

BAJAJ CAPITAL ELIMINATES DOWNTIME WITH JUNIPER NETWORKS' WIRED-LESS CAMPUS AND DATA CENTER NETWORKING

Summary

Company: Bajaj Capital Ltd

Industry: Financial Services

Challenge(s): An increasingly IT-dependent business running over a heterogeneous network infrastructure that was difficult to scale, difficult to manage, and very difficult to troubleshoot, leading to unacceptable downtime.

Selection Criteria: Proposals were evaluated in terms of adherence to standards, solution completeness and integration, performance, scalability, manageability, and cost-effectiveness.

Network Solution:

- Juniper Networks EX4200 Ethernet Switch with Virtual Chassis technology for core switching
- Juniper Networks EX2200 Ethernet Switch at the access level
- Juniper Networks SRX240 and SRX210 Services Gateways providing Universal Threat Management
- Juniper Networks AX411 Wireless LAN Access Point for campus wireless network coverage

Results:

- KPI of 99.9 percent application availability met
- Faster application response times
- Seamless security and quality of service (QoS) across wired and wireless LANs
- Rapid problem detection, diagnosis, and resolution

Bajaj Capital is one of India's oldest and most successful investment advisory firms, serving more than 1 million individual investors and over 3,000 institutional clients. Bajaj offers customers "360° Financial Planning," investment research, securities, funds and insurance, both online and through a network of more than 200 investment centers across India.

Challenges

While Bajaj Capital has grown increasingly dependent on its IT systems, the network infrastructure at its head office has struggled to keep up with demand. Over the span of a decade, what started out as a well structured office LAN grew organically to accommodate more users and applications, with point solutions from different vendors added at different times to address new functional requirements.

The result was an inflexible heterogeneous network infrastructure that was difficult to scale, difficult to manage, and most critically, difficult to troubleshoot when problems arose, as they often did.

"When problems developed on the network, they would almost always take a long time to fix, precisely because it was a very heterogeneous environment which made diagnosis of the problem difficult," recalled Jijy Oommen, Executive Vice President - Information Technology of the Bajaj Capital Group. "On occasion, the corporate network was down as much as two days. This level of business disruption obviously gets a lot of management attention, and it was clear to me that we needed to make a clean sweep and install a completely new network infrastructure in order to make such outages a thing of the past. We were also keen to make wireless access a first-class service on the network to enable mobility within the office, and that would have been a very difficult task with the existing infrastructure."

Selection Criteria

Oommen and her team started looking at available options in early 2010, producing a definition of requirements and undertaking market research to establish a short list of three vendors that were invited to make proposals. A detailed evaluation of technical capabilities and business benefits ensued and was completed by the end of March 2010.

"We evaluated the proposals on several different parameters, including standardization and the ability to integrate multiple components into a single network platform," said Oommen. "This called for vendors to provide a range of products fitting all the functional areas we required—for instance firewall, core switch, edge switch, and wireless access point—that can run together and be tightly integrated."

The Bajaj team also looked at management and monitoring capabilities to aid problem detection, diagnosis, and resolution. Systems were benchmarked to ensure that they were capable of delivering the performance needed to meet application requirements, and the team evaluated scalability potential to accommodate at least five years of business expansion. "Cost was also an important consideration because, in early 2010, we were just recovering from the economic downturn. We evaluated the proposals both in terms of capital cost and the five-year total cost of ownership," said Oommen.

Solution

The Bajaj Capital team concluded that Juniper Networks' solution was the best option based on a number of factors. Not only did the Juniper proposal meet all of the basic criteria, but it scored highest in the technical evaluation, proving particularly strong in terms of performance across the whole infrastructure, according to Oommen.

"The highest priority for performance was in core switching," she said. "We tested Juniper's Virtual Chassis technology that links switches together as a cluster, which produced excellent throughput—much better than the others—and also ensures scalability."

The Juniper solution was also competitive in terms of overall cost, despite the fact that Bajaj Capital's network administration team was unfamiliar with Juniper technologies and would need training on the Juniper Networks® Junos® operating system. The proposed solution was entirely based around Juniper products, all running on Junos OS, creating a highly standardized and highly integrated network infrastructure without the need for any third-party products.

"From a CIO perspective, streamlined network and security management that seamlessly spans the wired and wireless network is a huge benefit in terms of lowering operational cost and having peace of mind."

-Jijy Oommen,
Executive Vice President - Information Technology,
Bajaj Capital Ltd.

Bajaj Capital's new corporate network is built around Juniper Networks EX4200 line of Ethernet switches at the core, linked with Virtual Chassis technology. The EX4200 Virtual Chassis configuration supports the company's data center with servers running business applications, a suite of financial planning applications, the online brokering system, a web-based customer trading platform, and office automation systems. The company has also deployed Juniper Networks EX2200 line of Ethernet Switches, uplinked to the core, that provide network access and Power over Ethernet (PoE) for staff working in multiple buildings within the Bajaj Capital head office site.

Juniper's Virtual Chassis technology allows up to 10 EX4200 switches to be interconnected over a 128 Gbps backplane to create a single, logical device supporting up to 480 wire-speed Gigabit Ethernet (GbE) ports and 20 10GbE uplink ports. In this configuration, the switches share a common Junos operating system and configuration file, greatly simplifying system operations, maintenance, and troubleshooting. As Virtual Chassis interconnections can also be made over the 10GbE ports, Bajaj Capital has been able to distribute its core switches across its multiple buildings, connected over high capacity fiber-optic links, while still managing them as a single device.

The EX4200 switches have many of the same high availability features found in much more costly chassis-based switches, including internal redundant hot-swappable power supplies and a field-replaceable fan tray, making them well suited to core and data center switching duties.

Within its data center, Bajaj had started to implement server virtualization before the new Juniper Networks solution was deployed and had experienced performance issues due to the fact that a single network link can easily become oversubscribed by multiple virtual machines running on the same physical host. "We're now running 50 virtual machines on five high-powered blade servers in a single blade chassis, which generates a large amount of network I/O," explained Oommen. "We were able to eliminate the network bottleneck by combining 16 gigabit Ethernet ports on one of the core switches into a link aggregation group that gives us all the performance we need. It's an innovation we appreciate."

Security within the data center is handled by the SRX240 Services Gateway, with SRX210s deployed to enforce security across the campus LAN. These devices consolidate a range of Unified Threat Management (UTM) services including a powerful firewall, network intrusion detection and prevention (IDP), antivirus and anti-spam functions, and application-level security.

In addition, the SRX240 and SRX210 Services Gateways also act as the controllers for the Juniper Networks AX411 Wireless LAN Access Point devices deployed across the Bajaj Capital campus to provide 802.11n WiFi connectivity. The combination of Juniper Networks SRX Series Services Gateways and AX411 WLAN access points integrates the wired and wireless LANs into a single network with the same security and quality-of-service (QoS) architectures.

With Junos OS orchestrating network operations and security across the entire infrastructure, and the Virtual Chassis core switch and multiservice security devices in place, Bajaj Capital's network administration has been greatly simplified. Fewer devices to manage combined with a consistent and highly automated set of management processes eliminate many causes of network downtime.

Results

Looking back 18 months after Bajaj Capital's new network infrastructure was installed, Oommen feels the decision to select the Juniper Networks solution has been fully vindicated.

"Juniper Networks has enabled us to realize our vision of a much more powerful, capable, secure, and available head office network, which helps drive customer service delivery across the group. From a CIO perspective, streamlined network and security management that seamlessly spans the wired and wireless network is a huge benefit in terms of lowering operational cost and having peace of mind," said Oommen.

"It took about six months to completely stabilize the network, during which time we dealt with the virtual server performance issue, optimized the wireless network coverage, implemented a new IP contact center, and tuned our security and quality-of-service policies," Oommen continued. "Since then it has been pretty much smooth sailing. The network is very stable and my key performance indicator of 99.9 percent application availability is being met. Users are enjoying much faster application response times. And on the few occasions where network problems have arisen, they've been dealt with very quickly, so users didn't notice and our business didn't suffer."

Next Steps and Lessons Learned

Apart from handling the implementation of Bajaj Capital's new network infrastructure, Targus Technologies, an Elite member of the Juniper Partner program, stationed a Junos Certified Professional network administrator onsite for the first six months of operations to train Bajaj staff and help stabilize the network. Targus continues to provide frontline support.

"Junos skills are not yet that common in India, so outsourcing leadership of our network admin team to Targus in the early stages was extremely valuable," said Oommen. "When we decided to move ahead with the implementation of our new 120-seat IP contact center, I was initially a bit apprehensive because it entailed quite a big change in the network. The whole process went very smoothly and without disruption to our existing operations, which proved to me that our Juniper Networks infrastructure has the flexibility and scalability to meet any new requirements the business may throw at us in the coming years."

For More Information

To find out more about Juniper Networks products and solutions, please 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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