Don’t Hyper-Ventilate over Hyper-V backup!

A straightforward solution to Hyper-V backup

Presented by Linus Chang, Lead Developer of BackupAssist

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The theme of today is…

Hyper-V!

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Today's agenda

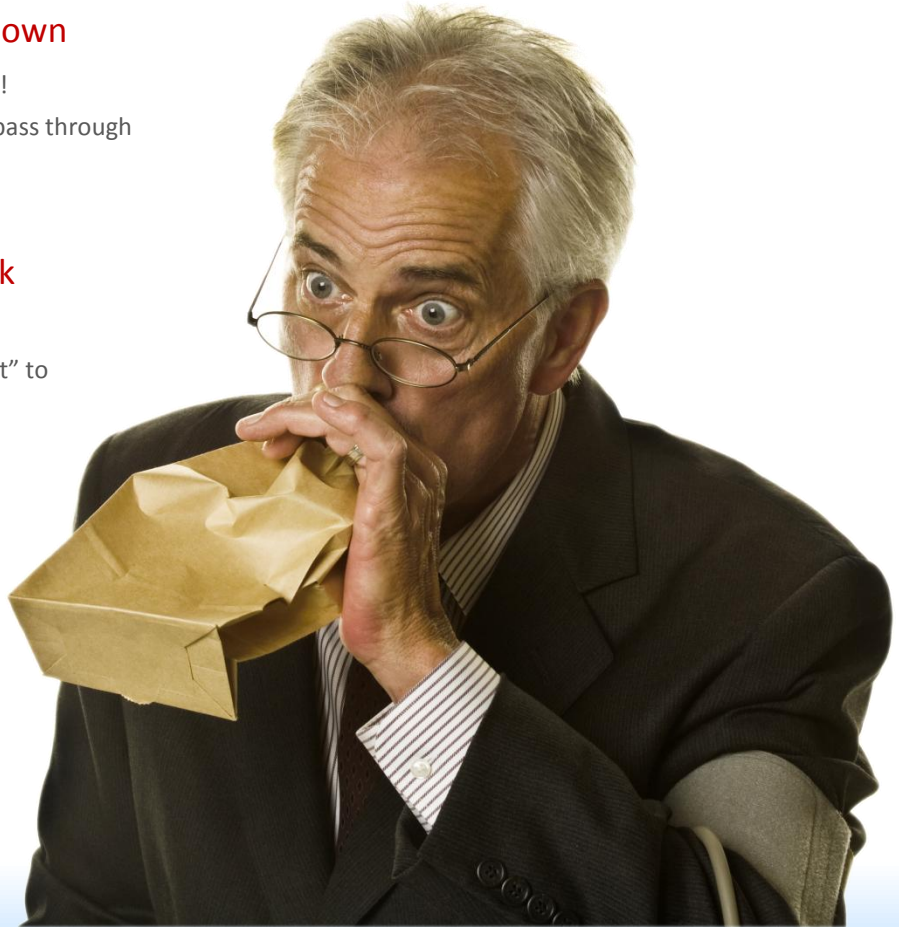
1. The causes of discomfort and concern
2. Solving the difficulty problem
3. Solving the price problem
4. What else can BackupAssist do?

The causes of discomfort and concern

Quick recap of the causes of Hyper-V hyperventilation:

1. **Difficulty** = stress = nervous breakdown
   - Traditional backup methods don't hit the spot!
   - Not straightforward to image guests: no USB pass through
   - How to back up multiple machines?

2. **Price** gives your client a heart attack
   - Install a license on each guest machine?
   - Install an expensive "special version" or "agent" to allow unlimited guest backups?



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Solving the difficulty problem

The difficulty problems

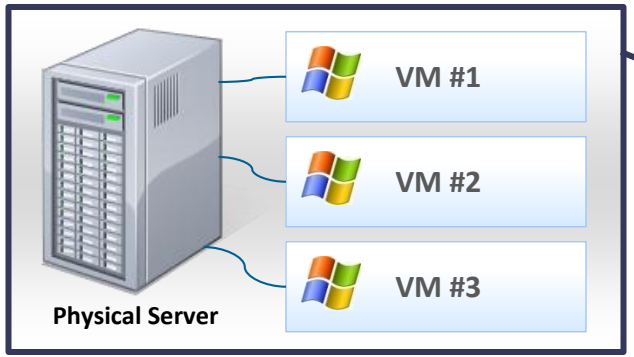
Recovery scenarios with a normal server

Recovery scenarios with a hyper-v server

BackupAssist handles all recovery scenarios

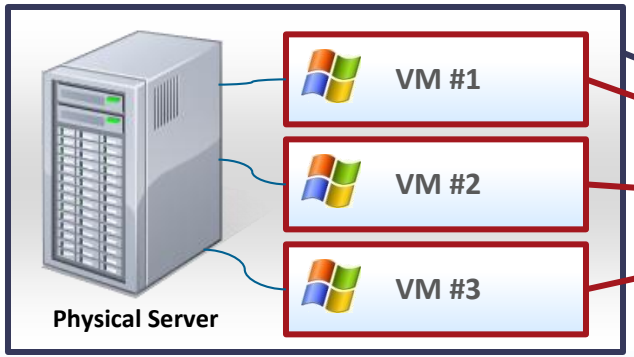
The difficulty problems:

- Recovery scenarios
- Installation – on host or guest or both?
- One-pass or two-pass backup?



One pass – backup the physical host only

Backup device



Two pass – backup the physical host first, then the virtual guests

Backup device

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Solving the difficulty problem

The problems

Recovery scenarios with a normal server

Recovery scenarios with a hyper-v server

BackupAssist handles all recovery scenarios

Recovery scenarios with a normal server:

- ☐ Recover the entire server from bare metal
- ☐ Recover specific files and folders
- ☐ Recover a complete Exchange Server
- ☐ Recover individual Exchange mailboxes and Outlook items
- ☐ Recover SQL Server databases
- ☐ Onsite & offsite data protection

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Solving the difficulty problem

The problems

Recovery scenarios with a normal server

Recovery scenarios with a hyper-v server

BackupAssist handles all recovery scenarios

Recovery scenarios with a Hyper-v server:

- ☐ Recover the entire server from bare metal
- ☐ Recover specific files and folders
- ☐ **Restore all Hyper-V VMs to a different host**
- ☐ **Restore a single VM**
- ☐ **Restore a single VM to a different host**
- ☐ **Restore specific files & applications on a guest**
- ☐ Recover a complete Exchange Server
- ☐ Recover individual Exchange mailboxes and Outlook items
- ☐ Recover SQL Server databases
- ☐ Onsite & offsite data protection

Solving the difficulty problem

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BackupAssist handles all recovery scenarios:

- ☑ Recover the entire server from bare metal
- ☑ Recover specific files and folders
- ☑ Restore all Hyper-V VMs to a different host
- ☑ Restore a single VM
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How the BackupAssist solution works

One-pass backup solution

Hyper-V backup integration services

Let's clear up some terminology

Example setup

A one-pass backup solution that allows recovery at all levels.

One-pass means you don't need to back up the same data multiple times at both the host and guest levels.

Utilises these features of Windows:

- Windows Server Backup (wbadmin) to image the host.
- Hyper-V Backup Integration Services – a VSS based snapshot of all guests.

Additionally, BackupAssist provides:

- Hyper-V Granular Restore Console – to restore files and folders within Guest VMs.

Plus, you get the world-famous benefits of BackupAssist:

- Scheduling
- Media Rotation
- Reminder Emails
- Report Emails

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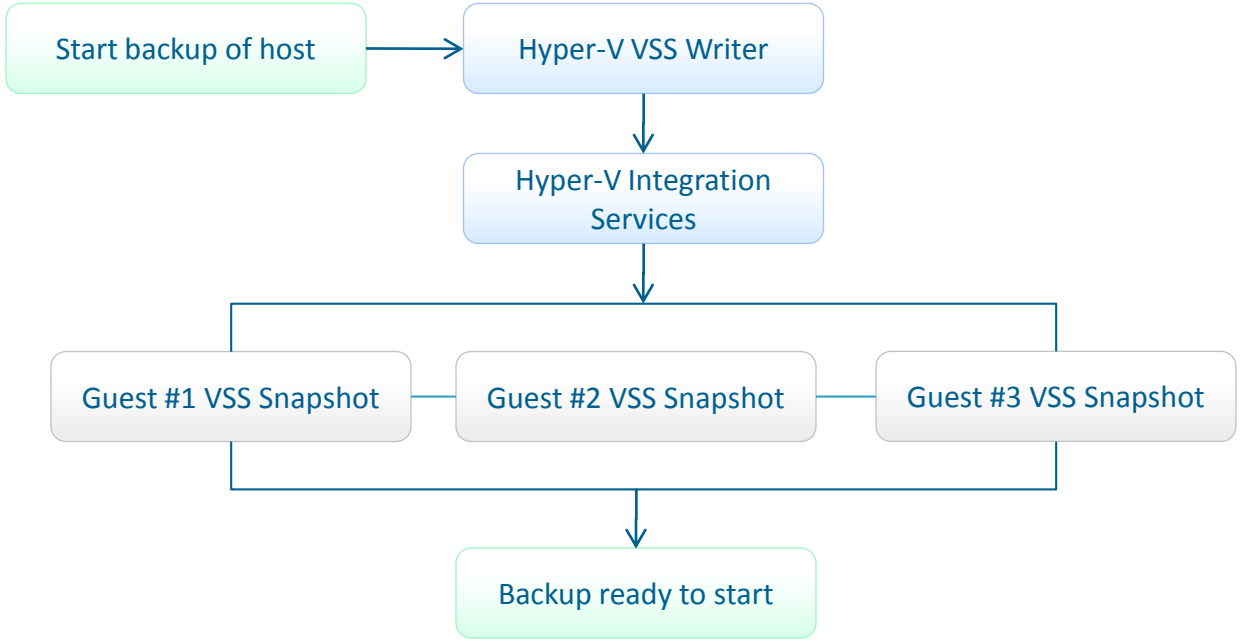
Hyper-V backup integration services:



That way all the guests and the host are ready for backup.

- Guest must be an OS that supports VSS
- Use only basic disks, not dynamic disks

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Clearing up some terminology:

Hyper-V Snapshot – is a manual snapshot created by the user, to allow you to roll back the entire machine to a past point in time.

- Not VSS Aware and not a backup!
- Only recommended for special occasions – e.g. before a risky operation like attempting an application upgrade, etc.
- Freezes a VHD file, and creates a differencing VHD (AVHD) on top of the VHD.
- Makes it more tedious to migrate from one host to another (but we have instructions on how to do this).
- Major impact on performance.
- Not recommended to leave snapshots hanging around! Remove when you've satisfied yourself that it's no longer needed.

VSS Snapshot – is a live snapshot created at backup time that makes sure all data is flushed to disk (for database integrity) and ready for backup.

- Exchange logs in guest machines are pruned.
- Slight performance hit as all guests commit their data to disk.
- All backup apps that use the Hyper-V VSS writer will suffer from this (not just BackupAssist).

Fine print:

Guest OS must use NTFS disks, formatted as Basic disks (not dynamic disks).

Each volume on each Guest OS must have adequate free space to store VSS data (20% rule of thumb).

After recovery, you need to manually recreate any virtual networks.

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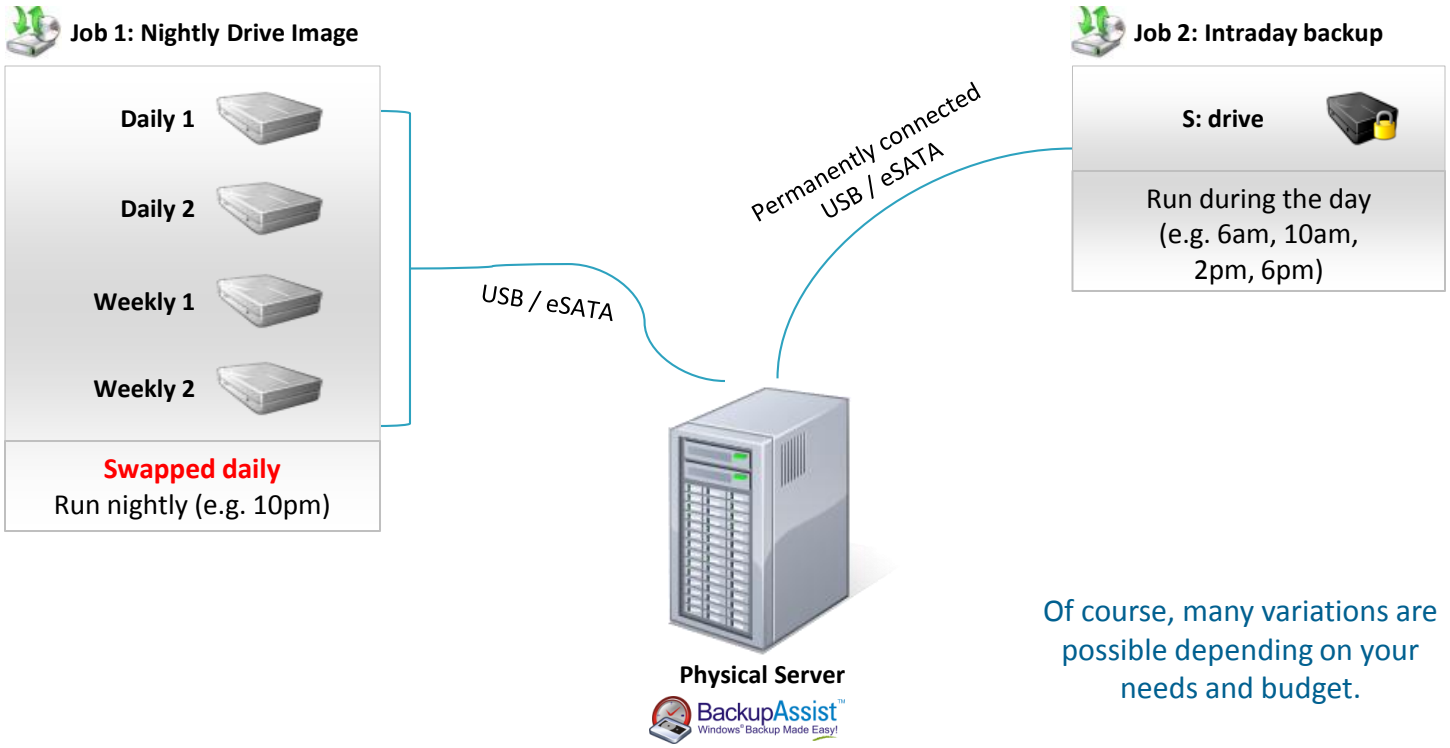
Example of Hyper-V backup setup:



Of course, many variations are possible depending on your needs and budget.

Recovery scenarios

Recover the entire server from bare metal

Recover specific files and folders

Restore all Hyper-V VMs to the same host

Restore a single VM

Restore a single VM to a different host

Restore specific files & applications on a guest

Recover a complete Exchange Server on Guest

Recover individual Exchange mailboxes and Outlook items

Recover SQL Server databases

Recover the entire server from bare metal.

1. Boot from the Windows DVD.
2. Launch the recovery.
3. Load any new drivers for the new hardware.
4. Make yourself a coffee and come back later.

For additional information, please see:

Testing Report: Simulated disaster recovery of a Hyper-V host and all Guest VMs to new hardware:
http://www.backupassist.com/downloads/casestudies/Hyper-V_BareMetalRestore.pdf

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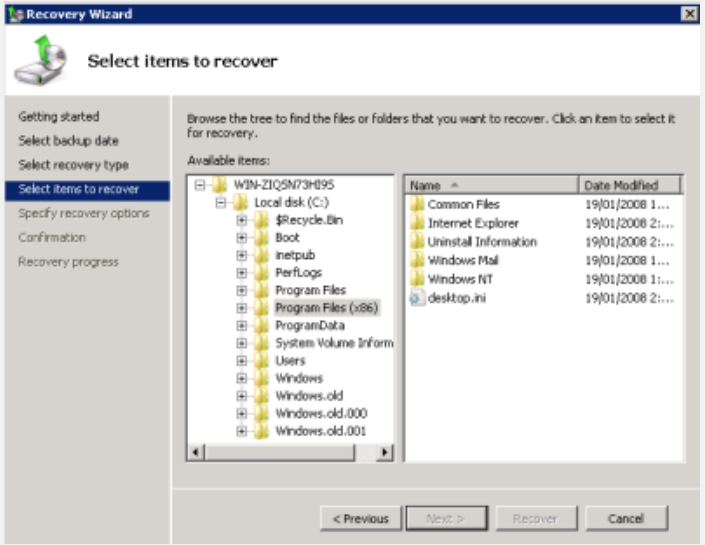
Recover specific files and folders.

1. Launch the Windows Server Backup Recovery Wizard.
2. Choose your backup and select the 'Files and folders' option.
3. Select what you want to restore.
4. Complete the wizard.



For additional information, please see:

HOWTO: File and Application Restoration from Windows Server 2008 Backup

http://www.wbadmin.info/articles/howto-file-application-restoration-windows-server-2008.html

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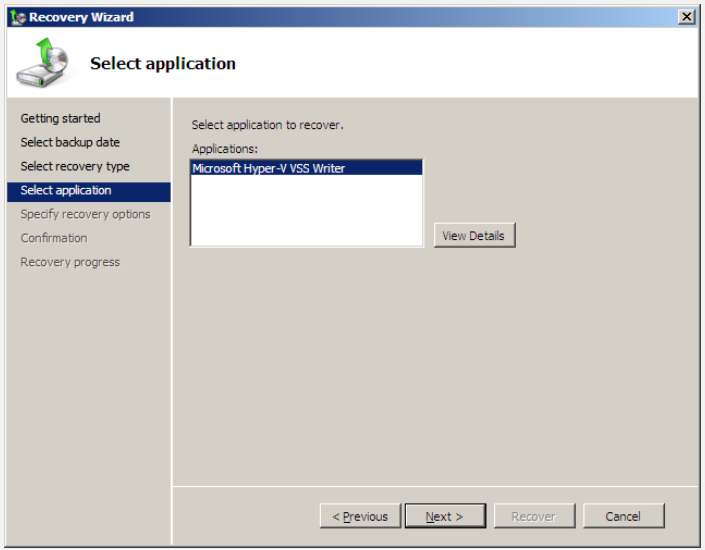
Restore all Hyper-V VMs to the same host

1. Launch the Windows Server Backup Recovery Wizard.
2. Choose your backup and select the 'Applications' option.
3. Select the option for Hyper-V VSS Writer.
4. Complete the wizard.



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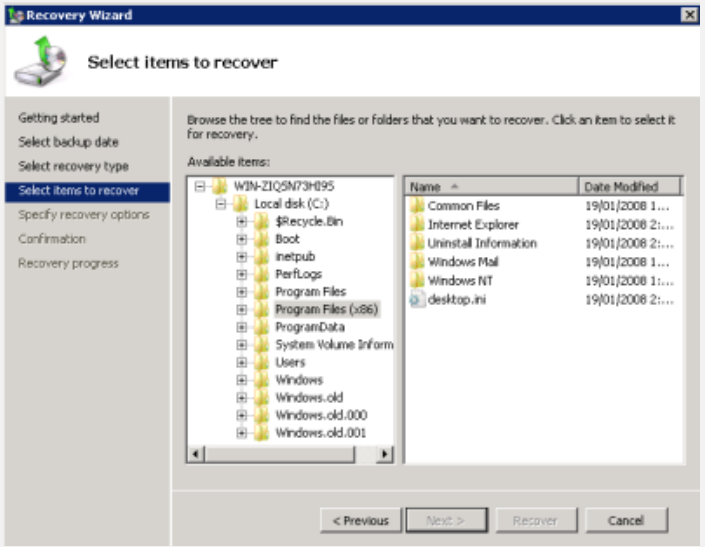
Restore a single VM

1. Launch the Windows Server Backup Recovery Wizard.
2. Choose your backup and select the 'Files and folders' option.
3. Stop the Hyper-V Guest.
4. Select what you want to restore.
5. Complete the wizard.



For additional information, please see:

Individual VM Restore of Hyper-V machine from backup

http://www.backupassist.com/blog/support/granular-individual-vm-restore-of-hyper-v-virtual-machine-from-backup/

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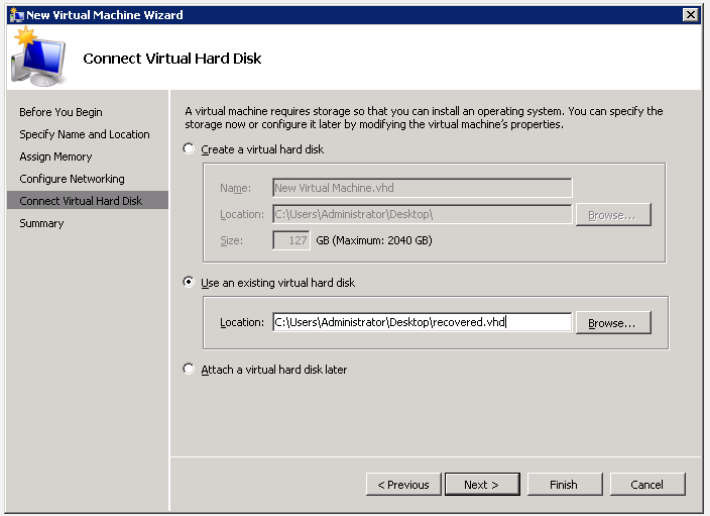
Restore a single VM to a different host

1. Launch the Window Server Backup Recovery Wizard and choose to recover another server.
2. Select your backup location and the backup you wish to recover.
3. Choose to restore files and folders, locate the VM's VHD file and restore it to a local volume.
4. Open the Hyper-V manager, create new virtual machine and attach your recovered VHD file.
5. Complete the wizard and start your recovered VM.



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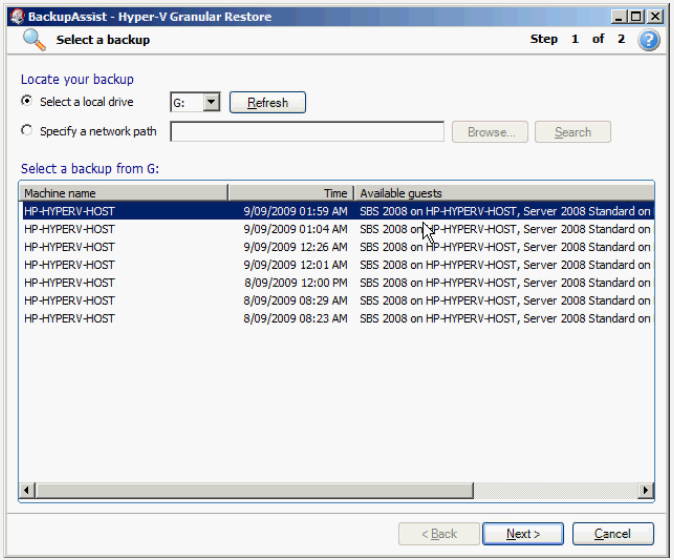
Restore specific files and applications on a guest

1. Launch the BackupAssist Hyper-V Granular Restore Console.
2. Connect your backup device, and select the backup to restore from.
3. Mount the Guest's VHD as a drive letter on the host.
4. Copy over the data you want to restore.
5. Unmount the VHD from the host.



For additional information, please watch:

Hyper-V Granular Restore Console Video Demonstration

http://www.youtube.com/watch?v=pXCVSqS67xE

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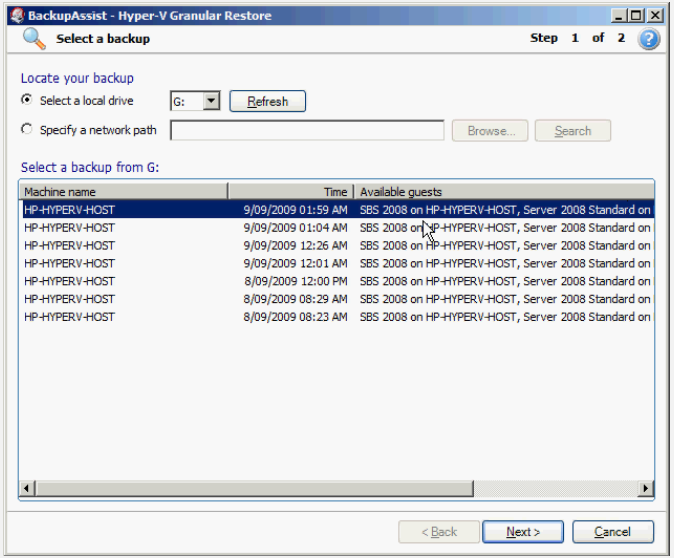
1. Use the BackupAssist Hyper-V Granular Restore Console to mount your backup.
2. Stop Exchange Server on your guest.
3. Rename your existing Mailbox folder ("just in case") and create a new Mailbox folder.
4. Copy the Exchange Mailbox folder from the mounted backup (from step 1).
5. Start Exchange Server on your guest.
6. Unmount the VHD from the host.



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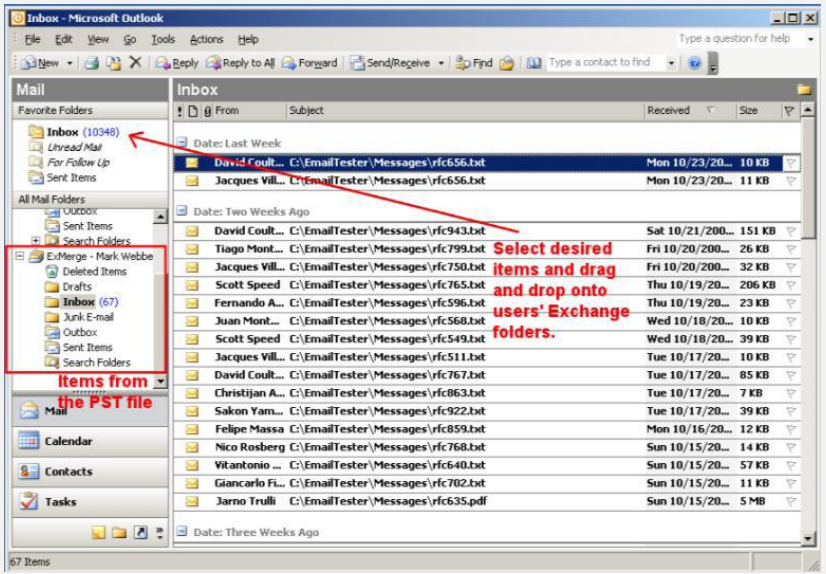
Recover individual Exchange mailboxes and Outlook items

1. Copy the appropriate PST file to a location that is accessible to the relevant user's computer. (e.g. "Users Shared Folders", another network share or an external hard drive).
2. From the relevant user's computer, run Microsoft Outlook and select File > Open > Outlook Data File.
3. Browse for the PST file in the location it was copied to in Step 1.
4. From this PST file you can view the email messages and drag-and-drop the mail items back into the original folders.



For additional information, please see:

Exchange Mailbox Add-on White Paper

http://www.backupassist.com/downloads/whitepapers/ExchangeMailboxBackup_WP.pdf

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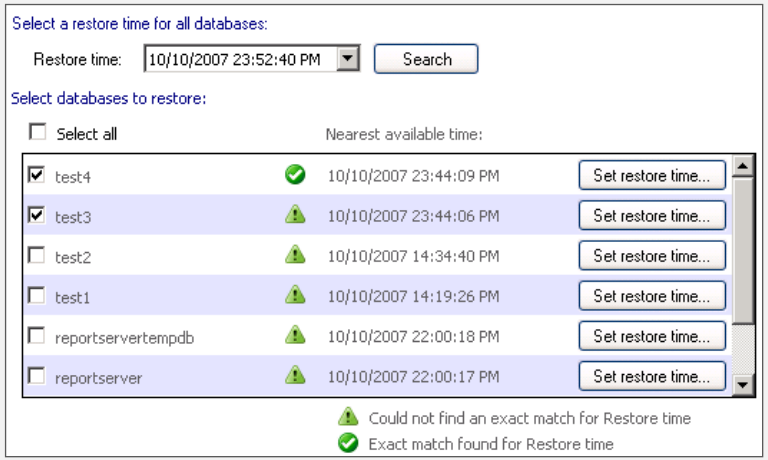
Recover SQL Server databases

Recover SQL Server databases (backed up by the BackupAssist SQL Add-on)

1. Launch the BackupAssist SQL Restore utility.
2. Choose the SQL server instance you wish to restore to.
3. Specify the path where the database backup files reside (in .BAK format).
4. Select which database backups you want to restore from the list.
5. Specify the point in time that you want to restore your databases to (a different restore time can be specified for each individual database if required).
6. Click Start restore to restore your SQL databases.



For additional information, please see:

BackupAssist SQL Add-on White Paper

http://www.backupassist.com/downloads/whitepapers/SQL_WP.pdf

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Hyper-V Granular Restore Console video

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Any questions so far about Hyper-V?

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Solving the price problem

Typical Hyper-V solutions costs

Compare this to the BackupAssist solution

So how much does a solution like this cost?

Describe your LAN environment	1 Microsoft Virtual Server Hyper-V host environment (Supports unlimited guest machines) 1 Exchange server
Number of tape libraries in your environment	0 Tape libraries
If you are using NetApp, EMC or IBM N Services NDMP filers, enter the number of NDMP filers in your environment	0 Filers
Total number of Windows Servers in your environment for which you would like fast, bare metal system recovery in minutes in the event of a drive failure or disaster	1 Windows Servers with bare metal system recovery
Total number of desktops or laptops in your environment for which you would like to ensure complete data recovery	0 Windows Desktops and Laptops
Select a maintenance option for your products	◉ 1 year 24 * 7

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Solving the price problem

Typical Hyper-V solutions costs

Compare this to the BackupAssist solution

Result:

Product	Price
Competitor product **–** for Windows Servers License + Essential 12 Months Support	$1,162.66
Competitor product **–** Agent for Microsoft Exchange Server License + Essential 12 Months Support	$1,162.66
Competitor product **–** System Recovery Server Edition License + Essential 12 Months Support	$994.51
Competitor product **–** Agent for Microsoft Virtual Server License + Essential 12 Months Support	$2,915.41
Total	**$6,235.24**

Note: Pricing is in US Dollars

BackupAssist™ Windows® Backup Made Easy!

Solving the price problem

Typical Hyper-V solutions costs

Compare this to the BackupAssist solution

How about another competitor?

Product	Price
Competitor product **–** Backup and Recovery 10 Advanced Server Virtual Edition	$1,999.00
Competitor product **–** Recovery for Exchange SBS Edition	$499.00
Total	**$2,498.00**

Note: Pricing is in US Dollars

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Solving the price problem

Typical Hyper-V solutions costs

Compare this to the BackupAssist solution

Compare this to the BackupAssist solution:

Product	Price
BackupAssist plus 12 months BackupCare	$345.85
BackupAssist Hyper-V Granular Restore Add-on	$249.00
BackupAssist Exchange Mailbox Add-on	$129.00
Total	**$723.85**

Competitors' solutions:

Competitor #1 solution:	**$6,235.24**
Competitor #2 solution:	**$2,498.00**

Note: Pricing is in US Dollars

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What else can BackupAssist do?

Probably the most versatile backup package

One-stop solution that satisfies your clients

No more hyperventilation for any kind of backup!

Since our last appearance at SMB Nation in 2008:

- ✓ To be released shortly: Hyper-V Granular Restore Console
- ✓ Released in v5.3: Tape Drive Support for Windows Server 2008 – ZIP Engine
- ✓ Released in v5.3: Exchange Mailbox Support for Exchange Server 2007
- ✓ Released in v5.2: Exchange Server 2007 backup on Server 2008 (Exchange plug-in)
- ✓ Released in v5.1: Rsync – Bandwidth efficient Internet based backup
- ✓ Released in v5.0: File Replication Engine – exact mirroring of file systems
- ✓ Released in v5.0: Centralized Monitoring Console

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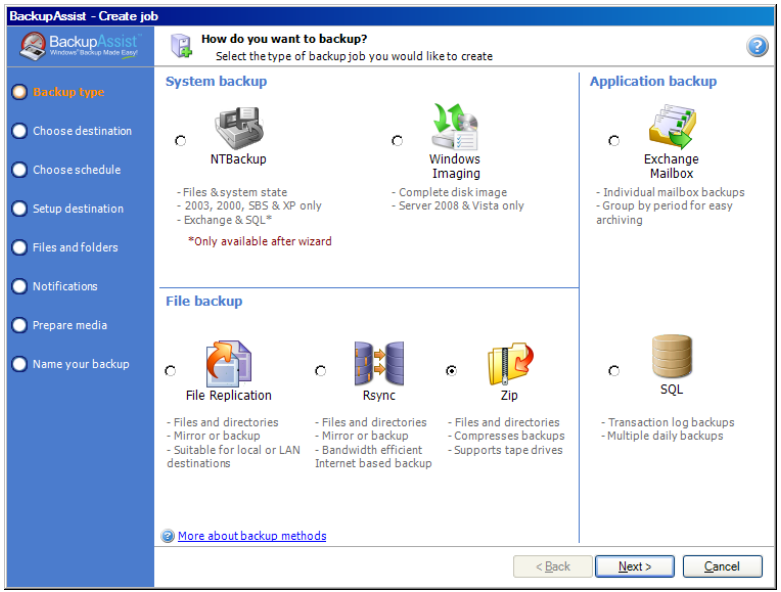
Probably the most versatile backup package:

- ✓ Drive Imaging on Server 2008
- ✓ Data Backup with our new ZIP Engine:
  - Tape
  - External / Local Disk
  - NAS
  - USB Flash
  - DVD
- ✓ Bandwidth efficient Internet based backup
- ✓ Centralized Monitoring
- ✓ Fix Windows Server Backup problems
- ✓ Fix NTBackup problems



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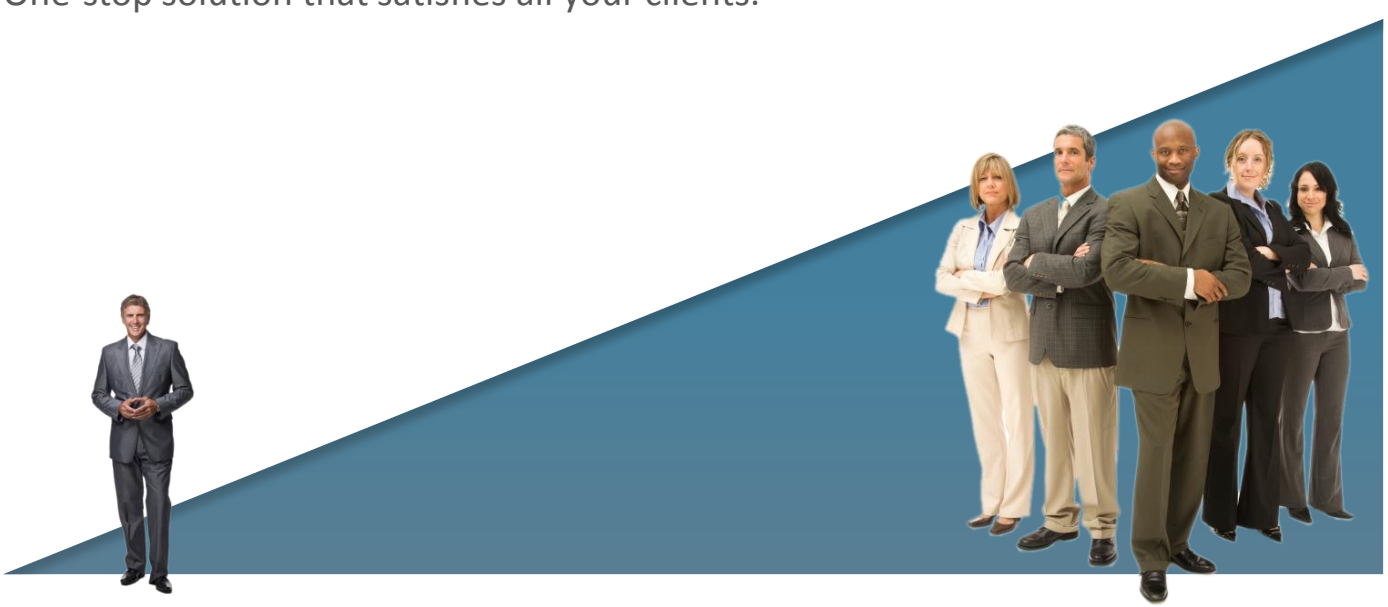

Small client

- Basic needs
- Limited budget
- 1 or 2 servers

Large client

- Advanced needs
- Bigger budget
- Multiple servers

Size of client

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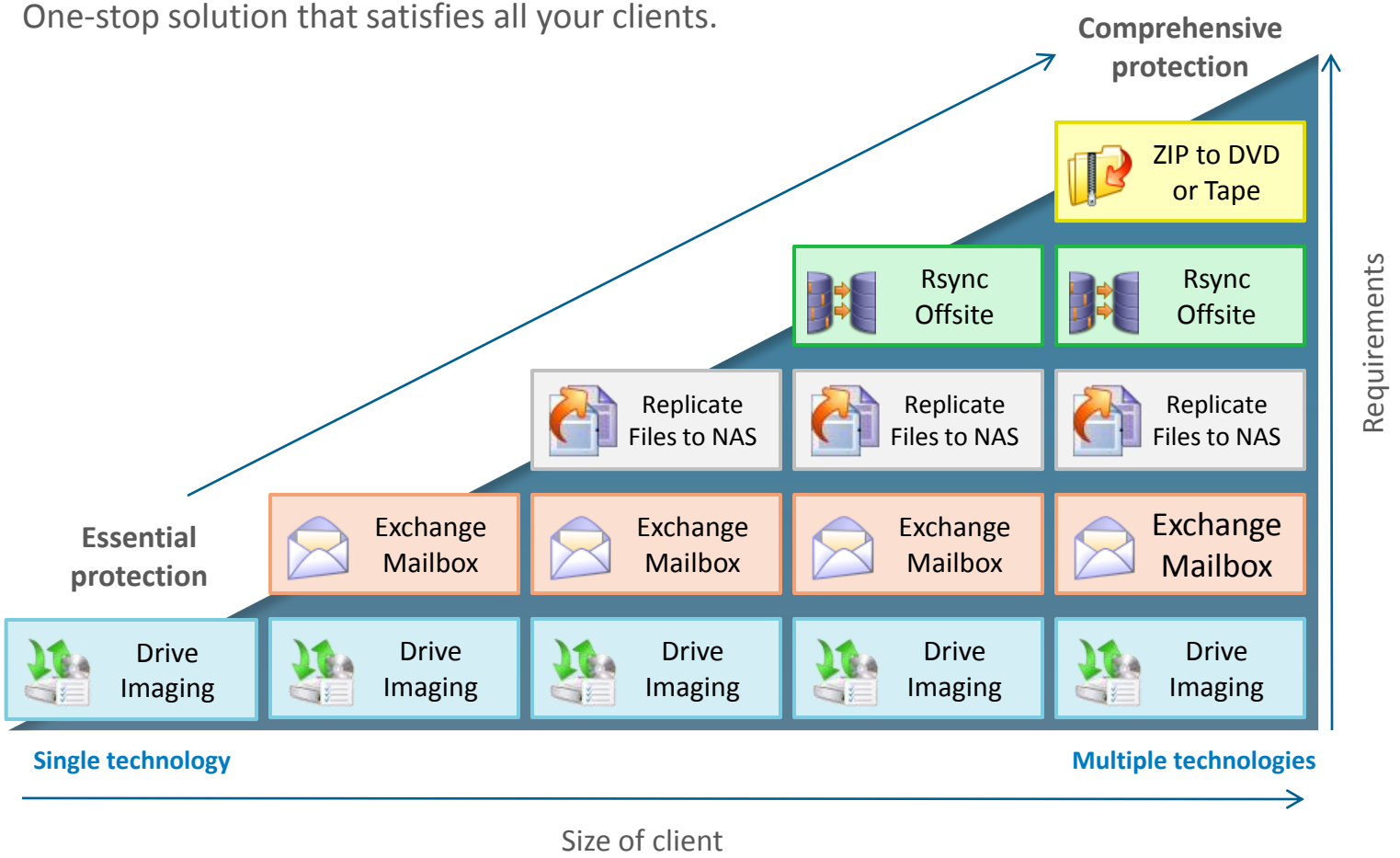

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Question and answer time

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