

# **ADVANCED** **VISION**

TECHNOLOGY GROUP

***REMOTE OFFSITE BACK-UP***

***&***

***VIRTUALIZED DISASTER  
RECOVERY  
BUSINESS CONTINUITY SERVICE***

***WHITE PAPER***

## Fully Managed & Monitored Solution that provides you with cost-effective World Class Protection

### Highlights of the Service:

- Eliminates the cost and time of managing on-site tape backup. We monitor and manage the entire process and validate backup data!
- A complete solution that is designed to reduce any server down time with the use of a specialized back up and virtual server appliance.
- Allows near real-time backups-as frequent as every 15 minutes.
- Off-site remote data backup to high-level replicated Data Centers in Baltimore and Phoenix at a very affordable cost.
- All aspects of the on-site and off-site solution are fully monitored and managed 365\*7\*24 by Advanced Vision Technology's NOC.
- File and Folder level restoration in minutes.
- Server Virtualization as quickly as 1-hour if a protected server fails.
- Bare metal restorations to dissimilar hardware in the event a failed server needs to be replaced.
- **ALL Labor involved with the recovery effort is included at NO additional charge.**

### Executive Summary

Recent studies have shown that of companies experiencing a "major" loss of computer data, 43 percent never reopened their business, while 51 percent closed within two years of that loss and a sheer 6 percent actually survived in the long-term. These statistics suggest the necessity of implementing a Business Continuity Plan strategy augmented for the requirements of your small and medium-sized businesses (SMB).

Unlike major enterprises, smaller companies do not optimize in-house backup strategies and solutions and face unnecessary consequences. These companies are at an elevated risk **of being put out of business** due to any major loss of data. "Loss of data" can consist of the loss of emails, accounting data, patient or client files, company records, client legal records or orders and so on. This white paper will evaluate the scope of BCP for smaller companies by examining their challenges and possible currently implemented solutions and their drawbacks. We will also discuss how our solution overcomes commonly faced challenges to offer the optimal solution for data recovery and business continuity planning (BCP).

## **Business Continuity Planning for Small and Medium Sized Businesses**

A Business Continuity Plan (BCP) is the blueprint for how a business plans to survive everything from a local equipment failure to a global disaster. Data – oriented BCP, an indispensable component of business planning regardless of organization size, poses the several challenges. Smaller businesses generally lack the in-house or off site IT resources and/or knowledge to achieve 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, antiquated fashion that fails to conform to the best practices of integrated BCP.

### **Understanding the risks of not implementing a proper BCP:**

- Understanding how to diminish the risk of losing vital business data, such as client records and files.
- Being aware of the environmental hazards that the business infrastructure is exposed to due to your geographical location.
- High costs and preventable, excess 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.
- Understanding regulatory compliance requirements in your industry. Regulations such as the Healthcare Insurance Portability and Accountability ACT (HIPPA) and the Gramm-Leach Bliley Act (GLBA) and other state and federal laws.

### **Technical Challenges**

- Identify the lowest cost, highest performance data backup medium (tape or disk) based solution, while implementing and maintaining the latest and most beneficial backup in the industry for your business.
- Ensure that all backed-up data is encrypted and safeguarded from theft both within your infrastructure and off-site.
- Ensure that back-up data can be restored to different kinds of hardware; regardless of current type of hardware in use.
- Ensure that data backup continues even during active recovery phases.
- Ensure that if a local server failure takes place, that the business does not suffer from loss of productivity.
- Ensure and confirm that data is **actually** being backed-up.

## **Operational Challenges**

- Identifying exactly what data to backup.
- Identifying how frequently to back up and related cost and ROI.
- Retain the ability to recover not only the most recent data but also data as past quarters and/or years.
- Retain the ability to monitor and manage the integrity of ongoing data backup processes so that backup failures can be diagnosed “proactively” before adversely affecting the BCP lifecycle.

## **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, industry “Best Practices” indicate 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. Industry Leaders indicate that 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, tapes 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.

## **Traditional Solution vs. Emerging Technology** (continued)

Adding to the above is that a tape is seldom encrypted, compounding the destructive impact of tape theft: On a recent survey, we learned that many businesses do not encrypt backup tapes, which means that they rely on the security of the backup and off-site rotation. Magnetic tape encryption, unlike disk encryption, has historically been too costly for all but large enterprises.

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. 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.

Leading Manufacturers recognize 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. It is known that because of the superior speed of disk storage it has an enduring advantage.

While disk offers advantages over tape, it is not a cure-all. 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.

## **A Turn-Key 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 SOX) for data retention and data record reconstruction. It 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 Virtual Network Attached Storage (VNAS) allows customer servers and applications to be restored and rebooted within minutes. As you may sometimes endure a wait of several days in order to receive replacement servers from vendors, your VNAS can have your business up and running. The VNAS multi-tasks, even while functioning as a virtual server, it can continue to back up data from other devices plugged into the VNAS. Our solution thus allows you to remain productive without any significant loss of data backup, server functionality, or business downtime.

**A Complete Image:** We generate an image of all hard drive partitions via an agent which is warehoused on the VNAS device physically located at your location. The data is stored AES-256 bit encrypted and compressed. 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.

**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:** On a daily basis, after imaging the servers to which it is attached, the VNAS 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 BCP. It guarantees that in case of physical damage to the client's network or VNAS or even regional disaster, the data is safe in uncompromised locations. Encryption is an important step in the process of transmitting data between the VNAS 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 VNAS 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. It is important for us to assess your bandwidth and make sure it is sufficient for this transfer.

**24x7 Completely Managed Solution:** Our Network Operations Center (NOC) monitors your VNAS units and the attached servers 24\*7\*365. Failed processes generate immediate alerts to our engineers, who often remotely correct errors within minutes of receiving notification. In case of more serious VNAS issues, we will conduct repairs at your site. If any VNAS units are irreparably damaged or destroyed, we will overnight replacements, pre-loaded with all stored data, directly to your location.

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