



The IP Storage Payoff: Turning your investment into efficient, affordable results

Contents

Abstract	3
Proliferating Information: Both an Asset and an Obstacle	3
A Snapshot of Today's Data Storage Environment	4
The Benefits of IP-based Networked Storage	5
Considerations for Transitioning to an IP-based Storage Network	6
EMC: Your Strategic Partner	7
EMC IP Storage Solution Portfolio	7
References	8

The IP Storage Payoff: Turning your investment into efficient, affordable results

Abstract

Today's midsize enterprises face the daunting challenge of managing growing volumes of data—and struggle to find ways to do this effectively with constrained budgets and limited staffing resources. But recent advances in IP-based storage technology have made it possible for businesses of all sizes to leverage existing technology and staffing resources to easily and cost-effectively build and maintain sophisticated storage networks. This paper outlines the many data storage challenges facing the IT staff at today's midsize enterprises and discusses how IP-based networked storage can help them overcome these challenges.

The widespread adoption of IP storage—iSCSI and NAS technology to access storage systems—has created a new opportunity for organizations of all sizes to cost-effectively build and maintain efficient, reliable storage networks. So, instead of investing in the same Fibre Channel (FC) networks that their larger counterparts use for storage, midsize enterprises can leverage existing IP technology and IP-trained staff to deploy and maintain their storage networks. In essence, today's sophisticated IP-based storage technology offers methods to achieve the same storage results as larger enterprises—in a far simpler and more affordable way.

Proliferating Information: Both an Asset and an Obstacle

Information is the fuel of the modern business—and in today's global, 24x7 environment it is more abundant than ever before. To remain profitable, competitive, and compliant, businesses must be able to store, protect, and access terabytes upon terabytes of data quickly, efficiently, and securely—making data not only the most valuable asset of the modern enterprise, but also its greatest challenge.

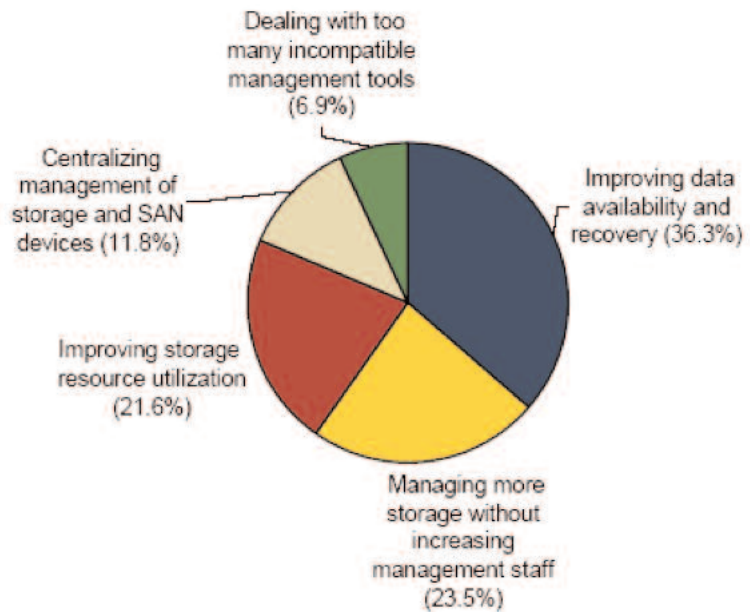
While the demand to more efficiently and securely consolidate data is felt at businesses of all sizes, it is particularly apparent at midsize enterprises, according to IDC's recent survey of IT administrators at organizations of this size. The respondents cited the following factors as contributing to the pressure to better manage storage:

- More data-intensive applications that generate more information and consume more storage
- An increase in the number and range of internal and external end users that demand access to information
- Protection requirements for all applications and information in case of failures or disasters

In fact, the rate of storage capacity consumption—combined with the increasing range of solutions and skilled staff needed to address business growth—is stretching the limited budgetary and staffing resources at midsize enterprises to the maximum. And adding just a single new administrator to address these issues can increase IT staff budgets by as much as 20-33 percent.¹

IT managers at midsize enterprises don't have the staff, financial resources, or time to navigate the growing array of technologies and implementation details involved in deploying storage for new applications while maintaining and enhancing existing ones. As such, they need solutions that can not only help them overcome the growing challenges of data storage, but also allow them to leverage existing resources to do so.

Critical Mid-Market Storage Management Challenges



Source: IDC Information and Data²

A Snapshot of Today's Data Storage Environment

Networked storage, which enables consolidating and storing massive amounts of data in a centralized file server or storage system, is a highly effective way to overcome the challenges of massive data growth. A networked storage environment delivers enhanced reliability, availability, and speed of access while ensuring efficient and predictable data protection, backup/recovery, and long-term archiving across all systems.

For large enterprises, networked storage is nothing new. High-bandwidth Fibre Channel (FC) technology provides a foundation upon which to deploy and consolidate large critical applications. Network-attached storage offers a lower-cost supplement to these dedicated FC networks, more suitable to house mainly file-serving and file-sharing applications. So, enterprises could use a combination of both to build a reliable, cost-effective storage network.

But while large enterprises had the resources to build and maintain these networks, smaller enterprises were lacking not only the budget to invest in the technology, but also the skilled staff to deploy and support it. Instead, they met the challenges of the growing data store by purchasing and deploying storage on a server-by-server basis as needed. So, as they needed to deploy more applications, they purchased additional storage. And if they needed additional storage, they purchased more servers. However, as the environment changed and data grew, these servers proliferated throughout the organization, creating a

complex, inefficient, and difficult-to-manage storage network.

This storage deployment model presents an entirely new set of challenges, including:

Under-utilization of resources. In a distributed storage environment, resources are typically being used at about 25 percent of their overall capacity, negatively impacting the optimization and the return on investment of storage technology.

Increased costs. The more servers and stranded management assets that are deployed, the more complex the storage environment becomes. This complexity can make the environment increasingly difficult to maintain, which drives up management costs.

Decreased reliability. As data and storage is spread throughout the organization, it becomes increasingly difficult to maintain a reliable environment, putting organizations at risk for data loss or unavailability and costly downtime.

Complex backup and recovery. In a distributed storage environment, there is no consistent, common, or simple way to conduct backup. This can render business continuity and disaster recovery processes slow or, worse yet, completely ineffective.

The Benefits of IP-based Networked Storage

With the advancement in IP-based storage technology, it is no wonder that a recent EMC® survey showed that 50 percent of today's midsize enterprises are considering deploying an IP-based storage solution in the next 12 months.

Today's sophisticated IP-based storage technology presents new, attainable methods for midsize enterprises to achieve the same storage consolidation results as the market's largest organizations—in a simpler way and for far less. After all, they already have the technology in place via existing IP networks, so their IT staff already has the skill set necessary to deploy and manage the environment.

Plus, an IP-based storage solution can deliver a wide range of benefits, including:

Increased utilization rates. In environments where storage has been consolidated via the IP network, utilization rates are significantly improved. In fact, storage resources can achieve 80 to 85 percent utilization.

Decreased management costs. An IP-based storage solution provides a centralized way to manage information, simplifying the process and driving management costs down.

Increased reliability. The inherent functionality of a dedicated IP- storage system can vastly increase the reliability and availability of application data.

Simplified backup and recovery. IP-based networked storage furnishes the opportunity for midsize enterprises to implement consistent, common, and simpler backup and recovery processes.

Considerations for Transitioning to an IP-based Storage Network

Compared to server-resident or direct-attached storage, IP-based networked storage is a far more efficient, cost-effective method of storing fast-growing data. But there are a few things to consider in deciding whether or not it is right for an organization.

Following are some questions an IT professional may ask to determine whether IP-based networked storage is right for them:

Is budget a major concern? Today's midsize enterprises are under very tight budgetary constraints and need solutions that can deliver increased return on investment in current technology with minimum new investment. IP-based networked storage meets this requirement by allowing organizations to leverage the existing IP network to build a simple yet capable storage network for a comparatively small investment.

How easy will the transition be? The IT staff at typical midsize enterprises have their hands full not only with existing data issues—such as access, protection, backup/recovery, and archiving—but also with the wide range of other IT initiatives throughout the business. Staff at these organizations are already trained on IP technology, so deploying networked storage based on this will ease the transition.

What types of applications need to be supported? Whatever storage technology an organization chooses, it will need to support a wide range of applications—and have the capacity to support even more as the organization grows and evolves. NAS is ideally suited for file sharing and home directories. iSCSI is ideal for e-mail and OLTP applications and can deliver more than sufficient performance for these typical applications with small-block, random I/O loads. Fibre Channel provides more bandwidth and better performance for applications characterized by large-block sequential I/O loads such as decision-support systems and backup-to-disk.

How will storage needs change in the future? As organizations grow and evolve, storage requirements will surely change. What may be an acceptable capacity for storage now may not be suitable years down the road. As such, when choosing an IP-based storage solution, it is critical to take into account not only the consolidation capabilities and the expertise available to deploy the initial solution, but also the scalability and additional functionality that may be required in the future. Some additional functionality that midsize enterprises may need in the future include:

- Flexibility to offer iSCSI, NAS, and FC capabilities to support a variety of application requirements
- Advanced backup, recovery, and archive solutions
- Disaster recovery capabilities

Why an EMC IP Storage Platform?

- Lower costs by stopping the proliferation of servers and storage
- Increase uptime for applications, featuring “five 9s” availability
- Consolidate management by simplifying everyday tasks
- Speed backup and recovery to better meet RPO/RTO targets
- Offer backing by the industry’s best services organization to help understand the environment, design an optimized solution, and simplify the transition to IP-based storage

EMC: Your Strategic Partner

EMC is the market leader in IP storage for midsize enterprises today. According to IDC research, between EMC and its wide network of Velocity² Partners, no other provider has deployed more IP-based storage solutions. That’s because EMC offers a wide range of flexible options to bring cost-effective, simple IP storage to midsize enterprises—whether they are deploying an initial networked storage system or consolidating servers and applications not on their current SAN.

EMC IP Storage Solution Portfolio

The **EMC Celerra® NS20 and NS40** are high-performance, full-function IP-storage platforms that deliver NAS and iSCSI capabilities for application storage and file server consolidation. Easy to deploy and simple to manage, the NS20 Integrated and NS40 Integrated models are all-in-one multi-protocol storage platforms that offer customers the flexibility to add on Fibre Channel SAN connectivity. The NS20 and NS40 offer customers a choice of FC or cost-effective ATA drives to meet the needs of a wide range of organizations.

The **EMC CLARiiON® AX150i** iSCSI networked storage systems are simple to install and easy to manage. The CLARiiON AX150 extends the proven EMC CLARiiON architecture—providing integrated functionality and ease-of-use at an entry-level price. And it delivers cost-effective consolidation and capacity, integrated functionality, and performance with the economy and familiarity of IP networking.

EMC CLARiiON CX3 FC/iSCSI systems (CX3-10, CX3-20, CX3-40) are cost-effective platforms for consolidating application storage via iSCSI. These systems deliver industry-leading levels of system availability with the powerful UltraScale™ architecture; and offer extremely simple management via the wizard-driven Navisphere® Task Bar. The CX3 FC/iSCSI systems also have the flexibility to deploy iSCSI and FC connectivity to simultaneously support a wide range of application requirements.

CLARiiON CX3 series systems can ensure further information protection with the addition of optional software. **EMC SnapView™** increases availability while reducing backup windows by creating local, point-in-time copies of data that can be used for testing and backup and recovery operations. **EMC Replication Manager** handles snapshot and replication integration and management for both Microsoft Exchange and SQL, enabling scheduled or on-the-fly replica creation for backup and/or operational recovery. And **EMC RepliStor®** and **EMC MirrorView™** increase the availability of IP-accessed data via remote replication to a secondary location to satisfy disaster recovery requirements.

References

- ¹ Boggs, Raymond, and Richard Villars. Delivering Qualified Storage Solutions That Meet the Needs of Mid-Sized Enterprises. IDC Information and Data. 2006.
- ² Boggs, Raymond, and Richard Villars. Delivering Qualified Storage Solutions That Meet the Needs of Mid-Sized Enterprises. IDC Information and Data. 2006.
- ³ Soleheim, Shelley. "Disk Storage Sales Surge in 2005." Network World (2006). <<http://www.networkworld.com/news/2006/030206-disk-storage-idc.html?page=2>>.
- ⁴ Grey, Robert C. IP Network Storage Moves into the Mainstream. IDC Information and Data. 2006.



EMC Corporation
Hopkinton
Massachusetts
01748-9103
1-508-435-1000
In North America 1-866-464-7381

EMC believes the information in this publication is accurate as of its publication date. The information is subject to change without notice.

THE INFORMATION IN THIS PUBLICATION IS PROVIDED "AS IS." EMC CORPORATION MAKES NO REPRESENTATIONS OR WARRANTIES OF ANY KIND WITH RESPECT TO THE INFORMATION IN THIS PUBLICATION, AND SPECIFICALLY DISCLAIMS IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

Use, copying, and distribution of any EMC software described in this publication requires an applicable software license.

EMC², EMC, Celerra, CLARiiON, Navisphere, RepliStor, and where information lives are registered trademarks and MirrorView, SnapSure, SnapView, and UltraScale are trademarks of EMC Corporation. All other trademarks used herein are the property of their respective owners.

© Copyright 2007 EMC Corporation. All rights reserved. Published in the USA. 07/07

EMC Perspective
H2692.1