



NASA Langley
Research Center

EqualLogic SAN Enables Information Exploration at NASA

Company:

Aerospace Technology

Industry:

Government

Platform:

Red Hat® Linux,
Microsoft® Windows® 2003

Applications:

Xerox® DocuShare®,
Oracle® database,
Adobe® PDFMaker,
document analysis tools

Challenges:

Building a knowledge base for collaboration and information sharing with numerous document formats and management systems while delivering a high functionality, redundant, flexible environment within budget and without extensive ramp up

Solution:

Fully redundant, high functionality PS Series SAN consolidates information for easy access, utilizes familiar IP-based network, and requires minimum administrator attention

Supporting 4,000 civil servant and contractor employees at NASA's Langley Research Center, Chief Technology Officer Jeff Seaton has a big job. While the researchers focus on exploring the frontiers of space, aeronautics, and atmospheric sciences, Seaton concentrates on building the business processes that smooth information management and sharing. Investigating new technologies led Seaton to implement an EqualLogic PS Series iSCSI SAN which allows for centralized information and helps researchers find information that was previously inaccessible.

The Langley facility, located in Hampton, VA, is one of eleven NASA field centers around the country. In the past, numerous document management systems were used to store presentations, reports, technical data, and multimedia files. But since the document management systems didn't integrate, it was impossible to build an effective knowledge base. Previous research on a topic might exist, but researchers were unaware of it. In addition, as projects and people came and went, significant amounts of information were lost – any research that was not documented in a formal paper might be lost when researchers moved on and hard drives were erased. Seaton realized that Langley needed to fundamentally change how people stored information, shared it, and collaborated. “We decided to build a storage environment with a knowledge management approach, to capture information for the long term,” says Seaton. “We wanted to manage information so it would be useful beyond the immediate project use – and in our IT environment with direct-attached storage, that just wasn't possible.”

Designing the System

Seaton and his team met with users and outlined the requirements of a new environment. They wanted to centralize information storage while planning for capacity growth and better performance. Flexibility was important, since it was impossible to predict the needs of potential projects or customers. In addition, they wanted a robust system with built-in redundancy to protect against failures. Controlling costs, including avoiding long learning curves, was important for getting the system up and running quickly.

With these parameters in mind, Seaton looked at both Fibre Channel and iSCSI SAN solutions. “The iSCSI landscape had really matured,” he comments. “We felt comfortable that iSCSI would meet our needs for performance and stability across our enterprise.” After looking at several Fibre Channel and iSCSI products, Seaton selected the EqualLogic PS Series iSCSI SAN for several reasons, including level of sophistication. Staff was

already very familiar with how to configure and optimize IP-based networks, while Fibre Channel would mean an extensive learning curve. The Langley technical staff was impressed with the EqualLogic array's capabilities and ease of implementation. Features that were especially attractive included snapshots, ease of expandability, and cost; the ability to add a second array, plug it in, and have the system recognize and adapt to it was a huge benefit. "Things are always changing at NASA, as we partner with other NASA centers, universities, and other organizations. If ten major projects suddenly need to use the system, now they can without breaking the bank. Now we have a simple yet scalable and economical way to meet increasing demand."

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*- NASA's Langley Research Center,
Chief Technology Officer,
Jeff Seaton*

NASA Langley's new infrastructure will include six Dell™ PowerEdge™ servers running the Red Hat Linux operating system; these are focused on document management using a customized version of the Xerox DocuShare system, with additional tools for document searching and analysis, and an Oracle database. In addition, two Windows 2003 servers focus on converting information to Adobe PDF format for consistency. The results have been tremendous and Seaton's team is excited about the possibilities. Recalls Seaton, "In the past, if a project had sudden needs, we'd be scrambling around trying to find a system that could support the requested software functionality and storage capacity. Now, it's automatically taken care of." They planned that the SAN could be implemented quickly and then require very little attention – and that is exactly what happened.

"It's been superb," says Seaton. "We got it set up and configured in a few hours, and since then it just works. The array provides so much of the desired functionality that it has faded into the background, while we focus on our knowledge management objectives."

The Big Picture – Exploring the Knowledge Base

The PS Series SAN has delivered superior benefits. Seaton is pleased that researchers can now focus on their research instead of the underlying technology, and that sharing information is so much easier. "Most exciting of all," he says, "researchers will now be able to find information they didn't even know existed, while in the past they'd have been out of luck. That's really the key – we are facilitating scientific exploration by making previously unknown information accessible to those that need it. That's a tremendous accomplishment."

Simplifying Networked Storage

EqualLogic PS Series solutions deliver the benefits of storage consolidation in an intelligent, enterprise-class storage system that is easy to install, manage and grow. Visit our web site at www.equallogic.com and let us show you what *simplifying networked storage* can mean for your business.

Compliments of:  **EQUALLOGIC™**
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Storage Solutions

3835R East Thousand Oaks BLVD. #315
Westlake Village, CA 91365
Tel 877.230.2837 / Fax 805.435.2500 / www.ess-direct.com