

Success Story



Technology Pioneer Deploys Scalable, Manageable New Network Solution

Dunham-Bush, a pioneer and industry leader in rotary screw compressor technology, selects Allied Telesis for a cost-effective and highly available network.



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

The customer

Dunham-Bush, a pioneer and industry leader in rotary screw compressor technology, is based in Kajang, Malaysia. The company builds refrigeration systems and air-cooled rotary screw flooded chillers. It also provides customized, leading-edge cooling systems to commercial buildings, schools, hospitals, airports, factories, and residences.

Dunham-Bush was formed in the 1950s through the merger of the C.A. Dunham Company (est. 1894) and the Bush Manufacturing Company (est. 1906). With more than 100 years of combined research and development, it produces one of the broadest lines of air-cooled and liquid-cooled chillers in the industry.

From their corporate headquarters in Kajang, Dunham-Bush operates a global network of sales and service offices. Dunham-Bush has manufacturing facilities in many countries including the United States, England, Malaysia, and China.

Dunham-Bush has the flexibility to continuously respond to evolving customer needs and emerging markets around the globe. Their unique combination of customer knowledge and engineering expertise results in products specifically designed and built to be efficient and reliable.



PROFILE

Kajang, Malaysia

- Kajang, a city in the eastern part of Selangor, Malaysia, is also the district capital of Hulu Langat. It is located 21 kilometres from Malaysia's capital, Kuala Lumpur.
- The population of Kajang has grown rapidly in the past few years, at an estimated rate of 9% per year.

The requirements

Dunham-Bush needed a highly available network, capable of supporting the Company's mission-critical applications. Any network outage would have a significant impact on the business.

In addition, the network had to support IP telephony, and be scalable to cater for future growth.

Dunham-Bush selected Allied Telesis to upgrade its network. Allied Telesis provided a complete network solution that exceeded the requirements.

The challenges

Dunham-Bush's old network was incurring ongoing maintenance costs. It did not provide the high availability they needed, causing problems for the mission-critical environment. Dunham-Bush needed a highly available network solution with minimal maintenance costs.



The solution

The new network installed at Dunham-Bush utilizes the following advanced Allied Telesis products, ensuring a high level of performance to meet network demands:

- AT-x600-24Ts/XP - Advance Layer 3 Core Switches
- AT-8000S/24POE- Layer 2 Stackable Fast Ethernet Switches
- AT-8000S/48POE - Layer 2 Stackable Fast Ethernet Switches

Four AT-x600-24Ts/XP units, eight AT-8000S/24POE units and eight AT-8000S/48POE units provide high-speed Internet and IP telephony in Dunham-Bush's three office blocks and one factory block.

The two main office blocks each have two AT-x600-24Ts/XP switches installed. Core switches provide connectivity to the AT-8000S/48POE in one of the main office blocks. A second set of core switches provides connectivity to the server farm and the remaining operations. Link aggregation allows Dunham-Bush to double their network bandwidth by having two 10Gbps active uplinks between its two main office blocks.

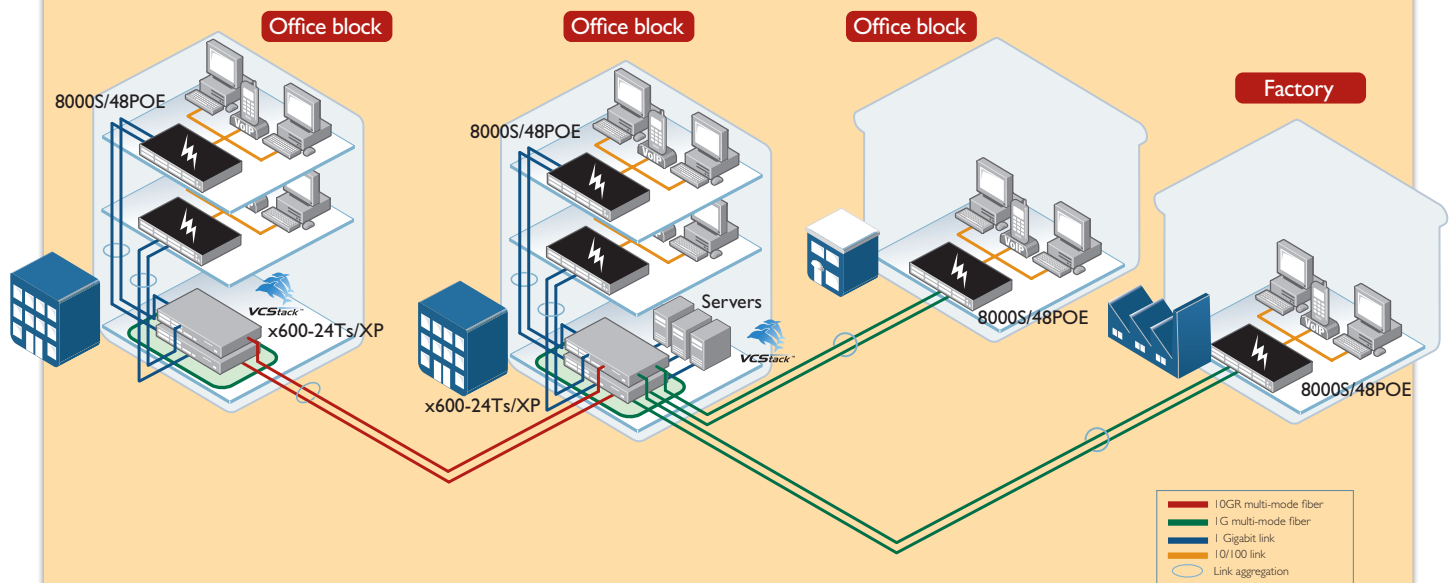


Figure 1: Dunham-Bush's new network

Key benefits

Solution benefits

- Powerful simplicity with VCStack
- High availability with fast convergence
- Future-proof
- Secure
- Cost effective
- East to use
- Service and support

Powerful simplicity achieved with Virtual Chassis Stacking (VCStack)

The new network utilizes Allied Telesis Virtual Chassis Stacking (VCStack™) technology, which delivers resiliency and scalability, simplifying management while increasing performance. Fast failover further enhances the network, providing minimal downtime in the event of a problem.

During normal operation with VCStack, all bandwidth and routing power in the network are fully available for use all the time. If a link or device fails, some of the bandwidth or forwarding power is lost, but the network remains fully operational and all remaining resources continue to be fully utilized.

The key advantage of VCStack comes from configuring the links from the access switches to the core as an 802.3ad link aggregation. With link aggregation across ports on different

virtual chassis members, there is no perceptible disruption in the case of a link failure, and the full bandwidth of the network is available. Link aggregation is also used to connect network resources, such as servers, across the virtual chassis members. This ensures device and path resiliency for Dunham-Bush.

High availability with fast convergence

The Allied Telesis SwitchBlade x600 Layer 3+ switches offer an impressive set of features in a high-value package.

Non-blocking architecture and comprehensive low-latency wire-speed Quality of Service (QoS) provides flow-based traffic management with full classification, prioritization, traffic shaping and a min/max bandwidth profile. Dunham-Bush is able to benefit from increased network performance and guaranteed delivery of business-critical Ethernet services and

applications. Time-critical services, like voice and video, take precedence over non-essential services like file downloads, maintaining the responsiveness of Enterprise applications. Voice VLAN is a key convergence feature of the Allied Telesis x600 Series, which automatically separates voice and data traffic into two different VLANS. This automatic separation places delay-sensitive traffic into a voice-dedicated VLAN, which simplifies QoS configurations for Dunham-Bush.

The AT-8000S POE switches provide high performance Layer 2 switching in an affordable fixed configuration platform, combined with Power over Ethernet, to provide power to edge devices including IP phones and wireless access points. The stacking capability integrated into this platform is configured as a resilient ring topology, designed to provide high reliability and simplified management for higher port-density applications.



Future-proof

The new infrastructure will easily respond to any future changes with ample bandwidth availability.

With a choice of 24- and 48-port versions the Allied Telesis x600 Series offers the ability to stack up to four units. This flexible network configuration is ideal for anything from a small workgroup to a large business. The choice of 1 Gigabit or 10 Gigabit uplink ports allows Dunham-Bush to tailor the uplink bandwidth to suit its network applications. Stacking bandwidth is provided separately from the 10 Gigabit uplink ports, which means Dunham-Bush has up to a massive 160 Gbps of uplink bandwidth.

The AT-8000S/24 supports both Gigabit and Fast Ethernet Small Form-factor Pluggables (SFPs). This makes it ideal for Dunham-Bush, who plans to phase in Gigabit fiber solutions over time. Support for both available SFP speeds lets Dunham-Bush stay within its budget as the Company migrates to faster technology.

Secure

The advanced security features of x600 protects the new network from access to core. Network Access Control (NAC) gives unprecedented control over user access to Dunham-Bush's network. 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 thus given different levels of network access. Additionally, Dunham-Bush can configure a Guest VLAN to provide a catch-all of the users who are not authenticated.

Cost-effective

Being able to provide a total network solution for Dunham-Bush helps to lower integration cost, making it more cost-effective to operate in the long run. In addition, IP telephony lowers the cost of communications, which further lowers operating costs.

Easy to use

Allied Telesis x600 Series switches run the advanced AlliedWare Plus™ fully featured operating system, delivering a rich feature set and an industry-standard Command Line Interface (CLI). This significantly reduces learning time and minimizes deployment costs. In addition to the CLI, the x600 Series switches feature a comprehensive GUI for easy access to monitoring and configuration.

Service and support

Allied Telesis provided superior service and support during the entire process, and designed customer training and workshops, which enabled the solution to be implemented smoothly at Dunham-Bush's offices and factory.



Featured products



x600 Series

ADVANCED LAYER 3 GIGABIT STACKABLE EDGE SWITCHES

Allied Telesis x600 Series advanced stackable switches provide high performance, flexibility and reliability. The x600 Series provides high levels of NAC security, making them ideal as the entry point into a corporate network. High speed 10Gbps uplinks and high-speed stacking of up to four switches ensures unsurpassed performance.



8000S Series

ADVANCED LAYER 2 SWITCHES

The Allied Telesis 8000S Series are high value Layer 2 switches with leading edge security functionality, coupled with the ability to stack multiple units for simplified management and flexibility.

The use of PoE models allows IP telephones and wireless access points to be powered from the switch, simplifying infrastructure and network changes.

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



the solution : the network

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