CASE STUDY

Children's Hospital and Medical Center of Omaha

With a 400% Increase in Sleep Study Data, Children's Hospital & Medical Center of Omaha Chooses Qumulo for Storage and File Backup Support

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Children's Hospital & Medical Center of Omaha, a non-profit facility and the only full-service, pediatric health care center in Nebraska provides critical health care for children across a five-state region and beyond. With thousands of children treated yearly, and more technology advancements and industry changes impacting how they deliver services while expanding how much data must be managed, the hospital was seeking a dedicated storage solution. Qumulo was the answer, handling their data-intense use cases, and providing capacity to handle file backup and disaster recovery.

- **Flexible storage for 30+ TB and growing of sleep study, neurological data:** Experiencing a 400% increase in sleep and other neurological study data, Qumulo scales to capture and back up video files that must be securely retained for a year given HIPAA storage requirements.
- **Scaled storage for primary, secondary, and tertiary data backups:** Qumulo integration to Commvault, the backup solution for Children's Hospital & Medical Center of Omaha, allows Qumulo to handle all synthetic backups, including unchanged data from a file source as well as incremental backups of changed data. This creates a 66 percent time-savings for IT, but having consistent file replication and transfers between Qumulo and Commvault also stabilizes capacity so it doesn't exceed 50%.
- **Increased trust, multi-department adoption from customer support:** Qumulo Slack assistance is accessible and easy, and proactive outreach from account support addressing questions or concerns is priceless. This high-touch approach has increased how many hospital departments use Qumulo and created unmeasured value for operational staff and doctors who are dealing with data-intense files, but must stay focused on patient care and satisfaction.

Children's Hospital & Medical Center of Omaha, a 225-bed,non-profit facility provides more than 50 pediatric specialty services to children across a five-state region and beyond. It's the only full-service, pediatric health care center in Nebraska, and has treated critically ill children and championed child-centered legislation, research, and education for more than seven decades. Families receive round-the-clock, life-saving care from the state's only dedicated pediatric emergency department, Level II Pediatric Trauma Center, and Level IV Newborn ICU and Fetal Center,as well as the Pediatric ICU and Cardiac ICU.

They've seen significant growth in the volume of unstructured data under management, which comes from modern diagnostic and imaging equipment, electronic health records, and their picture archiving and communication system (PACS)—part of a vast file network used by onsite staff and specialists working in their 20 remote clinics. With thousands of children treated yearly, data has been a critical piece to address their needs and inform treatment plans, but it rapidly expanded in areas like neurology, and from expanding services and technology advancements. That put pressure on their storage and network, and capacity was hit or exceeded at times.

The facility used a Windows-based, network-attached storage (NAS) device, but it was costly, difficult to maintain, and the setup was cumbersome. Overlaid files were quickly depleting the storage capacity and they needed a dedicated storage solution to handle data-intensive use cases—the sleep and neurological studies—with scalability and flexibility to also manage backup and disaster file recovery. Eagle Technologies, a Service Partner for the hospital and Qumulo, recommended Qumulo.

They knew it offered NAS, but more than that, it provided software-defined storage (SDS) with many advantages. Among them, no file size limits, increased application efficiencies that support operational productivity, an improved user experience, and little-to-no storage downtime, which was costly to the hospital, providers, and children and families served.

30+ TB of sleep study, neurological data captured and backed up with Qumulo

Around the clock, Children's conducts patient sleep studies that collect continuous video feeds and data. Previously measured at **six terabytes, that data grew to more than 30 terabytes in under a year as more studies occurred.** Now, the department monitors patient's sleep patterns, epileptic episodes, and other neurological activity. Footage captured by the system must be securely retained for a year in case patient follow-up or additional physician review of data is needed, given HIPAA data storage requirements.

Struggling with the **400% increase in neurologic study data**, they knew that the Windows file server couldn't easily expand with more shares during file backups. Unfortunately, accessing older files was too slow, and if they were deleted after a year, the stubbed file had to be backed up, shifted to another folder where it was restored, and then deleted. This process bogged down storage, the network, and reduced staff productivity.

Qumulo

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Stubbing files isn't necessary with Qumulo. All active data sits on a Qumulo system that scales with increasing demands. Meanwhile, deleting old files is much faster and happens on a different Qumulo cluster dedicated to file backup and disaster recovery, which helps the hospital maintain small data sets. The stubbing process, which previously took an hour, but maxed out storage capacity and sometimes halted work, is completed in Qumulo with a few clicks. Better yet, **used storage never surpasses 50%**, leaving room to manage other data.

"Everyone was quite excited despite early trepidation. We're thrilled about not having to worry about space every month and appreciate that there is little downtime, maybe 15 minutes, for Qumulo maintenance versus it taking all night, which we were used to."

– Alex Hrdy, Network Architect II, Children's Hospital & Medical Center of Omaha

Scaled storage for primary, secondary, and tertiary data backups

Commvault is the backup solution for Children's. Previously, "files were going to a Nexsan storage array, which was basically spinning disks in a box, but it approached end of life and needed to be replaced," explained Hrdy. The hospital replaced it with a Qumulo system, now the backup storage target to Commvault. Qumulo handles all synthetic backups, including unchanged data from a file source and the incremental backups of changed data. It's sealed to minimize how much storage is used. This **process previously took up to, and sometimes more than 18 hours**, and often blocked the next incremental backup

Having Qumulo integration with Commvault, it now takes **6 hours—a 66 percent time-savings for IT** as they safely and confidently back up data for staff to access when needed. Since file replication and transfer consistently happens from Qumulo to Commvault, they also avoid huge storage spikes, keep all files and their backups protected, and maintain a steady storage capacity with room to scale.

Initial setup and the transition to Qumulo was seamless. As Hrdy explained, "The physical architecture is much easier to handle since Qumulo uses nodes, and one or two people can easily install them in a rack. Qumulo is straightforward and that means anyone can get it up and running." Altogether, it took **less than four hours and Eagle oversaw the complete process.** Replication is now a constant workstream and providers are reassured that the files they need are easily at hand.

Comprehensive customer support boosts trust, prompts multi-department Qumulo adoption

A significant differentiator, and "the main reason we chose Qumulo was support," said Hrdy. With the Slack channel, assistance is accessible and easy to find, and there have been times where someone from Qumulo contacted the hospital to address a question or concern before they initiated outreach.

"To feel like someone proactively looks out for us is priceless. I think we would pay any amount of money to get this kind of support with our other products."

– Alex Hrdy, Network Architect II, Children's Hospital & Medical Center of Omaha

As a next step to expand the Qumulo engagement, the marketing team will move its data to the same cluster that stores the sleep study data. Marketing has a significant amount of raw and edited multimedia files; some are used for internal purposes like training or hospital-wide communication, and the Child Life program captures video recordings of celebrities narrating books for patients, which are broadcast from an internal TV channel. The files are data-intensive, but patient value is unmeasured, helping children feel at ease during an uncertain time.

Learn more about the advantages of software-defined storage (SDS) from Qumulo and how other healthcare providers and facilities are benefitting from this approach similar to Children's Hospital & Medical Center of Omaha.