

FUSEFX

Leading worldwide visual effects studio reduces the cost and triples the performance of its petascale high-performance storage with RozoFS



FuseFX, a leading worldwide visual effects studio, has found the RozoFS storage technology to be as reliable as competing Tier 1 systems, yet faster, more flexible and less costly. In head-to-head pipeline testing, RozoFS on the Nautilus-SR platform demonstrated better performance storage results in production.

HIGHLIGHTS

Industry:
Media and Entertainment

Solution:
Nautilus-SR, powered by Rozo

- Challenges:**
- Scale and performance limitations
 - Overly complex storage operations
 - Storage budget blowing up

- Results:**
- 300-percent performance increase
 - Improved agility by enabling storage as a service on commodity infrastructure
 - Increased reliability at half the cost leveraging fast erasure coding

THE CUSTOMER



About FuseFX, an award-winning visual effects studio

FuseFX has emerged as a leader in visual effects services for television, feature films, commercials, games, special venues, and virtual reality. The company has more than 300 employees across three studio locations in Los Angeles, New York City and Vancouver, Canada. Today, FuseFX has more than 60 television shows in production simultaneously, while also servicing various commercial and feature film projects. The company has provided visual effects for all the major studios on such productions as American Horror Story, Marvel's Agents of S.H.I.E.L.D., Criminal Minds, Bones, TURN, The Blacklist, Designated Survivor, Luke Cage, The Punisher, Runaways, The Tick, Scorpion, The Magicians, Madam Secretary, Preacher, Mr. Robot and many others.

The principals at FuseFX believe visual effects offer an amazing ability to go beyond the limits of what practical production can accomplish, enabling their clients to create a vision and story that could not otherwise be produced. FuseFX differentiates itself through the quality of its staff and a proprietary, highly efficient pipeline. This process allows for better quality control and faster turn-around of shots so the artists can focus on the creativity of visual effects

THE SYSTEM INTEGRATOR



Daystrom Technology Group builds optimized storage solutions for extreme performance standardS and a wide range of requirements. As long-time advocates for the software-defined storage paradigm, Daystrom has developed a rigorous engineering process to avoid the pitfalls common to SDS deployments and ensure that critical functionality, performance and flexibility are delivered that exceed what general-purpose pre-built storage can deliver.

A key member of the Daystrom portfolio is Nautilus-SR, an impressive storage platform that delivers NAS simplicity and SAN performance, enhanced security and data analytics. Key to Nautilus is the unbelievably fast performance and a scale-out architecture built on the RozoFS technology and RDMA networking.

THE CHALLENGES

FuseFX was looking for a Tier 2 storage solution to backup its EMC-Isilon and Qumulo systems. The Tier 2 solution needed to provide failover in the event the primary storage systems went down, so that time-critical work can proceed. The Tier 2 system would also provide long tail storage with multi-petabyte (PB) capacity to enable fast response to changing client needs.

The new system had multiple requirements:

- **Performance:** Although not a primary storage system, the solution needed to be able to make daily snapshots. Also in case of failure of the primary storage, the system will be required to deliver data - with no impact on performance - to lessen disruption to the FuseFX team.
- **Cost-effective:** With new shows generating huge amounts of data and FuseFX existing in three locations, cost is a key concern. The high per terabyte price of the Tier 1 EMC-Isilon and Qumulo systems makes them cost prohibitive for long tail storage, elevating the need for next-generation technology to step in and fill the need.
- **Scalable:** FuseFX is expanding quickly and new files and workflows are growing at a furious pace; therefore, the ability to quickly scale the system through the addition of disks and servers without downtime and without creating data islands is critical.
- **Reliable:** The system needs to make disk and server failures transparent to the users to provide maximum uptime. The replacement of failing disks and servers is not an emergency and can be deferred until IT resources are available.
- **User-Friendly:** The FuseFX team needs fewer headaches, not more, and the Tier 2 system should be a 'set and forget until needed' solution... but when needed, should perform at the level required to get content delivered on time.

THE SOLUTION

FuseFX quickly decided on software-defined storage (SDS) solutions deployed on commodity x86 servers to meet its cost requirements. The solution selected would also need to offer a scale-out architecture to support the expected capacity expansions. Object storage solutions were quickly rejected, because they did not integrate into the file-based workflow and did not meet performance requirements.

With Daystrom as their partner, FuseFX evaluated SDS solutions based on the GlusterFS, CEPH SDS and Microsoft Storage Spaces file systems and ran petabyte-scale testing of the solutions. However none could deliver the baseline requirements of scale, throughput and reliability needed to satisfy FuseFX. Fortunately, internal testing at the Daystrom's facility was showing superior performance from the emerging Nautilus/RozoFS platform, enabled by the highly-efficient Mojette Transform for data distribution and protection. The decision was made to convert the petabyte-sized testing ground to a Nautilus/RozoFS configuration. Using the automated deployment based on Ansible tools, the team was able to create a system of amazing scalability, performance and resiliency in a matter of hours.

THE RESULTS

The Nautilus-SR system, powered by RozoFS, exceeded the performance and cost targets set for the Tier 2 system and actually demonstrated better performance than the Tier 1 systems in selected pipeline testing. The system has been online for nearly a year, providing continuous failover protection for three of the FuseFX Tier 1 production systems.

Based on the results delivered by the Nautilus-SR system powered by RozoFS, FuseFX has expanded the capacity of its Tier 2 system to eight nodes in the flagship studio in Los Angeles. Storage capacity is now in excess of two petabytes with a large growth potential to accommodate future expansion. Similar systems are planned for the New York and Vancouver studios. Capacity expansion is very simple and requires little planning: additional nodes and disks are easily integrated into the existing storage cluster, with optimized rebalancing of data occurring automatically.

“The Rozo solution is disruptive for the storage industry. In the traditional model, fast is expensive. With Rozo, you can build a cost-effective hardware configuration at a performance that competitors can’t offer even on more expensive hardware.”

Jason Fotter
Co-Founder and CTO
FuseFX

During testing to validate that performance would at least be adequate for any failover use, the FuseFX team was blown away by the throughput that the system is capable of achieving - especially as it was never built for speed. The potential for use as Tier 1 storage, at significant savings, is quite exciting to the FuseFX team.

“This is the first time in my 20-year career that I have found a storage system that delivers the three key components simultaneously: performance, scalability and cost effectiveness. The Nautilus platform powered by RozoFS software offers a unique storage solution that none of the large established vendors or well-funded startups have delivered.”

Jeremy Lang
Head of Technology
FuseFX

Based on this success, FuseFX is extremely happy with the purchase and considering much wider use of the Nautilus powered by RozoFS in the future.

The Rozo Systems team is currently working on a cloud solution of Nautilus-SR and the team at FuseFX is looking forward to new opportunities as they continue to look at innovative ways to leverage the power of the cloud.

CONTACT US

To learn more about how Rozo products, services and solutions can help solve your business and IT challenges, contact us at info@rozosystems.com or visit us at www.rozosystems.com.