

# Aviatrix Edge

On

## Equinix NE/ Megaport MVE



# Rise of Hybrid, multi-cloud Why Now?

The rise of hybrid, multi-cloud strategies across industries demands:

- **End-to-End encryption** for data in transit and global scaling
- **Lower latency** and predictable performance
- **Resiliency and Operational efficiency** in these environments.
- Hybrid and multi-cloud environments are moving toward **automated, integrated** solutions to meet these demands.

# Edge – Platform and Features

<https://fabric.equinix.com/ne/new-virtual-device>

**Device Configuration File**  
This file usually includes the license, boot up configuration, Controller IP Address, and encryption key.

test-EQXSVC-cloud-init.txt Remove it here.  
Upload .txt files under 500 KB

**Device Resources**  
Select the appropriate resource below. [Learn More](#)

2 Cores, 4 GB Memory    4 Cores, 8 GB Memory    8 Cores, 16 GB Memory

16 Cores, 32 GB Memory

- **Equinix Network Edge(NE)**  
Aviatrix Edge (2-16 core VMs)
- Transit Edge:
  - 9 WAN Interfaces (max)
  - 1 Mgmt Interface
- Spoke Edge
  - 8 WAN Interfaces (max)
  - 1 Mgmt Interface
  - 1 Lan Interface



<https://portal.megaport.com/mve>

\* MVE Name

\* Size

Service Level Reference [?](#)  
 MVE 2/8  
 MVE 4/16  
 MVE 8/32  
 MVE 12/48

\* Cloud-init File

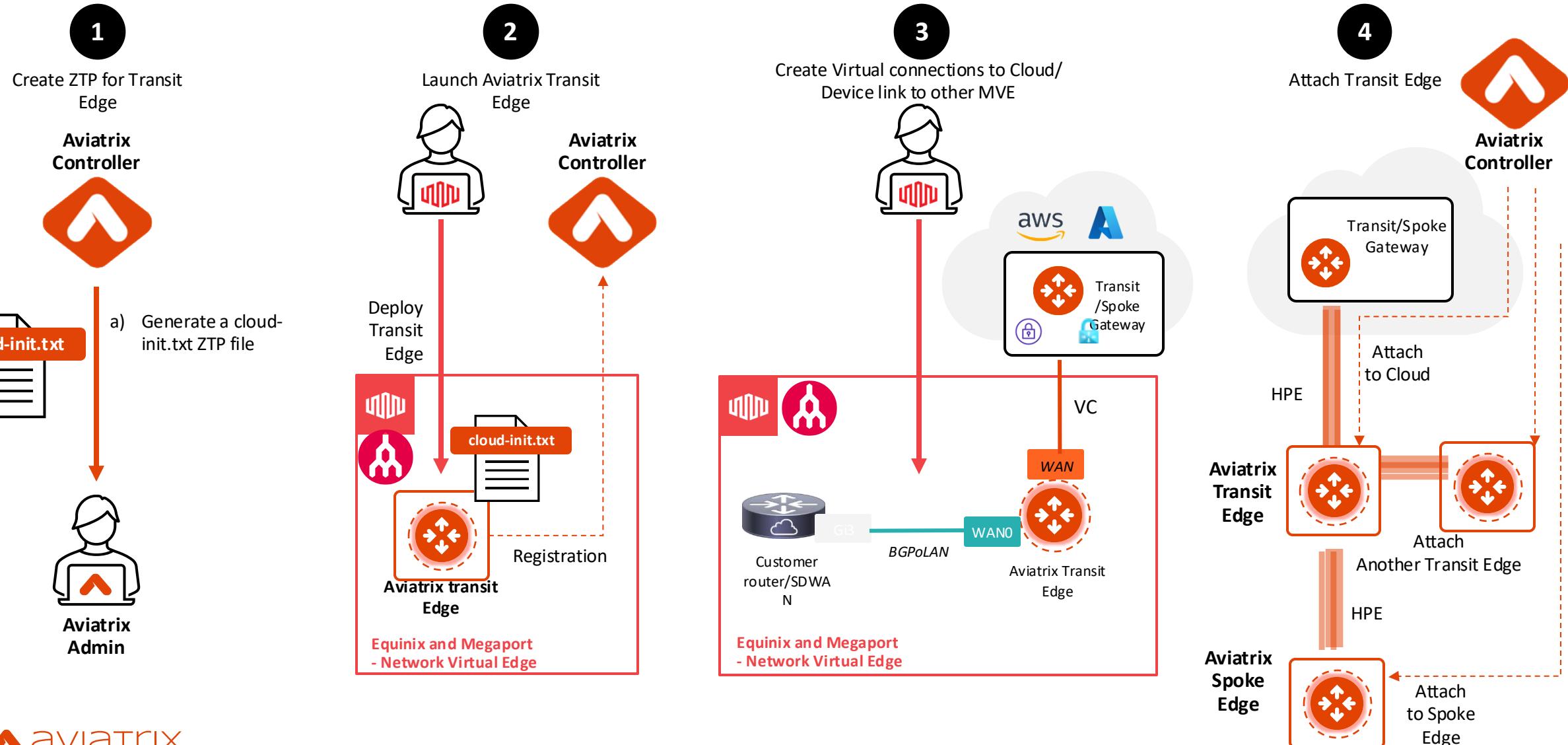
Virtual Interfaces (vNICs)  

0	eth0
1	eth1
2	eth2

- **Megaport Virtual Edge (MVE)**  
Aviatrix edge (2-12 Core VMs)
- Transit Edge:
  - 4 WAN Interfaces (max)
  - 1 Mgmt Interface
- Spoke Edge
  - 3 WAN Interfaces (max)
  - 1 Mgmt Interface
  - 1 Lan Interface

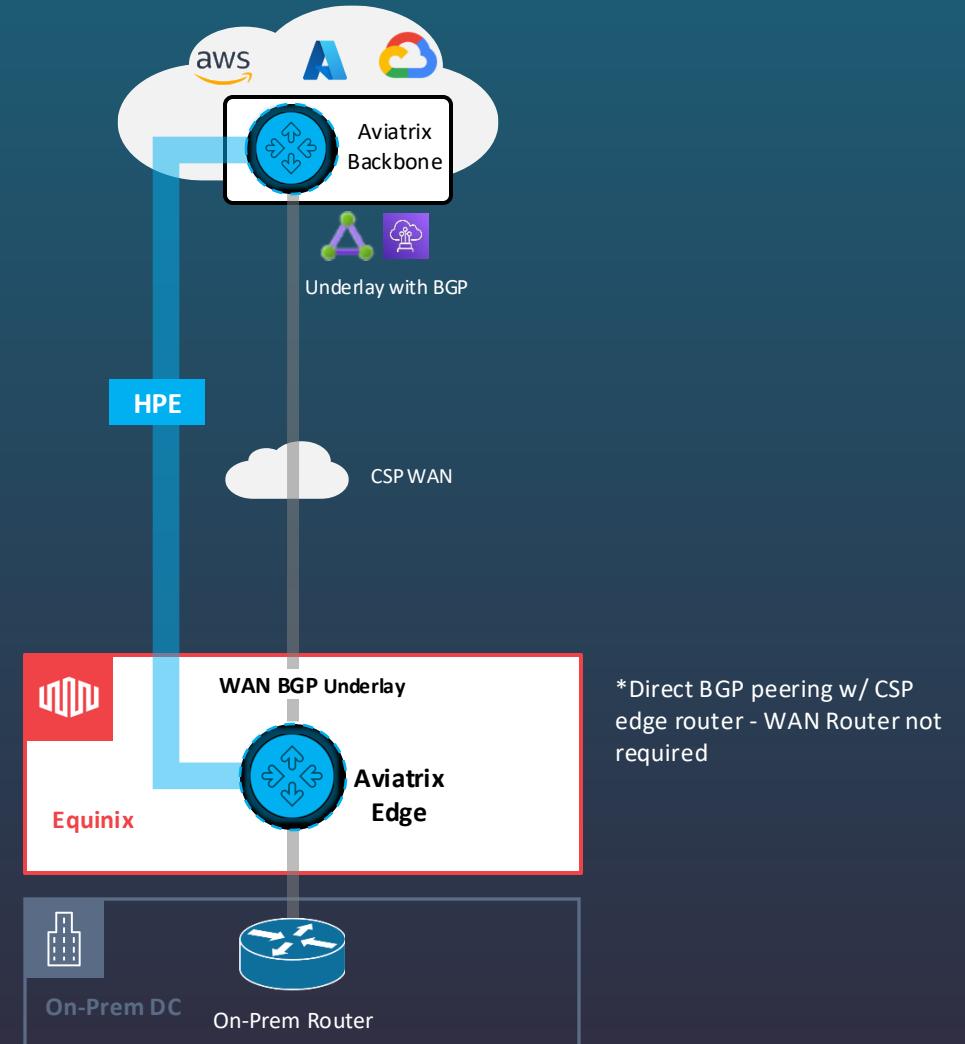
\*Megaport MVE supports 5 VNICs today

# Aviatrix Transit Edge - Equinix and Megaport Deployment Workflow



# Aviatrix Edge on MidMile Providers (Equinix/Megaport) Additional Capabilities

- BGP underlay
- Multi-WAN interface





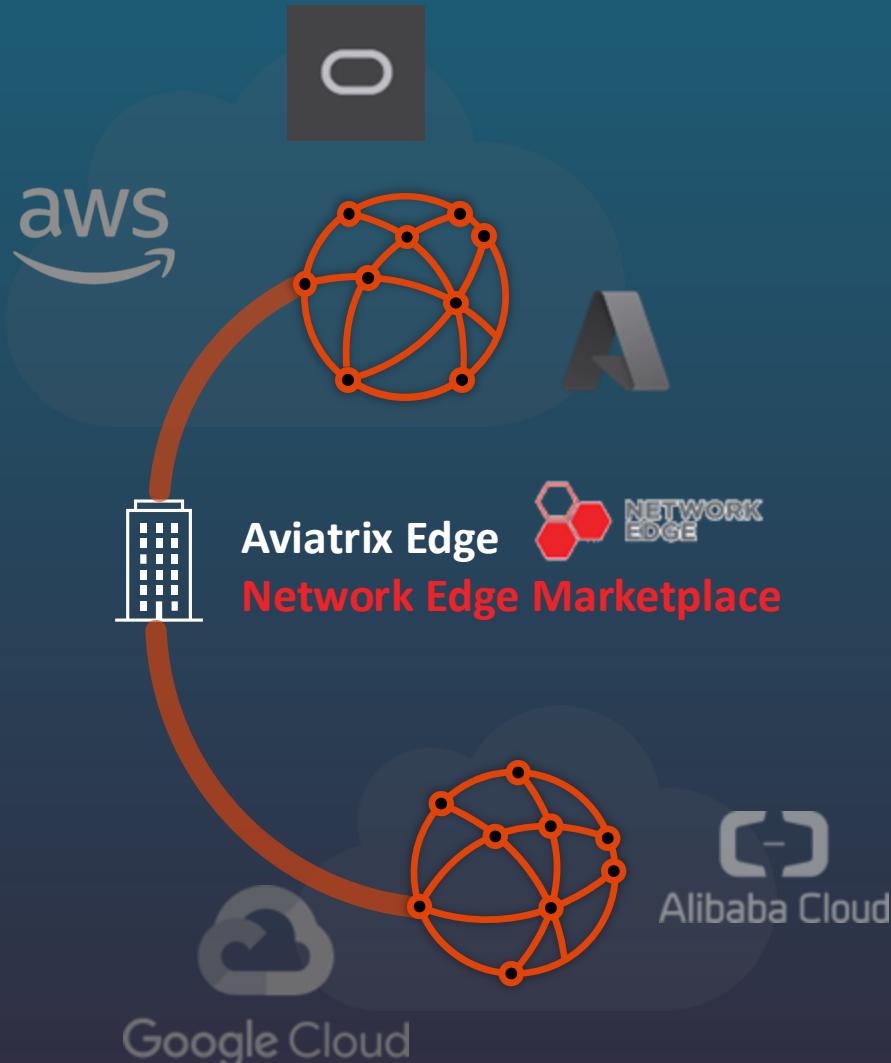
## Aviatrix Edge on **Network Edge**

TM

High Performance Encryption  
for Multicloud Connectivity



# Aviatrix Edge on Network Edge



## What is Aviatrix Edge on Network Edge?

- The Highest Performance Encrypted Connection to Cloud
- Extends the Aviatrix Intelligent Cloud Networking and Security platform to the Equinix Fabric
- Simplifies highly distributed deployments through Equinix cloud adjacent locations.
- Designed for multicloud and hybrid connectivity that provides a consistent architecture across these environments.

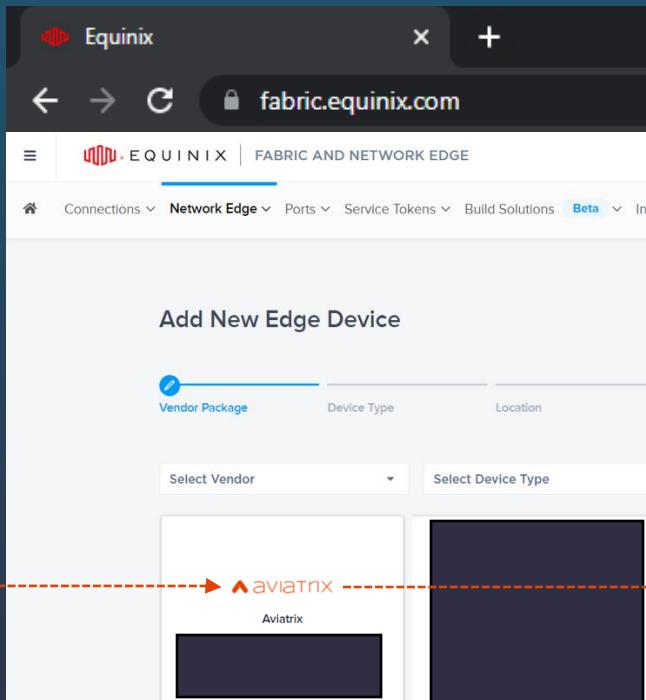
## Why Do Customers Deploy?

- Simplifies deployment of private multicloud connectivity leveraging the Equinix infrastructure.
- Multicloud connectivity over the Internet for backup.
- Accelerates enterprise cloud adoption by removing hardware requirements
- Edge connectivity that is secure, easily deployable, and reliable with visibility and control.
- A seamless operational model and consistent architecture across network edge and multicloud.
- Complete network traffic visibility and granular control across hybrid cloud environments.
- Support for overlapping IP addresses leveraging NAT

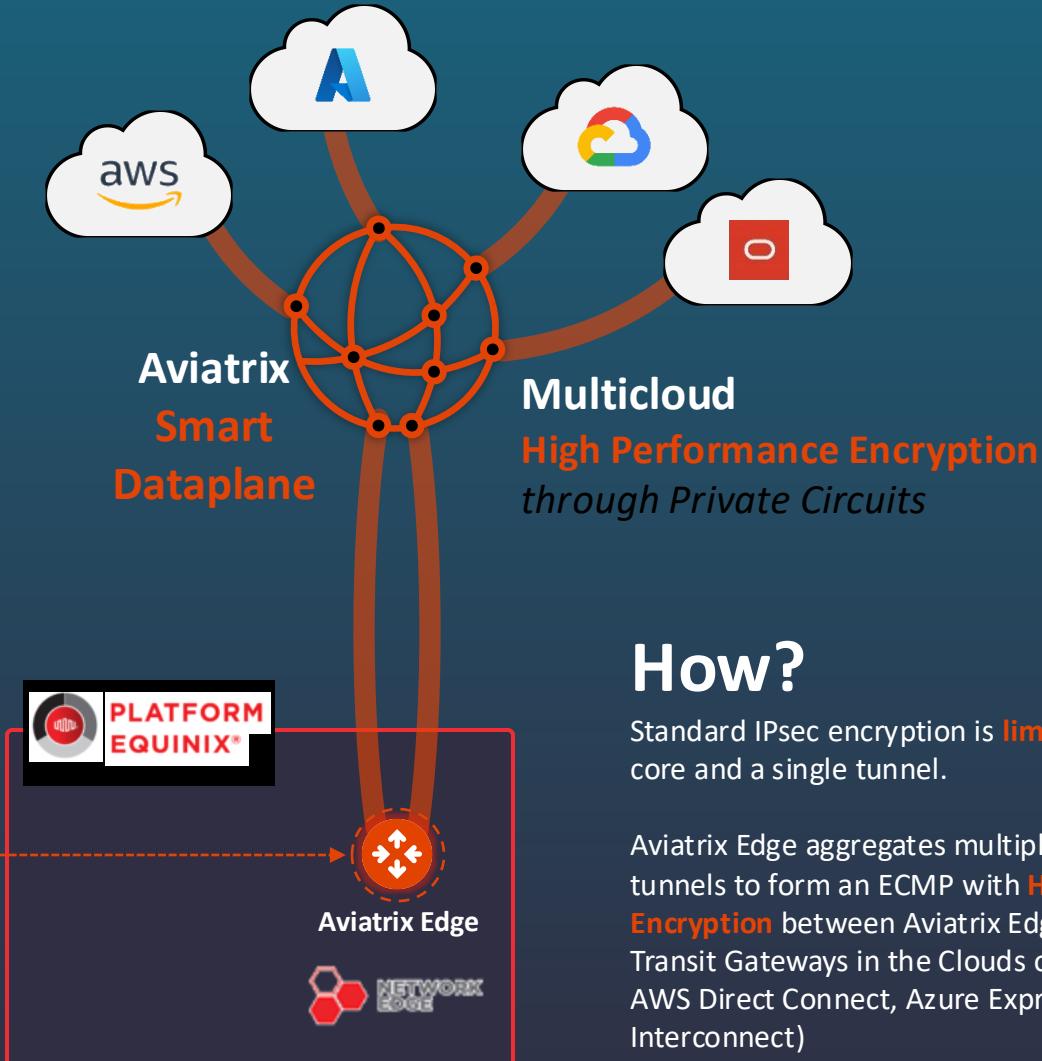
## Requirements?

- Aviatrix Edge launched on Network Edge Marketplace
- Aviatrix Transit Gateway in Cloud – software launched from cloud marketplace

# Aviatrix Edge on Network Edge Marketplace



The screenshot shows the Equinix Fabric interface with the URL [fabric.equinix.com](https://fabric.equinix.com). The main heading is "Add New Edge Device". Below it, there are fields for "Vendor Package", "Device Type", and "Location". Under "Vendor Package", a dropdown menu is open, showing "Select Vendor" and "aviatrix" highlighted with a red arrow. To the right of the dropdown are two empty input fields labeled "Select Device Type".



## How?

Standard IPsec encryption is **limited** to a single processor core and a single tunnel.

Aviatrix Edge aggregates multiple cores and multiple tunnels to form an ECMP with **High Performance Encryption** between Aviatrix Edge in Equinix to Aviatrix Transit Gateways in the Clouds over private circuits (e.g., AWS Direct Connect, Azure Express Route or GCP Cloud Interconnect)

# Enabling additional WAN interface.

## Create Spoke Gateway: Interface Configuration

STEP 1  
Gateway  
Configuration

STEP 2  
Interface  
Configuration

Supported Interface Configurations: 1-8 WANs, 1 LAN and 1 MGMT.

WAN (selected) LAN 1 MGMT 1 + WAN Interface

Interface Labels BGP Off

WAN 0 Primary Gateway Interface CIDR Default Gateway IP Public IP Optional Discover

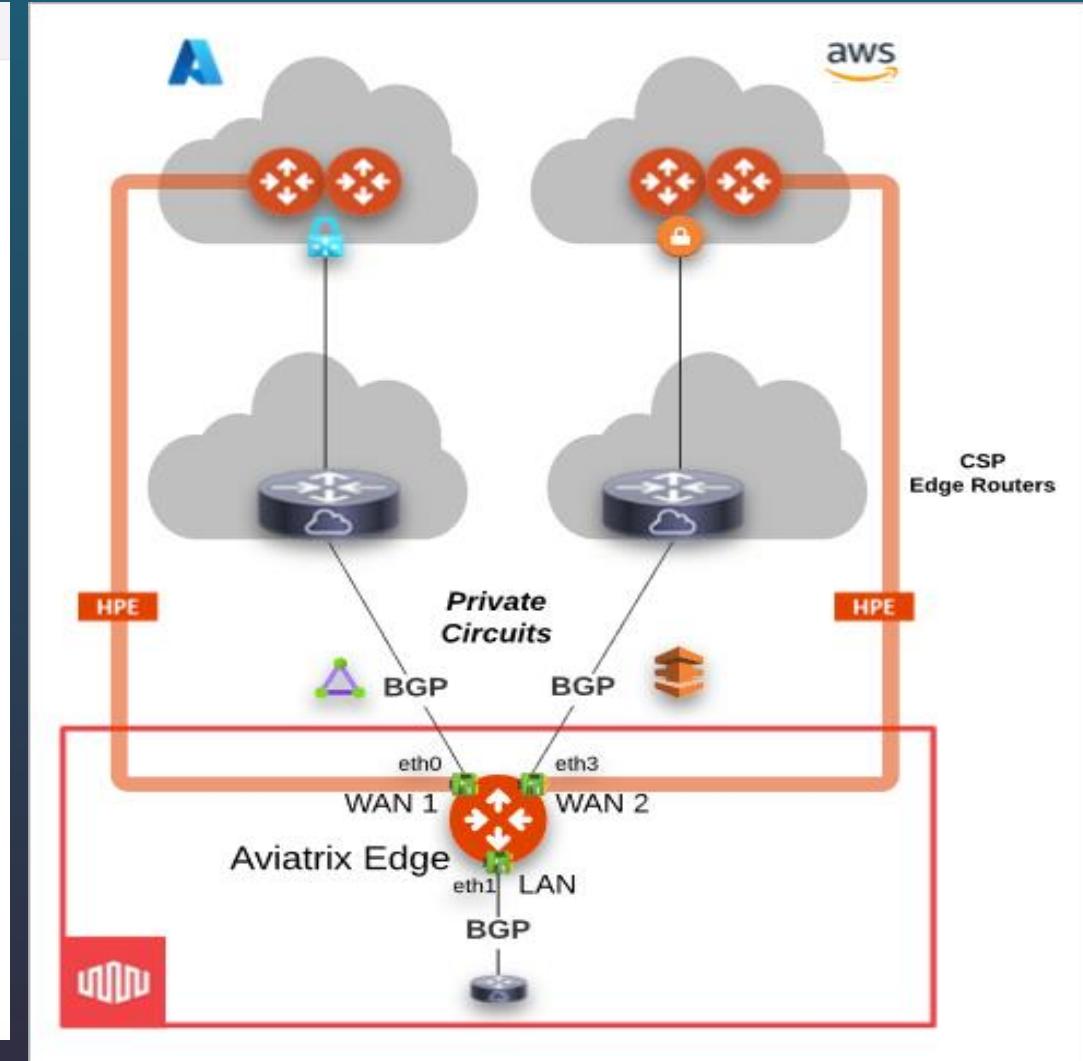
Interface Labels BGP On

WAN 1 Primary Gateway Interface CIDR Link-Local Underlay CIDR Default Gateway IP Public IP Optional Discover

BGP Local ASN Remote ASN Local LAN IP Remote LAN IP Password

Cancel Done

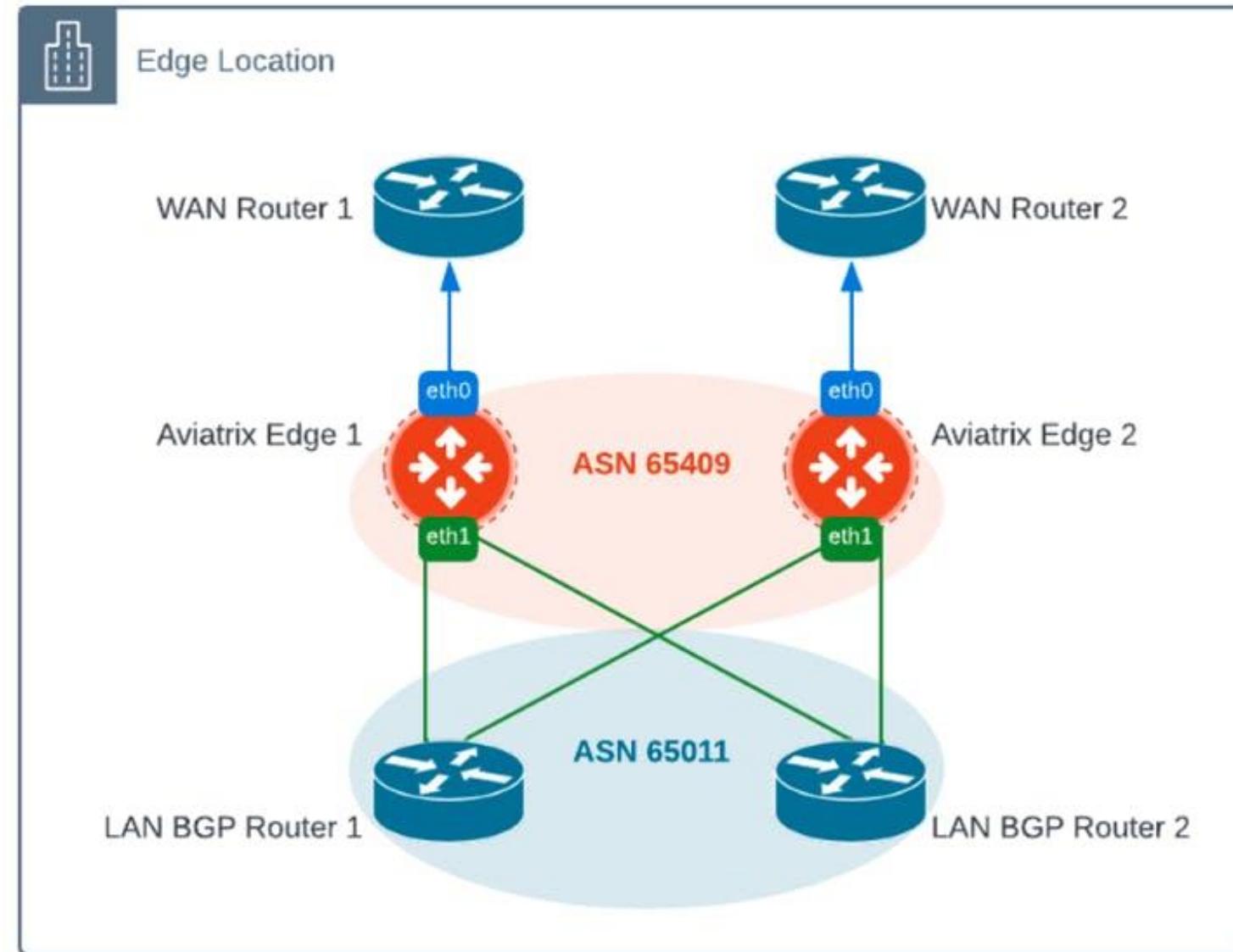
Back



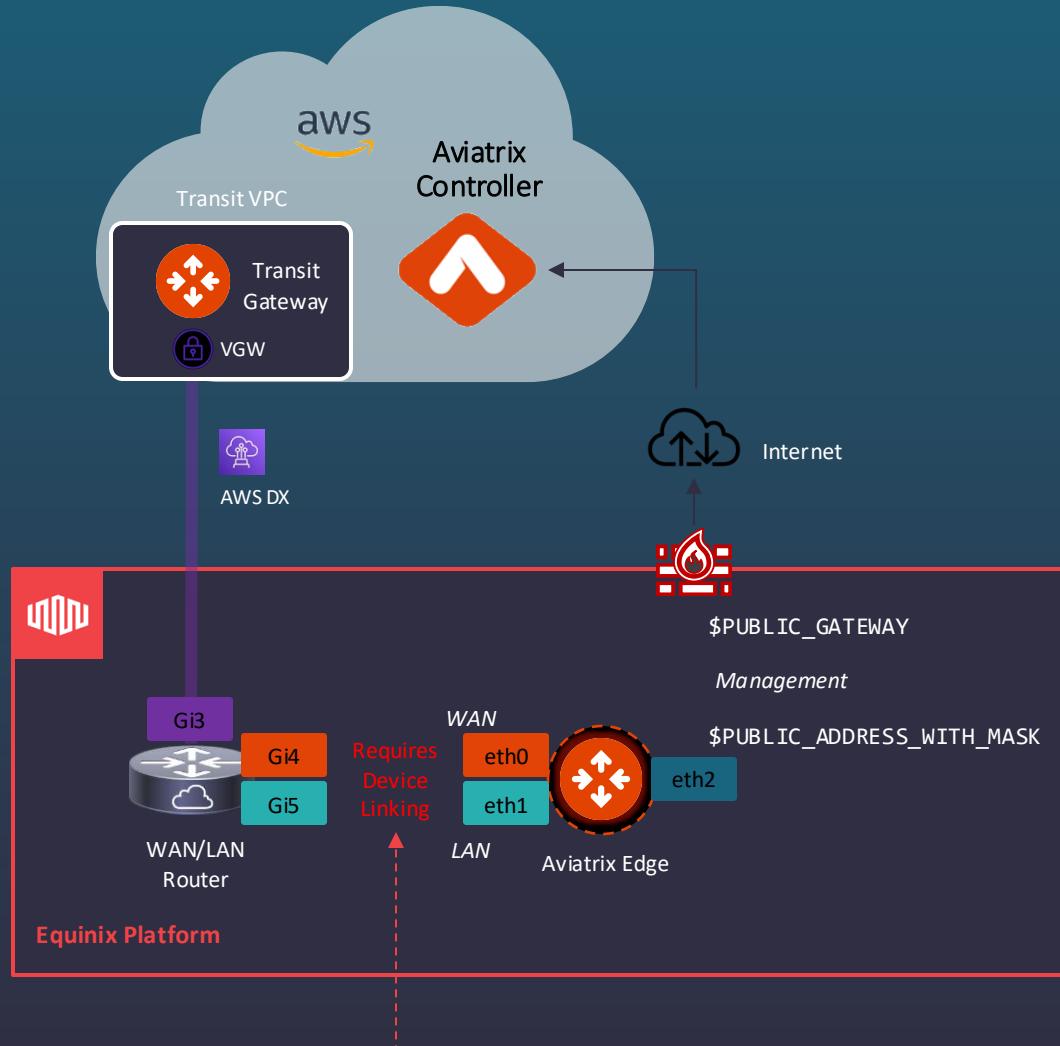
## BGP ActiveMesh at Edge

- Enables resiliency from Edge to external BGP connections

Edge Spoke BGP peering to LAN neighbors. This is applicable to architectures at DC (via a switch) or mid-mile providers like Equinix with L2 multipoint support

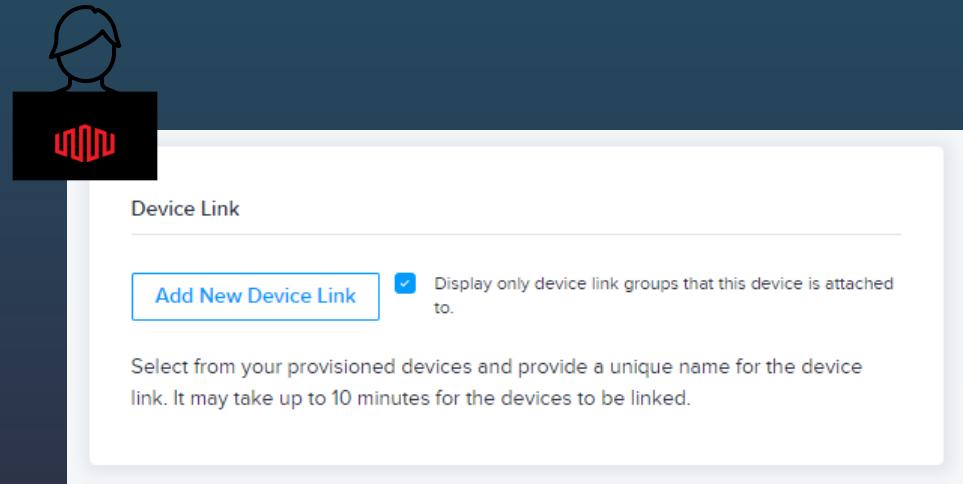


# Equinix Device Linking



Device Linking Table

Device	Interface	Device	Interface
Third-party router	GigabitEthernet4	Aviatrix Edge	eth0
Third-party router	GigabitEthernet5	Aviatrix Edge	eth1





# Megaport

## Aviatrix Edge on **Megaport Virtual Edge (MVE)**

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High Performance Encryption  
for Multicloud Connectivity



# Aviatrix Edge on Megaport Virtual Edge (MVE)

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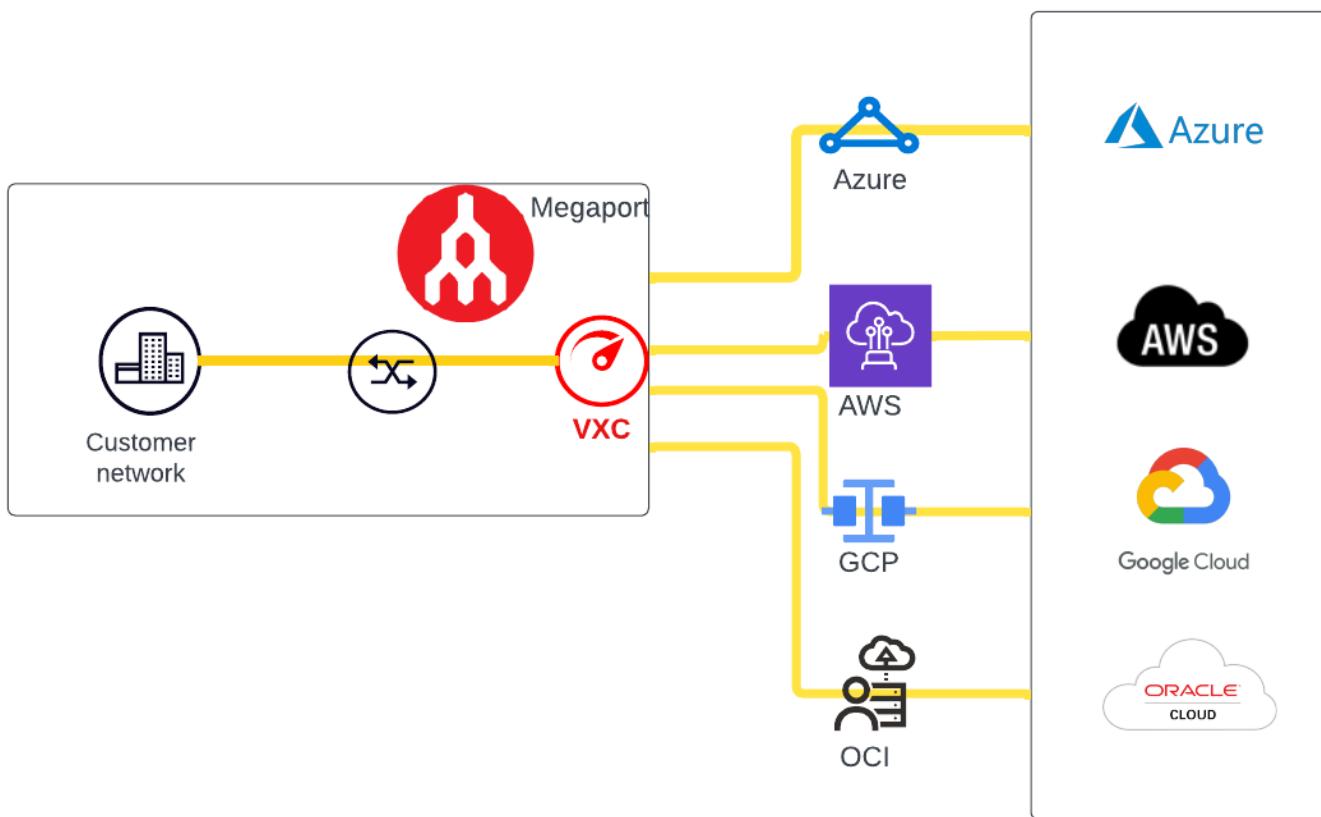
## Key Benefits

- A cloud-like experience for hybrid cloud environments across multicloud environments that provides a consistent, high performance, secure, and resilient architecture.
- On-demand provisioning of hybrid cloud edge and private connections leveraging Megaport fabric.
- Complete network traffic visibility and granular control across hybrid cloud environments.
- Support for overlapping IP addresses leveraging NAT.
- Segmentation capabilities across hybrid and multicloud environments to support workload isolation and security requirement with cloud orchestrated policies.

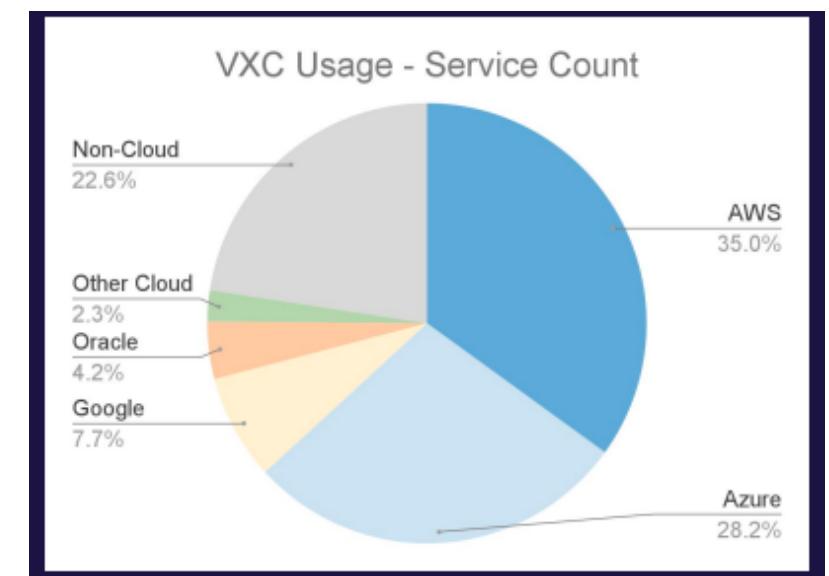
# Megaport

850+ Megaport Enabled Datacenters, 280+ Cloud on-ramps, 25 countries

On-demand, high speed private connections to major cloud providers.



Network as a Service with Megaport Virtual Edge (MVE) and Virtual Private Connections (VXC) 1G to 10G.

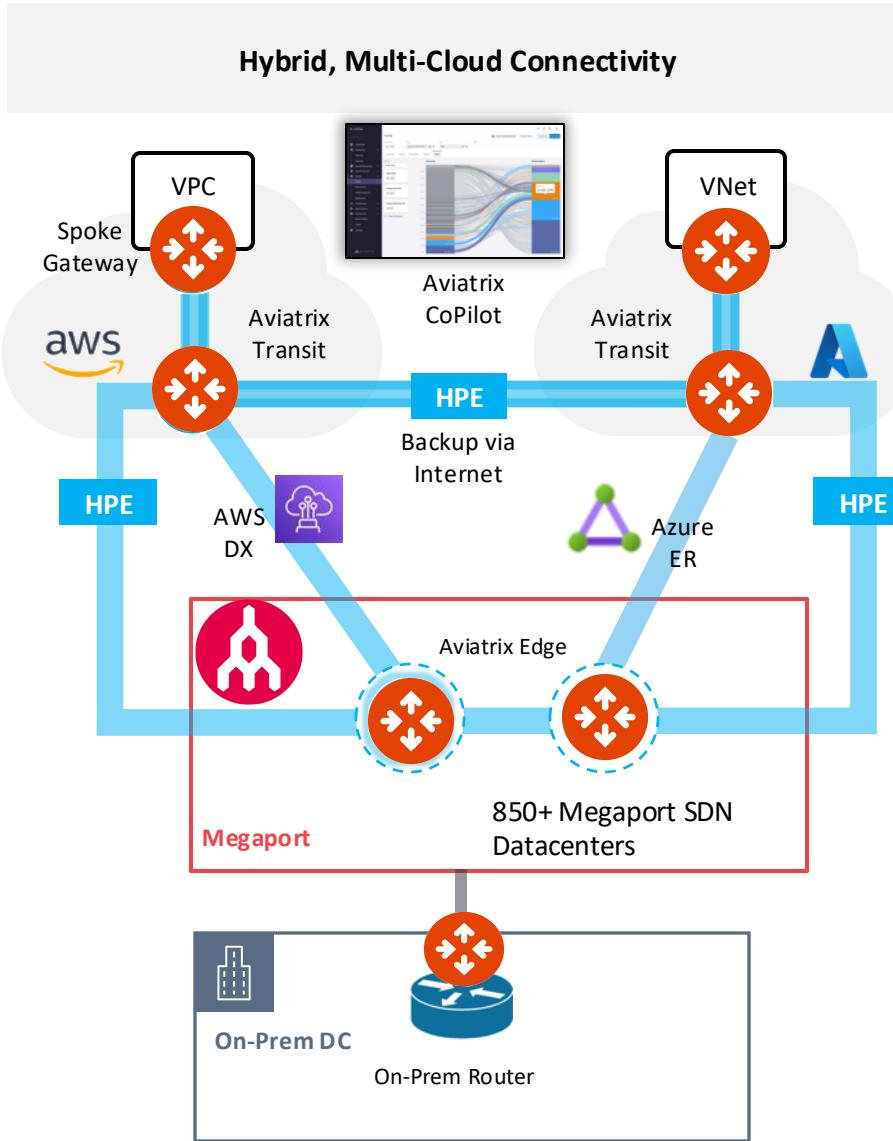
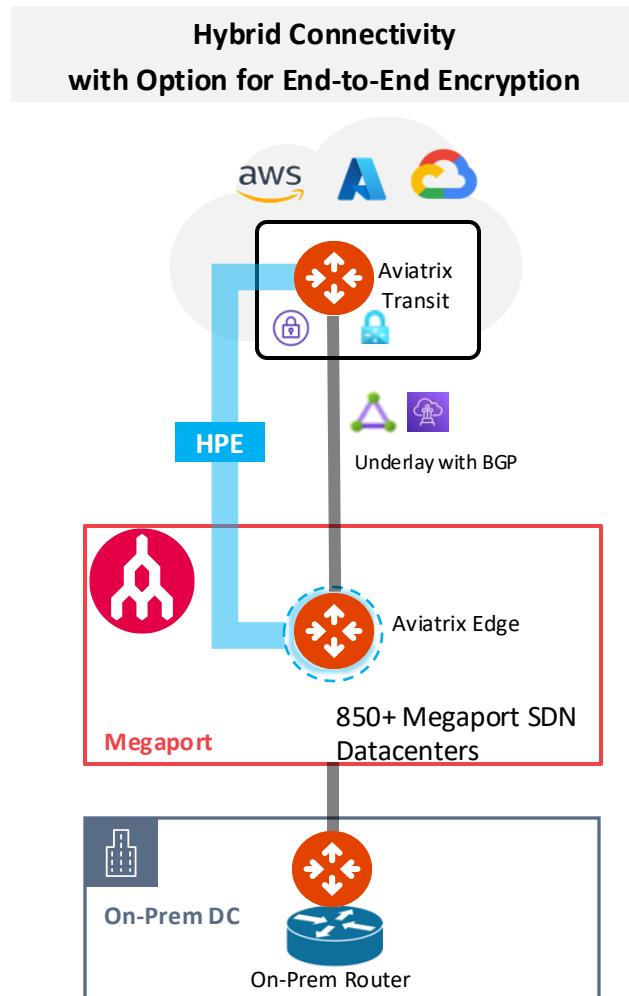


Connections to Cloud account for 75% of Megaport Virtual Connection usage

# Aviatrix Edge in Megaport MVE

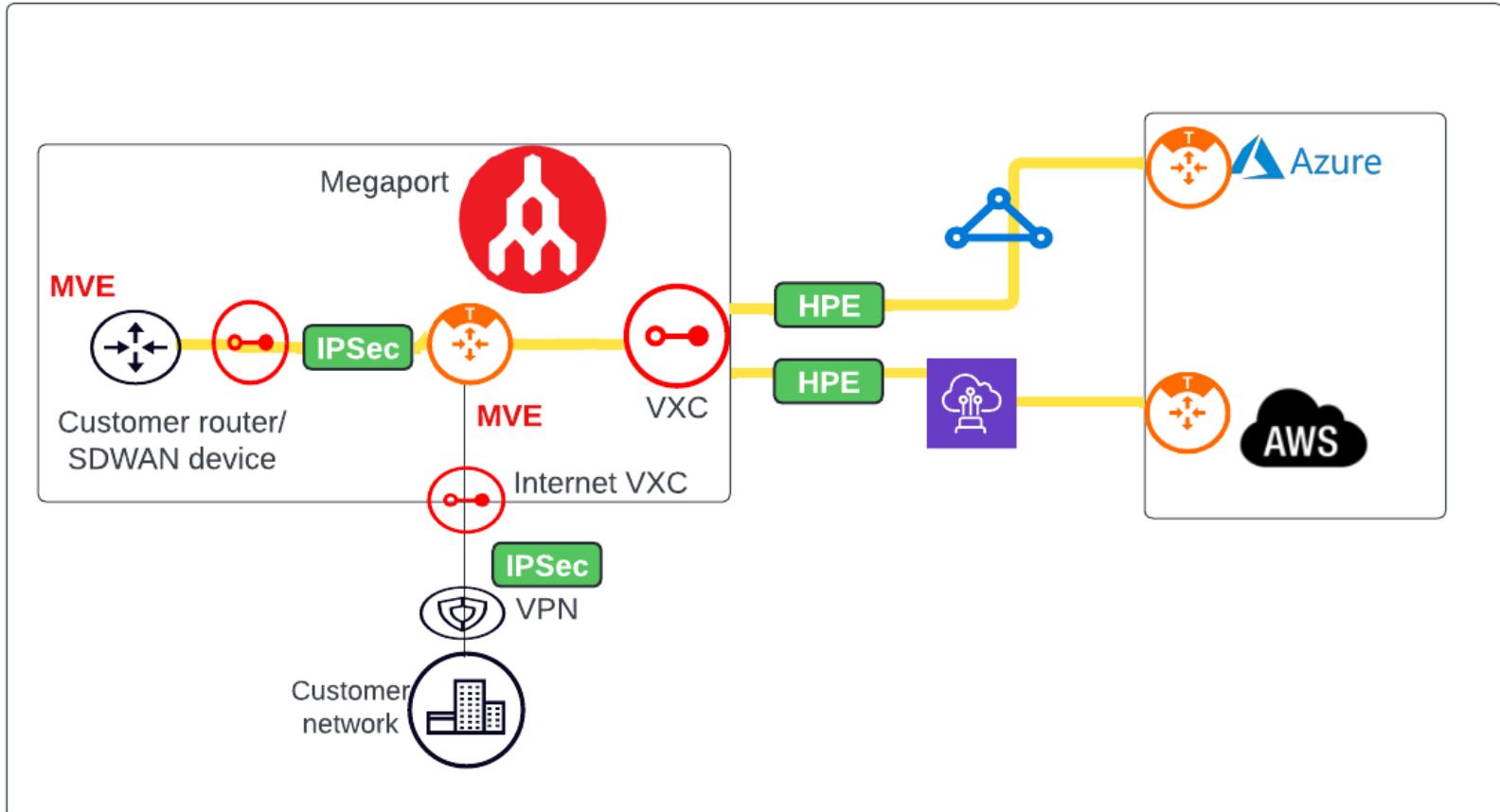
Aviatrix Secure Edge in MVE – 2vCPU, 4 vCPU and 8 vCPU VM offering . No physical hardware

Build Private line rate encrypted on-prem to cloud and cloud-cloud network with Aviatrix Edge in MVE – 50Mbps to 10G

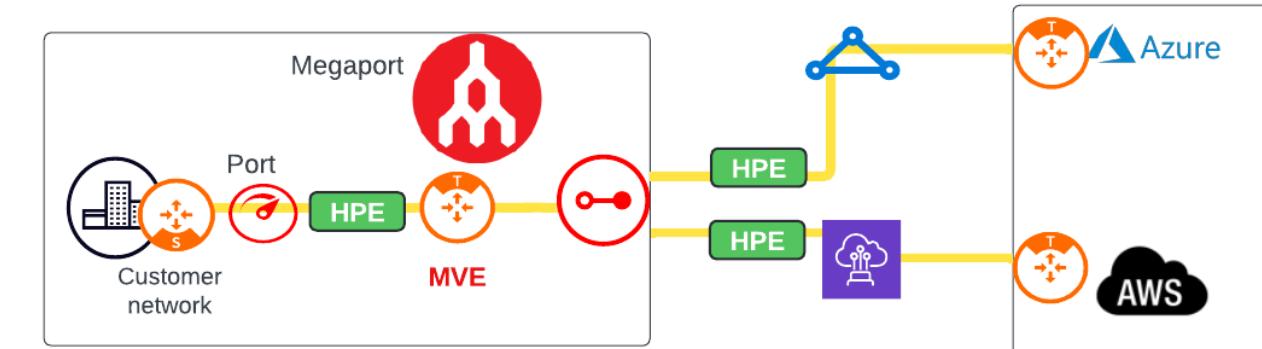


# Transit Edge S2C

- Let's look at Megaport
- Used For:
  - Interconnection to another MVE via IPSec (need for encryption)
  - Land remote connectivity over IPSec.

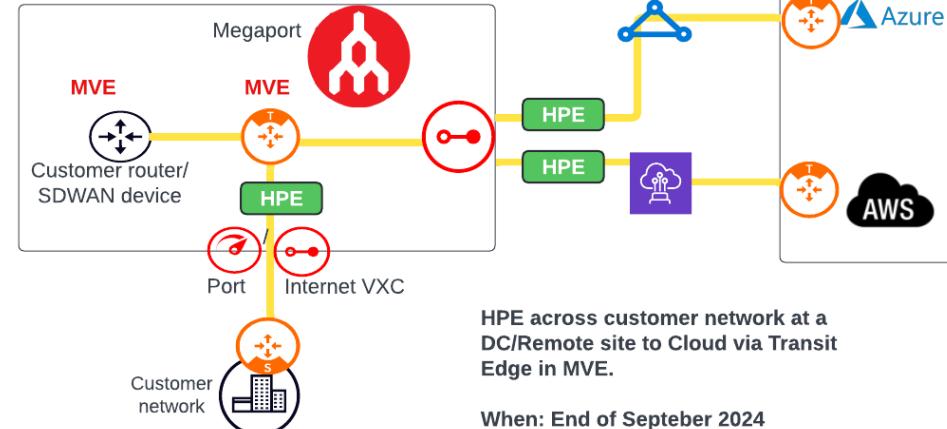


# Transit Edge - Megaport



HPE across customer network via port connection to Transit Edge in MVE to Cloud

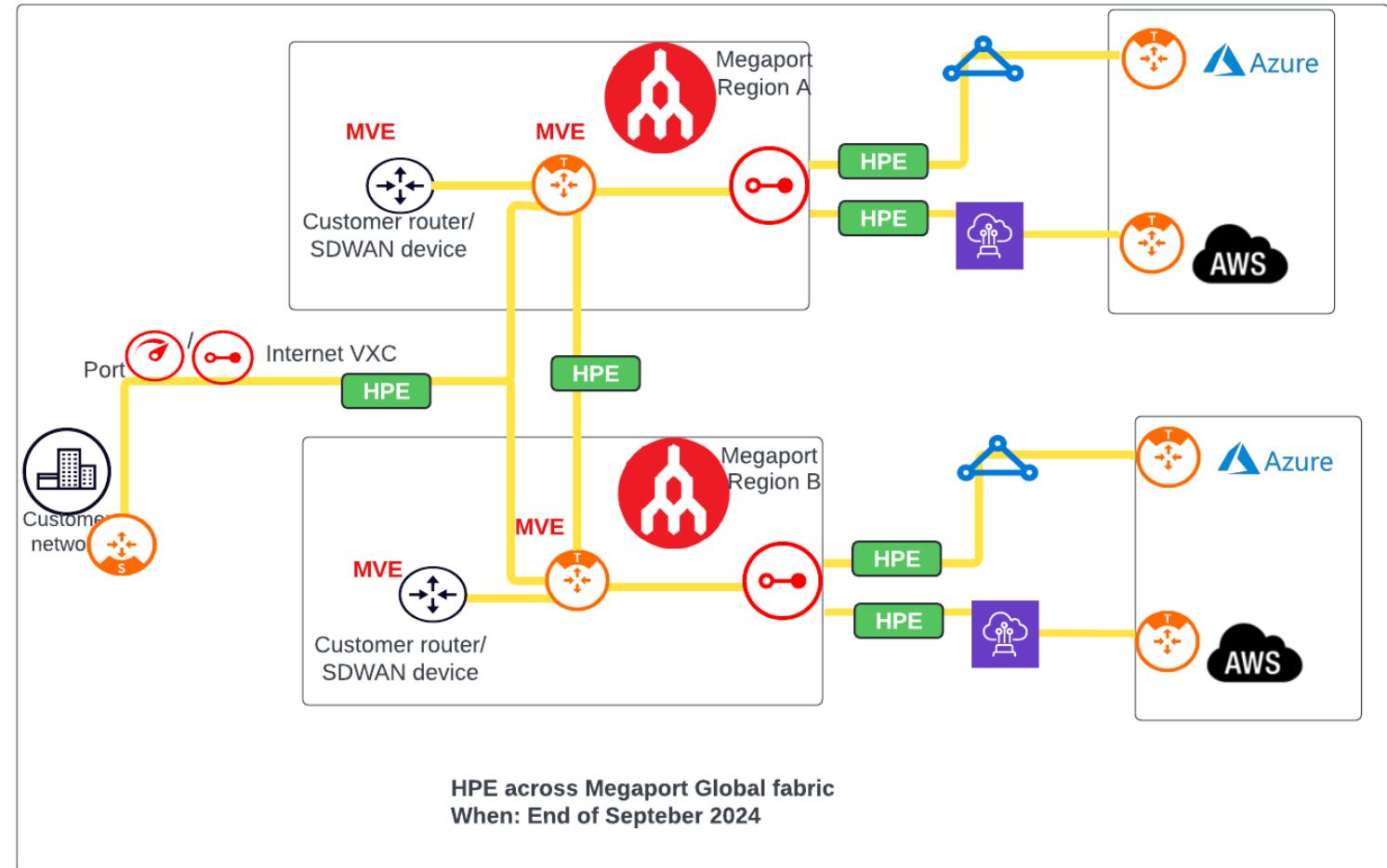
When: End of September 2024



HPE across customer network at a DC/Remote site to Cloud via Transit Edge in MVE.

When: End of September 2024

# Transit Edge - Megaport



# Megaport Limitations

- Megaport supports max 5 Interfaces.
- Number of vNICs can't be changed after MVE is launched.
- Point to point device links.
  - Does not support Active Mesh peering or Active Mesh Site-2-Cloud without an additional router or MCR
  - Does not support on EaS (Edge as Spoke) VRRP and Vlan features.

# Deployment

- Aviatrix Controller and Copilot
- Deploy Edge via Copilot or TF
- Account on [portal.megaport.com](https://portal.megaport.com)
- Create MVE
- Attach Cloud-init
- Build Cloud On-ramp

## Feature Summary

Megaport Edge bring up is similar to bringing up an edge in Equinix Network Edge.

Package Size	vCPUs	DRAM	Storage	Megaport Internet Speed *
MVE 2/8 <b>Small</b>	2	8 GB	64 GB	Adjustable from 20 Mbps to 10 Gbps
MVE 4/16 <b>Medium</b>	4	16 GB	64 GB	Adjustable from 20 Mbps to 10 Gbps
MVE 8/32 <b>Large</b>	8	32 GB	64 GB	Adjustable from 20 Mbps to 10 Gbps
MVE 12/48	12	48 GB	64 GB	Adjustable from 20 Mbps to 10 Gbps

## Performance

<https://aviatrix.atlassian.net/wiki/spaces/AVXENG/pages/1802436609/Edge+performance+on+KVM+on+7.0+Equinix+Network+Edge+Environment>

# Aviatrix Edge Deployment (Generating ZTP File)

## Step 1 – Create Partner Platform- this release adds Megaport support

Connect Edge Platform

Name

Type

Aviatrix Edge  
Edge orchestration using Aviatrix Edge Platform

Network Service Provider (NSP)  
Edge orchestration using Partner Platforms.

Self Managed  
Bring you own self-managed hardware.  
Suitable for VMWare and KVM environments.

[Cancel](#) [Connect](#)

Create WAN, LAN and MGMT interfaces  
MGMT: leave at default DHCP



## Step 2 – Create Edge GW

Create Edge Gateway

EdgeMP

Platform: NSP Site: MPSVC ZTP File Type: cloud-init

High Availability: Off

Interface Configuration

NSP support 1 MGMT, 1 LAN and Multiple WANs

WAN 1 LAN 1 MGMT 1 + WAN Interface

Edge Gateway Interface	Interface Labels	BGP
eth0	AWS	<input type="checkbox"/> Off
Primary	Interface CIDR	Default Gateway IP
	169.150.30.2/30	169.150.30.1

Interface Configuration

NSP support 1 MGMT, 1 LAN and Multiple WANs

WAN 1 LAN 1 MGMT 1

Edge Gateway Interface	Private Network
eth2	<input type="checkbox"/> Off

# Aviatrix Edge Deployment (Generating ZTP File)

Step 3 – Cloud-init

Step 4 – Update Egress IP with the public IP allocated by Megaport

## Interface Configuration

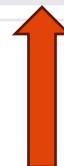
↳ NSP support 1 MGMT, 1 LAN and Multiple WANs

WAN 2    LAN 1    MGMT 1

Edge Gateway Interface      Private Network  
eth2       Off

Egress CIDR (Primary)

162.43.150.31/32    



This IP gets programmed on the controller SG in CSP  
For edge to controller control plane

# Portal.megaport.com -> Deploy MVE

## Step 1 – Choose Location

New MVE

1 Select Location    2 Configure    3 Summary

Untitled  
Vendor: -, Size: -  
No Location Selected  
Diversity Zone

\* Select MVE Location

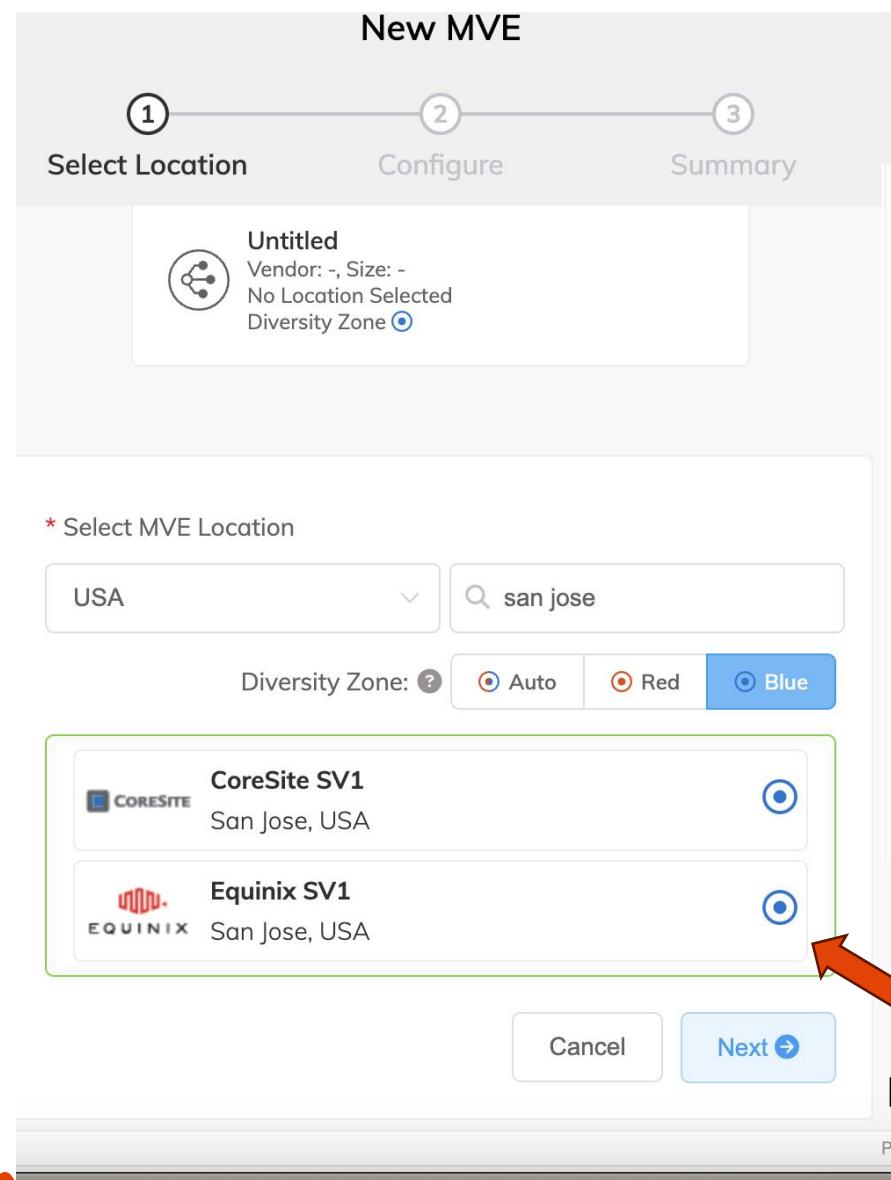
USA

Diversity Zone:  Auto  Red  Blue

**CoreSite SV1**  
San Jose, USA

**Equinix SV1**  
San Jose, USA

Privacy



A screenshot of the 'Select Location' step of the Megaport MVE deployment wizard. It shows a search bar for 'san jose' and two diversity zone options: 'CoreSite SV1' and 'Equinix SV1', both of which are highlighted with a green border and have radio buttons checked. Below the diversity zones are 'Cancel' and 'Next ➔' buttons.

## Step 2 – Choose Aviatrix Edge

New MVE

1 Select Location    2 Configure    3 Summary

aruba Version 8.3.3.3\_86005  
Aruba Orchestrator 9 or later required, must immediately upgrade boot image to version 9.X

Aviatrix Secure Edge Version 202405021650

Cisco C8000 Version 17.06.01a Minimum version of vManage is 20.6

Cisco C8000 Version 17.09.01a Minimum version of vManage is 20.9

Cisco C8000 Version 17.12.02

Cisco C8000 Version 17.13.01a

Cisco C8000 Version 17.14.01a

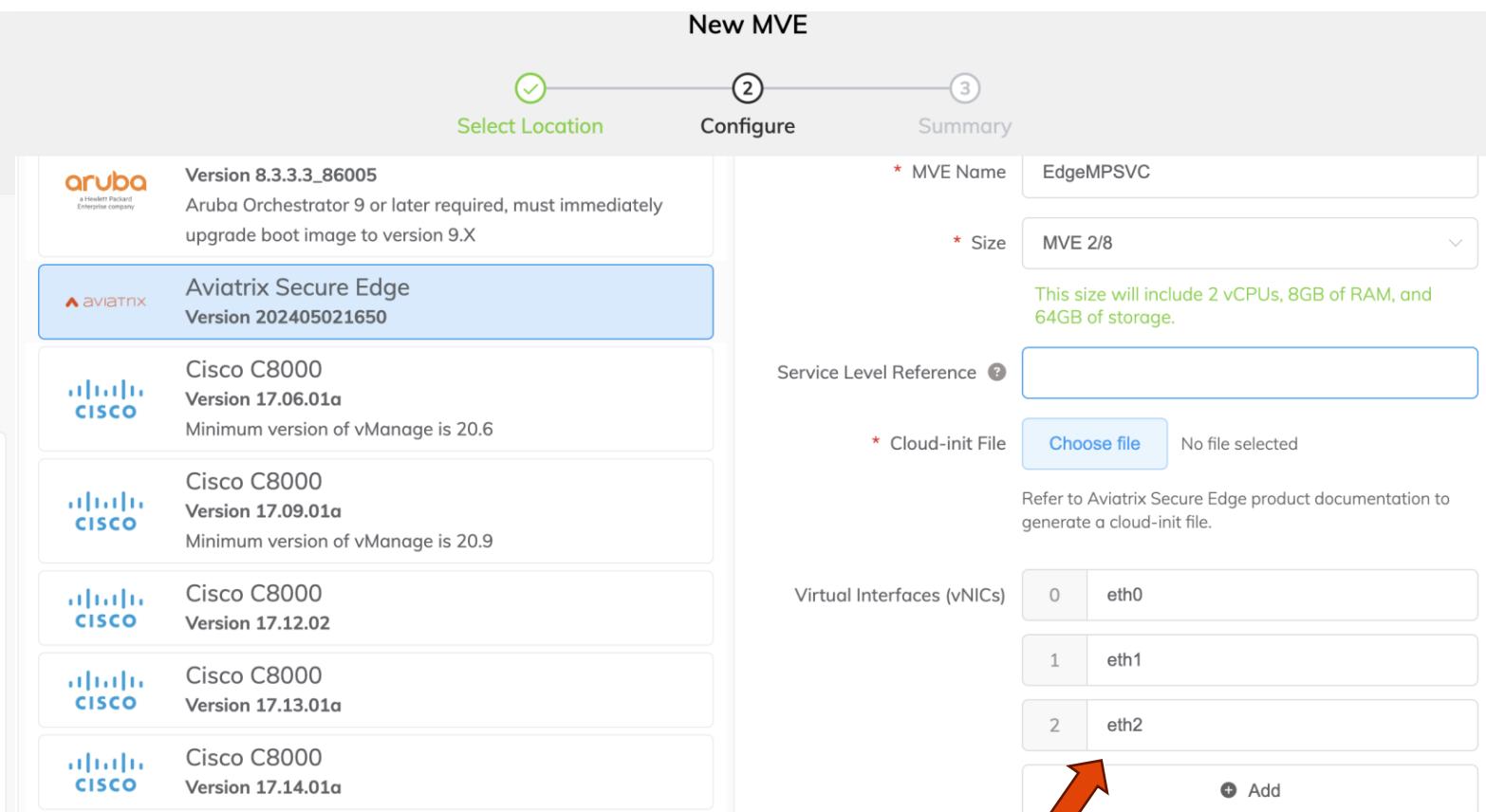
\* MVE Name  \* Size   
This size will include 2 vCPUs, 8GB of RAM, and 64GB of storage.

Service Level Reference

\* Cloud-init File  No file selected  
Refer to Aviatrix Secure Edge product documentation to generate a cloud-init file.

Virtual Interfaces (vNICs)

0	eth0
1	eth1
2	eth2
<input type="button" value="Add"/>	



A screenshot of the 'Configure' step of the Megaport MVE deployment wizard. It lists several edge device options: Aruba (Version 8.3.3.3\_86005), Aviatrix Secure Edge (Version 202405021650), Cisco C8000 (Version 17.06.01a, 17.09.01a, 17.12.02, 17.13.01a, 17.14.01a). On the right, configuration fields are shown: 'MVE Name' set to 'EdgeMPSVC', 'Size' set to 'MVE 2/8' (which includes 2 vCPUs, 8GB of RAM, and 64GB of storage), 'Service Level Reference' (empty), 'Cloud-init File' (choose file button, no file selected), and 'Virtual Interfaces (vNICs)' with three entries (eth0, eth1, eth2) and an 'Add' button. A red arrow points from the 'CoreSite SV1' entry in the location selection step to the 'Aviatrix Secure Edge' entry here.

Default 3 Ethernet interfaces. MVE can support up to 5.

Diversity zones support. If Auto, Megaport auto allocates

# Portal.megaport.com -> Deploy MVE

## Step 3 – Attach internet VXC to Edge MGMT Eth2

**Connection Details**

Connection      Details      Logs      Usage      Billing

EdgeMPSVC-Azure  
Size: MVE 2/8  
Santa Clara, USA  
Diversity Zone ●

Megaport Internet  
100 Gbps  
Santa Clara, USA  
Diversity Zone ●

Monthly Rate: \$0.00 USD (Price Excludes Tax)

**Connection Configuration**

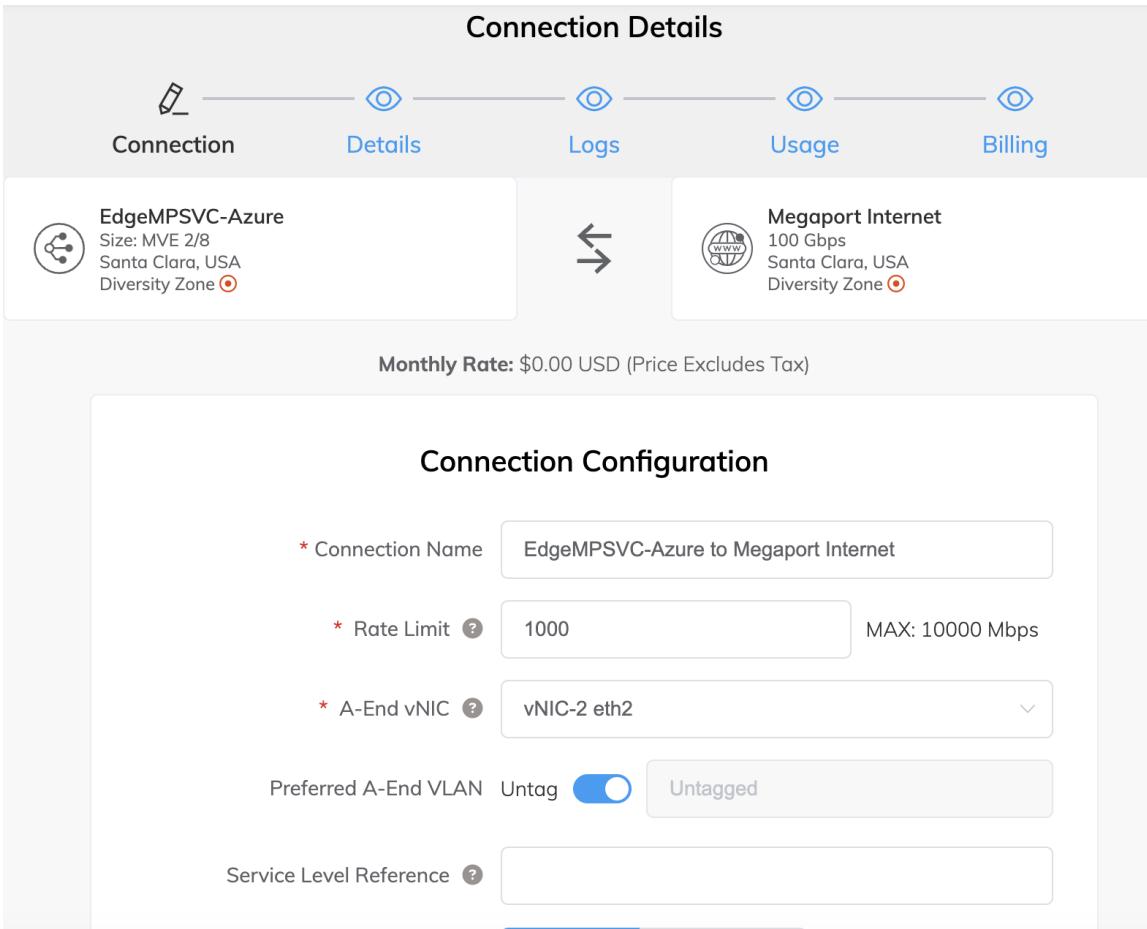
\* Connection Name: EdgeMPSVC-Azure to Megaport Internet

\* Rate Limit: 1000 MAX: 10000 Mbps

\* A-End vNIC: vNIC-2 eth2

Preferred A-End VLAN Untag  Untagged

Service Level Reference ?



## Step 4 – Get allocated VM Public IPv4 address

**Connection Details**

Connection      Details      Logs      Usage      Billing

Service ID: #96ab2bba

**Service Status**

Provisioning Status: LIVE

Service Status: ●

**Service Information**

Created By: Madhuri Kaniganti

Rate Limit: 1000 Mbps

A-End vNIC: vNIC-2 eth2

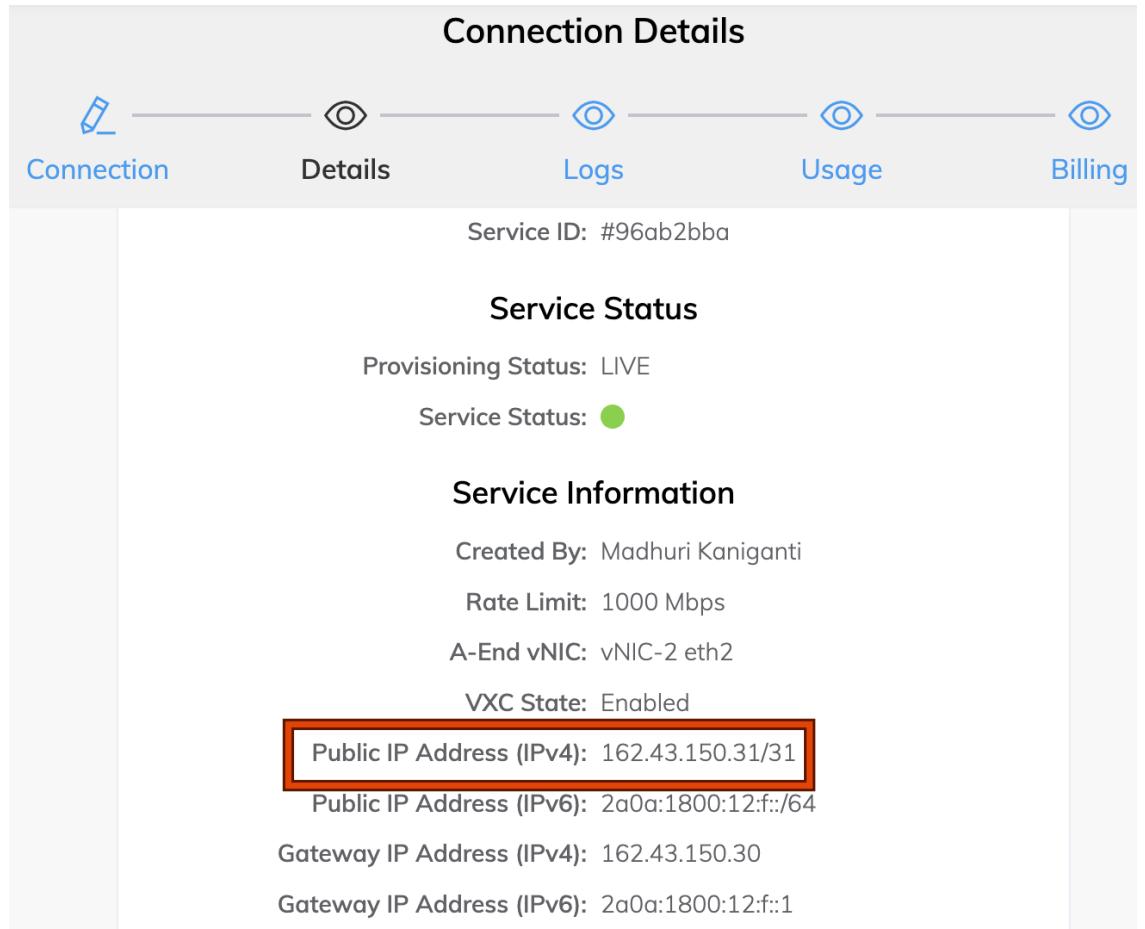
VXC State: Enabled

Public IP Address (IPv4): 162.43.150.31/31

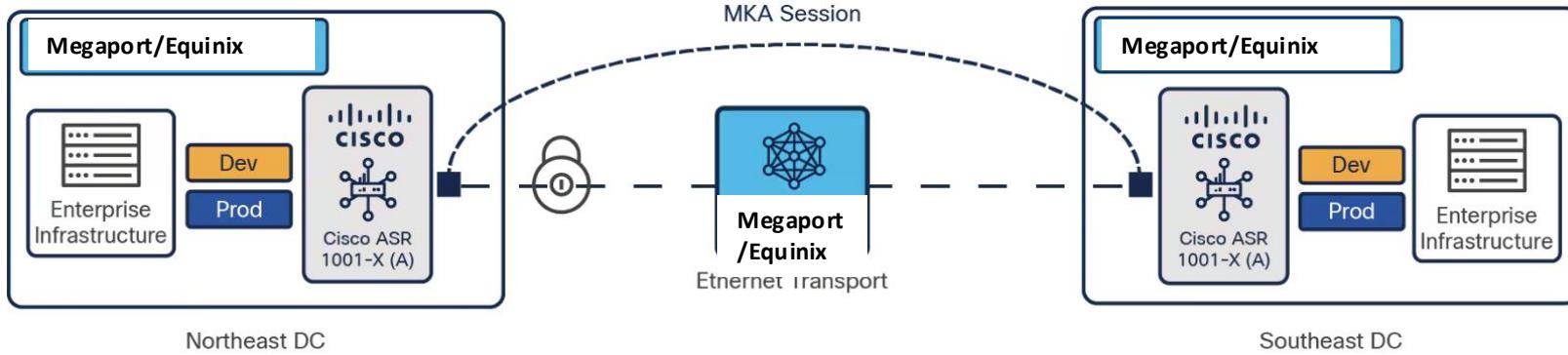
Public IP Address (IPv6): 2a0a:1800:12:f::/64

Gateway IP Address (IPv4): 162.43.150.30

Gateway IP Address (IPv6): 2a0a:1800:12:f::1



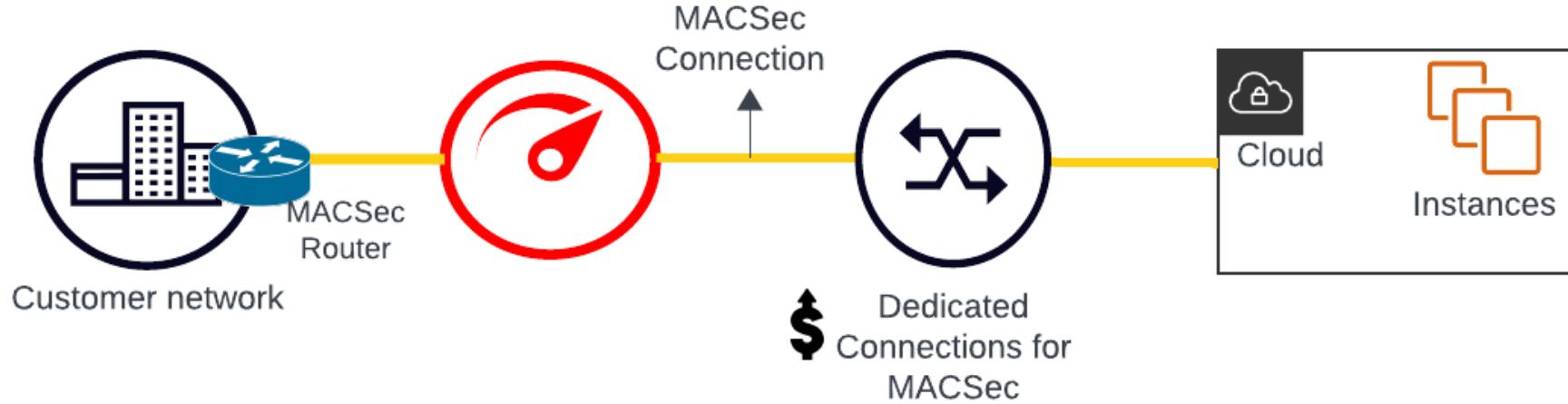
# MACSec Replacement



Requires:

- 1) Routers/Network Devices – Silicon support for MACSec
- 2) Cisco Licenses are complex – HSEC, DNA, Throughput based tiers
- 3) Setup is complex – MKA Sessions, Certificate management, PKI infrastructure
- 4) Requires every hop to be MACSec
- 5) Requires payload to be decrypted at every hop (its L2)

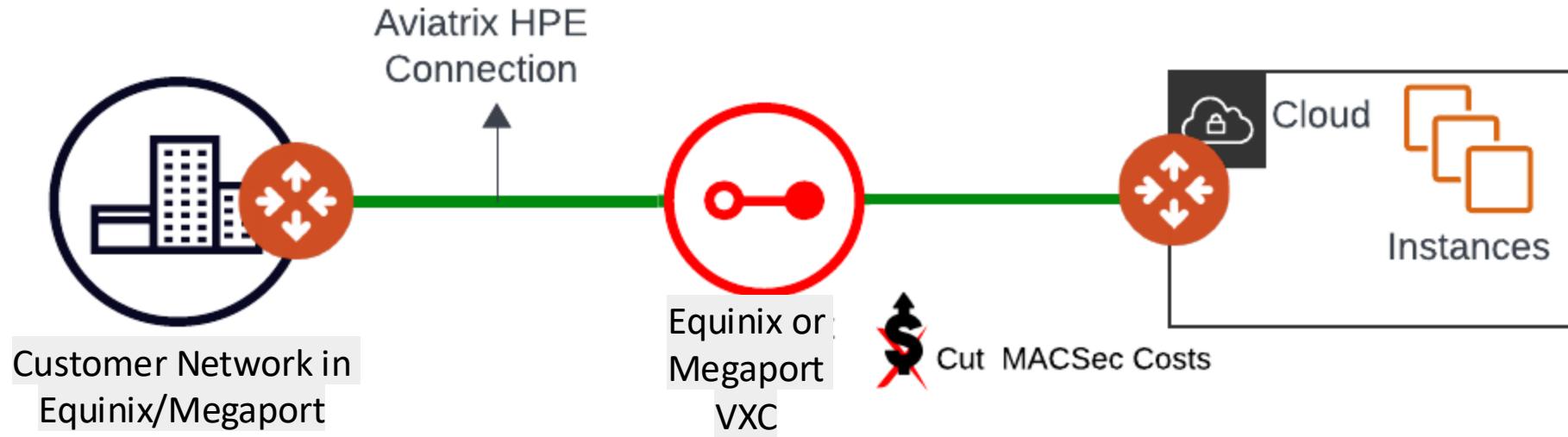
# MACSec to Cloud



Requires (in addition to previous slide):

- 1) MACSec only supported by Cloud providers on dedicated private ports, which are 10x more expensive for 1G circuit and 2x for 10G circuit (Azure)
- 2) Implementation time is high (cabinets, routers, cross connects – leads to multiple days if not months) vs hosted on-demand connections (in minutes)
- 3) Azure only support 10G and 100G Port speed for MACSec. Incremental is not possible

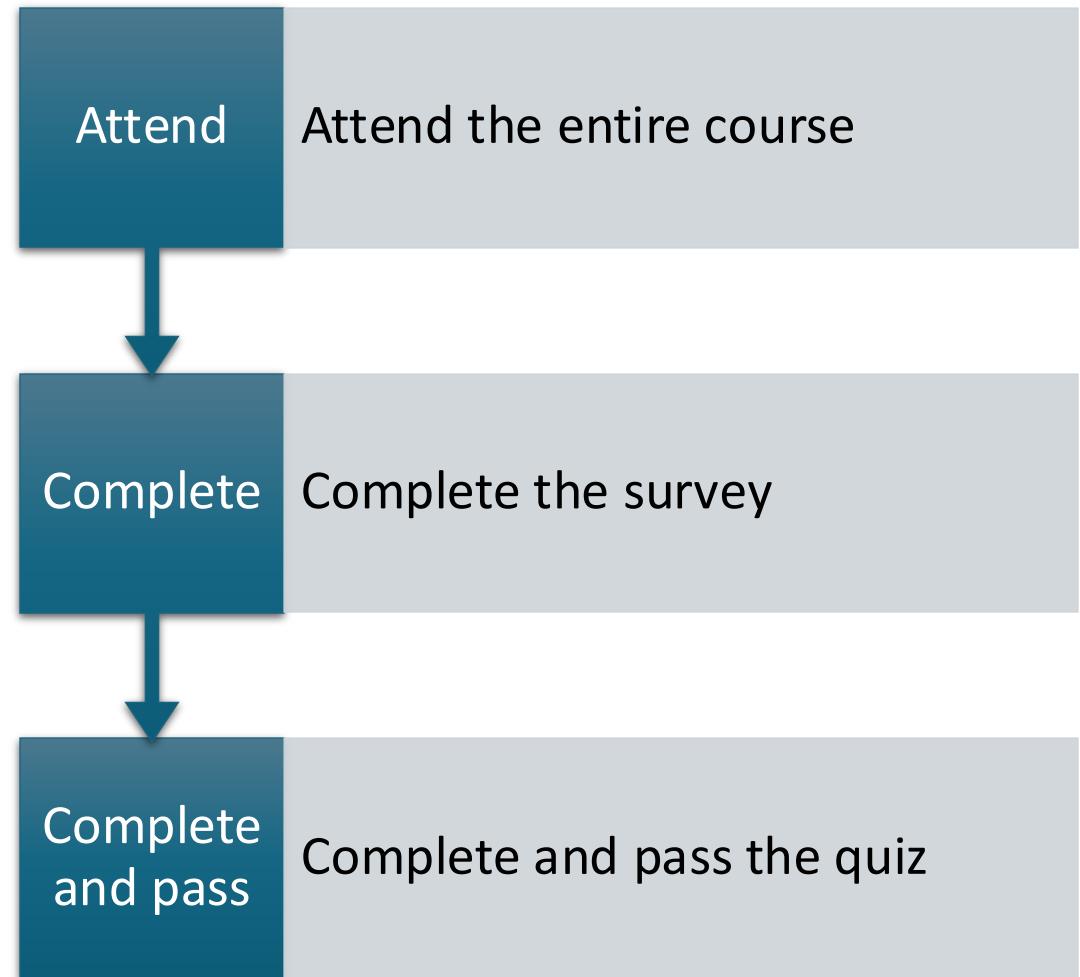
# Remove MACSec Configuration complexity and Significant cost savings:



# ACE-Hybrid Cloud Certification Requirements

- Survey Link:

<https://pages.aviatrix.com/ace-hybrid-cloud-survey.html>





**Thank You!**

**For attending and completing  
the Survey**



Aviatrix Certified Engineer (ACE)  
<https://aviatrix.com/ACE>



COMMUNITY  
<https://community.aviatrix.com>