

## BUYER CASE STUDY

### A Large ISP Selects YottaYotta for Storage Virtualization and Data Migration

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#### IDC OPINION

The amount of data being stored by enterprises has been growing at exponential rates for some time and is expected to continue to do so. The challenges facing enterprises in managing the data as well as delivering an infrastructure that can support business needs have become more complex. In addition to managing the infrastructure, storage administrators are tasked with ensuring data availability, security, performance, and recoverability. To address these new challenges, the market has started to look at technologies that can mitigate risks and simplify management. A large ISP facing these challenges and many others took the time to evaluate a number of these solutions in the marketplace and decided that YottaYotta GSX3000 NetStorage Control Node offers the best set of features and functionalities needed. These included:

- Scalable architecture that is easily configurable and manageable, delivering efficiencies in operations and paying for itself in less than two years
- A data mobility engine that is not limited by distance, creating disaster recovery and business continuity solutions that minimize manual intervention and requirements for testing
- Virtualized storage environment to increase redundancy, facilitate failover, and ensure scalable performance across the whole infrastructure

#### IN THIS BUYER CASE STUDY

This IDC Buyer Case Study looks at a large ISP that has implemented YottaYotta NetStorage Control Nodes to assist with data migration. This document examines the circumstances that drove the need for a data migration solution and what specific technical and operational requirements helped the ISP decide to use YottaYotta.

#### SITUATION OVERVIEW

##### Organization Overview

Currently, the ISP maintains seven datacenters throughout the world; the number of datacenters continues to grow. Though each datacenter differs in size and complexity, the initial datacenters where NetStorage has been deployed have, on

average, 15,000 hosts (Linux, Solaris, HP-UX, and Windows) and about 2PB of data across direct-attached and storage area network (SAN)-attached storage (EMC HDS, Sun, and HP). The SAN consists of 4,000-6,000 ports (Brocade) with each host connected to the SAN via multiple paths to ensure data availability. A number of applications, both consumer and back office, are considered critical, including SAP, PeopleSoft, and Exchange. Some applications do have specific service-level agreements, but most are monitored and maintained on an ongoing basis with changes being made to the configurations based on performance and capacity metrics collected regularly.

All hardware deployed in datacenters is leased for three to five years. The need to migrate data at the beginning and end of a lease has decreased the usable life of the array. For example, if the lease terms are 36 months, then the hardware is operated in production only about 32 months; the other four months must overlap in order to migrate data from array to array. This overlap takes up two months at the start of a lease and two months at the end of the lease. During the overlap, the ISP is paying double for the use of the hardware, which in an environment of this size is a significant cost.

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## **Challenges and Solution**

To maintain adequate performance of applications and optimize capacity utilization, the ISP engages in frequent data migrations to either consolidate or ensure optimal performance. The task of migrating data across storage arrays or RAID sets can be disruptive to the organization. Another type of migration that accounted for operational inefficiencies equating to unnecessary costs is the hardware and firmware upgrades. The initiative that resulted in the implementation of YottaYotta was driven by the need to improve the processes and capabilities around management and migration of data.

### ***Addressing the Challenges***

The challenge of migrating data had been the primary reason for evaluating solutions such as storage virtualization; traditional methods had been challenging to use effectively. A new approach had to be explored in order to achieve desired result. After significant considerations, it was determined that the way to address the main challenges was through virtualization. A number of solutions were considered. Each was evaluated based on criteria representative of the operational needs. These needs included:

- ☒ The solution had to be in an n-way clustered configuration in order to have no performance or availability degradation during migration or failure. Solutions that were based on clustered pair opened the environment to vulnerability while a node was being replaced in a situation of a failure.
- ☒ The solution had to have multiple paths to maintain redundancy and performance during migration of data or system upgrades. Most virtualization solutions only have two paths to each LUN; the cluster only sees the LUN that is assigned to it. Adding another cluster doesn't necessary increase performance where it is most

needed. In the end, the environment has to be rebalanced, moving data from overutilized storage to where there is more bandwidth.

- ☒ The ability to support multiple code versions during upgrades, at least for a short period of time, would enable maintenance to be performed without any downtime and is a critical requirement for operating a successful ISP business.
- ☒ Though today, the ISP has not deployed storage clusters over the WAN, it is looking for a way to maintain active/active datacenters in the future so there is minimal to no risk that the disaster recovery system will not come online successfully.

### ***Selected Solution***

After long considerations, the ISP selected YottaYotta NetStorage Control Node technology to address its storage needs. YottaYotta was selected for a number of reasons:

- ☒ YottaYotta has a 14-month payback on investment. This was accomplished in two ways. First, the migration of data from hardware coming off lease to new hardware has been demonstrated to decrease from three months at each end of the lease to a month. The gain of four months in the lease saves a significant amount of money for each piece of hardware being replaced. Second, during the migration, a number of personnel typically focused on business-relevant applications have to take significant amounts of time to assist with the migration. The personnel time gained from decreasing migration complexity and time accounts for over 50% of savings realized through the implementation of NetStorage Control Nodes.
- ☒ YottaYotta architecture leverages all the resources for maximum utilization. Adding a NetStorage node increases performance across the whole environment. Each host knows it has eight paths to storage on two redundant host bus adapters (HBAs) across two redundant fabrics.
- ☒ Data migration occurs without any disruptions or performance degradation. The NetStorage nodes are deployed so that if one node goes down, traffic can be redirected through any other node in the configuration. This is further assisted because of YottaYotta's unique architecture, in which the metadata about the configuration is distributed across all the nodes.
- ☒ YottaYotta's solution was significantly less expensive than the alternatives. Fewer YottaYotta nodes could achieve the necessary performance and availability targets. The other cost savings came from the ease of use associated with the configuration. Less training and fewer personnel were required to manage the environment.
- ☒ YottaYotta's unique architecture is well positioned to make active/active sites possible with applications such as Oracle RAC. In this scenario, the NetStorage configuration enables the Oracle RAC cluster to be stretched across geographies. Oracle RAC can be accessed simultaneously in two locations without any manual intervention. This ensures disaster recovery.

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## Results

The YottaYotta solution has now been implemented for over two months, with just over half the intended implementation completed. The implementation was simple. The initial migrations went off without a hitch. The support received from YottaYotta and its willingness to work with the ISP on specific requirements differentiated YottaYotta as a partner in the effort to address the storage challenges listed.

The implementation is well positioned to eliminate the need for replication. The technology enables data copy across geographies at a lower cost and with greater efficiency.

## ESSENTIAL GUIDANCE

YottaYotta is now at a crossroads. Its technology has been tested and implemented in a variety of environments with varying requirements. Based on this case study, NetStorage delivers value on multiple levels, simplifying migration, enabling high availability of storage, and facilitating disaster recovery and business continuity with minimal manual intervention.

YottaYotta is challenged with letting the market know what it has to offer. It has been operating in stealth mode for some time, but in order for it to make the next necessary step, it must invest in marketing communications and branding. The market has to learn who YottaYotta is. End users must learn to associate YottaYotta not with *Seinfeld* but with an innovative technology company that can solve many of today's storage-related problems.

Marketing the company must be accompanied by efforts to develop a channel that can introduce YottaYotta to enterprises and package its technology as a solution addressing a specific customer need. The channel partners chosen must have expertise in storage, disaster recovery, and business continuity planning and understand how to position YottaYotta as a complement and a competitor to storage virtualization, replication, and high-availability solutions.

Finally, YottaYotta needs to consider extending its offerings to the midrange enterprise market segment. Organizations in this segment often have the requirement for advanced functionality but may not have the budget to implement the whole solution. YottaYotta might consider packaging its technology with specific applications in mind, thus limiting the functionality to what is desired by the end user and nothing more. This type of packaging offered at a lower price point and distributed through resellers and integrators may expand the market opportunity addressable by YottaYotta NetStorage Control Node.

## LEARN MORE

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### Related Research

- ☒ *Virtualization Across the Enterprise* (IDC #TB20070405, April 2007)
- ☒ *Storage Virtualization* (IDC #206033, March 2007)
- ☒ *Storage Virtualization Comes of Age* (IDC #TB20070201, January 2007)
- ☒ *Managing Virtual Infrastructure: Key Business and IT Benchmarks* (IDC #ITMS5078, January 2007)
- ☒ *Storage Virtualization Comes of Age, Following Server Virtualization* (IDC #204175, November 2006)

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