



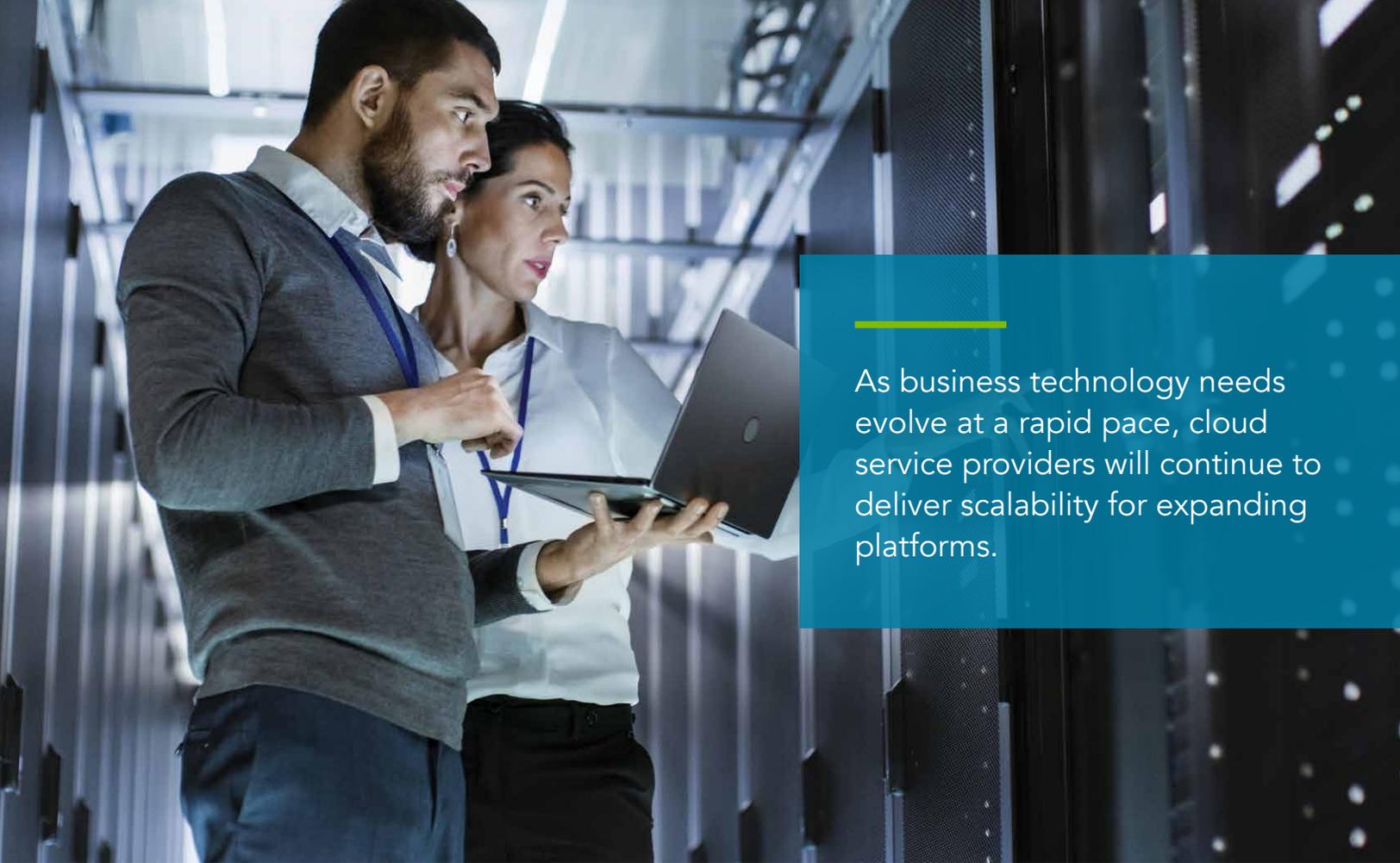
A Better Way to Reach the Cloud

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WHITE PAPER





As business technology needs evolve at a rapid pace, cloud service providers will continue to deliver scalability for expanding platforms.

The Internet should be efficient. Connecting critical environments to it can be anything but easy. This white paper lays out why this process is needlessly difficult, and how a partnership of two leading companies can help.

Connecting to the cloud can be harder than it should be. A do-it-yourself approach entails enormous risk, expense, and distraction from running the organization that is supposed to be helping.

Traditional network service providers can take months to establish connections to customers and typically demand long-term contracts containing few assurances about the services they provide. This report examines the problems enterprises of all sizes can encounter in accessing cloud providers. It also details how Stream Data Centers can solve these issues through its partnership with Megaport, a leading provider of elastic interconnection and cloud services.

Connecting to the cloud should be easy.



WHY THE CLOUD MATTERS AND WHY CONNECTIONS TO IT ARE PROBLEMATIC

As enterprises adopt increasingly computing-intensive workloads, such as cloud-based applications and artificial intelligence, they are using more IT resources through the cloud. Just prior to development of this paper, Gartner forecasted 36.8 percent growth in 2017, to \$34.6 billion, for the infrastructure as a service (or “IaaS”) piece of the global public-cloud market.¹ Many enterprises are adopting hybrid cloud models because of benefits in time to market and quality, according to McKinsey.² As organizations’ technology needs change at a faster pace, cloud service providers provide flexibility to get work done without buying or maintaining hardware or software, according to TechTarget.³

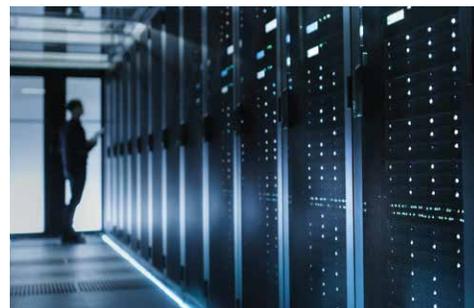
Cloud services provide everything from basic applications, to full suites of enterprise software. When using these offerings, companies may choose to delegate the control of both the infrastructure the applications run on and the administration of the software.

Investing in the cloud can achieve expense reductions of 15 percent in IT and 16.18 percent in operations, according to a study by researchers at Vanson Bourne.⁴ That’s because enterprises can keep key hardware in-house while running much of their software on other people’s machines, renting computing resources as they need it. In an IDG survey of technology decision makers, the top drivers for cloud investments were lowering total cost of ownership (42 percent) and replacing on-premises legacy technology (35 percent), according to IDG Enterprise.⁵

Utilizing cloud services allows enterprises to scale their computing resources as the business requires while paying only for what they use. Some 23 percent of respondents in the IDG study cited the cloud’s flexibility as a driver for their investments in it, IDG Enterprise reports.⁶ Having computing power available as-needed can bring new efficiency to enterprises. Cloud computing delivered an average of 20.66 percent improvement in time to market and an 18.80 percent increase in process efficiency, Vanson Bourne has found.⁷

The most popular types of cloud service models include, but are not limited to:

- **Software as a service (SaaS):** Licensing and using software located on a vendor’s servers.
- **Platform as a service (PaaS):** A combination of hardware and software, generally for developing applications. Examples include AWS Elastic Beanstalk and Engine Yard.
- **Unified Communications as a service (UCaaS):** A bundle of applications such as enterprise messaging & video conferencing.



(1) Gartner, “Gartner says worldwide public cloud services market to grow at 18 percent in 2017”: <https://www.gartner.com/newsroom/id/3616417>

(2) McKinsey, “IT as a service: From build to consume”: <https://www.mckinsey.com/industries/high-tech/our-insights/it-as-a-service-from-build-to-consume>

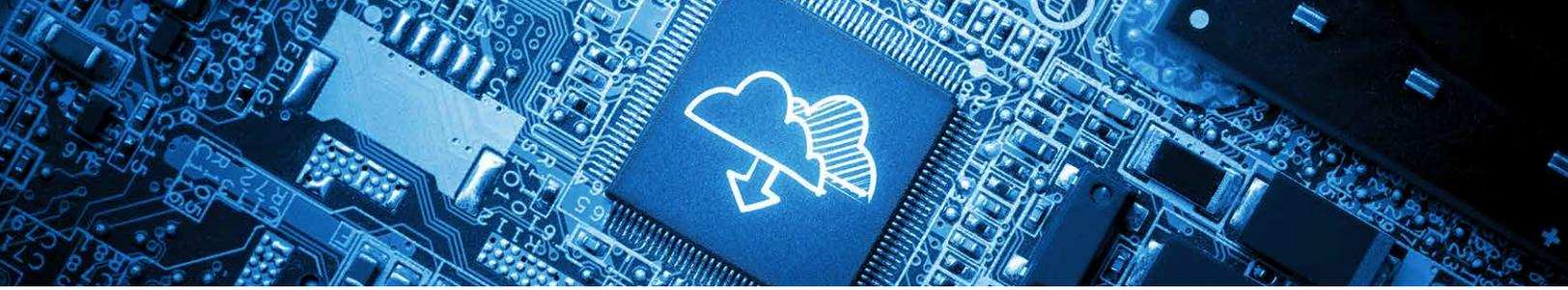
(3) TechTarget, “Infrastructure as a service”: <http://searchcloudcomputing.techtarget.com/definition/Infrastructure-as-a-Service-IaaS>

(4) Vanson Bourne, “Business Impact of the Cloud”: <https://www.skyhighnetworks.com/cloud-security-blog/11-advantages-of-cloud-computing-and-how-your-business-can-benefit-from-them/>

(5) IDG Enterprise, “2016 IDG Enterprise Cloud Computing Survey”: <https://www.idgenterprise.com/resource/research/2016-idg-enterprise-cloud-computing-survey>

(6) IDG Enterprise, *ibid.*

(7) Vanson Bourne, *ibid.*



INDUSTRY ADOPTION OF THE CLOUD

The fundamental idea of the cloud is remote access to computing power and is believed to have dated back to the 1940s. But modern providers of this service began to appear en masse around the middle of the last decade. Amazon Web Services, for instance, was founded in 2006.

Businesses were understandably hesitant at first to entrust their mission-critical data to outside partners. But with improvements in areas like security and compliance, around 70 percent of organizations have at least one application in the cloud, with 56 percent identifying other IT operations that are candidates for cloud hosting, according to IDG Enterprise.¹

Depending on an organization's needs from its computing resources, it will adopt one of **three cloud models**:



Public cloud

A public cloud is one based on the standard cloud computing model, in which a service provider makes resources, such as virtual machines (VMs), applications or storage, available to the general public over the internet. Public cloud services may be free or offered on a pay-per-usage model.



Private cloud

The enterprise controls everything, from where data is hosted to the use of virtualization and automation for efficiency, ZDNet has reported.² Though more expensive, this model provides more control over security, privacy and compliance.



Hybrid cloud

Though definitions vary, this essentially is a mix-and-match combination of public and private IT resources. Enterprises may, for instance, opt to keep some mission-critical infrastructure in-house and use the cloud for "bursting" to accommodate spikes in usage.

Nowhere has the cloud's impact been more of a game-changer than the health care industry. Both insurers and service providers initially used the cloud for non-critical data that wasn't covered by federal privacy laws. Now health care organizations across the board are migrating workloads to the cloud more than ever before. Each month, they upload on average 14.4 terabytes of information, behind only manufacturing companies (24.5 TB) and high tech (21.9 TB), according to a 2016 study by Skyhigh Networks.³ Major cloud providers offer services that comply with requirements in privacy laws like the Health Insurance Portability and Accountability Act of 1996 (HIPPA).

(1) IDG Enterprise, *ibid*.

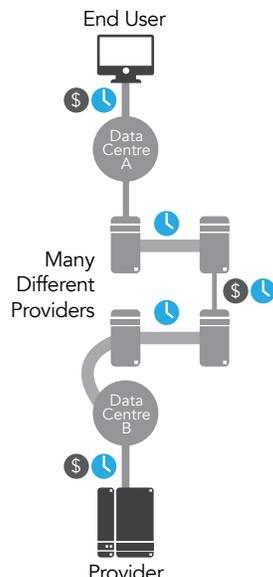
(2) ZDNet, "Public cloud, private cloud, or hybrid cloud: What's the difference?": <http://www.zdnet.com/article/public-cloud-private-cloud-or-hybrid-cloud-whats-the-difference/>

(3) Skyhigh Networks, "Cloud Adoption And Risk Report": <https://info.skyhighnetworks.com/rs/274-AUP-214/images/WP-Cloud-Adoption-and-Risk-Report-Q4-2016.pdf>

How to Connect to the Cloud:

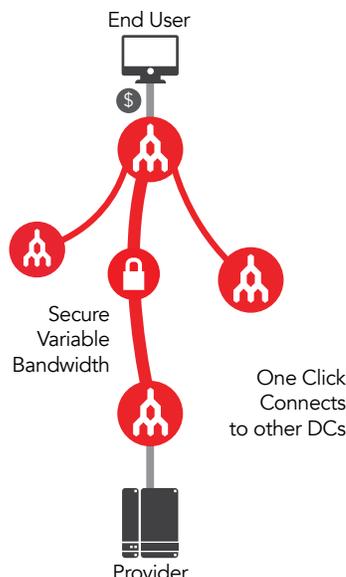
Old Way

-  Cost
-  Time / Term



New Way

-  Secure
-  Megaport
-  Bandwidth



ISSUES IN CONNECTING TO BIG CLOUD PROVIDERS

Though a do-it-yourself method may be appropriate for some organizations, this approach involves time, money and uncertainty, all to essentially re-invent the wheel.

The process begins with purchasing a circuit to connect an enterprise's IT infrastructure to a cloud provider. That is pricey proposition for organizations that do not buy this technology regularly. The installation and testing of the system can also be costly and creates liability risks if something goes wrong or it can't pass an audit.

Enterprises must repeat this process for each additional cloud provider they connect to. This adds cost, hassle and significant risk. Using a traditional network operator also means signing long-term contracts for services like connectivity, power and security. Aside from being expensive, these arrangements can be rigid and thus act as constraints to an organization's growth.

PROBLEMS WITH EXISTING SERVICE PROVIDERS

Many vendors promise to solve organizations' problems with cloud connectivity. But in application, customers may feel like these providers are in the business of saying "no." Big third-party firms typically have physical interconnections only in the largest metropolitan areas.

This means higher cost to the customer while preventing enterprise customers from taking advantage of favorable

economics and labor supply that other cities can offer. Networking infrastructure can vary from one geographic market to the next. Enterprises may need separate interconnections for each location where they have mission-critical hardware.

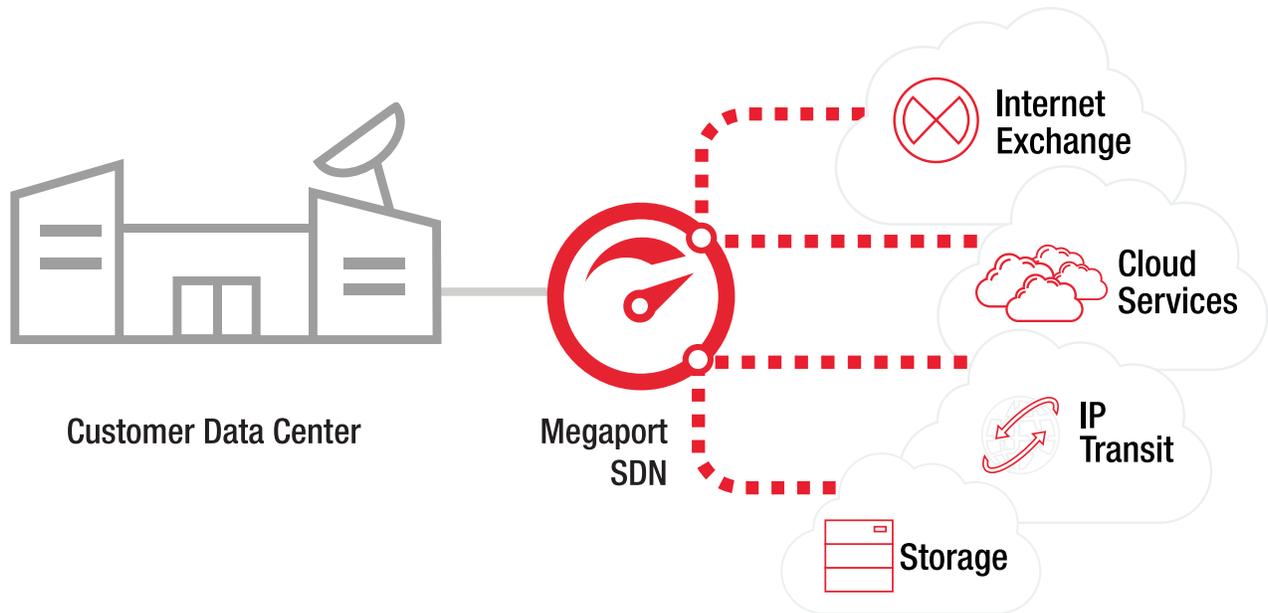
Large network service providers have high overhead that is passed on to clients. This issue manifests itself in required, long-term contracts. While perhaps beneficial for vendors, these arrangements force enterprises to pay for bandwidth they're not using.

Big providers can create more issues for customers than they solve with the implementation procedures they use to link IT environments to the cloud. Establishing network connections can take months, and vendors typically do not offer service level agreements, or SLAs. These types of contracts set expectations for the types and quality of service providers supply to its customers and remedies for when they fail to meet the minimums.

While carriers may guarantee private interconnections, customers can encounter bandwidth limits when using virtual private networks, which are supposed to provide safe, encrypted connections in places like the public internet, according to TechTarget.¹ Network providers typically do not offer real-time visibility into how much bandwidth an enterprise is using. Clients may be forced to make changes through phone calls, emails and paper contracts. And long-term commitments add expense, hassle and risk to the process of finding a better provider.

(1) TechTarget, "Virtual private network": <http://searchnetworking.techtarget.com/definition/virtual-private-network>

We Make Cloud Connectivity Easy.



A SOLUTION-BASED PARTNERSHIP THAT MAKES THE CLOUD EASY

Stream Data Centers joined forces with Megaport because our customers told us they needed flexibility in three areas: location, services, and cost. Organizations have neither the time or money to waste on travelling to data centers in inconvenient locations. Customers of all sizes need cross connects established quickly and have bandwidth readily available. And above all, enterprises want to pay only for service they use and bandwidth consumed. Traditional networking contracts can feel like a ball and chain. A more sensible approach frees the customer to turn service on and off as needed without all the hassle. In partnering with Megaport, we can not only meet, but exceed expectations in these and many more areas.

Stream will be rolling out Megaport's service in markets that previously have never had this level of access, including Minneapolis, Minnesota, and the Texas cities of San Antonio and Houston.

Customers in those markets will benefit from Megaport's standardized methodology for connecting enterprises' critical infrastructure to cloud providers. This makes the process fast, easy and cost effective.

As added pluses for enterprises in these regions, Stream's data centers are built to withstand 185-mile-per-hour winds and employ best practices in both physical and logical security. Our facilities also hold certifications and comply with standards such as SOC 2, Type II, PCI and HIPPA.

Megaport offers robust connections to the following providers and many others:

- Amazon Web Services (AWS)
- Google Cloud
- IBM Cloud
- Microsoft Azure
- Oracle Cloud
- Salesforce.com (SFDC)

Flexible cloud connection offerings through Megaport provide 3 primary options:

- **Megaport:** A high-speed Ethernet interface that connects to the Megaport fabric. Bandwidth options range from 1 Mbps to 10 Gbps.
- **VXC (Virtual Cross Connect):** A direct Ethernet connection between two Megaports allowing high speed and private connectivity. Networks accept new users in minutes, allowing rapid deployment and instant time to revenue.
- **MegalX:** Megaport owns and operates a 100 percent neutral Internet Exchange and provides connectivity to content networks and services across multiple geographies.

MegaPort's services are adaptable, allowing customers to purchase as much bandwidth as they need and turn it off when not in use. Contract options include month-to-month or yearly to meet customer's needs. Service agreements can be as flexible as enterprise's bandwidth needs fluctuate. MegaPort's connections to cloud providers are robust, but come with affordable price tags. Providing secure connectivity to most major cloud suppliers via one ubiquitous fabric, provisioning can take less than a minute.

Through MegaPort's powerful application programming interfaces, customers can achieve seamless software integration. Interconnections with other participants are available in any time frame desired by the customer, ranging from one day to years. Bandwidths ranging from one Mbps to as much as 100 Gbps to meet any customer's needs. MegaPort's centralized control allows customers to swiftly and easily connect their critical infrastructure to major cloud providers. Additional interconnection points are available at any of their 150 connected data centers across 19 countries and four continents where MegaPort provides services.



Customers can manage their resources through an intuitive web portal, a mobile app, or an API stack. The MegaPort system makes it simple to add, change, delete ports, and interconnect all of an enterprise's IT needs to ensure a seamless environment while allowing for endless growth.

ELASTIC CONNECTIVITY – AT LAST!

Stream's partnership with MegaPort gives enterprises new choices for accessing the cloud. Organizations of all sizes can optimize their interconnections to get the right mix of bandwidth, speed and cost.

**What can the
cloud do for you?**

ABOUT THE AUTHOR



ERIC BALLARD Vice President - Network & Cloud | Stream Data Centers

Eric Ballard oversees interconnection and cloud services for Stream Data Centers, a leading supplier of critical environments to the Fortune 500 and beyond. As Stream's Vice President – Network & Cloud, Ballard specializes in network design, peering, cloud initiatives, compute, storage and virtualization. Ballard joined Stream from Equinix, where he was Solutions Architect for the global customer base. A holder of multiple Cisco certifications, Ballard is a graduate of LeTourneau University.

ABOUT STREAM DATA CENTERS

Stream Data Centers is committed to improving the critical environments experience through exceptional people and service. Since 1999, Stream has been an active investor and industry leader, providing premium services, optimized value and critical environments to Fortune 500 companies. To date, Stream has acquired, developed and operated more than two million square feet of data center space in Texas, Minnesota, Illinois, California and Colorado, representing more than 200 megawatts of power.

Stream develops and operates highly resilient, scalable and efficient data centers, with products including fully-commissioned Hyperscale Cloud Centers, Private Data Center™ Suites, Ready-to-Fit™ Powered Shells and Build-to-Suit Data Centers, as well as Retail Colocation environments – all with immediate connection to network carriers and public cloud providers.

Stream understands the dynamics of the data center market, and is able to forecast customer demand to proactively and cost-effectively deploy the right products at the right time. These disciplines, aligned with significant capital and industry expertise, keep Stream ahead of the data center planning curve.

Services supporting critical environments and energy procurement leverage the combined skill sets and resources of Stream's technical real estate professionals with fine-tuned data center and energy expertise, to deliver end-to-end solutions for mission-critical infrastructure needs.



FOR MORE INFORMATION

To learn more about stream cloud connectivity services, visit:

www.streamdatacenters.com/cloud



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