

Rapid Backup and Recovery Strategies for NT/Linux

Matthew F. Reagan
Centocor, Inc.
mreagan@fast.net

Purpose

- The purpose of this presentation is to identify a problem with traditional backup and recovery strategies and propose alternative or supplemental solutions

Presentation Goals

- Discuss the problems encountered
- Identify alternative or supplemental solutions
- Propose a supplemental solution
- Present a snapshot of research into rapid backup and recovery solutions
- Emphasis on non-production environments

Presentation Non-Goals

- Present the **only** solution
- Present the **best** solution
- Present the **cheapest** solution
- Present the **fastest** solution
- Ignore the subjective side of the issue
- Replace backups

Production Environments

- Standard hardware configurations
- OS installed using SOPs
- Documented software installation
- Usually static configurations
- Centralized, regular backup

Non-production Environments

- Development
- Validation
- Evaluation
- Sandbox

Non-production Environments (cont)

- Not always standard hardware
- Baseline OS/software configuration
- Myriad extensions to the baseline
- Loose documentation requirements
- Usually not backed up (regularly)

Description of Problem

- How do you recover from media failure
- How do you recover from accidents
- How do you recover from bad installs
- ... with YOUR deadlines?

Checklist for System Recovery

- Repair the hardware
- Reinstall NT Server
- Reinstall the Service Pack(s) as Needed
- Reinstall the required drivers
- Reinstall the appropriate applications
- Recover the OS from backup tape

Problems with Recovery

- Requires installation and configuration knowledge of
 - NT Server
 - Service Packs
 - OS baseline
 - Application Software
 - Drivers (you know where they are, right?)

Rapid Recovery Options

- Implement robust backups
- RAID
- Drive “snapshots”

Implement robust backups

- Requires additional hardware (tape drives)
- Requires additional software (backup)
- Requires (more) operations staff
- Train personnel in NT, service pack, driver and software installation and configuration

Implement robust backups (cont)

- Recovery requires extensive configuration and installation knowledge
- Recovery is complex
- Recovery is time consuming

Implement local backups

- Requires additional hardware (tape drives) on each server
- Requires additional software (backup)
- Train personnel in backup procedures
- Needs tape storage/retention policies
- (not much better than previous option)

RAID

- Requires additional hardware (drives)
- Requires additional software (backup)
- Train personnel in RAID installation, configuration and operation

RAID (cont)

- Recovery requires extensive configuration and installation knowledge
- Recovery is complex
- Recovery is time consuming
- Implementation nightmare

Drive “Snapshots”

- Wouldn't it be nice if we could just take a snapshot of the hard drive?

Imagine, if you will, taking a snapshot...

- Prior to installing a service pack
- Prior to installing a new software version
- Prior to modifying an existing configuration
- Just after finishing an install

Recovery would be...

- Simply putting back the snapshot

Functional Requirements

- OS independent
- Floppy based
 - Avoids open files
 - Avoids configuration differences
- Simple to use
- Cheap

PowerQuest Drive Image

- Provides a drive snapshot capability
- Supports DOS, Windows 3.x, Windows 95, Windows NT, Linux
- Reads IDE and SCSI hard drives
- Writes to IDE and SCSI hard drives, ZIP, Jaz drives, network drives, etc.
- Creates an optionally compressed image file (~40%)

Possible Configurations

- Local hard drive
- Internal/External ZIP drive
- Internal/External JAZ drive
- Network drive

Local Hard Drive

- Destination drive must be mountable under boot floppy (native IDE, ASPI driver for SCSI)
- Destination drive must have a FAT partition
- Boot using supplied floppy
- Point and click snapshot done!

Internal/External ZIP Drive

- Internal uses IDE or SCSI
- External uses PP or SCSI
- Destination cartridge must have a FAT partition
- Boot using supplied floppy
- Point and click snapshot done!

Internal/External JAZ Drive

- Internal uses SCSI
- External uses PP (traveler) or SCSI
- Destination cartridge must have a FAT partition
- Boot using supplied floppy
- Point and click snapshot done!

Network Drive

- Create a network boot floppy (see NT client administrator)
- Must have write privs on share
- Boot using network boot floppy
- Point and click snapshot done!
- (took 5 minutes for 2 gb partition with 50% of disk in use)

Recovery

- Boot using supplied (or network) floppy
- Gain access to the image
- Run PQDI
- Point and click snapshot recovered!
- Network recovery took 5 minutes for a 2 gb partition with 50% of space in use

Caveats

- Only supports non-RAID configurations
- Only supports Intel (or clone) CPUs
- Have not tested larger than 6.4 gb HDs
- There are other options (Symantec's Ghost)

Conclusions

- Several untraditional options available
- Each is a balance between cost, convenience, and efficacy
- Drive Image is a strong contender
- Additional research is necessary

Questions?

