SUCCESS STORY

Education

XI'AN JIAOTONG: LIVERPOOL | PROBLEM SOLVED

With NetApp all-flash storage, Xi'an Jiaotong—Liverpool University created an intelligent integrated data storage management system that met the needs of its online users while protecting online information.

All-Flash Storage Accelerates IT Modernization at XJTLU

As the first university jointly founded by China and a foreign country, Xi'an Jiaotong—Liverpool University (XJTLU) is always looking for new ways to create the best educational practices in China and Britain. In order to integrate global educational resources, XJTLU relies heavily on information technology. XJTLU needed a complete data system to keep up with the needs of online users, improve performance speed, and protect data. NetApp All Flash FAS and NetApp SnapMirror were the perfect solution. With NetApp products, XJTLU increased management efficiency by 80%, and boosted boost its storage performance by 10x. Now, the XJTLU user experience is better than ever.

Increased management efficiency by

80%

Boosted storage performance by

10×

or more

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"NetApp's all-flash storage not only helps us ensure a high I/O throughput and a low latency while achieving complete data protection, but it also lets us monitor and manage IT resources in real time."

Xudong Feng
Director, Management Information Technology and System Office, Xi'an Jiaotong—Liverpool University

With the official approval of the Ministry of Education in China, Xi'an Jiaotong: Liverpool University was founded jointly by Xi'an Jiaotong University and the University of Liverpool of Britain in Suzhou in 2004. It is a new international university with an independent legal status and distinctive characteristics.

XJTLU is the first university jointly set up by China and a foreign country and offers science, engineering, and management courses.

With global trends and demands in mind, XJTLU integrates global educational resources to build an environment, combining education, scientific research, social services, management systems, and campus culture. Thus XJTLU leverages the best educational practices from China and Britain.

CHALLENGES

The rapid development of modern information technology constantly influences the evolution of the education industry. The university community has widely accepted the need to build a digital campus with modern computer and networking technologies to improve teaching, scientific research, and administration. Information technology has penetrated into every aspect of the university. So it was increasingly hard for the legacy IT infrastructure to meet the requirements of integrated applications. Challenges needed to be addressed, such as degraded performance, reduced speed at peak hours, lack of data protection in the event of a disaster, and global issues with management development and testing. With the significant growth of online users and information on campus, the university needed a complete data protection system, as well as a unified information management framework.

All departments and users needed integrated, user-centric information services to make sure of data reliability on campus.

Lacking a comprehensive view of IT resources on campus, XJTLU was not able to control the actual usage of its IT resources or analyze the operational status and trends of its IT systems.

Therefore, XJTLU required an intelligent, integrated data storage management system for

BUSINESS BENEFITS

- A best-in-class user experience with SSD all-flash configurations
- Multiple built-in space efficiency technologies
- Rapid cloning capabilities for easy analysis and development based on primary data
- Native Hadoop interface for connection to the Hadoop big data platform
- OpenStack interface to connect with cloud management platforms
- OnCommand Insight to visualize IT resources across campus

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complete control of the campus data network.

SOLUTIONS

At XJTLU, smooth daily operations across campus depend on the reliability of the campus administrative systems. After investigating and analyzing the demands at XJTLU, NetApp proposed a data protection solution with SAN and NAS support using a NetApp® AFF8040. This solution would help XJTLU resolve storage challenges for structured and unstructured data, while meeting the requirements for rapid data access of the application systems and data protection in the event of a disaster. And with rapid cloning technology, the university can easily conduct development and analysis based on primary data. The university's core data management has also improved at all levels, providing a powerful safeguard for the security and business continuity of the entire campus IT system.

Furthermore, with NetApp SnapMirror® as an off-site data protection mechanism in the northern and southern campuses, the asynchronous data loss window was reduced to less than 10 minutes, while the system downtime window decreased to less than 60 minutes. Thus data security has been improved from 99.999% to 99.9999%. This change addresses challenges at peak hours during course registration at XJTLU, when the system sometimes crashed due to high volumes of traffic within a short period.

Thus, the university gained a high-performance, reliable storage network for its information system. At the same time, the use of Hadoop and OpenStack interfaces also gives access to Hadoop's big data and cloud management platform, which provides availability and reliability for later upgrades and expansions of the information system. It also supplies virtualization and data protection in the event of a disaster.

It is worth noting that the OnCommand® management software uses open APIs and a software development kit. With key storage management features, OnCommand allows the storage array to connect with most major cloud management systems and share data storage within the IT infrastructure.

Furthermore, Insight, a new tool included with OnCommand, can conduct service analysis on storage and other elements of the infrastructure, allowing the university to manage storage performance for various applications and monitor IT resources in real time. This capability addresses the need to visualize IT resources within the campus while making sure of continuous operation of the university's entire IT system.

> "The new IT storage system built by NetApp offers us powerful data protection capabilities while significantly improving the reliability of our existing IT system, laying a solid storage foundation for our future IT needs."
>
> Xudong Feng Director
> Management Information Technology and System Office,
> Xi'an Jiaotong—Liverpool University

BUSINESS BENEFITS

Simplifying data management while boosting storage performance

With the powerful NetApp all-flash AFF8040, XJTLU is now able to handle workloads more quickly

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while boosting storage performance by 10x or more. Issues with delays at peak hours have been effectively resolved, while storage performance and overall IT efficiency have been improved. Now the IT system can respond more quickly, with a latency of less than 0.5ms. In addition, NetApp's unified storage supports both SAN and NAS for applications on campus. This major consolidation of data simplifies management while increasing management efficiency by 80%. The FAS series, along with its built-in data management features, dramatically boosts data access performance while reducing the system's footprint by over 50%. Postlaunch test results show that the single AFF8040 unit can provide nearly 250,000 IOPS with a latency of less than 1ms. This not only makes sure of the overall efficiency of the university's administrative system, but also validates the ease of use, security, and flexible scalability of NetApp's all-flash storage.

Making sure of data security and making campus data management easier

The new solution encompasses several technologies such as NetApp SnapVault®, FlexClone®, and Snapshot®, which can be implemented through an IP network easily and cost-effectively. It enables disaster tolerance and backup for XJTLU while making sure of real-time data protection and data security.

NetApp OnCommand Insight management software enables global fault analysis end to end across various platforms. It provides a consistent view of the data center infrastructure to help the university monitor and manage its infrastructure, keeping it running effectively at optimal performance levels across campus.

CONCLUSION

The administrative system at XJTLU has been successfully migrated to the AFF8040. The university plans to deepen cooperation with NetApp in the future and deploy a MetroCluster™ active-active solution to improve the RTO and RPO of data while achieving full data protection across campus.

During implementation of the project, XJTLU appreciated NetApp products and solutions because of their fast deployment, ease of use, and reliability. This is another example of NetApp's extensive reach in China's education industry.

SOLUTION COMPONENTS

NETAPP PRODUCTS

- NetApp AFF8040 with 480 x 400GB SSDs
- SnapMirror for asynchronous data replication across sites
- Exchange/SQL/VMware applications
- SnapManager® for backup
- OnCommand Insight to monitor IT resources across the campus

LEARN MORE

netapp.com/us/products/storage-systems/all-flash-fas

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Leading organizations worldwide count on NetApp for software, systems and services to manage and store their data. Customers value our teamwork, expertise and passion for helping them succeed now and into the future. To learn more, visit **www.netapp.com**.