

Webex Edge Connect Design and Deployment for Webex Meetings, Calling and Dedicated Instance

cisco Live !

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Technical Marketing Engineer – Technical Leader

Webex App

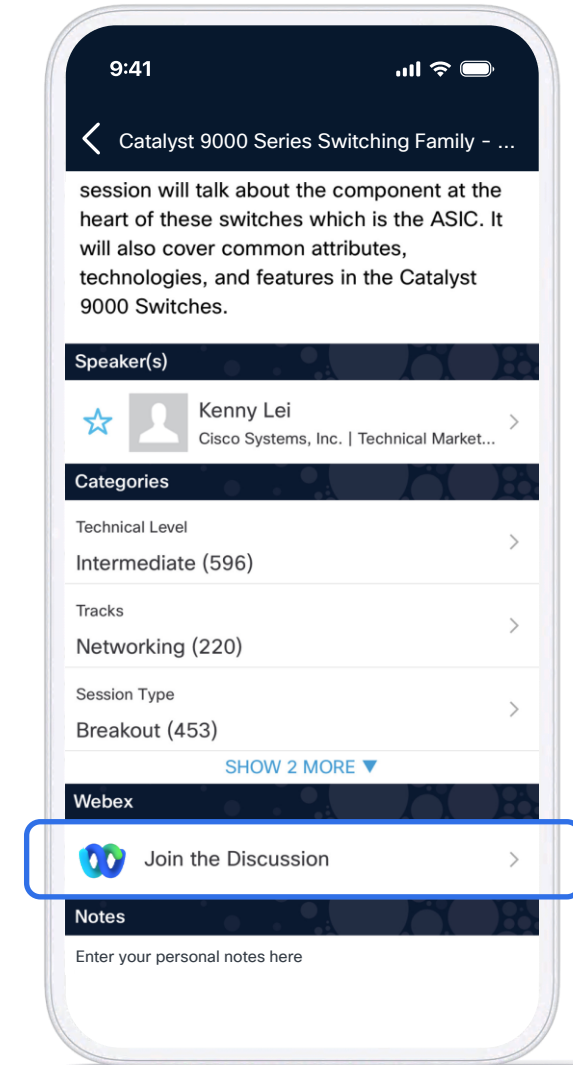
Questions?

Use Webex App to chat with the speaker after the session

How

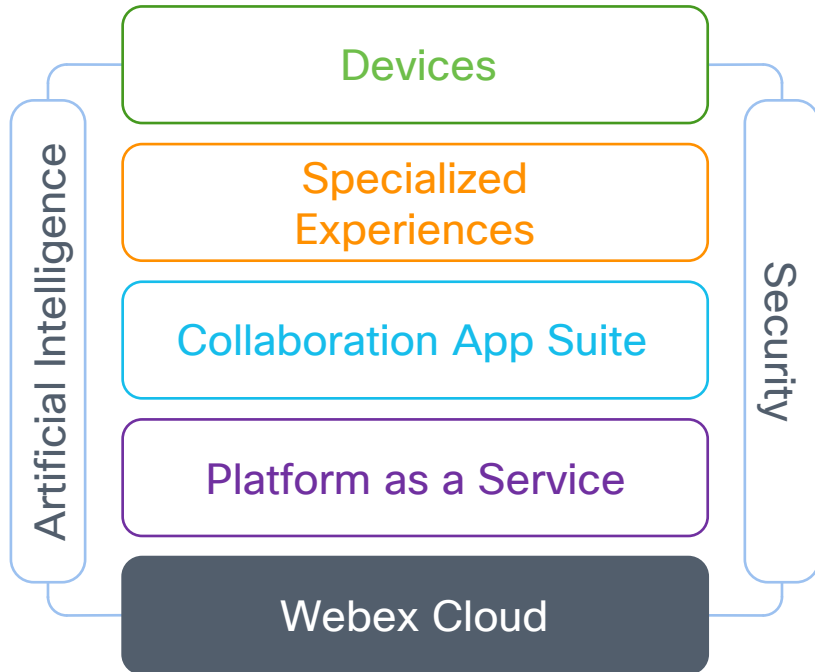
- 1 Find this session in the Cisco Events App
- 2 Click “Join the Discussion”
- 3 Install the Webex App or go directly to the Webex space
- 4 Enter messages/questions in the Webex space

Webex spaces will be moderated by the speaker until February 27, 2026.



- 1 Webex Service locations**
- 2 Edge Connect for Meetings and Calling**
- 3 Edge Connect for Dedicated Instance**
- 4 Provisioning**

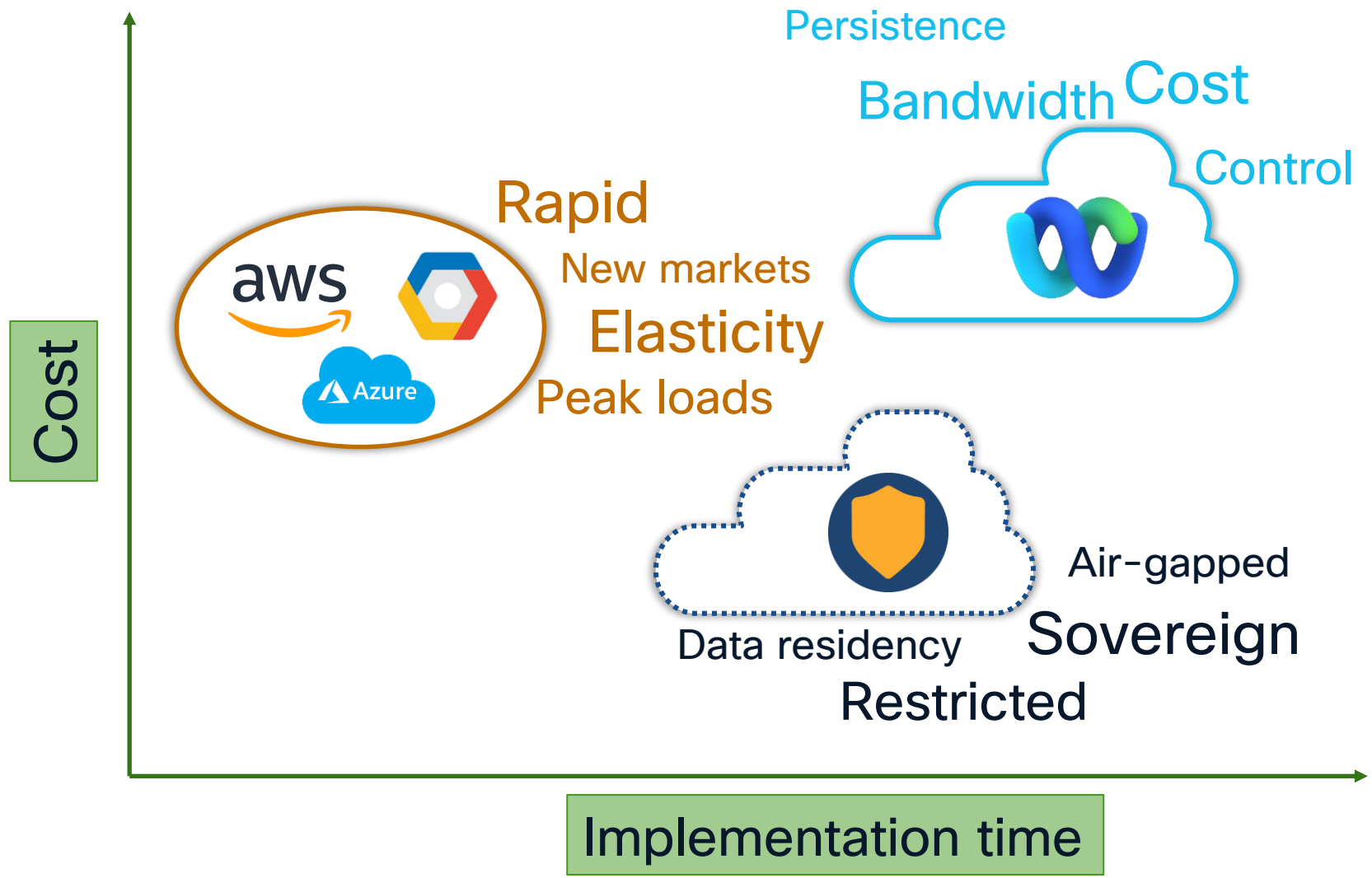
Webex Cloud Mission



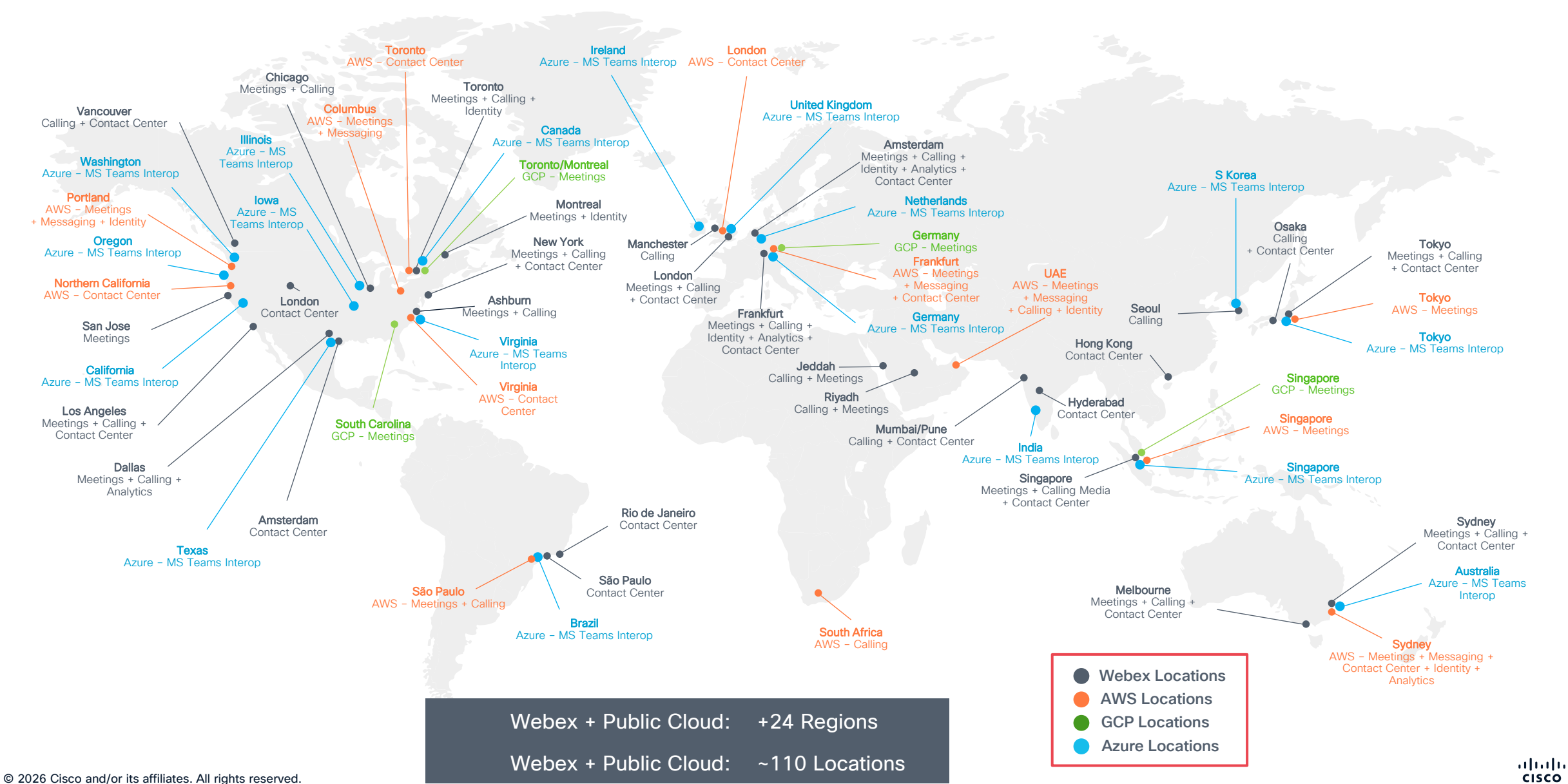
Provide a robust, reliable, scalable, extensible, and secure **platform foundation** for everything we do in Webex, today and tomorrow

Combine Webex Data Centers and Cloud Service Providers into a seamless **hybrid cloud** with prescriptive operational and delivery models

Considerations for the Webex cloud service

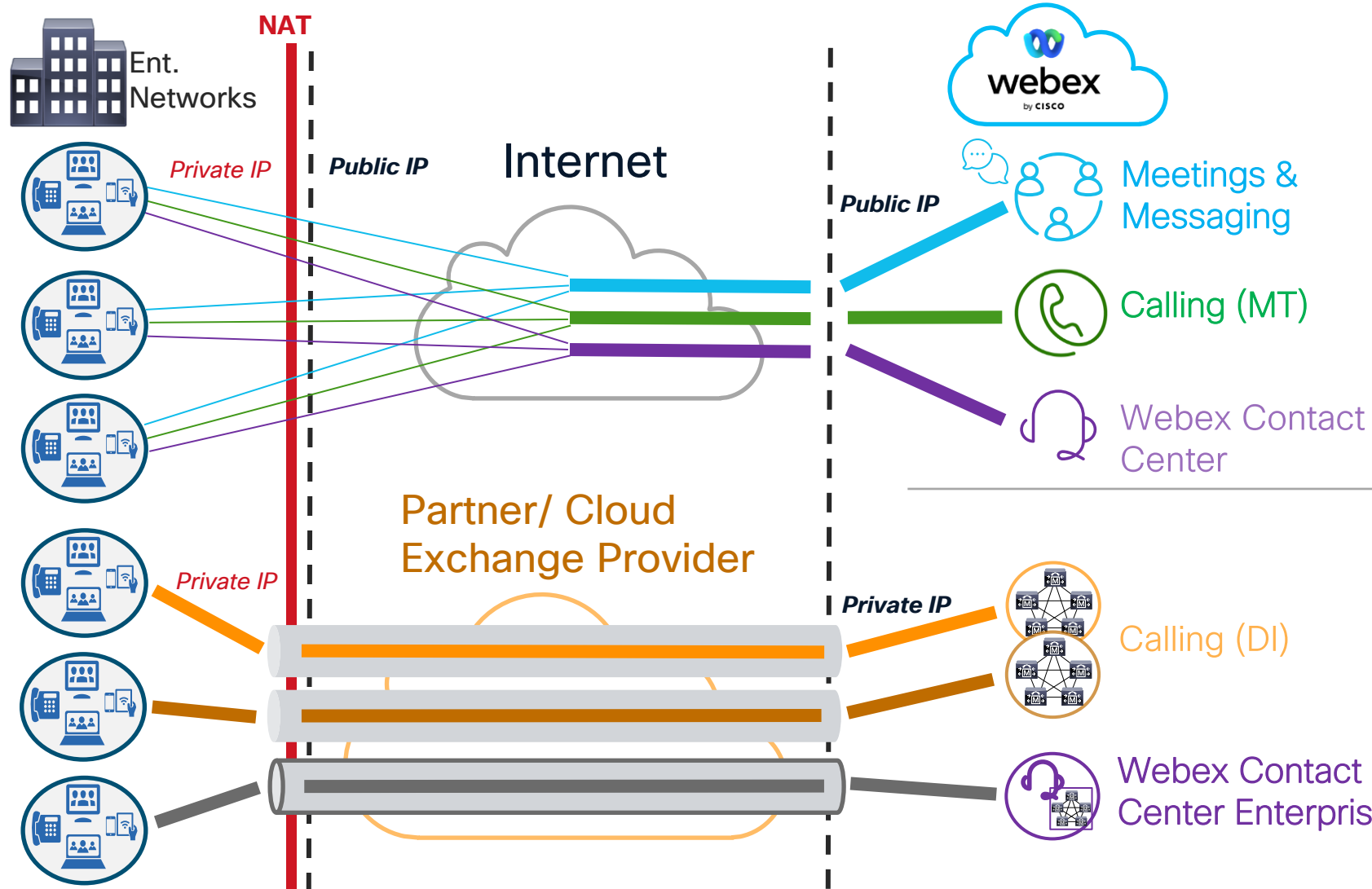


Webex Cloud Landscape



Edge Connectivity

Multitenant vs Dedicated Offerings



Multitenant Offerings

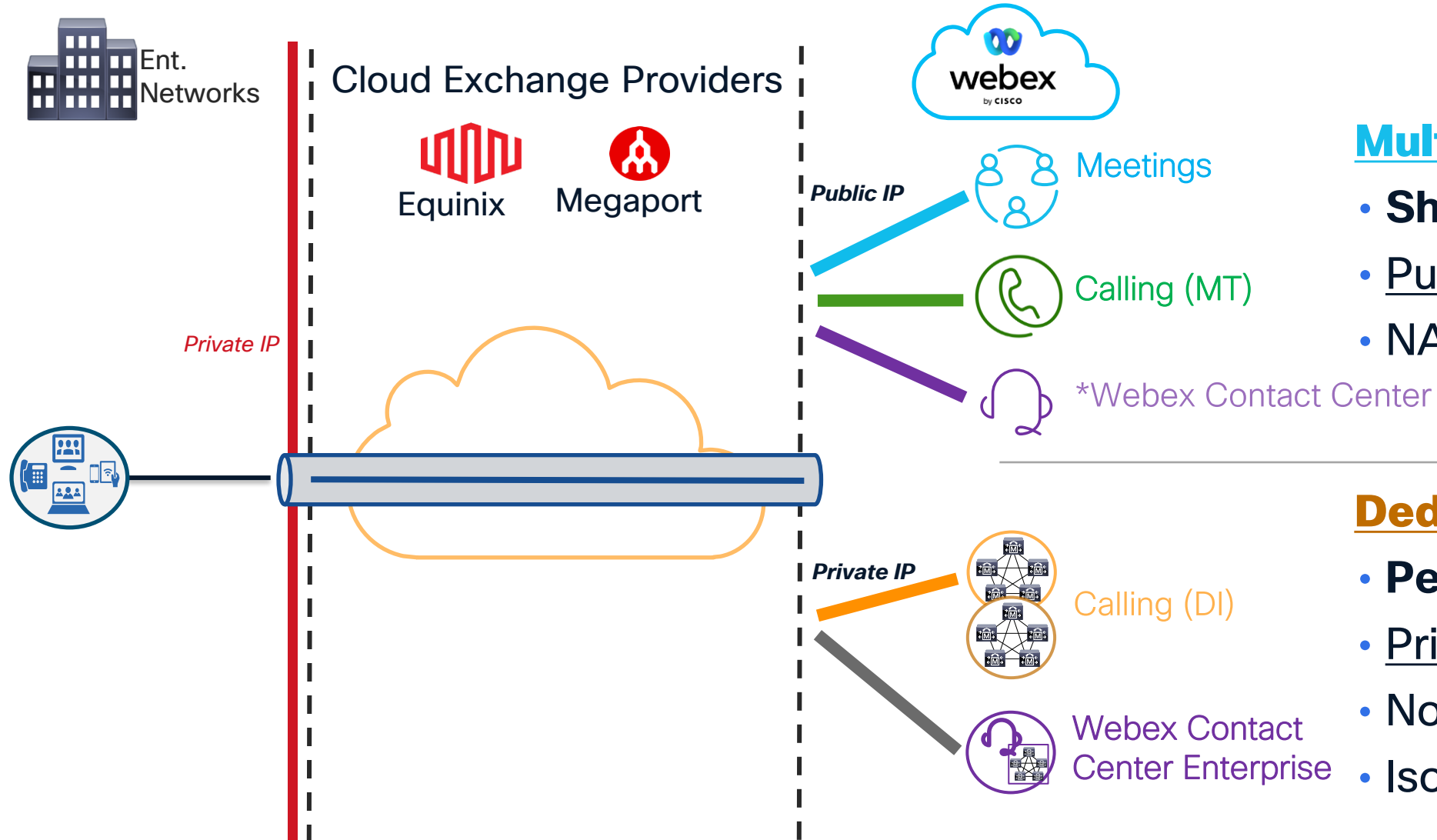
- **Shared** services
- Public IP subnets
- NAT OK
- OTT access

Dedicated Offerings

- **Per-customer** services
- Private IP subnets
- No NAT

Edge Connectivity

With Cloud Exchange Providers



Multitenant Offerings

- **Shared** services
- Public IP subnets
- NAT OK

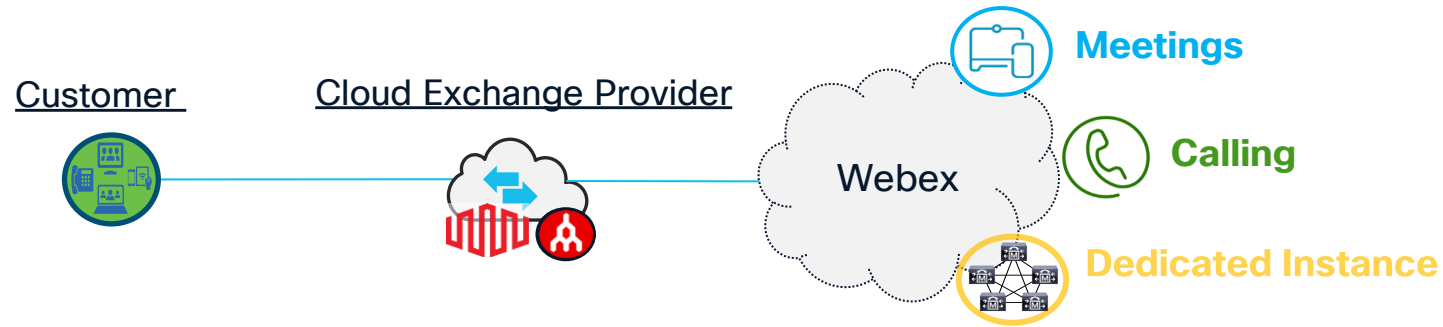
*Webex Calling MT traffic only

Dedicated Offerings

- **Per-customer** services
- Private IP subnets
- No NAT
- Isolated network access

What is Webex Edge Connect?

Answer: One or more private network peering connections to Webex



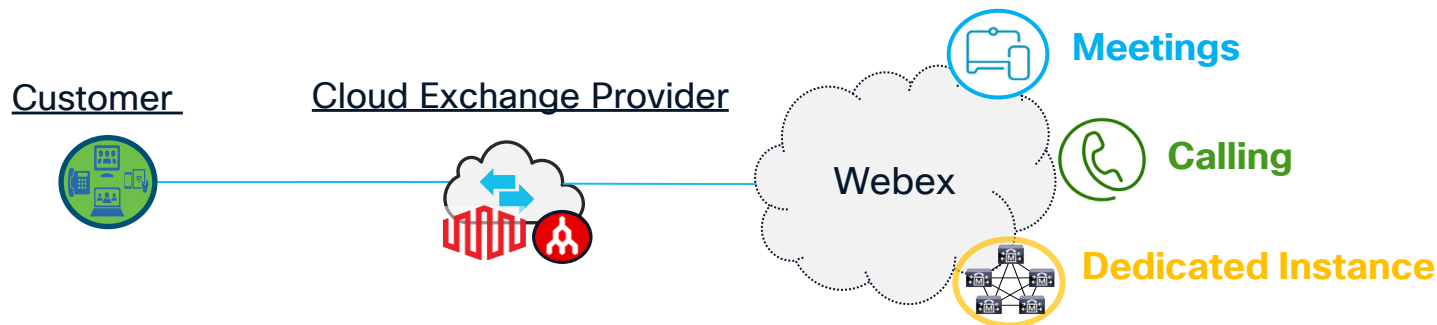
Benefits:

- Direct connection to the Webex backbone for services
- A dedicated, consistent, reliable, high-quality secure meeting and calling experience
- Provides protection from the public Internet and the potential threats and attacks associated with the Internet.

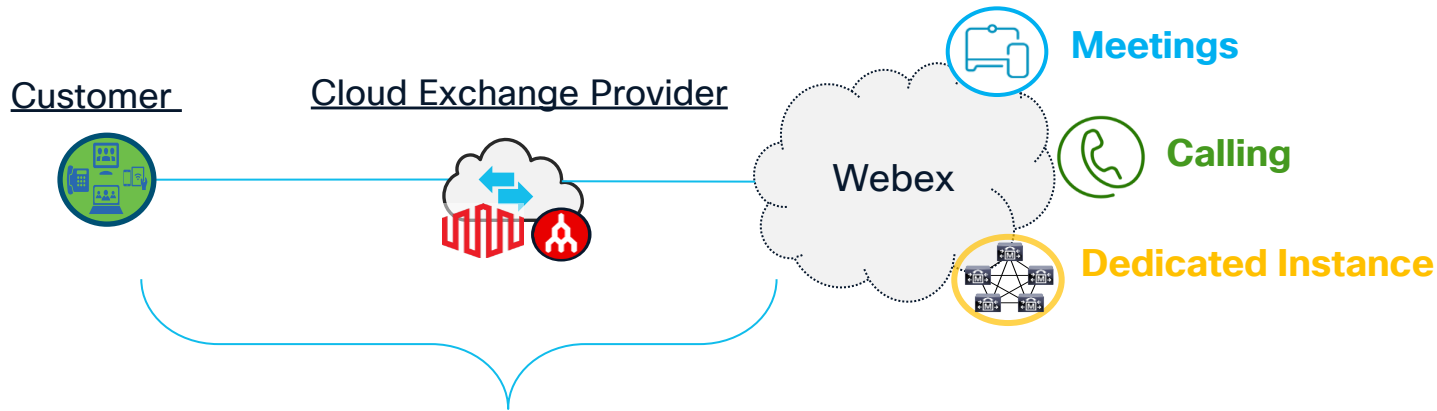
Cloud Exchange Providers for Edge Connect

Connectivity through a cloud exchange provider only.

- Equinix 
- Megaport 
- No direct peering with Cisco from the customer, must use a cloud exchange provider fabric connection to Webex.



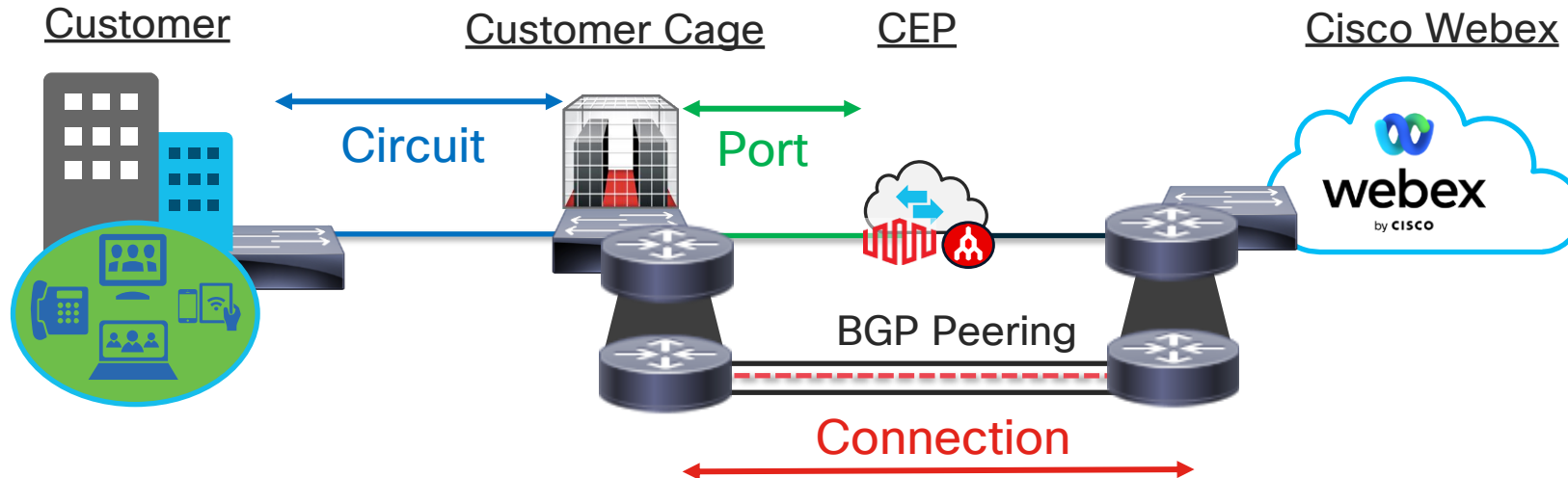
Edge Connect sizing options



- Options from 200MB to 10 GB connection speed to Webex
- Can purchase a 200M, 500M, 1G, 2G, 5G, 10G connection
- Able to upgrade speed after initial purchase

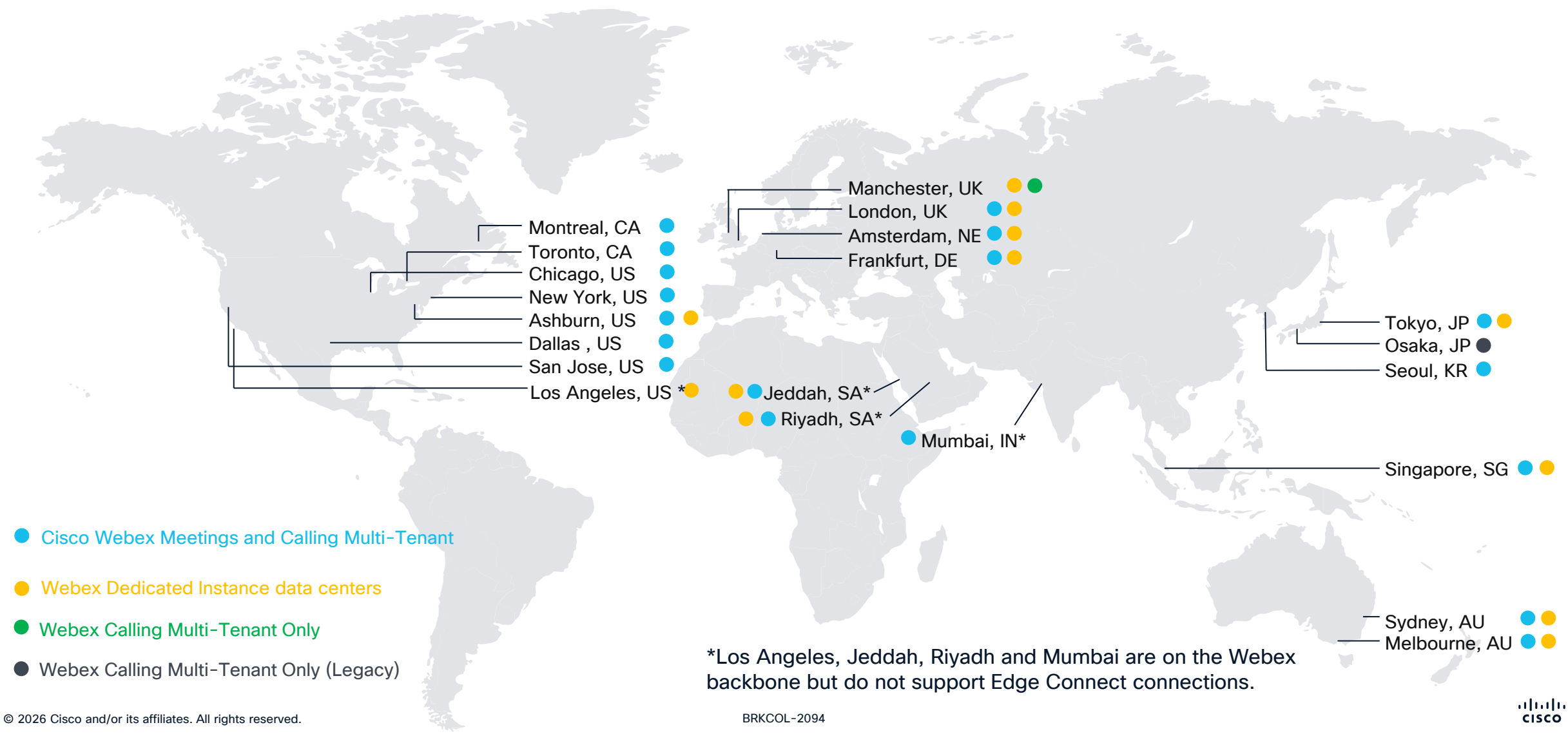
Nomenclature – Let’s speak the same language!!!

- Cloud Exchange Provider (CEP): Equinix or Megaport
- “**Circuit**”: Network circuit between Customer and the CEP. May have traffic to multiple cloud providers.
- “**Port**” – A port is the physical port that was ordered in the CEP that is connected from the CEP backbone to the customer equipment in the cage (router/switch).
- “**Connection**” – This is where a customer uses the CEP portal to submit a request to connect to a Cloud Provider (Webex).

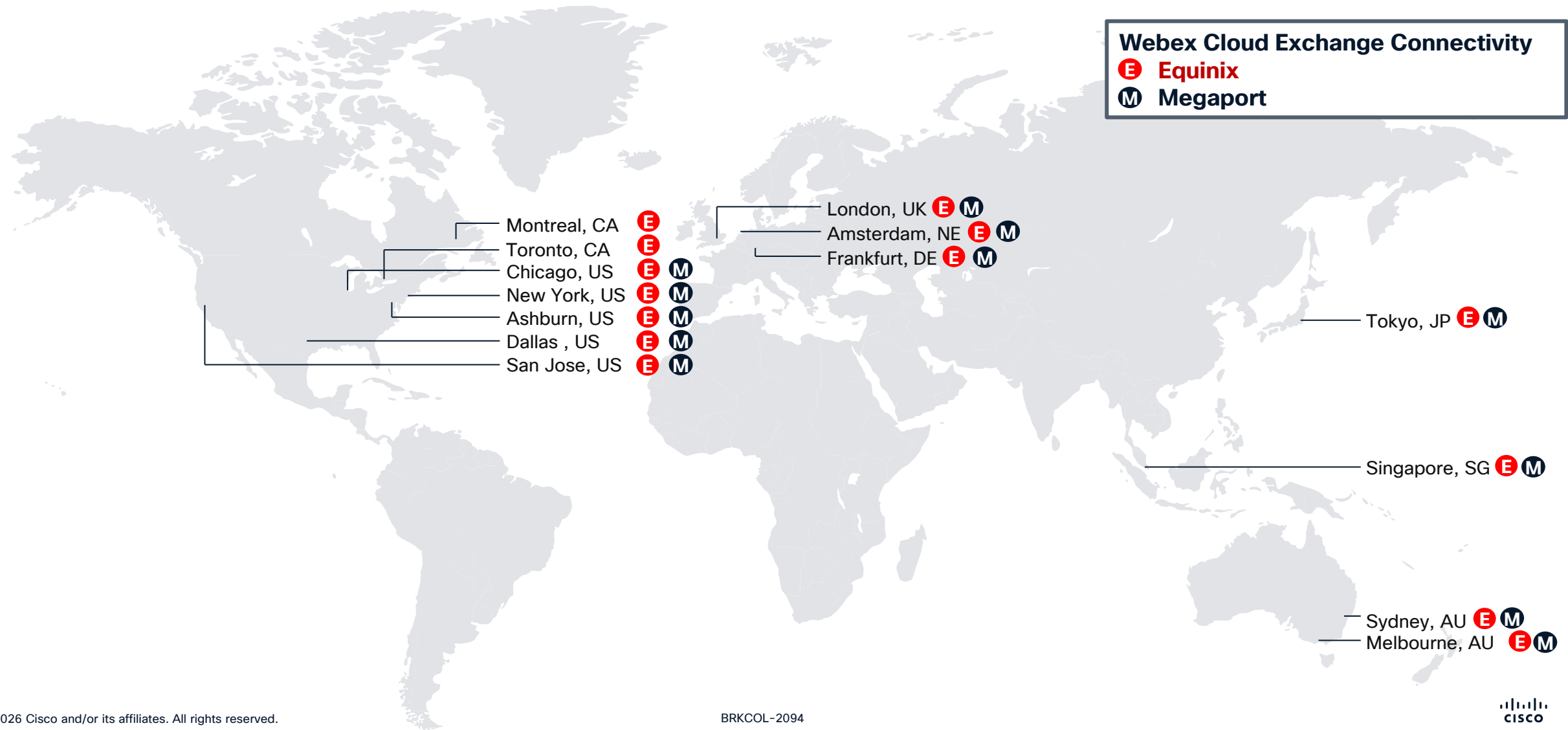


Locations

Webex Meetings/Calling and Dedicated Instance service locations

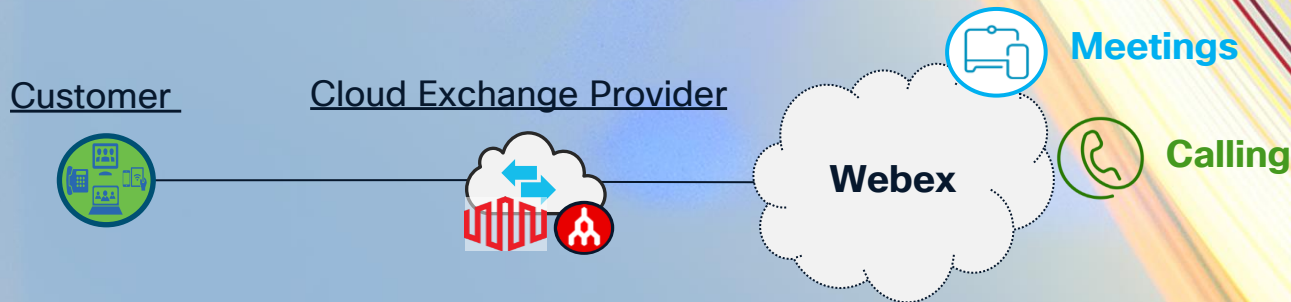


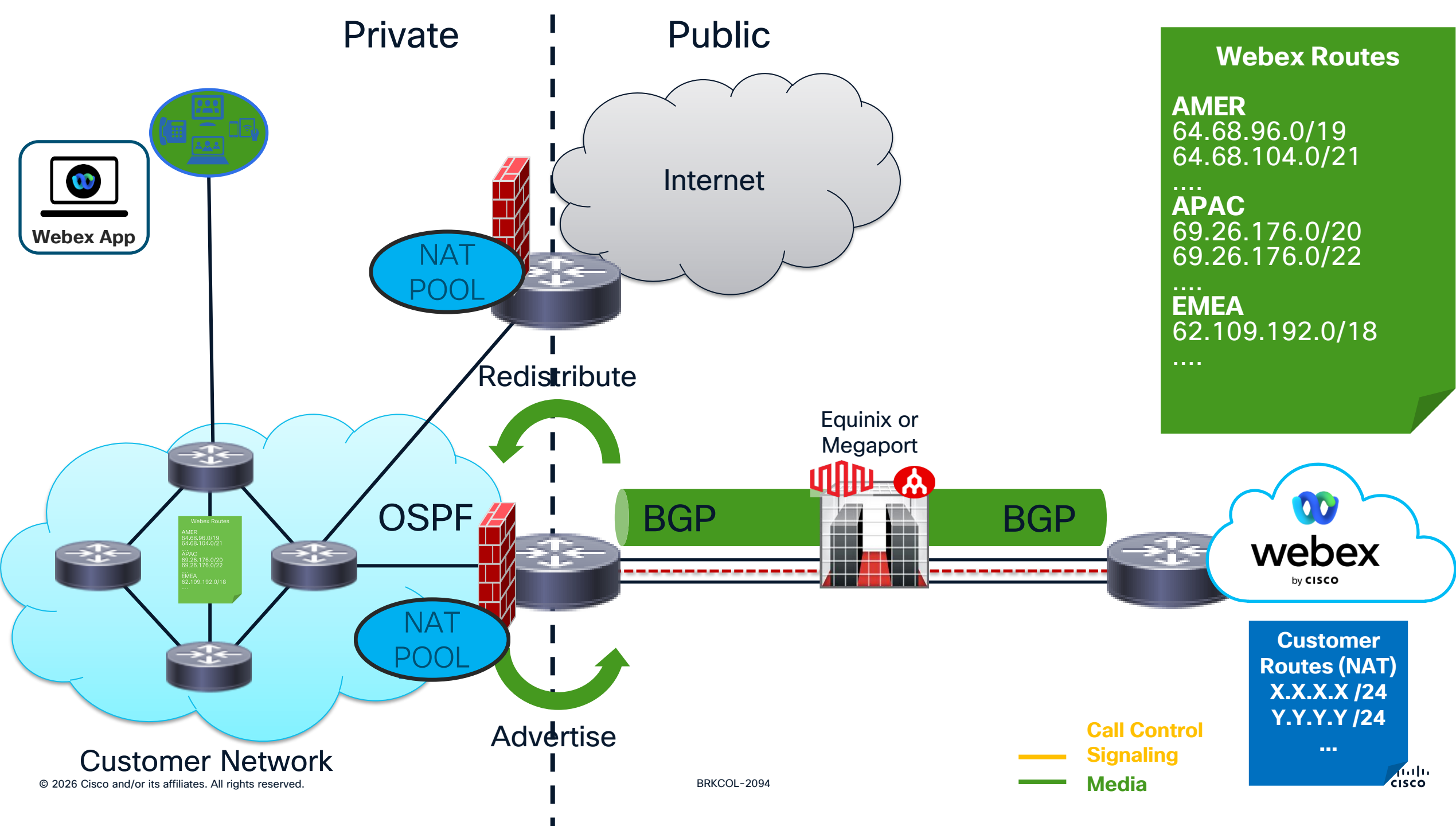
Webex backbone entry points via **Equinix** and Megaport for Edge Connect connections



Webex Edge Connect for Meetings & Calling

Technical Overview





Connect to
wbx2.com



13.59.223.20

64.68.96.55

Call Control
Signaling
Media

DNS Lookup

DNS
Server

Internet

DNS
Server

Equinix or Megaport

OSPF

BGP

BGP

webex
by CISCO

Customer Network

Webex Routes

AMER

64.68.96.0/19
64.68.104.0/21

....

APAC

69.26.176.0/20
69.26.176.0/22

....

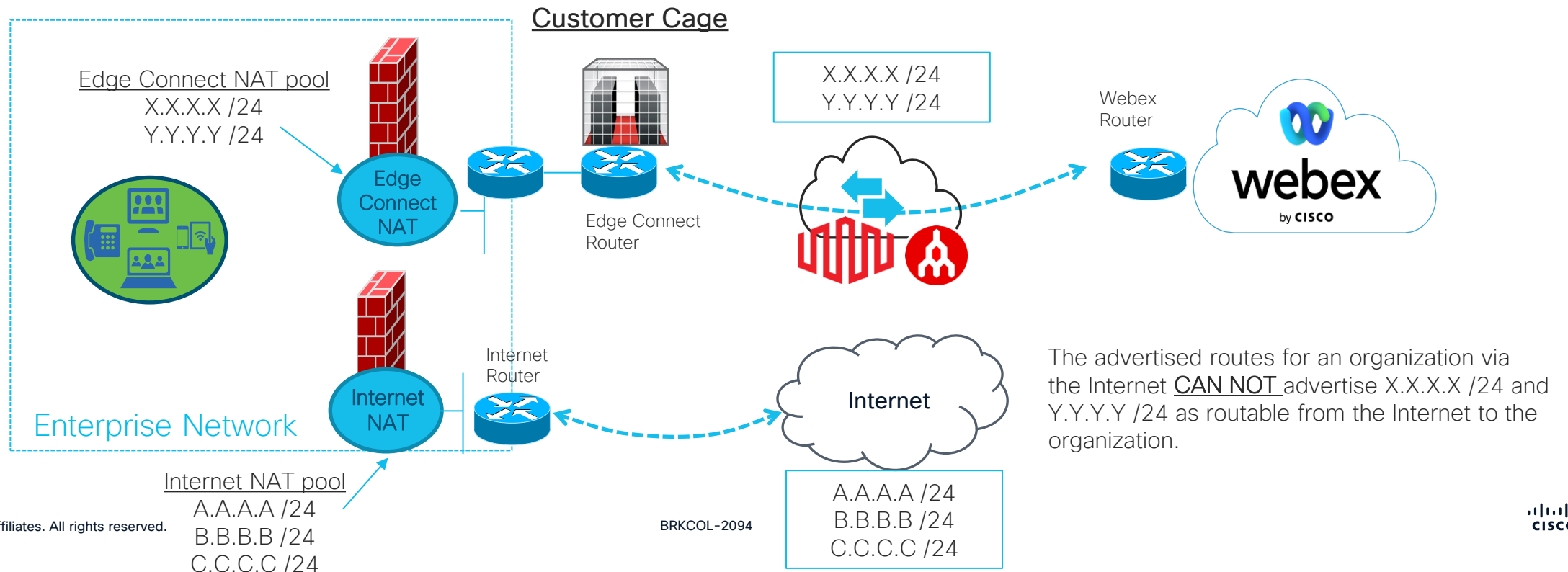
EMEA

62.109.192.0/18

....

NAT Pool addresses

- A unique NAT pool IP range is configured on the customer's environment.
- Nat pool public IP subnet(s) are advertised to Webex via BGP on the Edge Connect link only
- Must be unique public IP subnets not advertised via the Internet or accessible via the Internet connection.



Meetings and Calling-MT

*Use of X.X.X.0 addresses are examples, but Public IP Addressing (IANA) needs to be used.

Corporate Network

Using RFC 1918 address

10.0.0.0/8
172.16.0.0/12
192.168.0.0/16



Need to connect to
Webex services

```
interface GigabitEthernet0/1/1.100
*ip address X.X.X.5 255.255.255.252
encapsulation dot1q 100
```

```
router bgp 64512
bgp log-neighbor-changes
neighbor X.X.X.6 remote-as 13445
neighbor X.X.X.6 password 1Secretpaswd!
```

Edge Connect link

```
interface GigabitEthernet0/0/2.208
* ip address X.X.X.6 255.255.255.252
encapsulation dot1q 208
```

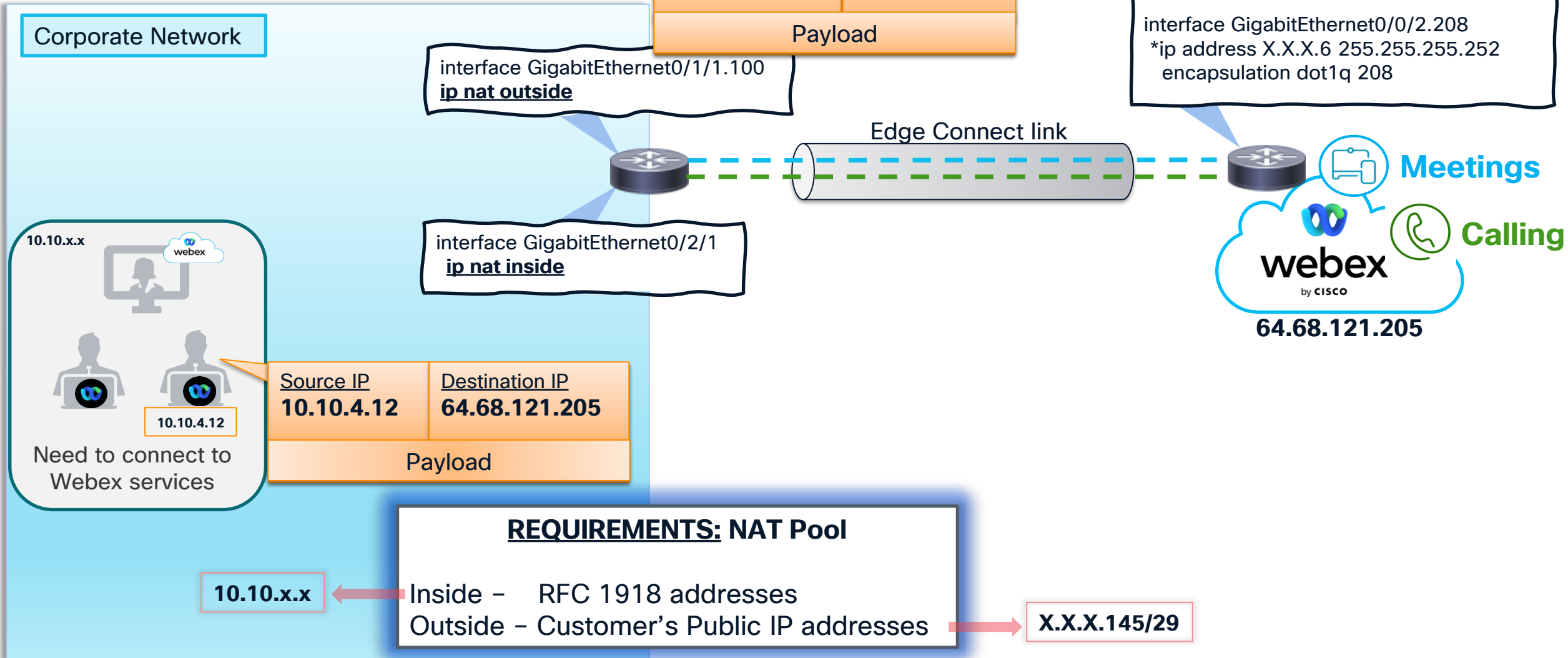


REQUIREMENTS: Customer Edge Router IP Config

- **Public IP address** (/30 or /31) provided by customer between the customer and Webex routers
- Local Vlan and encapsulation
- BGP enabled with **Public or Private ASN** for peering

Meetings and Calling-MT

*Use of X.X.X.0 addresses are examples, but Public IP Addressing (IANA) needs to be used.

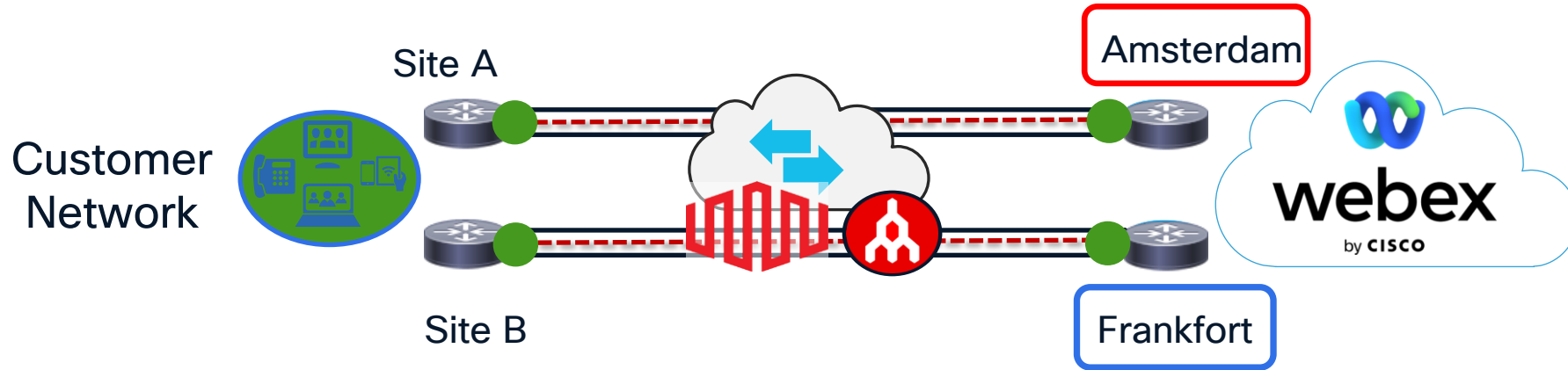


BGP Peering

BGP Traffic Engineering – Customer Controlled

- All global routes are advertised by Webex Edge Connect
- We recommend using IP prefix lists to manage route advertisements
- Filter ONLY on subnet groups by Solution Theater: Meetings or Calling (AMER, EMEA, APAC, JP)
- No static routing – Dynamic routing is required
- Route advertisements may change over time so customers should accept all Webex routes with prefix length that is less than or equal to /24
- Internet connection is required

Connections



Edge Connect for Meetings & Calling architecture

- single connections is part of the offering
- need to order the redundant connection

Edge Connect for DI architecture

- 2 connections are part of the offering

BGP Traffic Engineering – Customer Controlled

Multiple options to influence traffic flow

Option 1 – BGP Community local preference tagging

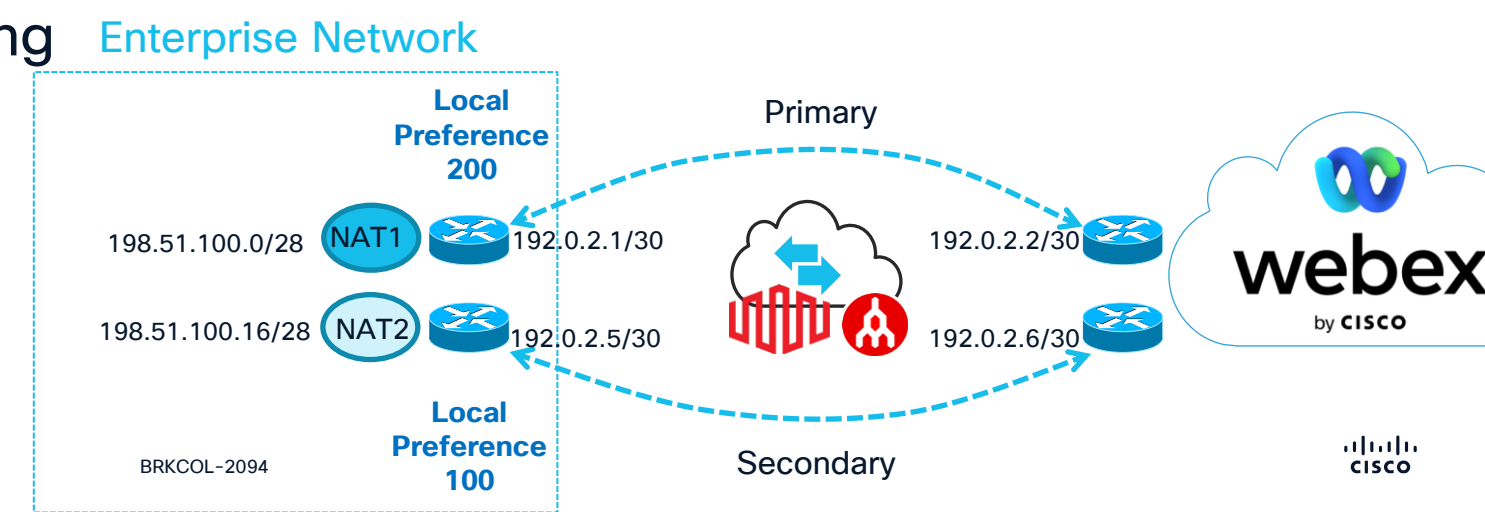
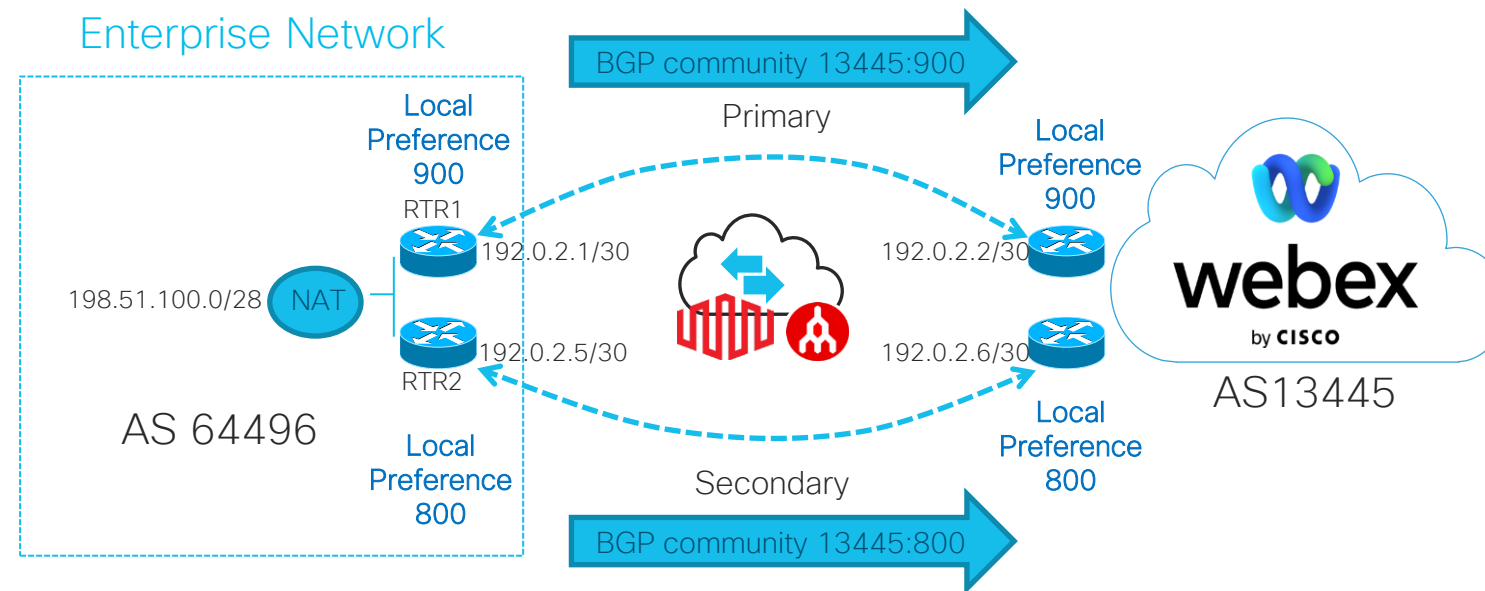
- Highest level of control and routing influence
- Advanced customer configuration

Option 2 – AS-Path prepending

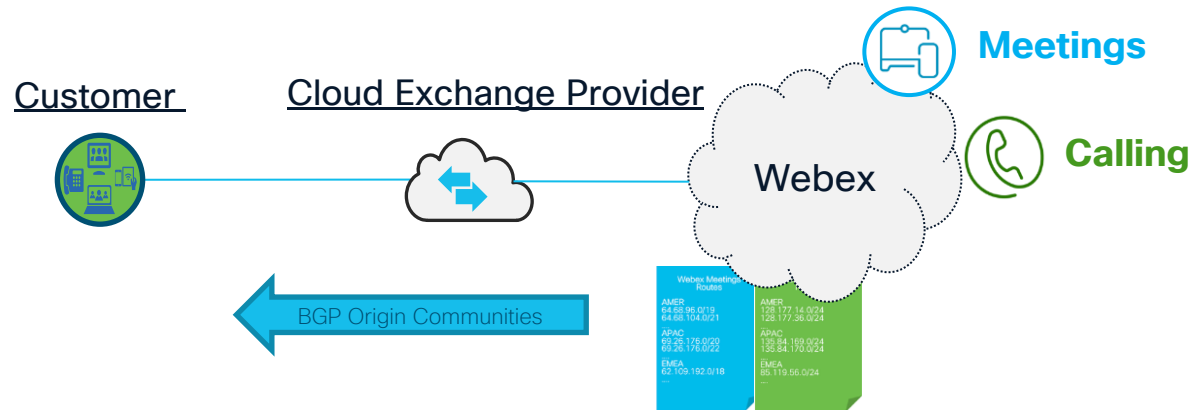
- Simple

Option 3 – Unique NAT Pools per peering session

- Simple
- Disruptive Fail-over



BGP Traffic Engineering – Customer Controlled



Full list of subnets broken down by BGP Origin Communities on help.webex.com

Traffic Engineering Communities

Link Priority

- None – Default (least desirable path)
- 13445:200 – Local Preference 200
- 13445:300 – Local Preference 300
- 13445:400 – Local Preference 400
- 13445:500 – Local Preference 500
- 13445:600 – Local Preference 600
- 13445:700 – Local Preference 700
- 13445:800 – Local Preference 800
- 13445:900 – Local Preference 900 (Most desirable path)

Webex Prefix BGP Origin communities

- 13445:10000 – AMER
- 13445:10010 – EMEA
- 13445:10020 – APAC
- 13445:20000 – Calling AMER
- 13445:20010 – Calling EMEA
- 13445:20020 – Calling ANZ
- 13445:20060 – Calling APAC

Customer Prefix propagation scoping communities

- None – Default permit global reachability
- 13445:677 – Permit local theater reachability

Filtering on Webex Calling Prefixes through Community Strings

```
router bgp 65333
  bgp log-neighbor-changes
  neighbor 100.64.2.2 remote-as 13445
  neighbor 100.64.2.2 fall-over bfd
  !
  address-family ipv4
    network 100.64.200.128 mask 255.255.255.128
    neighbor 100.64.2.2 activate
    neighbor 100.64.2.2 route-map CALL-ONLY in
  exit-address-family
  ip bgp-community new-format
  ip community-list 1 permit 13445:10000
  ip community-list 2 permit 13445:10010
  ip community-list 3 permit 13445:10020
  ip community-list 4 permit 13445:20000
  ip community-list 5 permit 13445:20010
  ip community-list 6 permit 13445:20020
  ip community-list 7 permit 13445:20060
  !
  route-map CALL-ONLY permit 10
    match community 4 5 6 7
  !
  route-map MTG-ONLY permit 10
    match community 1 2 3
  !
```

2

Apply Route-Map to filter on Webex Calling Prefixes ONLY

1

Route-map matching only on permitted community lists with Webex Calling communities

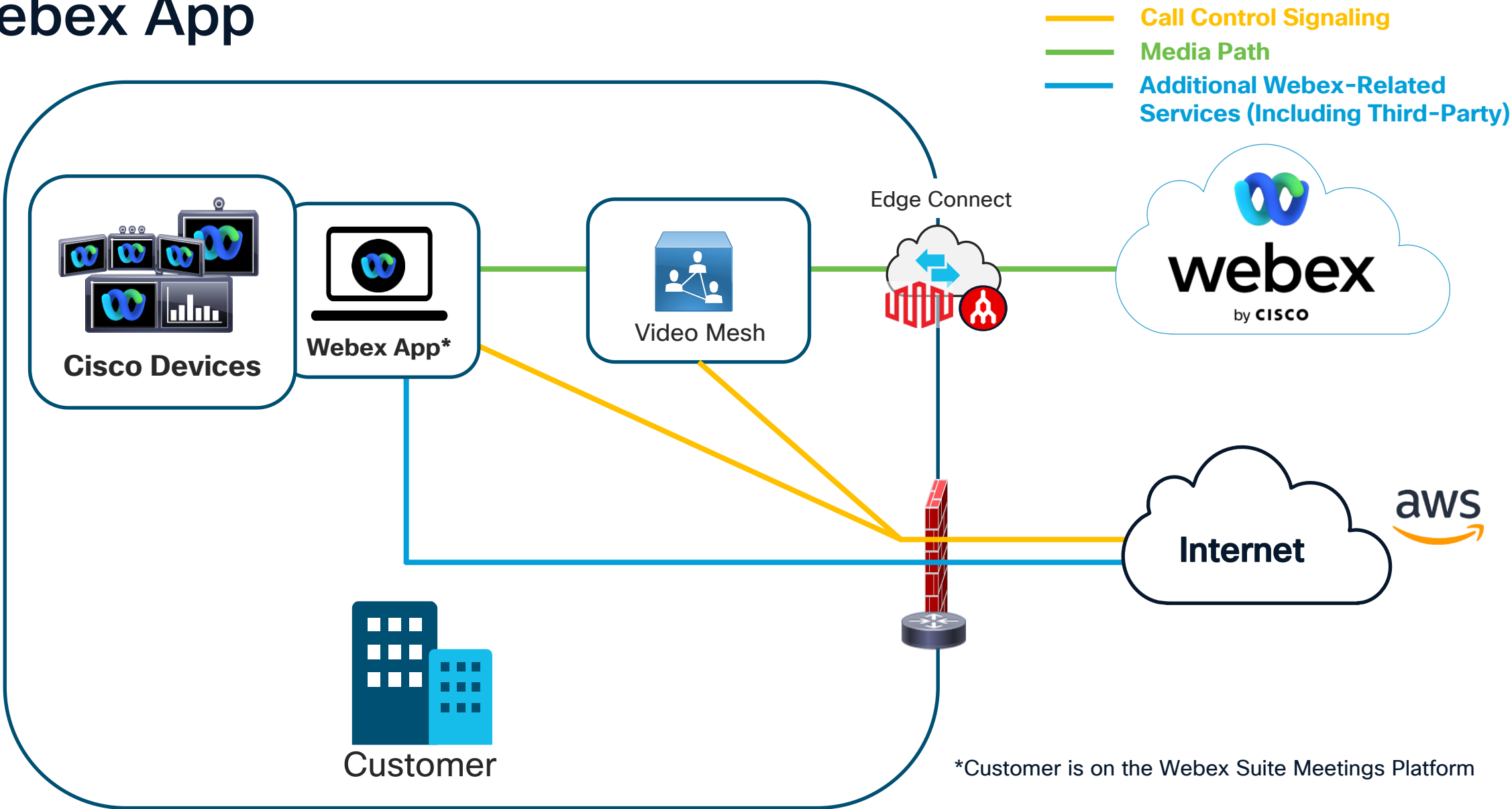
Webex Edge Connect for Meetings & Calling

Traffic Flows over Edge Connect

Traffic Flows across Edge Connect links

- Media will always traverse the Edge Connect link.
- Make sure that the Internet link is available for certain types of traffic and for failover use cases!
- Some Webex microservices are located on public cloud providers (for example, AWS).
 - This traffic does not traverse the Edge Connect link.
 - Call Control Signaling will go across the Internet link in most cases.
- Webex backbone is not a transit network to the Internet.

Webex App

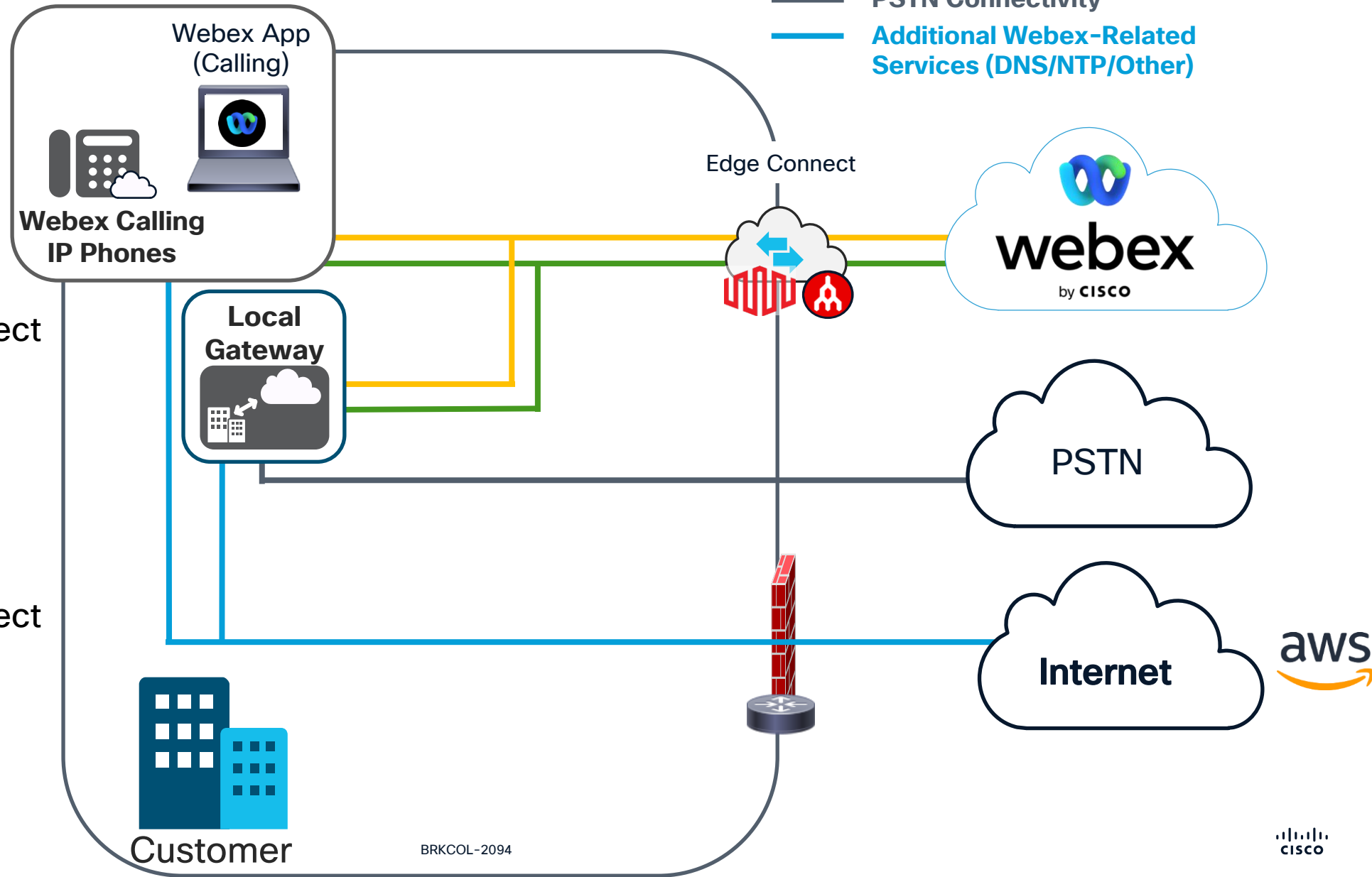


Webex Calling Multi-Tenant

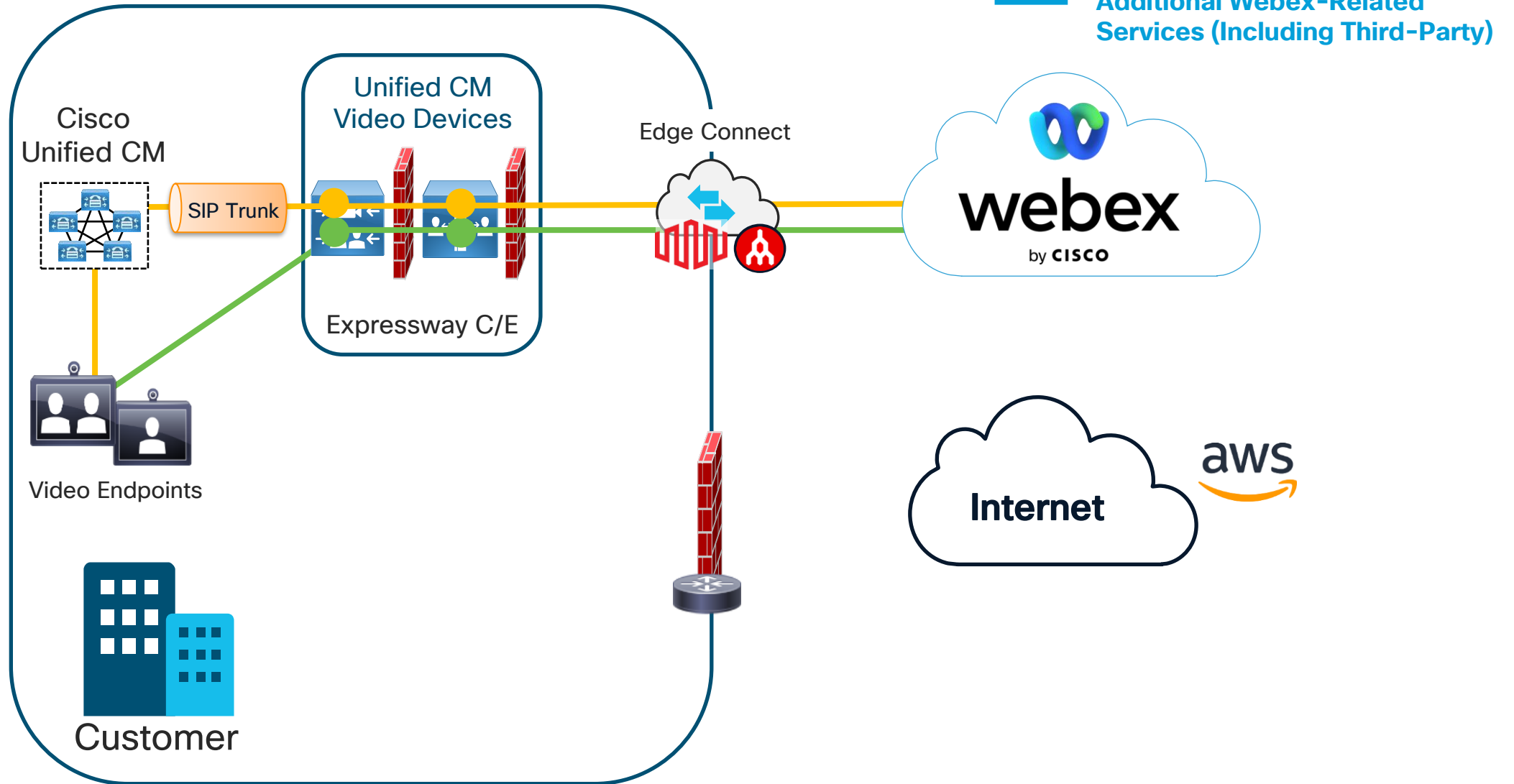
Note:

In the Webex Edge Connect for Meetings and Calling architecture the LGW registration-based or certificate-based registration will work.

In the Webex Edge Connect for DI architecture, certificate-based registration will **not** work.



UCM Registered Devices – SIP call



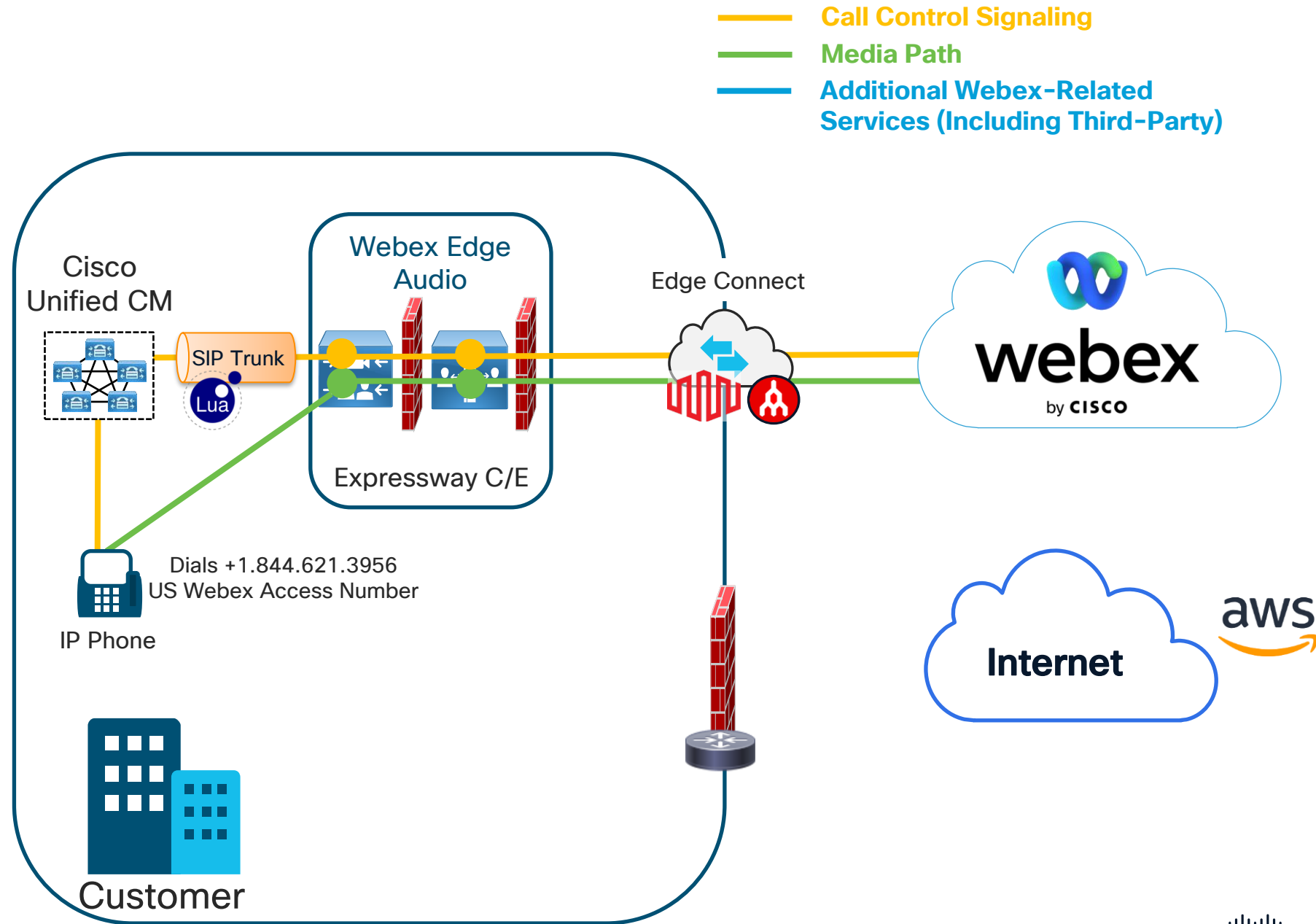
Edge Audio



Note: Webex Edge Connect for DI and Edge Audio is not supported due to tight integration with NAT but the alternatives are called DI integrated audio, or the other alternative is to use the Internet edge to send Edge Audio traffic.

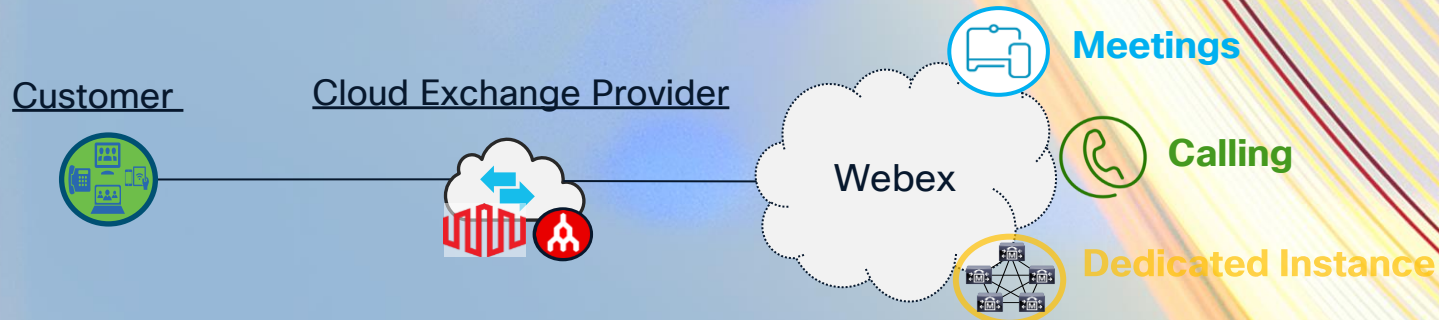
Webex Edge Connect for Meetings and Calling architecture connections can use Edge Audio to send the calls to the local on-premises UCM.

Webex Edge Connect for DI architectures connection need to use DI integrated Audio for Edge Audio.



Webex Edge Connect for Dedicated Instance

Technical Overview



Dedicated Instance Only

Note: DI requires redundant links to different datacenters

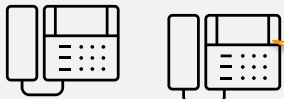
*Use of X.X.0.0 addresses are examples, but Public IP Addressing (IANA) needs to be used.

Corporate Network

Using RFC 1918 address

10.0.0.0/8
172.16.0.0/12
192.168.0.0/16

192.168.x.x



192.168.1.50

Need to connect to
Webex services

Source IP

192.168.1.50

Destination IP

178.215.131.10

Payload

```
interface GigabitEthernet0/0/1.300
description Edge Connect
bandwidth 100000
encapsulation dot1Q 300
*ip address X.X.X.5 255.255.255.252
```

```
interface GigabitEthernet0/0/3.209
description Edge Connect
bandwidth 100000
encapsulation dot1Q 209
*ip address X.X.X.6 255.255.255.252
```

Edge Connect link

Default
Route
0.0.0.0

DI Routes
178.215.131.0 /25
178.215.131.0 /24

Dedicated
Instance

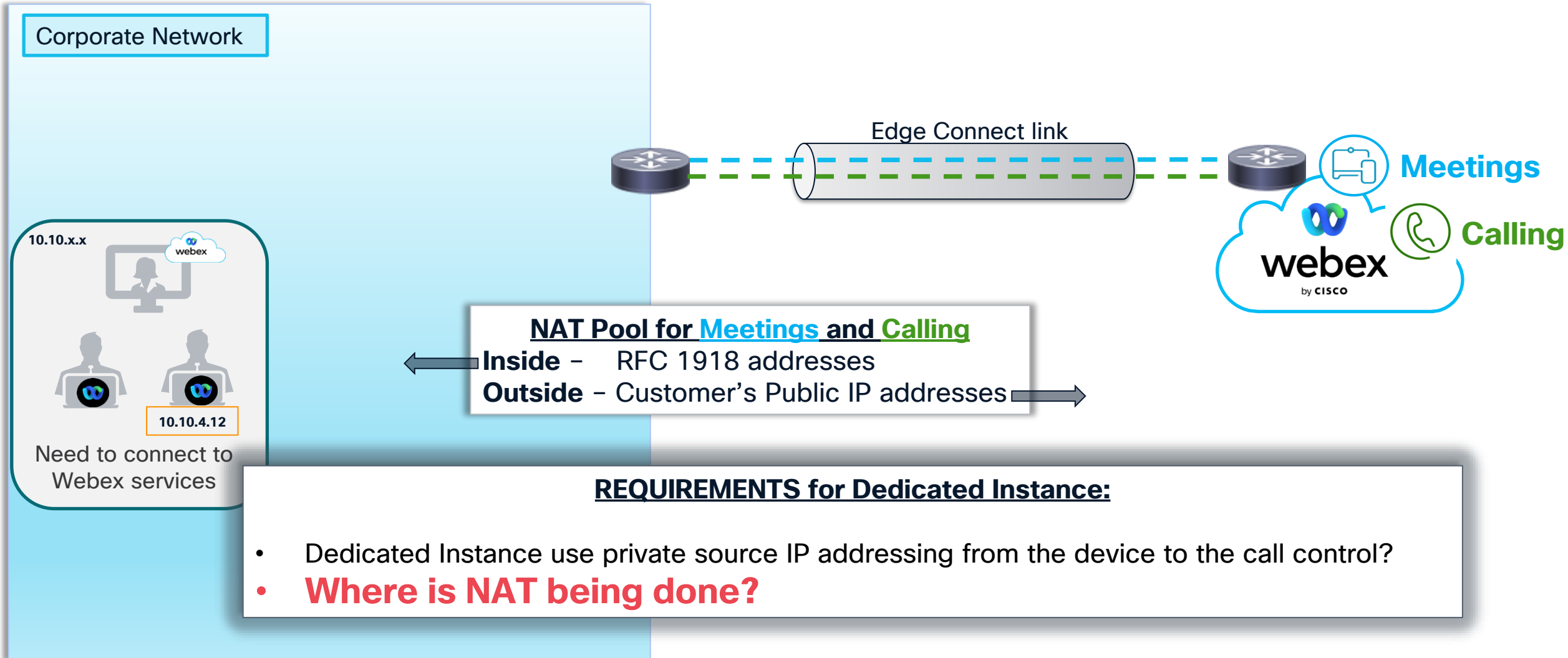
178.215.131.10

webex
by CISCO

REQUIREMENTS: Customer Edge Router IP Config

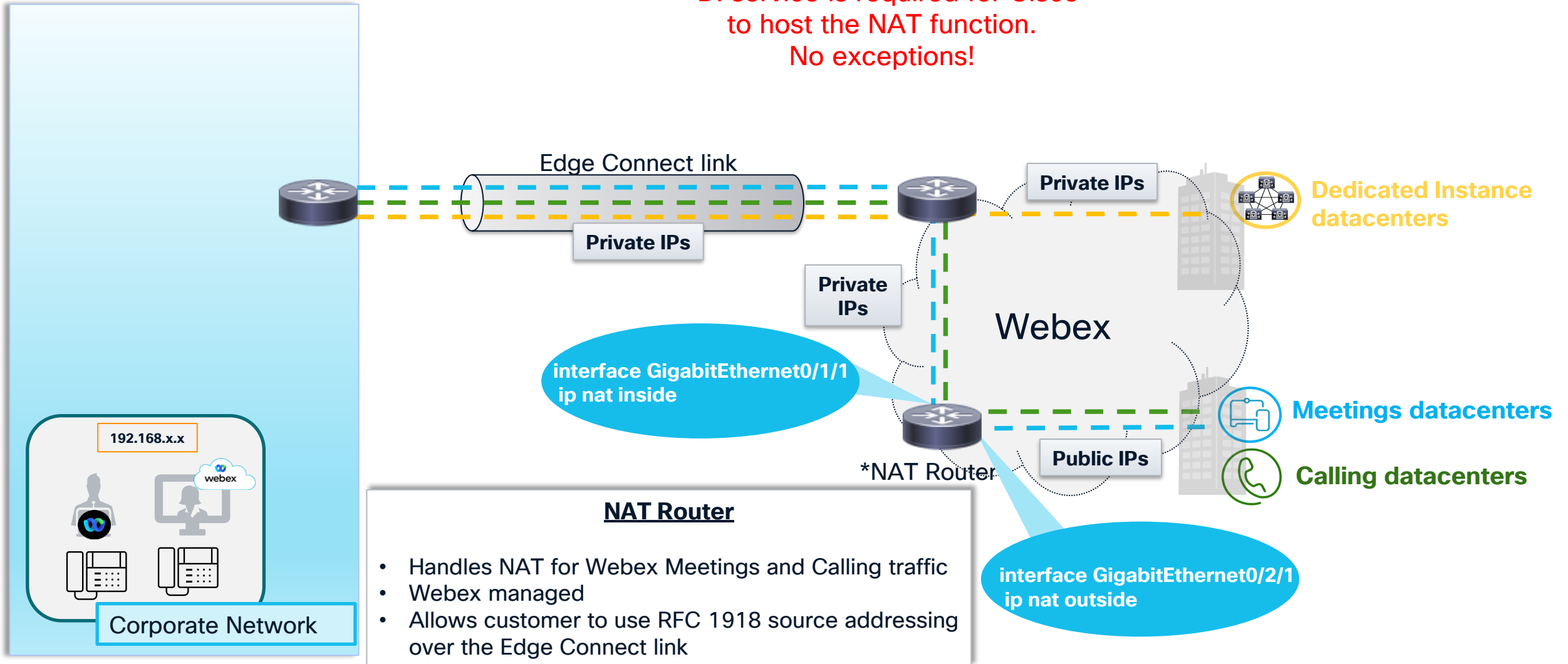
- Uses RFC 1918 source address from the phone to the call control.
- Public IP address used between CE and PE router for BGP Peering.
- Advertised prefix in BGP peering is the default route (0.0.0.0).

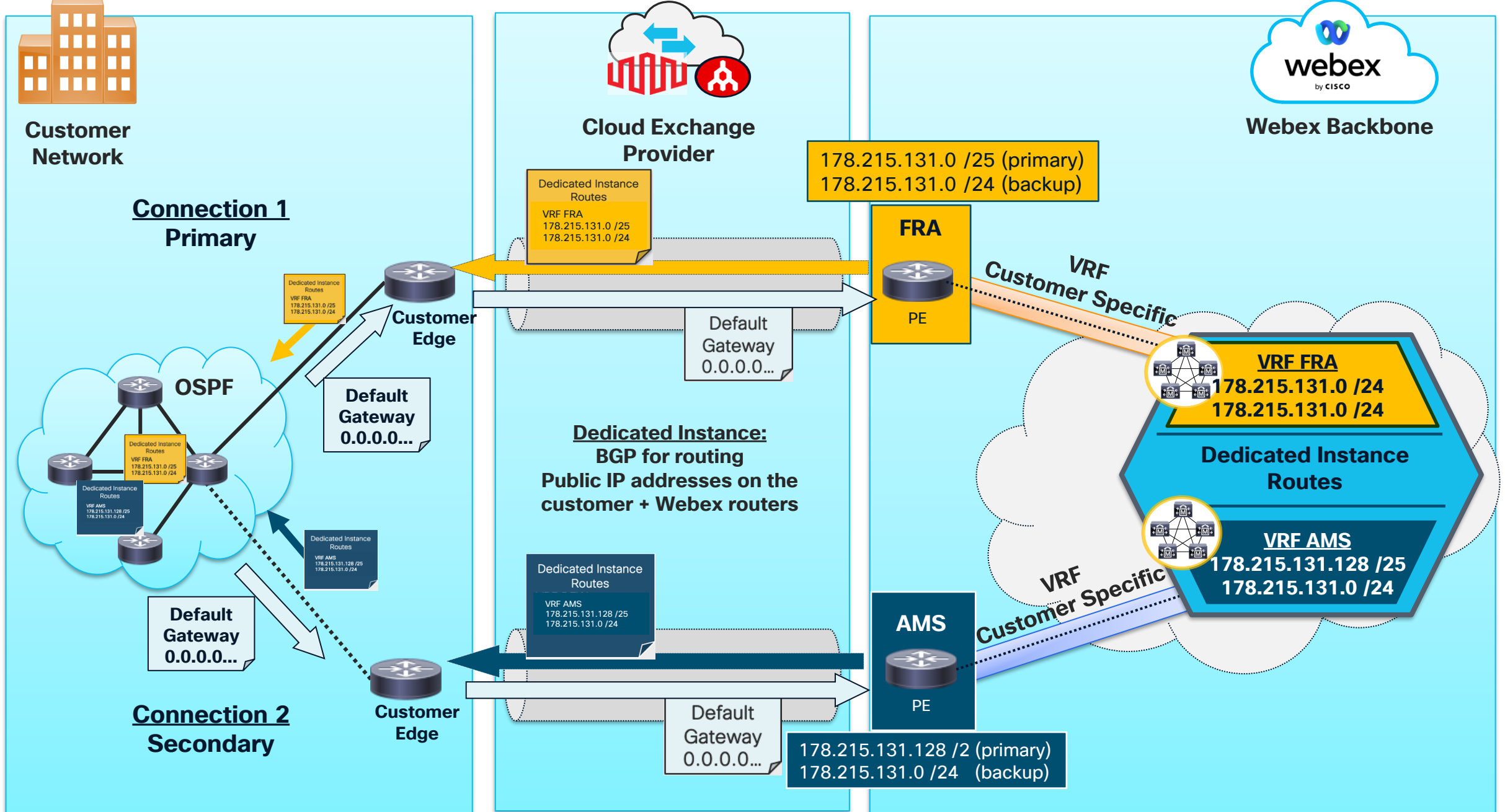
Dedicated Instance With Meetings and Calling-MT - how?

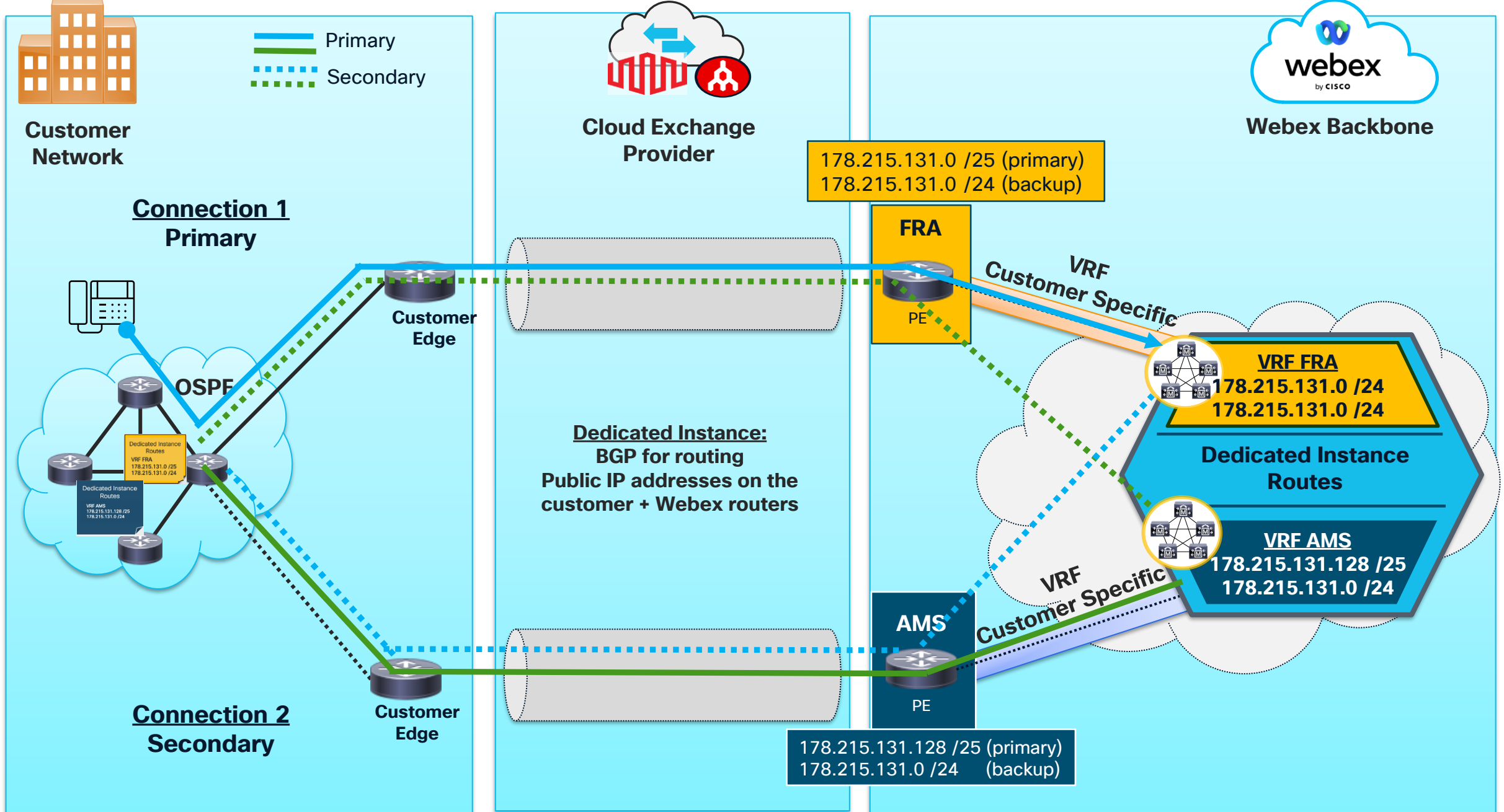


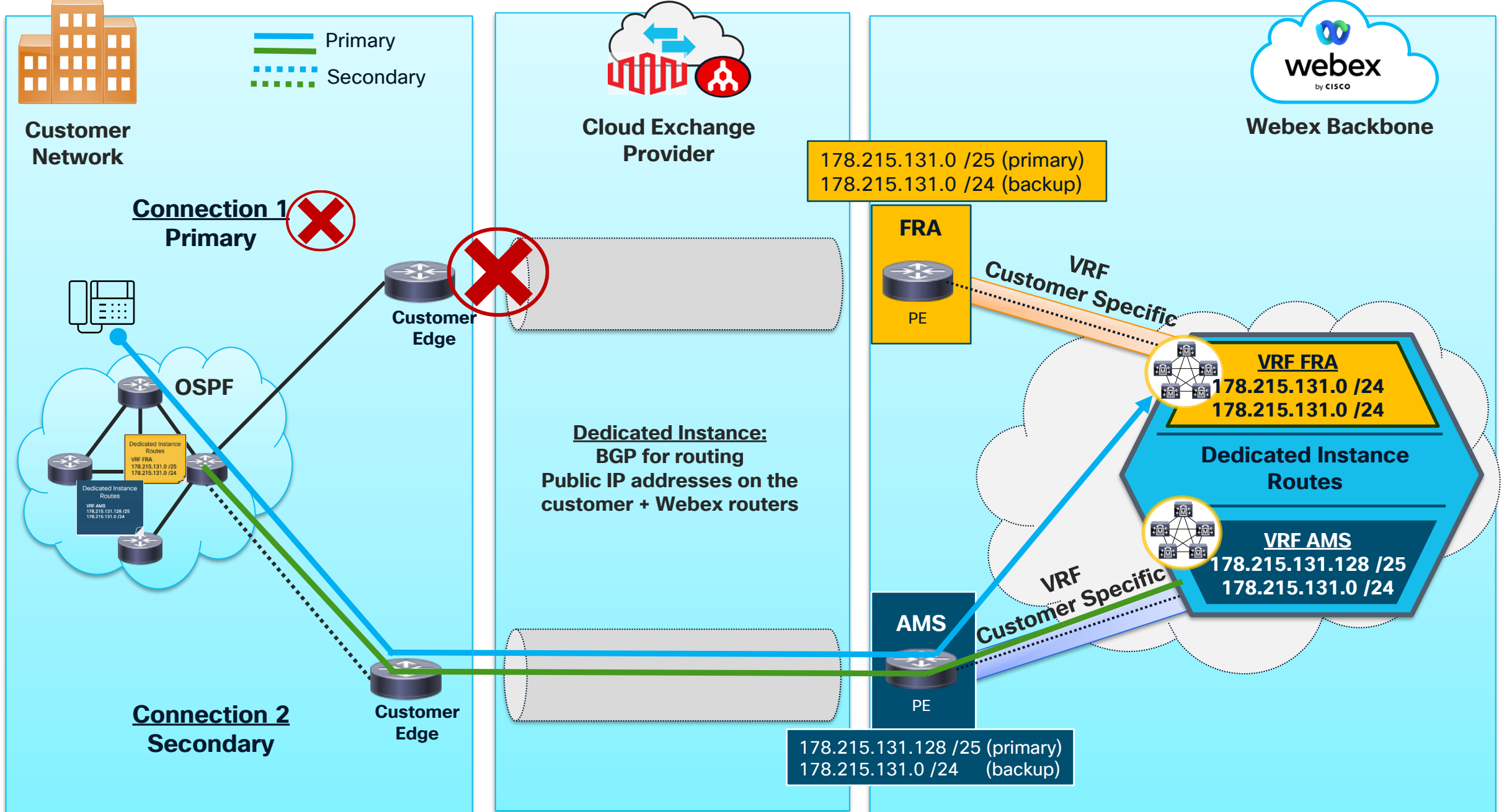
Meetings, Calling and Dedicated Instance

*DI service is required for Cisco
to host the NAT function.
No exceptions!









Regional IP subnets for Dedicated Instance

EMEA	DI IP subnets
LON	178.215.138.0 /25

AMS	178.215.138.128 /25
-----	---------------------

EMEA	DI IP subnets
LON	178.215.135.0 /25

MAN	178.215.135.128 /25
-----	---------------------

Europe	DI IP subnets
FRA	178.215.131.0 /25

AMS	178.215.131.128 /25
-----	---------------------



Regional IP subnets for Dedicated Instance



North America	DI IP subnets
LAX	69.168.17.0 /25
IAD	69.168.17.128 /25

DI Peering Locations

Regional IP subnets for Dedicated Instance

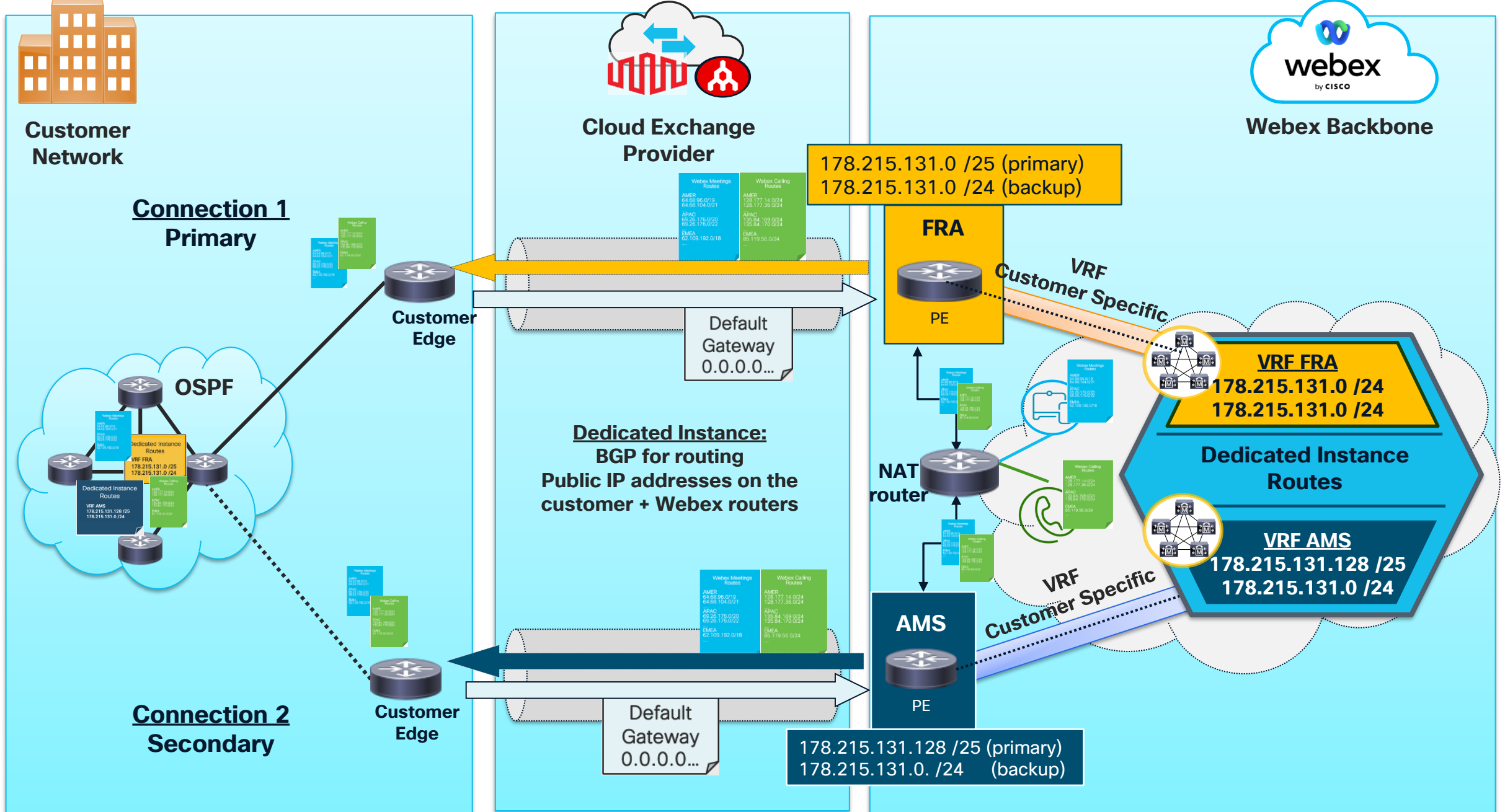
APJC	DI IP subnets
SIN	103.232.71.0 /25
NRT	103.232.71.128 /25

Australia	DI IP subnets
MEL	178.215.128.0 /25
SYD	178.215.128.128 /25



DI Peering Locations

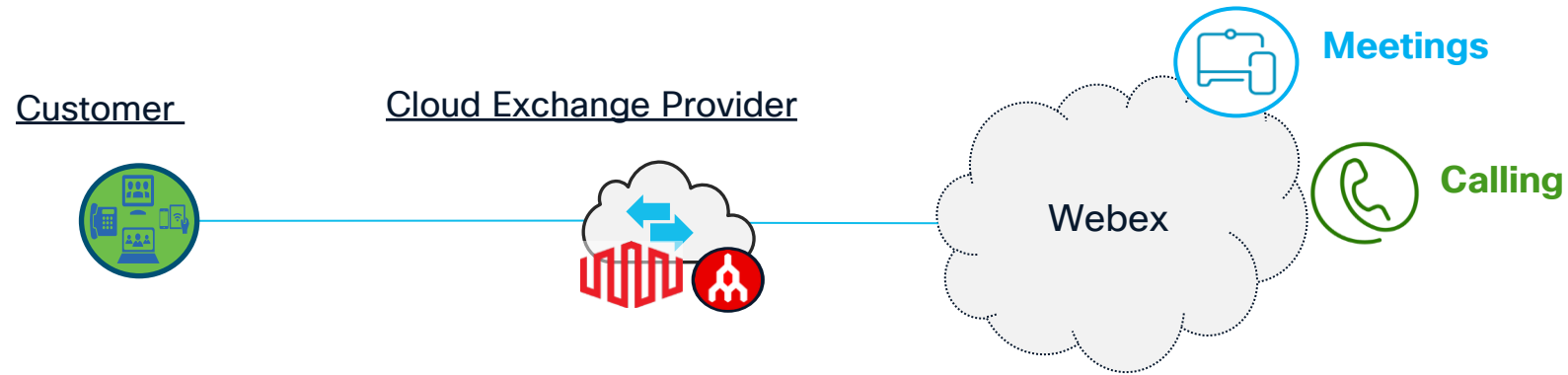
Note: 3 letter names represent the airport code
DI documentation uses TKY for Tokyo, not NRT 🙋



**Adding Dedicated Instance to
an existing Edge Connect for
Meeting and Calling link**

Scenario

- Customer has an existing Meetings and Calling Edge Connect link.



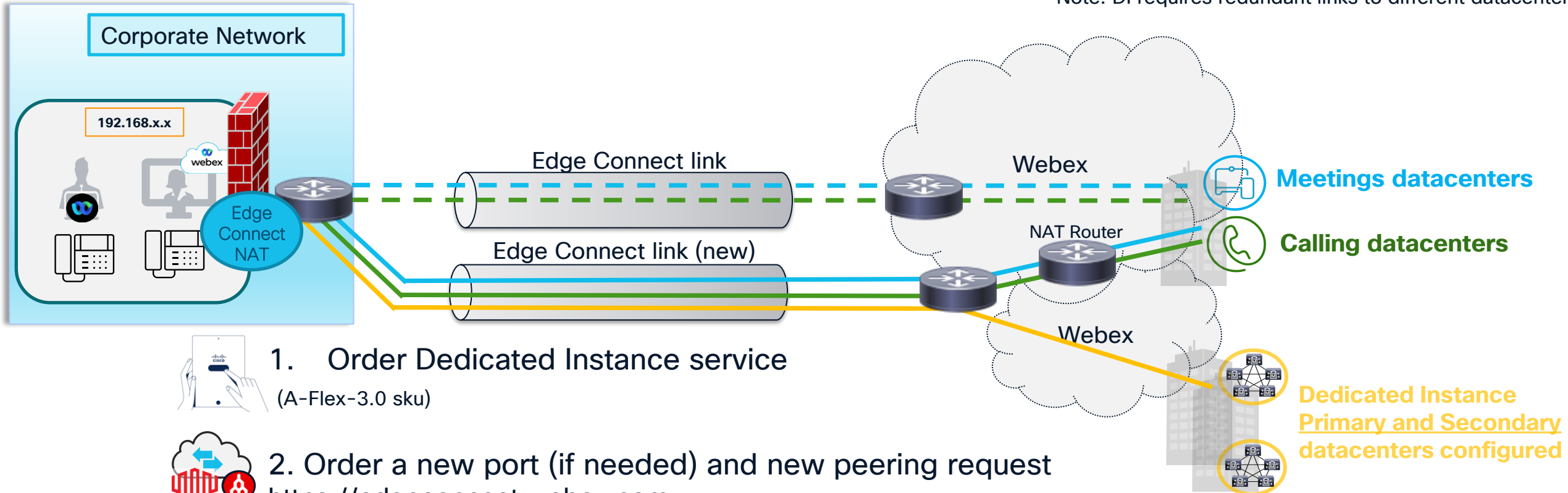
- Now wants to add all the services, Meetings, Calling-MT, and Dedicated Instance over a single peering, the Edge Connect for DI architecture.
- How is this accomplished?

Adding Dedicated Instance to an existing link



Represents the customer

Note: DI requires redundant links to different datacenters



1. Order Dedicated Instance service
(A-Flex-3.0 sku)



2. Order a new port (if needed) and new peering request
<https://edgeconnect.webex.com>



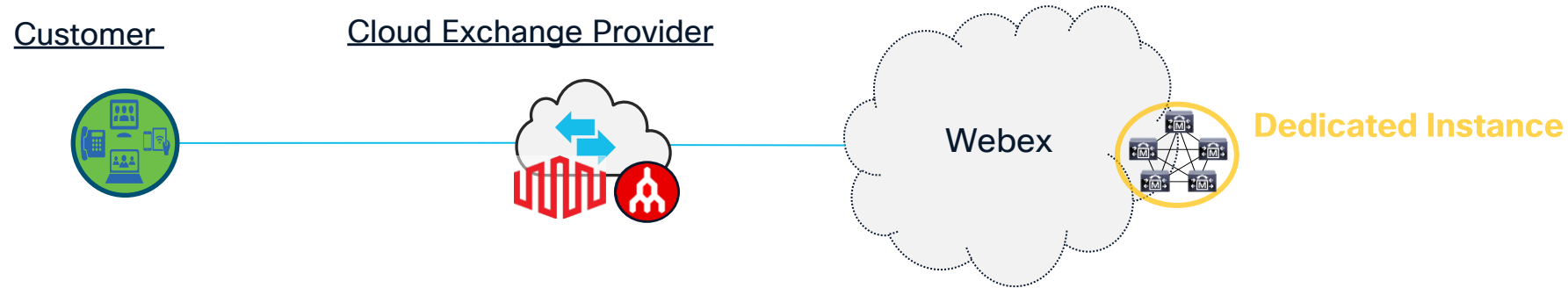
3. Everyone provisions their routers for connectivity



4. Decommission request for the original Meetings and Calling connection.
 - Send an email to csg-peering@cisco.com to terminate the Edge Connect connection. Provide the circuit id and location (source and destination)
 - Delete the virtual connection in the cloud exchange provider portal

Scenario

- Customer has an existing (pre-Edge Connect) Dedicated Instance link.

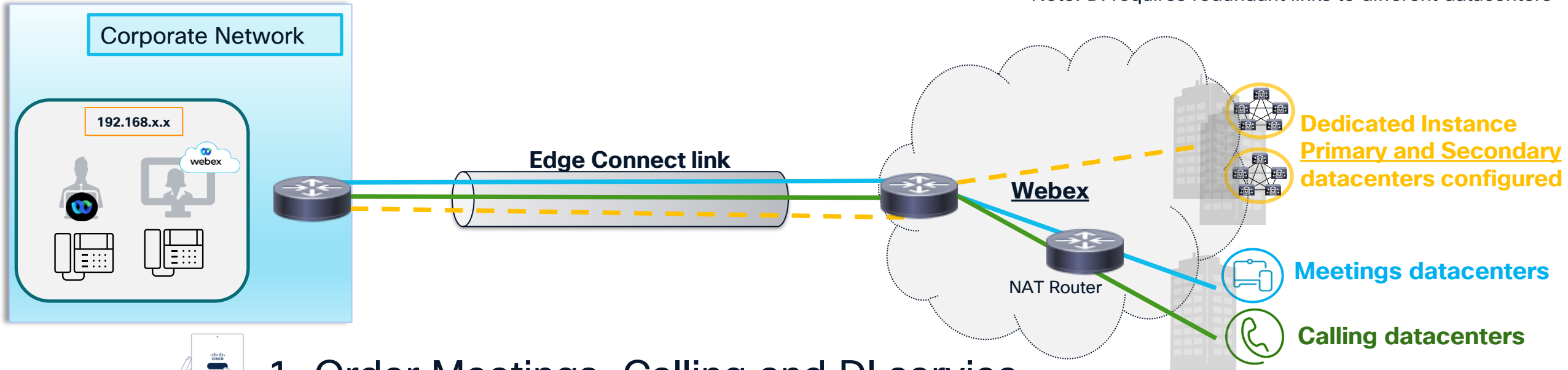


- Now wants to add all the services, Meetings, Calling-MT, and Dedicated Instance over a single link, the Webex Edge for DI architecture.
- How is this accomplished?

Adding Meeting and Calling-MT to an existing DI link

 Represents the customer

Note: DI requires redundant links to different datacenters



1. Order Meetings, Calling and DI service
(A-Flex3-SKU, if applicable)



2. Open a TAC case for upgrade request, escalate to BU.



3. Coordinate time for upgrade to be provisioned and configured.

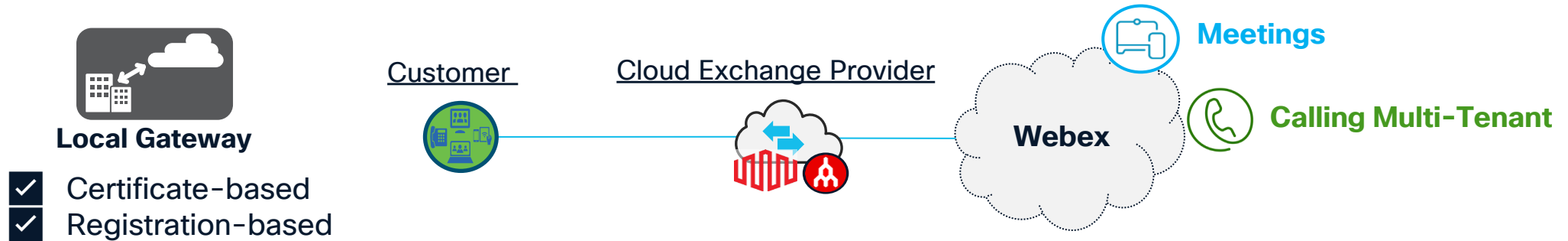


4. Test connectivity and verify routes are being passed via BGP.

Miscellaneous Topics

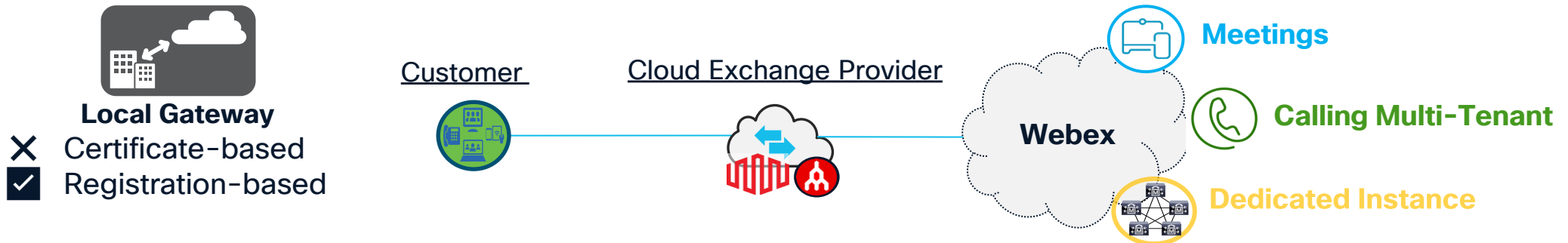
Webex Calling Multi-Tenant and Local Gateway Registration

- Within Webex Calling Multi-Tenant, there are two options for premises-based PSTN: registration-based Local Gateway (LGW) and Certificate-based Local Gateway.
- To reach the Certificate-based LGW, Webex Calling Multi-Tenant requires a Fully Qualified Domain Name (FQDN) for the local gateway. This FQDN must correspond to a public IP address assigned to that local gateway. Cisco Unified Border Element (CUBE), when configured as a local gateway, can have a private IP.
- In the Edge Connect for Meetings & Calling architecture, where the customer manages the NAT pools, the solution will function correctly because the FQDN can resolve appropriately from the Public to Private IP address.



Webex Calling Multi-Tenant and Local Gateway Registration

- Within Webex Calling Multi-Tenant, there are two options for premises-based PSTN: registration-based Local Gateway (LGW) and Certificate-based Local Gateway.
- To reach the Certificate-based LGW, Webex Calling Multi-Tenant requires a Fully Qualified Domain Name (FQDN) for the local gateway. This FQDN must correspond to a public IP address assigned to that local gateway. Cisco Unified Border Element (CUBE), when configured as a local gateway, can have a private IP.
- In the Edge Connect for DI architecture (Meetings, Calling Multi-Tenant, and Dedicated Instance), the customer does not have control over the NAT pool, as it is managed by Webex. Consequently, the customer cannot utilize the Certificate-based Local Gateway option for Webex Calling Multi-Tenant in the Edge Connect for DI architecture



Webex Calling Multi-Tenant and Local Gateway Registration

- Solution: Two different connections via the cloud exchange provider with different workloads

Connection #1 - Meetings and Calling-MT architecture

Connection

1



Local Gateway



Certificate-based



Registration-based

Customer



Cloud Exchange Provider



Meetings



Calling Multi-Tenant

Connection #2 - DI only architecture

Connection

2

Customer



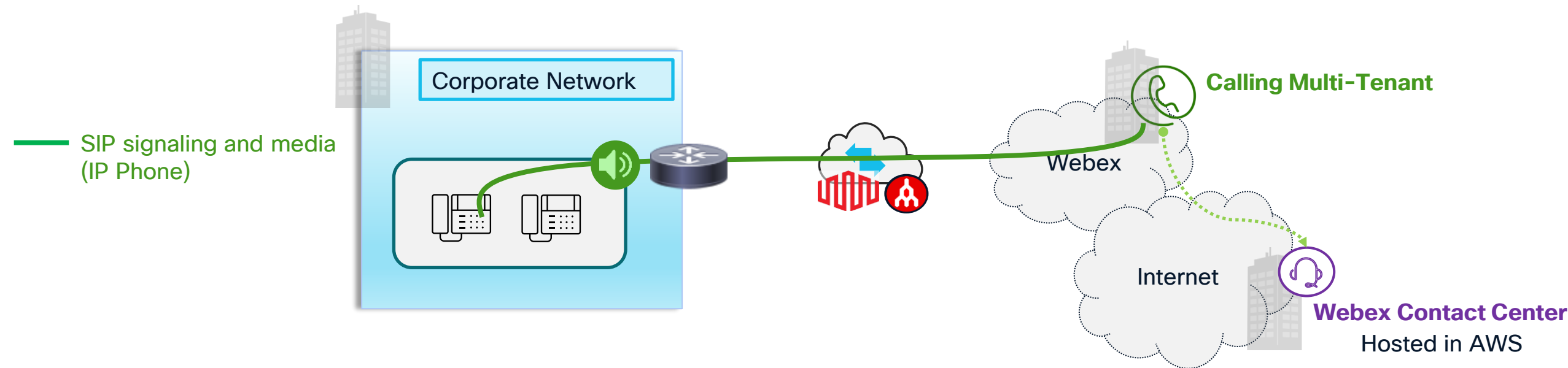
Cloud Exchange Provider



Dedicated Instance

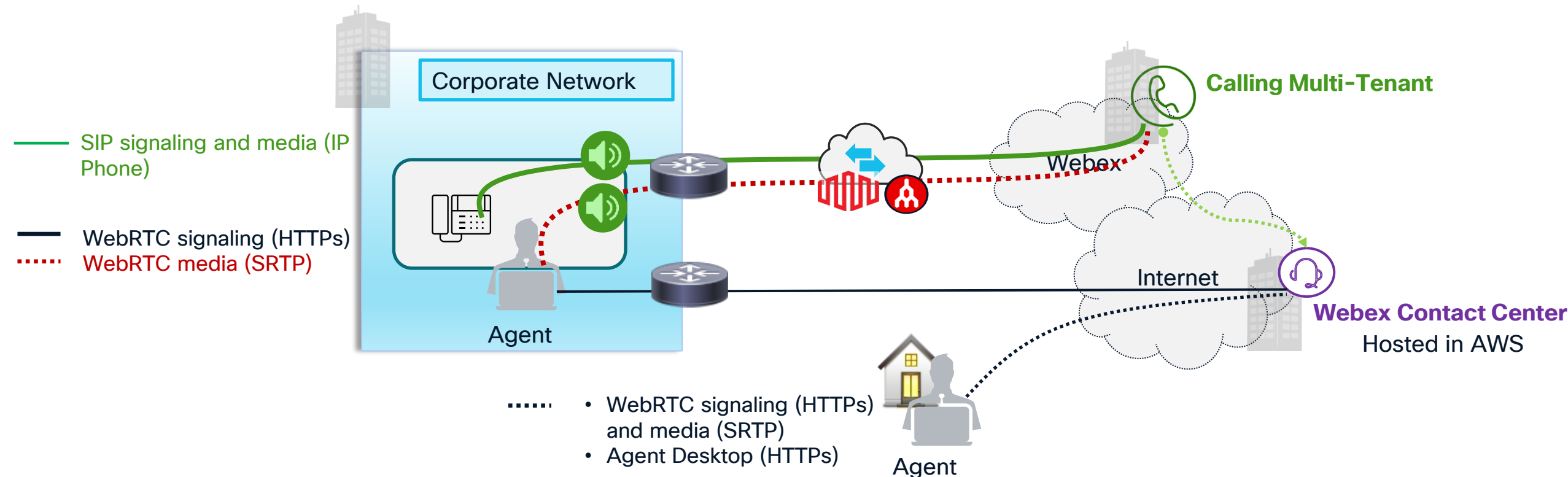
Webex Contact Center with Edge Connect

- Webex Contact Center (WxCC) is a multi-tenant cloud solution.
- In a Webex Contact Center scenario all the Webex Calling Multi-Tenant media traffic will traverse the Edge Connect link, either Edge Connect for Meetings & Calling or Edge Connect for DI architectures, and that audio traffic will be routed to the Webex Contact Center service.

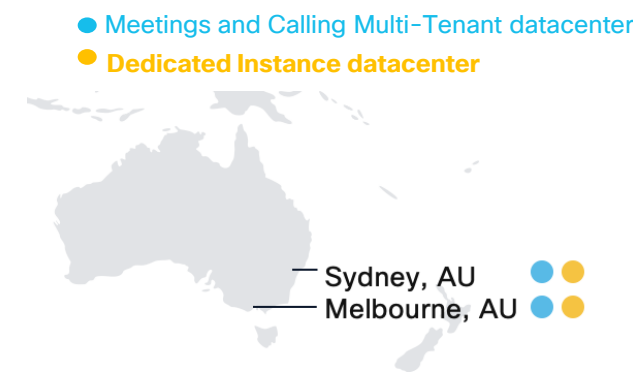


Webex Contact Center with Edge Connect

- Other flows for the Webex Contact Center solution, such as Agent Desktop screens or WebRTC, will depend on where the agent is located. If on the corporate network, then WebRTC media will use the Edge Connect link and signaling will use the Internet. All other corporate or remote agent traffic will use the Internet connection.



Australia datacenter connectivity

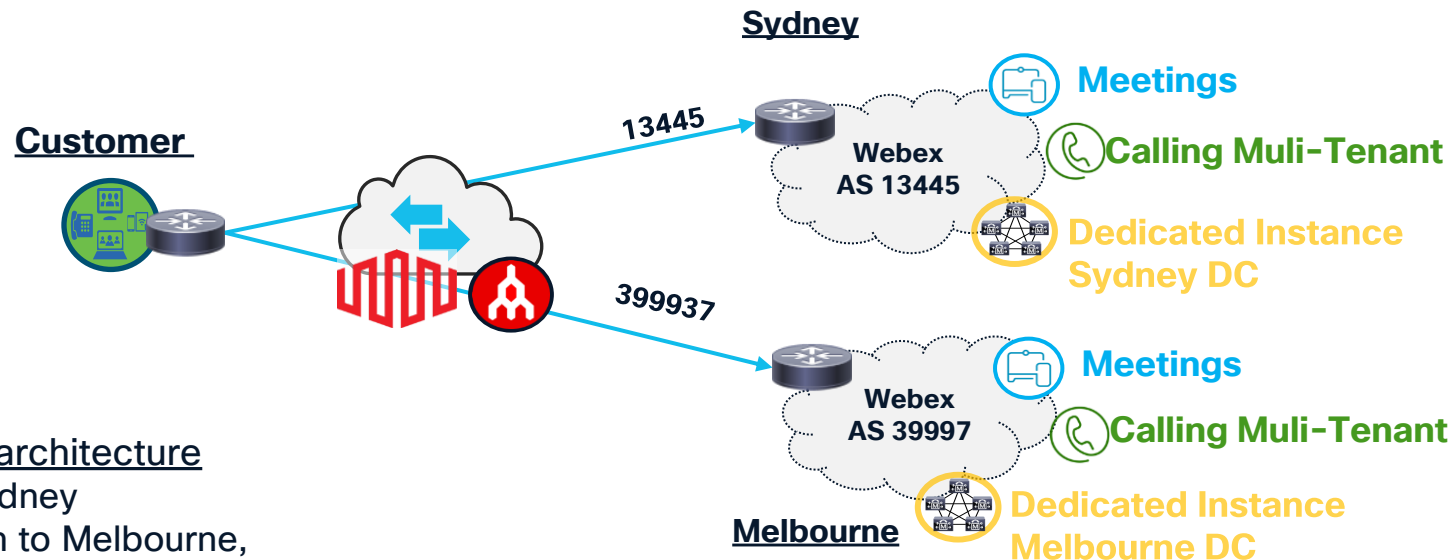


Sydney, AU

- Meetings, Calling Multi-Tenant, and Dedicated Instance are available in the datacenter
- Webex backbone has connectivity into Sydney and uses BGP AS 13445.

Melbourne, AU

- Meetings, Calling Multi-Tenant, and Dedicated Instance is available in the datacenter
- Melbourne is currently not connected to the Webex backbone and thus why the BGP AS 399937 is different for that connection for Dedicated Instance.



Redundancy for Edge for DI architecture

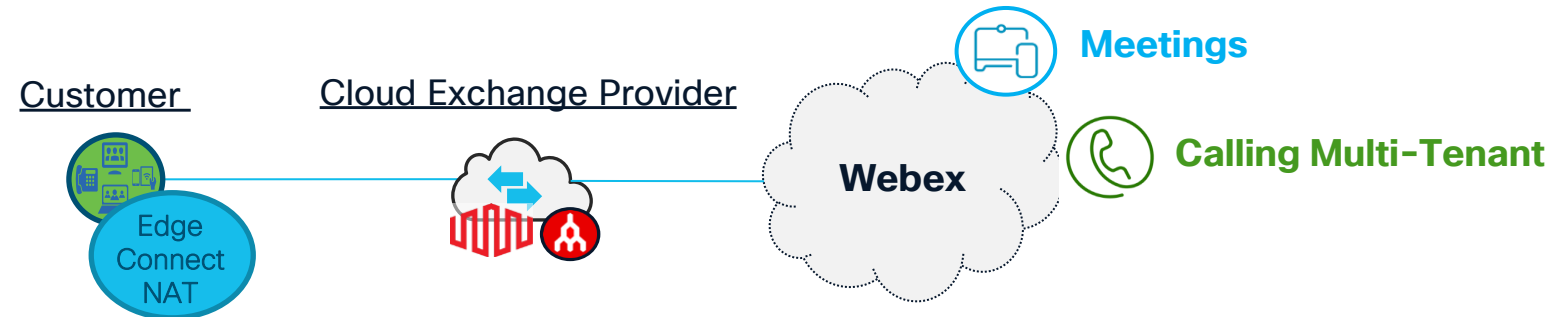
1. Order a connection to Sydney
2. Order another connection to Melbourne, but this is only for Dedicated Instance traffic

Architecture differences

	Edge Connect for Meetings & Calling architecture	Edge Connect for DI architecture
Meetings	Yes	Yes
Calling Multi-Tenant	Yes	Yes
Dedicated Instance (DI)	No	Yes
Equinix	Yes	Yes
Megaport	Yes	Yes
Customer manages NAT pool	Yes	No
Webex manages NAT pool	No	Yes
# of connections required	1	2
Customer provided public IP addresses (/30 or /31) for edge routers	Yes	Yes
BGP Public or Private ASN	Yes	Yes
Status	General Availability	General Availability

Ordering/Provisioning for Edge Connect

Customer Requirements – Meeting and Calling-MT



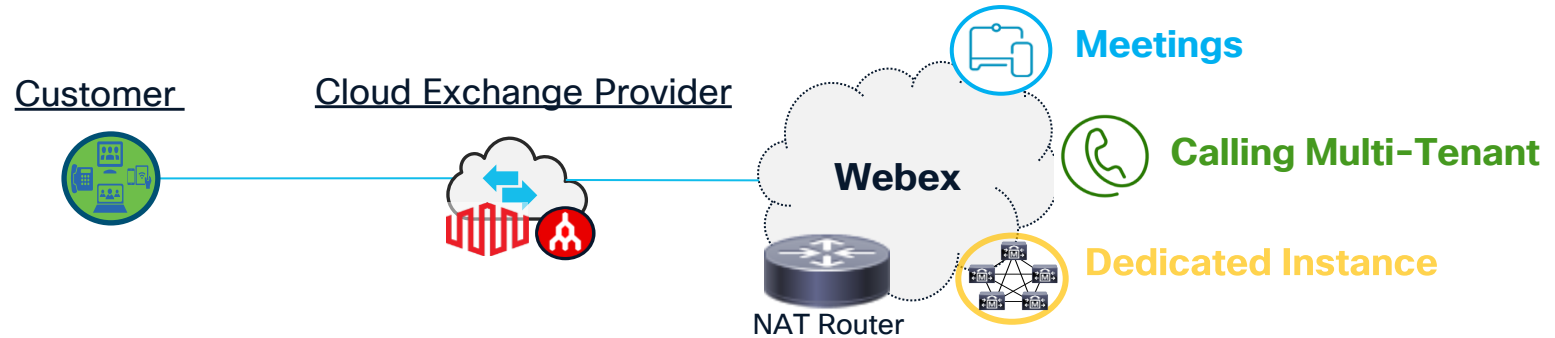
IP Addressing

- Customer owned public IP - /30 or /31 for BGP peering
- Private or Public BGP ASN
- Max length prefix that Webex advertises is /24
- The maximum number of routes Webex accepts is 100
- Customer has NAT pool(s) configured for Edge Connect

IP Addressing

- Cisco recommends that customers allow 500 routes from Webex on the BGP peering as the number of routes that Webex advertises may change over time. Meeting and Webex Calling Multi-tenant routes are sent to the customer.
- Bidirectional-Forwarding Detection (BFD) is supported and enabled with a default value of 300 ms x 3 on the Webex Edge routers

Customer Requirements – Meeting, Calling-MT, DI



IP Addressing

- Customer owned public IP - /30 or /31 for BGP peering
- Private or Public BGP ASN
- **Customer advertises default gateway (0.0.0.0) to Webex for Dedicated Instance**
- **No customer configured NAT pool(s) for service**

IP Addressing

- Cisco recommends that customers allow 500 routes from Webex on the BGP peering as the number of routes that Webex advertises may change over time. Meeting, Webex Calling Multi-tenant and DI routes are sent to the customer.
- Bidirectional-Forwarding Detection (BFD) is supported and enabled with a default value of 300 ms x 5 on the Webex Edge routers

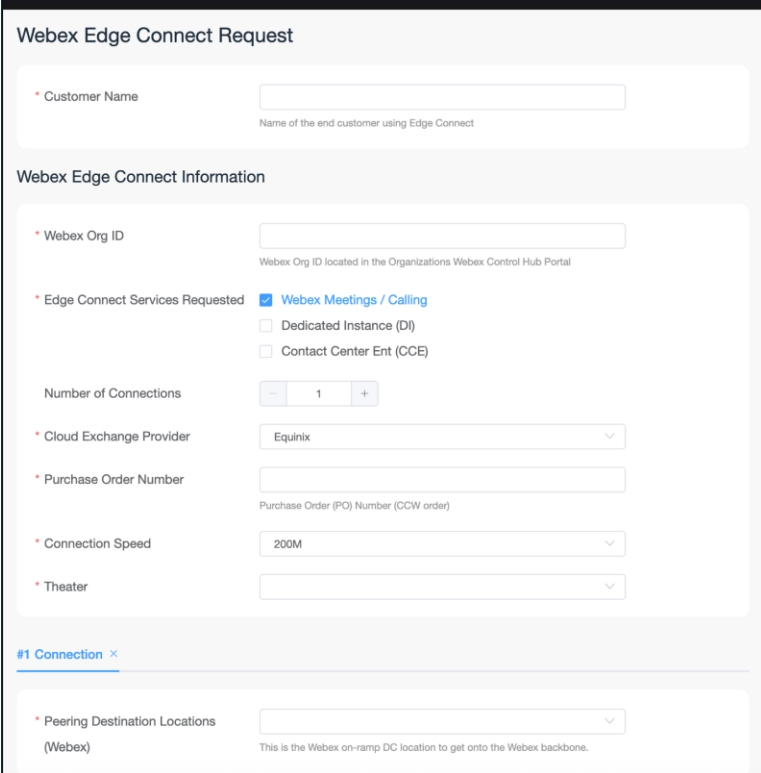
Edge Connect Request and Provisioning Process

When placing an order for an Edge Connect for Meetings and Calling or Edge Connect for Dedicated Instance link, it is best to understand the overall process. Below outlines the major items that need to be done during the ordering and provisioning process.

1. Customer needs to have an account and port purchased with Equinix or Megaport. This is done with Equinix and Megaport directly.
2. Purchase Cisco Webex Edge offering.
3. All sales, customer, partner, and technical information is inputted into the Cisco Edge Connect Request portal webpage. (<https://edgeconnect.webex.com>)
4. Webex edge routers are configured based on the information provided, along with the appropriate backbone connectivity to the different datacenters.
5. Customer receives an email from csg-peering@cisco.com with a service key with a service key within 10 business days of the submission. The email is sent to the "Technical Contact Email Address" inputted in step 3. The customer enters the service key in the Equinix or Megaport website.
6. Customer configures their edge router.
7. IP connectivity is established between the customer router and Webex router.

Edge Connect Provisioning Portal

- Webpage to enter requests for Edge Connect provisioning: <https://EdgeConnect.webex.com>
- Use Webex credentials
- Captures all the information needed to provision the Edge Connect link(s)
- All Edge Connect offerings use this portal
 - ✓ Edge Connect for Meetings and Calling
 - ✓ Edge Connect for Dedicated Instance (Meetings, Calling-MT and DI)
 - ✓ Edge Connect for Dedicated Instance (DI only)
- Supports Megaport and Equinix fabric connections



The screenshot displays the 'Webex Edge Connect Request' form. It includes the following fields and options:

- Customer Name:** A text input field with a placeholder 'Name of the end customer using Edge Connect'.
- Webex Edge Connect Information:**
 - Webex Org ID:** A text input field with a placeholder 'Webex Org ID located in the Organizations Webex Control Hub Portal'.
 - Edge Connect Services Requested:** A section with three options: ☒ 'Webex Meetings / Calling', ☐ 'Dedicated Instance (DI)', and ☐ 'Contact Center Ent (CCE)'.
 - Number of Connections:** A numeric input field set to '1' with minus and plus buttons.
 - Cloud Exchange Provider:** A dropdown menu with 'Equinix' selected.
 - Purchase Order Number:** A text input field with a placeholder 'Purchase Order (PO) Number (CCW order)'.
 - Connection Speed:** A dropdown menu with '200M' selected.
 - Theater:** A dropdown menu.
- #1 Connection:** A section header for the first connection.
 - Peering Destination Locations (Webex):** A dropdown menu with a placeholder 'This is the Webex on-ramp DC location to get onto the Webex backbone.'

Demo – New Portal

Edge Connect Request Portal

- Review the request in the webpage and then click “Submit” to enter your provisioning request.
- Once the new request is submitted in the Edge Connect Request portal page, Cisco will take up to 10 business days to complete the provisioning request. Any further communication about the request can be done by emailing csg-peering@cisco.com.
- An email will be sent to the technical contact(s) email address in the request from with a service key/token included. This service key/token needs to be inputted into the Equinix or Megaport portal page for that connection to link the customer side and Webex side vlans on the fabric.

References

Edge Connect Reference Links



Edge Connect

<https://help.webex.com/en-us/article/n68tcpb/Webex-Edge-Connect>



Dedicated Instance (Edge Connect)

<https://help.webex.com/en-us/article/nguhruk/Dedicated-Instance-network-and-security-requirements>



Dedicated Instance Network and Security

<https://help.webex.com/en-us/article/nguhruk/Dedicated-Instance-network-and-security-requirements>



Preferred Architecture

https://www.cisco.com/c/dam/en/us/td/docs/solutions/PA/EdgeConnect/PA_Edge_Connect_Design.pdf



Network requirements

<https://help.webex.com/en-us/WBX000028782/Network-Requirements-for-Webex-Teams-Services>



AS13445 Looking Glass

<https://lg.webex.com/lg/>

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