# Building Cloud Networks to Support Online Organizations

Network solutions that make online businesses more agile, efficient, and profitable

## Challenge

For online organizations, their website is their business. Therefore, the cloud data center that underpins the online business must be agile, scalable, and intelligent. Likewise, the network within that cloud can't be just any network—not if it supports your web-based business.

## Solution

Juniper Networks offers a complete networking portfolio that makes your cloud more adaptable, intelligent, and scalable. The MetaFabric architecture—the foundation of Juniper's cloud portfolio— combines switching, routing, security, and SDN solutions to build the optimal cloud network.

## Benefits

- **Grow the business**—Juniper's cloud networking solutions make the network an enabler, not a hindrance.
- **Facilitate differentiation**— Companies with a better network can offer better services to drive competitive advantage.
- **Drive innovation**—With a simple, open, and smart network, you spend more time innovating and less time managing and provisioning your network.

Successful Web companies know that only the agile survive. Whether you run a social media business like LinkedIn or Facebook, or you offer a cloud-based alternative to a brick-and-mortar solution such as Esurance or Amazon, speed of innovation and service velocity are critical success factors. You must constantly plan several steps ahead to maintain your competitive edge.

It's not just about speed and agility, though. Scalability, performance, reliability, security— all are critical to establishing your ability to deliver value and superior service compared to competitors, whether cloud-based or traditional.

With the right architecture, complemented by the right network and security solutions, Web companies like yours can build a high-performance, highly reliable cloud capable of delivering many types of product offerings with adaptability, intelligence, and scale. With a cloud built on Juniper Networks solutions, you can offer the truly innovative and differentiated applications, services, and technologies your customers demand without worrying about whether your network will be able to keep pace.

## The Challenge

Selecting a network solution to support your web-based business is not something that should be taken lightly. The network is a key component of your cloud data center; if you operate online, chances are your cloud data center is a critical part of your business. Networks capable of supporting a web-based organization should deliver the capabilities required to deal with the technological and business challenges facing your business. Below are some of the key characteristics that should be considered when evaluating cloud network solutions.

- **Ability to seamlessly and elastically scale to accommodate rapid growth**—Your network must be able to scale at the same pace as your business. And as you grow, your data center network inevitably has to migrate from a tree structure to a flat fabric architecture that enables higher bandwidth, lower latency, and lower cost—and which allows for the migration of virtual machines to meet your customers' needs.
- **Infrastructure agility and automation**—Like your other data center infrastructure components, your network must be agile enough to support and enable the rapid pace of innovation in as-a-service markets. Agility is directly enabled by an increased level of automation through the use of open interfaces, scripting, or software-defined networking technologies.
- **Robust security**—If you deliver content or services over the Web, the confidentiality of data and the integrity of the service, as well as its continuous availability, are all essential for building a trusted brand.
- **Openness**—No one can predict the future. That's why an open architecture, and a history of using industry-standard protocols, are both critical. As new technologies come along, an open network is capable of adapting and evolving along with technological progress. A proprietary network, on the other hand, can lock you into a cycle of disruptive upgrades.

## The Juniper Networks Cloud Solution for Online Businesses

Juniper Networks offers a complete portfolio of networking solutions that make your cloud more adaptable, intelligent, and scalable. The foundation of Juniper's cloud portfolio is the Juniper Networks® MetaFabric™ architecture, which combines switching, routing, security, and SDN solutions to help you build a simple, open, and smart cloud network.

Juniper solutions are:

- **Adaptable**—Juniper solutions are based on an open and future-looking architecture, enabling evolutionary upgrades to whatever new technologies become available, without requiring a costly rip-and-replace of your old network infrastructure.
- **Intelligent**—Context-aware and application-oriented with built-in analytics, the Juniper Networks solutions are the most intelligent in the marketplace.
- **Seamlessly Scalable**—Juniper solutions offer IP fabrics and SDN solutions that allow the network to seamlessly scale both up and out as your business grows.

## Features and Benefits

- **Seamless expansion and growth**—Juniper's scalable and flexible architecture makes it easy for your cloud to evolve as your needs evolve. Whether you host most of the content yourself or rely on third parties for hosting and content delivery, the MetaFabric architecture makes it easy to connect multiple clouds and data centers, ensuring that the network will never be a hindrance to business growth.
- **Orchestration**—You rely on your Web portal to deliver products, services, and support to your customers. These portals, in turn, must communicate with the underlying network infrastructure via an orchestration system— whether an established third-party product such as CloudStack or OpenStack, or a homegrown do-it-yourself solution. Juniper offers you tight integration with all of these platforms through both its hardware portfolio and its Juniper Networks Contrail SDN solution.
- **Automation and SDN**—You depend on server administration tools like Puppet and Chef to simplify your network management functions. With these tools, as well as Contrail, Juniper can automate network tasks to reduce operational complexity and OpEx.
- **Security**—Juniper provides you with high-performance and scalable security solutions for both physical and virtual systems. When your customers trust you with their personal or sensitive data, Juniper provides the breadth and performance required for network and Web application security to ensure that your customers' data and applications are safe and secure.

## Solution Components

**Juniper Networks MX Series 5G Universal Routing Platforms**— This family of highly scalable routers is the core of the data center network, as well as the data center interconnect edge. These routers can connect multiple physical data center locations into a seamless private cloud environment, making them very attractive to cloud-based businesses.

**Juniper Networks Junos® Space Network Director**—As a single point of management for all networking hardware and software, Junos Space Network Director lets you automate network maintenance and upgrades from a single management interface. Its interoperable APIs allow it to talk to other cloud orchestration tools, including OpenStack, VMware NSX, or homegrown systems.

**Juniper Networks QFX Series Switches**—QFX Series switches are Juniper's top-of-rack (ToR) data center switching solution. By deploying QFX Series switches in a fabric architecture, you can deliver latency and application consistency. If you operate in more than one location, you can connect your data centers with the MX Series routers, as well as integrate virtual network protocols like VXLAN, OpenStack, and CloudStack.

**Juniper Networks High-End SRX Series Services Gateways with Firefly Perimeter**—Juniper's next-generation security products offer unparalleled protection against data exfiltration, website outages, and other serious data center threats that can bring down your cloud. Firefly Perimeter plays a particularly critical role by providing the same benefits of a high-performing firewall in a virtual form factor.

## Summary—Juniper Networks Enables the Most Tech-Savvy, Fast-Moving Web Businesses

Like your website, your data center—and therefore your network— must be agile, scalable, and intelligent:

- Agile so it can dynamically respond to changes in application or user traffic patterns
- Scalable so it can grow seamlessly along with your business
- Intelligent to know what applications and users are doing, giving you the edge you need to improve performance, reliability, and customer satisfaction.

With the right architecture, complemented by the right network and security solutions, online businesses can build a high-performance, highly reliable cloud capable of supporting the next generation of Web trends. A Juniper-based cloud lets you focus on what you do best—developing truly innovative and differentiated content, applications, or services for your users, without worrying about whether the network can keep pace. Juniper's cloud solutions deliver more than just a network. They provide a high-performance, always-on, and ultra-secure foundation that intelligently connects users, data, and applications within and between clouds, creating true business value.

## Next Steps

For more information about Juniper's next-generation portfolio of networking solutions, please contact your Juniper Networks sales representative or visit www.juniper.net.

## About Juniper Networks

Juniper Networks brings simplicity to networking with products, solutions and services that connect the world. Through engineering innovation, we remove the constraints and complexities of networking in the cloud era to solve the toughest challenges our customers and partners face daily. At Juniper Networks, we believe that the network is a resource for sharing knowledge and human advancement that changes the world. We are committed to imagining groundbreaking ways to deliver automated, scalable and secure networks to move at the speed of business.

**Corporate and Sales Headquarters**

Juniper Networks, Inc.

1133 Innovation Way

Sunnyvale, CA 94089 USA

Phone: 888.JUNIPER (888.586.4737)

or +1.408.745.2000

Fax: +1.408.745.2100

www.juniper.net

**APAC and EMEA Headquarters**

Juniper Networks International B.V.

Boeing Avenue 240

1119 PZ Schiphol-Rijk

Amsterdam, The Netherlands

Phone: +31.0.207.125.700

Fax: +31.0.207.125.701

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