

# Easing Server Management Challenges with XIOtech's Virtualized Storage Architecture

## Introduction

Managing servers with direct-attached storage can be a nightmare for administrators, often requiring extensive server downtime for common but necessary maintenance tasks.

### Key Benefits

- ⇒ Minimized administrative burden; most tasks can be completed online, in minutes...not hours
- ⇒ Greater application and data availability
- ⇒ Reduced risk to data from server maintenance procedures
- ⇒ Lower server purchase, lease, and maintenance costs

Administrators usually have to perform server maintenance at night or on weekends so user access to data and applications is not interrupted. Of course, for companies that function 24x7, there is no good time to take servers offline.

XIOtech Corporation's virtualized storage architecture—comprised of the MAGNITUDE™ storage area network (SAN) hardware platform and REDI™ software family—provides the ultimate server management platform. No other solution can perform so many administrative functions **easily . . . without downtime to servers . . . in the middle of the day**. XIOtech gives administrators their time back, allowing them to focus on more important projects—while maximizing data and application availability for end users.

## Server Management Headaches Are a Thing of the Past

Changing configurations with server-attached storage is time consuming and wrought with challenges, but XIOtech's virtualized storage architecture relieves server administration headaches. The following are just a few examples.

### Booting from the SAN

With the boot partition of a server on XIOtech's MAGNITUDE, multiple servers can boot directly from the SAN. Much of the server management functionality of XIOtech's virtualized storage architecture is possible because of the ability to boot servers from the MAGNITUDE.

### Installing and Upgrading Software

To prepare for a software upgrade, the server's operating system, applications, and data should be backed up to protect against possible corruption during the upgrade process. If all the server's files are housed on the MAGNITUDE, they can be copied to disk rather than to tape—taking minutes, not hours.

What's more, if one step in the installation or upgrade process fails, you don't have to start over from the beginning—just pick up at the last successfully completed step. Once you have completed one installation, you can use the same image to deploy additional servers in just minutes.

### Adding Disk Capacity

To add capacity to a server with attached disk requires server downtime and some risk to data. This function invariably is performed during a "maintenance window," even if the need for space is immediate. With XIOtech's virtualized storage architecture, you can add physical or logical space to a server on the fly and even can expand existing partitions—in the middle of the day, without server downtime.

### Changing RAID Types

The RAID level that initially is set for a server may not be the optimum RAID level throughout the life of that server. Changing the RAID level can increase performance, enhance data protection, or free capacity. However, RAID levels rarely are changed in server-attached storage environments because of the risks. XIOtech's virtualized storage architecture makes changing RAID levels risk free, and the task can be performed in the middle of the day, with no server downtime.

### Changing Server Hardware

Server hardware upgrades take a lot of time. Data and applications have to be backed up and then rebuilt on the new server—eating away at an administrator's day. With your data on XIOtech's MAGNITUDE, servers are no longer dependent on attached disk. To change servers, simply unplug the old one, plug in the new one, point the server at the same virtual disk (storage volume), and the upgrade is complete.

Now you can think of servers in a completely different way—not as data repositories but simply as managers of data movement. This allows you to explore a wealth of possibilities:

- The ability to boot servers from the SAN lets you deploy less expensive, diskless “thin” servers.
- Using less expensive thin servers makes it cost effective to keep a spare server on hand to serve as a fast replacement for a failed unit. This strategy lets you move to a less costly 9x5 server maintenance contract, while reducing downtime and perhaps saving overtime costs.
- Because replacing servers is fast and painless, you can shorten your lease cycle. This lets you keep up with server technology and reduces overall lease costs.
- You now can consolidate servers because data can be reassigned from one server to another in seconds, with minimal downtime, and without the need for backup and restore operations.
- XIOtech's virtualized storage architecture is a perfect foundation for server clustering. This technology allows a server to fail over to another, ensuring that users maintain access to data and applications even if a server fails.

## XIOtech Responds to Data Center Needs

### **Support for Multiple Operating Systems**

Like many organizations, you probably have a mix of operating systems throughout your enterprise. Unlike server-attached storage systems, XIOtech's MAGNITUDE hardware platform supports NetWare, Windows NT/2000/.NET, Linux, MacOS, HP-UX, Solaris, AIX, and many other operating systems. The MAGNITUDE can manage all these servers on the same SAN, at the same time, without any server being able to see disk assigned to another server.

### **Foundation for a Test Lab**

XIOtech offers a superb way to build a test lab, even if you have only a couple of servers available. By pointing to different MAGNITUDE virtual disks, servers can be rebooted to completely different environments. One minute you could be testing GroupWise with NetWare 6; all you have to do is repoint and reboot the server, and you could be running SQL Server 2000 with Windows .NET. The possibilities are endless!

### **Data Center Footprint**

Up to 42 thin servers can be mounted in a single rack, all booting from the same MAGNITUDE hardware platform. This reduces the footprint in a data center to the equivalent of two racks for 42 servers and terabytes of flexible storage capacity.

### **Standards Management**

Because diskless thin servers are less expensive than traditional servers, it may be feasible for you to replace them more quickly and standardize on a unified platform throughout your organization.

### **Capacity Planning**

XIOtech's virtualized storage architecture practically eliminates the need for capacity planning because you only have to purchase what you need today. When you need more capacity, you can add drives without any downtime to the MAGNITUDE or servers, and without affecting end users.

### **Disaster Recovery**

XIOtech's REDI SAN Links Replicator software allows operating systems, applications, and data to be mirrored from one MAGNITUDE hardware platform to another. With the second MAGNITUDE in a remote location, if one site goes down, servers can easily be repointed to the disaster recovery system and brought back online.

## Conclusion

XIOtech's virtualized storage architecture dramatically eases the burden of server management—tasks that used to take hours, now can be performed in just minutes, without server downtime. The result is higher availability of data and applications, less “off hour” work for administrators, and lower costs for your organization.

A companion white paper, *Server Management with XIOtech's Virtualized Storage Architecture*, is available from XIOtech. This paper provides a more in-depth look at the concepts that are introduced in this solution brief.

**To learn more about how XIOtech's products and services can help relieve your server management and storage-related challenges, contact your local XIOtech account executive, visit [www.xiootech.com](http://www.xiootech.com), or call XIOtech's corporate headquarters at 866.472.6764 (toll free).**



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