

## DATA INFRASTRUCTURE

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## Aviatrix, A Category Defining Play on Multi-Cloud Networking

We hosted a call with Steve Mullaney, CEO of privately-held Aviatrix, an up-and-coming multi-cloud networking platform. Aviatrix empowers enterprise IT admins to take back control of their network technology and security posturing from what has been the wild west of Cloud adoption. We believe Aviatrix offers a unique solution that, under the stewardship of Mr. Mullaney, could eventually become a reference architecture for multi-cloud networking and essentially create a new category of cloud software, though this is not without risk given the rapid evolution of cloud computing. Incumbent IT suppliers such as Cisco and VMware strive to address similar and related opportunities, and Aviatrix sees its clean slate start as a compelling advantage over legacy players.

**Background on Steve Mullaney, CEO:** As a Silicon Valley veteran, Mr. Mullaney came out of retirement three years ago to take the helm at Aviatrix and guide the company in its mission to simplify and secure multi-cloud networking for large enterprises. Previously, he was the CEO of Nicira until its acquisition in 2012 by VMware; Nicira virtualized network switching and led the trend toward software-defined networking. Prior to Nicira, he served as interim CEO for Palo Alto Networks and oversaw the company's invention of the next-generation firewall market category. Mr. Mullaney sees Aviatrix as another category defining technology, with the company positioned to become the reference architecture for cloud networking and capitalize on the accelerated transition to multi-cloud by large enterprise.

**The Aviatrix Platform:** The Aviatrix platform is a conglomeration of software technologies hosted on customer assets in the public cloud. These technologies are designed to work together at the lowest level of the network/compute stack to create the virtual, multi-cloud, software-defined network layer that IT admins require to plan, deploy and operate a secure enterprise-class multi-cloud network. In essence, Aviatrix restores network control, visibility and security that is either unavailable or hidden to IT administrators in current cloud consumption models, while also offering advanced features and capabilities. Public cloud providers such as Amazon's AWS, Microsoft's Azure and Google's GCP, which are all now Aviatrix partners, initially resisted adoption of multi-cloud, but have come to accept the concepts. Still, the operators do not facilitate the use of multiple clouds, which creates the opportunity for Aviatrix.

**Aviatrix Business Momentum:** Aviatrix has raised nearly \$350 million in funding since its inception in 2014, including \$200 million in September 2021 at a \$2 billion implied valuation. Over the last three years, the company has grown dramatically, from 38 employees, ~100 customers, and \$4 million in ARR to 500 employees, 500 customers, and over \$40 million in ARR. The company now counts 63 of the Fortune 500 as customers, with nearly 15 customers paying \$1 million or more per year; both were non-existent three years ago. Real time indicators of business momentum also remain exceptional, with ARR growing over 100% y/y and the company posting a net dollar retention rate of roughly 200%. Traction has improved as organizations sought to take-back control from the public cloud providers and to gain discipline in purchasing through the broader IT organization rather than credit card swipes by the DevOps teams.

**Derivatives:** Mullaney characterized Aviatrix as category defining, which typically represents a hurdle for analysts attempting to assess implications to an industry. Within our coverage, we see Aviatrix as posing the most direct threat to Cisco and VMware, both of which have discussed efforts to facilitate multi-cloud and implement full-stack observability. Mullaney asserts that incumbents never remain relevant from one transformation to the next, and refers to the traditional suppliers as "Cloud naive". As infrastructure moves to public cloud, visibility and automation often become pain points. Unlike with on-premises switches, IT departments cannot just plug in a tap and start collecting flow records. Network teams may not be familiar with the automation tools, processes, and constructs necessary to operate in the new multi-cloud environment. We are not convinced that Cisco and VMware are asleep at the switch (pun intended), but we consider it important for each to demonstrate progress on full-stack observability and multi-cloud management.

**Business Model:** Aviatrix derives revenue based on consumption. Although we suspect the structure continues to evolve, customers pay for connections under management. Aviatrix offers a variety of connection types, so it is the combination of type, duration and number that determines the expense to the customer.

**The Aviatrix Architecture.** The Aviatrix platform is also, arguably, an architecture, as the different software technologies were created to work together to form the **Aviatrix Transit Network**, a virtual network layer that runs on top of public cloud infrastructure. Indeed, the Transit Network is the heart of the Aviatrix Architecture, and spans the customer's entire multi-cloud environment, creating a single normalized data plane and one unified control plane with advanced networking and security features. The key software elements behind of the Architecture and Transit Network are:

- **The Aviatrix controller.** The Aviatrix controller is the brain of the cloud network platform. The platform leverages the centralized intelligence and knowledge of the controller to dynamically program both native cloud network constructs and Aviatrix's own advanced services. A single Terraform provider enables network and security Infrastructure-as-Code automation across the multi-cloud environment.
- **Aviatrix Gateways**, which connect the Transit Network to public cloud provider APIs to interact with and directly program native cloud networking constructs, abstracting the unique complexities of each cloud. Gateways are primarily deployed to deliver transit network and security services such as intelligent dynamic routing, active-active network high-availability, end-to-end and high-performance encryption and collect operational visibility data, but also for secure network ingress and egress filtering and external service insertion.
  - **High-Availability Networking:** Pairs of Aviatrix Gateways, deployed in separate availability zones, establish a full mesh, multi-path connection that maximizes both throughput performance and network availability.
  - **High-Performance Encryption:** Standard IPSec encryption is limited to 1.25 Gbps. Aviatrix's high-performance encryption distributes processing across multiple cores and aggregates IPSec tunnels to achieve wire speed encryption, up to 75 Gbps.
  - **Multi-Cloud Network Segmentation:** Some clouds enable the creation of security domains. Aviatrix extends secure network segmentation, enabling multi-cloud security domains, with consistent, centrally managed, global network segmentation and connection policies.
  - **Multi-Cloud Network Service Insertion:** Aviatrix Transit provides a secure point of access for network and security services such as next-generation firewalls, IDS/IPS and SD-WAN cloud edge connections. Aviatrix gateways provide load balancing to scale out connected services and ensure redundant and failover high availability.
  - **Secure Cloud Ingress and Egress Controls:** Aviatrix gateways offer both ingress and egress L4 and Fully Qualified Domain Name (FQDN) filtering. Centrally managed filter groups ensure consistent multi-cloud security for any cloud application communicating with Internet-based resources and service.
- **The Aviatrix CoPilot.** Aviatrix CoPilot utilizes the intelligence of the Aviatrix Controller and network flow analytics from Aviatrix Gateways to provide a global operational view of the customer's multi-cloud network. Enterprise IT teams – who need day-two operational visibility for cloud networking – use Aviatrix CoPilot's dynamic topology mapping to maintain an accurate view of their global multi-cloud networks, FlowIQ to analyze global network traffic flows and global heat maps and time series trend charts to easily pinpoint and troubleshoot traffic anomalies.
  - **Operational Visibility:** Enterprise network operations teams must have deep visibility into network activity. Native public cloud networks are opaque, even basic analytics must be obtained from multiple sources and require skilled human correlation to become actionable. Multi-cloud visibility is simply not available from any cloud provider
  - **Dynamic Network Mapping:** Aviatrix leverages the central intelligence and knowledge of the controller to dynamically generate and maintain an accurate multi-cloud network topology map that includes all network resources and network configurations the controller is managing.
  - **FlowIQ – Intelligence Network Traffic Flow Analytics:** Aviatrix extracts detailed network traffic flow data from Aviatrix Transit infrastructure including source, destination, port and protocol filtering and combined with additional metadata such as latency and tagging to deliver never-before possible multi-cloud flow inspection and global traffic heat maps.

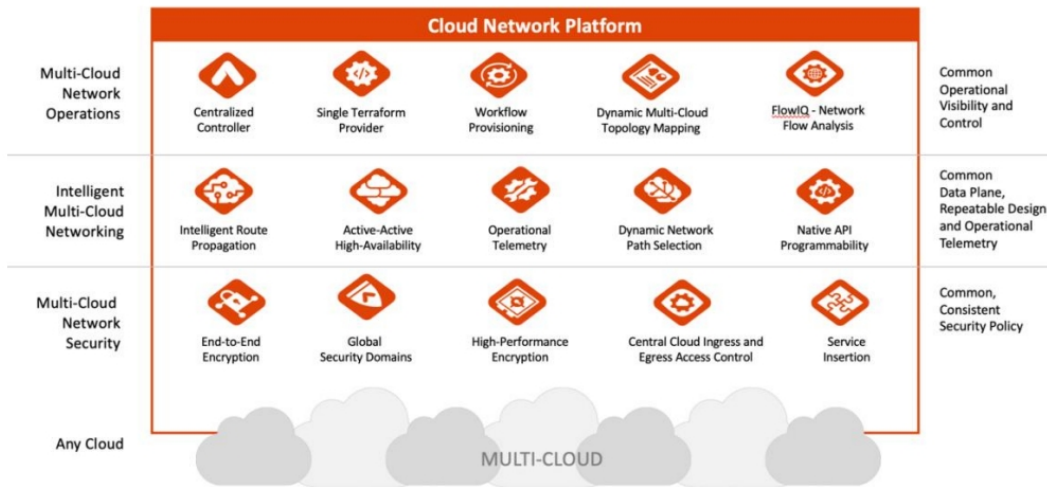
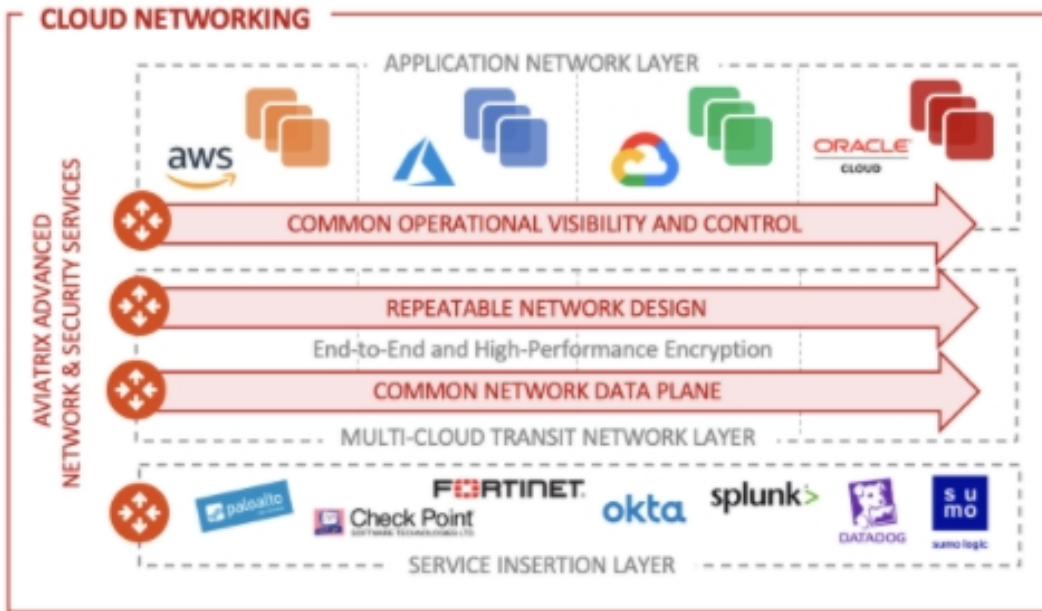


Figure 1: The Aviatrix cloud network platform brings multi-cloud networking, security, and operational visibility capabilities that go beyond what any cloud service provider offers.

Source: Aviatrix



Source: Aviatrix

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