

# *Virtual* Disaster Recovery

## Introduction

Today's data center has evolved into a complex, inflexible IT environment that can be costly to manage and difficult to recover in the event of a disaster. "Disaster" is a relative term and can mean anything from loss of an important file to loss of an entire physical site. A disaster can come in many forms, including but not limited to, operator error, malicious virus, hardware failure, or act of nature; and can result from system maintenance and planned downtime. The fact is, for one reason or another systems will go down, and for many organizations this can mean lost revenue and the inability to serve customers.

Consequently it is not only important to plan for disasters, but to also have a methodology in place for recovery. This may mean a backup strategy that includes offsite data storage and the ability to run operations remotely from an alternate site.

## Today's Complex Data Center

Data and system availability is the number one priority in today's IT department. Unfortunately data and system availability is difficult to achieve using traditional technology and even more difficult to restore when something goes wrong. The complexity of today's data center makes sustaining availability or recovering data and systems in the event of a disaster a daunting challenge and one that many data center managers find impossible to accomplish.

How can we gain control of our data and recover quickly? A growing number of organizations are turning to storage virtualization as the answer. Virtualization helps reduce capital equipment expenditures and operational costs and allows organizations to be more flexible and nimble to respond to disasters and recover operations quickly.

## Step One: Storage Virtualization

Storage virtualization is the first step toward virtual disaster recovery. With advanced storage area network (SAN) technology managers can easily provision storage for multiple servers, automatically classify and migrate data to the appropriate tiers of storage, and create an unlimited number of recovery points using snapshot technology. Storage virtualization also brings the ability to boot from SAN. For organizations with more than a few servers, deploying and recovering servers can be a laborious task. Boot from SAN offers IT managers numerous advantages compared with booting to direct-attached disks. Booting from SAN reduces complexity, lowers costs and accelerates server recovery.

To create a truly virtual data center, IT managers need a holistic storage solution; one that allows fully shared resources and provides complete data protection. Snapshots, or point and time copies of data, protect against data loss or corruption. Your SAN solution should give you the ability to take an unlimited number of space-efficient snapshots and allow you to keep them as long as necessary. This will enable you to design a complete matrix of protection around your data. Storage virtualization using snapshot technology and boot from SAN provides continuous data protection and enables quick response and complete recovery of data and systems.



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## Step Two: Server Virtualization

A storage environment built on a feature-rich SAN provides the optimum platform for virtual servers. Server virtualization enables the consolidation of applications on a smaller number of physical servers. By combining storage virtualization and server virtualization you create a complete virtual disaster recovery strategy.

Traditional SAN technology may not offer the flexibility needed to optimize a virtual server environment and the limitations make disaster recovery not only complex but also expensive to implement. Consequently most data center managers lack a comprehensive data recovery strategy. With traditional SANs the overhead required for snapshots increases storage cost and complexity. Traditional snapshots require full volume clones during the creation and recovery process and pre-allocated space for storage. Consequently you are limited to the number of snapshots you can take and store on traditional SANs and much of your storage expenditure goes to allocated but unused space. This becomes even more costly when want to replicate data for disaster recovery because that same storage configuration has to be duplicated at the replication site.

## Testing Your DR Strategy is Key

With today's more advanced SAN technologies the data center can be recovered quickly and efficiently. IT Managers are able to virtually eliminate the backup windows on production systems by taking advantage of features that allow physical and virtual servers to boot from SAN and by using unlimited snapshot capability to recover servers within seconds. Remote replication technology provides protection against site loss. Snapshots can be replicated continuously between sites, synchronously or asynchronously. Choose a replication technology that can be tested with all users connected and the system up and running, allowing IT managers to easily verify that their volumes are being replicated successfully. The ability to test your disaster recovery strategy on an ongoing basis will ensure you success in the event you have to put your plan into action.

The result is an affordable disaster recovery solution, one that leverages the full capabilities of today's virtualization technologies. Data center managers can create a complete data center virtualization solution by combining server virtualization with a feature-rich SAN that offers storage virtualization capabilities.

Server and storage virtualization used together provides real DR for today's IT.

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## Critical Definitions

**Virtualization** - The liberation of software from hardware. For too long, software applications have forever been tied to a specific piece of hardware. This becomes problematic with the rapid changes facing IT. Virtualization of storage combined with server virtualization frees applications from old hardware. Properly implemented, this creates a resilient architecture that allows for rapid recovery from crashes and disasters, provides simplified IT management, while reducing the total costs of operations including power consumption.

**Virtualizing servers** allows IT to put many "virtual" machines on a single piece of hardware. Virtualizing storage allows you to create a central "pool" of storage that services all servers in the environment. When these are combined, the simplified management and reduction of costs can be dramatic, while the entire architecture becomes "Highly Available". Davenport Group can assess your specific situation and let you know if you will receive benefit from one or both of these areas of virtualization.

