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Key Datacenter Network Modernization Considerations and Requirements for CXOs

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Introduction

CIOs and other C-level technology executives (CXOs) often delegate procurement decisions regarding datacenter network infrastructure to domain experts, namely network architects, engineers, and operators. While those network specialists are well placed and eminently qualified to evaluate the technical requirements of the network infrastructure, and to ensure that it is deployed correctly, CXOs have a valuable role to play in ensuring that strategic business considerations, including organizational and operational issues, are included as essential criteria in the evaluation and selection of their datacenter networks.

IDC increasingly finds that datacenter network infrastructure can make or break an organization's ability to meet goals relating to digital transformation and digital resiliency. As cloud technologies and operating models become increasingly critical to business agility and flexibility, the need for an intelligently automated datacenter network becomes more acute.

The network must serve as the digital nervous system of the cloud era, capable of facilitating rather than inhibiting business and operational agility. That means the network must be every bit as automated as compute infrastructure and as digitally proficient and streamlined as DevOps processes. For the network to fulfill that mandate, CXOs must ensure that organizational and strategic objectives are reflected and served by their network architecture and the operational models that govern it.

Indeed, while CIOs need not micromanage the choice of network architectures and infrastructure, they should oversee the selection process, ensuring that network automation aligns with business strategy.

Given that strategic mandate, CIOs should require the following from their modernized datacenter networks:

» Adoption of flexible, purpose-built tooling to achieve both operational simplicity and reliability

- This democratizes network operations, with tooling made accessible and effective for IT generalists, who can now perform operational tasks that would otherwise be done by network specialists.

- It also addresses and mitigates the skills gap that many organizations confront — due to attrition and changes in staffing — ensuring that business continuity is maintained.

» Ability to deliver zero trust datacenter security

- In this regard, tools need to be sufficiently intelligent to detect potential security gaps that network changes can create unintentionally.

- Security tooling also must help operators define and implement network segmentation, which protects workloads, secures sensitive data, and meets compliance rules.

» Automation throughout the life cycle, from day 0 through day 2/n

- Full life-cycle network automation provides a consistent operational model for both architects and NetOps teams, reconciling concerns and aligning outcomes.

» Analytics and telemetry for architects and NetOps teams to future proof the design and scale of the network

» Alignment among DevOps, NetOps, server, and network teams, resulting in smoother workflow and greater IT operational efficiency

» Technology based on industry standards and APIs, providing flexibility and openness

» Vendor-agnostic solution to mitigate lock-in, ensure a fast pace of innovation, and minimize the impact of supply chain disruptions, such as those that have inconvenienced enterprises and vendors worldwide in 2021

Benefits

Cost savings and increased efficiencies result from the ability to fully utilize the workforce by enabling IT generalists to play a larger role in the operation of the datacenter network rather than having only specialists oversee and execute every task.

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Zero trust datacenter security helps maintain application and service availability and protect against costly lateral exploits that can inflict financial and reputational damage. It also plays a valuable role in protecting workloads and sensitive data and ensuring that compliance rules are continually enforced.

Full life-cycle network automation, which large organizations identify in conversations with IDC as a growing priority, ensures that business intent is clearly and simply defined, verified, maintained, and optimized in a continuous loop. Full life-cycle network automation also guards against configuration drift and helps achieve a proactive posture to network management, resulting in optimal availability, heightened reliability, and improved business outcomes. Similarly, analytics and telemetry provide actionable insights to architects and NetOps teams to accelerate mean time to resolution (MTTR).

Further, the use of standard APIs and abstraction of vendor-specific network constructs allows DevOps teams to accelerate the pace at which they develop and continuously integrate new services.

Considerations

CXOs should view the datacenter network as an asset that must be optimally managed, not only to reduce costs through greater operational efficiency but also to deliver desired outcomes and objectives. As such, they should also consider how an intelligently automated datacenter network can lower capex by facilitating the choice and flexibility that come from being able to support multivendor network environments without compromising agility or performance.

CXOs can play their part by directing and defining business-oriented selection criteria based on IT strategy and desired business outcomes. To ensure that the datacenter network can fulfill its business-driven mandate, CXOs should provide prescriptive high-level guidance pursuant to network procurement and deployment process so that lower-level decisions adhere to business objectives. They should consider how their automated datacenter network will dovetail with and support applications, developers, DevOps, SecOps, architects, and server teams, thus avoiding or mitigating the interdepartmental friction that can impede business agility.

Conclusion

Intelligent datacenter network automation gives CXOs strategic opportunity to reconcile concerns and interests across various levels of their organizations. Accordingly, CXOs should ensure that the chosen solution meets the needs of each organizational level and that it does so within the scope of budgetary constraints.

At the business level, the need is for infrastructure to be agile, flexible, and scalable to support evolving requirements. Lines of business will want to ensure that those requirements and the strategic interests that drive them are reflected in vendor and technology assessment and selection through to procurement. IT architects will want to ensure that developer and application needs are met and that the network automation solution offers relevant abstracts that align with DevOps processes. Further, network operators need a reliable platform and tooling that facilitates consistent, repeatable, and validated automation.

Just as digital natives realize that their datacenter infrastructure contributes directly to their top and bottom lines, organizations worldwide are recognizing the importance and value of having an intelligently automated datacenter network as an integral component of their datacenter infrastructure. The network need not be perceived as a cost center and inhibitor to business agility. In fact, IDC finds that successful digitalization initiatives at large organizations, across nearly every major industry, depend increasingly on the network as a modernized, highly automated element of digital infrastructure. With strategic direction from CXOs, the datacenter network can assume its rightful place as a key facilitator of the next chapter of digital business.

About the Analyst

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Brad Casemore is IDC's Research Vice President, Datacenter and Multicloud Networks. He covers datacenter network hardware, software, IaaS cloud-delivered network services, and related technologies, including hybrid and multicloud networking software, services, and transit networks. Mr. Casemore also works closely with IDC's Enterprise Networking, Server, Storage, Cloud, and Security research analysts to assess the impact of emerging IT and converged and hyperconverged infrastructure.

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