

Success Story

 Allied Telesis™

# Next-Generation Learning - Implementing a Scalable Solution at University of Hyderabad

The University of Hyderabad, in India, select an Allied Telesis resilient and powerful solution for their network upgrade.



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

# The customer

## University of Hyderabad

The University of Hyderabad (UoH), one of the major providers of higher education in India, is a premier institution of post graduate teaching and research. UoH, also known as Hyderabad Central University or HCU, was established by an Act of Parliament on October the 2nd, 1974, with Prof. Gurbaksh Singh as its first Vice Chancellor. It has since emerged as a leading centre of teaching and research.

UoH is largely devoted to postgraduate studies and is widely known for its excellence in research, and for its distinguished faculty. The large campus, located near Gachibowli, the IT hub of Hyderabad, has immense biodiversity and is home to over 75 varieties of bird, as well as lakes and rock formations which give the campus a natural beauty.

UoH has over 400 faculty members and more than 5000 students. It offers close to 150 different programs of study ranging from Doctoral studies to Masters level degrees, as well as a range of post graduate diplomas and short-term courses. There is a thriving Five Year Integrated Masters Program, and the University also hosts an ever increasing number of foreign scholars in the highly popular Study in India Program.

For more information, see the website at [www.uohyd.ac.in](http://www.uohyd.ac.in)

### Hyderabad, India

Hyderabad is the capital and largest city of the southern Indian state of Andhra Pradesh. It is situated along 650 square kilometers on the banks of the Musi River. With a population of 6.8 million and a metropolitan population of 7.75 million, it is the fourth most populous city and sixth most populous urban area in India.

Hyderabad was historically a pearl and diamond trading centre, and today it continues to be known as the “City of Pearls”.





# Overview

## The problem

Hyderabad University's campus network had been put together slowly over time and then extended as the network demands grew. Because of this piecemeal approach, the implementation was not considered or planned, and was not able to meet rising demands. It needed a major update.

Slow network access was a problem, as were multiple points of failure which created a lack of reliability. There was no equipment standardization or centralized management, so it was becoming a challenge for the network administrators to manage. And with no endpoint security, the network was unprepared for the increase of Internet capable devices that are converging on modern networks.

## Hyderabad University choose Allied Telesis

Hyderabad University chose an Allied Telesis advanced solution to provide them with the high performing network they need.

"Our number one priority is to provide a great network experience to support student and faculty success, while being a cost-effective solution. We look for ways to be economical and be great stewards of taxpayer's money, while giving the campus fraternity the best experience possible. At Campus Network Facility (CNF), University of Hyderabad, a large part of our job is to build the best and most reliable network. Allied Telesis has empowered us to build the best" said Mr. Pradeep, In-charge, Campus Network Facility.

Allied Telesis were chosen over the competitors because they proposed a resilient and powerful solution with industry-leading features such as Virtual Chassis Stacking (VCStack™) and Ethernet Protection Switched Rings (EPSRing™). They were also able to provide a cohesive product set - from the core chassis, to the modular distribution and gigabit edge switches. An industry standard command line ensured an easy to manage, high-value solution.

Allied Telesis were very pro-active in engaging with Hyderabad University, and provided a comprehensive consultative approach that met all current and future requirements. After a detailed evaluation process, the decision to partner with Allied Telesis was easy.

# The network requirements

Hyderabad University required a highly resilient and robust network that would reliably handle the convergence of the many online systems and applications on campus. They also needed a comprehensive WI-FI network to provide students with easy and secure access to online resources.

The new network was to be a converged campus-wide solution, with 10 gigabit fiber in the backbone for high performance across the distributed topology. The initial deployment included more than 250 switches, and a second phase of the network implementation would add a further 300 access switches.



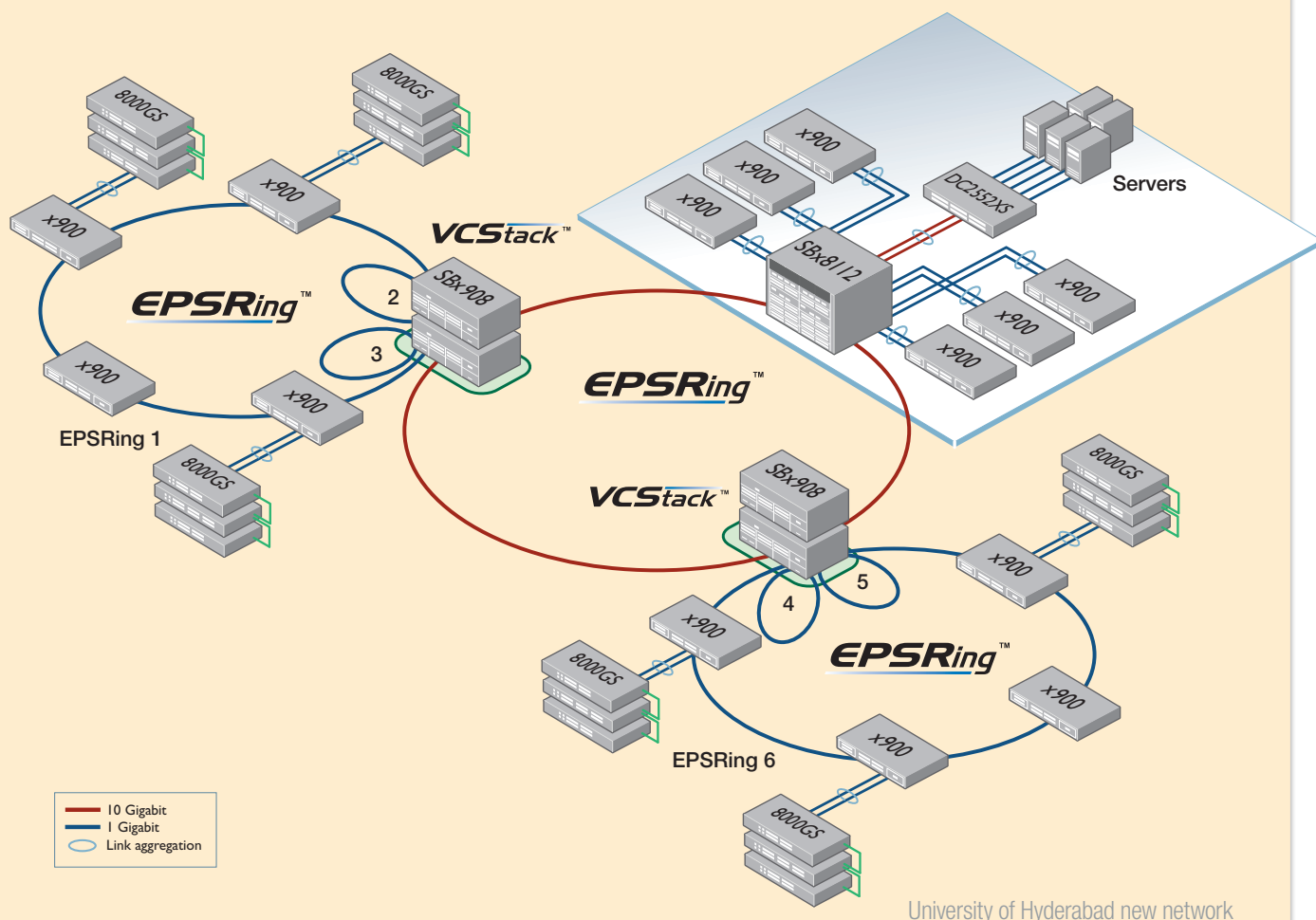
The key requirements of this large new network were:

- A resilient distributed network design to support the many online applications
- Scalability to allow future growth
- No single point of failure for maximum network uptime
- Centralized management
- Security for the many different user groups
- It had to be future-proof and ready for transitioning from IPv4 to IPv6
- Cost-effectiveness
- Energy efficiency

With modern digital online library resources, e-learning, virtual desktops and private cloud-based computing, the university needed a network that could meet their needs today, as well as be prepared for next generation technologies.

Allied Telesis took all of these requirements into consideration as part of their consultation and planning in conjunction with Hyderabad University, and have provided a flexible and comprehensive solution.

# The solution



University of Hyderabad new network

The new network is a cohesive and powerful solution that provides high availability and no single point of failure. It is scalable to easily support future network growth, both in size and the ability to incorporate new next generation online resources and applications.

At the core of the new network is a SwitchBlade® x8112 Next Generation Intelligent Layer 3+ Chassis Switch, which delivers high availability, wirespeed performance, and a high port count. Advanced features make it the ideal solution for the modern enterprise network where resiliency, reliability and high performance are the key

requirements. A DC2552XS 10GbE switch provides server connectivity. The distribution layer is made up of SwitchBlade® x908 and x900 series modular switches, connected in EPSRings™. Six 1Gbps EPSR rings connect to a 10Gbps EPSR ring, providing high-speed resilient connectivity to the network core. The SwitchBlade x908 switches are also paired as a VCStack™.

The AT-8000GS edge switches provide gigabit to the desktop, and are stacked for improved port density and ease of management. They are connected via link aggregation to the distribution switches.

# The solution

Hyderabad University's key requirements are all met in the new Allied Telesis Solution.

## Resilient design

The core SwitchBlade x8112 chassis, and SwitchBlade x908 and x900 distribution switches all feature dual load-sharing hot swappable power supplies to maximize network uptime.

Using EPSR rings for network distribution ensures high-speed access to online data, with ring failover in as little as 50ms in the case of a failure. Creating a VCStack of the SwitchBlade x908 distribution switches provides complete device and link redundancy, allowing connection of multiple switches via high-speed stacking links. This aggregates the switches, which then appear as a single switch, or "virtual chassis." The virtual chassis can be configured and managed via a single serial console or IP address, greatly simplifying management tasks. The AT-8000GS edge switches are also stacked, further fortifying this resilient network access solution.

The Allied Telesis advanced switches and powerful feature set have provided Hyderabad University with high availability, especially in their data center, which is the central hub for all intranet applications that are run across the campus.

## Scalable for future growth

The SwitchBlade x8112, SwitchBlade x908 and x900 series switches can have extra line-cards or expansion modules (XEMs) added to provide additional copper and fiber connectivity. Gigabit and 10 gigabit options deliver the ultimate

## Key features:

- » Resilient design
- » Scalable for future growth
- » No single point of failure
- » Centralized management
- » Secure
- » Future-proof
- » Cost-effective
- » Energy efficient

in flexibility. These line-cards and XEMs can be hot-swapped into the chassis to ensure no network downtime when expanding the network. The Allied Telesis switches can even be pre-configured for the new line-cards and XEM modules before they are added, so they will be available to immediately manage and forward traffic once connected.

This flexibility in expansion provides the university with the potential to add other IP-based services, such as security surveillance, virtual desktops and e-learning in the near future.

## No single point of failure

The resilient ring topology provided by EPSR provides a solution that has no single point of failure, and ultra high speed automated recovery. VCStack creates a virtual chassis with total resilience, and link aggregation between the distribution and stacked edge switches further increases network reliability. This high availability network solution ensures uninterrupted access to online information when needed.



### **Centralized management**

Using the Allied Telesis Network Management System (NMS) the university has a solution which is centrally managed and monitored. For such a large network, this is a key feature to facilitate everyday network administration, and ease what would otherwise be a very large management overhead. The powerful provisioning and management features of NMS make it ideal for a large distributed network.

### **Secure**

Allied Telesis powerful edge security features ensure total network access control for the many different users. Centralized RADIUS authentication simplifies network access control and MAC address filtering ensures no unauthorized end-points can gain access to the network. This provides a network environment which is equally secure for permanent devices and computers, and the many devices that students use to access the WI-FI network.

### **Future-proof**

Allied Telesis are at the forefront of IPv6 switching, and all of the advanced switches are IPv6 ready. This meets the Indian government's mandate that all new networks be ready for a smooth transition to IPv6 networking for all applications. Hyderabad University can be confident of an easy move to IPv6 networking, and Allied Telesis transition technologies ensure this can be done in a manner, and at a speed, that is comfortable and manageable for this large tertiary institution.

### **Cost-effective and high-value**

The new Allied Telesis network has proven to be very cost-effective, and has provided a high-value solution with advanced features that make the network highly resilient, reliable and ready for new technologies, yet still very easy to manage. The total cost of ownership is minimized with high-value products and Allied Telesis technologies that keep daily running costs low.

### **Energy efficient**

All Allied Telesis products are designed with a commitment to environmentally friendly processes, and reduced power consumption. Features include high efficiency power supplies, and low-power chip-sets. Some models also include an ECO-Switch button on the front panel allowing conservation of additional power by turning off all diagnostic LED indicators when they are not required. This ensures a network that is cheaper to run and better for the environment too.

## Summary

The Allied Telesis solution has simplified network administration and management. Deploying a comprehensive end-to-end solution has ensured that Hyderabad University has overcome the challenge of finding and retaining skilled employees to manage their complex network environment. The university has the utmost confidence in their new network infrastructure, and in the advanced solution it has provided for staff and students.

With a 10 gigabit back-bone, and a cohesive and resilient design, the new Allied Telesis network solution meets all of the university's requirements, and is ready for the next generation of online applications.

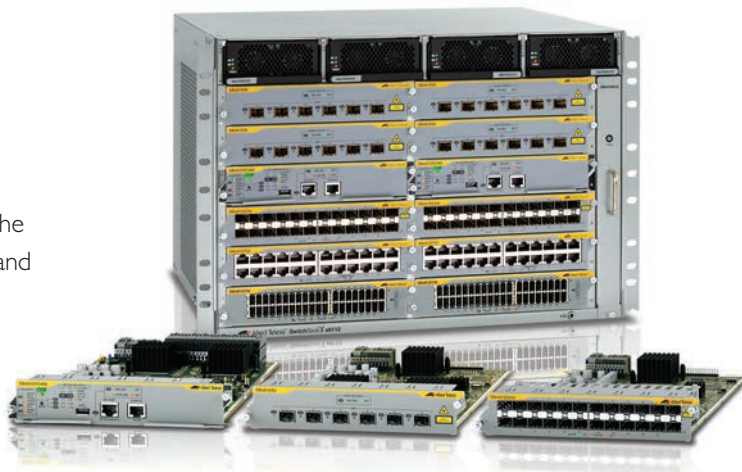
Allied Telesis look forward to continuing to support Hyderabad University with their current and future networking needs as they provide staff and students with a 21st century learning environment.

# Featured products

## SwitchBlade® x8112

### NEXT GENERATION INTELLIGENT LAYER 3+ CHASSIS SWITCH

The Allied Telesis SwitchBlade x8112 is the ideal solution for the modern enterprise network core where reliability, resiliency and high performance are the key requirements.



## SwitchBlade® x908

### ADVANCED LAYER 3+ MODULAR SWITCH

The Allied Telesis SwitchBlade x908 industry leading modular switch is an ideal network solution with powerful features packed into a compact 3RU chassis.

## x900 Series

### ADVANCED LAYER 3 SWITCHES

The Allied Telesis x900 Series is one of our most advanced series of switches and is unmatched in performance, flexibility and reliability in a 1RU form factor.







## DC2552XS

**HIGH DENSITY 10GBE SWITCH**

The Allied Telesis DC2552XS provides high-density 10GbE connectivity, and also includes four of today's fastest Ethernet standard 40GbE ports.



## AT-8000GS Series

**GIGABIT ETHERNET SWITCHES**

The Allied Telesis 8000GS Series Gigabit Ethernet switches are low-cost, managed and stackable. They are 1RU high and rack mountable. Some switches in this series have optional PoE.

## AlliedWare Plus™

**LAYER 3 FULLY FEATURED OPERATING SYSTEM**

AlliedWare Plus is the next generation operating system from Allied Telesis, providing advanced IPv4 and IPv6 features, superior robustness and ease of management.

The AlliedWare Plus operating system combines superior networking functionality and strong management capabilities with the exceptional performance that today's networks demand. A standards-based implementation, it also assures full interoperability with other major network equipment, and features improved usability for a superior customer experience.

**AlliedWare Plus™**  
**OPERATING SYSTEM**



## About Allied Telesis

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](http://alliedtelesis.com)



the solution : the network

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