

NETWORK INFRASTRUCTURE SOLUTIONS FOR BUSINESS-CRITICAL IT DATA CENTERS

Juniper Networks Solutions Accelerate Success Today, Help You Prepare for Tomorrow

Challenge

Enterprises need to grow their businesses and keep up with changing market requirements while ensuring the reliability and performance of today's business-critical applications.

Solution

Comprised of intelligent and scalable routers, switches, security solutions, SDN solutions, and management tools, the Juniper Networks MetaFabric architecture delivers to enterprises the flexibility to adapt as needed to dynamic business and technical developments while keeping business-critical applications highly available to users.

Benefits

- **Available**—Keeps applications available for smooth and consistent business operations to maintain employee productivity
- **Secure**—Provides robust and secure access control and threat protection
- **Compliant**—Delivers granular audit capabilities for compliance purposes
- **Cost-effective**—Enables business growth within a defined CapEx/OpEx window

The stakes are high for IT managers responsible for data center planning and growth. They must keep legacy business-critical applications—many of them proprietary or highly customized—running reliably and at performance levels that maintain the productivity of workers across the organization. Downtime is unacceptable. Business continuity is everything. Additionally, containing costs while achieving high performing applications continues to be an organizational mandate.

At the same time, necessity demands a look to the future, specifically what lies ahead in both business and technical landscapes, including the cloud. This balancing act of future solutions and today's needs means that you must be conscious of the high expense of hitting technological dead ends. You need to ensure that the investments you make in network infrastructure components won't need to be ripped out and replaced in the future when and if the cloud becomes a more important component in your IT strategy.

The Challenge

The No. 1 issue for enterprises with traditional IT infrastructures is ensuring that business-critical applications are high performing while ensuring uptime for users. The challenge—especially today as businesses place greater demands on their IT departments to spur innovation and generate new efficiencies—is achieving this while moving towards greater simplicity and open architectures.

These qualities are desirable for myriad reasons. First, reducing complexity is an overarching goal of most network administrators, who must deal with multiple generations of technologies, frequently from multiple vendors, and somehow manage it all efficiently to reduce errors and CapEx. Second, given the high degree of virtualization that most enterprises have achieved, they must also be able to leverage the latest automation tools and manage both physical and virtual network infrastructure from a single control point.

Openness is critical in two ways. First is the obvious fact that most enterprises today possess heterogeneous networking environments in which components from multiple vendors must seamlessly work together. Second, open protocols mean that no matter what turns technology might take in the future, or in what direction the enterprise chooses to go, the existing investment in networking components is protected. This latter point is especially critical given that most enterprises with a heavy installed base of legacy applications eventually plan to move to the cloud.

Security is another challenge. In the face of mounting and increasingly sophisticated forms of attacks, enterprises must ensure tight network access control and protection from threats.

Finally, there's the cost issue. Although data center budgets have seen significant annual increases in recent years, the less-good news is that they haven't been increasing at a rate that enables IT to keep pace with the additional capacity required, or the responsibilities being assigned. In this technology-dependent age, IT is frequently viewed as the enabler of new business opportunities and efficiencies. Delivering these desired results in an expanding environment while keeping costs contained—both CapEx and OpEx—is always challenging.

The Juniper Networks Data Center Portfolio

The advanced portfolio of intelligent routers, switches, security solutions, SDN solutions, and management tools that make up the Juniper Networks® MetaFabric™ architecture provides what the business-critical data center needs today: the flexibility to keep applications up and available, while adapting as needed to dynamic business and technical developments so as to protect networking investments.

The MetaFabric architecture enables a simple, open, and smart data center that accelerates the deployment and delivery of applications within and across multiple sites and clouds. A MetaFabric architecture is delivered through a combination of powerful switching, routing, and security platforms leveraging feature-rich silicon, programmable systems, network orchestration, SDN, and open APIs that enable integration with today's technology ecosystem.

Features and Benefits

- **Data center automation and orchestration**—Juniper Network solutions enable enterprises to automate networking functions and thus simplify operations, saving both time and money, especially OpEx. Perhaps even more important are the automation capabilities delivered by the Juniper portfolio, which enable enterprises to eliminate the errors that are common when manually performing routine upgrades, maintenance, or management tasks. In addition, virtual network instances can be spun up immediately rather than waiting for weeks or months.
- **Seamless scaling for applications**—Whether an enterprise is deploying new applications or adding capacity for existing applications, the Juniper Networks MetaFabric architecture supports a mixed environment of bare metal and virtualized applications with high performance and availability.
- **Business continuity and disaster recovery**—Juniper's Data Center Interconnect (DCI) feature for interconnecting applications and workloads across multiple physical data center locations and sites enhances business continuity and disaster recovery protections.
- **Robust security**—Juniper provides high-performance and highly scalable security services for both physical and virtual networks.
- **Integrated management tools for mixed physical/virtual environments**—As more data centers become virtualized, one of the key challenges that emerges is how to connect the virtual networking environment with the legacy/physical network. Juniper offers visibility into both the physical and virtual environments to enable greater reliability, agility, as well as OpEx savings. Because this visibility helps enterprises perform much more accurate network capacity planning, they also achieve significant CapEx savings.

Solution Components

Juniper Networks MX Series 3D Universal Edge Routers—

These robust high-end, high-performance routers are ideal for interconnecting data centers. They enable enterprises to seamlessly transfer workloads between data centers while ensuring business continuity and disaster recovery, as they help enterprises achieve high performance, scalability, and reliability.

Juniper Networks SRX Series Services Gateways and Firefly

Virtual Firewalls—Juniper's next-generation security solutions offer enterprises unparalleled protection against data exfiltration and other serious data center threats that can bring down business-critical applications and systems. Firefly in particular is relevant to highly virtualized data centers because it provides the same benefits of a high-performing firewall in a virtual form factor.

Juniper Networks QFX Series Switches, EX Series Ethernet

Switches, and switching fabrics—When enterprises have legacy apps in the data center but also new business requirements, they need a network infrastructure that is elastic enough to scale as required. Juniper switching fabrics boost system and application performance in enterprise app environments that are constantly in flux. Since these are simple to manage, and deliver reliably consistent performance across even multiple data centers, connecting these switches in a switching fabric enables location independence, as you can position switches anywhere in the same fabric and they behave the same way.

Juniper Networks Junos® Space Network Director—

The role of the data center network director is changing. Rather than having data center resources (compute, storage, and network) managed in silos, many enterprises now want a central point of control. Junos Space Network Director provides this central point of control through orchestration and automated provisioning. No more opening complicated change tickets—new instances can be spun up on demand through user-facing portals. This enables greater agility, time savings, and faster time to market.

Summary—Juniper Supports You Now and Prepares You for the Future

Juniper Networks solutions mean that you don't have to compromise between picking solutions that meet today's requirements and preparing for the future. Keeping the business running and competitive with high-performance and high availability of business-critical applications can be achieved with the same network infrastructure that can in the future enable you to transition to the cloud (if and when you are ready). Juniper's network infrastructure solutions for business-critical IT data centers are adaptable, intelligent, and seamlessly scalable—everything enterprises need to succeed now and to prepare for whatever lies ahead.

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 is in the business of network innovation. From devices to data centers, from consumers to cloud providers, Juniper Networks delivers the software, silicon and systems that transform the experience and economics of networking. The company serves customers and partners worldwide. Additional information can be found at www.juniper.net.

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