IBM and Juniper Networks

Networks built for a fast-moving, hyperconnected world

Enabling critical network performance

More than ever, the world relies on information. Data is being gathered at a staggering rate and leveraged in ways unimagined only a few years ago. There are now smart electrical grids with the ability to heal themselves and manage energy demand, thanks to information about usage and service. Healthcare is becoming more personalized and effective because providers can collaborate better and predict patient outcomes. Retailers are analyzing and understanding shopper behavior in detail to serve their customers better. Scientists are using Big Data analytics to unravel the dynamics of weather to improve forecasts and warnings. The list is seemingly endless.

All that data has one thing in common: it must travel over a fast, reliable and secure network. The velocity and value of information is greater than ever. A trading company might find itself betting millions of dollars on its ability to respond to information a few milliseconds faster than its competitors. And, one need look no further than the headlines to see how vital network security has become.

- ■ **Enable more agile, flexible network infrastructures to support new business strategies**
- ■ **Reduce complexity and lower overall integration costs**
- ■ **Accelerate time to market for new service offerings**
- ■ **Realize significant TCO savings and lower environmental impact**
- ■ **Leverage new computing models and industry-specific solutions to gain strategic advantage**

Conventional networks are ill-suited to handle the explosive growth in data and connectivity. Data traffic is becoming a critical issue as companies incorporate mobile and cloud technologies into their business models and consumers adopt an increasingly digital lifestyle. The old model of building outwards to grow is not sustainable; it adds complexity and cost geometrically. What's needed is a fundamentally simpler approach to networking.

IBM and Juniper: Driving industry success

A multimedia company in Portugal achieved a 98 percent reduction in network service issues by adopting IBM Integrated Service Management and IBM Tivoli software to manage its Juniper network infrastructure. Using data from network devices, IPs, systems, business applications and security devices, the solution provides near-real time root cause analysis and diagnosis of complex network issues.

A leading pediatric hospital worked with IBM and Juniper to build a comprehensive networking solution that supports voice, data and video. The highly scalable network will allow clinicians the information they need to provide the best patient care while on the move and positions the hospital to meet its data networking needs for many years to come.

A city council in the UK expects to reduce annual operating costs by EUR1.4 million by adopting a citywide cloud computing platform using Juniper technology. IBM designed and deployed the solution, which offers low-cost, accessible and secure computing services to local businesses, thereby stimulating the local economy.

An energy company embarked on a consolidation initiative to merge all of their disparate networks – wireless, wire line, SCADA (equipment control) and microwave into a single network that could support voice, data and smart grid capabilities. IBM and Juniper helped create a vision for unification that reduced complexity and dramatically lowered total cost of ownership while improving performance.

A major Spanish bank reduced costs while gaining flexibility and agility by teaming with IBM Global Technology Services to implement a centralized Juniper Networks Cloud-Ready Data Center solution. Advanced virtualization capabilities will allow the company to deploy cloud services with ease and confidence, supporting the bank's continued growth and success.

Juniper QFabric and IBM in action

Clients can explore the possibilities of high-performance computing with Juniper QFabric at the IBM Executive Briefing Center in Poughkeepsie, NY. This world-class facility allows the deployment of fully functional proof-of-concept systems that can be tested under real-word conditions. By doing so, the speed, scale and efficiency of Juniper network fabric technology running on IBM infrastructure can be experienced first-hand. Similar capabilities are being installed in early 2013 at the IBM Executive Briefing Center in La Gaude, France.

IBM and Juniper are leveraging complementary skill sets, collaborative innovation and a demonstrated commitment to open, robust networking and security solutions to create this new approach through:

• Data center networks
• Network security
• Cloud computing and strategic outsourcing
• Next-generation networks
• Industry-specific solutions

Data center networks

At the heart of the high-performance networks that power today's data-dependent businesses is transformational Juniper QFabric™ technology. From its beginnings as part of a collaborative research effort with IBM called Project Stratus, QFabric has grown to a platform that integrates seamlessly with existing network assets. It is part of a robust portfolio that enables a new approach to networking – virtually managed infrastructures without the inherent drawbacks of conventional architectures.

QFabric is the embodiment of the Juniper 3-2-1 networking concept. It can "flatten" complex 3-tier architectures that have multiple dependencies and convoluted data paths into a single-tier, any-to-any fabric architecture. QFabric consolidates multiple network layers and platforms to dramatically simplify the infrastructure and improve its performance. When combined with technology such as the virtualization capabilities built into Juniper EX switches, this technology enables much more flexible networks.

Technology from Juniper and IBM helps drive cost savings throughout the data center and IT organization. The ability to design networks with fewer, more efficient devices reduces power and space requirements. Cost is also reduced through operational simplicity. The JUNOS® operating system used by all of Juniper's products increases productivity by providing ease of use and consistency across the infrastructure.

IBM services complement Juniper products, providing the critical expertise needed to build a seamless networking infrastructure that delivers on customers' objectives for performance, interoperability and low cost of ownership. IBM experts can address all data center and network requirements, from strategy to solution design, implementation, integration and ongoing operational support.

Managed maintenance solutions for Juniper hardware and software[1] combine IBM service excellence with Juniper support to optimize performance, reduce downtime and increase productivity. Remote and on-site support, available at various levels to match client needs, come together to streamline problem resolution, with a single point of contact and accountability.

IBM also offers industry-leading servers, storage and networking products that ease management and reduce cost of ownership. For example, the IBM PureSystems™ family of expert integrated systems makes building an IT infrastructure faster and more cost-effective because they are optimized and preconfigured for ease of deployment. Juniper technology complements the basic tenets of PureSystems solutions by driving agility and operational ease in the data center. A number of Juniper products have demonstrated compatibility with the IBM Flex System and IBM PureFlex, core offerings of the portfolio.

Leading technology and implementation expertise is critical to success, but equally important is execution. The management of complex projects on a worldwide scale is a core IBM competency, proven by thousands of successful engagements. Globally aligned IBM management practices ensure that consistent delivery and execution are achieved across the enterprise.

Network security

Security is only as strong as the weakest link. To manage operational and infrastructure risk and ensure regulatory compliance, businesses need to deploy robust solutions that maintain a consistent security policy across the entire organization. Protecting the infrastructure itself is, of course, essential, but truly effective security demands a comprehensive set of interlocking capabilities that can address both the physical network and virtualization layers.

Juniper's network security offerings like the SRX series of gateways provide outstanding scalability and security coverage with low complexity, helping to reduce cost and improve reliability. Juniper's Adaptive Threat Management Solutions cooperate with one another to provide broad-based protection, actively preventing attacks that evade more narrowly focused point solutions. This level of security enables the network to adapt dynamically to a wide range of risks, while producing a full audit trail.

To provide the same level of security for virtualized environments that Juniper SRX provides for physical servers, Juniper offers the vGW (Virtual Gateway) series. Juniper vGW provides best-in-class virtual firewall and intrusion detection layers to analyze and secure all network traffic that travels between virtual machines – a "must have" capability, because the majority of this data never touches the physical network. Because vGW has been purpose-built to support virtualized data centers, it synchronizes automatically with virtualization management platforms from leading vendors, including IBM and VMware, to improve efficiency and productivity.

IBM complements Juniper security leadership with deep expertise based on years of experience in sensitive industries such as finance and government. IBM best practices, managed services and products extend customers' security beyond the network, addressing key issues such as identity management, governance, activity monitoring and regulatory compliance. IBM also offers end-to-end hosted mobile device security solutions that dramatically reduce the risk posed by remote access. Working with the built-in security of Juniper networks, IBM helps the enterprise execute a robust mobile strategy that can accommodate users' own devices and access from public locations.

The comprehensive nature of IBM and Juniper security offerings allows the same highly economical solution to protect virtually all core infrastructure, including both external and internal-facing data centers. With this broad portfolio of services and a high degree of solution adaptability, IBM and Juniper can help organizations sustain a low cost of ownership even as the threat, application, technology and business landscapes change.

Cloud computing and strategic outsourcing

IBM and Juniper Networks are collaborating to offer hybrid cloud services that allow enterprises to provide greater scalability by extending their private clouds to remote servers located in a secure public cloud. This allows clients to seamlessly roll workloads from Beijing to Silicon Valley to Sao Paulo, helping to ensure that they never miss a service level agreement.

Businesses can reduce deployment risk and improve the economics of cloud computing by working with IBM for strategic outsourcing. IBM can manage customer-owned Juniper infrastructures or offer them as a service. By shifting responsibility for the network to an expert provider able to guarantee service levels, the business reduces capital requirements and manages business risk more effectively.

The two companies are also providing dedicated, industry-specific cloud offerings that hold the potential for significant business transformation. For example, the IBM Communications Service Provider Platform represents a tremendous opportunity for carriers to achieve faster time to market for new service offerings, global scalability and greater opportunities for monetization in an environment free of conventional network infrastructure constraints. Based on open technologies, this solution is the first in the industry to combine accelerated network and application performance, carrier-grade security and superior service-level management – all at massive scale – in a dedicated offering designed specifically for communications service providers.

Next-generation networks

Both IBM and Juniper Networks have a strong presence in the telecommunications industry. To succeed in this hyper-competitive marketplace, service providers are seeking innovative ways to differentiate themselves through the rapid development and reliable delivery of new and enhanced services that can increase customer loyalty and revenue. These services can take the form of video (both on-demand streaming connections and real-time broadcast) as well as other network performance-dependent applications, such as gaming and voice over IP communications.

The business and networking expertise of IBM and Juniper enables them to deliver flexible, secure and open high-performance networking solutions that can accelerate the business transformation of telecommunications companies. By using these solutions, organizations can create responsive and trusted environments for deploying diverse services and applications over a single network with fast time to market. At the same time, they can take advantage of IBM and Juniper security solutions that provide comprehensive application and network-level protection with scalable performance.

Industry-specific solutions

Many organizations have unique needs related to their industry focus. Dedicated solutions from IBM and Juniper provide enhanced value through relevant capabilities and technology designed to meet industry-unique requirements. More than a one-size-fits all approach, each focused solution builds on IBM insight and expertise, combining it with leading products and services from both IBM and Juniper. The alliance offers proven capabilities in such industries as telecommunications, healthcare, finance, energy and utilities, and government.

A key example of this collaborative expertise is a set of solutions for the energy industry that enable the creation of an intelligent utility network (IUN), or smart grid. Utilities around the world are creating IUNs to address the challenges of rising energy costs, aging infrastructure and increased demand for reliability by leveraging all of the benefits of automation and digitization. The IBM Intelligent Utility Network solution provides a comprehensive set of targeted capabilities, such as smart metering, enhanced security and regulatory compliance, grid operations, utility network communications and operational network control.

A powerful alliance that yields real results

The value of working with two industry leaders lies in their complementary strengths. While a single-vendor approach may seem to provide reduced complexity and cost, the reverse is actually the case. According to Gartner "most organizations should consider a dual-vendor or multivendor solution as a viable approach to building their network, as significant cost savings are achievable with no increase in network complexity, while improving the focus on meeting business requirements." Gartner found that the total cost of ownership in a dual-vendor relationship actually went down by 15 to 25 percent over five years. Moreover, most organizations reported a lasting decrease in network complexity.[2]

Together, IBM and Juniper Networks have the experience and resources to deliver the highly responsive and efficient networking infrastructure required in an era where network transformation that drives business agility is a critical success factor. The key is the combined strength of two industry leaders, working together to transform the way business is performed today and tomorrow.

For more information

For more information on how IBM and Juniper can help make your company more agile and responsive, contact your IBM or Juniper representative.

Visit us at:
ibm.com/juniper

[1] Coverage may vary by country.

[2] *Debunking the myth of the Single-Vendor Network*, Gartner RAS Core Research Note G00208758, November 17, 2010

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