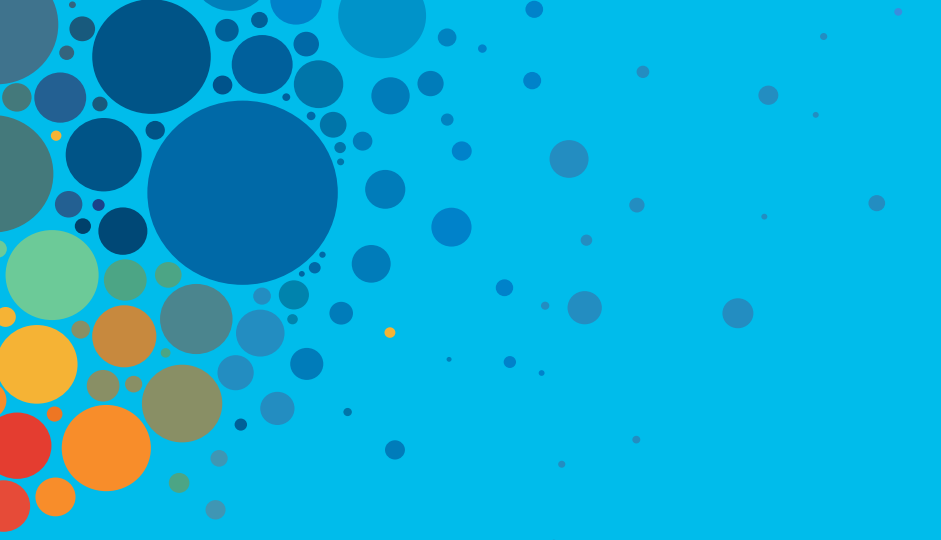
Certify

Cisco Certifications and Specialist Certifications
Award-winning certification program empowers students and IT Professionals to advance their technical careers

Cisco Guided Study Groups
180-day certification prep program with learning and support

Cisco Continuing Education Program
Recertification training options for Cisco certified individuals

Here at the event? Visit us at The Learning and Certifications lounge at the World of Solutions



Continue your education

- Visit the Cisco Showcase for related demos
- Book your one-on-one Meet the Engineer meeting
- Attend the interactive education with DevNet, Capture the Flag, and Walk-in Labs
- Visit the On-Demand Library for more sessions at www.CiscoLive.com/on-demand



The bridge to possible

Thank you

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