IBM Storage Management for SMBs:
Data Protection on a Mom-and-Pop Budget

SMB Storage Management: All the Risks, None of the Budget

The average SMB (small to medium business) has most of the same data protection needs as its larger competitors. It must quickly store and retrieve information about products, customers and transactions; protect data from loss and recover rapidly from everything from the simplest user error to natural and man-made disaster. In an increasing percent of cases, SMBs must also meet regulatory requirements for storing email, financial and customer data for years or even decades. But most SMBs can’t afford a trained staff assigned specifically to storage management and protection. Instead, what passes for storage management is done by whichever employee happens to sit closest to the tape library, or is interested enough to volunteer for the job. The reality is that SMBs aren’t likely to find the extra money to hire trained storage staff anytime soon, and will continue to make do with IT generalists. As a result, when they buy storage management software they look for solutions that are both less expensive and easier to use than traditional products in order for their staff of generalists to meet their storage management and data protection requirements.

Such requirements go far beyond a simple daily or weekly backup (which many SMBs find hard enough to perform consistently). SMBs competing in a 24/7 global Web economy also have 24/7 data protection responsibilities, including the need to retrieve data whenever and wherever a user needs it. But even those requirements are often just the beginning. Companies operating in tightly regulated industries such as financial services or health care must also comply with state, national or industry regulations governing the security, availability and integrity of sensitive information. For example, in the securities industry, brokers and dealers must preserve customer and transaction records for at least six years, with the data being kept in “an easily accessible place” for the first two years. Pharmaceutical and biotech companies must comply with the Food and Drug Administration’s Title 21 Code of Federal Regulations (Part 11 which covers the role of electronic signatures in medical records, as well as areas such as data retention and data access. Small medical practices, medical labs, billing processors and others must comply with the Health Insurance Portability and Accountability Act (HIPAA), which regulates the use and disclosure of Protected Health Information and requires caregivers to maintain the availability of patient information. Of course, if the SMB does business internationally, it may need to meet special sets of national or regional standards for data retention and retrieval. In Europe, for example, the European Banking Capital Accord (Basel II) requires financial services firms to prove that their business practices, including storage management, don’t pose a risk to their business.

All these and many other requirements apply equally to SMBs and to their largest competitors. An SMB, of course, will rarely if ever be able to make the protective investment that its enterprise-sized competitors can. How then can SMBs compete with companies which can afford high-end storage management software, the best storage hardware, and large staffs of experienced and skilled storage experts?

Investing in Storage Management

Since they cannot compete in dollar-for-dollar storage spending, SMBs must take extra care when they go looking for solutions to meet their storage requirements. A good Rule Of The Road: SMBs should not focus on technology and building storage infrastructures; rather, they must first identify business needs and then make IT investments that ensure those needs will be met. What does this mean? Their larger competitors think in terms of recovery point objectives (RPOs - how “current” or “granular” a backup and restore must be); recovery time objectives (RTOs - how quickly data can be recovered so applications become productive again), and service level agreements which specify the uptime and reliability of critical applications. SMBs should think in the same business-oriented terms to assure they have access to data when they need it and in the form they need it.

Obviously, SMBs need simple tools that do not require a highly-paid expert staff. Beyond that, their need for persistent access to data translates into a set of storage needs that generally parallel those found at their much-larger competitors:

- Immediately available primary disk-based storage systems which provide data for daily use at the highest levels of reliability and performance.
- Local, immediately accessible data backups to enable quick recovery from day-to-day problems.
- Remotely stored data, made up of data replicated from the primary systems, to allow recovery from more severe emergencies.
- Business-driven data and storage management policies to assure that critical business data is available for authorized users no matter where and when they need it.

IBM Offers a Family of Products Tailored for the SMB Market

Today several vendors offer storage management solutions for SMBs, providing many advanced features at a far lower
cost than is seen with typical high-end storage management systems. One example is the family of offerings built around IBM’s flagship storage product, IBM Tivoli Storage Manager.

**IBM Tivoli Storage Manager Express** is based on the proven enterprise-level Tivoli Storage Manager, but runs on the inexpensive WinTel servers typically found at an SMB site rather than on more expensive devices. It is aimed at companies with between 5 and 20 servers, and is designed to be easy enough to use that even non-technical employees can install and configure the software. The company estimates a non-technical user can complete the installation and be conducting a full backup in less than 30 minutes.

Ease-of-use and several convenience features are built into the product. Wizards guide the administrator through basic functions such as backups and restores (the system even provides “to do” lists and email reminders about the storage tasks that must be performed each day). Tivoli Storage Manager Express backs up all data to disk. This not only means that archival backups may be transferred to tape at times that are convenient to the administrator, but also means that backed-up data residing on disks is easily accessible for quick restores. As a site’s needs grow, customers can easily migrate from IBM Tivoli Storage Manager Express to Tivoli Storage Manager Extended Edition.

IBM also offers **Tivoli Continuous Data Protection for Files**, a product providing continuous data protection (CDP) for the 60-70% of corporate data that resides on laptops and desktops. At some companies such data is backed up daily or weekly at best; at most, it is completely unprotected, with the result that if the PC or notebook fails, data is irretrievably lost. Tivoli CDP for Files captures every change made to a file and saves the changes locally, but also offers the option of transparently duplicating the changes and sending them to a networked location. A typical scenario might see a local copy stored on an external USB drive on the user’s desktop, with the remote copy being transmitted to a NAS device or to SAN storage. If, as might be the case with laptops, the user is intermittently connected to the corporate network, data meant for remote storage is held in local cache for transmission the next time the user links to the network. Only changes to files are transmitted rather than the files themselves, so there is minimal impact on network bandwidth. Most importantly, users can recover data from any stage in its history. Because each change is kept on a local disk, recoveries are both rapid and are handled entirely by the end user, who easily execute their own recoveries and never need to call for help desk or any other IT support. This eliminates the need to wait for recovery from a server or off-site service, and drastically reduces any interruption of the work flow.

As with Tivoli Storage Manager Express, IBM has taken pains to make this CDP capability as easy as possible. Tivoli Continuous Data Protection for Files can be installed and configured in minutes, operates in the background without the need for user intervention, and allows non-technical users to secure and recover files on their own.

**EMA’s Perspective**

IT managers at Fortune 100 and Fortune 1000 companies have always worried about application and data availability, and now make recovery point objectives and recovery time objectives a fundamental part of the service level agreements they execute with their corporate stakeholders. Most SMB owners and managers may never have heard of RPOs or RTOs, but their requirement to keep their own businesses up and running means that rapid and granular data recovery is just as great a concern for them as it is for the enterprise. In order for their business processes to be competitive, they must be competitive in IT as well.

This is particularly evident when an SMB competes against larger and better-funded competitors, or when it participates in a regulated industry. Most midsize medical practices, for example, with no storage specialists on their IT staff, can barely accommodate a standard backup and recovery process. What happens if an office worker downloads an attachment infected with a virus that destroys the clinic’s online data store, or if a construction worker halfway across the country accidentally cuts a fiber optic cable to the outsourcer that hosts the clinic’s disaster recovery site? In either case, medical services to patients may be significantly curtailed and the practice may lose thousands of dollars per hour. If such outages are common and severe enough, they could result in regulatory fines, the defection of patients and doctors, or even a wave of bad publicity large enough to force the practice out of business.

Recognizing that similar risks exist for SMBs in a range of data-intensive or highly regulated industries, IBM has taken important strides to deliver storage management solutions that fit SMBs’ needs, skill sets and budgets. With Tivoli Storage Manager Express and Tivoli Continuous Data Protection for Files, IBM provides solutions that are easy to install and to manage, and that offer the functionality SMBs need to protect their servers, desktop and laptop devices. Enterprise Management Associates feels IBM has taken impressive steps in customizing its enterprise-class Tivoli Storage Manager, with the result that companies with smaller staffs and IT budgets now have access to many of the same kinds of data protection as do their largest rivals. EMA expects IBM to continue making inroads in this market, providing additional easy-to-use solutions that are appropriate for SMBs, but which are also part of a clear growth path that will be useful for customers as they grow from small to medium to enterprise class businesses.