ST. MONICA'S COLLEGE BUILDS STATE-OF-THE-ART NETWORK WITH BEST-IN-CLASS SOLUTIONS FROM JUNIPER NETWORKS

Industry: Education

Challenges: St. Monica's College needed to build a secure intranet that would support its learning management system as well as converged voice, data and video applications, and to enable secure access to selected applications.

Selection Criteria: Ease of integration, ease of use, security, reliability, cost

Network Solution: Juniper Networks SA4000 SSL VPN Appliance, Juniper Networks IC4000 Controller, Juniper Networks SSG140 Secure Services Gateway, Juniper Networks WXC500 Application Acceleration Platform

Results:

- A state-of-the-art network that supports converged voice, data and video applications
- Secure, reliable intranet and remote access for staff and students
- A sevenfold improvement in network throughput over the college's wireless bridge

St. Monica's College in Melbourne, Australia, is a regional Catholic coeducational secondary college established in 1964. It currently has over 2,300 students, teachers and support staff.

The college has two campuses that are located about 1 km apart. The Davisson Street campus caters to students from years 10 to 12 (16-18 years old) and houses the Administration Complex, while the Dalton Road campus caters to younger students from years 7 to 9 (13-15 years old), and also houses the College's Sports and Assembly Hall.

Challenge

In 2003, St. Monica's College conducted an IT review, assessing its network infrastructure and learning management system to see how well they would meet its future requirements.

Back then, there was no intranet and the transfer of data was done via batch files. Users trying to access information or retrieve their emails found the network slow.

Meanwhile, usage was increasing, with more and more people accessing the system for applications such as staff timetabling and cross-campus search and communications. As the workload grew, performance deteriorated even further.

Besides the performance issue, St. Monica's College also wanted to implement remote access to its network in order to "lift the boundaries of the school" and provide students with 24 x 7 access to learning resources.

"We needed a solution that would provide a seamless connection between school and home," said Mr. Fulvio Frijo, deputy principal, St. Monica's College, Epping.

In the longer term, the plan was to bring telephony, data, voice and video under one umbrella. As part of an IP convergence push, St. Monica's wanted a network that could support all these capabilities as well as its learning management system and standard applications such as file sharing and Web browsing.

Selection Criteria

In looking for solutions to address its requirements, St. Monica's decided to deploy Juniper Networks for its best-in-class solutions across multiple technologies. Juniper also offered ease of integration, ease of use and a high level of security and reliability, at a reasonable price.

For example, Juniper Networks SA Series SSL VPN Appliances and Juniper Networks Unified Access Control would enable the college to deploy an infrastructure that could be centralized so that both the extranet and intranet could connect to shared resources.

The SA4000 feature rich, access-privilege management functionality that can be used to create secure extranets with no infrastructure changes, no DMZ deployments and no software agents to install or maintain on devices.

At the heart of Juniper Networks UAC is the Infranet Controller (IC), which functions as the centralized policy management engine as well as the interface with existing enterprise Authentication, Authorization and Accounting (AAA) infrastructures. The IC4000 uses as a foundation Juniper's market-leading SA Series, leveraging its policy control engine, and can be easily integrated with Microsoft Active Directory. It also features integrated RADIUS capabilities from Juniper Networks SBR Series Steel-Belted Radius Servers, enabling support for 802.1X transactions.

For its implementation partner, St. Monica's wanted a one-stop shop—a service provider who could manage the network, take care of the infrastructure design and architecture, and make recommendations for its learning management system. Based on these considerations, it chose to work with LJM Systems to develop the intranet and expand it to the extranet for external access for teachers and students.

Solution

LJM Systems deployed Juniper's SA4000 and IC4000 to provide the infrastructure for a secure intranet as well as an extranet that would enable staff and students to access St. Monica's network from home and to differentiate their network and application access based on their role, whether remote or local.

With Microsoft SharePoint Portal providing the framework for accessing Microsoft Exchange Webmail and the college's learning management tools and platforms, the SA Series enables St. Monica's staff at both campuses to communicate with each another and provides secure and cost-effective remote access for both staff and students, from any standard Web browser.

Network support staff from LJM Systems can also access the system via the SA Series to troubleshoot issues remotely without having to come into the college.

As the hardened, centralized policy management server for Juniper's UAC, the IC4000 provides port-based filters on the school's switching infrastructure. This maps the different Organizational Units and Security Groups in Microsoft Active Directory to different roles, providing users with different levels of access. For example, students are allowed network access only during school hours while teaching and administrative staff are able to access the network at all times. Also, only certain computers will have access to manage infrastructure devices such as switches, firewalls and the PABX.

Besides the deployment of the SA4000 and the IC4000, St. Monica's also replaced its existing Juniper Networks NetScreen-25 and NetScreen-50 firewalls with Juniper's new SSG140 Secure Services Gateways to support the college's IP convergence roadmap and to meet the growing demand for network performance and flexibility. The SSG140s also interoperate with UAC as enforcement points, enabling only authorized users to have network access during predetermined time periods, as well as only authorized access to secured infrastructure and servers.

To ensure that the various campus network applications, especially voice, could be accessed smoothly over the wireless bridge that connected the two campuses, the Juniper Networks WXC500 was deployed at both ends of the link to ensure fast application response.

The WXC Series accelerates application performance for remote and branch-office users accessing centralized resources—delivering faster response times, reducing WAN bandwidth consumption, and prioritizing mission-critical traffic to ensure uninterrupted operations.

> "With the Juniper deployment, we have a network which is state-of-the-art, contemporary as well as future focused."
>
> **Mr. Fulvio Frijo,**
> **Deputy Principal, St. Monica's College, Epping**

Results

With the Juniper deployment, learning and management tools such as the Microsoft SharePoint Learning Kit, time tabler, student attendance register, central database of student results, and resource booking as well as standard applications such as file sharing and Web browsing can now be securely accessed by authorized users locally over the intranet via UAC, and remotely via the SA Series.

In addition, voice communications can be delivered over the network using an IP phone system integrated with Microsoft Exchange 2007. Cross-campus video conferencing and presence capabilities such as "click and call" have also become a reality for St. Monica's College.

To ensure that these applications are delivered seamlessly across the two campuses, the deployment of the WXC500 appliances at either end of the wireless bridge have led to a sevenfold improvement in network performance.

"The Juniper solutions have proven to be capable of meeting our requirements, supporting up to 1,850 students and 250 staff who may wish to access our network at any time," said Mr. Frijo.

Up to 1,000 remote users can also access the network concurrently, through 24 x 7 external access hosted at LJM's data center.

Going forward, the college will continue to work with Juniper Networks and LJM Systems to further enhance its network. For example, it plans to extend its remote access capabilities to parents. This will allow parents to come into the college network to access bulletins and community boards, view student progress reports and communicate with teachers. "With the Juniper deployment, we have a network that is state-of-the-art, contemporary as well as future focused," said Mr. Frijo.

About Juniper Networks

Juniper Networks, Inc. is the leader in high-performance networking. Juniper offers a high-performance network infrastructure that creates a responsive and trusted environment for accelerating the deployment of services and applications over a single network. This fuels high-performance businesses. Additional information can be found at **www.juniper.net**.

To purchase Juniper Networks solutions, please contact your Juniper Networks representative at **1-866-298-6428** or authorized reseller.

3520267-001-EN Feb 2009

Printed on recycled paper.