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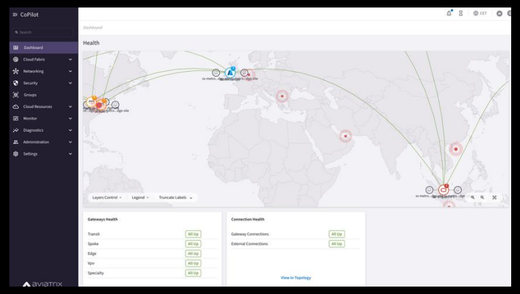
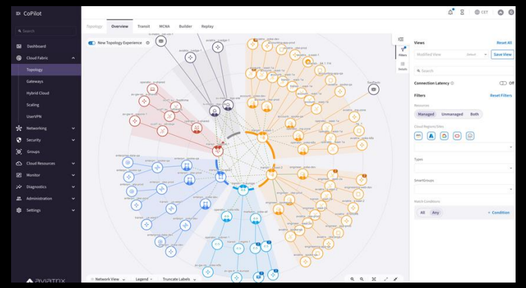
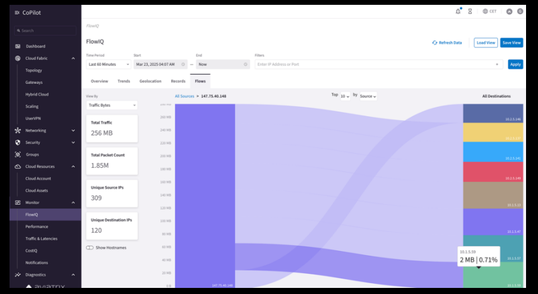
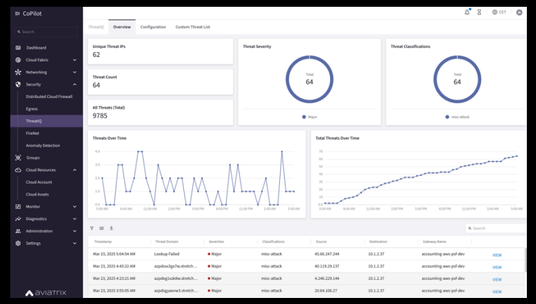
Network Segmentation

Segmentation

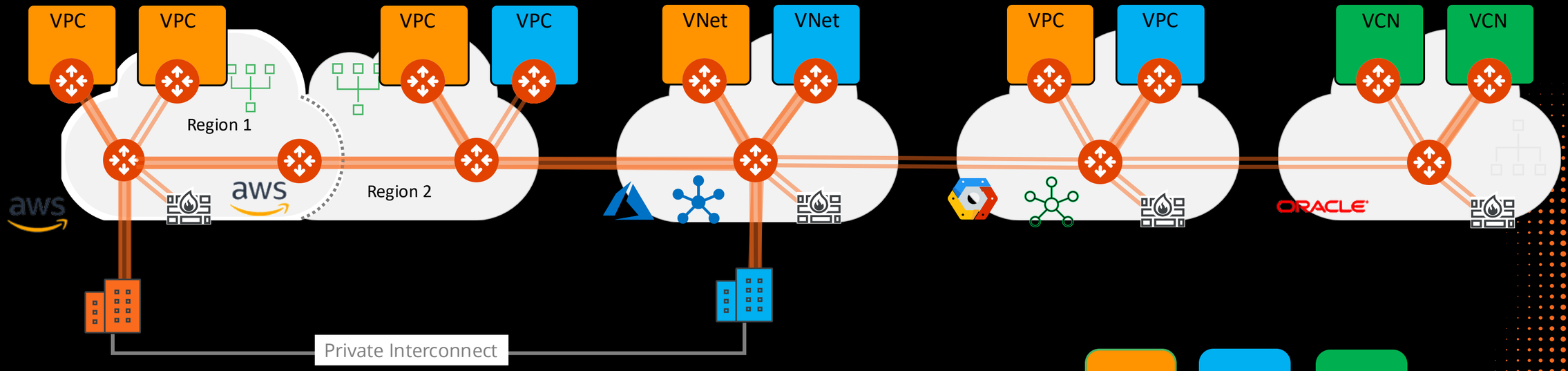
- Main Purpose: Enable ZTNA across multi-region and multi-cloud environments, including on-premises.
- Group VNets/VPCs/VCNs/Apps that share similar security policies.
- Define your own domains.
- Use Cases: Compliance, Governance, Audits.
- Network Segmentation is also referred to as Macro-Segmentation.
- A Network Domain can encompass one or more VPCs as a single logical container (i.e., Routing Domain).

Hybrid-Cloud Network Segmentation

Aviatrix CoPilot

Network Granularity and Control



LOB1 LOB2 LOB3

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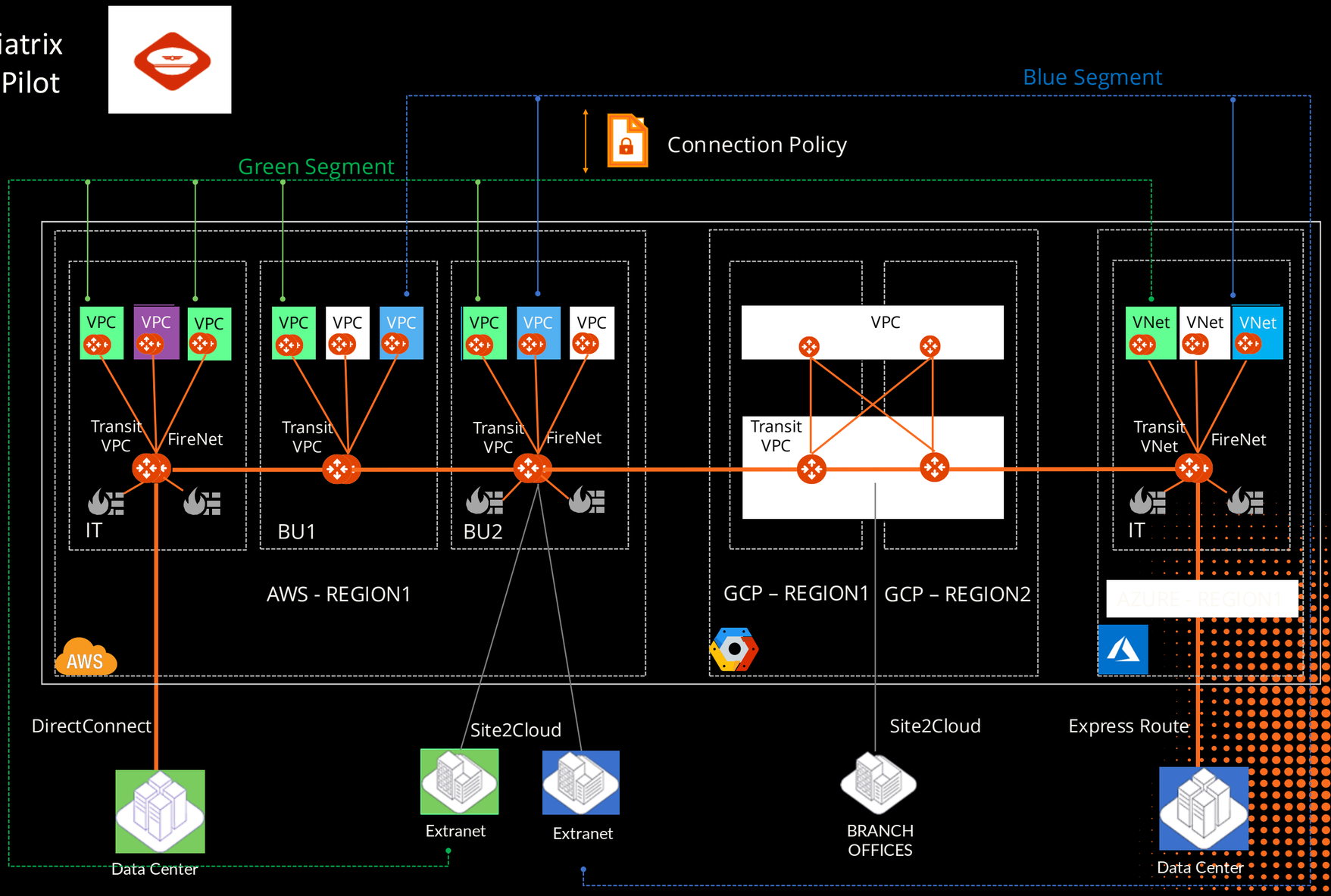
Hybrid-Cloud Network Segmentation

Policy Based Network Segmentation
- Global
- Consistent / Repeatable
- Across accounts, subscriptions & projects

Cloud and Connection Agnostic
- Single cloud
- Intra-region or inter-region
- Multiple clouds

Edge/Access Segmentation
- On-Prem DCs
- Branches
- Extranets
- Cloud Peering

On-Demand Compliance/Governance
- Security Posture within minutes
- Aviatrix control plane realizes the intent
- Zero-Trust
- Flexible
- Automated



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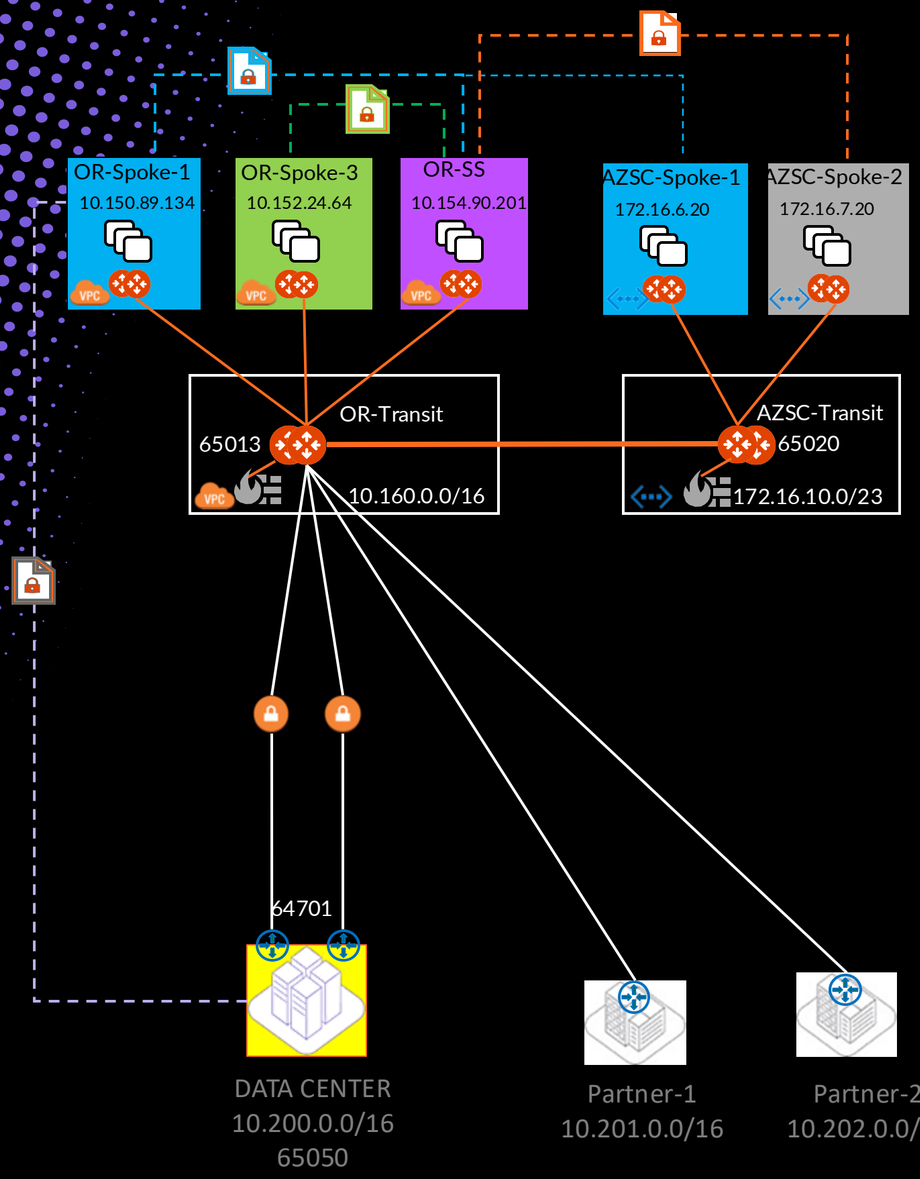
Hybrid-Cloud Network Segmentation



Name: AZSC-Spoke1-AGW

DESTINATION	VIA	DEV	NEXTHOP IP	NEXTHOP GATEWAY
default	172.16.6.65	eth0		
10.154.0.0/16		tun-AC100A44-0	172.16.10.68	AZSC-Transit-AGW
10.150.0.0/16		tun-AC100A44-0	172.16.10.68	AZSC-Transit-AGW
10.200.0.0/16		tun-AC100A44-0	172.16.10.68	AZSC-Transit-AGW
172.16.6.0/24	172.16.6.65	eth0		
172.16.6.64/26		eth0		
172.16.6.132		tun-3499E255-0	52.153.226.85	AZSC-Spoke1-AGW-hagw

Purple

Remote-Blue

Yellow

Local-Blue

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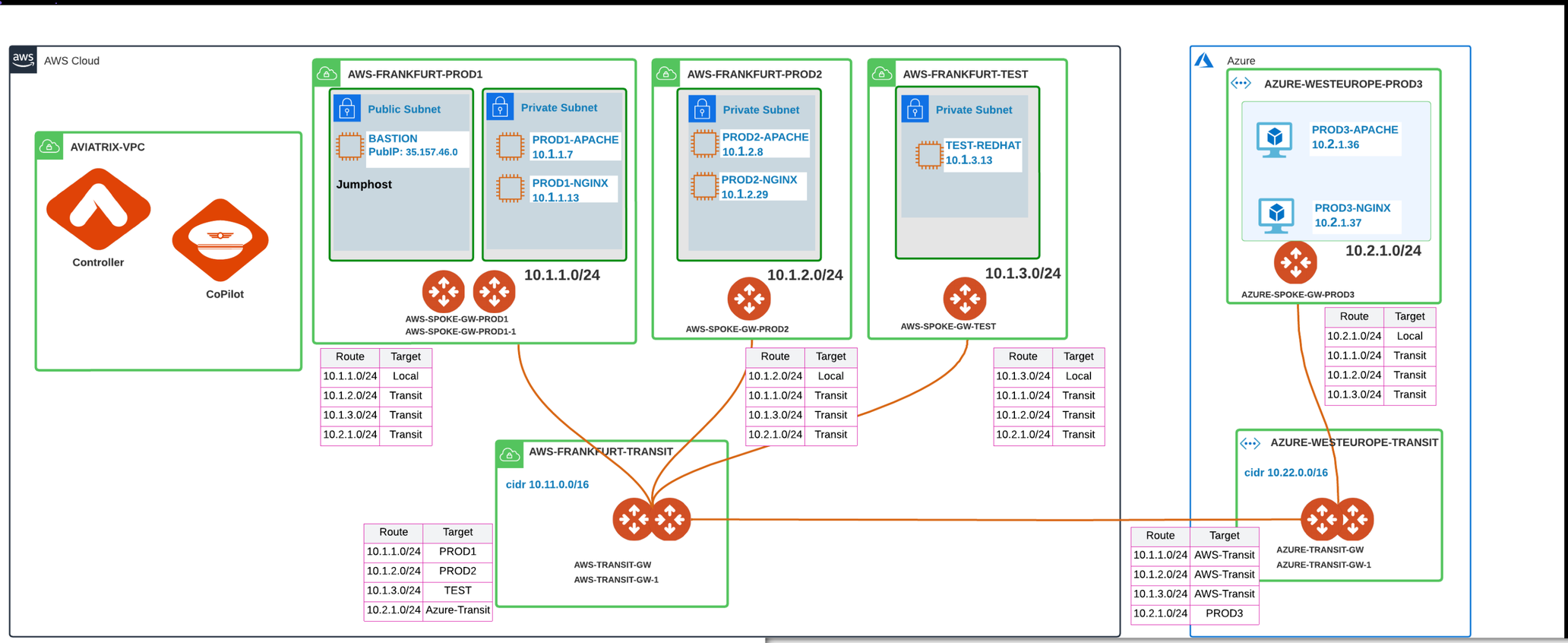
Enable Network Segmentation on the Transit Gateways



Route	Target
10.1.1.0/24	Local
10.1.2.0/24	Transit
10.1.3.0/24	Transit
10.2.1.0/24	Transit

Route	Target
10.1.2.0/24	Local
10.1.1.0/24	Transit
10.1.3.0/24	Transit
10.2.1.0/24	Transit

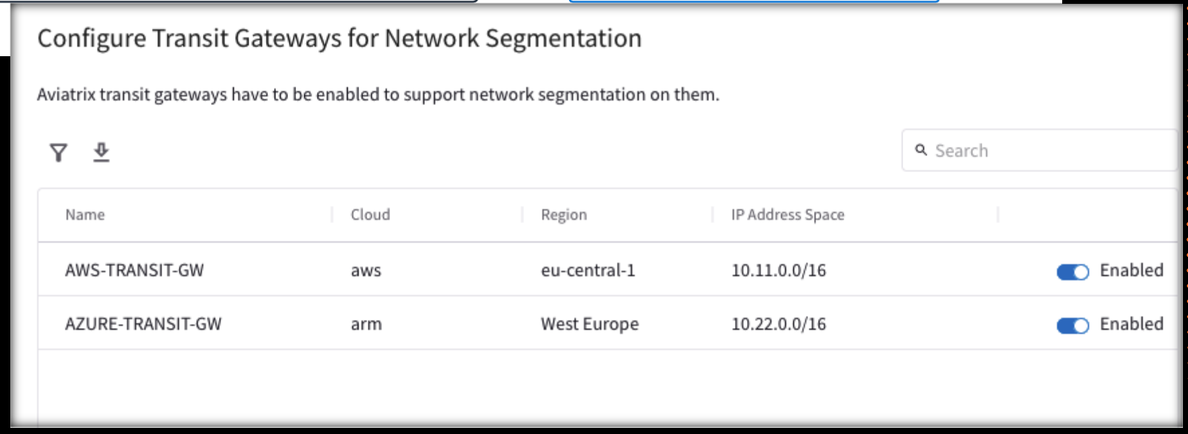
Route	Target
10.1.3.0/24	Local
10.1.1.0/24	Transit
10.1.2.0/24	Transit
10.2.1.0/24	Transit

Route	Target
10.2.1.0/24	Local
10.1.1.0/24	Transit
10.1.2.0/24	Transit
10.1.3.0/24	Transit

Route	Target
10.1.1.0/24	PROD1
10.1.2.0/24	PROD2
10.1.3.0/24	TEST
10.2.1.0/24	Azure-Transit

Route	Target
10.1.1.0/24	AWS-Transit
10.1.2.0/24	AWS-Transit
10.1.3.0/24	AWS-Transit
10.2.1.0/24	PROD3

Caveat: Select the Transit Gateways that will handle traffic for their associated members.



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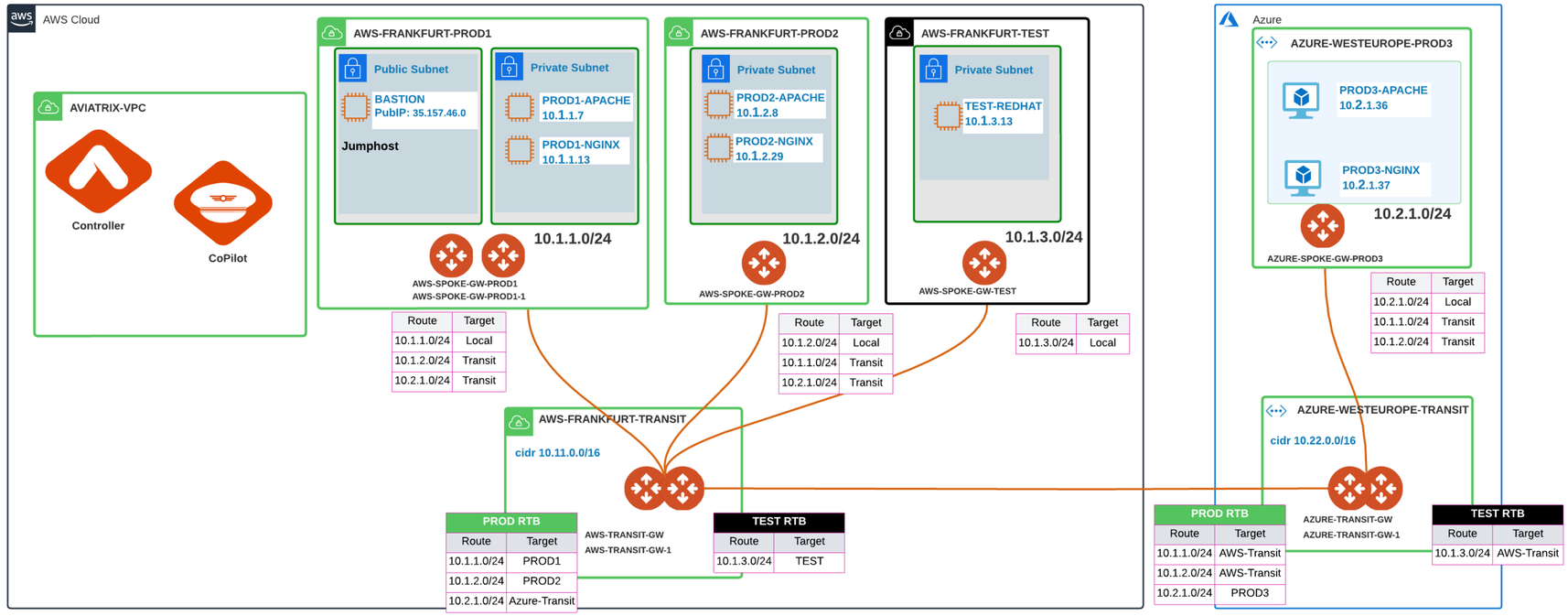
Creation of Network Domains and VPCs Association



Transit Gateway

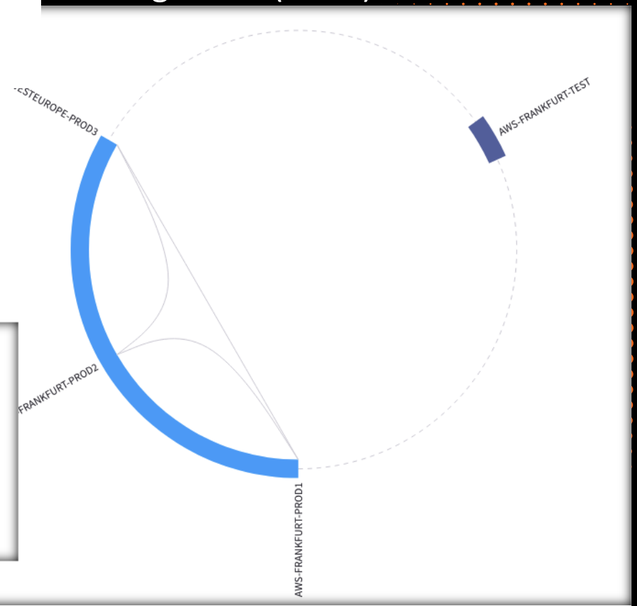
- Multiple RTBs (per each Network Domain)
- Main RTB:
  - The main RTB will host the ***Transit Routes*** (i.e. the routes of the *backbone layer*) and the routes that belong to *Unmanaged Network Domains* (i.e. VPCs/Vnets not assigned to any Network Domains yet).

Spoke Gateway

- Single RTB (Main)

- Assign a Name to each Network Domain
- Associate the Spoke VPCs/Vnets and/or Site2Cloud Connections to the Network Domain

CAVEAT: You can create maximum **200** Network Domains per each Transit Gateway



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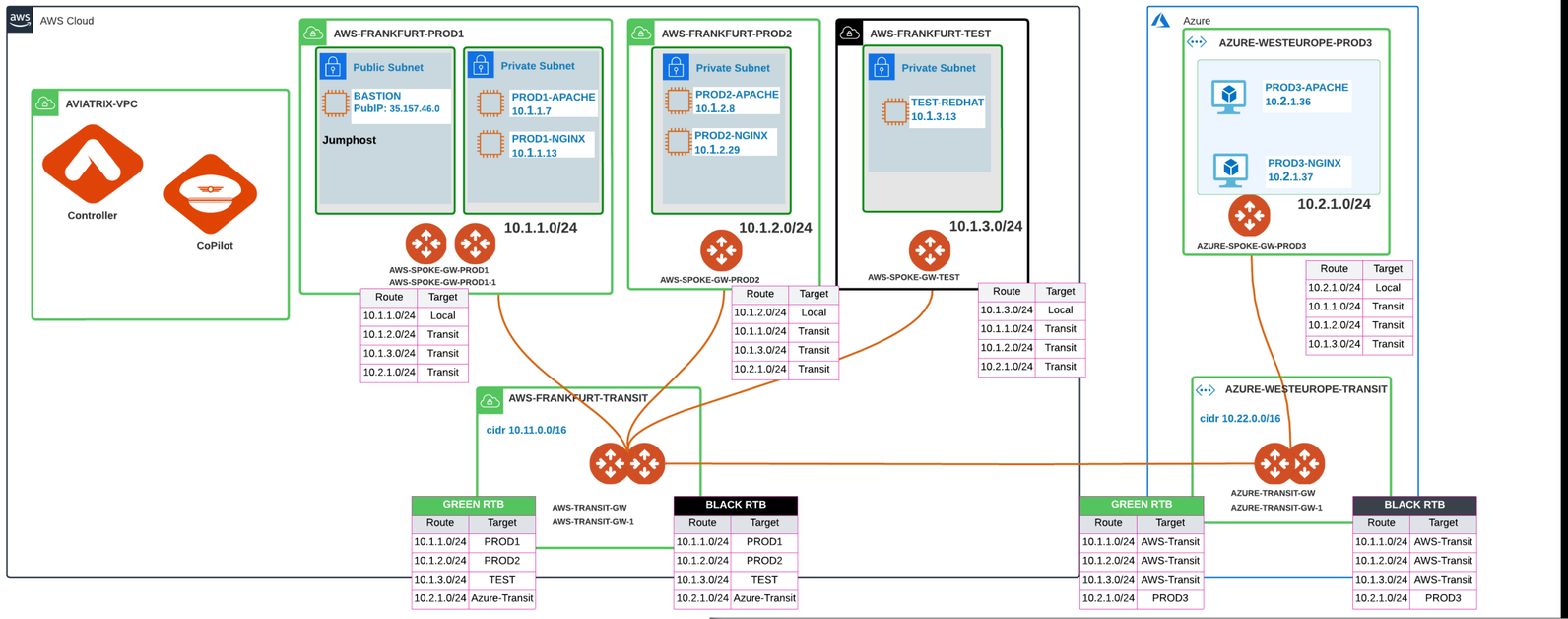
Connection Policy



Route	Target
10.1.1.0/24	Local
10.1.2.0/24	Transit
10.1.3.0/24	Transit
10.2.1.0/24	Transit

Route	Target
10.1.2.0/24	Local
10.1.1.0/24	Transit
10.1.3.0/24	Transit
10.2.1.0/24	Transit

Route	Target
10.1.3.0/24	Local
10.1.1.0/24	Transit
10.1.2.0/24	Transit
10.2.1.0/24	Transit

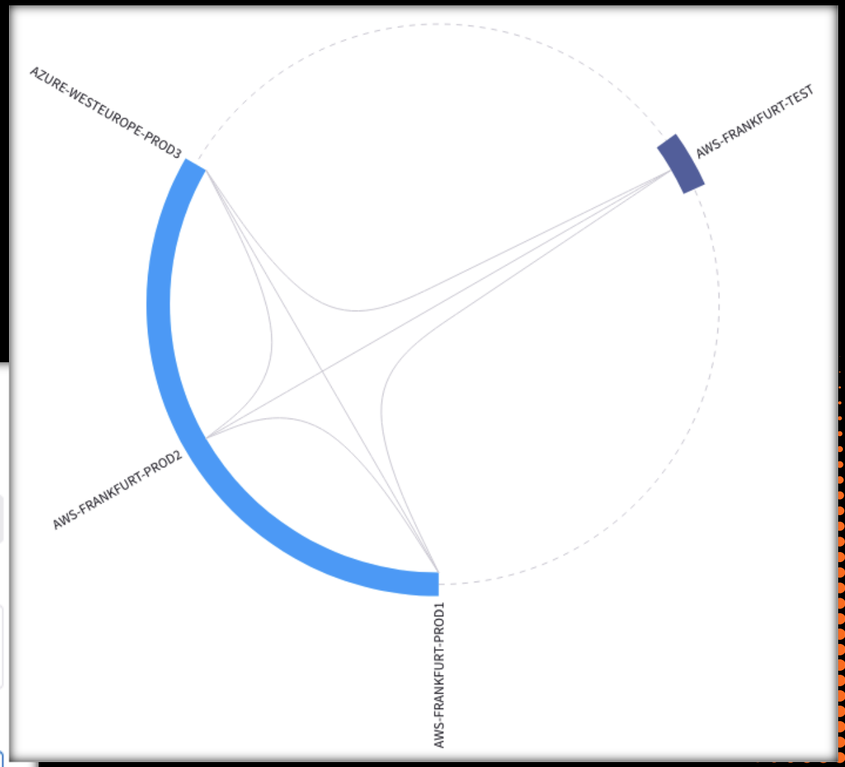
Route	Target
10.2.1.0/24	Local
10.1.1.0/24	Transit
10.1.2.0/24	Transit
10.1.3.0/24	Transit

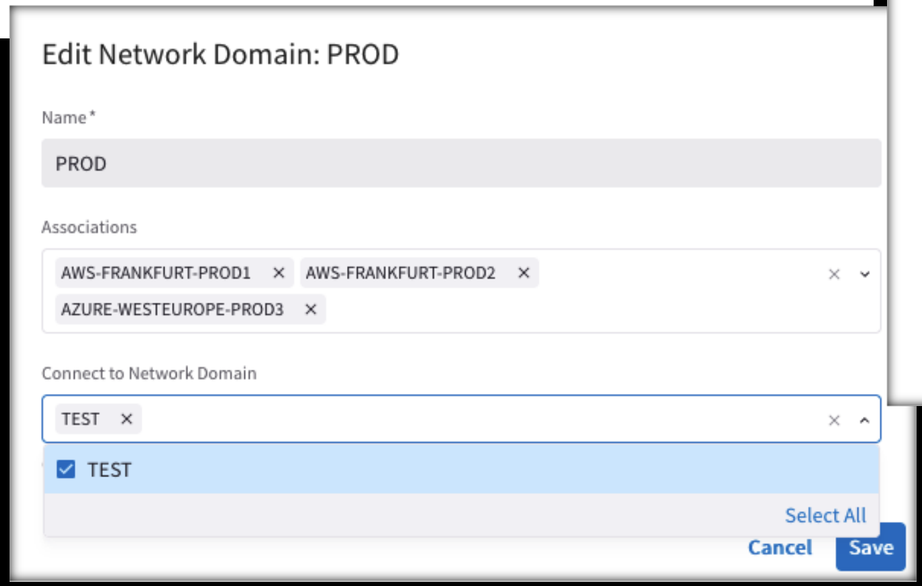
GREEN RTB Route	GREEN RTB Target
10.1.1.0/24	PROD1
10.1.2.0/24	PROD2
10.1.3.0/24	TEST
10.2.1.0/24	Azure-Transit

BLACK RTB Route	BLACK RTB Target
10.1.1.0/24	PROD1
10.1.2.0/24	PROD2
10.1.3.0/24	TEST
10.2.1.0/24	Azure-Transit

GREEN RTB Route	GREEN RTB Target
10.1.1.0/24	AWS-Transit
10.1.2.0/24	AWS-Transit
10.1.3.0/24	AWS-Transit
10.2.1.0/24	PROD3

BLACK RTB Route	BLACK RTB Target
10.1.1.0/24	AWS-Transit
10.1.2.0/24	AWS-Transit
10.1.3.0/24	AWS-Transit
10.2.1.0/24	PROD3





- **Optionally enable the Connection Policy**: Network Domains' routing tables are merged (i.e., VRF leakage).

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Next: Lab 3 - Network Segmentation