



# Increasing SaaS and IaaS Performance

## CHALLENGES

### Unpredictable response time

Tracking locations of cloud-based apps in real-time and reaching them in the most efficient way

### No traffic steering

Classifying apps on first packet to steer traffic to its destination without backhauling

### Limited flexibility in supporting IaaS and SaaS

Interoperability supporting various cloud services

### Inadequate security and performance

Accessing distributed and cloud-based apps efficiently and securely over broadband

### High operational cost

Complex app-driven policy management across locations

## SOLUTION

### Predictable performance – any cloud, any app, any where

An intelligent and dynamic traffic steering on an app-by-app basis

### Securing the cloud-ready branch

A multi-dimensional approach to securing apps and achieving compliance

### Managing the cloud-ready branch

A centralized orchestration of deploying, managing, monitoring and maintaining app policies across branches and cloud

## What's Driving The Need for SaaS and IaaS Performance?

It is estimated that 78% of workloads will be processed in cloud data centers by 2018 (source: IDC 2016). This means workers in branch offices will be accessing more distributed and cloud-based services that may reside in one or more locations. These may include SaaS, IaaS and public and private clouds.

In this type of environment where SaaS and IaaS become an extension of the enterprise network, businesses must reach them in the most efficient and high-performance way possible.

To support this new traffic pattern shift most efficiently and cost-effectively, organizations must leverage public broadband transport in addition to – or perhaps even instead of – costly leased line services. In this transition, the challenges are ensuring consistent application performance and availability without compromising security.

## CHALLENGES

Organizations that are optimizing performance for SaaS and IaaS must address the following challenges:

- **Unpredictable response time** – As SaaS applications and IaaS will often reside in different locations that may change from time to time, the response time in accessing them will vary unpredictably. In addition, the traditional backhauling required by legacy architectures adds latency and impacts performance. While incorporating broadband to the WAN to connect directly to cloud-based applications alleviates some of the potential performance issues, it raises additional challenges such as reliability and security concerns.

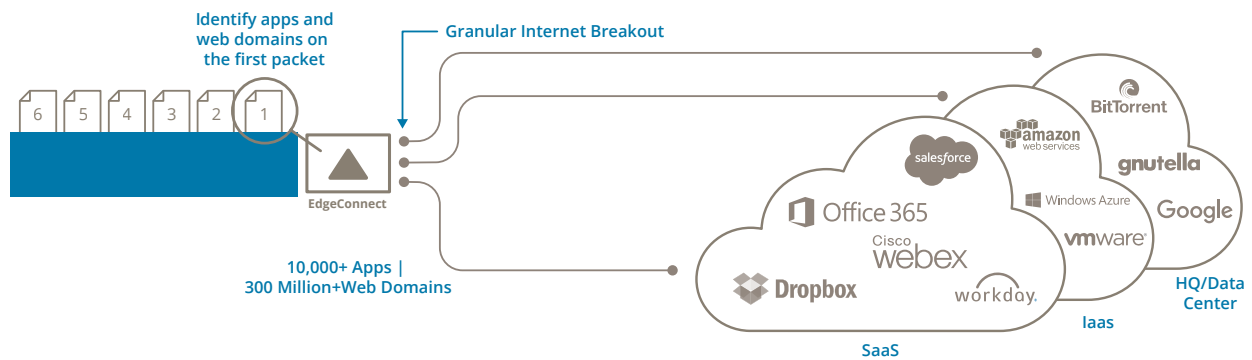


Figure 1: Granular, intelligent and dynamic application steering

- **No traffic steering** – Classifying network traffic on an application-basis before exiting the branch requires intelligence at the WAN edge to steer it to the correct link to the right destination to optimize performance and maximize security.
- **Limited flexibility in supporting IaaS and SaaS** – Businesses will leverage several IaaS and SaaS vendors to support cloud services. This necessitates a solution that can integrate and interoperate with these different platforms (AWS, Azure, O365, Salesforce, Box, etc.) for maximum flexibility.
- **Inadequate security and performance** – As enterprises look to leverage broadband internet services as part of their enterprise WAN strategy to support cloud-based applications, potential vulnerabilities increase as does the risk of unpredictable performance and reliability.

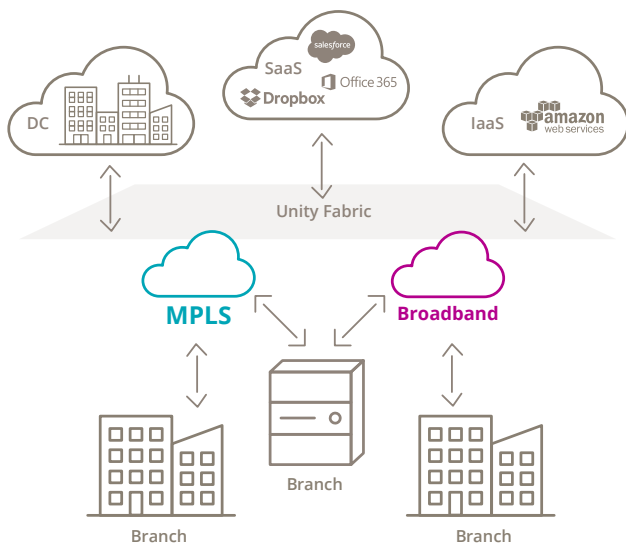


Figure 2: Unified view, management and consistent policies across applications

- **High operational cost** – Managing and ensuring policy consistency across applications that reside in different locations can be complex and costly to accomplish. This requires a centralized management model based on business intent, support for varying virtual topologies such as full mesh and hub and spoke, dynamic path steering, and simplified troubleshooting.

## REQUIREMENTS TO ADDRESS CHALLENGES

As organizations assess their challenges they need to evaluate and consider the following requirements:

- Solutions that enhance the reliability and security of broadband services to deliver the performance and security requirements for cloud-based applications

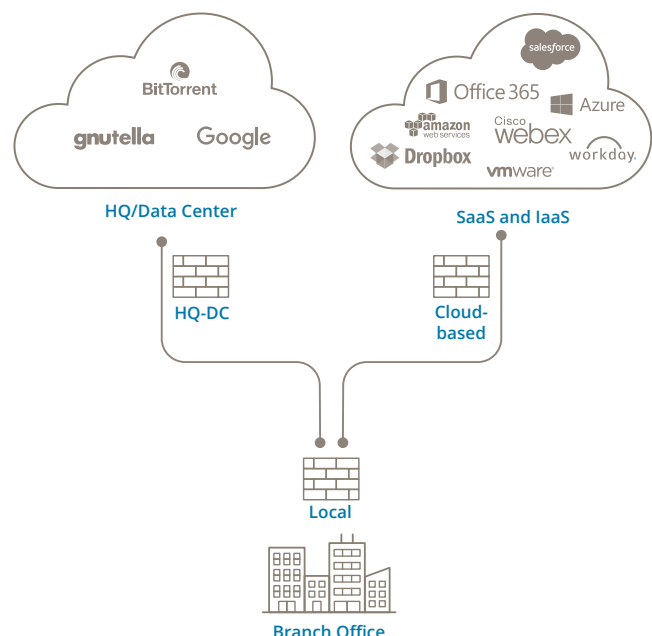


Figure 3: Orchestrated application-driven security policies

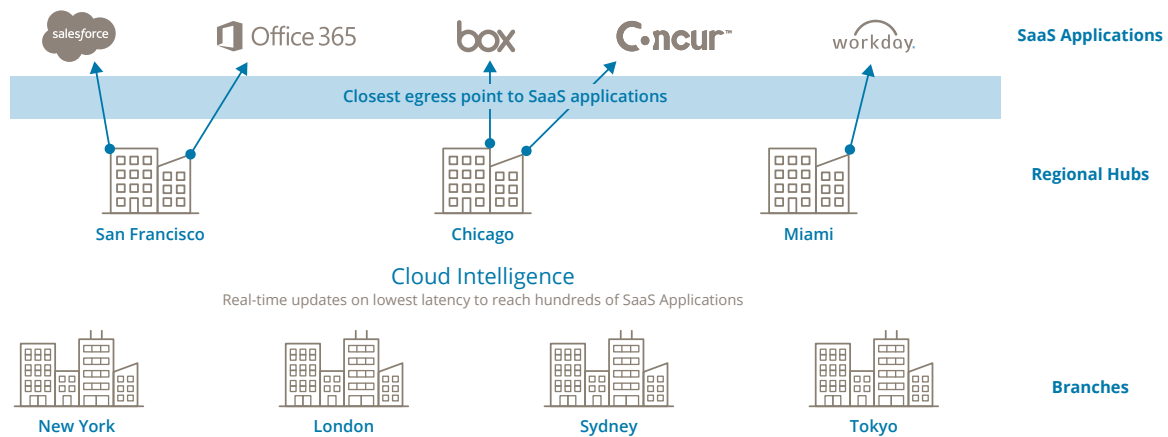


Figure 4: Optimizing SaaS reach based on best performing path

- Intelligent classification of applications enabling secure, local internet breakout to SaaS and IaaS directly from the branch
- Consistent policy and unified management no matter where the application is located, SaaS/IaaS/DC headquarter/public cloud
- Orchestrated application-driven security policies regardless of application location
- Ability to reach SaaS and IaaS cloud-based services via the most efficient path from any location

## SILVER PEAK UNITY EDGECONNECT SOLUTION INCREASES SAAS AND IAAS PERFORMANCE

### Predictable Performance – Any Cloud, Any App, Any Where

- A Silver Peak SD-WAN provides a virtual overlay spanning multiple SaaS and IaaS cloud providers, data centers, headquarters sites and branch offices. It provides unified, consistent policies across applications no matter where they reside.

Business intent policies include rules describing application communications and topology, SLA requirements, security policies, and more to enable predictable performance over any combination of transport (Figure 2).

- EdgeConnect intelligently steers traffic on an application basis in real-time to the best performing path to SaaS applications and IaaS cloud services based on business policies delivering the best user experience. Since most SaaS applications will be accessed via the internet, EdgeConnect breaks out local internet traffic (direct-to-net) at the branch avoiding backhauling. In cases where multiple internet connections are available, packet-based load balancing can be configured between links to achieve higher application performance and availability (Figure 1).
- Distributed branches that access SaaS applications with regionalized and global application points of presence can benefit from the Silver Peak SaaS Optimization feature. Silver Peak Cloud Intelligence determines and delivers real-time updates on the best performing paths to reach hundreds of SaaS applications, connecting

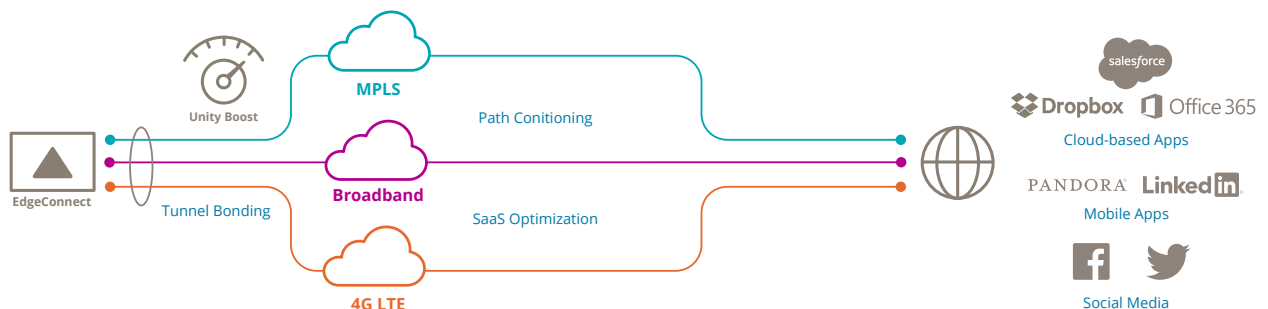
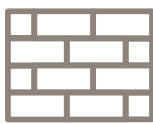


Figure 5: Built-in capabilities to optimize application performance and availability

**Figure 6: Multi-dimensional approach to securing the branch**



Application Segmentation



Built-in stateful firewall, Secure Zero Touch Provisioning, App Whitelist



First Packet IQ, Controlled app steering based on business intent



Edge-to-edge AES-256 Encryption, SHA-2 Hashing



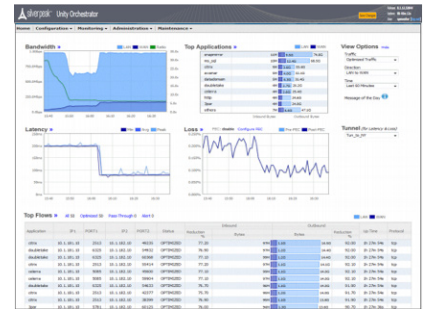
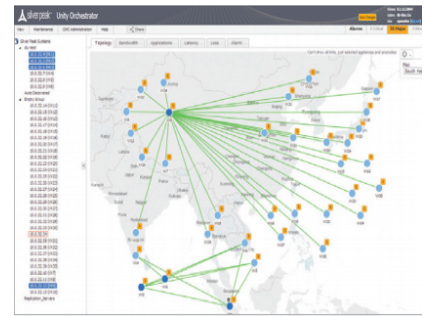
Ease of service chaining, Ecosystem Partner

users to applications in the fastest, most intelligent way available (Figure 4).

- EdgeConnect has built-in capabilities like [path conditioning](#) and tunnel bonding that enhance application performance and availability no matter where they reside, even during a WAN service outage or brownout for all applications. For certain latency-sensitive applications where performance is impacted by long distances, [Unity Boost](#), an optional, integrated WAN optimization performance pack, mitigates latency and ensures fast application response time (Figure 5).

### Secure the Cloud-ready Branch

- EdgeConnect enables a flexible, application-driven security policy enforcement model. Now IT can easily and quickly define policies to direct traffic to local, cloud-based or local security services depending on application type and location with our ecosystem partners including [Fortinet](#), [Palo Alto Networks](#) and [Zscaler](#) (Figure 3).
- EdgeConnect provides a multi-dimensional approach to securing the branch, applications and achieving compliance such as [PCI](#). This includes [application segmentation](#) to minimize attack surface and encryption of data communications as well as secure on-boarding of new



**Figure 7: Dashboard detailing application and network statistics**

WAN edge devices through secure [Zero Touch Provisioning](#). Furthermore, ease of [service chaining](#) with ecosystem partners to simplify policy orchestration and control application steering based on business intent (Figure 6).

### Manage the Cloud-ready Branch

- The Silver Peak Unity EdgeConnect SD-WAN solution enables real-time visibility and consistent policy-based control as businesses migrate key corporate IT infrastructure applications, mobile applications and more from on-premises infrastructure to IaaS for increased scalability, availability and reduced costs (Figure 8).
- A site map shows branch connectivity status in real-time with performance monitoring and granular

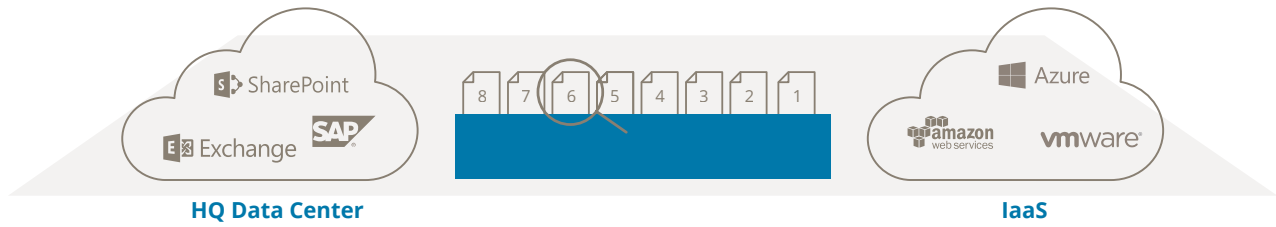


Figure 8: Real-time visibility and consistent policy-based control

details into application and network statistics (Figure 7).

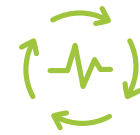
- > The EdgeConnect SD-WAN solution enables enterprises to centrally manage and maintain, control appliance sprawl and build a thin branch as it consolidates and orchestrates network functions like SD-WAN, BGP routing, stateful firewall, WAN optimization, and ease of service chaining (Figure 9).

- > Reduces security risks significantly with multi-dimensional approach keeping IaaS and SaaS applications safe from vulnerabilities and threats
- > Increases control of all applications simplifying operations, reduces Opex and enables spinning up new cloud services quickly

## BENEFITS AND BUSINESS OUTCOMES

Silver Peak EdgeConnect enables organizations to increase SaaS and IaaS performance and achieve tangible benefits:

- > Improves SaaS application performance by up to 40x enhancing user productivity and satisfaction
- > Optimizes connectivity to IaaS and SaaS applications for the highest performance to accelerate business transformation



Orchestrator

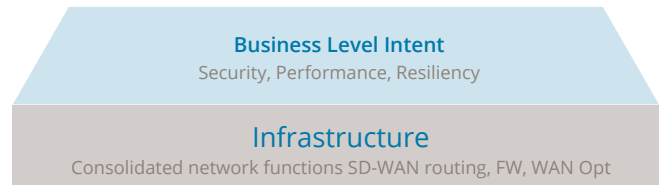


Figure 9: Single pane-of-glass managing infrastructure based on business intent



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