Hyundai MOBIS Relies on Qumulo Hybrid File Software to Develop the Future of the Connected Car

Autonomous driving is a core focus for Hyundai MOBIS that requires its team to analyze terabytes of real-world video data. This global top-tier automotive parts supplier was using a scale-up storage option that became too fragmented and expensive to efficiently handle the load. Qumulo's hybrid file software provided the performance, scalability, and simplicity they were missing, at a price that was too good to pass up.

A Fragmented View of the World

In the last century, the automobile has transitioned from a simple piece of machinery to one of the most technically sophisticated and connected platforms on the planet. From entertainment and navigation features, to driver-assistance and crash-avoidance technologies, the car of today is a richly complex piece of technology that requires an increasing level of connectivity.

Shaping the future of the connected car, especially around autonomous driving, is a huge opportunity, and it's drawing the interest of companies from Google to Uber and Tesla to GM.

Every company taking an interest in these technologies is producing vast amounts of data in the process. Every sensor and every system on connected cars generates a steady stream of information. Research and development teams are analyzing massive file data sets, and dealing with the volume, velocity, and variety of that data creates an inconvenient challenge for researchers.

As the world's sixth largest supplier of parts and components for automobile manufacturers like Hyundai, Chrysler, General Motors, and Subaru, Hyundai MOBIS is in the thick of connected car development. Assisted and autonomous driving are a core focus of the company's current R&D efforts, both in the U.S. and in its Asian and European operations.

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IT Manager

Making vehicles intelligent enough to "see" and react like a human requires the development team to collect and pour through hundreds of terabytes of video. Researchers drive vehicles through a broad range of geographies, climates, and environments, while cameras record the journey. Back in the lab, teams carefully identify important elements of street-level world views, such as signs, signals, pedestrians, and hazards, and feed that data into the latest training scenarios.

The Hyundai MOBIS IT team is charged with the incredibly difficult task of storing the massive quantities of video collected and keeping the indefinitely accessible. Their data storage selection has to be able to stand up to the task in a way that's scalable, performant, and easy to manage.

USE CASE

- Development of Advanced Driver-Assistance Systems (ADAS)
- Storing and managing hundreds of terabytes of video content to use in training scenarios

REQUIREMENTS

- Single-volume architecture and linear scalability
- High performance and scalability
- Flash-first hybrid architecture that leveraged commodity hardware

BENEFITS

- Provides a real-time view into global data footprint through data analytics
- Scales capacity and performance with each node, without creating separate volumes or silos of storage
- Reduces costs with as-needed expandability and budget-friendly commodity hardware
- Eliminates management headaches through simple set-up and maintenance-free operation
- Ensures peace of mind through proactive Qumulo Care monitoring and support

"We can't store large quantities of video in small pockets of fragmented storage," said John Beck, IT Manager for Hyundai MOBIS. "Yet, that's what we had with our existing NetApp scale-up storage system, and adding more capacity threatened to only make the situation worse."

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Legacy scale-up NAS offerings, such as NetApp, have a significant Achilles' heel: size-limited volumes create capacity silos that require manual data management and migration. Adding additional capacity creates more silos and fragmentation, and capacity must be purchased en masse, instead of as-needed, which balloons up-front costs. This scenario drove Beck and his team to look for a new storage solution.

Beck recognized that something like scale-out storage was a better alternative for Hyundai MOBIS, delivering the single-volume architecture and linear scalability lacking in legacy scale-up solutions. The company's European operations team was using an alternative NAS solution, and colleagues recommended the infrastructure change to Beck.

Beck found a more innovative solution with Qumulo. Qumulo's hybrid file software offers real-time visibility, scale, and control of data, both on-prem and in the cloud. Qumulo software offered Beck's team the performance and scale they required, while its flash-first hybrid architecture leveraged affordable commodity hardware to keep costs low.

According to Beck, even at the massive scale his team was working with, deploying Qumulo's file system was incredibly simple. "With Qumulo, I just connected some cables and I was done," he said. "I deployed the NetApp storage barely six months earlier, and had a totally different experience. Qumulo is so easy to set up and maintain. Working with NetApp was the exact opposite."

Hyundai MOBIS' R&D team is currently storing tremendous amounts of data with Qumulo's file system, with more being added all the time. The fact that the cluster can ingest that steady stream of machine-generated data without constant management is a substantial benefit, freeing Beck's team to concentrate on other things.

"The Qumulo cluster is super simple for us to maintain – in fact, other than occasional software updates, we really don't have to spend any time on it at all," he noted.

The Qumulo customer success team helps by proactively monitoring the system and alerting Beck of any potential problems. They have even alerted Beck about possible drive issues before any failure could disrupt operations at Hyundai MOBIS – a fact that has saved him a good deal of time.

"The Qumulo support team is amazing in its ability to help us head off issues before they become problems," he said. "With NetApp, we'd get an alert after a failure, not before. Qumulo's proactive monitoring is a pretty cool advantage and the best service experience I've ever had — it seems like they're actually watching out for us."

Based on the team's success with Qumulo, Beck has significant plans for expanding the deployment over time. As the company broadens its development of autonomous driving, Beck's team will need to pull data from other global R&D centers onto the Qumulo cluster, making the performance, capacity, scalability, and manageability of the system even more important. Beck's team also plans to store other types of data from different departments throughout the company, so the ability of Qumulo's software to handle both small and large file sizes equally well will be another important advantage.

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In expanding the deployment, Beck is particularly keen to take advantage of Qumulo's real-time analytics. "As we scale the system to handle data globally, having a real-time view of everything that's happening on the cluster will be critical for staying ahead of the needs of other teams," he explained.

Overall Beck is extremely impressed with the Qumulo system, and finds that he no longer has to worry about his data. "Managing data with Qumulo is so simple it's hard to describe the impact," he said. "It has given us tremendous ROI in terms of time saved and problems eliminated, and having that reliable storage we can finally trust makes us eager to use it more broadly throughout the company."

ABOUT QUMULO

Qumulo is the leader in enterprise-proven hybrid cloud file storage, providing real-time visibility, scale and control of your data across on-prem and cloud. **For more information, visit www.qumulo.com**