

High-Performance Encryption (HPE)

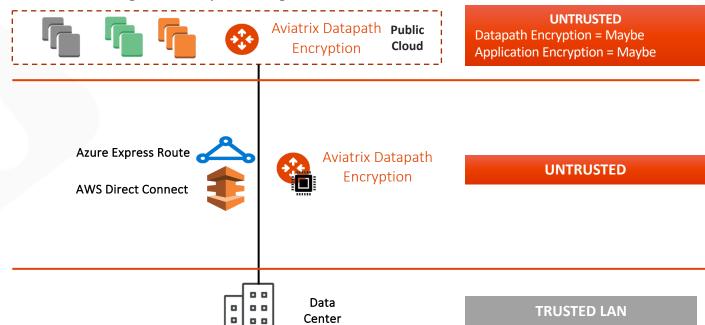
SOLUTIONS ENGINEERING

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Zero Trust – Datapath Encryption

Why?

- Compliance Requirement
- Data Security
- Business Policy
- Native Constructs Routing Scalability Challenges

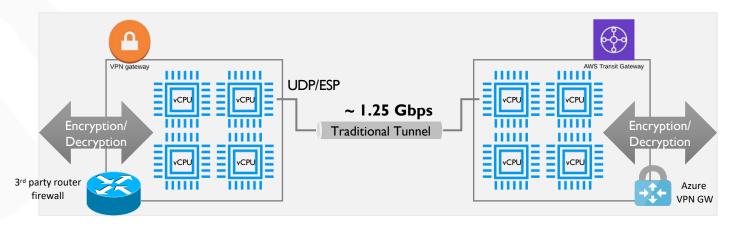


Without Aviatrix: Encryption / IPsec Performance Limitations

 All software-based IPsec VPN solutions have maximum performance of 2Gbps depending on ciphers used

 Packet can only use single core despite availability of multiple cores

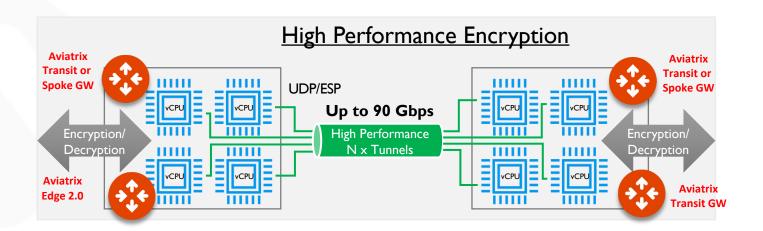
 Software Routers use single core and establish only one tunnel





Solution: Aviatrix High Performance Encryption (HPE)

- Aviatrix Controller automatically builds multiple tunnels between Aviatrix devices
- Uses all available CPU cores
- IPsec encryption performance can be up to 90 Gbps

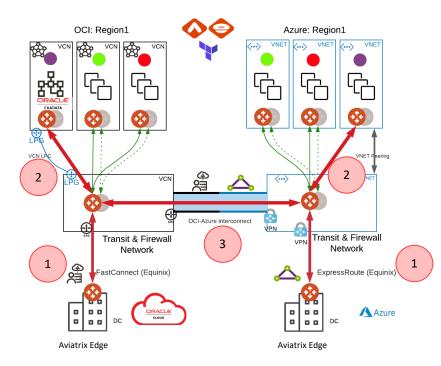


High Performance Encryption is also called **INSANE MODE**



High Performance Encryption (HPE)

- Between the Cloud (over DirectConnect, ExpressRoute, FastConnect, Cloud Interconnect) to the DC via:
 - Aviatrix Edge
- Between networks in one cloud (same or different regions)
 - Automatic VPC/VNet/VCN peering to build required underlay
- Between networks in different clouds
 - Requires private underlay (e.g., Equinix, Epsilon, OCI-Azure Interconnect)
 - Over Public Internet (v6.4)



Aviatrix Edge will be discussed in Site2Cloud module



HPE Peering — Public or Private IP?

HPE in the same cloud

• Will use CSP-native peering so the tunnels will be built over private IPs.

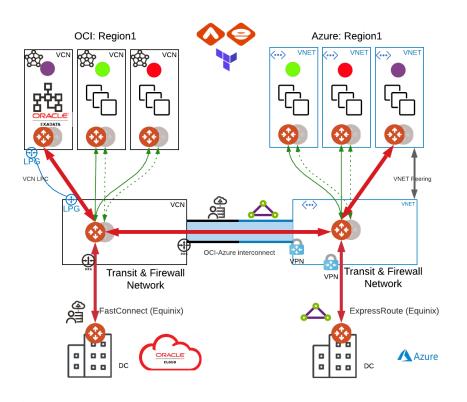
HPE across different clouds

- Supported over private circuits (Direct Connect, Express Route, Cloud Interconnect, Fast Connect).
- Supported over internet (AWS, Azure, GCP, OCI).

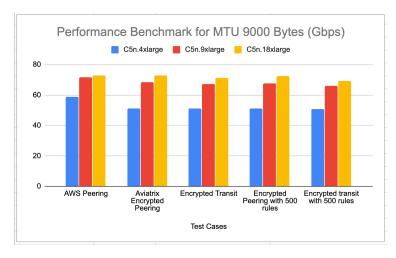


HPE Performance – Matching the Speed of the Underlay

https://docs.aviatrix.com/HowTos/insane_mode_perf.html



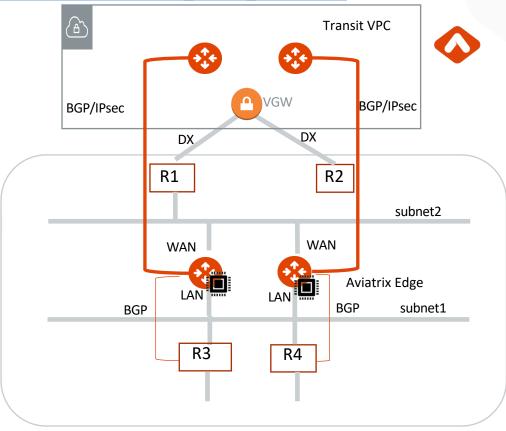
- ~90 Gbps in-region in AWS
 - 9000 MTU supported
- Line-Rate (~9.6 Gbps) over single 10 Gbps Direct Connect or ExpressRoute





Architecture over Direct Connect and Other Private Circuits

https://docs.aviatrix.com/HowTos/CloudN insane mode.html







Next: ActiveMesh