

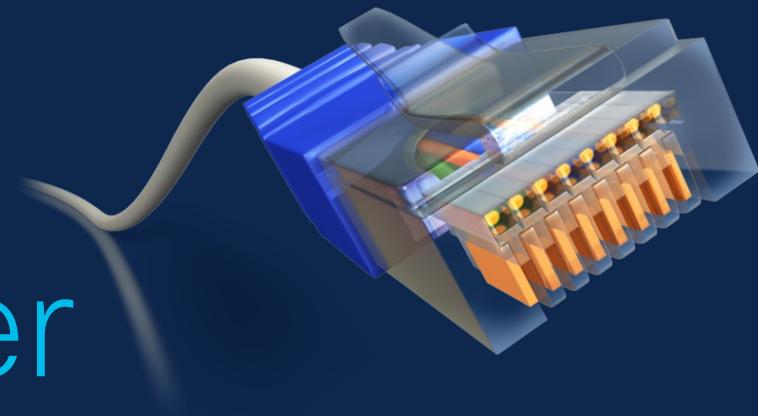


Webex Contact Center

PSTN Integration Options

Kal Gouda, Principal Engineer
CCBU

April 2023



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Contact Center Track

- ✓ **15** Breakout sessions
- ✓ **5** instructor led labs (4 hour each)
- ✓ **2** Techtorials (4 hour each)
- ✓ **3** Interactive breakout sessions
- ✓ **10** Walk-in labs
- ✓ **3** PSO sessions

Don't forget to register!

Agenda

- Overview
- PSTN Options
- New Media Services Layer
- Global Deployment
- Use Cases
- Sneak peak : WebRTC for Webex CC
- Q&A



Topics that are NOT included

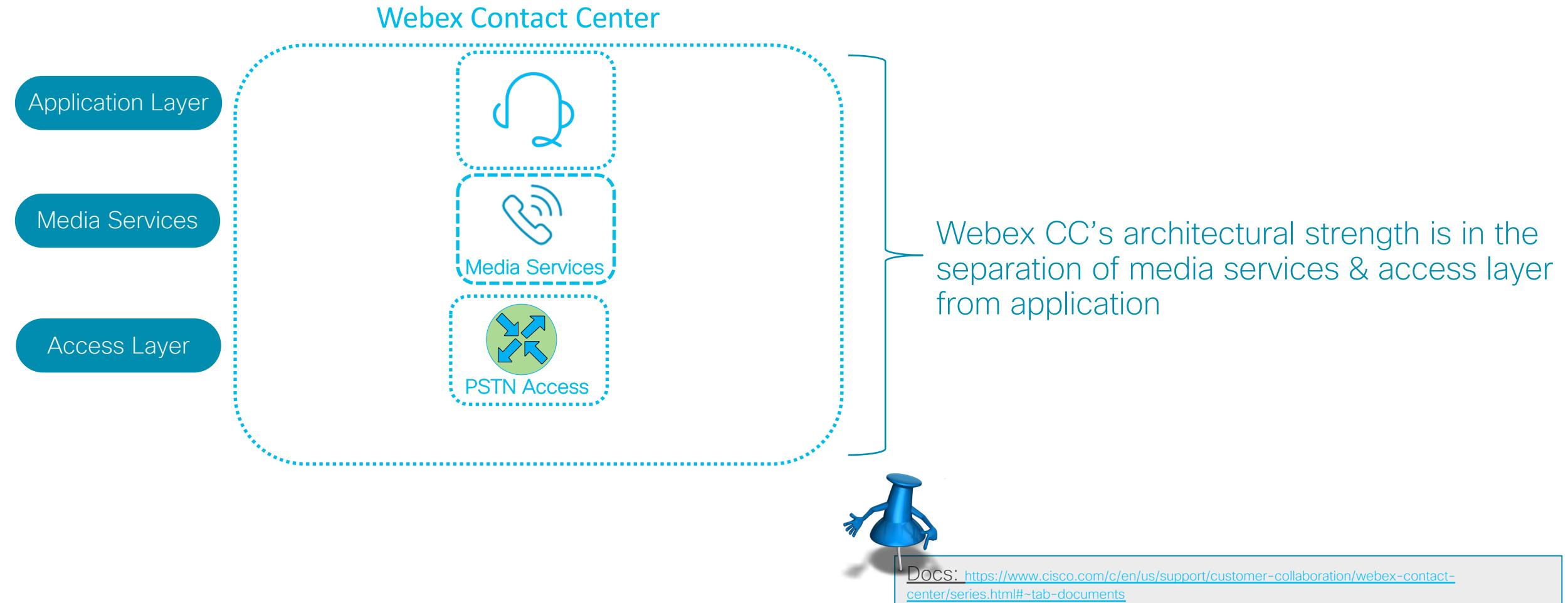


- 01 • Licensing
 - Questions about licensing please use technical summit Webex space
- 02 • PSTN Ordering/Onboarding
 - Details in the back up slides
- 03 • CUBE & LGW design
 - Details in the back up slides
- 04 • Webex Calling Integration
 - With new Media services , coming soon
- 05 • MS Integration
 - Coming soon



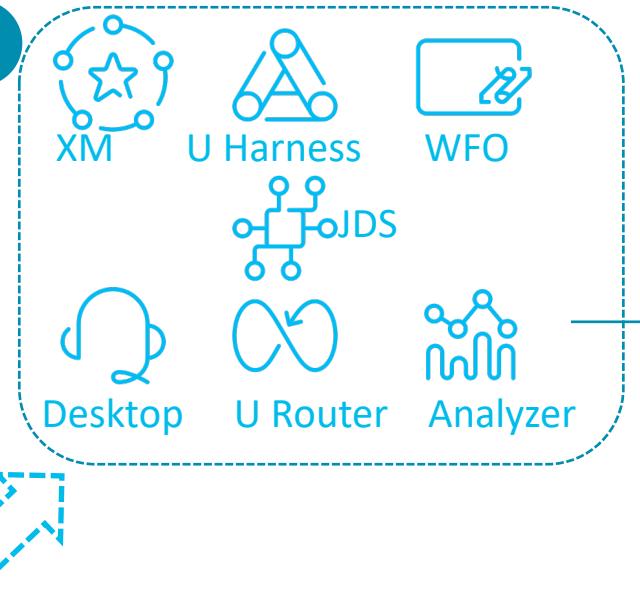
I added many notes & references

Webex Contact Center



Webex CC Overview

Application Layer



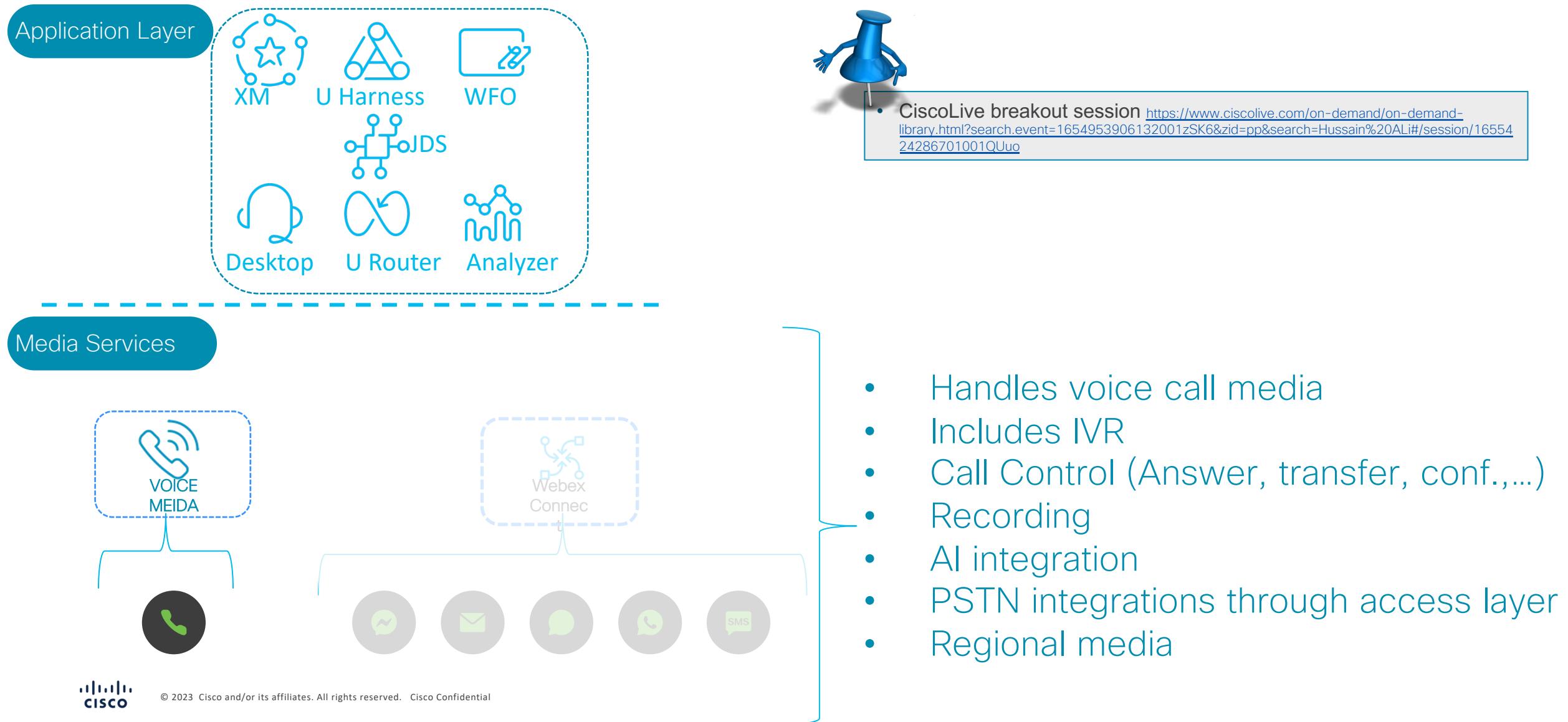
- House Voice, digital channels and Analytics application stacks
- Voice stack designed to be compatible with different Media Services layers
- Application services generates data that is fed into the reporting/analytics stack in real-time
- End users access their applications via the Internet
 - Zero footprint on customer premise



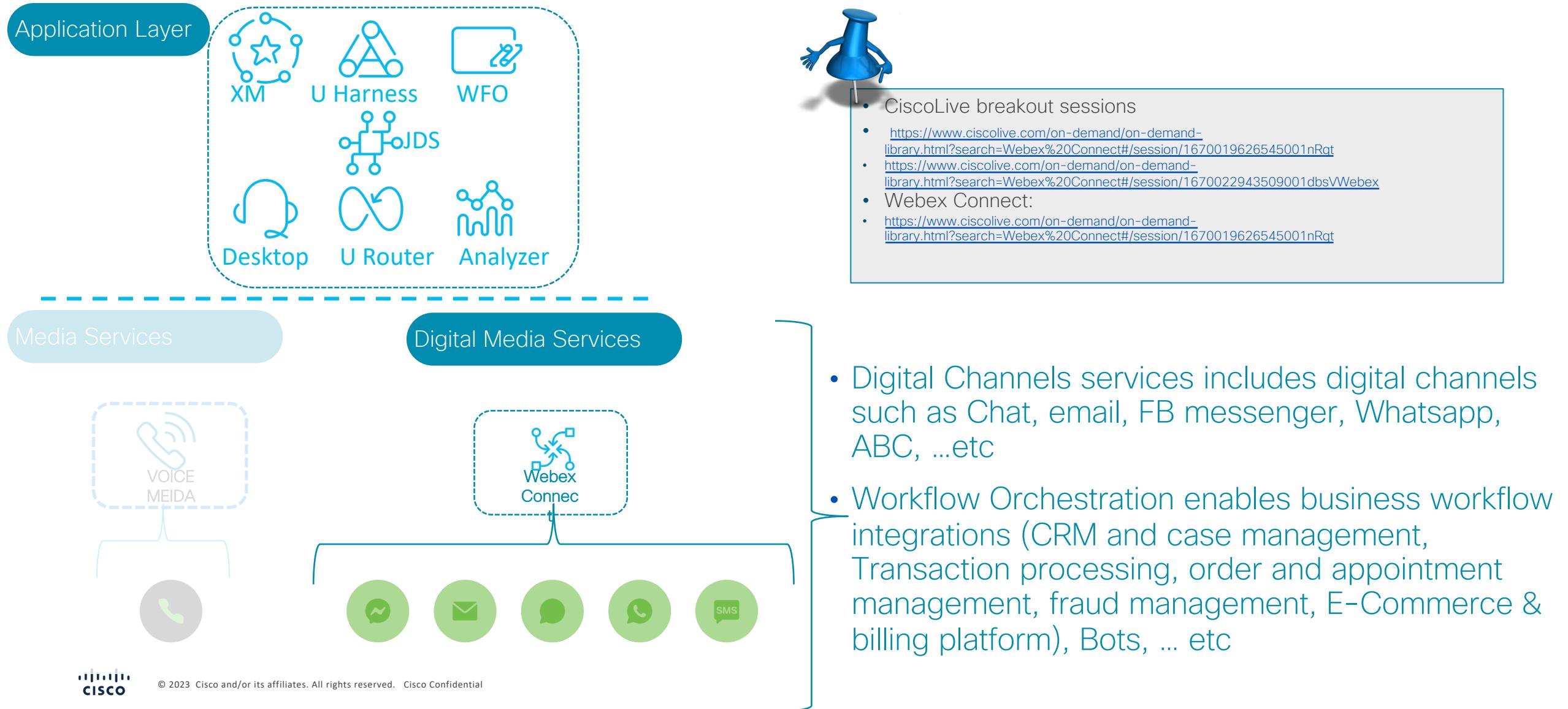
Webex Contact Center TDM Deck

<https://salesconnect.cisco.com/c/r/salesconnect/index.html#/search/Webex%2520Contact%2520Center%2520TDM/content>

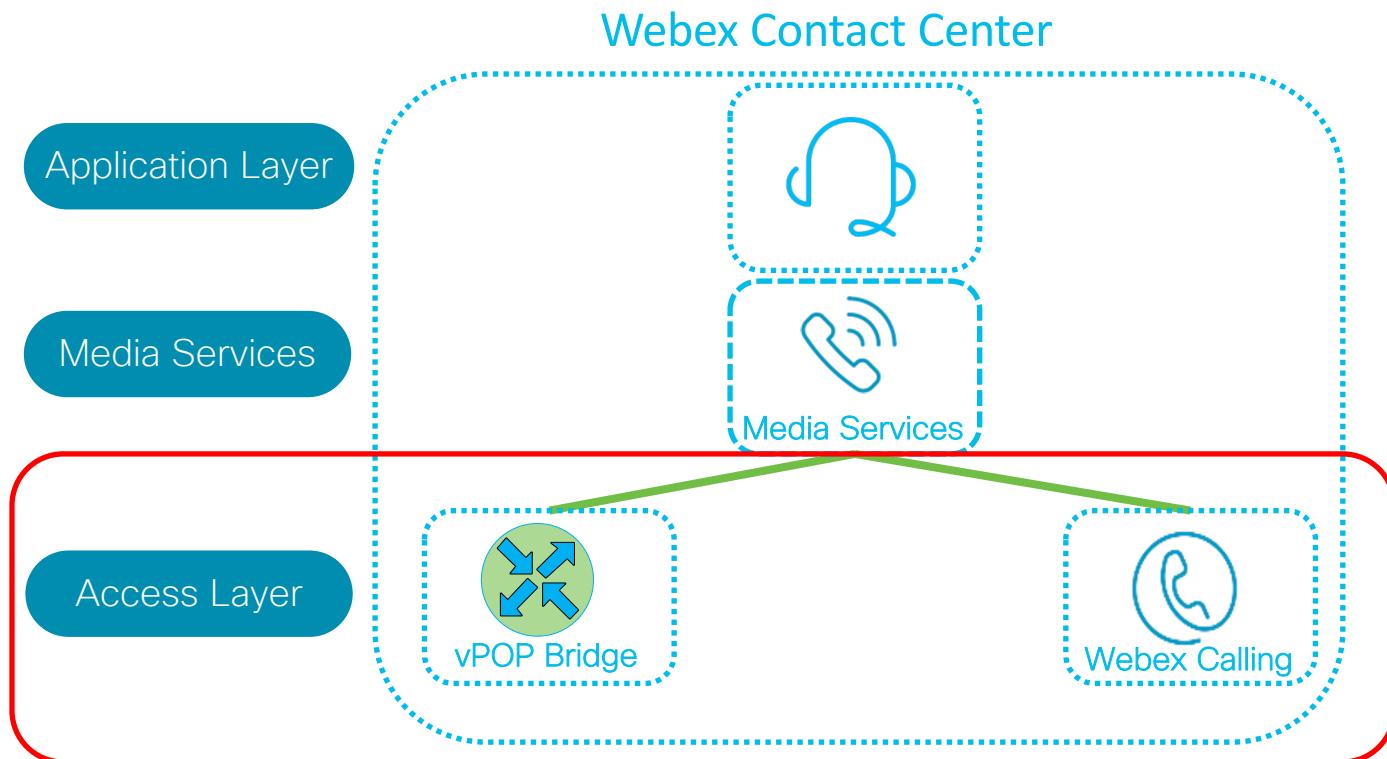
Webex CC Overview



Webex CC Overview

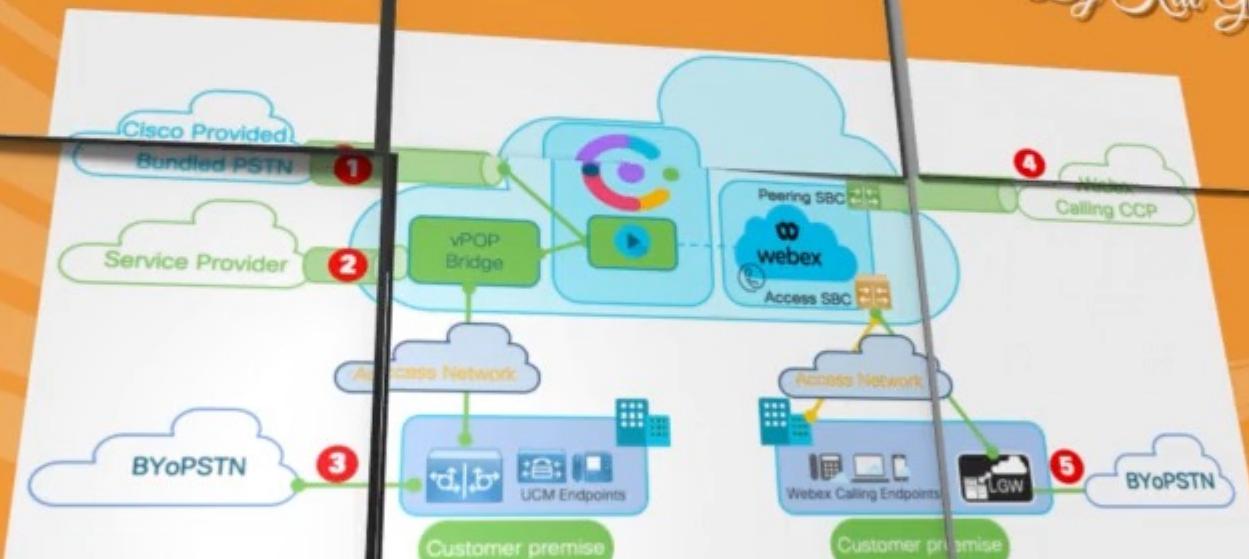


Webex Contact Center



Webex CC PSTN Options

By Kal Gouda



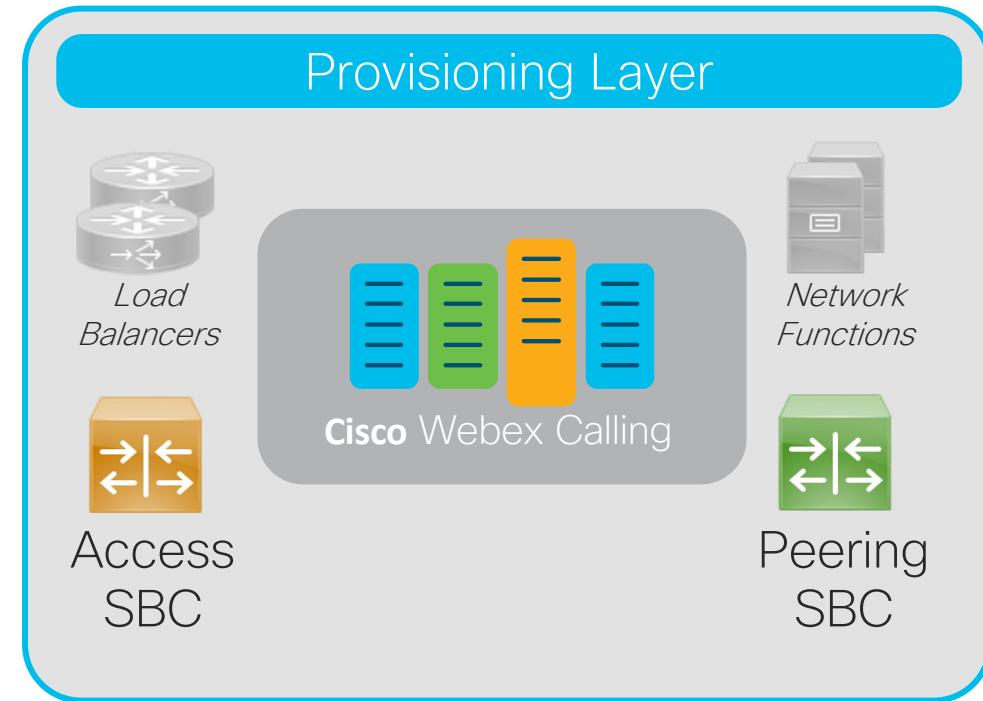
Webex Calling Quick Overview



Webex Calling



- Fully featured PBX functionality
- Secure, redundant, carrier grade global cloud
- Seamless Webex Teams and Webex Meetings Integration
- Apps, Cisco integrated device support, some third-party solutions
- Webex App centered experience
- Multiple PSTN connectivity options



What's new in Webex Calling

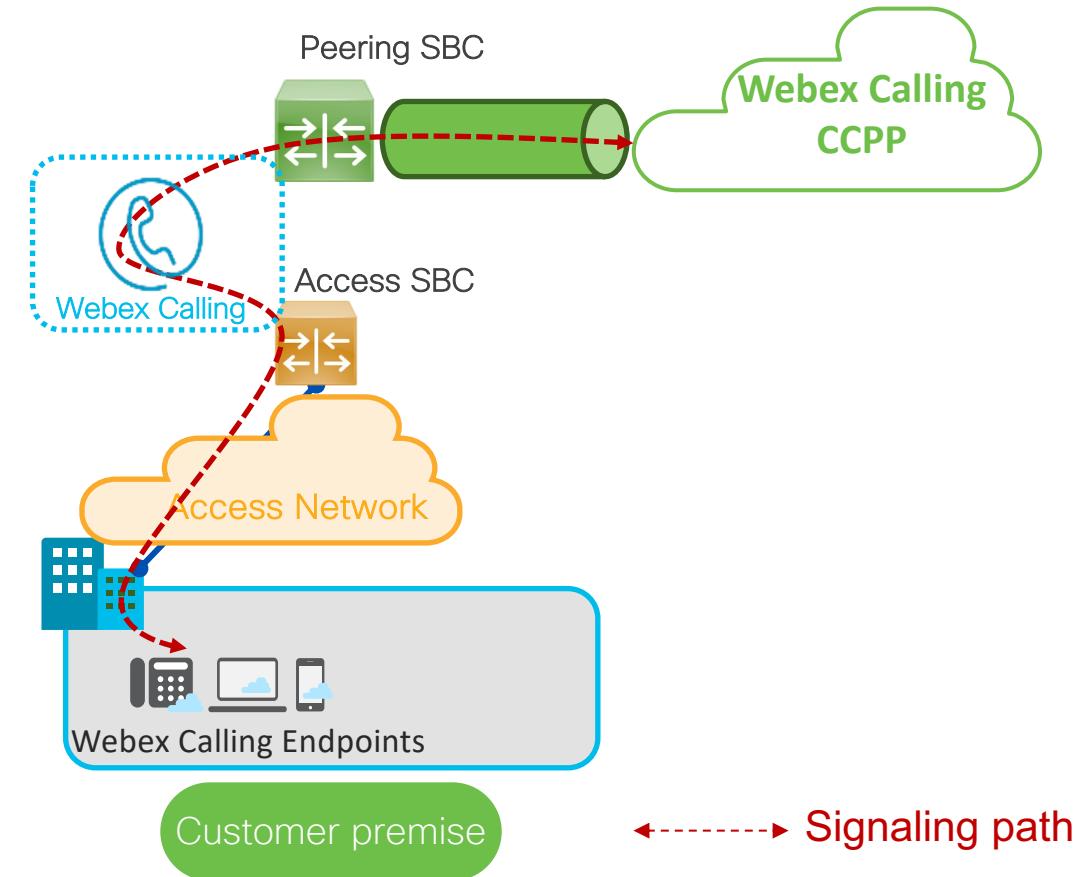
<https://help.webex.com/en-us/article/rdmb0/What's-new-in-Webex-Calling>

Cisco Webex Calling Design and Deployment - DGTL-BRKCOL-2792

<https://www.ciscolive.com/on-demand/on-demand-library.html?search=Webex%20Calling&search=Webex+Calling#/session/16360601404500017hpD>

Webex Calling with Cloud Connected PSTN Provider (CCPP)

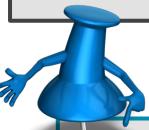
- Peering SBC connect to the SP PSTN
- Access SBC connect to the customer premise though access network
- Webex Calling matches incoming PSTN calls to customer's destinations
- It sends the call to the target end point



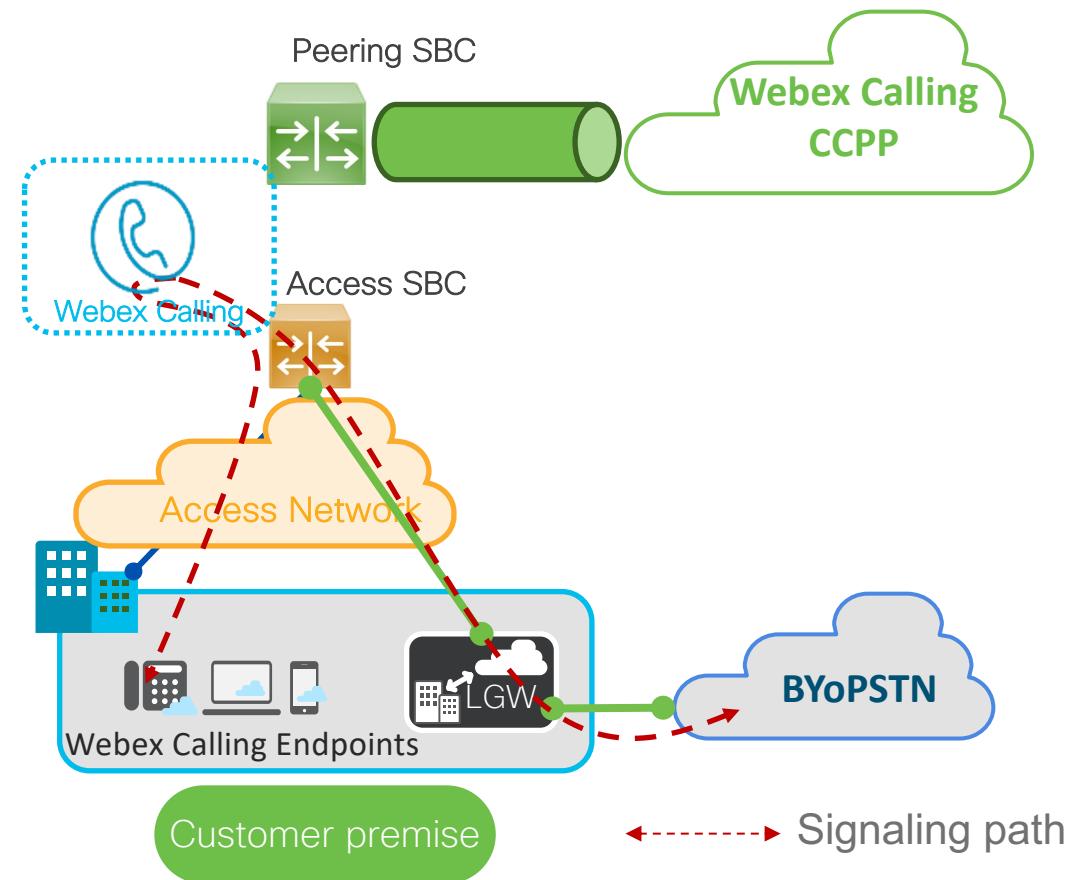
- WxC is not limited to a single CCPP provider. Unique CCPP providers can be selected for different Webex Calling locations to include geographical presence of the provider .
- CCPP Providers <https://community.cisco.com/t5/collaboration-voice-and-video/global-availability-and-cloud-connected-pstn-options-for-webex-ta-p/3916211>

Webex Calling Trunk - Local Gateway (Premise-based PSTN) Deployment

- Provides connectivity to a customer-owned premise-based PSTN service
- May also provide connectivity to an on-Premise IP PBX or dedicated SBC/PSTN GW
- Enables on-prem to Webex Calling transition
- All communication between Webex Calling and endpoints/LGW is secured (SIP TLS/sRTP)
- Premise-based PSTN requires that a trunk or a route group with multiple trunks is selected as the PSTN choice in Webex Control Hub. Each trunk represents a connection to a Local Gateway.

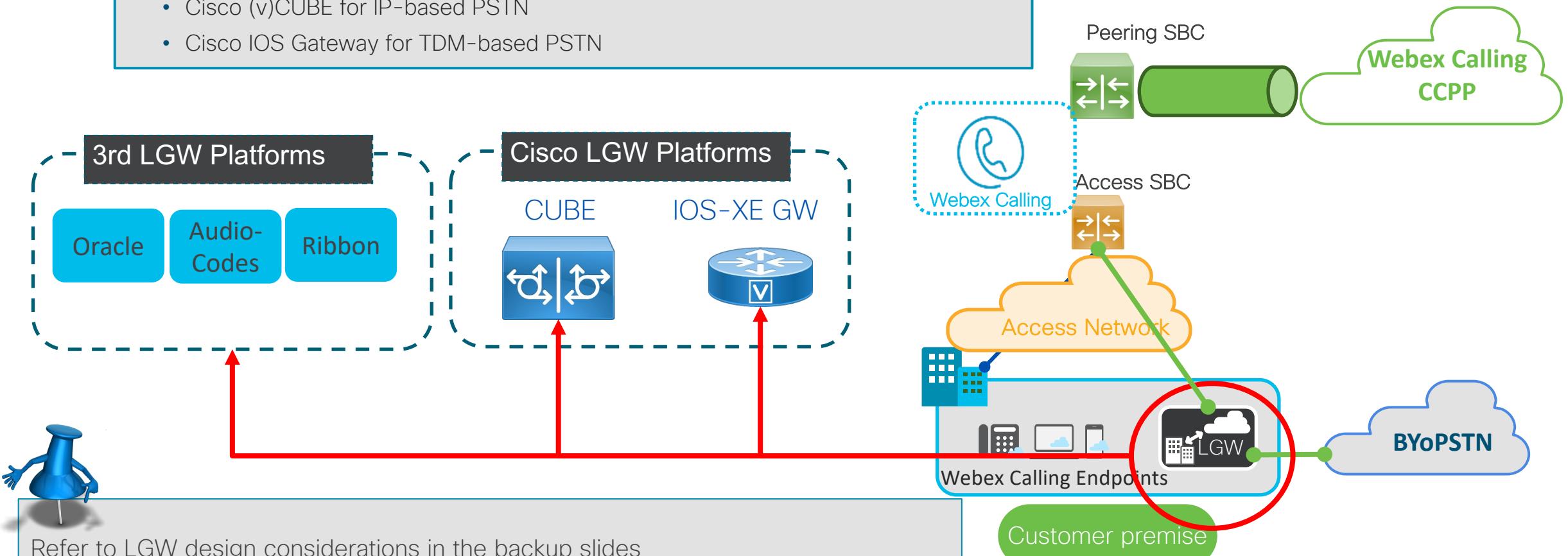


- The Local Gateway function is commonly deployed on the customer's Premise but can also be hosted by a partner.
- Endpoint registration is NOT proxied through Local Gateway, unlike CUBE Lineside. Endpoints directly register to Webex Calling over the Internet eliminating the need for endpoint survivability.



What is a Local Gateway (LGW) ?

- Provides connectivity between Webex Calling Trunk and On Premise
- LGW Platforms
 - Cisco (v)CUBE for IP-based PSTN
 - Cisco IOS Gateway for TDM-based PSTN



Refer to LGW design considerations in the backup slides

Docs:

<https://help.webex.com/en-us/article/n0xb944/Configure-Trunks,-Route-Groups,-and-Dial-Plans-for-Webex-Calling>

WxC Region & Locations – PSTN access

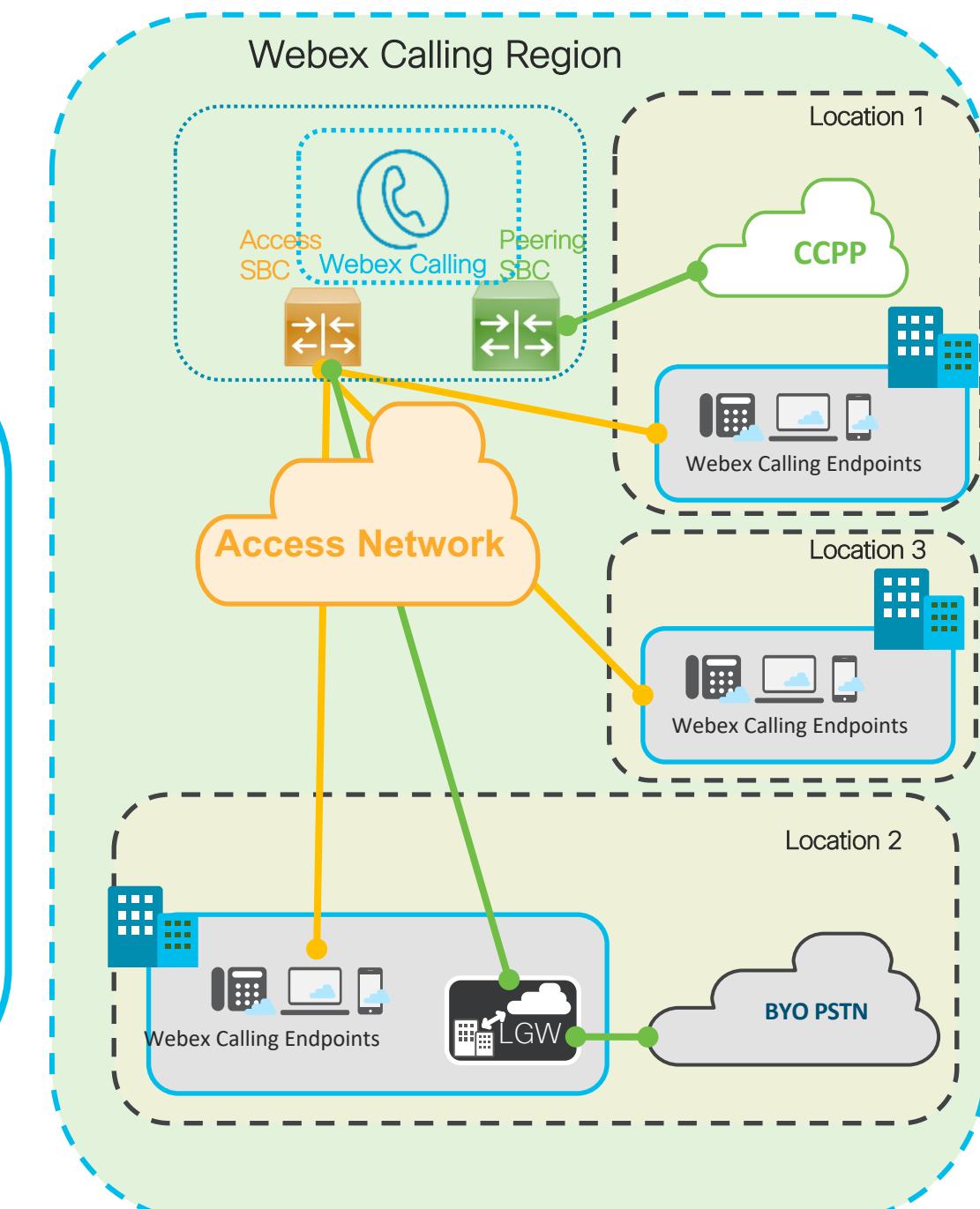


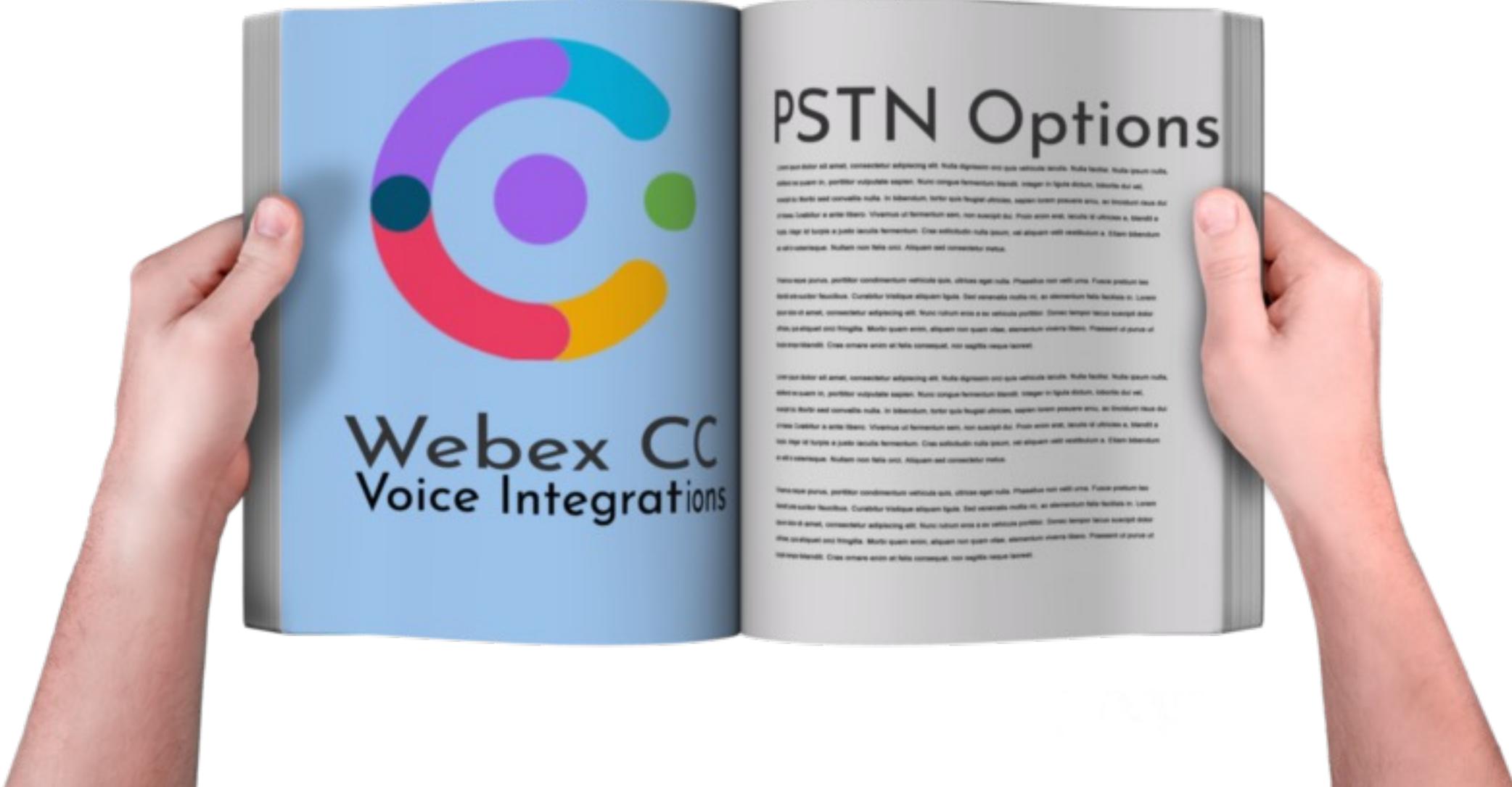
A Region can have multiple locations

A CCPP or LGW must be selected as the PSTN access method for each location

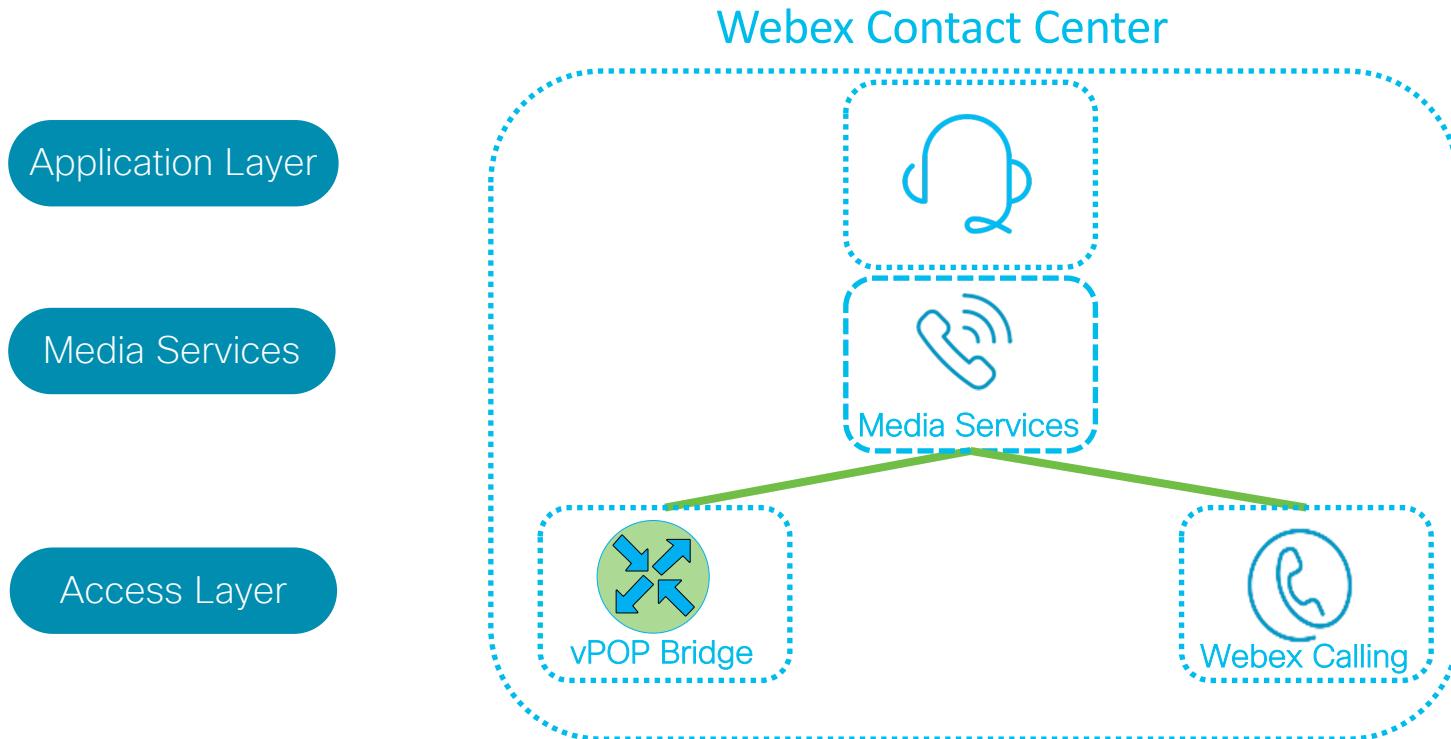
Only one PSTN access method per location

Same PSTN access method (CCPP or LGW) can be used for multiple WxC Locations

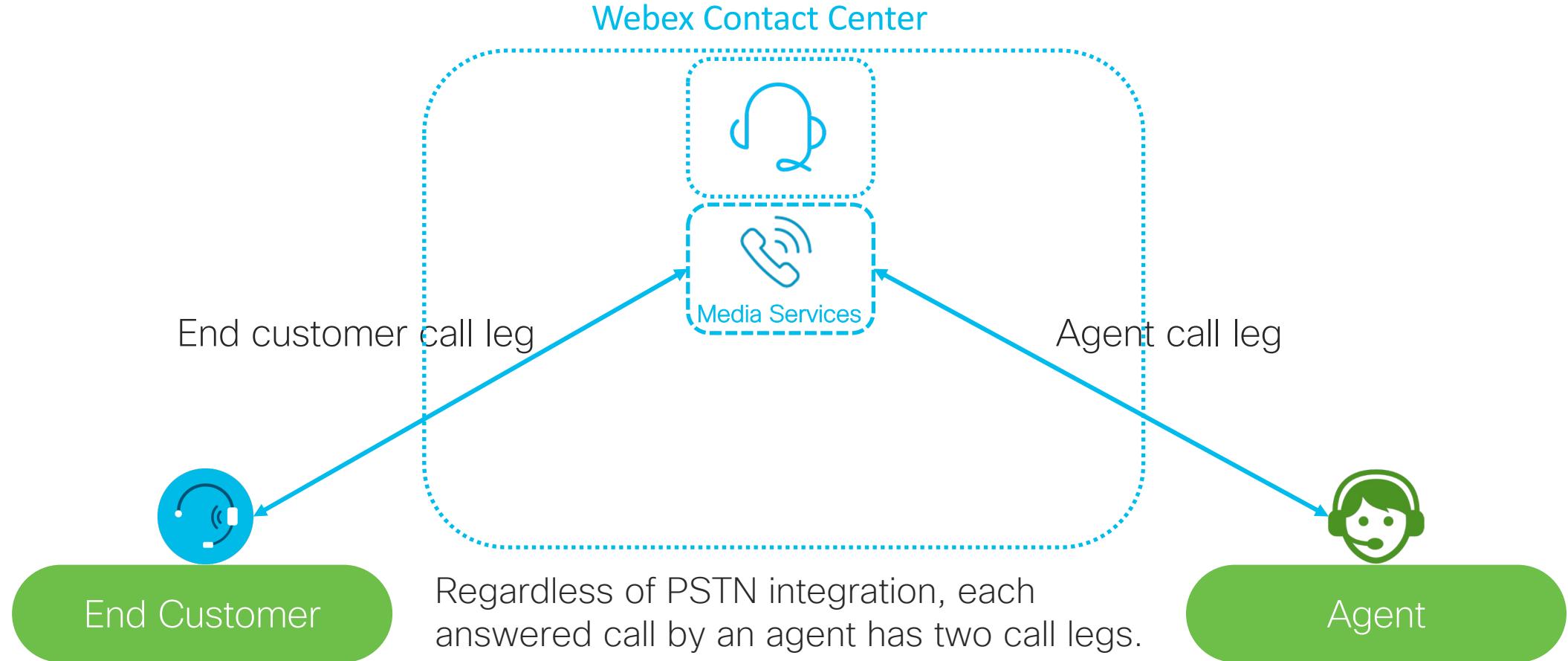




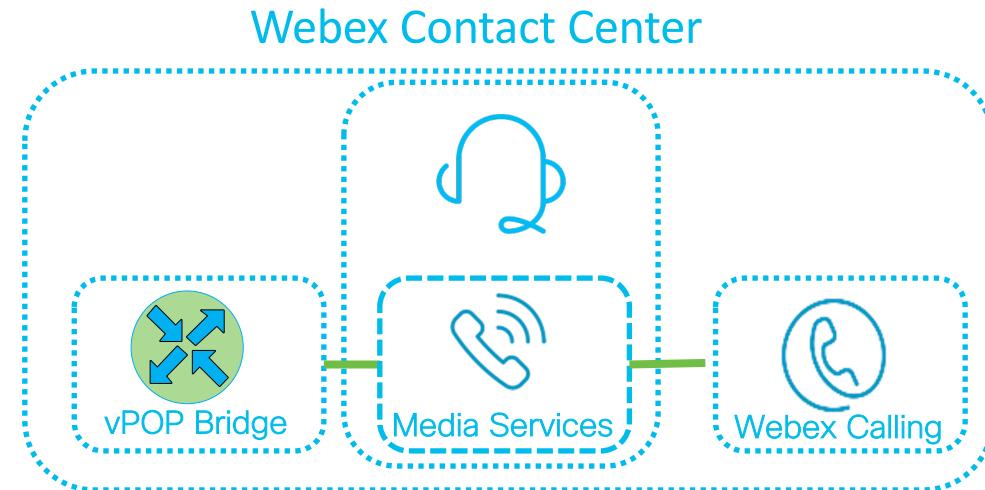
Webex Contact Center



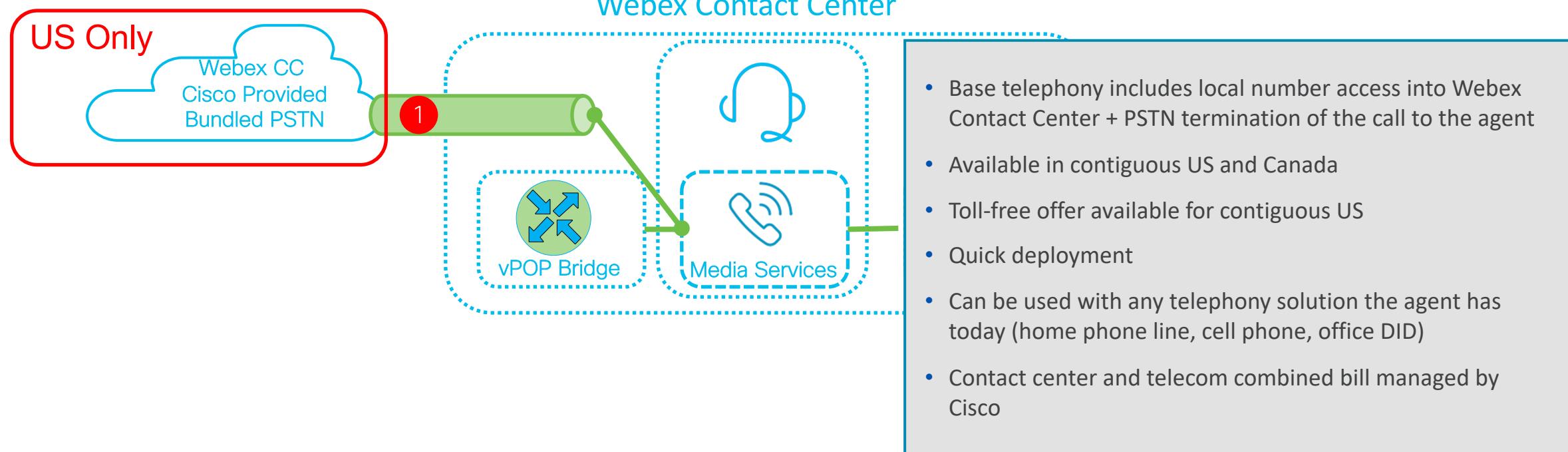
Webex Contact Center Call legs



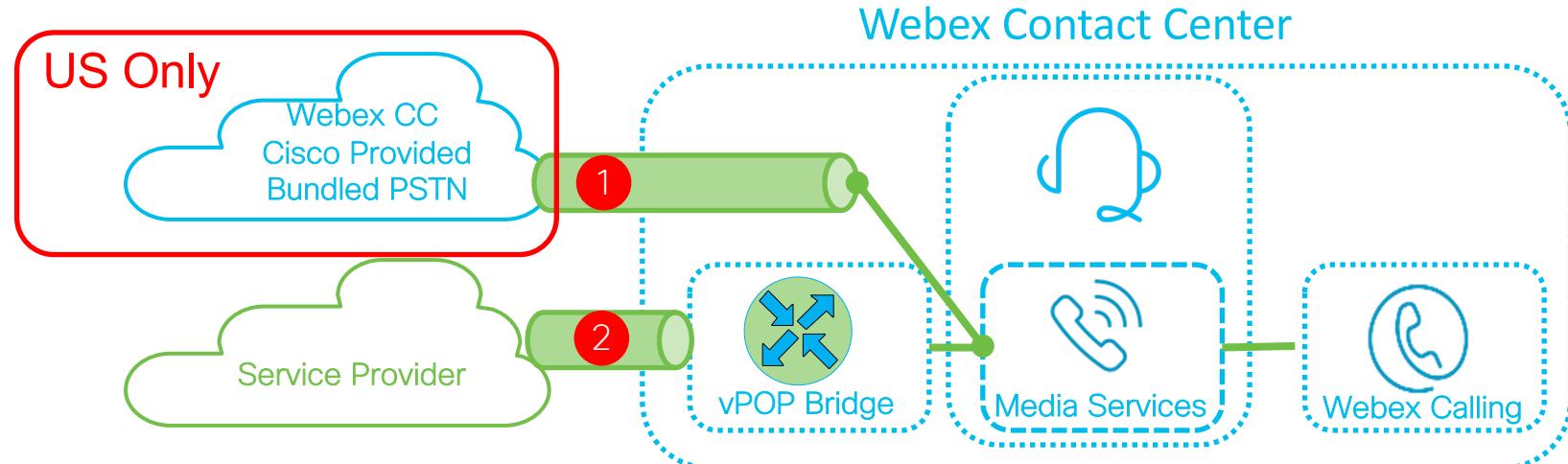
New Webex Contact Center



Webex Contact Center

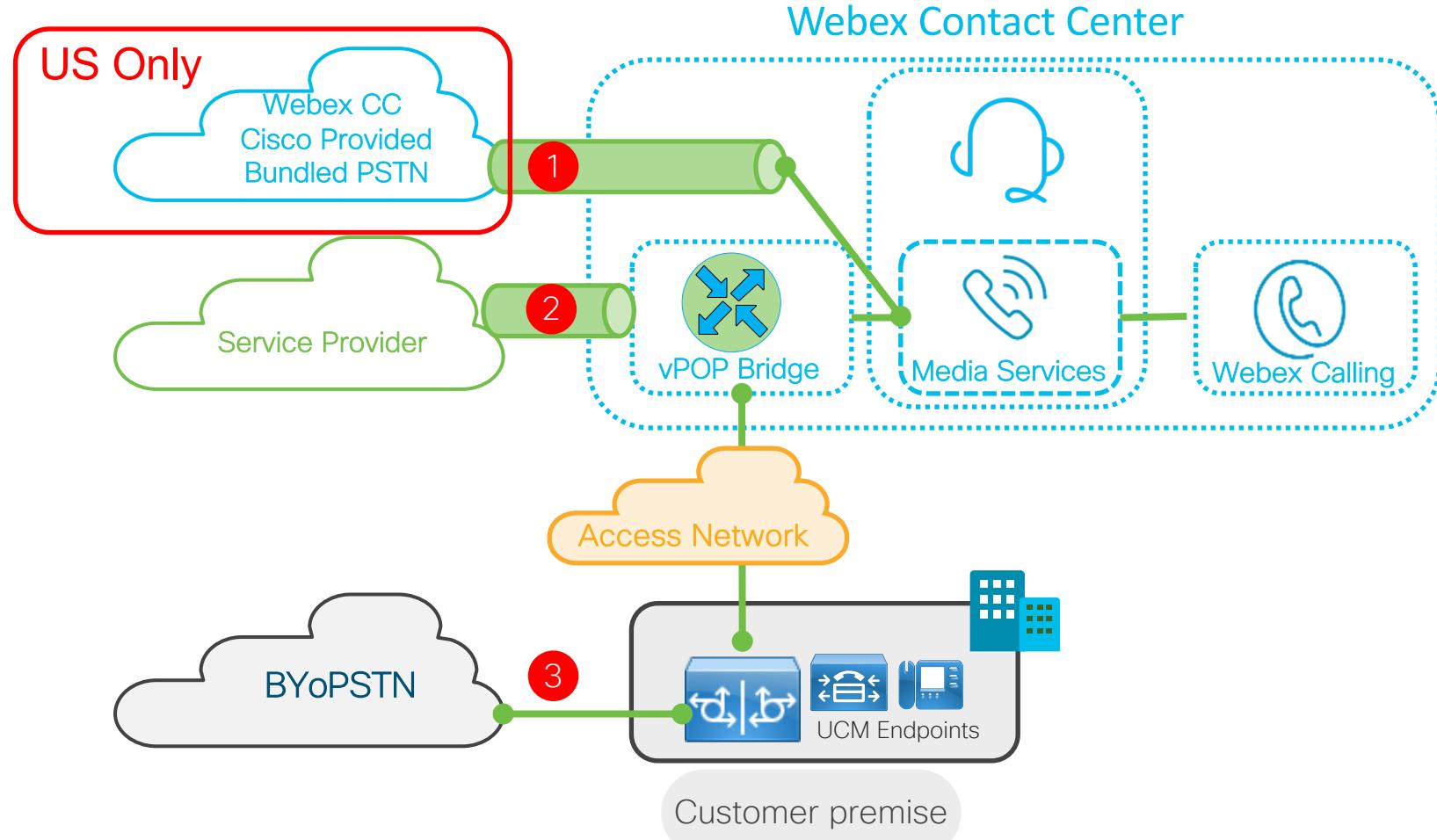


Webex Contact Center

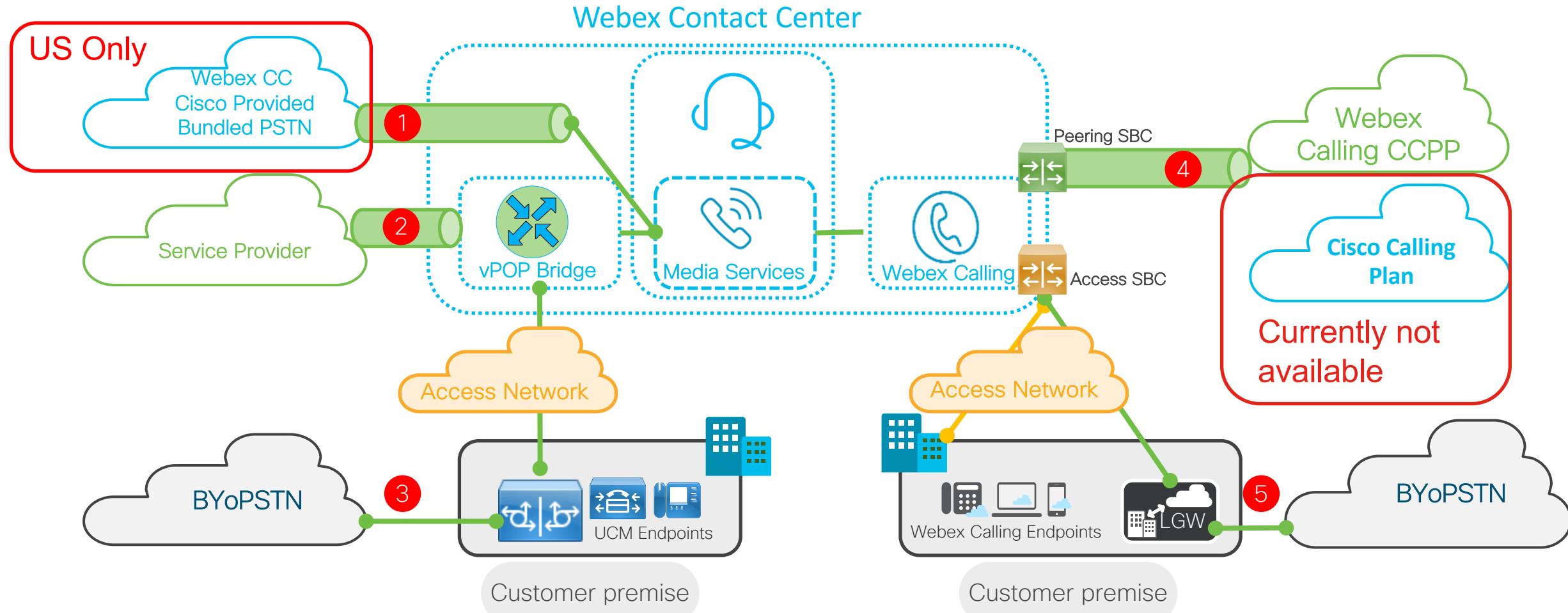


SIP Trunk from customer's CUBE to the vPOP

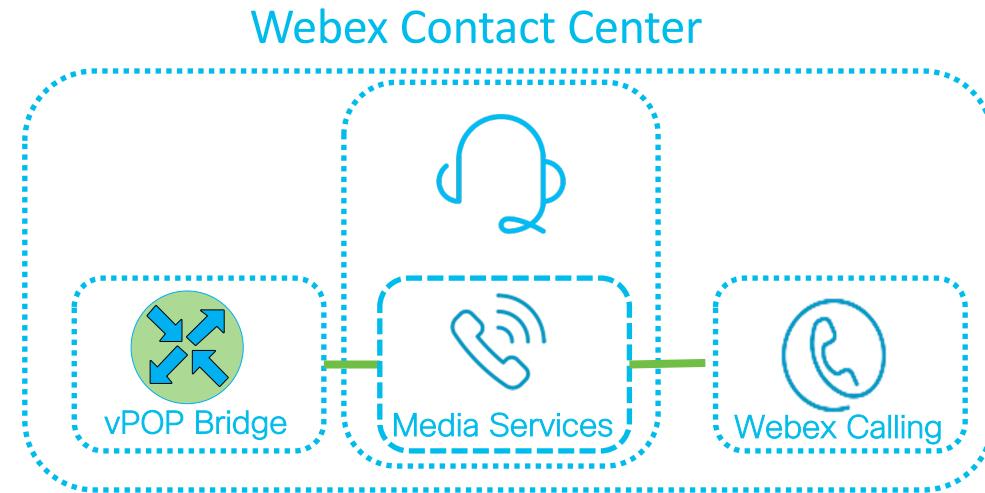
Webex Contact Center



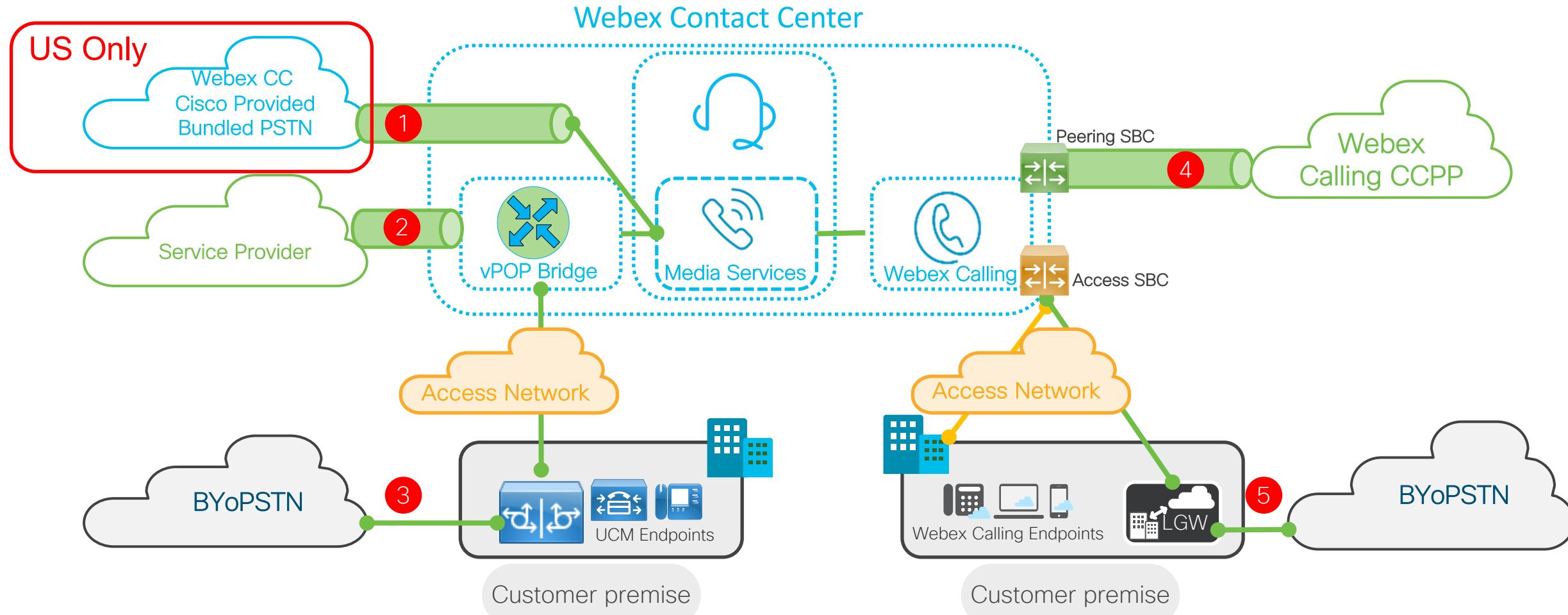
Webex Contact Center



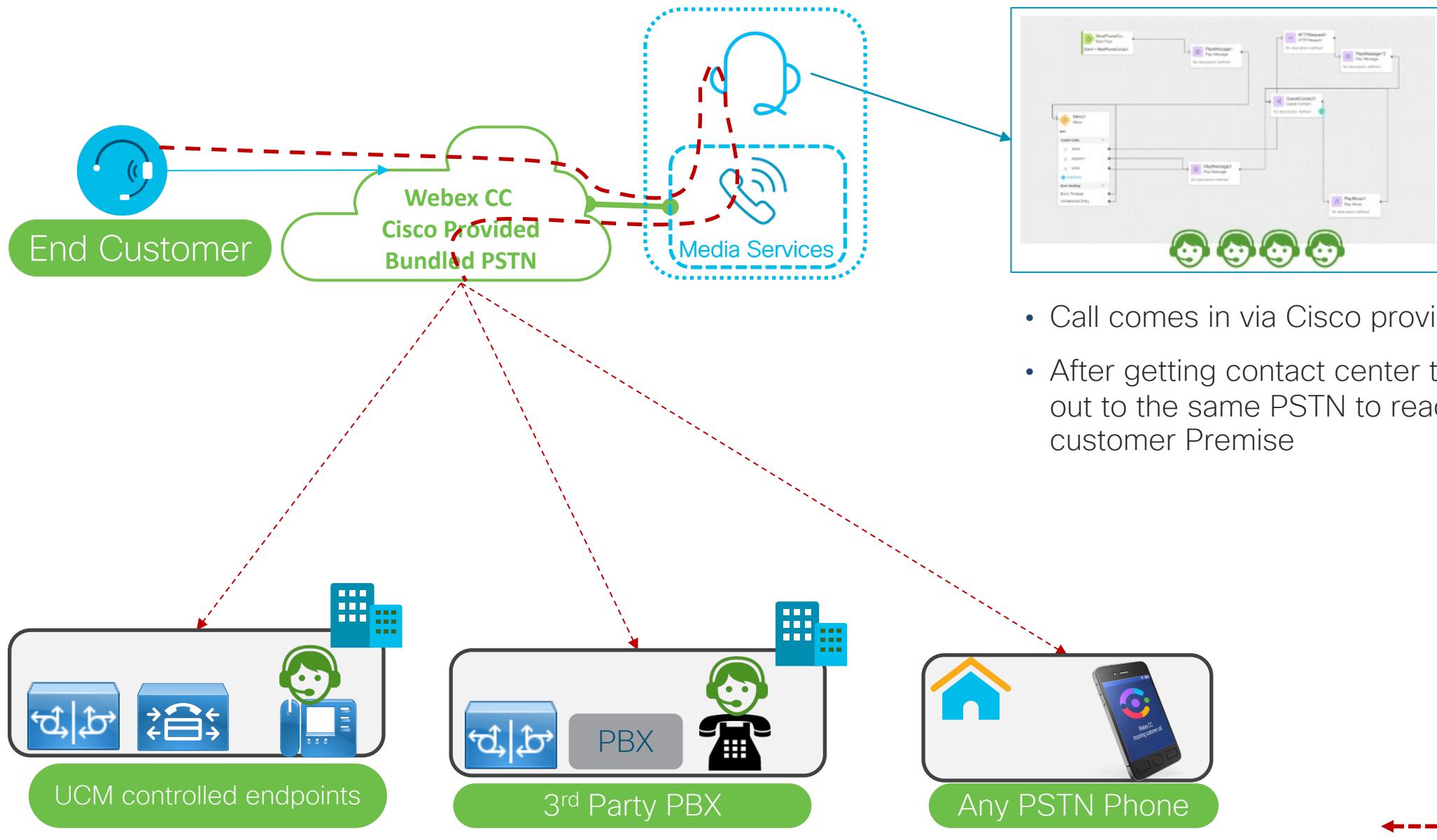
Call Flows



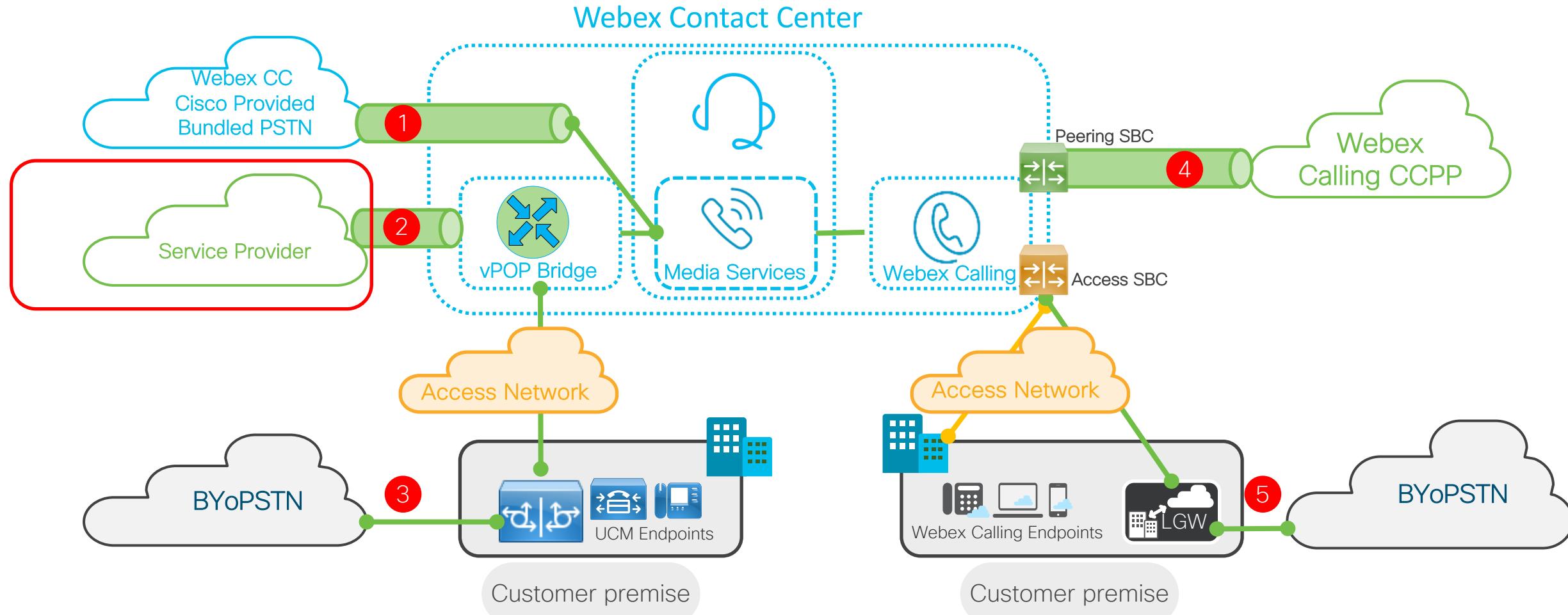
Webex Contact Center



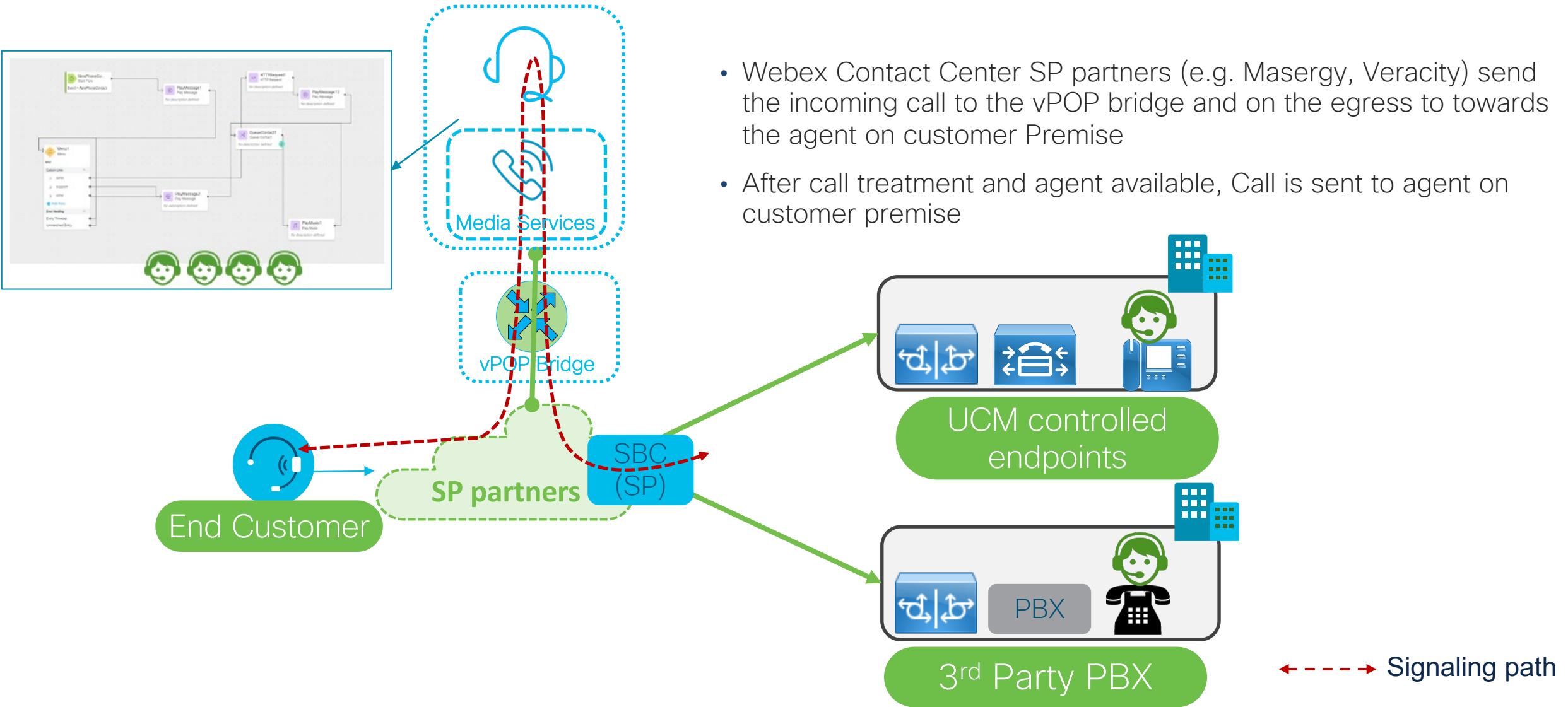
1. Cisco Provided Bundled PSTN



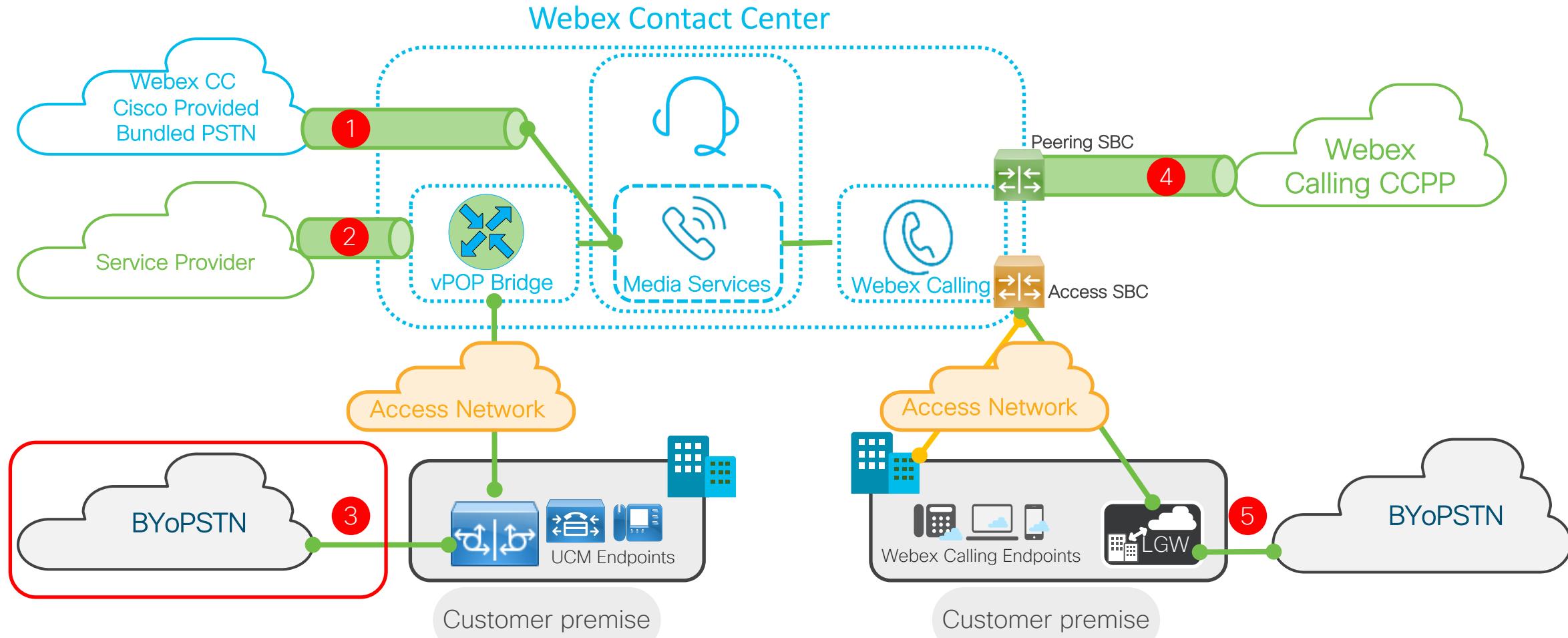
Webex Contact Center



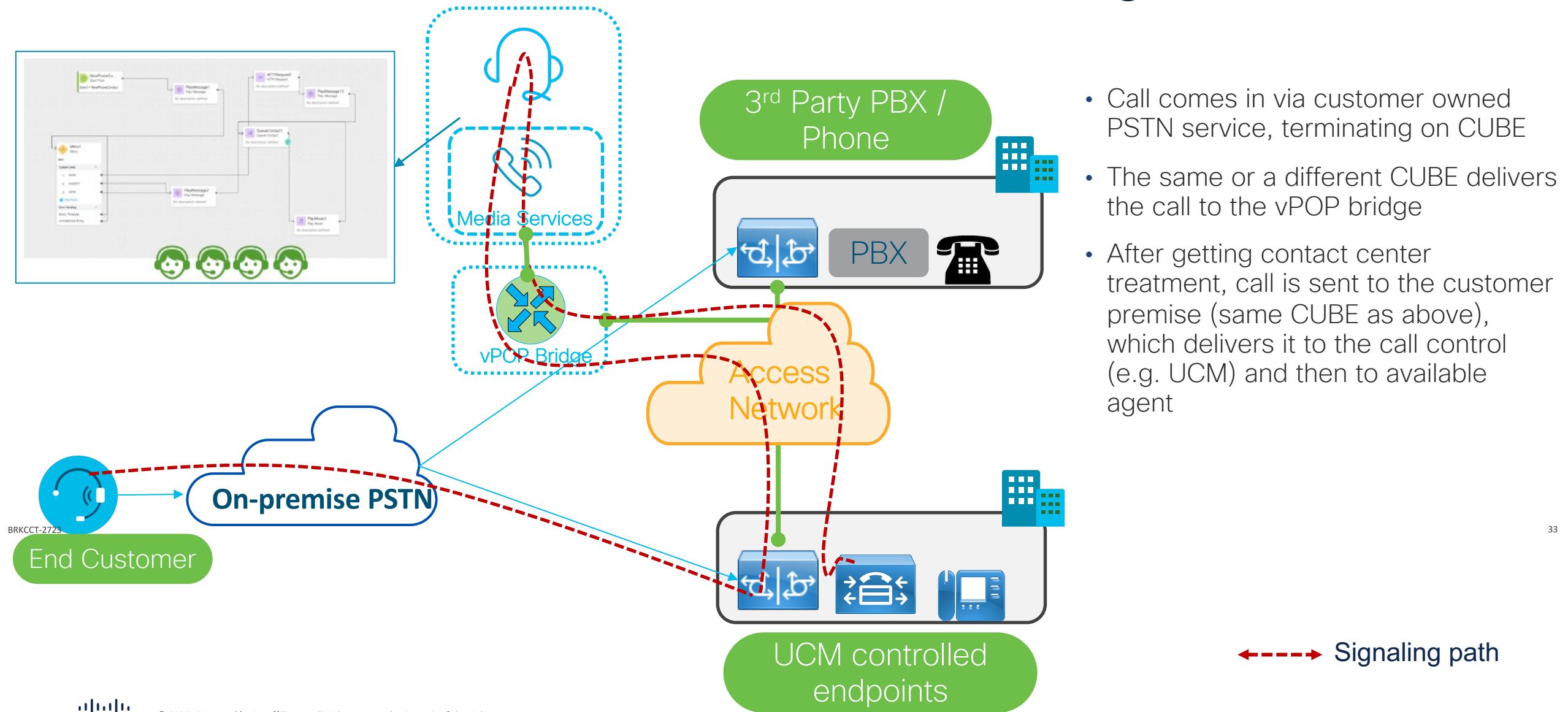
2. Service Provider PSTN via vPOP Bridge



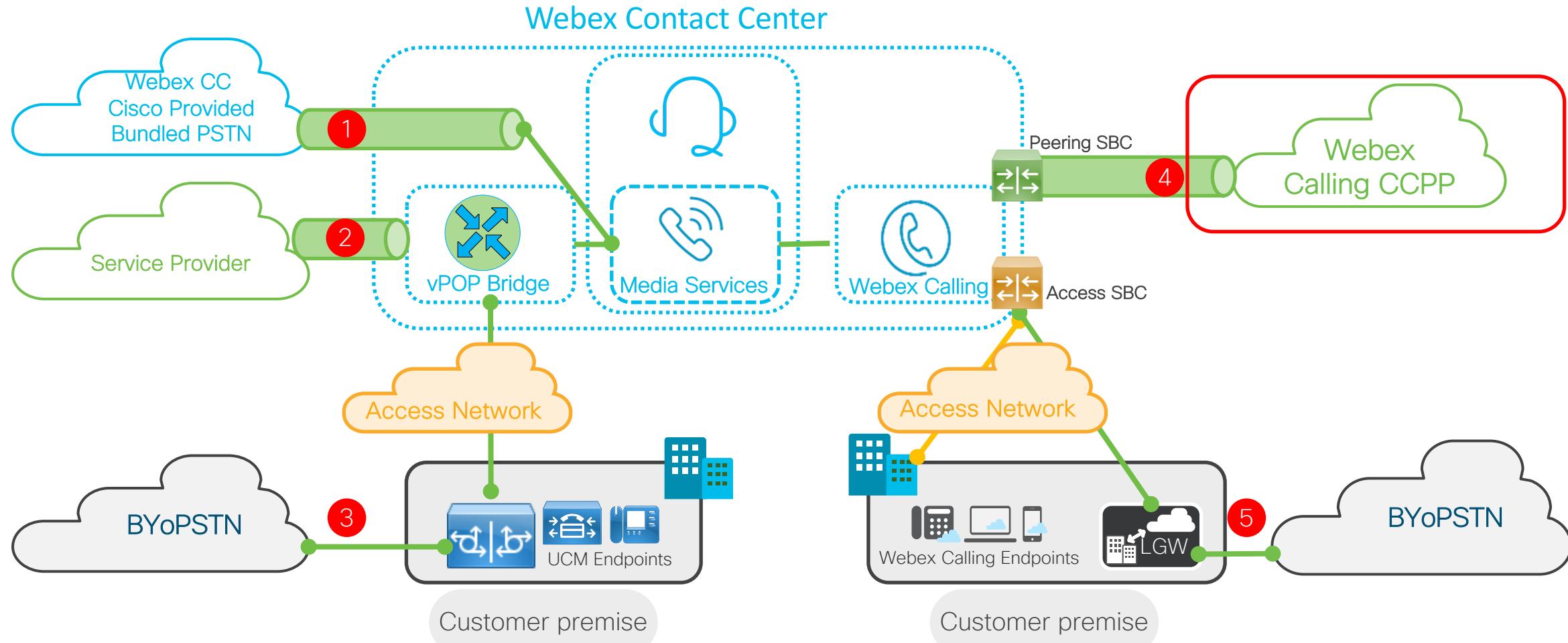
Webex Contact Center



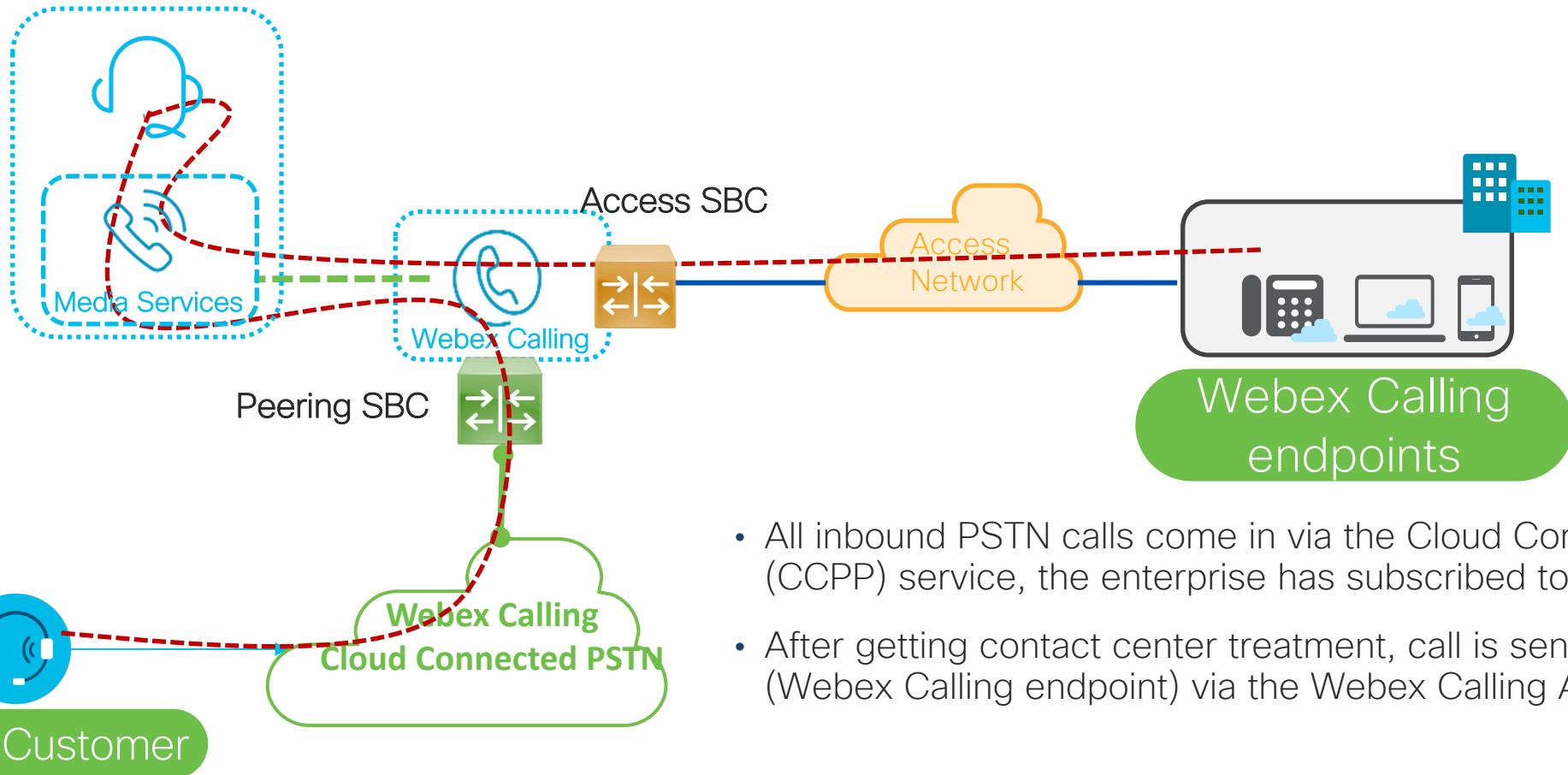
3. On-Premise PSTN to the vPOP Bridge



Webex Contact Center



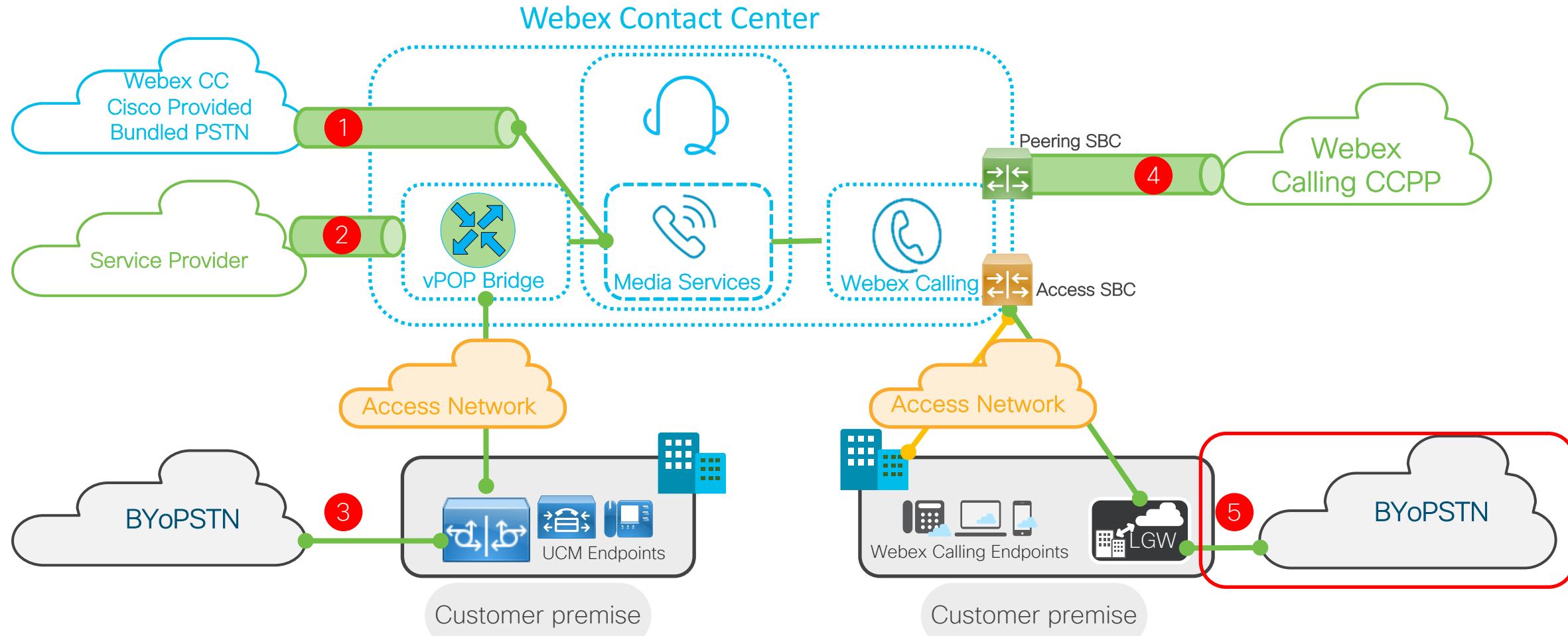
4. Webex Calling with Cloud Connected PSTN (CCPP)



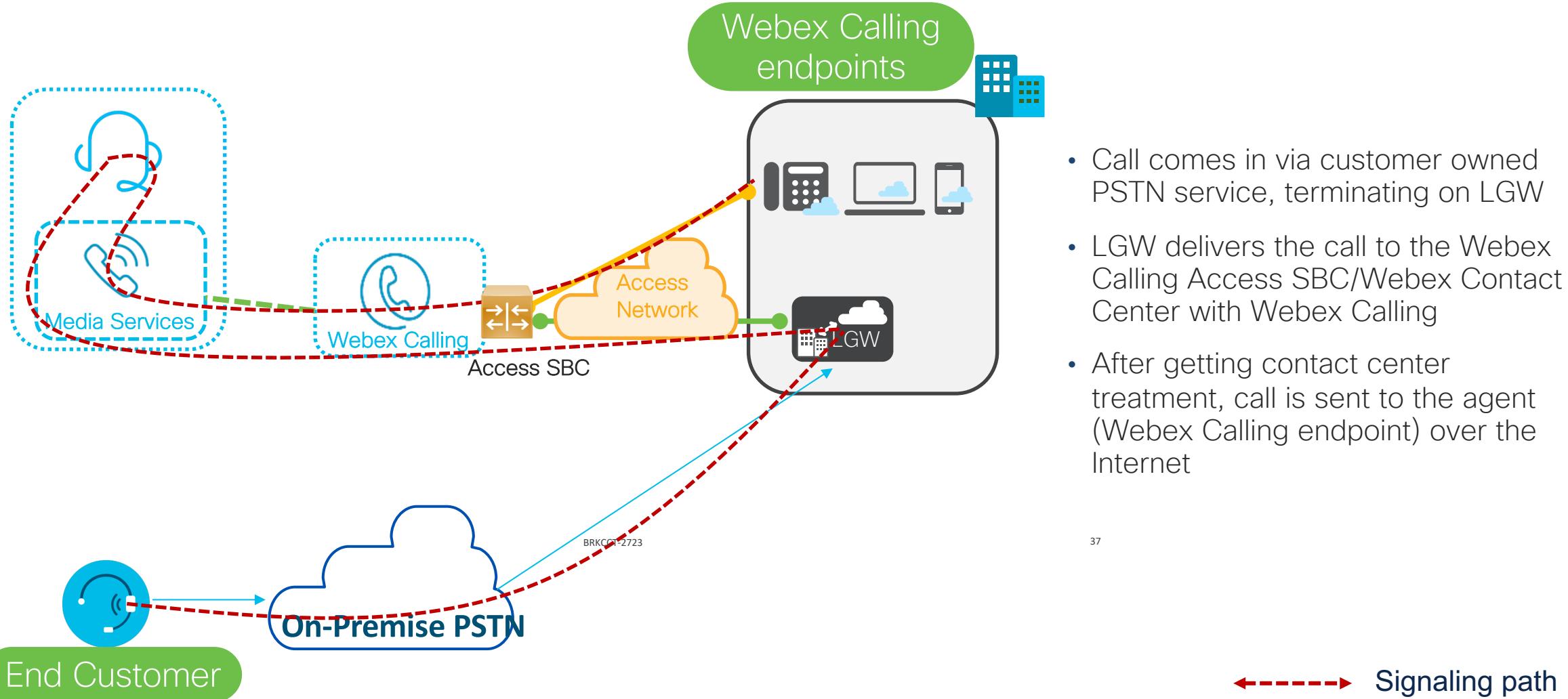
- All inbound PSTN calls come in via the Cloud Connected PSTN (CCPP) service, the enterprise has subscribed to
- After getting contact center treatment, call is sent to the agent (Webex Calling endpoint) via the Webex Calling Access SBC (OTT)

←→ Signaling path

Webex Contact Center



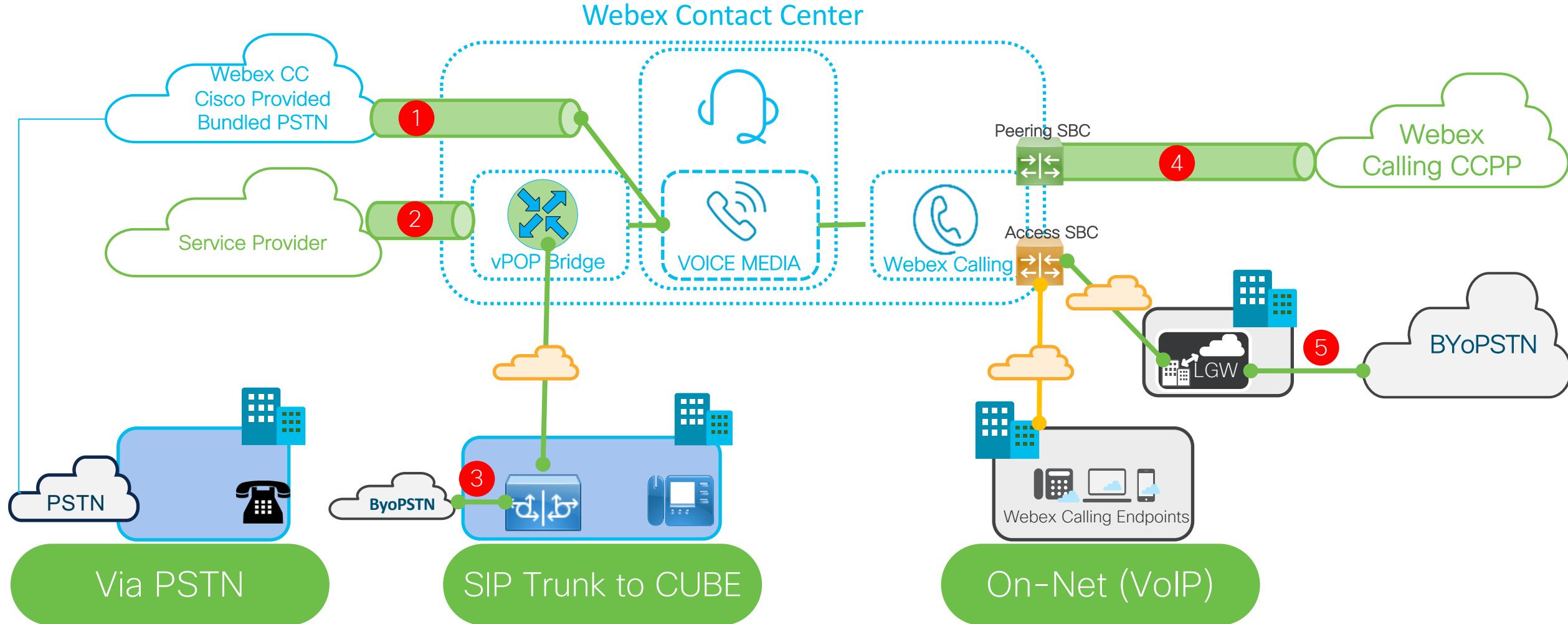
5. Webex Calling with Premise-based PSTN



Agent Call Delivery Options

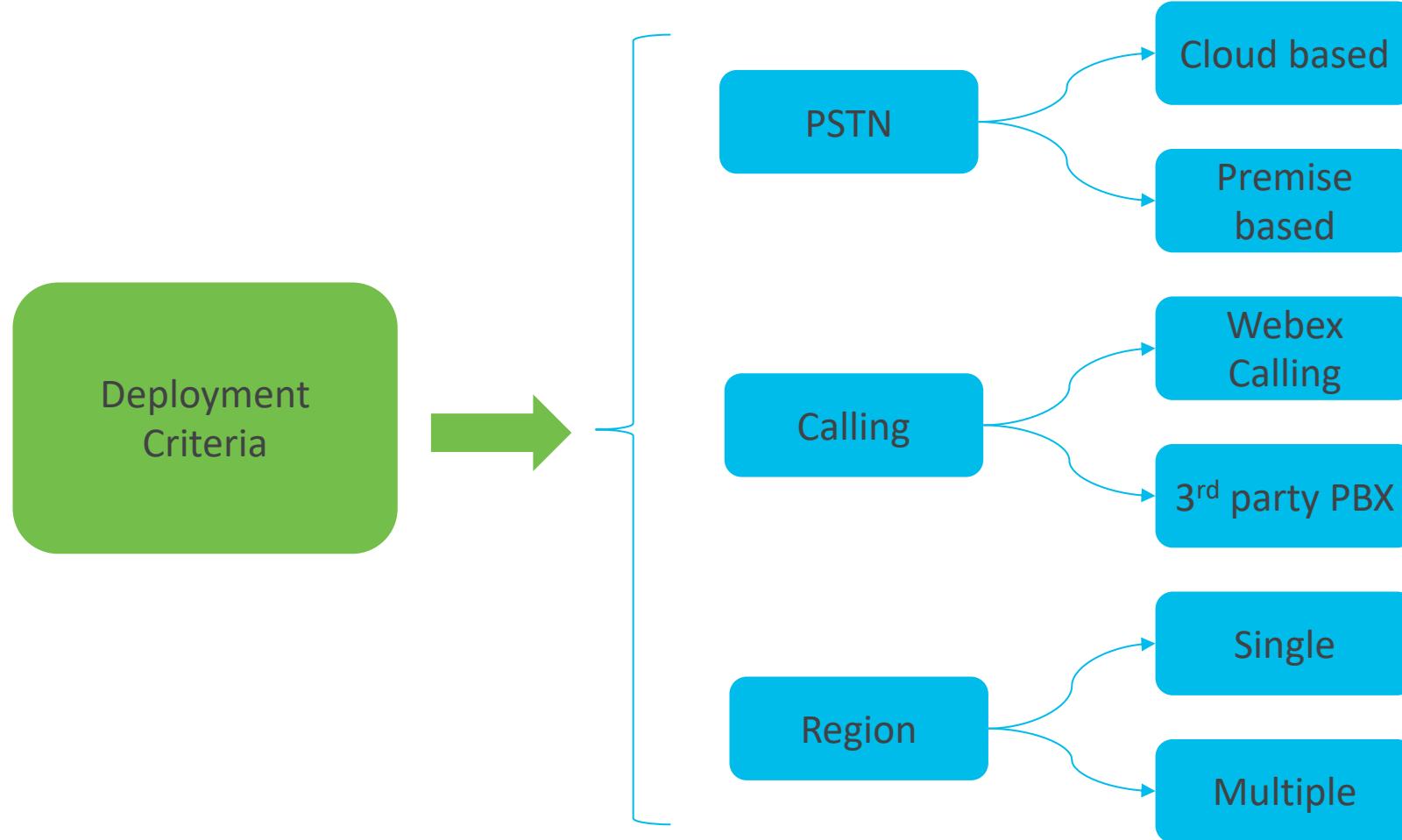


Agent call delivery options

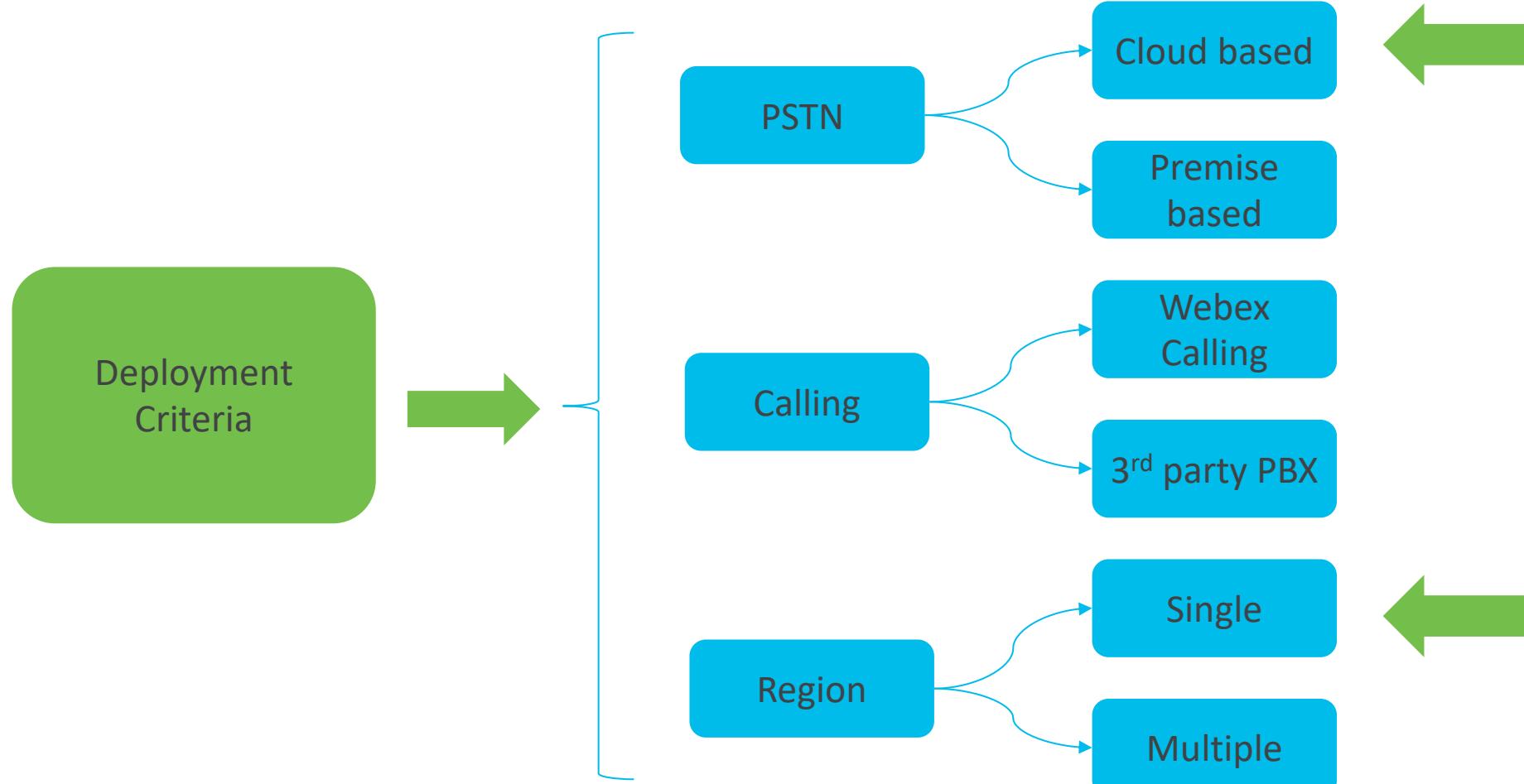


How to select PSTN option?

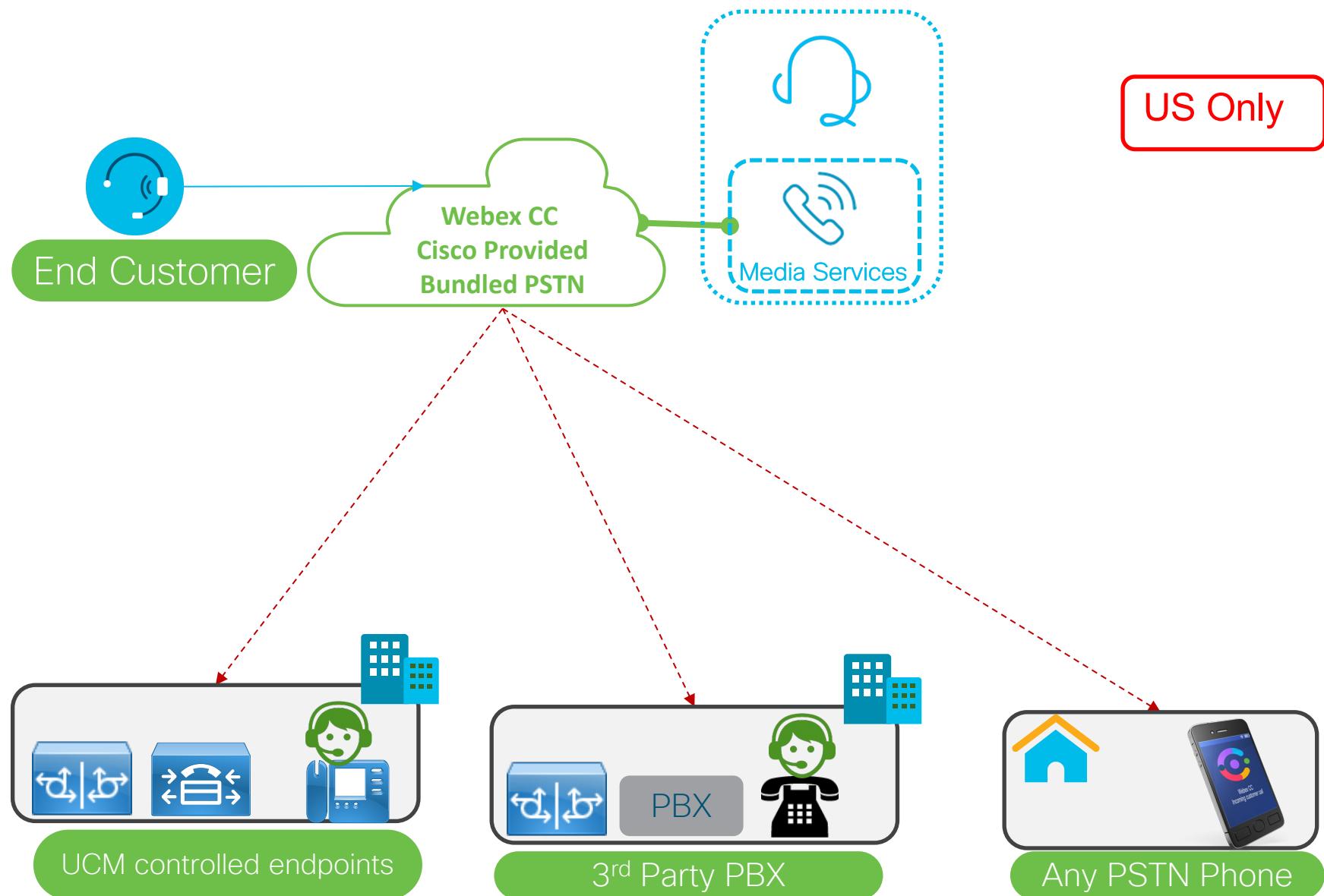
Deployment Criteria



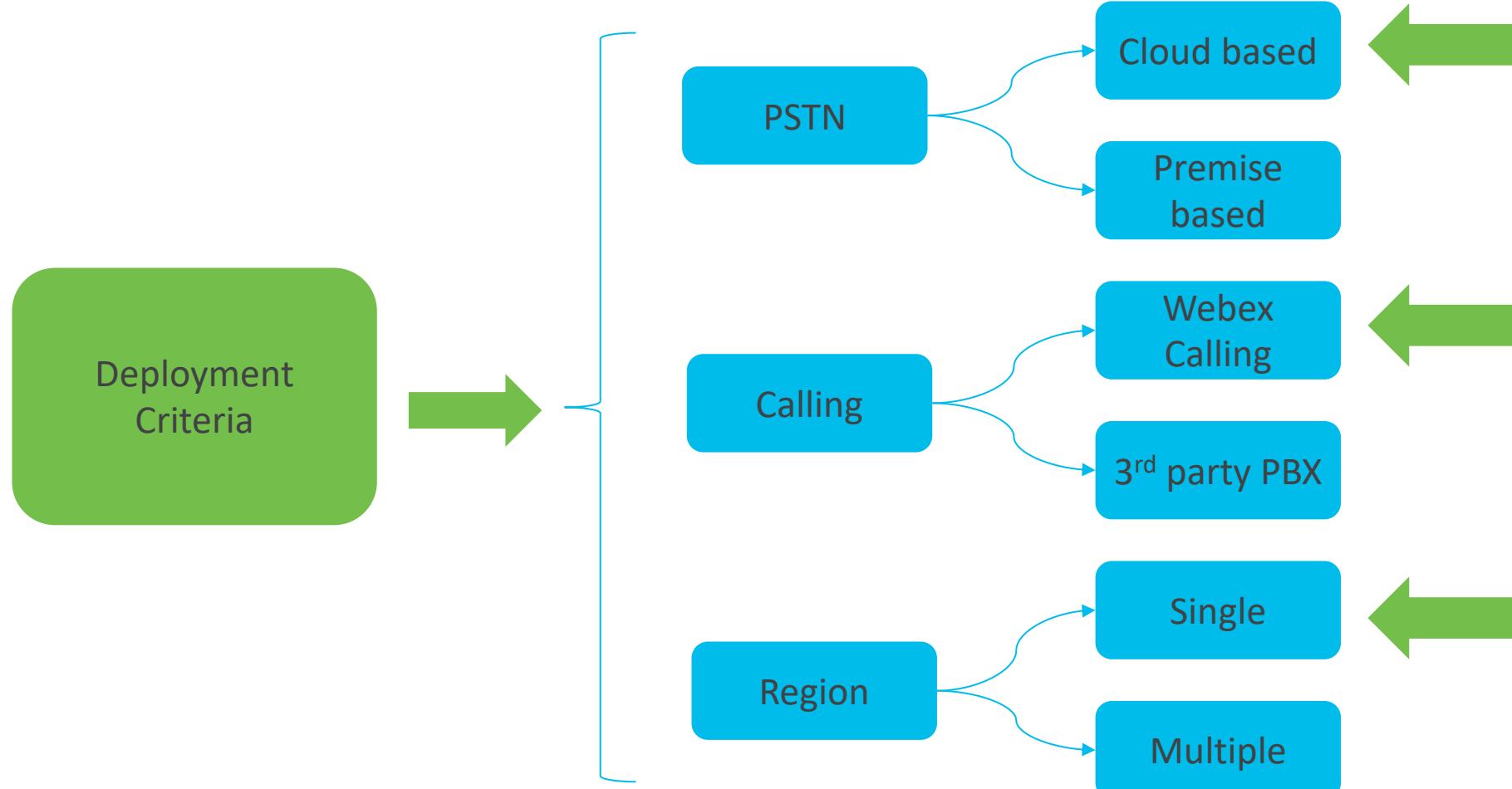
Deployment Criteria



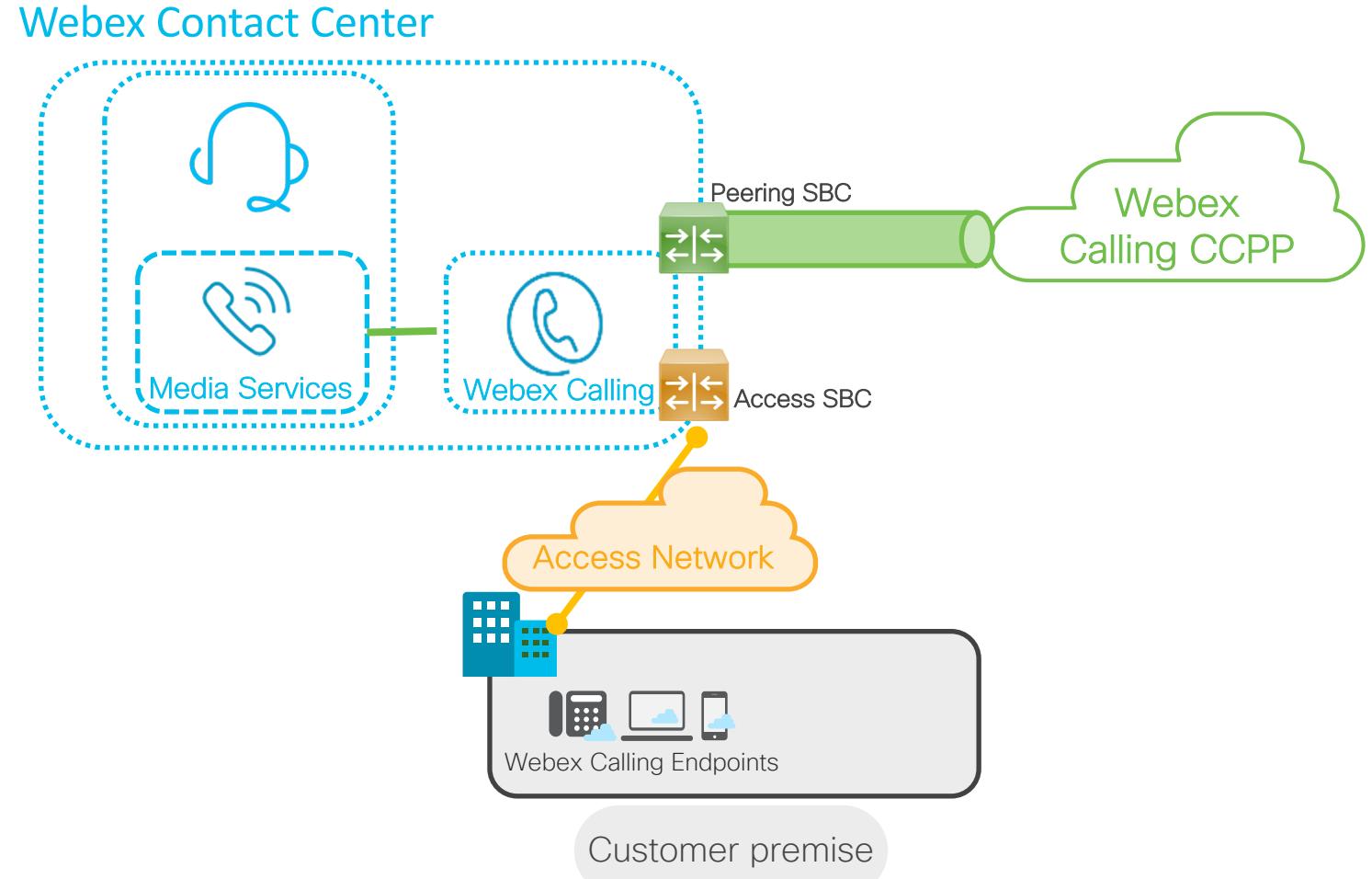
Cisco Provided Bundled PSTN



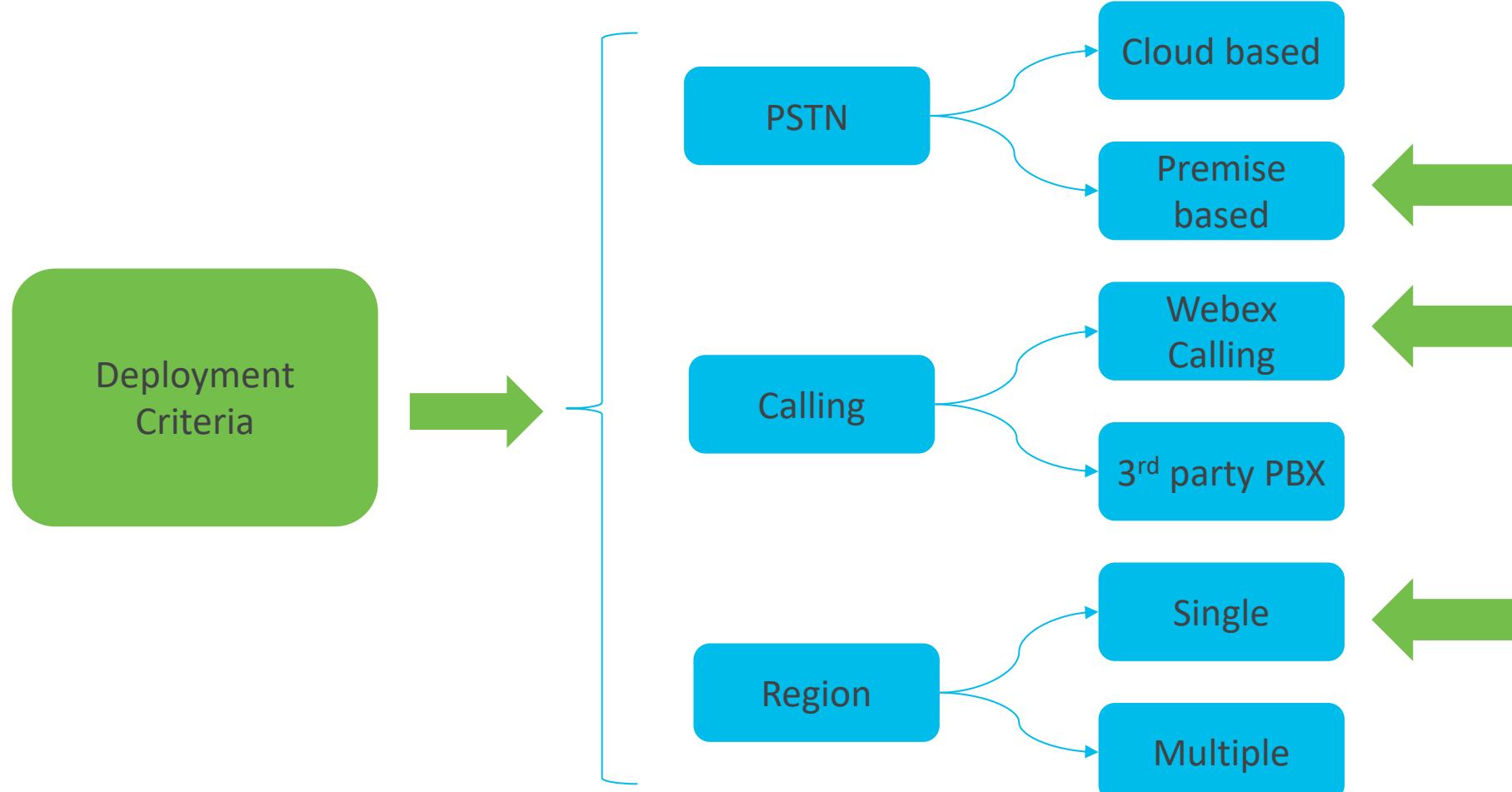
Deployment Criteria



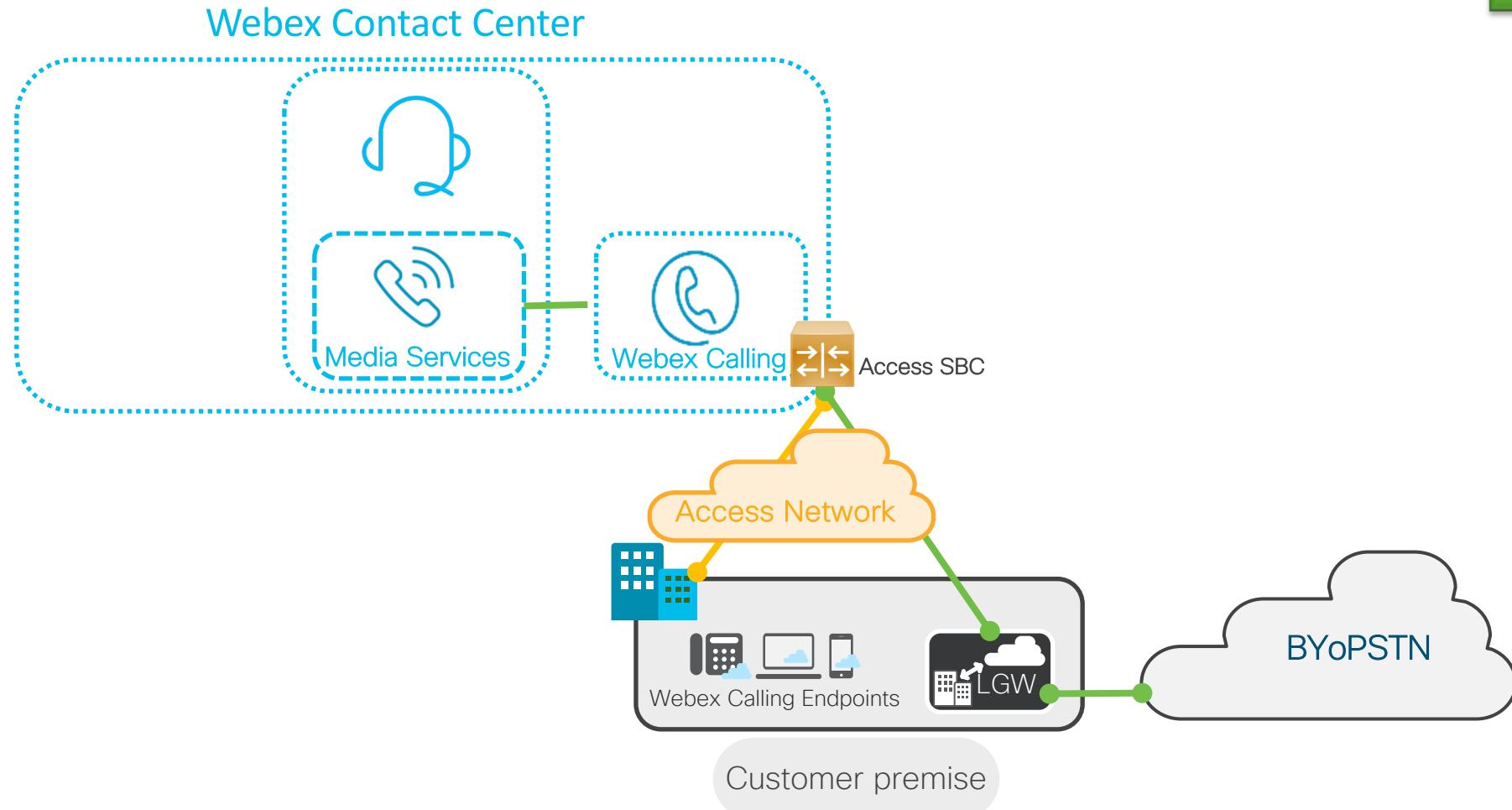
Webex Contact Center – Model 2



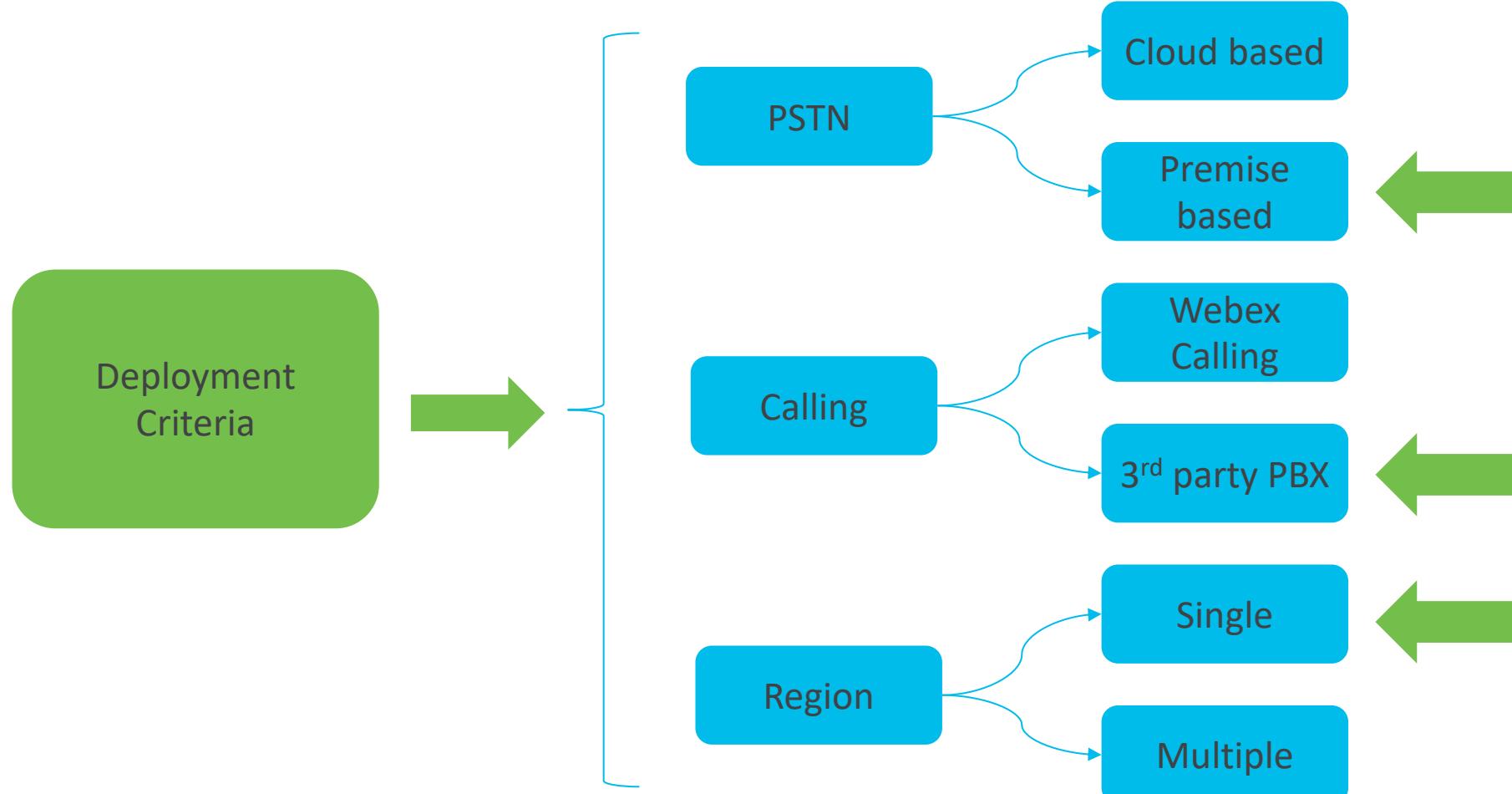
Deployment Criteria



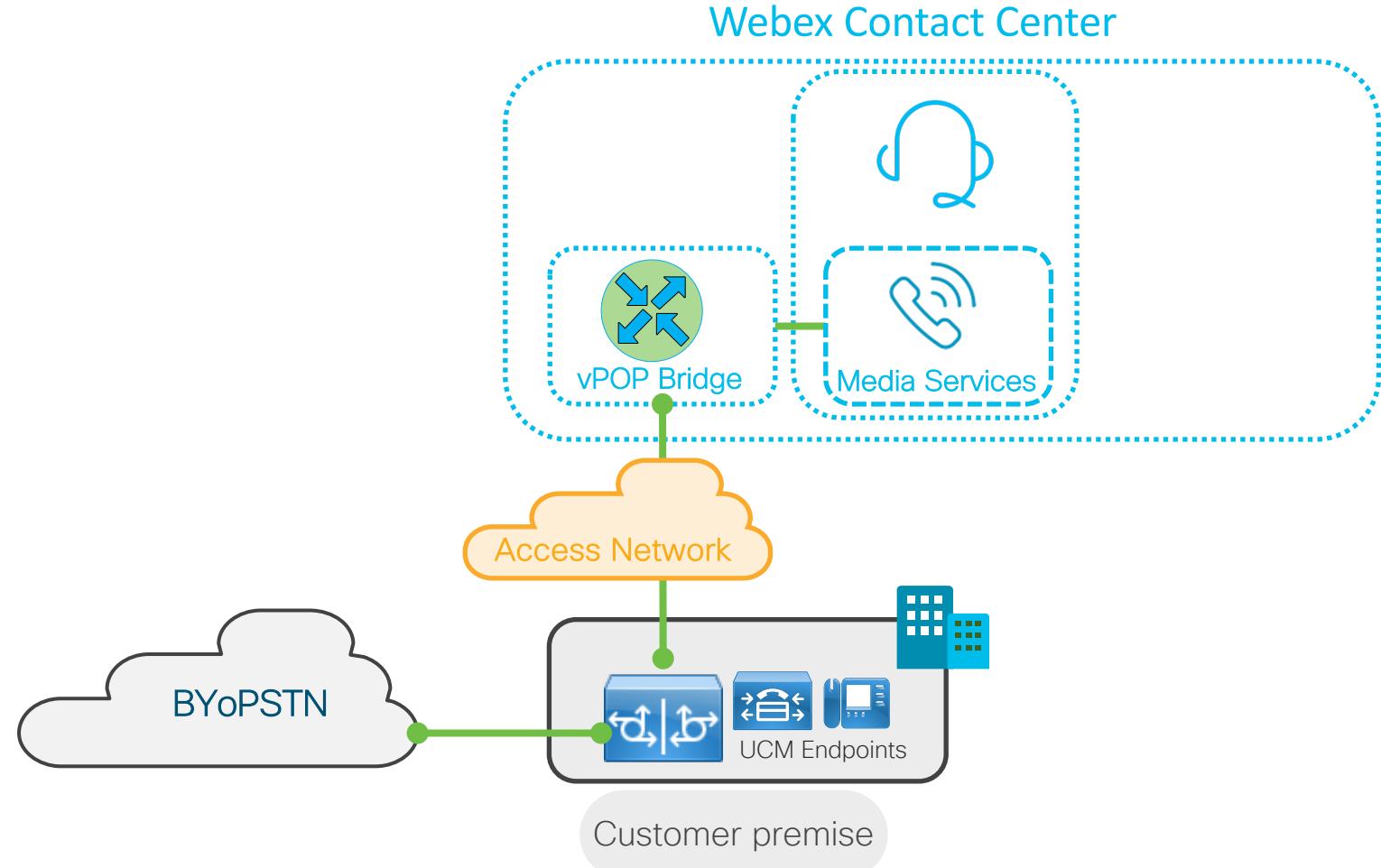
Webex Contact Center



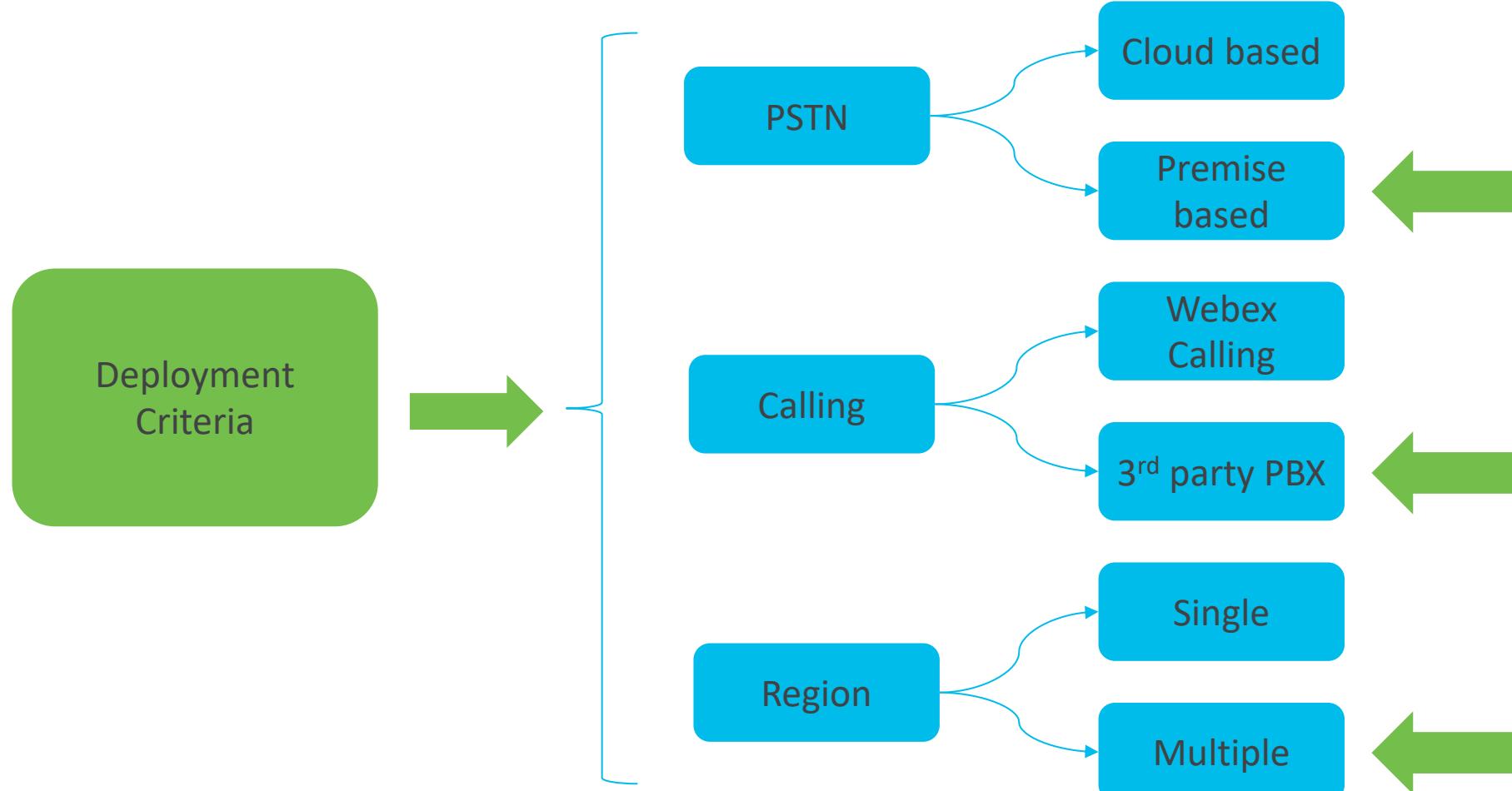
Deployment Criteria



Webex Contact Center

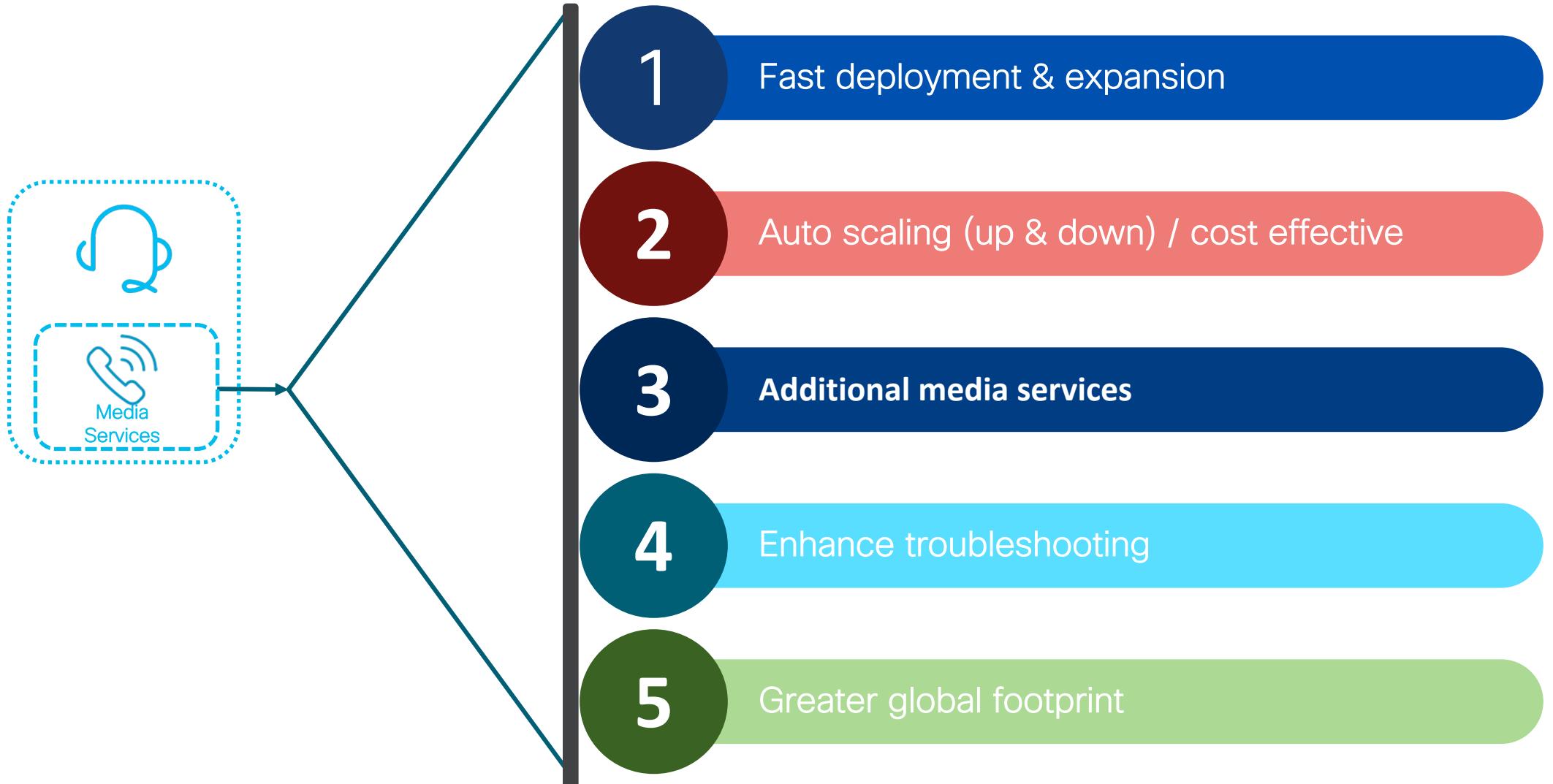


Deployment Criteria



New Media Services Layer

Why New Media Services Layer?



New Media Layer / Goals

1

Full Feature parity to existing media layer

2

Enhance telemetry, alerting, and troubleshooting

3

Simplified upgrade to new media layer

4

Additional media services

WebRTC

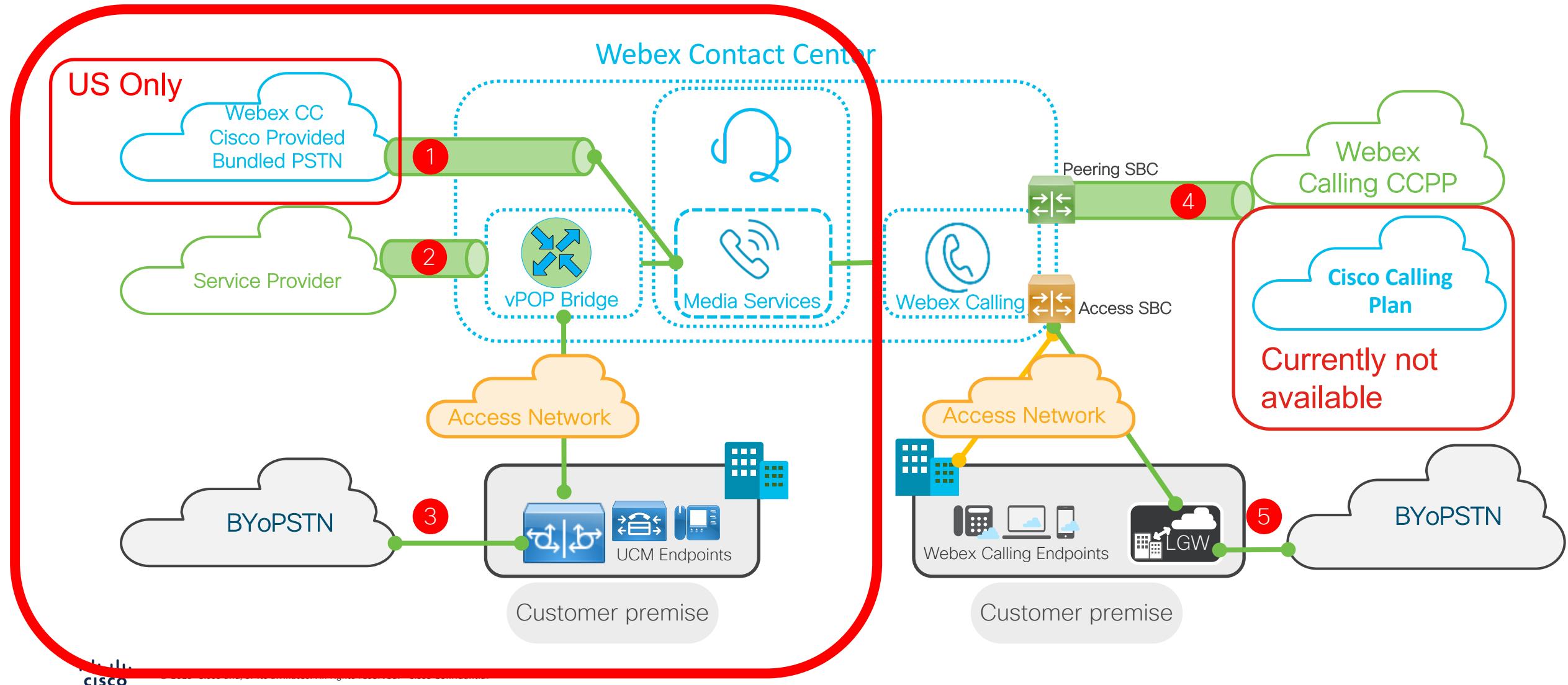
Enable AI Universal Harness

Background noise removal

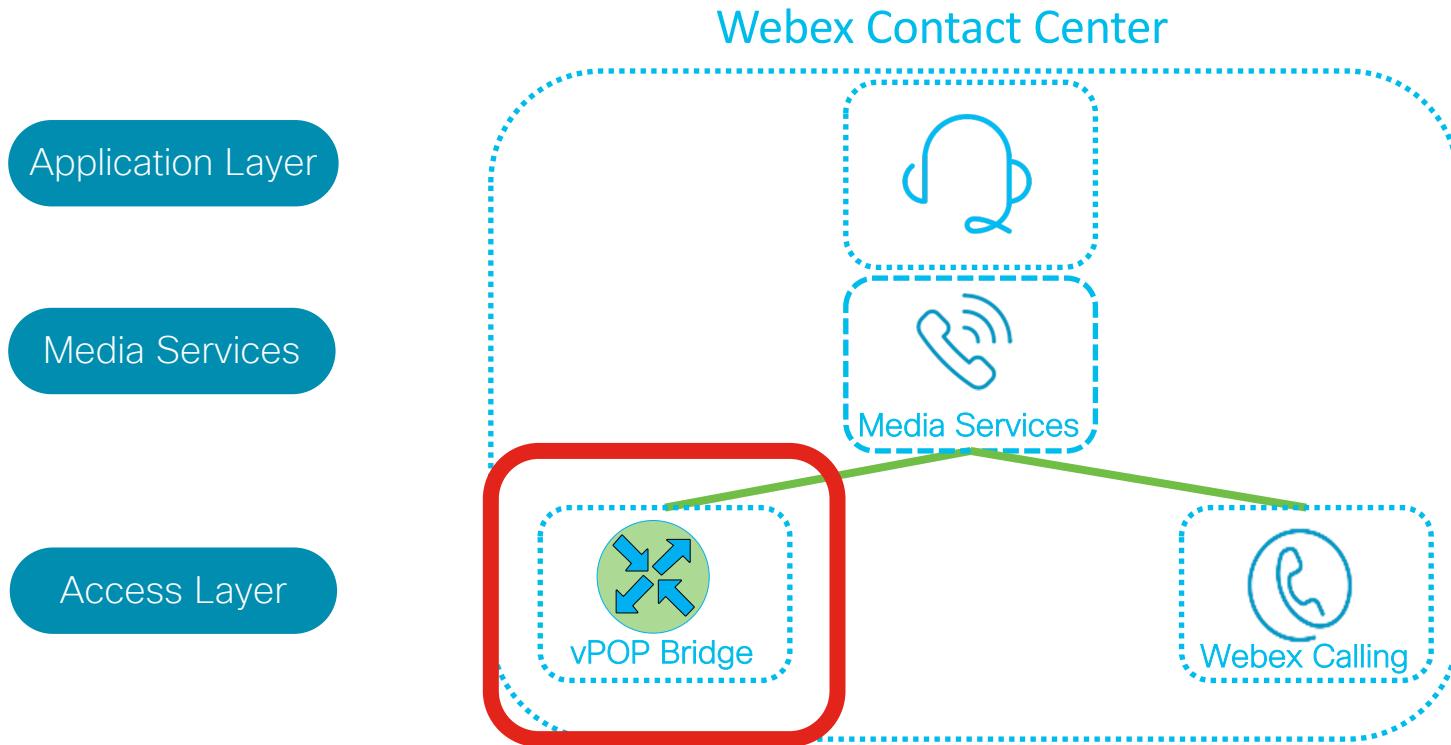
5

Greater global footprint

Webex Contact Center

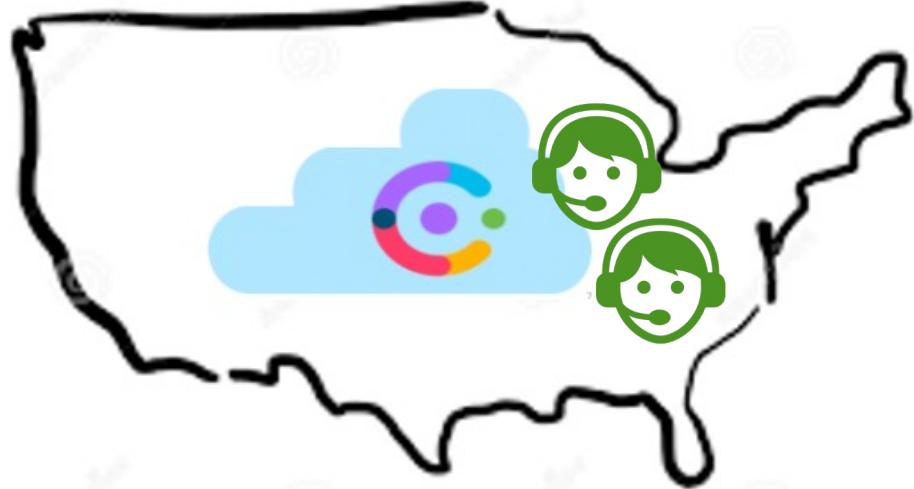


Webex Contact Center



Home Region & Remote Regions

US



EMEA

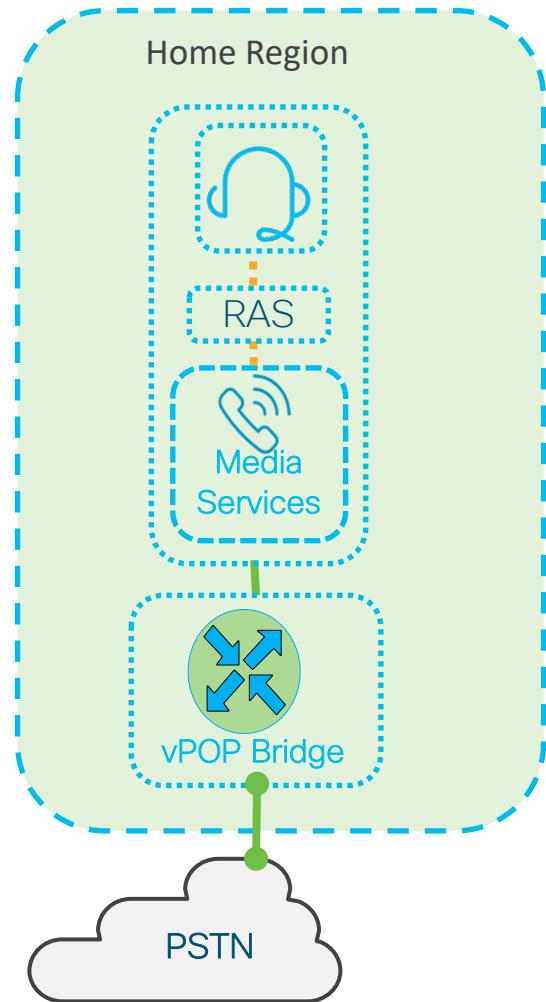


Home Region: Where a Customer's data is provisioned.

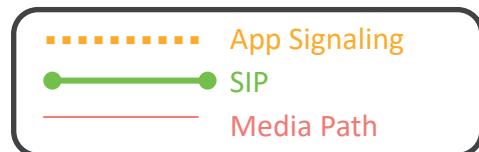
Remote Region: If a Customer has a Location outside the Customer's Home Region, it is part of a Remote Region.

Tenant & Regions

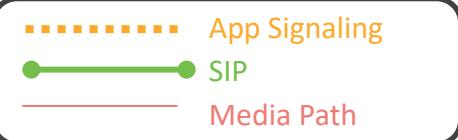
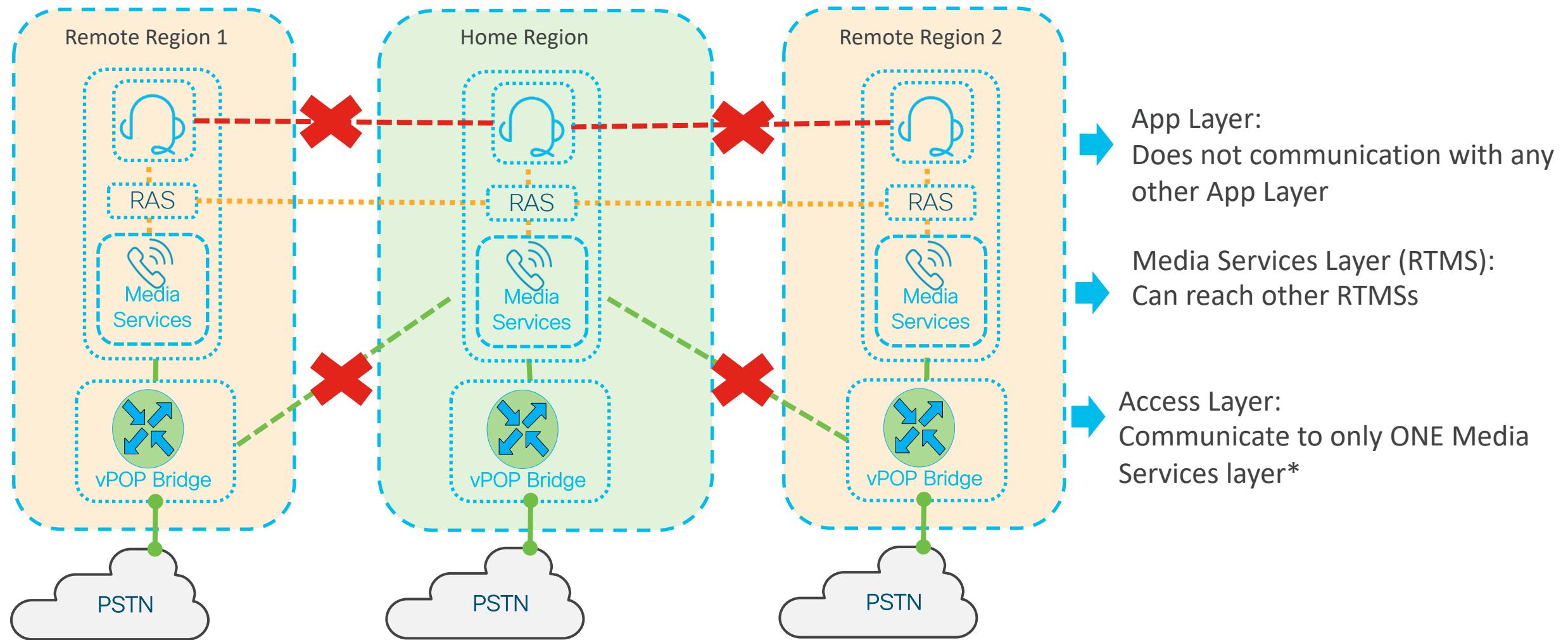
Single Region



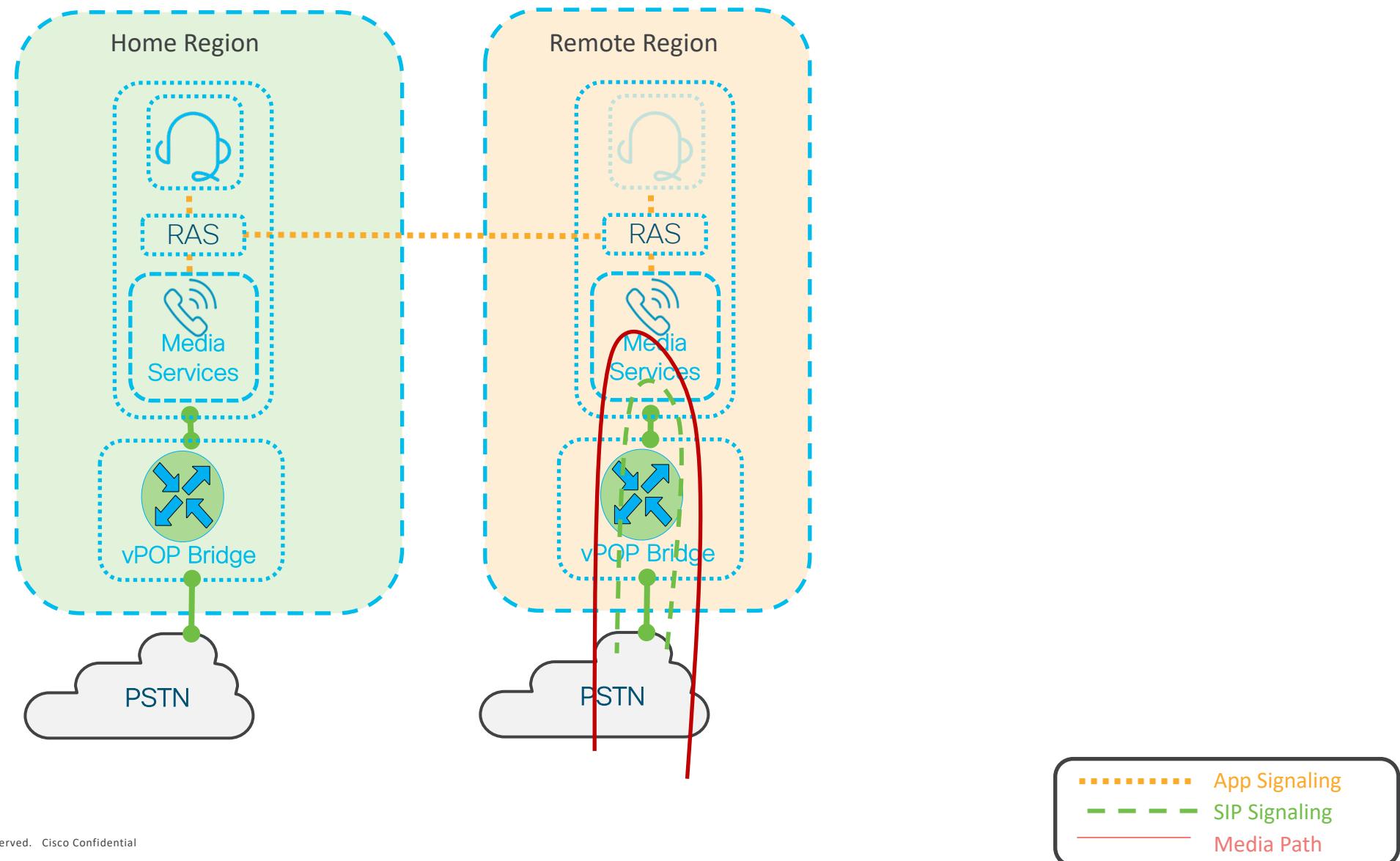
- App Layer:
Per tenant only One region (home region)
- Media Services Layer (RTMS):
One or more region per tenant
Keeps media & SIP signaling local in its region
- Access Layer:
One or more region per tenant



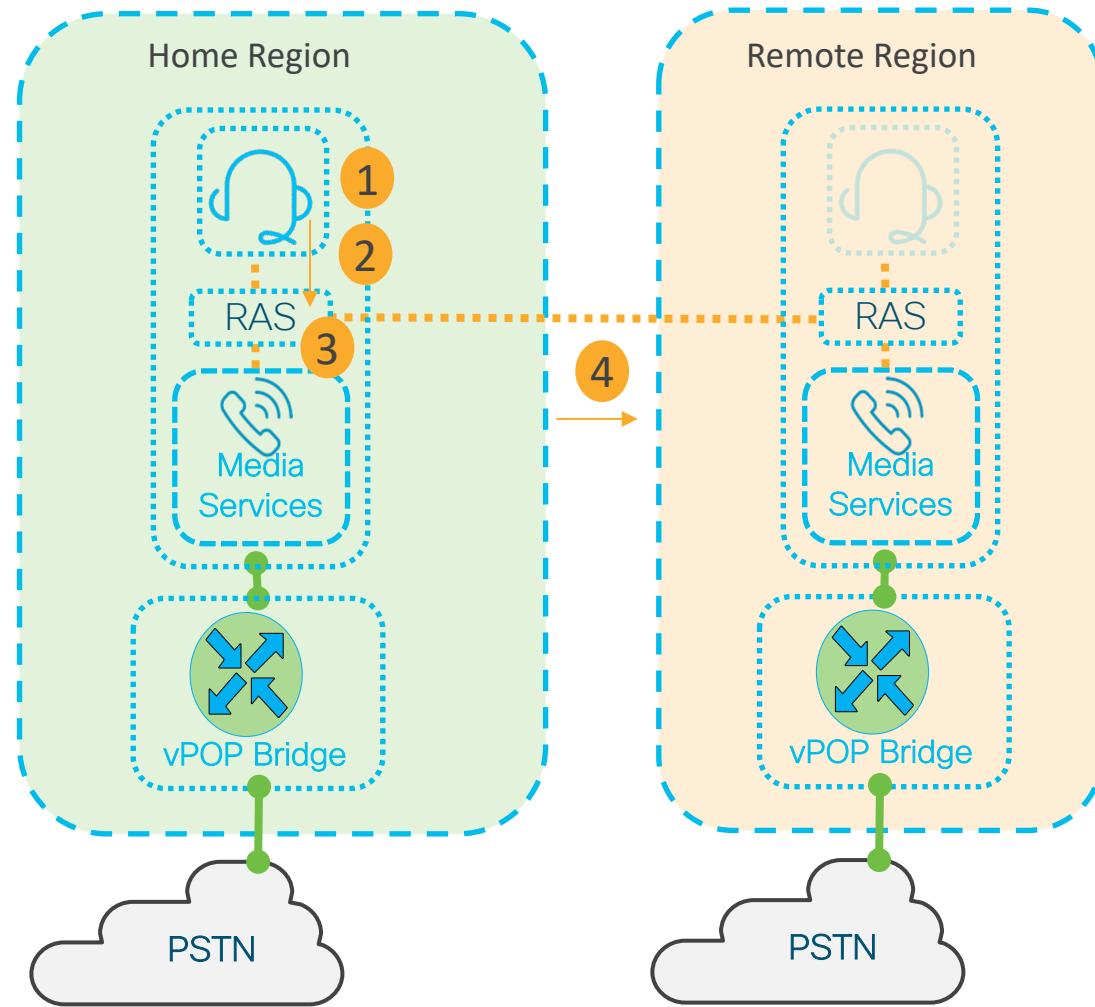
Tenant & Regions



Media & SIP signaling stay within a region



Remote RTMS & EP-DN mapping



- (1) (Admin Portal) EP-DN Mapping, region = RemoteRegion
- (2) Add webhook mapping, RemoteRegion
- (3) Saves the EP-DN mapping
- (4) Sends DN RemoteRegion webhook mapping



Configuration



Feature Flags

- Regional Media is activated via a Feature Flag set on your Tenant.
 - Work with your Cisco Account Team or Partner to enable this flag.
- The following feature flag must be ‘on’ to enable the feature:
`wxcc_rtmsRegionalMedia`
- It is recommended to work with your Cisco Account Team or Partner to verify eligibility for RTMS Regional Media.

Regional Media Configurations

EP-DN & Region

The screenshot shows the 'Entry Point Mappings' page in the Cisco Management interface. The top navigation bar includes 'trial-org-feb16', 'Dashboard', and 'Entry Point Mappings'. The main section is titled 'Entry Point Mappings' under 'Dialed Numbers'. A 'Select Entry Point' dropdown is set to 'All'. A 'New Mapping' button is highlighted with a callout 'Click to add EP-DN mapping'. The table lists entries:

DN	Entry Point	PSTN Region	ID
5165179760	rtmsProdEP	Default	627fb03e-5597-4578-8670-03fd40176011
5596948001		Default	23511e0c-a84a-419a-a212-b7a331e0ac67
5596948002		Default	cbf150a7-303b-4056-92d5-9b8796dad0a7
+15165179760		Default	23a9d8c8-e3c7-45ad-9070-163cdcc725c3
+15596948002	rtmsProdEP2	Default	714c705e-fe45-40dc-84fa-8f8f2f27b368
+15596948003	rtmsProdEP2	Default	318b175a-d7bd-4f3f-995a-ba3d8737f4fa
+15596948005	rtmsProdEP	Default	010b83e5-523c-4f24-b86c-776faf3f79b4
+61370363925	rtmsProdEP	Australia	dc76e26c-e852-4078-b497-0e51f32b023f

A callout box points to the 'New Mapping' button with the text 'Click to add EP-DN mapping'. Another callout box points to the 'Australia' entry in the 'PSTN Region' column with the text 'Shown when RTMS (new media services) is enabled'.

Regional Media Configurations

- EP-DN Mapping

trial-org-feb16 Dashboard Entry Point Mappings

New Dialed Number Mapping

Service Provider Voice

DN

Entry Point

PSTN Region

Add the dialed number

Select the EP

Select select the PSTN region

Here home tenant is in US (Default), you can assign the number to Australia region

Default

Australia

Agent Outdial



Regional Media Onboarding & Configurations

The screenshot shows a web-based interface for managing Outdial ANI configurations. At the top, there is a navigation bar with tabs: trial-org-feb16, Dashboard, Entry Point Mappings, and Outdial ANI (which is the active tab). Below the navigation bar, the page title is "Outdial ANI". On the left, there is a button labeled "+ New Outdial ANI". The main content area displays a table with two columns: "Outdial ANI Name" and "ID". The first row contains the value "Australia" in the "Outdial ANI Name" column and "910aa51b-32f2-46eb-b274-88d150419f1d" in the "ID" column. The second and third rows contain the values "One" and "Two" respectively, with their corresponding IDs partially visible. A callout box with the text "Click to add outdial ANI" points to the "+ New Outdial ANI" button. On the right side of the page, there are links for "Help", "Outdial ANI > List", and a search bar.

Outdial ANI Name	ID
Australia	910aa51b-32f2-46eb-b274-88d150419f1d
One	d0d6bab0-1dbb-4b64-8802-318c9a76fedf
Two	1-e73f-4555-844c-792e825e9642

Outdial ANI configuration in Portal

Regional Media Configurations

- Outdial ANI

The screenshot shows the Cisco Regional Media Configurations interface. On the left, there's a navigation bar with tabs: trial-org-feb16, Dashboard, Entry Point Mappings, and Outdial ANI. The Outdial ANI tab is active. Below the tabs, there's a section titled "Outdial ANI" with a "General Settings" sub-section. It contains fields for "Name" (Australia) and "Description". To the right, a modal window titled "Add Outdial ANI" is open. It has fields for "Name" (Australia) and "Number" (+15596948005). At the bottom of the modal are "Save" and "Cancel" buttons. A callout box labeled "Select EP for outdial" points to the "Save" button. Another callout box labeled "Outdial ANI in the entry list" points to the "Outdial ANI Entry List" table on the left. The table has columns for #, Name, and Number. It shows one entry: #1, Name AUS - One, and Number +61370363925. Below the table are "Save" and "Cancel" buttons.

Add Outdial ANI

Name: Australia

Number: +15596948005

Save Cancel

Select EP for outdial

Outdial ANI in the entry list

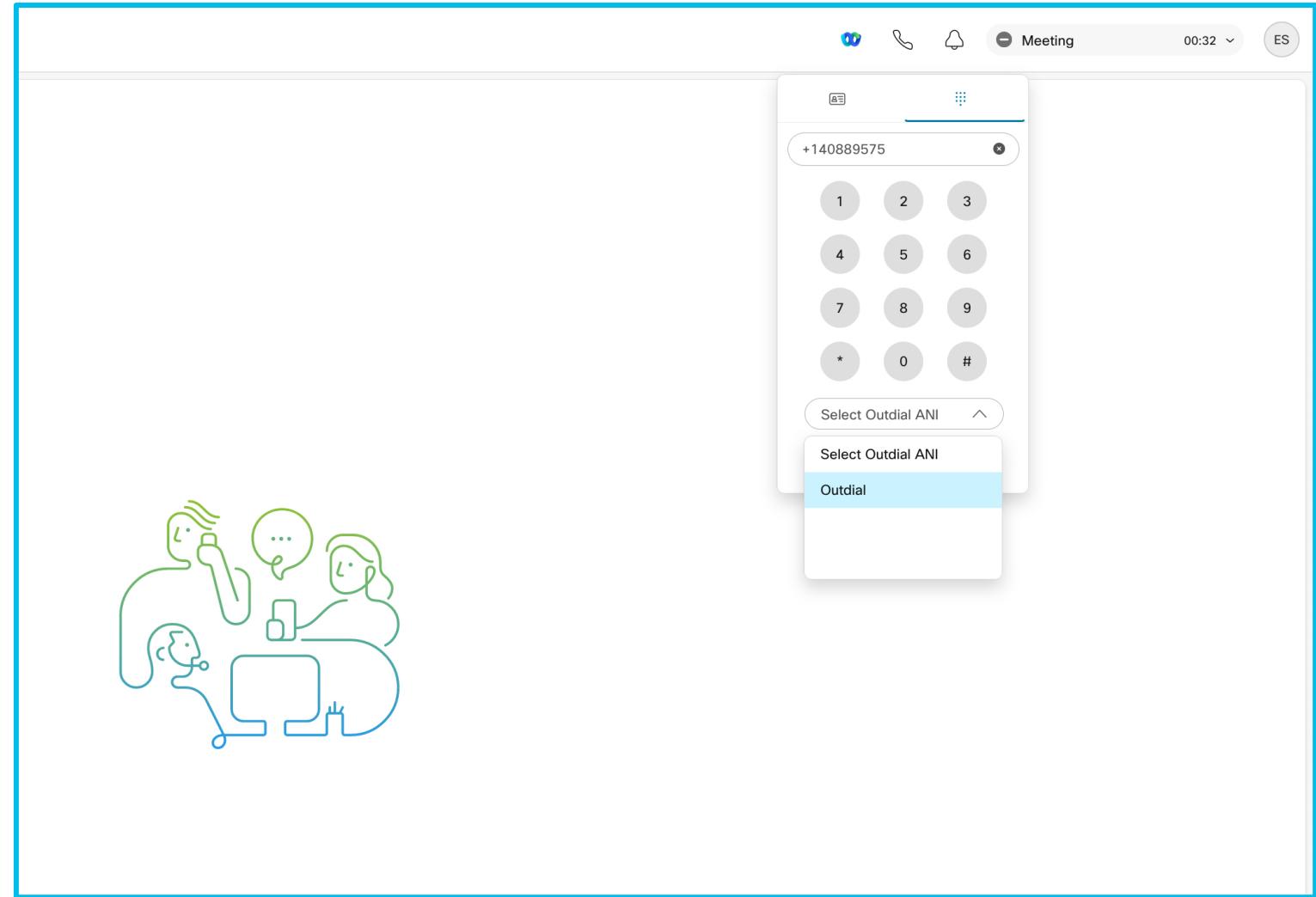
#	Name	Number
1	AUS - One	+61370363925

Save Cancel

Outdial ANI configuration in Portal

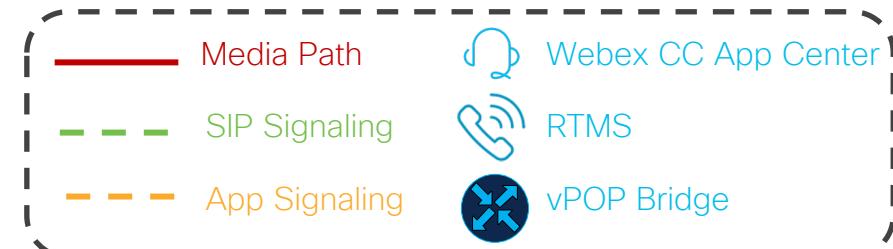
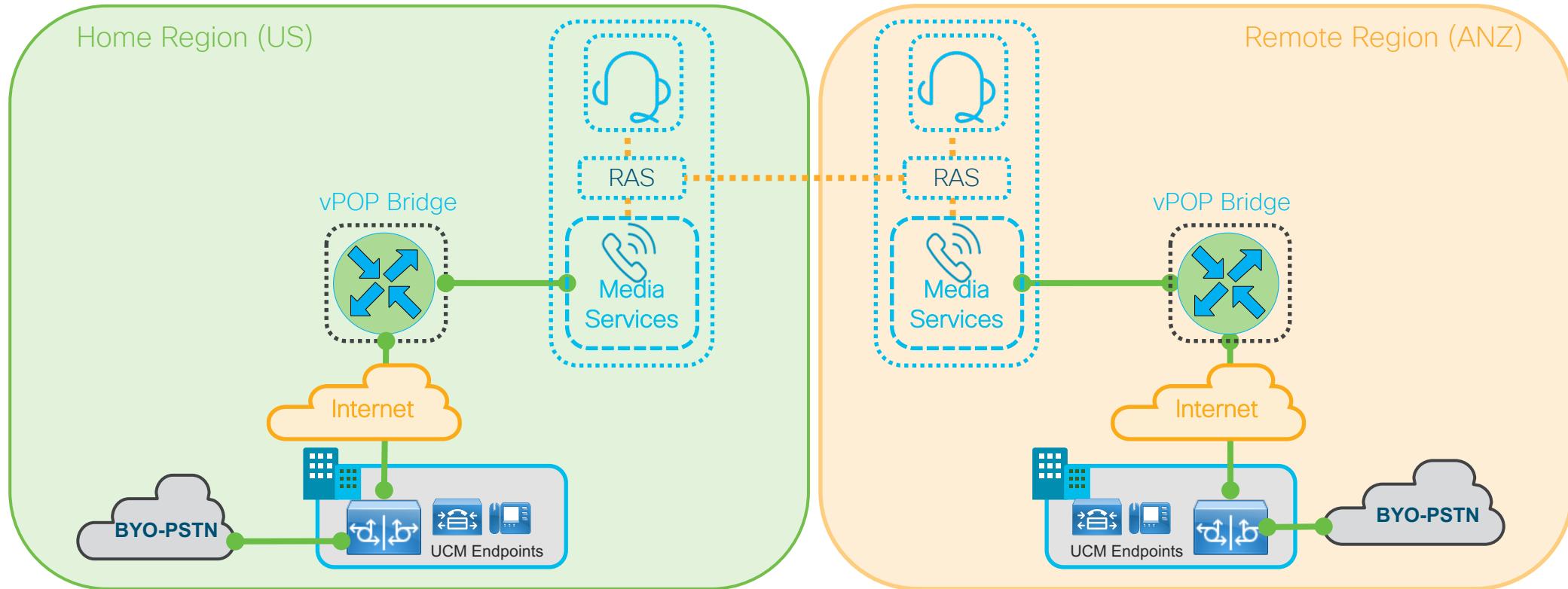
Agent outdial

Agents use the agent desktop to pick from the list.



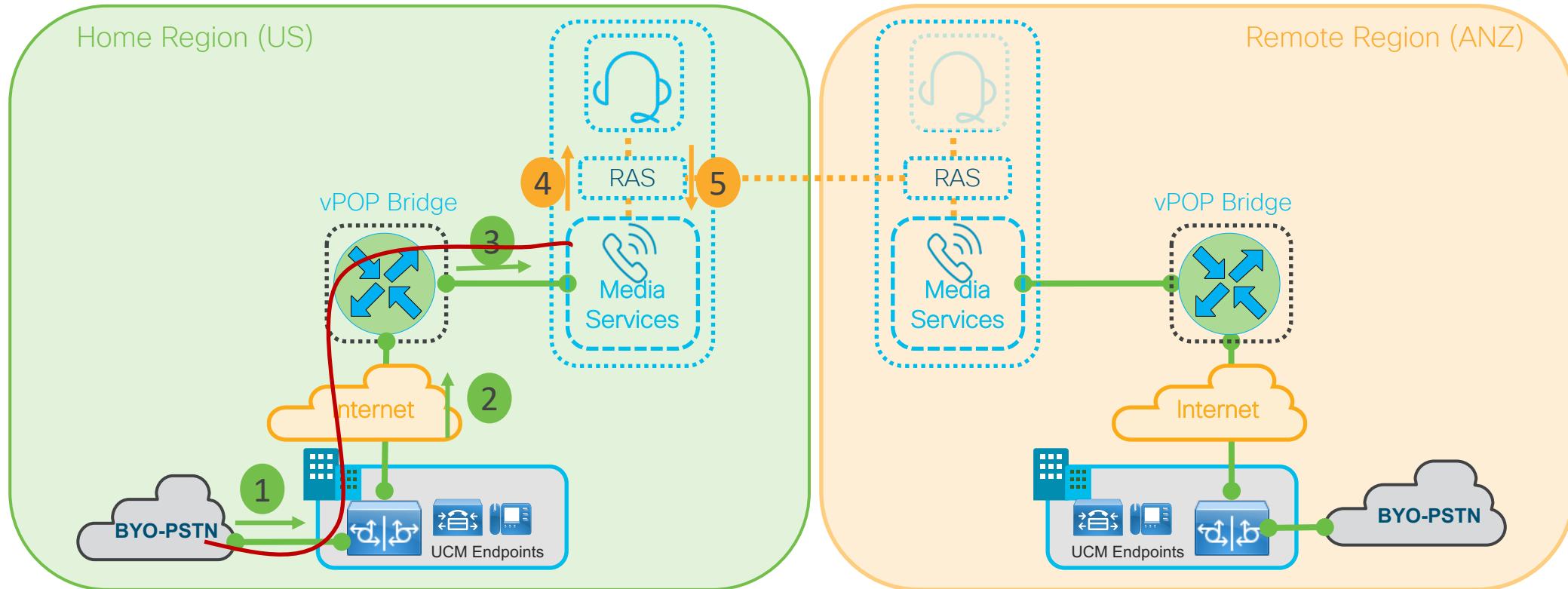
Call flows (more details)

Multi Region PSTN / Multi-Region Agent Locations



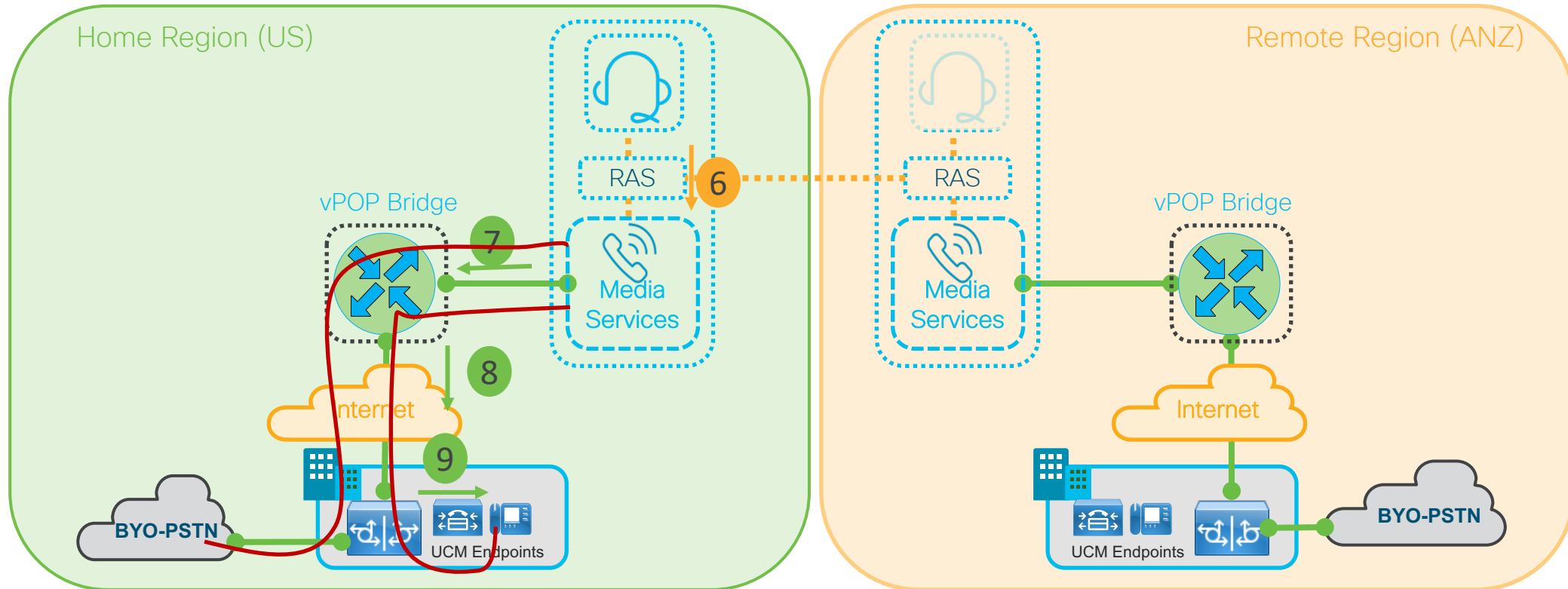
Multi Region PSTN / Multi-Region Agent Locations

- Inbound (caller & agent are in same region)



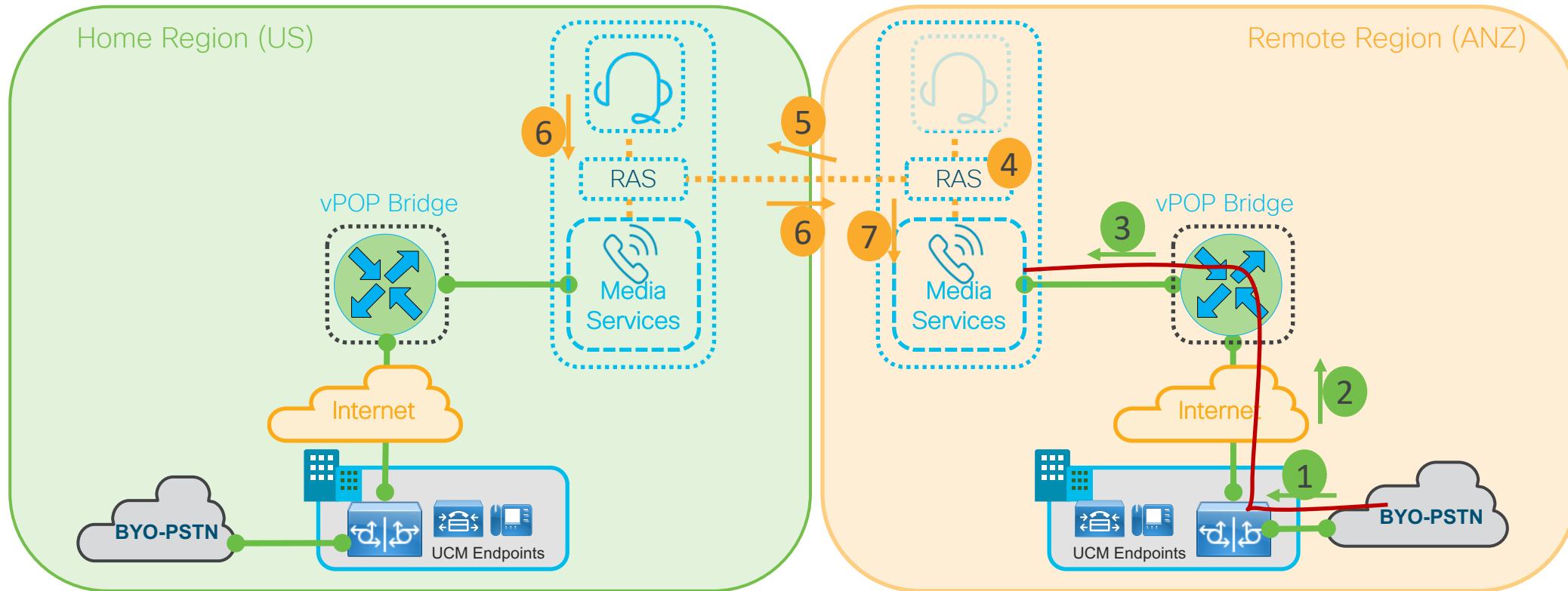
Multi Region PSTN / Multi-Region Agent Locations

- Inbound (caller & agent are in same region)



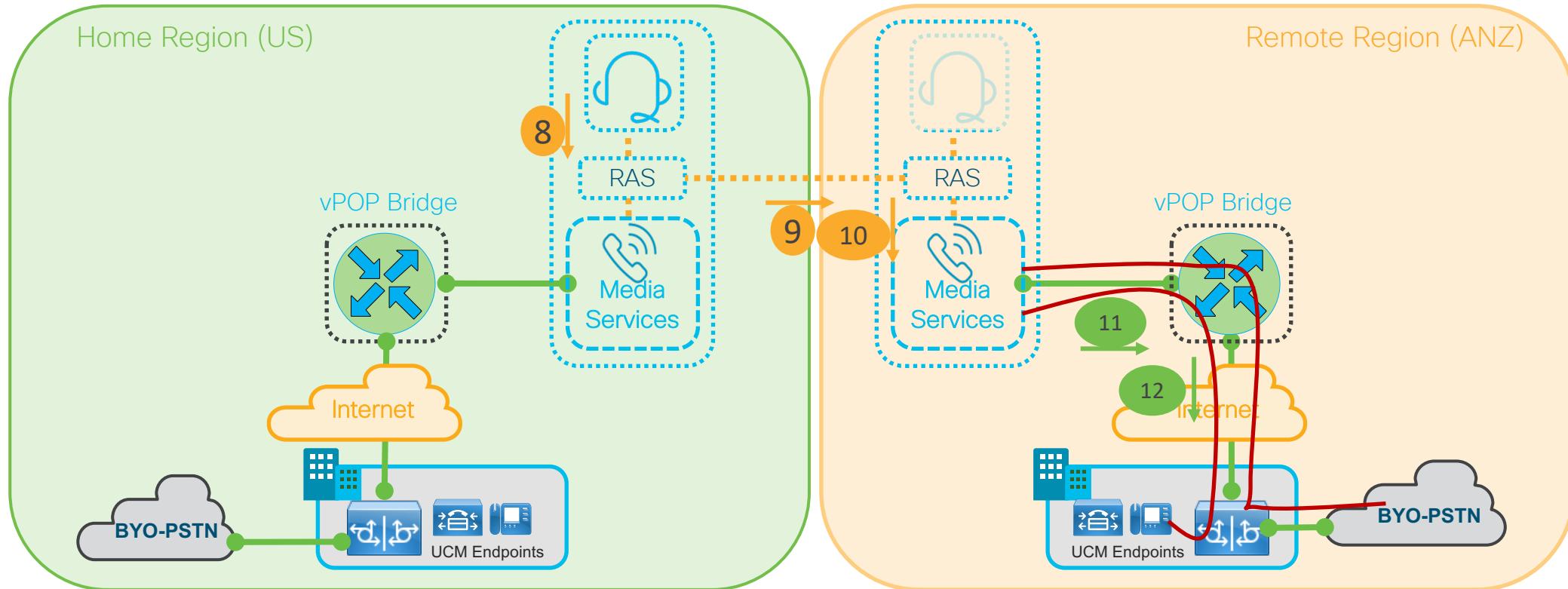
Multi Region PSTN / Multi-Region Agent Locations

- Inbound (caller & agent are in same Remote region)



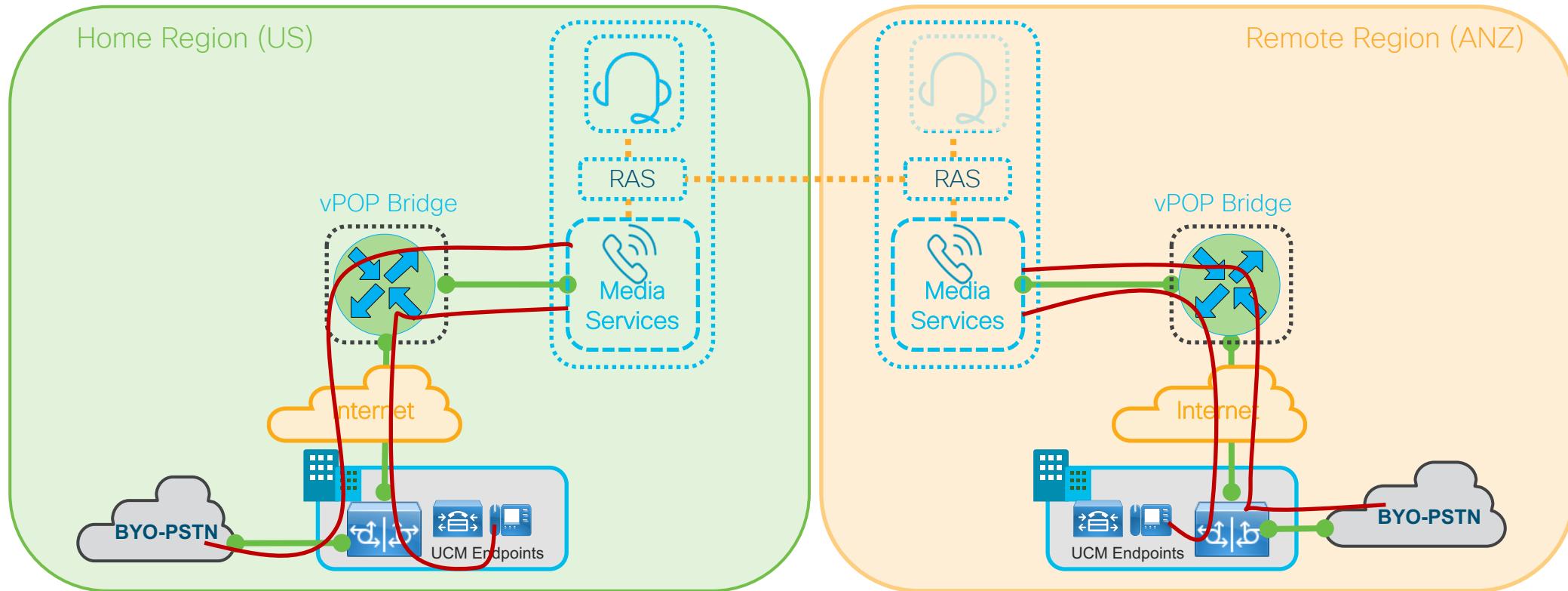
Multi Region PSTN / Multi-Region Agent Locations

- Inbound (caller & agent are in same Remote region)

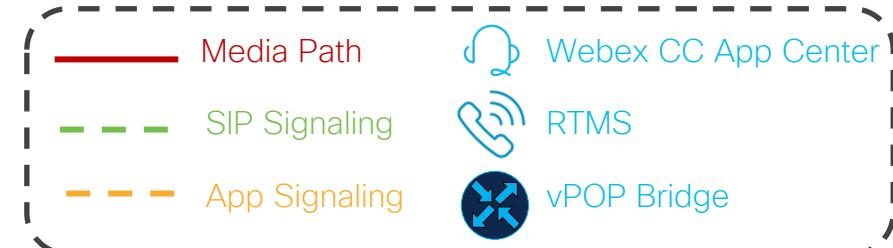


Multi Region PSTN / Multi-Region Agent Locations

- Inbound (caller & agent are in same region)

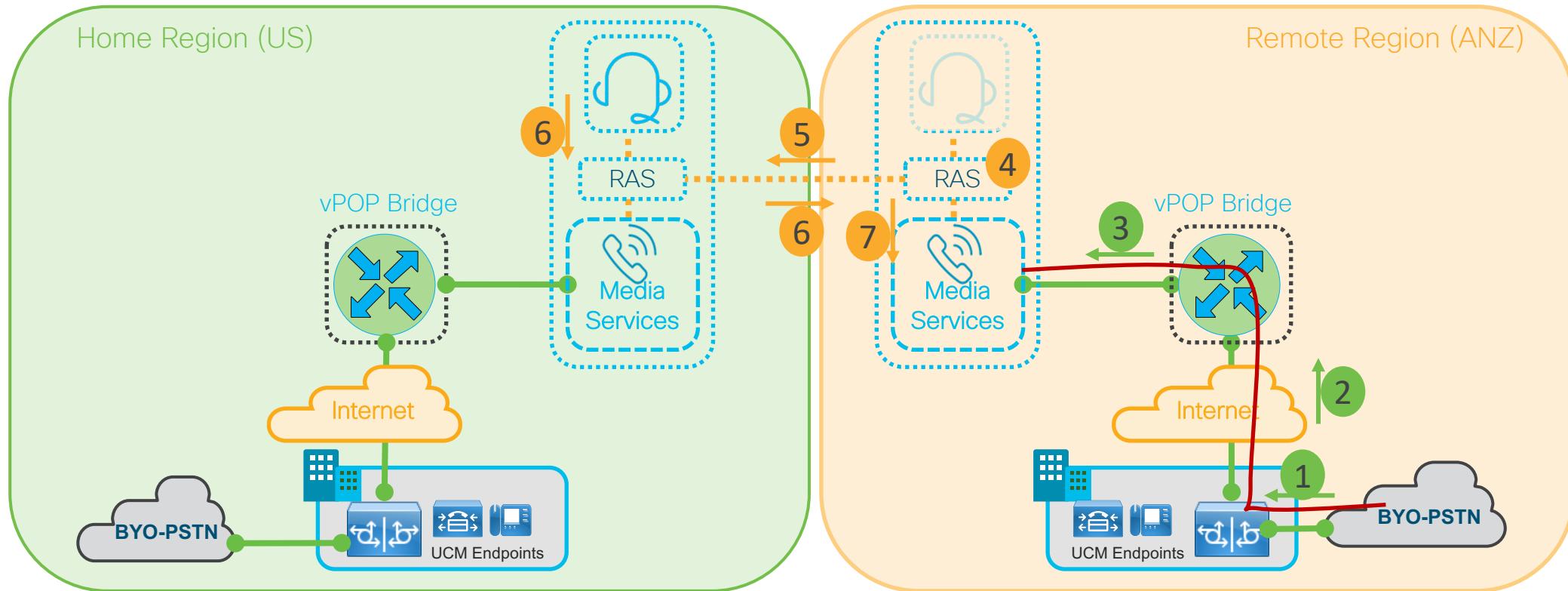


- Inbound calls are sent back by Webex CC to the vPOP @ the inbound region
- IVR Treatment occurs at the inbound region
- Media stays local to the inbound region, application signaling goes back to the home region.



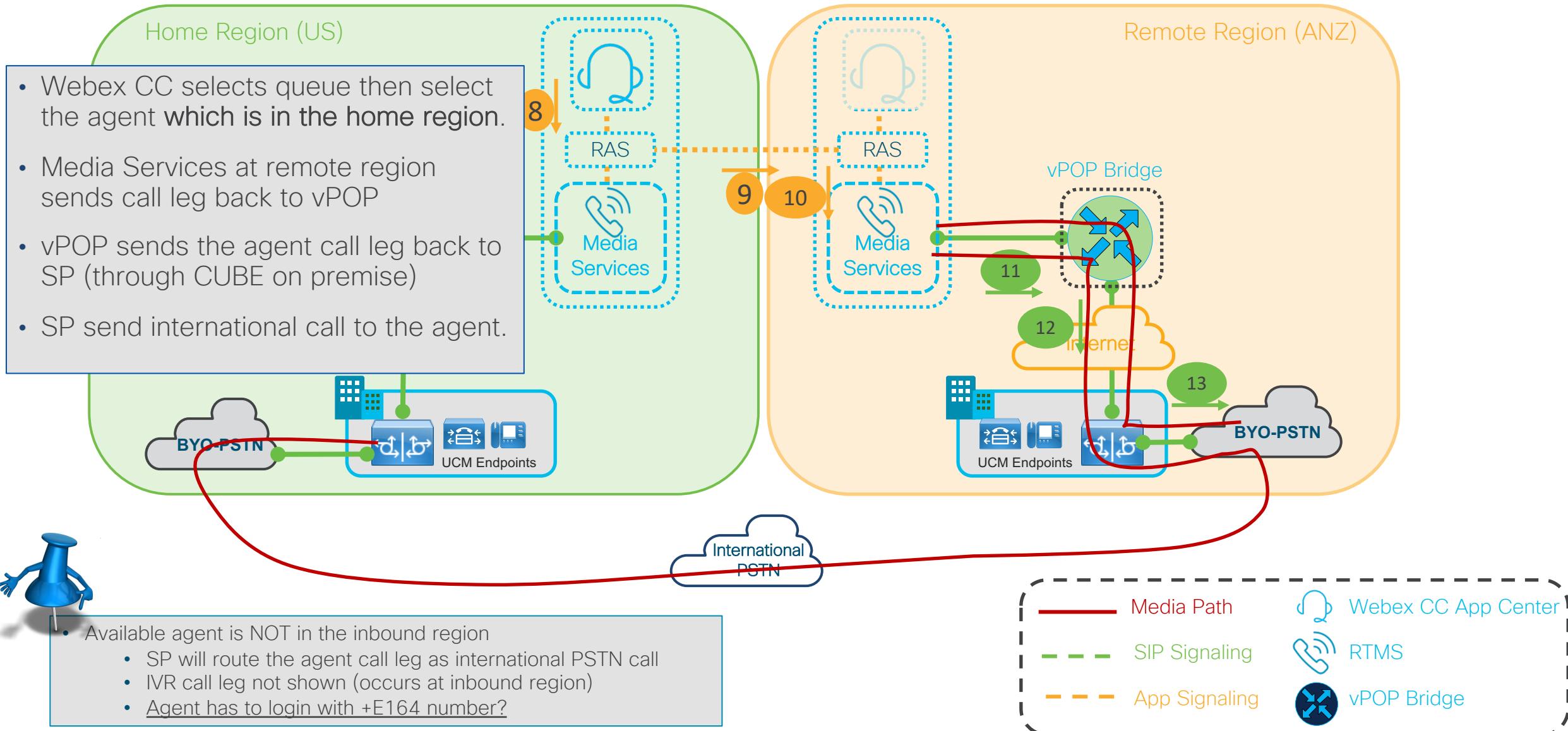
Multi Region PSTN / Multi-Region Agent Locations

- Inbound (caller remote region & agent are in home region)

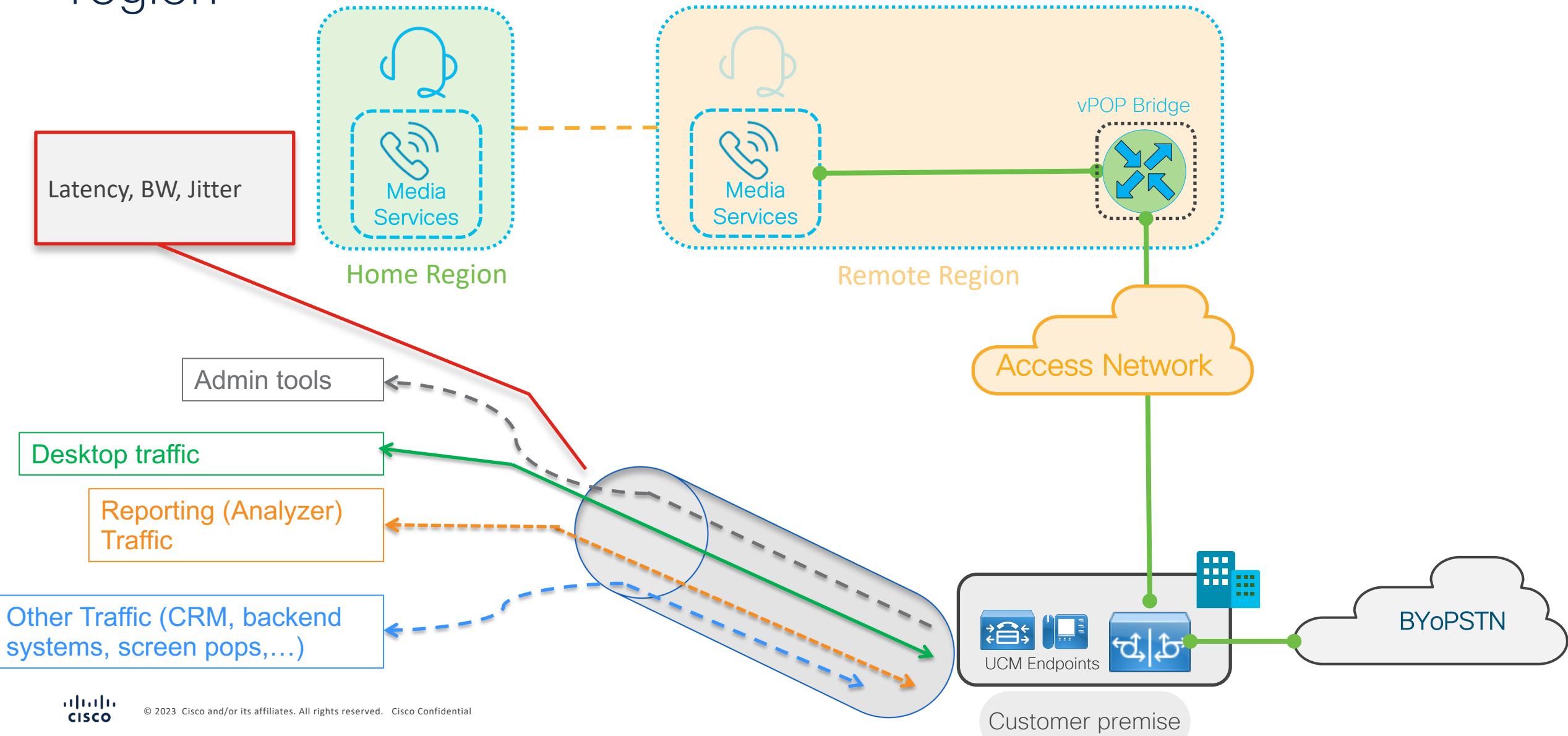


Multi Region PSTN / Multi-Region Agent Locations

- - Inbound (caller remote region & agent are in home region)



Agent connectivity Network considerations for remote region



Current RTMS Considerations

- Webex CC Cisco Provided Bundled PSTN
 - GA mid-end of April
- Features under development
 - Consult Transfer to EP/DN currently (limited access /availability soon).
 - Post Call Survey
 - Google CCAI integrations (No Virtual Voice assistant & no Agent Answers) – early access in US region only (Google CCAI CX)
- Other considerations
 - Available only to new customers (not available to current Webex CC customers)
 - Upgrading from Webex CC rel 1.0, or 2.0 is currently not available (work started)
 - No downgrade from RTMS to CTI Stack without tenant rebuilding
 - A tenant can have either RTMS or CTI Stack (no mix for one tenant)

This a snapshot as we have it today(April 2023). The train is moving fast, always checkback for the latest update

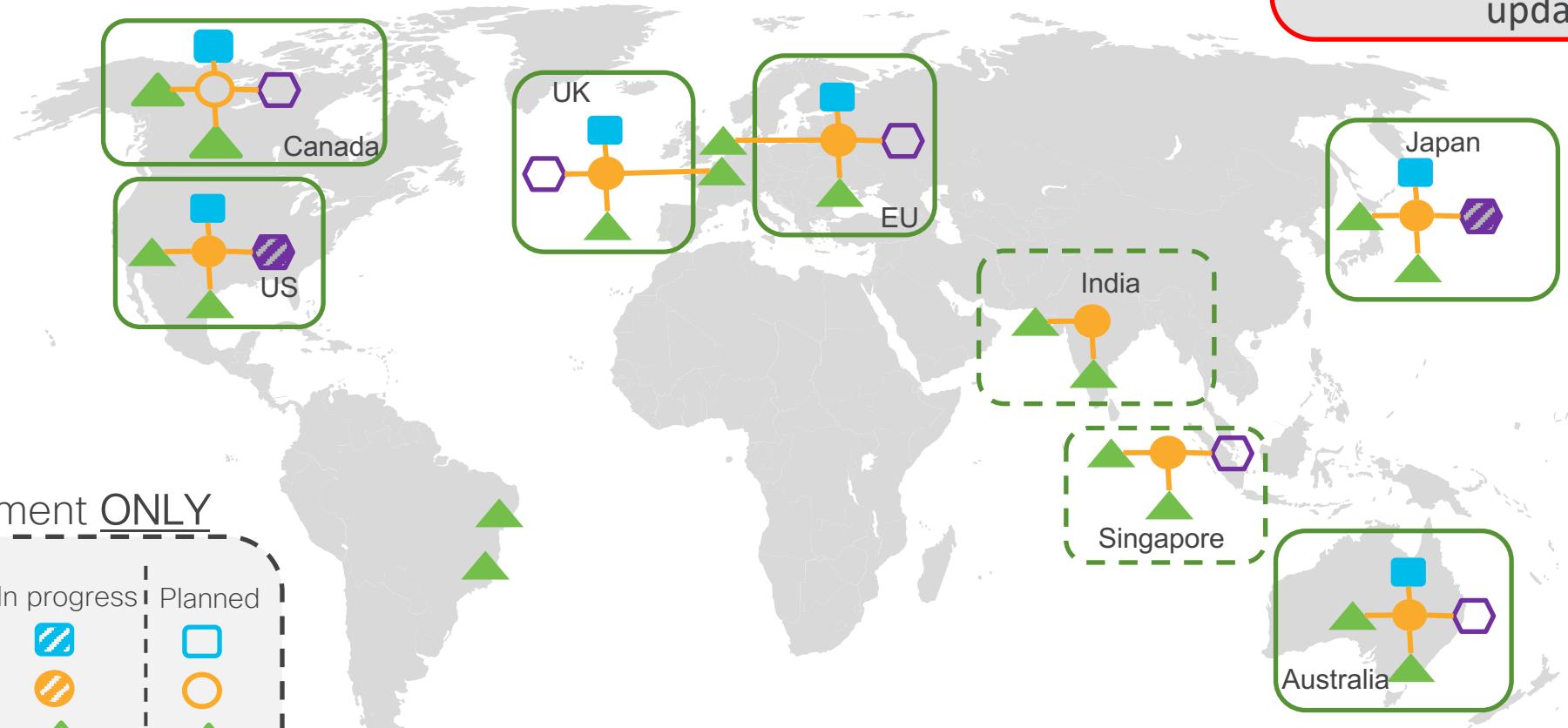


New Media Services Regions

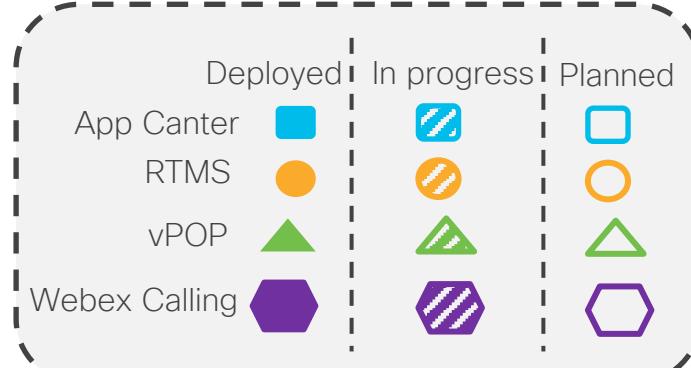


RTMS Integration - vPOP & Webex Calling

This a snapshot as we have it today(March 2023). The train is moving fast, always checkback for the latest update

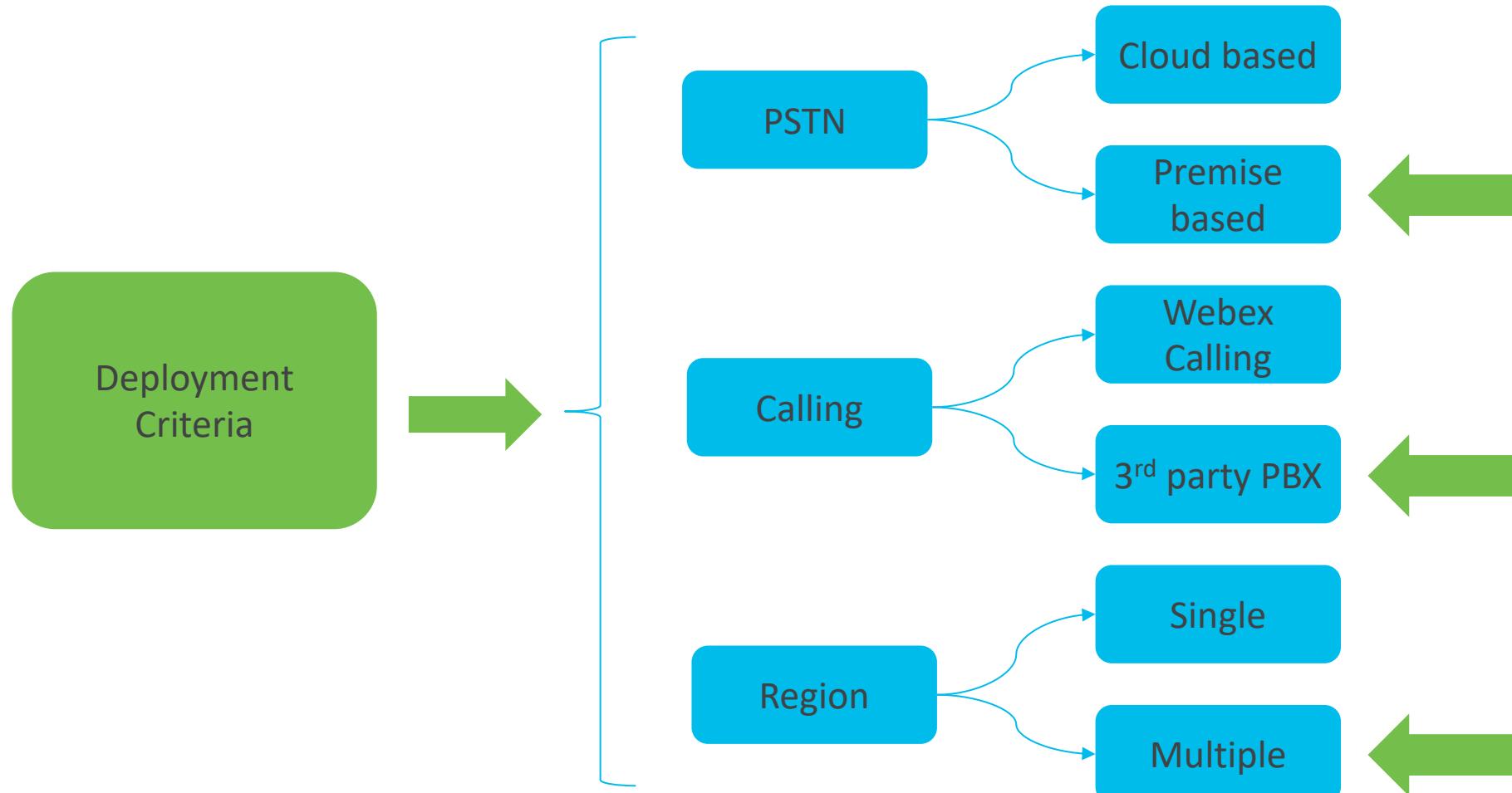


RTMS deployment **ONLY**



Global deployment example

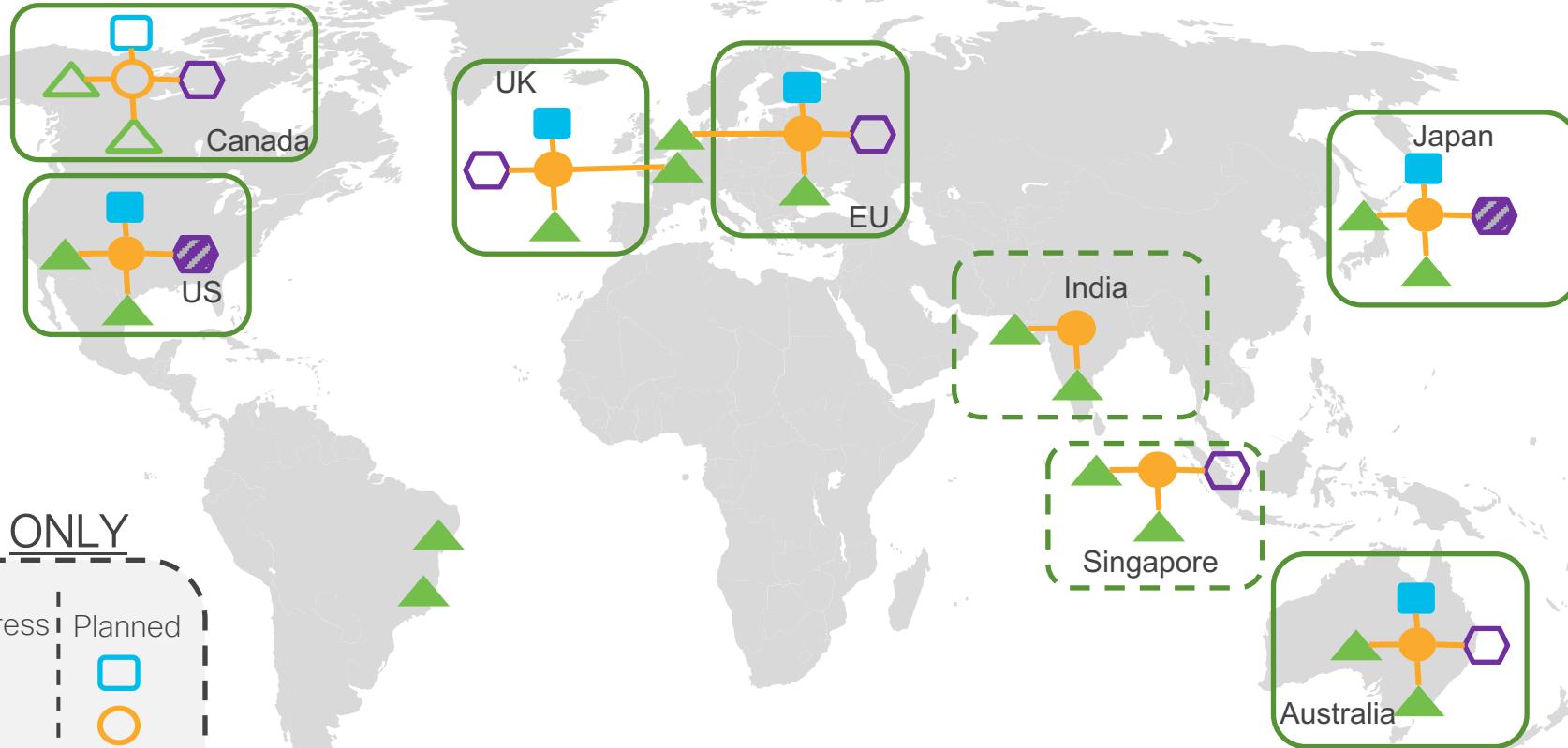
Recall ...



RTMS Integration - vPOP & Webex Calling

Use case

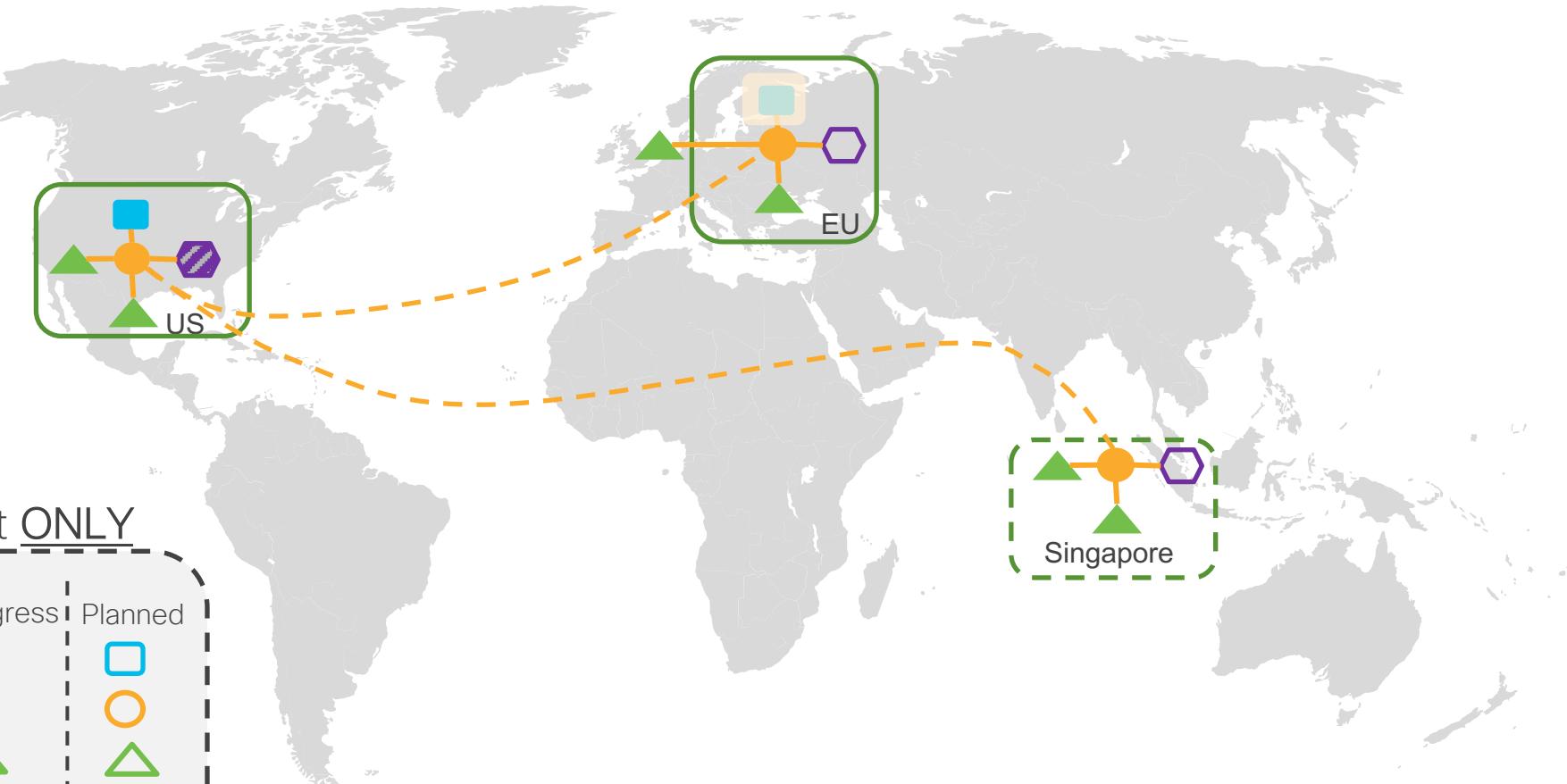
- International Enterprise/ head quarter in US
- Agents & end customers in US
- Agents & end customer in Singapore & EU
- Inbound voice, Limited Outbound



RTMS Integration – vPOP & Webex Calling

Use case

- International Enterprise/ head quarter in US
- Agents & end customers in US
- Agents & end customer in Singapore & EU
- Inbound voice, Limited Outbound



RTMS deployment ONLY

	Deployed	In progress	Planned
App Center	■	■	□
RTMS	●	●	○
vPOP	▲	▲	△
Webex Calling	●	●	○

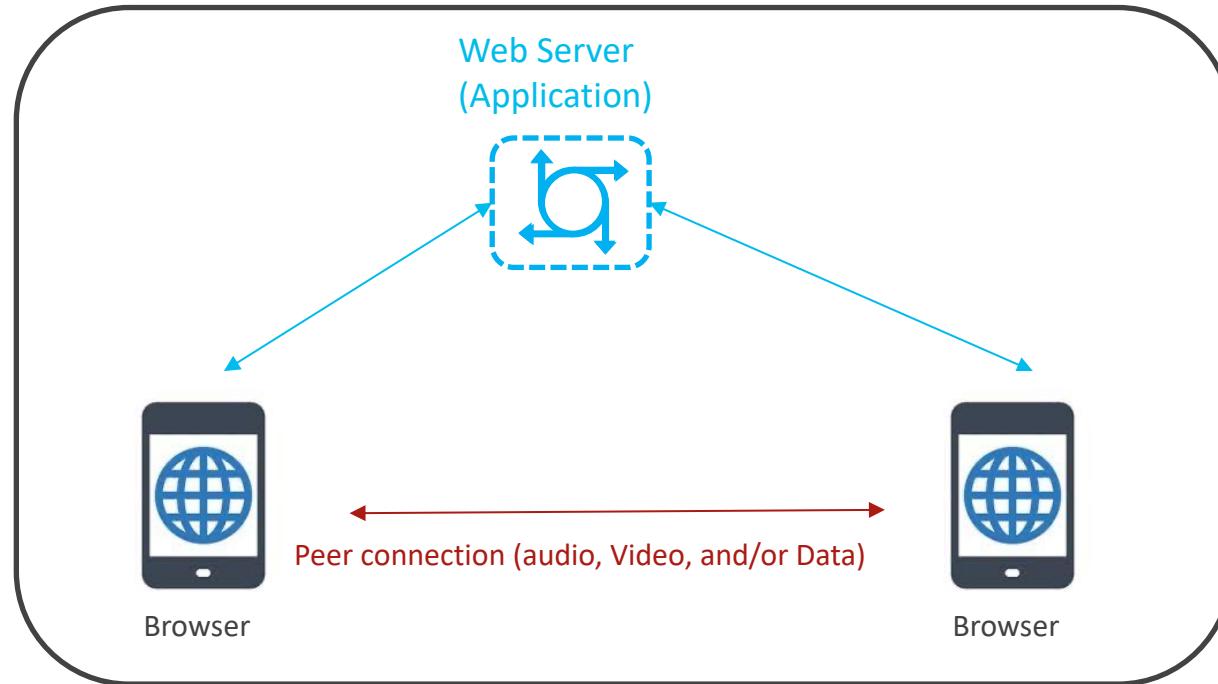


Sneak Peek Webex CC & WebRTC



What is WebRTC?

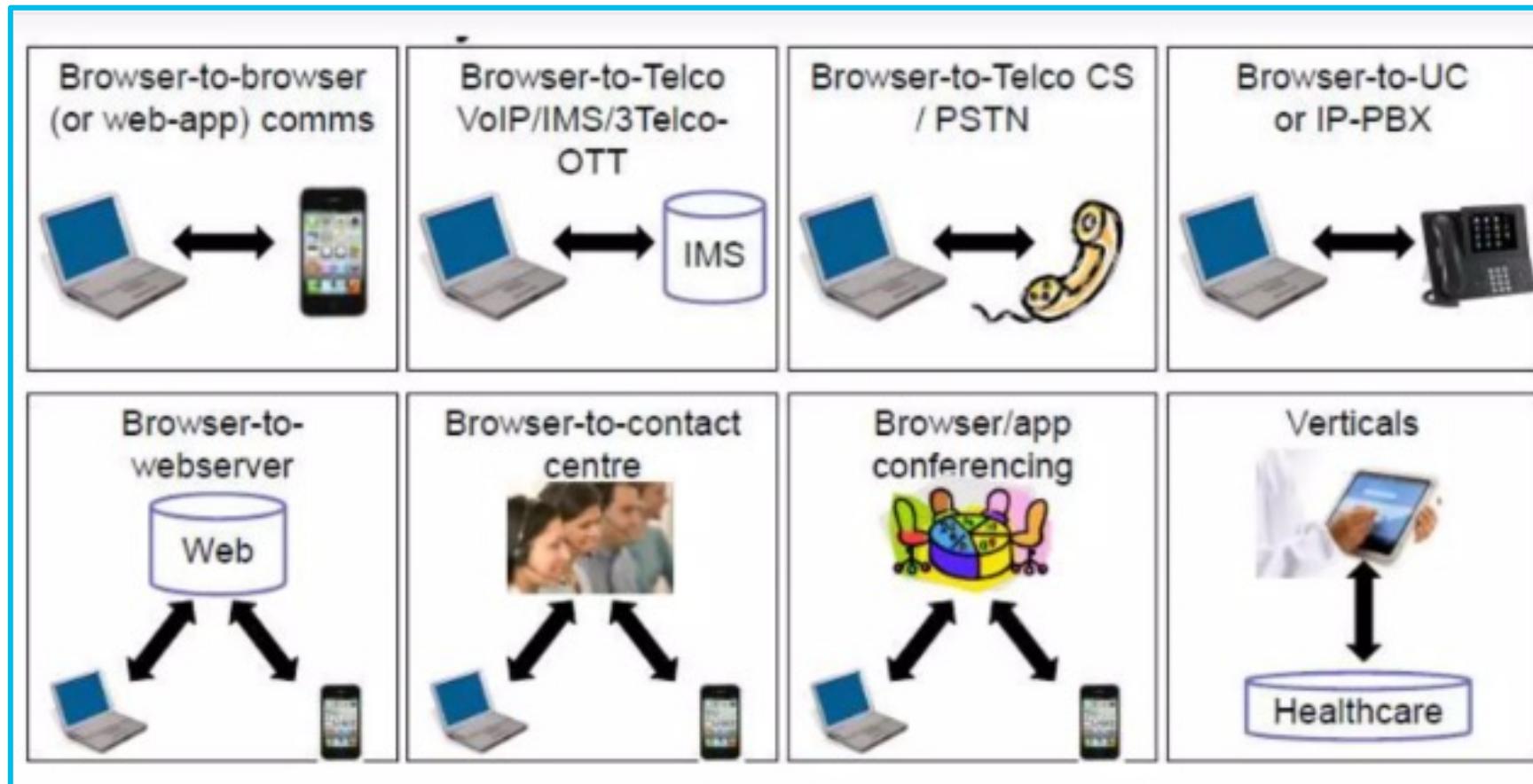
WebRTC (Web Real-Time Communication) is a technology that enables Web applications and sites to capture and optionally stream audio and/or video media, as well as to exchange arbitrary data between browsers without requiring an intermediary



There are many other deployment models....

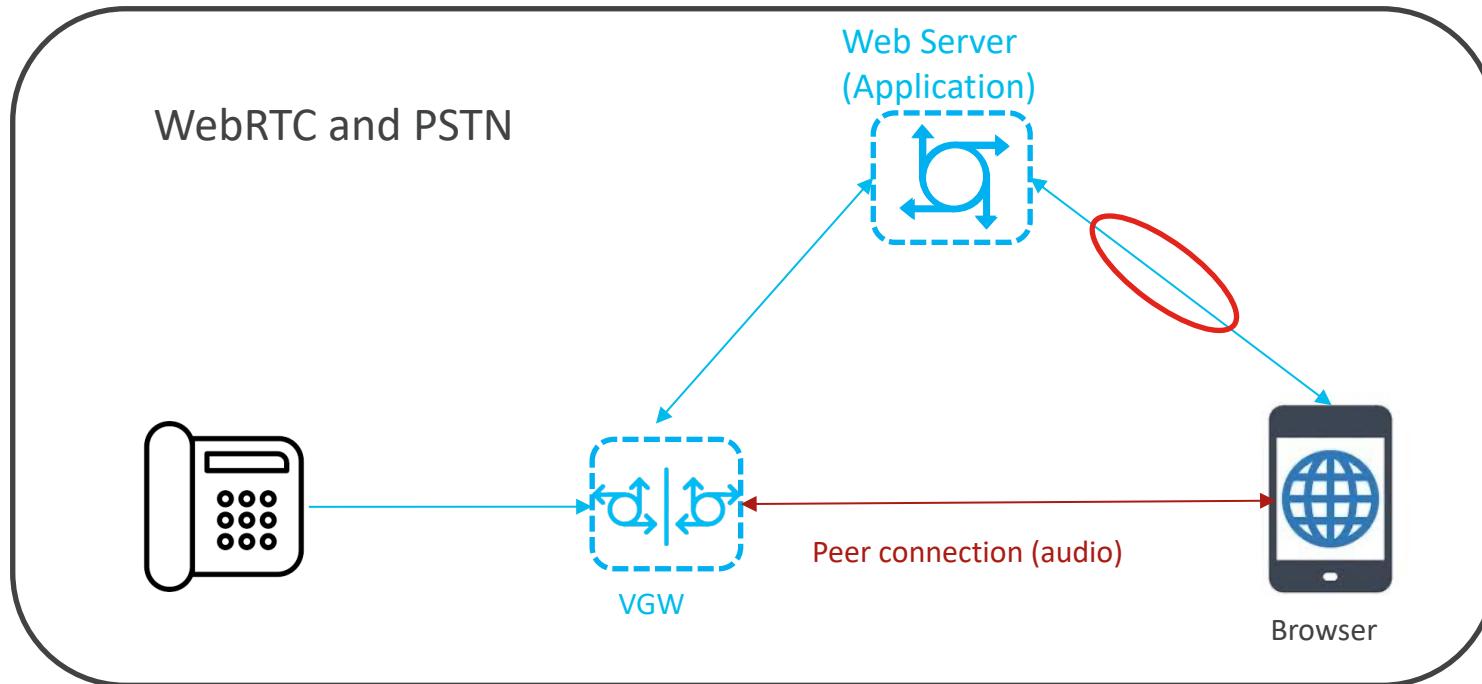


WebRTC use cases

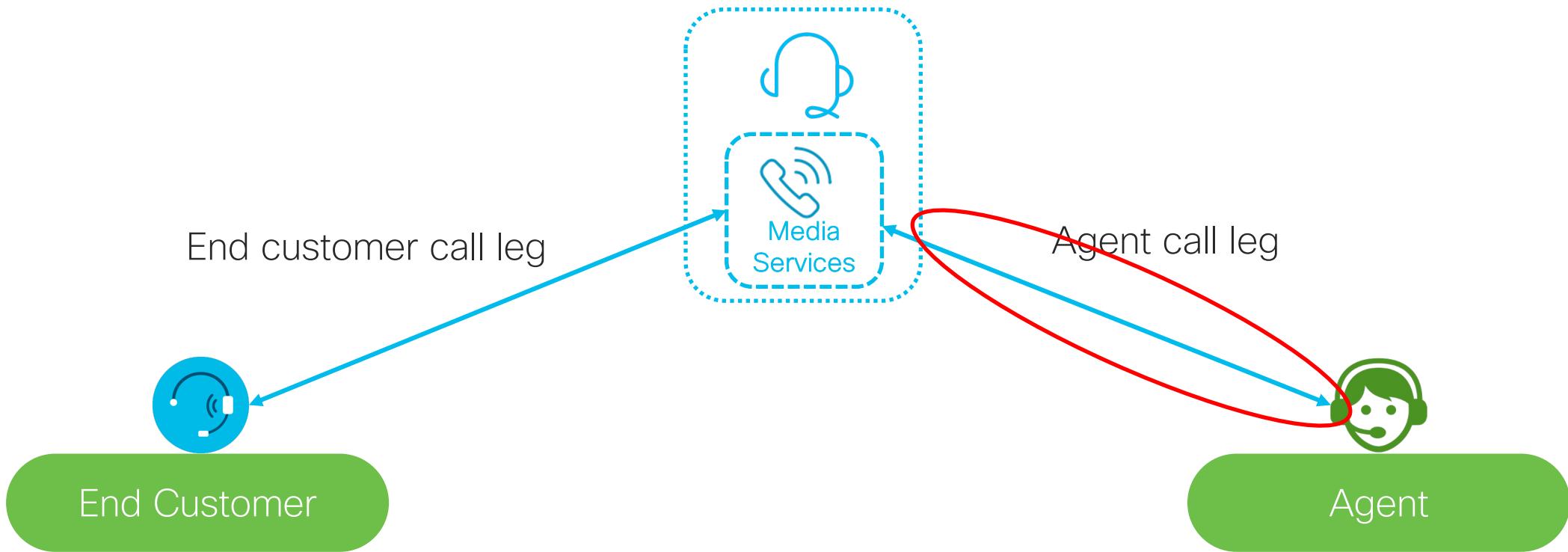


+ various other ...

WebRTC & PSTN

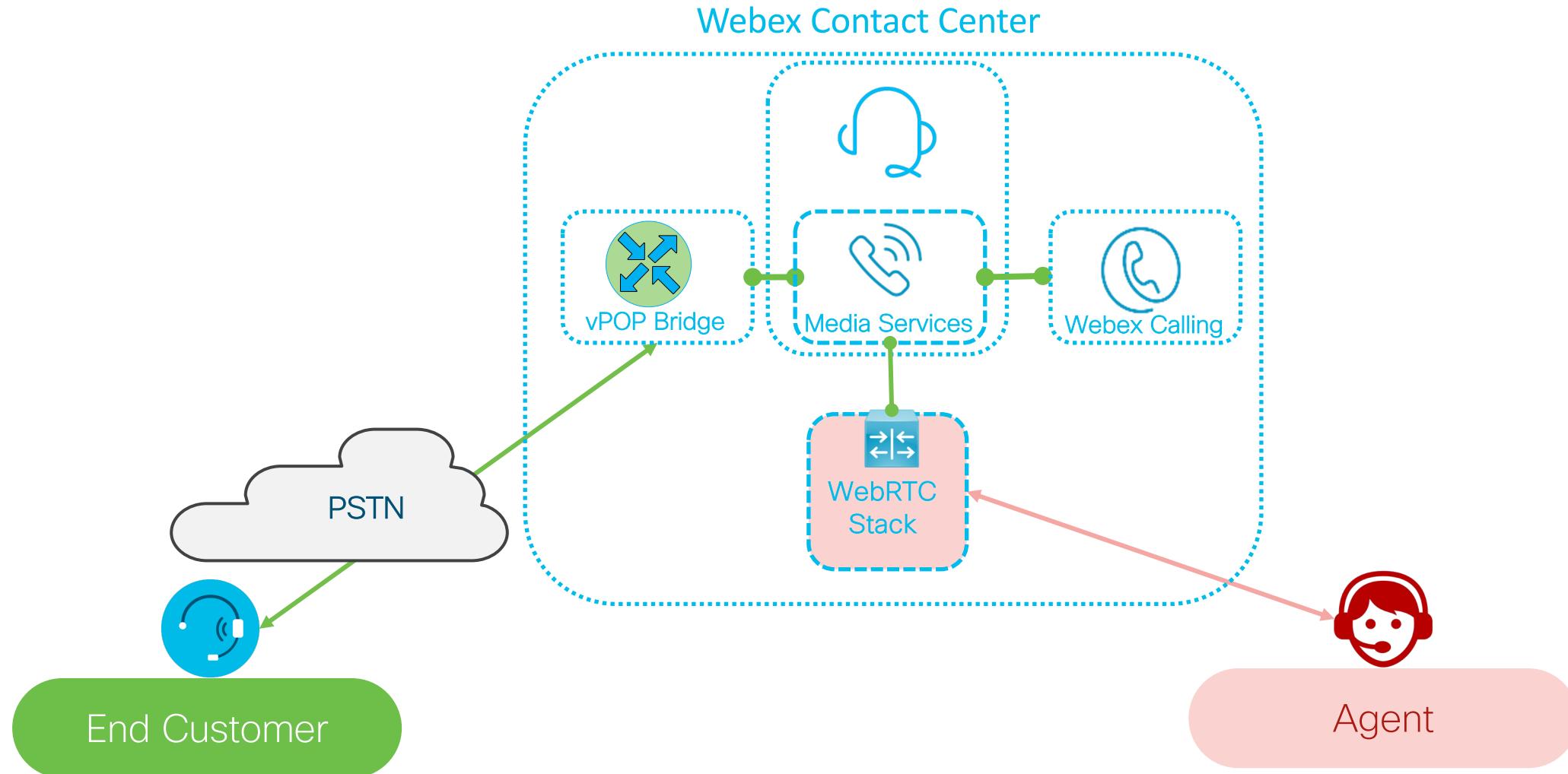


Recall ...

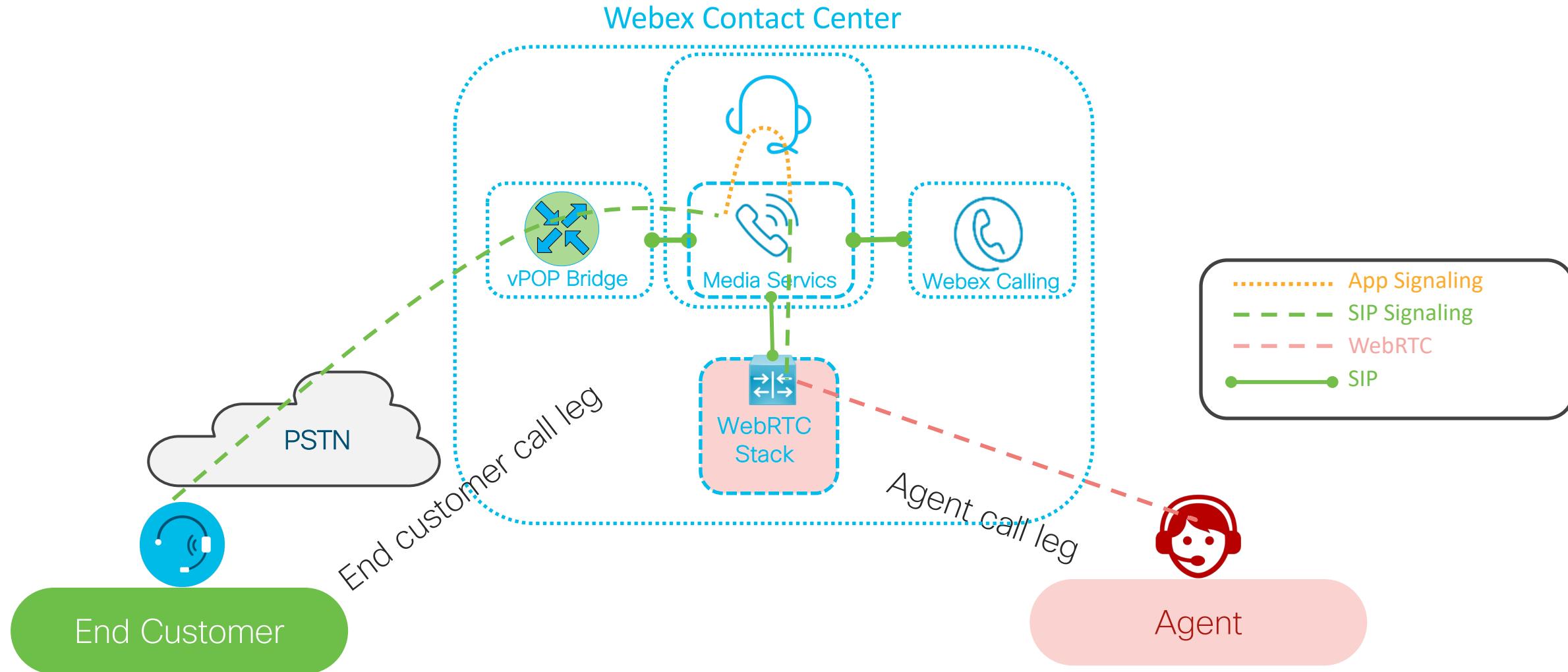


Regardless of PSTN integration, each answered call by an agent has two call legs as shown above

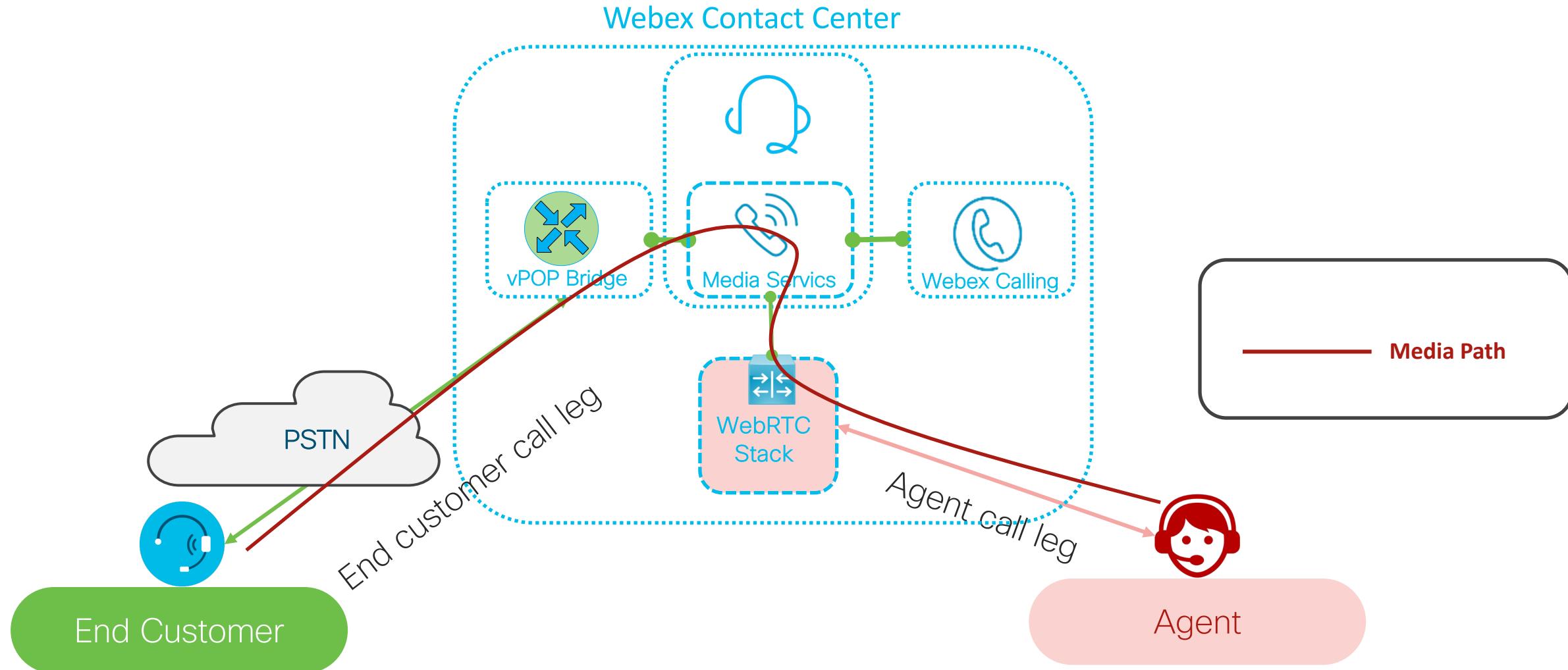
WebRTC for agent call leg



WebRTC for agent call leg



WebRTC for agent call leg (Cont.'d)



Webex CC & WebRTC

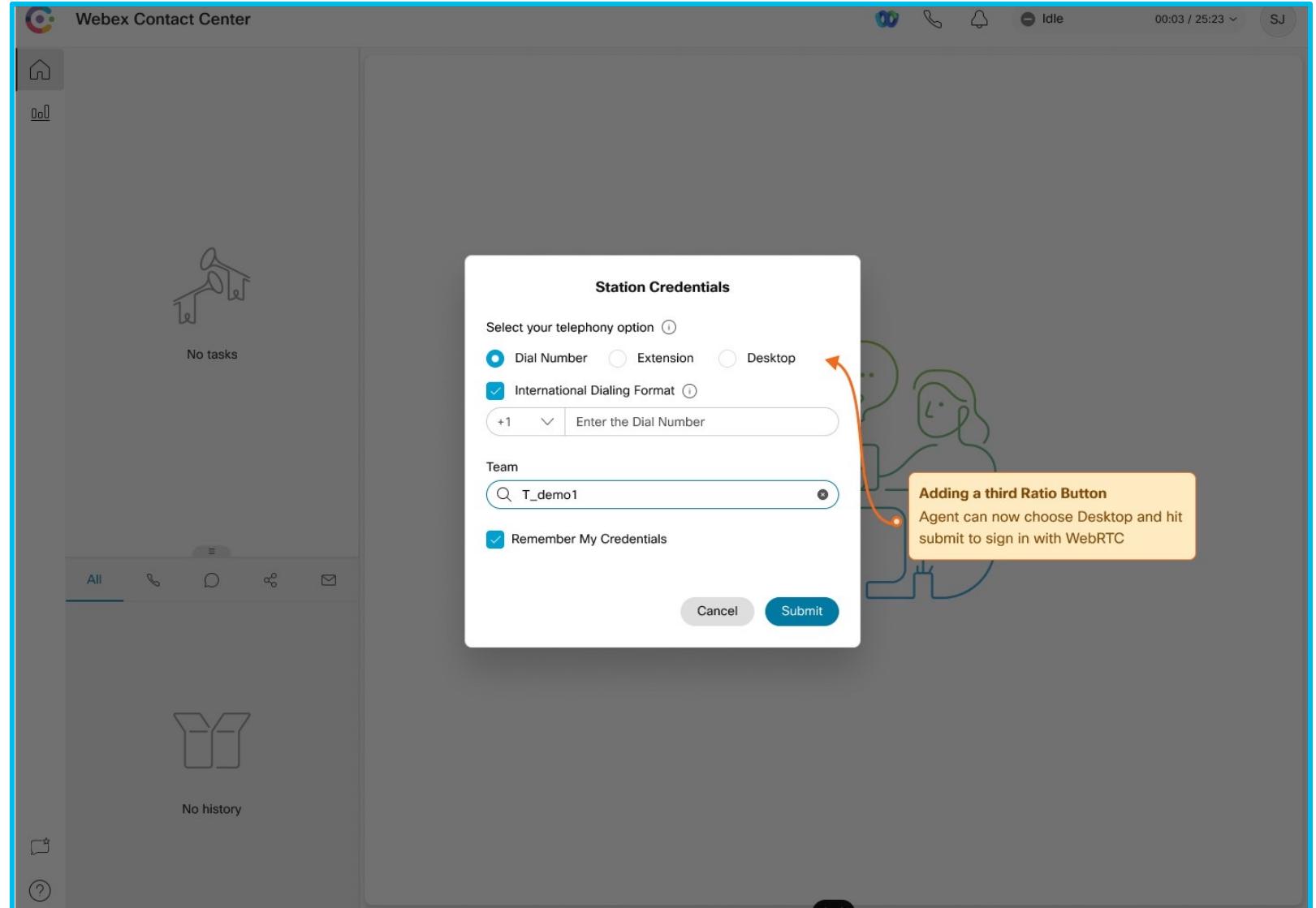
- WebRTC will be available to all customers in a region
- A feature flag will be used to enable WebRTC for a tenant
- WebRTC will not be made available to an existing tenant by default
- When set for a tenant, WebRTC will be enabled for all agents by default
- Customers can decide which of their agents use WebRTC
- Administrators will be able to disable the feature through the Agent Profile
- When enabled, the option will be available at login

Desktop Support

- WebRTC support built in
- Control of Agent leg of call
- Call control in Agent Desktop unchanged – Transfer, Conference, Hold/Retrieve
- Extend WebRTC to the new Supervisor Desktop

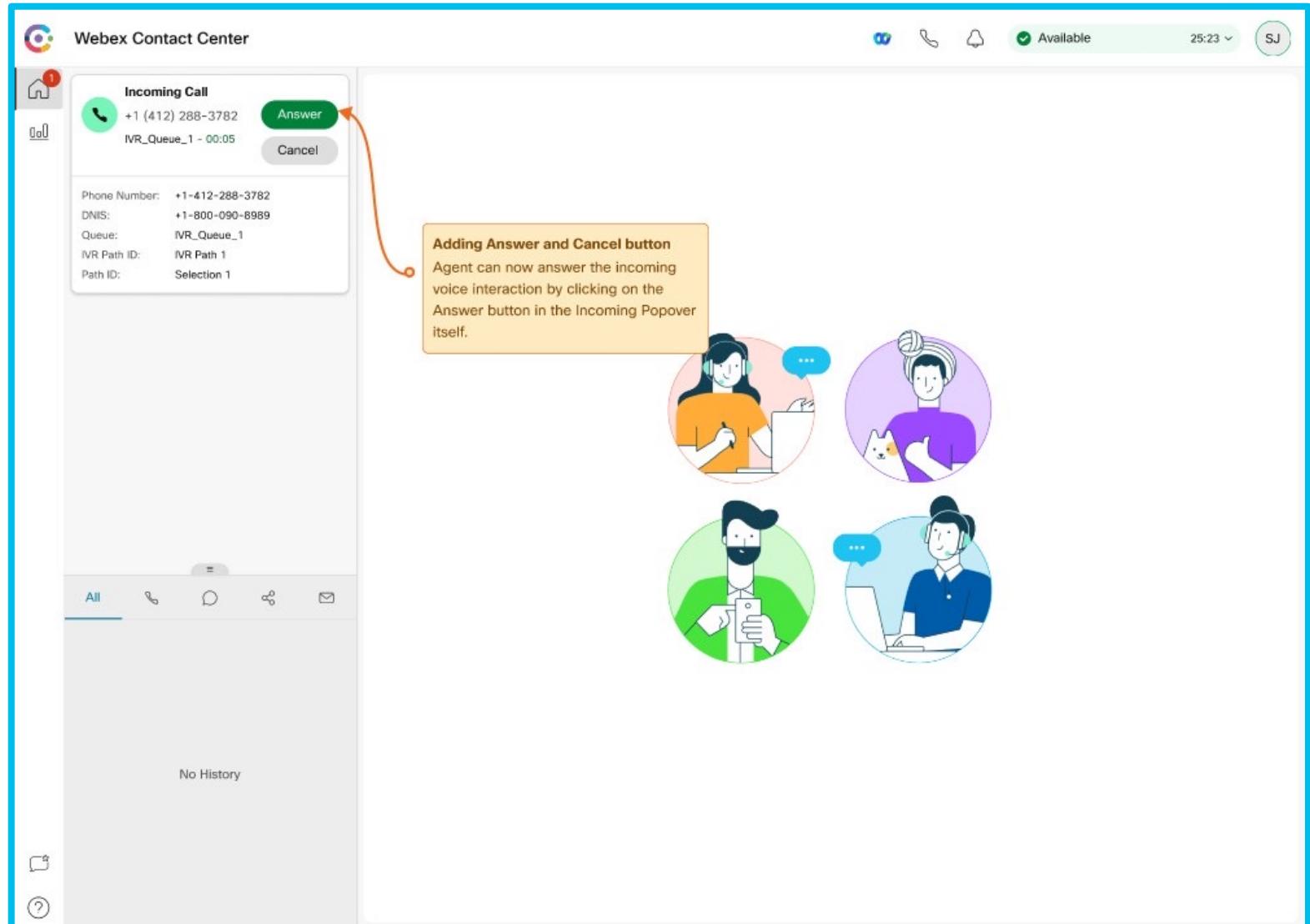
Agent Log In

- Agent selects “Desktop” to sign in with WebRTC



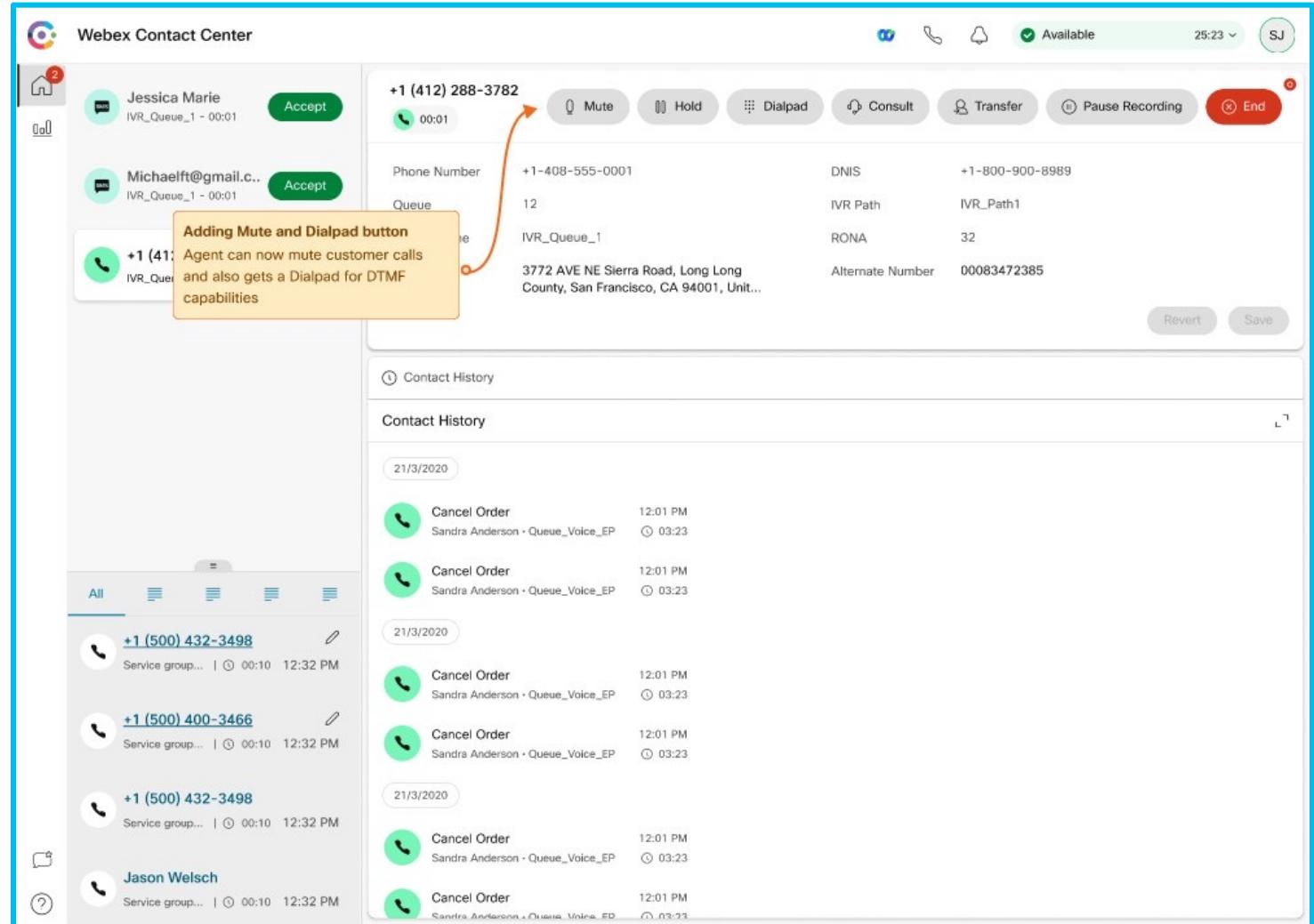
Agent Answer button

- Answer and cancel buttons will be added to call control widget



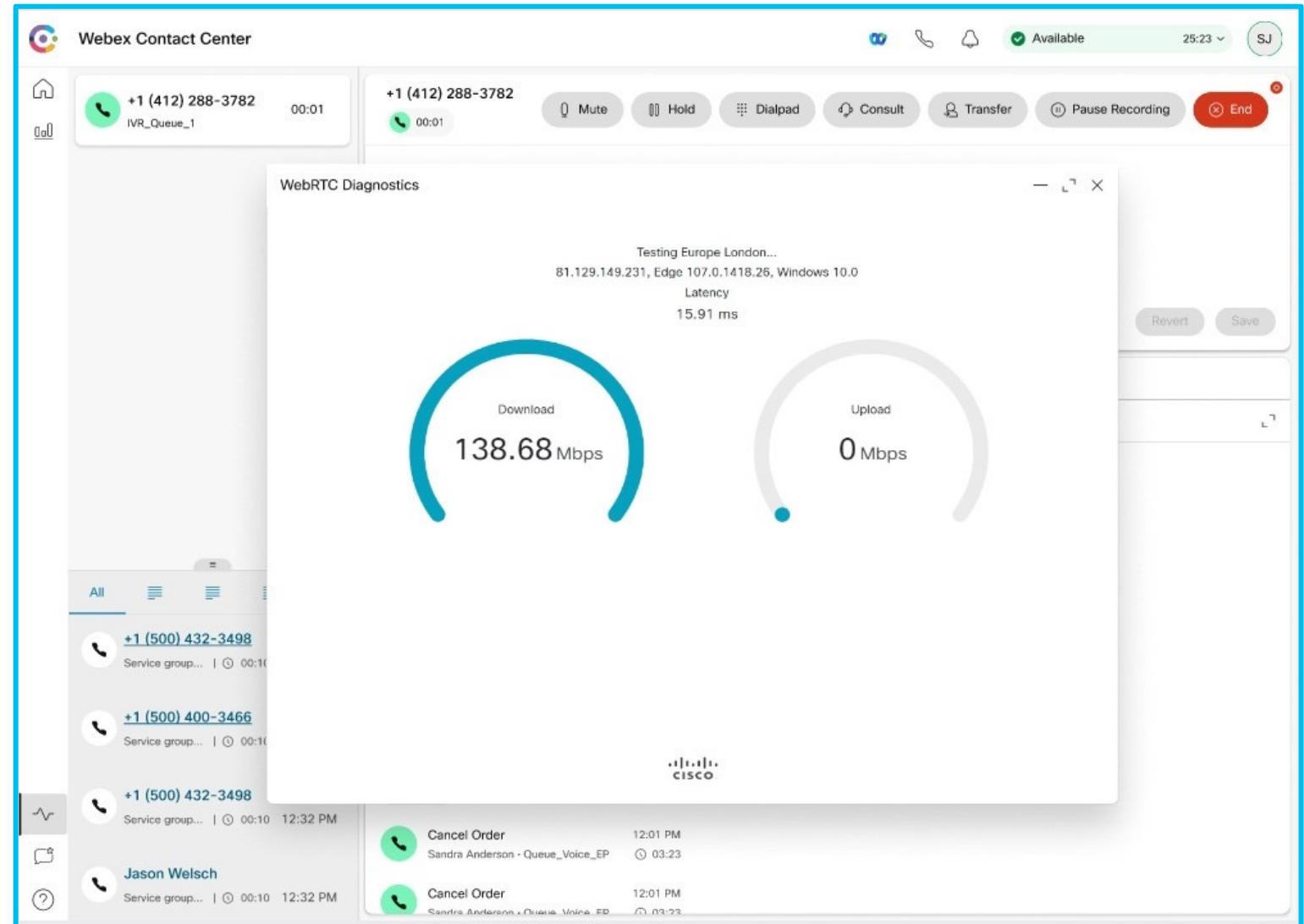
Mute Button and Dialpad

- Mute button will be added to call control widget
- Dialpad for DTMF and out-dial will be added to call control widget



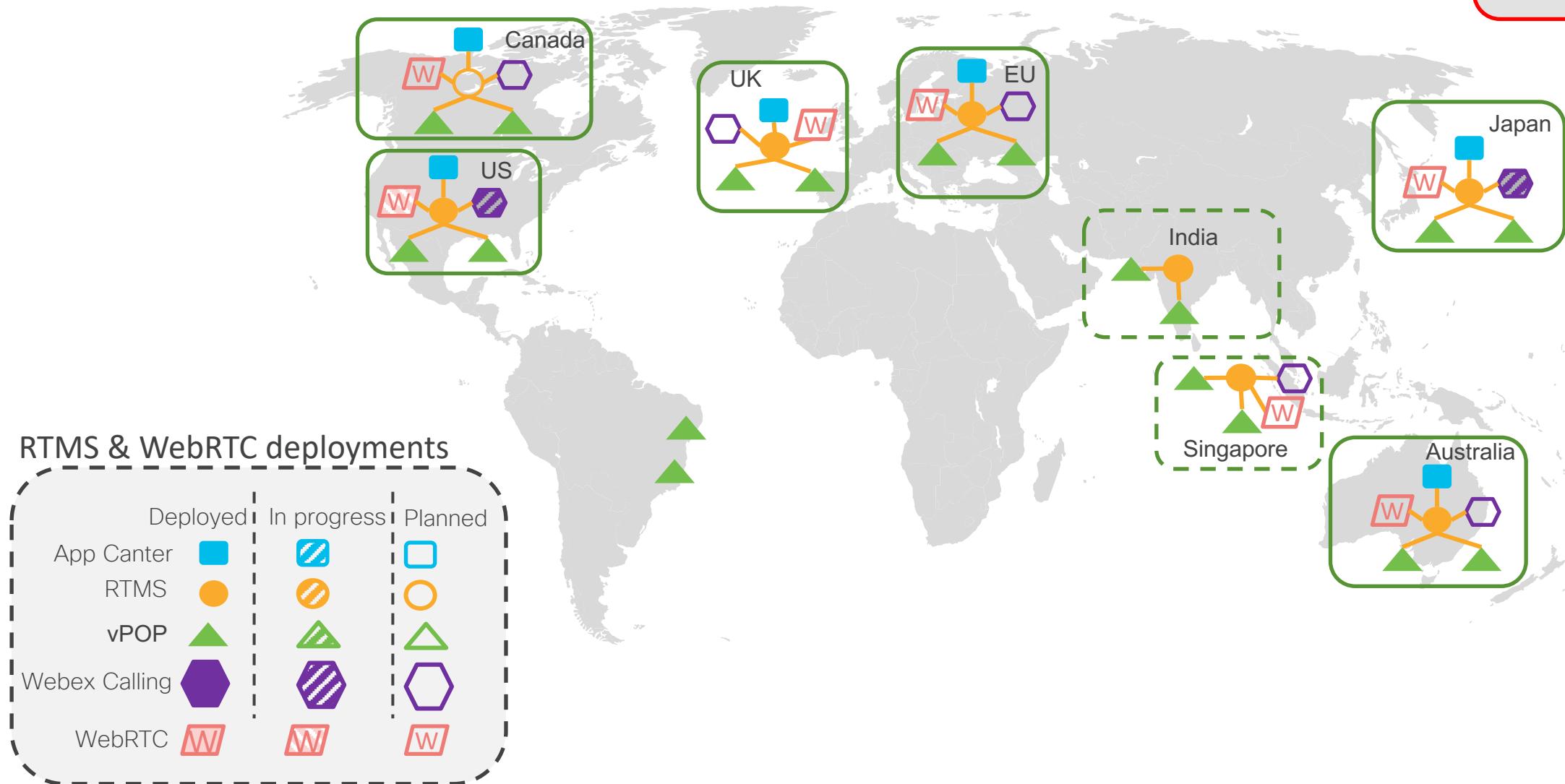
Troubleshooting

- Inbuilt troubleshooting facilities
 - Tests the general network link to the agent position looking at download and upload speeds, measuring packet loss and jitter
 - Checks for microphone and camera operation
 - Provides a confidence check that the agent position is ready to use webRTC.

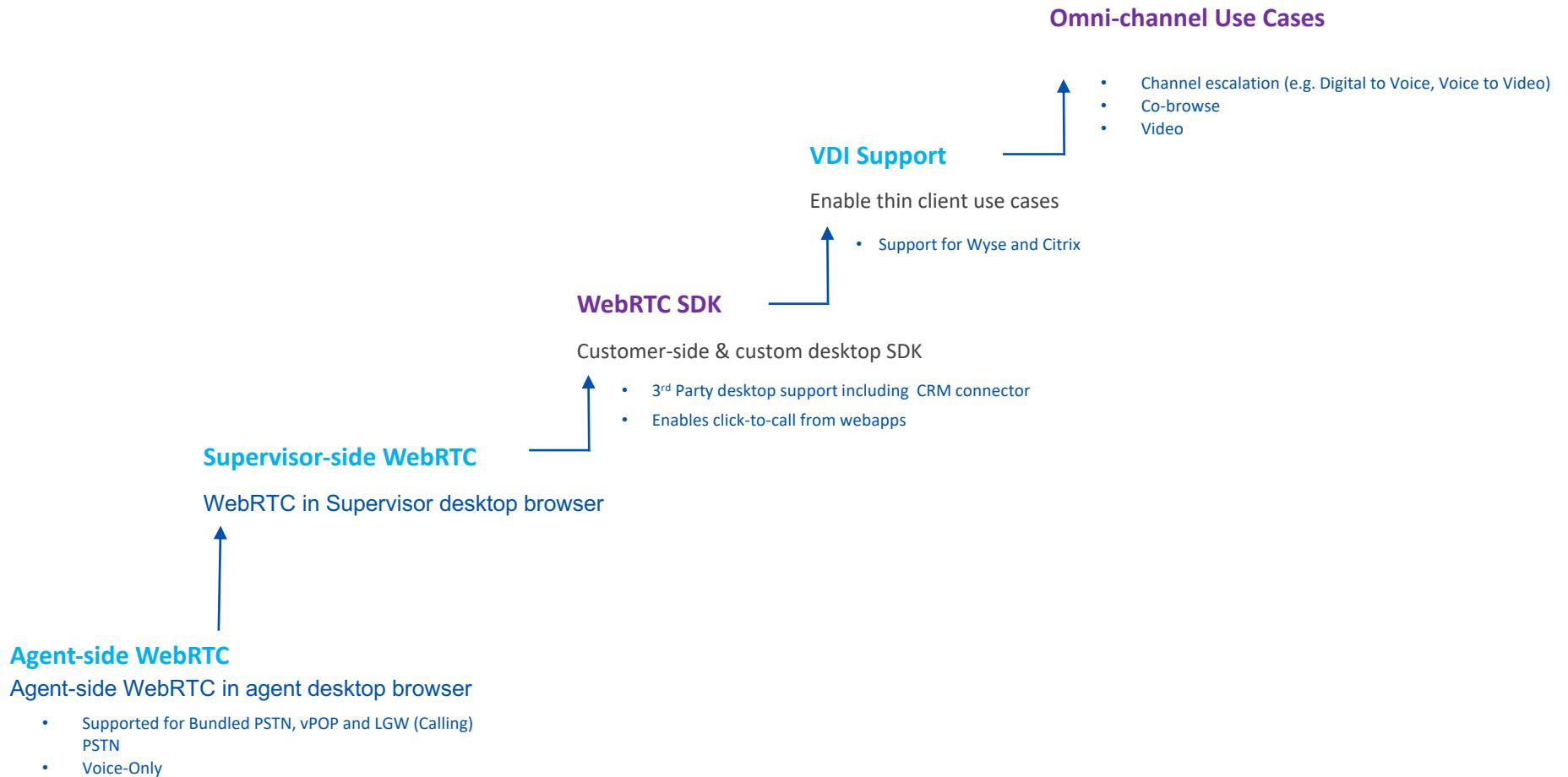


WebRTC availability, in progress & planned

WebRTC
(DRAFT) plans.



Webex CC WebRTC Phasing



Takeaways ...

The new media services architecture allows for

Fast deployment & expansion

Auto scaling

Greater global footprint

WebRTC

All the above

Online References

- [WxCC data sheet](#)
- [What's new in WxCC](#)
- [Webex Contact Center Expert course](#)
- [Webex Contact Center Sales course](#)

[SalesConnect Hub WxCC](#)

[D-Cloud](#)





Don't forget to submit your feedback & survey

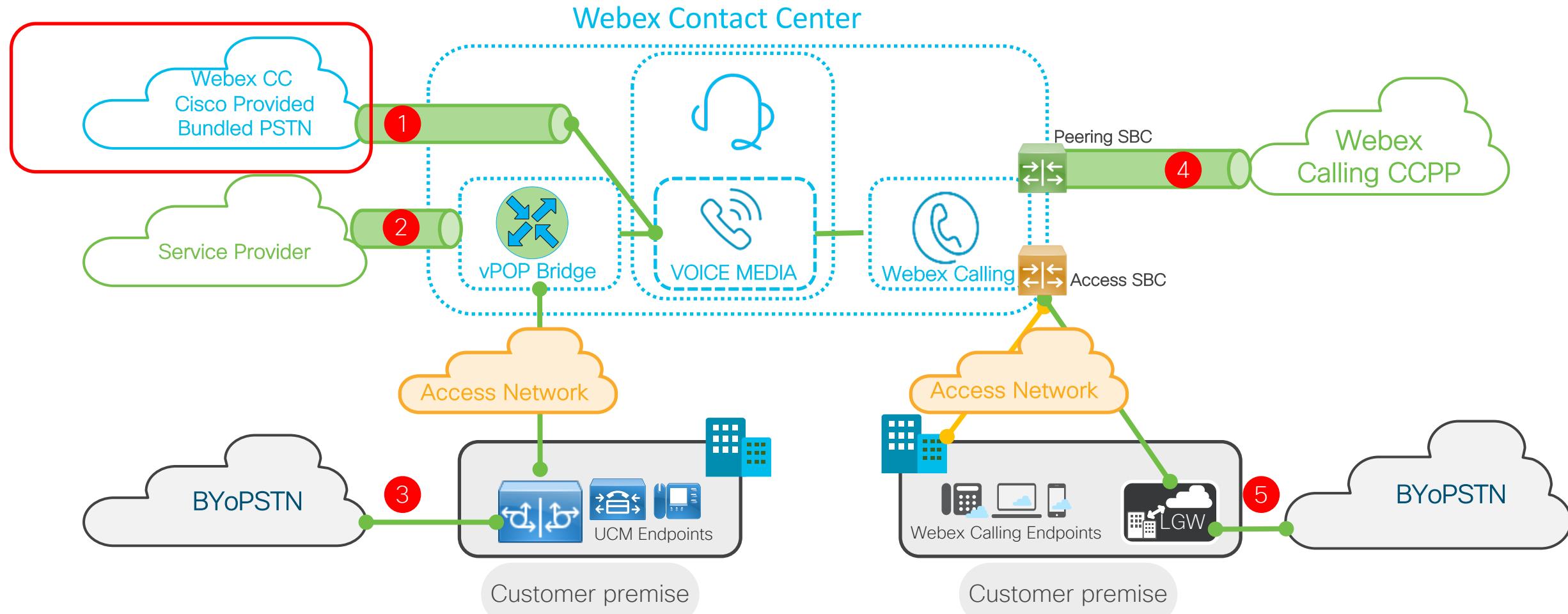


The bridge to possible

Appendix

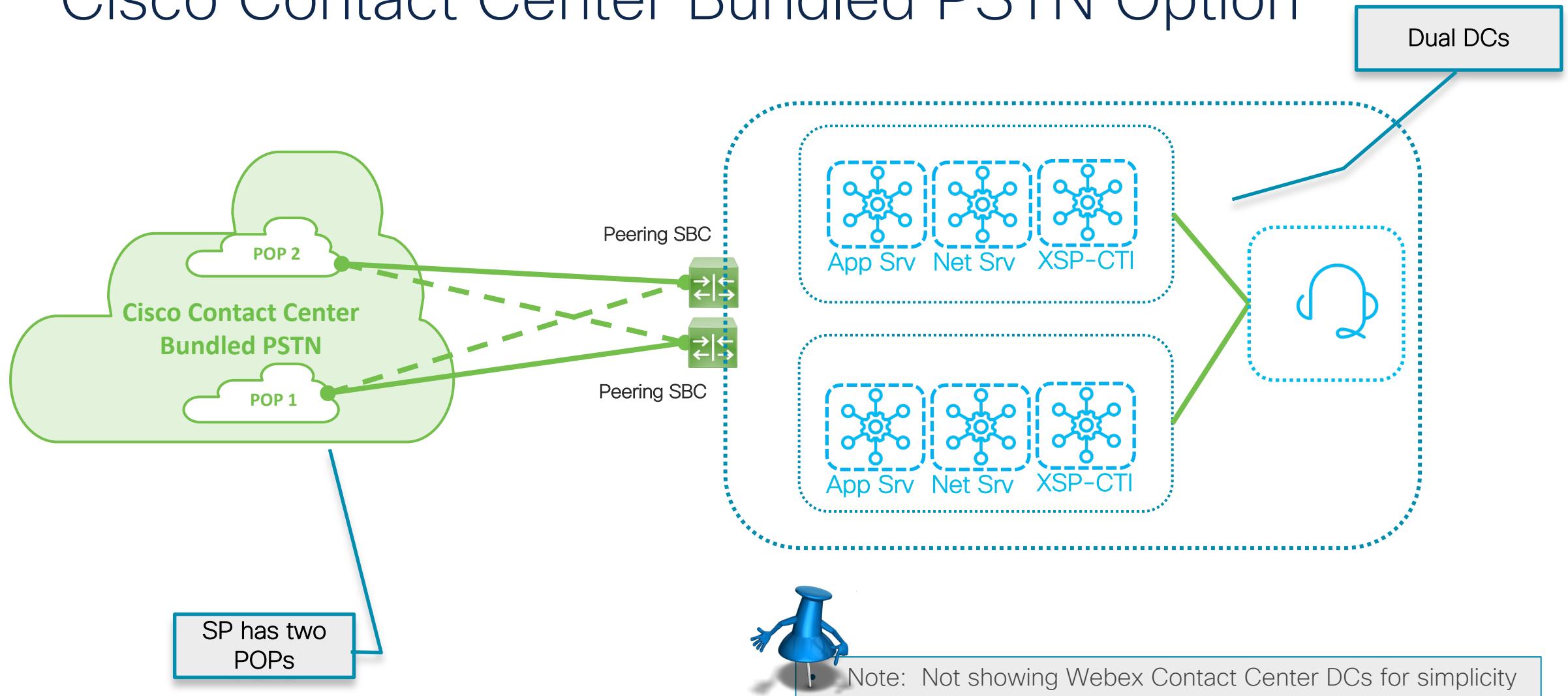
High Availability for PSTN Options

Webex Contact Center

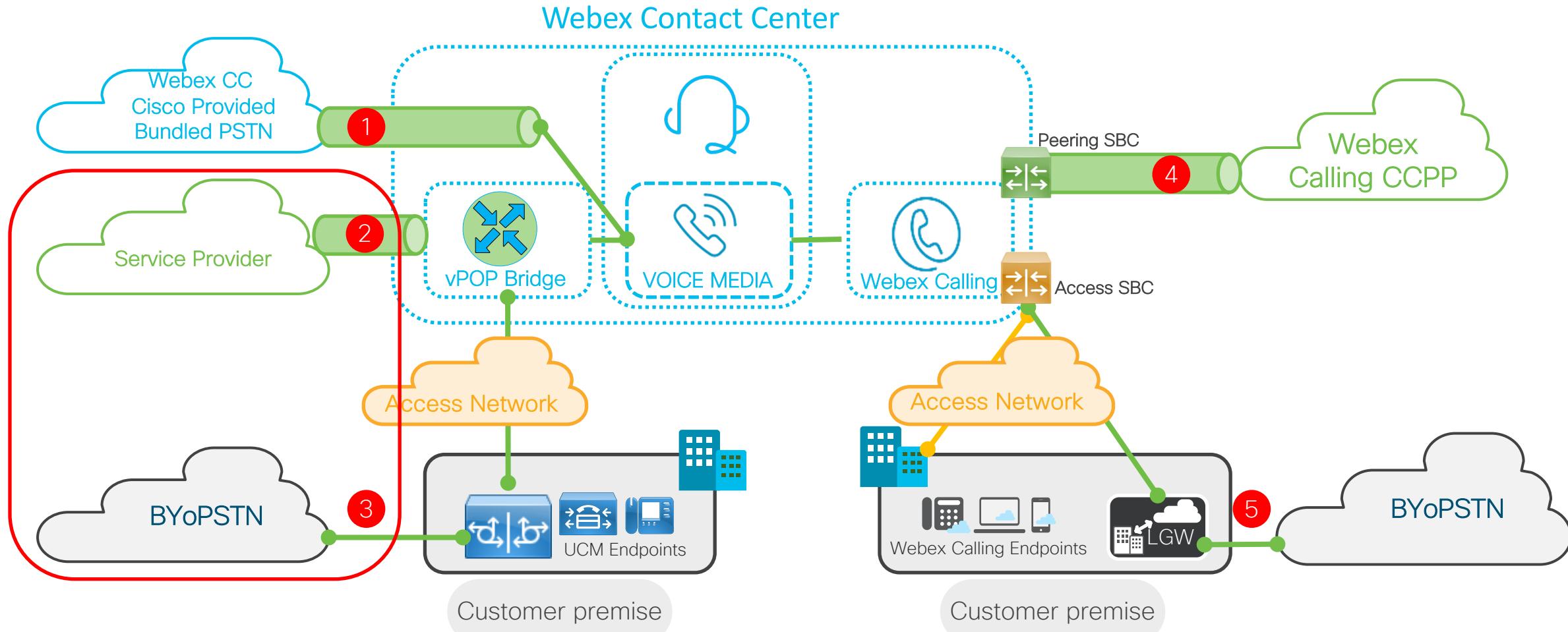


High Availability

Cisco Contact Center Bundled PSTN Option

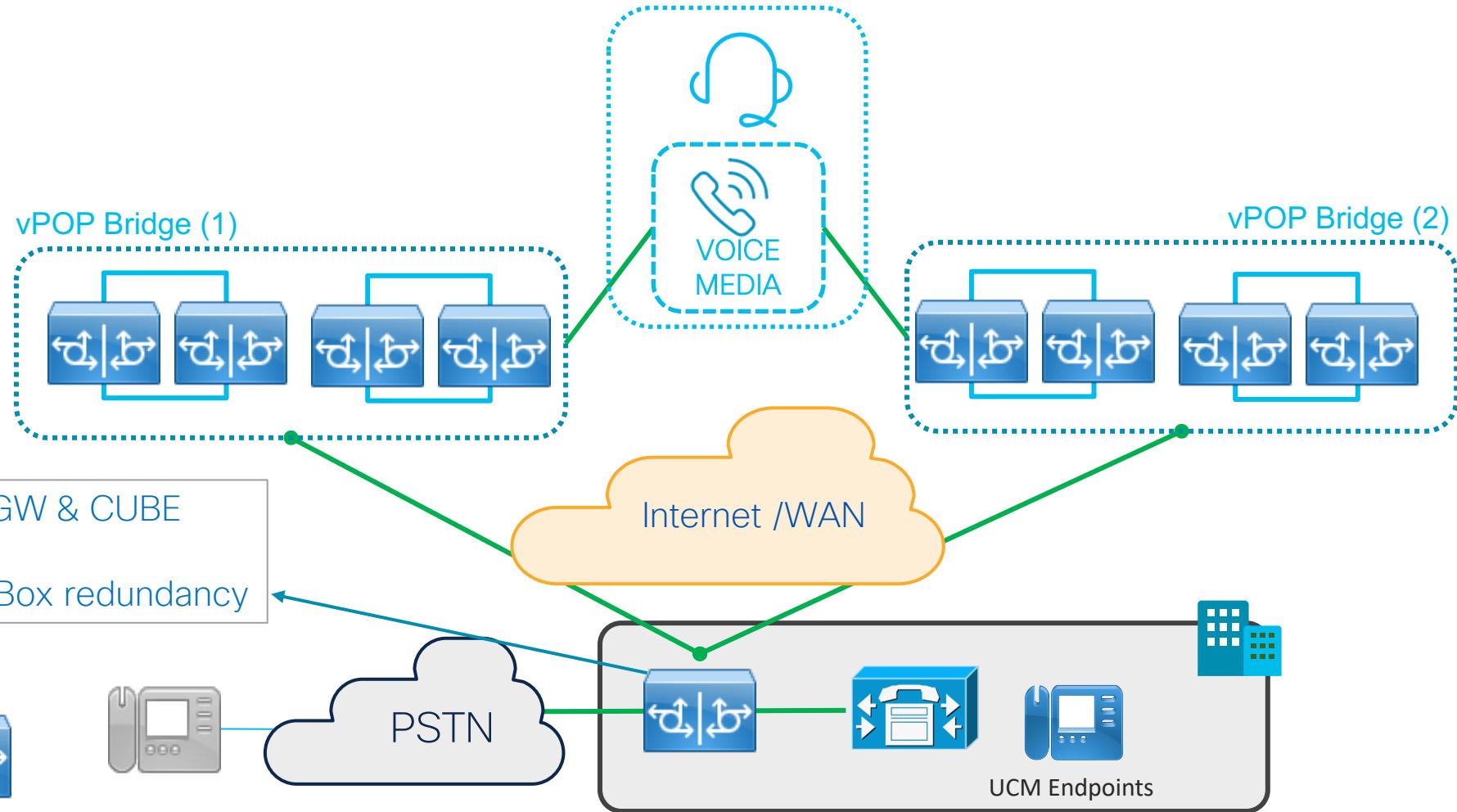


Webex Contact Center



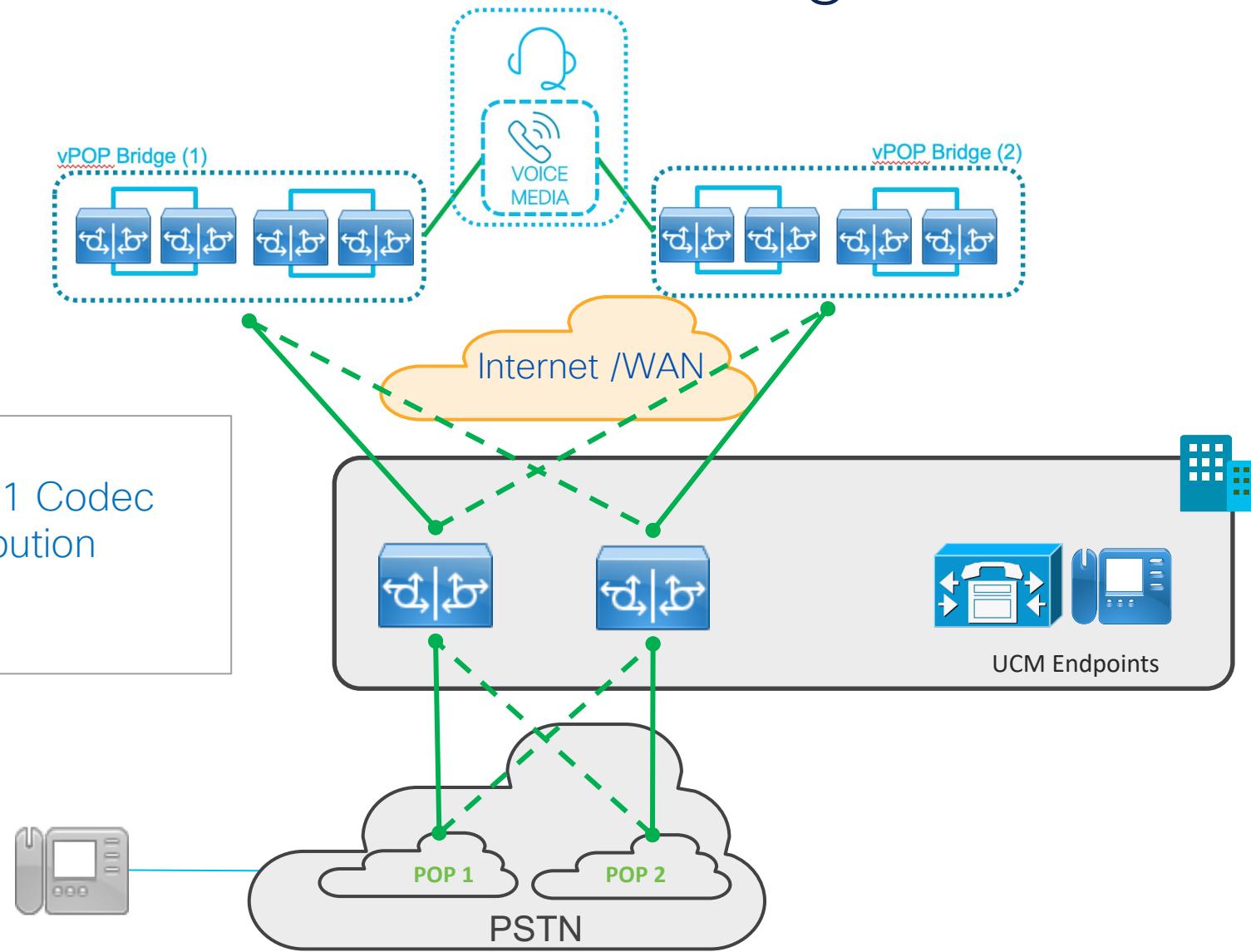
High Availability

SIP trunk from CUBE to vPOP bridge

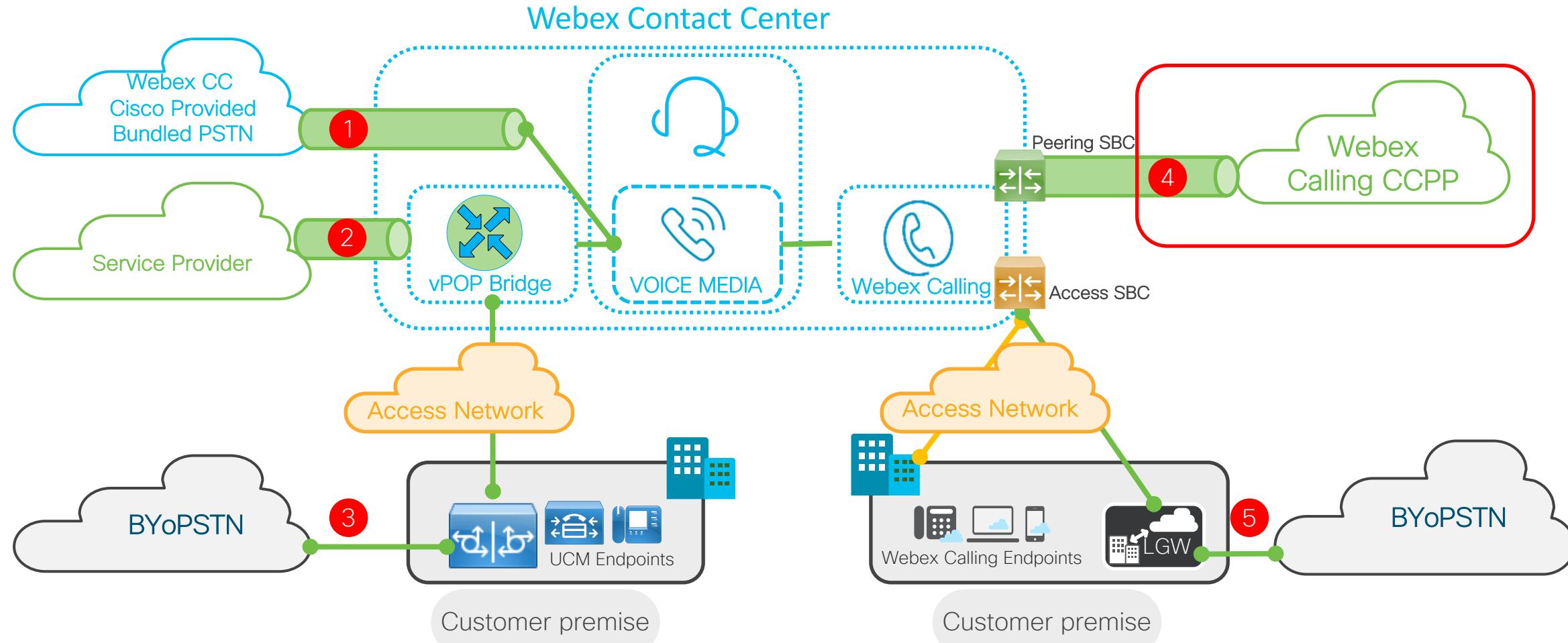


High Availability

SIP trunk from CUBE to vPOP bridge

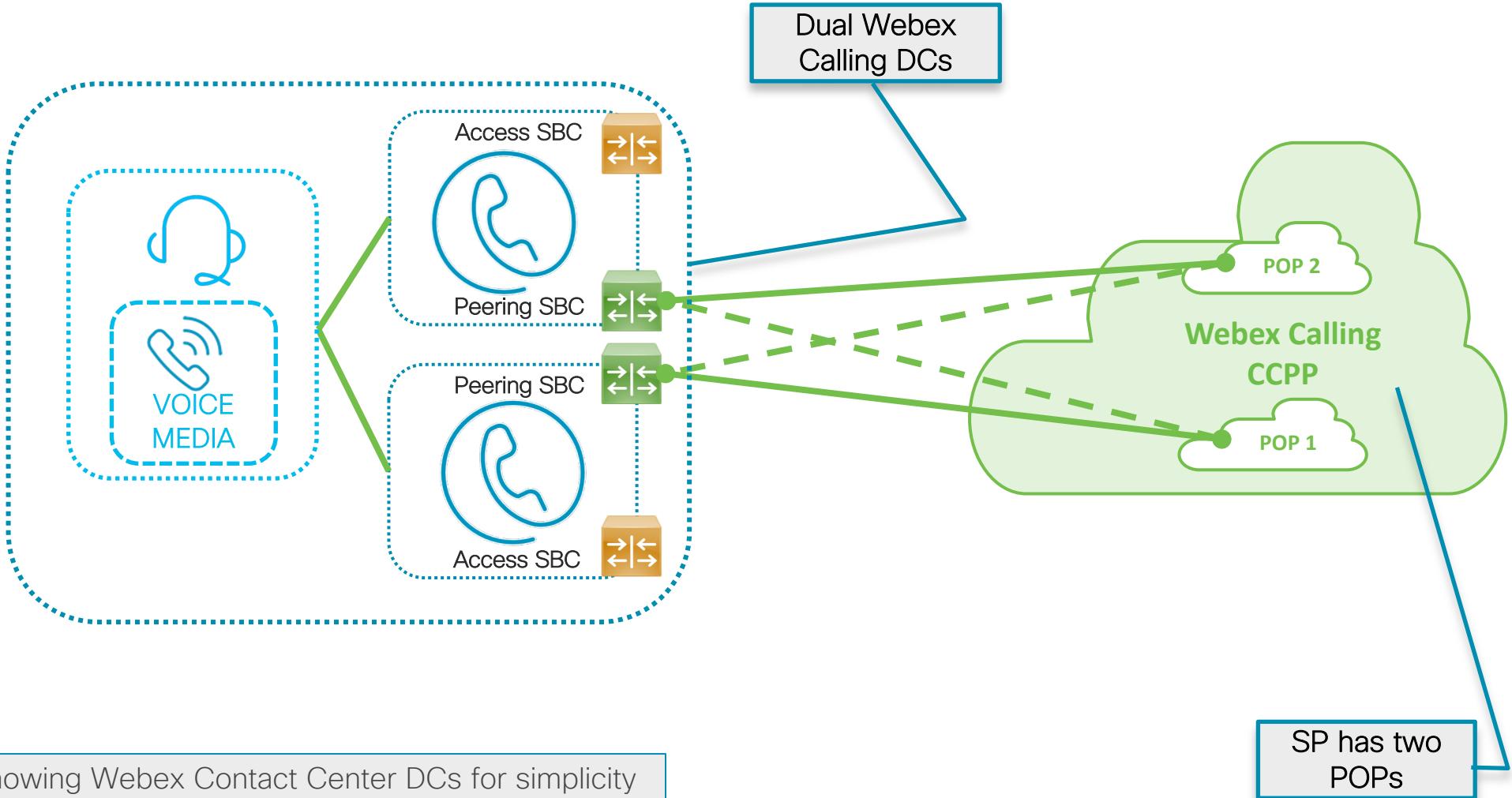


Webex Contact Center

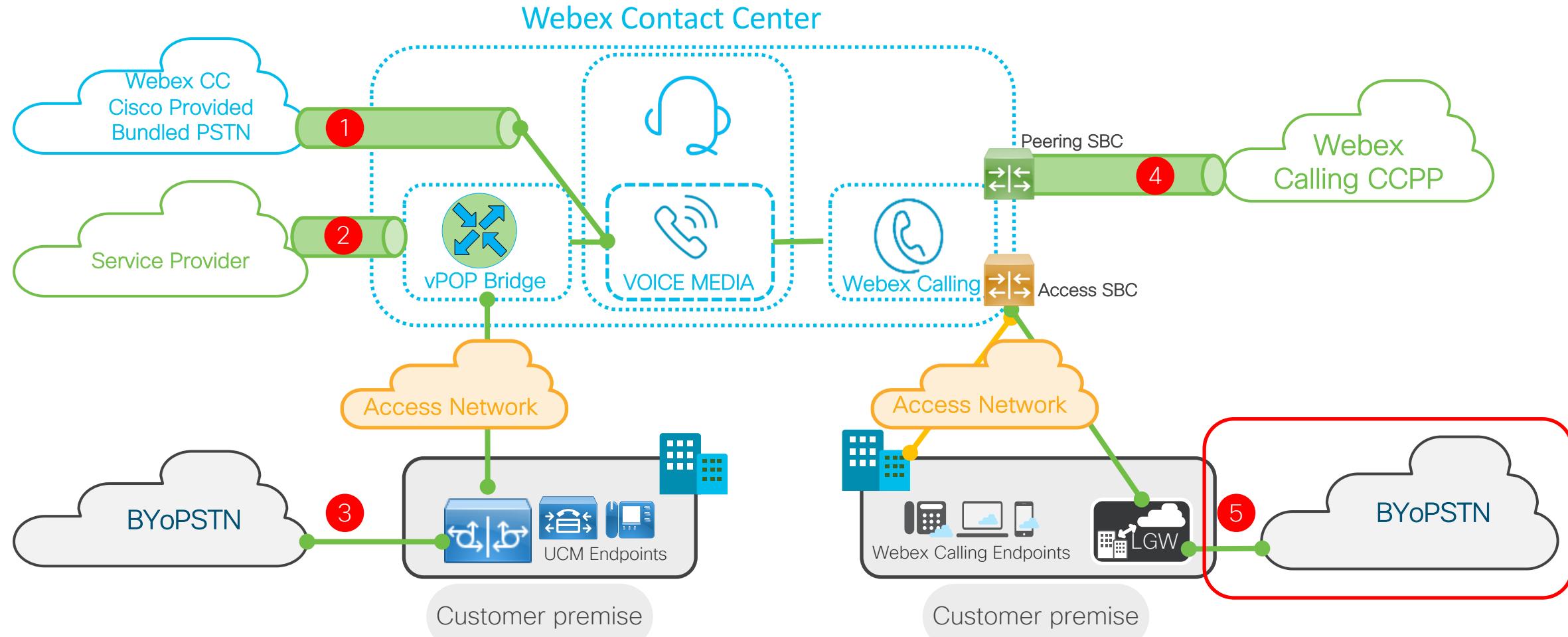


High Availability

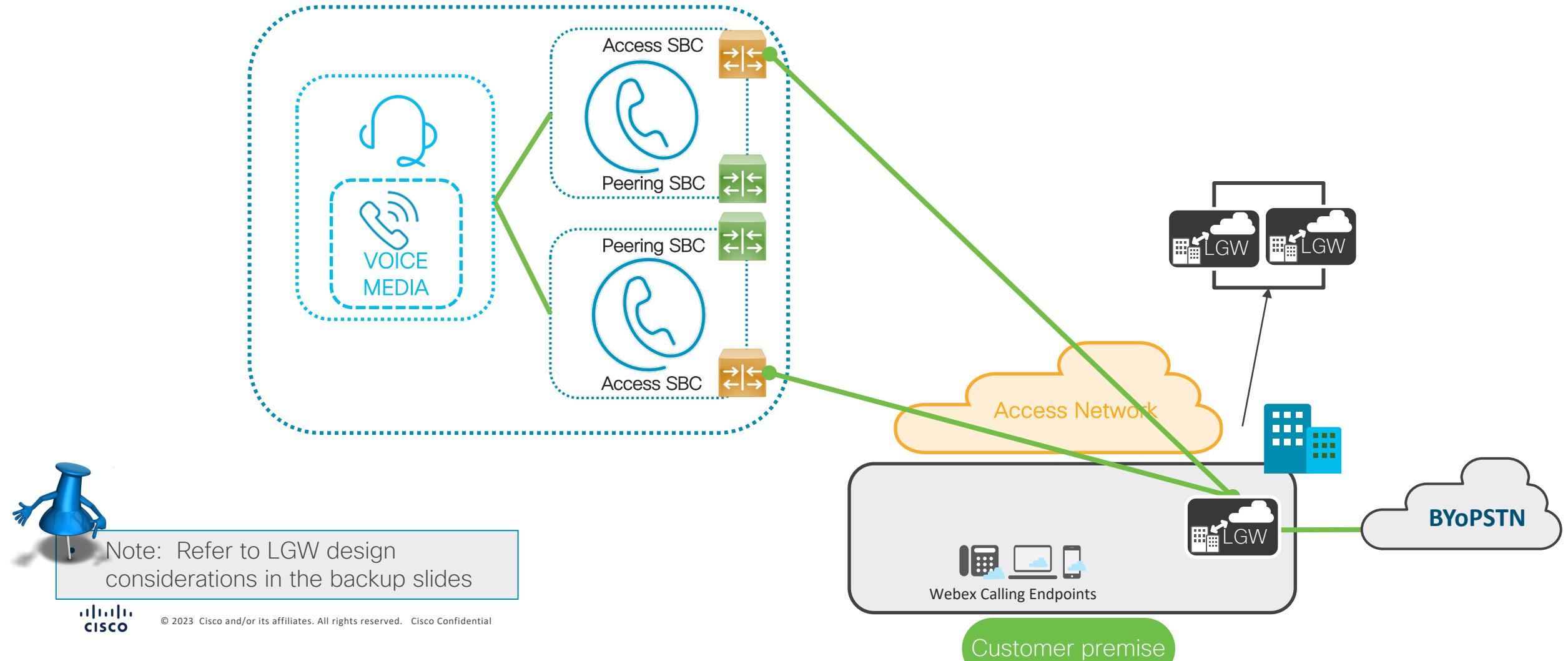
CCPP As PSTN Option



Webex Contact Center



Local Gateway As PSTN Option



Onboarding via Control Hub

CH First Time Setup Wizard

Confirmation of the Services and Licenses Purchased

Plan Review

Webex Teams	Webex Meeting	Webex Calling	Contact Center
Free Public Collaboration Services			
Cisco Webex Teams Free Messaging	Cisco Webex Teams Free Meetings	Cisco Webex Free Calling	None
Licensed Collaboration Services			
Start your new 90-day trial.	Webex Meetings	Start your new 90-day trial.	Start your new 90-day trial.
Webex Teams Webex Teams Trial Qty: 100		Trial Enterprise Qty: 100 Basic Qty: 100 Places Qty: 100	Webex Contact Center Trial Premium Concurrent Agents Qty: 50 Trial Standard Concurrent Agents Qty: 50

First Time Setup Wizard

Plan Review
Overview of your collaboration plan

Calling Settings  Phone-related settings

Contact Center Settings  Platform and telephony settings

Enterprise Settings  Set up global configurations

Finish  Complete your setup

Need help - [Search the knowledge base](#).

Calling Settings

Data Center Country Selection

Choose the country to which all data, media, and registrations will be mapped. Once selected, this country can't be changed and all subsequent locations and users will be provisioned to the associated data center. The country can be different from where a location is physically located. [\(i\)](#)

United States of America

Customer Contact

First Name: Site

Last Name: Admin

Phone Number:  +1 (240) 720-0664

Email: email@emaildomain.com

Customer Address

Address: Address

Unit, Suite, etc.: Unit, Suite, etc.

City / Town: Washington

State/ Province/ Region: Alaska

ZIP/ Postal Code: 123456

[Back](#) [Next: Default Location](#)



First Time Setup Wizard

Plan Review
Overview of your collaboration plan

Calling Settings
Phone-related settings

Contact Center Settings
Platform and telephony settings

Enterprise Settings
Set up global configurations

Finish
Complete your setup

Calling Settings

You can close and let the customer complete the rest of the setup.

Save & Close

To setup your first Location, enter the Location Name and provide additional details below. You can add more locations later by going to **Services > Call > Locations**. Phone numbers can also be added to your location later.

Location Name
HQ

Country
United States of America

Language
English (United States)

Time Zone
America/New_York

Clear

Skype for Business ⓘ

Location Address

Address
Address

Unit, Suite, etc.
Unit, Suite, etc.

City / Town
Washington

State/ Province/ Region
Alaska

ZIP/ Postal Code
123456

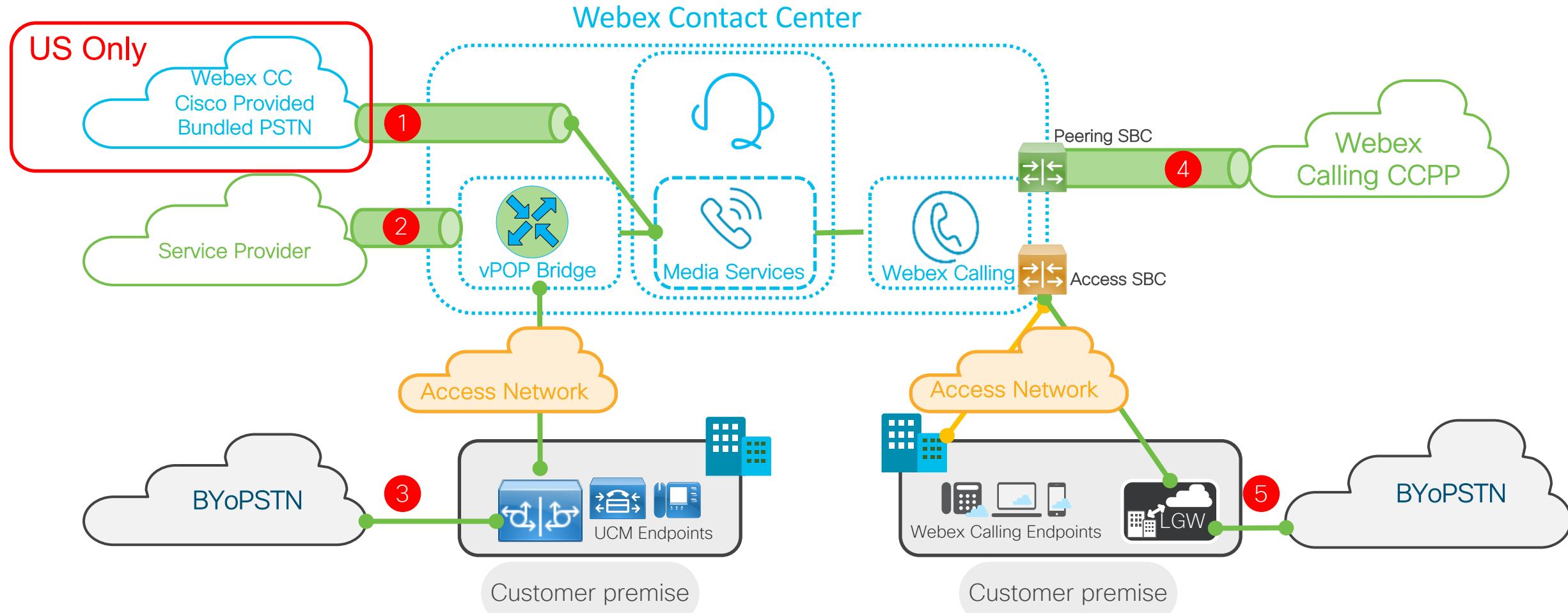
Clear **Reset to saved information** ⓘ

Back **Next**

Need help - [Search the knowledge base](#).



Cisco Provided Bundled PSTN



Cisco PSTN Bundle



The screenshot shows the 'Subscription Review' step of the Cisco PSTN Bundle setup. On the left, a sidebar lists four sections: 'Subscription Review' (Overview of your collaboration plan), 'Contact Center Settings' (Platform and telephony settings, highlighted in blue), 'Enterprise Settings' (Set up global configurations), and 'Provision and Begin Billing' (Complete your setup). A large red box highlights the 'Webex Contact Center Platform' configuration section. This section includes two options: 'PRODUCTION SUBSCRIPTION' (Default Platform) and 'EFT ONLY' (New Platform). Both options have a 'Learn more about the [platform]' link below them. Below this, a red box highlights the 'Webex Contact Center Telephony' section, which contains a note about the PSTN connection type and a checked checkbox for 'Webex Contact Center PSTN'. Navigation buttons 'Back' and 'Next' are at the bottom right.

Subscription Review
Overview of your collaboration plan

Contact Center Settings
Platform and telephony settings

Enterprise Settings
Set up global configurations

Provision and Begin Billing
Complete your setup

center. For more information, read here.

United States of America

Webex Contact Center Platform
Choose a contact center platform for this customer. Consult with Cisco Solution Assurance to ensure the right selection. This configuration cannot be changed later.

PRODUCTION SUBSCRIPTION
Default Platform
Select this option to setup a tenant for a Webex Contact Center Subscription Order.
[Learn more about the Default Platform](#)

EFT ONLY
New Platform
Select this option to setup an EFT tenant for the Webex Contact Center Platform.
[Learn more about the New Platform](#)

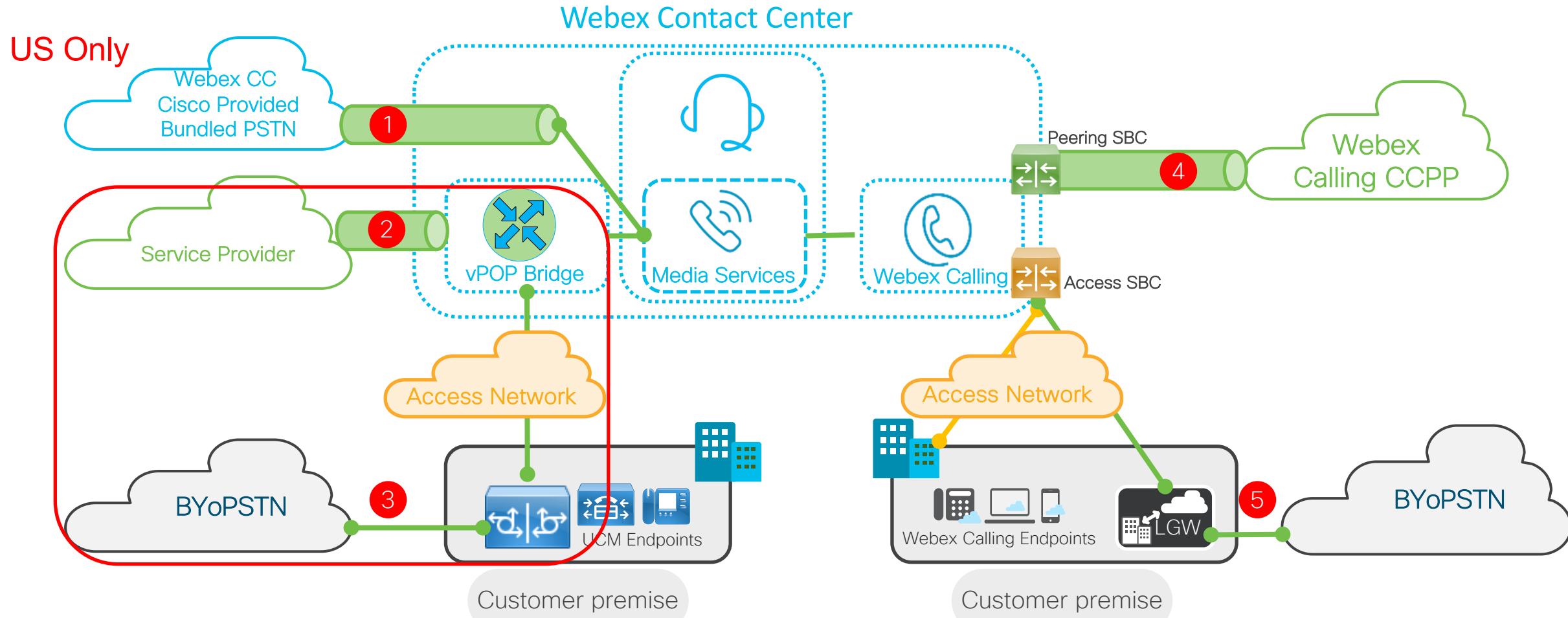
Webex Contact Center Telephony
To learn about Contact Center telephony, please read the Voice Onboarding for Webex Contact Center document.

Webex Contact Center PSTN
This PSTN connection type was selected as part of the order in Cisco Commerce Workspace (CCW) Ordering tool.

Need help - [Search the knowledge base](#).

Back Next

vPOP Bridge PSTN Options



First Time Setup Wizard

Webex Contact Center – PSTN Options



Plan Review

Overview of your collaboration plan

Calling Settings

Phone-related settings

Contact Center Settings

Platform and telephony settings

Enterprise Settings

Set up global configurations

Finish

Complete your setup

Contact Center Settings

Webex Contact Center country of operation

Select the country where this contact center will operate from. The customer tenant will be mapped to the closest regional data center. For more information, [read here](#).

United States of America

Webex Contact Center Platform

Choose a contact center platform for this customer. Consult with Cisco Solution Assurance to ensure the right selection. This configuration cannot be changed later.

PRODUCTION SUBSCRIPTION

Default Platform

Select this option to setup a tenant for a Webex Contact Center Subscription Order.

[Learn more about the Default Platform](#)

EFT ONLY

New Platform

Select this option to setup an EFT tenant for the Webex Contact Center Platform.

[Learn more about the New Platform](#)

Webex Contact Center Telephony

To learn about Contact Center telephony, please read the [Voice Onboarding for Webex Contact Center document](#).

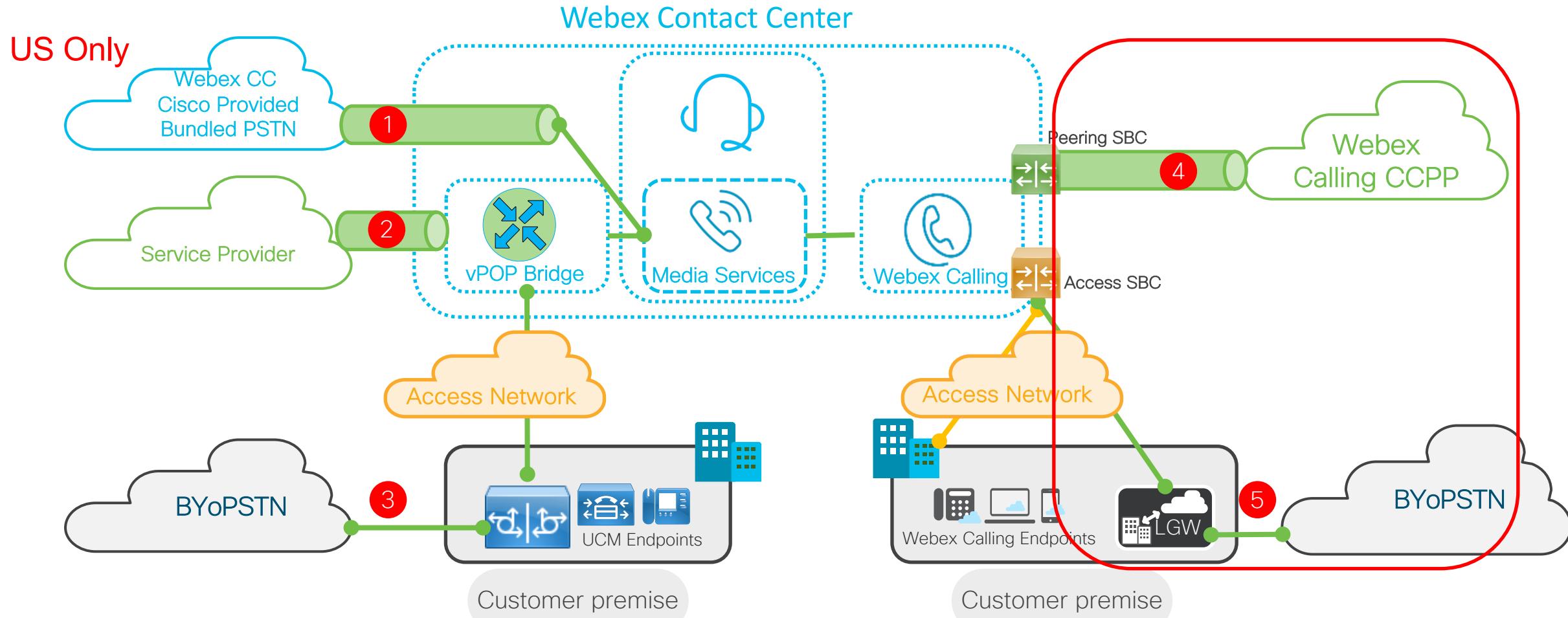
Voice POP Bridge

Service Providers can use this telephony option to provide telephony connection to Voice POPs. Verify this selection is correct as it cannot be changed later.

Webex Calling

Choose this option if you would like to configure Contact Center telephony through one of the approved Webex Calling Cloud Connected Providers(CCPs) or Local gateway.

Webex Calling PSTN Options



First Time Setup Wizard

Webex Contact Center – PSTN Options

Plan Review

Overview of your collaboration plan

Calling Settings

Phone-related settings

Contact Center Settings

Platform and telephony settings

Enterprise Settings

Set up global configurations

Finish

Complete your setup

Contact Center Settings

Webex Contact Center country of operation

Select the country where this contact center will operate from. The customer tenant will be mapped to the closest regional data center. For more information, [read here](#).

United States of America ▾

Webex Contact Center Platform

Choose a contact center platform for this customer. Consult with Cisco Solution Assurance to ensure the right selection. This configuration cannot be changed later.

PRODUCTION SUBSCRIPTION

Default Platform

Select this option to setup a tenant for a Webex Contact Center Subscription Order.

[Learn more about the Default Platform](#)

EFT ONLY

New Platform

Select this option to setup an EFT tenant for the Webex Contact Center Platform.

[Learn more about the New Platform](#)

Webex Contact Center Telephony

To learn about Contact Center telephony, please read the [Voice Onboarding for Webex Contact Center document](#).

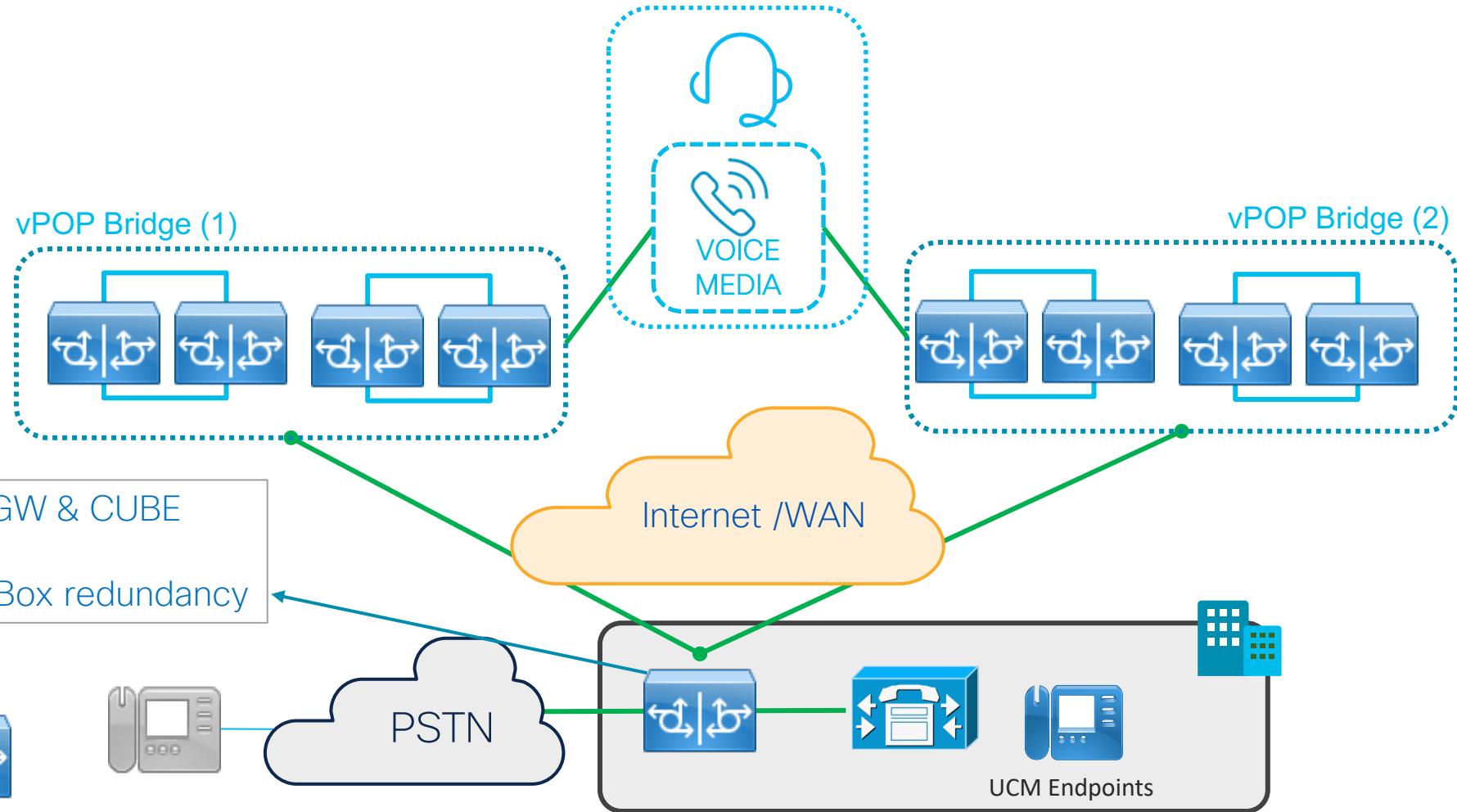
Voice POP Bridge
Service Providers can use this telephony option to provide telephony connection to Voice POPs. Verify this selection is correct as it cannot be changed later.

Webex Calling
Choose this option if you would like to configure Contact Center telephony through one of the approved Webex Calling Cloud Connected Providers(CCPs) or Local gateway.

Premise-based CUBE Design Considerations

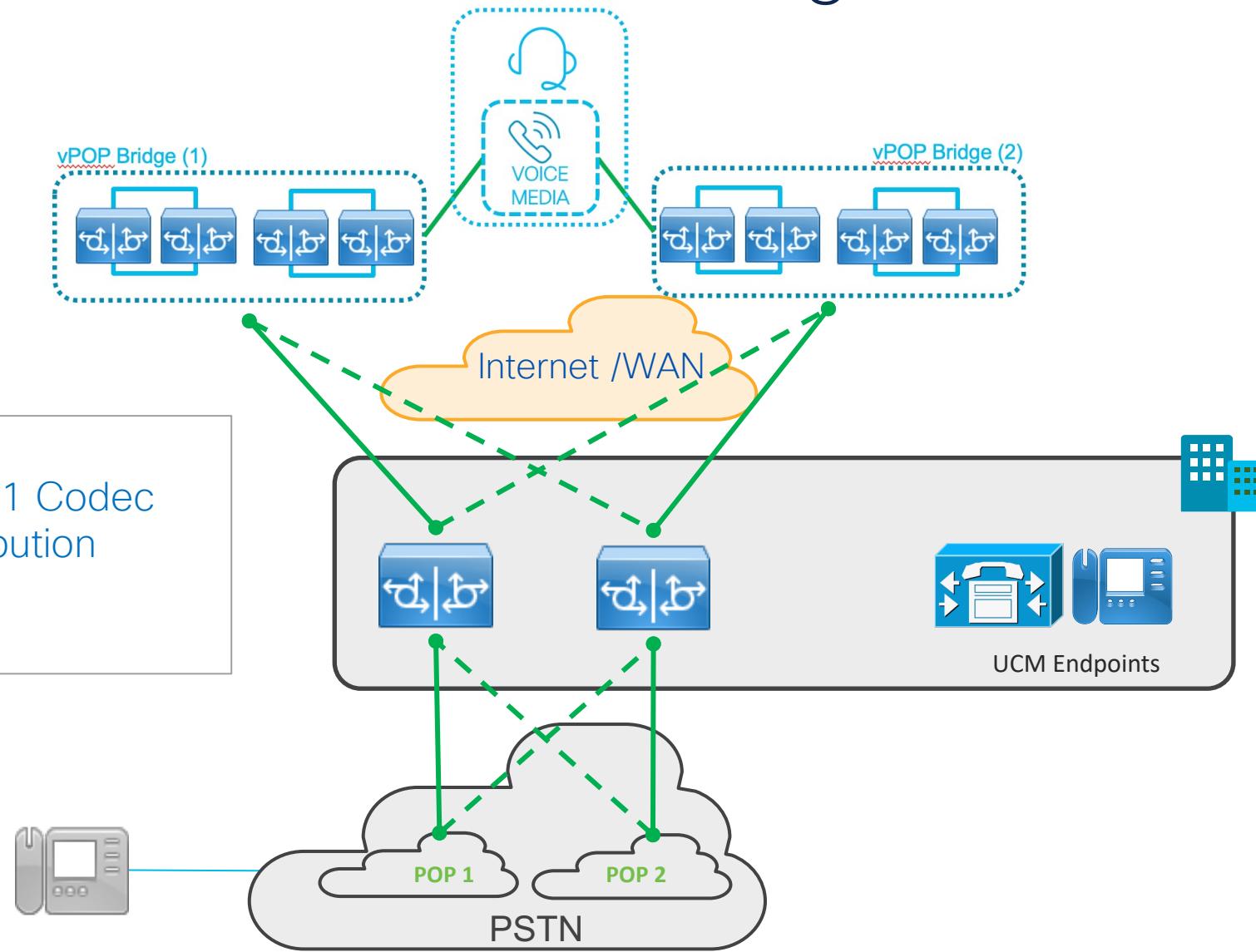
High Availability

SIP trunk from CUBE to vPOP bridge



High Availability

SIP trunk from CUBE to vPOP bridge



CUBE Sizing Considerations

- SIP over TLS & SRTP reduces CUBE device capacity when compared with basic Collab calls
- If you are planning to use SIP over TLS. You will need to use effective capacity.

CUBE Encrypted IPT Session Capacity (IOS-XE 16.12+)

Platform	Session Capacity (IOS-XE 16.12+) RTP(G711)-RTP(G711)	Impact of sRTP to IPT	Encrypted Audio calls w/SHA1_80 sRTP(G711)-RTP(G711)	CPS
CSR1Kv - Based on tests using Cisco UCS® C240 host with Intel® Xeon® 6132 2.60GHz processors running VMware ESXi 6.0.				
1100 series (Default DRAM)	500	40%	300	2
4321 (4 GB)	500	40%	300	1
4331 (4 GB)	1000	40%	600	3
4351 (4 GB)	2000	62.5%	750	4
4431 (8 GB)	3000	75%	750	4
4451 (8 GB)	6000	65%	2100 (16.12.2)	11
4461 (8 GB)	10000 (17.2.1r)	46%	5400 (17.3.1)*	30
C8300-1N1S-6T (8 GB)	7000 (17.3.2)	77%	1600 (17.3.2)	9
C8300-2N2S-6T (8 GB)	7500 (17.3.2)	76%	1800 (17.3.2)	10
C8300-1N1S-4T2X (8 GB)	8000 (17.3.2)	74%	2100 (17.3.2)	12
C8300-2N2S-4T2X (16 GB)	10000 (17.3.2)	57%	4300 (17.3.2)	24
CSR1Kv - 1 vCPU ¹ (4 GB)	1000	70%	300	1
CSR1Kv - 2 vCPU ¹ (4 GB)	3000	67%	1000	6
CSR1Kv - 4 vCPU ¹ (8 GB)	6000	82%	1080	6
ASR1001-X (16 GB)	12000	79%	2700	13
ASR1002-X (16 GB)	14000	55%	6500	36
ASR1004/6/6-X RP2/ESP40 (16 GB)	16000	78%	3500	20

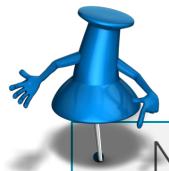
Effective capacity could be simplified to
(number of concurrent agents X 2) + (active sessions in queue)



Recommended config for Premise CUBE

- To handle error messages and play announcements, huntstop feature starting IOS-XE 17.4+

```
voice class server-group 1
  ipv4 <vPoP1>
  ipv4 <vPoP2>
  ipv4 <redirection service>
  huntstop 1 resp-code 400 to 479
  huntstop 2 resp-code 481 to 500
```

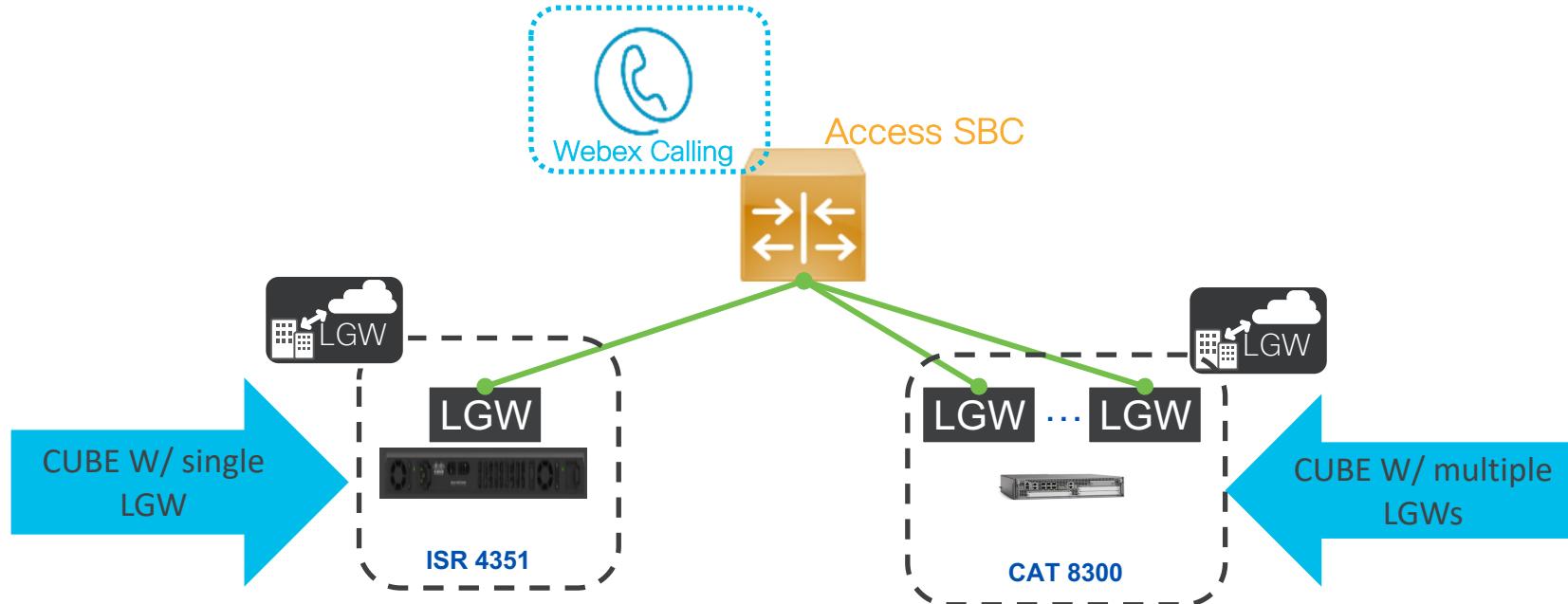


Note:

Not showing the dial peer to send the call to a destination to play announcement message to the caller

Local Gateway (LGW) Design Considerations

Closer look at Registration based LGW



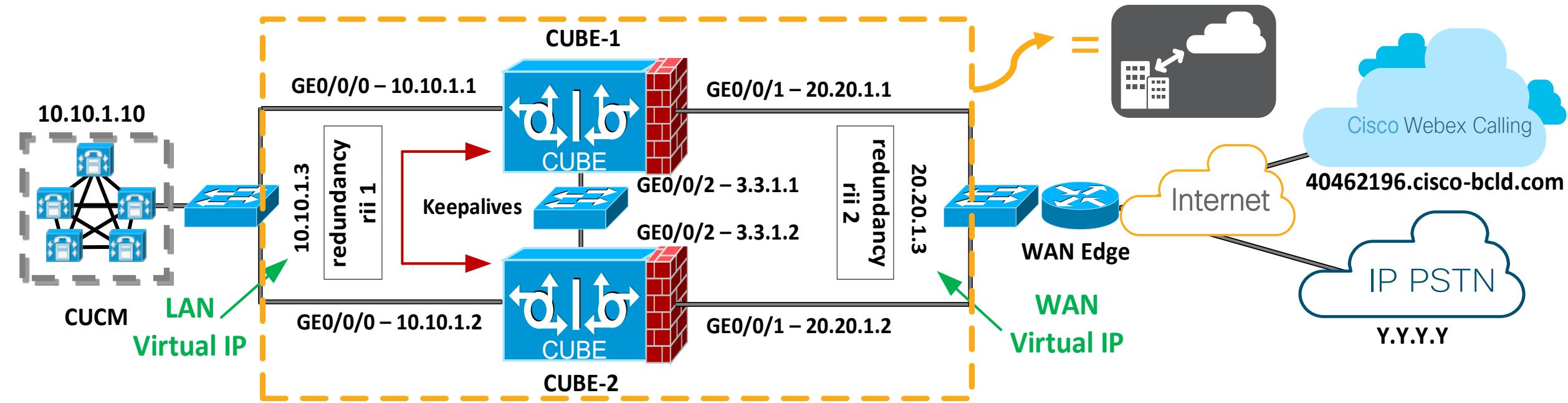
Can run on (v)CUBE platform (ISR 4351 example)

A single (v)CUBE instance can support multiple LGWs, no overlays required
(Virtual Routing and Forwarding VRF , ...). (CAT 8300 example)

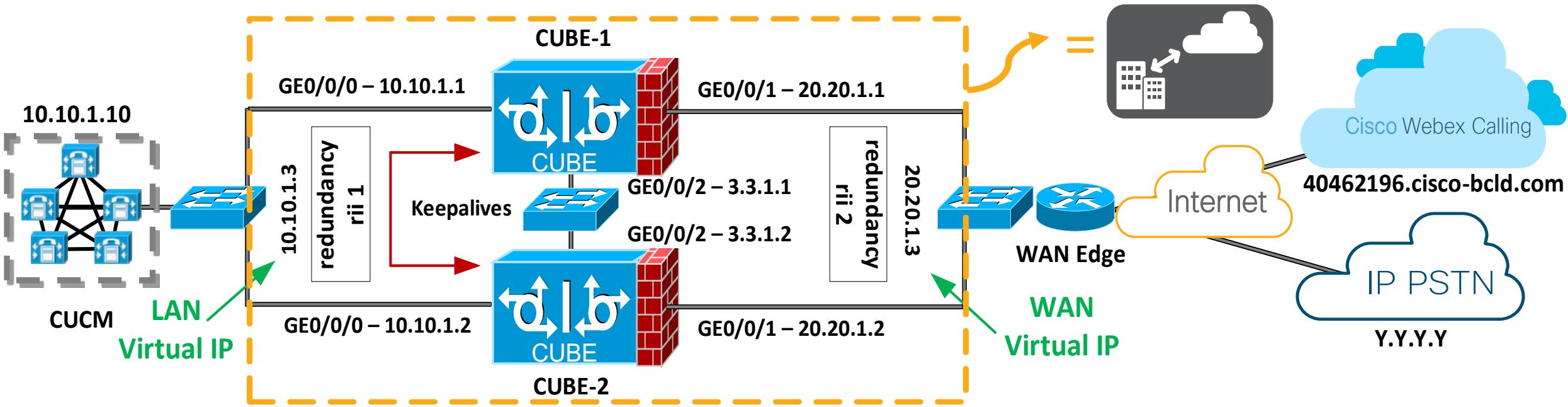
Refer to configuration details here <https://help.webex.com/en-us/article/jr1i3r/Configure-Local-Gateway-on-Cisco-IOS-XE-for-Webex-Calling>

Local Gateway CUBE High Availability Considerations

- LGW HA solution with layer 2 box-to-box redundancy for call preservation
 - CUBE HA Active/standby model using virtual IP addresses
 - **CUBE HA as LGW supported on ISR 4K and vCUBE only.**
 - vCUBE tracks only the next vSwitch interface resulting in SSO of vCUBE-HA only due to software failures (active vCUBE crashing/reloading)



Local Gateway CUBE High Availability Considerations (Cont.'d)



- Acts as a **single Local Gateway** from Webex Calling point of view. At any given time, only one platform will maintain an active registration as the Local Gateway with the Webex Calling access SBC.
- Support for Webex Calling deployments available from **IOS-XE 16.12.2**
- **LGW HA cannot have TDM or analog interfaces co-located**

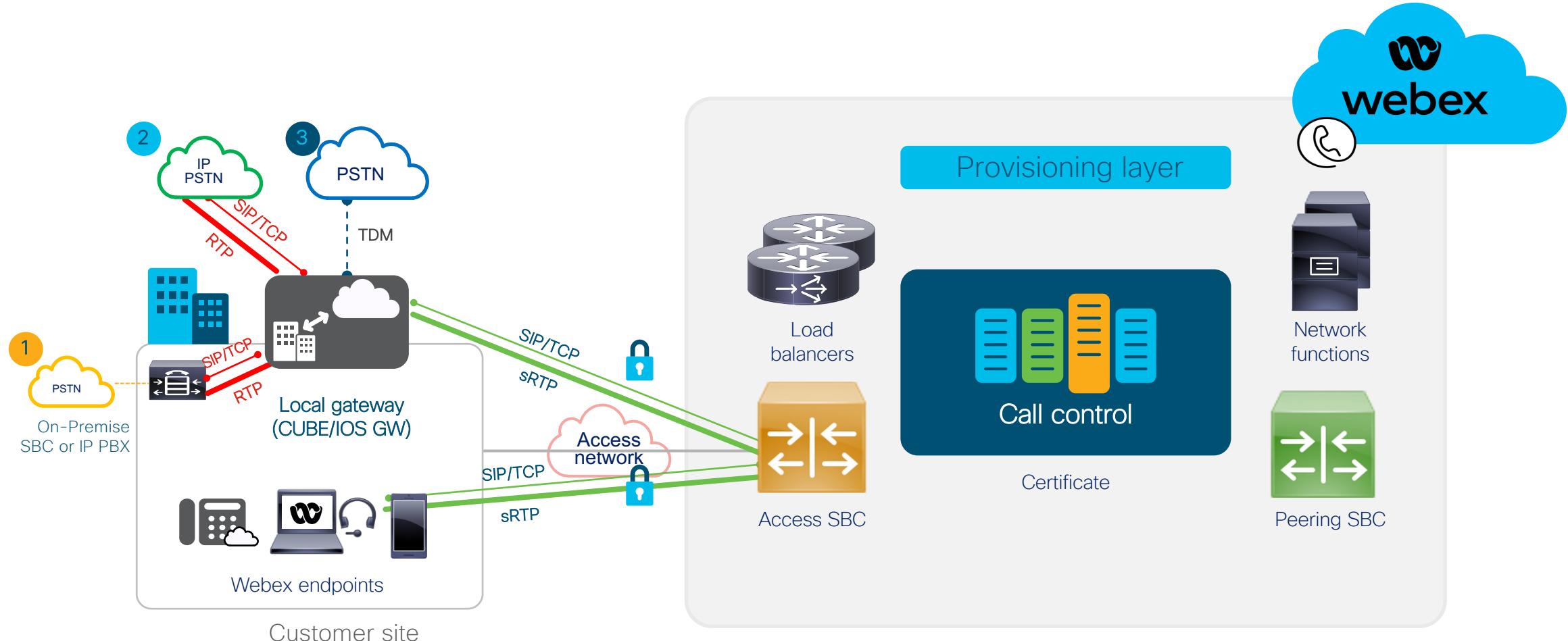


Note:

- Refer to <https://help.webex.com/en-us/article/ndiofhf/Implement-CUBE-High-Availability-as-Local-Gateway> for more details

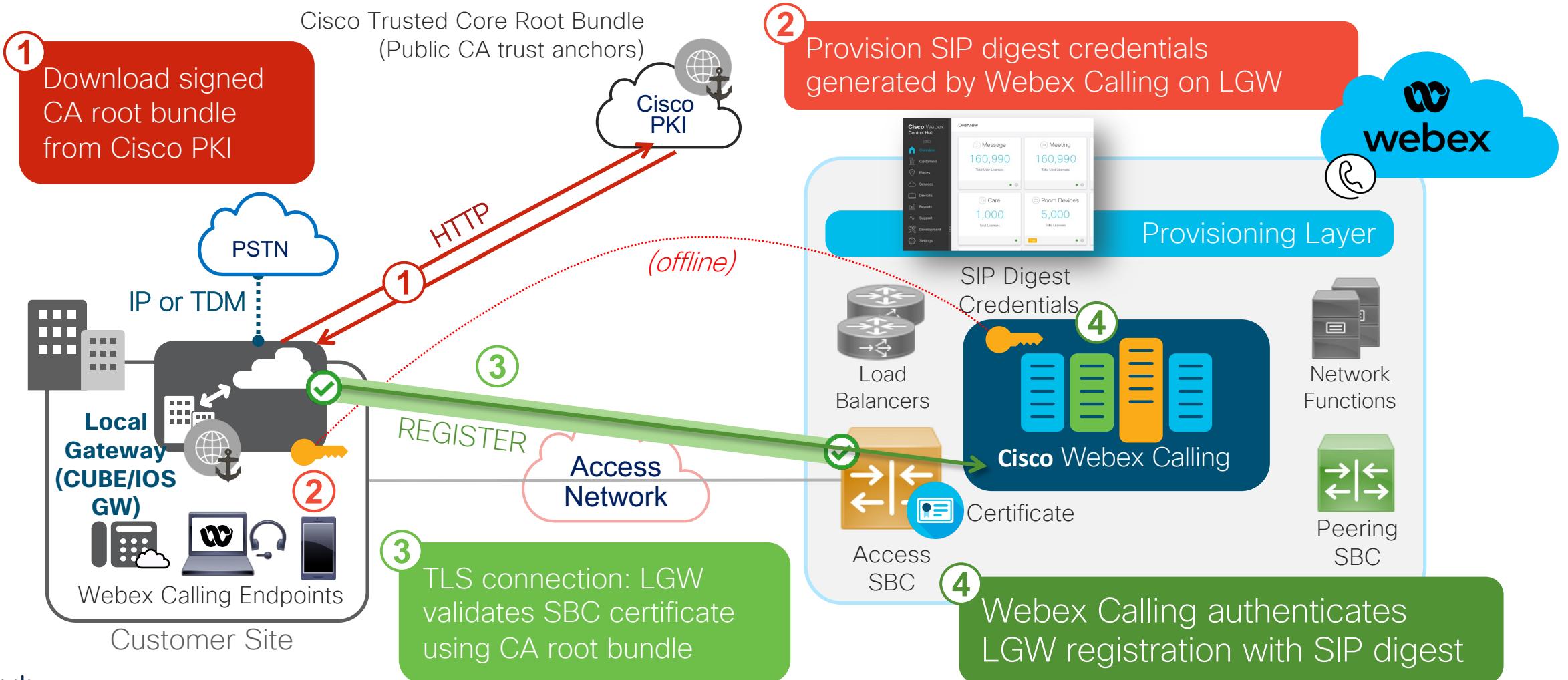
CUBE as a Registration based local gateway

PSTN connectivity options



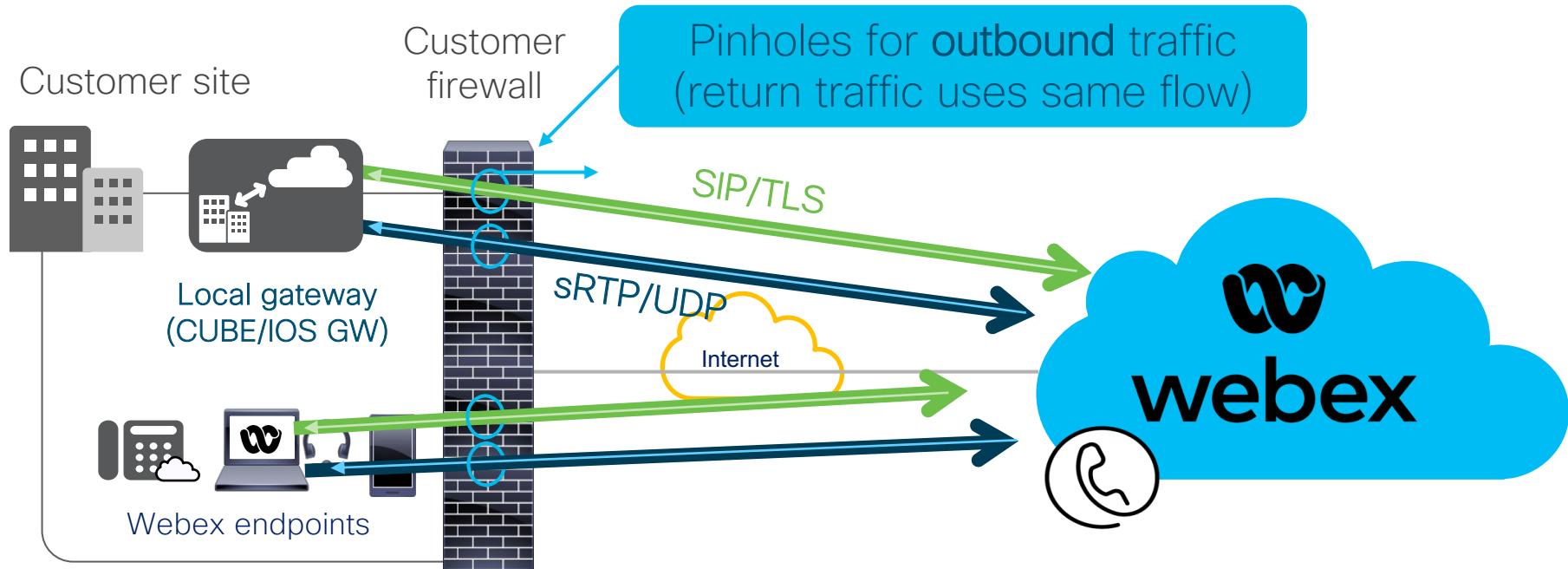
Registration based Local gateway

Security and authentication



Registration based CUBE as a local gateway

Firewall and NAT traversal



- In most cases, the local gateway and endpoints can sit on the **internal** customer network using private IP addresses (with NAT and PAT)
- Firewall needs to allow **outbound** traffic (SIP, RTP/UDP, HTTP) to specific IP addresses/ports (see updated Webex Calling port reference guide)

CUBE/LGW deployments for Webex Calling

The ordering guide specifies that additional CUBE hardware and licensing is required:

- Without the need for additional explicit CUBE licenses
- The licenses will be considered as included in the Webex Calling subscription
- 1 CUBE license will be provided for every 2x subscribers to Webex Calling in order to provide for high-call ratio customers

CUBE entitlement is included as part of the Webex Calling subscription using a manual process, which will involve opening a support case by visiting <https://cs.co/scmswl>

For more details, visit the Local Gateway Ordering guide at <https://www.cisco.com/c/en/us/products/collateral/unified-communications/unified-border-element/guide-c07-742037.html>



The bridge to possible