



BlueArc and StorageTek combine to accelerate CGI animation for Mainframe Entertainment, Inc.

“The big thing for us is throughput. Data is large, and turnaround is key. Storage is the cornerstone – large amounts of data I/O. BlueArc is a great fit because of the high performance and scalability.”

“How artists spend their time is critical. Given a set number of constraints, it is on how many iterations it can render. Films are never done – you just eventually stop working on them.”

- Troy Brooks, Manager of Production Technology

“One of the first things that made it at the beginning was that the box was good to go. It only took 3 1/2 hours to get it from start to serving files. For (our previous system) it took 3 1/2 weeks. That translates into saved money for the company. Right from the get-go, I figure we saved 6-8 weeks of senior sys admin time.”

“Every time the render farm references a texture file, it would take time to register it and take it up the wire. That’s where BlueArc makes a difference. If you have an environment with a lot of reference files and a central location, and the central location is BlueArc – it is at least 6 to 8 times faster.”

- Wendi Davies, Manager of IT

Mainframe Entertainment Inc. (“Mainframe”), an IDT Entertainment company, capitalizes on joint storage solutions from BlueArc and StorageTek to deliver a reliable, high performance configuration capable of meeting future needs, while accelerating production times and eliminating project disruptions.

The Background

Mainframe is a leader in computer generated (CG) animation for television and direct to video family entertainment, having produced over 250 half hours of CG animated television as well as 10 CG animated direct to video feature films and two one-hour CG animated television specials. Mainframe’s CG animation expertise is also being used in the production of theatrical feature films, interactive games and commercials.

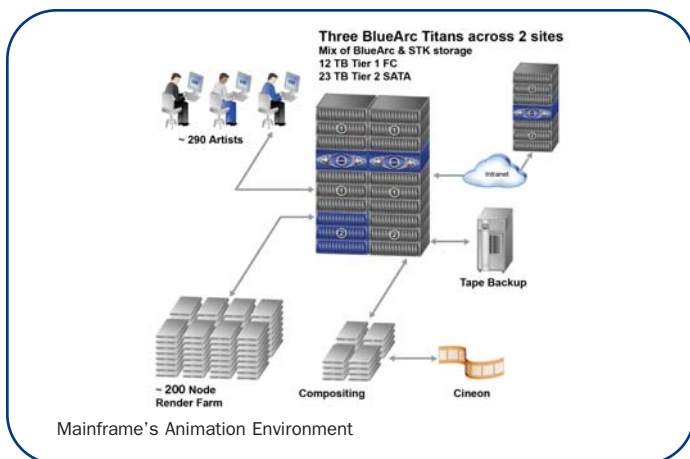
Established in 1993, Mainframe continues to grow its library of proprietary productions, and has received many prestigious awards for its work on such international brands as *Barbie*, *Hot Wheels*, *Spider-Man*, *Casper* and *Popeye*. The company is recognized as a CG animation pioneer having developed the groundbreaking internationally distributed television series “ReBoot”. Mainframe clients include Sony, Mattel, Lions Gate Home Entertainment, Electronic Arts (Canada) and MTV. Mainframe’s majority shareholder, IDT Corporation, is a NYSE-listed multinational telecommunications and entertainment company.

The Challenge

To develop cutting-edge artistry that tests the boundaries of modern computer generated animation, companies require cutting-edge technology infrastructures – from their artists’ workstations to their network, rendering servers and storage.

An increase in simultaneous projects, paired with shorter deadlines and an almost 3-fold increase in staffing, rendered Mainframe’s legacy storage infrastructure a major limitation.

According to Wendi Davies, IT Manager for Mainframe, the major problems with the company’s existing configuration were: an unclear and expensive upgrade path for the existing fileserver, diverse and esoteric storage pools, poor network performance, and reliance on separate server gateways to enable heterogeneous operating systems to share files and production data. A solution was required that could consolidate storage to a single networked location accessible by multiple operating systems simultaneously, provide the high performance necessary to support the company’s growing artist crew and offer a straightforward, flexible, and appropriately priced upgrade path.



The Solution

After reviewing a number of Network Attached Storage (NAS) offerings, Mainframe selected BlueArc's Titan Storage System in a multi-tiered storage configuration, featuring both high performance fibre channel disks and high density ATA drives. Mainframe opted for Titan due to the system's high performance and high capacity ceiling, but also because Davies found the system much more easy to configure and manage compared to the alternatives. While it took nearly a month to bring the previous storage system into production and serving files, she said that Titan was put into production a mere 3 1/2 hours after it arrived. "The ease of integration saved upwards of six to eight weeks of valuable System Administrators' time," Davies said.

Additionally, the flexibility of the Titan allowed Mainframe to cement their relationship with StorageTek, already in the plans for backup and archiving critical production data to StorageTek's state-of-the-art tape libraries. Mainframe purchased 8 terabytes of Fibre Channel and 7 terabytes of ATA disks from StorageTek to integrate behind the company's Titans – which were optimized and certified for use with StorageTek equipment.

The Value

Mainframe has approximately 450 networked clients constantly accessing Titan. For the company, fast and reliable access to scene files, texture files, rendered images, home directories and e-mail – all stored on BlueArc, is an absolute necessity for the success of their business.

The Titans' ability to support a multi-tiered storage environment has enabled Mainframe to save money through utilizing less-expensive Serial ATA disks for images and static files, while higher performance fibre channel storage is used for project data requiring frequent interaction – from scene files and texture files to employees' e-mail

and home directories. This enables the company's IT infrastructure to adapt in line with corporate business processes.

Having put the Titans into production, Mainframe's artists can render directly to and from Titan without seeing a decrease in performance as the file is registered and passed over the network.

Speeding up the company's creative process has eliminated project slowdowns and increased the efficiency of Mainframe's artists – who don't have to work around the technology infrastructure, but can instead embrace its benefits. As Davies recalls, prior to the Titan being installed, the company's IT staff would frequently be paged by artists on the floor, upwards of 3-5 times per day, with complaints that the file system was slow. Now she says they have not been paged even once in the last year, since the Titan was installed.

The Titans have been placed at the center of Mainframe's creative workflow. Animated scenes begin as low-resolution animatics, and then are refined by artists – raw body movements are massaged into more detail, and textures are added to the geometry. Each refinement to a scene is rendered, turning the scene into a series of images. Through this process, scene files become iteratively larger. Following this rendering process, the image files are then taken to compositing before the project is presented for viewing.

Given that artists can now load and save scenes faster, as well as review rendered images more closely and more frequently, Mainframe finds that the projects' quality improves, ultimately making their clients happier. "How artists spend their time is critical. Given a set number of constraints, it is on how many iterations it can render. Films are never done – you just eventually stop working on them," Troy Brooks, Mainframe's Manager of Production Technology said.

The Conclusion

Mainframe Entertainment Inc., having established itself as a leader in CG animation for family entertainment and direct to video projects, is now branching out to extend its offerings to the challenging world of feature films. As projects increase in length and improve in quality, fast and reliable access to production data becomes imperative, and can mean the difference between finishing a project on time with the desired quality, and falling short of those goals.

Relying on technology partners including BlueArc and StorageTek has enabled Mainframe to bypass the limitations of substandard technology infrastructure, and to focus on the art of CG animation, letting loose the company's creative soul and vision.



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