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SPOTLIGHT

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Enterprise networks today are dynamic as organizations increasingly rely on cloud, a more distributed workforce, and high-bandwidth, low-latency connections. IT organizations need advanced deployment capabilities to implement and migrate to a modern enterprise network securely and efficiently.

Advanced Services Can Help Organizations Realize the Value of Intent-Based Networking

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Introduction

The value of highly reliable networks continues to reach new heights as companies increasingly rely on connectivity to build out their operations on tightly interconnected networks that tie them with suppliers, partners, and customers. CIOs are tasked with providing a network designed to handle mission-critical workloads that deliver on business outcomes, drive efficiencies in operations, increase productivity and revenue growth, and improve user experiences. The changing nature and velocity of business, the pace of technology innovation and enterprise adoption of cloud-based IT services, and the pressures of digital business transformation are converging to elevate the importance of agile, cloud-ready networks. In the digital economy era, embracing digitization isn't just the ability to keep pace; it is also the ability to transform network infrastructure as well as people and processes — quickly, efficiently, and securely.

AT A GLANCE

KEY STATS

- 45% of companies will use technology partners for infrastructure architecture, planning, and design.
- 47% of companies will use technology partners for monitoring, troubleshooting, and remediation.

KEY TAKEAWAYS

As enterprises face significant challenges acquiring and retaining IT professionals, having access to industry-leading specialized technology expertise is essential.

IDC believes that networks will take on greater importance as the unifying, performance-enhancing element supporting today's technology-dependent business environment. Enterprises that are architecting, deploying, migrating, managing, and maintaining these networks with a stretched talent pool will need to turn to trusted expert partners for assistance. Leveraging best practices, the smartest AI-driven analytics and automation tools, and the right partner to assist with this complex ecosystem will be necessary to extract the most value from network initiatives. To achieve business objectives, enterprises will need the expertise of these partners to ensure continuous uptime across an evolving multivendor landscape and that each element of the infrastructure is fully optimized and secure.

Network Complexity Continues to Increase, Complicating IT Operations

Resilient network infrastructure and streamlined networking operations remain a key strategic imperative to achieving desired business outcomes, but one that is very elusive even for the most network-savvy IT departments. With intent-based networking being so incredibly complex, CIOs and network managers are looking to better architect, deploy, migrate, manage, and maintain disparate parts of their network, from the datacenter to the campus (LAN) to the edge (software-defined WAN). CIOs are also demanding the complete integration of network security, which must be built in from the ground up in network architecture design, not bolted on. The complexity of these networks seems to only increase as companies consider their hybrid cloud strategies and whether to pursue an on-premises or collocated private cloud or

connectivity to a public cloud solution. Other new innovative networking technologies such as software-defined WAN/LAN, Wi-Fi 6, and 5G help ensure that the network is no longer an impediment to digital transformation but an accelerant to innovation and competitive advantage. Expertly planning, deploying, migrating, and operating networks will be just as important as the data that traverses them. To manage these complex network landscapes, enterprises seek to implement advanced technologies that include AI-driven analytics and automation to simplify network life-cycle operations across single and multivendor environments. Faced with a scarcity of in-house skilled IT resources and a growing talent gap, enterprises will increasingly turn to their vendor partners for a range of asset life-cycle assistance.

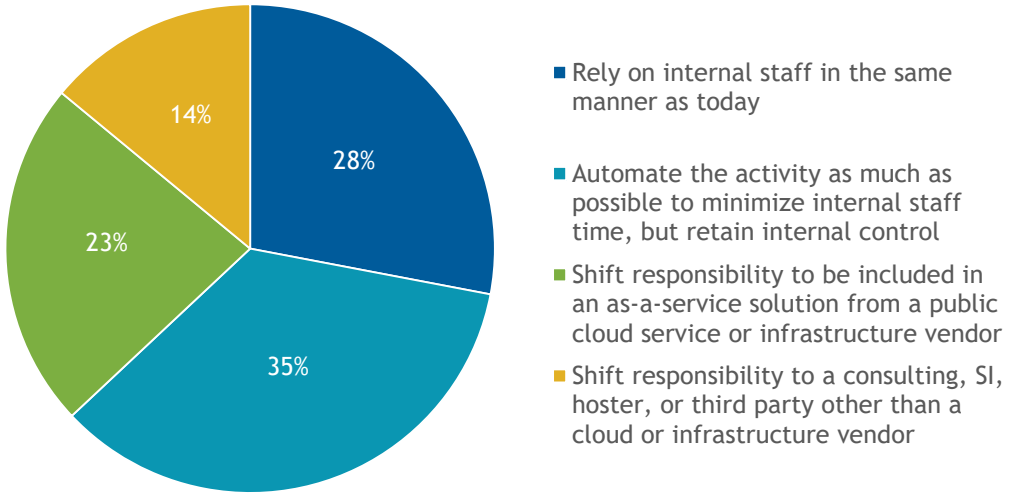
In 2020, IDC ran a cost of downtime survey to look at planned and unplanned downtime for networks. Across all verticals, the results showed, on average, approximately 65 hours of planned downtime and another 50 hours of unplanned downtime. Clearly, there is still room for improvement across the life-cycle services of the network from planning to refresh. The survey found that despite advanced technologies and improved operations, enterprises continue to see unplanned downtime across their systems, which makes managing planned downtime an IT necessity.

CIOs and IT Organizations Look to Partners and Vendors for Help

Organizations need to maximize the value of their advanced network technologies, which can be accomplished only with proper architecting, building, and migration as well as ongoing management to keep the network secure and compliant. When IDC asked 796 companies how they are handling their IT asset life cycle, 37% said they are looking to use a trusted expert partner and 35% said they are looking to implement new AI-driven automation while keeping some internal control (see Figure 1).

FIGURE 1: ***Organizations Seek Partnering or Automation for Help with Life-Cycle Services***

Q To support future digital infrastructure operations, what is your organization's likely primary approach for addressing system/service configuration, deployment, life-cycle management, and break/fix activities in the next 24 months?



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Source: IDC's Future Enterprise Resiliency and Spending Survey, Wave 2, March 2022

The reason for this shift in utilization of trusted partners stems from the need to augment the internal skills required for full utilization of the solutions.

The Power of Proper Network Architecting, Deployment, Migration, Management and Operations

As enterprises look to cohesively architect, deploy, migrate, and manage multiple domains of their multivendor networks (datacenter, campus, edge, public cloud), a centralized platform will be needed that can extend to all areas of the network that must be handled. Key aspects of accomplishing this task will include:

- **Architecting intent-based network designs for new workloads and interconnectivity.** With remote users, edge, and campus locations as well as public cloud providers, the architecture of networks is as complex as ever. Using sophisticated design methodology and tools will be critical to ensure flawless network operation.
- **Automating zero-touch deployments that can scale.** Less human interaction equals less downtime. According to IDC's research, human error was still the number 1 cause of downtime.
- **Migrating from the "old" to the "new" simply and easily.** In the age of hybrid cloud, modernizing networks will be crucial to provide the high-speed infrastructure that helps create a better user experience (no matter where the workload resides).
- **Ensuring continuous validation of the network design.** This will provide assurance that the systems are secure and compliant over the lifespan of all assets on the network.

As the scale of the enterprise network grows, and with the recent supply chain constraints to consider, relying on multivendor or vendor-agnostic life-cycle management tools becomes an important way to efficiently manage the network. These tools include:

- **Baseline monitoring.** An AI-driven system understands what normal and abnormal behavior is and automatically alerts when there is a performance or security issue.
- **Issue avoidance and faster repair.** AI-driven systems can automatically determine what steps need to be taken to resolve an issue (in the best instance, before they happen), and either recommend those steps or automatically implement them, enabling a reduction in incident mean time to resolution.

For most IT organizations, third-party service providers are a key element of realizing the full value of complex, advanced network technologies. Specifically, IDC recommends that IT organizations consider the following aspects when adopting new solutions:

- **Network architecture.** Up-front design is critical not only for smooth deployment but also for optimizing ongoing operations and management. Look for robust toolsets that will incorporate multivendor scenarios.
- **Deployment services.** It is important to look for providers with a demonstrated methodology around the complete life cycle, from plan and design to implementation and deployment through ongoing operations. In addition, complete deployment services should include access to experts, best practices in specific industries and applications, and adoption of key tools that can streamline operations going forward.

- **Migration services.** Consideration should also be given to providers with a proven history of phase-based delivery that can be customized for specific requirements, such as rapid implementation. In addition, the service provider should offer expert assistance at each step in the migration, with a specific focus on knowledge transfer to ensure seamless transition and efficient network operations.
- **Dedicated engineering teams.** Access to technical expertise throughout the product life cycle can help maximize the value of critical network technology investments. In addition, ongoing knowledge sharing initiatives can help internal IT teams implement best practices when working with the life cycle of the network assets, particularly for support.
- **Robust predictive and preventive support tools.** Minimizing downtime across the network is a top priority for most enterprises, and support providers that offer predictive and prescriptive capabilities can help. Organizations can use these tools to prevent issues from affecting business users as well as to continually optimize network performance.
- **Data from ongoing operations.** Organizations should consider providers that include monitoring, capturing, and tracking operational data across the networking environment to continually optimize network operations and keep the network secure.
- **Asset tracking and life-cycle management through a single pane of glass.** For IT organizations managing complex heterogeneous network environments, these tools can improve transparency and visibility, especially when they can monitor multivendor environments.
- **Modern, updated online portals with intuitive user interfaces.** Easy-to-use portals can accelerate self-help and self-healing capabilities for IT teams that are supporting complex network infrastructure.

Considering Juniper Apstra and Services for the Modern Datacenter

Juniper Apstra is an intent-based networking software tool that automates and validates the design, deployment, and operations of a datacenter network across different vendors and environments. It is designed to support enterprises, cloud providers, and service providers that are migrating from existing (legacy) production datacenters to more modern datacenters in a vendor-agnostic way. The key features of Juniper Apstra include:

- **Fast access.** Provides quick assistance with technical issues to ensure an organization gets the most out of its technology investments
- **Design.** Orchestrates plans for multiple fabrics and domains in a vendor-agnostic fashion that can migrate smoothly between the old design to the new design
- **Build/deploy.** Enables zero- or low-touch deployment of validated multivendor network designs that include minimal impact migration from the legacy network
- **Operate.** Provides ongoing validation of network for security and compliance as well as quick root cause analysis to keep the multivendor network operating efficiently

To assist enterprises adopting Juniper Apstra, the company also offers the following services:

- **Apstra Automated Data Center Deployment Service,** a fully customized service developed for deploying a next-generation datacenter network by using easy-to-deploy, validated datacenter reference designs as well as flexible Apstra Freeform reference designs tailored to specific customer requirements
- **Apstra Automated Data Center Migration Service,** specifically designed for migrations from existing production datacenter networks to next-generation datacenter networks by using easy-to-use migration packages with validated fabric reference designs or fully customized migrations using the flexibility available through Apstra Freeform reference designs to leverage any feature, protocol, or architecture that is tailored to a customer environment

Challenges

While Juniper has significant opportunities to increase utilization of the Juniper Apstra features, the company will also face some challenges in this dynamic and competitive market. As complexity in network architecture, migration, and operations continues to grow, CIOs and IT organizations will expect vendors to stay ahead of the technology curve in capabilities. Juniper will need to continue expanding and updating the features and capabilities of the Apstra solutions and services to differentiate outcomes and results across a crowded market.

IDC believes Juniper will also need to continue its investments to grow adoption of Apstra and the full utilization of its features. Juniper will need to help its customers make the best use of the tool, with incentives and perks that are available only for IT organizations fully adopting the Apstra solutions. The company will also need to implement updates with new secure capabilities to continually enhance the platform as new needs and use cases arise. Further, Juniper must invest in the education of the channel community, as it will play a critical role in acquiring new customers and facilitating adoption of this new technology.

Conclusion

The market has responded to what companies are seeking. The technology and capabilities offered by vendors have dramatically increased, allowing them to play a more integrated role in enterprise network environments. In effect, companies are looking to rapidly deploy and support diverse traffic types with high-performance requirements as well as to leverage technologies that can accelerate adoption and rapidly gain access to key capabilities that deliver greater value. With the appropriate solution in place, companies can quickly deliver the kind of high network availability that creates an excellent service experience for customers.

As a result, advanced deployment capabilities are continually expanding and will be the predominant way vendors will assist companies in the future. The intelligence that they are building into their deployment and support offerings provides better telemetry data to help keep networks highly available and keenly optimized. With the dynamic nature of networks today, advanced features will become essential to operations.

When enterprises are choosing a vendor to partner with, technology and technology road maps are important, but the people, processes, and services that wrap around that technology are just as critical. The ever-changing network landscape demands a partner that provides excellent technology, assesses how that technology will define the needs of the future, and helps enterprises maximize the value of these solutions. To deliver a highly satisfactory customer experience, vendors should adopt a customer-centric mindset across their organization, with a focus on the best interest of their customers.

About the Analysts

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Elaina Stergiades is the Research Director for IDC's Software Support Services program. In this position, she provides insight into and analysis of industry trends and market strategies for software vendors supporting applications, development environment, and systems software. Elaina is also responsible for research, writing, and program development of the software support services market.

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Rob Brothers is a Program Vice President for IDC's Datacenter and Support Services program as well as a regular contributor to the Infrastructure Services and Financial Strategies Programs. He focuses on worldwide support and deployment services for hardware and software and provides expert insight and intelligence on how enterprises should be addressing key areas for datacenter transformation and edge deployment and management strategies. IT hardware services covered include IoT devices, converged infrastructures, storage, servers, client devices, networking equipment, and peripherals. Software covered includes software-defined infrastructures, cloud support, operating systems, databases, applications, and system software. He also has expertise in the latest consumption models, which include as-a-service models such as device as a service.

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