

A FROST & SULLIVAN EXECUTIVE SUMMARY

Is Your Network Cloud Ready? Network Enable Your Cloud With MPLS VPNs



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Program Manager, Business Communication Services
 Frost & Sullivan

Frost & Sullivan and AT&T recently joined together for a discussion about how IT decision-makers can take advantage of the flexibility of the public cloud model by implementing a network-enabled cloud that is highly-secure and reliable. It is critical for enterprises to evaluate a network-enabled cloud as they outline their cloud deployment strategy.

MARKET OVERVIEW

Cloud computing is revolutionizing the way enterprises buy IT services. With cloud infrastructure as a Service (IaaS), organizations can buy IT resources — Compute and Storage — on demand, allowing them to quickly scale up and down their IT workloads. This model is appealing to businesses of every size as it shifts IT spending from restrictive capital budgets to more flexible operating budgets. However, no one type of cloud fits the needs of enterprises.

Public cloud services are inexpensive, easy to procure, and accessible over the public internet, but the high level of shared infrastructure creates concerns about security risks. As a result, the public cloud may not be well suited for mission-critical applications. However, enterprises that want to offload infrastructure management to a cloud provider can still do so, by turning to a hosted private cloud model. Or you could employ a hybrid model that uses a combination of public cloud and private cloud resources.

Since networks are an integral part of a cloud's performance, it is important that enterprises also evaluate a network-enabled cloud as they outline their cloud deployment strategy. Network enabled cloud services extend a company's MPLSVPN to their cloud resources and allow the bandwidth to scale up and down along with the compute and storage resources. As a result, a network enabled cloud can deliver end-to-end performance guarantees to the customer.

Before we can understand the importance of networks in cloud deployments, it is important to first understand infrastructure as a service (IaaS).

Frost & Sullivan defines Cloud IaaS as hosted, scalable data center infrastructure resources, available on-demand, without term or usage commitments, and charged via a pay-per-use model. IaaS comprises "raw" infrastructure, onto which users can build and deploy applications or workloads.

THREE TYPES OF CLOUD MODELS

1. **Public Cloud:** Virtual machines are shared by multiple customers, connected via a public internet
2. **Private Cloud:** Virtual machines on a server are dedicated to a particular customer, typically accessed using a private network
 - a. Premises-based Private Cloud
 - b. Hosted Private Cloud
3. **Hybrid Cloud:** This occurs when an enterprise uses a combination of the above models

WHY LOOK AT CLOUD IAAS AS A SERVICE OFFERING

Based on Frost & Sullivan research, the top reasons for considering Cloud IaaS include:

Decrease IT Infrastructure Costs: As technology requirements grow, businesses struggle to maintain capital and operating budgets, so they view cloud — which requires no infrastructure investment — as a cost-effective way to add new applications. (Cited by 55 percent of IT decision makers as a key driver for IaaS adoption.)

Support for Business Continuity and Disaster Recovery Plans: Virtual machines deployed in Cloud IaaS can be moved and replicated in minutes with just a few keystrokes, making them easy to move in the case of a failure. (Cited by 35 percent of IT decision makers as a key driver for IaaS adoption.)

Scalability: Enterprises can purchase computing storage resources in a pay-as-you-go model, which offers them flexibility in managing IT resources. (Cited by 35 percent of IT decision makers as a key driver for IaaS adoption.)

Improve Security and Compliance Profile: This driver defies common wisdom, yet it is cited by 25 percent of IT decision makers as a key driver for IaaS adoption. Businesses in the lower-end of the market may be able to obtain greater levels of security and availability from a state-of-the-art datacenter run by a top provider than one they could afford to run on their own.

Reduce IT Staff: As IT functions become more complex, IT departments are struggling to staff and train experts in diverse disciplines, so they look to the cloud to save on costs. (Cited by 15 percent of IT decision makers as a key driver for IaaS adoption.)

However, there are concerns galore for cloud adoption. These key concerns include:

- Unauthorized access to data
- Inability to meet compliance requirements
- Inconsistent application performance

ADOPTION TRENDS IN CLOUD IAAS

Frost & Sullivan's 2012 survey of U.S. enterprise IT decision-makers on the cloud IaaS adoption trends found that:

- 64 percent of survey respondents agreed with the statement, "I am concerned about relying on the public Internet to access cloud applications," and
- 61 percent agreed with the statement, "I would be interested only in a private cloud, where my applications do not share computer servers with other companies"

"With all these trends put together, it points us to the importance of networks: the concerns about using the public internet to access the cloud, and the need for a private network to access public or private cloud deployments," said Roopashree (Roopa) Honnachari, Program Manager, Business Communication Services, Frost & Sullivan.

When you look at an enterprise IT infrastructure, the cloud cannot exist in a silo. It must interconnect with various applications that are already running on the enterprise's network: VoIP/UC, Internet, Data, Video, and Security.

"The cloud has to seamlessly fit into the IT deployment models that already exist in place, and the network is the connecting piece," said Honnachari.

THE POWER OF NETWORK-ENABLING YOUR CLOUD

“We all use mobile devices in our personal and work life and more and more end points are being mobilized. Along with this mobilization transformation, Cloud and the widespread use and understanding of virtualization technology has allowed us to push the limits of shared resources,” said Amy Machi, Director, Marketing, AT&T Cloud Solutions.

Applications can live in the cloud and with faster wired or wireless networks these applications can be delivered to any end point, anywhere, very quickly.

These disruptive technologies are changing the game for businesses of all sizes. The enterprises that best exploit these benefits put themselves in the strongest competitive positions.

CHALLENGES AND OPPORTUNITIES IN THE CLOUD

Advancements in technology provide not only new opportunities for enterprises, but can also create challenges. The pace of IT changes and increasing complexity of computing environments make it more difficult for businesses to keep pace and maintain efficiency. Other challenges include:

- The consumerization of IT is forcing IT managers to rethink how they procure and manage IT services as employees can utilize self-service and BYOD.
- Global expansion means a borderless expansion of IT applications across the world.
- Increasing financial pressures to provide services in more economical ways with limited financial exposure are also impacting cloud adoption.
- The requirement for responsive partners and resources that enable organizations to innovate, take more risks, and bring greater value to the business.
- The need for easy, flexible, highly secure access to scalable computing capacity to meet the business demands.

“Other key concerns enterprises have with cloud computing revolve around security, reliability, and control,” said Machi.

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AT&T NETBOND – OVERVIEW

Enterprises are looking for the agility, cost efficiencies and elasticity of Cloud, but still require the control, security and performance of a private network environment.

“AT&T's approach to integrate these two worlds is to move the cloud to our customers by leveraging our MPLS virtual private network and network-enable the cloud. Through a network service called AT&T NetBond, an enterprise can extend their AT&T virtual private network to their cloud resources as another site on their network to create an on-net environment,” said Machi.

AT&T NetBond pre-integrates and pre-deploys redundant circuits into the data-center environment from AT&T's MPLS network. Through a set of Network Orchestration APIs the customer's VPN is “stitched” and bound to their compute resources. AT&T's patented Intelligent Routing Service Control Point (IRSCP) is used to securely control separation of customers' routed data throughout the network.

“AT&T NetBond delivers an end-to-end, virtual private cloud environment by extending the customer's VPN to their cloud resources,” said Machi. “By doing so it delivers the control, protection, and performance advantages of a private cloud with the economies and elasticity of a public cloud. It offers the best of both worlds.”

BASIC REQUIREMENTS FOR MOVING TO THE CLOUD

The cloud is simple, with the ability to provision compute and network resources quickly with lower latency and higher availability. The cloud is flexible, with resources that can expand based on a business' needs. The cloud is secure, with the ability to minimize the risk of Internet DDoS attacks.

The ways in which AT&T can address these requirements with its network-enabled cloud break down to:

1. **Simple:** Fully managed service with pre-deployed resources that can be spun up on demand. This turnkey service reduces complexity for internal IT staff.
2. **Flexible:** The network and infrastructure expand and contract together, which avoids over- or under-provisioning of network resources. This automation ensures optimal performance and a best in class user experience.
3. **Highly-secure:** A network enabled cloud provides a virtual private network environment which avoids exposure to internet-facing threats. Additionally, corporate security policies can extend seamlessly across each layer: network, cloud, and device.

“Network-enabled cloud technology allows you to leverage the benefits of your trusted AT&T virtual private network into your cloud resources and get the on-demand, flexible, and secure performance of a private network,” said Machi.

NETWORK-ENABLED CLOUD: CASE STUDIES

AT&T and IBM recently introduced a joint solution which integrates AT&T NetBond into the IBM SmartCloud Enterprise+ datacenter environment. Together, the two companies built an end-to-end, enterprise-grade, network-enabled cloud solution.

The benefits of this solution can be observed in the following case study scenarios involving AT&T and IBM customers.

BANK – DEVELOPMENT AND TEST

The significant business growth of a bank (16 new branches in three years), led to the need for a secure testing and development environment where new solutions could be built quickly and securely. These solutions needed to be agile and move seamlessly from the testing environment to the production environment.

AT&T and IBM provided a highly secure, higher performance, reliable environment for the bank, with standardized infrastructure across all these elements. Applications could operate in the same environment for development and production "and because they had numerous development projects, they needed an environment where they could access resources quickly and only use what they needed," said Machi.

By utilizing a network enabled cloud environment the bank was able to shorten their development cycles and lower their costs, while still maintaining the required level of security.

INSURANCE COMPANY – BENEFITS ENROLLMENT

An insurance company was deploying a new global benefits enrollment application. They needed a compute environment that was enterprise-grade, highly scalable for peak times of the year and employee growth. The application needed to provide end-to-end security and a uniform experience for employees outside the U.S.

The cloud solution provided by AT&T and IBM met all of these needs. The solution was able to scale its network and computing resources in tandem during employee benefits annual open enrollment periods. This ensured that the insurance company did not need to go out and invest additional capital in equipment that would sit idle during most of the year. “The network enabled cloud can let customers expand capacity for one quarter and then scale back as needed for the steady state demand the balance of the year” said Machi.

FOOD MANUFACTURER – HYBRID

A food manufacturer in need of a more efficient hosting infrastructure required a hybrid cloud solution to maintain workloads in its data center, while moving non-core functions to the cloud.

Leveraging the data center and the cloud allowed the company to move into this hybrid environment with the control and security they were accustomed to, thus reducing costs and the need for more fixed data center space.

LARGE WINDOW MANUFACTURER – DATA CENTER MIGRATION

In the case of a large window manufacturer with budget constraints, the company needed to reduce hardware and maintenance costs by migrating their customer-owned data center to a more efficient cloud solution. The manufacturer also required a solution that supports existing AIX operating system. And, lastly they required an infrastructure that enables a mobile ERP solution, supporting customer's growth sales model.

The network-enabled cloud allowed the company to migrate workloads to the cloud and reduce hardware and maintenance expenses. The solution's robust enterprise grade AIX environment provided consistency for all workloads and allowed the company to extend applications confidently to their mobile sales force.

These case studies demonstrate the various benefits of network enabling the Cloud. "Customers are really just paying for what they need, when they need it, but with the security, performance and reliability of a private environment," said Machi.

FINAL THOUGHT

As enterprise adoption of cloud-based services increase, be it public cloud or private cloud, the cloud has to seamlessly fit into the enterprises' wide area network. Choosing a MPLS network-enabled cloud can help enterprises to make that transition seamlessly. The on-demand procurement option of cloud services, and the pay-as-you-go billing model associated with it, is influencing the buying behavior of enterprises for network services: increasingly, enterprises resist using fixed network services to access pay-as-you-go cloud services. A MPLS network-enabled cloud can help enterprises apply the same pay-as-you-go model to their network service as well. Amy Machi's presentation on AT&T NetBond and the case studies illustrate that. By integrating the private network capabilities of an MPLS VPN with the on-demand model of cloud services, a network-enabled cloud truly delivers the best of both worlds for enterprises.

ABOUT AT&T

Enterprises of all sizes, whether a global company or a smaller entrepreneurial business, have similar aims to increase sales, improve revenues or expand market opportunities. To achieve these goals your teams will need to collaborate in ways that are easy, efficient and diverse enough to meet the needs of the moment. Advances in networking technologies have enabled employees to be more mobile, productive and empowered. These same technology platforms have given IT operators more flexibility, control and business alignment. At the top of the list of technology must-haves are virtual private networks (VPNs) with a powerful array of network resources that includes wireless, Wi-Fi, high speed Internet access, voice, security and cloud-based service applications. As a leader in the industry, AT&T can help your business integrate business strategies and technical architectures to achieve business transformation. This library of useful resources explores how to apply proven technologies to promote responsiveness and drive decision-making.

ABOUT FROST & SULLIVAN

Frost & Sullivan, the Growth Partnership Company, enables clients to accelerate growth and achieve best-in-class positions in growth, innovation and leadership. The company's Growth Partnership Service provides the CEO and the CEO's Growth Team with disciplined research and best practice models to drive the generation, evaluation, and implementation of powerful growth strategies. Frost & Sullivan leverages 50 years of experience in partnering with Global 1000 companies, emerging businesses and the investment community from more than 40 offices on six continents. Learn more at www.frost.com.

DISCLAIMER

This Executive Summary discusses key insights and excerpts from a live presentation and panel discussion by Frost & Sullivan and AT&T on September 26, 2013. This summary presents industry insights, best practices, and case studies discussed by the presenters, in the context of the live presentation and panel discussion. For more details, visit www.frost.com/vpn. Frost & Sullivan is not responsible for the loss of original context or the accuracy of the information presented by the participating companies.

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