Success Story

Allied Telesis™

Southern Institute of Technology (SIT)

Thanks to the power of Allied Telesis Management Framework™ (AMF), SIT now enjoys simplified and automated network management.

SOUTHERN INSTITUTE OF TECHNOLOGY
TE WHARE WANANGA O MURIHIKU

the **solution** : the **network**

Overview

The Southern Institute of Technology (SIT) is a New Zealand tertiary education institution, with campuses in Invercargill, Christchurch, Queenstown and Gore. SIT also runs a distance learning facility called 'SIT2LRN'.

In 2012, SIT began the process of upgrading its network infrastructure. It needed a robust, scalable solution that would fulfil all its network requirements, both now and into the future.

SIT was already a satisfied customer of Allied Telesis, and was using its second generation of Allied Telesis equipment. Because of this history, SIT chose Allied Telesis once again to provide the technology and expertise to build its new network.

Allied Telesis, in partnership with Spark Digital, has deployed a high-performing and widespread network at SIT. It is a large and complex network, that connects all campuses, and thanks to the power of Allied Telesis Management Framework (AMF), SIT now enjoy simplified and automated network management.

CUSTOMER PROFILE

Southern Institute of Technology

SIT is a large educational institution with multiple campuses throughout the South Island of New Zealand.

SIT Invercargill

- Invercargill is home to the major SIT campuses.
- The main campus is located at 133 Tay Street, and has many facilities including a student gym, bookshop and cafe, as well as support services.
- A second 'Downtown' campus is located on Don Street. This campus is a creative zone, housing Art, Design, Photography, Film, Animation, Music, Audio, Fashion, Journalism and Drama students.
- There are around 5,000 students on campus, and another 8,000 around New Zealand studying via SIT2LRN. SIT offers variety and culture, and maintains small class sizes to ensure plenty of hands-on experience.

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Invercargill, New Zealand

Invercargill is the southernmost city in New Zealand, and one of the southernmost cities in the world. It is the commercial center of the Southland region.

Invercargill is also the gateway to some of New Zealand's most beautiful scenery and destinations including the Southland heartland, Stewart Island, Fiordland, the Catlins and Central Otago.

SIT chooses Allied Telesis

To upgrade its network infrastructure, SIT needed a world-class vendor, with proven technology, to help the institute move to a future-proof, next-generation solution.

SIT had already enjoyed several years' worth of high-performance online connectivity with two different generations of Allied Telesis equipment. Starting with a network based around the SwitchBlade 4000 Series core chassis switch, SIT then upgraded its network to use the extremely successful SwitchBlade x908 Modular Chassis core switches.

For the latest upgrade, and against competing rivals, SIT chose a third Allied Telesis solution. This time, the solution was based around the SwitchBlade x8100 Series of next-generation core chassis switches. Previous experience with the reliability and performance of SwitchBlade-based networks encouraged SIT to again select Allied Telesis to build an up-to-date, high-performance solution. The cost-effective new network is flexible, scalable, and, like previous iterations, comes with great service and support.

The Allied Telesis solution also provides the power of Allied Telesis Management Framework (AMF), which allows the entire network to be managed very simply, with many day-to-day tasks completely automated.

Partnership with Spark Digital

Allied Telesis worked in partnership with Spark Digital, the premium system integrator in New Zealand. Spark Digital provides end-to-end information technology solutions that enable businesses to operate with confidence, improve performance and realize opportunities for growth.

Stephen Wilcox, Lead Technical Consultant from Spark Digital Southland, managed the new network deployment at SIT. Stephen is very experienced with Allied Telesis equipment, having partnered with the company on many large network deployments over many years. Stephen provided SIT with local knowledge and the expertise to ensure a smooth upgrade.

"I've worked with Allied Telesis coming up to 20 years now, with their solutions being a great fit for education providers. They stack up very well against the competition, are high-value, and offer comprehensive solutions with industry leading features"

Stephen Wilcox
Lead Technical Consultant - Spark Digital Southland

The network requirements

The new SIT network had to be robust, scalable and easy to manage. It had to support the latest advances in technology for teaching, SIT2LRN distance learning programs, as well as the increasing online connectivity of students and staff.

The new network had several key requirements. It needed to provide:

- **High availability**
  The network had to be extremely resilient. It had to eliminate single points of failure in the network, and ensure continuous access to online resources and applications. Traffic had to continue to flow, even if an access or distribution switch, cable, or network interface failed.

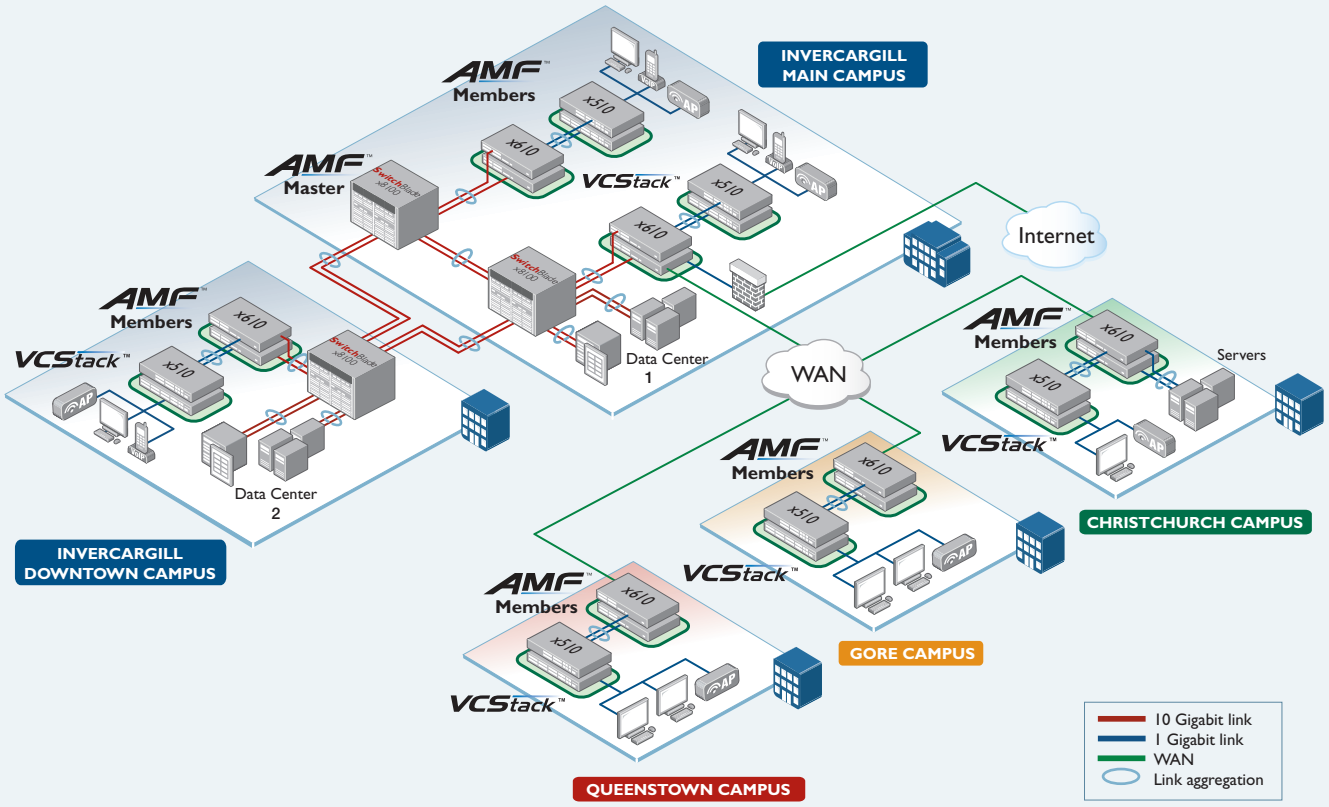
- **High performance**
  SIT needed a high performing network to meet the needs of several thousand on-campus students and staff, as well as several thousand more students using the SIT2LRN distance learning program. The network had to manage all the different traffic types of today's modern converged networks; support services such as digital telephony, streaming video; and store large amounts of data.

- **Business continuity and disaster recovery**
  The network design had to cater for the deployment of a business continuity site at the downtown campus, where the downtown data center could mirror the main data center. This was to ensure no disruption to network services. The ability to recover data in the unlikely event of a catastrophic failure was to be provisioned from the Christchurch campus.

- **Scalability**
  The network had to be future-proof, providing a scalable platform that can easily be added to as SIT employs new next-generation technologies, and adds online services.

- **Ease of management**
  SIT's network covers multiple campuses around New Zealand's South Island. Such a large and complex network had to be easy to configure, maintain, and expand.

The solution



The new network has a three tier design. The network core consists of three SwitchBlade x8100 Series next-generation chassis switches – two at the main Invercargill campus, and one at the downtown campus. This is the 3rd generation Allied Telesis network at SIT utilizing SwitchBlade chassis core switches, underscoring the power, performance and reliability of the platform. The SwitchBlade core chassis are interconnected with 80Gbps bandwidth, which can be increased even further. They also employ 10 Gigabit connectivity to servers, storage and distribution switches.

The network distribution layer uses Allied Telesis x610 Series Layer 3 switches. The x610 switches use Allied Telesis Virtual Chassis Stacking (VCStack™) to create a single virtual unit out of multiple physical devices. The distribution layer uses link aggregation to connect to the SwitchBlade core and also to the edge switches.

The network edge uses Allied Telesis x510 Series switches, which also use VCStack, further increasing the resilience of the design.

The key element that ties the SIT network together is the Allied Telesis Management Framework (AMF), which allows the entire network to be managed as a single virtual device. AMF provides:

- Centralized management of the entire network, and any or all switches, at once.
- Automatic backup of firmware, configuration and other important files for every network device.
- Automatic upgrade of firmware across all devices in the network.
- Automatic recovery and provisioning when replacing or adding new units.

Through this combination of robust features, AMF drives lower network operating expenses by reducing the complexity and level of effort and expertise required to maintain the network.

The new SIT network infrastructure was deployed, and then AMF was switched on once the remote campuses were set up with new AMF-capable switches. Installing AMF onto the network was extremely simple, even in this large multi-campus environment.

> "Installing AMF was a lot simpler than we had anticipated. The actual deployment of AMF, we did essentially in one evening, and that was across around 90 switches in 5 different locations. It was very straightforward."
>
> Stephen Wilcox
> Lead Technical Consultant - Spark Digital Southland

SIT has a close partner in Spark Digital, who will continue to provide ongoing support for the new network.

Benefits of the new solution

The new network has provided SIT with a powerful solution that has more than met key requirements:

- **High availability**
  SIT now enjoys always-on access to online resources and applications, to support a modern learning environment. This ensures students can make use of technology as an integral part of their studies, and is an important part of the quality of education SIT is able to offer.

  The SwitchBlade core chassis are incredibly resilient, comprising dual controllers, and dual hot-swappable power supplies to maximize uptime. With VCStack creating virtual units out of multiple physical devices at the distribution and edge, the network has no single point of failure, creating a high-availability solution for data connectivity.

- **High performance**
  The increased bandwidth of the network supports the several thousand on-campus SIT students, as well as thousands more using the SIT2LRN distance learning program. Multiple aggregated 10 Gigabit links connect the network core with distribution switches, as well as servers and storage. This provides staff and students with high-speed data access, and supports services such as streaming video and digital telephony.

  Powerful Quality-of-Service (QoS) features on the switches prioritize and manage bandwidth for different services, to guarantee high performance and improve the user experience.

- **Business continuity**
  For a modern education provider like SIT, continuity of operations is key, with many thousands of students relying on the availability of the learning environment. The new network is a high-availability solution, with high-bandwidth between the core chassis switches at the main and downtown campuses. This provides high-speed access to the data centers at each location, and a data-mirroring solution between the data centers maximizes availability.

- **Scalability**
  SIT will keep evolving to keep pace with technology, and its use in improving educational outcomes. The new network is flexible and scalable, with adding bandwidth as easy as adding new line-cards to the SwitchBlade core chassis switches, or another switch to a VCStack, along with connecting more high-speed fibre links. This will enable SIT to quickly deploy new online services and technologies to meet business initiatives, and offer further learning opportunities.

- **Ease of management**
  The new network covers multiple campuses, and yet is extremely easy to manage. AMF has simplified and automated many day-to-day administration tasks like backing up the network, upgrading firmware, and installing or replacing units. Many of these previously time-consuming tasks can now be carried out across the complete network with a single command.

Summary

AMF has provided SIT with a network solution which is simple to manage, change or grow. The powerful combination of features reduces the time and cost of network management.

The next-generation network now operating at SIT is a high-performance, high-availability online solution. It is flexible and scalable, and for a complex converged multi-site network, remains extremely easy to manage. This increases SIT's ability to utilize digital educational resources, supports great campus facilities, and provides an environment conducive to today's learning.

Both Spark Digital and Allied Telesis look forward to continuing the partnership with SIT, to keep its online capabilities at the forefront of technology.

"IOur students and staff expect a fast, modern and reliable network. The upgrade has met these requirements and provided SIT with a solid platform, whilst eliminating the bottlenecks or performance issues of the past. Allied Telesis has been excellent to work with, and the equipment has lived up to our expectations. "

Patsy Eade

Human Resources Manager at SIT

"AMF has definitely met all our expectations. Two key benefits I was looking for were:

Centralized backup of all the configuration and firmware files: With a network the size of SIT, it is absolutely key to make sure you've got a current backup of your configuration files, especially if you need to replace a switch. AMF automatically backs up the entire network every day.

Change management: Networks this size have complex configurations and sometimes even making a small change can take a couple of hours. From my direct experience, after installing AMF in SIT's network, a change which would have taken 2 hours previously, we can now do in literally 10 minutes–that is to make the same change, across the entire network. So the efficiency of AMF for managing a network is fantastic.

When you add in the ability to automatically configure new or replacement switches, and upgrade the firmware across the entire multi-site network with a single command, AMF has greatly reduced the burden of network management."

Stephen Wilcox

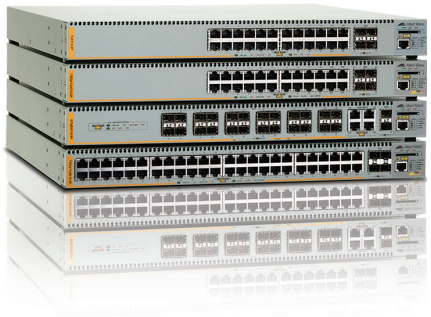
Lead Technical Consultant - Spark Digital Southland

The products

SwitchBlade® x8100 Series

NEXT GENERATION INTELLIGENT LAYER 3+ CHASSIS SWITCH

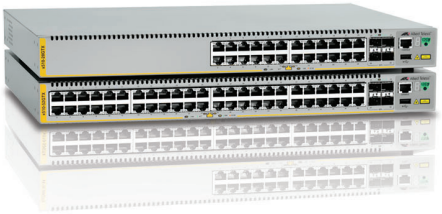
Allied Telesis SwitchBlade x8100 Series Advanced Layer 3+ chassis switches are designed to deliver high availability, wirespeed performance, and a high port count. Two control card options, CFC400 and CFC960, provide solutions for medium and large networks. The ability to stack two chassis when using the CFC960 provides a powerful and completely resilient network core solution, which can even be distributed over long distance.



x610 Series

ADVANCED LAYER 3 GIGABIT ETHERNET STACKABLE SWITCHES

The Allied Telesis x610 series is the high performing and scalable solution for today's networks, providing an extensive range of port-density and uplink-connectivity options. 24-port and 48-port versions are available with optional 10 Gigabit uplinks and PoE+ ports. The ability to stack up to eight units includes using fiber for long distance stacking. The x610 Series can connect anything from a small workgroup right up to a large business.



x510 Series

STACKABLE GIGABIT SWITCHES

The Allied Telesis x510 Series of stackable Gigabit switches includes a full range of security and resiliency features, coupled with easy management, making them the ideal choice for network access applications.

Allied Telesis x510 Series switches are a high-performing and feature-rich choice for today's networks. They offer a versatile solution for enterprise applications.

AMF™

Allied Telesis Management Framework (AMF) is a sophisticated suite of management tools that provide a simplified approach to network management. Common tasks are automated and every-day running of the network made extremely simple. Powerful features like centralized management, auto-backup, auto-upgrade, auto-provisioning and auto-recovery enable plug-and-play networking and zero-touch management.

About Allied Telesis, Inc.

Founded in 1987, and with offices worldwide, Allied Telesis is a leading provider of networking infrastructure and flexible, interoperable network solutions. The Company provides reliable video, voice and data network solutions to clients in multiple markets including government, healthcare, defense, education, retail, hospitality, and network service providers.

Allied Telesis is committed to innovating the way in which services and applications are delivered and managed, resulting in increased value and lower operating costs.

Visit us online at **alliedtelesis**.com

Allied Telesis™ the **solution** : the **network**

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