Building and operating enterprise networks in the Cloud Continuum

An entire continuum of cloud solutions now exists across the organisation, spanning public and private clouds, applications, data, edge devices, and IoT connectivity. They were combined with the need for flexible "anywhere, everywhere" access. It creates a much larger and vastly more complex enterprise IT footprint and fundamentally changes data flow in, out and across the organisation.

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While enterprise IT has generally moved with the times, many enterprise networks simply haven't kept up with this pace of change in the last two decades. They were built for a world where the static desktop PC was the interface, and the corporate data centre was the centre of an organisation's IT universe.

An overhaul of networking is overdue – and here's why

The risk is this – when networks are in perpetual catch-up, they can throttle enterprise innovation. When the network falls further behind the enterprise innovation curve, it becomes an ever-greater bottleneck on the whole organisation. Today's networks need to meet a vast and rapidly changing set of business requirements and provide employees with seamless connectivity to data, applications, and platforms from anywhere and everywhere.

The networking parts of a cloud journey have too often been treated as an afterthought or "just another" infrastructure fix. Such a reactive, patchwork approach is inefficient, where issues are addressed when something breaks or costs escalate. It can lead to a spiral of technology debt where their network teams spend all their time and budget maintaining and fixing legacy technology rather than reimagining it for the business's future needs.

The overarching objective is to rearchitect the network for a modern cloud environment. That means building an any-to-any device-to-cloud network that leverages an advanced automation layer and is linked to a broader infrastructure-as-code approach. It is essential to get the network from a position of technology debt to a place of technology wealth.

Here are five steps to a modern network

1. Build a secure network foundation for cloud services

Network Architectures need to be seen as the solid foundation of your cloud strategy, with rigorous security, to cover traffic between devices and workloads, workloads themselves, and multiple clouds. Network servers that once lived in the data centre should be migrated to the cloud and become an integrated capability that provides the essential network services for better integration. Another consideration in this equation is the emergence of 5G, which offers the possibility of "removing

the wires" of private networks and unlocking enterprise-wide mobility of devices. By creating a configurable architecture, the network is enabled to change as new cloud-native projects are added.

2. Set up the software-defined network for a hybrid cloud environment

The key is to recognise that hybrid/multi-cloud is a reality for modern enterprises. Virtually no organisation globally has all its workloads in a single cloud, and the network needs to be designed to accommodate this requirement. Rather than treating networking as a problem to be solved (and re-solved) with each new cloud project, the goal is to provide hybrid/multi-cloud flexibility across the network so the organisation can pick and choose the most suitable cloud services for its unique needs. To simplify this process, enterprises should consider using a software layer product to manage the WAN and 5G connectivity across multiple clouds.

3. Automate as a Rule

A cloud service might instantly spin up thousands of workloads to handle a sudden burst of activity. Managing a network manually at that speed and on that scale is impossible. So, having a highly automated programmable network layer is now a critical enterprise capability. That layer should be integrated with cloud workloads and enterprise tools via a set of APIs so that the monitoring and analysis of workloads and networks happen as one unified approach – vastly accelerating the network's ability to flex with the needs of the business.

4. Ensure Resilience by Design

For any enterprise network, the need to send an engineer out to fix network hardware when an outage happens can significantly contribute to technology debt and adversely impact availability metrics. A conceptual shift is required to a model based on the premise that every component is likely to fail. A highly effective way of doing this is with chaos engineering. Under this model, developed initially by Netflix, a tool (referred to as a "chaos monkey") causes outages at random in the production environment to test the system's resiliency. By doing so, the enterprise can address weaknesses, strengthen the overall design and have confidence it has the resilience and the redundancy needed to deliver round-the-clock availability.

5. Build your network for new ways of working

Secure Access Service Edge (SASE) is an emerging option to ensure access to cloud services from anywhere and at the right levels of security, bandwidth and performance. SASE provides access and security across a device-to-multi-cloud network by bundling together SD-WAN and security and delivering them as a service. The result is a more secure, more agile end-user footprint that's also simpler to manage.

Having your network in a "perpetual catch-up" mode could lead to security risks and an inability to innovate at speed.

ABOUT THE AUTHOR

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