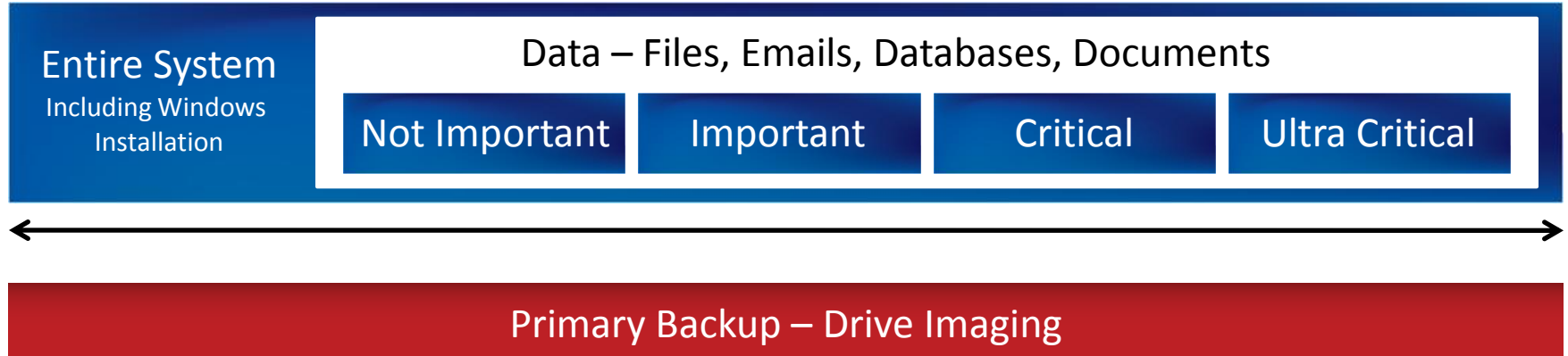


# Primary Backup



## Primary Backup

objective is fast server recovery

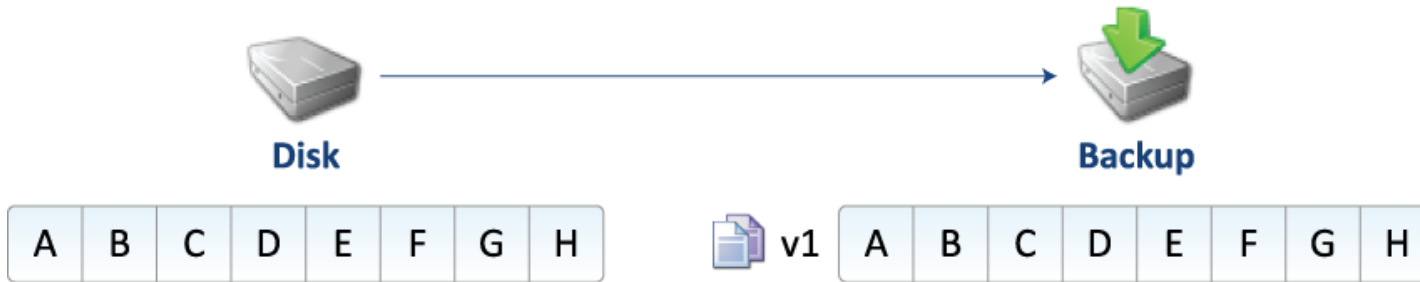
## ■ Highlights:

- Fast recovery – boot from CD to start restore
- VSS Aware
- Automatic disk management
- Fast differential images
- Built into the Operating System

## ■ Lowlights:

- Technology limitations, poor usability, management and reporting

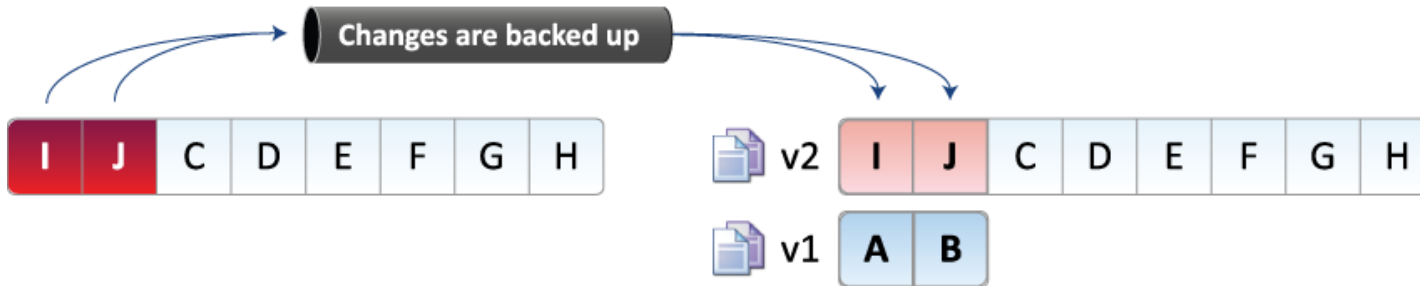
## ■ How it works – first backup



### Monday's Backup

- No previous backups on this disk
- Full backup performed on Monday

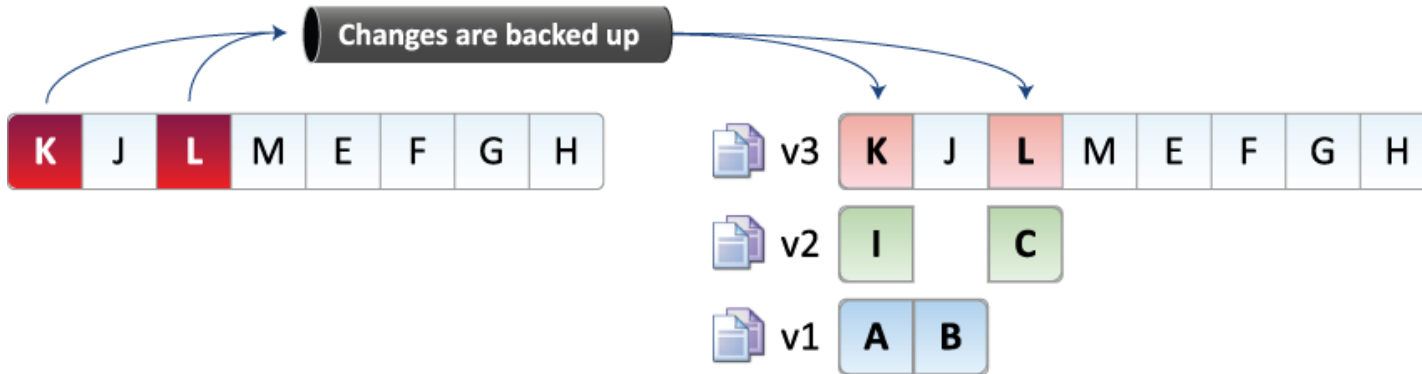
## ■ How it works – second backup



### Tuesday's Backup

- Blocks I and J are modified
- Blocks I and J are transferred to form the new full backup for Tuesday
- Blocks A and B are stored as Monday's version

## ■ How it works – third backup



### Wednesday's Backup

- Blocks K and L modified
- Blocks K and L are transferred to form a new full backup for Wednesday
- Blocks I and C are stored as Tuesday's version
- Blocks A and B are stored as Monday's version

- From our testing, it handles Hardware Independent Restores (HIR)
  - ▣ Physical to physical (P2P)
    - Intel Xeon Dual Processor Dual Core Server
      - AMD Phenom Single Processor Quad Core Desktop
    - Acer Laptop → AMD Sempron Desktop
  - ▣ Physical to virtual to physical (P2V, V2P) using VMWare Server
    - AMD Phenom Quad Core → VM on AMD Sempron Single Core
      - Intel Xeon Dual Proc Dual Core
    - Intel Xeon Dual Proc Dual Core → VM on AMD Sempron Single Core → AMD Phenom Quad Core
- Despite our best efforts, we couldn't actually break it!

- Technological limitations / gotchas of the Windows Backup Engine:
  - Backups are not copyable
  - No Exchange 2007 on Server 2008 support yet...  
Microsoft were meant to have released a plug-in by now!
    - Note: this is included in SBS 2008, just not Server 2008
  - You must restore to a disk of the same size or bigger
  - You are not guaranteed any level of backup history
  - No tape drive support

## ■ Wizard Limitations

- Wizards are built-into Server 2008 and SBS 2008
- Unfortunately there are many limitations in the wizards that limit their usefulness

## ■ Enter BackupAssist

- Just like we added scheduling, management and reporting features for NTBackup, so too we do it for Windows Server Backup, so it's as reliable as other imaging products that cost thousands of dollars.

# How BackupAssist “fixes” WSB



## ■ General features

Feature	Server 2008 Wizard	SBS 2008 Wizard	BackupAssist
Easy setup and scheduling	✓	✓	✓
Multiple backup jobs	✗	✗	✓
Monitor the backup “live” as it happens	✗	✗	✓
Event log backup result	✓	✓	✓

# How BackupAssist “fixes” WSB



## ■ Hardware support

Feature	Server 2008 Wizard	SBS 2008 Wizard	BackupAssist
Support for USB HDDs	✓	✓	✓
Support for eSata disks	✗	✓	✓
Support for removable disk (rdx, REV)	✗	✗	✓
Support for local disks	✗	✓	✓
Support for NAS	✗	✗	✓
Detect & inject HDDs before backup	✗	✗	✓
Safely eject HDDs after backup	✗	✗	✓

- Note: We have had difficulties with eSata support in the SBS Wizard due to inconsistent motherboard support of AHCI. BackupAssist solves this.

# How BackupAssist “fixes” WSB



## ■ Media rotation & reminders

Feature	Server 2008 Wizard	SBS 2008 Wizard	BackupAssist
<b>Media rotation</b>			
In-built media rotation schemes	✗	✗	✓
<b>Reminder notifications</b>			
Remind operator to insert media	✗	✗	✓
Maintenance messages (eg. perform test restore)	✗	✗	✓

- Note: The built-in wizards do not have predefined media rotation schemes or media checking, so the user is left to his/her own devices! Human error leads to a compromised backup strategy.

# How BackupAssist “fixes” WSB



## ■ Reporting

Feature	Server 2008 Wizard	SBS 2008 Wizard	BackupAssist
Reporting			
Report emailed to administrator	✗	✓	✓
Overall status of backup	✗	✓	✓
Notification if user inserts wrong disk	✗	✗	✓
Detailed log	✗	✗	✓
Media usage report	✗	✗	✓

- Without BackupAssist, you will have no forward warning when you're about to run out of disk space until the backup fails, and no idea what backups are on each disk.

# How BackupAssist “fixes” WSB



## ■ Scripting

Feature	Server 2008 Wizard	SBS 2008 Wizard	BackupAssist
Scripting before / after backup	✗	✗	✓
Run script before backup	✗	✗	✓
Run script unconditionally after backup	✗	✗	✓
Run script if backup succeeded	✗	✗	✓
Run script if backup failed	✗	✗	✓

# Microsoft “wizards” aren’t so magical



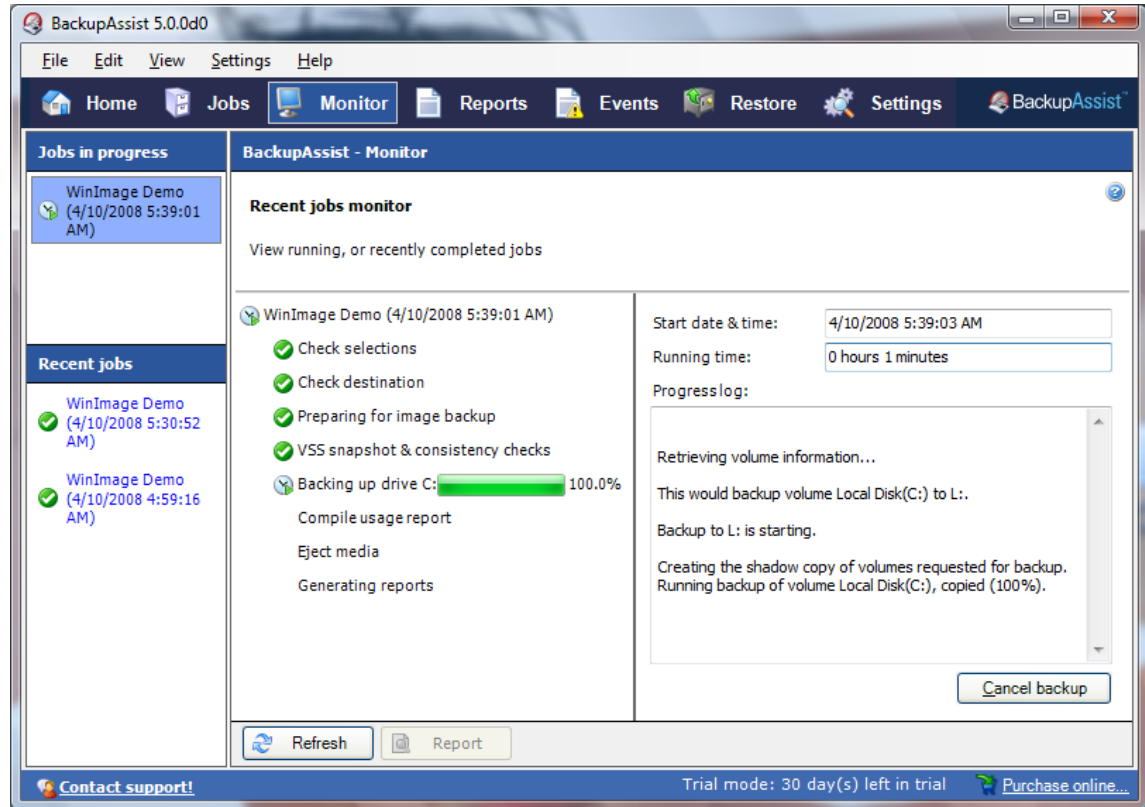
## ■ In summary...

Feature	Server 2008 Wizard	SBS 2008 Wizard	BackupAssist
Easy setup and scheduling	✓	✓	✓
Multiple backup jobs	✗	✗	✓
Hardware support			
Support for USB HDDs	✓	✓	✓
Support for eSata disks	✗	✓	✓
Support for removable disk (rdx, REV)	✗	✗	✓
Support for local disks	✗	✓	✓
Support for NAS	✗	✗	✓
Safely eject HDDs after backup	✗	✗	✓
Media rotation			
In-built media rotation schemes	✗	✗	✓
Reminder notifications			
Remind operator to insert media	✗	✗	✓
Maintenance messages (eg. perform test restore)	✗	✗	✓
Reporting			
Report emailed to administrator	✗	✓	✓
Overall status of backup	✗	✓	✓
Notification if user inserts wrong disk	✗	✗	✓
Detailed log	✗	✗	✓
Media usage report	✗	✗	✓
Monitor the backup “live” as it happens	✗	✗	✓
Scripting before / after backup	✗	✗	✓
Run script before backup	✗	✗	✓
Run script unconditionally after backup	✗	✗	✓
Run script if backup succeeded	✗	✗	✓
Run script if backup failed	✗	✗	✓
Event log backup result	✓	✓	✓

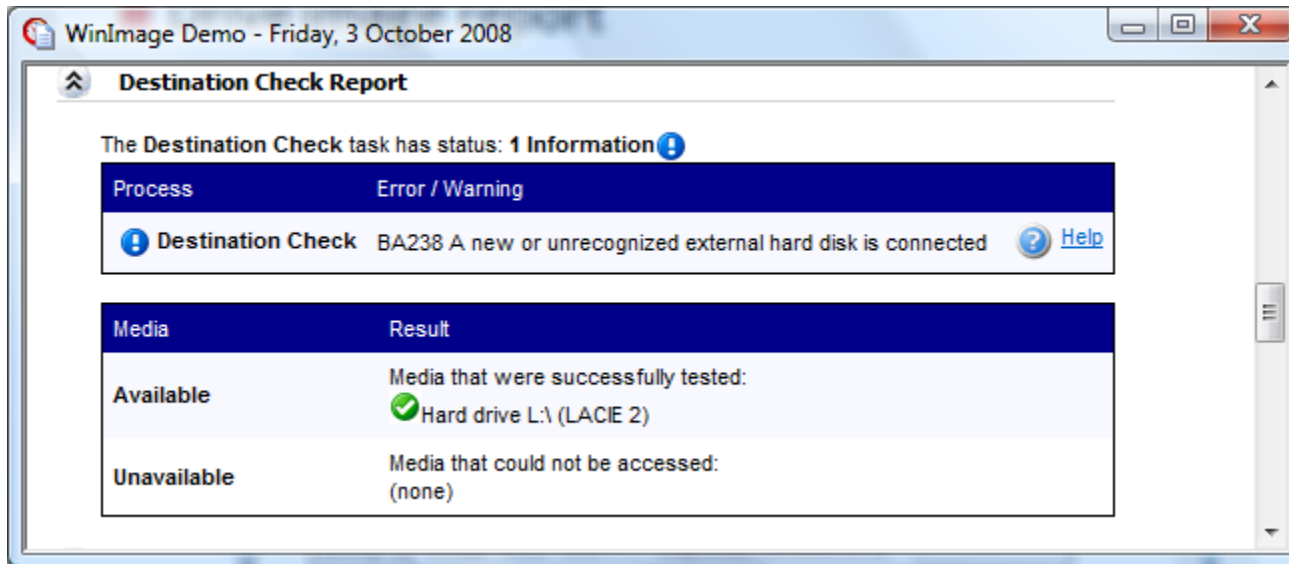
# Live monitoring in BackupAssist



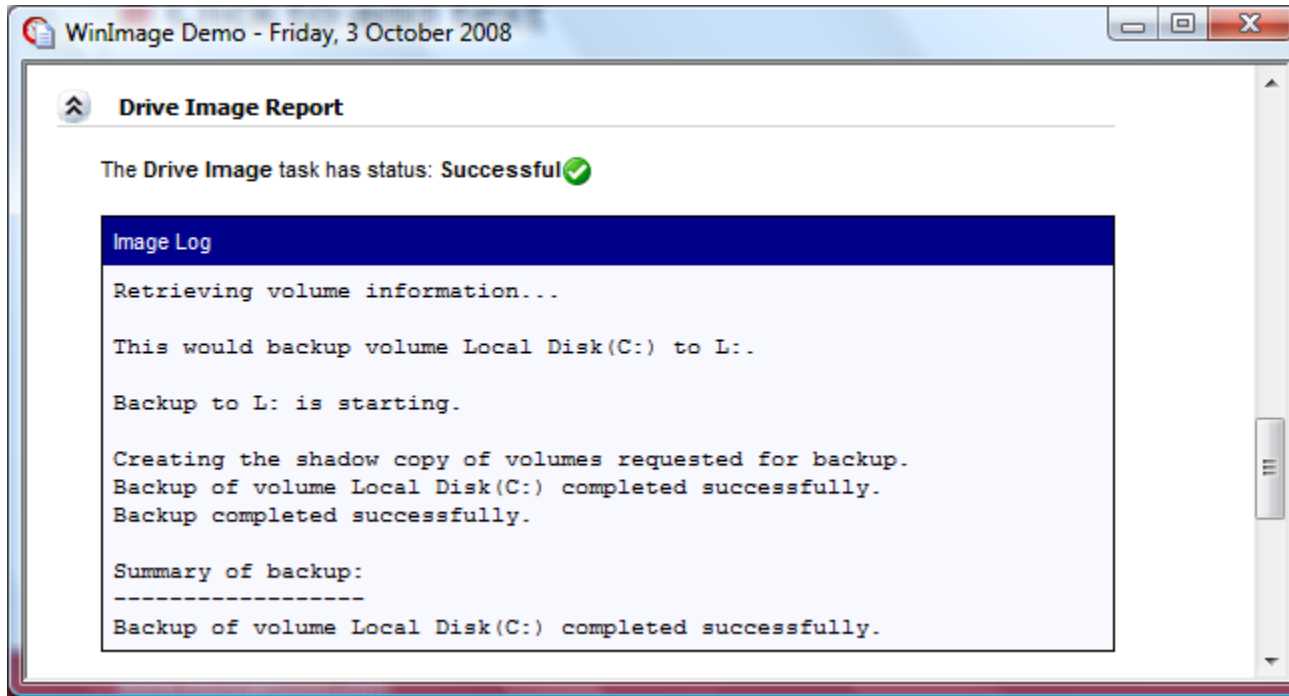
## ■ Live monitoring



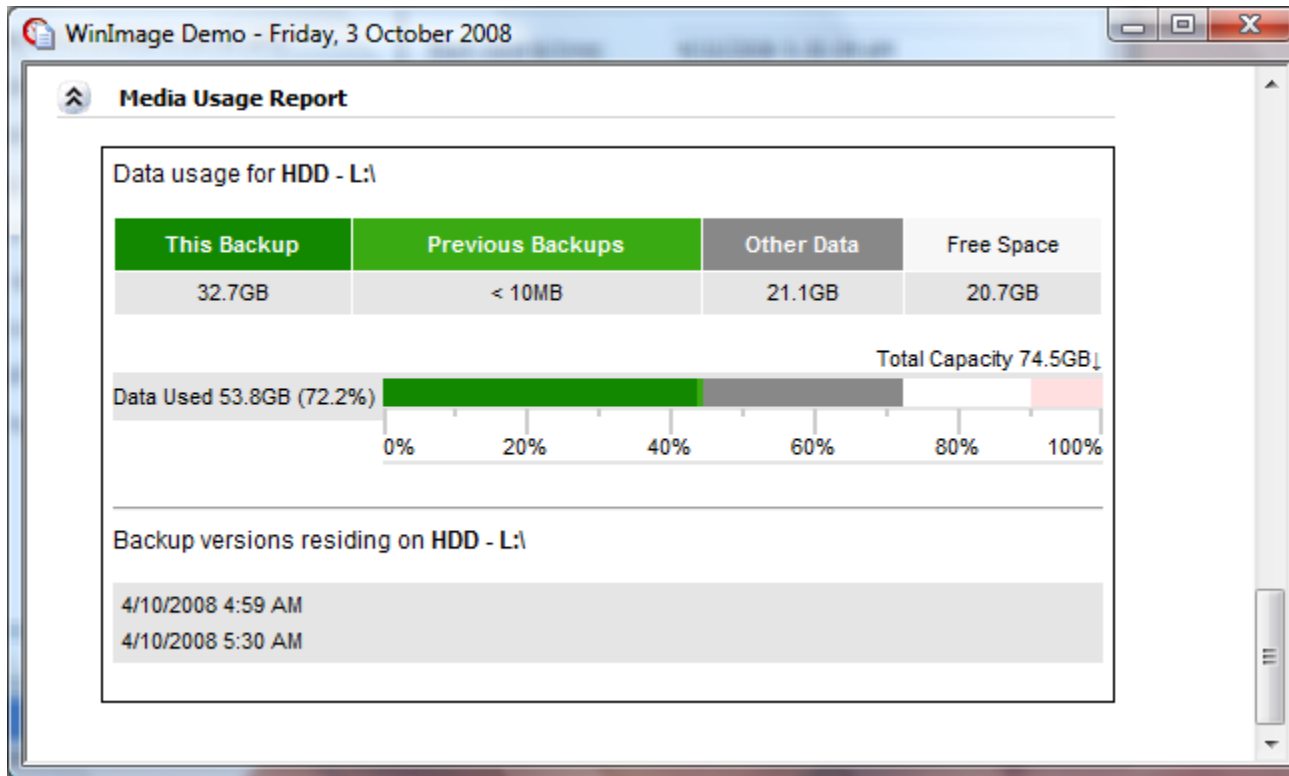
## ■ Destination checking



## ■ Drive image report



## ■ Media usage report:



## Other facts about Windows Server Backup

- Images stored in VHD format
- Tools are available to mount the images
  - ▣ WinMount – works fine
- No “converter” to go straight to a VMware virtual machine. Instead, do a bare metal restore into a skeleton VM
- Backup entire volumes only

New metal server recovery  
Volume backup

Application backup & recovery (VSS)  
File & directory recovery

Backup network files

Backup individual files & folders

Archival backup (versioning)

Application aware backup

Internet based backup