



Tivoli Storage Manager FastBack



Transcript

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Introduction 1: Remote Offices

Managing and Protecting Remote Data is a Large and Growing Problem

There are more than 4 million remote/branch offices in the U.S. alone, according to the United States Census Bureau. Many of these offices belong to multi-national companies based in other countries and millions more exist across the globe. The amount of data in these remote offices is of course increasing with the overall growth in electronic information and the requirements for longer data retention periods.

Additionally, the percentage of total corporate data created and stored in remote offices is increasing as companies expand operations into new markets and attempt to move closer to their customers, suppliers and partners.

The data in your remote offices, however, is likely not protected as well as it should be. This distributed data is just as important as data managed in data centers, if not more so, because it is so close to your customers. But most companies do not have the sophisticated IT systems, resources and processes in place in remote offices to provide data center class protection and recovery capabilities for this data.

For example, backups are often performed in remote offices by non-IT personnel that have other jobs; they often forget to run the backup, and when they're absent from work it's also likely the backup won't get done. Also, tape-based systems in remote offices rely on manual processes, such as tape labeling, loading, formatting, tensioning, unloading, transporting off-site, recycling, etc. and these manual processes can introduce significant risks into your data protection and recovery systems.

It's often said that it's the restore that matters, not the backup - but if it doesn't get backed up, it can't be restored. An automated, reliable solution is needed to capture and protect new and changed data in the remote office, just as it is in the data center.

A common practice in remote offices is to physically send copies of backup tapes off-site for disaster recovery – but this opens the door to data security risks. Reports of data tapes being lost or stolen are an all-too-common occurrence and often result in a loss of customer confidence, lost revenue, or worse.

And of course, should anything go wrong, recovering lost data in a remote office is a painful and often impossible task. Usually, it requires the support of central IT staff, pulling them away from their already over-extended jobs.

IBM has a new answer to the remote data protection problem. With the introduction of IBM Tivoli Storage Manager FastBack, IBM gives you the power to easily protect and quickly recover data in your remote and branch offices, cost-effectively and covering a wide range of things that can go wrong, including: lost or deleted files or folders; a virus or hacker attack; a corrupted database; a disk or server crash; and even a local or regional disaster.

TSM FastBack integrates easily into central data protection systems such as IBM Tivoli Storage Manager, easily adding remote data to core processes such as long-term archive, retention and compliance. Other vendors have to cobble point solutions together to provide the scope of services that IBM Tivoli Storage Manager FastBack provides.

Let's look at some of the things that can go wrong when protecting remote office data. First, and most often, your remote office staff may forget to run a backup, or does it wrong. Your current response would

be to hope that nothing fails until the next night, or whenever the next backup gets run successfully. With TSM FastBack, the backup runs automatically, in the background as often as needed during the day, without impacting the performance of production servers.

Next, you may experience the accidental or malicious deletion of critical files. Today, this would result in a frantic call to central IT, and they would have to walk your remote office staff through loading the right sequence of tapes, and hope they don't over-write any of today's new data as they perform a restore. With TSM FastBack, it's as easy as opening a browser window, selecting the files to recovery, and then doing a simple drag-and drop.

Or, you could discover that a critical database, such as SQL or SAP, has been corrupted and it may have started a couple of weeks ago. You'll probably need to fly in an expert, and the system will be down for days. Not good. But with TSM FastBack, you just start a virtual restore operation, pick the point-in-time that you want to recover from and the entire database will be made available within a few seconds. Days of downtime, huge expenses to perform a recovery – all but eliminated with TSM FastBack!

In a worst case scenario, the remote office is hit by a disaster that renders it completely out-of-service. With a tape-based system, you would need to restart operations from scratch whenever you can get into a (new) facility and suffer the lost customers, revenue and reputation due to the delays in getting running again. Or, you could use TSM FastBack for Bare Machine Recovery to reconstitute the remote office's entire workload in another location, within an hour, without the extreme costs of standby hardware and management associated with typical "high availability" solutions.

The moral of this story is, with IBM Tivoli Storage Manager Fastback, you will be able to recover any amount of remote office data, from any previous point-in-time, and get your operations up and running within minutes.

The IBM Tivoli Storage Manager FastBack product family includes the following components:

IBM Tivoli Storage Manager FastBack, a local disk-based, block-level, incremental continuous data protection solution for Windows servers. It includes selective replication for off-site Disaster Recovery and Business Resilience, plus near-instant recovery of any data asset – from a single file to an entire volume.

IBM Tivoli Storage Manager FastBack for Microsoft Exchange provides granular recovery of any Exchange e-mail object, including: messages, attachments, contacts, calendar entries, notes and tasks.

IBM Tivoli Storage Manager FastBack for Bare Machine Recovery delivers restoration of the Windows server operating system volume, even to a completely different hardware platform or to a Virtual Machine, within an hour; then, using the near-instant data volume recovery capabilities of TSM FastBack, you can get back up and running a few seconds later.

Think about all the data in your remote offices that are critical to the successful operation of your business. How much of this data can you afford to lose? And how long can you afford to be without it? If your answer to either of these questions is "less than a few days", you should take a look at IBM Tivoli Storage Manager FastBack. If, however, your answer is something like "none", you should contact us right now.

Introduction 2: Critical Applications

Almost all businesses today rely on certain applications and information to effectively run their operations – and that information is increasingly stored in digital format. Whether it be transactional databases of orders, shipments, invoices and payments, or research documents, engineering drawings, software designs, medical records, or financial reports – there is some digital information that your business can not afford to lose or be without access to for extended periods of time.

Protecting this data from loss and ensuring continuous access to it is smart business, and IBM has a range of smarter solutions available to help you build a dynamic infrastructure. One of them is Tivoli

Storage Manager FastBack. This next-generation data protection and near-instant recovery software can help you reduce the risk of data loss while also saving you money and improving application availability.

There are many things that could occur which would cause data loss. Someone could accidentally or maliciously delete critical files. Databases could become corrupted through software errors, human error, or virus attacks. Servers and storage systems could experience hardware failures. And at some point you will likely experience a local or even regional disaster.

But no matter what happens, you want to be able to get your most critical applications back up and running as quickly as possible. Downtime can cost money, lost revenue opportunities, customer satisfaction and loyalty, respect in the marketplace, penalties for non-performance, and possibly even fines and sanctions from government agencies.

Each data mishap requires a specific response. You need to be able to quickly recover either individual files or entire data volumes, to roll back to a specific point-in-time, to restore the system's workload on another server, or restore operations in another location. Many companies have deployed multiple point solutions in an attempt to address all of the potential problems – but this approach can be extremely expensive and difficult to manage.

The old ways of recovering data don't meet the needs of today's 24x7 business environment where these critical applications need to be available at all times. It can take hours, even days, to perform complex application recovery from tape, and it usually requires specialized skills that might not be readily available in each of your departments or facilities. Plus, you will need to recreate all of the new data that you lost because it hadn't been backed up yet. Can your business really afford all of that downtime?

IBM Tivoli Storage Manager FastBack is a comprehensive solution that addresses all of these needs, while eliminating the downtime associated with traditional backup and restore software. It performs highly efficient block-level incremental-only backup – which means that it captures only the new and changed blocks of data – and it does this as often as you like, even continuously. This reduces the amount of data at risk of loss; with traditional nightly backups, you have as much as 24 hours of data at risk; with Tivoli Storage Manager FastBack you can reduce that risk to just the last transaction. And the backup happens in the background – no need to shut down your operations – and no more 'backup windows'.

Because Tivoli Storage Manager FastBack performs backup at the block level, it protects the data of any application, including Microsoft Exchange, SQL Server, SharePoint, IBM DB2, SAP and Oracle. And the backup agent is so CPU efficient that it is an excellent solution for protecting virtual machines directly, without the need for a proxy server.

Tivoli Storage Manager FastBack is a leading solution for reducing the data storage requirements in your backup environment. It only copies the new and changed data blocks, forever eliminating all of the data that is duplicated by doing full backups. And FastBack also includes built in data deduplication to eliminate redundant data that is backed up across all of the servers that it protects.

Application recovery is where Tivoli Storage Manager FastBack really provides return on investment, providing near-instant access to any data that you need to restore. You can recover individual files and folders, from any previous point-in-time, with a simple drag-and-drop operation. Or you can restore full access to an entire disk volume – even terabytes of data – within a couple of minutes. Tivoli Storage Manager FastBack also includes built-in disaster recovery, enabling you to restore your operations in another location when a facility becomes unavailable.

The Tivoli Storage Manager FastBack family also includes two optional modules. These help you quickly restore individual e-mail data objects from your Microsoft Exchange system, and to perform Bare Machine Recovery, which restores the operating system volume on a new system with similar, dissimilar or even virtual hardware. A conveniently priced bundle of all functionality is also available in Tivoli Storage Manager FastBack Center.

IBM Tivoli Storage Manager FastBack provides a higher degree of protection and near-instant recovery for your critical application servers, both in the data center and in remote offices, and is a key part of IBM's Unified Recovery Management solution set. For longer term data retention and storage on tape,

Tivoli Storage Manager FastBack can be integrated seamlessly with Tivoli Storage Manager, IBM's enterprise-class data management solution. For example, you can launch and manage FastBack operations from the Tivoli Storage Manager Admin Center.

Another component of the Unified Recovery Management platform is Tivoli Storage Manager FastBack for Workstations. This new offering provides continuous data protection for desktop and laptop computers, with a central administration console for managing thousands of protected systems. The backup data collected from the workstations can be protected by either Tivoli Storage Manager or FastBack, and data restoration can be user-initiated.

Do you have critical applications and data that you can't afford to lose, or be without access to for extended periods of time? Are you backing up your critical data only once a day, or less? Are you trying to manage multiple solutions for backup, replication and disaster recovery? To learn more about how Tivoli Storage Manager FastBack can help you address these challenges cost-effectively, please contact your IBM Sales Representative or Business Partner, or visit our website.

DEMO: TSM FastBack

Welcome to the recorded demonstration of Tivoli Storage Manager FastBack version 5.5. This is a 15 minute recording in which we have attempted to show as many TSM FastBack features as possible. However this recording does not include a bare machine recovery demonstration. Portions of this recording have been sped up at times to allow us to fit all of the demonstration within a 15 minute window.

This is the main FastBack administration interface, which allows us to configure FastBack, create backups, and launch recoveries. You can see here we have multiple hosts, the disks that are on those hosts, as well as a disk dedicated to the FastBack repository. We can define users internally to FastBack or use an existing active directory group to control administrative access. The navigation of the FastBack interface is very simple. From here, we can define what we want to protect, when we want to protect it, and how we want to manage those backups. For example, here I am selecting the file data group which has a single host and a volume which just contains file data. You can also select volumes to protect based upon applications discovered on those hosts.

Once you define what you want to protect, you will then define the schedule which is protected. And this example is my Exchange schedule. Here's also when you'll define, or if you want to have CDP—continuous data protection—running for that particular application, if you want to exclude certain times to run this backup, or whether you want to have application [quiescing] and other consistency and post-backup steps to be performed.

Once you've defined what and when to protect, you will tell FastBack how to manage that. Do I want disaster recovery replication for these backups? How many generations do I want to have? What is the priority of this backup? And do I want to do any pre- or post-processing for applications such as Oracle or DB2? There are also backup wizards that you can run any time to create ad hoc backups or just have a wizard step-by-step generation of the backup policies.

Once you have those backups scheduled, you can also monitor the completed backups. You can also see here when they ran, their performance, what type of backup they were, and if it included continuous data protection. Let's go ahead and do an example. I'm going to go to my local G:\ volume. This just has file data. I'm going to modify one of my files. Save the file. And return to FastBack Manager. I can initiate an ad hoc backup from out of the snapshot monitor or from the policy definition itself. I'm going to run incremental snapshot. Since I've only changed a few blocks, I'm going to return to the FastBack monitor and see that the backup is already completed.

TSM FastBack takes incremental forever snapshot-based backups at the block level, so I never have to take another full backup even if it's an application such as Exchange, SQL, DB2 or Oracle. I can take a full backup if I want to.

One of the best things about FastBack is the ability to mount a snapshot without having to do a recovery. So I'm going to go look at the snapshot I just took. I'm going to mount it internally to the host as the I:\ drive, so now I can access this snapshot. I can mount it to a drive letter, a directory, read-only mode or a pseudo re-write mode. When I return to Windows Explorer, I'll see I have a new I:\ drive. I'm going to make some changes to my existing data on the G:\ drive so that we can do a restore here and see those changes reverted. If I go look at the I:\ drive, it is a copy of the G:\ drive that we took a few minutes ago, the backup. I didn't have to recover it to get access to it.

So I'm going to restore the version of changeme.txt that occurred when we did the backup and the two deleted files. And the restore is just that easy. I don't have to learn a different interface or anything like that. Now take a second to think about the implications of being able to access your backups while they're in the repository. If I'm not certain what to restore, I can search by file name, by content. I can do consistency checking, anything like that I may want to do while the data still sits in repository. I'm going to move to the next demonstration and dismount the I:\ drive. In addition to the other benefits of being able to access the backups in repository, this gives me a very unique capability for individual message and mailbox recovery with Exchange. I've got Exchange 2007 running, two users defined. We'll take a quick look at their mailbox. The users, Sue and Bob, have sent each other one or two messages prior to my backup. I also have taken a backup of this environment from several days ago; I believe it was August 5th. Inside of that Exchange environment, there are messages referring to a project named Epsilon that have since been deleted and the users need recovered.

So I'm going to mount that date's backup of Exchange. I'll also go to my I:\ drive. Now I can access that Exchange backup without having done any recovery using TSM FastBack for Exchange. This is unique in the industry because our competitors [already have to do] two backups to get message-level recovery—one of the database and one of the messages—or, as with a normal TSM restore, I may have to bring back a large chunk of my Exchange repository before I can access it to get the individual messages out. So I've mounted the backup. You can see I have a previous version of the post—of, excuse me, the mailbox for those two users that include references to that project named Epsilon. And when I do the recovery, I have two options—three options. I can restore directly to Exchange. I can export to a .pst file or send them via SMTP. I'm going to access Exchange in this case directly using an existing Outlook profile.

So the bottom half of this pane is actually the active environment. So Sue was the project manager, so I can bring back a message just by dragging and dropping it from the backup straight into her inbox, or I can get the entire project folder and bring it back to her whole mailbox. So if we go look at her active mailbox right now—Refresh—You can see I have that one message in the inbox and that whole project folder was brought back.

If I have a more sophisticated requirement to bring back all messages to an auditor that referred to that project, I can actually search the contents of that Exchange backup. So I can choose what to browse. I'm going to look at all of my mailboxes. Look for messages at this time. I can also look for task and calendar entries and restore those. I'm going to look for the word "Epsilon." Look in both the body and subject of the mail. There are other options that I'm not going to use here—select who sent these I'm looking for, who was it sent to, the size, the date, things like that. I'm just going to do a search, a simple search. I look in where those mailboxes—Do you see, I'm actually seeing those in a deleted folder in the sent items, those can also be recovered. But I'm going to just choose those that were not—that had existed when they originally sent, so I'm not going to get anything from this sent folder or from the deleted items at this time.

We're going to assume Bob is the auditor, so I'm going to create a new folder in his mailbox, called "Restored Epsilon." And I'm going to drag those back to his folder, excuse me, to that new folder. If I go look at his current mailbox, you can see that folder is now there with this content. It includes the attachments. I'll go ahead and detach one of the attachments. Save it on my desktop. This is a very simple little spreadsheet. Just open it up to show you that it recovered correctly.

I've returned to FastBack for Exchange. I'm going to show you that I can also get other kinds of data—calendar entries so I can see calendar entries in the previous backup, contacts, tasks, things of that nature. I'm going to bring back one of the calendar entries by just dragging it into, in this case, Bob's calendar.

I'm going to move to the next demonstration, which is a FastBack recovery of the Exchange Server. I'm going to stop Exchange to simulate a failure of the entire Exchange Server. Start the FastBack Mount Client again. I'm going to my most recent of my backups for the Exchange backup. Instead of clicking "Mount" I'll click "Restore." I'm going to overwrite the E:\ volume with this—the original location. Excuse me, before I do that I need to stop the FastBack client so that we aren't doing a restore and backup simultaneously. I'll explain that more later. Warned me—Am I sure I want to do that? I'm going to bring up Windows Explorer in the background so you can see that the E:\ drive will go away and then come back. I'm going to go and start the restore of the F:\ drive, which includes the logs from my Exchange environment. I'll restore that over its original location. Say "yes" to the warning. Now right now I'm restoring both the E:\ and the F:\ volume. Now what's interesting and unique about the FastBack recovery is that during the recovery, my volume is fully available. So you can see I can see the contents of the E:\ drive. I can also now start Exchange. So my recovery time is not defined by how long it takes me to move all of the data for the volumes back to the original. The recovery time is now defined as, "How long does it take me to initiate the restore and start Exchange?" So you can see Exchange is starting right now as we see the counters proceed on our recovery. This is one of the ways that TSM FastBack provides very aggressive recovery time objectives.

I'm going to go back to Bob's mailbox, create a new message, mail it to Sue, and remember, all this time when Exchange has been started, I'm actively using it. The restore of the volume is still going on in the background. So I go back to Sue's mailbox, check her message, she received a message. So I have full access to all Exchange activities during my recovery. This did not require any special snapshot based hardware.

While this restore is still running, I'll move to a couple of other demonstrations. FastBack has the ability to replicate disk repository in a very effective manner over the WAN to a centralized data center or disaster recovery site. Here's our multiple branch office management interface, called the Central Control Station. In this case I only have the one branch office named Demo. I click on it. I can see the last replication success, the performance for the last day, or all the backups that have been replicated to the remote repository at the centralized site. Now I do not have to replicate all of my data from the branch office. By policy I can select which backups and which type of data are replicated.

See my restore is still going on. We'll have to wait a moment, so I'm going to accelerate the video so that we'll get through it rather rapidly, and I'll do the final demonstration, which is continuous data protection. Continuous Data Protection is the feature that allows us to send duplicates of the blocks written to client disk immediately to the FastBack repository. So data as it is being created is being protected immediately. This also gives it a very fine level of recovery when we can restore a client's volume down to the second. Now you won't do this for all kinds of data because the amount of information transferred will be larger, but certain kinds of data will require that. In my example, I've got an order processing or orders coming in need to be backed up immediately so that we can restore down to the most recent order. As you can see, the restore of the Exchange volume is completed and I started the FastBack client. This will allow me to start a CDP volume restore of the volume which I had CDP backups running. I'm going to restore to the original location. This will bring up the CDP restore interface. On this interface, I actually have a timeline with a slider where I can choose the exact moment into which I want to recover this volume to, down to the second. You will also notice on this timeline part of the indicator is red. This shows that I was unable to do CDP backups. That's when I stopped the FastBack client so that I could do the Exchange volume restores.

DEMO: TSM FastBack – Bare Machine Recovery

In this recording we will demonstrate a Windows Bare Machine Recovery to dissimilar hardware using TSM FastBack Bare Machine Recovery. Bare Machine Recovery, or BMR, is the restoring of a backup taken of a running operating system and its applications to another host, which may or may not have identical hardware.

In this demonstration, we are using three virtual machines. One is running the TSM FastBack Server. The second is the demonstration client we are backing up, which is in the Virtual LSI Logic SCSI adapter. This

host has two virtual disks, the C:\ and the E:\ drive. The E:\ drive is hosting a web server, which is our demonstration application. While we are here, let's create a new file in each of the two volumes.

The third virtual machine will be the target of the BMR. It has two virtual disks in the same size, but uses a different SCSI adapter. After the BMR, if we do not insert the correct device driver information into the Windows registry, Windows will be unable to load and will receive what is commonly referred to as a "blue screen of death."

Let's return to the FastBack server. We have the client group, schedule, and policy defined for that host, Demo Client and its two virtual disks, C:\ and E:\. Let's run an incremental snapshot backup. When we go to snapshot monitor, we should see this take a very short period of time to run, since there is so little change. You can see we have just taken a backup of the C:\ and E:\ drive.

We can simulate a hard failure of that host by simply powering it off.

We would now go to the BMR target and start our Bare Machine Recovery. There is no operating system installed on this host, so we're going to boot from the TSM FastBack BMR Client on the CD-ROM drive. This is going to load a small Windows environment in the TSM FastBack BMR Client. It will take a second to load. We will accept the license agreement to proceed. TSM FastBack BMR detects the virtual hardware including the [NIC], and we use [DCHP] to assign a network and DNS server.

You can specify the network address and the DNS server if you wish.

We need to log in to the TSM FastBack server backup repository. Enter the domain, username, and password, and the share name for the repository. FastBack BMR Client will go out there and scan the repository. We need to select the correct policy. The server is correct. We will select the C:\ drive, which has the operating system. And we're going to select the last snapshot by date, or just by clicking that snapshot.

If the volume hadn't already existed on this host, we could do a volume restore. However there's nothing on the hard drive, so we're going to add the snapshot and do a true BMR. We can see the snapshot we've selected for recovery. We have the options setting which partition that we're restoring will be bootable. We'll select the destination hard drive. Once you do that, you can validate your disk space is acceptable. You can also change the disk signature if you wish.

We'll get our warning message to make sure we wish to do this. And now the restore will begin. We're going to speed up the video here, so that you don't have to wait for two to three minutes needed to transfer the data. And the restore is completed.

At this point, we're going to install the device drivers for the dissimilar hardware. However first we're going to reboot just so you'll see that we do get a blue screen of death and we don't have the right drivers. You will see Windows try to load, fail to load, giving us a blue screen. Server is set to automatically reboot; we're going to boot from CD-ROM again, so now we can go back into the TSM FastBack BMR Client, pick up where we were at last, which is where we should have installed the device drivers.

Once again, we will accept the license agreement. Go to the screen for our network connections. Instead of going and doing a restore here, we're going to go to the any-to-any hardware restore, which allows us to handle dissimilar hardware. If there are any partitions we need to recover, we would run repair storage in step one. We don't need to do that, so we'll move on to step two, and this will allow us to automatically locate the Windows installation. It located it successfully on the C:\ drive on the Windows subdirectory, and it identified it as Windows 2003.

Since we're going to modify the registry by inserting drivers, we'll create a backup—just a standard best practice. We'll go select our device driver and insert it. You can also have other parameters such as "Remove SCSI or ID drivers," "Use different keyboard or mouse settings," "Disable known problems services," "Disable FastBack BMR filter drivers," "Autorebooting," or to "Active [SYS PREP]" if you're doing a clone. You can also specify a different [hardware] obstruction layer or how, if you a different number of CPUs or different motherboard. We're also going to stop the service for our HTTP server, since that's our demonstration application.

We don't need to do anything further since we've inserted the device drivers. So we're going to restart this host by using the reset button.

Now you can see Windows loading successfully. We're going to log in now. Since we've backed up this with a live operating system, Windows does detect that you—as if you had done a hard power down, which is what a Bare Machine Recovery is necessary for. We're going to create a volume for the E:\ drive. This is going to be our target for an Instant Restore.

When doing BMR with a FastBack client, the real value proposition is being able to bring the applications up more quickly, which is a function of the instant restore. This is a big differentiator between our competing products.

As that disk is formatting, we're going to go stop the TSM FastBack Client service, which is necessary when you do the instant restore. You may also notice that Windows detected the new hardware. We'll go check our volume to make sure it formatted correctly. It is up and is healthy, so we'll start getting some restore.

We're going to log into the repository just as we did with the BMR client. Oops, I need to specify the domain, excuse me. We'll choose the correct policy. We're restoring the E:\ drive. And we'll select the last snapshot. We'll restore to the original location.

I'm going to bring up Windows Explorer. Once we remount the E:\ drive, you will see that it will show up in the list again. It will take a moment. There's the E:\ drive. We can see our restore is already about 7% complete. So that means that since this is instant restore, our application has full access to the volume. We're going to go start our HTTP server service, which is my demonstration application. We'll start it. It should start with no problem, even though we're not even halfway done with the restore. To evaluate the application is functioning correctly, we'll bring up our web browser, and refresh to make sure there is nothing in cache.

Now the instant restore is completed. We can see that FastBack gives a much faster Bare Machine Recovery.

DEMO: TSM FastBack – Client Policy

Let's take a look at how easy it is to protect information using FastBack. It's a three step process. The first is defining what needs to be protected. I'm looking at my server here, in this case looking at the Exchange 2007 Server, and I can protect all of my storage groups. In this case, that's protecting volumes F:\ and volume E:\. Once I've defined it, I give it a simple name and apply that to create my client group. Simple and easy.

Once it's defined, I then need to say when I'm going to protect this information. So I'll create a new job schedule. In this case I'll give it a simple name as well. Here's where I would define if I was going to use continuous data protection, protecting every transaction incrementally forever, or whether maybe I'm going to run this only once a day, at a specific time period. Or I can run it on an hourly basis, I can define this today as one, and I'm going to do this Monday through Friday. I can also protect my application consistency by leveraging VSS [quiescing] and even Exchange server logs can be purged as part of this process. Once I've got it defined, I can simply apply this job schedule and I'm two-thirds of the way complete in creating my policy.

Creating the policy is nothing more than combining the existing client group and the job schedule. I'll use client group zero here, to add that to my policy. My next step then would be to add the job schedule that I've already created. So I'll use job schedule zero here. Add that.

And my final step is just some final tweaking of the policy. Is this going to be part of my disaster recovery plan? I check that here. How many generations of backups do I want to keep of this policy? Maybe I've got to be able to run pre- and post-scripts, so I have the ability to run three different scripts as part of this policy. Once I've got that done, I can click finished, and my policy is now in place.

I can right mouse that policy and then I can maybe run incremental snapshots or full snapshots on demand in addition to my scheduled policy. Looking at my pending jobs, I can see where all of these are scheduled for the next several weeks.

DEMO: TSM FastBack – Individual Mailbox Restore (IMR)

Let's take a look at how Individual Mailbox Restore would work with FastBack for Microsoft Exchange. You can see the policy here for backing up my Exchange server. My data is on drive E:\, my last snapshot here, and I've mounted that already as drive K:\. So my backup of E:\ is loaded on this system as drive K:\ using our FastBack mount.

Let's go ahead and log in to our live Exchange environment as Sue. You can see her email box here has a couple of email messages in it. Let's delete those to simulate a failure. And just to make sure they're gone, we'll move them out of the deleted items folder as well. So they're now gone from the live production Exchange system.

So to go out and start our restore process, I'll load FastBack for Microsoft Exchange. I can go out and open that [EDB] file. You can see in my directory structure I'm looking at K:\ for my backup. There's my live data volume on E:\, so by going to my first storage group, mounting that EDB, now I can see all the email. That's my backup system at the top and my production system down here at the bottom.

So let's open up Sue's mailbox. We'll go to her inbox, and there we can see her email items. If we go down to the production system, we look at her inbox, there's nothing there at this point. So let's highlight the two email, and then by using my Exchange restore, I can restore a number of different ways. Notice I've got a check mark here on "Restore Items as Unread." That allows me to choose either directions. We'll choose restore and put it back to her production inbox—we could choose any folder—and there you see the messages have been restored.

Close this window. Look at my production system. You see the email is there. If we go refresh our email client on the web, those email are now back in the production system. Simple, easy drag and drop. Now in FastBack Manager for Exchange, I can do that for calendar items, contacts, drafts, journal entries, notes—any of my individual items within my Exchange environment quick and easily.

Now that was a fairly simple process when we knew what we were looking for, doing the whole mail file. But what if we didn't know where the particular item was that we were looking for. How would we locate it? We have a powerful search engine in [X-Chip] FastBack for Exchange, and I can search for any Outlook item, or messages, notes, contacts. Any of those things can be searched on.

We'll just use an example here, searching for a text string. Let's use the word "backup"--any message that has the word "backup" in the subject. But I could be subject or body or attachment name if that was what I was—where I wanted to look. I can refine the search, from "From" or "Sent to." I can refine it by when it was created, modified, received, or sent. And I can even define the size of the emails I want to look at. Maybe it's got an attachment and I want to look for something bigger than a certain K-byte size. So I have a lot of different parameters I can refine to do a more effective search. I need to tell it where to search. I was currently searching only in Sue's mailbox, but I'm going to tell it to search through all of the mailboxes at this point.

Now I've got that defined, so I can do my search very quickly. And there are the results. So I can select which emails I want to respond to and restore back to the system. Before we used the direct Exchange restore, and restored directly to the message box, but I could use a way of sending a .pst file directly using a mail protocol to another mail account if that was the way I wanted to do it. In this case, I'm just going to drag and drop them down to the production system. And that quickly they've been restored.

If I go back and refresh the view, you can see the email messages have been returned very quickly, very easily, without a lot of fuss.

DEMO: TSM FastBack – Instant Restore

Let's take a look at how Instant Restore can make my data available during a restore even while the restore is going on. You see here, I've got a drive G:\ that's got quite a bit of data on it. I'm going to go out and simulate a drive failure here by deleting all of the data off of that drive. We'll go ahead and empty the recycle bin so that we know that everything is gone. There we go.

Let's close this window and bring up our FastBack mail utility. Now you can see here that I've got my policy for drive G:\. I've got all of my incremental backups. I'll go to the most current one here and I'll click restore to start the process and mount it back to drive G:\. I get one quick warning message to be sure, and as you can see, the process of the restore is starting at this point.

I'll remove drive G:\ from the system, create a new bitmap, mount drive G:\ back, and at this point, the restore is in process. Now this could take a long period of time if it's a large data volume, but if you look at drive G:\, it looks like all of the data is already back. As a matter of fact, I can go ahead and start pulling up a document. Here you see a PowerPoint document that I've already restored, but the restore is still going on. I was only about 40% complete when that document came up.

Instant Restore gives me the ability to bring whatever data a user requests to the top of that restore queue, so that it could be brought back as it is needed, while the restore is still going on. You can see we're about caught up here. My restore is complete at this point, but I could start using right away.

DEMO: TSM FastBack – Mount Backup Restore

Let's take a look at how we might use FastBack to restore some files that have been deleted. I'm looking out here on my server, on my drive G:\, and it has a number of different types of files stored on it out here right now. As I scroll through the list, I see that there are some .mp3 files that I have a policy we don't store .mp3 files on this server, so I'm going to delete those. And just using Windows Explorer to do a normal delete, and then going over to the Recycle Bin to empty it as well. So those files are truly gone.

Now, soon as I empty the Recycle Bin, I actually get a call from Marketing telling me that these were valid files. They're part of a current ongoing marketing campaign, so I need to restore those. So I go to FastBack, and I look at my server, and pull up the policy for volume G:\, and here's the last replica that was done on the 21st, so I can mount that entire image of that drive G:\ now as a drive M:\. That puts the backup on my system as just another drive.

So let me move FastBack out of the way here for just a second. We'll go to My Computer. We'll open, and you see, sure enough, there's drive M:\. So I open up the example data folder there, you see, it looks just like the one we have live on our system, but because it was the most recent backup, there are the files that I deleted. So I can simply highlight those .mp3 files, drag them across using Windows Explorer with normal drag and drop processes, and sure enough, there they all are—quickly, easily, no additional skills required.