



Cloud Backbone

HYBRID CONNECTIVITY

<Instructor Name>

ACE Solutions Architect

AGENDA

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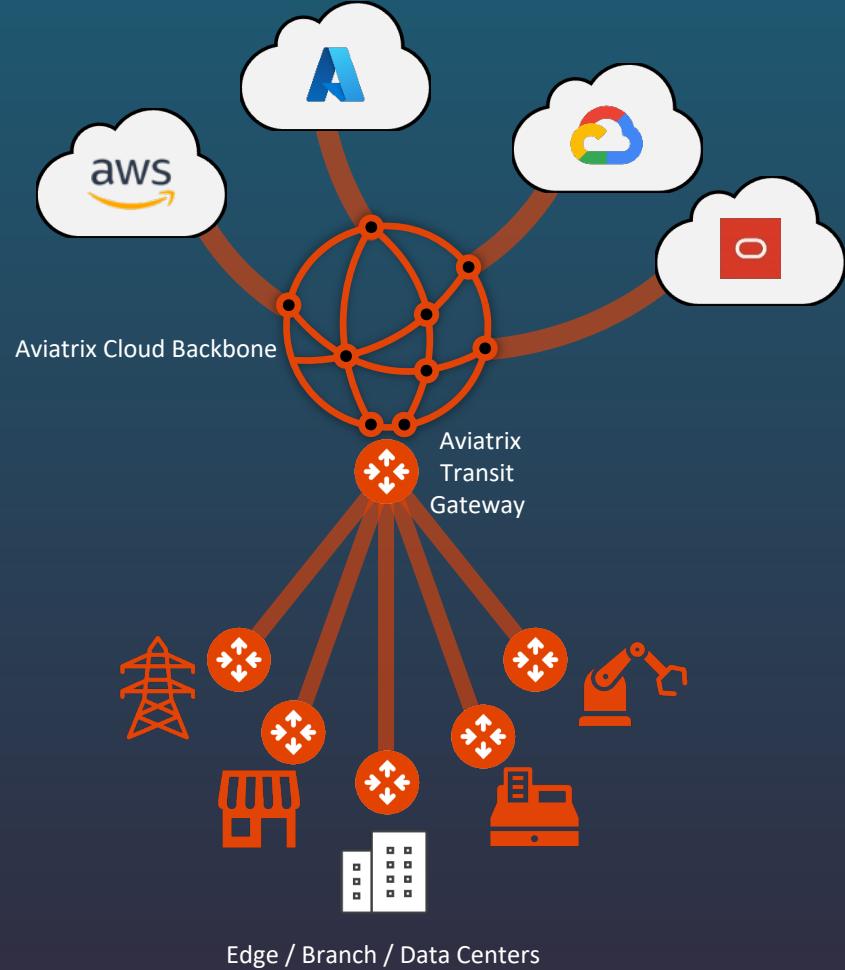
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DEMO & LAB

Aviatrix Edge

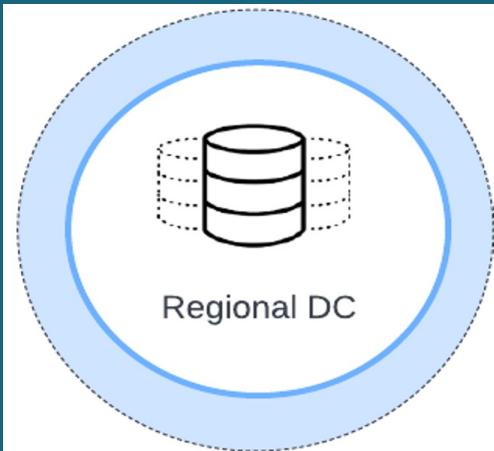


Aviatrix Edge



- Aviatrix Edge is an extension of the **Aviatrix Cloud Backbone**
- Designed for Multi-cloud connectivity
- Simplicity and Ease of Use through a single unified control and management plane
- Provides End-to-End high-performance encryption (HPE) allowing near line-rate encryption of high-speed private circuits
- Security is embedded into its data plane
- Extends cloud segmentation to the edge
- Provides deep traffic visibility and granular controls for edge locations
- Full lifecycle management

Edge locations



Regional DC



HQ



Service providers

Regional Data Centers

Server infrastructure in customer data centers. Mixed workloads which some continue to reside in DCs. These workloads also require access to and from cloud.

Office/branch locations

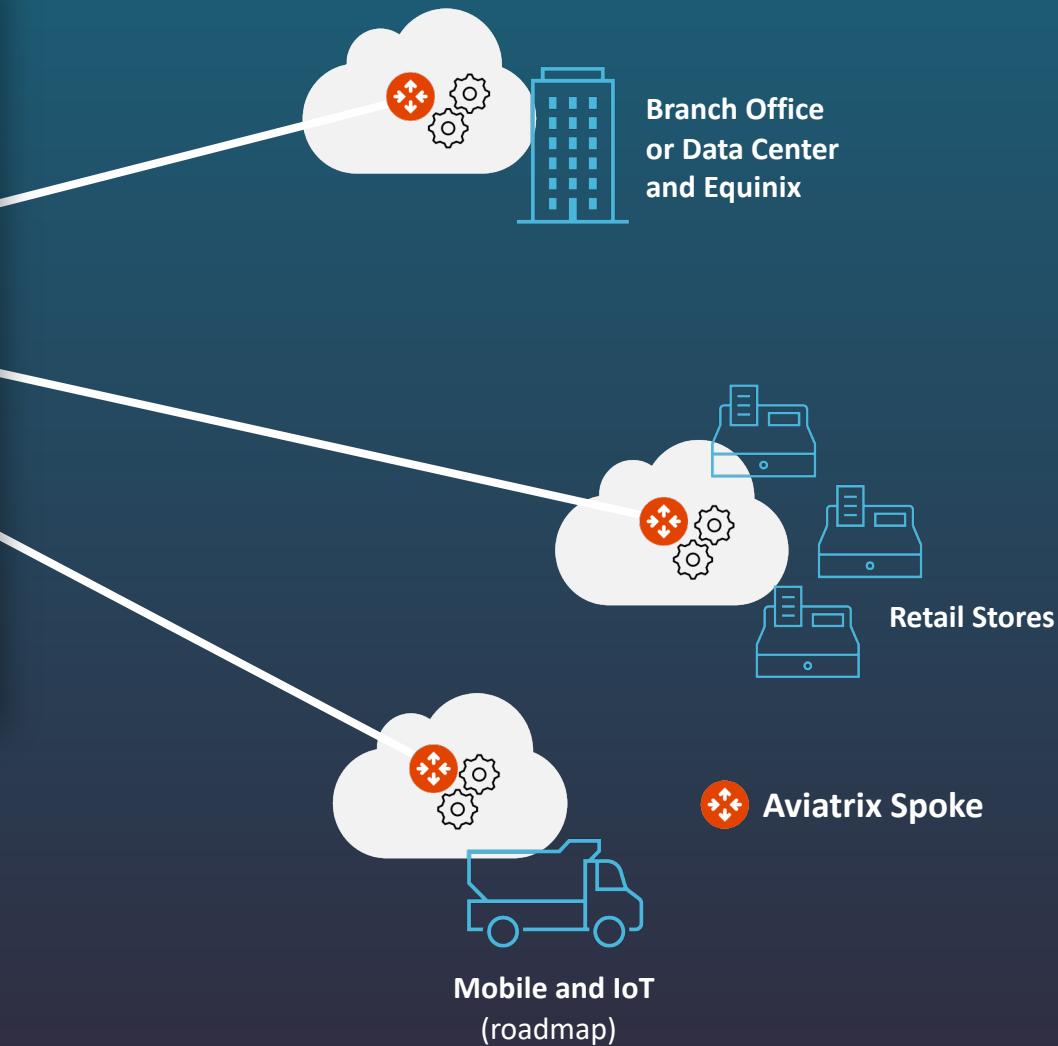
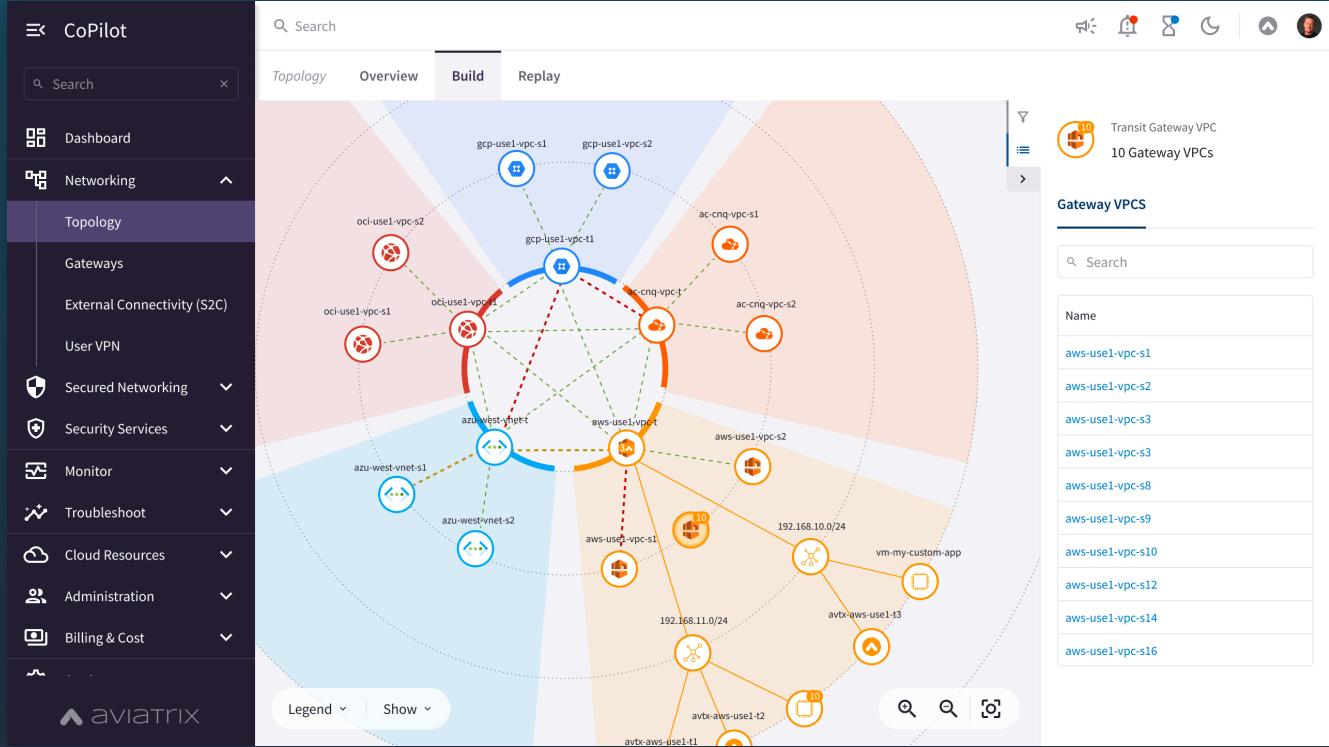
Access to workloads from cloud

- Partner locations –SaaS hosted applications
- Enterprise branch/office locations

Mid Mile Providers

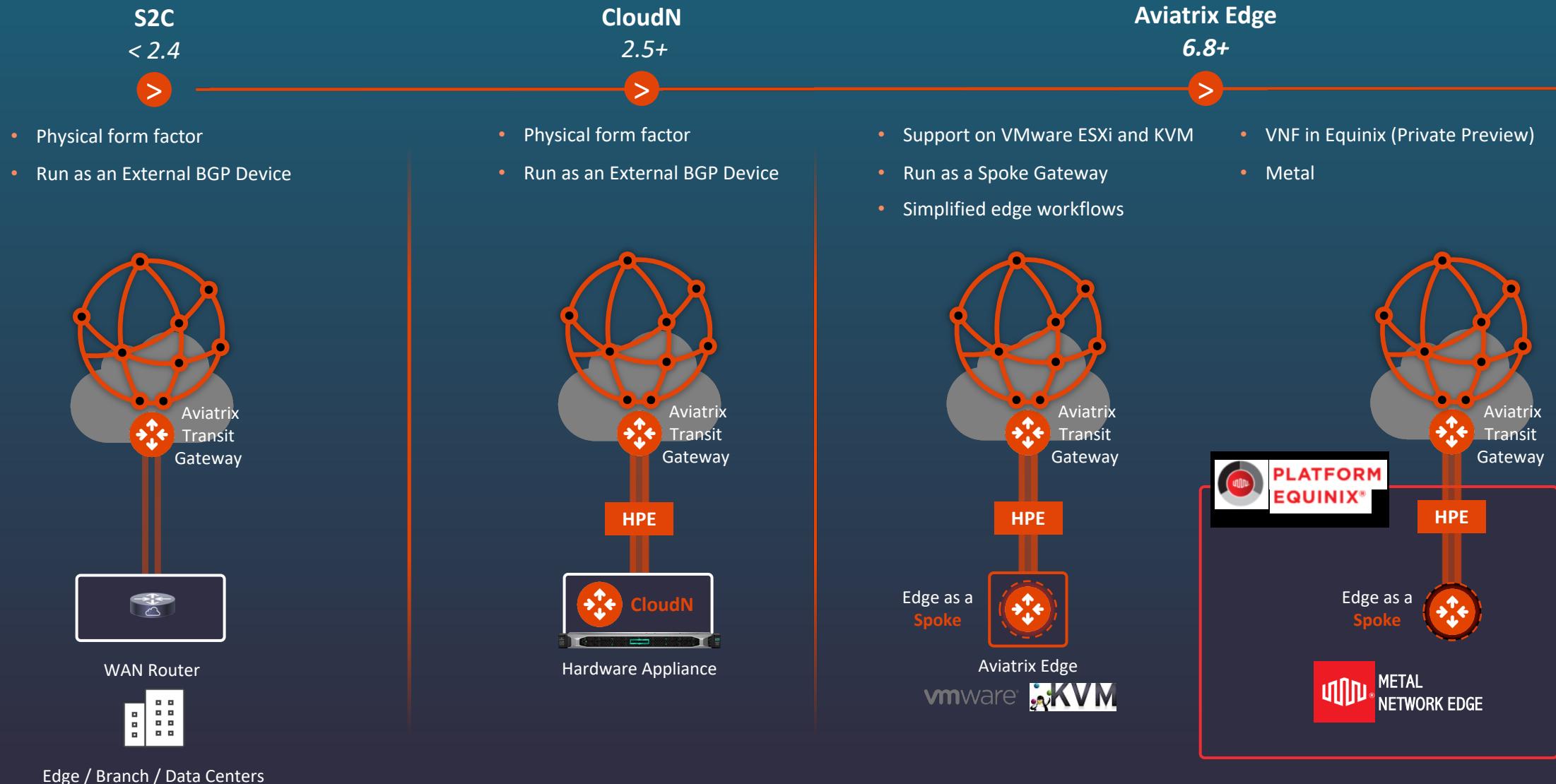
Hosted infrastructure and VNF providers where customers aggregate the network connections and use private connectivity to cloud

Extend Cloud to the Edge



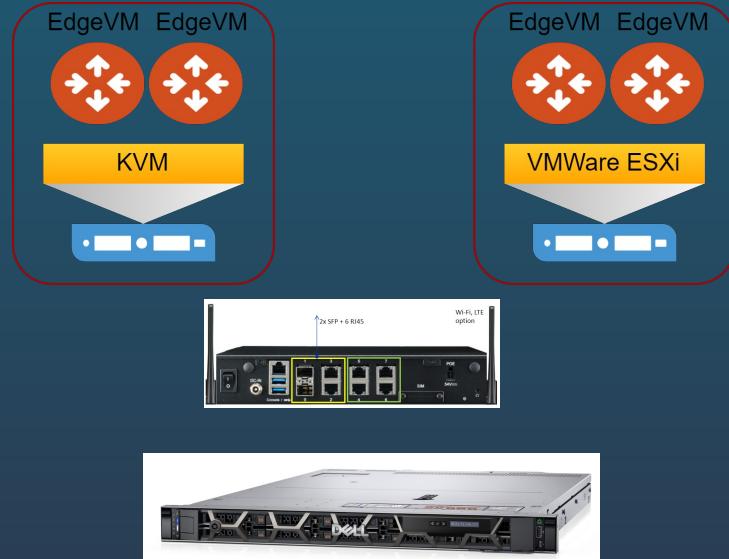
- Extend the Cloud Operational Model to the Edge
- Manage Your Edge Like a VPC or VNet
- Infrastructure as Code Automation

Aviatrix Edge Timeline Journey

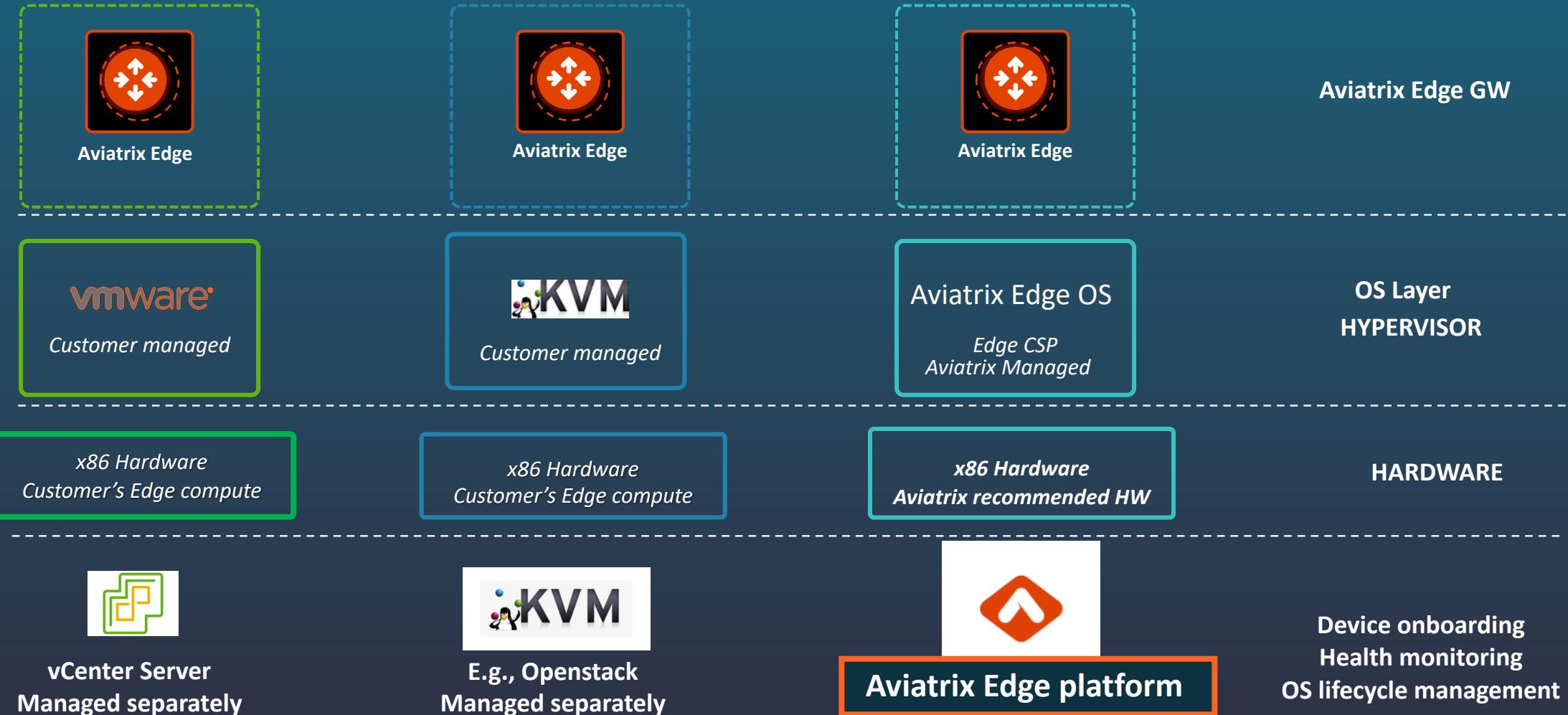


Aviatrix Edge

- **Acts like a Spoke Gateway**
 - Secure Cloud Networking™
 - **Virtual Formfactor**
 - Equinix Marketplace
 - ESXi
 - KVM
 - VNF T-Hirt size small, medium , large , X-large
 - Upto ~10G Throughput
- [Edge Virtual Form Factor Documentation Link.](#)
- **Hardware Formfactor (Edge Platform)**
 - For Branch/Remote Site FWA-1012-VC
 - For Enterprise DC/Colo (Dell Server with 10/25G NIC)
 - **Single Terraform Provider**
 - Multicloud Networking Software (MCNS)



Aviatrix Edge GW – Supported platforms



Aviatrix Edge

Technical Details

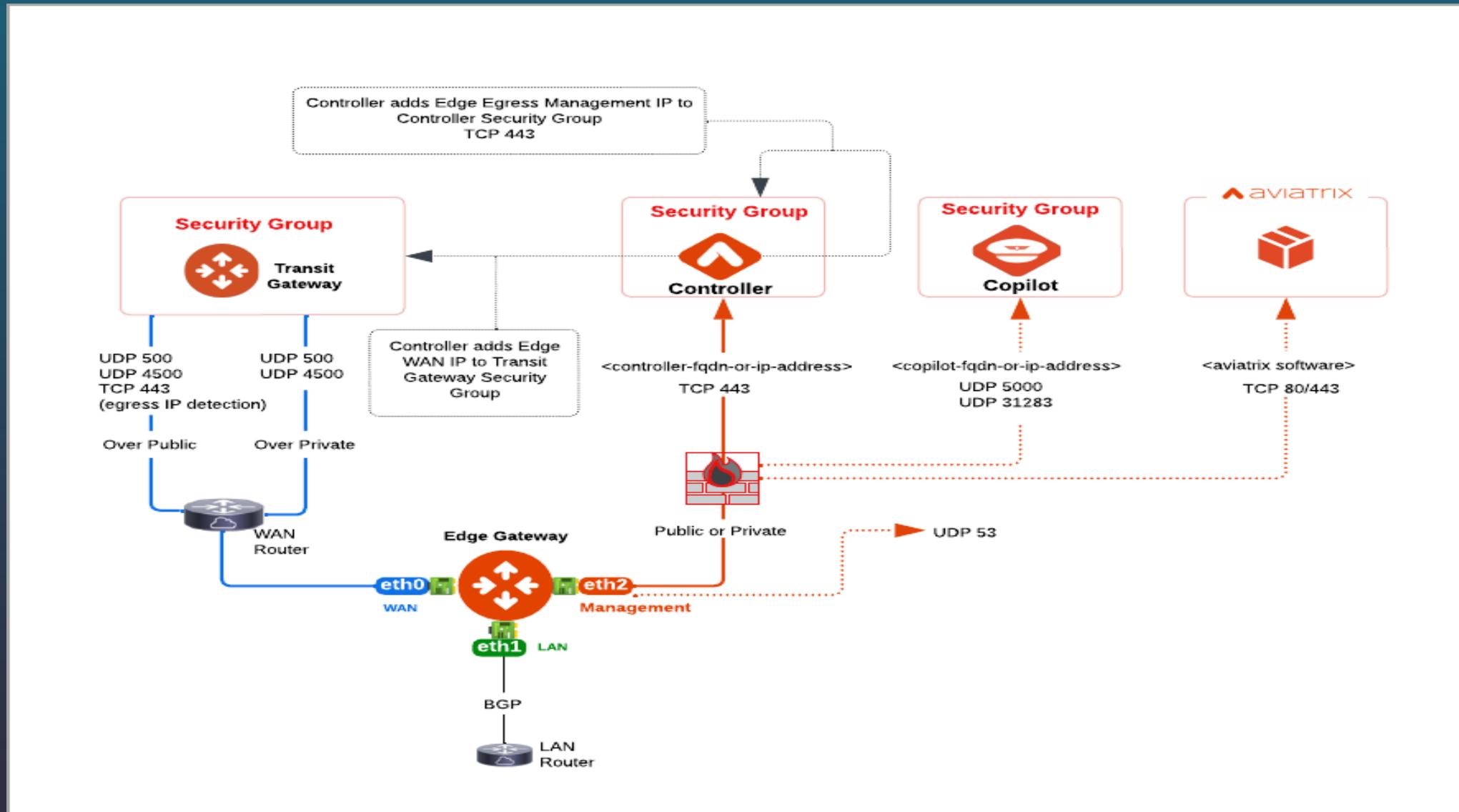


Aviatrix Edge

- **WAN Interface**
 - Connects to underlay
- **LAN Interface**
 - Connects to LAN switches, routers, firewalls, virtual devices
- **Management Interface**
 - Outbound access to Aviatrix Controller & software patches
- **Tunnel Interface**
 - Number of overlay tunnel interfaces

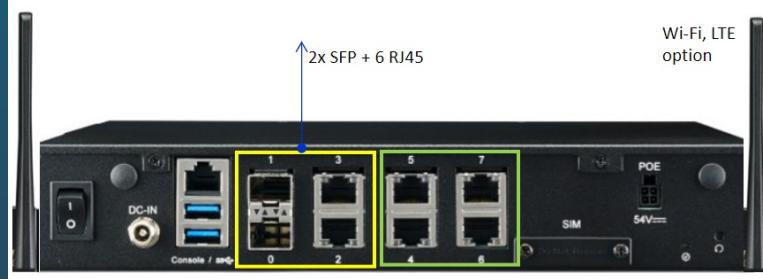


Aviatrix Edge Gateway Interfaces Ports and Protocols



Edge Hardware Details

FWA-1012VC – For Branch/Remote Sites

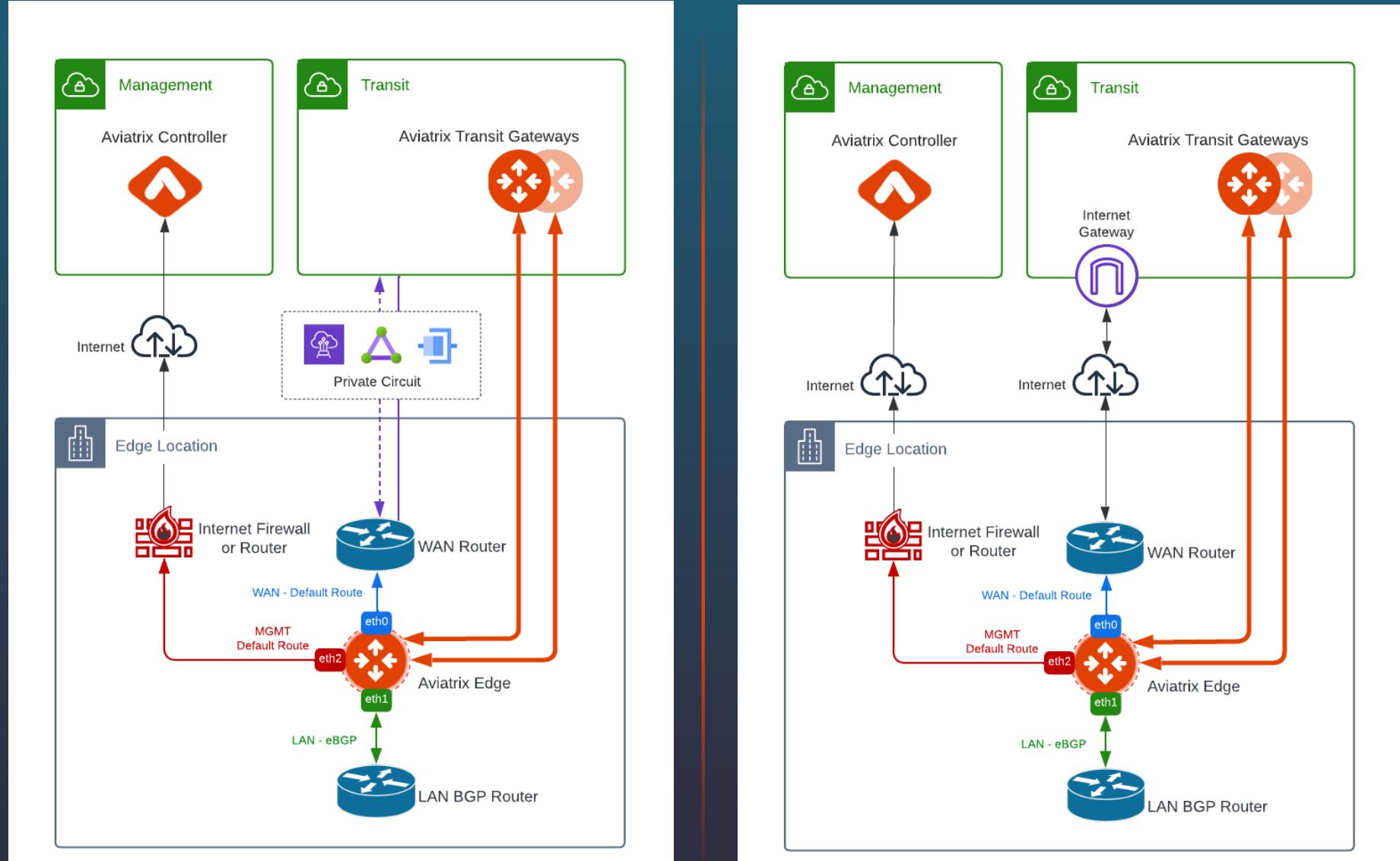


Dell Server– For Enterprise DC /Colo Sites

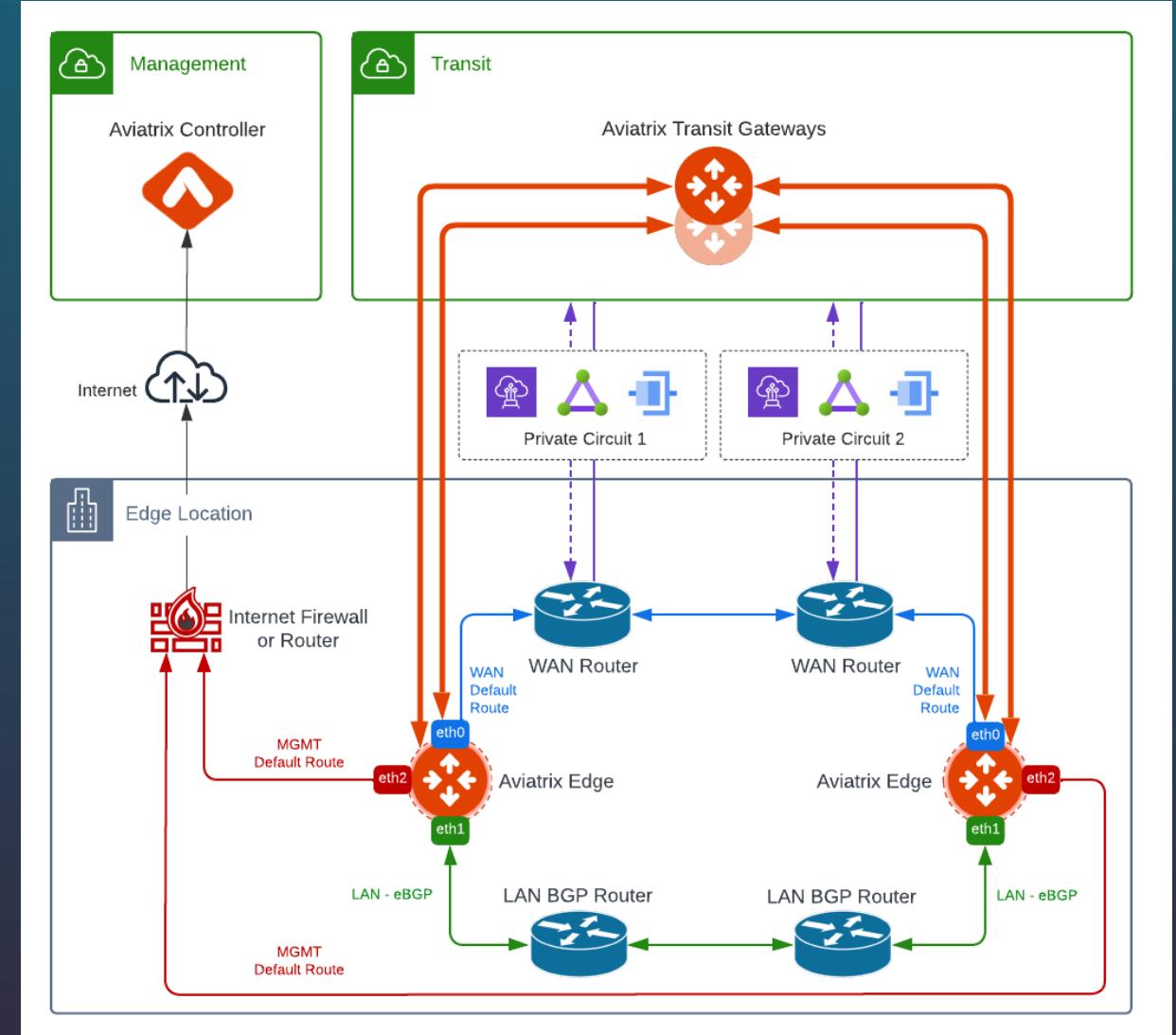
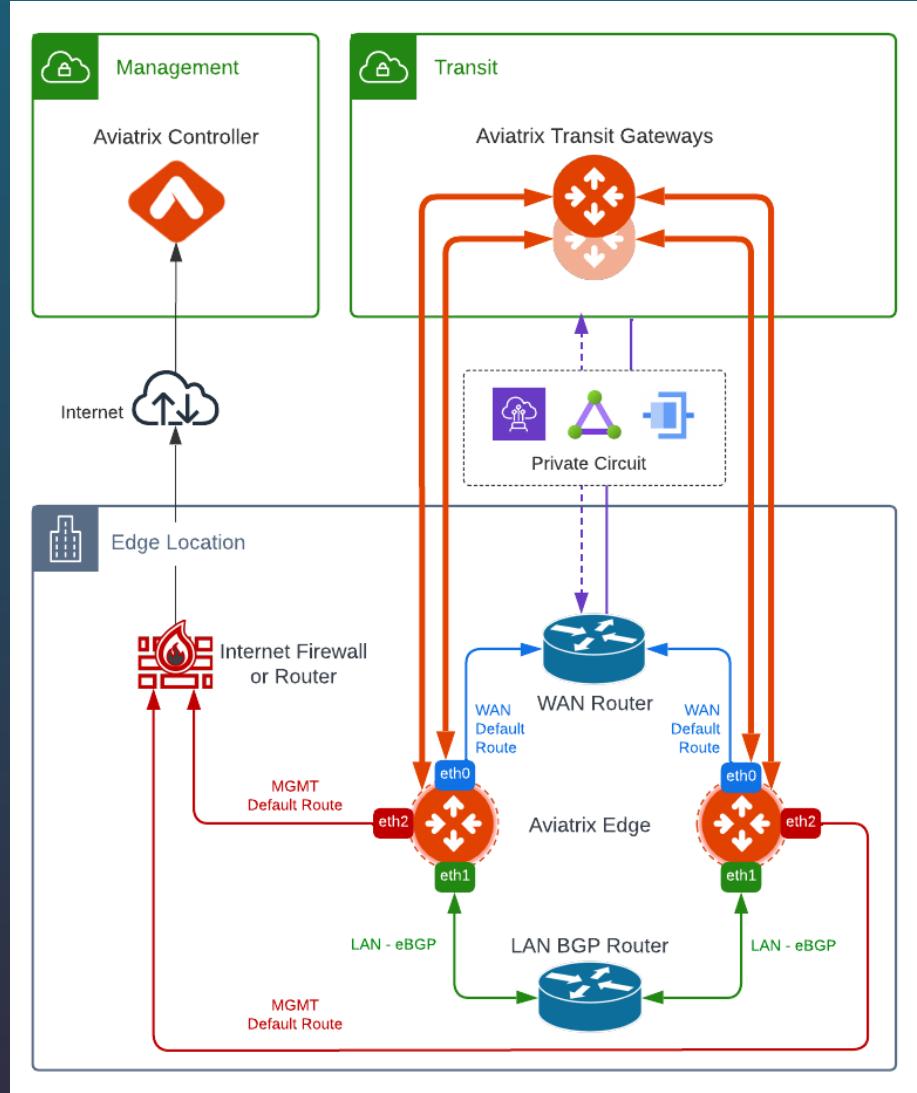


- | | |
|--|---|
| <ul style="list-style-type: none">• Intel Xeon Gold 5318Y 2.1G, 24C/48T, 11.2GT/s, 36M Cache, Turbo, HT (165W) DDR4-2933• 32GB RAM• 600W dual hot-plug power supplies• Enterprise iDRAC license | <ul style="list-style-type: none">• 1U server• Intel E810-XXV Dual Port 10/25GbE SFP28, OCP NIC 3.0• 480GB SSD Drive• TPM 2.0 v3 |
|--|---|

Aviatrix Edge to Aviatrix Transit Attachment

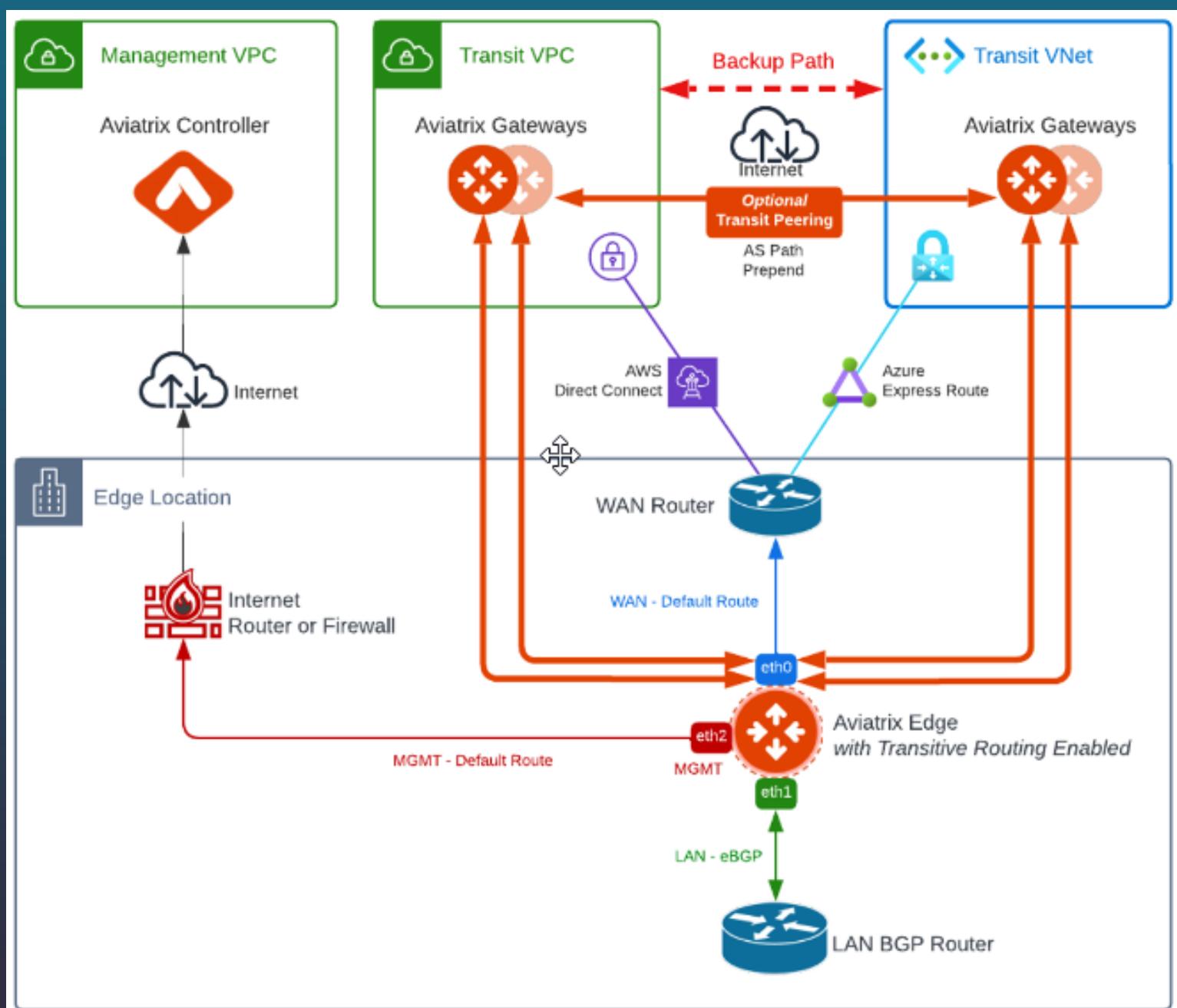


Redundant Edge Connectivity



Transitive Routing

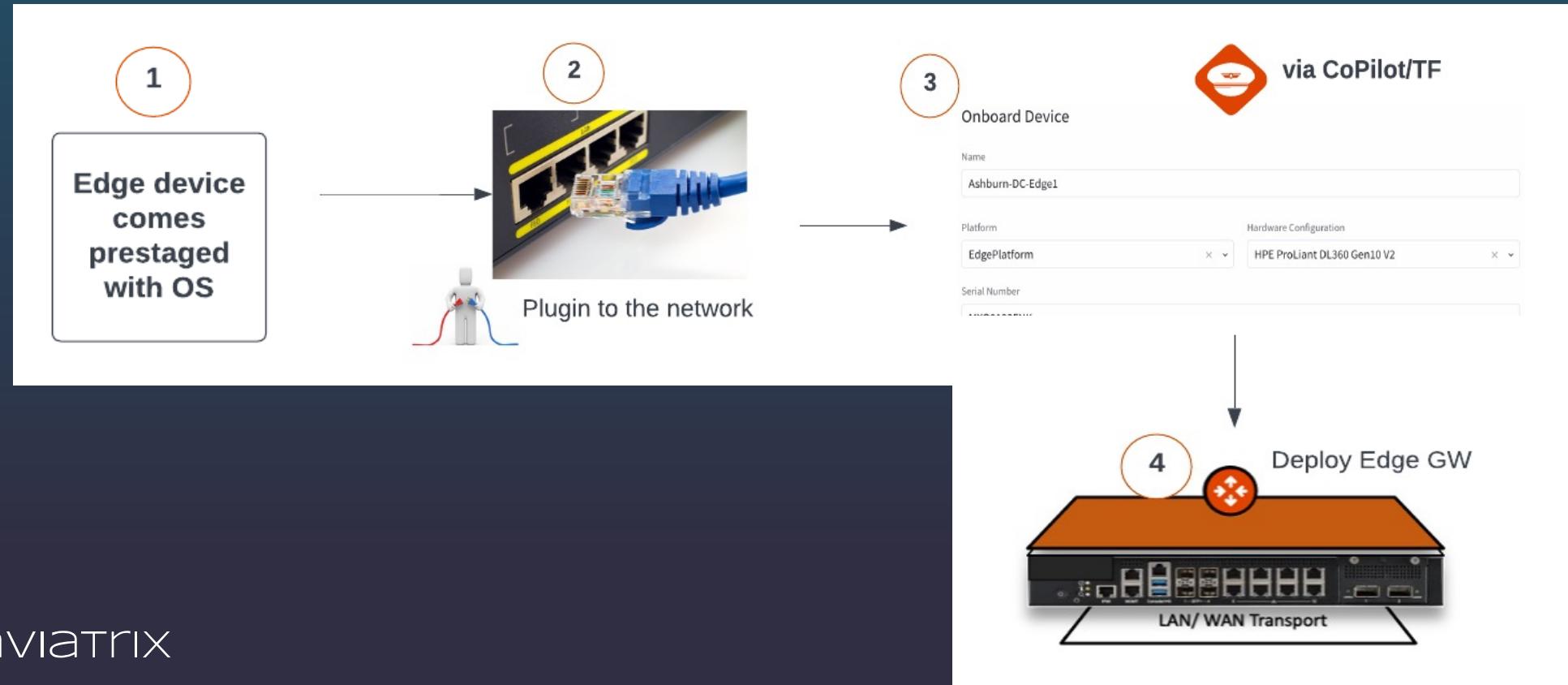
- Aviatrix Edge enables forwarding of routes between multiple Transit Gateways
- Transitive Routing is disabled by default
- Configurable feature



Aviatrix Edge Platform

Onboard , Operate and Manage Edge HW and Edge GW from Cloud

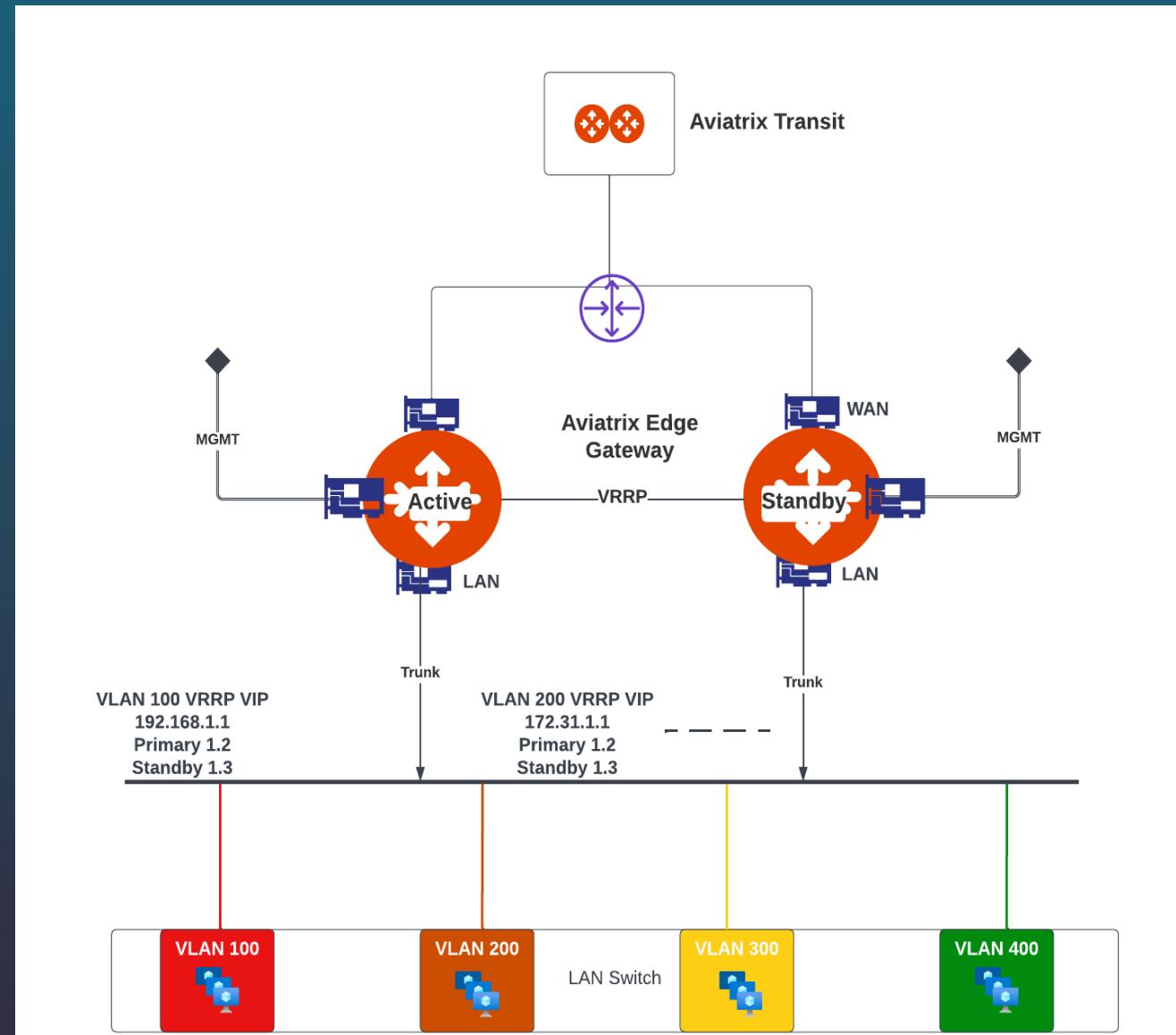
1. Aviatrix Edge OS pre-deployed on HW
2. Customer plugs-in the device
3. Onboard the HW from Cloud
4. Deploy Edge GW from Cloud



Aviatrix Edge- VLAN and VRRP Support

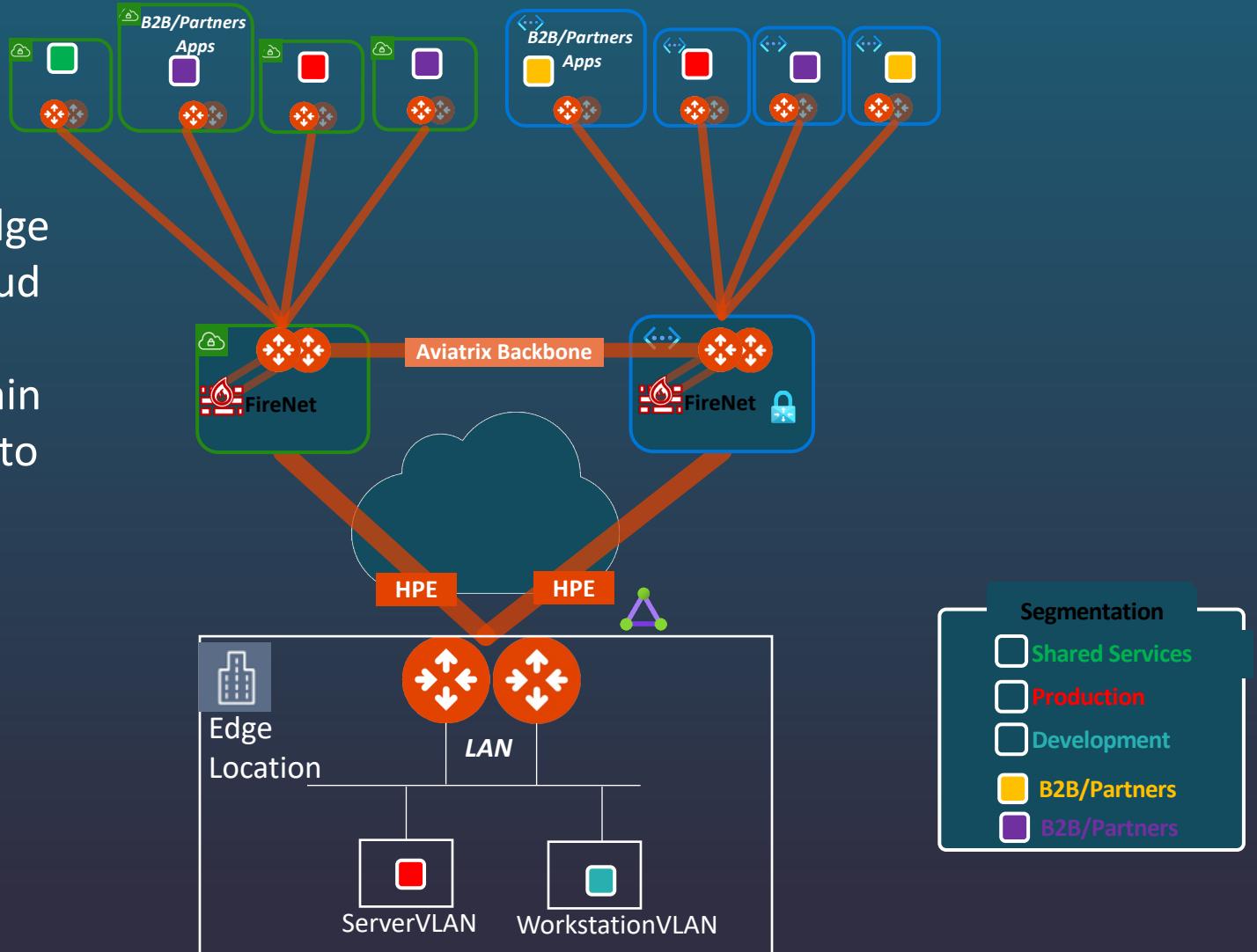
Use case: Large office hub, Factory location with LAN side need

- VLAN support
 - Edge GW can support multiple VLANs on LAN side.
 - Edge as default GW for VLANs CIDRs
 - VLAN range supported: 2-4092
- VRRP support on LAN side:
 - VRRP HA on LAN side – A/S mode
 - Primary GW is active for all VLANs



Aviatrix Edge- VLAN Network Domains

- Maintain network isolation from cloud to edge
- Simplified and consistent policies across cloud and network
- VLANs can be associated to a network domain
- Define domain connection policy for VLANs to CSP Spokes and/or VLAN to VLAN traffic
- Easily extend the segmentation domains to new connections



Aviatrix Edge - DFW using CIDRs

- DFW policy enforcement using CIDRs at Edge
- Secure workload access on-prem <-> cloud

The screenshot shows the Aviatrix DFW interface. At the top, there are tabs: 'Distributed Firewalling' (disabled), 'Rules' (selected), 'Policy Monitor', 'Detected Intrusions', and 'Settings'. Below the tabs is a search bar and a toolbar with icons for adding a rule, sorting, and filtering. A table lists the rules:

Priority	Name	Source	Destination	Action
0	● LANServertoDBAccess	LANServer	DBServer	Allow

To the right of the table, a detailed view of the selected rule 'LANServertoDBAccess' is shown:

Priority	Source	Destination	Protocol
0	LANServer	DBServer	Any

Below the main table, there are tabs for 'Source Entities (1)', 'Destination Entities (1)', and 'Statistics'. The 'Source Entities (1)' tab is selected, showing:

Name	Type	Cloud	Region
10.222.42.1	IP Address		

Central Intent Policy —→ Distributed Enforcement



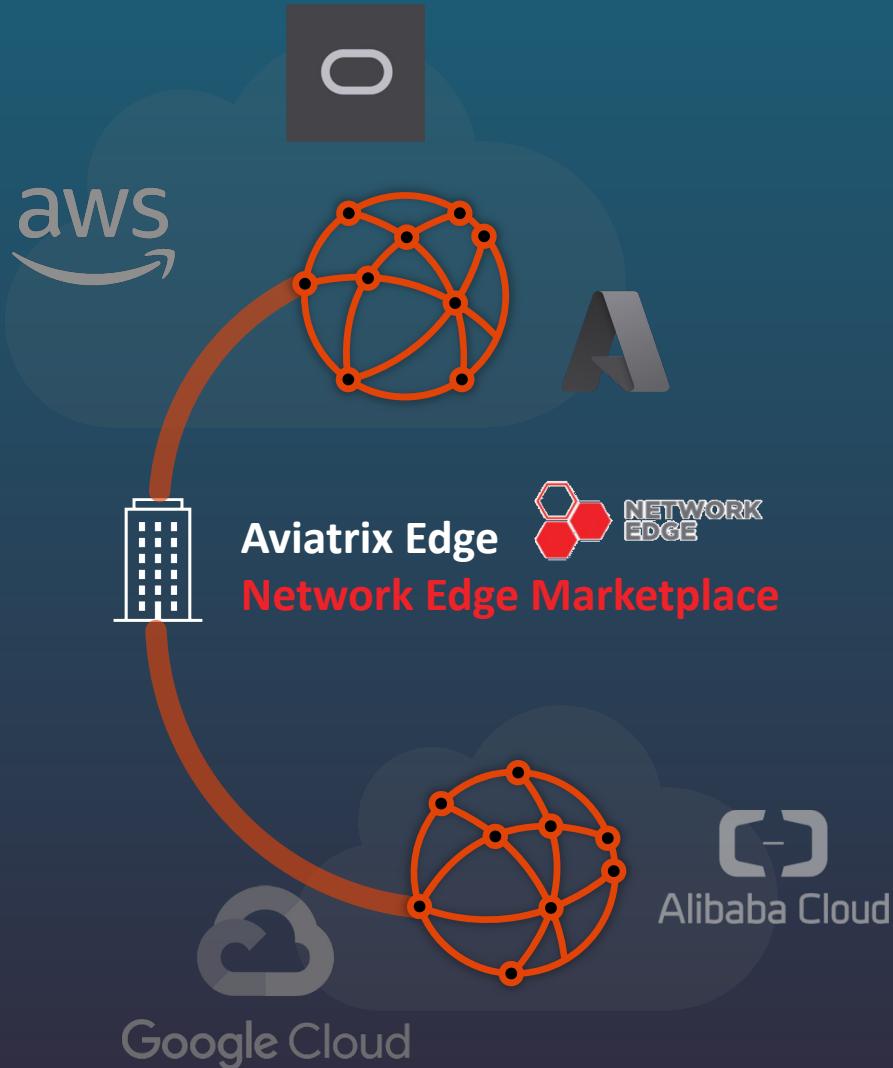
Aviatrix Edge on **Network Edge**

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 Aviatrix Intelligent Cloud Networking using the Equinix Fabric for high performance private cloud networking
- Simplifies highly distributed deployments through Equinix cloud adjacent locations

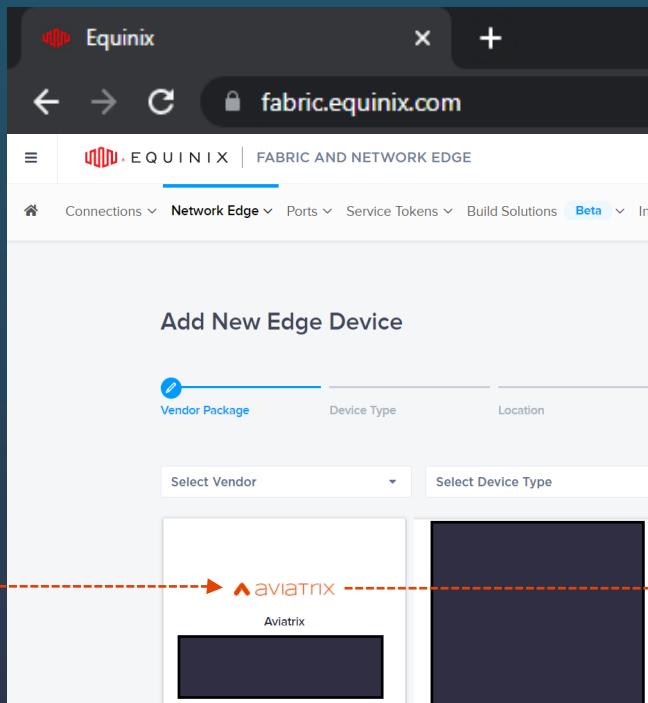
Why Do Customers Deploy?

- High-Performance Encryption, line rate IPSec over AWS Direct Connect, Azure ExpressRoute, and GCP Cloud Interconnect Circuits
- Multicloud connectivity over the Internet for backup
- Enterprise-Class Visibility with Aviatrix CoPilot

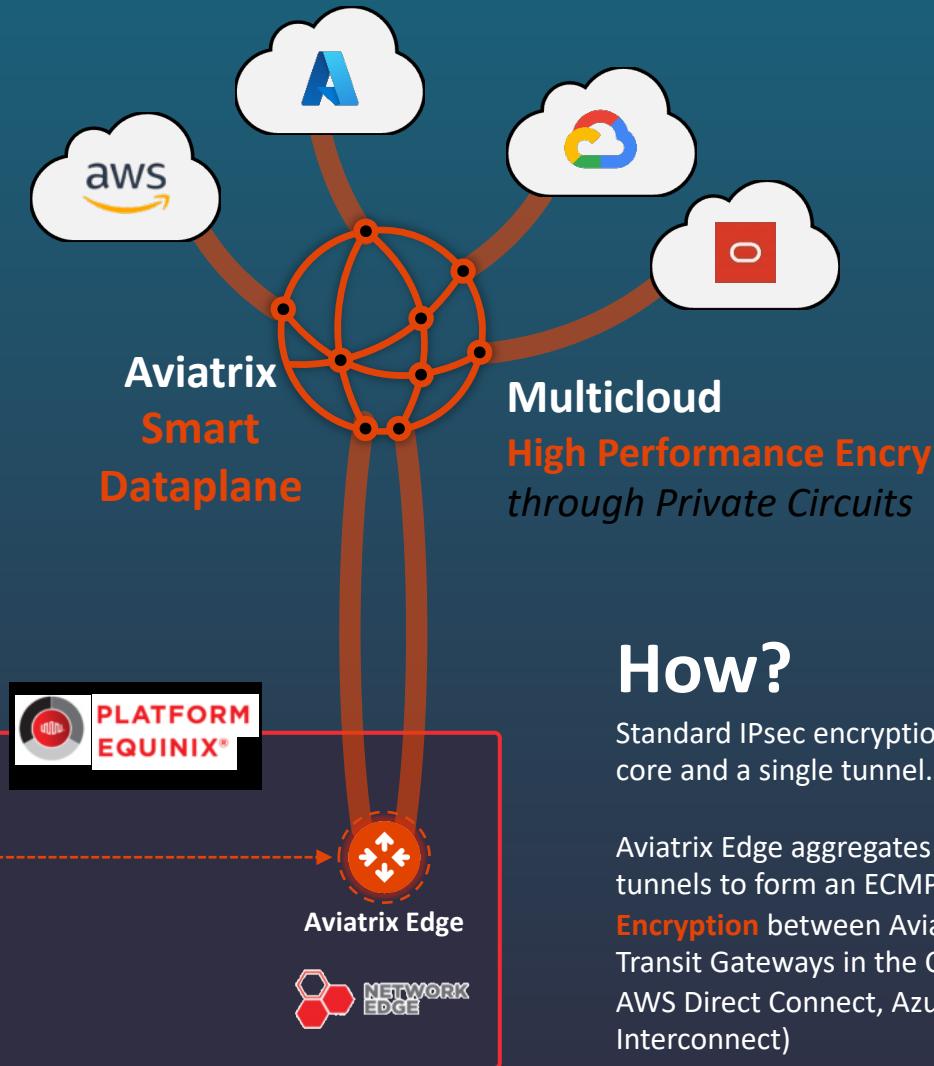
Requirements?

- Aviatrix Edge launched on Network Edge Marketplace
- Aviatrix Transit Gateway in Cloud – software launched from cloud marketplace (AWS, Azure, GCP)

Aviatrix Edge on Network Edge Marketplace



The screenshot shows the Equinix Fabric and Network Edge interface. In the top navigation bar, there is a 'Fabric and Network Edge' tab. Below it, a sub-menu includes 'Connections', 'Network Edge' (which is selected), 'Ports', 'Service Tokens', 'Build Solutions', and 'Beta'. The main content area is titled 'Add New Edge Device'. It has three tabs: 'Vendor Package' (selected), 'Device Type', and 'Location'. Under 'Vendor Package', a dropdown menu says 'Select Vendor' and shows an option for 'aviatrix'. Under 'Device Type', there is a dark blue placeholder box. The 'aviatrix' vendor package is highlighted with a red dashed box.

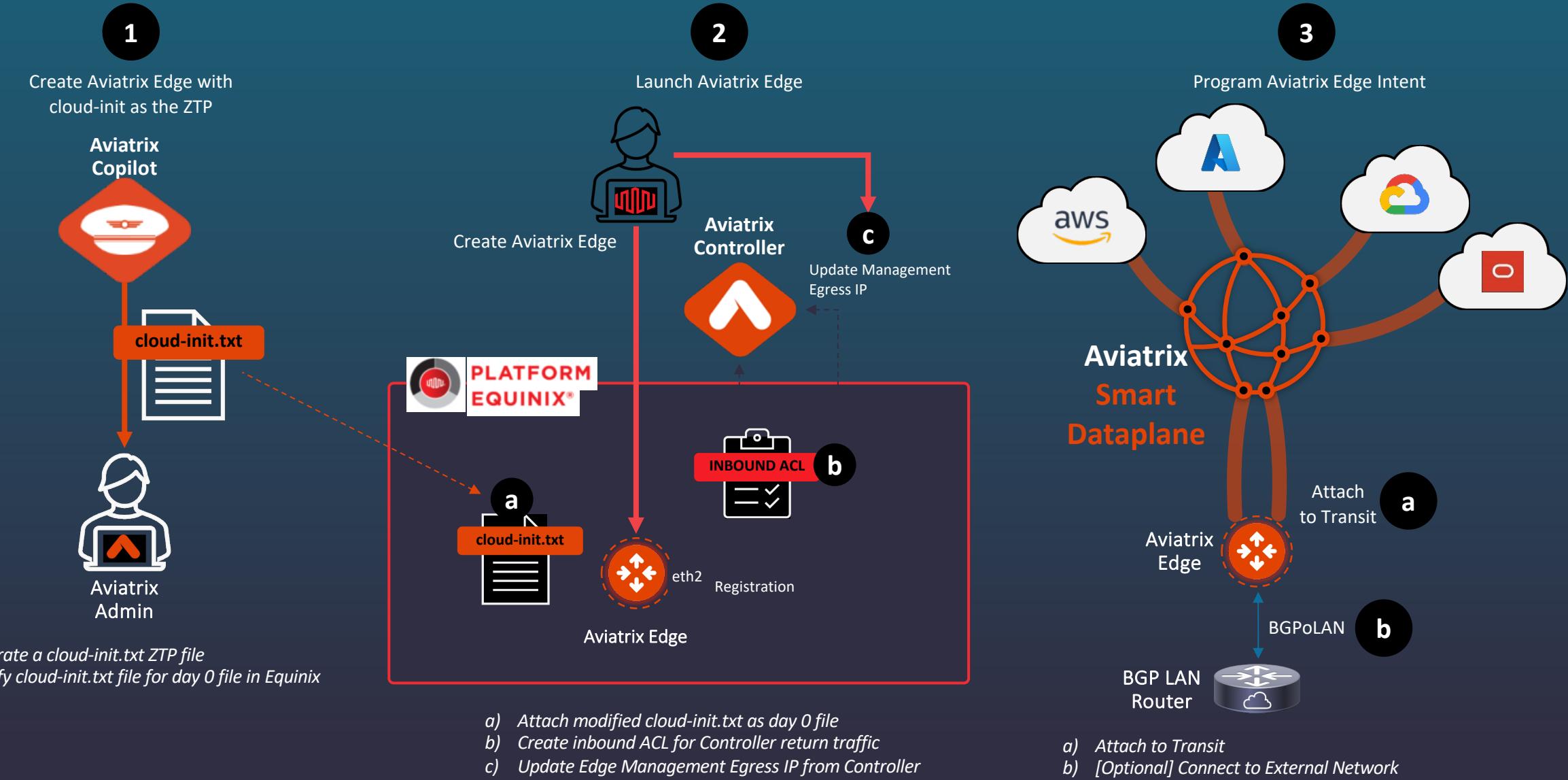


How?

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

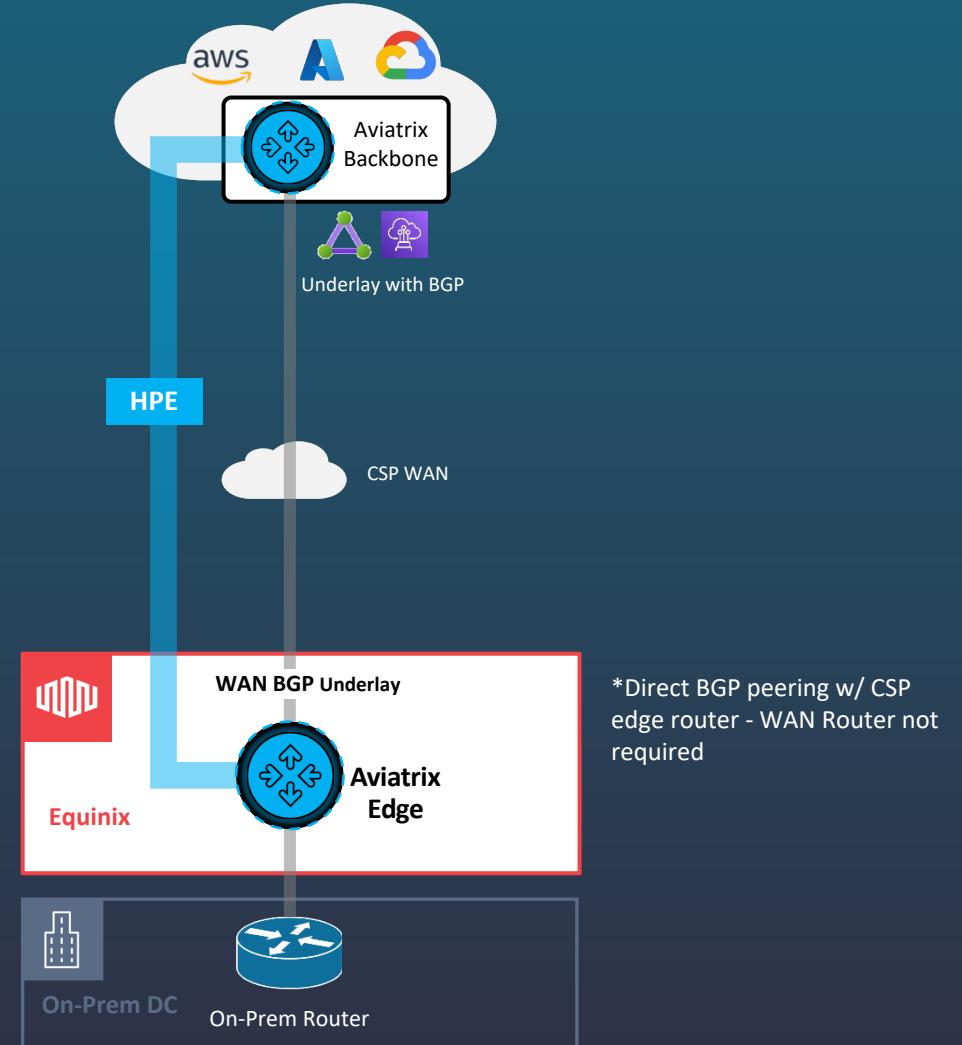
Aviatrix Edge aggregates multiple cores and multiple tunnels to form an ECMP with **High Performance Encryption** between Aviatrix Edge in Equinix to Aviatrix Transit Gateways in the Clouds over private circuits (e.g., AWS Direct Connect, Azure Express Route or GCP Cloud Interconnect)

Aviatrix Edge on Network Edge Deployment Workflow



New For Equinix

- BGP underlay
- Multi-WAN interface
- Edge Capabilities
 - Up to 8 WAN Interfaces (recommended 4)
 - Single LAN
 - Single Mgmt.



Enabling additional WAN interface.

Interface Configuration

Equinix support 1 MGMT, 1 LAN and Multiple WANs

WAN 2 LAN 0 MGMT 0 + WAN Interface

Edge Gateway Interface Interface Tag BGP

eth0 Optional On

Primary Interface CIDR Default Gateway IP

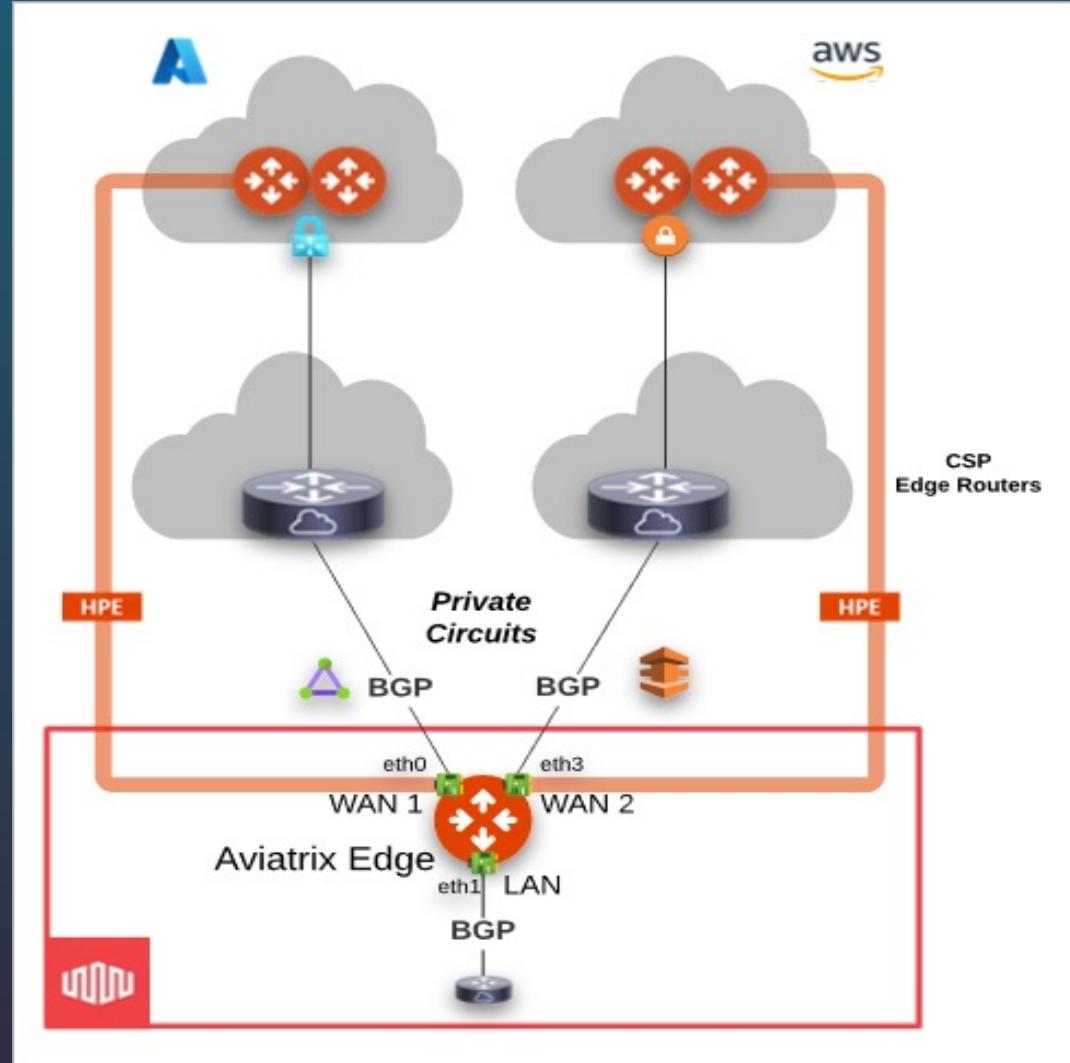
BGP Configuration Local ASN Remote ASN Local Tunnel IP Remote Tunnel IP Password

Edge Gateway Interface Interface Tag BGP

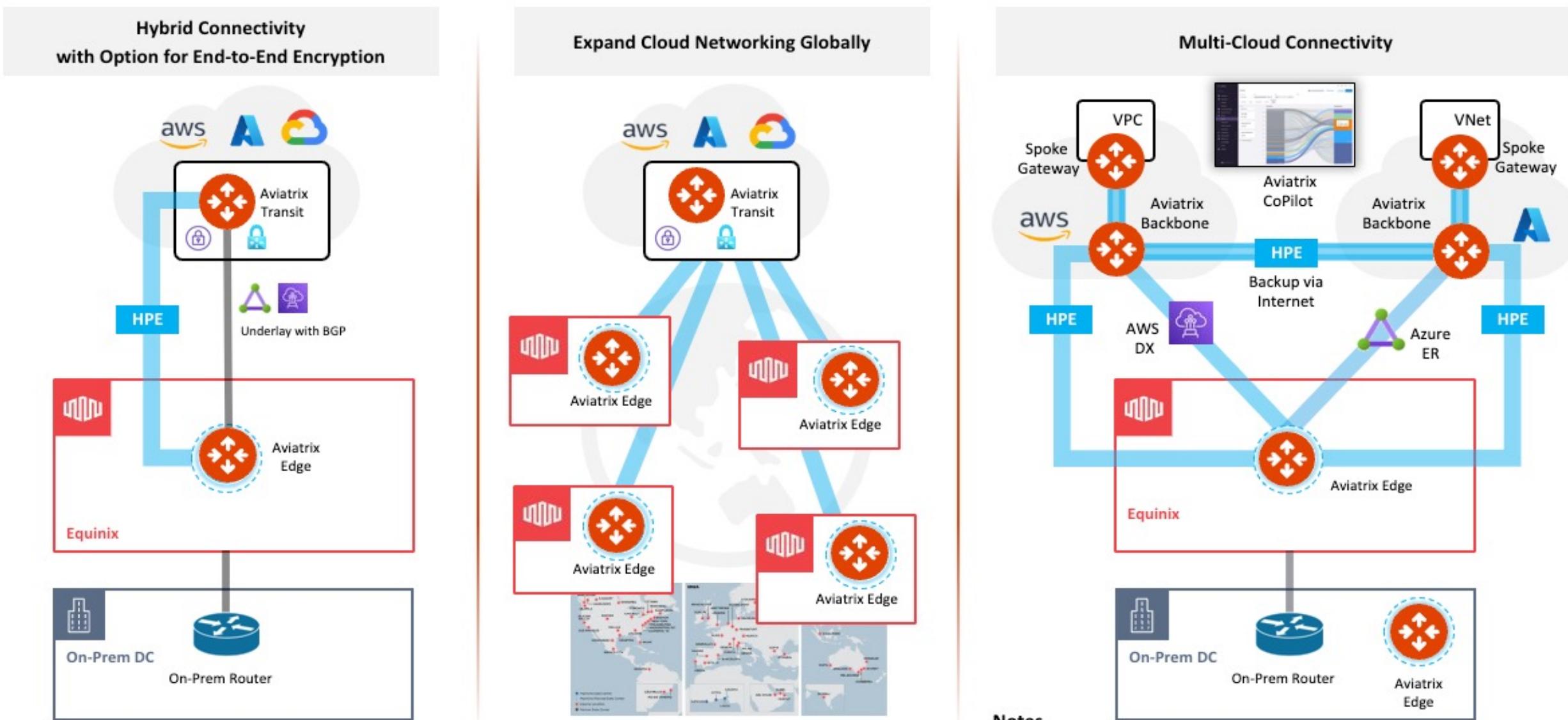
eth3 Optional On

Primary Interface CIDR Default Gateway IP

BGP Configuration Local ASN Remote ASN Local Tunnel IP Remote Tunnel IP Password

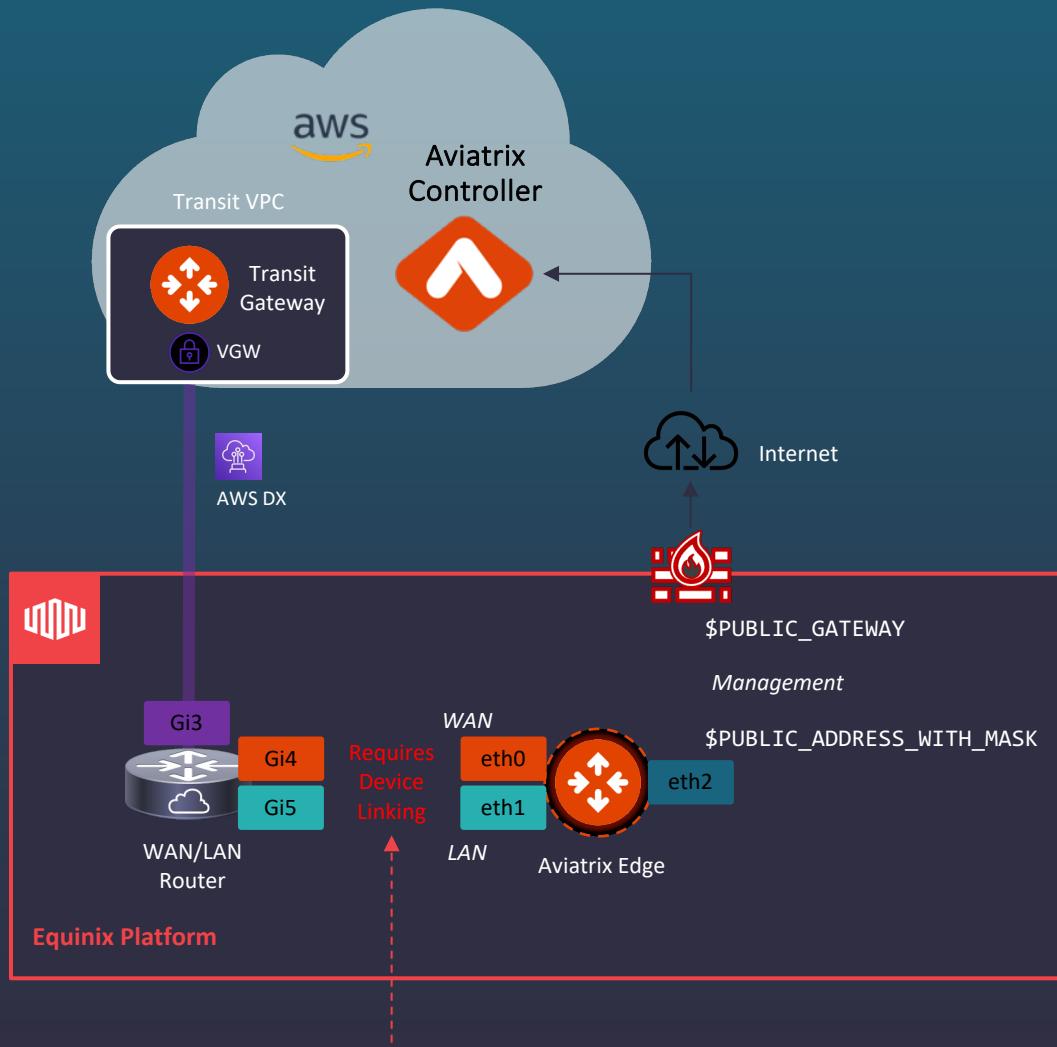


Aviatrix Edge on Network Edge – Popular Use Cases



Notes

Device Linking



Device Linking Table

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

