

# Save

## Success Story

### SKYWEST AIRLINES

#### Largest Regional Carrier Soars to New Heights with Flexible, Reliable Disk- and Tape-Based Storage Solutions

##### Challenges

- Backups and restores took too long and were unreliable.
- An inordinate amount of administrative effort was required to complete backups and restores.
- Needed an expandable solution that could accommodate rapid growth.

##### The Solution

REO 4000, REO 9000 and two NEO 2000s

##### Benefits

- Additional tape library capacity supported migration to weekly full backups.
- D2D2T backups reduced time and administration by more than 80 percent.
- Both the NEO and REO work seamlessly in any environment.
- REO diversity provided support for VTL, standalone virtual tape drives and disk volumes.

##### Reseller

IoDynamix  
www.iodynamix.com

At SkyWest Airlines, a commitment to quality service with a competitive cost structure fuels continuing business growth in a highly competitive and demanding industry. A wholly owned subsidiary of SkyWest Inc., the airline focuses on proven best practices and the latest IT solutions to streamline and automate operations. With its recent acquisition of Atlantic Southeast Airlines (ASA), the St. George, Utah-based company has become the largest regional airline carrier network in the United States, serving more than 250 cities in North America, Mexico and the Caribbean.

**"With our scalable, reliable and flexible NEO/REO platform, we have set the standard for backup and recovery excellence. We have complete confidence that our most vital data is safe and sound."**

Josh Ursenbach  
Manager, Systems Engineering  
SkyWest Inc.

With more than 14,000 employees and almost 400 aircraft, the airline provides some 2,400 daily departures for 25 million passengers annually. According to Josh Ursenbach, manager of systems engineering, SkyWest's ability to access, manage and protect critical data is key to keeping back-office, maintenance and flight operations running smoothly and efficiently. "We continually invest in and utilize leading-edge technologies to increase automation and boost overall productivity," he says.

To that end, the four-person systems engineering team oversees 100 Microsoft Windows 2000/2003 servers and 1,400 PCs while ensuring users with around-the-clock access to a host of mission-critical applications and databases. The team also safeguards nearly 2 TBs of data stored on an EMC Clariion CX400 Storage Area Network (SAN).

##### The Challenge

As the volume of data on the airline's file servers increased, performance diminished on its legacy AIT tape loader. After running 12-to-18 hours daily for four years, reliability waned considerably. Additionally, the time and impact on other systems became problematic. At the time, network bandwidth limitations hindered the process, which took about three days for a full monthly backup of 45 servers. Often, critical data changed while backups were in process, which meant most current files weren't protected properly. Increasing failure rates on incremental backups required an inordinate amount of administrative effort.

"Restarting failed backups and locating older versions of backed up files took one person up to five hours a day," recalls Ursenbach. "This was completely unacceptable, so we set out to locate a more expandable solution that could scale to meet our evolving needs."

By the end of 2004, SkyWest evaluated best-of-class tape libraries and high-capacity LTO-2 tape drives. The team wanted to leverage its existing Fibre Channel SAN fabric and sought a modular tape library that would

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enable adding capacity as needed. "I wanted a 'best of all worlds' mid-range tape library, but many of the options from ADIC and StorageTek were either too big—and therefore too expensive—or too small to scale sufficiently," says Ursenbach.

## The Solution

In seeking an affordable system that could grow to meet SkyWest's increasing data backup and recovery requirements, Ursenbach consulted Scott Cooper, National Sales Manager at I/O Dynamics, who suggested the NEO tape library family from Overland Storage. The library's modular design and expansion-on-demand capabilities seemed ideal for SkyWest's needs while providing flexibility to increase capacity as needed.

Each NEO 2000 module in the expandable chassis supports up to 30 LTO cartridge slots and up to two tape drives, providing up to 24 TBs of storage. "We liked how easily NEO interfaced with Fibre Channel, SCSI and iSCSI environments for complete configuration flexibility," said Ursenbach.

In early 2005, SkyWest deployed its first NEO 2000 and took advantage of the straightforward operation and additional capacity to migrate toward weekly full backups. The switch to LTO tape technology proved fortuitous as well, allowing SkyWest to reduce its weekly tape load from 12 to three tapes. Automating the process also enabled moving the library offsite to strengthen the airline's disaster recovery planning.

Next, the team decided to leverage disk-to-disk backup and virtual tape library (VTL) capabilities, prompting a review of offerings from Overland, StorageTek and Exabyte. Ursenbach was impressed with the diversity of Overland's

REO 9000, a disk-based backup and recovery appliance that operated as a virtual tape library and standalone virtual tape drives. The simplicity of creating disk volumes (LUNs) for accommodating interim storage requirements—only available on the REO—also was a definite plus.

As a result, Ursenbach says Overland's REO was a "hands-down winner," so in late 2005, SkyWest purchased a REO 9000 with up to 44 TB of raw capacity.

## The Benefits

"Within 45 minutes of installing the REO 9000, we had virtual tapes rolling," explains Ursenbach. "We took advantage of REO's pre-built RAID arrays to get up-to-speed quickly and everything worked perfectly." With the REO, 12 virtual tape drives were available within minutes for supporting simultaneous backups, which reduced time and effort substantially. Conducting full backups has been improved by more than 80 percent while incremental backups can be completed in half the time.

While the REO is connected to fiber, Ursenbach likes the option of switching to an iSCSI interface for attaching big database servers to the back of the device without impacting FC SAN performance. "Having options in our dynamic environment is critical," Ursenbach says. "Both NEO and REO give us lots of interface choices and work seamlessly with any platform."

The REO also is well positioned to help SkyWest keep up with occasional spikes in storage requirements from its quality assurance and development teams. The technology team can carve out disk volumes to meet on-the-fly demands for expandable storage or additional data protection during server and database migrations or upgrades.

SkyWest has achieved impressive restore times since implementing the new solution. The IT team recently restored a 68 gigabyte database from the REO in less than three hours, while recovering individual files now is nearly instantaneous.

The NEO-REO D2D2T combination has reduced administrative time for backup and recovery from three-to-five hours a day to 45 minutes. As backups no longer require excessive administration, SkyWest's systems engineering team is devoting more time to implementing new strategic initiatives, including adding a second NEO 2000 and a smaller REO 4000 to ASA's data center in Atlanta to provide a parallel quality of backup and recovery.

"With our scalable, reliable and flexible NEO/REO platform, we have set the standard for backup and recovery excellence," concludes Ursenbach. "We have complete confidence that our most vital data is safe and sound."

## 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](http://www.overlandstorage.com).



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### 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](http://www.overlandstorage.com)