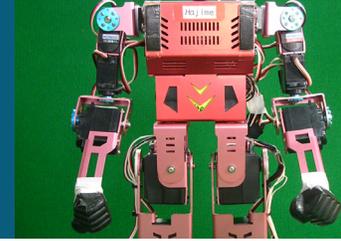


Save



Success Story

CARNEGIE MELLON UNIVERSITY ROBOTICS INSTITUTE

Fast-Growing Robotics Engineering Center Armed with Versatile, Expandable Disk- and Tape-Based Storage Solutions

Challenges

- Rapid data growth drove need for scalable storage capacity
- Inability to react quickly to overnight surges in storage requirements
- Existing outdated tape library with DLT tape technology required upgrade
- Decentralized backups were inconsistent and posed security concerns

The Solution

NEO 4100, REO 4000 and REO 9000

Benefits

- Expandable tape library with faster LTO technology accelerates backup and recovery
- Centralized management of disk and tape backup process reduces burden on small IT staff while increasing overall storage management efficiency
- Disk-based backup appliance offers "on-the-fly" capacity expansion
- Ability to recycle storage quickly reduces project ramp-up from two days to 30 minutes

Reseller

HorizonTek, Inc.
www.horizontek.com

The Robotics Institute at Carnegie Mellon University conducts basic and applied research in robotics technologies to boost the productivity and competitiveness of businesses throughout the United States. At the Institute and the National Robotics Engineering Center (NREC), ground-breaking papers and state-of-the-art prototypes are built for various branches of the armed forces, NASA, the National Science Foundation and participating companies across many vertical markets and industries. The NREC takes a broad view of technology, building everything from robotic arms and pipe robots to unmanned vehicles for combat and homeland security, as well as robotic museum tour guides, ship-cleaning robots, robot forklifts and more.

"NEO expedited our tape backups while REO gave us 'on-the-fly' capacity expansion and helped take our D2D2T backup and recovery to the next level."

Jonathan Woytek
Computing Manager
National Robotics Engineering Center
Carnegie Mellon University

Over two years, NREC's faculty and staff at its Pittsburgh facility doubled while the magnitude of its projects-and amount of critical data generated-quadrupled. According to Jonathan Woytek, NREC computing manager, the demand to scale storage capacity grew exponentially, giving the IT team an opportunity to upgrade its storage and server infrastructure. "We discovered that our decentralized storage and inconsistent backup approach created security concerns and

was completely insufficient for our expanding project requirements," he says.

The Challenge

NREC's two-person IT department oversees an average of 15 ongoing projects involving up to 120 staffers, including special university faculty and graduate and post-doctorate computer science students. Projects range from six-to-eight months to eight-to-10 years while generating a few hundred gigabytes to 12 TB of data. "We are constantly thrust into unknown territory in supporting our unique robotics research and engineering," notes Woytek. "In collecting design, CAD files, spreadsheets, testing logs and sensor data, storage for one project alone can jump easily from 100 gigabytes to three terabytes overnight."

As a result, the ability to scale storage capacity quickly and easily topped the list of selection criteria in seeking data backup options nearly two years ago. NREC first decided to upgrade an older DLT tape library from Overland Storage that supported a handful of Microsoft Windows NT as well as Linux- and Unix-based servers. The immediate goal was to obtain more capacity and scalability while migrating to newer, faster LTO tape technology.

In addition, NREC wanted to incorporate disk-based backup storage. The team felt iSCSI-based solutions would alleviate some of their management headaches.

The Solution

In evaluating tape- and disk-based solutions, NREC rated products based on ease of use, centralized management, form factor, scalability, availability, interoperability and price. The team looked at offerings from Overland Storage, Sun Microsystems and a Compaq tape library from HP since the uni-

Continued...



versity had relationships and corresponding discounts with the latter organizations.

The Overland NEO 4100 offered the most compelling value proposition. Of great interest to the NREC technologists was its ability to add 52- or 60-slot modules for instant, affordable library expansion. "Increasing capacity is huge, so it was a major drawback that you could only add more drives--not slots--to the mid-range Sun library," explains Woytek. "Only Overland was positioned to meet our explosive growth, enabling us to increase capacity by up to four times while protecting our original library investment."

An extended warranty with field-replaceable components and a small form factor clinched the deal. "We were impressed that Overland packed a lot of functionality into a compact tape library that fit our limited space," Woytek adds. "They put a lot of effort into supporting their products." In upgrading its Overland tape library to the NEO platform, NREC also migrated to faster, higher capacity LTO tape-drive technology. Aside from the boost in speed, the team projected an overall reduction in media costs from switching DLT tapes to more advanced LTO tape technology.

The installation in late 2003 of the Overland tape library with NetVault backup and recovery software from BakBone Software went smoothly. After centralizing its tape backup and recovery operations, the team turned to expanding its storage infrastructure. NREC reviewed both iSCSI-based and Fibre Channel SAN solutions from Overland, Dell/EMC and MPAK Technologies. Again, the driving factor was rapid expansion, and in this case, the ability to quickly and easily allocate-and reallocate-storage to meet fluctuating project demands.

Overland's REO 4000 disk-based backup and recovery appliance offered the opti-

mal mix of capacity, speed and versatility as well as iSCSI interfaces for streamlined, economical operation in NREC's Gigabit Ethernet LAN environment. "The opportunity to leverage our existing Overland NEO tape library with a complementary disk-based solution for comprehensive disk-to-disk-to-tape (D2D2T) backup and recovery was appealing," says Woytek "NEO expedited our tape backups while REO gave us 'on-the-fly' capacity expansion and helped take our D2D2T backup and recovery to the next level."

Since October 2004, NREC has installed four REO 4000s, each supporting up to 2 TB, along with one high-end REO 9000 with support for up to 9.6 TB. The REOs have been installed in a clustered configuration to ensure high availability of project data stored on a variety of Linux-based servers.

The Benefits

NREC takes advantage of NetVault's automated policy-based backup and recovery management and automation to reduce its backup window while accelerating restores substantially. The team also benefits from decreasing the time and effort to support new projects. "It used to take at least two days to get the computing and storage foundation in place," explains Woytek. "With REO, we can recycle disk storage rapidly and have a new environment ready in less than 30 minutes, which is a huge time and cost savings for our small IT staff."

Other benefits from the combined NEO/REO implementation include simplified, centralized storage management; expedited backup and recovery operations; extensive expandability as well as flexibility to conduct backups on disk first and then migrate them to tape for complete D2D2T data protection. NREC also plans to configure the REO as disk volumes (LUNs), virtual tape drives and/or virtual

tape libraries to meet its wide range of online and near-term storage requirements.

"As our robotics projects continue to grow in scope and complexity, they continue to generate an enormous amount of data," Woytek concludes. "With Overland's REO and NEO, we can carve out all the storage capacity we need and more, with complete confidence that vital information is protected and secure."

About Overland Storage

Now in its 25th year, Overland Storage is a market leader and innovative provider of simply protected storage solutions – smart data protection appliances and software modules designed to work together, affordably, to ensure that information is automatically safe, readily available and always there. Overland's award-winning data protection solutions include the ULTIMUS SERIES™ of protected primary storage appliances; the REO SERIES™ of disk-based backup and recovery appliances; and the NEO SERIES® of tape libraries. Overland sells its products through leading OEMs, commercial distributors, storage integrators and value-added resellers. For more information, visit Overland's web site at www.overlandstorage.com.



WORLDWIDE HEADQUARTERS

4820 Overland Avenue
San Diego, CA 92123 USA
TEL 1-800-729-8725
1-858-571-5555
FAX 1-858-571-3664

GERMANY OFFICE

Humboldtstr. 12
85609 Dornach Germany
TEL +49-89-94490-214
FAX +49-89-94490-414

UNITED KINGDOM (EMEA OFFICE)

Overland House, Ashville Way
Wokingham, Berkshire
RG41 2PL England
TEL +44 (0) 118-9898000
FAX +44 (0) 118-9891897

FRANCE OFFICE

126 Rue Gallieni
92643 Boulogne Cedex France
TEL +33 (0) 1 55 19 23 93
FAX +33 (0) 1 55 19 25 02

ASIA PACIFIC OFFICE

Level 44, Suntec Tower Three
8 Temasek Boulevard
Singapore 038988
TEL +65 6866 3848
FAX +65 6866 3838

www.overlandstorage.com