

Move to software-defined networking for speed and agility



Digital transformation continues to dramatically change how information and communications technology (ICT) services are being delivered to clients across all industries. This transformation has added new technologies and types of endpoints, increased network traffic and driven more applications to the cloud.

Overcoming operational challenges

Increased performance and availability requirements – which are needed to remain competitive – continue to increase, while demands on the network, caused by the proliferation of devices, increased traffic and growth in cloud-based applications, continue to climb exponentially.

Operations management teams face increased pressure to:

- Reduce costs
- Accelerate innovation
- Deliver an exceptional user experience
- Consistently meet policy and security standards

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“ **Intent-based networking reduces the complexity of managing and enforcing network policies.** ”

Intent-based networking (IBN), software-defined networking (SDN) and centralized network management

Software-defined networking (SDN) uses software to configure device-to-device networking. IBN adds artificial intelligence (AI) and machine learning (ML) capabilities that provide the automation needed to achieve greater efficiency and predictability in network operations administration and management.

IBN creates optimal and automatic network performance configurations based on business intent, then develops customized networking baselines to define the optimal network state. These baselines are used to monitor the network to identify network performance issues faster, provide continuous verification and automate corrective action where feasible. IBN reduces the complexity of managing and enforcing network policies. It's a vendor-neutral way to understand, monitor, configure and administer all devices and network interactions.

Is it worth the effort to change?

IT operations leaders must always weigh the cost of change in their operations against the value the change will deliver. The level of effort involved in changing procedures, modifying the operational environment and reskilling staff is always concerning and not without its own set of challenges.

Together with the centralization of network management, IBN delivers immediate benefits that greatly surpass the change effort and enable you to be ready for a future that requires even more agility, greater scale and higher performance. Many industry analysts believe that SDN with IBN features will become a necessity. That's because these combined capabilities are needed to manage and administer the network complexity associated with multiple public clouds, multiple campus environments and connectivity to an even broader array of IoT and edge devices.

The value of IBN with centralized network management

The implementation of IBN with centralized access management delivers an improved quality of service, lowers operating costs and takes much of the complexity out of network management.

Lowers cost by improving operational efficiency

IBN translates a business-aligned policy into the desired network state by using centralized network orchestration software to automatically implement policy-based configurations consistently across the network.

With IBN, it's possible to monitor, identify and react to changing network conditions in real time. Business-aligned policies can be based on job roles, device function and application requirements. Intent-based policies are stated in terms of what the network should do rather than how something should be done, and can also include performance requirements such as availability and latency.

Manual methods to onboard devices, configure ports set-up and implement access control lists are no longer feasible. Most policy violations are due to human error. They not only introduce security risks but also create service incidents.

Network management simply can't keep up with the volume of change by continuing to add additional networking staff. Centralized legacy change management processes can't respond adequately to maintain the quality of service and keep up with new users and network additions.

Automating the deployment, monitoring, verification and remediation of policy configuration lowers costs by:

- Accelerating policy-activation and verification processes by automating network changes for thousands of devices
- Reducing human errors associated with traditional change and configuration deployment practices
- Simplifying the process of adding and refreshing network resources
- Capping or reducing the number of skilled staff required for network management
- Improving the quality of service

Network telemetry and end-to-end SDN fabrics provide detailed visibility of the real-time user experience. Using AI

and ML, IBN systems can also determine the best way to implement the desired network state, and take automated corrective action to maintain it.

These advances:

- Help to optimize network traffic flow
- Reduce the time taken to react to changes in order to deliver a level of service that supports the customer experience (CX)
- Reduce network noise and enable faster issue identification and resolution

The end result is higher availability and improved network performance.

Reduces business risk through improved policy compliance

Security attacks are both more numerous and more sophisticated than ever. Network weak points represent prime territory for infiltration. Endpoint devices like laptops, smartphones and IoT devices continue to proliferate. Each of these devices presents a potential security threat if policies are not effectively and consistently applied and maintained.

The automation of policy deployment and continuous verification of compliance improves security from the edge to the cloud. Policy compliance helps to secure application traffic over the internet. IBN with centralized access control lowers the risk of unsecured elements or unauthorized users accessing the network.

Simplifies the complexity of network management

Combined with centralized network management, IBN enables IT to treat the network as an integrated whole so you can leverage the benefits of fully software-defined networking. Growing network complexity and the fast pace of change require a more dynamic approach to building, deploying and managing the network environment.

With IBN, all users, devices and connected things are recognized automatically. The best network path to improve performance is automatically defined. Network availability is improved by lowering unplanned downtime. The deployment and verification of policies across the network and all access points is assured, and compliance maintained. Managing performance, achieving business SLAs and optimizing costs all become less challenging.



Realize the advantages of IBN and centralized access

Overcome your network challenges today and prepare for an even more challenging future by adding IBN and centralized network management to SDN. Making the change will lower your operating costs, improve the efficiency of network administration and deliver better network performance.

Take the next step

Implement a roadmap to transition to software-defined networking, and capture the full value of what you have today and will invest in tomorrow. With our full suite of services, we can help you plan your journey to software-defined and ease your transition to a new way of operating and monitoring your network.