

## **Nominee: Framestore/ Avere Systems**

### **Supporting Vendor: Avere Systems**

#### **Nomination title: Avere Systems FXT 4500 Edge filer supports VFX studio Framestore on latest blockbuster Gravity**

Using Avere Systems' FXT 4500 Edge filer, Soho-based visual effects studio Framestore vastly improved storage performance in production stages of upcoming blockbuster Gravity, starring Sandra Bullock and George Clooney aboard a 3D recreation of the International Space Station. Phenomenal storage performance with Avere improves data availability and access, saving hours for busy VFX artists, bolstering artist interactivity, and enabling Framestore to rapidly recover data following system outages, as has already occurred in a brownout in the Soho office.

Although Gravity was, according to Framestore CTO Steve MacPherson, "the most computationally demanding film Framestore has ever done," Avere made the delivery environment "relaxed" by enabling artists to focus more on their work than on frustrating IT issues.

MacPherson said: *"The difference [with Avere] is enormous, in terms of our ability to respond to client requests and to 'be there' for the studio; Avere played a key role in moving our infrastructure and our creative abilities forward."*

Framestore, a Soho-based VFX company famous for high-profile work on many blockbuster films, was in urgent need of a reliable NAS solution to manage their massive rendering and storage performance requirements. It was clear from the onset that Gravity's resource demands would be enormous, eventually scaling up to over 15,000 processor cores at peak rendering. As rendering hits full stride, the render nodes create the classic production bottleneck, consuming all available storage bandwidth and creating slowdowns on the artist / workstation side.

To support the projected load, Framestore undertook a project to rebuild their storage and networking infrastructure around a primary storage capacity of 1.2 petabytes of tiered HDS (formerly BlueArc) storage sitting behind six high-performance Mercury 110 heads. The core networking for the facility was all upgraded to 10Gb and a new low latency Arista core switch was deployed to accommodate the huge increase in network traffic. Initial results on this configuration were favourable, but as the reality of the rendering requirement became evident, it also became clear that Framestore needed new methods to meet the computational needs of the render farm.

Framestore's team was interested in partitioning the storage so that Gravity-related rendering would pull data from storage pools separate to those being used for the rest of the facility.

Several competitive SSD-based solutions were considered, including building their own system based on CacheFS software and adding SSDs to the newly installed core filers.

*"Ultimately, Avere won the argument with its ability to deliver the type of metrics, analysis and identification of hot files essential to production efficiency. Simplicity is a key Framestore engineering design goal. Once we established the correct configuration for the Avere system, we were able to just step back and let it do its thing,"* explained MacPherson.

Avere's FXT 4500 Edge filer, with its ability to deliver up to 150 TB of Flash in a single cluster, was built to meet the challenging demands of workloads found in the entertainment industry. Avere Edge filers serve Framestore's render farm, freeing the storage system to service the rest of the facility. As a result, it is now much quicker and easier for Framestore's artists to access the right images at the right time and to collaborate more effectively.

Before Avere, Framestore artists struggled with performance bottlenecks that negatively impacted their interactivity and productivity. The system was always slowest towards the end of production cycles, when resources were most needed. With Avere, artists working on Gravity were able to rely on the system even when demands were enormous.

Surpassing original goals, Avere proved itself in a disaster recovery situation in 2012, when the power grid at one of Framestore's locations in London's Soho district was struck by an electrical brownout. At that time, post-production processes were running all day, every day.

*"Usually we clear the farm over the weekend, but we were running 24x7, and our render queues were full to capacity. We had to restart entire job sequences. Fortunately, everything was cached in the Avere FXT4500s. Once restarted all jobs were back up to speed very quickly, performance levels of the Avere went through the roof and the Avere Edge filers did an amazing job of shielding the BlueArc from the impact of the entire farm simultaneously asking for data,"* explained MacPherson.

*"[Avere] has given us performance and stability. If you don't have those two things you don't get the work through the door. What we've got helps people work faster and do more and with greater complexity,"* Steve MacPherson told Antony Adshead in a Computer Weekly article earlier this year.

MacPherson said, *"We are also very pleased with the support and technical knowledge of the Avere team at all levels – from the installation engineers to the CEO... The Avere Edge filers were absolutely critical to the delivery of Gravity – the most computationally demanding film Framestore has ever done."*

### **Why nominee should win:**

- Avere saves Framestore's busy VFX artists valuable time, improving artist interactivity and enabling Framestore to "be there" for the production studio
- With Avere, artists working on Gravity were able to rely on the system even when demands were enormous
- Although Gravity was "the most computationally demanding film Framestore has ever done," Avere helped make the delivery environment "relaxed" by enabling artists to focus more on work than on frustrating IT issues
- Avere even proved itself in a disaster recovery situation when the power grid at Framestore in London was struck by an electrical brownout