

CS Case Study



Nielsen Mobile: Reliable Storage for Invaluable Data

In the extremely competitive wireless communications industry, it is the consumer who ultimately decides which carriers win and lose. For companies vying for market share, data that measures the experience of the consumer is invaluable. Nielsen Mobile, a service of the Nielsen Company, has capitalized on this opportunity to become the world's largest provider of syndicated consumer research to the telecom and mobile media markets. By collecting, processing, and reporting millions of measurements each month on the quality and usability of mobile technology products, Nielsen Mobile delivers critical data that helps large

telecom providers and mobile media companies understand what drives consumer purchasing decisions.

Massive Data Growth and Long Term Requirements

As a direct result of accumulating this vast amount of data, Nielsen Mobile's storage needs are immense. To support one major product line, a growing fleet of more than 25 highly specialized vans collect data on mobile signal strength and call quality for carrier customers. The data is captured as binary files which can be as large as 500 megabytes when uncompressed. Each van can generate upwards of 8 gigabytes of

raw data per day, and data is collected four to five days a week. Every year the vans can generate as much as 50 terabytes of raw data, and Nielsen Mobile's total storage environment already exceeds 200 terabytes.

Nielsen Mobile typically processes and analyzes the data within a few days of collection. Once analysis is complete, the raw data becomes a permanent record that needs to be maintained online for years, but is accessed less frequently and therefore does not require the performance offered by expensive primary and midrange storage solutions.





Evaluating Alternatives

The IT department recognized the need for an easy to manage, reliable archive storage solution. This measurement data is a point-in-time record that is expensive to acquire and impossible to reproduce, so it is absolutely critical that the data be stored on the most reliable media available. The current solution of manually archiving data from network-attached storage (NAS) to DVDs had proven to be reliable, but was quickly becoming unmanageable.

When investigating alternatives, Nielsen Mobile considered traditional hard drive-based solutions that could easily provide online accessibility, but there were concerns about cost, rack space, and the massive amounts of electricity for power and cooling that would be required. The team also evaluated technology that powers down inactive disk drives to mitigate the power and cooling concerns, but realized that complex file management would be an obstacle for less-skilled staff. Tape-based solutions were also considered, but providing online access would be a challenge not to mention the concerns about data recoverability and

the management overhead associated with a batch-oriented process.

Keeping Total Costs Down and Reducing Energy Requirements

Nielsen Mobile ultimately selected the Active Archive Appliance (A3) from PowerFile for its unbeatable combination of cost, manageability, reliability, energy efficiency, and scalability. The up-front cost of the PowerFile solution was a fraction of existing NAS offerings, but it was just as easy to manage and allowed end users direct access to archive volumes without having to engage IT staff – a big issue with some of the other tape- and disk-based alternatives that were being considered. The system's rock-solid durability provided peace of mind that the data would be safe and recoverable.

Unlike leading disk-based solutions, which can easily consume 100 watts of power for every terabyte of storage, the A3 Enterprise Edition only requires 5 watts of power for every terabyte of storage due to the innovative application of low energy, industry standard optical media. By using a "hybrid" design that combines a dynamic disk-based cache

with a virtualized pool of Blu-ray media, the A3 provides the online accessibility of disk with industry-leading energy efficiency.

"Watts per gigabyte matters a lot to us, since half of our data center bill is power and cooling," pointed out IT Director John Wooley. "Our data center has also put a cap on total power they will provide us; which makes energy efficiency incredibly important if we are to continue growing the business. The PowerFile system helps us meet that challenge."

The ability to upgrade in 10 TB increments was also appealing. Nielsen Mobile has already added a 10 TB expansion library to the PowerFile A3 system to handle growing capacity requirements. With mobile consumers spending \$350B each year on connectivity, devices, and content, Nielsen Mobile is understandably optimistic about demand for its unique services.

"PowerFile's solution provides an excellent balance of ease-of-use and low power consumption," says John Wooley. "It can handle all our archive needs as we continue to grow."

“ PowerFile's solution provides an excellent balance of ease-of-use and low power consumption. It can handle all our archive needs as we continue to grow. ”

John Wooley | Nielsen Mobile