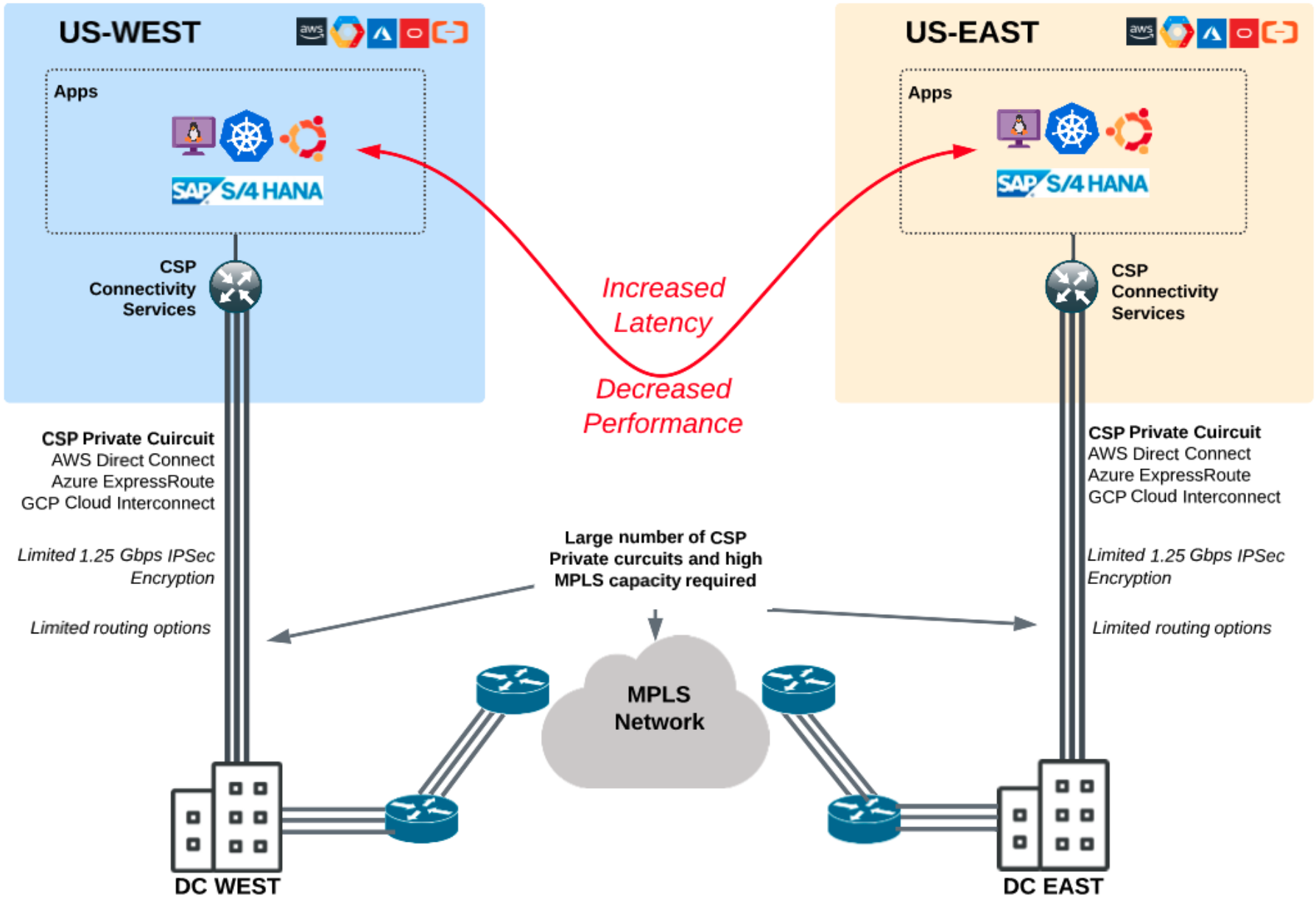
Cloud Backbone Details

ACE GLOBAL ENABLEMENT AND TRAINING
SOLUTIONS ARCHITECT TEAM

Existing Backbone Solution (Issues)

Existing Backbone using expensive on-prem-private circuits and MPLs Backbone

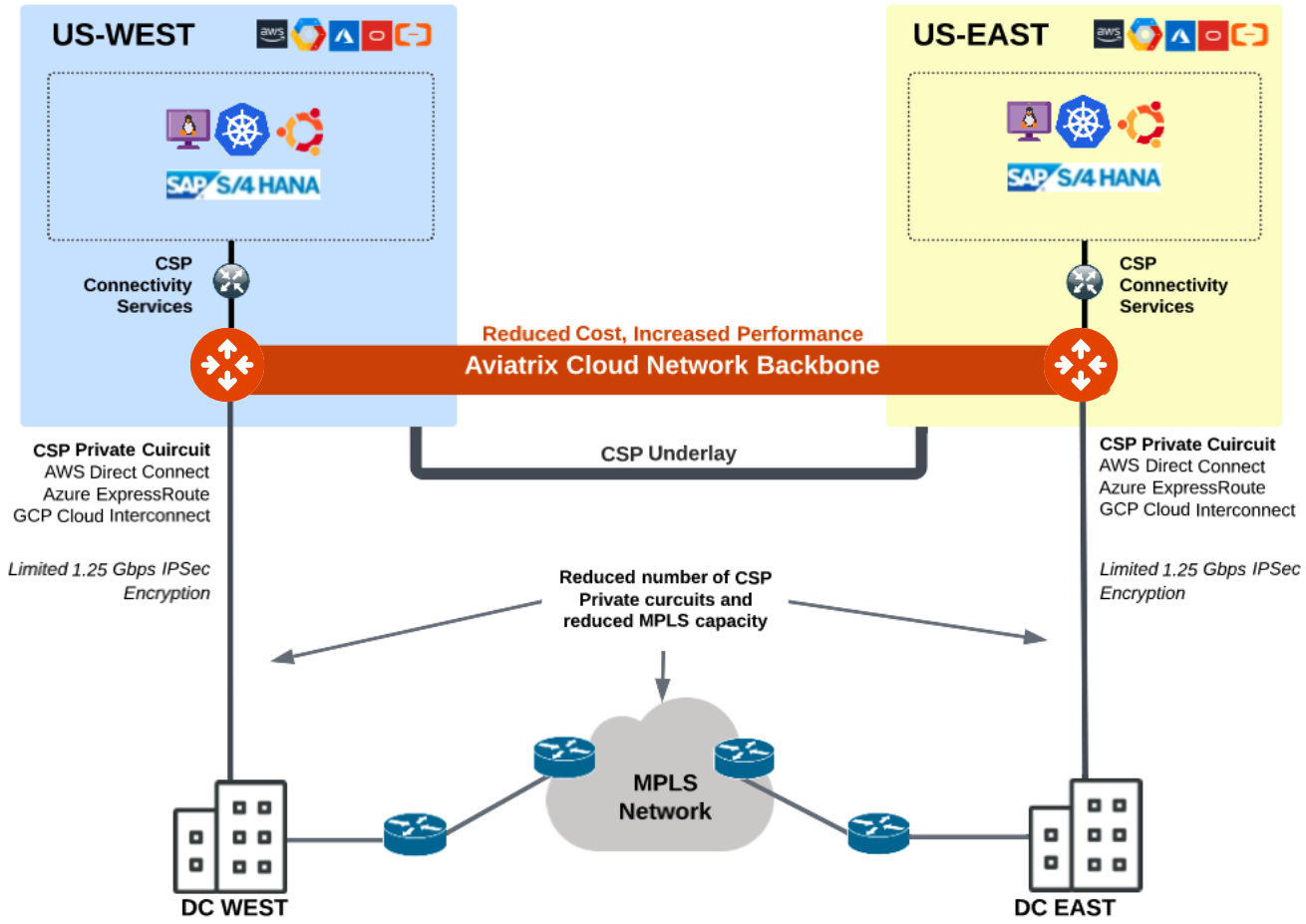


Aviatrix Backbone Use Cases

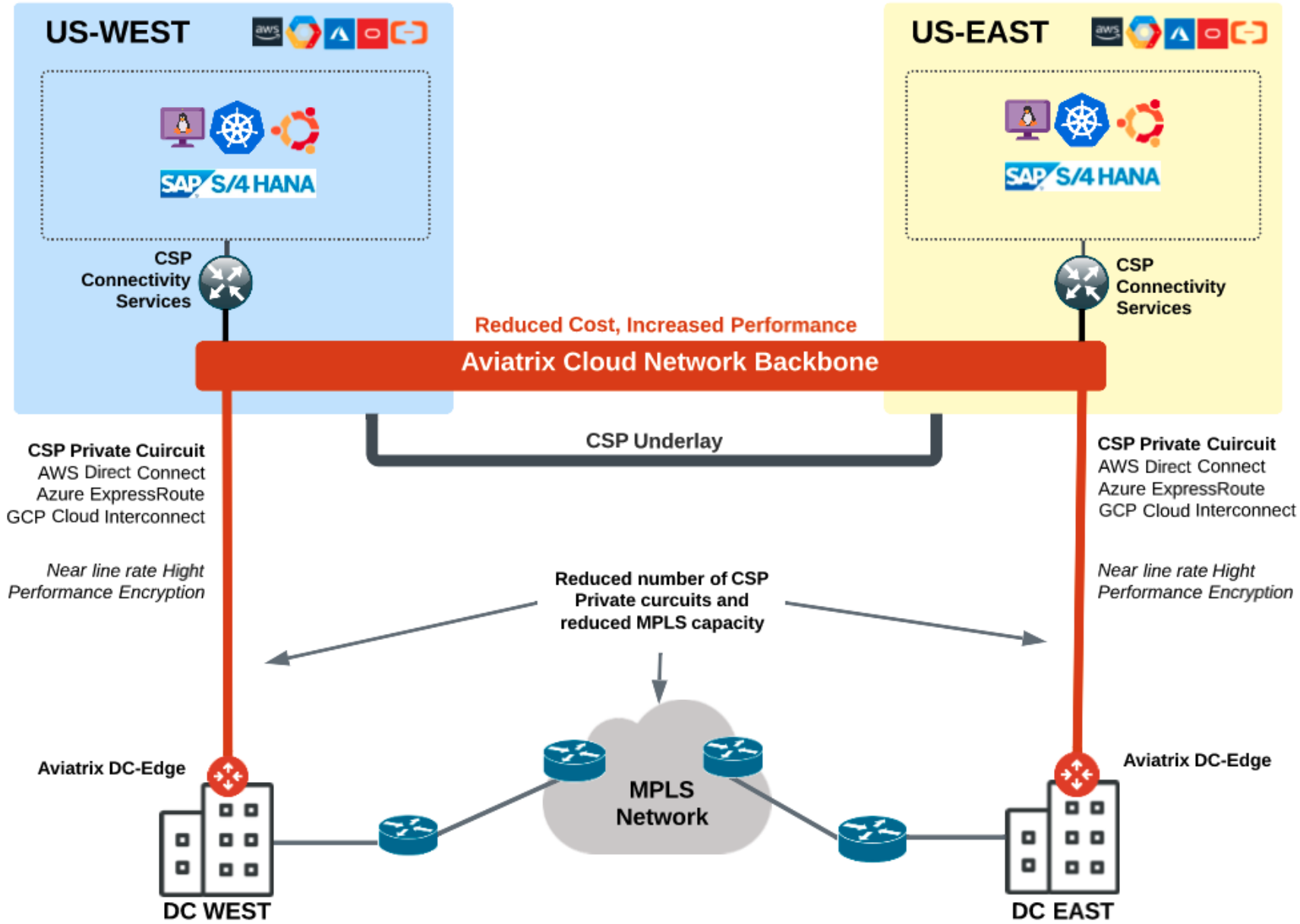
Aviatrix Backbone Use-Cases

- Building Cloud Backbone
- Aviatrix Backbone to CSP Native Transit (AWS TGW, Azure vWAN, etc.)
- Aviatrix Backbone to Aviatrix Spoke Gateways in CSP VPC/VNET
- Aviatrix Backbone to Edge Locations
  - To Data Center/Colo without Aviatrix Edge
  - To Data Center/Colo with Aviatrix Edge
- Fully Integrated Aviatrix Solution

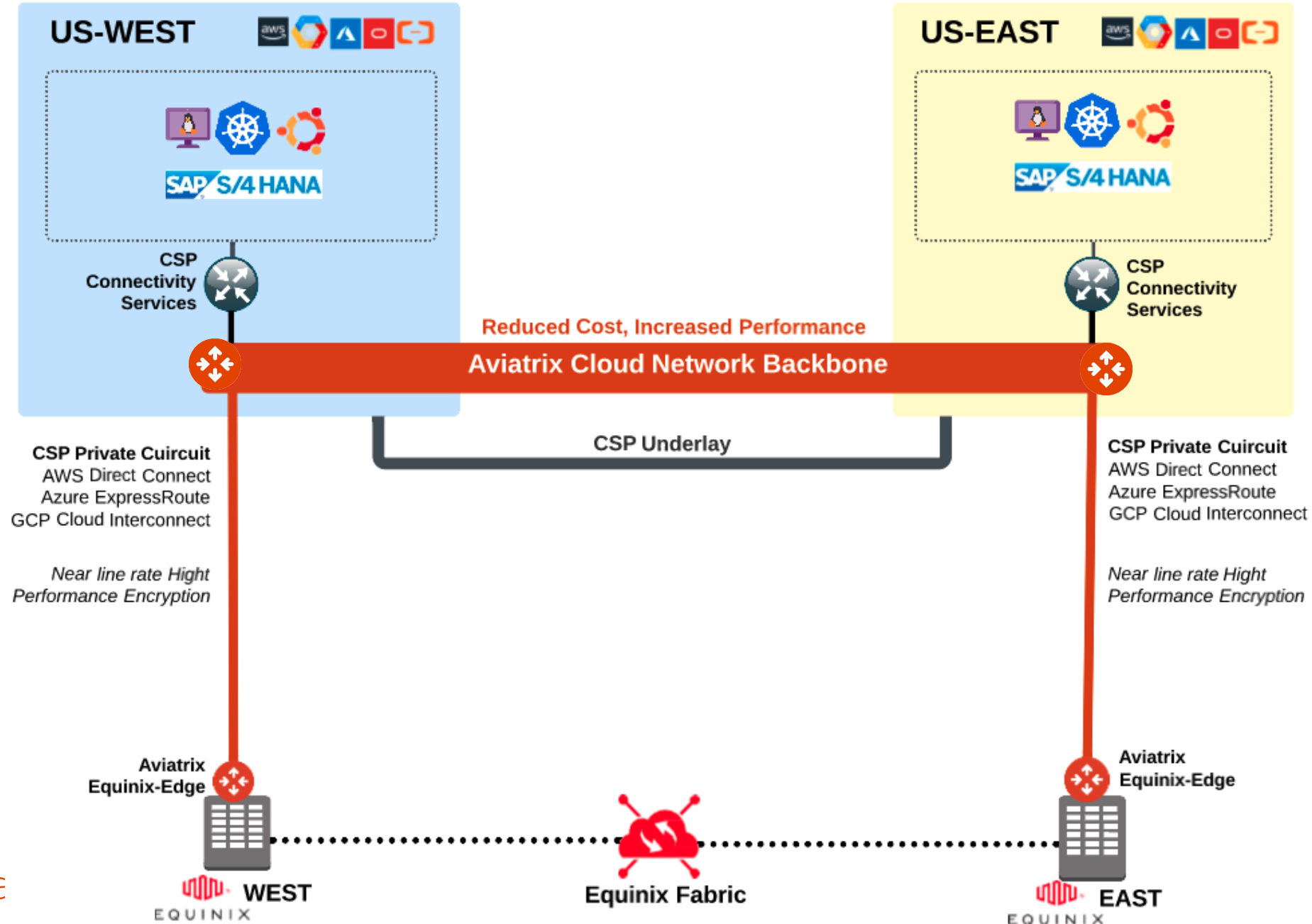
Cloud Backbone with Aviatrix Leveraging CSP Underlay



Extend Cloud Backbone to Data Center with Aviatrix DC Edge



Extend Cloud Backbone to Colocations with Midmile Providers (Equinix and Megaport)



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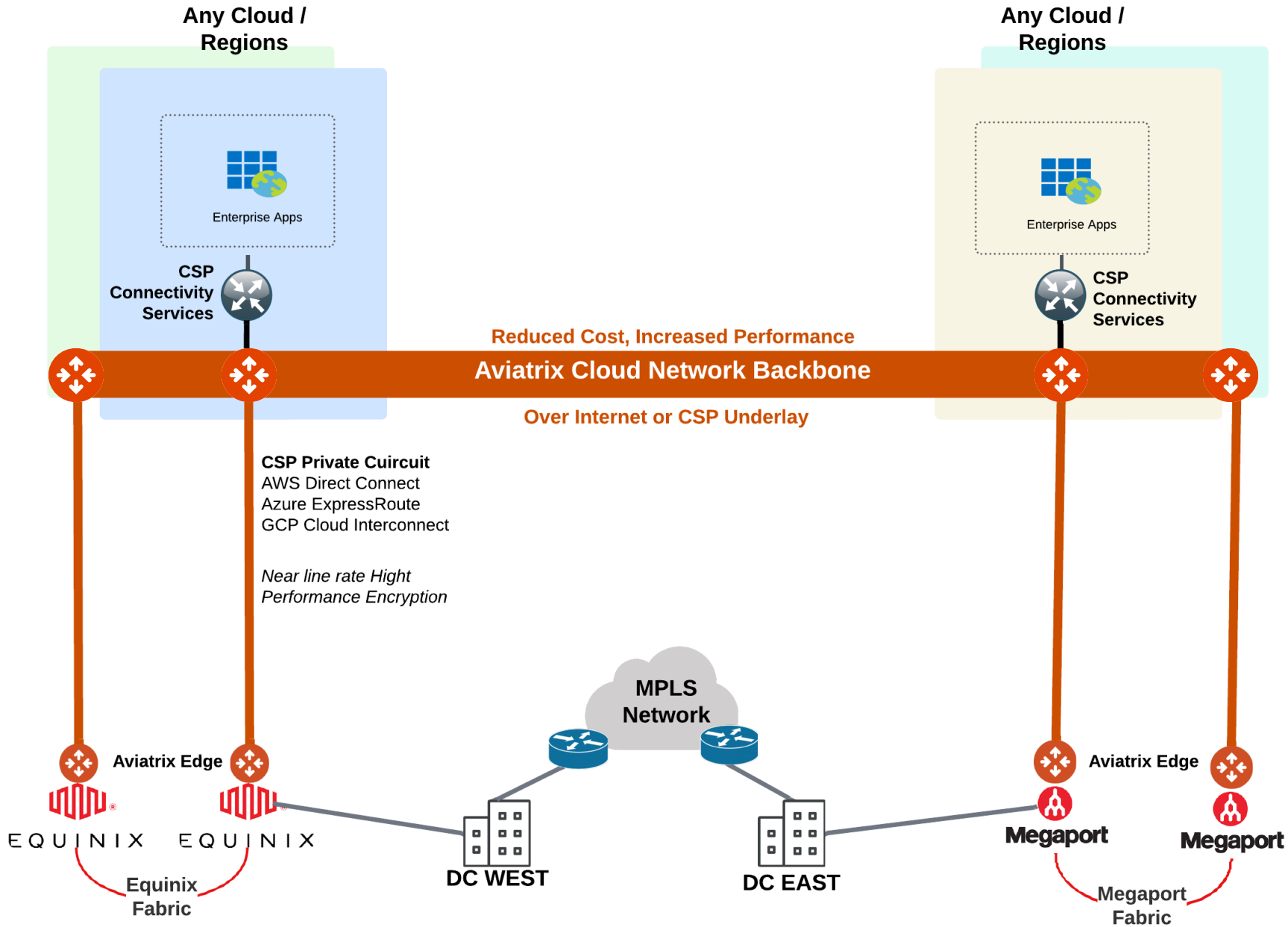
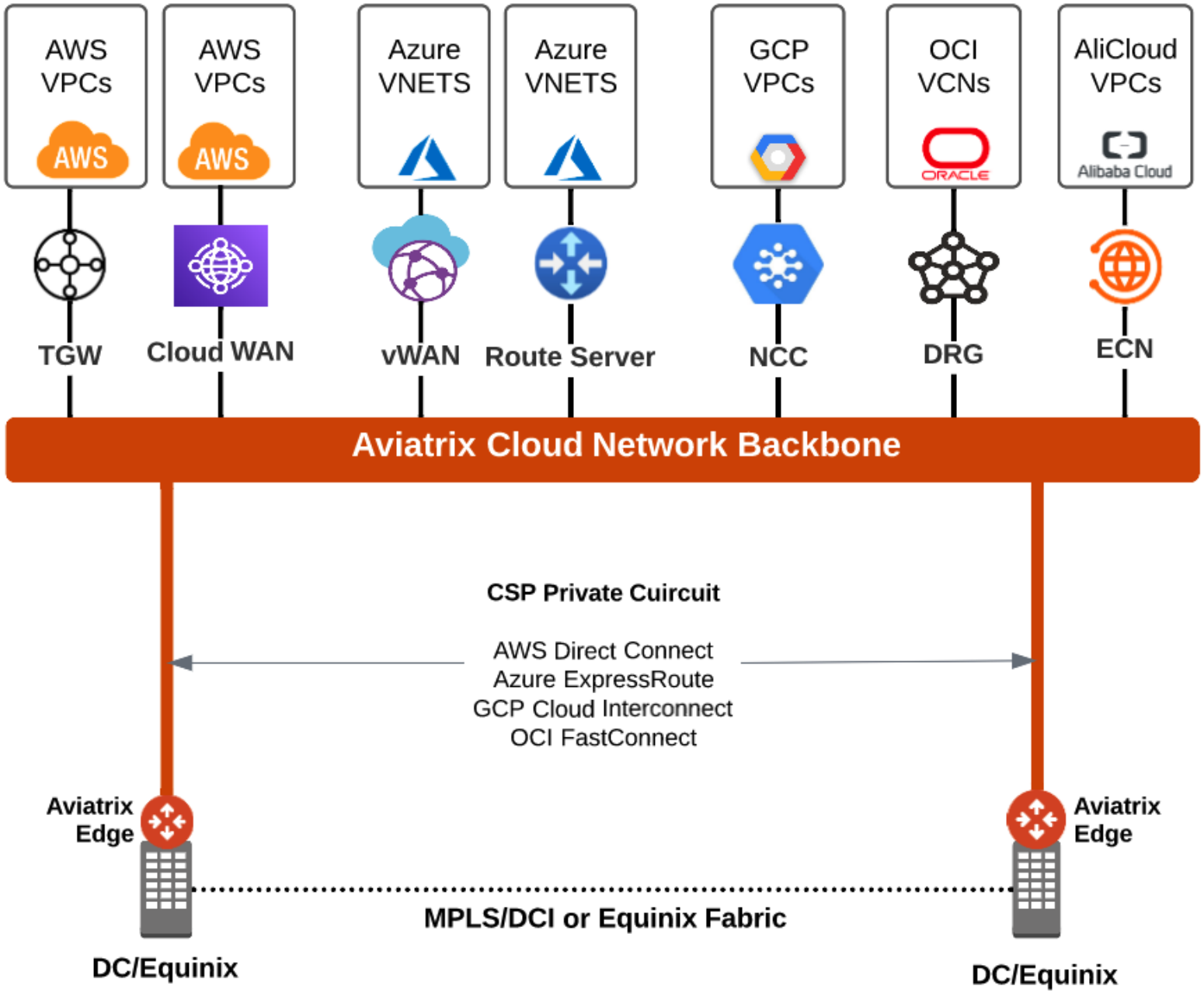
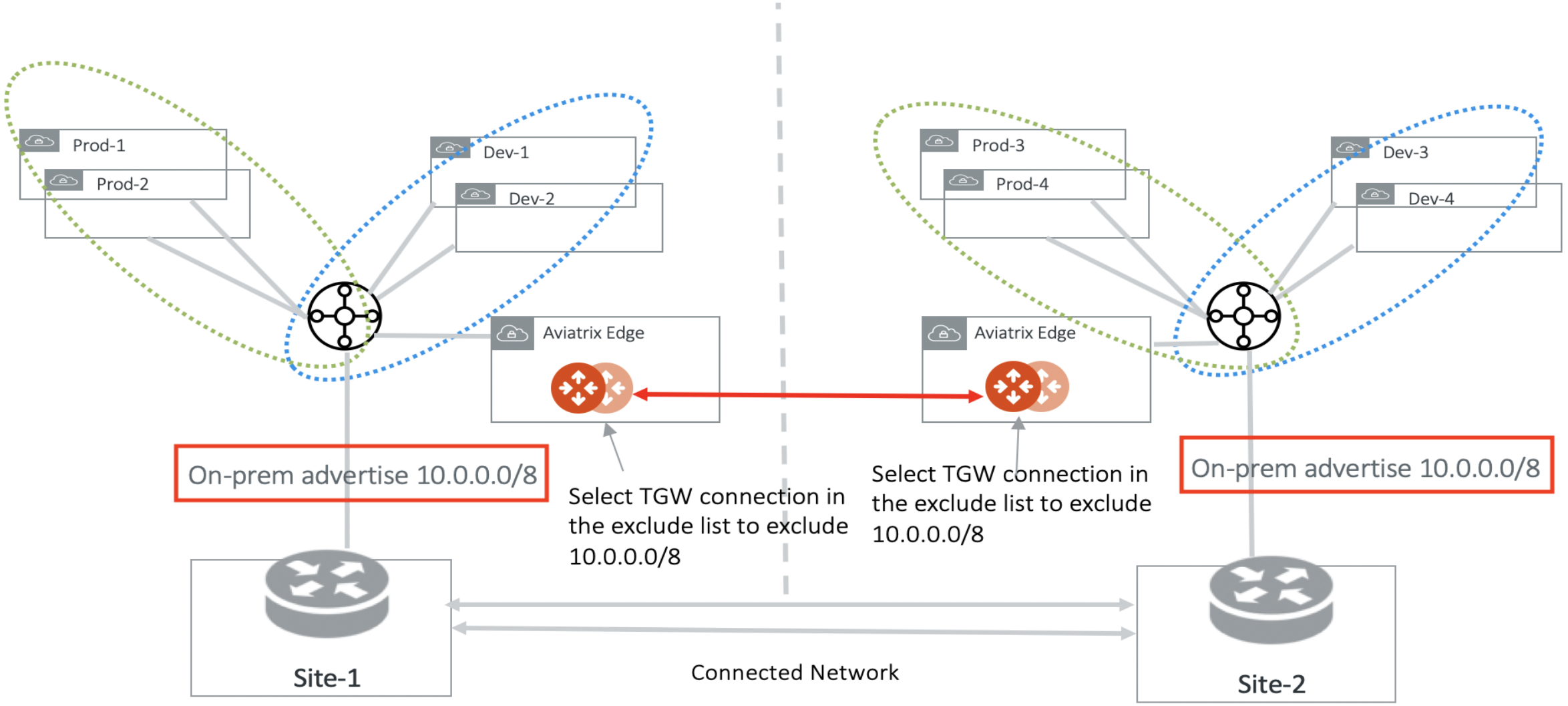


Aviatrix Backbone to CSP Native Transit (AWS TGW, Azure vWAN, etc.)

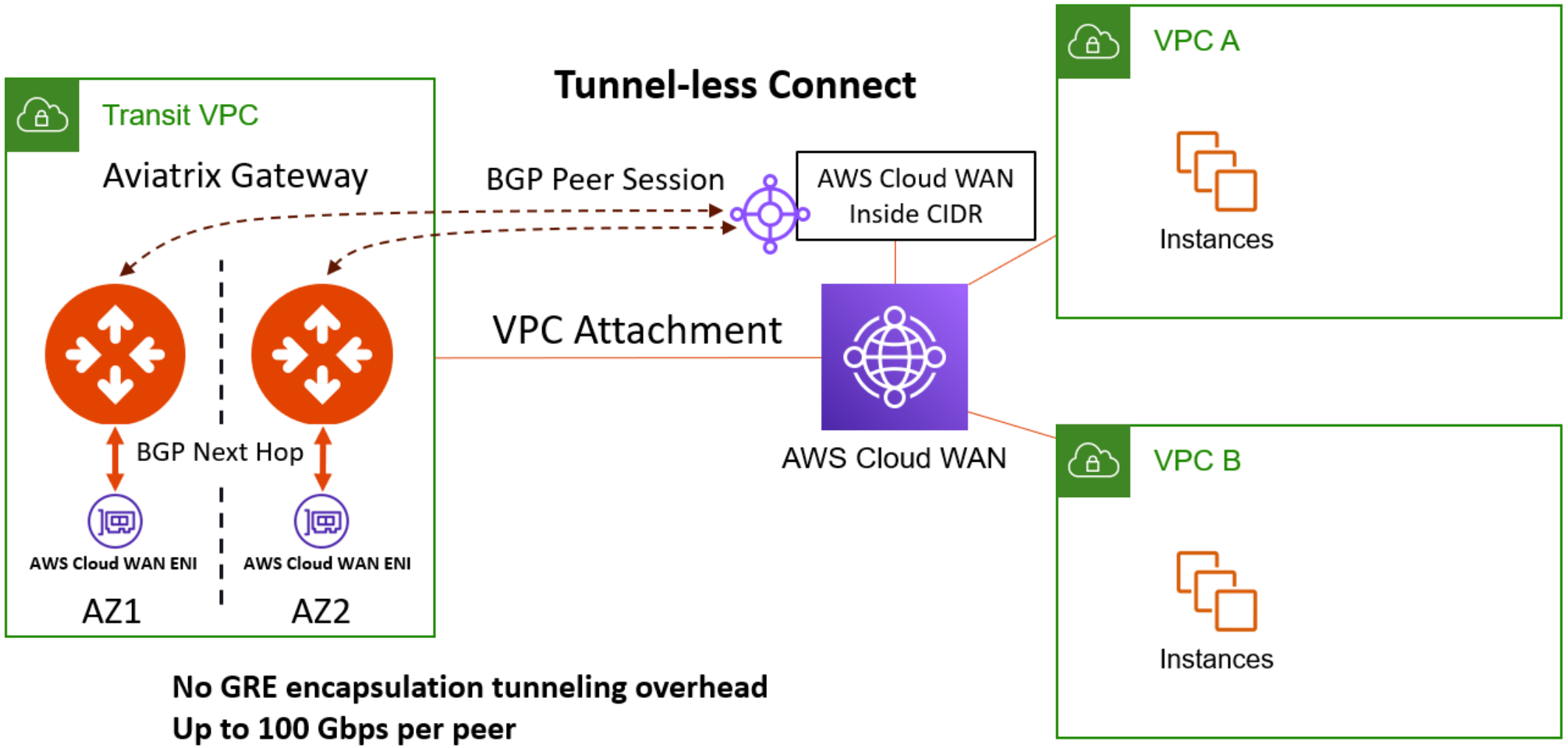
Aviatrix Backbone with CSP Native Networking:



Aviatrix Backbone in AWS to connect Multiple Regions



Integrating Aviatrix with AWS Cloud WAN



No GRE encapsulation tunneling overhead

Up to 100 Gbps per peer

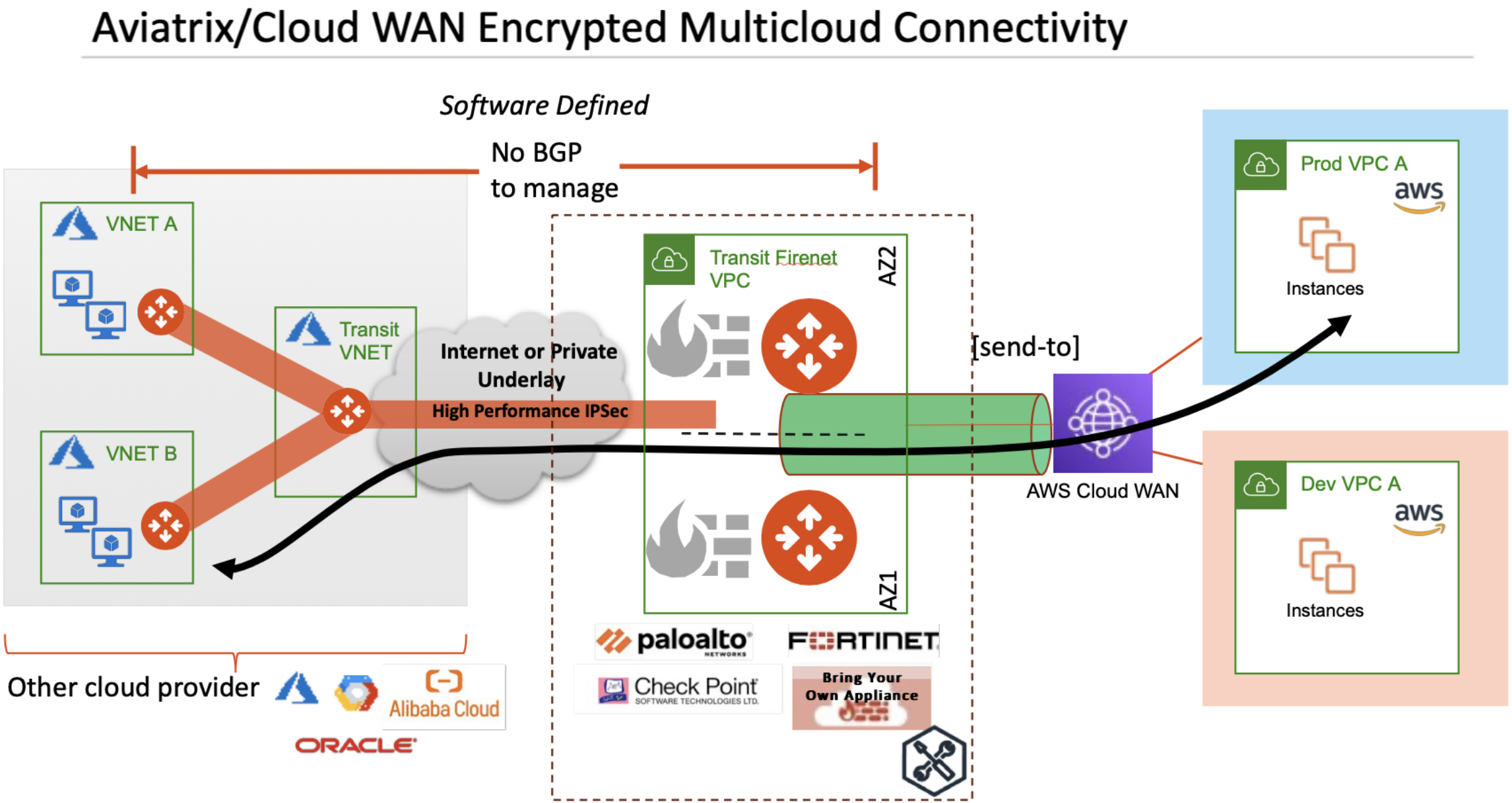
Aviatrix Transit VPC is a VPC attachment to AWS Cloud WAN

BGP Session to AWS Cloud WAN Inside CIDR

AWS Cloud WAN BGP Next Hop is in the Aviatrix Transit VPC

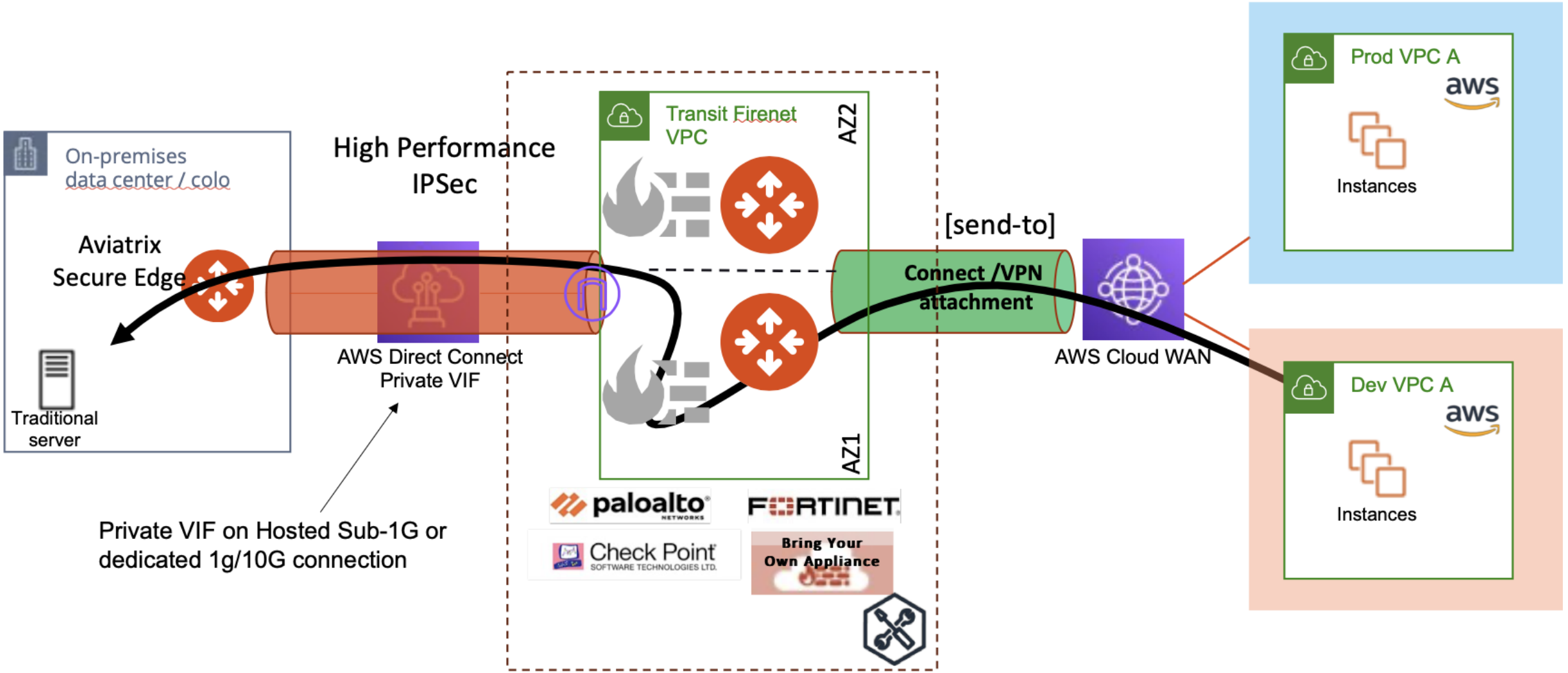
Does not yet support segmentation use cases

Aviatrix Cloud WAN Multicloud Connectivity



Aviatrix Cloud WAN On Prem Connectivity

Encrypted On Prem connectivity using Private VIF and Transit Firenet

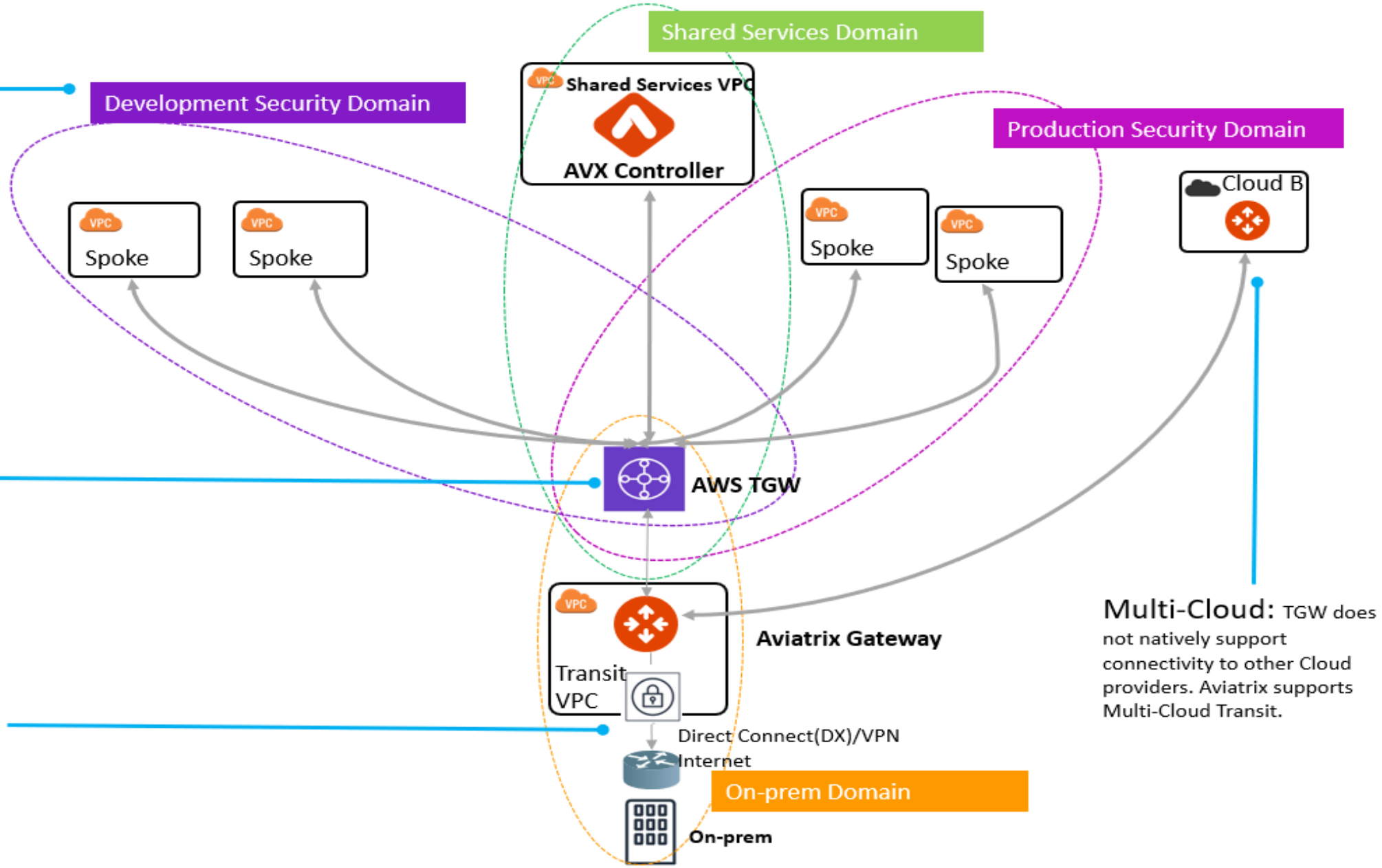


Aviatrix Backbone to overcome Native Limitations

Security Domain:
Enforced network of member VPCs attached to the same route table. Member VPCs have connectivity to each other. VPCs outside the domain cannot connect. A Security Domain is an instantiation of the TGW Route Domain concept.

Connection Policy:
Enforced cross-security domain connection. Uses TGW route table propagation

Direct Connect: Several limitations of DX and DXGW with TGW such as 3 TGW per DXGW. Aviatrix Gateway overcomes these limitations and supports DX via a VGW and VPN .



Multi-Cloud: TGW does not natively support connectivity to other Cloud providers. Aviatrix supports Multi-Cloud Transit.

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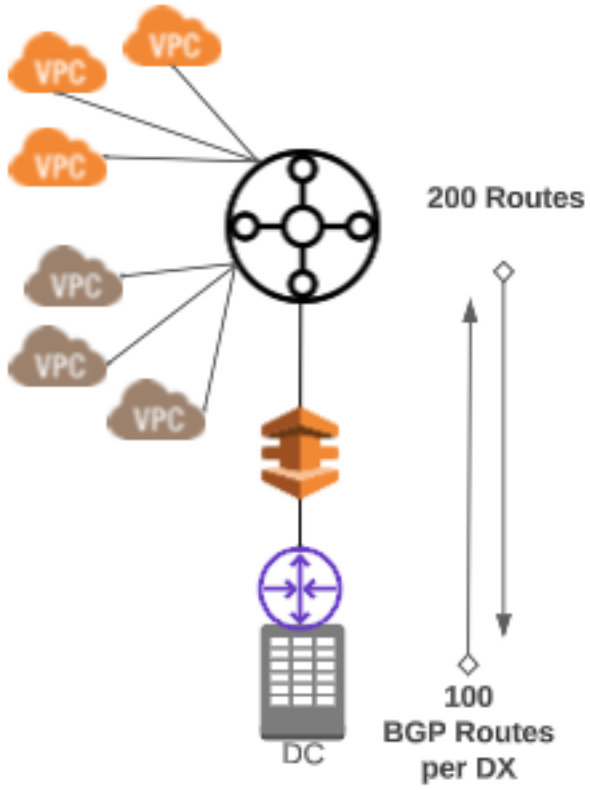
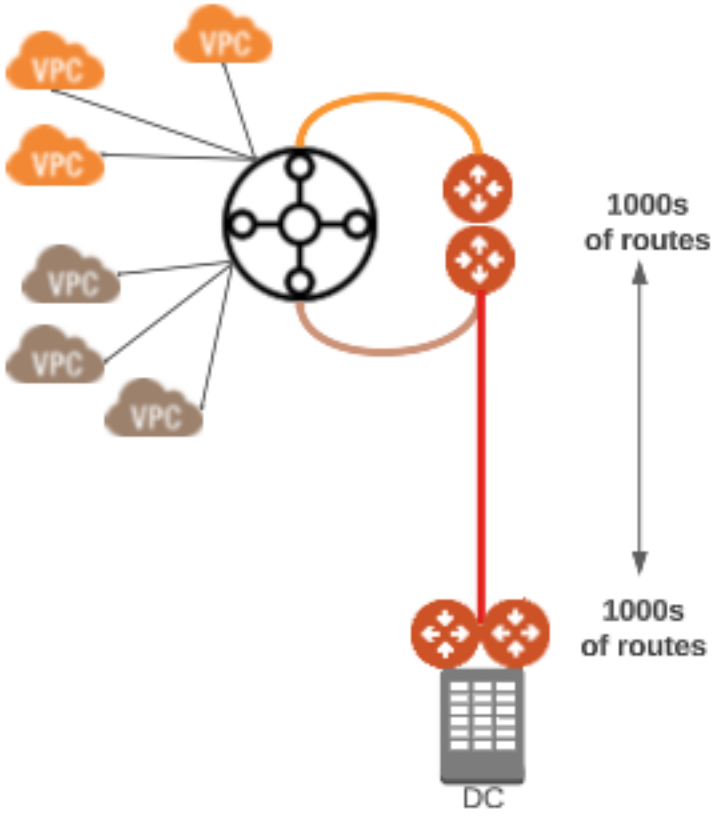
Aviatrix Backbone to overcome Native Limitations



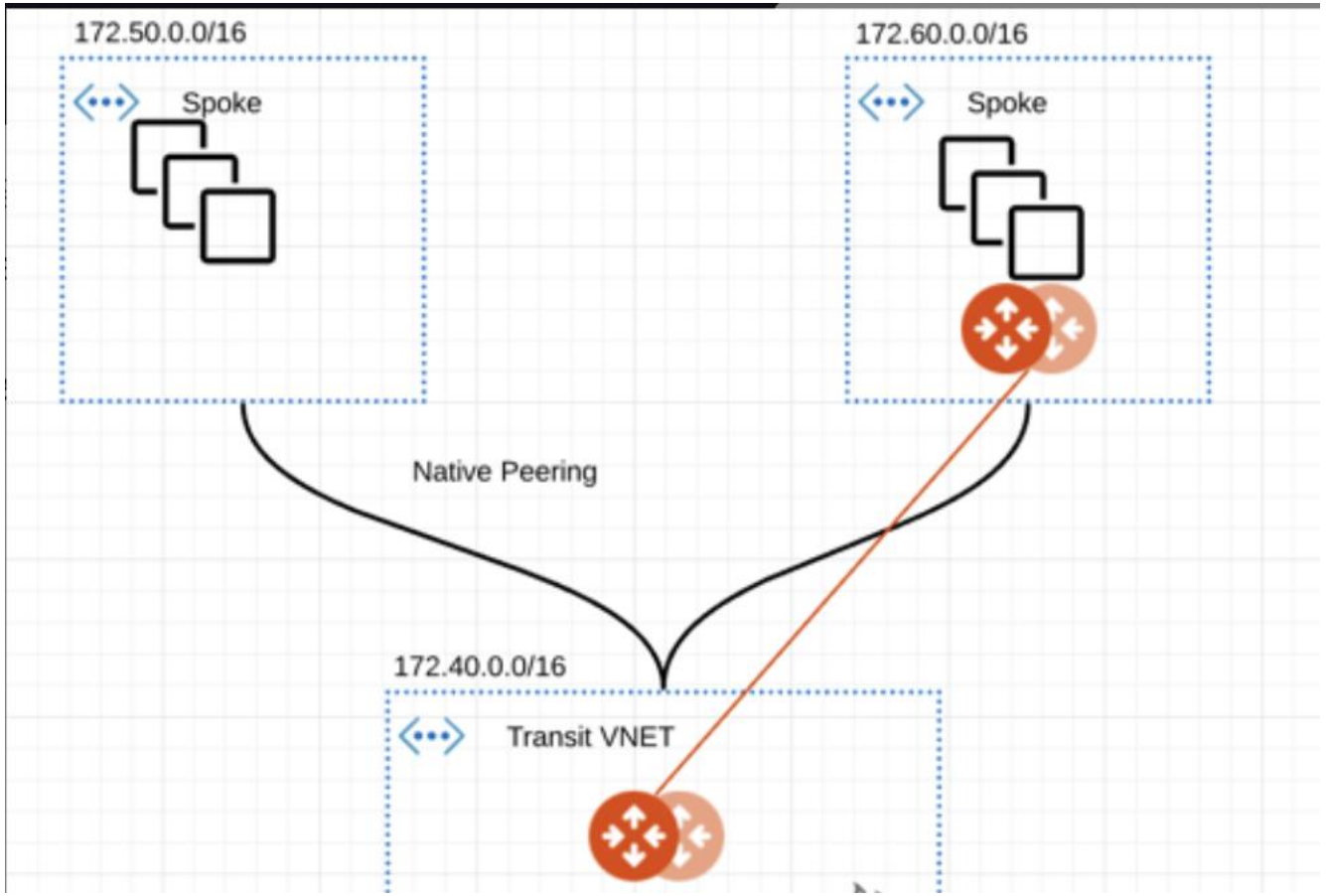
Cloud Native



Aviatrix Integrated

Link

Aviatrix Backbone with Azure with Native peering



Aviatrix Backbone to Aviatrix Spoke Gateways in CSP VPC/VNET

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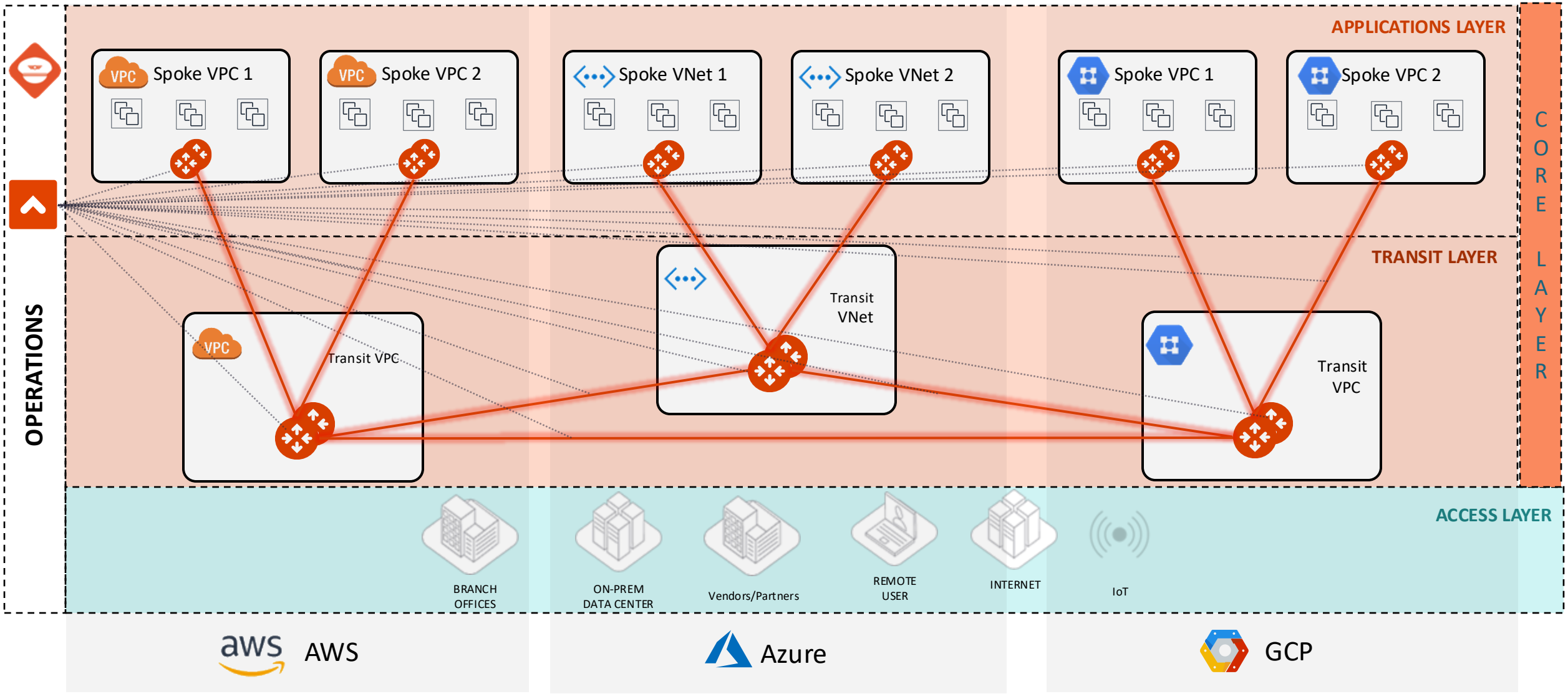
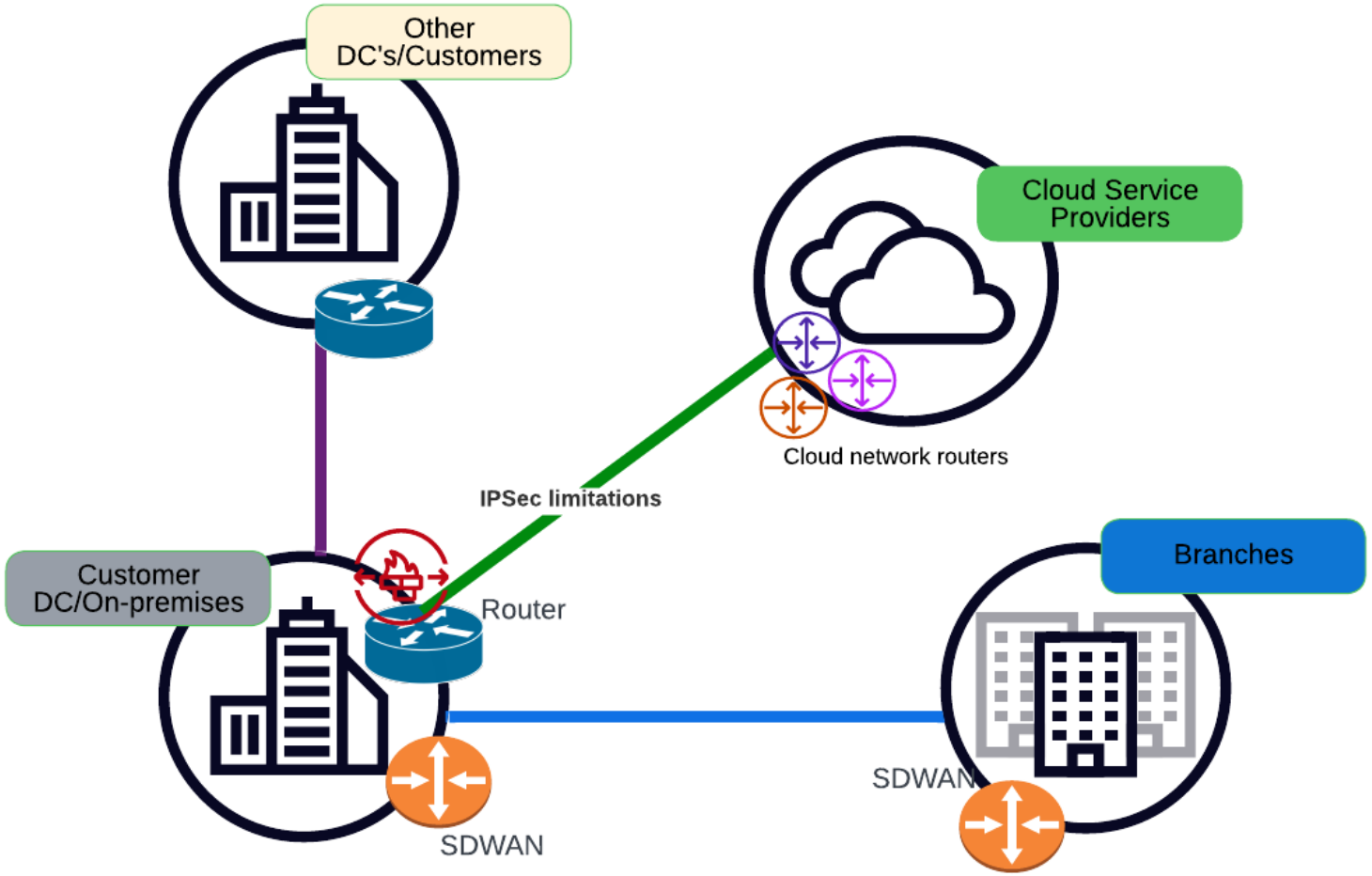
MCNA Deployment:



Aviatrix Backbone to Edge Locations

- To Data Center/Colo **with** Aviatrix Edge

Problem:
Existing Hybrid and multi-cloud network solution challenges



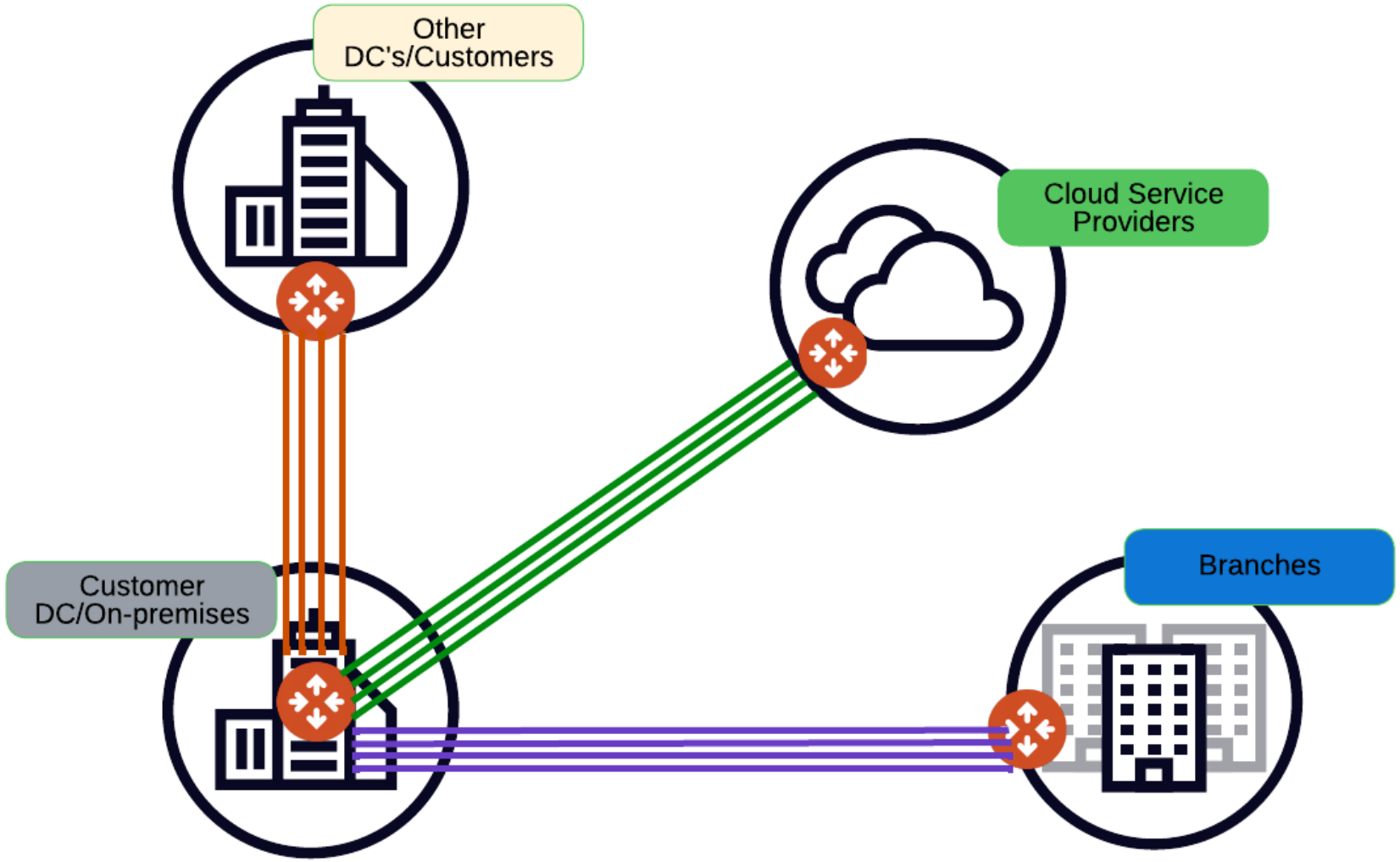
Performance limitations due to encryption requirement and disparate network stacks

Complex Routing and Deployment complexities connecting applications across Cloud, On-premises and business partner locations

Operational difficulties in visibility, troubleshooting, and management

High costs of managing hybrid-cloud connectivity manually.

Solution: with Aviatrix Transit Edge – Secure high performance hybrid cloud solution



Provides **high-performance encrypted connectivity** for hybrid cloud deployments.

Integrates with **Equinix and Megaport** for on-demand interconnectivity.

Utilizes **cloud-native transit gateways** features like dynamic routing and active mesh resiliency.

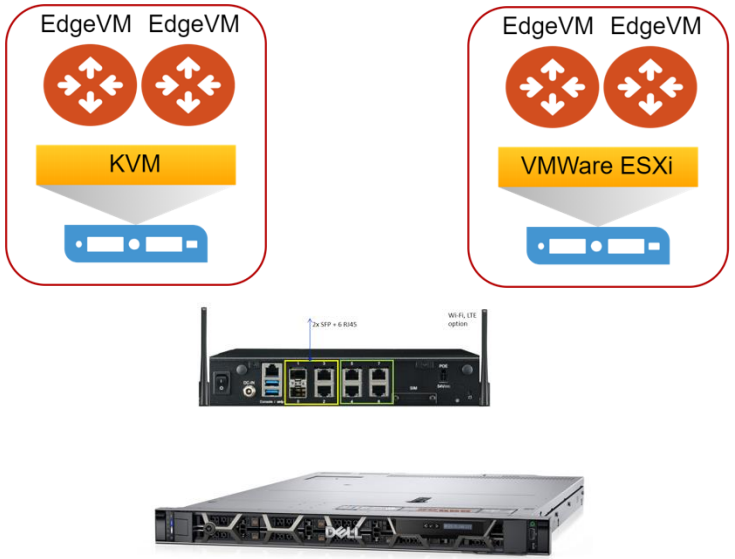
Enhances **visibility** with real-time network insights and seamless integration with enterprise tools

Automates deployments via **Terraform** and CI/CD pipelines, reducing operational complexity.

Aviatrix Secure Edge

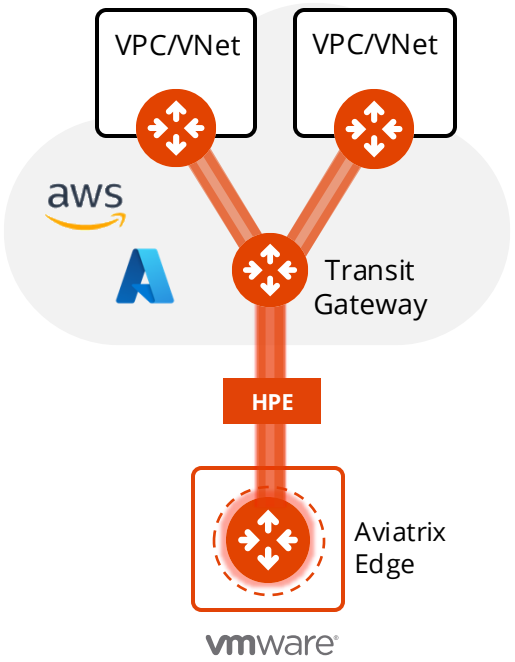
- **Edge Platform Deployment Options**
  - **Aviatrix Edge Platform (AEP as HW Formfactor)**
  - **Equinix Network Edge**
  - **Megaport Virtual Edge**
  - **Self Managed**
- **Virtual Formfactor**
  - ESXi
  - KVM
  - VNF T-Shirt size small, medium , large , X-large
  - Upto ~10G Throughput

  Edge Virtual Form Factor Documention 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)

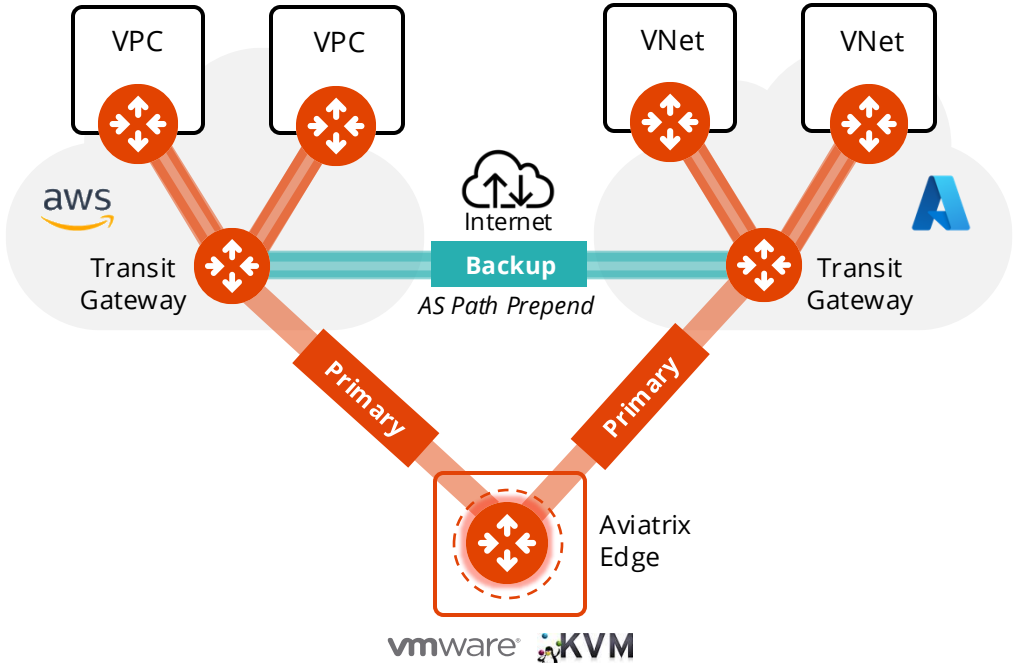


Aviatrix Edge Use Cases

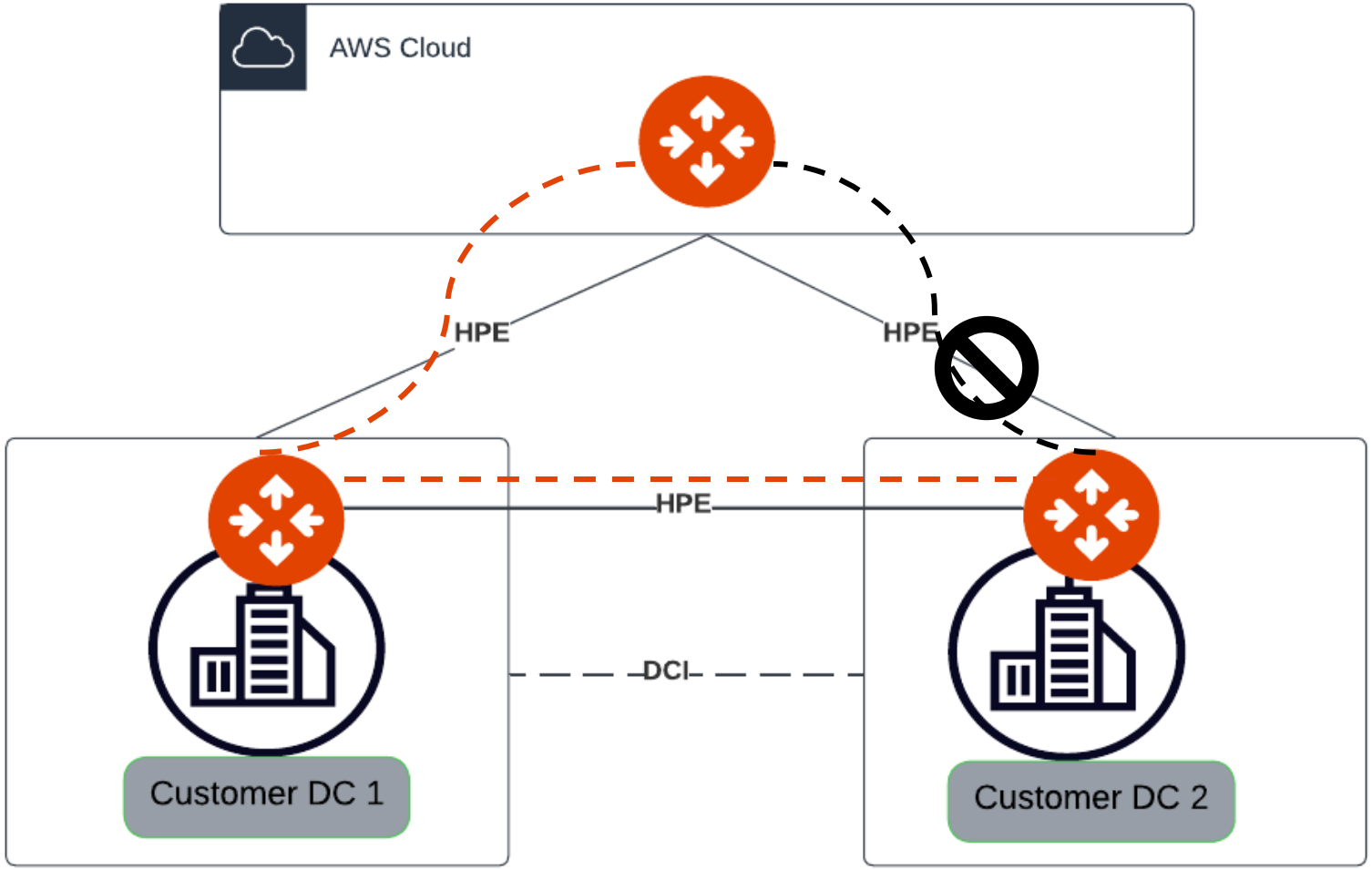
Extend the Aviatrix Platform to the Edge



Multi-Cloud Connectivity via Aviatrix Edge



Aviatrix Edge - DC overlay use case



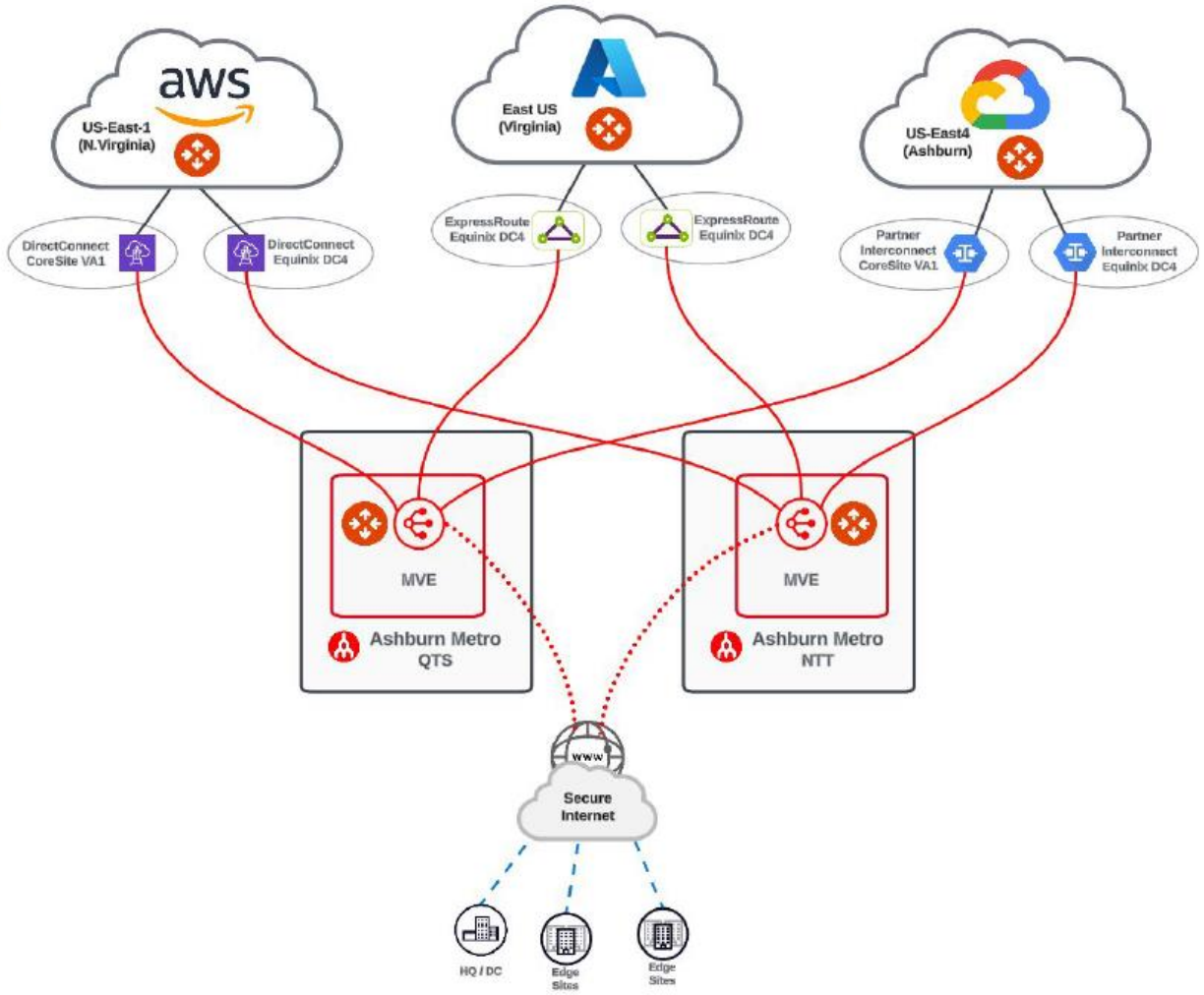
Aviatrix Edge on Megaport Virtual Edge (MVE)

Operational Resiliency - Hybrid Cloud Landing Zones

Ensure network is highly resilient and meets regulatory requirements for failover scenarios / uptime.

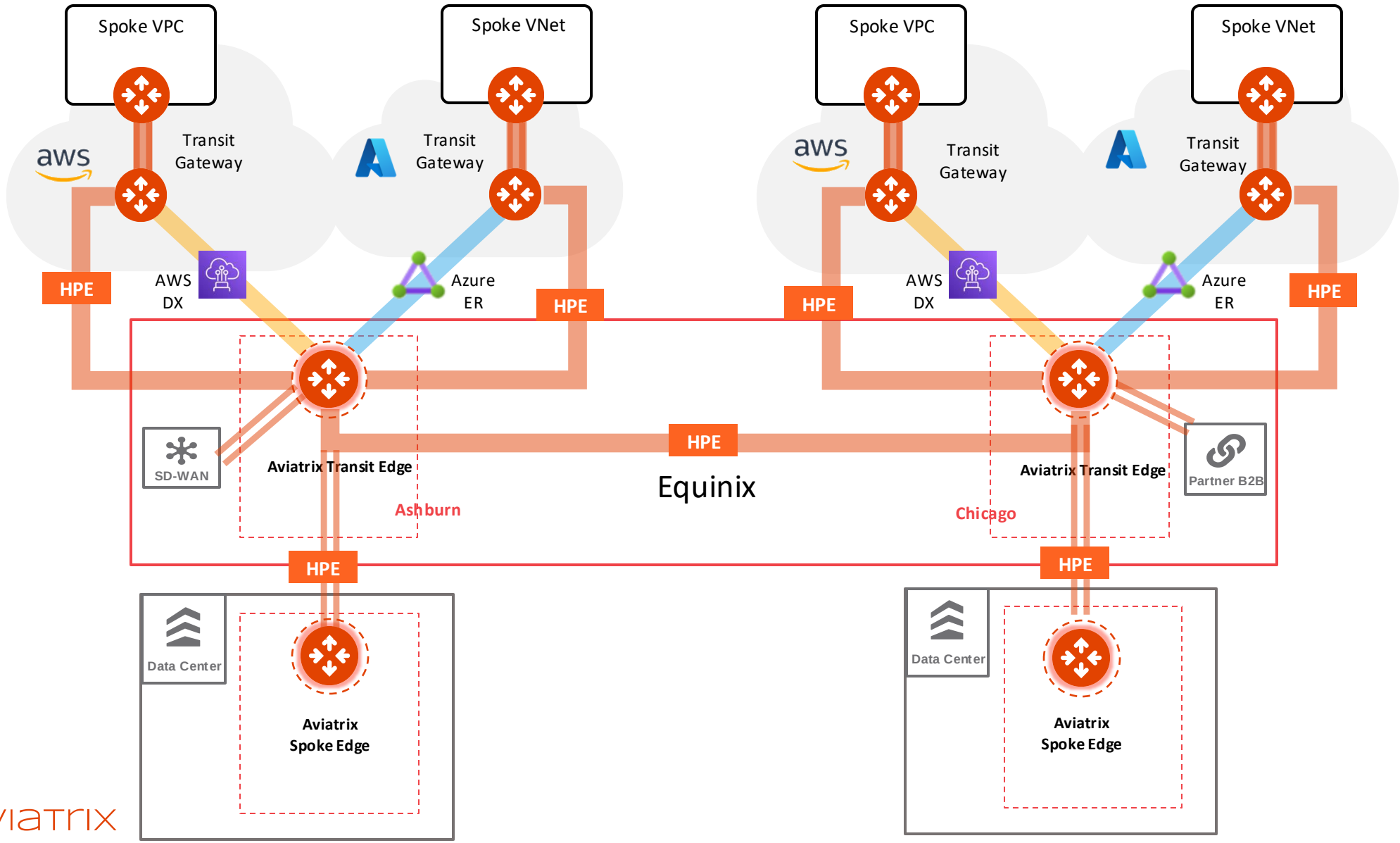
Key features:

- Physical diversity: Deploy multiple NNIs in diverse data centers
- Multiple VXCs (layer 2 VLANs) to connect at on-ramps and any cloud region globally
- Aviatrix deployed at edge and in cloud - creating single control plane with enhanced network visibility for risk mitigation
- Advanced routing to achieve optimal diversity
- Eliminate internet attack surface for cross-cloud workloads while improving encryption performance



Aviatrix Hybrid Cloud Networking

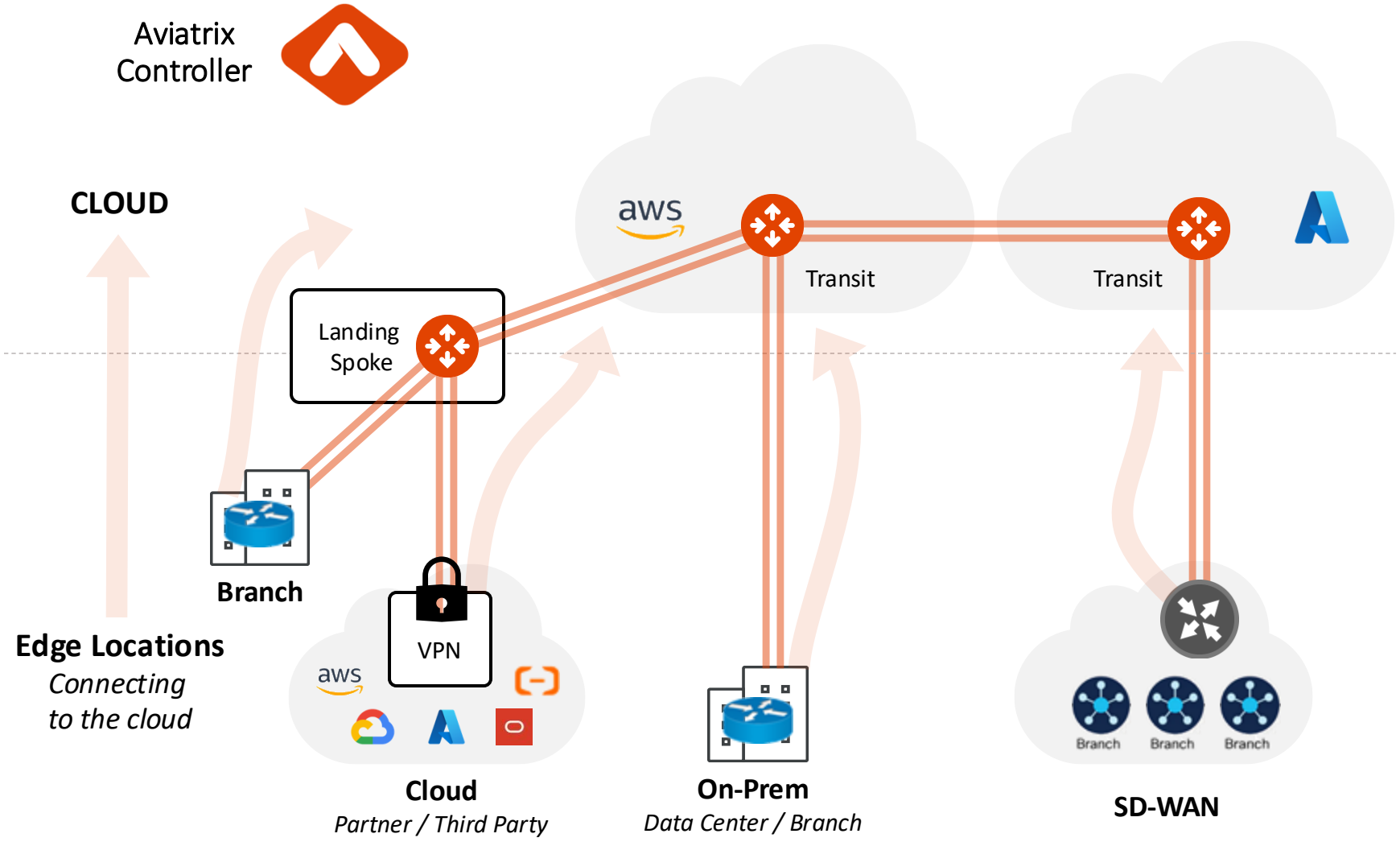
Seamless and Secure hybrid cloud networking at distributed edge and mid-mile locations.



Aviatrix Backbone to Edge Locations

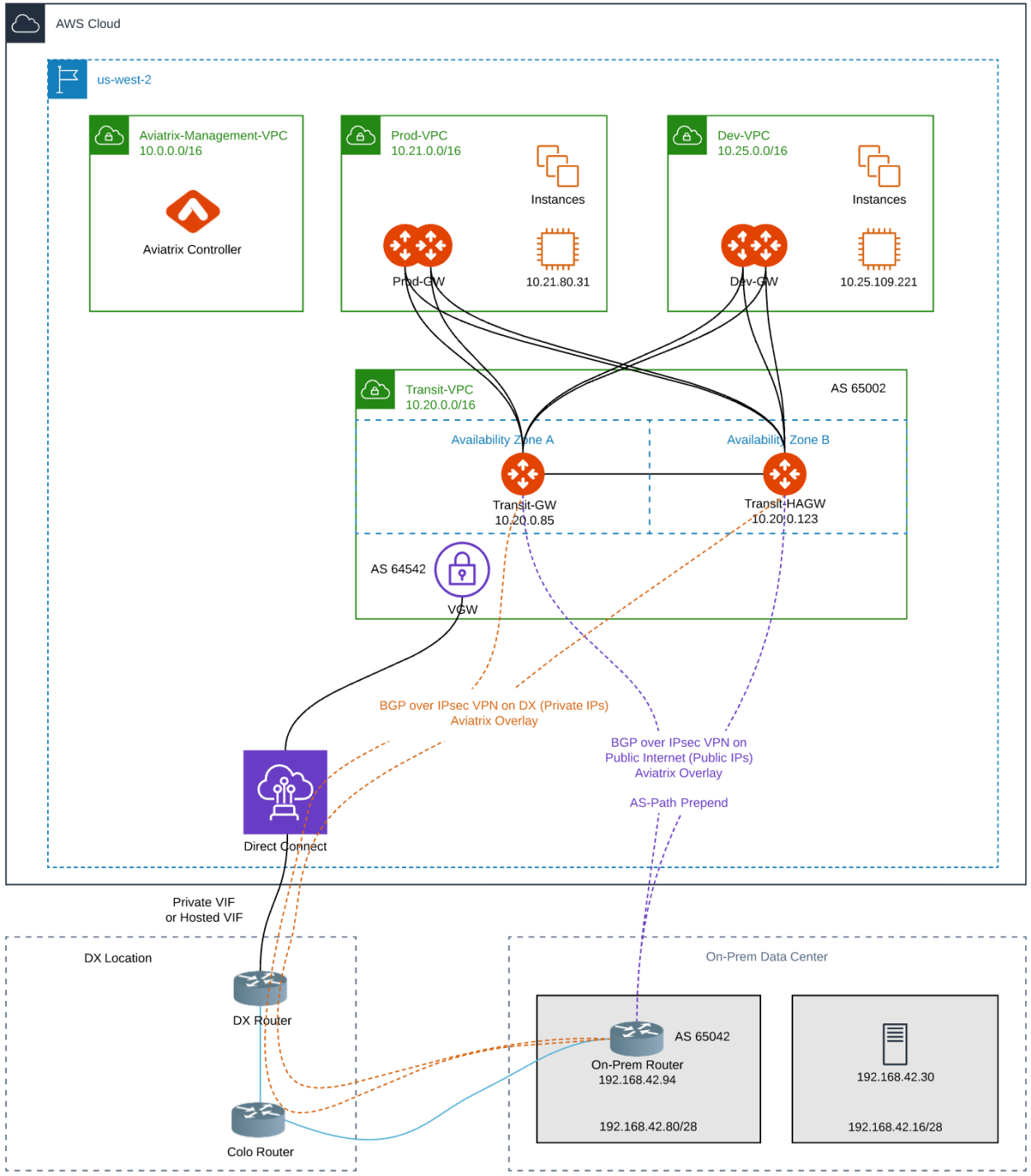
- To Data Center/Colo **without** Aviatrix Edge

Aviatrix Backbone to Edge Locations:



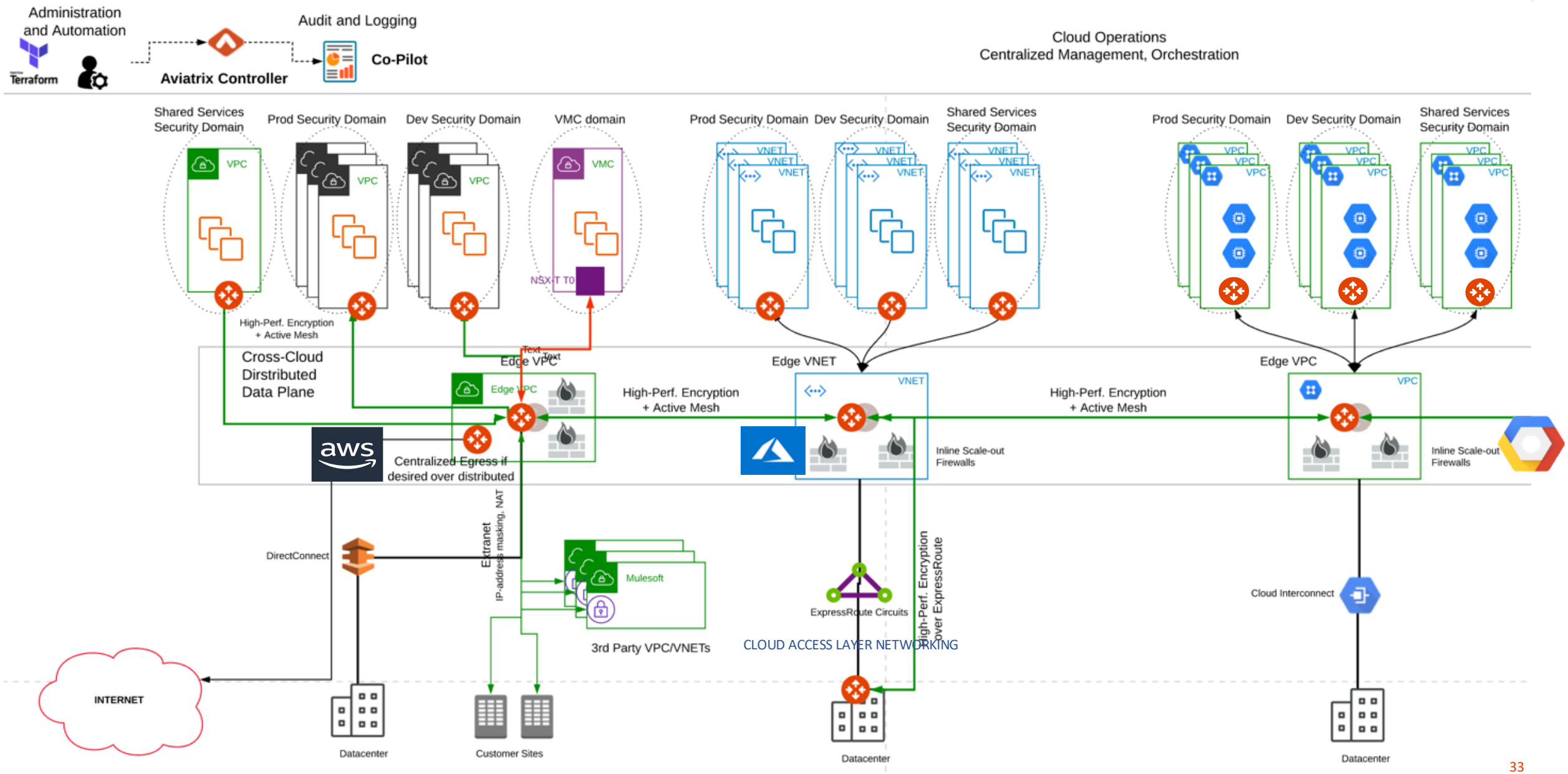
High Speed DC Connectivity with Backup VPN

- Connecting on-prem data centers to the cloud via route-based Site2Cloud + BGP control plane, landing on Transit gateways
- Primary Site2Cloud is using private IPs to leverage the DX underlay
- Backup Site2Cloud is using public IPs to use the public Internet as underlay
- On both connections, ECMP can be enabled for Active/Active high performance or disabled (typically if on-prem has stateful firewalls)
- On-prem router is performing AS-path prepend on VPN routes advertised to Aviatrix transit over the VPN connection, to force Transit gateways to send traffic via the DX connection
- Additionally, on-prem router would use Weight or Local Pref, etc., to send traffic to the DX connection
- If DX connection goes down, traffic would automatically failover to Backup connection
- Branch connectivity is following a similar BGP-based Site2Cloud to Transit gateways, but it is typically only via VPN over the public Internet



Full Integrated Aviatrix Solution

Result: Aviatrix Solution that Meets Design Requirements

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