

CISCO *Live!*



#CiscoLive



The bridge to possible

Understanding your PSTN options for the Cisco Webex Contact Center

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BRKCCT-2023



#CiscoLive

Cisco Webex App

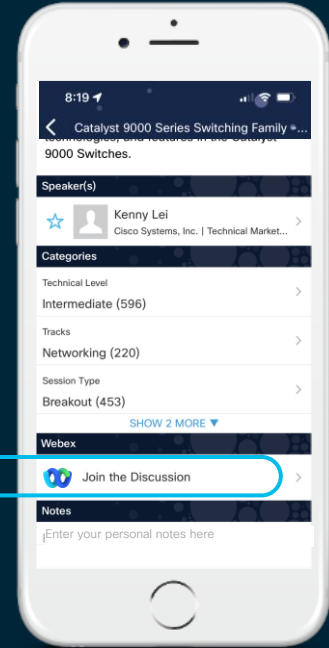
Questions?

Use Cisco Webex App to chat with the speaker after the session

How

- 1 Find this session in the Cisco Live Mobile App
- 2 Click “Join the Discussion”
- 3 Install the Webex App or go directly to the Webex space
- 4 Enter messages/questions in the Webex space

Webex spaces will be moderated by the speaker until June 17, 2022.



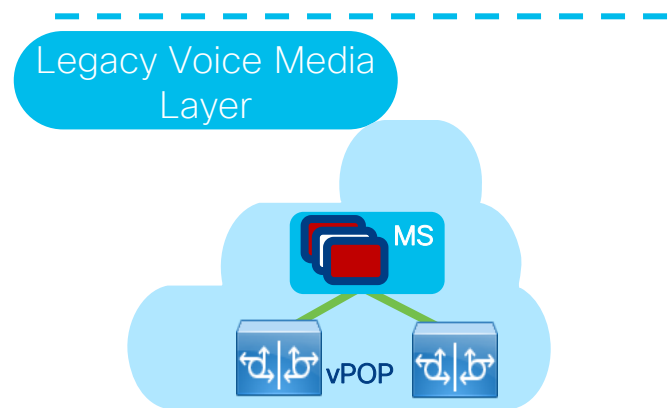
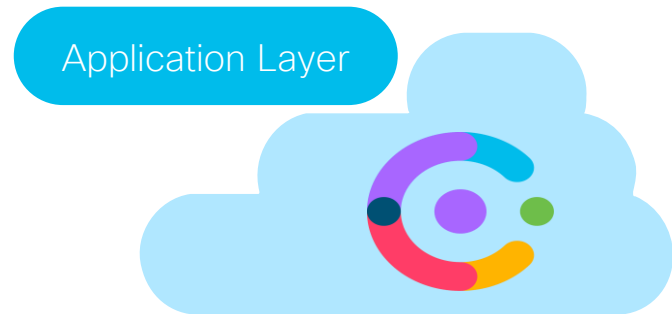
<https://ciscolive.ciscoevents.com/ciscolivebot/#BRKCCT-2023>

Agenda

- Webex Contact Center Overview
- Webex Contact Center with WxC as the Voice Media Layer
- Call Flows for PSTN Options
- PSTN Use Cases
- Onboarding via the Control Hub
- Takeaways

Webex Contact Center Overview

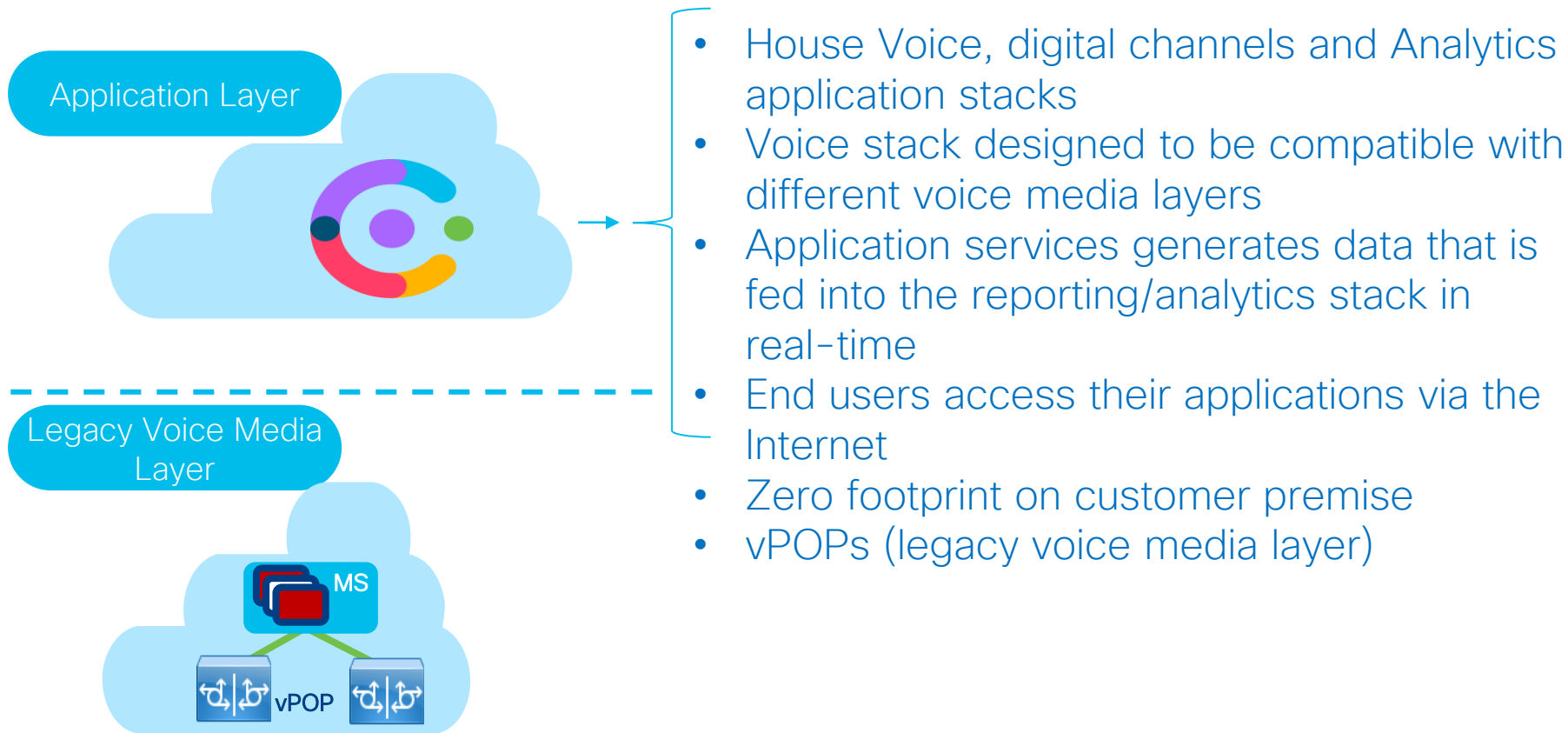
Legacy Webex CC Overview



- Webex CC's architectural strength is in the separation of media from application
- Media is handled by voice media layer and Application logic functionality is handled in the Application Layer
- Voice media is kept in geographic region, application logic is centralized

Webex Contact Center Overview

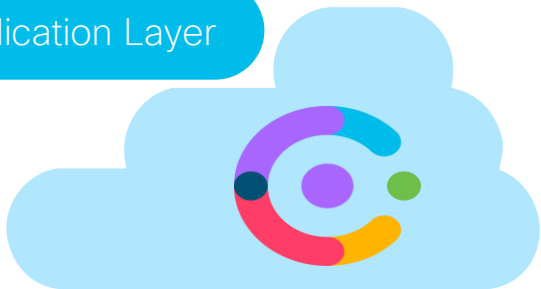
Application Layer



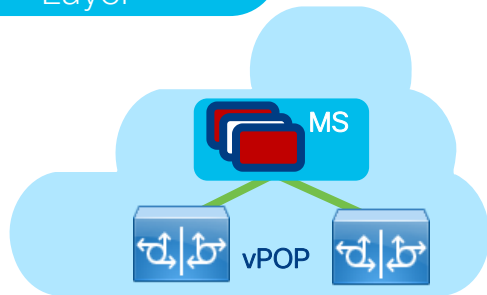
Webex Contact Center Overview

Media Layer

Application Layer



Legacy Voice Media Layer



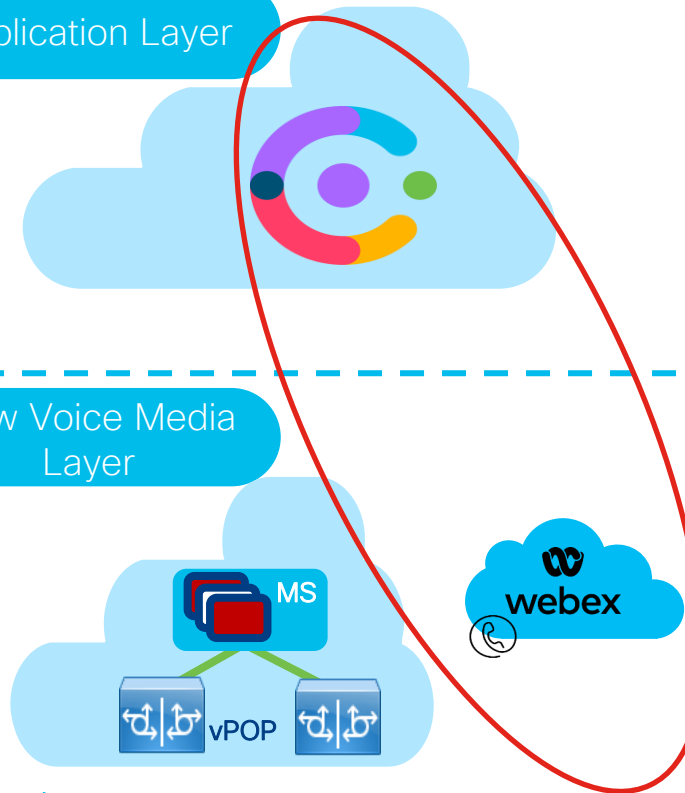
- Handles Voice call media
- Includes IVR
- Call Control (Answer, transfer, conference,...)
- Recording
- AI Integration
- PSTN integrations

The “New Webex Contact Center”

– New Voice Media Layer

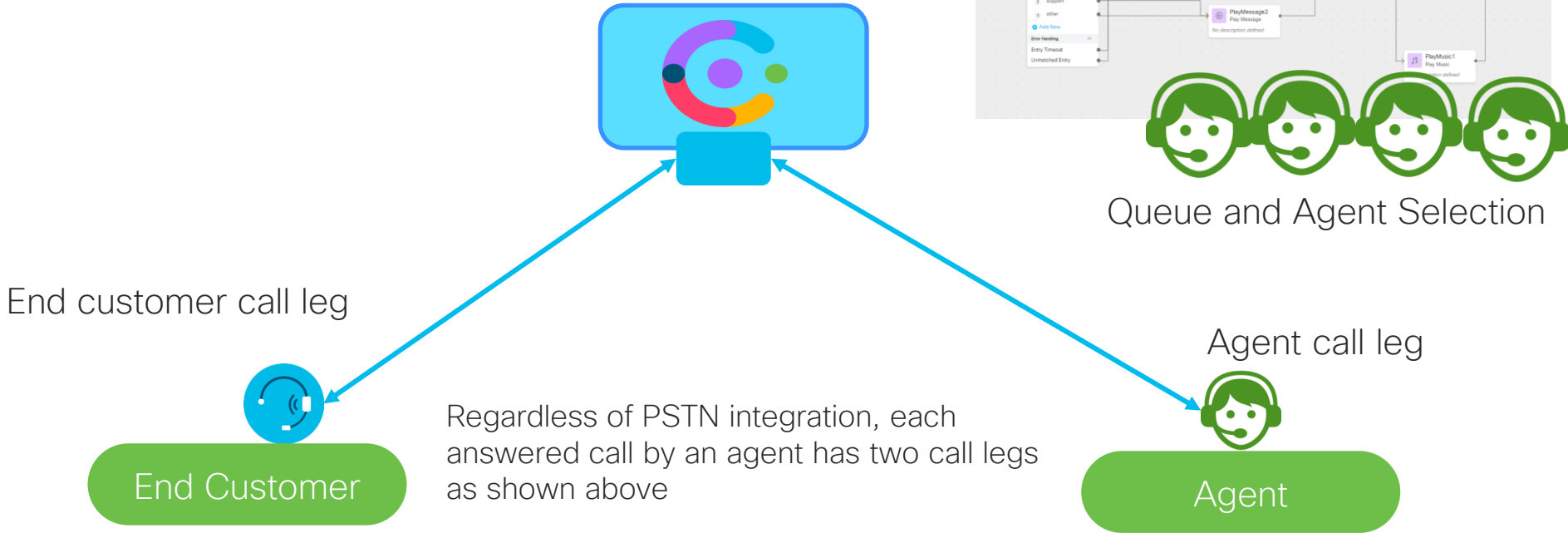
Application Layer

New Voice Media Layer



- The New WxCC’s new voice media layer replaces the legacy vPOP (existing WxCC) functionality
- Adds new capabilities such as AI integration

Making a Connection



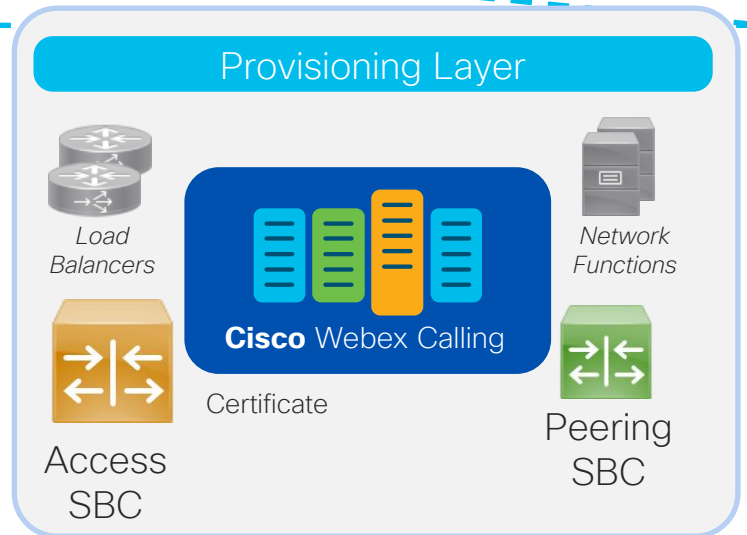
Webex Calling Recap



Webex Calling



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



What's new in Webex Calling

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

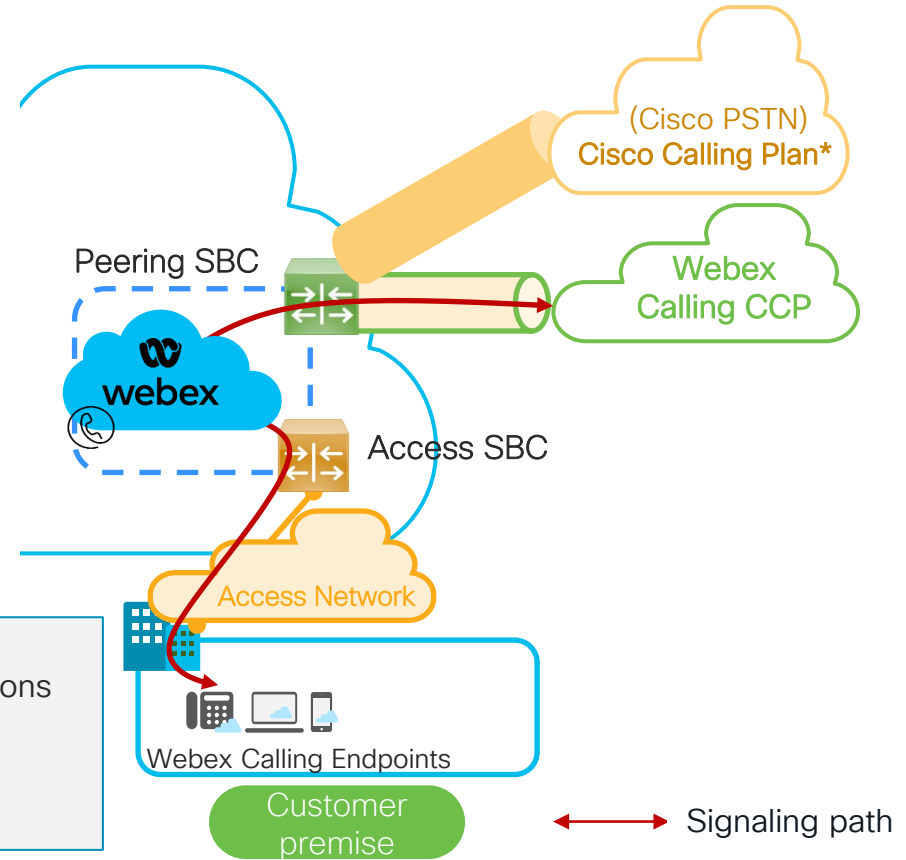
Cisco Webex Calling Design and Deployment - DGTL-BRKC0L-2792

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

Webex Calling with Cloud Connected PSTN (CCP)

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

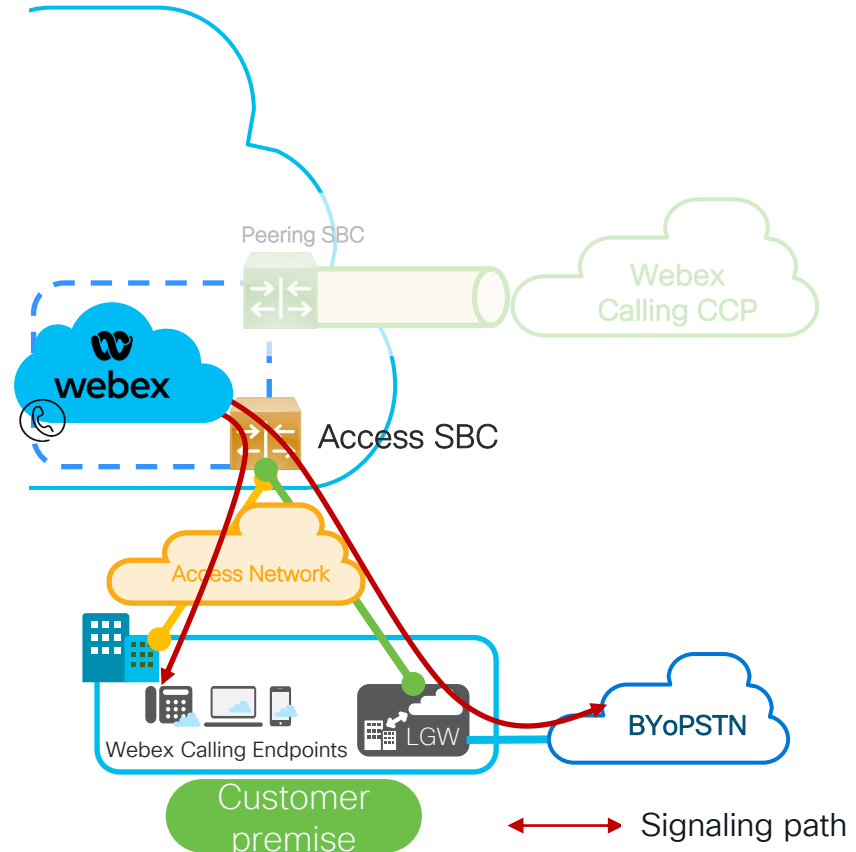
*Not supported with Webex CC



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

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

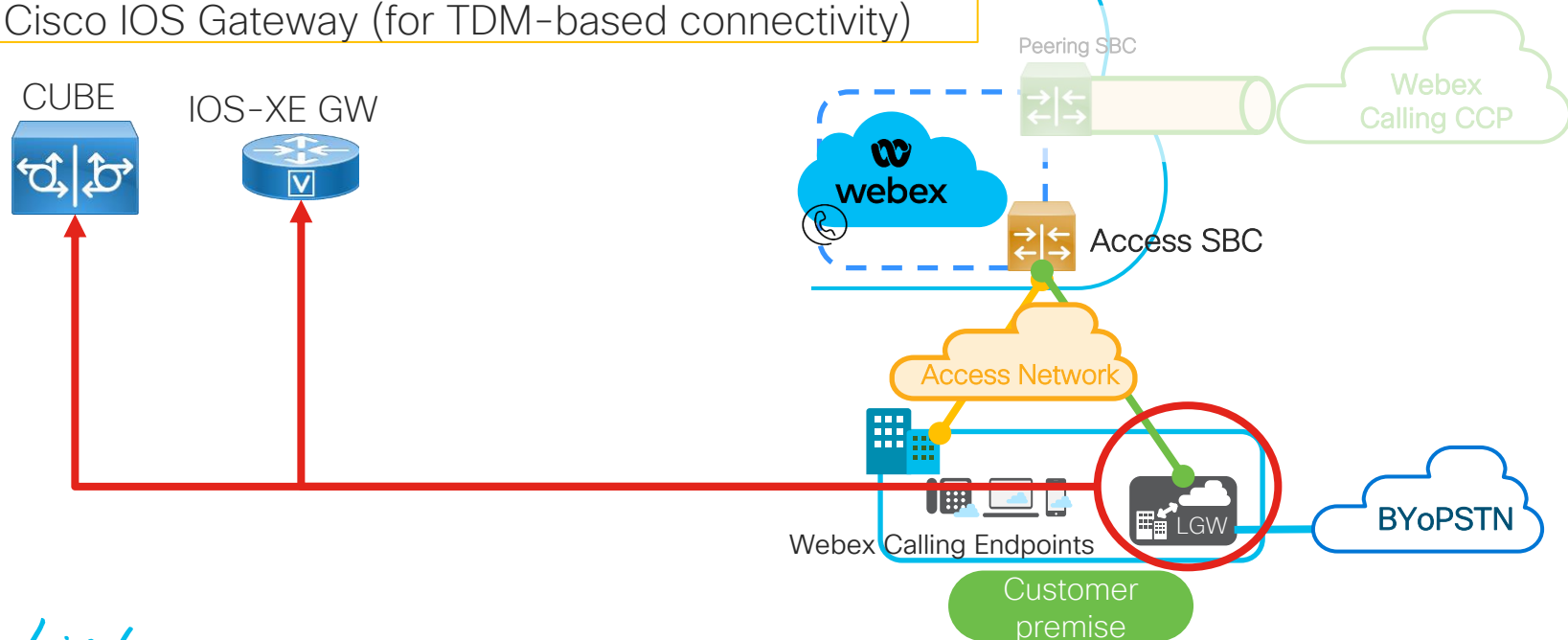
- Provides connectivity to a customer-owned premise-based PSTN service
- May also provide connectivity to an on-premises IP PBX or dedicated SBC/PSTN GW
- Enables on-prem to Webex Calling transition
- Premises-based PSTN requires that a trunk or a route group with multiple trunks is selected as the PSTN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

BRKCOL-2169

- Provides connectivity between Webex Calling Trunk and On premises
- Cisco CUBE (for IP-based connectivity) or Cisco IOS Gateway (for TDM-based connectivity)

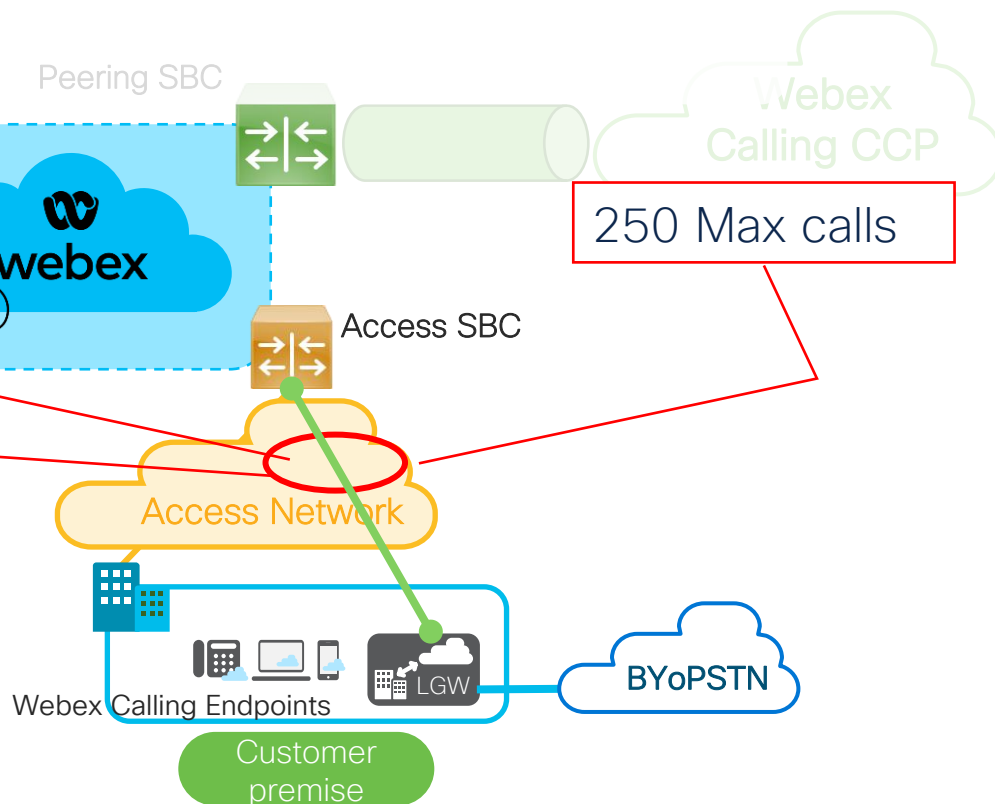


Webex Calling – Local Gateway Concurrent Call Limits

Regardless of LGW platform, OTT premises trunks between LGW and Webex Calling cannot exceed **250** concurrent calls [All LGW deployments should note this limit]

Maximum of 100ms one-way latency with 10ms jitter, and tcp-retry to be 1000

Higher latency/jitter value result in significantly lower numbers and unstable connections



WxC Region & Locations

- PSTN access

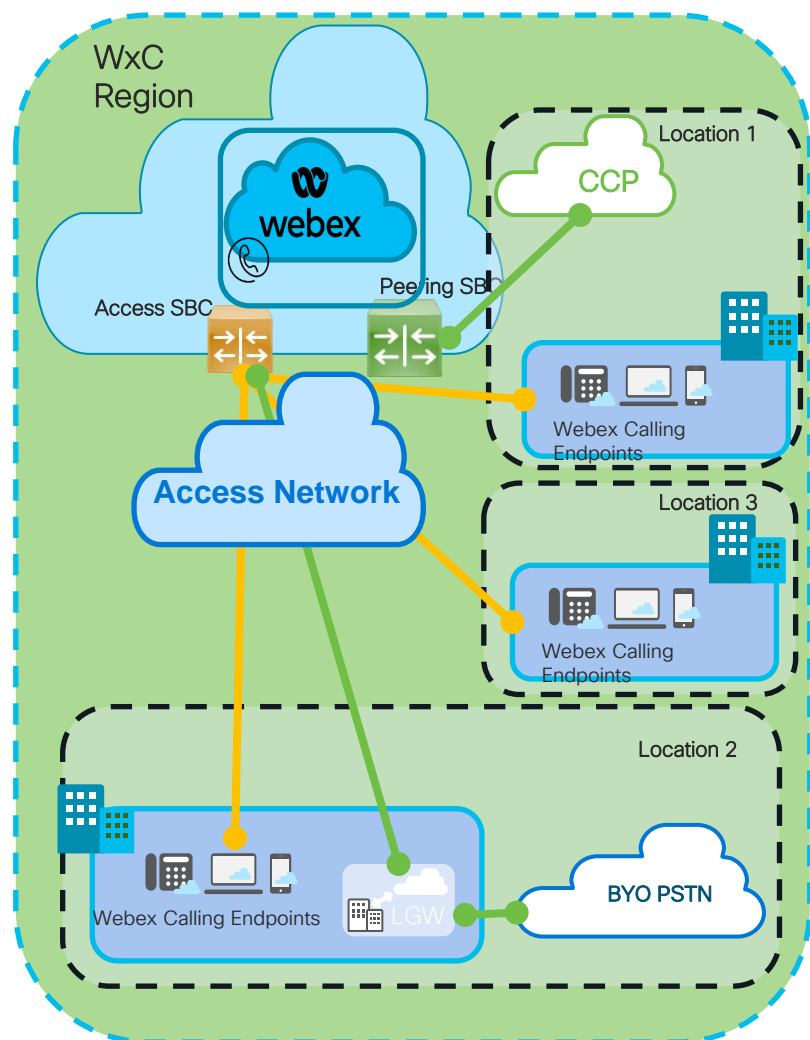


A Region can have multiple locations

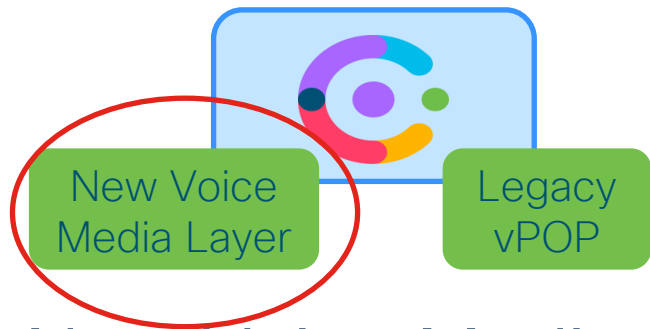
A CCP or LGW must be selected as the PSTN access method for each location

Only ONE CCP or LGW per Location (Multiple LGWs per location requires Route Group/Trunks)

Same CCP or LGW can be used for multiple WxC Locations



Webex Contact Center with WxC as the Voice Media Layer

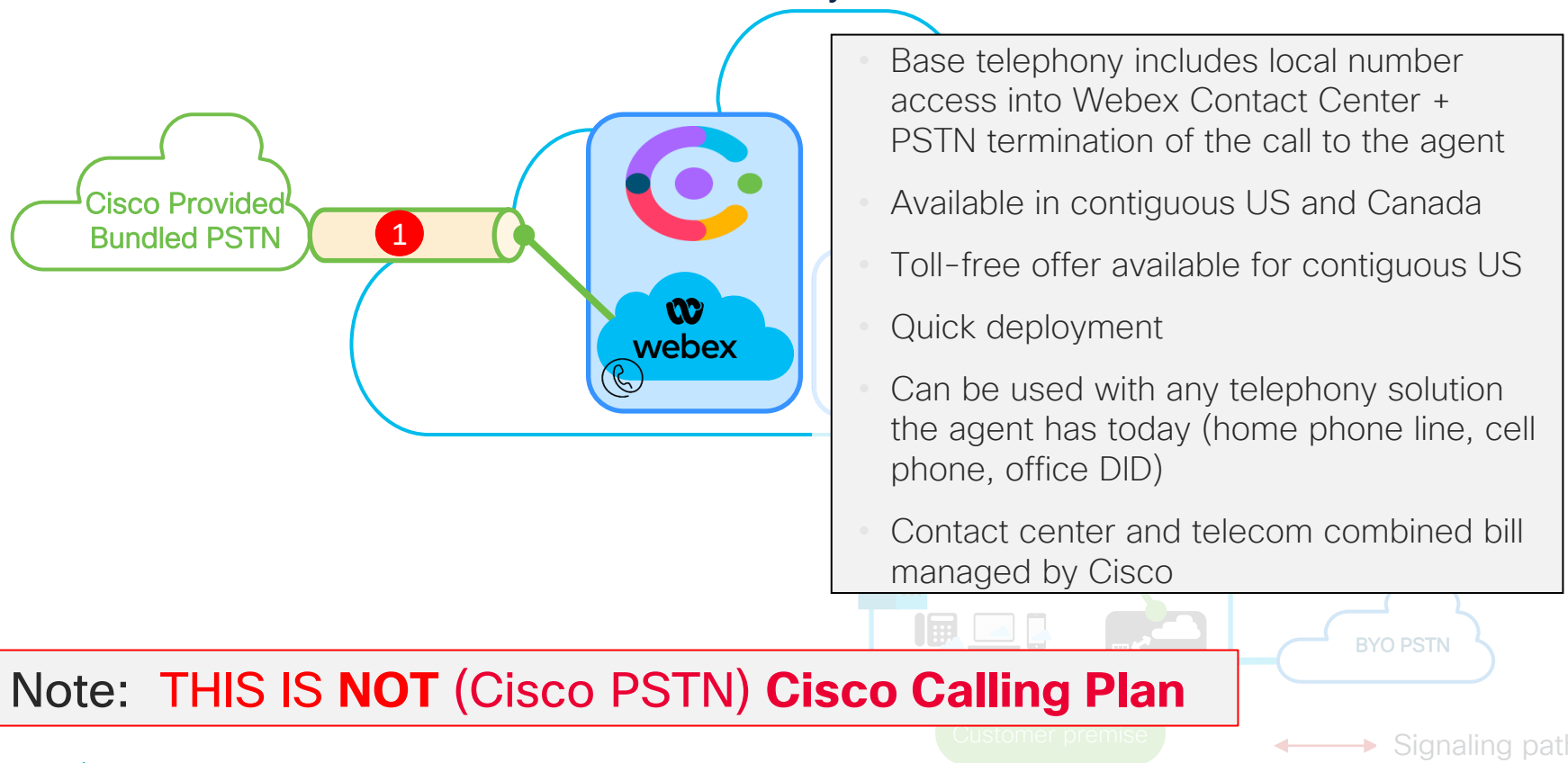


New Voice Media Layer



New WxCC – Cisco Provided Bundled PSTN

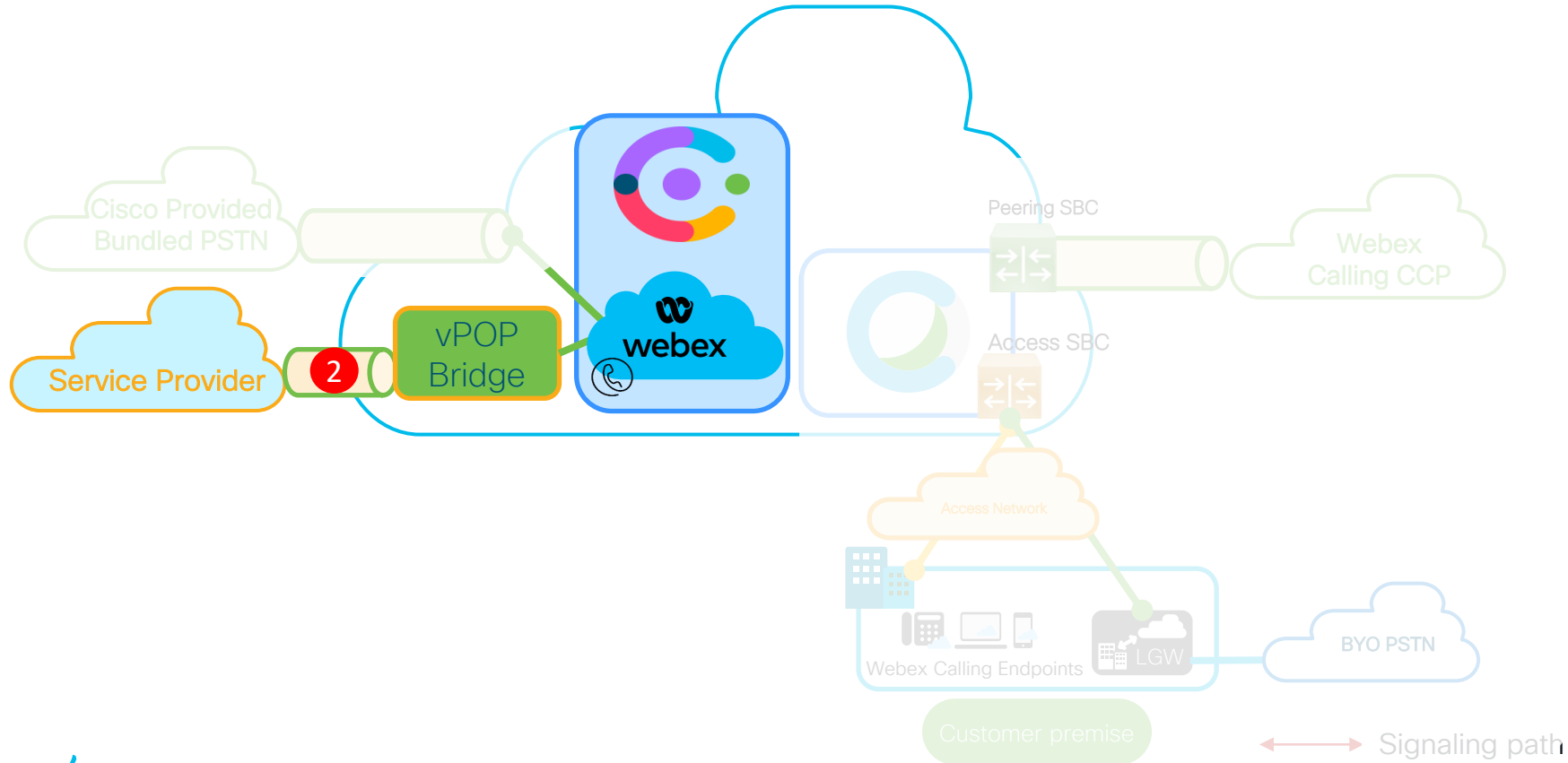
Direct SIP Trunk to the New Voice Media Layer



• Note: **THIS IS NOT (Cisco PSTN) Cisco Calling Plan**

New WxCC – Service Provider PSTN

Leverage the New WxCC via a vPOP Bridge



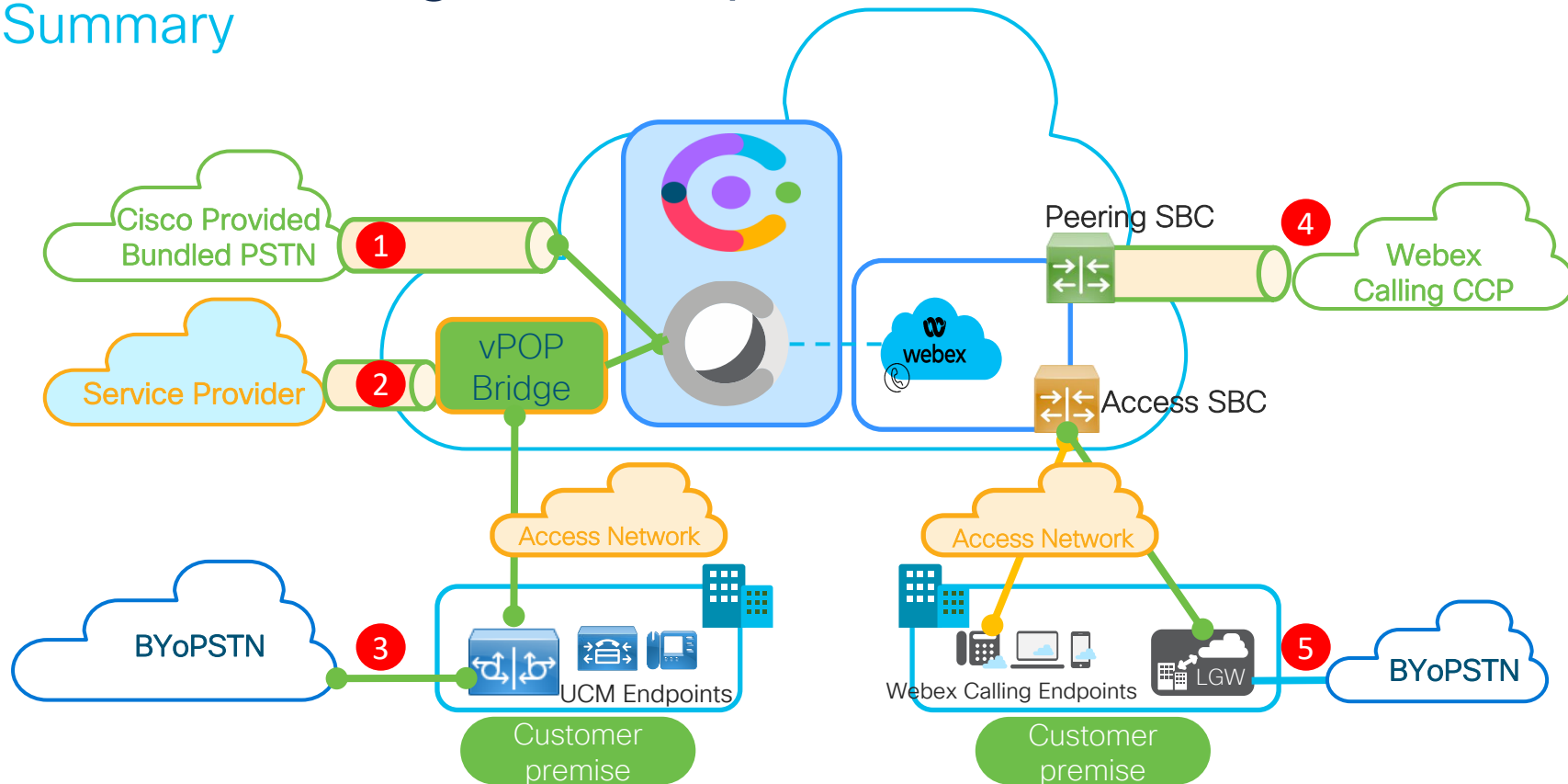
New WxCC – Bring Your own PSTN (BYoPSTN)

SIP Trunk from customer's CUBE to the vPOP Bridge



Webex Calling PSTN Options

Summary



Benefits of WxCC / WxC Integration

BENEFITS

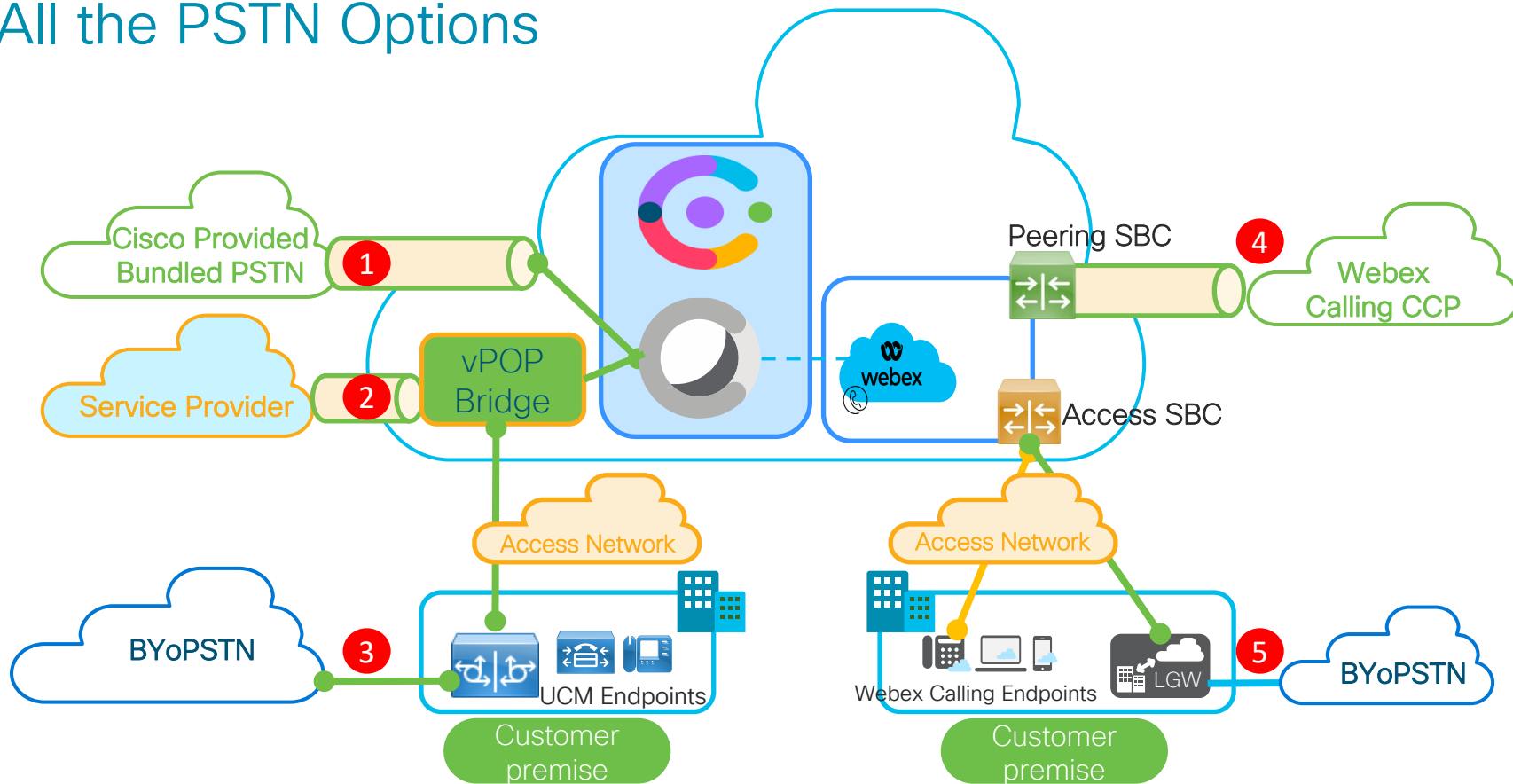


- Single PSTN option for Webex Contact Center and Webex Calling with the possibility of single (PSTN) bill vs dealing with multiple providers/vendors
- Single pane of glass for administration in Control Hub.
- On-net calling for agent leg i.e. lower PSTN cost
- Ability to have extension only agents (no more DID burnout)
- All Webex Calling end points are supported

Call Flows for PSTN Options

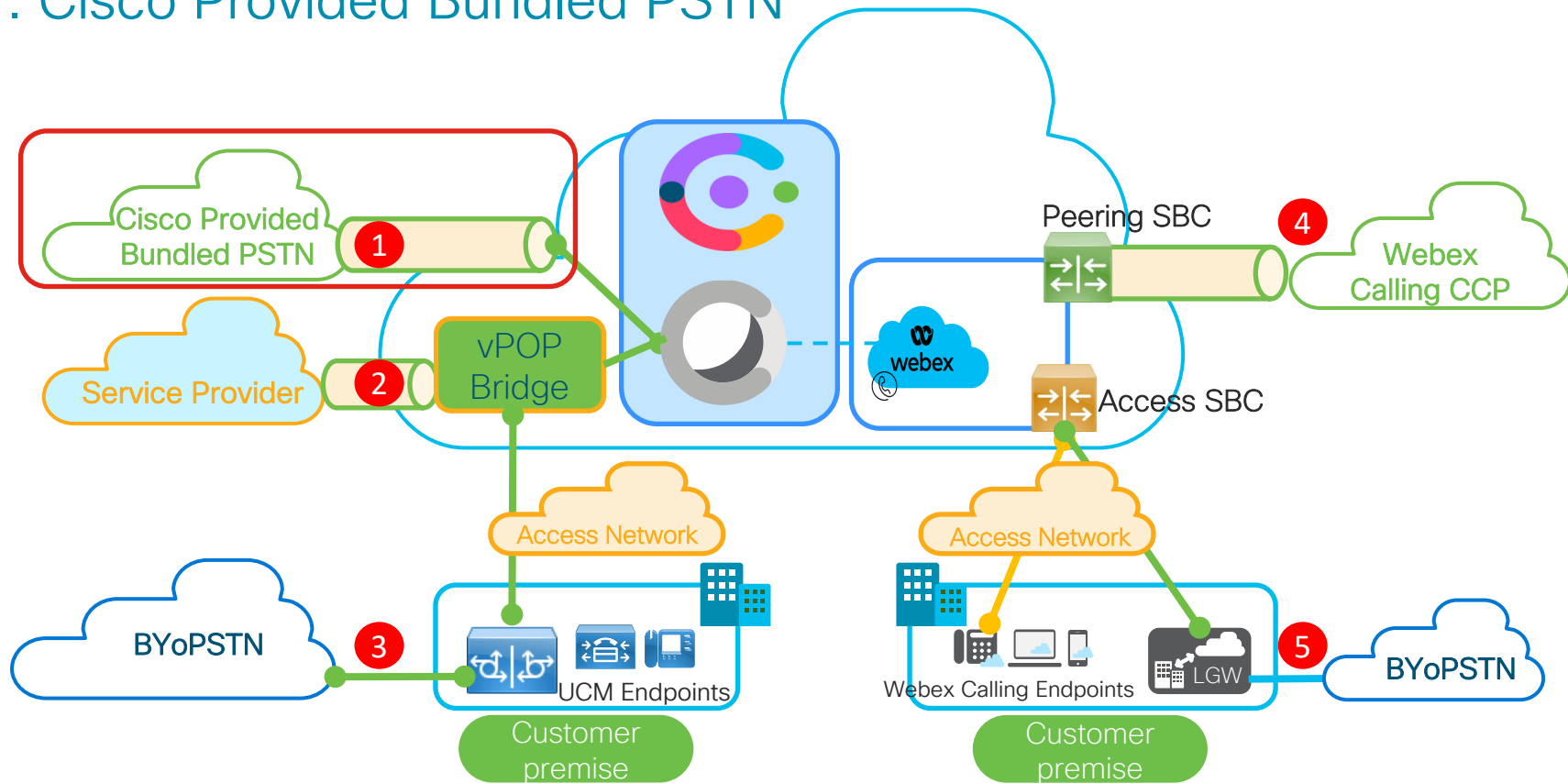
New Webex Contact Center

All the PSTN Options



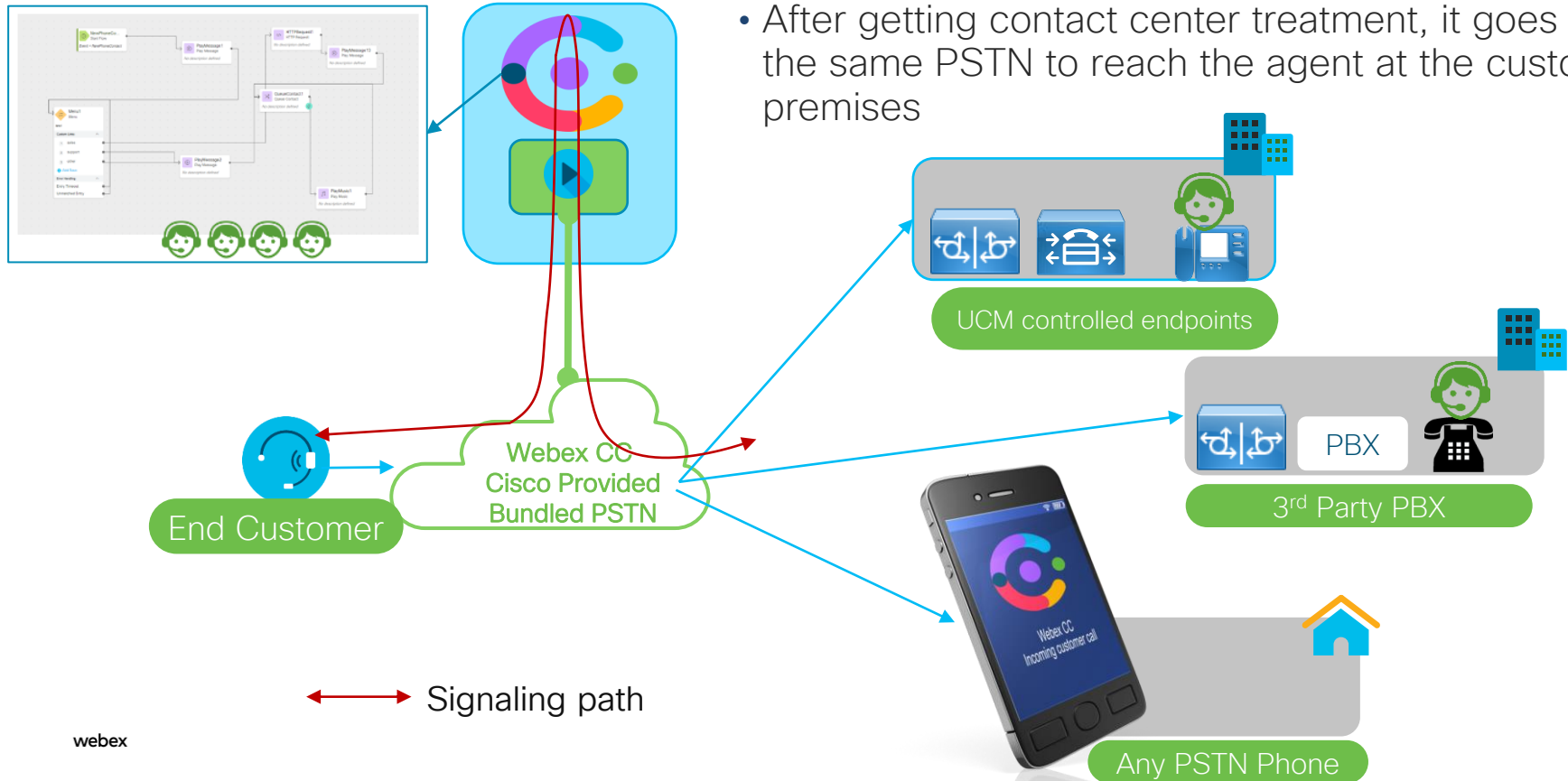
New Webex Contact Center –

1. Cisco Provided Bundled PSTN



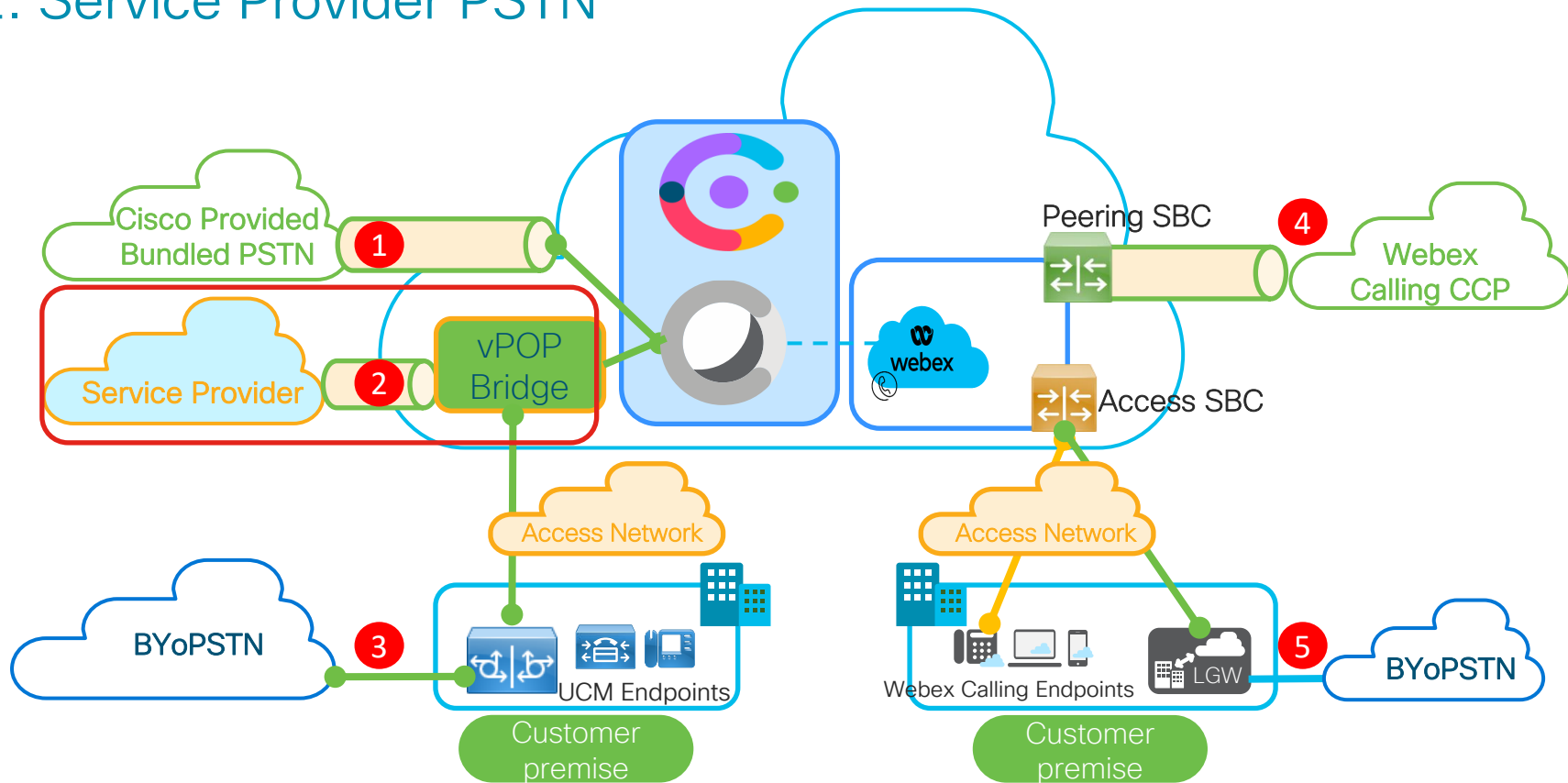
1. Cisco Provided Bundled PSTN

- Call comes in via Cisco provided bundled PSTN
- After getting contact center treatment, it goes out to the same PSTN to reach the agent at the customer premises



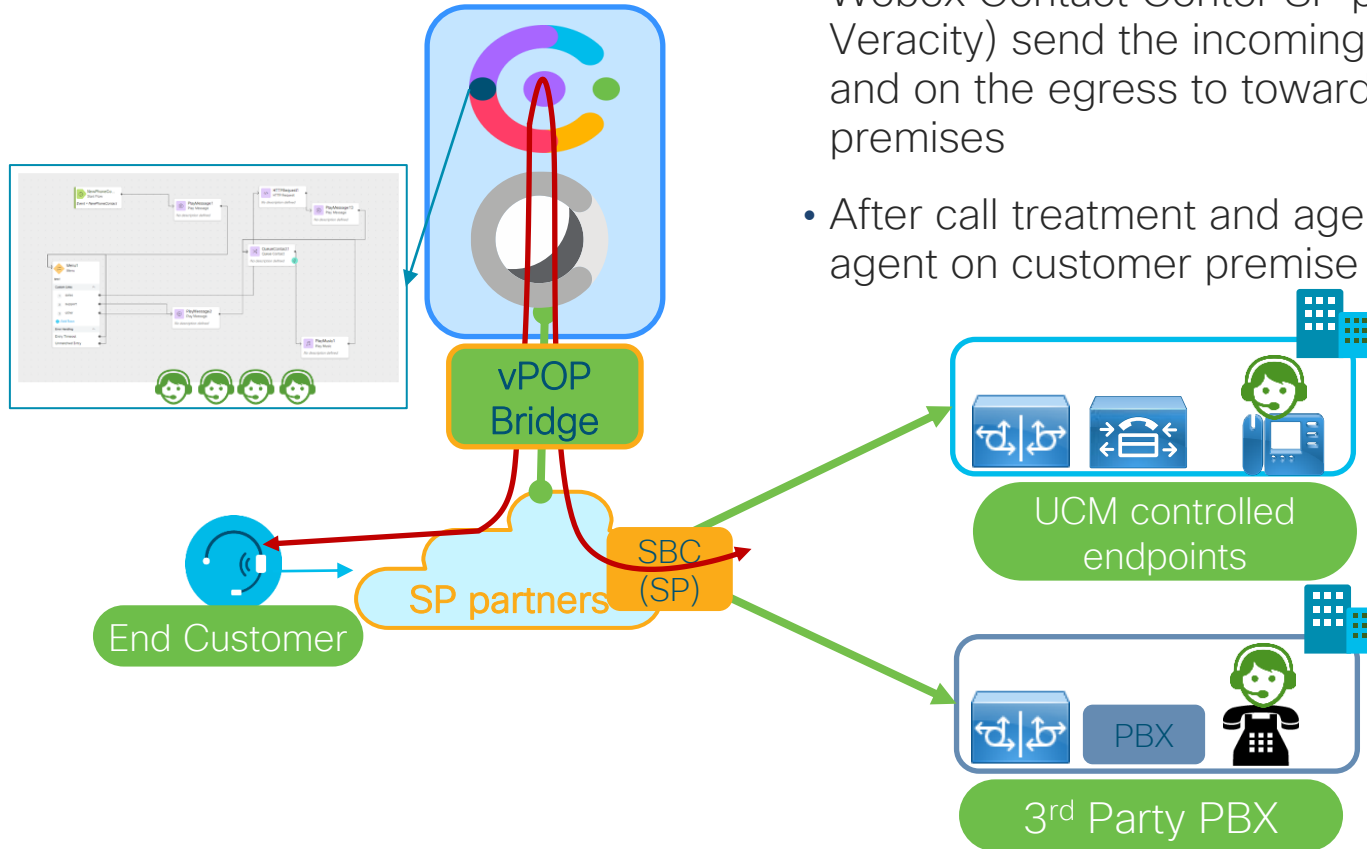
New Webex Contact Center –

2. Service Provider PSTN



2. Service Provider PSTN

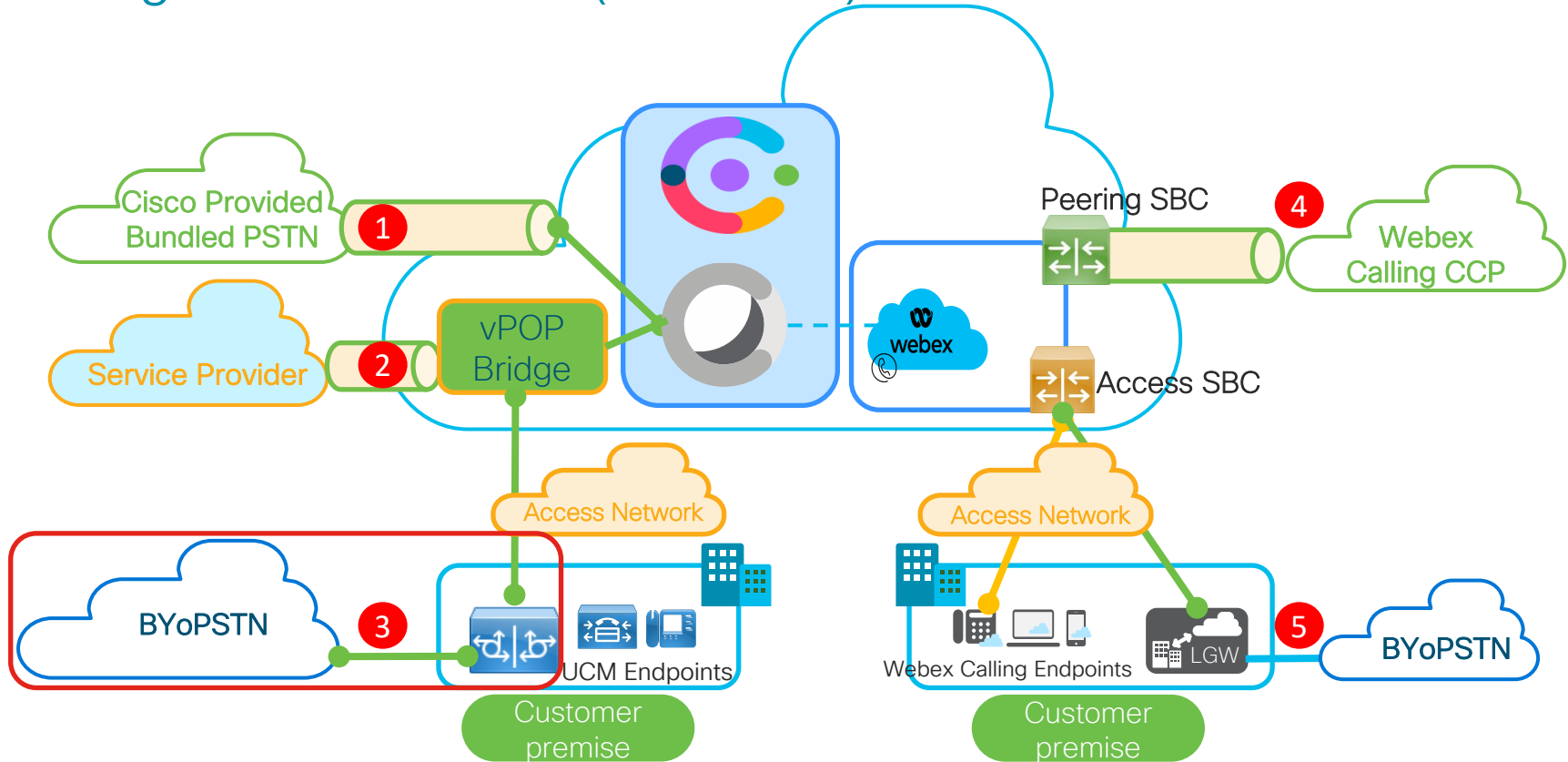
- Webex Contact Center SP partners (e.g. Masergy, Veracity) send the incoming call to the vPOP bridge and on the egress to towards the agent on customer premises
- After call treatment and agent available, Call is sent to agent on customer premise



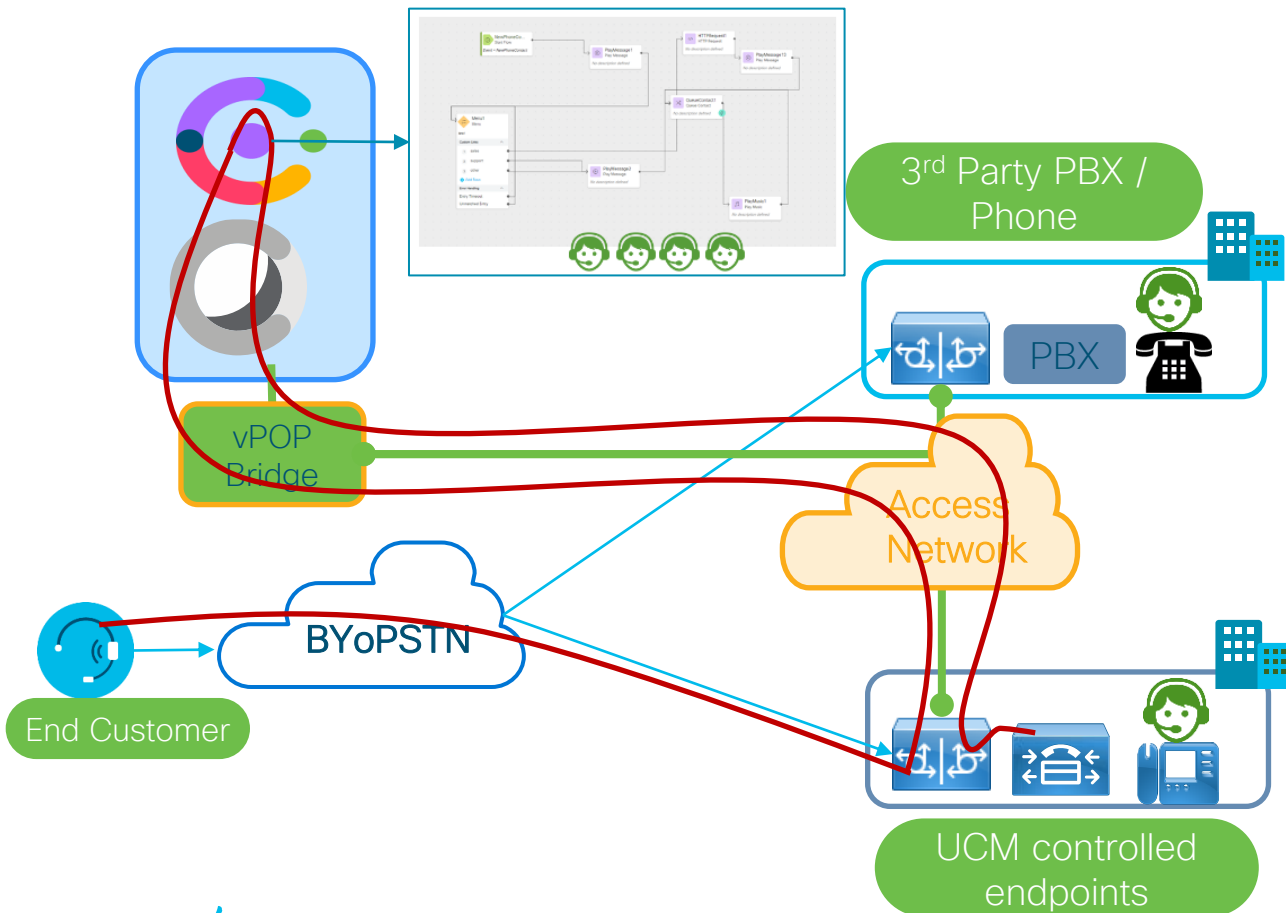
↔ Signaling path

New Webex Contact Center –

3. Bring Your own PSTN (BYoPSTN)



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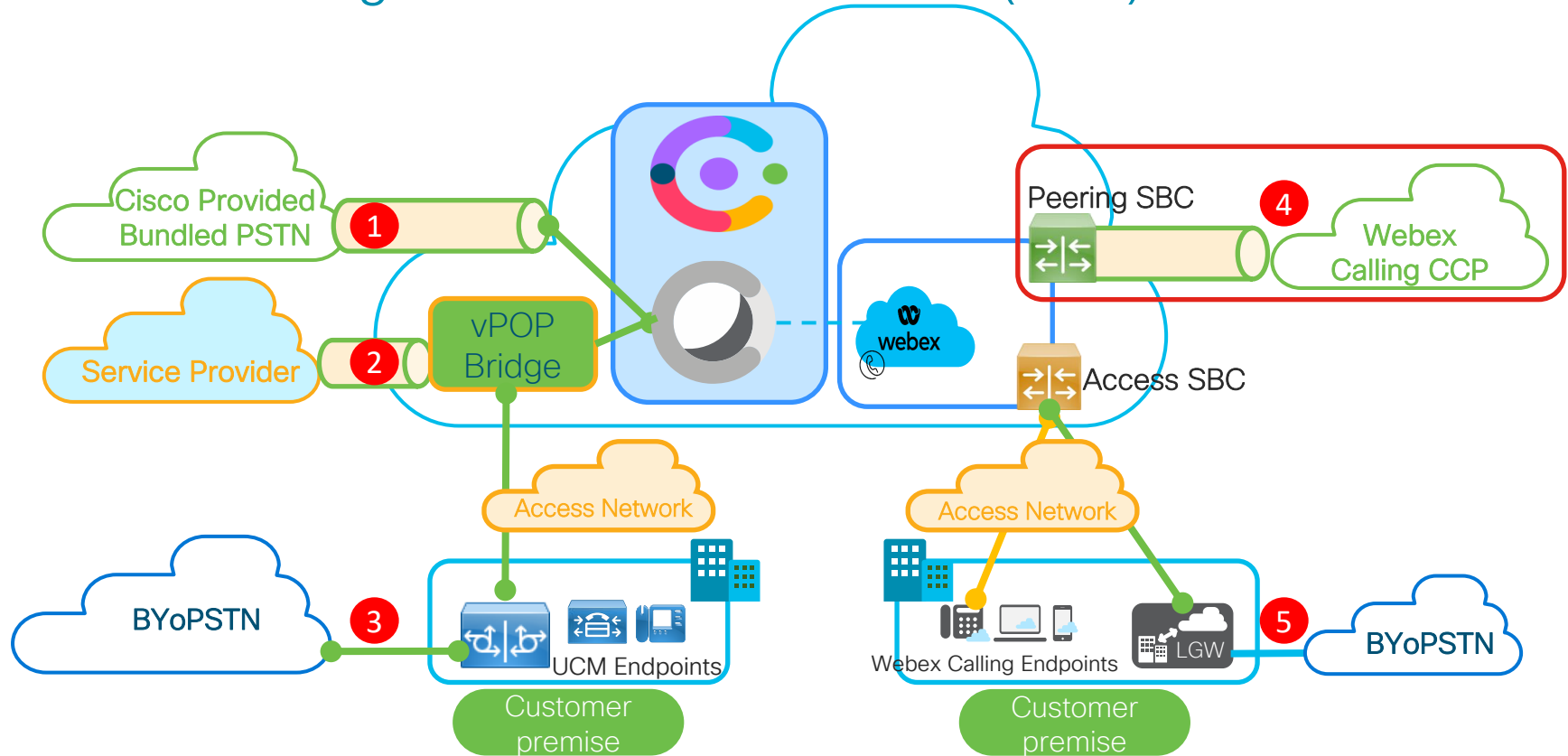


- Call comes in via customer owned PSTN service, terminating on CUBE
- The same or a different CUBE delivers the call to the vPOP bridge
- After getting contact center treatment, call is sent to the customer premise (same CUBE as above), which delivers it to the call control (e.g. UCM) and then to available agent

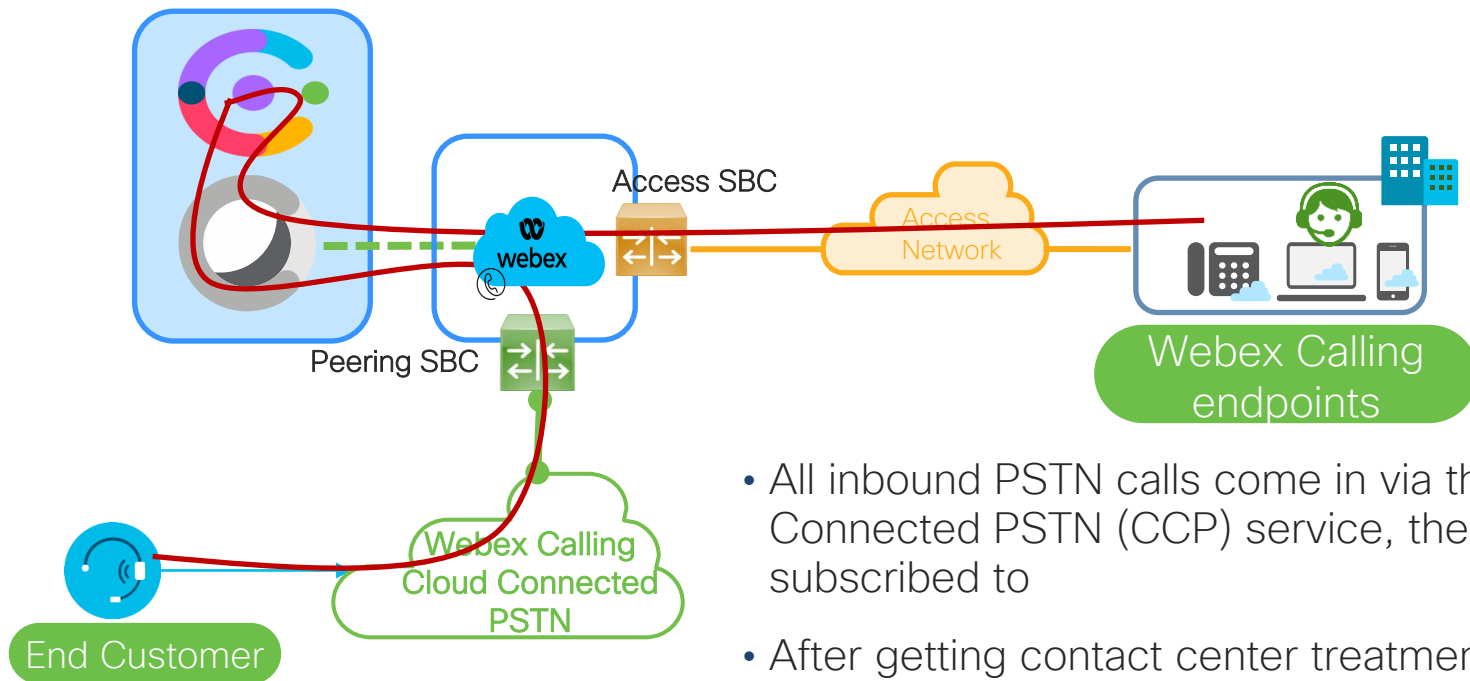
↔ Signaling path

New Webex Contact Center –

4. Webex Calling Cloud Connected PSTN (CCP)



4. Webex Calling Cloud Connected PSTN (CCP)

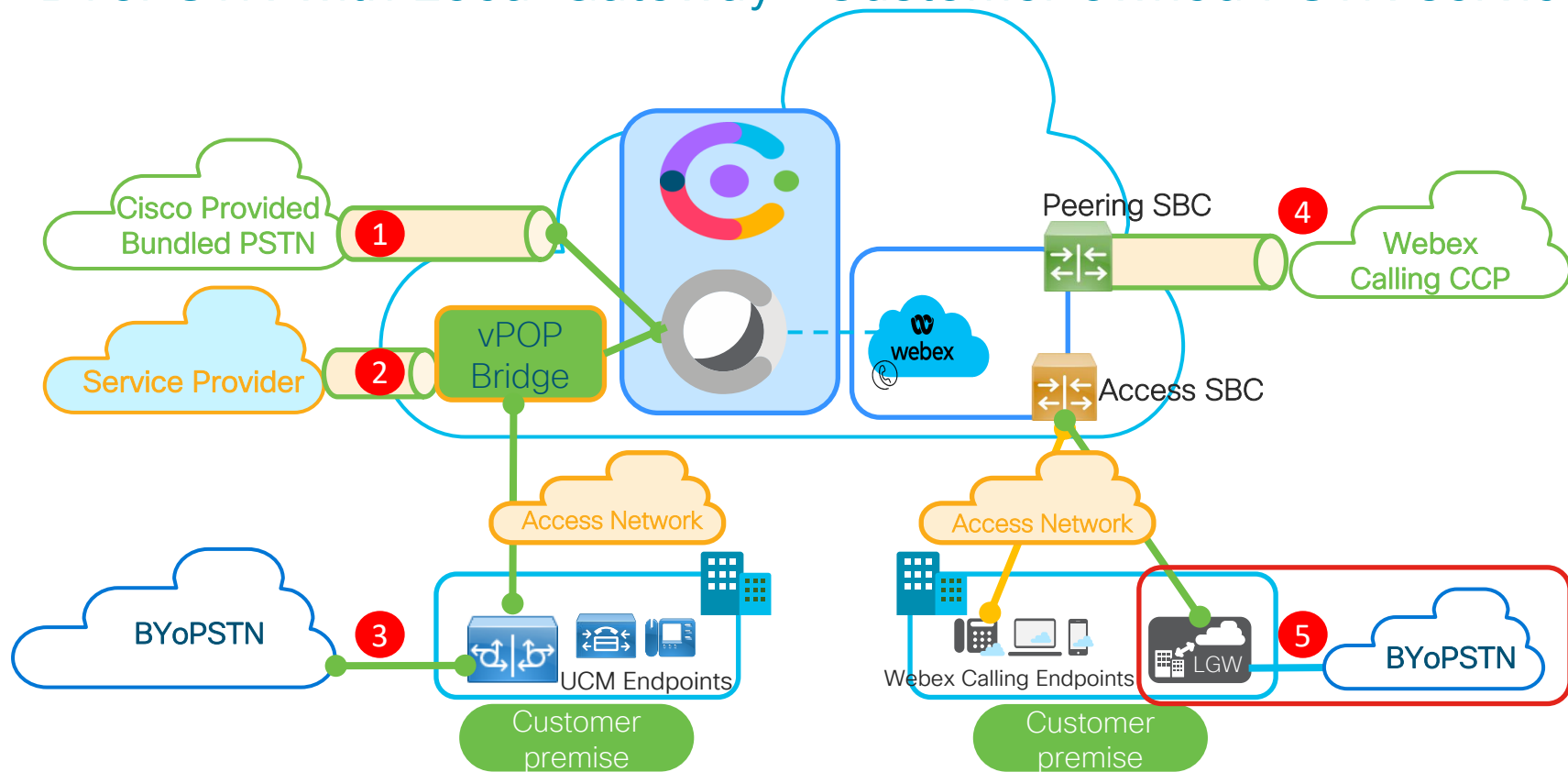


- All inbound PSTN calls come in via the Cloud Connected PSTN (CCP) service, the enterprise has subscribed to
- After getting contact center treatment, call is sent to the agent (Webex Calling endpoint) via the Webex Calling Access SBC (OTT)

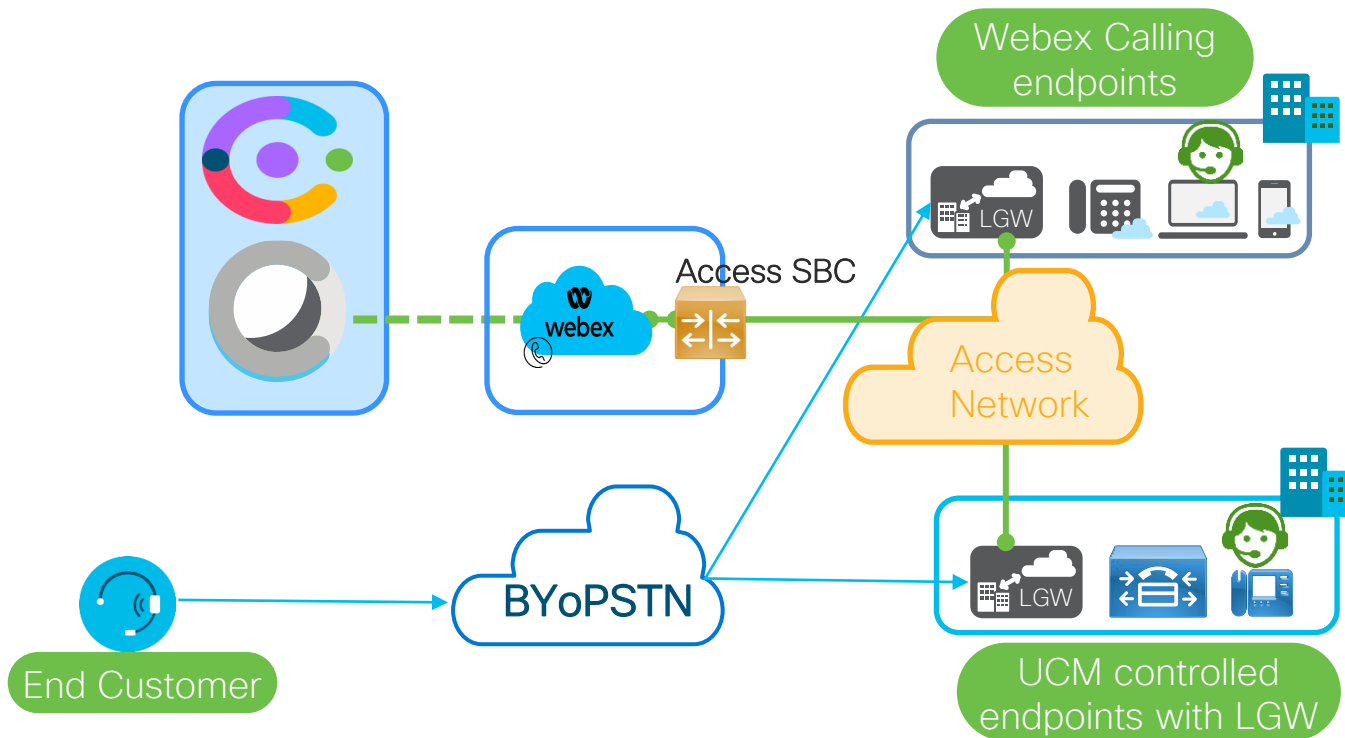
↔ Signaling path

New Webex Contact Center –

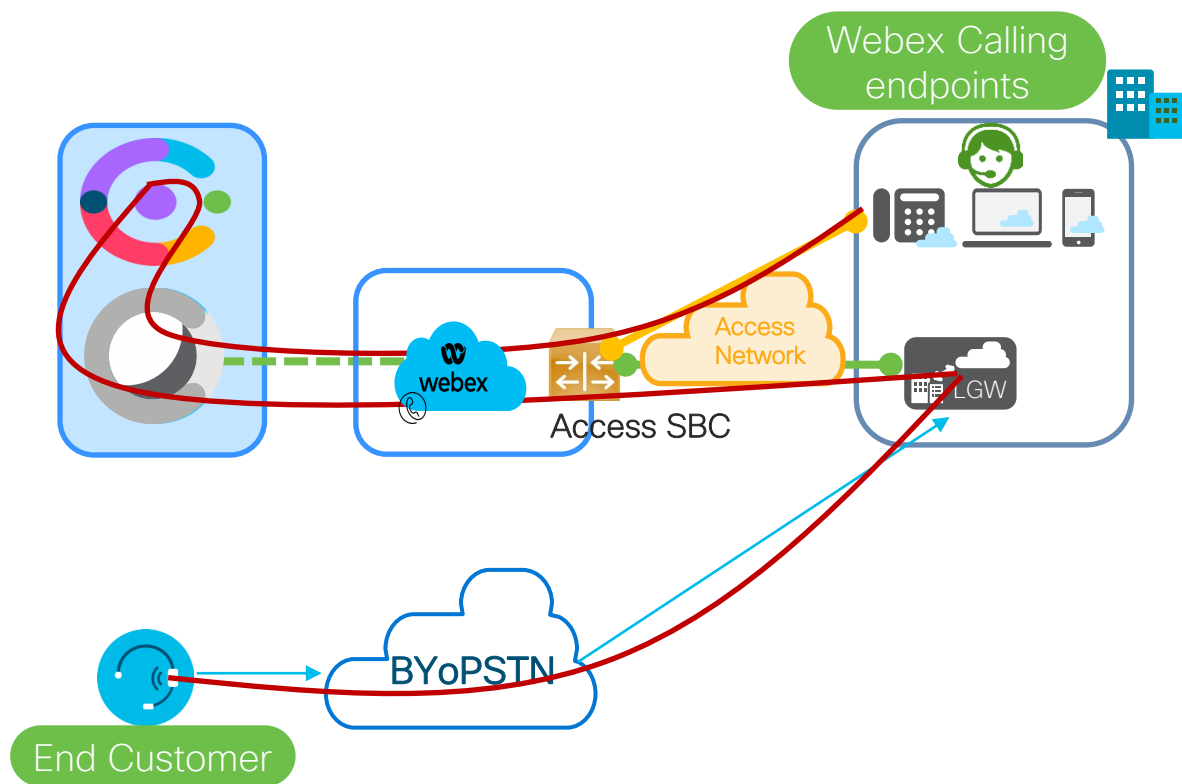
5. BYoPSTN with Local Gateway– Customer owned PSTN service



5. BYoPSTN with Local Gateway– Customer owned PSTN service

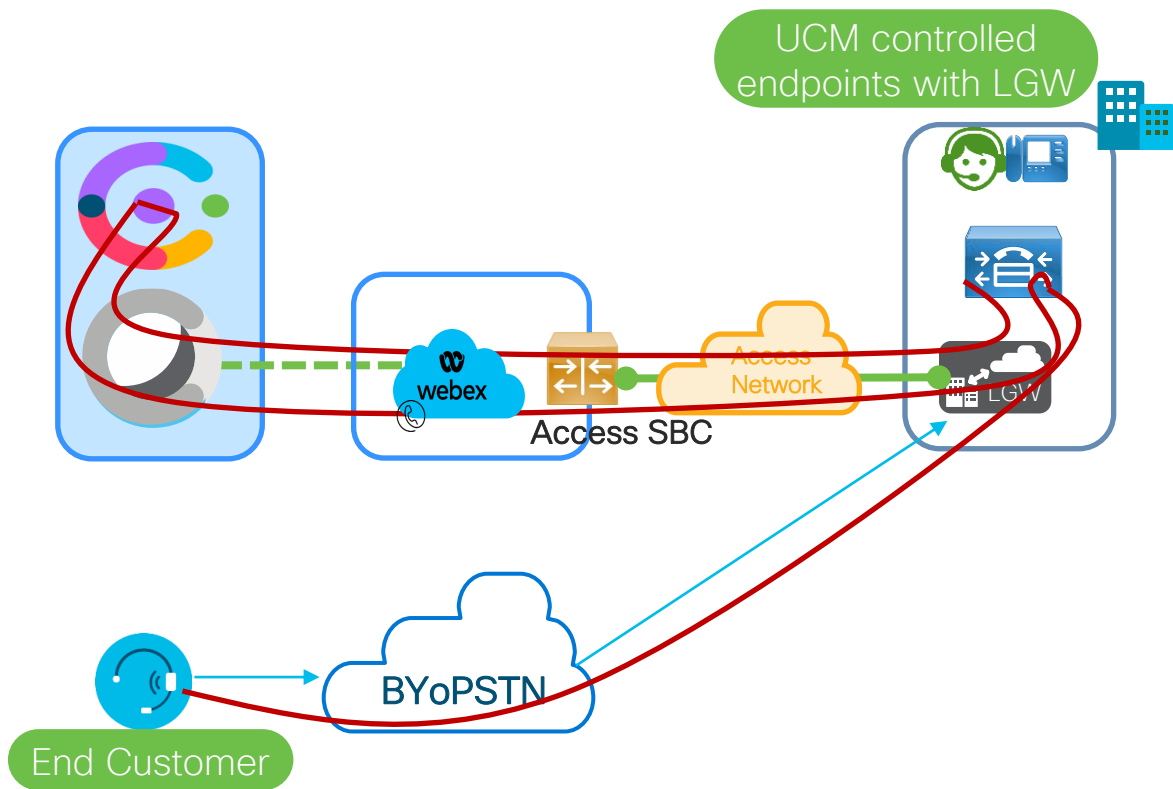


5a. BYoPSTN with Local Gateway- Webex Calling Agent



- Call comes in via customer owned PSTN service, terminating on LGW
- LGW delivers the call to the Webex Calling Access SBC/Webex Contact Center with Webex Calling
- After getting contact center treatment, call is sent to the agent (Webex Calling endpoint) over the Internet

5b. BYoPSTN with Local Gateway- On-premise UCM Agent

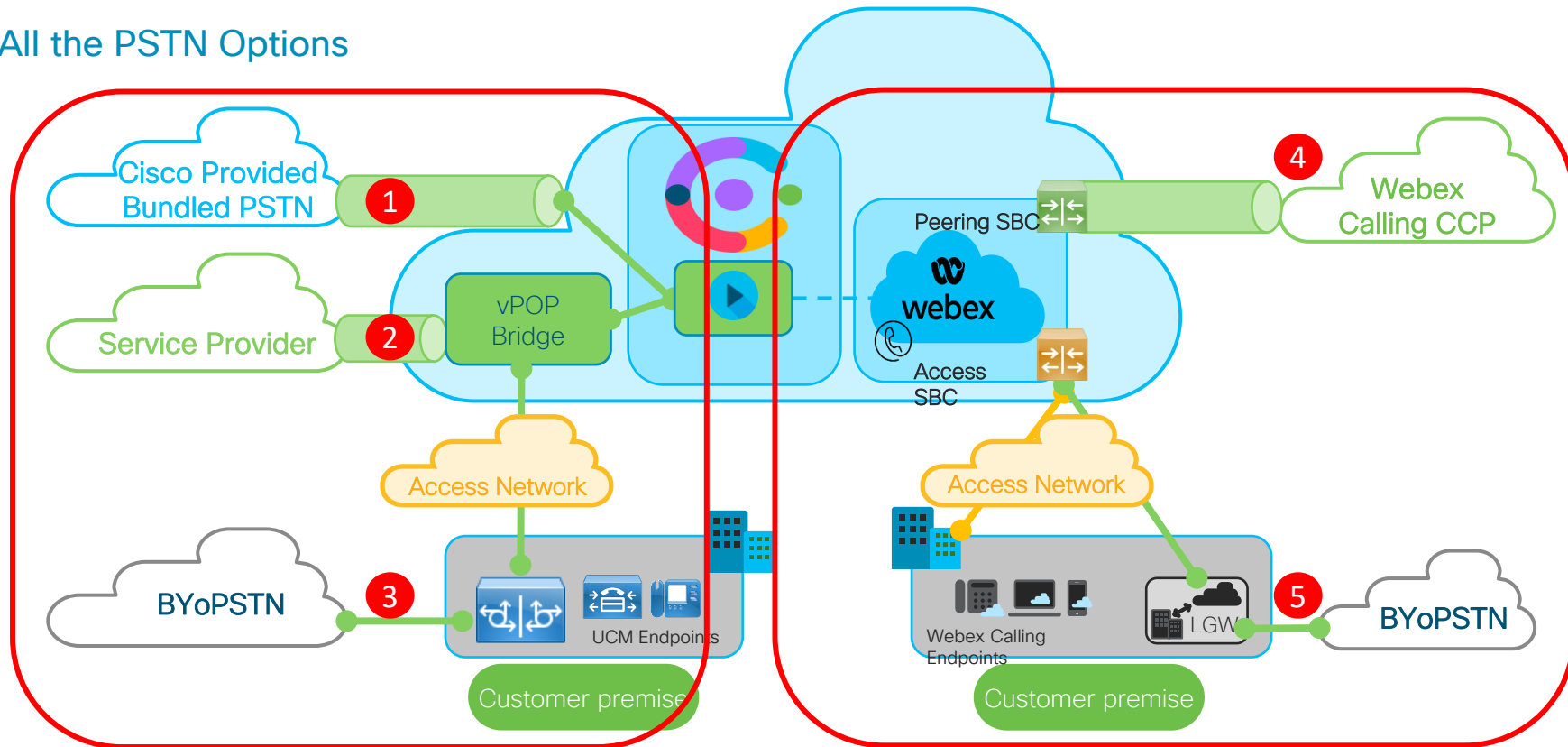


- All inbound PSTN calls come into the LGW, which sends it to UCM (centralized dial plan – combination of agent and non-agent phones)
- UCM sends the call to Webex Contact Center with Webex Calling via the LGW
- After getting contact center treatment, call is sent to the agent (UCM endpoint) via the LGW (OTT)

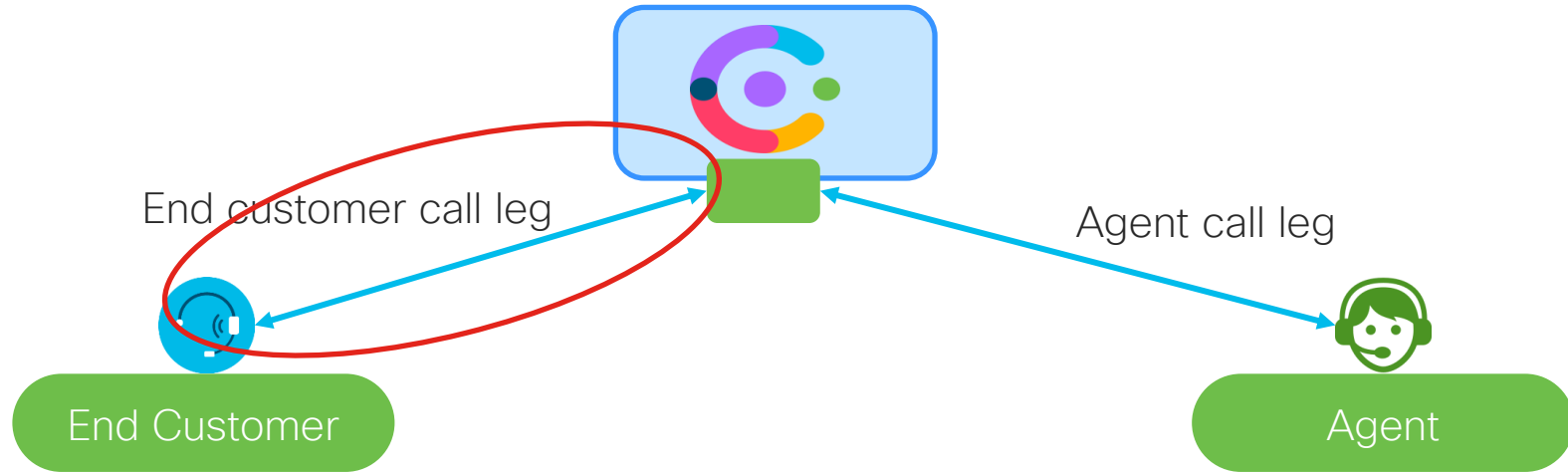
↔ Signaling path

New Webex Contact Center

All the PSTN Options

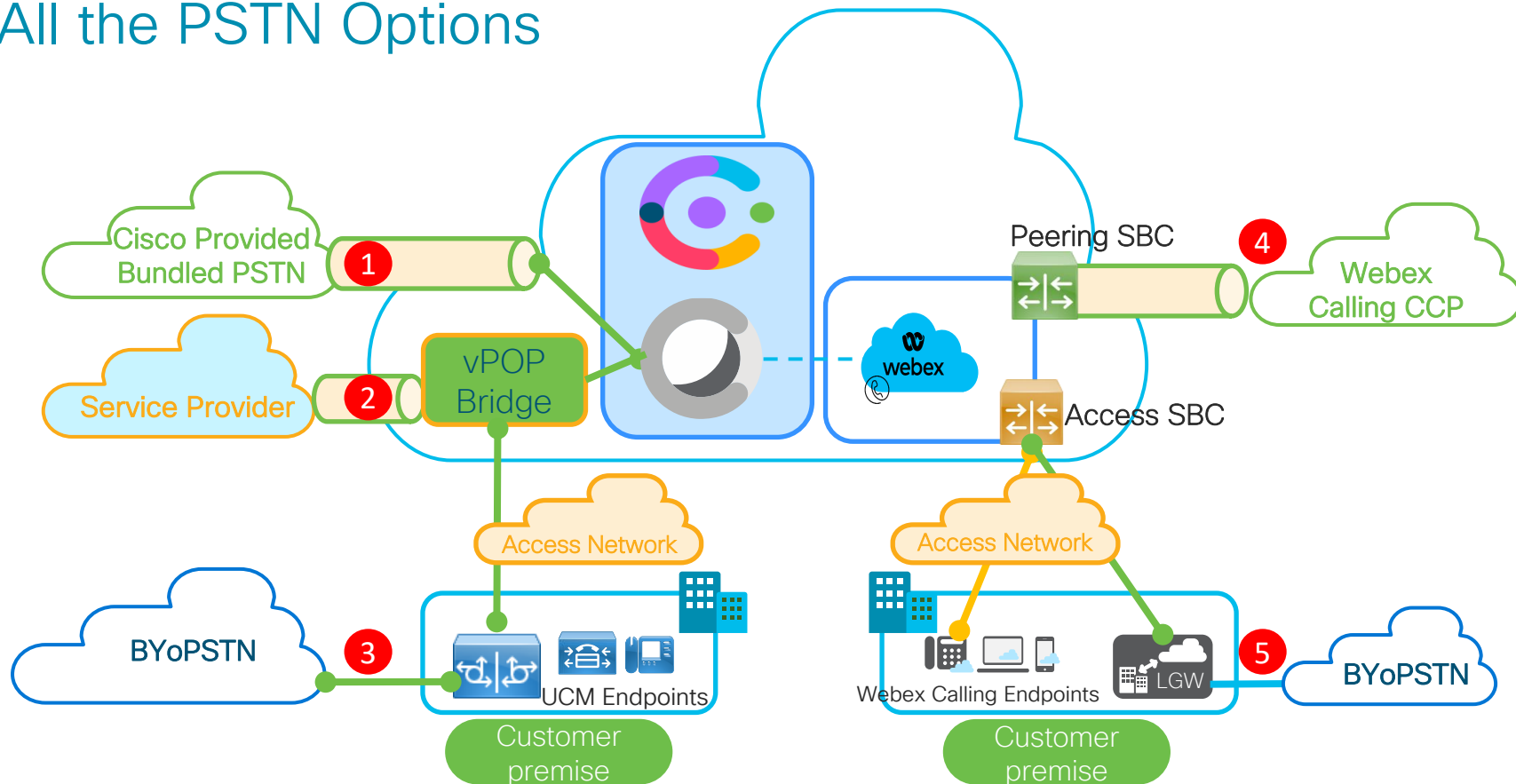


Recall this!

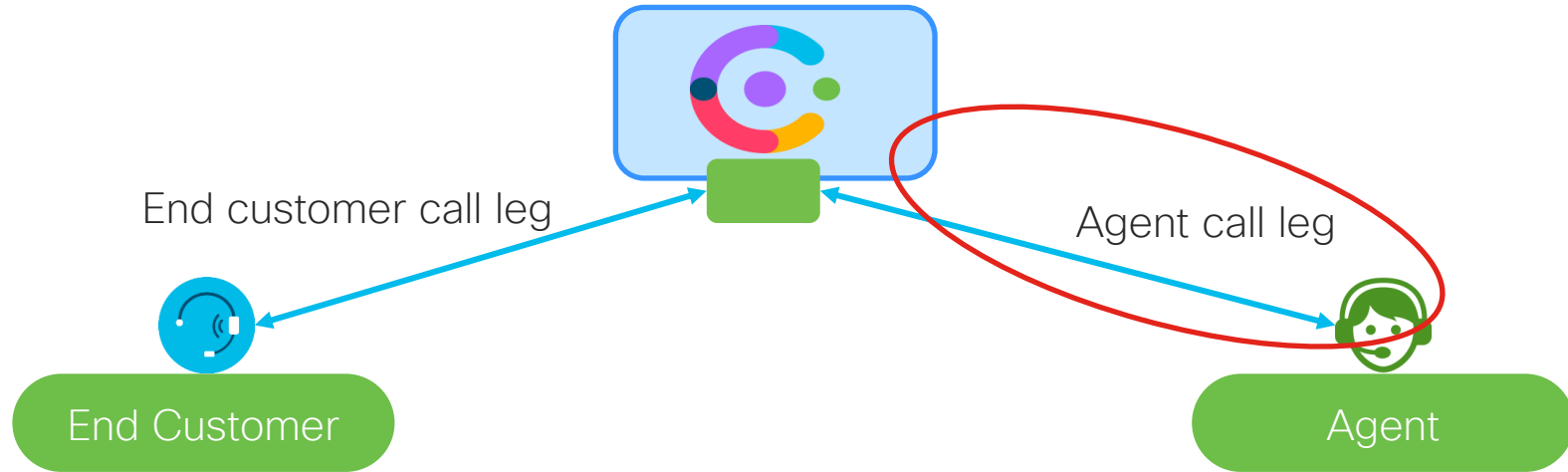


New Webex Contact Center

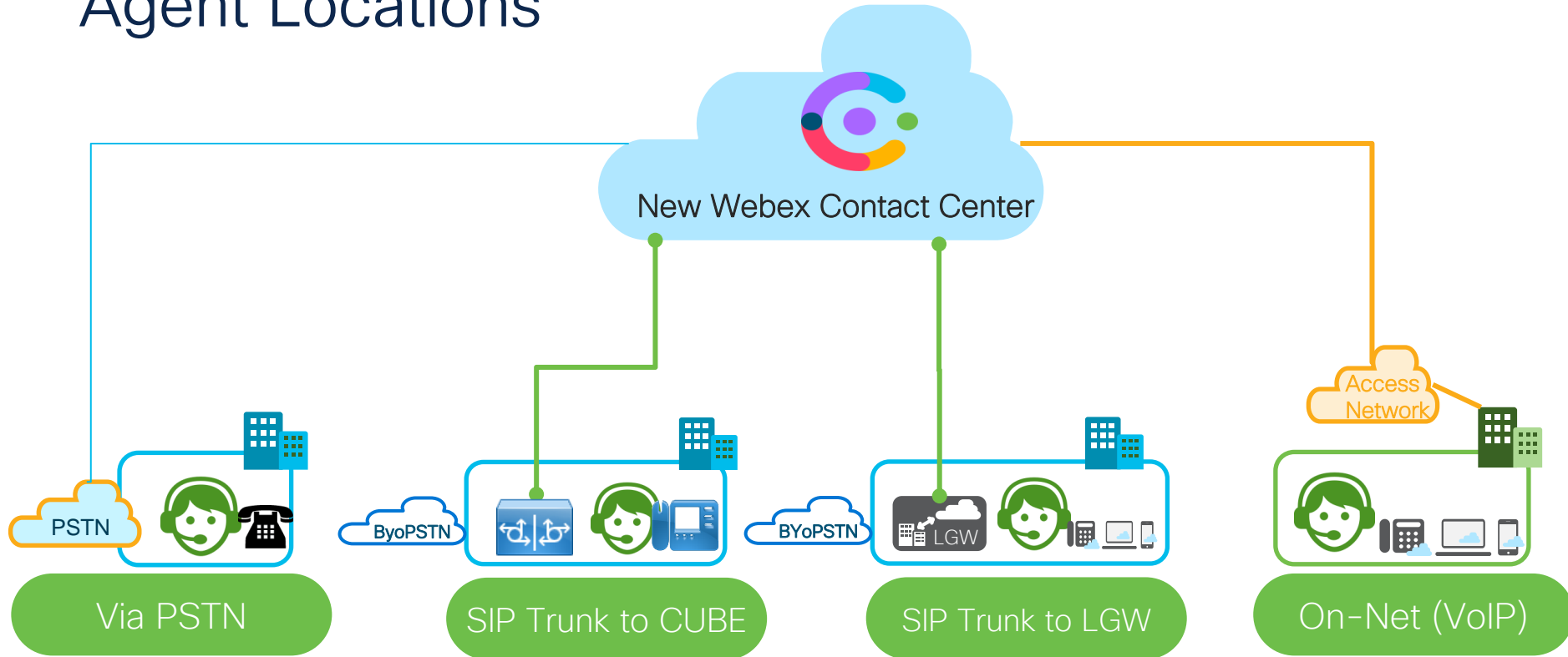
All the PSTN Options



Recall this!



Agent Locations



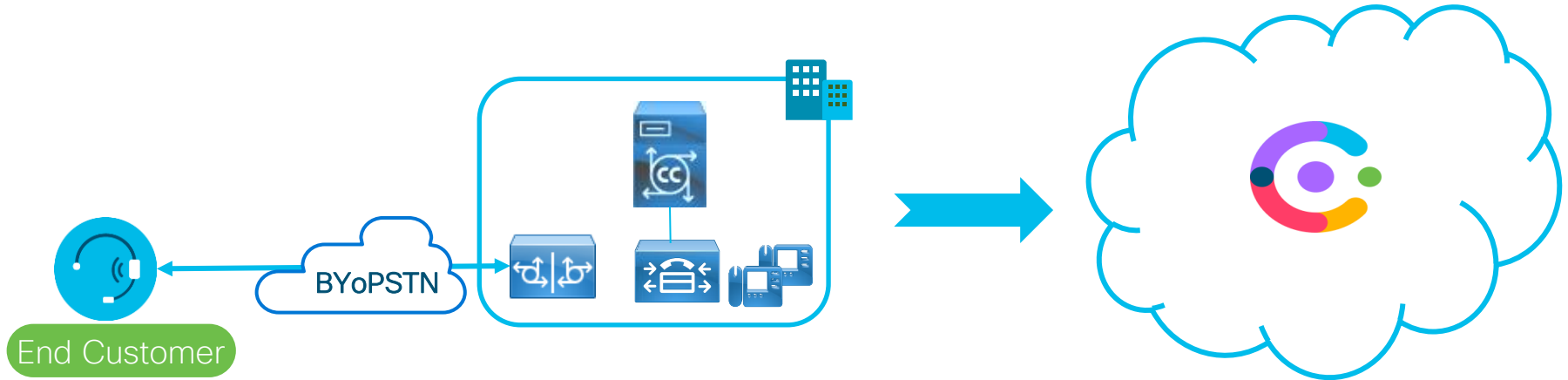
PSTN Use Cases with the New Webex Contact Center



PSTN options - Use case (1)

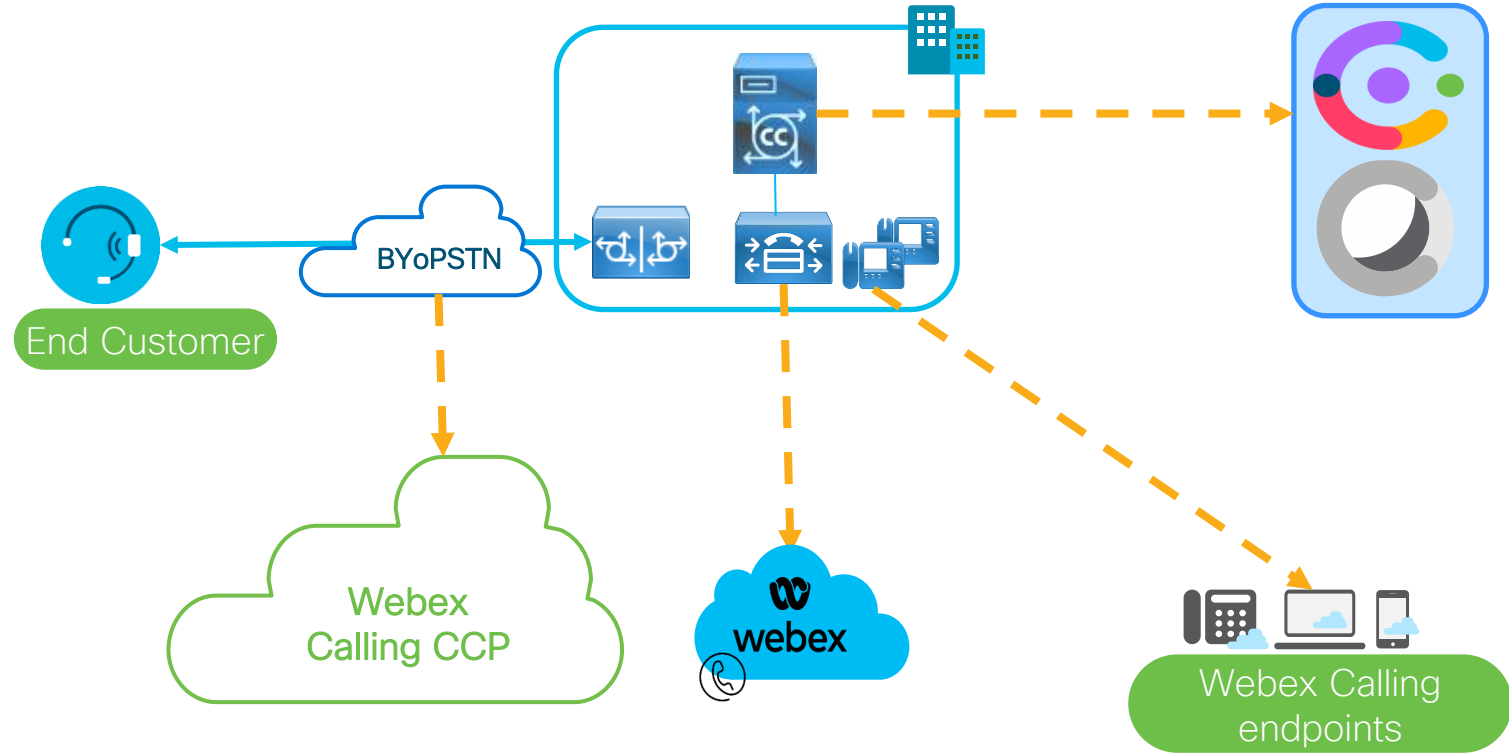
Requirement - Full transition to the cloud

- Customer has their own PSTN, Unified CM & UCCX.
- Customer wants to transition to the cloud and moving everything out of their own data center
- What are the Cisco Options?



PSTN options - Use case (1)

Available Options



PSTN options - Use case (1)

Recommended path for Full transition to the cloud

PSTN:

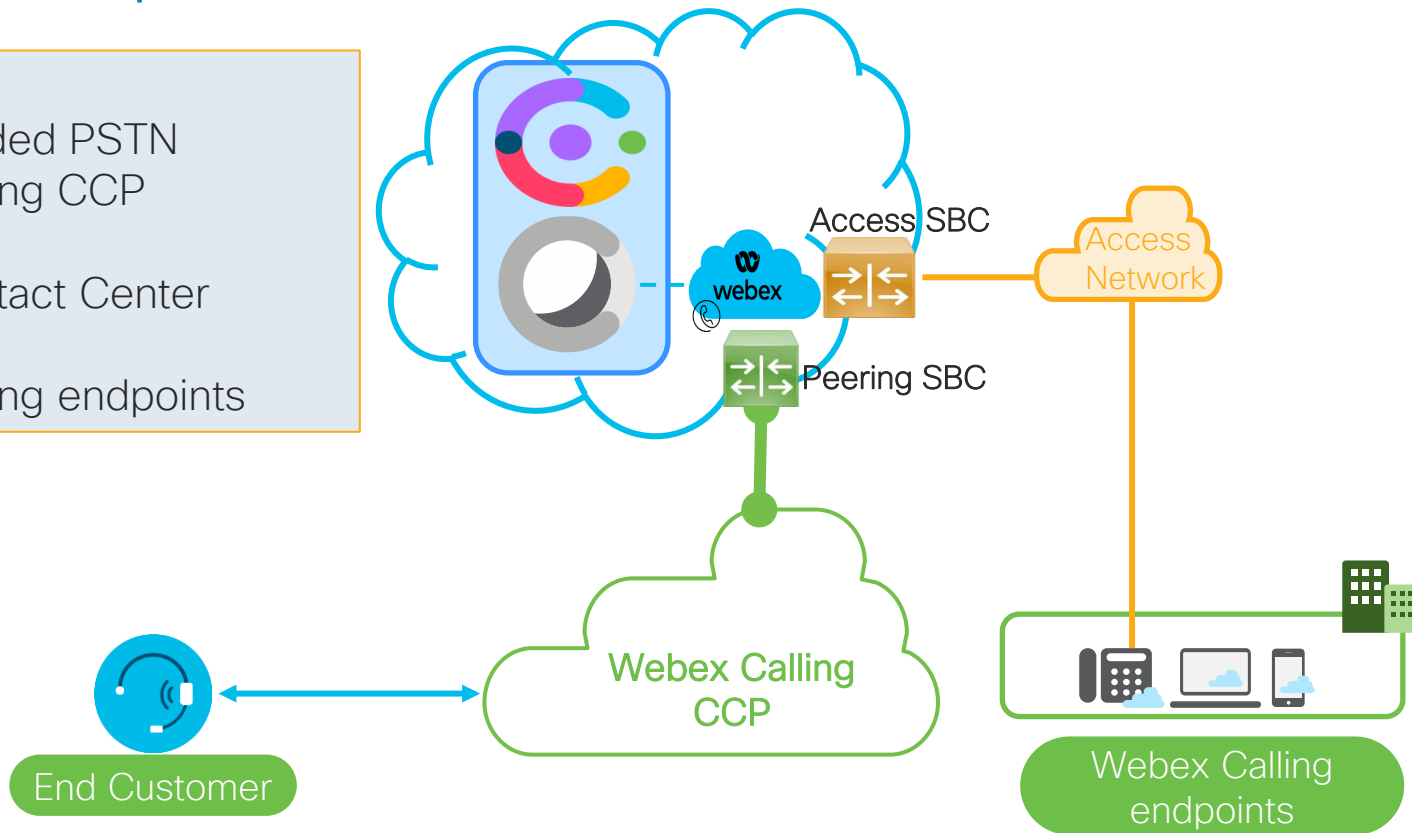
Cisco provided PSTN
Webex Calling CCP

Contact Center:

Webex Contact Center

Agent Endpoints:

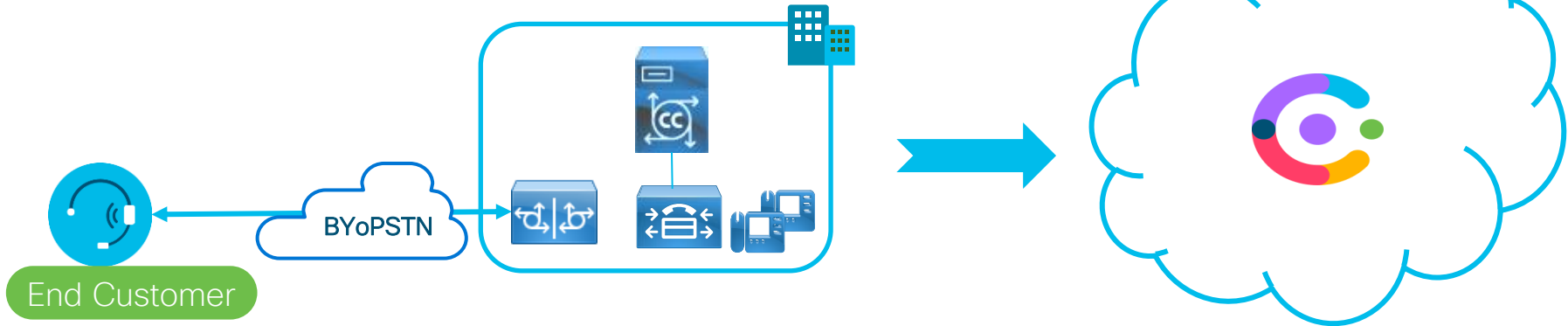
Webex Calling endpoints



PSTN options – Use case (2)

Requirement – Contact Center and UCM to the cloud with customer owned PSTN service (BYoPSTN)

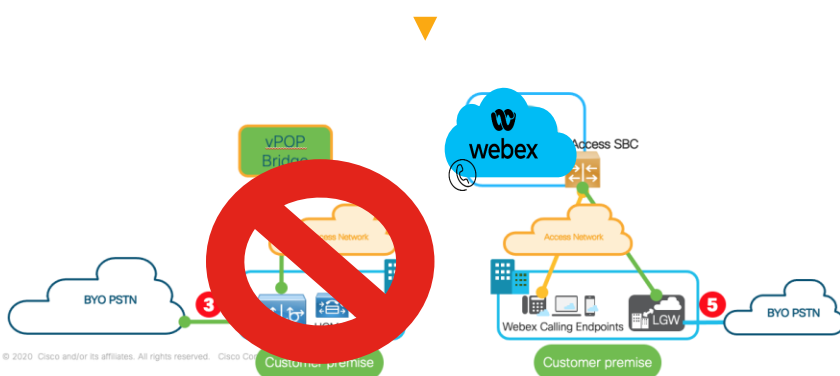
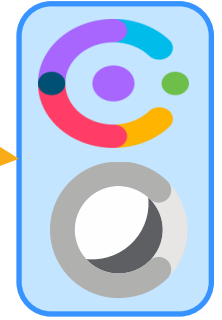
- Customer has their own PSTN, Unified CM, and UCCX.
- Customer wants to transition contact center to the cloud
- Customer wants to keep only their own PSTN
- Customer does not want to increase the PSTN billing/usage
- What are the Cisco Options?



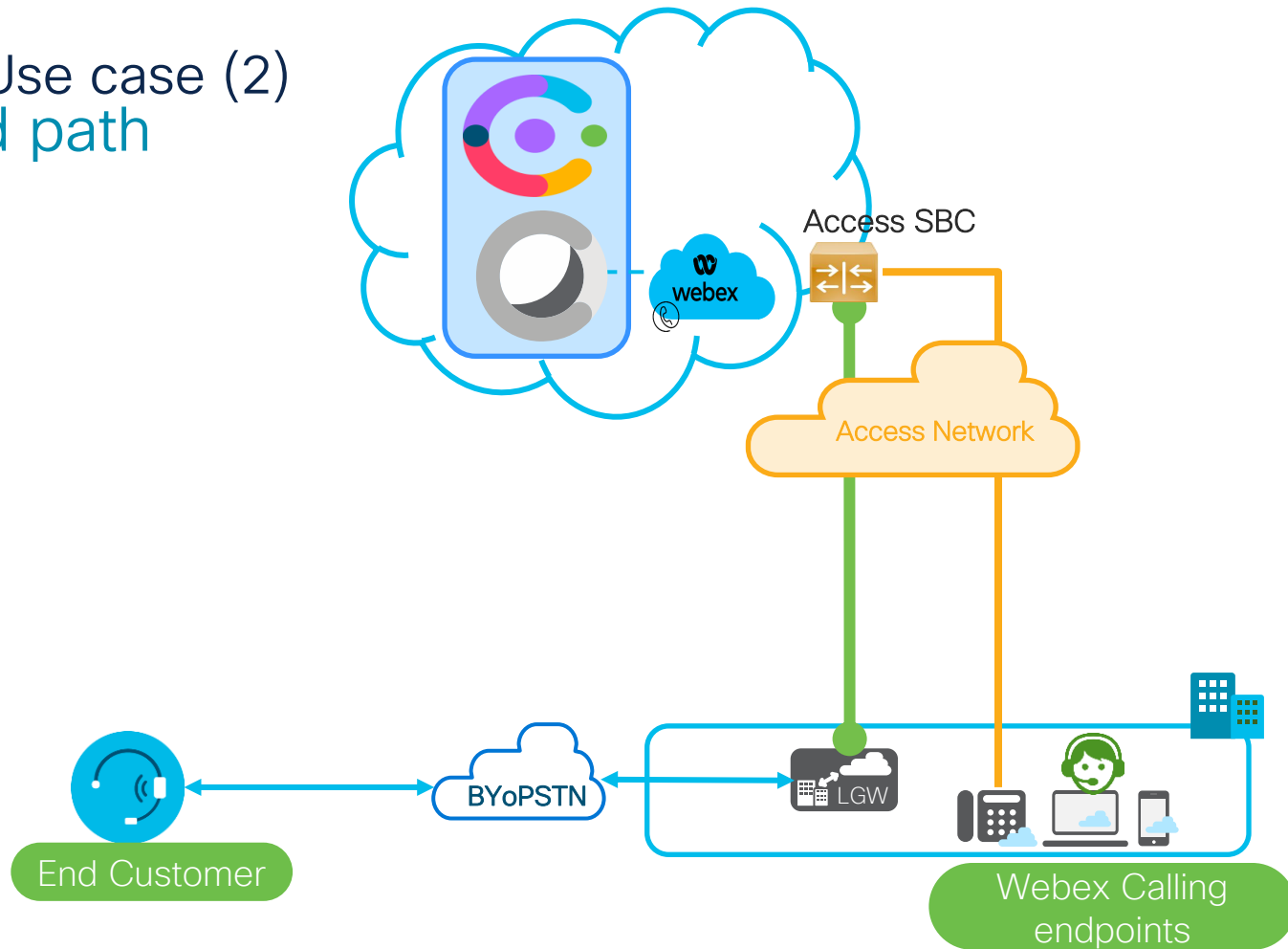
PSTN options - Use case (2)

Available Options

- Customer has their own PSTN, UCM, and UCCX.
- Customer wants to transition contact center to the cloud
- Customer wants to keep only their own PSTN
- Customer does not want to increase the PSTN billing/usage
- What are the Cisco Options?



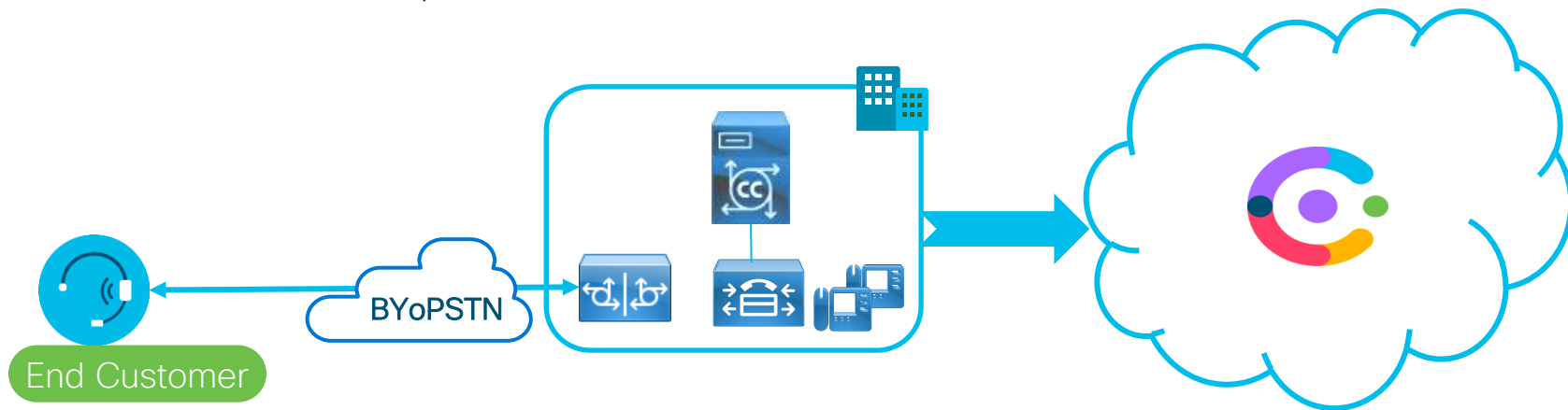
PSTN options - Use case (2) Recommended path



PSTN options - Use case (3)

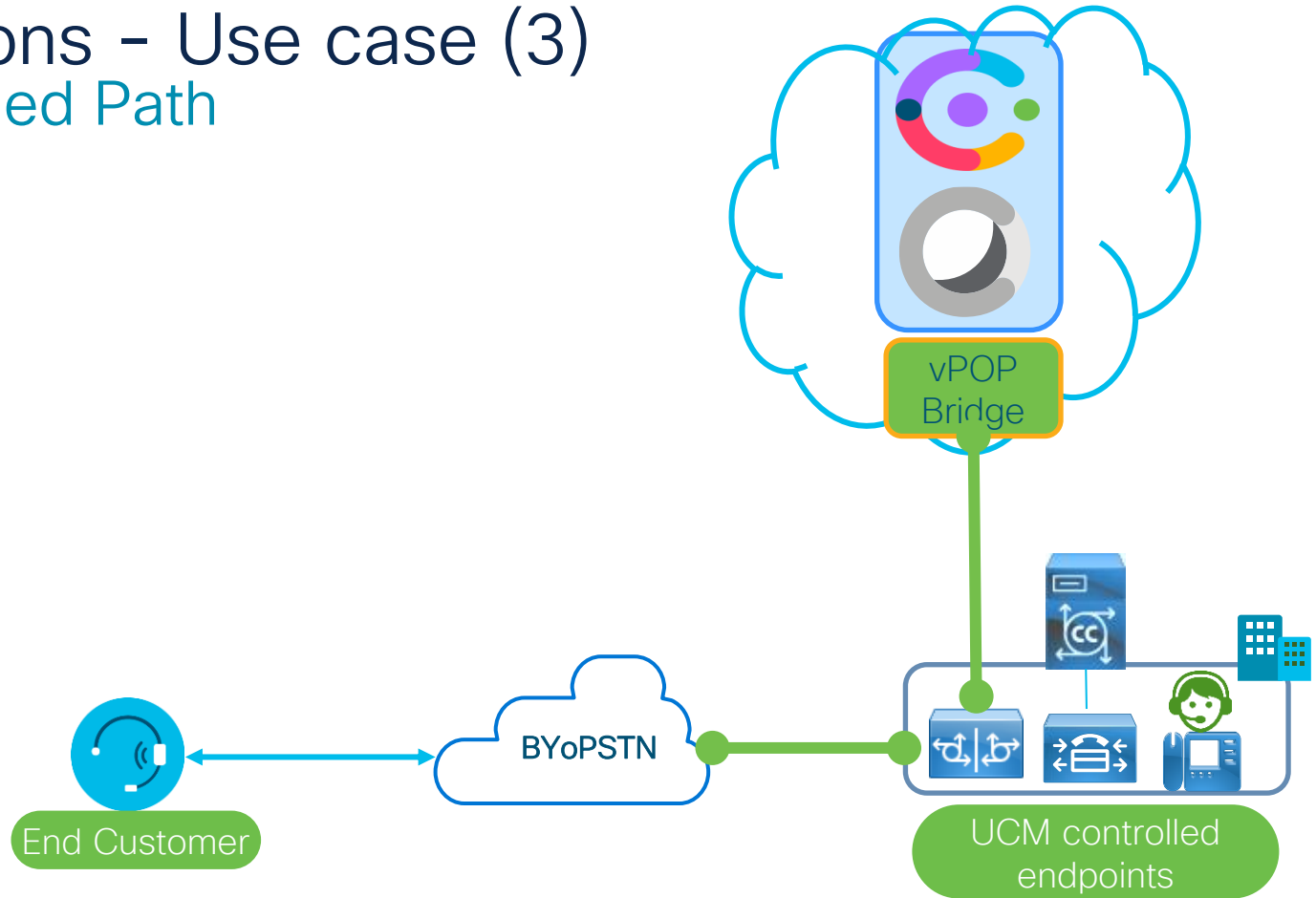
Requirement – Only Contact Center to the cloud with customer owned PSTN service and UCM

- Customer has their own PSTN, Unified CM, and UCCX.
- Customer wants to transition contact center to the cloud but keeping their own PSTN and Unified CM
- What are the Cisco Options?



PSTN options - Use case (3)

Recommended Path



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 <small>CSR1Kv - Based on tests using Cisco UCS C240 host with Intel Xeon E5132 2.50GHz processors running VMware ESX6.0</small>	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
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)*







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

Webex Calling – Data Center Location

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

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.

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.

City / Town
Washington

State/ Province/ Region
Alaska

ZIP/ Postal Code
123456

Need help – Search the knowledge base.

BackNext: Default Location

First Time Setup Wizard

Webex Calling – First Site

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

Location Address

Address

Address

Unit, Suite, etc.

City / Town

Washington

State/ Province/ Region

Alaska

ZIP/ Postal Code

123456

Clear

Reset to saved information

Skype for Business

Back

Next

CISCO *Live!*

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Cisco PSTN Bundle

Control Hub Configuration

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

Contact Center Settings

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.

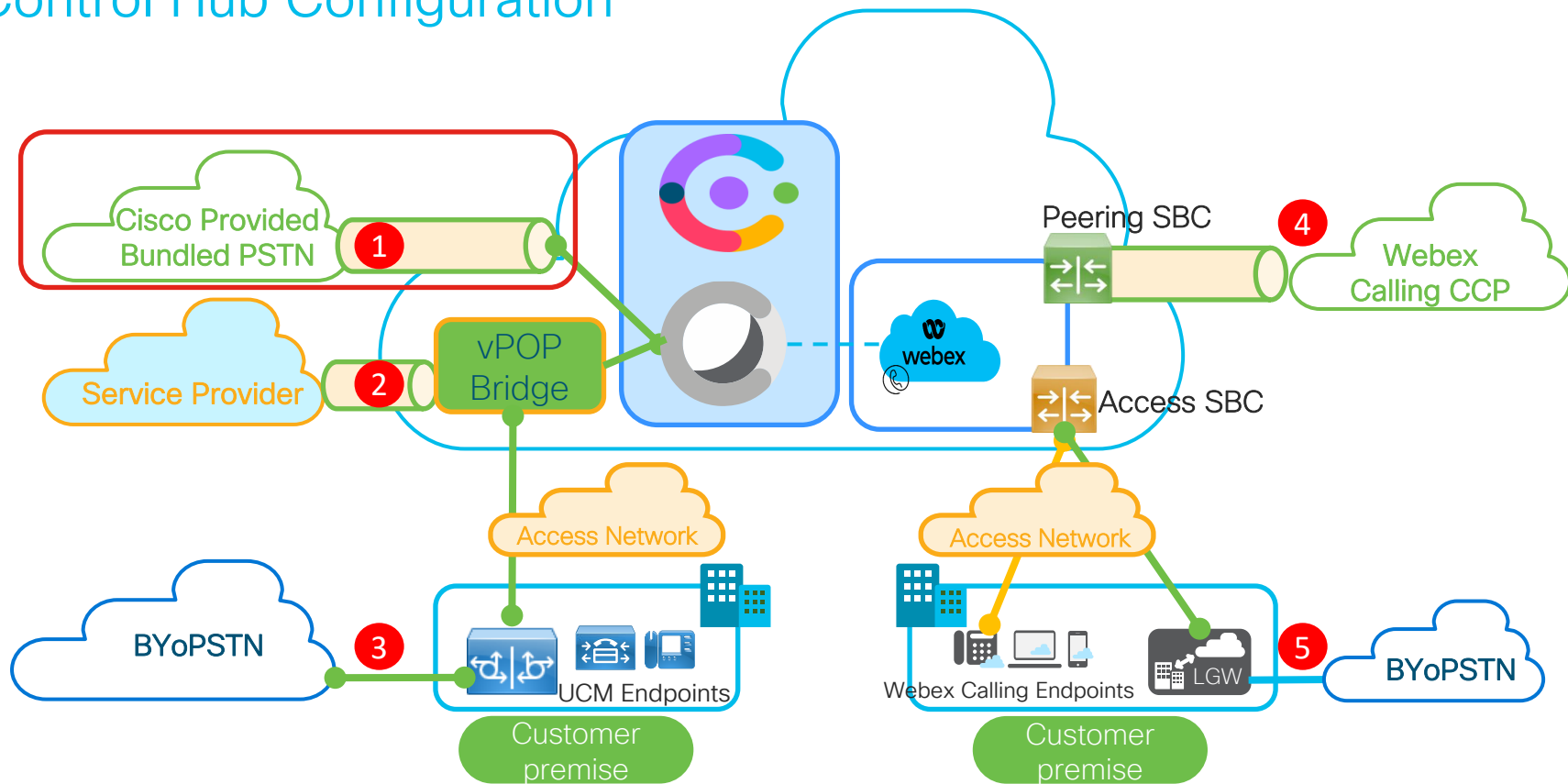
☒ **Webex Contact Center PSTN**
This PSTN connection type was selected as part of the order in Cisco Commerce Workspace (CCW) Ordering tool.

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

Back Next

Cisco Provided Bundled PSTN

Control Hub Configuration



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

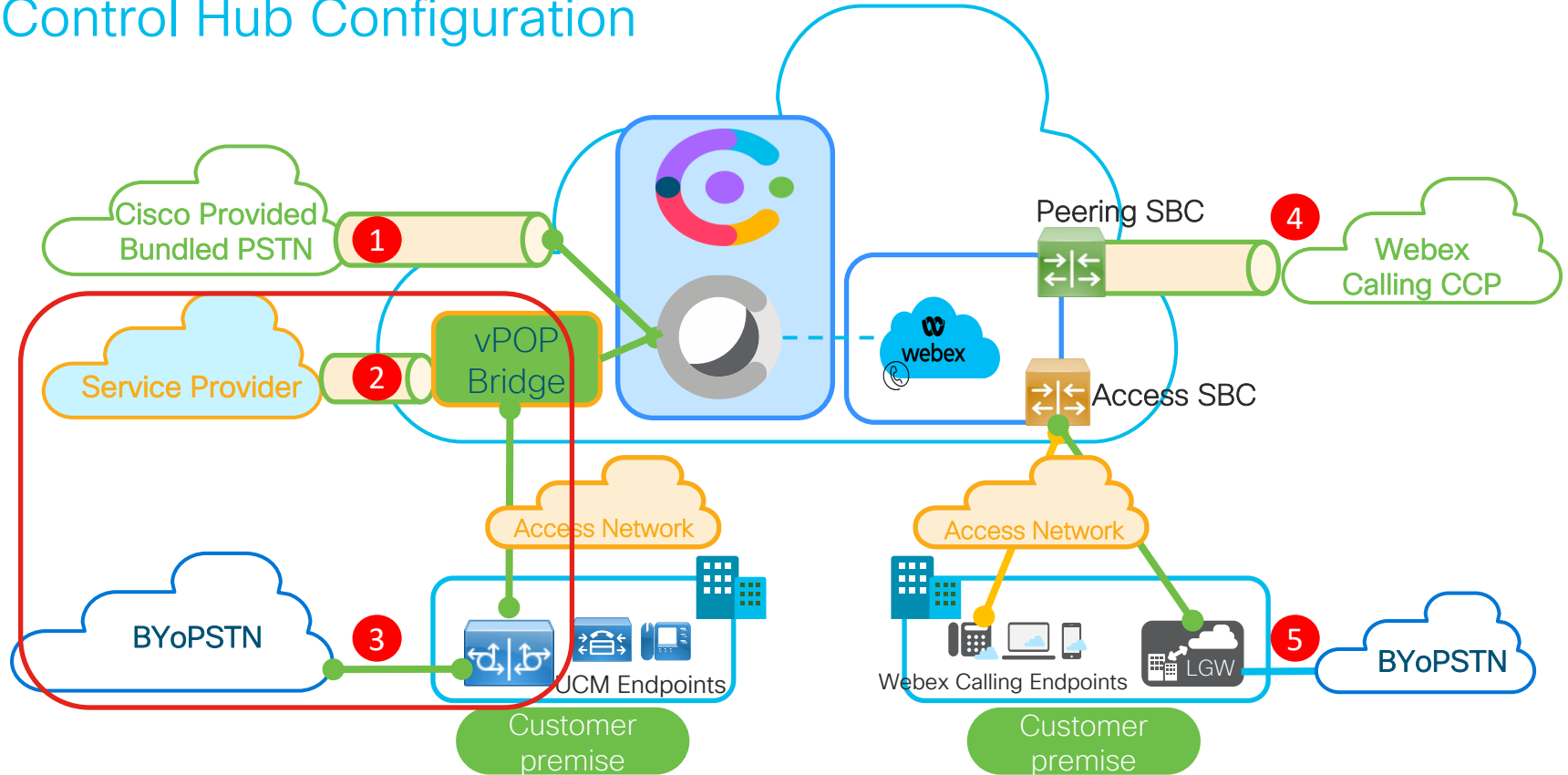
To learn about Contact Center telephony, please read the [Voice Onboarding for Webex Contact Center document](#).

☐ 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.

vPOP Bridge PSTN Options

Control Hub Configuration



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United States of America

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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](#)

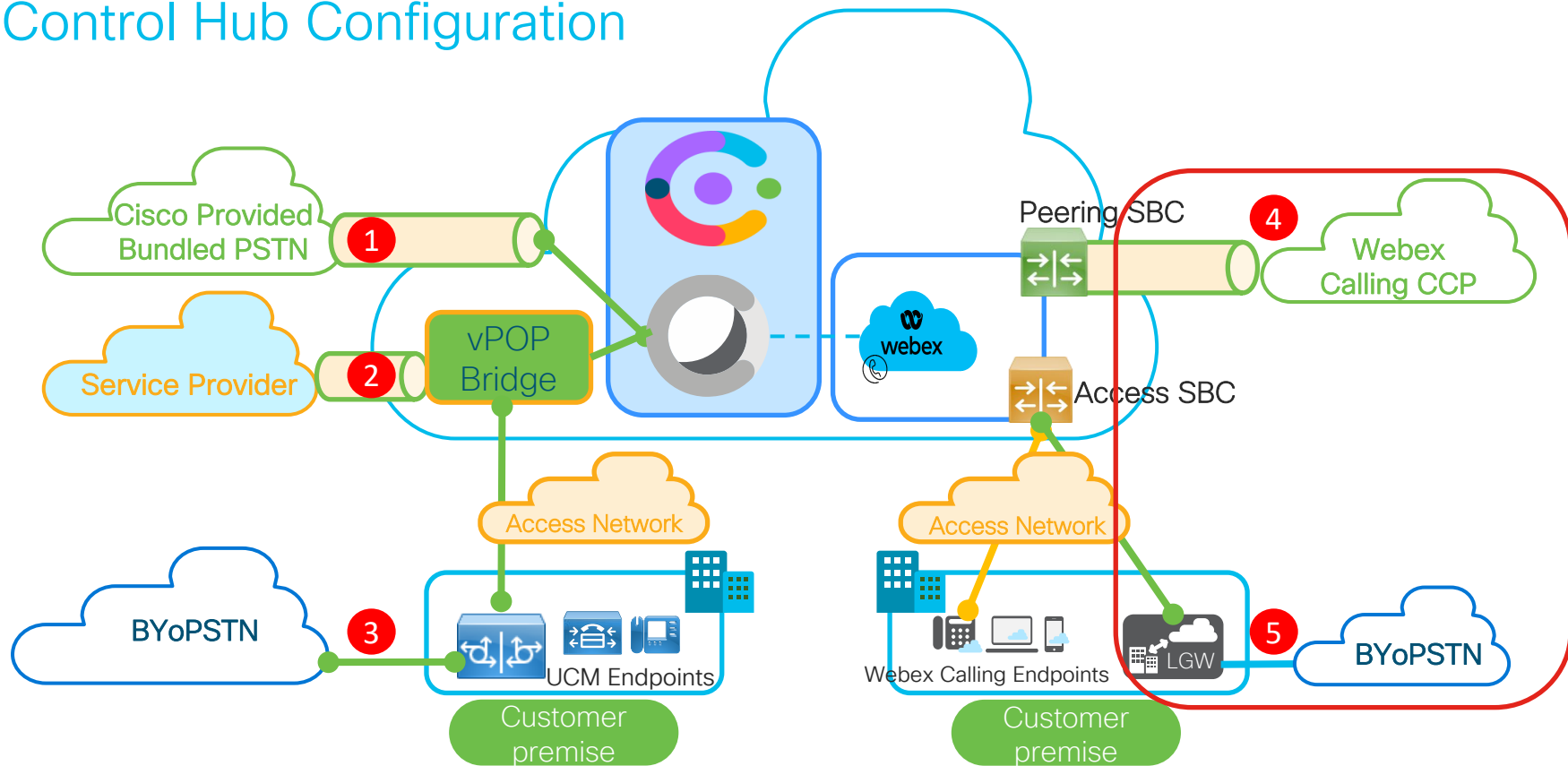
Webex Contact Center Telephony
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Service Providers can use this telephony option to provide telephony connection to Voice POPs. Verify this selection is correct as it cannot be changed later.

☐ 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

Control Hub Configuration

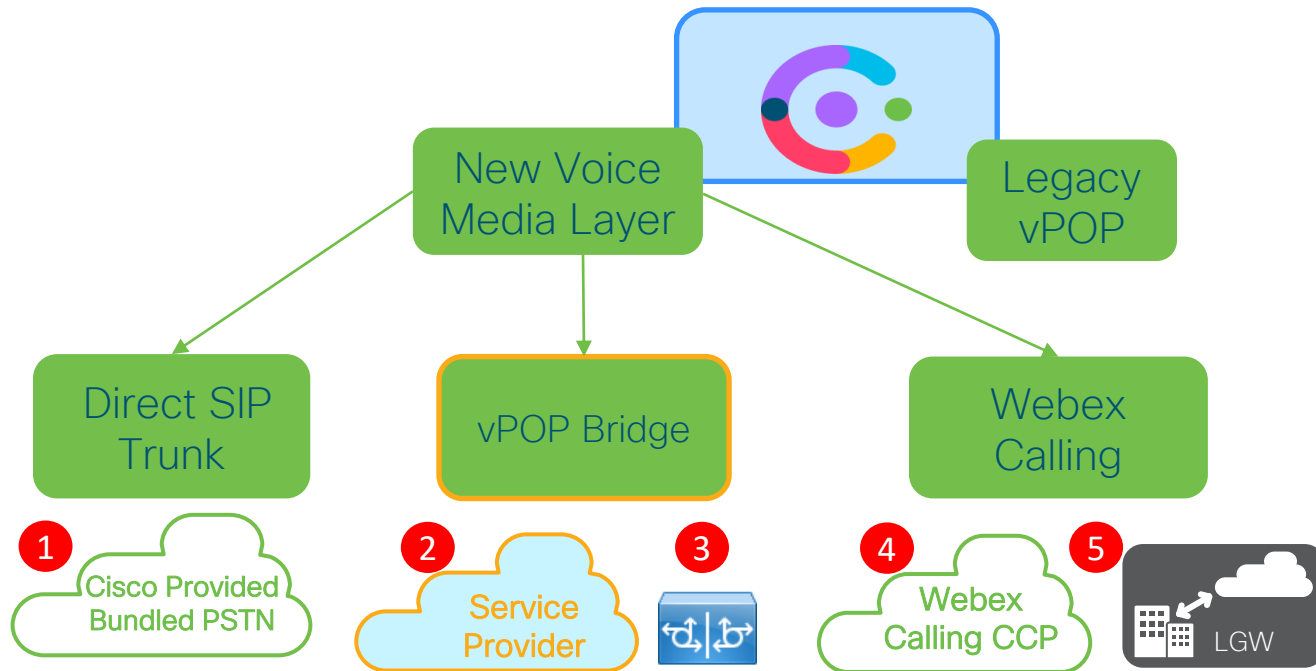


Key Takeaways

Webex Contact Center – PSTN

Current Integration Options

- Legacy vPOP (WxCC 1.0)
- New Voice Media Layer (WxCC 2.0 aka new WxCC)



Why New Media Layer?



- 1 Fast deployment & expansion
- 2 Auto scaling (up & down) / cost effective
- 3 Additional media services
- 4 Enhance troubleshooting
- 5 Greater global footprint

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

5

Greater global footprint

Now

US East (US-East-1), US West (US-West-1), Sydney (AP-Southeast-2)

Soon

(Q4 '22): Tokyo , Singapore, Frankfurt, UK

Planned

(Oct 2022): Canada(ca-central-1) , South America (sa-east-1), Milan (eu-south-1), USA (us-east-2)

References

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

internal



Tenant: CC TSA – Support – Please log issues @ <http://cs.co/wxccdemoissues>



[SalesConnect Hub WxCC](#)

external



[D-Cloud](#)

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- 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.



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Cisco Learning Network

Resource community portal for certifications and learning



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Cisco Learning Partner Program

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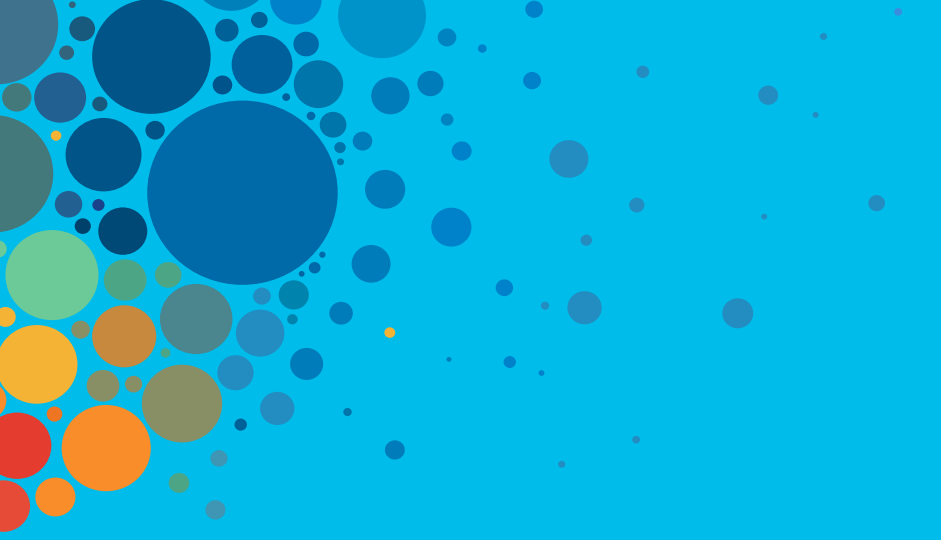
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The bridge to possible

Thank you

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