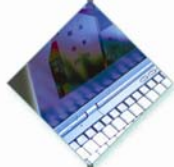
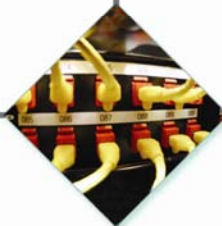


ComTech

Make The Right Move



Choose the Right IT Provider



“Bullet Proof Your Data”



ActiveCare™

Backup and Disaster Recovery



Is your data safe?



Helping You Work Smarter

Overview



ActiveCare™—ActiveBDR (Backup and Disaster Recovery)

A fully managed Data Backup and Disaster Recovery solution that provides a cost-effective way to “bullet-proof your data”.

A recent study discovered that, of companies experiencing a “major loss” of computer records, 43 percent never reopened, 51 percent closed within two years of the loss, and a mere 6 percent survived over the long-term. For small and medium-sized businesses (SMB’s) in particular, these statistics suggest the necessity of crafting a Business Continuity Planning (BCP) strategy grounded in a robust data backup and recovery solution.

Unlike enterprises, many smaller companies cannot afford optimal in-house strategies and solutions in service of BCP. These companies are consequently at an elevated risk of being put out of business due to any major loss of data. Loss of data could mean emails lost, accounting data lost, patient or client files lost, company records lost, client legal records or orders lost and so on. This white paper evaluates the scope of BCP for smaller companies, by examining their challenges, range of existing solutions and their drawbacks. We’ll also discuss how our solution overcomes commonly faced challenges to offer the most comprehensive solution out in the marketplace.

ComTech now offers the only complete cohesive Backup and Disaster Recovery Solution (BDR) for Windows 2000 and Windows 2003 Servers. This reasonably priced, all-encompassing solution provides Small to Medium size businesses (SMB’s) with near real-time backups that also includes seamless off-site data storage along with multi-year archiving and fast server virtualization capabilities. There are advanced restoration options like file and folder level restorations, with Exchange message and mailbox recovery and bare metal restorations to dissimilar hardware. Within hours, the unique BDR device can also be configured to function as a virtual server if needed. This solution will 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 1's and 0's are captured from the hard drive essentially eliminating failures related to open files. Block level data is raw data which does not have a file structure imposed on it. Database applications such as Microsoft SQL Server and Microsoft Exchange Server transfer data in blocks without having to worry if files are open or being used. Block transfer is the most efficient way to write to disk. Backups are performed as frequent as every 15 minutes providing clients with an increased amount of restore points when compared to traditional tape backups. Data is securely sent from the local BDR device to high availability, redundant off-site co-location facilities. All aspects of the on-site and off-site solution are monitored 24X7 by ComTech’s NOC.

This solution allows an organization the ability to continue to function even after a disastrous event without the need to deploy redundant hardware and software and the need for a company to invest in costly fault tolerant systems. This solution allows for a solid solution, with more frequent backups and a well thought out recovery strategy that is the primary component of a Business Continuity Plan.



Business Continuity Planning for Small and Medium Size Businesses

BCP is the blueprint for how businesses plan to survive everything from local equipment failure to global disaster. Data-oriented BCP, an indispensable component of business planning regardless of organization size, poses the following challenges. Smaller businesses generally lack the in-house IT resources to achieve these demanding planning, technical and process requirements. Therefore, many SMBs either neglect to implement any data-oriented business continuity plan or else approach data backup and recovery in a sporadic, rudimentary fashion that fails to conform to the best practices of BCP.

Understanding the risks of not having a plan in place:

- Understanding Regulatory Compliance requirements in your industry. Regulations such as the Health-care Insurance Portability and Accountability Act (HIPAA) and the Gramm-Leach-Bliley Act (GLBA) and other laws- state and federal.
- Understanding how to mitigate the risk of losing vital business data, such as customer records.
- Being aware of the environmental hazards that the business infrastructure is exposed to due to your geographical location.
- Estimating time it would take to build the business back if disaster strikes without having any BCP in place.
- Understanding ROI for having a BCP in place.

Technical Challenges:

- Identify the lowest-cost, highest-performance data backup medium (tape or disk) based solution and keeping abreast with the latest and greatest in the industry.
- Ensure that all backed-up data is encrypted and otherwise safeguarded from theft.
- Ensure that backed-up data can be restored to different kinds of hardware.
- Ensure that data backup continues even during active recovery phases.

Operational Challenges:

- Identifying what data to back up.
- Identifying how frequently to back up and related costs and ROI.
- Retain the ability to recover not only the most recent data, but also data from older time horizons, such as past quarters and years.
- Retain the ability to monitor and manage the integrity of ongoing data backup processes so that backup failures can be diagnosed and remedied before adversely impacting the BCP lifecycle.
- The need to hire Staff who can understand, design, implement and keep a BCP running 24/7 and be available to get business back in action after disaster strikes.

ActiveBDR



Traditional Solution vs. Emerging Technology

Implementing a data-oriented BCP strategy first requires designation of a specific data storage medium. Magnetic tape and disks are the two leading media for data backup storage. While magnetic tape is currently dominant, analyst Dave Russell of Gartner believes that “Recovery will move to online disk-based storage in the future. This will cause a major shift in the backup market during the next four to five years.”

Smaller Companies in particular will benefit from the shift, as recent advances in design and manufacturing lower the total cost of disk-based storage in terms of storage per bit. Falling prices, combined with the various performance advantages that storage industry analysts cite, render disk increasingly attractive. Gartner Group highlights the suitability of disk for these organizations by explaining that, “The need for high-performance online recovery of data, combined with the availability of low-cost disk arrays, has influenced enterprises and small and midsize businesses to adopt a disk-based approach for backup and recovery.”

Tape, in contrast to disk, is physically delicate and easily compromised by environmental factors such as heat, humidity, and magnetic interference. Moreover, tape cartridges must be replaced frequently (every 6-12 months). Tape’s innate sensitivity contributes to high failure rates, with analysts estimating that anywhere from 42 to 71 percent of tape restores fail. Even when magnetic tape backups are successful, tapes themselves are subject to loss or theft, and may be in the possession of an employee or vendor unable to reach a recovery site. Thus, even when physical backup and restoration processes succeed, tape may not prove to be as timely and appropriate a medium for data storage as disk. Time is a crucial consideration because each hour of server, application, and network downtime endured until data restoration comes at a high cost, especially to smaller businesses.

Analyst Jon Oltsik of Enterprise Strategy Group also points out that tape is seldom encrypted, compounding the destructive impact of tape theft: “Very few people encrypt backup tapes, which means that they rely on the security of the backup and off-site rotation process.” Magnetic tape encryption, unlike disk encryption, has historically been too costly for all but large enterprises: “Encryption of any data that is leaving the security of the data center, in transit, has always been an option, unfortunately, a very expensive option,” explains Clipper Group.

Disk offers not only lower cost encryption but also other advantages. In contrast to tape, “disks are more durable, last longer, withstand more overwriting and you don’t need to clean any heads,” according to Rinku Tyagi of PCQuest. Additionally, “When it comes to backing up using disks, they are easier to manage. Disk backup systems include management tools, often browser-based, for you to easily configure settings and check status from anywhere.”

HP enumerates other advantages of disk storage, noting that “Data is backed up to disk much faster than tape, which translates to less impact on production server availability. Disk is also a more reliable media than tape and less prone to error, which translates to less failed recoveries.” Clipper Group believes that the superior speed of disk storage is an enduring advantage: “High performance disk will always be the choice for online applications that require fast access.”

While disk offers advantages over tape, it is not a panacea. After installing disk technology, Companies will still be responsible for monitoring and managing backup processes, encrypting and safeguarding backed up onsite and offsite data, restoring data to new hardware, and other functions. Without implementing a layer of governance over disk-based data backup, these Companies court the danger of failed backups and delayed restoration of data, thereby jeopardizing their chances of successful recovery from major data loss.

Smaller Companies unable or unwilling to invest in the human expertise and infrastructure support systems necessary for data-oriented BCP can leverage our data backup and recovery solution, which removes cost and complexity burdens from your staff.

ActiveBDR



ActiveCare™ Backup and Disaster Recovery

Why do you need our Backup and Disaster Recovery Services?

- ◇ 70% of all Tape Backup restorations fail.
- ◇ Most Companies do not have an off-site backup for Disaster Recovery.
- ◇ Most companies do not have a secure backup.
- ◇ If you loose your data you could have the potential of going out of business.
- ◇ Good Insurance at a Great Price.

With this in mind ComTech created a solution for all your companies needs. A Disaster Recovery Solution that not only has off-site but on-site backup and restore capabilities. This solution also has the ability to create a virtual server should your physical server crash or is in-accessible. With 256-bit encryption, multi-year archiving, 100% managed by ComTech on a 24/7/365 basis, secure data transfer throughout the day, bandwidth throttling to keep your internet access open to all your users.

A Complete Solution that addresses all of your BCP Needs

Near Real-Time Backups: Our “Incremental Forever” methodology captures all changes to the initial image in increments of 15 minutes. The Incremental Forever technology not only backs up recent datasets but also allows end users to reconstruct the state of their data as it stood at the end of various 15-minute restoration points. This level of forensic and auditable data recovery may satisfy various regulatory requirements (such as HIPAA and GLBA) for data retention and data record reconstruction, and also serves stakeholders such as supply chain planners, warehouse analysts, auditors, and legal counsel.

On-site Virtual Server: If any of your servers fail, our server virtualization technology embedded in the Network Attached Storage (NAS) allows customer servers and applications to be restored and rebooted within two hours. As you may sometimes endure a wait of several days in order to receive replacement servers from vendors, your BDR can have your business up and running. The BDR multitasks so that, even while functioning as a virtual server, it can continue to back up data from other devices plugged into the BDR. Our technology thus allows you to remain in business without any significant loss of data backup, server functionality, or application downtime.

A Complete Image: We generate an image of all hard drive partitions via an agent, which is warehoused on the BDR device physically located at your location. The data is stored AES-256 bit encrypted and compressed, reaching efficiencies as high as 2:1. We employ a block-level, not file-level, backup, which means that data is captured at the level of 1s and 0s. Block level data is raw data which does not have a file structure imposed on it. Database applications such as Microsoft SQL Server and Microsoft Exchange Server transfer data in blocks. Block transfer is the most efficient way to write to disk and is much less prone to errors such as those that result from file-level backups. Additionally, block level backups are not affected by open files or open databases. The block-level image is an exact digital duplicate of the on-site server.

ActiveBDR



Intuitive and Flexible Restoration: A good backup system should allow for quick and flexible restores. Our solution allows for recovery of files, folders, partitions, mailboxes/messages, databases/tables using a quick and intuitive process. In case of a complete server failure we do support a bare metal restore to new hardware which has a different configuration, hardware and drivers as compared to the failed server. Our 15 -minute incremental based backup allows restores to be done from any point in time, allowing for multiple versions of files, folders, messages/mailboxes, database/tables to be restored.

Secure Remote Storage: After imaging the servers to which it is attached, the BDR device then creates an independent 256-bit encrypted tunnel and transmits the imaged data to a secure offsite 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. Since the data is encrypted and only you have the key, no one has access at any of the remote storage facilities.

Transmitting data to a remote site is a key component of BDR. It guarantees that, in case of physical damage to the client's network or BDR, or even regional disaster, the data is safe in uncompromised locations. Encryption is an important step in the process of transmitting data between the BDR and the remote sites, because it greatly reduces the risk of data loss incidents that plague magnetic tape and prevents man-in-the-middle attacks during transmission. We employ the 256-bit Advanced Encryption Standard (AES) algorithm because it has never been broken and is currently considered the gold standard of encryption techniques and render transmitted data immune to theft.

Secure, Bandwidth Throttling Transfer: Transmission itself occurs over your Internet connection, and can easily be configured to minimize bandwidth consumption. Our BDR leverages Adaptive Bandwidth Throttling, which only utilizes unused bandwidth or allows us to set an outbound limit. Our UDP based smart transfer technology utilizes a host of innovative algorithms to speed up data transport and resume from failure. We can therefore exercise fine control over the data imaging and transmission processes.

24x7 Completely Managed Solution: Our 300-person Network Operations Center (NOC) monitors your BDR units and the attached servers 24/7. Failed processes generate immediate alerts to *our engineers*, who often remotely correct errors within minutes of receiving notification. In case of more serious BDR issues, we will conduct repairs at your site. If any BDR units are irreparably damaged or destroyed, we will overnight ship replacements—pre-loaded with all stored data—directly to your location.

Affordable Cost: We offer a pricing packaged that is all inclusive of the complete backup and disaster recovery service-with no hidden costs. All your costs are bundled and include the BDR, the Incremental Forever Methodology, file restorations, file integrity checks, secure data transmission and remote storage.

On-site and Off-site Solution with Multi-year Archiving: Each NAS device, depending on the model, can be configured to backup from one single server up to eight servers. Multiple NAS devices can be placed on a LAN. As each backup occurs the data is securely transferred to the off-site co-location facility so in the event of a complete disaster we are able to ship a new NAS device imaged with the latest client data. Data is transferred to the co-location facility using AES 256-bit encryption and band-throttling software. Multi-year archiving using a combination of daily and monthly synthetic images is set up on the NAS Device and then replicated to the off-site co-location facility.

ActiveBDR



- All models have and Operating System that is Windows Storage Server 2003 R2 based.
- All models have virtualization software (Number of servers able to be virtualized differs from server backup quantity)

	BASE	ADVANCED	XTREME
NAS Device Storage capacity & specifications	400GB (500GBx2 RAID1) 4GB of memory (RAM) 2x10/100/1000 Mbps NIC Tower, Hot Swap Drives AMD Athlon May be used to backup only one server	1TB (500GBx4 RAID 10) 2U Rack Mount, Hot Swap Drives AMD Opteron Dual Core 8GB of memory (RAM) 2x10/100/1000 Mbps NIC Can be used to backup up to five servers	2TB (1TB x4 RAID 10) 2U Rack Mount, Hot Swap Drives AMD Opteron Dual Core 8GB of memory (RAM) 2x10/100/1000 Mbps NIC Can be used to backup 10 Servers
Off -site Storage Bundle *	30GB (if current image option selected) 15GB (if archive image option selected)	60GB (if current image option selected) 30GB (if archive image option selected)	120GB (if current image option selected) 60GB (if archive image option selected)

* Additional space is available at an additional charge.

Other Benefits:

Disaster Recovery/Business Continuity Solution that can be fully managed by ComTech.

Flexible on-site and/or offsite backup solution.

Intuitive and easy to use software with file level restores available.

Very frequent backups with offsite replication.

Easy restoration - on-site or off-site.

Eliminate costs associated with backup software and maintenance.

Your operational costs are greatly reduced.

BDR devices under full warranty.

ActiveBDR



Restoration Speeds for Virtualization.

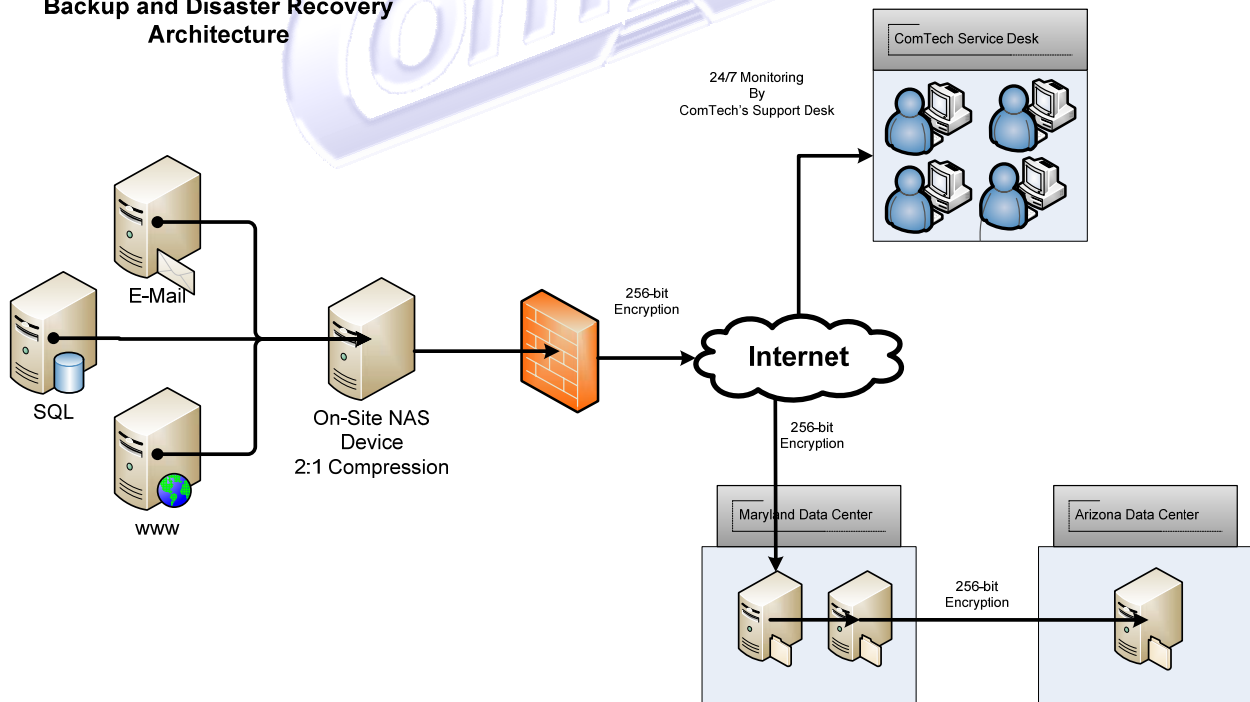
Both scenarios are based on virtualizing a server on the BDR device.

Base Model restore speeds are between 1.1GB/minute - 1.3GB/minute. Typical restoration for 100GB of compressed data is between 37-45 minutes.

Advanced and Xtreme Models restore speeds are between 2.7GB/minute - 3.6GB/minute. Typical restoration for 100GB of compressed data is between 15-20 minutes.

Due to the additional disks available in the Advanced and Xtreme Models BDR restoration speeds are faster. The Advanced and Xtreme Model BDR devices should be selected if this is a concern.

Backup and Disaster Recovery Architecture





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