

Starbreeze Studios, AB Optimizes Developer Productivity and Manages Explosive Data Growth with BlueArc Storage for VMware

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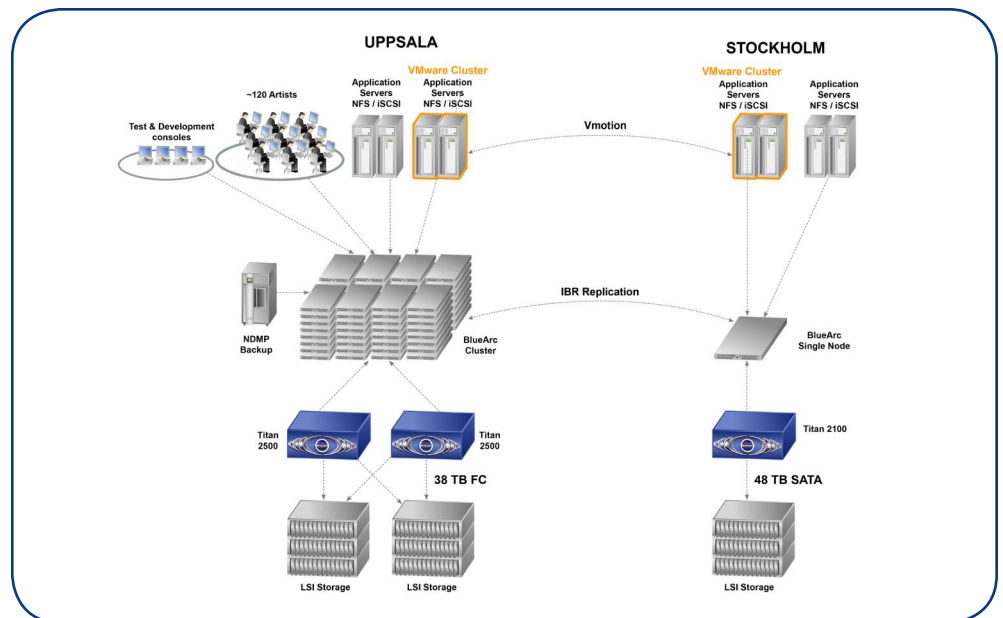
“Storage is added where it’s needed when it’s needed. We no longer need to overprovision storage or pre-allocate disk space. Setting up a file area on Titan or a virtual server in VMware to test something can be done very quickly. This helps to keep up the creative momentum. Our developer’s productivity is no longer impeded by our IT infrastructure.”

–Jon Johansson, Starbreeze IT

The Company

Founded in 1998 and based in Uppsala, Sweden, Starbreeze Studios, AB is one of the world’s leading, independent video game development studios. Their relentless pursuit of delivering games of high quality with high entertainment value has produced a string of successful titles including The Enclave, Chronicles of Riddick series, and The Darkness.

Employing 120 developers, the programmers work mainly with Microsoft Visual Studio®, while the 3D artists and animators work in many different tools such as Autodesk® Maya®, Motion Builder 3Dstudio®, Mudbox®, Adobe® Photoshop®, ZBrush®, etc. Starbreeze has two data centers with a mix of Dell and HP servers running VMware ESX and ESXi, Microsoft Windows 2003, 2008, SUSE Linux Enterprise, along with a variety of other applications. The most business critical applications are Perforce and in-house developed tools and build systems which run in VMware. The primary data center at HQ has a two node Titan 2500 cluster with 35TB of FC storage connected via 10GbE to the network. Two gigabit links connect the HQ data center with a secondary site which has a single node BlueArc Titan T2100 and 48TB SATA storage. BlueArc’s Replication software is used to replicate data between the two sites.



The Challenge

The bedrock of Starbreeze business is to deliver to video game publishers high quality productions at critical milestones throughout the project. Anything that impedes the developer’s ability to deliver on schedule impacts revenue and causes the business to suffer, potentially jeopardizing subsequent contracts from the video game publishers.

When Starbreeze started working on titles for Sony® Playstation 3® and Microsoft® Xbox 360® they saw a massive increase of data involved in these projects. The amount of data didn't simply double, it was exponential. Developers were often complaining about performance and volumes on file servers were quickly filling up. It was clear the developer's productivity was being negatively impacted, thus jeopardizing their ability to meet delivery schedules. Starbreeze administrators had to spend a lot of time moving data between file servers to even out the load. Backups were also becoming a problem as the amount of data grew larger. Starbreeze quickly realized the IT infrastructure to support their growing projects was getting difficult to manage as the number of systems had increased significantly. They realized that it was necessary to consolidate, find a faster storage solution and improve the speed of their network.

Along with BlueArc, Starbreeze considered systems from all of the top storage vendors. Key requirements for choosing a storage vendor were based on the following: the system had to support industry protocols NFS, CIFS, iSCSI, mixed storage with SATA/FC disks, snapshots and replication to a secondary disaster recovery system. 10Gbe was important but not a requirement. Starbreeze also needed a system that would last at least two projects and handle their unpredictable data growth without degraded performance. "Access to our data is essential to our production. We simply cannot produce anything without access to our data and with our tight production schedule it is rarely a good time to take the systems down for maintenance." –Jon Johansson, Starbreeze IT

From a business perspective it was fairly simple. Our projects need capacity and performance with nonstop operations. We compared initial costs, costs of upgrading and operational costs. BlueArc was not the cheapest system available but when we put it all together, looking at its consolidation potential, performance, scalability and ease of use we saw great value for the money.

The Solution

Starbreeze considered all of the top storage vendors, but BlueArc stood out from the others with its impressive performance and scalability, regardless of the different types of users, applications and access patterns. This opened up the possibility for Starbreeze to consolidate their application specific storage systems.

Since we installed the Titans we now have the performance to handle full HD video and we no longer need dedicated video editing workstations since all data is stored on network storage. Users can run video capturing and editing over the network without dropped frames. This was simply not possible with our previous systems; all video work had to be done locally on the user workstations. Previously data had to be copied between workstations or artists had to share the same workstation when working together on a video. Artists can now pick up a video project from any workstation in our network and start working on it right away. The Titans seem to have enough performance to handle whatever we throw at it. Since installing the Titans we have been able to take on larger, more lucrative projects knowing that our artists can work at maximum productivity. With the BlueArc system in place, Starbreeze started work-

ing on their VMware solution which was put in production in 2009. To date, Starbreeze has consolidated 32 servers and 3 storage systems thanks to VMware and the Titan system.

We designed our VMware solution on BlueArc storage because of its excellent NFS performance, reliability and ease of use. BlueArc storage combined with the performance improvement in VMware® vSphere™ 4 has allowed us to start consolidating even our most mission critical, performance intensive applications like our compile servers. BlueArc's performance over NFS is just fantastic no matter the size of the virtual server or the number of virtual servers. We managed to cut build delivery times by up to 67% from our build servers to our development consoles. The performance penalty for running virtual servers instead of directly on hardware is relatively small; the added management benefits and production efficiency more than makes up for it. We are now talking minutes, not days, to deploy a new server.

For Starbreeze, BlueArc NFS-based storage for VMware has proven very easy to work with, especially as the number of host servers grows. The VMware files can be managed just like any regular file and it is easy to recover an individual vmdk file from a snapshot if necessary. Storage can be added when it's needed and adding or moving a host server is a very simple task when working with the BlueArc storage. We have also seen much better utilization of our disks thanks to the Titan's pooled storage and thin provisioning. Storage is added where it's needed when it's needed. We no longer need to overprovision storage or pre-allocate disk space. Setting up a file area on Titan or a virtual server in VMware to test something can be done very quickly. This helps to keep up the creative momentum. Our developer's productivity is no longer impeded by our IT infrastructure.

A Very Real Test

Reliability is key in a consolidated environment. The BlueArc Titan system proved itself during a recent incident when an overloaded circuit breaker brought down one of the Titan cluster nodes.

The cluster failed-over to the remaining node within seconds and the situation was already resolved before I had read the alarm messages. The VMware cluster didn't even react and all virtual servers continued to run without interruption, which means all of our developers were also able to run without interruption. We did a lot of testing during the VMware implementation, but running simulated outages is one thing. I now have full confidence in the Titan system's reliability after seeing how it reacted in a real fail-over situation.

Summary

By deploying BlueArc and VMware for their mission critical, performance intensive applications, Starbreeze was able to overcome challenges to managing explosive data growth, maintaining optimum productivity, and consolidating infrastructure to drive efficiency. Starbreeze lives or dies by their ability to deliver high quality productions to video game publishers at critical milestones throughout a project. Anything that impedes developer productivity simply cannot be tolerated.



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