



The bridge to possible

Demystifying voice connectivity and real-time media handling in Webex Contact Center

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Objectives



- Describe **WxCC** voice architecture
- Describe the **PSTN** voice connectivity options
- Describe the **Agent** voice connectivity options for WxCC available in each theater
- Value proposition of the Webex Contact Center cloud **voice** architecture roadmap

Webex Contact Center (WxCC) Cloud Architecture Overview









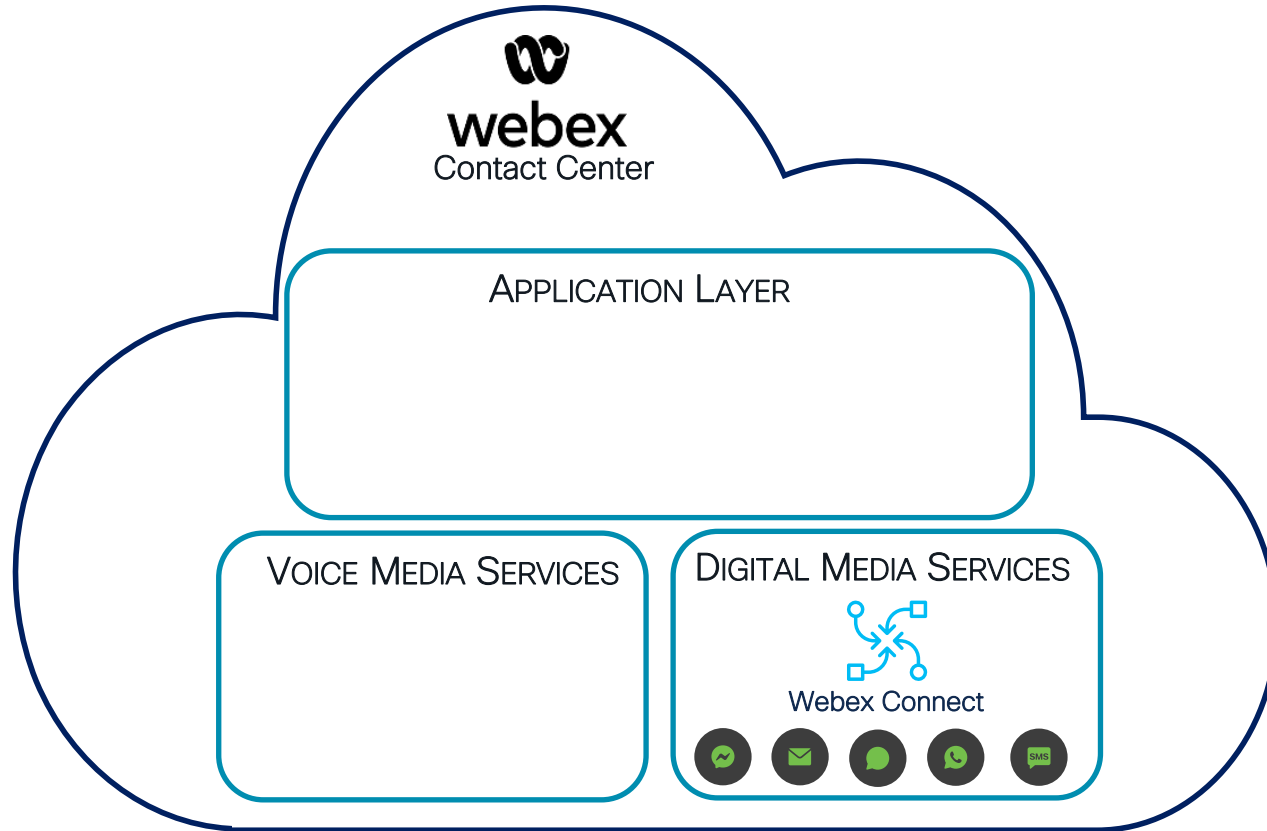
APPLICATION LAYER

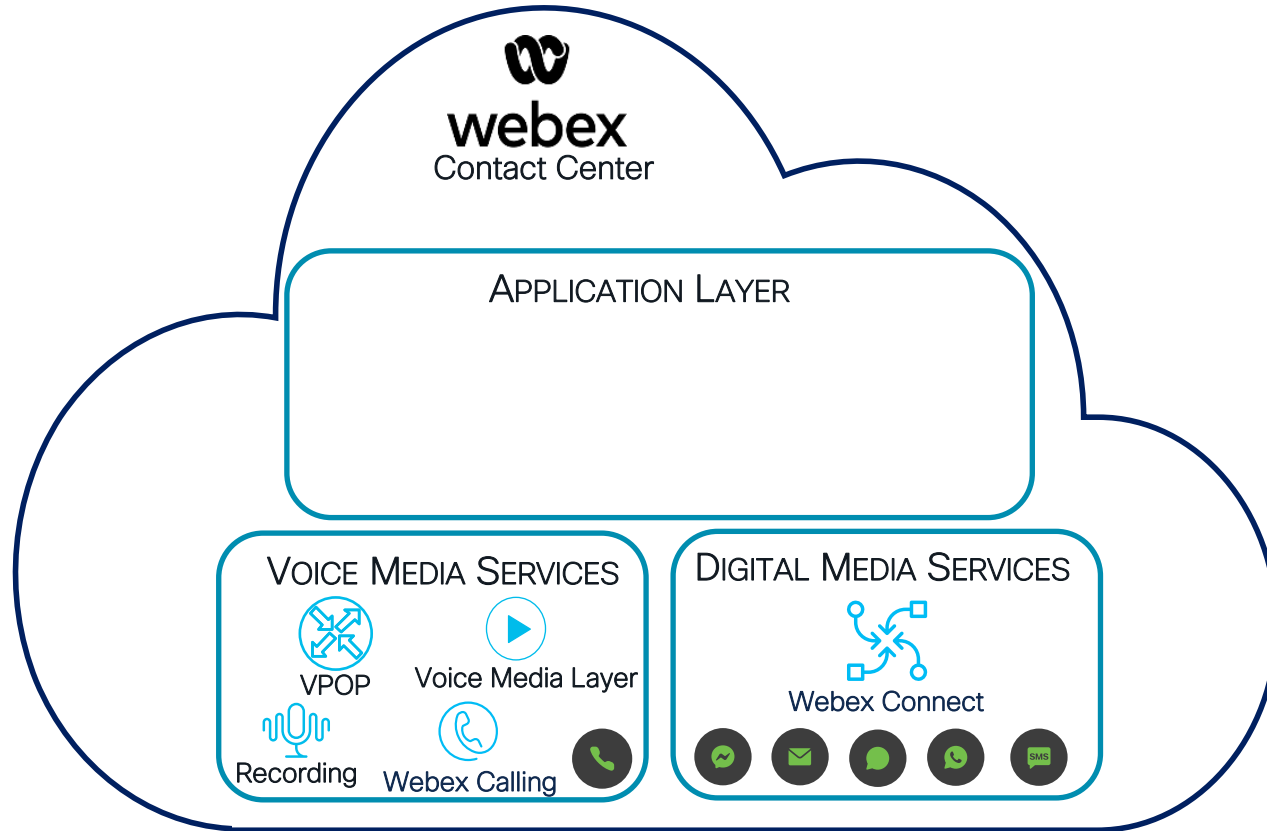


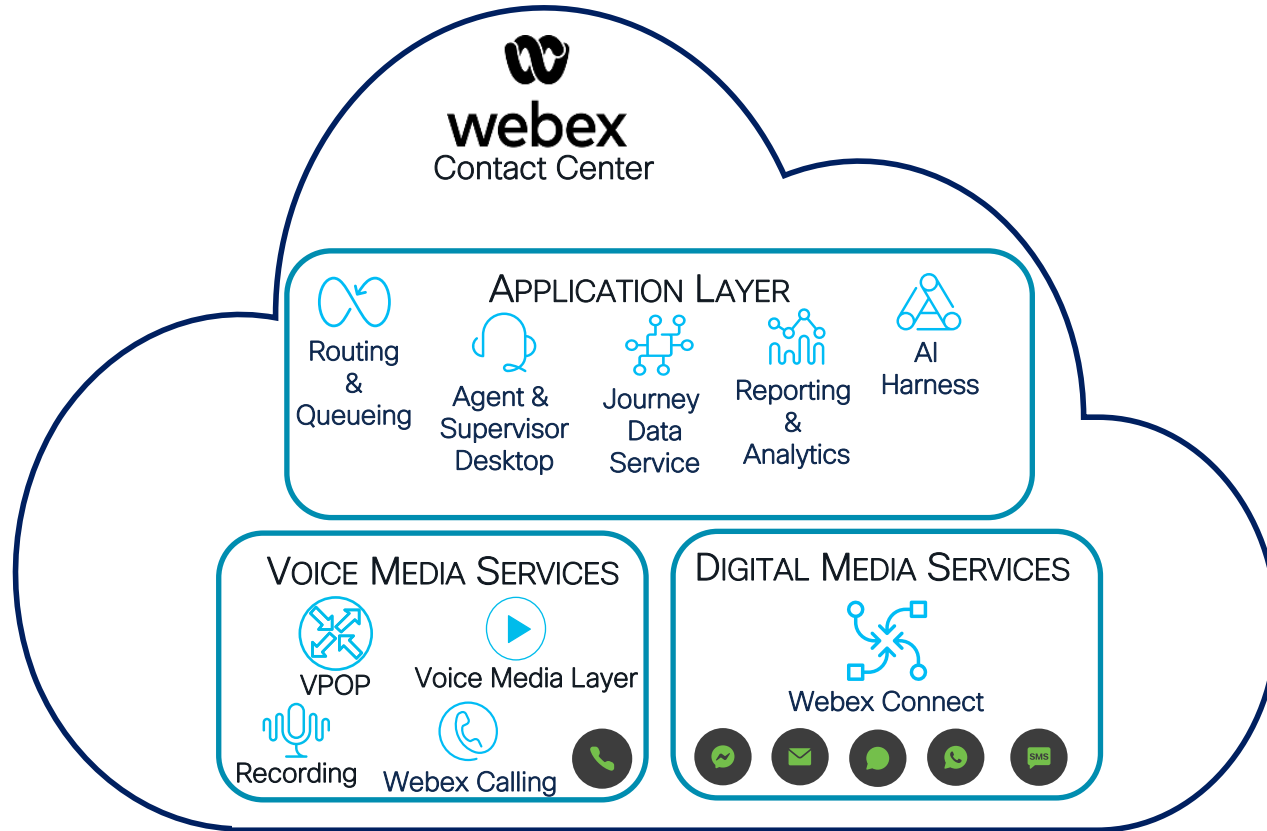
APPLICATION LAYER

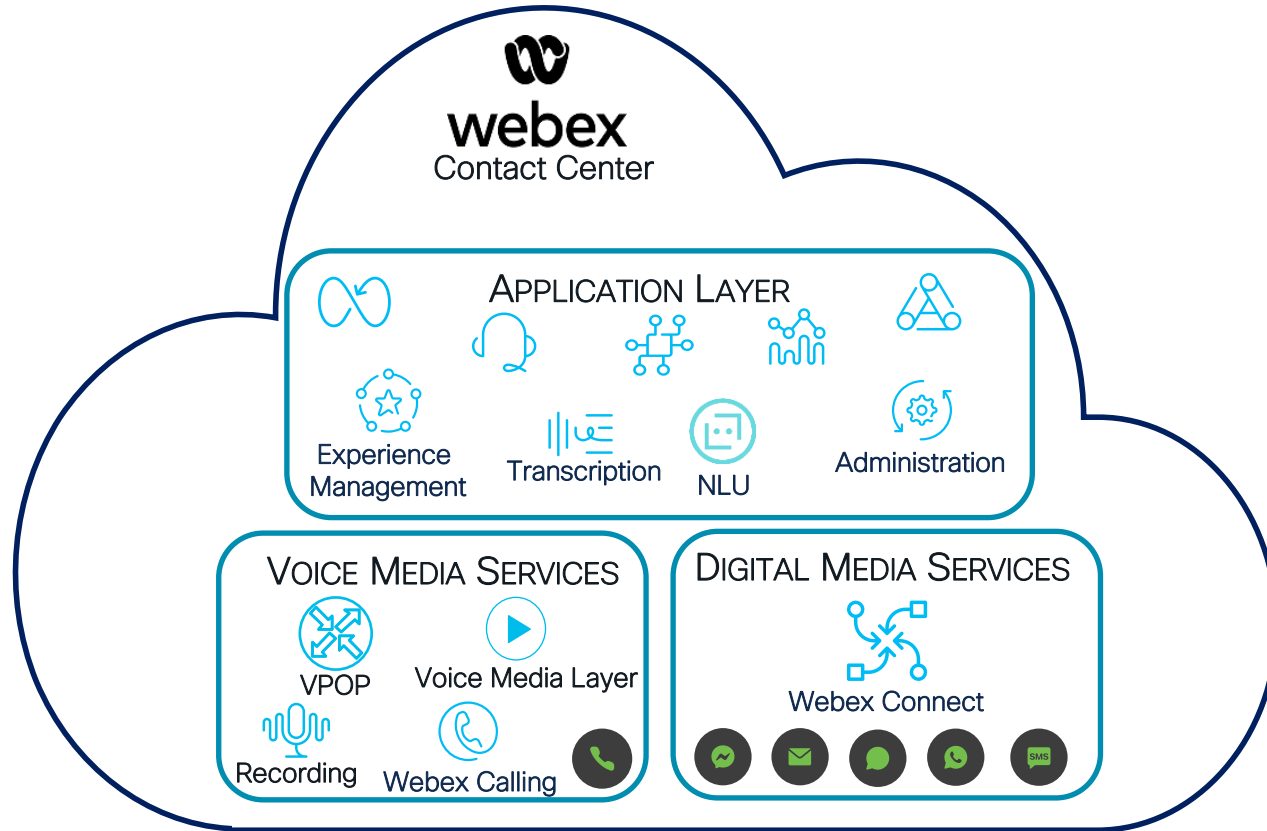
VOICE MEDIA SERVICES

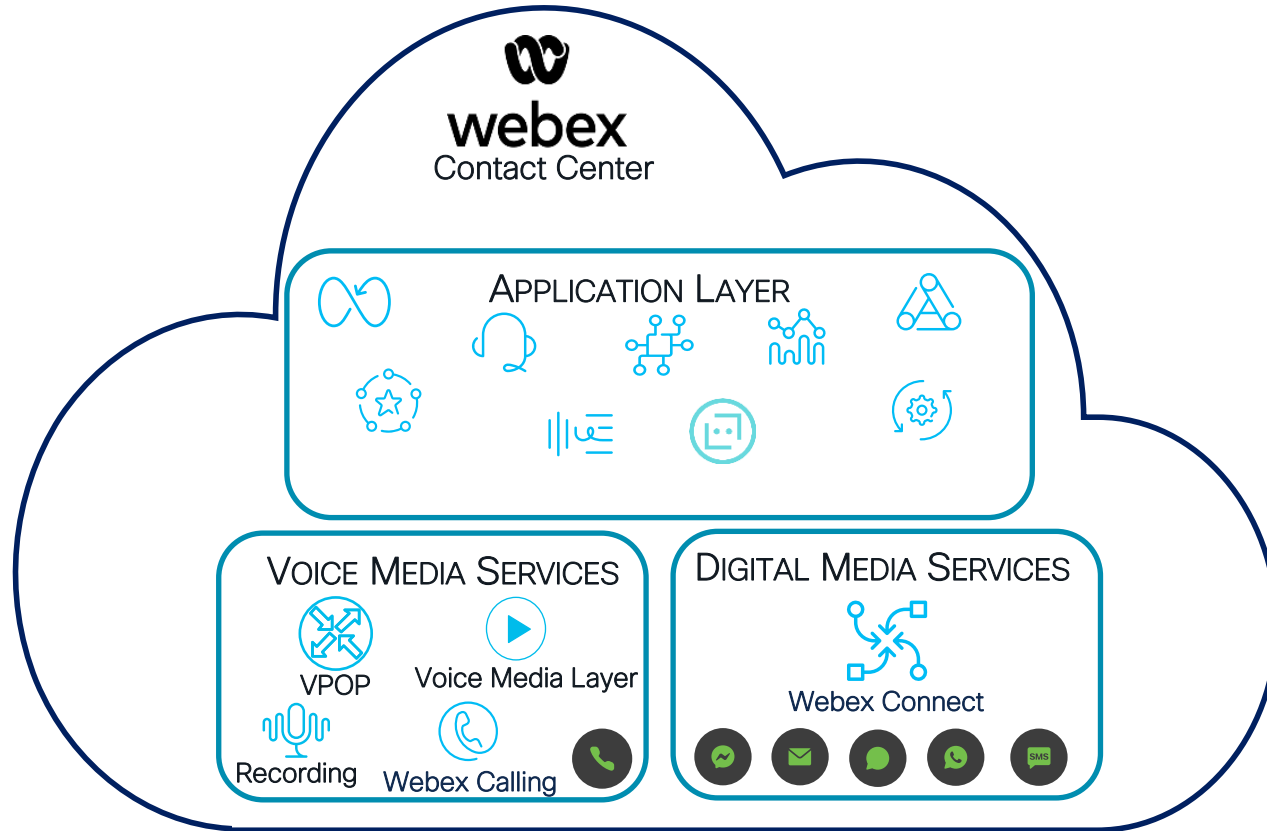
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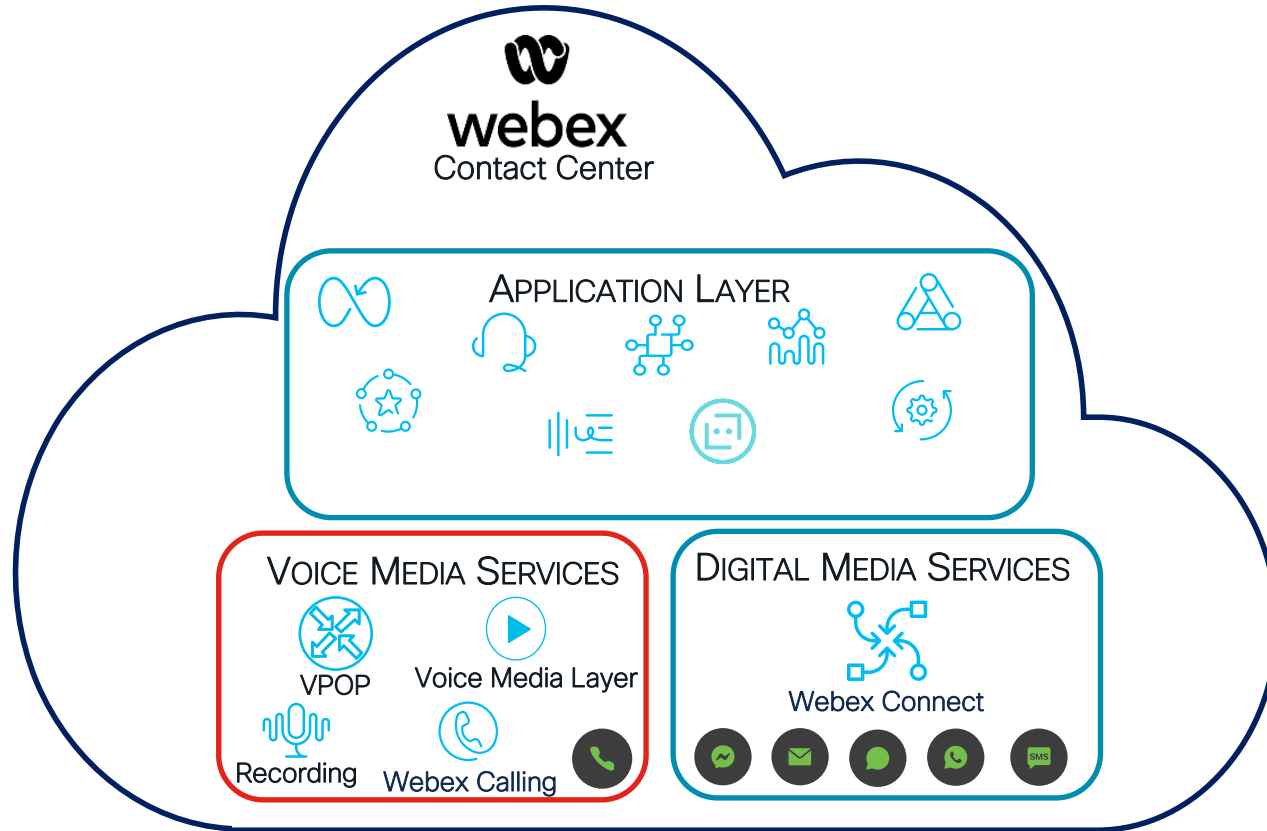












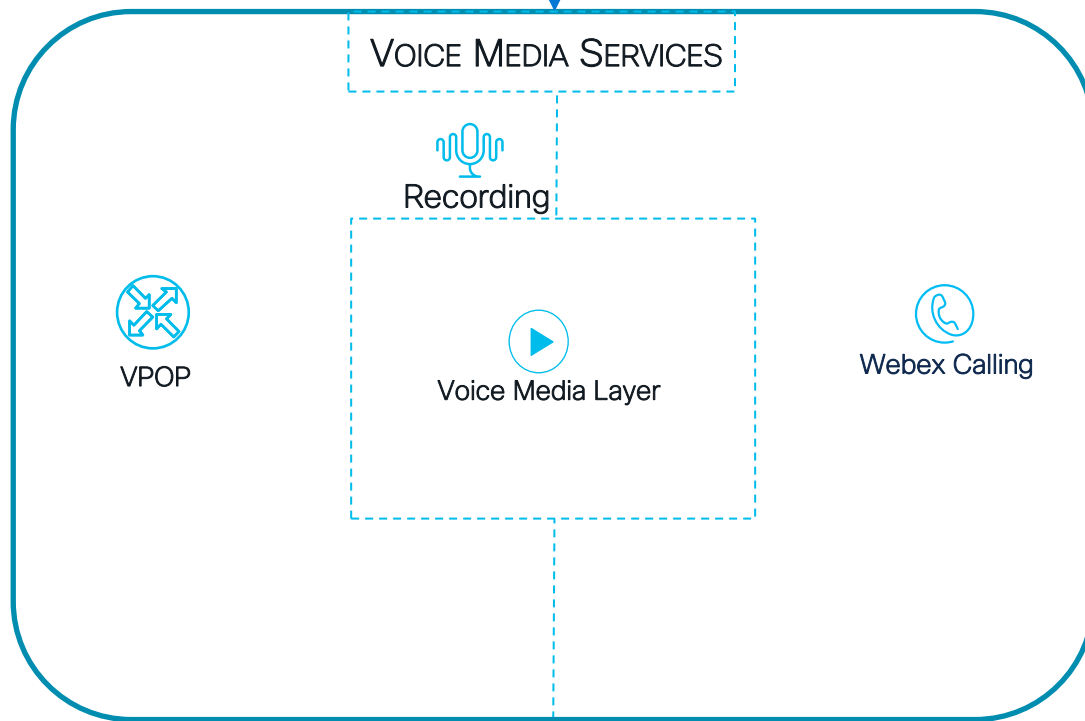
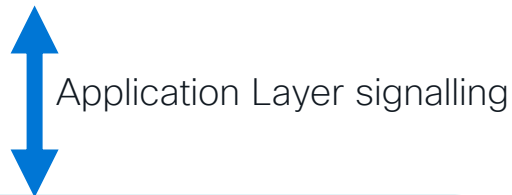


- PSTN integrations
- SIP Signalling
- Voice media handling
- Interactive Voice Response
 - Play prompts
 - Collect caller input
- Call Control
- Recording

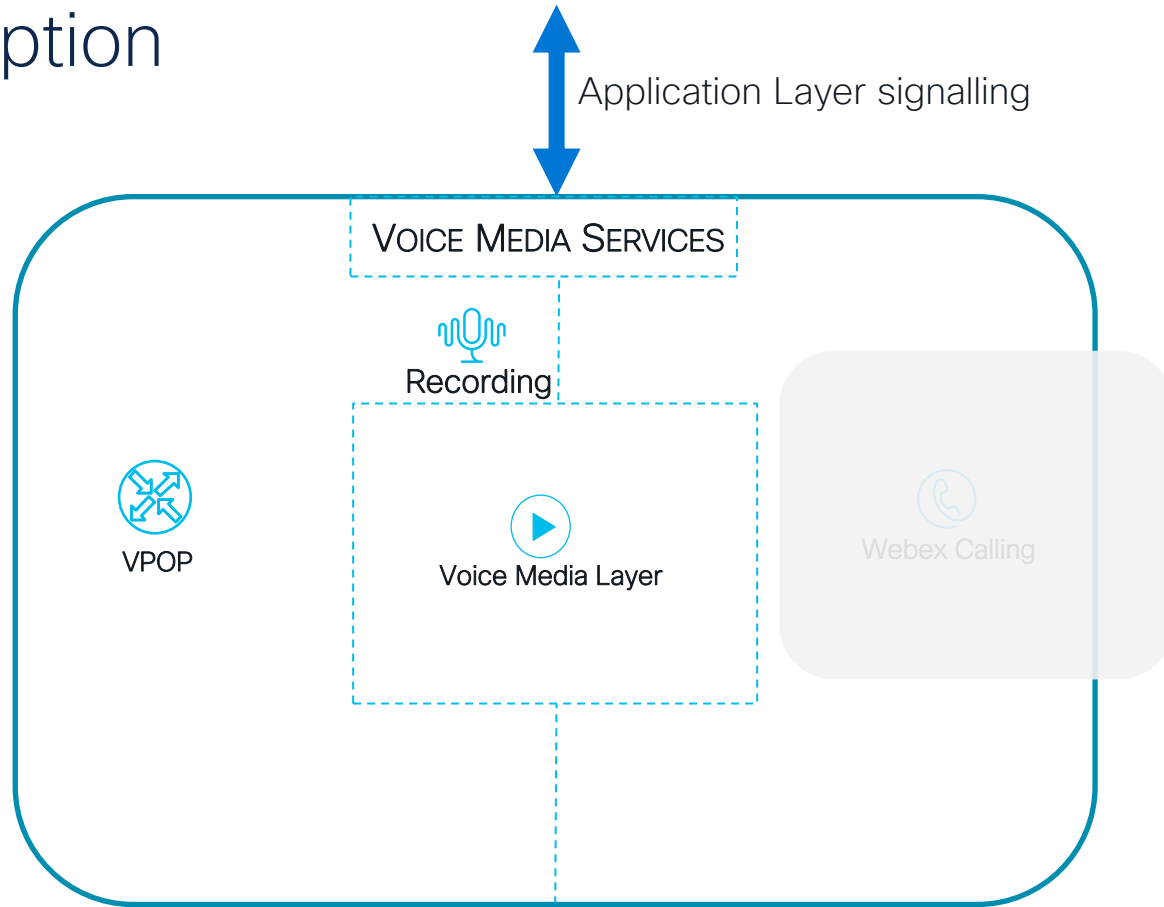
VOICE MEDIA SERVICES

Voice Media Services

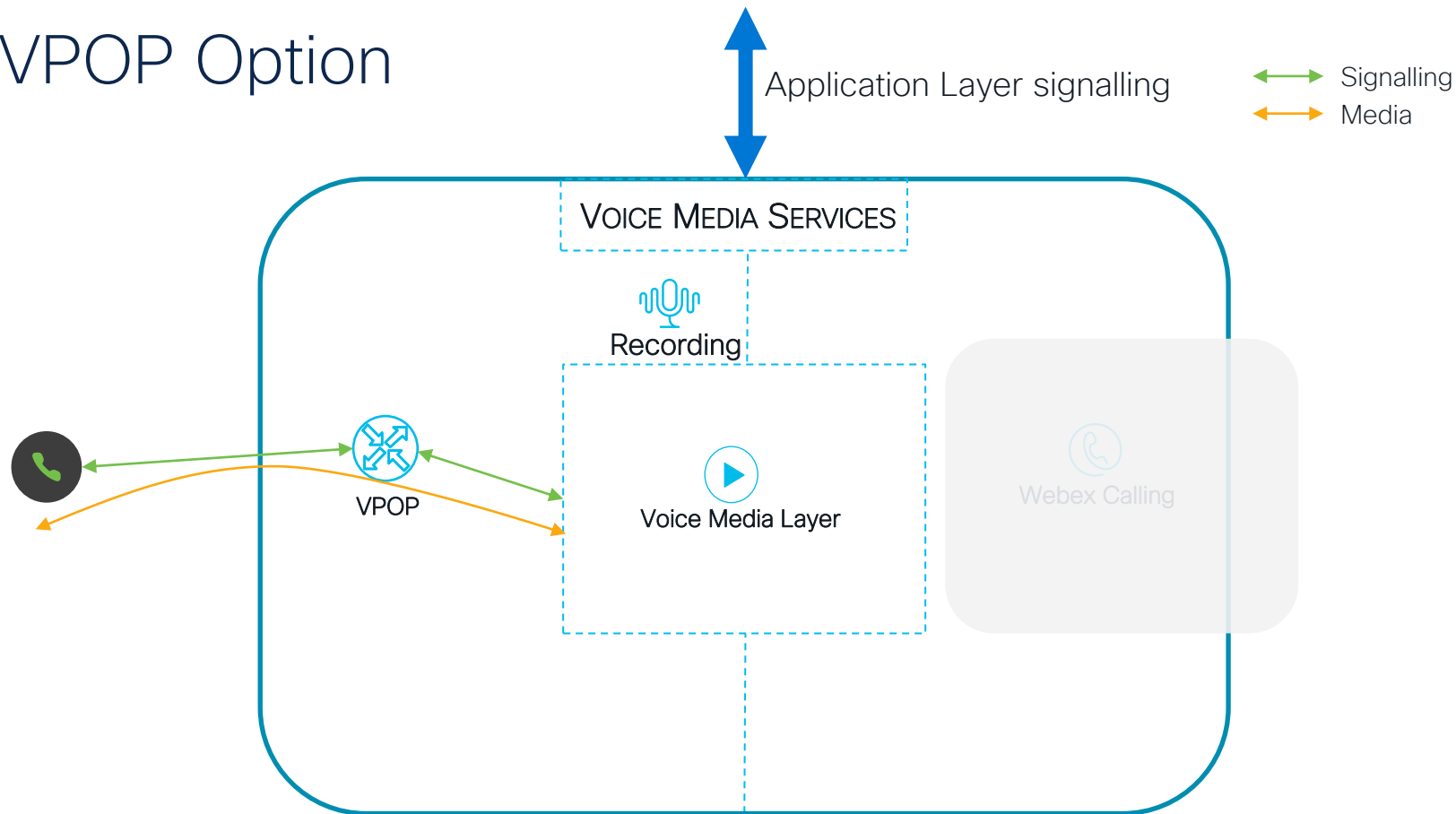
2 mutually exclusive options



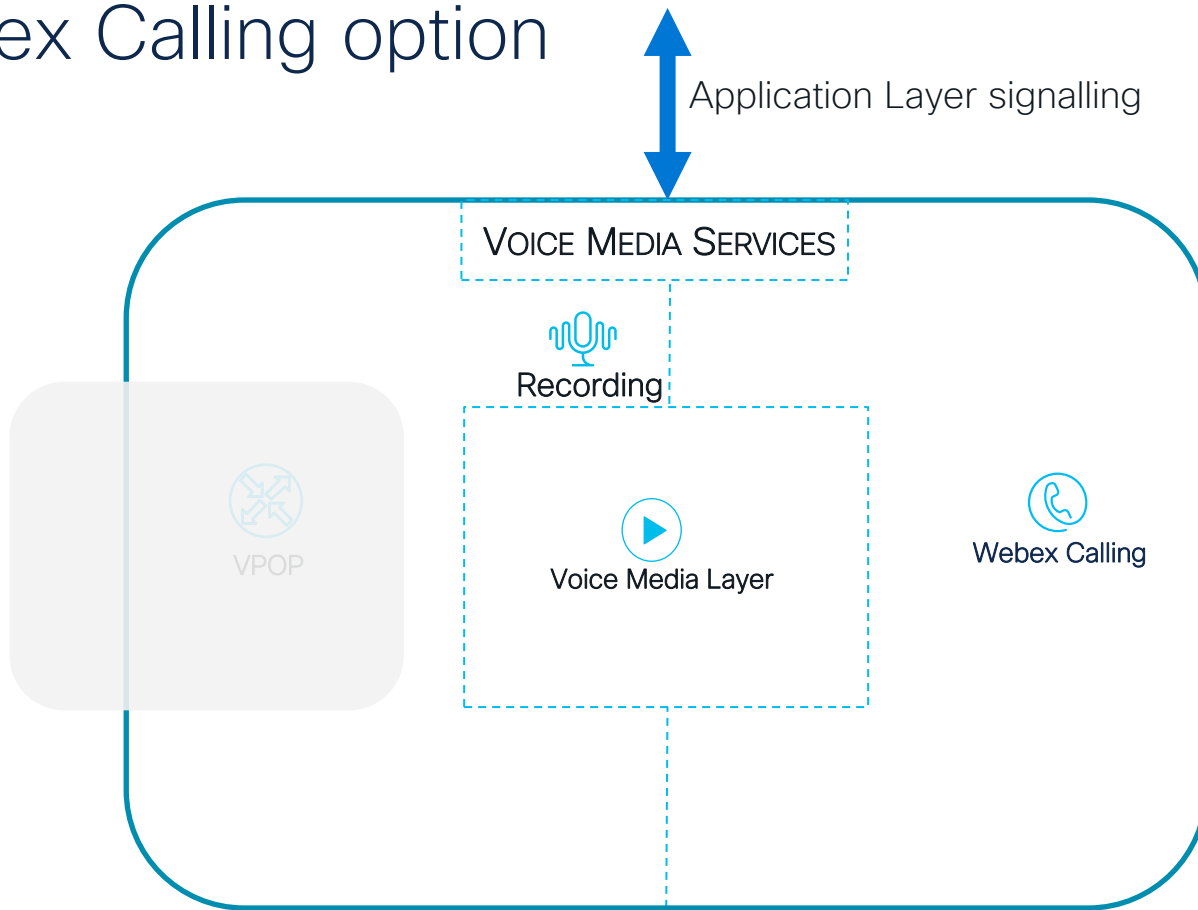
VPOP Option



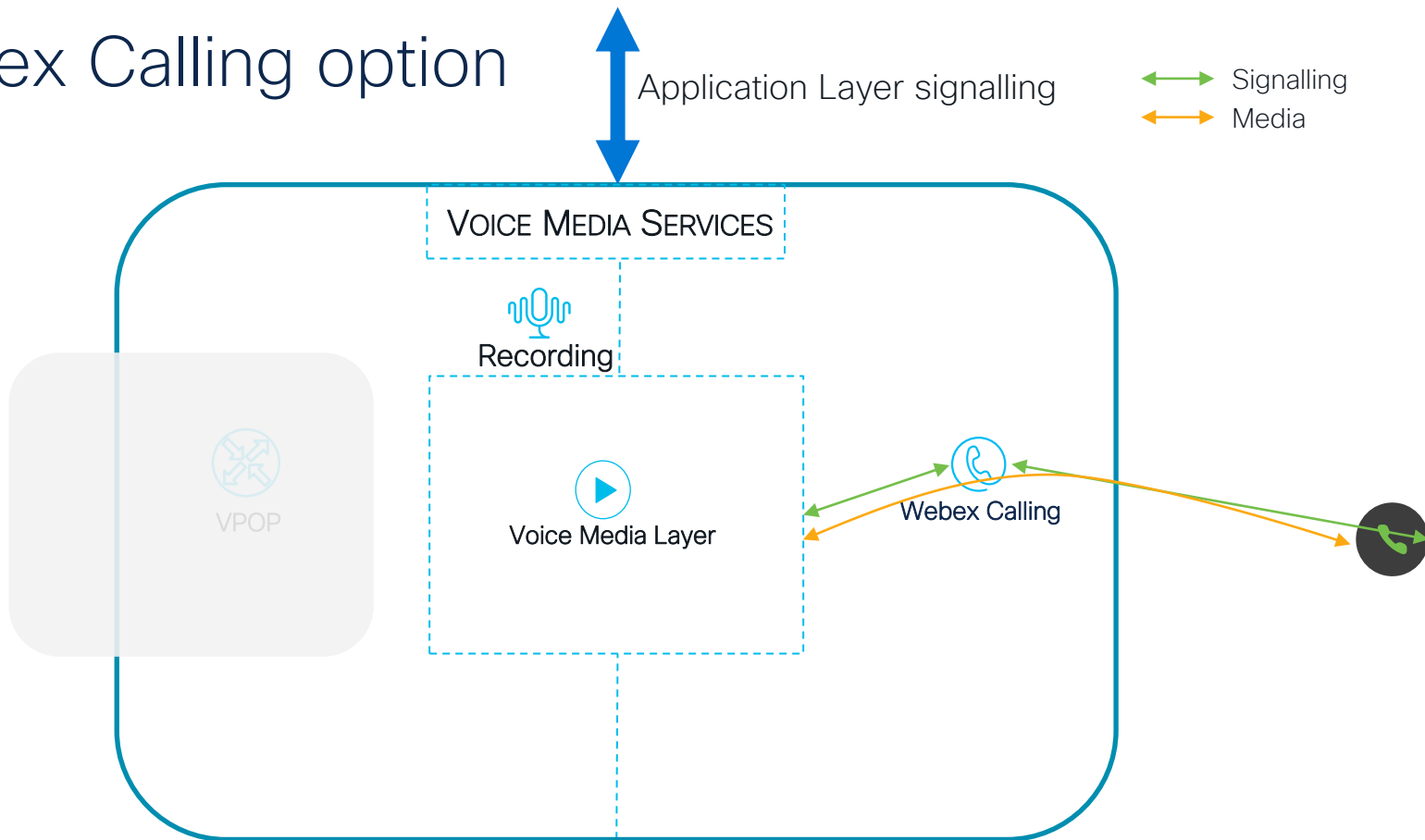
VPOP Option



Webex Calling option

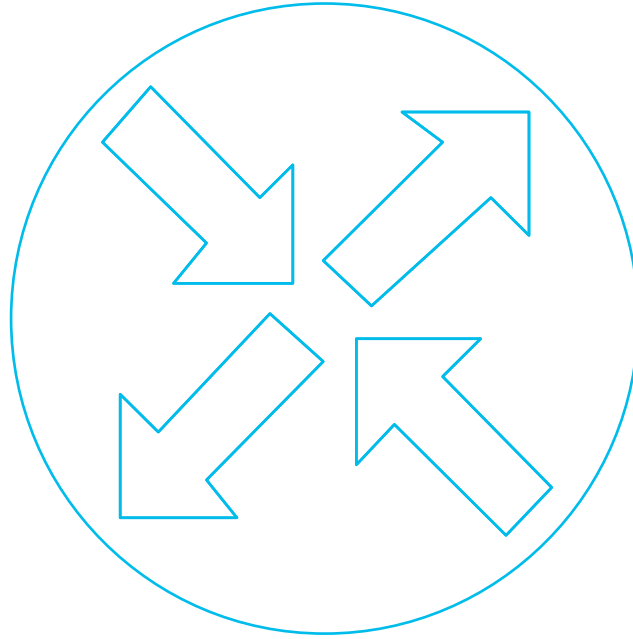


Webex Calling option



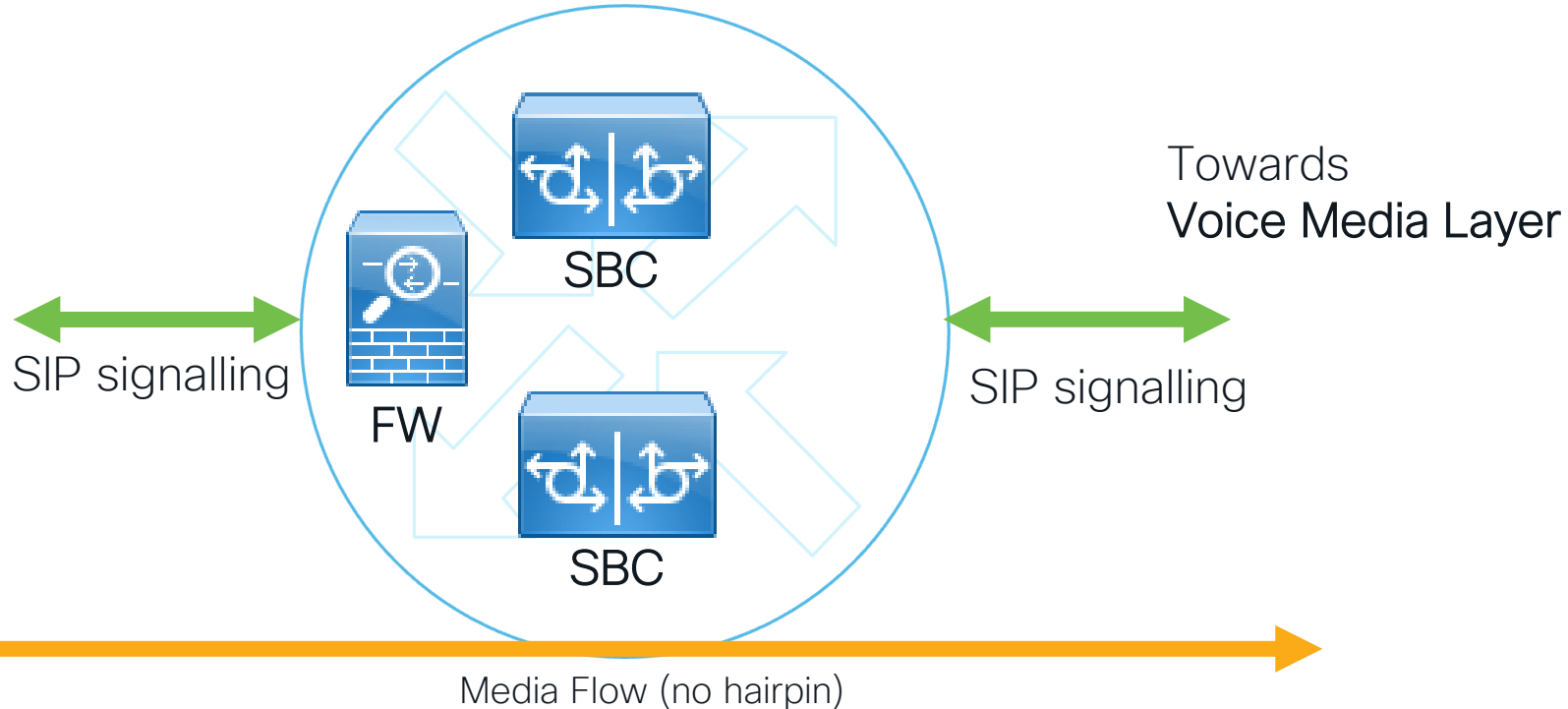
VPOP = Voice Point of Presence

*Also Called
VPOP Bridge



VPOP = Voice Point of Presence

From
PSTN
provider or
Customer
premises

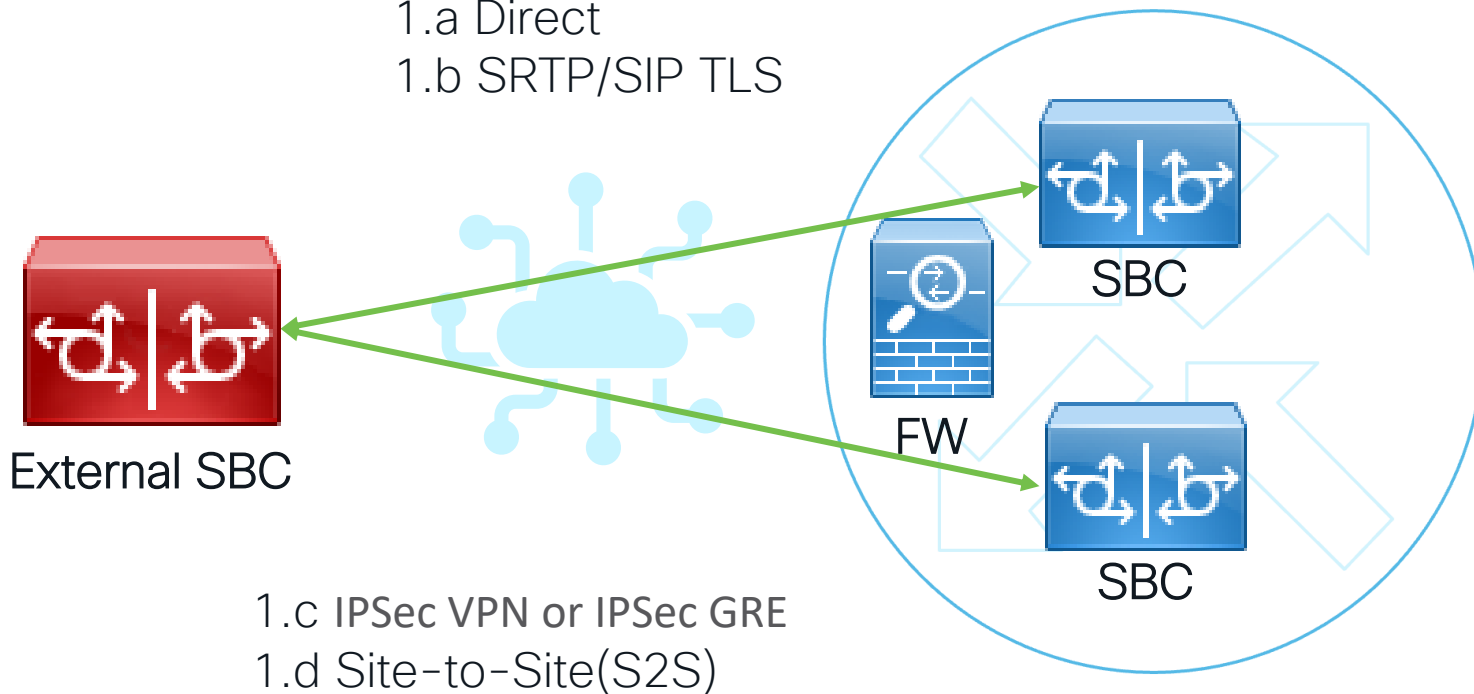


VPOP Connectivity options

1. Public Internet

1.a Direct

1.b SRTP/SIP TLS

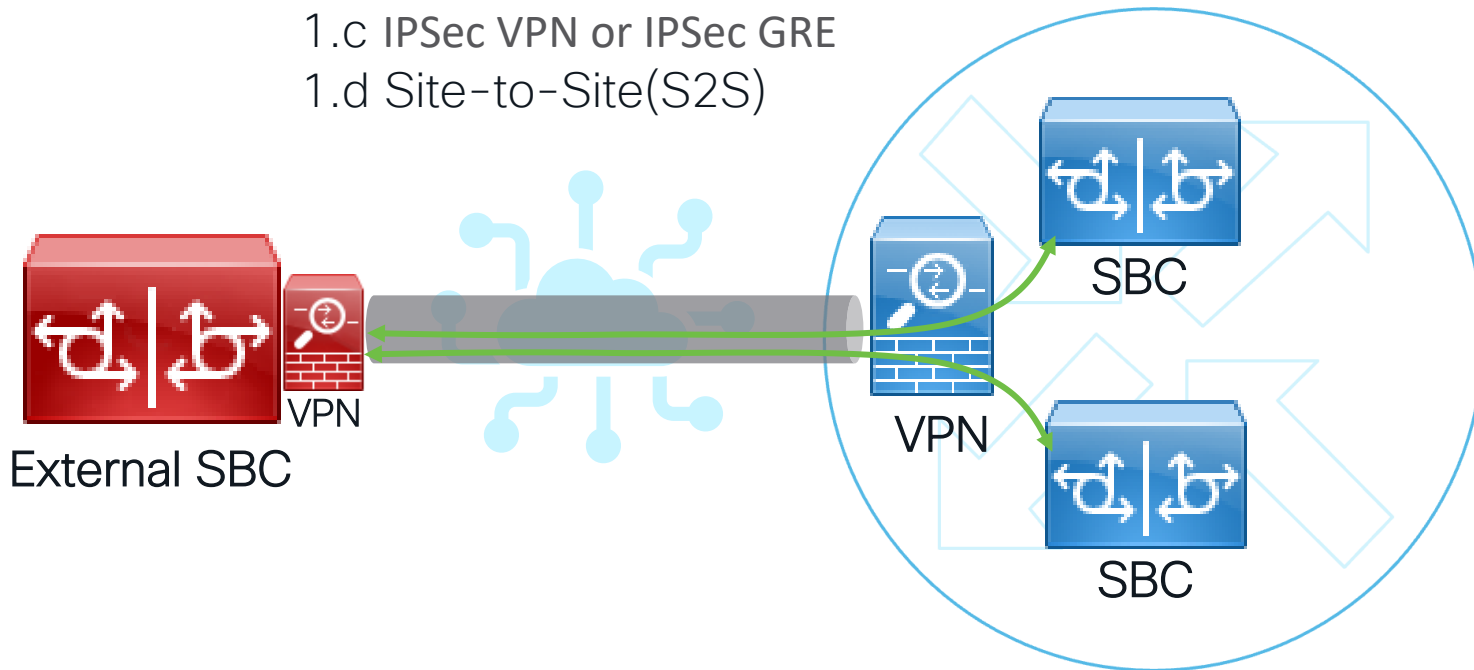


VPOP Connectivity options

1. Public Internet

1.c IPSec VPN or IPSec GRE

1.d Site-to-Site(S2S)



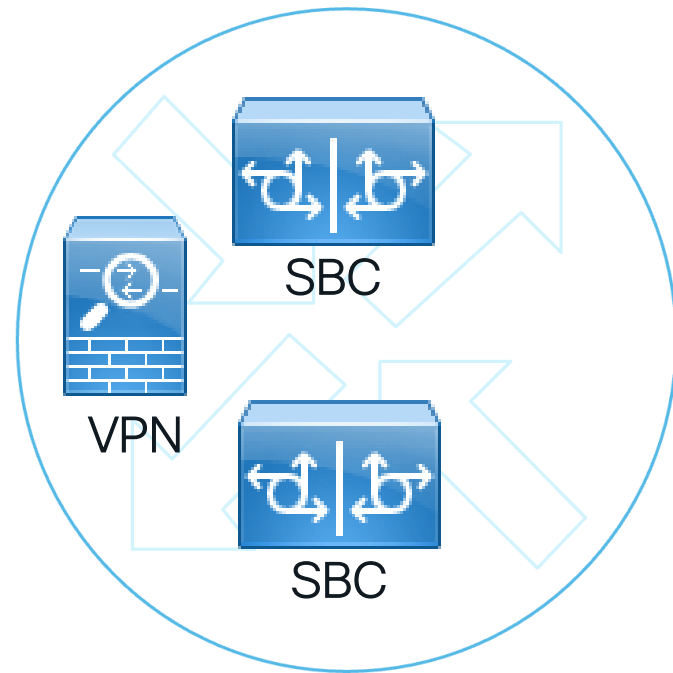
VPOP Connectivity options

2. Private Connectivity (Approval required)



External SBC

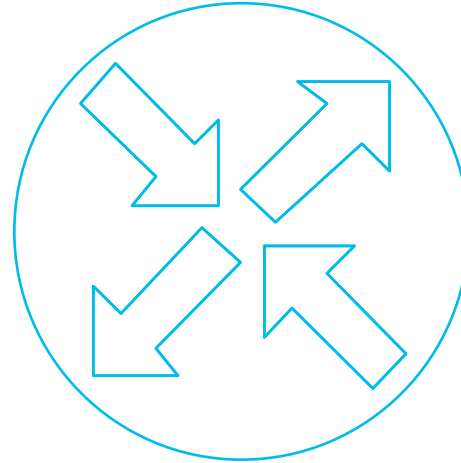
- 2.a MPLS
- 2.b Point-to-Point (P2P)
- 2.c VPLS
- 2.d SD-WAN
- 2.e Private WAN
- 2.f Data Center Cross-Connect
- 2.g Equinix Fabric Connections



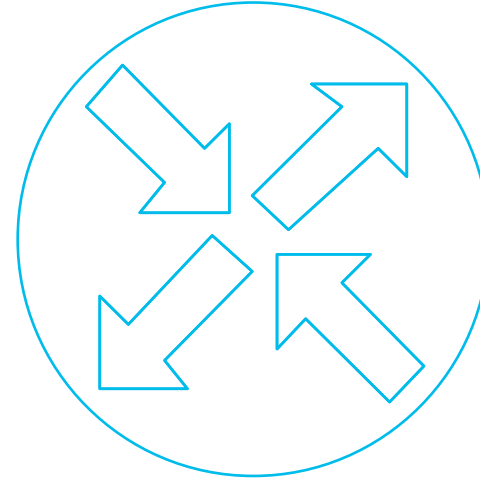
VPOP Locations

“Location Pairs” for redundancy

- UK
 - London + Amsterdam
- EMEA
 - Amsterdam + Frankfurt
- North America
 - New York + Los Angeles + Toronto
- South America
 - Sao Paulo + Rio de Janeiro
- Asia Pacific
 - Singapore (x2) + Melbourne + Sydney

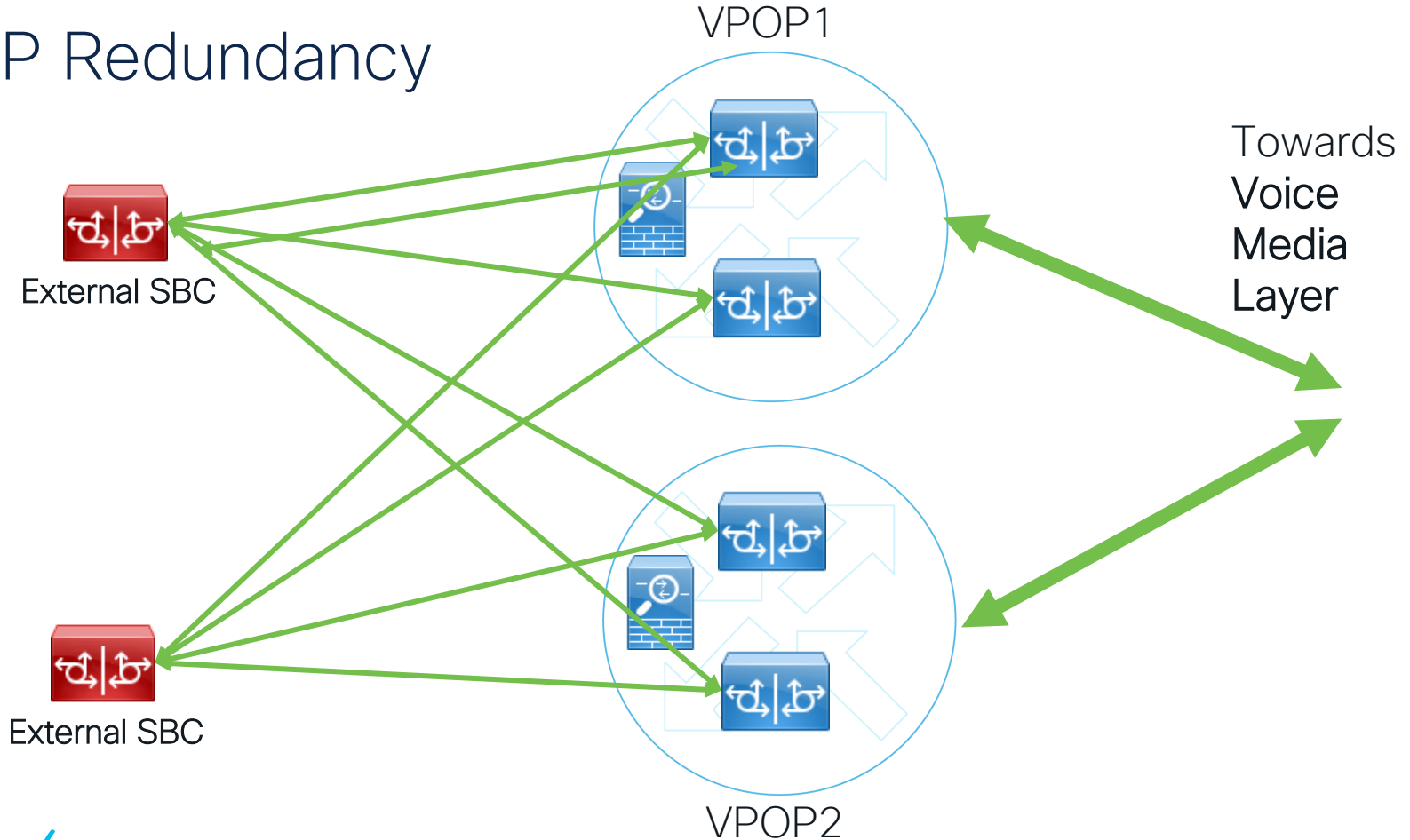


VPOP1



VPOP2

VPOP Redundancy



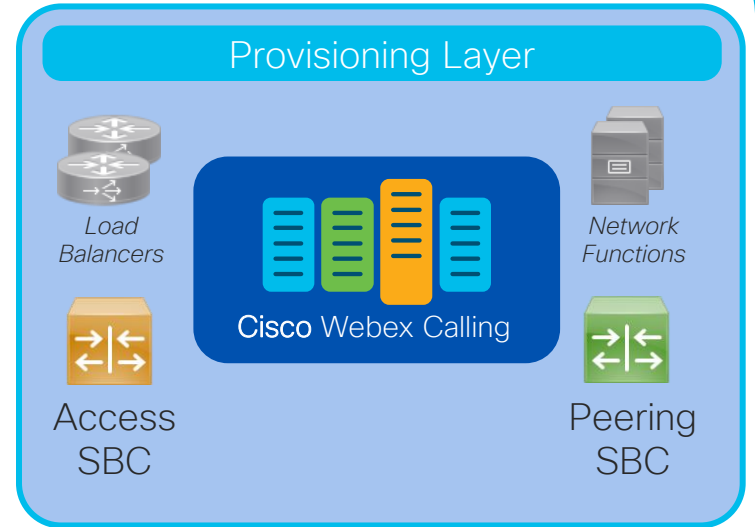
Reference

[Voice Onboarding Guide](#)

Webex Calling

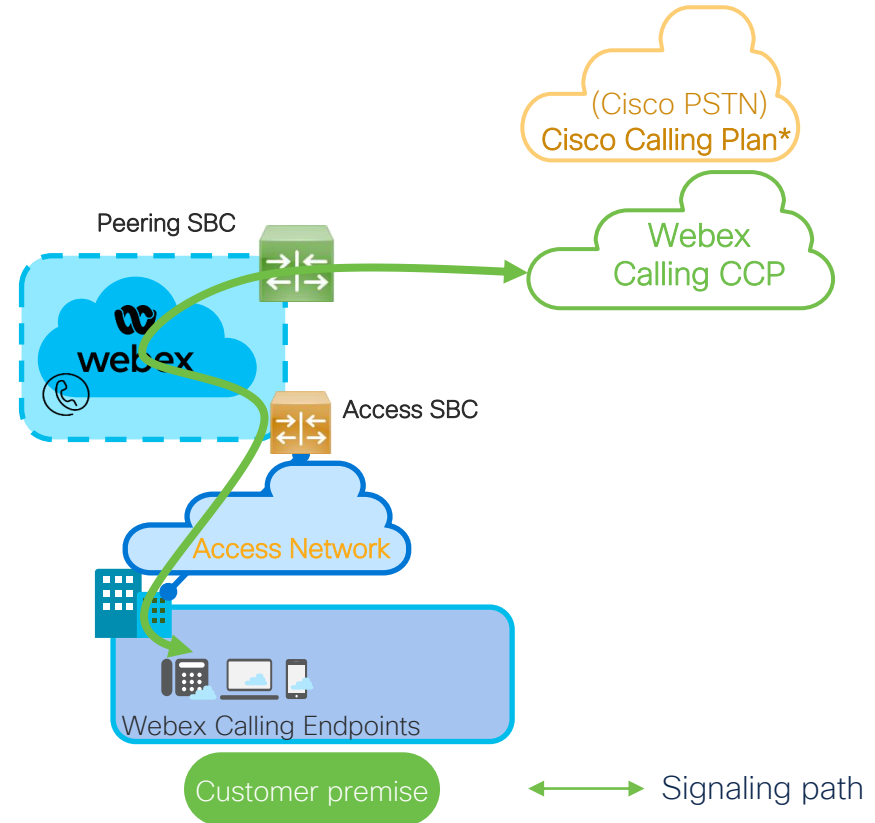


- Fully featured cloud PBX functionality
- Secure, redundant, carrier grade global cloud
- Seamless Webex Teams and Webex Meetings Integration
- Apps, Cisco integrated device support, some third-party solutions
- Webex App centered experience
- Multiple PSTN connectivity options



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

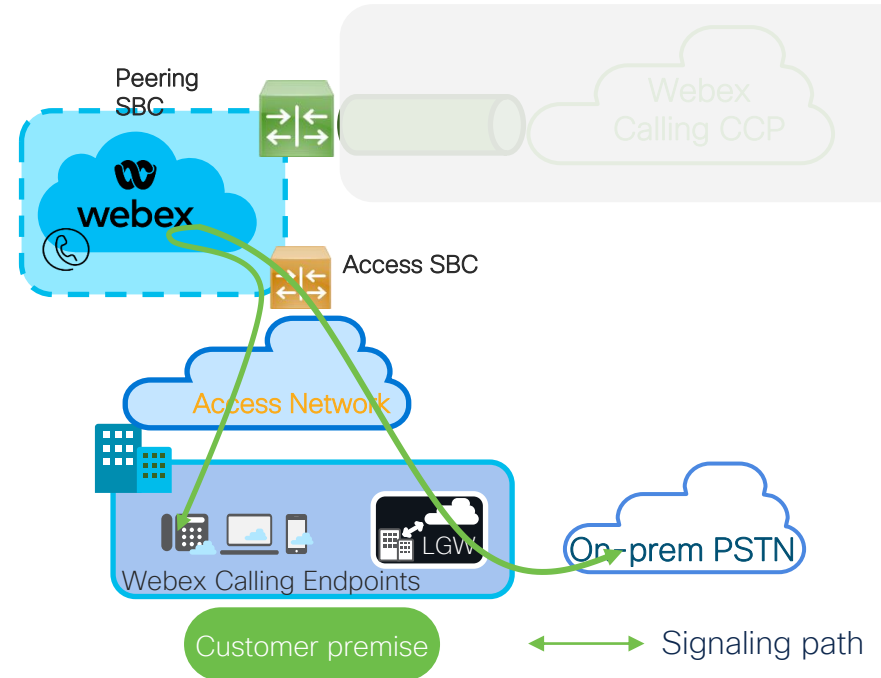


*Cisco Calling Plan not yet qualified for WxCC

Webex Calling Trunk - Local Gateway

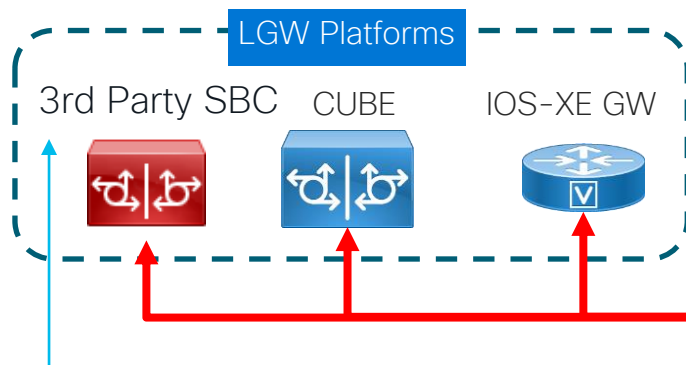
Premises-based Deployment

- 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
- All communication between Webex Calling and endpoints/LGW is secured (SIP TLS/sRTP)
- Premises-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.

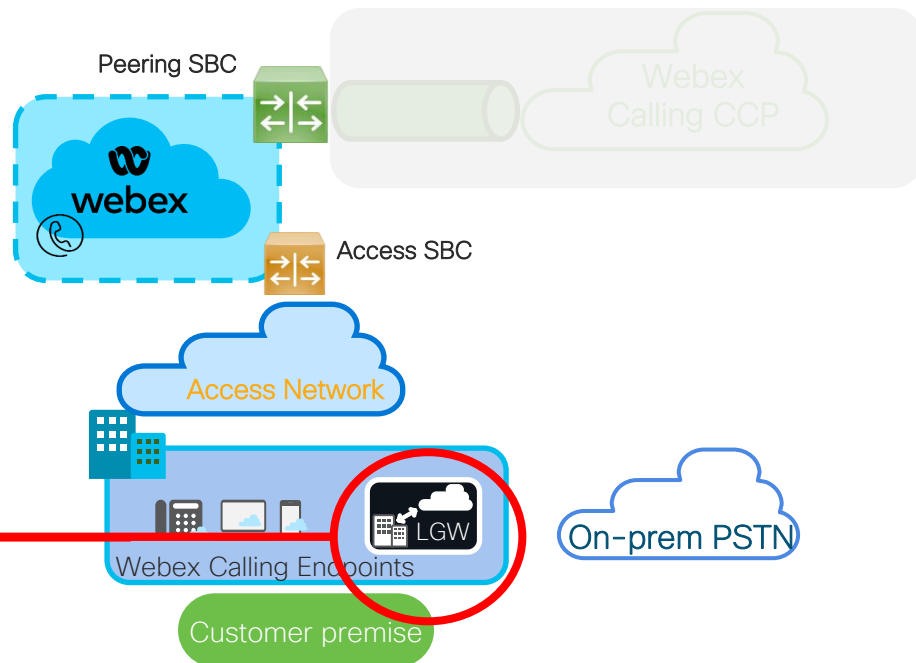


What is a Local Gateway (LGW) ?

- Provides connectivity between Webex Calling Trunk and On premises
- LGW Platforms
 - Cisco (v)CUBE for IP-based PSTN
 - Cisco IOS Gateway for TDM-based PSTN
 - Certified 3rd Party SBC



<https://blog.webex.com/cloud-calling/local-gateway-support-for-webex-calling/>



Webex Calling Region & Locations - PSTN access

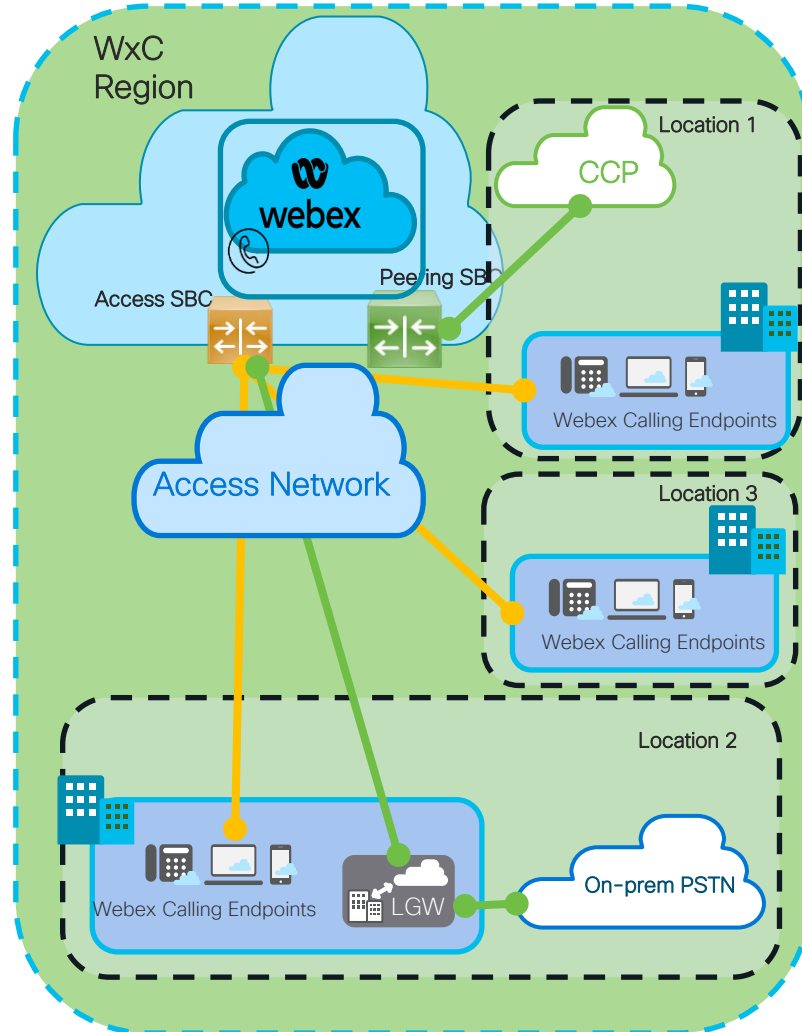


A Region can have multiple locations

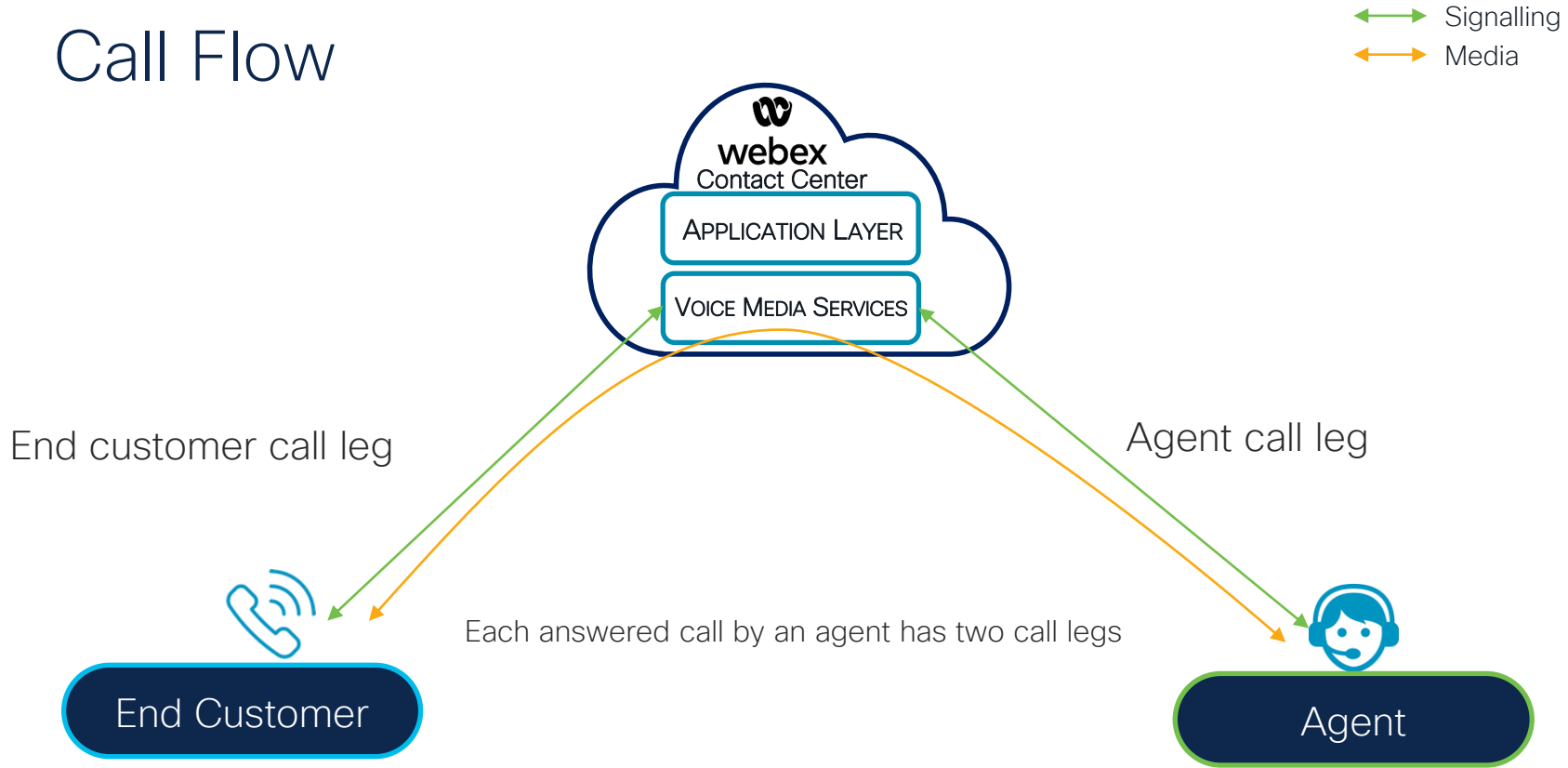
A CCP or LGW must be selected as the PSTN access method for each location

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

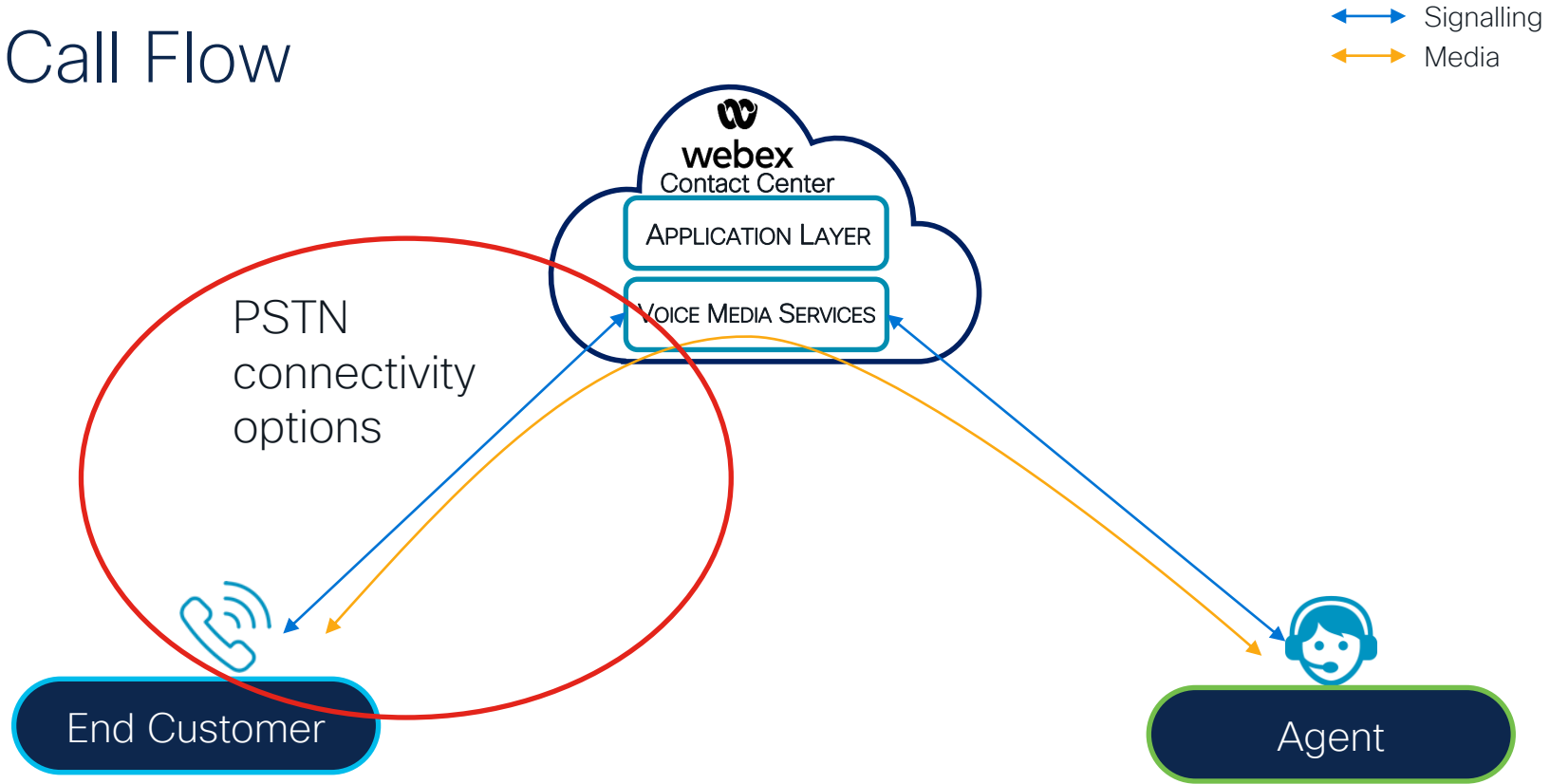
Same CCP or LGW can be used for multiple WxC Locations ONE CCP or ONE LGW per Location



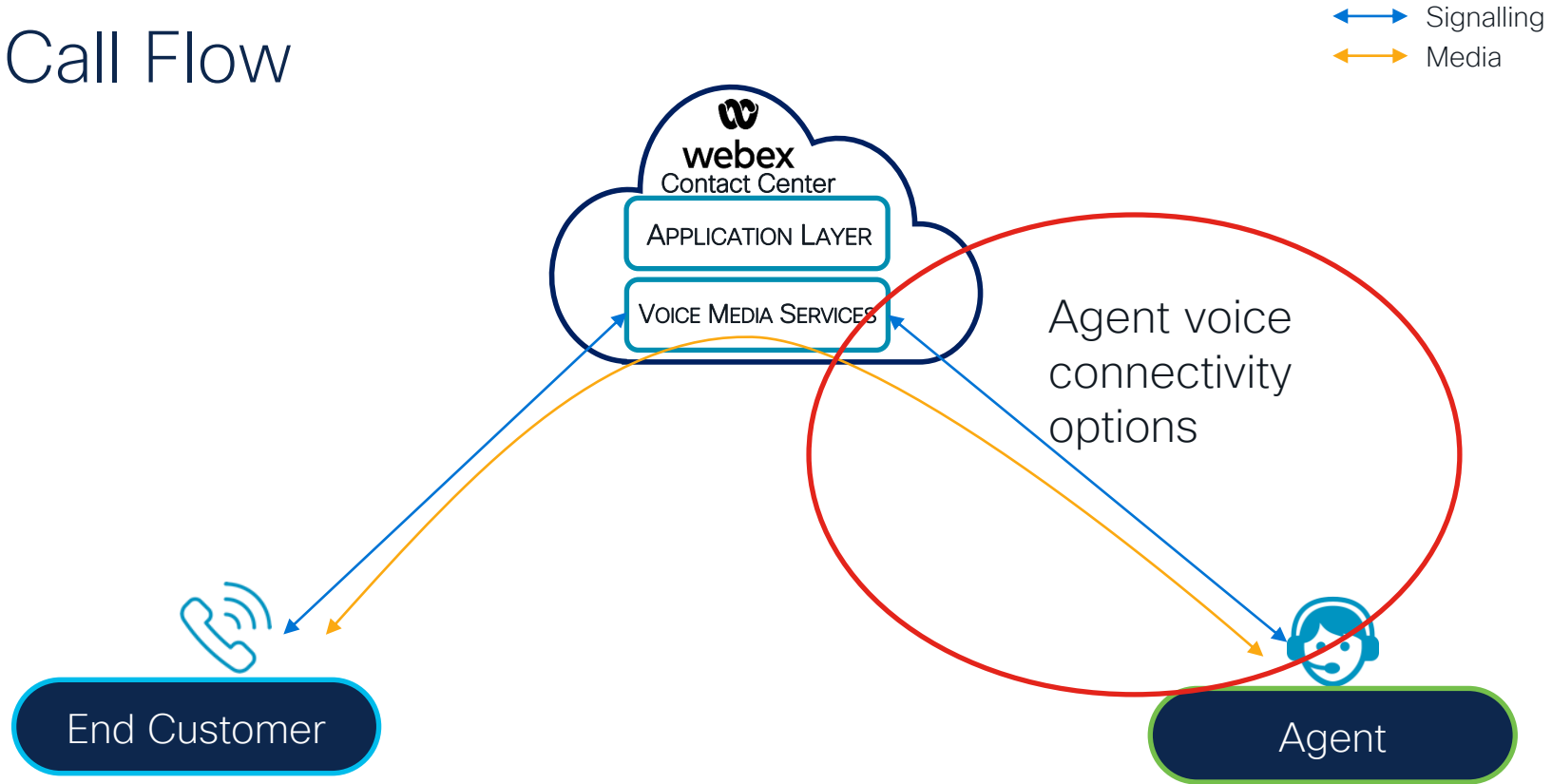
Call Flow



Call Flow



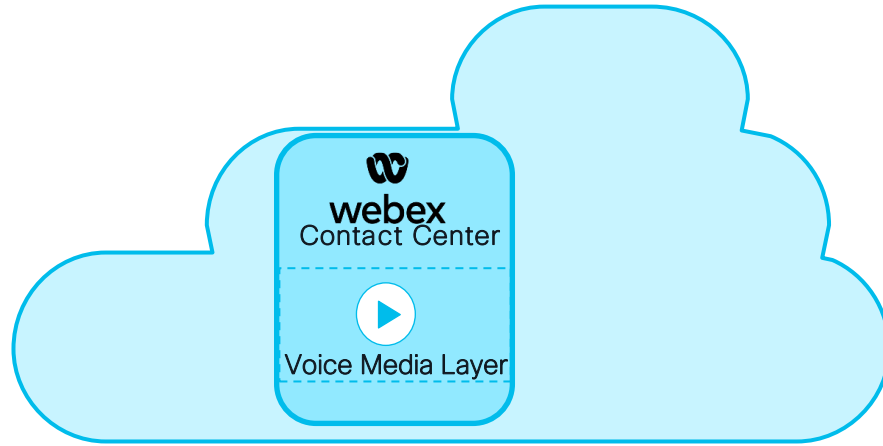
Call Flow



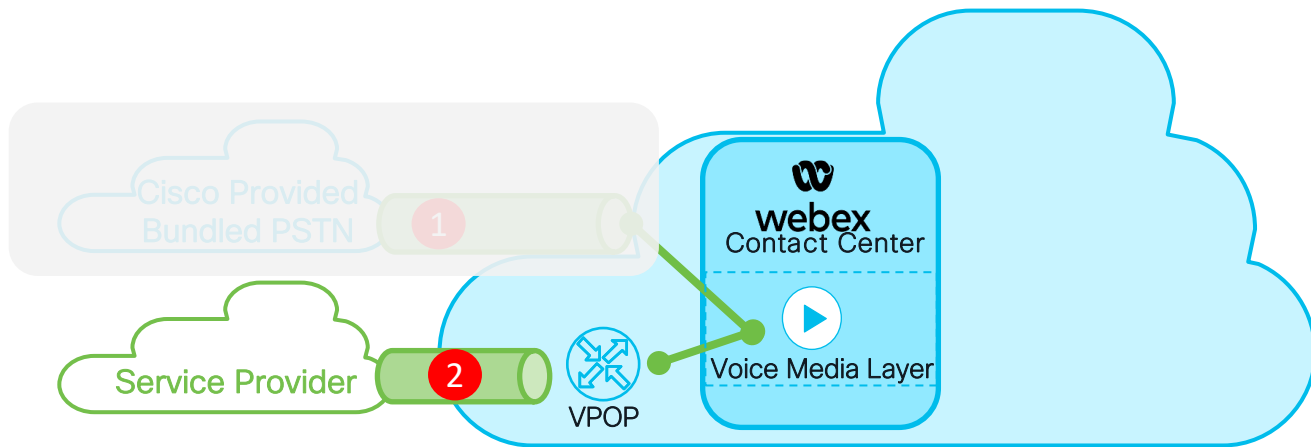
PSTN Connectivity Options

with Bundled PSTN or
VPOP-Bridge

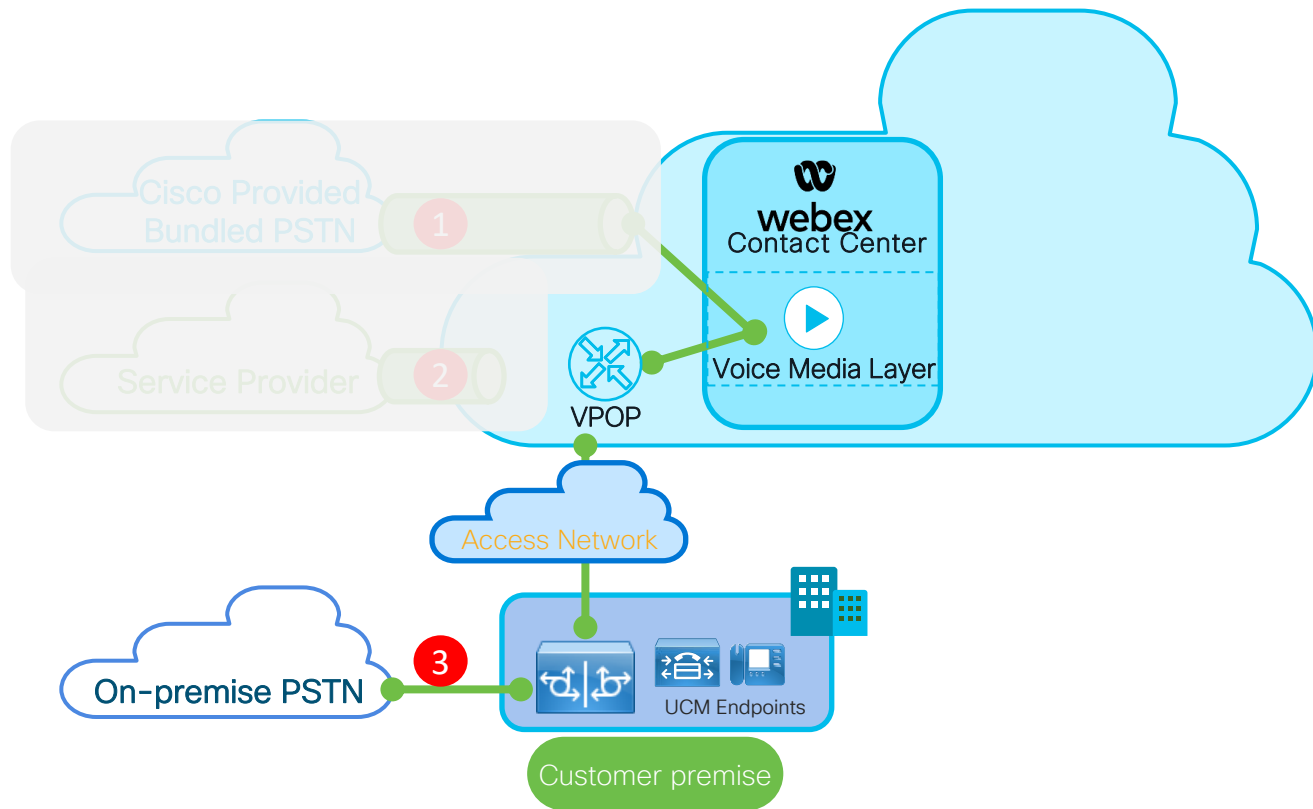




2. Service Provider PSTN via VPOP



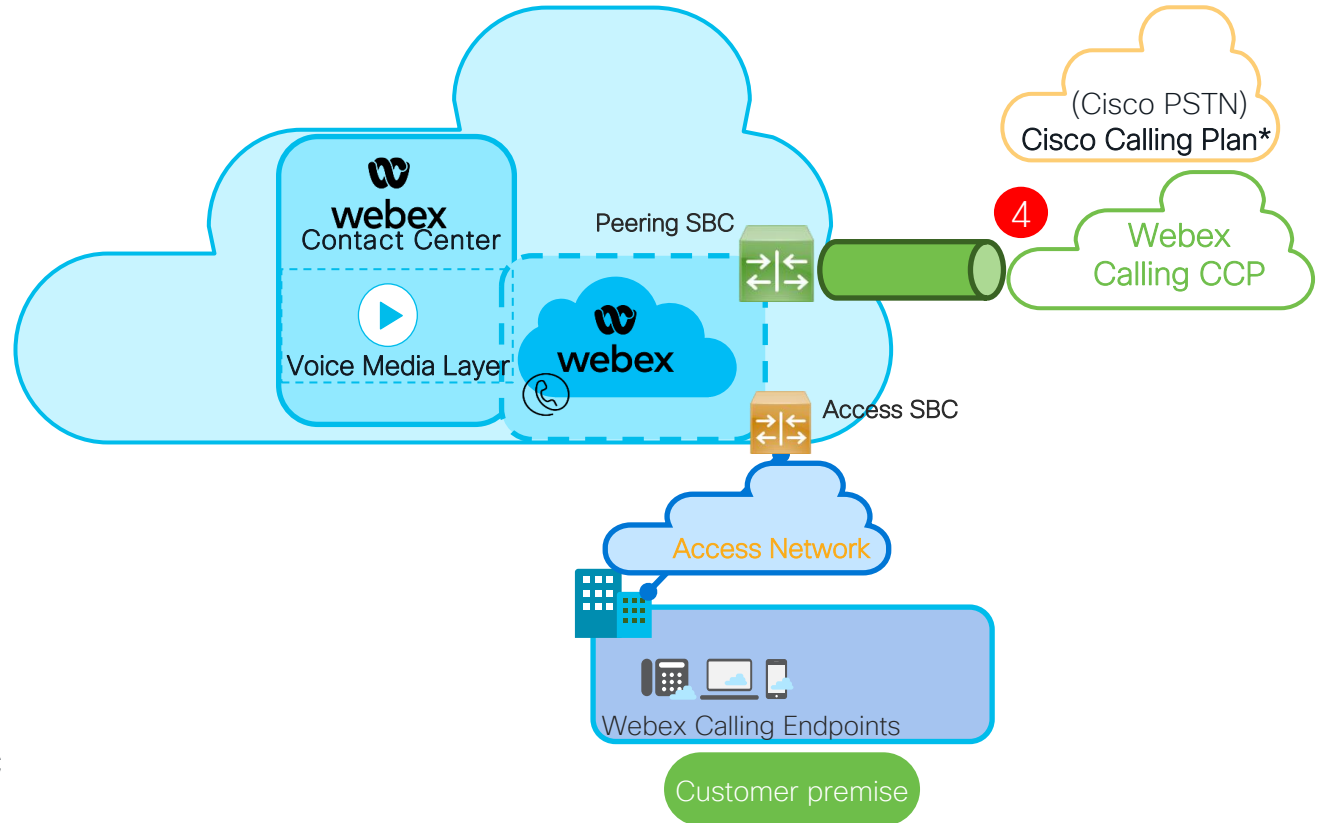
3. On-Premise PSTN to the VPOP



PSTN Connectivity Options with Webex Calling

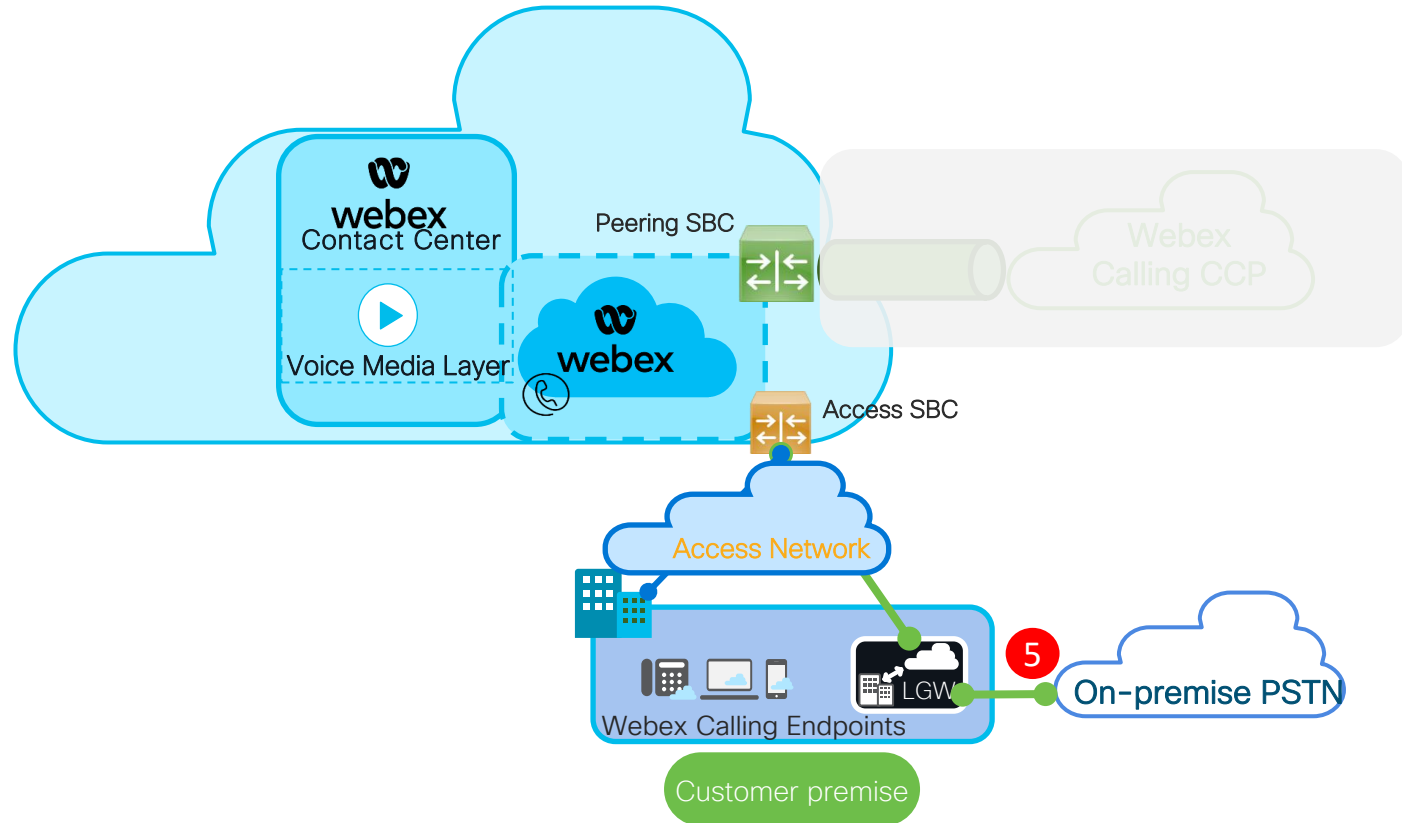


4. Webex Calling with Cloud Connected PSTN (CCP)

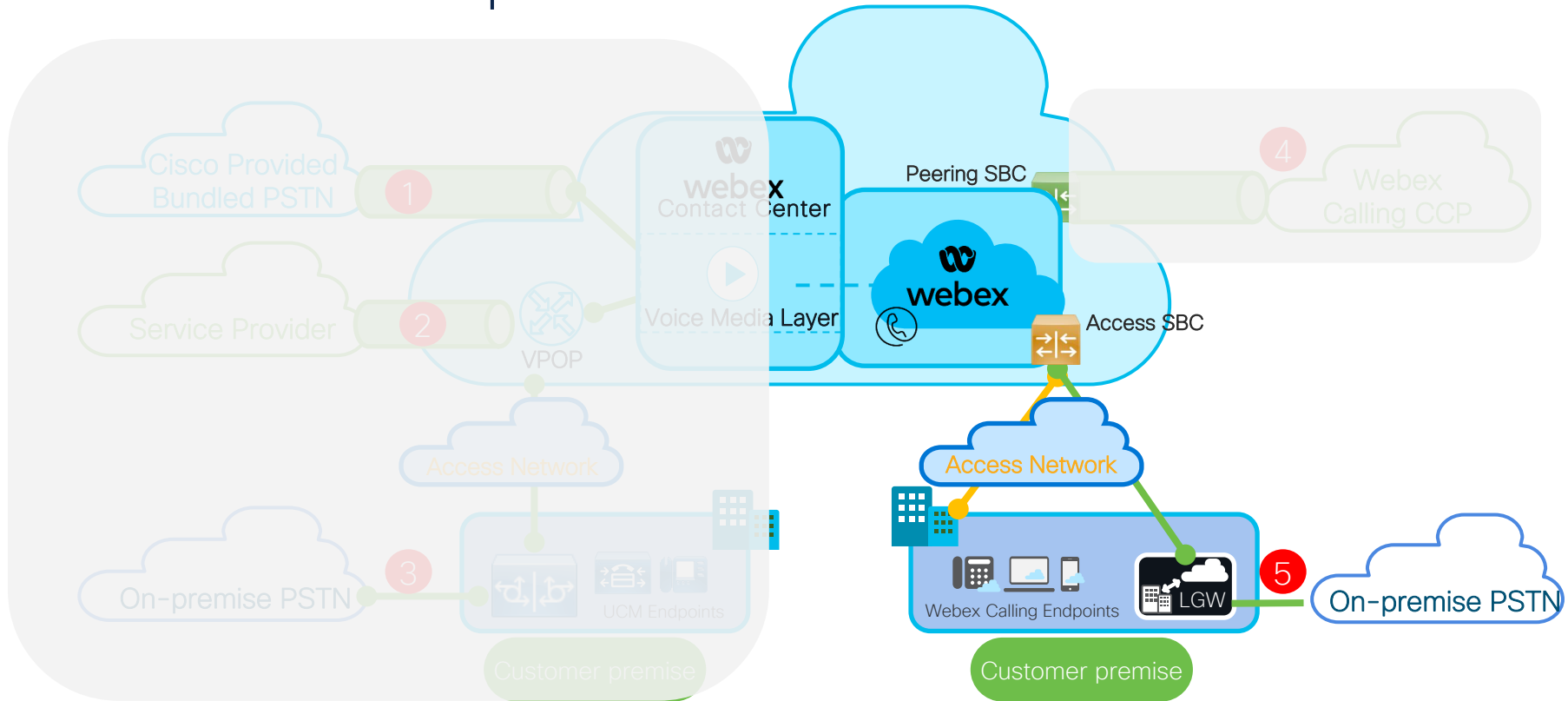


*Not yet supported with WxCC

5. Webex Calling with Premises-based PSTN



All the PSTN Options



Mixing PSTN Options

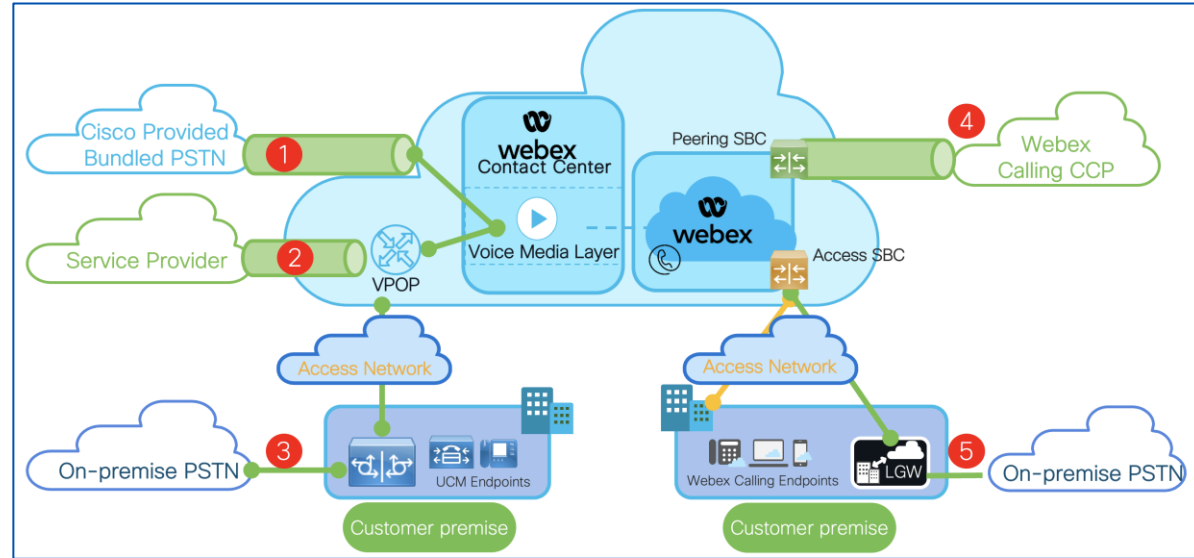


Per Tenant

Option 1 Only

Or option 2 and / or option 3

Or option 4 and / or option 5



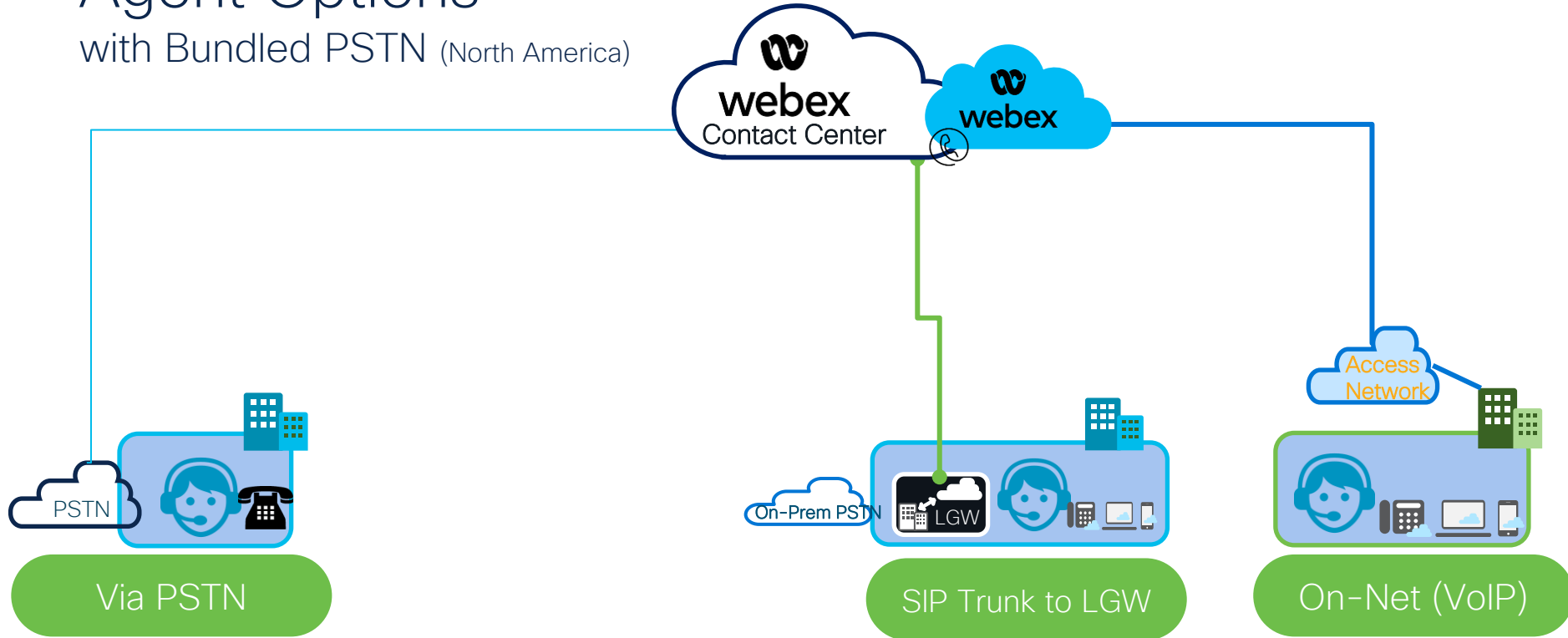
- Note:
You can change the telephony option refer to
<https://help.webex.com/en-us/article/nhy3codb/Set-Up-Voice-Channel-for-Webex-Contact-Center>

Agent Connectivity Options

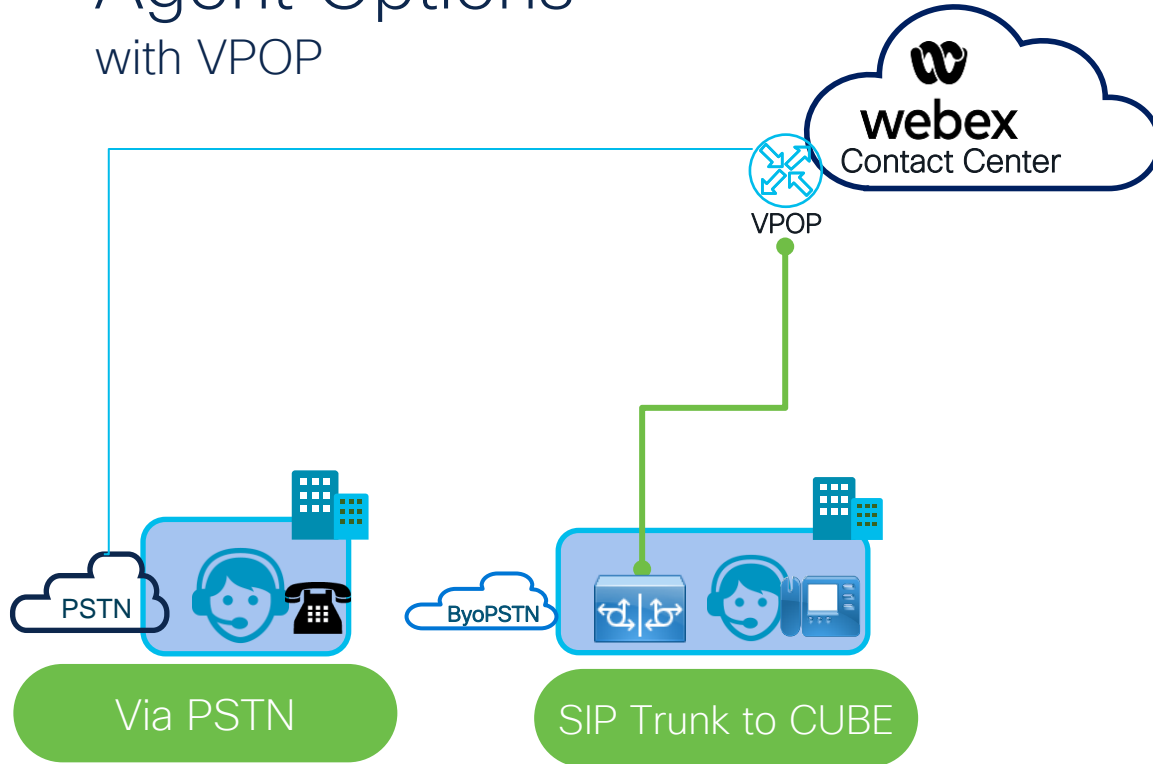


Agent Options

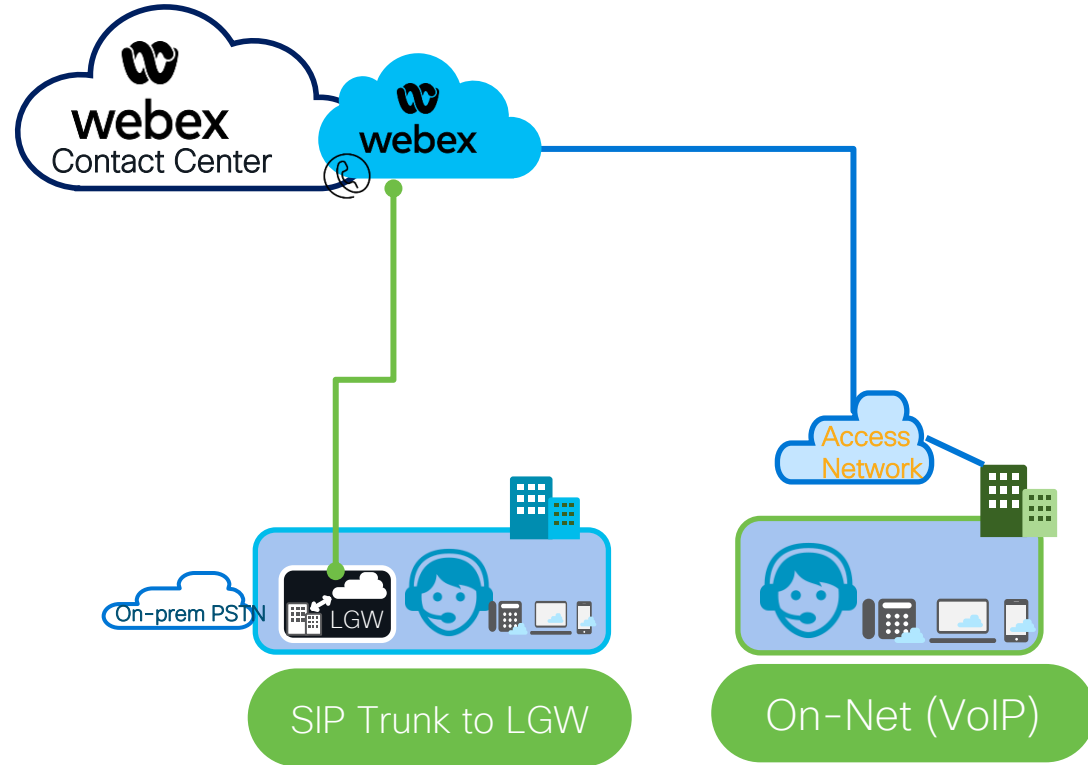
with Bundled PSTN (North America)



Agent Options with VPOP



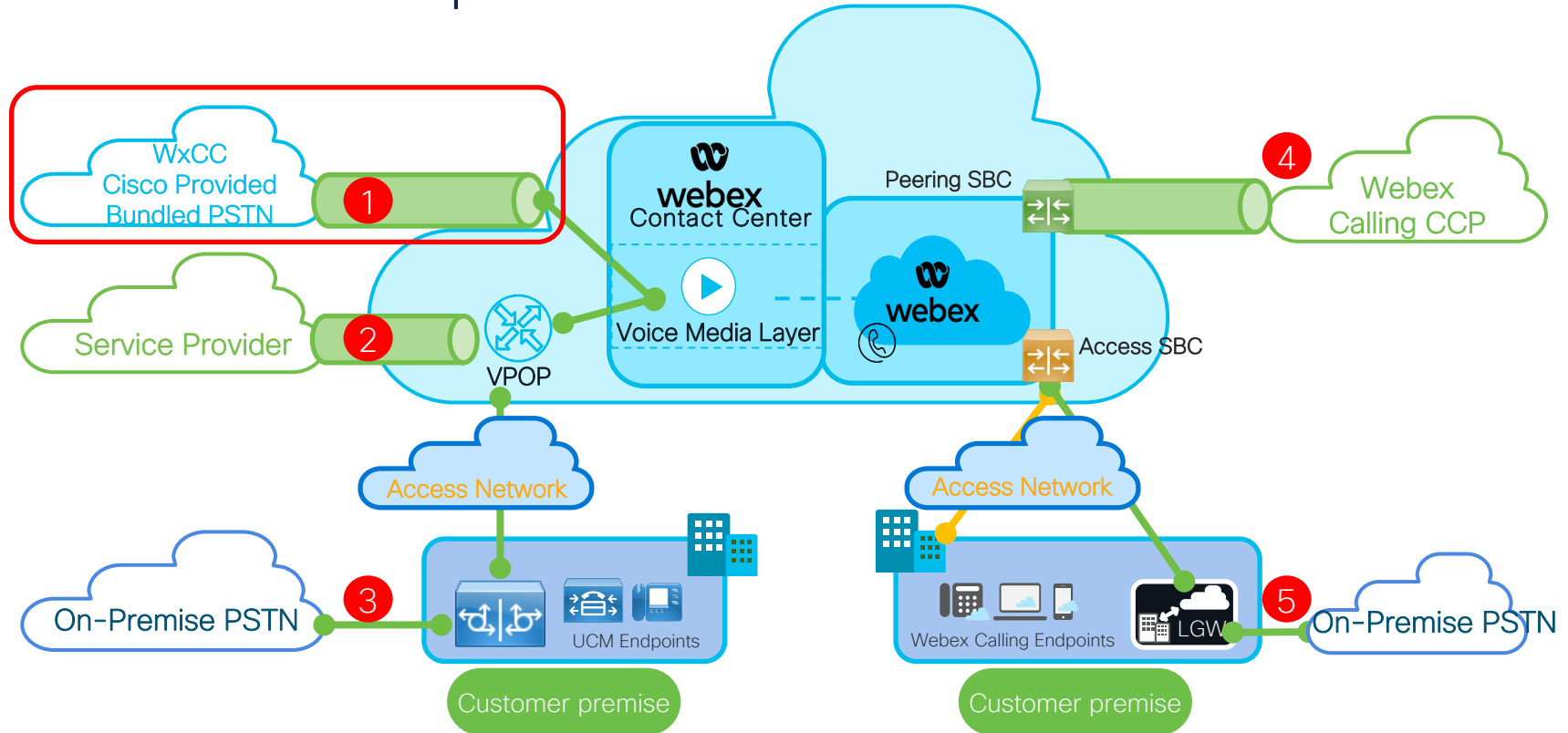
Agent Options with Webex Calling



Detailed Call Flows



All the PSTN Options

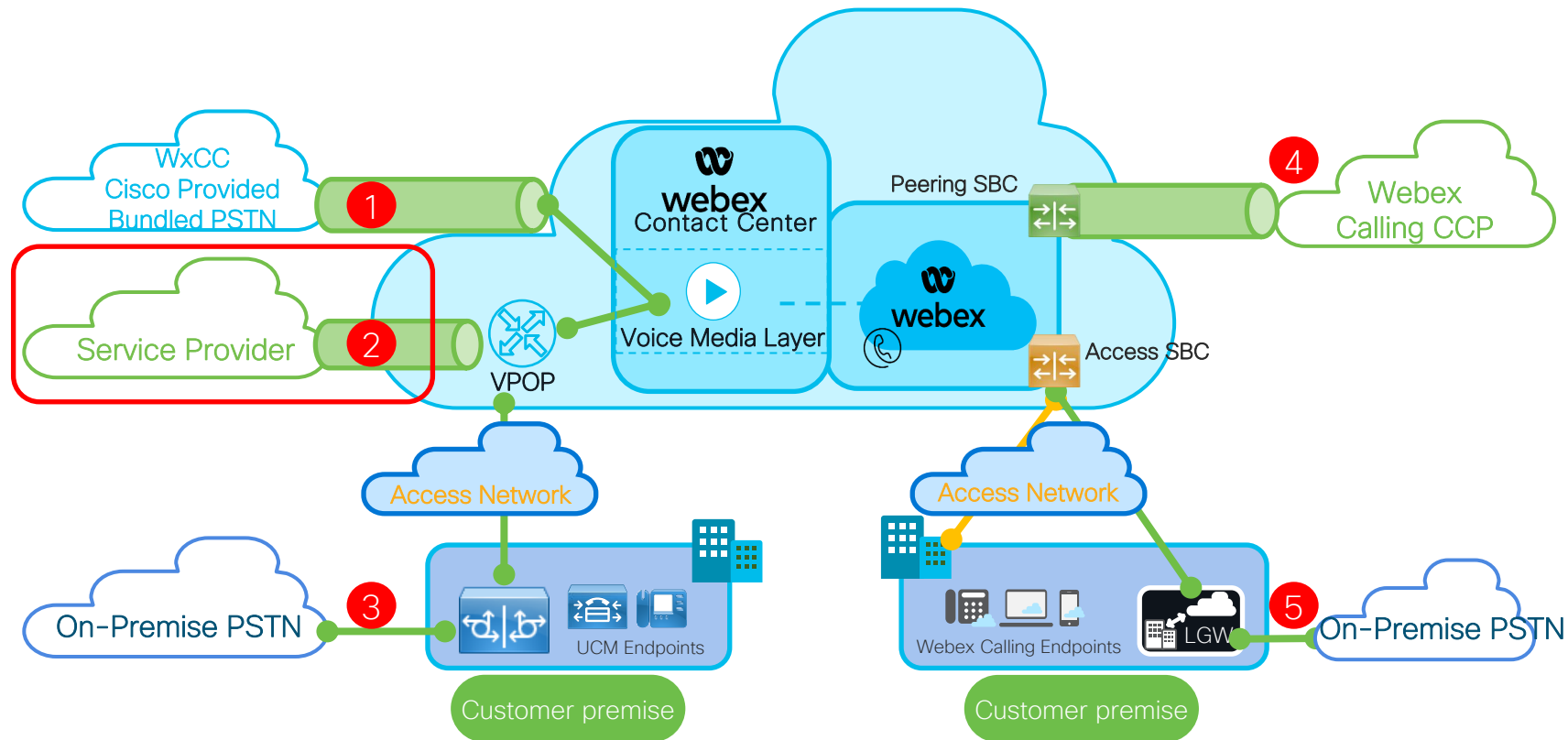


1. Cisco Provided Bundled PSTN

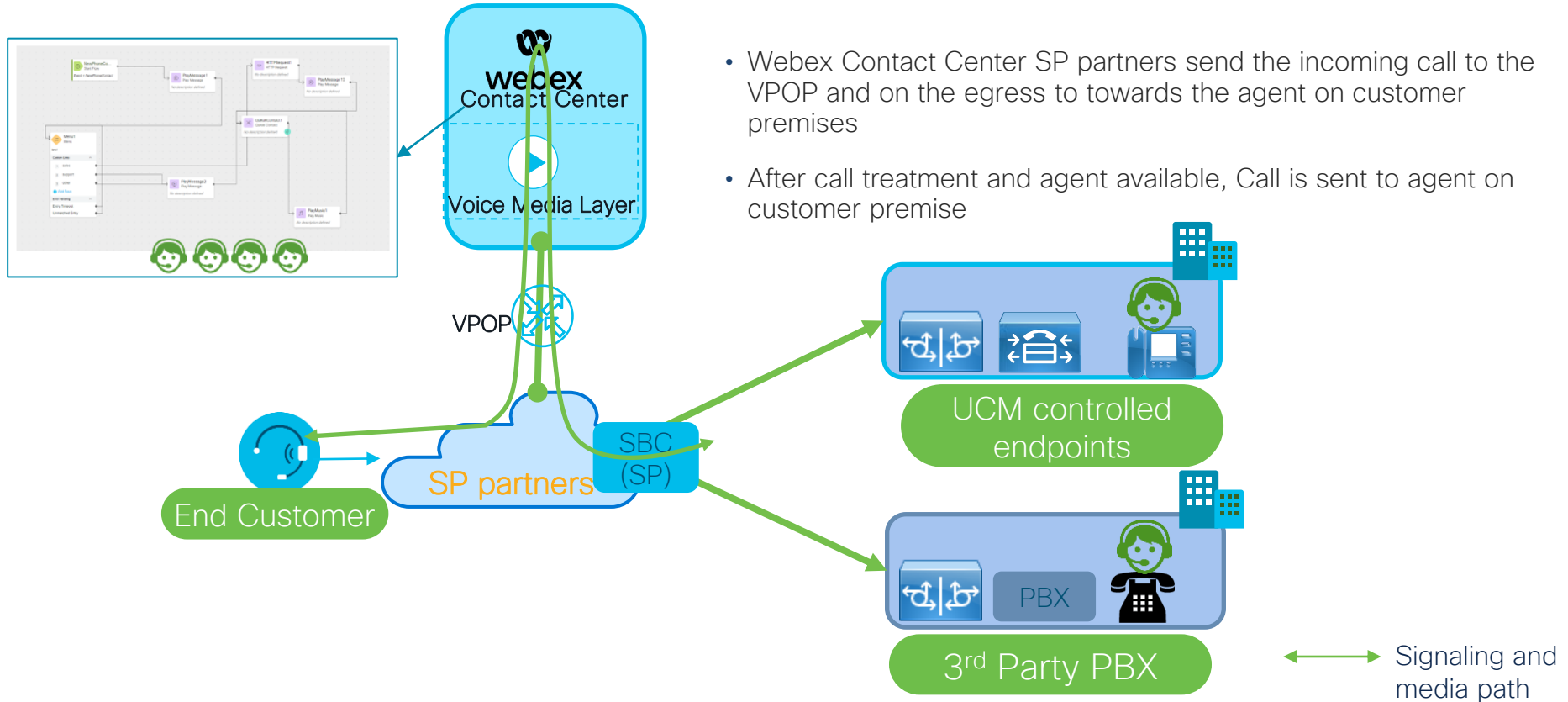
- Call comes in via Cisco provided bundled PSTN
- After getting contact center treatment, it goes out to the same PSTN to reach the agent at the customer premises



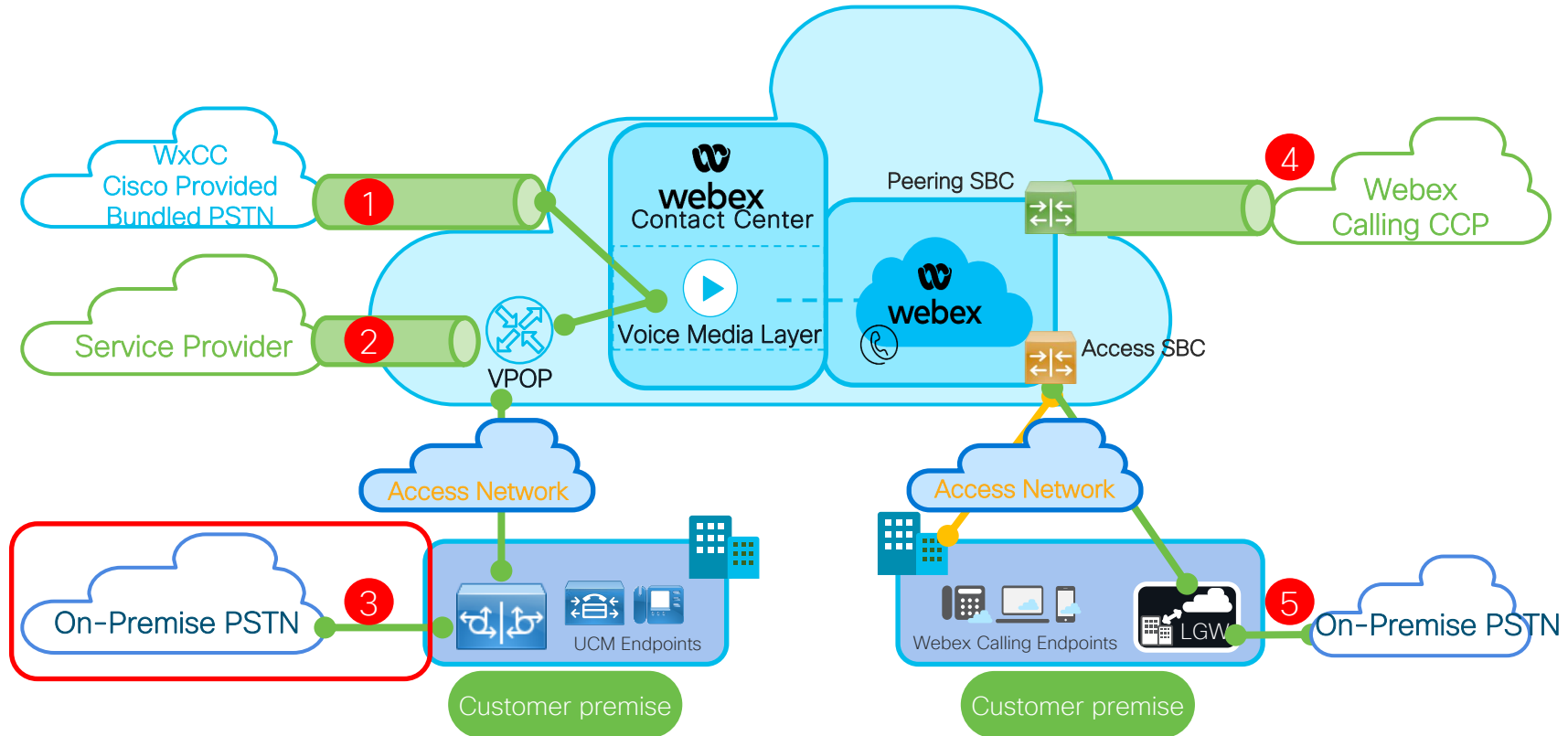
2. Service Provider PSTN via VPOP Bridge



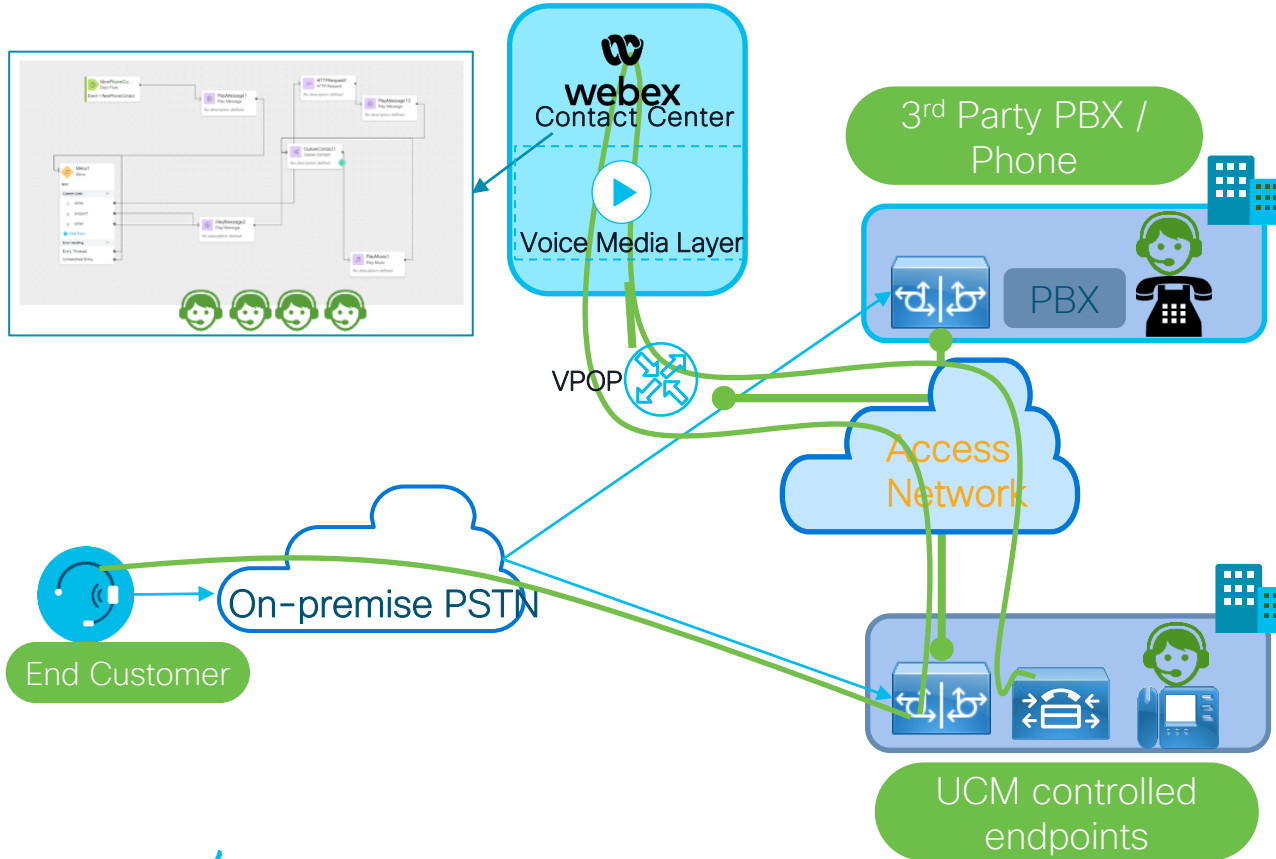
2. Service Provider PSTN via VPOP Bridge



3. On-Premise PSTN to the VPOP



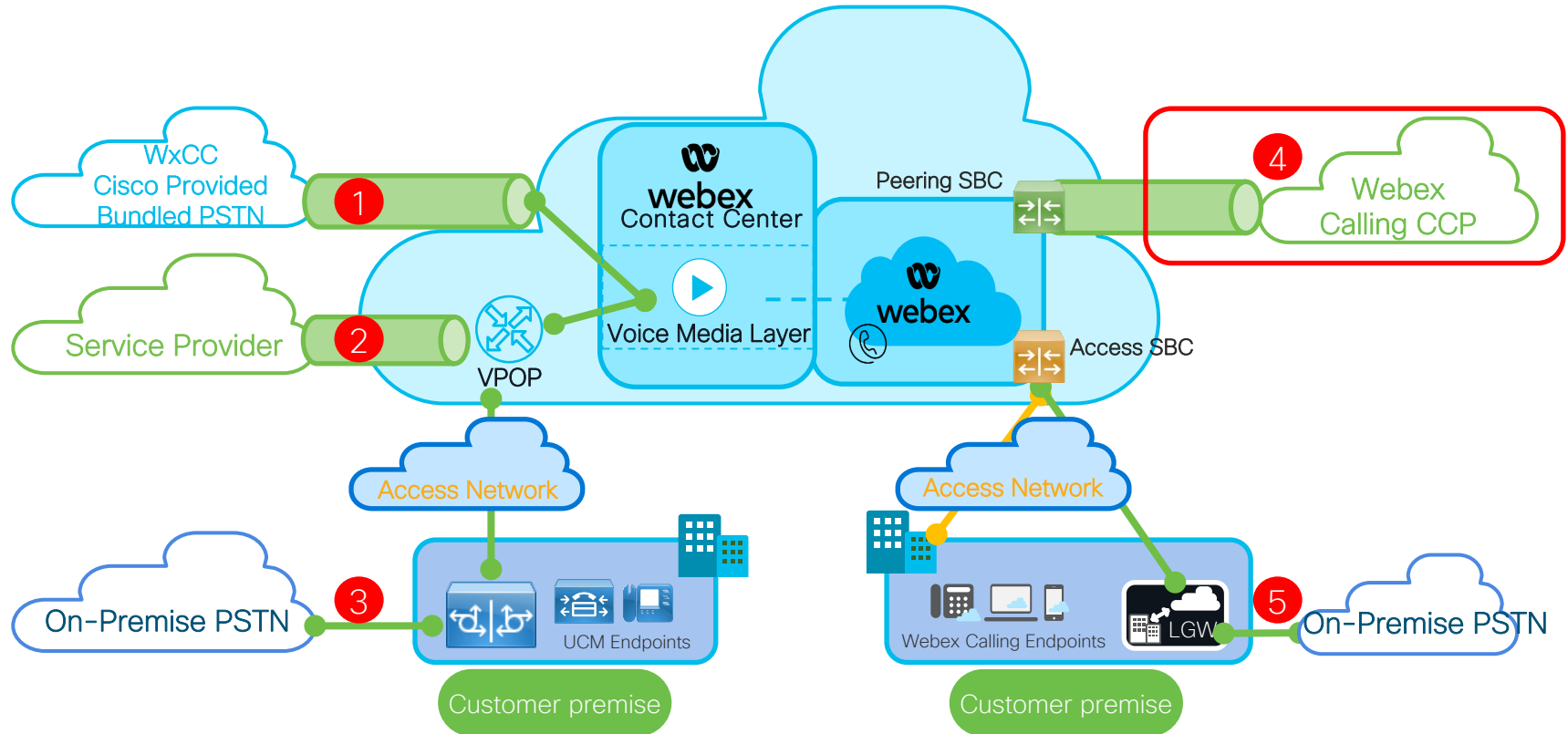
3. On-Premise PSTN to the VPOP



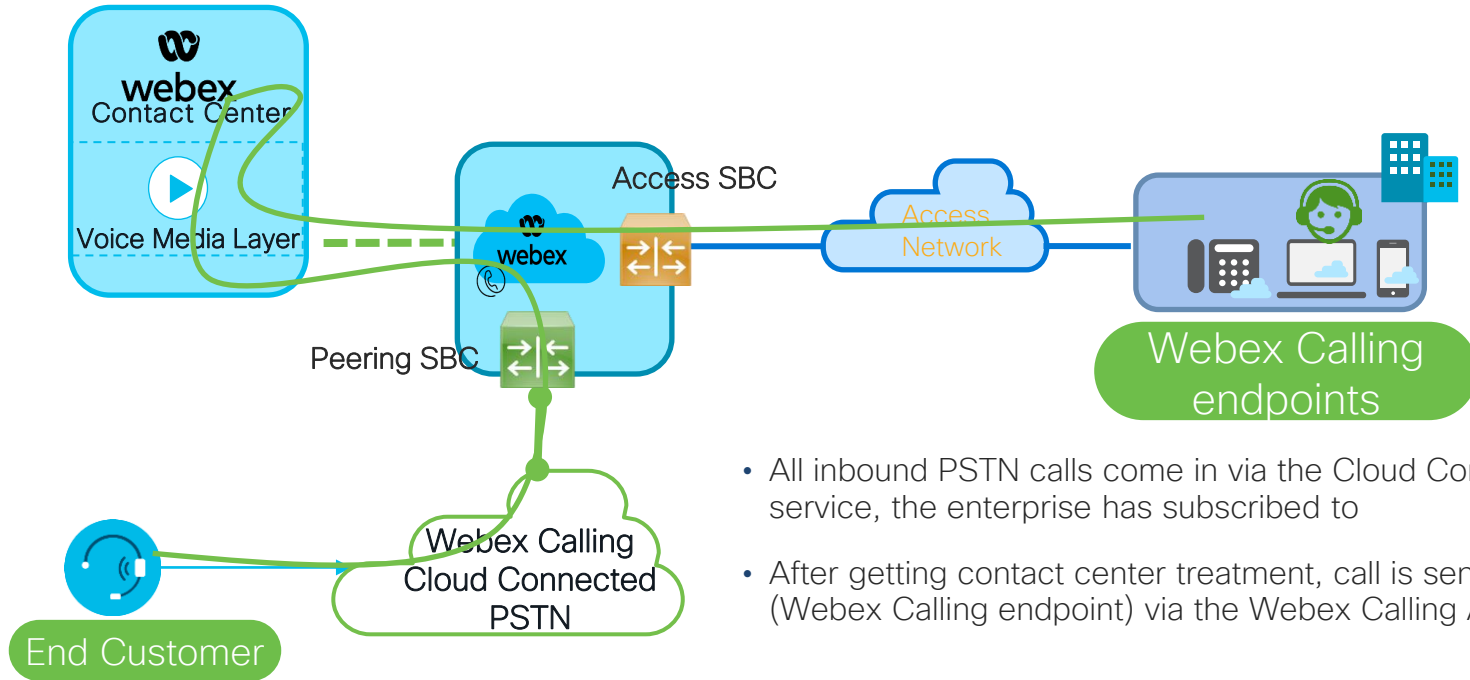
- Call comes in via customer owned PSTN service, terminating on customer SBC
- The same or a different SBC delivers the call to the VPOP
- After getting contact center treatment, call is sent to the customer premise (same SBC as above), which delivers it to the call control (e.g. UCM) and then to available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

↔ Signaling and media path

4. Webex Calling with Cloud Connected PSTN (CCP)

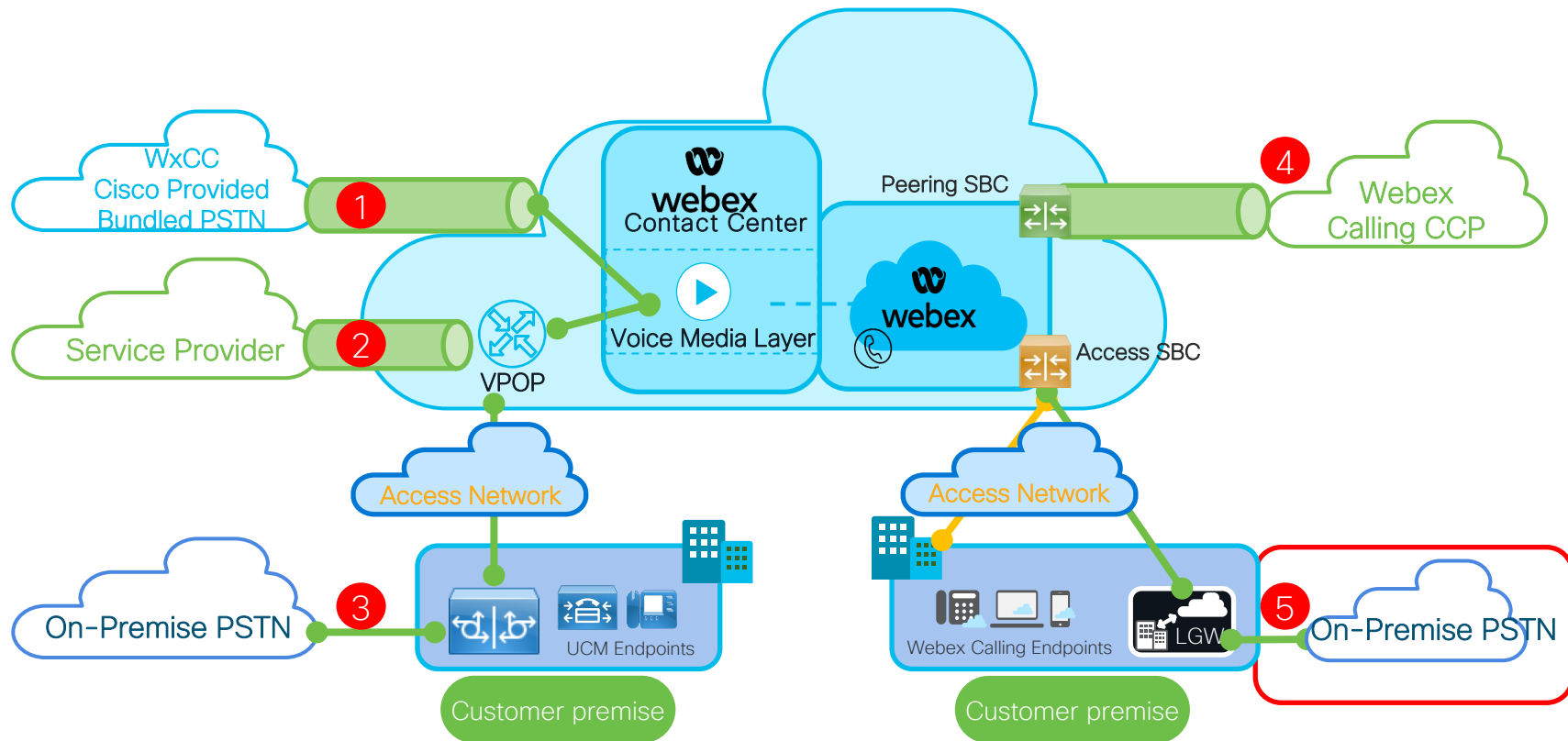


4. Webex Calling with Cloud Connected PSTN (CCP)

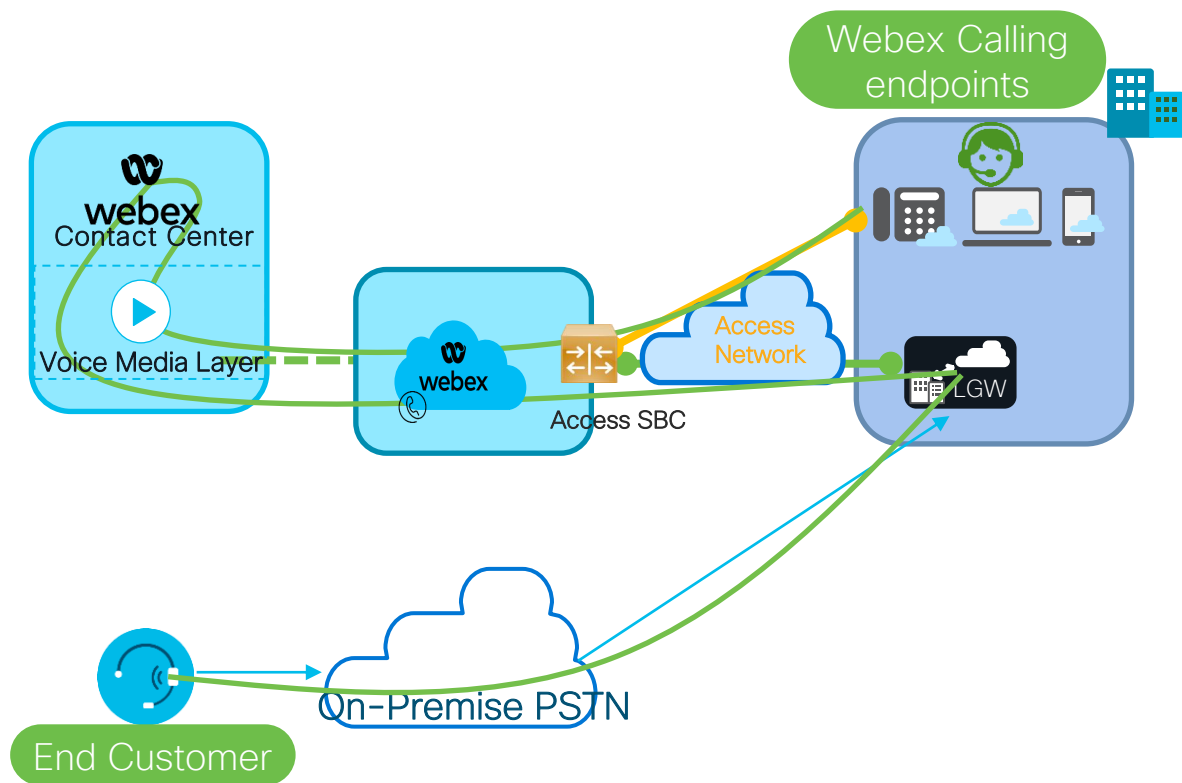


- All inbound PSTN calls come in via the Cloud Connected PSTN (CCP) service, the enterprise has subscribed to
- After getting contact center treatment, call is sent to the agent (Webex Calling endpoint) via the Webex Calling Access SBC (OTT)

5. Webex Calling with Premises-based PSTN



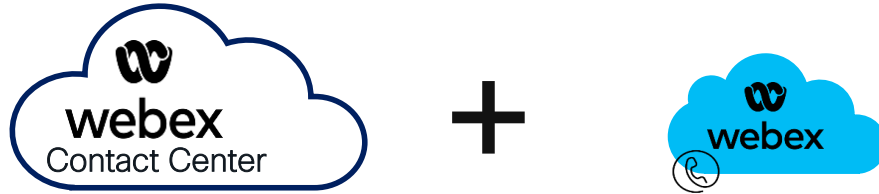
5. Webex Calling with Premises-based PSTN



- 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

↔ Signaling and media path

Benefits of WxCC / WxCalling Integration



- ✓ Single PSTN option (CCP) 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 DII burnout)
- ✓ All Webex Calling end points are supported

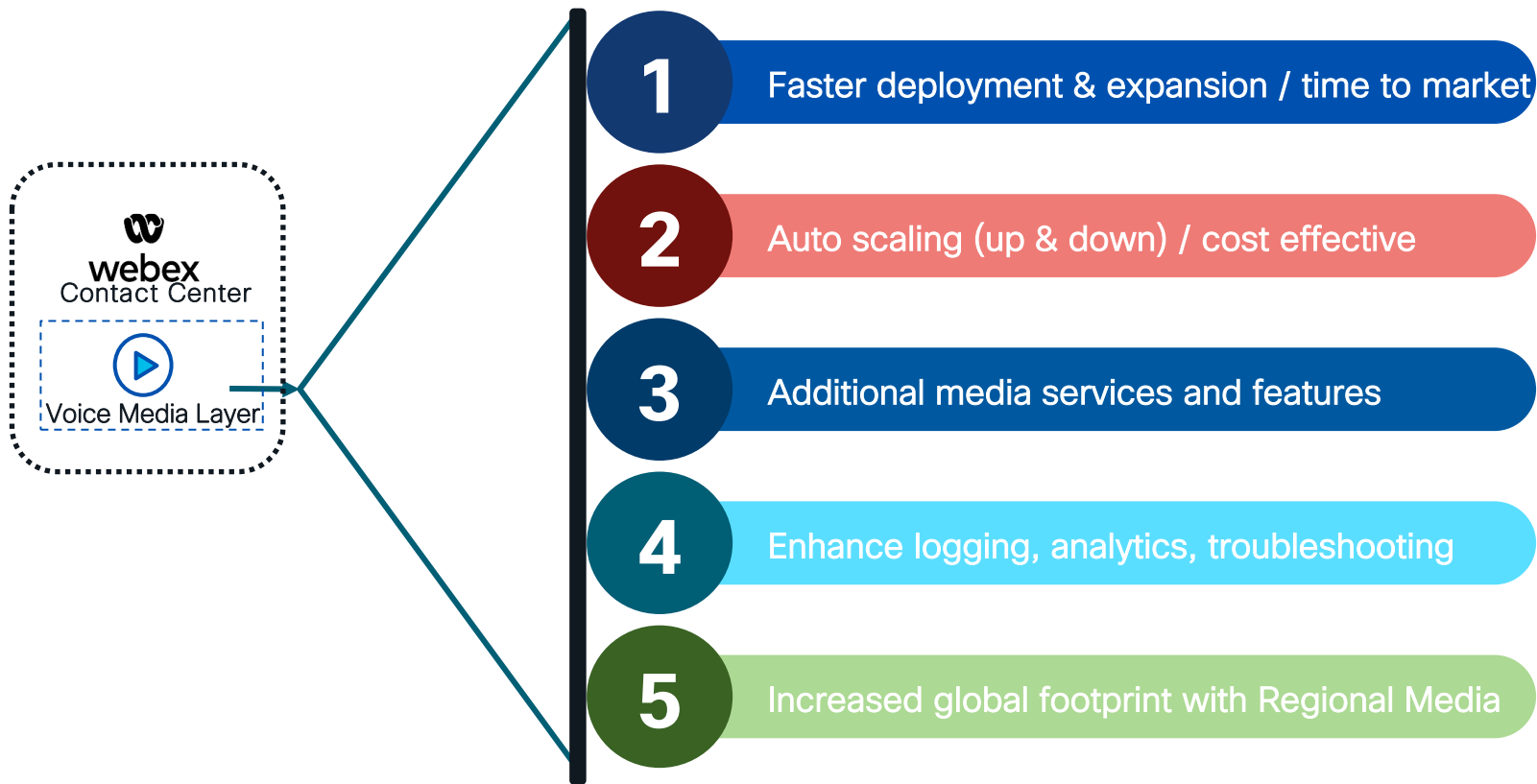
BENEFITS



New Voice Media Layer (aka RTMS)

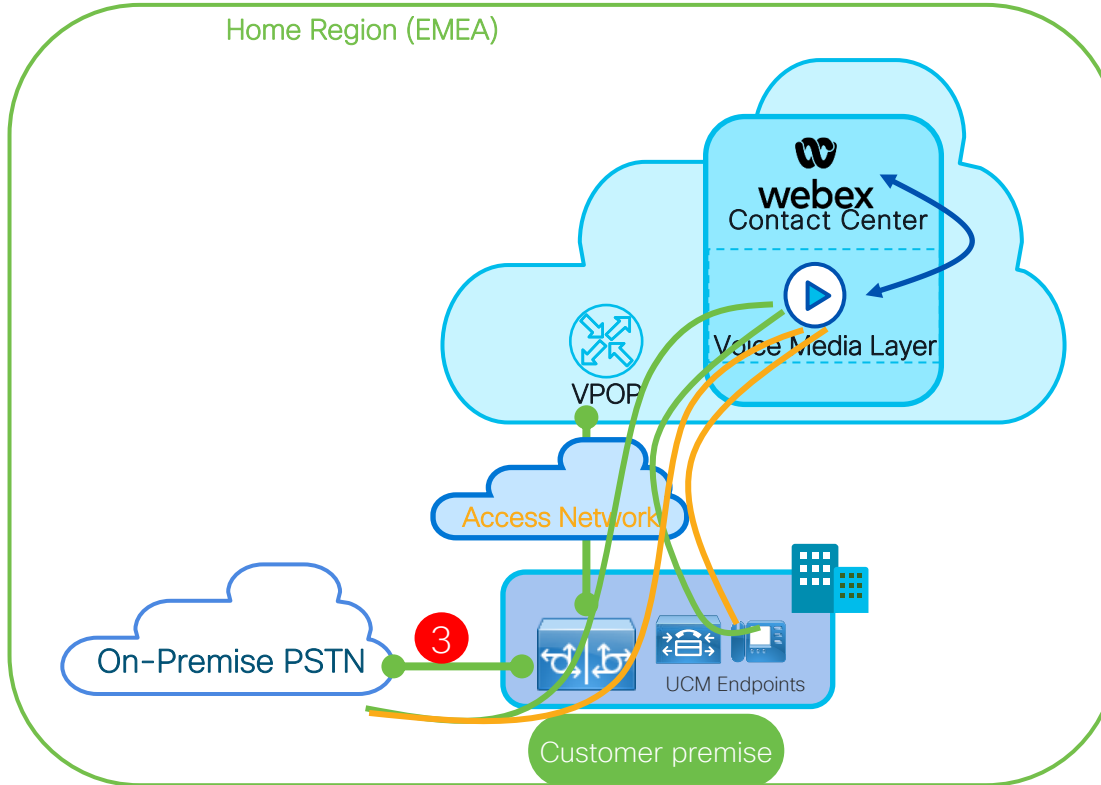
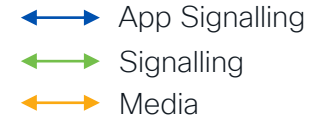


Why New Voice Media Layer?



New Voice Media Layer

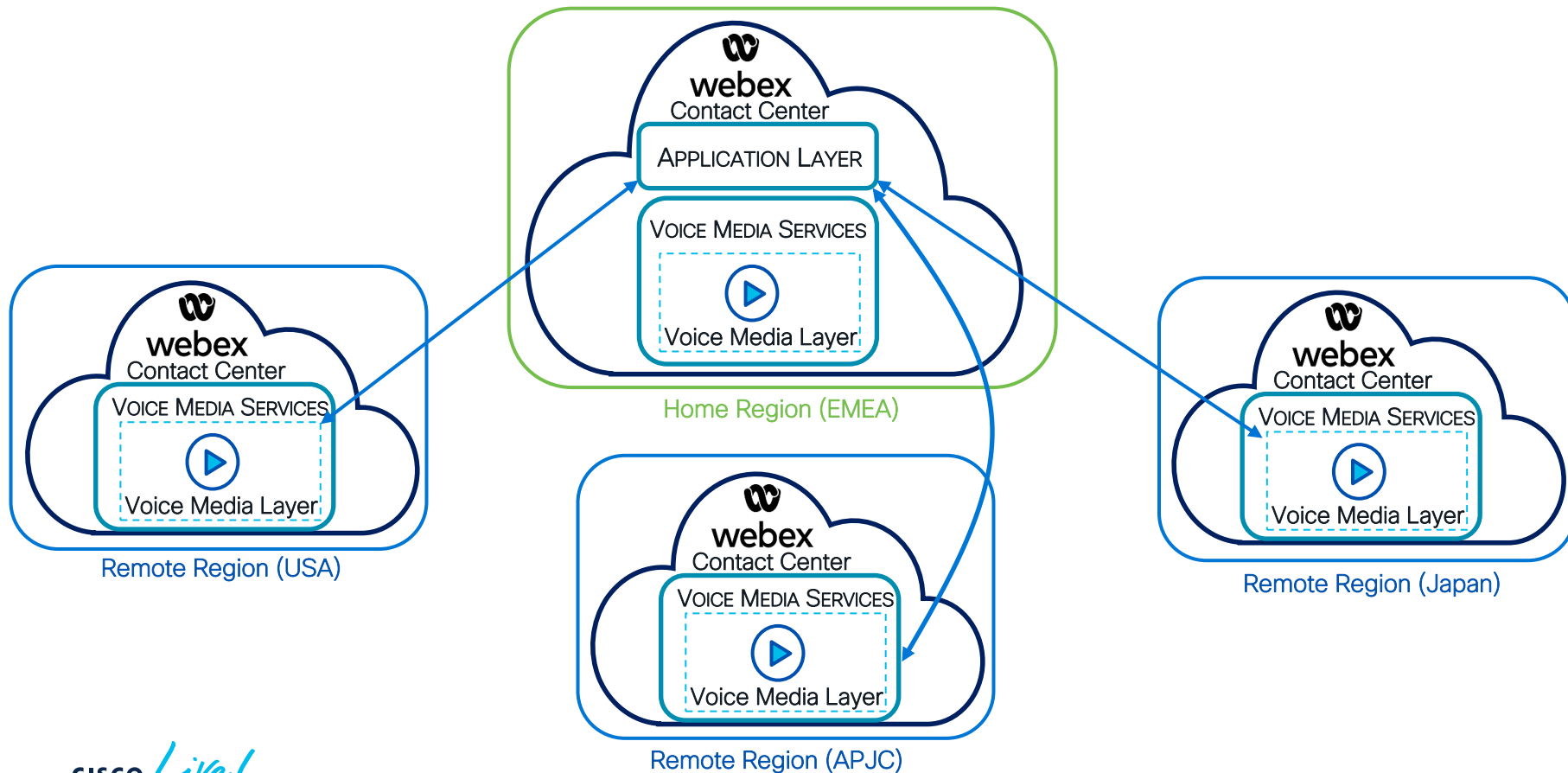
3. On-Premise PSTN to the VPOP



- Same behaviour, transparent migration
- Media stays at New Voice Media Layer
- Application Layer and New Voice Media Layer clearly differentiated and able to operate independently
- VPOP PSTN and Agent connectivity options already **Available** today (approval required)

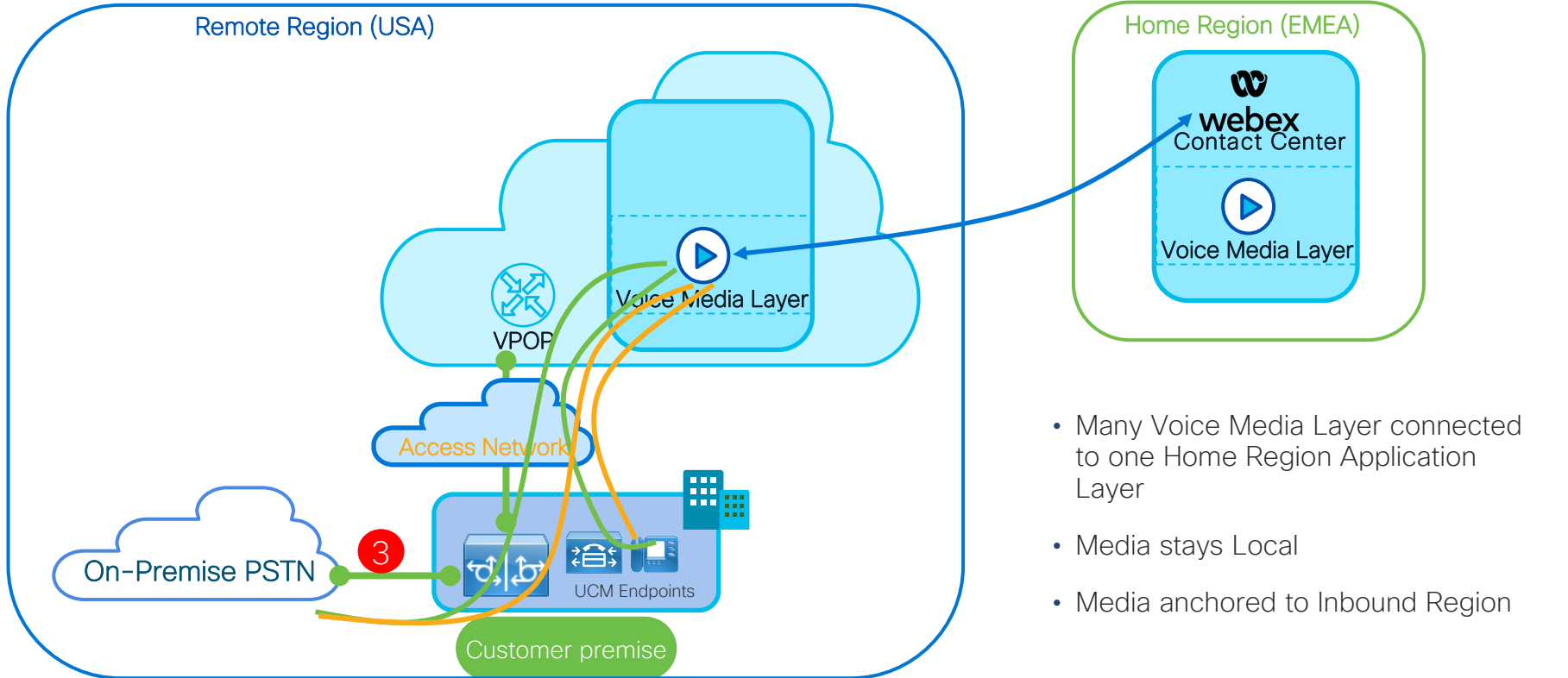
Multiple Voice Media Layers per tenant

↔ App Signalling



Regional Media

3. On-Premise PSTN to the VPOP



- Many Voice Media Layer connected to one Home Region Application Layer
- Media stays Local
- Media anchored to Inbound Region

New Voice Media Layer – Road Map

- **Webex Calling** integration with **media path optimization**
- Mix VPOP and Webex Calling PSTN and Agent connectivity options
- Agent Side **WebRTC**
- Cloud based **Background Noise Reduction**
- SIP/DTMF Interoperability enhancements including **SIP header passing**
- AI/ML/NLP enhancements with new AI Universal Harness
 - Multiple NLP engine support
 - Agent Assist
 - Regional Media for NLP

Key Takeaways



- Each WxCC call has two call legs
- WxCC has a highly flexible PSTN integration
- How to mix PSTN Options with Agent connectivity Options
- New Voice Media Layer enables global deployments, more flexibility and new features

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The bridge to possible

Thank you

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ALL IN