



Microsoft Game Studios Scales Up Tape Storage

WINNING THE STORAGE GAME

Microsoft Game Studios (MGS) may be in the entertainment business, but when it comes to taking care of storage, it doesn't play around.

"Our storage growth has been very dynamic," said Jason Reiner, IT Operations Manager for MGS in Redmond, Wash. "Three years ago we were at 17TB, now we have 40TB and we are projecting 50-60 TB within the year. With our ever increasing workload, I needed a scalable, reliable backup solution that was also easy to manage"

MGS is a wholly owned Microsoft subsidiary containing a number of independent game development studios, some which were acquired by Microsoft. MGS provides centralized support out of its headquarters in Redmond, Washington, but some of the acquired studios continue to operate in other cities or countries, developing their signature games.

Turn 10 studio, which created the popular Forza Motorsport series on Xbox, is one of the on-site studios based at Microsoft headquarters. All told, MGS has between 10 and 20 active studios and 2,000 users in the U.S. China, U.K. and Japan. The MGS Operations team provides preproduction support, and helps the developers stay connected through the use of shared data.

Given its rapidly expanding storage needs, a few months ago MGS upgraded its existing tape backup system to the Quantum Scalar i500 tape library. "I think the most attractive aspects of the Quantum Scalar i500 were its remote administration capabilities, superior RAS (reliability, accessibility and serviceability) features and easy expansion options," said Reiner.

SCALING UP

The i500 isn't the first Scalar tape system MGS has used. Five years ago, it had a Scalar 100 in Redmond. The company had deployed three Scalar 100s before upgrading to the Scalar i500. "The Scalar 100 worked very well," said Reiner. "It was easy to use, the remote management was good and the size and price point matched our infrastructure at the time. But due to extensive data growth we needed to move to a larger unit."

The Scalar 100s were used to perform full weekly and daily incremental backups. But with 50 to 60 games in development at any given time and the size of the games continually becoming larger, MGS required a more robust solution. "A build for a game runs 5 to 30GB, and we have up to seven builds per day," said Reiner. "The weekly backup window had grown to 72 hours."

Since he liked the Scalar 100, he decided to move to a larger unit within the Quantum product portfolio. The Scalar i500 can hold three times as many drives and more than five times as many tape cartridges than his previous system.

One concern at first was that the Scalar products were originally manufactured by Advanced Digital Information Company (ADIC), a company acquired by Quantum in 2006. Reiner reports, however, that from a customer standpoint he hasn't noticed any difference.

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SOLUTION OVERVIEW

- Quantum Scalar i500 tape library
- LTO-3 tape drives (x8)
- Symantec Backup Exec 10d for Windows Servers

KEY BENEFITS

- Backup window cut from 72 hours to 20 hours
- Tape maintenance time cut from 5 hours per week to 30 minutes
- Faster restores
- Simpler management interface
- Increased storage capacity
- Modular storage that grows with need
- Failure free operation

"Nothing has changed," he said. "We are dealing with the same key people, and Quantum is supporting us very well."

The Quantum Scalar i500 tape library starts with a 14U base system containing the tape drives, robotics and slots for 36 cartridges. Then customers can add 9U expansion modules above or below the base system. Each expansion unit has another 46 slots and, when fully built out, the rack has room for 404 cartridges. MGS started with one base unit with two tape drives, and one expansion unit. It has since added another expansion unit and seven drives.

Quantum also offers customers a Capacity on Demand option, where they can install a unit with more capacity than they need initially. As demand rises, they can use a software key to unlock the additional capacity.

"Capacity on Demand is a huge advantage," said Reiner. "Before, when we were at the break point, it took a significant investment to make any improvements, and it was hard to justify putting all those dollars into backup. But smaller increments that are directly related to growth are easier to sell to management, and I get more value out of my dollar."

FASTER BACKUP AND RESTORE

Although it was the demand for more capacity that led to purchasing the Quantum Scalar i500, Reiner has discovered several other advantages. Since it uses Fibre Channel (FC) rather than SCSI connections, the backup window has dropped from 72 hours down to 20. It requires less human interaction than running three Scalar 100s. For example, staff spends one hour per week changing out the tapes rather than half the day it used to take. The interface is so easy that backup tasks can be managed by Tier 1 staff, rather than the Tier 2 or Tier 3 staff previously required.

"Restores are faster from differential backups compared to the incremental backups," said Reiner. "It takes a few minutes now versus the hour or more it took to line up the proper incrementals – a task that can be accomplished by Tier 1 support." Once the file is located, the time it takes to restore depends on the file size. But between faster search times and the FC connection, Reiner said he was able to restore a failed 1TB server within four hours.

MEETING RELIABILITY NEEDS

Of course, the speed difference of the new tape library would be worthless without corresponding RAS functionality. "Our Quantum Scalar i500 must be available 24 hours a day to accommodate active work in every time zone," said Reiner.

The Quantum tape libraries include iLayer management software. iLayer uses remote monitoring and diagnostic logic to improve backup reliability and inform administrators of exceptions and fault conditions either within or outside the library which affect the backup. The libraries can also come with fully redundant power supplies and cabling to eliminate single points of failure. Components are hot swappable when there is a failure. There is also a flash memory card that stores configuration settings and event logs, so this data can be quickly restored if the controller needs replacement. All of these hardware and software features combined, reduce or completely eliminate downtime.

"Our workload is constantly growing and our volume is incredible," said Reiner. "As a result, downtime for upgrades and repairs is not an option and any activity needs to be simple to manage."

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ABOUT MICROSOFT GAME STUDIOS

Microsoft Game Studios is a leading worldwide publisher and developer of games for the PC, Xbox video game system and online platforms. Comprising a network of top developers, Microsoft Game Studios is committed to creating innovative and diverse game portfolios for PC (<http://www.microsoft.com/games/>), including such franchises as "Age of Empires," "Flight Simulator" and "Zoo Tycoon"; Xbox (<http://www.xbox.com/>), including such franchises as "Halo", "Project Gotham Racing" and "NFL Fever"; and Zone.com (<http://zone.msn.com/>), the official games channel for the MSN network and home to such hits as "Bejeweled" and "Outsmart."

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