HP StorageWorks NAS solution keeps airport terminal construction project flying on course

BAA

"HP StorageWorks NAS E7000 and the Microsoft Windows platform power our solution, which supports the Heathrow Terminal 5 project by helping us keep construction activities on time and within specified budgets."

– IT Systems Service Manager Simon Gale, BAA

In November 2001, the United Kingdom government approved construction of Heathrow's Terminal 5. With the addition of Terminal 5, Heathrow, which is owned by BAA (formerly known as the British Airport Authority), will maintain its position as Europe's leading international hub airport, providing a state-of-the-art facility to meet the future demands of air travel.

Terminal 5 is an extremely high profile project. Large numbers of highly skilled professional consultants – ranging from architects, project managers, and civil and electrical engineers – are working together to ensure its successful construction and completion. These are IT power users who employ 30 to 40 multi-layered drawings daily, maintaining, collaborating, and continually verifying project details.

The consultants' routine daily activities are intensive and very demanding on BAA's IT infrastructure. With approximately 3,000 individual users requiring access to the Terminal 5 IT infrastructure – and all these users working on tight timelines and critical project paths – systems downtime could result in disruptions, unacceptable delays, cost overruns. That could create an unwanted decline in the public relations surrounding the new terminal.

BAA had successfully used HP ProLiant servers with direct-attached storage solution for years. Although management and IT staff found these systems to be reliant and robust, they lacked the capacity to meet the anticipated data storage requirements of the Terminal 5 project. A solution with redundancy, failover, and recovery tools was an absolute necessity. In addition, any supporting systems needed to be highly reliable and available.

Having a successful business history with HP and Microsoft, as well as a talented IT team with the acquired skill set in HP technology and Microsoft Windows

"HP delivers a solution validated under the most demanding requirements."

applications, BAA investigated storage options from these organizations. It also considered a system from Network Appliance, which had a proprietary operating system with its own file system. However, since this system would have required an additional platform, with technology virtually unknown to BAA's IT personnel, it was a more costly option. BAA was looking for cost savings and lower total cost of ownership (TCO) as well. "We wanted to keep life simple," says IT Systems Service Manager Simon Gale, BAA. "To minimize complexity, we decided to standardize on our existing operating system and servers. That way we could leverage our existing technology as well as the skills of our highly technical, talented IT team."

BAA selected a network-attached storage (NAS) solution based on the HP StorageWorks NAS E7000 system. Providing optimized, function-focused file and data servers based on Microsoft Windows technology, the NAS E7000 is designed for high reliability, availability, and ease of management. "The selection of HP – with its history in cluster technology through acquisition of Digital, and its highly available data and information systems – delivers a solution validated under the most demanding requirements," explains Gale. "With Terminal 5 scheduled to open in 2008, we wanted a solution that would last the lifetime of the project; that's five years. We can rest assured we'll receive the ongoing support we need from both Microsoft and HP during that timeframe."

Defense against data loss

The primary feature of the StorageWorks NAS E7000 that BAA uses is snapshot functionality, which is easy to manage and easy to administer. Snapshot meets BAA's need for online data backup on an hourly basis, with a daily-end-of-day copy. Since deployment, however, BAA has not needed to recover data from snapshots because the solution has been completely reliable. "Snapshots do, however, provide BAA with a very nice insurance policy," remarks Gale.

In addition to supporting IT requirements for the Terminal 5 construction work, BAA's data storage solution also has to meet BAA's disaster-recovery requirements for its airports. A two-stretch cluster between two locations within the Heathrow Campus consists of a pair of NAS E7000 systems with 6 TB of storage capacity and a pair of ProLiant DL580 servers running an Oracle database. This provides no single point of failure, ensuring that critical disaster-recovery mechanisms will be in place to keep airport IT services up and running.

Reliable and available storage

With very tight service level agreements (SLAs) on the Terminal 5 construction project, BAA has to deliver system uptime at 99.5 percent, which means less than 40 hours of downtime per annum. However, BAA is striving for total reliability. The redundancy, failover, and recovery tools built into the NAS unit help BAA meet its goals for system reliability and availability. "Our HP StorageWorks NAS E7000 supports the Terminal 5 project by helping us keep construction activities on time and within specified budgets," explains Gale. "We have to keep our cement lorries rolling onto the site to enable the construction work to continue non-disruptively."

To enhance reliability further, BAA continues to use native Active Directory services as a standard, and is reducing IT maintenance costs by simplifying the management of users, workstations, servers, and policies. "BAA has had a good experience with the Microsoft Windows file system,"

says Gale. "It's been inherently reliable for us, and this is exactly the performance we are getting from the HP StorageWorks Windows powered NAS system."

Delivering scalability for future growth

Implementing a storage solution based on technology BAA staff was already trained in is providing immediate cost savings over other storage options. In addition, management efficiencies inherent to the NAS E7000 are allowing administrators to manage growing amounts of data easily as the Terminal 5 construction project continues, while reducing data storage costs.

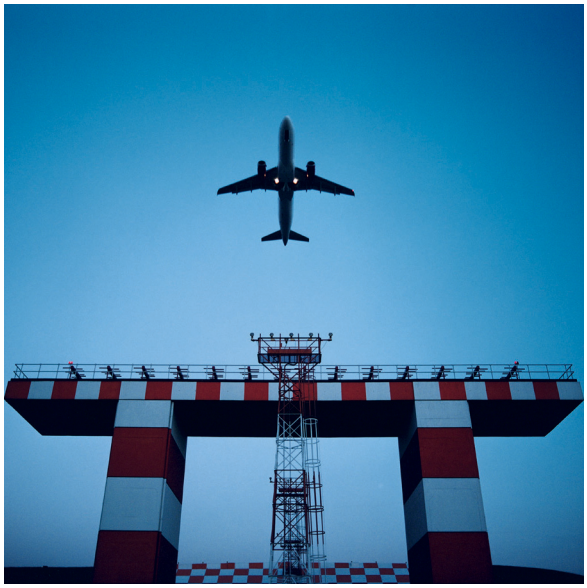
A centralized NAS system was the answer to provide BAA with the scalability to accommodate additional users, and the flexibility to grow and add disks dynamically on-line. BAA can easily increase storage capacity by simply adding more NAS E7000 systems to the network. "As this project evolves, we knew we would need systems in place to support construction activities that are highly scalable, because we anticipate the number of users and the amount of data growing a number of folds," says Gale.

The HP StorageWorks Windows-powered NAS system gives BAA an adaptive enterprise that strengthens the link between the IT department and BAA's business objectives for the Terminal 5 construction. It also positions the IT group to be able to support BAA's expected growth and the associated level of airline services in the future. BAA is currently rolling out the HP StorageWorks NAS E7000 solution at its other Heathrow terminals and plans to deploy it at an additional six U.K. airports. Ultimately, BAA anticipates that 12,000 persons will be using these systems across the seven U.K. airports that receive 78 percent of the air traffic in the United Kingdom.

Meanwhile, the HP StorageWorks NAS E7000 system is delivering around-the-clock availability with minimal management requirements. With the increased reliability of its HP network-attached storage solution, BAA is able to keep the Terminal 5 project moving forward on time and within budget.

Company profile

BAA is at the heart of the world's transport network. It is the largest single airport operator in the world – and a major commercial landlord, retailer, and developer. BAA owns 7 U.K. airports, including the world's busiest international airport (Heathrow), has management contracts or stakes in 10 airports outside the United Kingdom, and maintains retail management contracts at 2 U.S. airports.



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Challenge

- Provide a cost-effective alternative to the former DAS solution, using Microsoft Windows technology and interfaces with existing IT investments
- Deliver system uptime at 99.5 percent
- Meet airport disaster-recovery requirements
- Gain efficiencies and reduce the cost of storage management
- Support unexpected growth and storage needs for future airline services

Solution

Hardware

- 2 HP StorageWorks NAS E7000 systems as a stretch cluster in two data centers
- 4 HP ProLiant DL580 servers

Software

- Microsoft Windows operating system
- Microsoft Active Directory
- Oracle database

Results

- The HP NAS solution lowers total cost of ownership by providing a cost-effective alternative to BAA's former DAS solution, one of the lowest costs per gigabyte solutions available, and familiar Windows technology and interfaces to leverage existing IT investments.
- The redundancy, failover, and recovery tools built into the StorageWorks NAS unit meet BAA's goals for system reliability and availability, enabling it to deliver system uptime at 99.5 percent.
- A two-stretch cluster of HP StorageWorks NAS E7000 systems and ProLiant servers provides no single point of failure, which meets airport disaster-recovery requirements.
- The HP NAS system fosters management efficiencies, allowing administrators to easily manage growing amounts of data and reduce costs.
- While providing highly reliable, scalable, available storage, the solution also positions the IT group to be able to support BAA's expected growth and associated level of airline services in the future.

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