

Allied Telesis Solutions for Education





Executive Summary

At Allied Telesis, we know that your education network must:

- ▶ Facilitate access to information and resources, yet maintain the security of confidential data
- ▶ Provide secure network access to offsite staff and students
- ▶ Protect your valuable data from network threats both inside and outside of your network
- ▶ Support and easily encompass new technologies both now, and as they arrive — without breaking the budget
- ▶ Be easy to configure, manage, and troubleshoot, minimizing costly administration and downtime.

The Allied Telesis education solution provides:

- ▶ *Identity-based network access*
Ensure that your staff and students have constant access to appropriate resources, while still protecting confidential information, and maintaining privacy.
- ▶ *Secure mobility*
Provide secure network access to students and staff anywhere, anytime, both on and off the campus, including roaming wireless access.
- ▶ *Security without inconvenience*
Secure connection to online resources and the Internet, protecting both the network and students from inappropriate material and malicious threats, while minimizing administration overhead.
- ▶ *Advanced value-added services*
Support of new e-learning technologies such as streaming video seen in multiple locations simultaneously, video conferencing, distance learning, and remote network access. All provided within often constrained IT budgets.

Education needs and objectives

Modern education networks are complex, and serve a rapidly developing set of requirements, some of which challenge the technology and its security. Online applications, e-learning, and media-rich teaching methods provide immense benefits to secondary and tertiary education providers. Motivated students with access to advanced learning resources, remote schooling, and online opportunities are part of the next generation in education.

Schools take ultimate responsibility for the security of their pupils and networks, and so must provide an efficient, safe and effective computing environment which serves the entire school — pupils, teachers, administrators and all the other members of the school community.

When it comes to implementing networks, education providers face a number of challenges. You must provide:

- Individual access to appropriate resources for staff and students, while protecting confidential information and maintaining privacy — **identity-based networking**
- Secure network access to students and staff anywhere on the campus at any time, including roaming wireless access — **mobility while maintaining security**
- Secure connection to online resources and the Internet, protecting both the network and students from inappropriate material and malicious threats, while minimizing administration overhead — **security without inconvenience**
- Support of new e-learning technologies such as streaming video seen in multiple locations simultaneously, video conferencing, distance learning, and remote network access. All provided within often constrained IT budgets — **advanced value-added services**

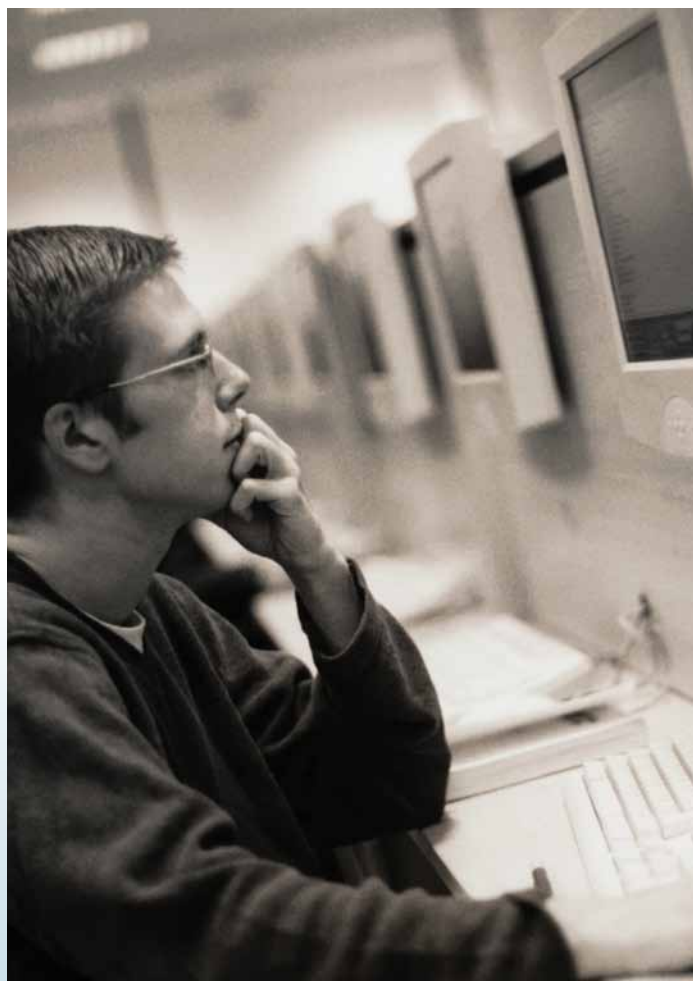
Finding a network that meets all your needs can seem like an impossible task – but with an Allied Telesis solution that is tailored for your organization, it is both achievable and simple.

Why Allied Telesis?

Allied Telesis is an industry leader in networking solutions. With our proven history of delivering highly reliable and feature-rich advanced network solutions, more and more education providers are turning to Allied Telesis to achieve their objectives.

At Allied Telesis, we understand the need to supply advanced cutting-edge network services to tomorrow's generation, within limited budgets. Allied Telesis has been implementing leading-edge educational networks for many years. Our advanced high-value product portfolio provides the security, mobility and high performance you need for your education network, both now and well into the future.

Let's look at how Allied Telesis meets the challenges faced in education, and provides solutions that facilitate advanced educational opportunities.



“The new network provides so many more management and operational capabilities — including monitoring, reliability, throughput, and enhanced security.”

Paul Rodley, Director of Information Technology, Christ's College, New Zealand

Identity-based network access

Ensure that your staff and students have constant access to appropriate resources, while still protecting confidential information, and maintaining privacy.

Providing appropriate access to network resources for individual staff and students can seem complex, requiring multiple sets of privilege levels for resources to maintain information confidentiality and privacy. Education providers offer increasingly advanced online resources, but maintain critical student and curriculum information, which must be kept private and protected from malicious use.

Allied Telesis products support Network Access Control (NAC), providing complete control over user access to the network. Users can have different levels of access, allowing for appropriate network and resource availability for students, teachers, and administration staff. NAC also checks a user's adherence to network security policies before granting network access, proactively stopping threats before they can enter the network.

NAC has introduced Identity-based networking, which is superior to previous methods of controlling online information access. NAC's automated nature is of real benefit for busy IT staff, as it simplifies complex administration tasks.

Many leading network vendors have implemented NAC solutions and Allied Telesis advanced switch products support a number of these, including Microsoft,[®] Symantec[®] and Sophos.[®] Allied Telesis products and expertise enable deployment of a robust NAC solution with minimum effort. Allied Telesis switching products have been extensively tested for compliance with popular NAC vendors, and we have published convenient step-by-step guides to implementing a comprehensive solution.

Network Access Control

NAC allows for unprecedented control over user access to the network, in order to mitigate threats to network infrastructure. Allied Telesis switches use 802.1x port-based authentication in partnership with standards-compliant dynamic VLAN assignment, to assess a user's adherence to network security policies and either grant authentication or offer remediation.

Furthermore, if multiple users share a port, then multi-authentication can be used. Different users on the same port can be assigned into different VLANs, and so given different levels of network access. Additionally, a Guest VLAN can be configured to provide a catch-all for users who aren't authenticated.

Secure mobility

Provide secure network access to students and staff anywhere, anytime, both on and off the campus, including roaming wireless access.

Wireless networking has increased exponentially in recent years, with demand for access to online applications anytime, anywhere. This is seen in the prevalence of new smart phones, music players and gaming devices with built in WiFi capability. All new laptop computers now have wireless built in as standard — an expensive addition just a few years ago.

As young people are typically the early adopters of the latest technology, today's students increasingly expect that their home and school or campus will provide wireless access. Wireless is also imperative for teachers and lecturers, who often make use of multiple rooms, theaters and other teaching spaces, yet require continual network access.

Furthermore, you must ensure that staff and students have the same level of access wherever they choose to connect to the network as more and more advanced high demand applications are made available on education networks. Wireless networking adds a further dimension that must be considered to keep mobile users securely connected, while not allowing access that would compromise the privacy of certain resources and sets of data.

Allied Telesis wired and wireless solutions utilize features such as NAC and Tri-Authentication to provide secure network access from anywhere on campus. Lecturers using multiple rooms over the course of a day can be assured that they will have instant access to their presentations and other media from any location. Students who access the network via their own laptops can gain the appropriate access to online information and the Internet.

Tri-Authentication

Authentication options on Allied Telesis switches include alternatives to 802.1x port-based authentication, such as web authentication to enable roaming and guest access, and MAC authentication for end points that do not have an 802.1x supplicant. All three authentication methods — 802.1x, MAC-based and Web-based — can be enabled simultaneously on the same port (tri-authentication). This ensures uniform inspection of all users and devices wishing to gain access to the network, maximizing security.

“By enriching the school network, we aim to provide a learning environment that’s visually appealing, interactive, and effective. Students can access multimedia video-on-demand materials that are right for their competence level.”

Mr. Yoshihiro Nagase, Director of the Kurashiki Information Learning Center, Japan

Security without inconvenience

Secure connection to online resources and the Internet, protecting both the network and students from inappropriate material and malicious threats, while minimizing administration overhead.

The need to maintain network security for all users, devices and applications in an education network is a major administrative overhead facing IT staff, who are tasked with keeping everything running efficiently. Allied Telesis has a number of advanced features to ease or automate network administration tasks, greatly reducing this burden.

Simplifying and automating the management of staff and students' online resource use, from all locations across the school or campus, ensures that you maintain uniform security. Plus, NAC provides — and automates — the ability to guarantee that a user's security status meets with current policies.

Control of network addresses used by computers and other devices, checking users' identities and managing network traffic volume and congestion are all time-consuming tasks. Allied Telesis has conceptualized "Network in a Box", which automates several network administration tasks by integrating services directly into advanced network switching products. This reduces the load on IT staff and increases security.

Maintenance and configuration of network equipment is greatly simplified with an industry standard Command Line Interface (CLI) on Allied Telesis products. This keeps training requirements for IT staff at a minimum, and reduces both your network management complexity and deployment costs. A web-based Graphical User Interface (GUI) also ensures a user-friendly way to monitor and configure your network.



Network in a Box

Network in a Box simplifies administration by integrating several network services into Allied Telesis switches:

- Radius Server checks the identity of users to keep the network safe and free from uninvited 'guests'
- Storm Control ensures a robust and resilient network by managing the amount of traffic allowed on the network, and dealing with any unexpected surges
- DHCP server automates the distribution of network addresses to every computer
- A centralized Timekeeper ensures your network is always working in full synchronicity
- Loop Protection guards against accidental wiring mistakes

Centralizing network administration greatly reduces the need for full-time IT experts, while increasing security and robustness.

"We demonstrated that we could have two video conferences, streaming video, VoIP, security cameras and Internet access going back and forth over the fiber simultaneously, and all in an IP environment."

Charles Newton, Principal, Nayland College, New Zealand

Advanced value-added services

Support of new e-learning technologies such as streaming video seen in multiple locations simultaneously, video conferencing, distance learning, and remote network access. All provided within often constrained IT budgets.

Modern schools and campuses use multimedia in many forms. Lectures on demand, distance learning, video conferencing and in-class streaming video are just some of the network intensive applications that can put a strain on your network infrastructure.

The ability to simultaneously view video from centralized servers in a number of locations is made possible with Allied Telesis' leading multicast features, allowing high quality video streaming which is controlled for the most efficient delivery — minimizing the amount of network bandwidth consumed.

As online applications become more media rich and bandwidth intensive, high availability for network resources is mandatory. Advanced switches that include dual power supplies, hot-swappable expansion modules and robust software features ensure that both hardware and software continue functioning under the highest load.

Technology has created tremendous opportunities for today's students. The addition of video and other advanced services to the standard data network has increased the need for extremely high resource availability. Managing traffic flow and volume on the network is something Allied Telesis switching solutions are especially good at, with advanced high-availability features like Virtual Chassis Stacking (VCStack™) and Ethernet Protected Switching Rings (EPSRing™). The wide portfolio of products supporting these features means that there is a powerful solution available for any size network.



Remote access

Another value added service that has become increasingly important in today's connected world is remote access to the network — staff need to have access to shared resources even when they are not on campus. When working from home or on a field trip, the ability to access files on school servers, or from shared education networks, can be a real time saver.

Secure, high-speed remote VPN access enables staff to work anywhere and still feel directly connected to the campus network. The knowledge that they can be just as productive in lesson planning and research off-site as on-site is very liberating for staff, and enables them to get that work done at times and places that work best for them.

Allied Telesis secure routers can encrypt and firewall hundreds of remote access sessions at the same time, making them ideal VPN gateways for even the largest educational institutions. The VPN service within the routers is completely interoperable with the standard Private Network Connection settings in Microsoft® Windows® and Mac OS® X — making it very simple to set up staff laptops for secure remote access.

High availability

High availability features ensure traffic flow continues even during outages.

Virtual Chassis Stacking (VCStack™)



VCStack provides excellent resiliency by allowing you to create a single "virtual chassis" from up to four physical switches. If one stacked switch fails, traffic routes seamlessly to another, preventing network disruption. VCStack delivers a resilient core at a fraction of the cost of a full chassis-based system, and it allows you to manage the stack as a single node on the network, greatly simplifying your management

Ethernet Protected Switched Rings (EPSRing™)



EPSR allows several switches to form a high-speed protected ring capable of recovery within as little as 50ms. This feature is perfect for high performance and high availability in distributed networks like schools and university campuses.

Looking to the Future

Allied Telesis products optimize your technology investments by fully integrating with existing systems and applications. As education needs change, your network can easily adapt as our products help you to build a more efficient and progressive infrastructure, designed to fulfil your needs both now, and well into the future.

As new and exciting ideas are implemented in the field of education, Allied Telesis products will remain at the forefront in providing a network infrastructure to encourage creative ways to positively influence the next generation.

About Allied Telesis, Inc.

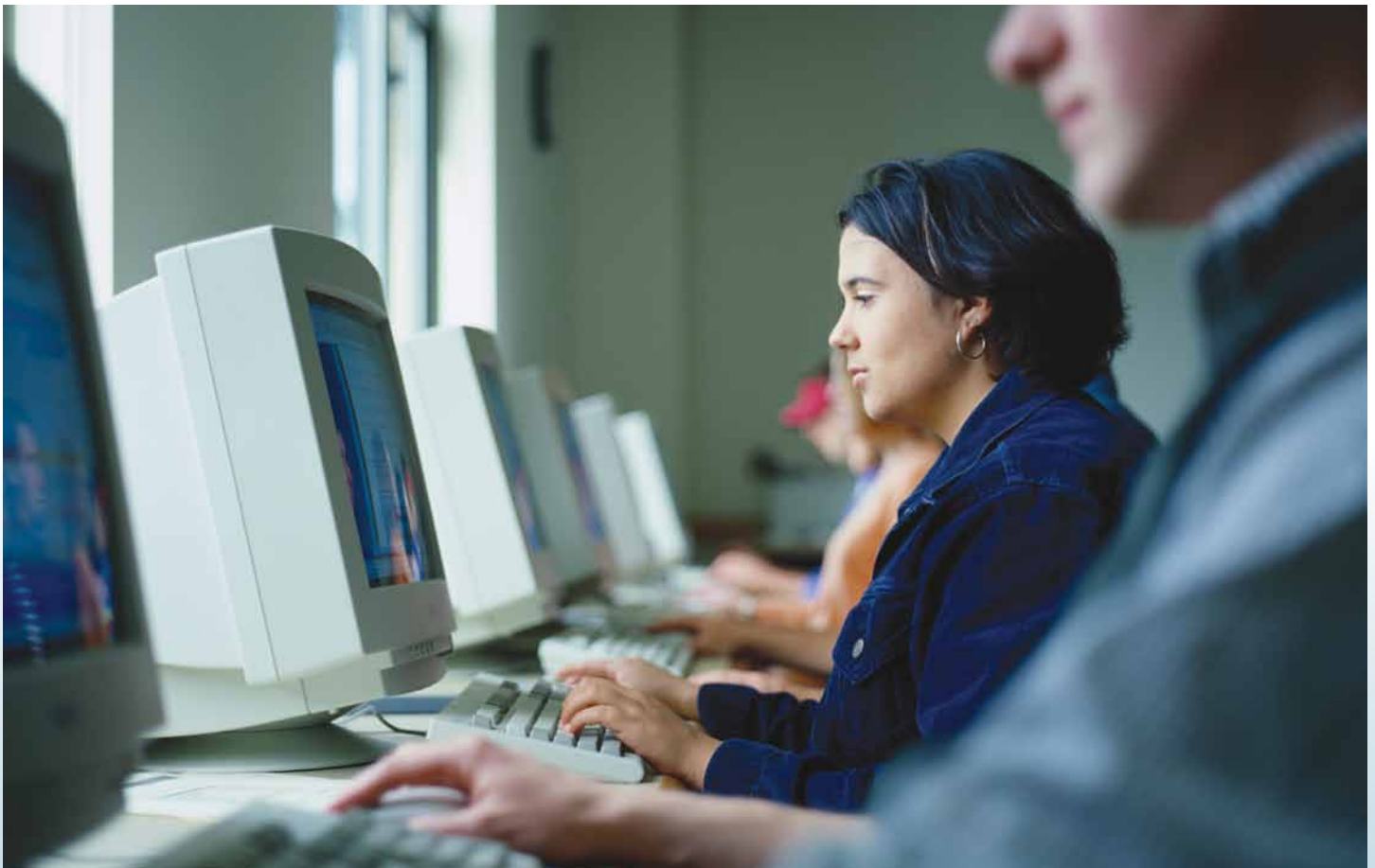
Allied Telesis is a world class leader in delivering IP/Ethernet network solutions to the global marketplace. We create innovative, standards-based IP networks that seamlessly connect you with voice, video and data services.


Enterprise customers can build complete end-to-end networking solutions through a single vendor, with core-to-edge technologies ranging from powerful 10 Gigabit Layer 3 switches right through to media converters.

Allied Telesis also offers a wide range of access, aggregation and backbone solutions for Service Providers. Our products range from industry leading media gateways which allow voice, video and data services to be delivered to the home and business, right through to high-end chassis-based platforms providing significant network infrastructure.

Allied Telesis flexible service and support programs are tailored to meet a wide range of needs, and are designed to protect your Allied Telesis investment well into the future.

Visit us online at www.alliedtelesis.com





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