Galvanized Backup and Disaster Recovery Protection from Syscon and Zenith Infotech

- **Quick standby server using Instant Virtualization Technology**
- **Flexible recovery options including exchange e-mail boxes and messages**
- **Bare-metal restore**
- **Low-cost, full off-site storage**
- **Turn-key managed appliance**

Responsible business owners want a powerful Backup and Disaster Recovery (BDR) solution. You want a way to deliver a highly reliable, highly scalable service that won't cost thousands of dollars to get started or hamstring top talent with routine activities. Problem solved. With no upfront fees or license purchases, Syscon can implement a comprehensive BDR program in days, not months like some other offerings require. You will enjoy such benefits as:

Business scalability without a huge investment and without giving up control
No long-term commitment requirements
Flexibility to direct existing resources to more profitable and strategic priorities
Unsurpassed service and protection for your organization

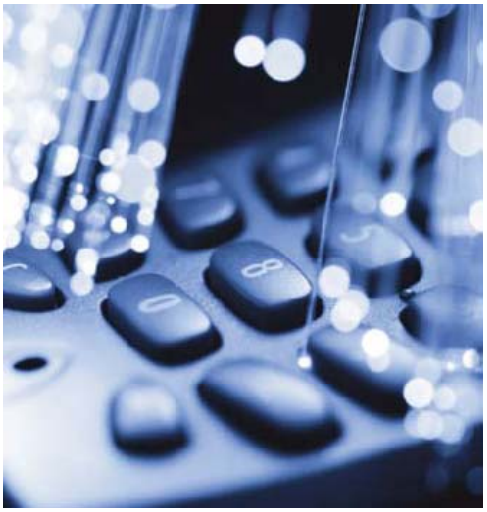
Take a look at Backup and Disaster Recovery Solutions from Syscon. You'll discover the easiest and most affordable way to provide your organization with speedy data, application and server restoration as well as the best way to rapidly resume in case of a server crash or a disaster.

Syscon, Inc. 1-800-545-2012

Syscon's Backup and Disaster Recovery (BDR) provides a cost-effective way to "bullet-proof" your data.

Syscon offers a comprehensive BDR solution for Windows 2000 and Windows 2003 servers. This reasonably priced, all-encompassing solution for small-to-midsize businesses provides:

- *Very frequent backups*
- *Seamless off-site data storage*
- *Multiple restore points*
- *Standby server capabilities*
- *Advanced restoration options*
  - *(file- and folder-level restorations)*
  - *with Exchange message and mailbox recovery*
- *Bare-metal restorations to dissimilar hardware*



With its Instant Virtualization capability, in less than 30 minutes, Zenith Infotech's unique network atttached storage (NAS) device can be configured to function as a standby server if needed. This unique device also can replace management-intensive, error-prone tape backups while providing much more.

This new NAS-based technology performs data backup at the block level where the actual 1s and 0s are captured from the hard drive, essentially eliminating failures related to open files. Because block-level data is raw information that's independent of file structure formatting, it's the most efficient way to write to a disk. Database applications such as Microsoft SQL Server and Microsoft Exchange Server transfer data in blocks without having to worry if files are open and in use. Backups are performed as frequently as every 15 minutes, providing your system with numerous restoration points compared to traditional tape backups. Data is securely sent from the local NAS device to high-availability, redundant off-site co-location facilities. All aspects of the on-site and off-site solution are monitored around the clock by Syscon and Zenith Infotech's network operations center (NOC).

With Syscon's BDR solution from Zenith Infotech, your business will have a solid, more frequent backups and a well-conceived recovery strategy for business continuity plans.

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Securely Link Every Operating System Component

The NAS device can be configured to backup multiple Windows 2000 and Windows 2003 servers by partition or logical drives. There are no file- or folder-level exclusions, because a snapshot of the entire partition is taken at the block level on the hard drive. In order to take advantage of the standby server function, the operating system drive must be selected. The data backup can also be scheduled to run during specific times and days of the week.

NAS User Interface

Once the initial configuration and provisioning of the NAS device is finished, the NAS User Interface (UI) will appear. This is the interface that will appear each time that you logon to the NAS device. The NAS UI allows you to perform administrative functions for the NAS device and the backups.

Base Image

The first backup taken of a server is the base image. The base image is an exact, complete copy of the currently used space on the server. The base image is taken for each volume (or partition) on the server. Once the base image completes, all future backups are incrementals.

Base Image Transfer by USB Drive

The base image files on the NAS device may be transferred to an external USB 2.0 drive. The USB drive is then shipped to Zenith Infotech's co-location facility by trained Syscon technicians, where the base image files are copied to Zenith Infotech's Storage Farm (SF). The USB drive transfer process can significantly reduce the time involved with transferring large initial base images to Zenith Infotech's co-location facility. This USB drive will be returned to you for reuse. Please allow for a three-week turn around.

While the Internet transfer is the default process, when the USB copy is invoked on the NAS device, the Internet transfer process is paused. Once the USB transfer process completes successfully at Zenith Infotech's co-location facility and the base image(s) is copied to and verified on Zenith Infotech's SF, the Internet transfer process is then resumed. If you are making your own personal copy of the base image to a USB drive and do not plan to send the USB drive to Zenith Infotech, you will need to manually browse and copy the base image and, optionally, any incrementals.

To estimate Internet transfer speeds, please use the following calculations:

1 Mbps sustained available throughput = 10 GB of data per day
256 Kbps sustained available throughput = 2.5 GB of data per day

If the Internet transfer process is already in progress and taking an extended amount of time, the USB drive transfer process is still an option.

Incremental Forever Methodology

Incremental forever methodology is similar to incremental backups where each incremental performs a backup of all changes since the last backup. This technology differs in that only one full backup or base image is required. This greatly reduces the time it takes to perform backups as each incremental takes only seconds to complete.

Incrementals

The incrementals take place at the frequency that you request. If you selected 24/7 backups at 15-minute incrementals, that will create 96 incremental files each day. If you selected one-hour incrementals, that will create 24 incremental files each day. All these incrementals will be saved on the NAS but only one image is pushed off-site daily to the co-location facility.

Synthetic Incrementals

Incremental files are collapsed into synthetic incrementals (basically a larger incremental file). This is done to ensure chain integrity and to speed up restorations. The fewer hops from the current point-in-time back to the base image, the faster your restoration will be.

- *Intra-day incrementals collapse to a synthetic daily incremental*
- *Synthetic daily incrementals collapse to a synthetic weekly incremental*
- *Synthetic weekly incrementals collapse to a synthetic monthly incremental*
- *The synthetic monthly incremental is currently the highest level back to the base image*

Recovery Options

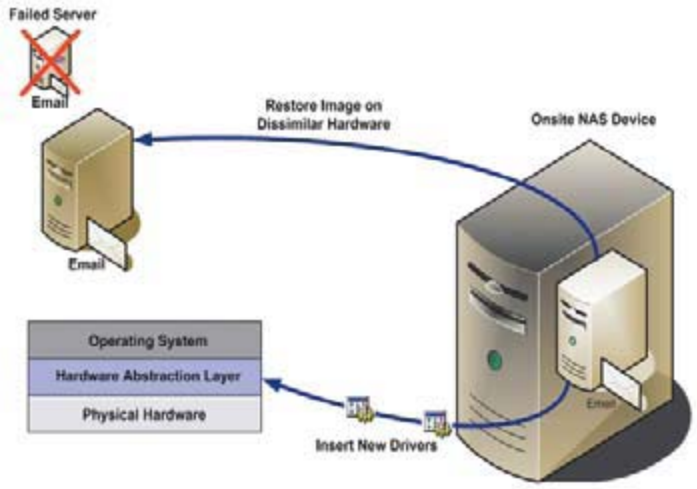
Recovering files and folders is a simple process where the entire server is mounted as a volume on the NAS device. The files can then be copied to the destination server over the network. There are also utilities enabling restoration of files, folders, Exchange mailboxes or messages and SQL tables and databases.

Standby Server Using Instant Virtualization

The NAS device has the ability to create a standby of a failed server by creating a virtual image of the failed server on the NAS. This unique ability is due to the fact that the virtualization engine natively understands the backup images as a hard drive allowing a failed server to be virtualized within minutes. No reconfiguration is needed as the "virtualized" server retains the same IP address, NetBIOS name, MAC address and application state of the original server. Once virtualized, the standby server will resume the backup schedule that was in effect before the failure.

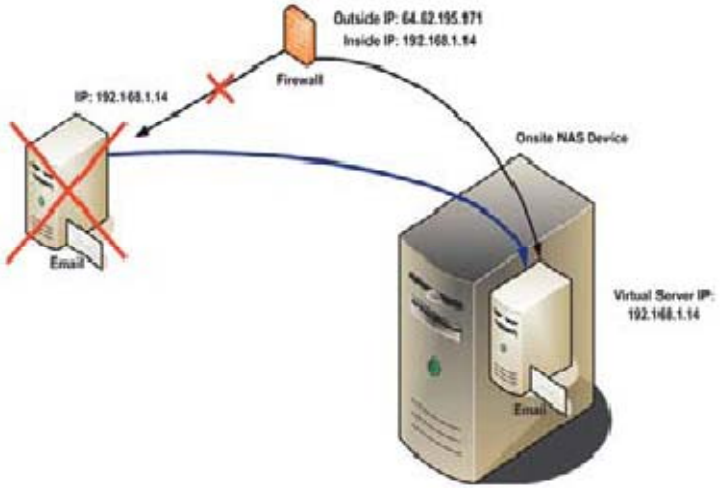
Bare-Metal Restore (Virtual to Physical)

When it comes time to restore the virtualized server back to physical hardware, our bare-metal restore process allows restorations to dissimilar hardware. This functionality can also be used to migrate an image of old servers to new servers (provided the customer has the right to do so based on the license agreements covering the software loaded on the server). Once the server image is loaded on the new server, we can manipulate the hardware abstraction layer.



Monitoring and Management

Syscon's total BDR solution is monitored and managed 24/7 by our NOC Team. If a problem occurs during any backup or with the hardware, we are quickly notified and take corrective action.



Technology and Features

The features and functions that comprise an affordable Backup and Disaster Recovery Solution include:

- *On-site and off-site storage*
- *Virtualization capabilities*
- *More recovery points to thoroughly protect your clients' vital data*
- *and network operations.*

Block-Level Backups

A NAS must be placed at each location with a Windows 2000 or 2003 server on a local area network (LAN). Multiple NAS devices can be placed on the same LAN. This solution is a block-level backup where we capture the entire server's partitions or drives at the 1s and 0s level. Block-level data is raw data which does not have a file structure imposed on it. The block-level image is an exact digital duplicate of the on-site server. Database applications such as Microsoft SQL Server and Microsoft Exchange Server transfer data in blocks and whether the files are open or being used makes no impact. This technology allows for complete server restorations based on the last functioning server's state before the failure occurred.

Backups are performed by server volume or partition. For virtualization you must capture the boot volume and any other volume(s) containing server applications. For example, if you install the operating system to drive C and Exchange to drive D, you must have both C and D backed up if you want to virtualize the server. Individual files cannot be added or omitted from the backup.

The frequency of off-site backups is limited by the amount of available bandwidth at the client site. Limited Internet bandwidth results in longer transmission periods so backups may take place on an hourly or daily basis.

Security

Encryption is an important step in the process of transmitting data between the NAS and the remote sites because it greatly reduces the risk of data loss incidents that plague magnetic tape backup solutions and prevents “man-in-the-middle” attacks during transmission. Zenith Infotech employs the 256-bit Advanced Encryption Standard (AES) algorithm to encrypt the backup images before they are saved on the NAS. After imaging the servers to which it is attached, the NAS device creates an independent 256-bit encrypted tunnel and transmits the imaged data to a secure off-site location where it resides in an encrypted, compressed format. That remote site then replicates again to an alternate data center, creating a total of three copies of the data in three geographically distinct regions. Only you have the pass key to the encrypted data — no one at Syscon or Zenith Infotech has access to the data on the NAS or the remote storage facilities.

Smart Data Transport

Data transmission occurs over your client’s Internet connection and can easily be configured to minimize bandwidth consumption. Our NAS leverages Adaptive Bandwidth Throttling (ABT) to limit the use of outbound bandwidth. Our software is able to adjust its transfer rates upwards or downwards based on how much bandwidth other applications need. Taking an example of a site where the maximum bandwidth allocated for offsite backup is 256Kbps, and the available bandwidth during the day (due to heavy Internet usage) is 140Kbps, then the data transfer software will use only 140Kbps of bandwidth at that time. The transfer value can also be capped not to exceed: 128k, 256k, 384k, 512k, 768k, or 1024k.

On-site and Off-site Solution with Multiple Restore Points

Multiple NAS devices can be placed on a LAN. Each NAS device, depending on the model, can be configured to backup one single server or multiple servers. As each backup occurs, the data is securely transferred to the off-site co-location facility. In the event of a complete disaster, we are able to ship a new NAS device imaged with your latest data.

NAS Retention

The NAS has only one retention policy available. The retention on the NAS is:

1. *Base image*
2. *Monthly synthetics (all)*
3. *Weekly synthetics (for last 5 weeks)*
4. *Daily synthetics (for last 14 days)*
5. *Intra-day incrementals (for last 2 days)*

Co-location Retention

The co-locations have two retention policies available: current image and archive option.

The current image also sends all of the backup images off-site but they are collapsed into a single image or restore point at the co-location facility. With the current image option you are able to restore a complete image of the server from the time the last incremental backup was received.

The archive option is an exact replica of the NAS device allowing you to perform restorations from as far back as when the base image was first taken. The only difference is that only one back up is sent off-site to the co-location, daily. These restore points are available for a one-year period. This archive option may not be sufficient to comply with some regulatory requirements. If you have specific regulatory or archiving requirements, our Syscon technicians will work with you to make sure the requirements are met.

NAS Specifics and Pricing

The NAS models can backup single or multiple servers. All models have an operating system based on Windows Storage Server 2003 R2, and come with virtualization software that is a hypervisor layer-based on open source.

Syscon will recommend the the appropriate NAS model with four things in mind:

Number of servers to be backed up
The volume of data to be backed up
The anticipated annual data growth
Allow space for all the incrementals by using a factor of 2:1 of the native data stored on the server

NAS Warranty

The NAS is fully warranted for the lease period, as long as monthly payments are being made. Additionally, if the NAS is purchased outright, the same warranty applies.

The NAS units cannot be traded in or upgraded. Any modification of the NAS device voids warranty.

NAS replacement parts will be shipped via standard ground transportation, prepaid. The faulty NAS part should be returned in the time allotted following the Zenith Infotech Returned Merchandise Agreement (RMA) or else you will be charged for the replacement parts. If it is determined the NAS has been tampered with or it is not faulty, you may be charged for the freight and shipping costs for the replacement part as well as the shiping costs of the original part.

Recovery after a Catastrophe

If a disaster results in the loss of an entire office — servers and on-site NAS included — you order a newly imaged NAS with the most current backup to be shipped out via nextbusiness-day air transportation to a location of your choice. Bear in mind that the frequency of off-site backups is limited by the amount of available bandwidth at your site.

Limited bandwidth will result in transmission periods which means backups may only be done hourly or daily depending on the speeds available. It's important to be cognizant of the backup frequency. Syscon technicians will make recommendations for greater bandwidth if it makes good business sense.

Depending on the NAS model, multiple servers can be virtualized on one NAS even as the NAS continues to perform backups. If such an event occurs, we will not host the data at the co-location facility during the period the NAS is acting as a virtualized server or servers.

Disaster Recovery

In a total loss disaster recovery situation, you will receive a NAS for temporary use. When the NAS arrives, all you need to do is plug in the RJ-45 cable and you're up and running. This recovery service will allow you to use the NAS for two weeks before it must be returned or purchased. This timeframe should allow you to get a new server ordered, in place, and do a bare metal restore from the NAS before returning the NAS. Alternatively, you can choose to keep the NAS and you will be billed for the new NAS. This would also allow you to use this NAS for the ongoing backups when you move forward re-establishing your network.

Offsite Remote Storage

Stored at two XO high-availability data centers in Phoenix and Baltimore

Highly redundant storage with backup images stored at the data centers on a Storage Area Network (SAN) at the primary facility, then replicated to the secondary facility

Connectivity provided by multiple roviders with automatic failover capabilities

Facilities provide two fiber-optic network drops for our backbone

Full physical security at each facility including security cameras, key card and biometric access

Network is secured with high-end redundant, automatic failover firewalls

Fire suppression and environmental control provided

Automatic backup power provided by on-site generators

Verification tests are done to point out any data corruption. In the event this occurs, the NOC takes the steps to fix the corruption or re-image a complete new image should the corruption be irreparable