GRAEF-USA

Cross-Office BIM/CAD Collaboration by Eliminating Local Storage

After several years of experiencing exponential data growth, GRAEF-USA assessed where its data consumption was going and how it was being housed. GRAEF was concerned with not only how data was being managed on-premise, but also how the data and files from its diverse library of AEC applications were being backed up, stored and shared between offices. Like most companies, each of GRAEF's six offices had disk-based storage for primary and secondary storage as well as tape for archive. In spite of having 80 terabytes of storage at their disposal, the company was finding it still wasn't enough.

Graef needed a solution that would minimize the administration overhead of its file systems and manage its storage hardware. It also needed to find a way to put off what seemed to be an inevitable refresh of its EMC NAS and SAN devices in just over a year's time…with another refresh immediately to follow soon after that. GRAEF chose Panzura's Distributed Cloud File System, which not only reduced its storage costs exponentially, but also provided distributed file locking, which enabled GRAEF employees to work collaboratively on BIM/CAD applications across each of its offices, eliminating multiple versions of files, file corruption and latency.

"Why Am I Doing This?' – Questioning the Treadmill of On-Premise Storage Expense

The amount of data generated by applications like AutoDesk, Revit, MicroStation and others had caused the volume of data being handled by GRAEF to grow tremendously over the past few years.

Situation Snapshot:

Six offices nationwide, project team members distributed across the country leveraging a diverse library of 395 different applications including Revit, MicroStation, other Bentley applications, and other Autodesk applications.

- **Challenge 1: Minimize Cost and Administration Overhead of File Systems** – GRAEF sought to eliminate the need to pay $250,000 over the next year for primary storage and secondary storage at two offices as well as reduce management and operational costs of storage.

- **Challenge 2: Seamless Cross-Site Collaboration** – GRAEF was having to "robo-copy" different bits and pieces of information as team members in one location would see one set of files, while team members in a second location would see another. This forced GRAEF to institute strict guidelines and rules for when data got replicated and how it was used.

- **Challenge 3: Eliminate Latency** – in spite of what seemed to be sufficient bandwidth, the company experienced significant latency, particularly in its Orlando office.

The expansion of the volume of data being handled in its six offices, each with its own set of tier-1 storage, plus second and third tier storage, had the company facing an expensive decision regarding the management of its data and a way to mitigate the disjointed way it handled collaboration between offices when employees worked on the same project.

GRAEF was facing the prospect of having to refresh its EMC NAS and SAN devices every three years. Compounding the high financial costs of the primary storage hardware, there was also the increasing cost for backup and archiving as the amount of data increased.

"I was sitting there thinking 'I have this budget of X amount of dollars that I'm going to spend on back-up hardware and software and I thought to myself, 'Why am I doing this?'" recalls David Neumann, Director of IT at Graef.

Neumann also looked at the great difficulties the company had when employees in multiple offices worked on the same project. Teams broke up files into bits in order to avoid corruption and then merged and correlated changes after the work was done. One set of drawings quickly became four or five and there was always the risk of some changes being missed when the files were merged manually. This led to very restrictive rules on how and when edits could be made to files, significantly increasing the amount of time it took to complete projects.

With Panzura, GRAEF saw immediate results:

- Significantly improved collaboration between skilled professionals in disparate locations
- Offices are no longer "islands of data" – team members in each office running Panzura see one set of data stored in one central cloud storage system
- File changes now available to team members in different offices in real time
- Files backed up automatically in real time throughout the day as opposed to once per day
- Reduced maintenance requirements have resulted in a 50 percent reduction in personnel needed to manage the backup process and elimination of the need replace file servers just to increase storage space at a cost of $20,000 per facility

Moving from On-Premise to Centralized Storage

Neumann found himself having to make a decision of a huge back-up implementation. Looking at all the costs, he realized GRAEF needed a solution for its storage as well as its collaboration issues.

"I had gone to the ACEC conference in Denver where [Panzura co-founder and CEO] Randy Chou presented a case study of one of his customers," said Neumann. "I really listened to what Panzura's customer was doing and also spoke with others at the conference about their interests. Everyone was so focused on a centralized file system; I knew we had to do this."

Neumann said the components he was looking for to resolve GRAEF's issues were:

- **Storage Centralization** - With multiple tiers of storage and backup in each office, the solution had to collapse those tiers into a single Distributed Cloud File System and reconcile the information to ensure project team members were all working from the same file rather than broken-up pieces of the file.
- **Expandability** - GRAEF was on the verge of needing to add additional server arrays at a cost of roughly $250,000 over the next year. The company needed to find an affordable, scalable solution to address its rapidly growing volumes of data.
- **BIM/CAD File Collaboration** - The solution needed to enable GRAEF employees to work collaboratively across multiple offices. It needed to eliminate the need for broken-up and multiple versions of files.
- **Latency Reduction** - Due to files being stored across multiple sites, a significant amount of latency had been witnessed. The solution needed to help make file openings much faster.

The Way of the Future: Collaboration via the Cloud

Coming out of the ACEC conference, Neumann looked to Panzura for a solution to GRAEF's storage and collaboration needs. The main focus for him was managing the cost of storage and managing hardware, but the idea of getting the different offices to work collaboratively and together was also an important piece of the puzzle.

"Our approach was to minimize the administration overhead of our file systems and one big thing that Panzura was able to do for us was reduce storage costs exponentially," says Neumann. "From the standpoint of everyone being able to work collaboratively, centralizing the file structure, being able to access those files wherever and whenever we needed them, that was just icing on the cake for us."

— David Neumann, Director of IT at Graef

Almost immediately GRAEF saw benefits with Panzura's distributed file locking technology. Neumann performed an assessment of a project that had previously been billed at 40-60 hours, of which the team considered 15 to 20 hours to have been spent on the overhead administration of just compiling the work from multiple versions and putting it into one deliverable and drawing set. Looking at a similar project, the team came in less than the 40 hour mark. Operating on the distributed file locking structure across each branch had eliminated the administrative overhead to complete a set of drawings, resulting in a 25 percent reduction in time – merely because they did not have to compile and consolidate anymore.

Opening files also became much faster when they were moved to the cloud.

"We took a dark approach when we put in Panzura," says Neumann. "We let users know we were moving data to a different storage device, but they did not to know we had moved it to the cloud because we wanted to get their unbiased feedback. The response we got back was, 'I love the new storage! What did you do? It's so much faster!' Everything was improved significantly."

Neumann cites a number of other benefits as well:

- Amazon bill decreased from $850/month to $364/month with recent cloud storage price drops.
- Total amount of storage reduced from 80 terabytes down to 15 terabytes.
- Avoided having to spend $110,000 on an expanded backup storage array in the next year.
- Eliminated the need to spend $250,000 in hardware costs over the next 3 years.

> *"This is the way of the future, We had always wanted to move our data to the cloud; we always saw it as the next business model. The key component to that was accessing it from the cloud at the appropriate bandwidth. Panzura solved that last piece to the puzzle, which made us extremely happy and fulfilled our dreams of moving our data to a centralized system."*
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> **— David Neumann, Director of IT at Graef**

About GRAEF-USA

COMPANY: GRAEF USA

HEADQUARTERS: Milwaukee, Wisconsin

OFFICES NATIONWIDE: 6

EMPLOYEES WORLDWIDE: Approximately 280

BACKGROUND: Established in 1961, GRAEF has grown to become a leading U.S. consulting firm, as ranked by Engineering News Record Magazine. Its technical personnel, located in offices in Milwaukee, Madison, and Green Bay, Wisconsin; Chicago, Illinois; and Orlando, Florida, provide comprehensive engineering resources and its staff is able to address all phases of building projects, including analysis, design, and construction.

About Panzura

Panzura is the catalyst in the transformation of cloud storage into high-performance enterprise file systems. Panzura's revolutionary global locking file system seamlessly combines the flexibility, performance and productivity benefits of distributed storage with the manageability, security and economics of centralized storage.

With Panzura, the cloud – public or private – not only serves as every tier of storage, it becomes the fabric that enables globally distributed teams rapid file access and easy collaboration. Panzura delivers one file system across hundreds of offices that allows users to work together as if they were in the same room. For more information, visit www.panzura.com.

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