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Next-Gen Networks Demand Increased Access

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Gartner defines next-generation networks as "the evolution and migration of fixed and mobile network infrastructures from distinct, proprietary networks to converged networks based upon IP." Businesses are no longer tied to traditional networking that uses hardware devices to control routers and switches, as these solutions are difficult to secure and scale. Software defined networks and hyper-convergence innovations are the latest networking approach, enabling the control and management of enterprise networks via software solutions and virtualization technology for better performance.

The promise of software-defined networking

Software-defined networking holds substantial promise for radically changing how networks are built and operated by reducing cost, improving performance, and increasing functionality. Replacing the point-to-point circuitry of traditional networks that use physical cables to connect components, software-based networks create virtual channels that IT teams can reconfigure rapidly using software that can connect to multiple endpoints.

The next generation software-based dynamic network means that IT staff won't need to physically visit locations to configure network devices. The result offers a highly flexible network that can adapt to changing data traffic patterns, segment and prioritize traffic on demand via quality-of-service (QoS), and allocate bandwidth based upon use cases or class-of-service (CoS). Data pathways can layer on top of each other while remaining segmented, so data doesn't cross virtual barriers. In this manner, network traffic can be highly secure, meaning critical data can be segmented, remaining classified from other portions of the network. This allows secure encrypted traffic to traverse the same paths as standard data while inhibiting intruders from accessing the entire network.

Colocation acts as a network hub for network possibilities

To build a next-generation network for the organization, businesses will need access to diverse products and mediums such as local and long-haul fiber, metro-ethernet, Gig-E, the types of carrier products that provide larger pools of bandwidth, and more diverse routes. This is where colocation and hybrid IT enter the picture. Hybrid IT is the idea of tapping into various types of infrastructure to develop an architecture that works best for the workload in question. Whether it's any combination of colocation, private cloud, and public cloud, hybrid IT and colocation allows customers to create a best-of-breed approach that offers access to advanced network solutions. With colocation as the network hub as well, businesses can connect to carrier providers and springboard their network to a global reach.

Carriers select colocation providers as locations to deploy new products and services. Rather than go across town via a circuit, businesses can set up direct connections from their collocated IT environment to a carrier within the same building. This allows for low latency, high bandwidth throughput, low cost, and high reliability in uptime, due to the clean, managed, secure environment. Ultimately, businesses come to colocation because they can get the most affordable solutions with a host of supplier solutions contained easily in-house.

As businesses continue to adopt cloud, mobile solutions, data intensive technologies, and leverage the everywhere infrastructure that come with hybrid IT, the expectations for rapid network provisioning and automation will expand beyond what existing point-to-point networks can provide. Building an SDN network architecture can reduce capital expenditures and simplify network operations.

Colocation offers access to regional carriers and cloud providers

Data center facilities are not limited to a single fiber provider within a building. Customers have the option of selecting from a vast ecosystem that includes fiber and network providers, managed solution providers, and cloud on-ramps or cloud providers in-house. All these connections are already live in the building and customers don't have to wait to build out a point of presence there.

The networking choices available through colocation offer the base layer that companies need to continuously deliver quick, secure, and dependable performance to connect their hybrid workloads and the network performance needed to meet their customers' expectations. With so many carriers and interconnection partners housed within the data center already, business network solutions are a cross-connect away. Businesses can also save on building separate physical connections to networks and cloud environments by leveraging numerous virtual connections through a single physical port. Many businesses begin leveraging the public cloud over public Internet when first implementing multi-cloud or hybrid environments. When it comes

to transporting data for high-priority workloads between various cloud and data center environments, the security, performance, or resilience of the public Internet can create challenges.

In colocation, enterprises get to choose from a range of cloud on-ramp providers. These providers have direct connections to cloud availability domains that can save on transport costs due to lower per-bit rates and allow for cloud-to-cloud routing, saving bandwidth up and down HQ direct circuits. This eliminates the data hairpin and reduces latency. This all adds up to a better user experience and application performance. The second key driver for deploying a private network versus public Internet include data privacy, data-in-transit security concerns, network coverage and performance issues, and particularly low-latency performance concerns. Further benefits include:

Improving network agility

When you build a network in colocation, you also have access to several best-of-breed solutions that allow you to build the network infrastructure in a way that makes the most sense for the business needs in question. By not having to pick between public, private, or hybrid clouds, you can pick the infrastructure that offers the most agility. Additionally, because businesses don't have to make those trade-offs, you'll also reap benefits that are already baked into the best-of-breed option, such as DDoS protection by using a private network in the architecture where applicable. Had a best-in-class approach been taken by, for instance, using a public cloud, the network would be susceptible to not only DDoS attacks but various other drawbacks such as "noisy" neighbors sharing the same VMs and various other headaches that would render the option impractical beyond a certain scale.

Cost reduction

A next-gen network can offer significant cost savings to users. That's because organizations using it in a hybrid infrastructure can create direct connections between their private and public footprints. That means they can lean on their private resources for sensitive workloads or even run them where they are the least expensive, since colocation isn't billed on a per-use bandwidth basis like the public cloud. Users pay for the space and power they utilize, providing a more predictable pricing approach and flat rates for monthly leases. In many cases, colocation providers also offer businesses remote-access controls that allow customers to view power consumption from afar and ensure costs are in line with budgets.

Speaking of operational costs, creating, maintaining, and upgrading on-premises data centers are a necessary evil for most organizations just as is dealing with public cloud providers. Another example of "doing more with less" that next-gen networks enable is that by shifting data center operations to a third party such as a colocation provider, electricity, building maintenance, system upgrades, and various other operational expenses the organization would incur are now the responsibility of the colocation provider. This gives internal IT teams more time to focus on more value-added tasks for their business.

Colocation can be for everyone, but not everything

While the benefits of a multi-cloud approach are plain to see, it's worth noting that for some industries and types of workloads, a next-gen network may not be the way to go. This includes:

Data-heavy applications

Applications that must store and compute large amounts of data are not next-gen friendly. Complex queries from users create latency issues and thus, end-user frustration. It may also result in expensive cloud provider bills, which is the opposite of what businesses are trying to achieve (for example, lower costs) by choosing a next-gen approach.

Applications for highly regulated industries

Those in financial services and healthcare, and other highly regulated fields, may not be the best candidates for colocation. That's because those industries are subject to government regulation and fines for failing to comply with those regulations. Some of those regulations include provisions on how exactly sensitive information, such as personal identifiable information (PII) about individuals. While there are colocation providers who specialize in these industries, it's worth asking yourself if colocation is the right option.

'Slow-and-steady' applications

'Slow-and-steady' applications are applications that typically require the same amount of computing power every day. This includes business applications such as CRM, ERP, SEM, and HCM. These applications tend to be very modular, and attractive for businesses as the application can grow with them; however, when hosted in the cloud, the more modules that get added, the more it will cost to run. The recurring cost of the cloud subscription may outweigh the one-time upfront payment to install it locally.

Maximum uptime applications

Enterprise-grade facilities are designed for disaster preparedness with all the bells and whistles that make these top-tier facilities reliable, redundant, and extremely robust.

Next-gen is here. Are you ready?

Together, these capabilities set the stage for findings from IDC which showed that, over a five-year period, even demanding workloads cost 44 percent less in hybrid environments than their native, public cloud equivalent. This is even after considering costs like infrastructure management, application installation and software licensing fees, refactoring, and migration. Today's businesses need operations that are always available and deliver the accelerated business results with a higher quality experience for customers and end-users.