



**Turtle Entertainment**  
"the eSports company"



**COMPANY:**

Electronic gaming company serving the Electronic Sports League (ESL), the largest league for professional computer gamers in Europe

**INDUSTRY:**

Entertainment

**PLATFORM:**

Linux

**APPLICATIONS:**

Gaming software;  
Oracle® Database

**CHALLENGES:**

Legacy direct attached storage (DAS) could not scale to meet the rapidly growing data of the online gaming activity of the ESL

**SOLUTION:**

Migrate all data from DAS to a centralized storage area network for scalability and data protection

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[www.turtle-entertainment.de](http://www.turtle-entertainment.de)

**GAME DATA FOR HALF A MILLION E-ATHLETES STORED ON EQUALLOGIC SANS**

There are industries where data traffic increases at above average rates, and there are market segments where data need to be available faster than in normal working environments. At Turtle Entertainment, a leader in the field of electronic gaming, both of these factors come together. Its primary area of activity is e-sports (electronic sports), where multiple players compete in computer and video games. Turtle Entertainment uses an iSCSI SAN to provide the storage for its databases and storage clusters for the Electronic Sports League (ESL).

With more than 630,000 registered members, a professionally positioned and organized game and league system, and over 1,800 leagues for approximately 80 games from all genres, the ESL is the largest and most significant league for computer gamers in Europe. The ESL offers leagues for players ranging from beginners to professionals. The immense growth of electronic sports and the related above average growth rates for data traffic for electronic gaming require an extremely large volume of storage.

By mid-2006, the huge success of Turtle Entertainment and the ESL meant that the existing storage systems, on which all of the ESL data resided, could not meet requirements. They could no longer handle the rapid increase in data, and the storage infrastructure had reached its limits. Turtle Entertainment manages a data volume of approximately 10 terabytes for the ESL alone, doubling this amount every year. The direct-attached storage (DAS) system, which connects the storage components directly to each server, was not sufficiently scalable and resources were not used efficiently. A DAS system only makes its resources available to the server to which it is directly connected, creating an imbalance in the allocation of resources in fast growing environments and resulting in overallocations and bottlenecking. In addition, each individual storage component must be administered separately in a time- and cost-intensive process.

As a result, Turtle Entertainment began looking for an optimal storage structure and a manufacturer of corresponding solutions. All large manufacturers of storage solutions were invited to present their systems and solutions to the company.

**SAN AS THE BASIS FOR THE NEW STORAGE STRUCTURE**

Even before choosing a storage manufacturer, Turtle Entertainment had agreed that the DAS system needed to be replaced by a storage area network (SAN), which

*"It wasn't easy for us to make this decision. We wanted a professional storage system that can offer us many possibilities for expansion and scaling in the future. We have had consistently positive experiences with the EqualLogic iSCSI storage systems, and we are already planning the next expansion steps."*

*– Turtle Entertainment, Director of Information Technology,  
Björn Metzdorf*

offers considerably more flexibility, greater scalability, and, above all, easier administration. SANs unite all storage components in a separate storage network, making all data centrally available to the entire server environment. Data growth can be managed more efficiently and performance can be evenly balanced across a single pool of storage while responding to the specific needs of different applications. Furthermore, a SAN is centrally organized and administrated, thus significantly reducing the time and effort required to manage storage.

#### **SYSTEMS 2006: EQUALLOGIC WINS THE CONTRACT**

Although Turtle Entertainment had already decided to use a SAN for its storage infrastructure, decisions still needed to be made about the array and storage network technology. Two standards were available for networking: Fibre Channel and iSCSI. Fibre Channel would have incurred unnecessary additional costs. The installation of a Fibre Channel network is more expensive than using iSCSI arrays, which are connected through a classic IP network in the SAN.

Now the various manufacturers could be approached and asked to present their iSCSI SAN solutions. EqualLogic presented its iSCSI SAN solution in Munich at the IT trade show Systems 2006 and it had several arguments to press home its case. Above all, the extremely high performance figures, its high level of scalability, and the integrated management tools were superior to those of other manufacturers. EqualLogic also offered the best investment plan with the standard inclusion of important management tools. Other manufacturers charge additional licensing fees for such tools.

Another advantage of the EqualLogic product portfolio is its end-to-end scalability. The portfolio contains a full range of storage components in various sizes and capabilities. The possible combination of both SATA- and SAS-based storage systems allow for numerous SAN configuration options, including tiered storage and replication to remote disaster recovery site. To begin with, however,

Turtle Entertainment is using an EqualLogic PS3800XV SAS system and a PS400E SATA system for its primary storage. Another PS3800XV array as well as two additional PS400E systems are already in testing and scheduled to go online soon.

#### **QUICK INSTALLATION AND DATA MIGRATION**

The first EqualLogic storage systems were installed in December 2006. The installation time was impressively efficient, lasting only a few hours, including the test run and firmware upgrade. Installation of the EqualLogic arrays is controlled by an automated management interface that leads the user step by step through the routine. Afterwards, the system independently configures itself and can be used immediately in production environments. Some manual operations were necessary to smoothly migrate the data from the DAS systems.

#### **TECHNICAL AND FINANCIAL BENEFITS**

From a technical viewpoint, there are many advantages to consolidating a distributed DAS system into a SAN. Central management and the interchangeability of the front-end servers simplify the lives of system administrators. In addition, the expertise and technology of affordable Ethernet equipment can be used when implementing EqualLogic iSCSI storage solutions.

Turtle Entertainment also benefits from the cost-effectiveness of the SAN. For example, in the past, when a server was shut down and no longer used for production operations, the DAS system for this server could not be used and the investment was lost. In a SAN this does not happen. Therefore the life of the discs and storage capacity utilization increases significantly.

#### **SIMPLIFYING NETWORKED STORAGE**

EqualLogic PS Series solutions deliver the benefits of storage consolidation in an intelligent, enterprise-class storage system that is easy to install, manage and grow. Let us show you what simplifying networked storage can mean for your business, visit our web site at [www.equallogic.com](http://www.equallogic.com).



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