



Continuous Backup and Assured Recovery for SMBs: Focus on Microsoft® Exchange

A WHITE PAPER

Abstract: For many small and medium businesses data protection is an immediate and growing challenge. A company's data- email, customer lists, financial transactions and database information- is the business. Once a day backup to tape combined with all the things that can go wrong with the data- accidental deletions, viruses, natural or manmade disasters- exposes the company to loss.

This paper discusses the challenges small and medium businesses face today using current data protection and recovery approaches, describes a new comprehensive approach to optimize backup and recovery and highlights an innovative strategy for Microsoft® Exchange data.

Continuous Backup and Assured Recovery for SMBs: Focus on Microsoft® Exchange

For many small/medium businesses (SMBs) today, data protection is an immediate and growing challenge. Your data— email, customer lists, and database information - is your business. And without secure and protected data accessible whenever you need it, your business may not survive.

Many SMBs report that their data capacities are growing at 50% per year, but operational personnel is shrinking. Combine this with all the things that can go wrong with your data - accidental or deliberate deletion, natural or manmade disasters – and it's clear that small and medium businesses need more advanced data protection and recovery strategy. Implementing a trusted, reliable solution will help you protect mission critical data with restricted resources in a continuous world, and, more importantly, easily recover the data when needed to meet business demands and regulatory requirements.

This white paper discusses the challenges you face today as an SMB using current approaches to data protection and recovery, describes a new, comprehensive approach to optimize backup and recovery for small/medium businesses, and highlights an innovative data protection/recovery strategy for Microsoft® Exchange data.

Are Traditional Protection and Recovery Methods Enough?

Problematic, time consuming and resource heavy- these are the adjectives many SMB storage administrators use to describe how they protect and recover data.

At many SMBs today, data protection equals backing up data, but performing it on a regular basis can be problematic. SMBs that have the resources and time to backup often employ a backup strategy based on tape or disk. . The advantages of tape – inexpensive storage transportable offsite – are offset by the limitations of tape for backup: no real guarantee that the tapes are readable when you really needed to restore; leaving critical data unprotected. Since backups are typically daily, there is the potential of loss of an entire day's data. And if a daily incremental strategy is used for backup, recoveries can be long a laborious task, as tapes are located, loaded and read. Even a simple file recovery needs to involve the administrator and more tape loading.

A disk-based backup strategy offers some advantages to tape in ease of use, speed, and reliability. Backup to disk is easier than to tape, since the ability to schedule simultaneous backup jobs makes the process faster. But the situation is still far from ideal. You still must deal with a backup window, data is still backed up one time a day, and usually you need an administrator to manually restore a file upon user request. And what happens if the daily, overnight backup fails, and the next day a virus is introduced before the failure is realized? How do you “roll back” to find a stable image for recovery, and capture any changes that are necessary to ensure accurate data and systems? Basically, you have lost a day's work and maybe facing a full system recovery.

Stir applications into that mix, and you've got a prescription for trouble. One of the most widespread applications in SMB environments is Microsoft Exchange. If email goes down, your business goes down, so Exchange is no longer just an email system but a mission critical application. And in most SMB environments, a Microsoft Exchange server hosts both data and applications, so the system itself also requires protection and a fast restore from a system crash.

Exchange backups and restores can be problematic. If email must always be available, when can you take the system down for backup? How do you speed up the backup process, yet ensure you are protecting all critical data? What happens if a user deletes an important message or worse, their entire

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mailbox? How fast can you get operations up and running when an Exchange system corrupted? How long will it take to repair the Windows file system and then rebuild Exchange? Hours? Days?

Although Microsoft Exchange servers have some inherent backup capabilities, they fall short in really recovering the entire system. If the system drive fails or becomes corrupt, the operating system and applications must be re-installed – a time consuming and complicated process, for restoration. It is vital to implement a recovery solution that not only protects the Microsoft Exchange environment, but also, in case of failure, allows the ability to quickly and accurately recover from that failure and get the business up and running.

Is Better Backup and Recovery Possible?

Until recently, the thought of continually protecting and having instant recovery of critical corporate data was the domain of enterprises, and too difficult and too expensive for SMBs. However, with the declining cost of disk storage and improved and easier to use solutions enable these practices for companies of all sizes.

A number of SMBs are embracing a new strategy called continuous data protection or CDP. Formerly performed only in enterprises, CDP offers SMB's a solution to optimize their backup and recovery while continuously protecting their mission critical databases, messaging, file systems and entire systems.

The idea behind continuously protecting data is straightforward. An administrator with an application facing a data corruption problem needs to be back online quickly with minimal data loss and interruption of service. A CDP solution runs in the background, without interfering with other IT tasks, to capture and record on a secondary device each block-level or file level- write operation in real time. Then, when a system disruption occurs, and a user needs an application, volume, file to be restored back to a "known good point in time", the CDP solution offers the means to do just that.

CDP differs from mirroring or replication snapshots, tools often used for high availability and disaster recovery. Mirroring is an exact replica used in case of a physical disk failure and therefore does not protect from accidental deletions or corruptions. Replication snapshots are scheduled and not continuous so they cannot be rolled back to any point in time. They are more like a still frame camera picture versus a VCR or TIVO concept used by CDP. Replication snapshots also can impact performance and they can require exact duplicate storage device as the target, making it costly.

CDP solutions maximize data protection and recoverability for SMBs.. With CDP, you gain the highest level of data protection for applications that cannot afford to lose any data - database management systems, point of sale systems, financial transaction systems and, of course, email. CDP allows SMBs to improve their recovery point objectives (RPOs) and recovery time objectives (RTOs) that meet the business requirements.

FalconStor CDP and Microsoft Exchange

FalconStor CDP for Microsoft Exchange delivers a robust, yet easy to deploy solution designed for Exchange users faced with mission critical data explosion, lack of backup capacity and time, and the need to protect their most important business assets. It offers key advantages in your SMB operations, delivering a higher and broader level of protection than you enjoy today, more choices to recover data, and the flexibility needed for fast moving operations.

Protection Beyond Data

FalconStor CDP solution protects not just data, but the entire system including Exchange specific configurations, service packs, and registry-key changes. By protecting both the data and the system in

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the Microsoft Exchange server at once, FalconStor CDP streamlines the recovery process. Setup the Exchange server one time, and afterward both the system and data is protected. FalconStor CDP continually backs up the system disk, keeping a full copy in its CDP appliance. If the system fails, FalconStor CDP can do a data file level and also a system level recovery. You can reboot directly from the image in the FalconStor CDP appliance, usually within five minutes or less, and quickly and easily restore mission critical data and applications protected on the FalconStor CDP appliance. No other CDP solution comes close with this system restore in one package like FalconStor CDP.

More Choices to Recover Critical Data

In addition to any-point-in-time recovery, FalconStor CDP gives you the ability to create transaction consistent recovery points for Microsoft Exchange data using agents that are integrated with Exchange. These consistent point-in-time snapshots minimize recovery time by serving as a base for the any-point-in-time recovery. You can create these point-in-time images either on demand or on a schedule. For example, you can take a snapshot of data every hour and turn on CDP between snapshots. If you take a snapshot at noon, and then lose the data at 12:15, you can roll back to noon's consistent point-in-time, and then only rebuild 15 minutes of any-point-in-time data. You are back on line is within minutes, not lengthy like a traditional Exchange restore, which can take hours first repairing the file system and then Exchange. Further, these consistent point-in-time snapshots can be directly put on line without any worry about running consistency utilities (ESEUTIL or CHKDSK) that can take hours.

Recovering from a data corruption or Exchange system failure is as easy as pointing and selecting a point in time and clicking "Restore". For system level corruption where the Exchange server cannot even boot up properly, it is possible to boot directly from the backup on the CDP appliance. Once booted up, the restoration tools can then perform block-level, bare-metal recovery of the system disk to recovery from the corruption.

FalconStor Message Recovery for Microsoft Exchange is integrated with the FalconStor CDP solution, making it easy for anyone to recover a single email or the entire mail box. Instead of an hour to find the right tape and recovering data step by step, you can use one wizard to determine the appropriate recovery point and get back the mailbox in minutes, without impacting the production email server. The process is completely integrated with Microsoft Exchange Recovery facilities and Active Directory to deliver rapid recovery of mailbox data from the backups while keeping your email system running without interruption.

The Flexibility You Need with Fast Moving Operations

Finally, FalconStor CDP offers ease of use and flexibility for Microsoft Exchange backup and restore operations. Packaged to easily setup and go, the FalconStor CDP appliance installs in less than 10 minutes, and uses a separate set of low-cost disks to backup. This enables faster backups with no tape involvement, and reliable backup that is fast, constant, and permanent. Restores are also easy with simple wizards that automate recovery processes like restoring Exchange mailboxes. To further protect against disasters, the FalconStor CDP has built-in optional Remote Replication capability to securely and efficiently replicate data off site to a backup or central site.

Are Email Problems Caused by Crashed Exchange Servers a Thing of the Past? – One Company's Discovery

Uptime is critical for Inventec Appliances Corp., one of Taiwan's leading mobile phone manufacturers, and Microsoft Exchange messaging servers are a vital part of their company's business operations. According to Chi-Liang Wu, director, Inventec Information Center, "Although we realize it is impossible to

stop a mail server from crashing, we hope, at the very least, to be able to swiftly recover the server and resume normal operations should this occur.”

Periodic backups and security precautions had proved insufficient for recovery purposes after a severe server crash rendered Inventec’s email system inoperable for two days. The downtime affected company-wide communications and worldwide customer support.

Eager to improve their system’s availability and reliability, Inventec searched for a cost effective solution that would be as robust and reliable as an extensive network-based solution, while providing minimal recovery time in the event of a disaster.

FalconStor’s CDP solution for Exchange was the answer. Using high-speed data transfer over iSCSI, FalconStor CDP backs up copies of Inventec’s email data onto the storage server in real time. FalconStor’s host-based continuous replication software, DiskSafe™, runs on the Exchange server and frequently captures copies of the system and database volumes. FalconStor’s tailored Snapshot Agent for Exchange, also running on the Exchange server, preserves transactional integrity and point-in-time consistency of Exchange data copies, making certain that data recovery is always fast and reliable.

Inventec management is pleased with their new solution. “Now that we have implemented FalconStor’s CDP for our database servers, we will never have to worry again about email problems caused by crashed servers,” said Wu. “In fact, we’re exploring a plan to implement further FalconStor CDP solutions for our Intranet data and SQL database environment.”

Businesses Rely on FalconStor

The challenges of deploying Microsoft Exchange in a small/medium business demand a comprehensive approach to data protection and recovery. The FalconStor CDP solution for Exchange provides a cradle-to-grave strategy for quickly recovering data at any given point in its lifetime with instant, granular recovery of mission-critical databases, email, files, and even a complete system recovery in the event of hardware or software failures, or site-level disasters. With FalconStor CDP for Exchange, recovery management can now be a reality across your entire business, and CDP functionality can be augmented by FalconStor’s offsite replication and advanced virtual tape solutions (see sidebar).

Businesses throughout the world depend on FalconStor’s adaptive data protection solutions that optimize data center efficiency and business continuity for all IT infrastructures. Governments, educational institutions, and Fortune 1000 enterprises deploy FalconStor products worldwide across industries including aerospace, energy production, financial services, healthcare, law, manufacturing, and telecommunications. More information on FalconStor CDP for Microsoft Exchange can be found at

About FalconStor

FalconStor Software, Inc. (Nasdaq: FALC) is the premier developer of adaptive data protection solutions that optimize data center efficiency and business continuity for all IT infrastructures. The company’s innovative storage virtualization, continuous data protection (CDP), disaster recovery, and virtual tape library (VTL) solutions integrate seamlessly to ensure rapid data recovery and simplified storage management. Available from major OEMs, system integrators, and resellers, FalconStor products — including award-winning IPStor® and VirtualTape Library software — are deployed worldwide by governments, educational institutions, and Fortune 1000 enterprises across industries including aerospace, energy production, financial services, healthcare, law, manufacturing, and telecommunications.

FalconStor is headquartered in Melville, New York, with offices throughout Europe and the Asia Pacific region. FalconStor is an active member of the Storage Networking Industry Association (SNIA). For more information, visit www.falconstor.com or call 1-866-NOW-FALC (866-669-3252).

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