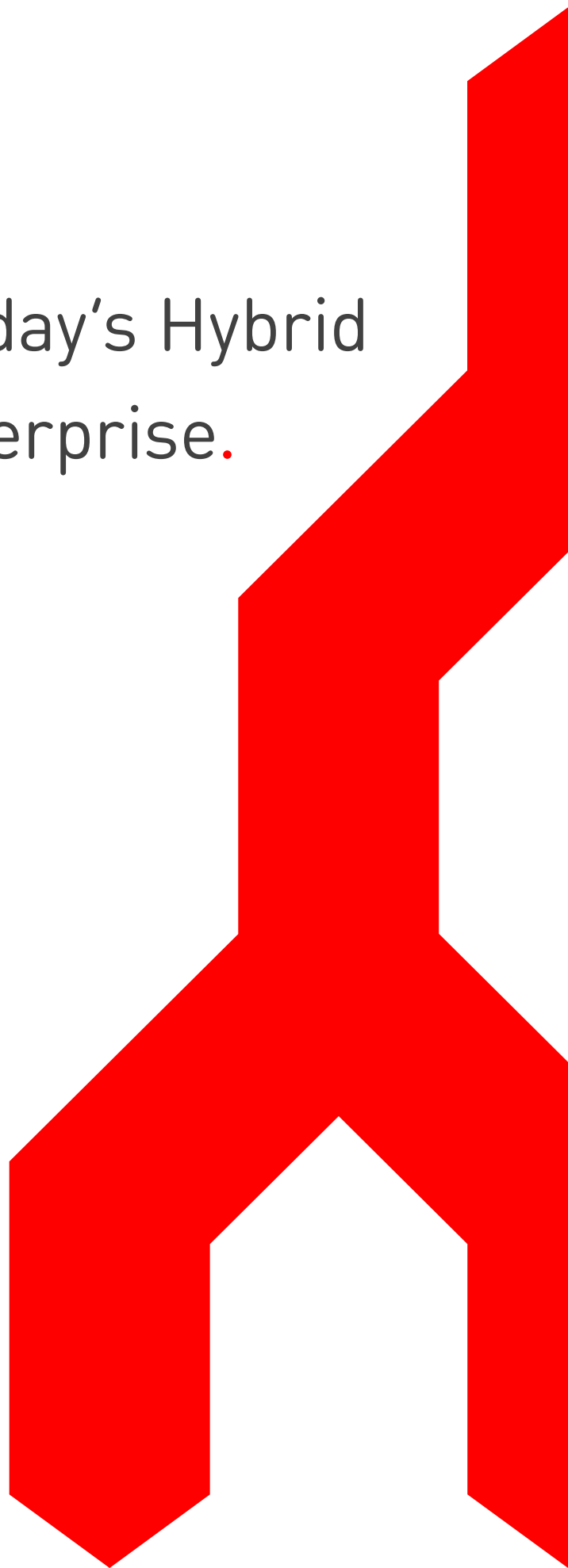


Connectivity for Today's Hybrid and Multicloud Enterprise.



Why connectivity matters for today's hybrid and multicloud enterprise

As organisations of all sizes strive to adapt and innovate to meet new technology demands of business units, they increasingly rely on multiple service providers to either augment or replace traditional IT infrastructure. Whether replacing hardware with compute and storage in the cloud, leveraging AI from IBM's Watson, or taking advantage of the convenience of Salesforce and productivity applications like O365 and G-Suite, businesses are turning to 'IT as a Service' models to reduce the burden of equipment and OS maintenance. This shift to public cloud allows companies to focus on their core business and react rapidly to changing environments and demands.

This infopaper explores how organisations are successfully adopting these new cloud trends and why connectivity is critical to achieve performance and security goals, simplify IT's management burden, and support workload flexibility – all without busting the budget.

Choosing the right network connectivity

The way enterprises use connectivity and bandwidth is evolving rapidly. On one hand, businesses are adopting new Software as a Service (SaaS) applications daily, while on-premises infrastructure continues to evolve as well. IT organisations and architects are increasingly utilising public cloud and private colocation to augment – or replace – traditional on-premises infrastructure.

The acceleration of these shifts is evidenced by a recent Gartner forecast, predicting that “80 percent of enterprises will migrate entirely away from on-premises data centres with the current trend of moving workloads to colocation.”¹ Why the rapid shift? Several megatrends are driving enterprises of all kinds out of the data centre into one or more clouds.

Firstly, IT is being challenged to become more responsive to rapidly changing line of business (LOB) demands and to meet elastic demands for capacity for seasonal or other bursts of growth. And, many of those LOB demands include new big data analytics requirements that are better fulfilled by utilising artificial intelligence (AI) and machine learning (ML) platforms more easily provisioned by the hyperscale cloud providers like Amazon Web Services (AWS), Microsoft, Google, and IBM.

Organisations relying on public internet connectivity may find themselves at a disadvantage, notably for the lack of security, less than stellar quality of service, and unpredictability that the public internet embodies. And, as organisations strive to be more flexible, most public internet services are the opposite, which means they lack the ability to align with rapidly changing workload and application demands of the cloud.

The internet is a public network built on trust. Sometimes, networks mistakenly 'leak' routes that cause traffic destined for an intended location, to show up in another – thus impacting performance and security. However, in some cases, there are malicious actors that engage in BGP route hijacking. These actors are taking advantage of the trust-nature of the internet by posing as a valid destination and intercepting traffic. Not only can critical information be stolen in such an event, the performance of the applications traversing the internet connection is severely degraded as traffic is routed, sometimes, halfway around the world.

Further hampering IT efforts to meet changing cloud demand is the time it takes to provision new networking connections. Traditionally, multiple cross-connects or separate private lines were required to connect to multiple cloud and network service providers at a substantial cost, and when time-to-market means everything, business units typically face 30 to 120 days of waiting between the time they order new connections and when they are finally deployed and ready to use.

¹ “Gartner identifies the top 10 trends impacting infrastructure and operations for 2019,” Gartner, December 2018

Migrating data into cloud environments and the ongoing connectivity to support them – whether from on-premises to cloud or from one cloud to another – is increasingly complex and will only become more so in the future. Put simply, the traditional model of procuring and using connectivity does not align with the ‘as a service’ model of cloud providers. And the internet is not inherently a secure method of transmitting data. This is why the choice that a company makes regarding its network connectivity has a direct effect on their business from the get-go.

Considering these implications, it’s clear that Network as a Service (NaaS) is a critical component to a holistic IT strategy. It aligns the consumption of network capacity to the elasticity of cloud models and enables self-serve, on-demand procurement. But, equally as important, as we’ll explore throughout this paper, NaaS also facilitates connections to services and data centres over a private, secure network - all while abstracting manual provisioning of capacity. Ultimately, NaaS empowers IT stakeholders with a powerful set of networking tools accessed through a web-based point-and-click environment. This allows them to simplify their connectivity strategy and processes, and focus on what’s next for their business instead.

Considering a multicloud approach

More often than not an enterprise’s journey to the cloud involves more than one public cloud provider, and perhaps more than one private cloud or colocation partner, as well. It’s become increasingly common to see organisations utilise SaaS cloud applications like Salesforce, SAP, and Oracle to manage critical ERP functions, and Cloud Service Providers like Azure, AWS, Google, and IBM for productivity applications, disaster recovery and backup, and AI. Many born-in-the-cloud enterprises also rely on Infrastructure as a Service (IaaS) or Platform as a Service (PaaS) private clouds and forgo on-premises infrastructure entirely.

This is what Gartner’s projection is pointing toward: “From co-location to public cloud, plenty of alternatives to on-premises data centres exist. Leaders must identify whether there are truly strategic reasons to persist with on-premises needs, especially when they consider the significant amount of investment involved is often amortised over many years.”²

Since each cloud provider offers their unique benefits, organisations may find that adopting multiple clouds enables them to gain several key benefits: Taking advantage of leading applications and services that align to specific business outcomes, optimising the overall return on their public and private cloud investment; avoiding being locked-in to a single cloud provider’s portfolio and rate structure; and reducing the overall risk of data loss due to catastrophe or natural disaster. As adoption of multiple clouds increases, the complexity of connectivity required to interconnect a multicloud architecture also increases.

Businesses of all kinds find the need to connect to and connect between on-premises infrastructure, co-located assets, and born-in-the-cloud or cloud-hosted data and applications. What are some real-world advantages of implementing a multicloud approach?

Florida Cancer Specialists increases control, lower latency

Data-intensive customer medical records are critical to national healthcare provider, Florida Cancer Specialists. Their need to scale mission-critical workloads for data protection between their Cyxtera data centre, private cloud, and public cloud services – securely with low latency and within their budget – led them to Megaport.

Now, Florida Cancer Specialists enjoys centralised control over their hybrid multicloud environment, and Megaport’s private network helps ensure compliance and regulatory needs are also being met. The result has been improved management of complex workloads between colocation and public cloud environments, thanks to Megaport’s cloud-neutral NaaS offering.

[See how they did it](#)

² Gartner ibid

The advent of the cloud onramp

AWS Direct Connect, Azure ExpressRoute, Google Cloud Interconnect, and Oracle Fast Connect are a few of the most popular cloud onramps available today. These onramps allow customers to directly connect into public cloud infrastructure through a private connection. This means that customers can bypass the best-effort internet and take advantage of dedicated connections into the cloud infrastructure that houses their applications. Today, there are hundreds of cloud onramps globally, dedicated to connecting customers into specific cloud availability zones or cloud regions. For example, as of publishing, Azure has two ExpressRoute onramps in Silicon Valley that service the US West Azure Cloud Region.

Network as a Service provides on-demand, dedicated connections to cloud onramps. Software and network integration with cloud providers ensures that NaaS enables the provisioning of capacity in near-real-time and that capacity can be managed in a point-and-click manner. This reduces the long lead times to turning up cloud applications and ensures connectivity is elastic and aligned to cloud consumption models.

Important factors for multicloud connectivity

Multicloud and cloud-to-cloud connectivity strategies are becoming the new normal for global enterprises of all sizes. Think about it this way: the applications that reside within individual Cloud Service Providers often need to communicate with one another. For example, a database hosted within 'Cloud Provider A' may need to communicate with the CRM, billing, and general ERP systems hosted in 'Cloud Provider B.' The connection between these applications is critical to ensure performance, security, and scaling. The same holds true for applications hosted on private infrastructure that need to communicate to applications within public cloud environments. So, what should architects and IT professionals look for when finding the right partners to connect their disparate cloud and on-premises resources?

- 🔌 Connectivity to cloud onramps of their chosen Cloud Service Providers is an absolute must. Organisations should not have to provision multiple physical connections to reach multiple clouds.
- 🔌 A robust ecosystem of service providers that enables access to best-in-class services and applications.
- 🔌 On-demand scalability from megabits to gigabytes per second as requirements or workloads change.
- 🔌 Software and network integration to reduce the complexities of provisioning and managing connections into mission-critical service providers.
- 🔌 Intuitive tools and reporting to control connectivity and visualise the network environment.
- 🔌 A large footprint to reach key locations around the globe effortlessly.
- 🔌 Cross-connectivity to multiple regions and multiple clouds to support localisation and redundant architectures.
- 🔌 Virtual routing capabilities to granularly control traffic and enable cloud-to-cloud connections easily.

Karma Automotive dynamically scales IT footprint

Specialty automaker, Karma Automotive, faced a prevalent enterprise challenge – network scalability. With production databases and workloads running seamlessly at their colocation site, they needed to rapidly scale the number of compute cores they provisioned in the cloud – for aerodynamics design and fluid dynamics modeling – from 200 to over 5,000 across multiple cloud regions. They turned to Megaport to provide the on-demand scalable bandwidth that enabled Karma to perform simulations in the right place and time, choosing the closest AWS Regions to lower latency. Megaport's Virtual Cross Connect (VXC) enabled Karma to bypass congested cloud exchanges with the flexibility and control to test performance and cost metrics before going into production.

Megaport's Network as a Service solution

Megaport is transforming the way people, enterprises, and service providers interconnect and makes multicloud connectivity easy and affordable. Its Software Defined Network (SDN) gives enterprises the ability to flexibly provision bandwidth between clouds and colocation providers on demand. Users can provision a new connection in minutes, as compared with weeks or months for traditional connectivity providers.

Customers can connect to Megaport at speeds up to 100Gbps. Megaport enables enterprises to create VXCs between any number of endpoints on their global network, whether they are clouds, data centres, or any of the over 300 service providers in their ecosystem, at any capacity up to 10Gbps, within seconds.

The Company's private network bypasses the public internet and provides secure, dedicated connectivity with predictable performance, and pay-as-you-go scalability without long-term contracts.

With an extensive footprint throughout APAC, North America, and Europe, businesses can access the Megaport Network from more than 450 global locations. Megaport connects more than 130 major cloud onramps globally. The end result is greater agility, reduced operating costs, and increased speed to market compared with traditional connectivity options.

[Click here](#) to learn how Megaport enables easy connectivity for enterprise businesses.



More information

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We make connectivity easy

Megaport is the highly scaled Network as a Service (NaaS) organisation utilising 100 Gbps technology to deliver dedicated access to cloud services. The Company's Software Defined Network (SDN) enables the interconnection of enterprises and service providers across hundreds of data centre locations around the globe. Fast, flexible, and dynamic, Megaport's connectivity solution is transforming the way businesses reach leading cloud services from Microsoft, Google, Oracle, Amazon Web Services, Nutanix, IBM, Salesforce, and Alibaba.



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