



BackupAssistTM
Windows[®] Backup Made Easy!

BackupAssist – SBS 2008 Scenarios

SBS 2008 Premium on Hyper-V Hypervisor

SBS 2008 Standard on Physical hardware

Your presenter:

Linus Chang, Lead Developer of BackupAssist

Notes to general audience reading this on the web:

- This presentation was delivered to the Brisbane SMB IT Professionals Group in May 2009.

- We (and 2 other major vendors) were asked to deliver technical content that explained how our products could protect a SBS 2008 server in both a physical and virtualised environment, so that different products could be evaluated side-by-side.
 - We were the only vendor who addressed the specified scenarios.

- The target audience already had a good knowledge of Hyper-V, Server 2008 backup and bare metal recovery, and also technologies like Rsync. If you're new to backup and disaster recovery, please see our introductory presentation at <http://www.backupassist.com/SBS/sbspresentation.html>

Notes to general audience reading this on the web:

- All prices in this presentation are in Australian dollars, including tax. Please refer to the BackupAssist website for pricing in other currencies:
<http://www.backupassist.com/purchasing/purchase.php>

- When we give example pricing, we include the cost of hardware. That's because BackupAssist's solution saves on both software and hardware.

- In addition to this presentation, we also provided some extra Cheat Sheets, which can be downloaded from
<http://www.backupassist.com/education/cheatsheets.html>:
 - Easy email archiving by using Exchange Journaling
 - Backup device speeds – comparing USB & eSATA HDD, rdx, REV and tape
 - Hyper-V backup strategies

- Virtualisation adds a lot of complexities to the backup equation:
 - ▣ To backup from the host or guest?
 - ▣ Hyper-V guests don't support USB pass through
 - ▣ Licensing – can be expensive
 - ▣ Separate backups for host and guests?

- Does anyone else feel that Microsoft didn't think it through enough?

- It's fortunate that we're talking about Hyper-V systems
 - ▣ Windows Based – lots of options
 - ▣ Cost effective

- Vmware ESXi – a lot harder to achieve the same outcome

Cutting through the confusion



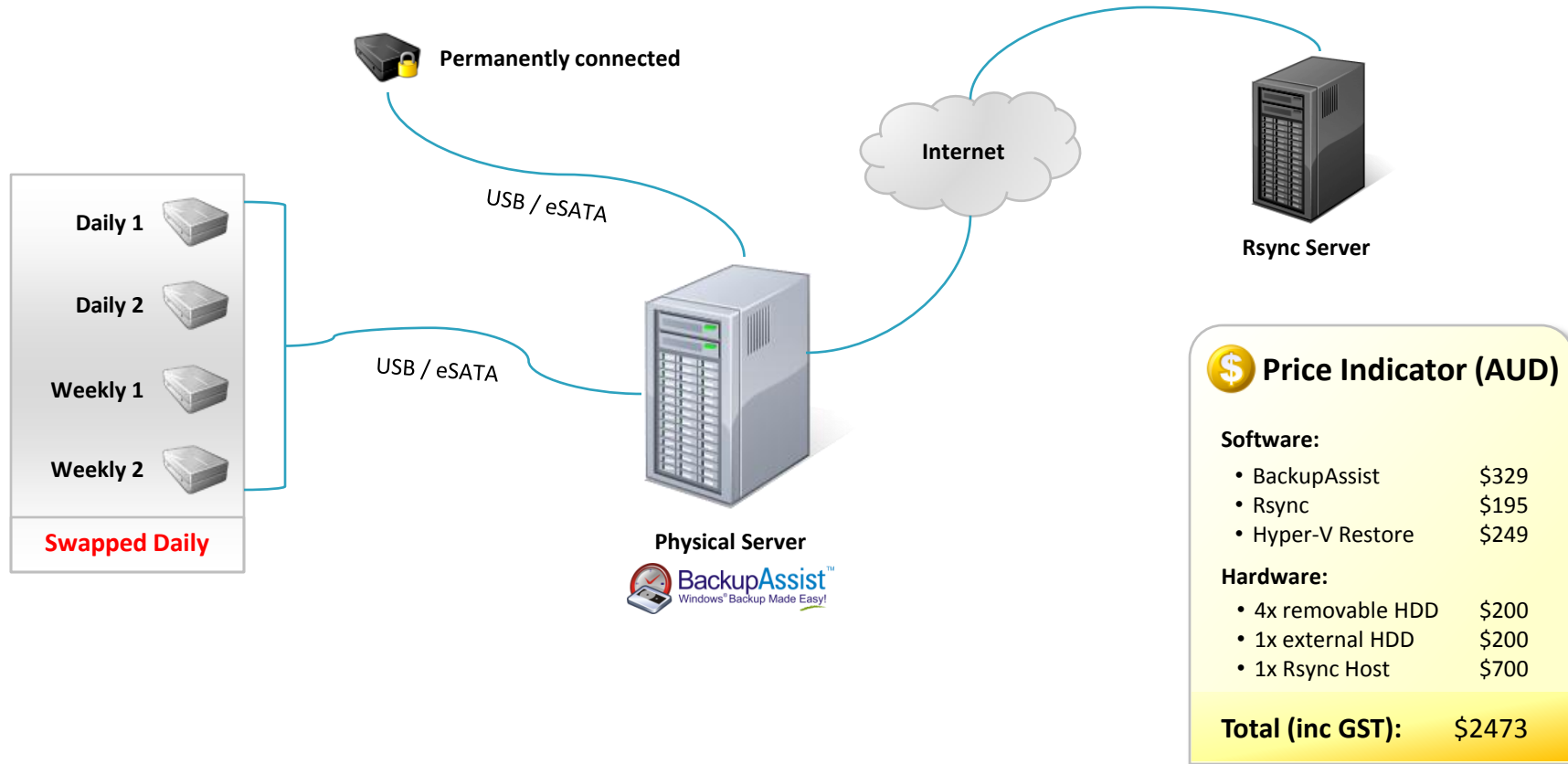
This presentation delivers:

- One recommended way!
 - Can be upsized or downsized as appropriate for the client's needs and budget

- One alternative way!

- We'll include a "Client view" and "Administrator view" of each scenario

Example: Client's view



Example: Administrator's view



Wide variety of options



- BackupAssist builds upon existing backup technologies



Windows Backup



Windows Server Backup



NTBackup

- ▣ Scheduling
- ▣ Media management
- ▣ Hardware support
- ▣ Monitoring and reporting

File based backup



Local file backup – File Replication Engine



Internet based backup – Rsync Engine

- ▣ VSS application backup
- ▣ Fast differential backups
- ▣ File-level Single Instance Store

Application specific backup



Exchange Mailbox add-on

- ▣ Export mailboxes to PST



SQL add-on

- ▣ Daily or near continuous backups of SQL
- ▣ Point in time recovery

Coming soon...



ZIP-64 based backup

- ▣ Replacement for NTBackup
- ▣ Tape Drive Support on Server 2008

Each technology has a purpose...

■ Similar to car safety devices



Seat Belts



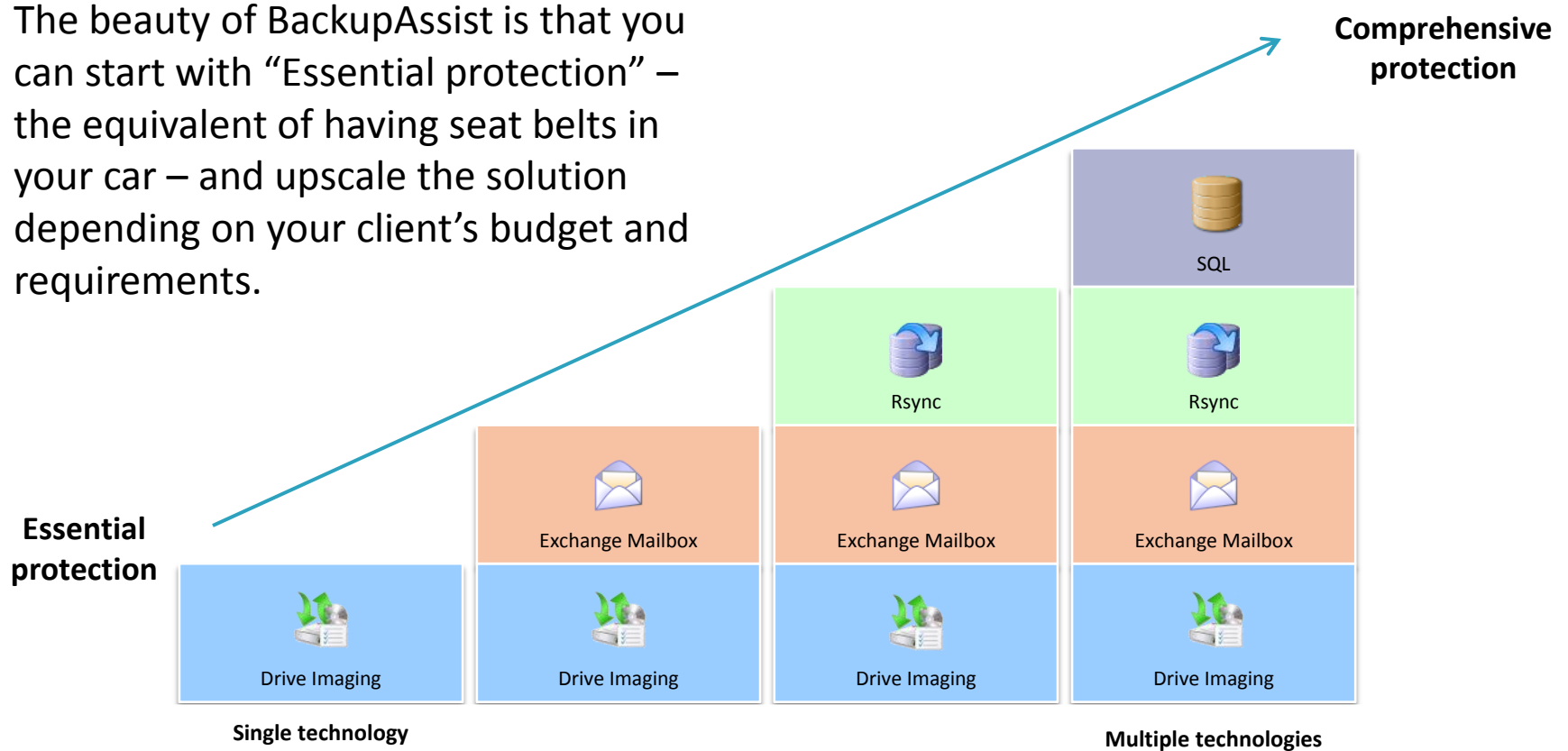
Air Bags



ABS Brakes

Multiple technologies

The beauty of BackupAssist is that you can start with “Essential protection” – the equivalent of having seat belts in your car – and upscale the solution depending on your client’s budget and requirements.

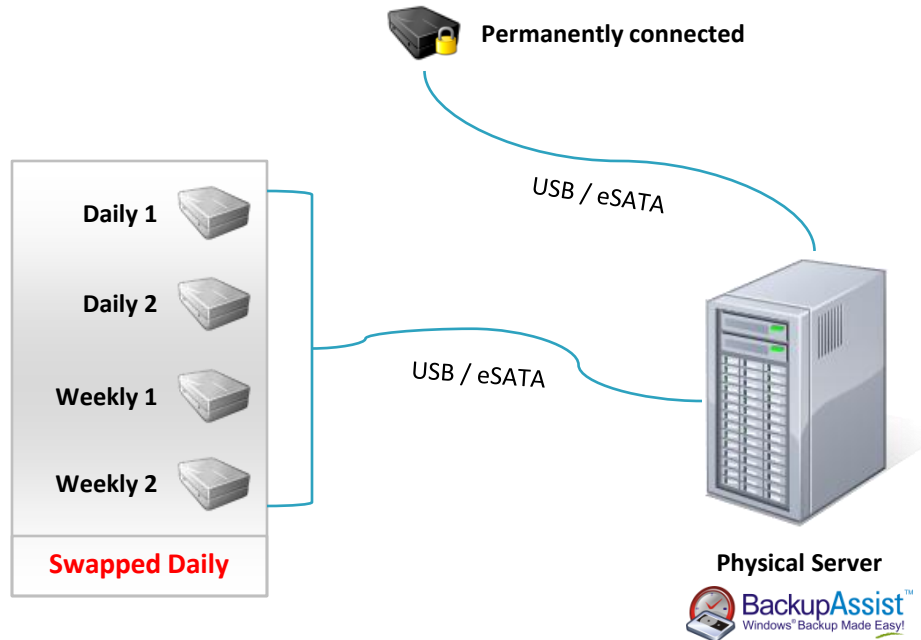


Essential protection



- Image the host!

Essential protection – Client's view



Price Indicator (AUD)

Software:

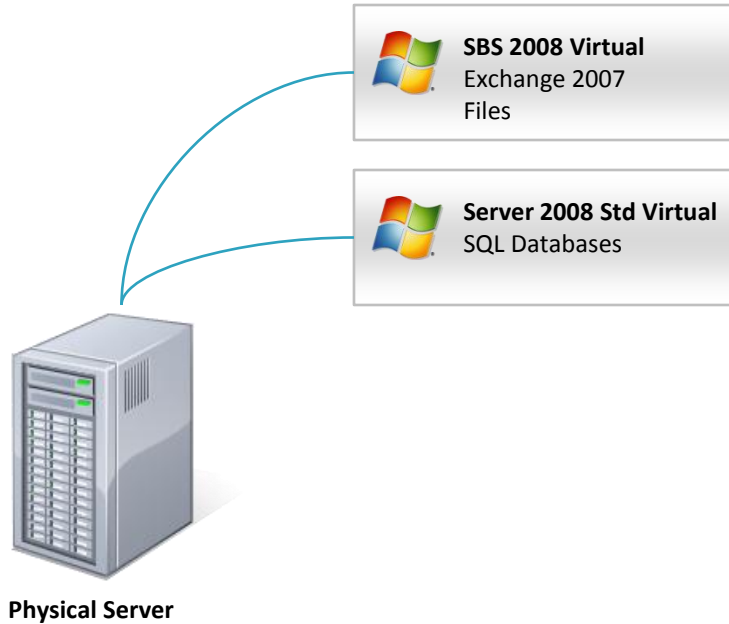
- BackupAssist \$329

Hardware:

- 4x removable HDD \$200
- 1x external HDD \$200

Total (inc GST): \$1329

Essential protection – Client's view



- Job 1:** Nightly drive image to rotating external HDDs
- Job 2:** Intra-day drive image to permanently connected HDD

Let's analyse why I recommend this...

- Nightly backups to rotating disks
 - ✓ Offsite storage of backups
 - ✓ Variety of restore points

- Intra-day backups to permanently connected disk
 - ✓ Automatic protection for mishaps during the day
 - ✓ Super cheap –\$200 for an extra HDD

- Fire
- Theft
- Hardware failure
- User deletion

- Hardware failure
- User deletion
- User forgot to bring in disk

■ Restore situations...

- ✓ Bare metal
- ✓ Restore to dissimilar hardware
- ✓ Restore all Hyper-V VMs
- ✓ Restore single VM
- ✓ Migrate single VM to different host
- ✗ Restore individual files on guest (we'll address this later)

- Little known gotchas that no-one talks about...
 - ▣ Where you backup to is where you must restore from! Limitation in the WSB Restore Procedure
 - ▣ Exchange 2007 logs in the Hyper-V guest are pruned upon VSS snapshot, regardless of whether the backup succeeds or fails
 - ▣ No consistency check is done on the guest – but Microsoft says it's supported
 - ▣ Don't use Dynamic disks in your Guests – these cannot be backed up while online. Use Basic disks. (Limitation in Hyper-V VSS Integration Services)
 - ▣ Using snapshots can cause problems with backup and migration
 - ▣ Follow my tip for enabling VSS to enable fast differential backups
 - ▣ **Refer to the cheat sheet for more details!**

- Backing up during the day?
 - I recommend that we backup to a permanently connected disk
 - No hassles with when the user swaps the device
 - Example: Say your first backup happens at 11am. Even if the backup operator is late into the office and swaps the disk at 1pm, your 11am backup will still happen!
 - There's never any need to match "fulls" with "incrementals" (unlike other imaging products) because each backup is a full.
 - How often do you image during the day? What are the overheads? [General discussion]

- Setting up Essential Protection
 - ▣ Destination
 - ▣ Schemes
 - ▣ Selections
 - ▣ Media tracking & preparation
 - ▣ Email features
 - ▣ Reports – sections, speed

- How much does your client normally spend on their backup solution?
 - ▣ We have to cater for a wide variety of budgets and risk tolerances
 - ▣ Options to upscale and downscale the solution as required.

Which strategy is right for your client?



- It all depends on:
 - How paranoid is your client?
 - How much are they willing to invest?
 - Your ability to educate your client on the potential dangers.

Backups are a lot like car safety features...

- Seat belts**
Disaster recovery protection
Recover from a complete server failure due to:
 - Hardware failure
 - Theft
 - FireSolution: Complete server backup / image
- Anti-lock brakes**
Data loss & corruption protection
Recover data from historical points in time due to:
 - Accidental or intentional deletion
 - Application corruption
 - Malware / virus infectionsSolution: Archival data & application backup
- Air bags**
Offsite data protection
"Last line of defence" protection for when other backups fail, or when catastrophes that destroy your other backups, hit:
 - Earthquake
 - Hurricane
 - Flood
 - BushfiresSolution: Automated offsite backup

We hope that we never need them...
BUT AFTER THE EVENT
we wish we had them all!

www.BackupAssist.com

Data loss can happen when you least expect...

Architect brings house down **The Daily Telegraph** 23rd January 2008

THEY say revenge is a dish best served cold, and Marie-Louise Cooley must be wishing she had listened.

The Florida architect saw a job advertisement in the local paper for a position she believed was her current job, with her own boss's number attached and, thinking she would be fired, decided to meet out her own punishment.

The 41-year-old went to her office late on Sunday night and erased seven years worth of drawings and blueprints, estimated to have been worth about \$2.5 million.

"She decided to mess up everything for everybody," Jacksonville Sheriff's Office spokesman Ken Jefferson told Fox.

"She just sabotaged the entire business, thinking she was going to get ahead."

It didn't take Steven Hutchins, owner of the architectural firm that bears his name, much time to figure out who'd done it — Cooley was the only other person who had full access to the files.

Police arrested Cooley and charged her with causing greater than \$1,000 damage to computer files, a felony.

She was hauled out the following afternoon.

Hutchins told one TV station he'd managed to recover all the files using an expensive data-recovery service.

As for the job, Cooley originally wasn't in danger of losing it. But it is now.

The ad was for Hutchins' wife's company:
<http://www.news.com.au/dailytelegraph/story/0,21045,23107343-5012895,00.html>

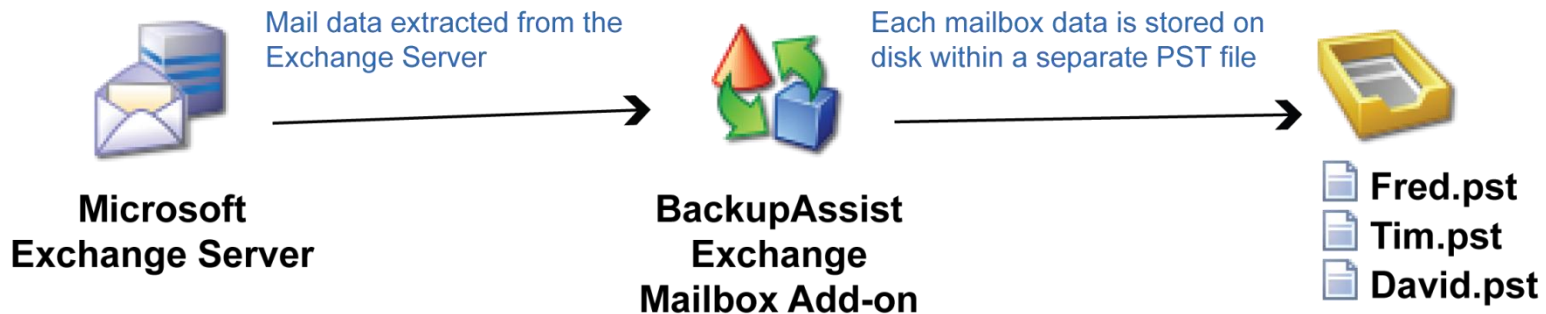
**Avoid the risk.
Use BackupAssist.**

www.BackupAssist.com

These fliers can help educate your clients!

■ Highlights:

- Basic email archiving
- Take user mailboxes to PST files



■ Success story:

From: Frank Whitaker
Sent: Thursday, 2 July 2009 4:41 PM
To: Steven Chua
Subject: Re: Are you happy with BackupAssist

One of these days I will have to write a story about how excellent your product is.

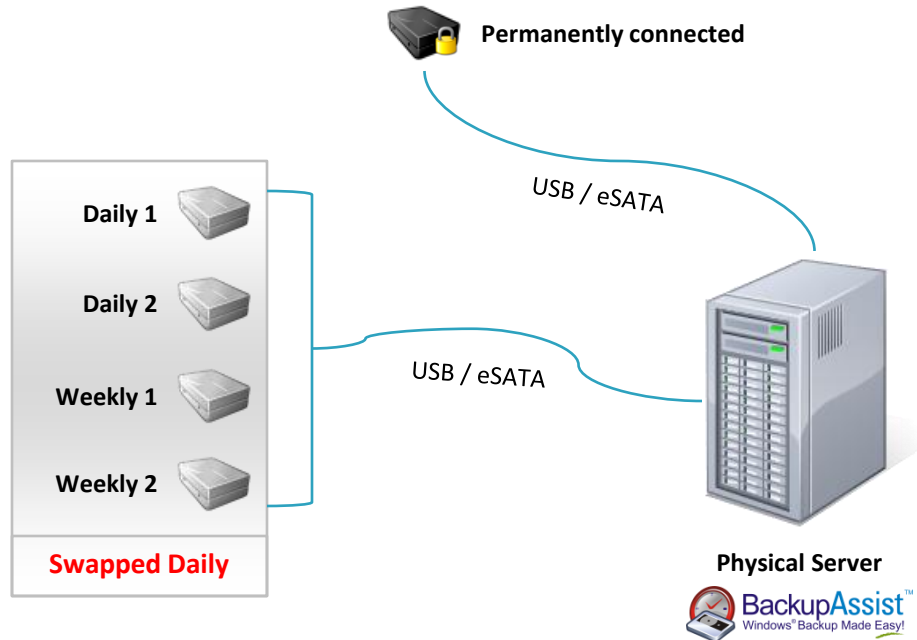
Short version:

CEO syncs his blackberry with his entourage and selects the "sync from phone" option. It wipes out his entire calendar contacts and emails from the past three years. Now a few years ago had this happened I would of spent half a day restoring files from the exchange server mount.

Instead, from my iPhone no doubt, I log into the server, open his email and import his backed up PST file from the night before.

Everyone was ecstatic and I was the hero!

Enhanced Protection – Exchange Mailbox



Price Indicator (AUD)

Software:

- BackupAssist \$329
- Exchange Mailbox \$195

Hardware:

- 4x removable HDD \$200
- 1x external HDD \$200

Total (inc GST): \$1524

Enhanced Protection – Exchange Mailbox



■ Highlights:

- Automatic file system protection via the Internet
- Bandwidth efficient
- VSS application compliant – Exchange, SQL databases

■ Added advantages:



Secure transmission

Transmissions over the wire are compressed and encrypted.



Mirror or history

Either create a single mirror of your data or a series of mirrors for backup history.



Choose your host

Choose where to backup your data: self managed, VAR managed or cloud managed.

Enhanced Protection – Rsync



- Some of our users are already backing up Exchange Info Stores and SQL Databases via Rsync. However, they ask – how big can the database be before performance really suffers?

- We tested performance on big files:
 - We ran a 40 gig VHD test from one desktop to another on a 100Mbps LAN to see what the checksum time would be
 - With 0 bytes of changes: 45 minutes
 - With 992MB of changes: 1 hour 2 minutes

- Extrapolating: 1GB of changes over 1Mbps – extra 3 hours added to the checksum time (estimated 4 hours in total). But most often, you won't have 1GB of data changing from day to day, so it'll be much faster.

- Conclusion: synchronising Exchange and SQL databases of this size is practical.

Enhanced Protection – Rsync



- Recommendation based on our latest testing - if you intend to synchronise large files, use a proper desktop or NAS with a decent processor as your Rsync destination, not a NAS device with low powered processors (e.g. ARM).

Example: 18.8GB file with approx 200 MB of in-file changes:

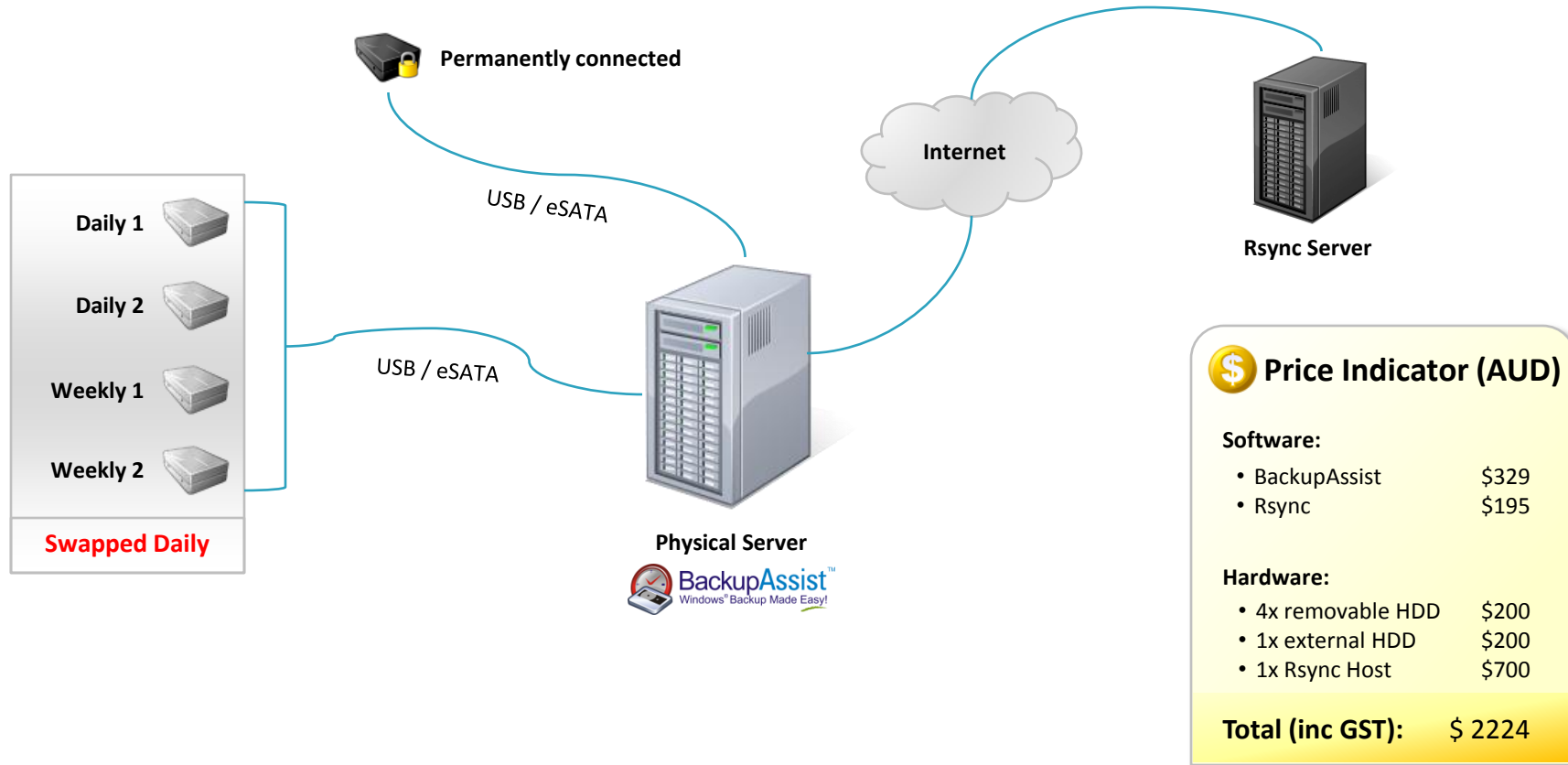
QNAP TS-209II running rsync 2.6.6

	Time taken	bytes sent	bytes received
Initial	7h55m	18.79 GB	504 B
Changed*	4h57m	160.64 MB	5.22 MB

Ubuntu 9.04 desktop running rsync 3.0.5

	Time taken	bytes sent	bytes received
Initial	1h22m	18.79 GB	418 B
Changed*	0h35m	160.63 MB	5.22 MB

Enhanced Protection – Rsync



Enhanced Protection – Rsync

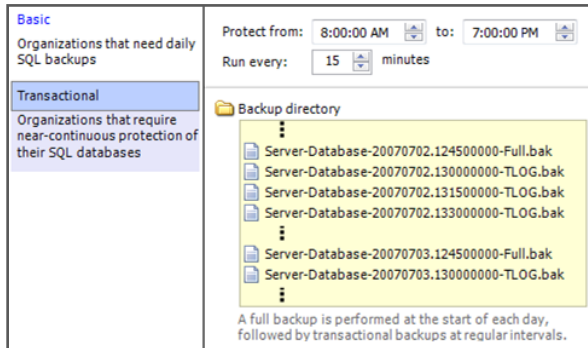


- Live demonstration
 - ▣ Setting up Exchange & Rsync jobs
 - ▣ Restore User Interface

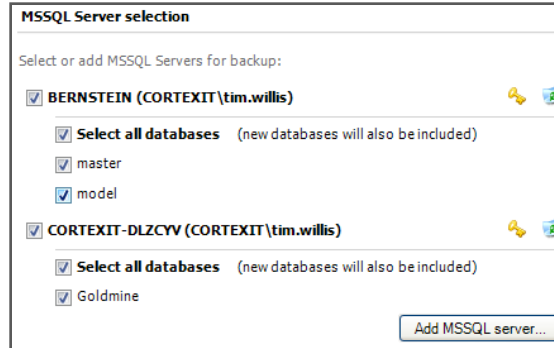
Enhanced Protection – SQL



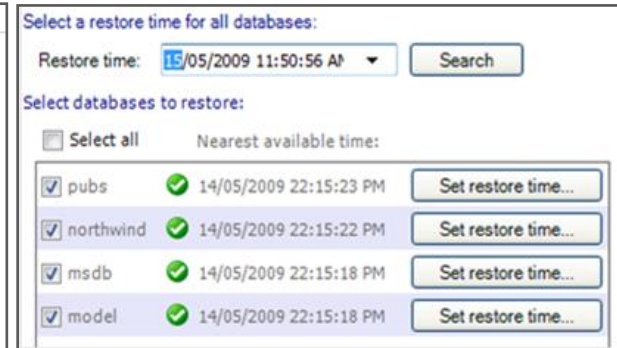
- Near continuous protection for SQL
- Any number of local or remote servers
- Point in time restore



Near-continuous protection

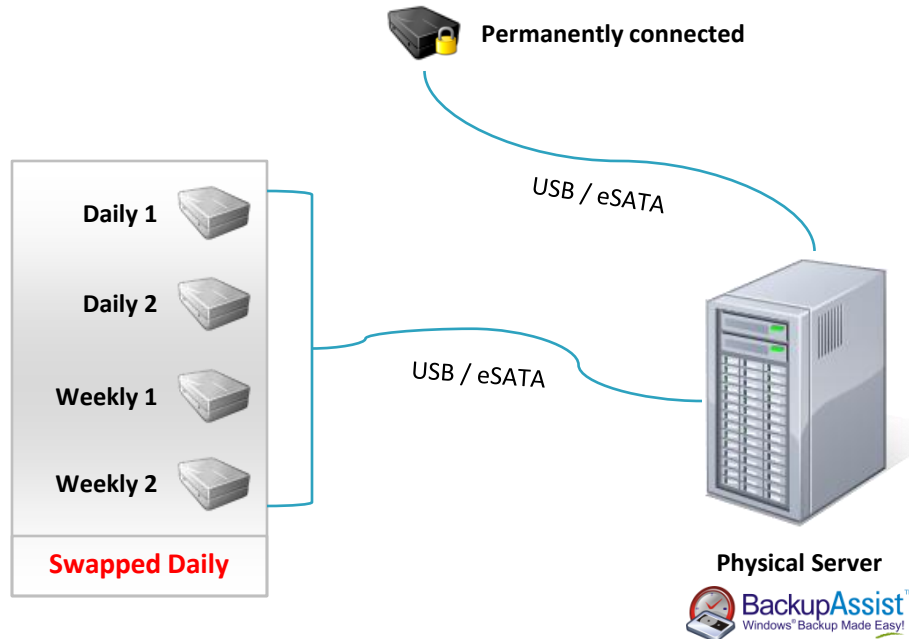


Backup multiple SQL Servers



Point in time restore

Enhanced Protection – SQL



Price Indicator (AUD)

Software:

- BackupAssist \$329
- SQL \$195

Hardware:

- 4x removable HDD \$200
- 1x external HDD \$200

Total (inc GST): \$1524

Enhanced Protection – SQL

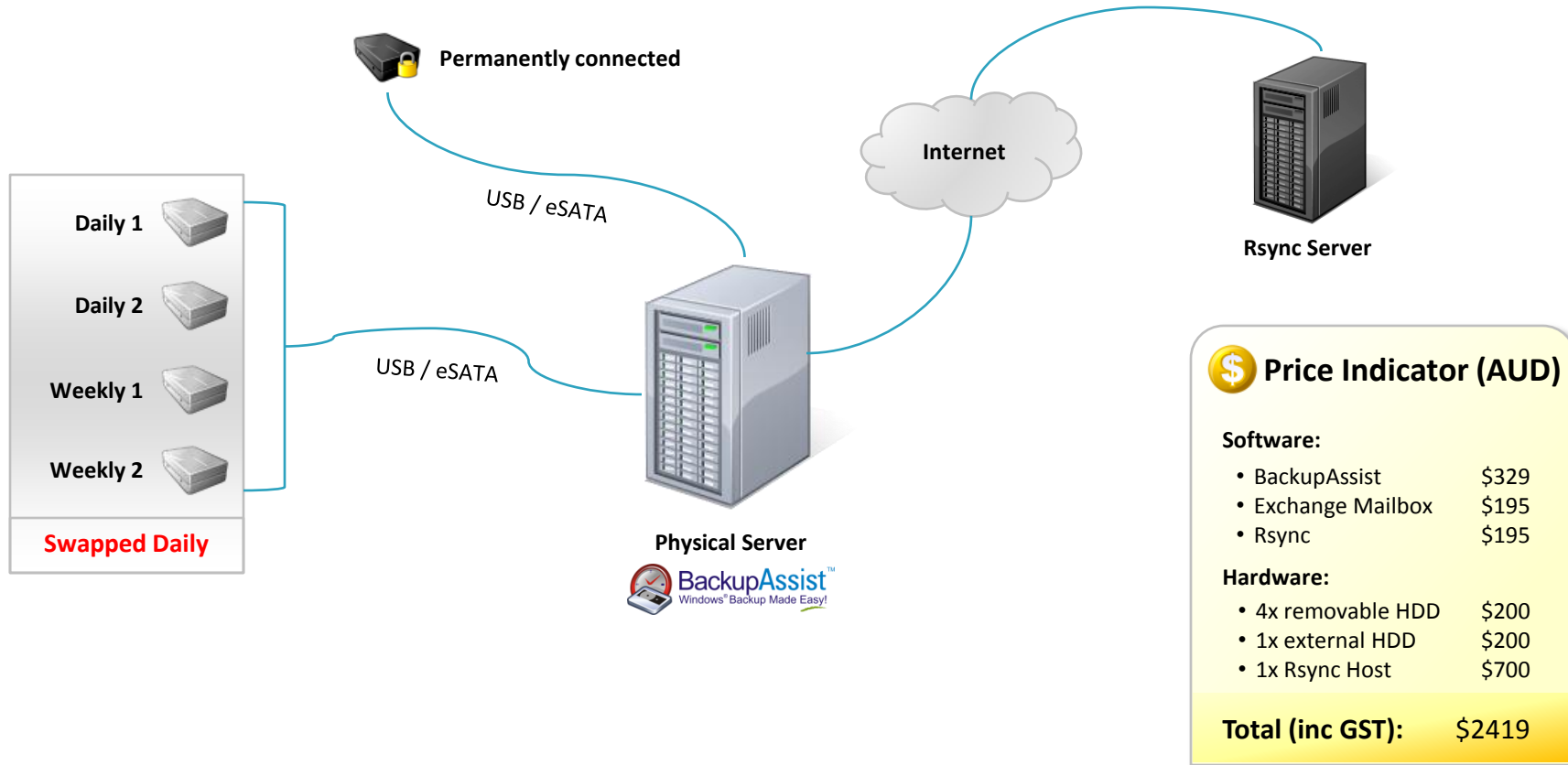


- Install BackupAssist on the VM to image it
 - ▣ The only way is to backup to NAS

- Advantages
 - ▣ Restore to Physical or Virtual
- Disadvantages
 - ▣ Only basic version history, other than changing the destination path
 - ▣ Slow – every 7th backup will be a Full

- Simplified version of the scenarios described so far.
- BackupAssist installed on the SBS 2008 machine, and all jobs run on it.

SBS 2008 Standard on Physical Hardware



SBS 2008 Standard on Physical Hardware



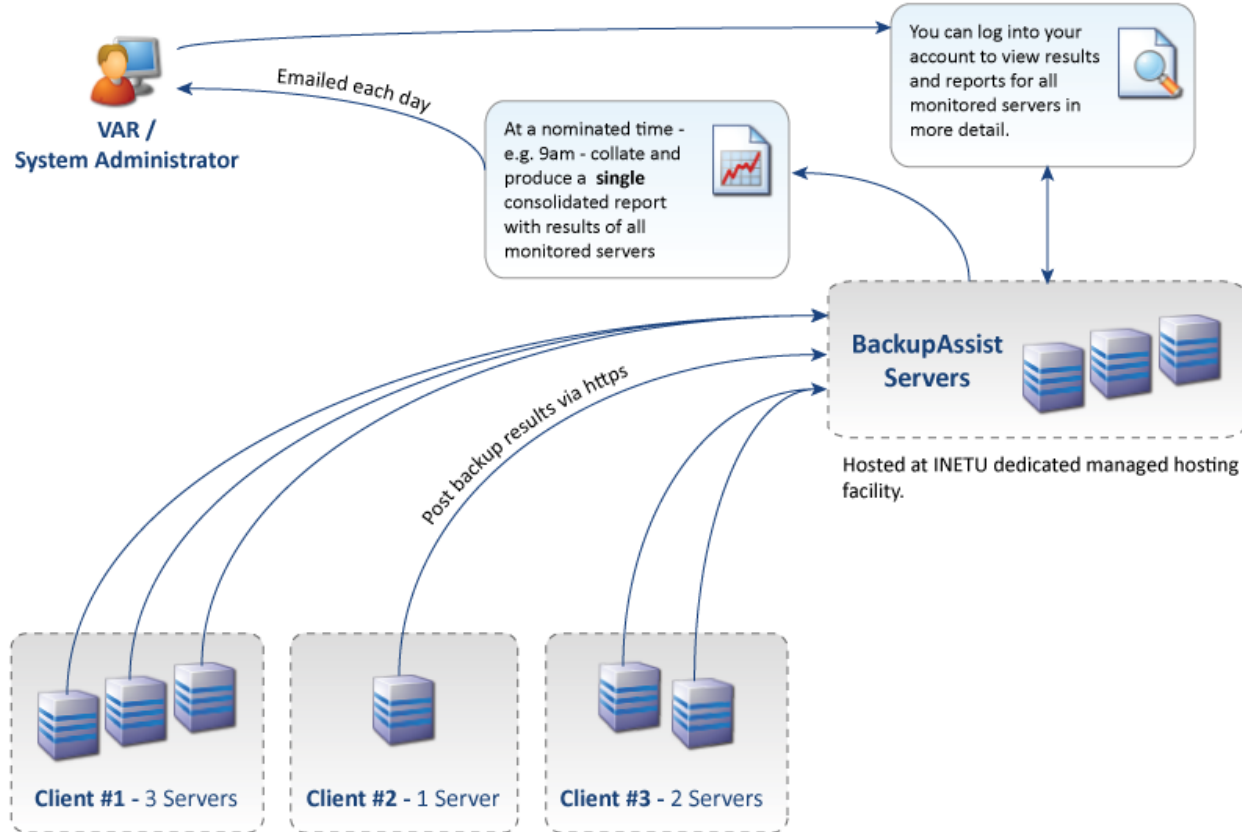
Physical Server



- Job 1:** Nightly drive image to rotating external HDDs
- Job 2:** Intra-day drive image to permanently connected HDD
- Job 3:** Nightly Exchange Mailbox job to local directory
- Job 4:** Nightly Rsync of files and folders

Centralized Monitoring - How it works

Centralized Monitoring Overview



■ Live demonstration

For web viewers of this presentation, a video demonstration is now available at:

<http://www.backupassist.com/education/videos/cmc/cmc.html>

- Remember the earlier slide – imaging your host is the “essential protection”, but doesn’t cater for one case:

- Restore situations...

- ✓ Bare metal
- ✓ Restore to dissimilar hardware
- ✓ Restore all Hyper-V VMs
- ✓ Restore single VM
- ✓ Migrate single VM to different host
- ✗ Restore individual files on guest (we’ll address this later)

- So how can we handle this requirement?
 - ▣ We could install the Rsync module on the file server to achieve offsite backups.
 - ▣ Or, we could restore guest files from the host backup, which brings us to...



Hyper-V Granular Restore add-on

- Recover individual guest VM files from the image backup of the host
- No need for 2nd backup



Hyper-V Granular Restore add-on

- 3 step process for restoring guest files:
 1. Choose the backup device
 2. Select the point in time to restore from
 3. Choose which guest VM and volume to mount as a drive letter – and simply copy files back!



Hyper-V Granular Restore add-on

- Currently in development
- Beta anticipated late July / early August
- Release in Q3, 2009



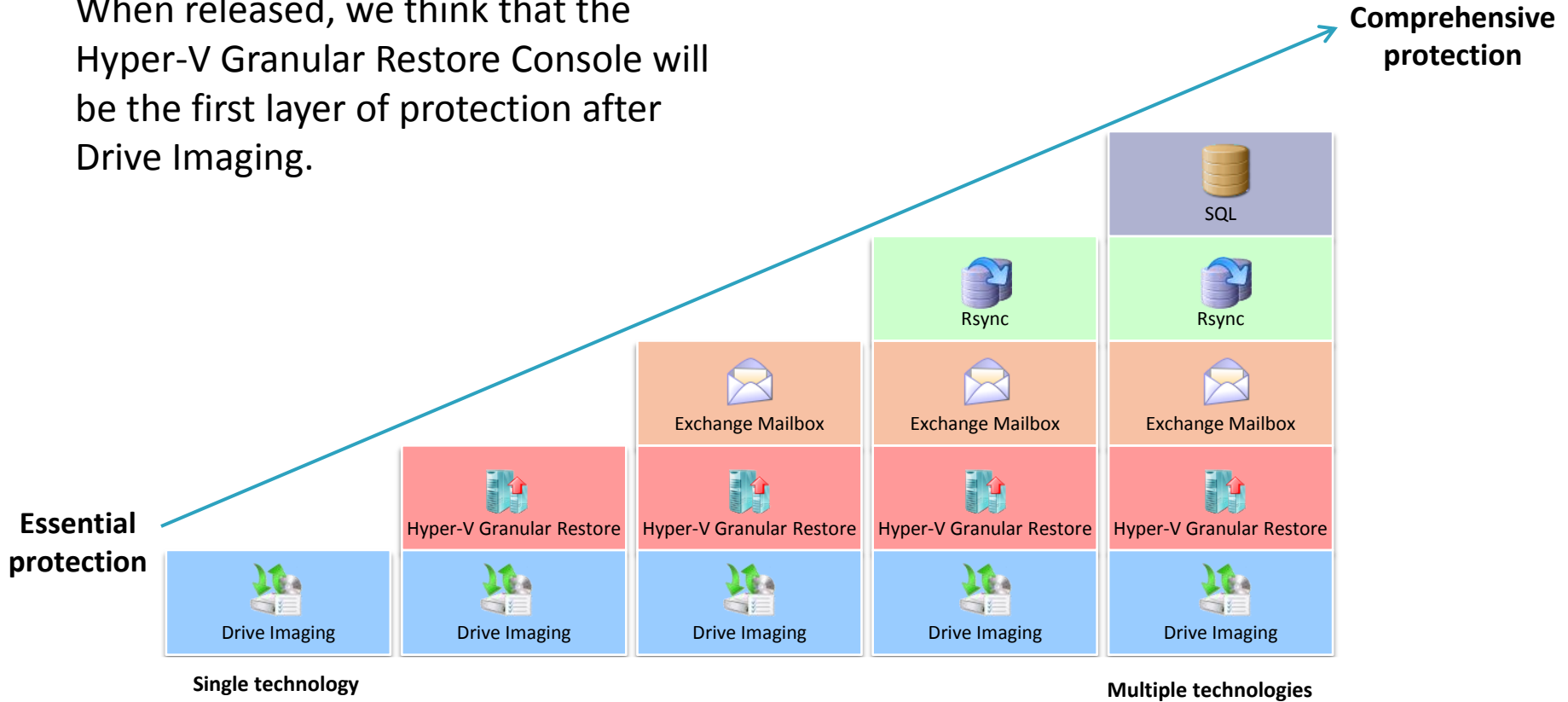
Hyper-V Granular Restore add-on

Comparison – US Dollar Pricing

BackupAssist		Symantec Backup Exec	
BackupAssist	\$249	Backup Exec	\$1162.66
BackupAssist Hyper-V Granular Restore	\$249	Backup Exec Agent for MS Virtual Server	\$2915.41
Total	\$498	Total	\$4078.07

Hyper-V Granular Restore

When released, we think that the Hyper-V Granular Restore Console will be the first layer of protection after Drive Imaging.



In today's presentation we've covered:

- Essential protection – Image the Host
- Enhanced protection
 - ▣ Exchange Mailboxes
 - ▣ Rsync
 - ▣ SQL
- Centralized Monitoring
- Hyper-V Granular Restore Console

Thanks for viewing!

- A free, 30 day trial of BackupAssist is available from our website

<http://www.BackupAssist.com/download>

- We also have reseller programs available if you intend to resell BackupAssist to your clients

<http://www.BackupAssist.com/reseller>

- Got feedback, requests, questions? Email our helpdesk at support@backupassist.com