Diploma in Infocomm & Security

IT2654: Systems Administration & Security

TOPIC 9:
BACKUP AND RECOVERY

Objectives

- Back up and restore data
- Implement shadow copy volumes

Disaster Recovery

- Disaster recovery is the process of resuming normal business operations as quickly as possible after the disaster is over
- Disaster recovery process includes:
  - Executing a written disaster recovery plan
  - Replacing any damaged hardware
  - Restoring data
  - Testing all hardware and software before resuming operations
- Administrators need to be prepared for the possibility of server failure and/or file and folder loss at all times

Disk Backup

- One of the best ways to make sure you do not lose valuable information on a hard disk is to fully back up information on a regular basis
  - These backups can be performed from the server or from a workstation on the network
- Performing backups from a backup device installed on the server has several advantages:
  - No extra load is produced on the network
  - Perform backups on a multiple-server network
  - Provides more assurance that the Registry is backed up

Disk Backup (continued)

- The advantages of performing a network backup
  - Backup jobs can be stored on a single backup media
  - One administrator can be responsible for backing up multiple servers
- The main disadvantages
  - The increase in network traffic

Windows Server Backup

- Considerations for using Windows Server Backup
  - Tool only backs up NTFS volumes
  - Tool does not back up to tape
  - If you have backup media made from Windows Server 2003 using Ntbackup.exe, you cannot restore from that media using the Windows Server Backup tool in Windows Server

Windows Server Backup (continue…)

- Backups can be run manually or scheduled to run automatically with Task Scheduler.
- Can use a Volume Shadow Copy Service (VSS) backup which allows even open files to be backup.
- By default backup is configured to back up local computer but can back up another computer remotely.

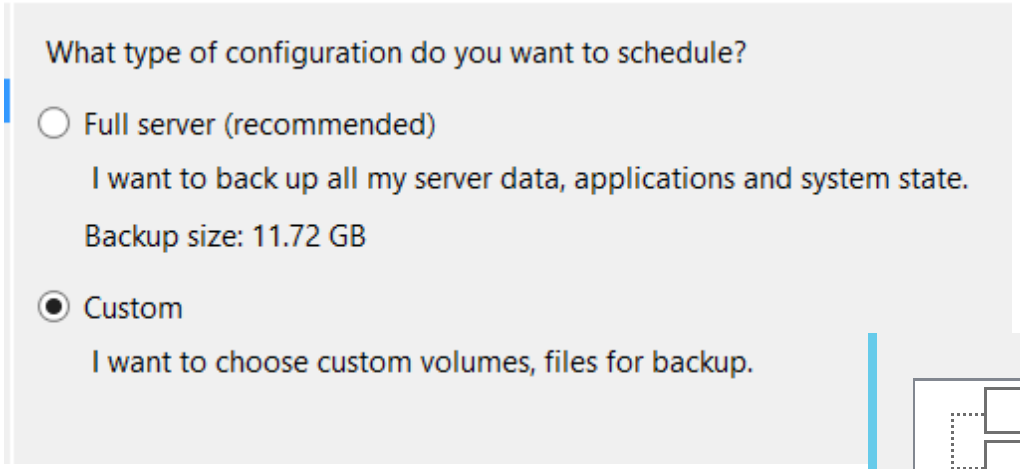
Who Can Back Up Data?

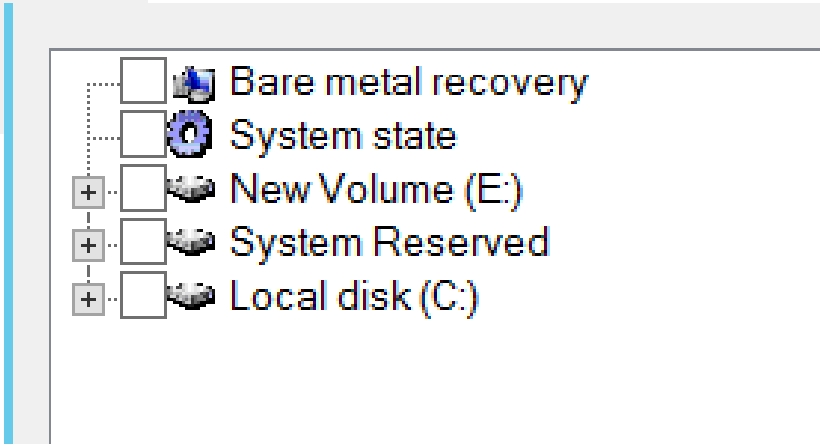
- You must have certain permissions or user rights
- Members of the Backup Operators group can perform manual backups only.
- Only members of the Administrators group can set up scheduled backups.
- You can give other users the Create Scheduled Tasks right by using group policies if required.

Backup Options

1) **Full backup (default)**
   - ✓ A backup of an entire system, including all system files, programs, and data files
   - ✓ Changes each file's archive attribute to show that it has been backed up
2) **Differential backup**
   - ✓ Only back up files that changed up to last full backup.
3) **Incremental backup**
   - ✓ Only backs up files that are new or that have been updated
   - ✓ Backs up only files that have the archive attribute marked

Backup Options (continue)

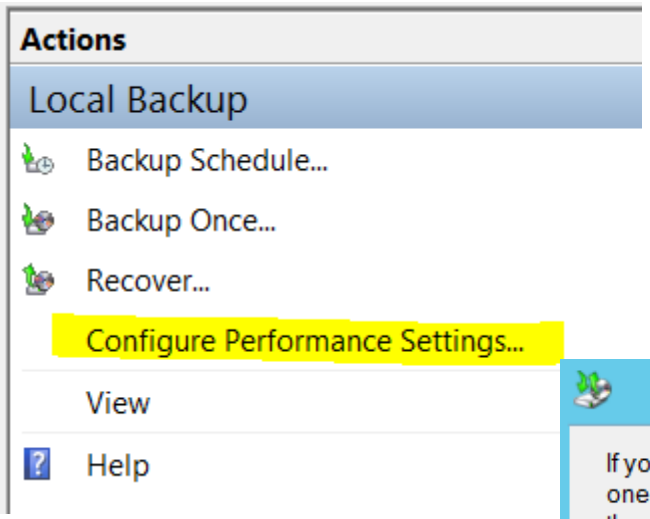


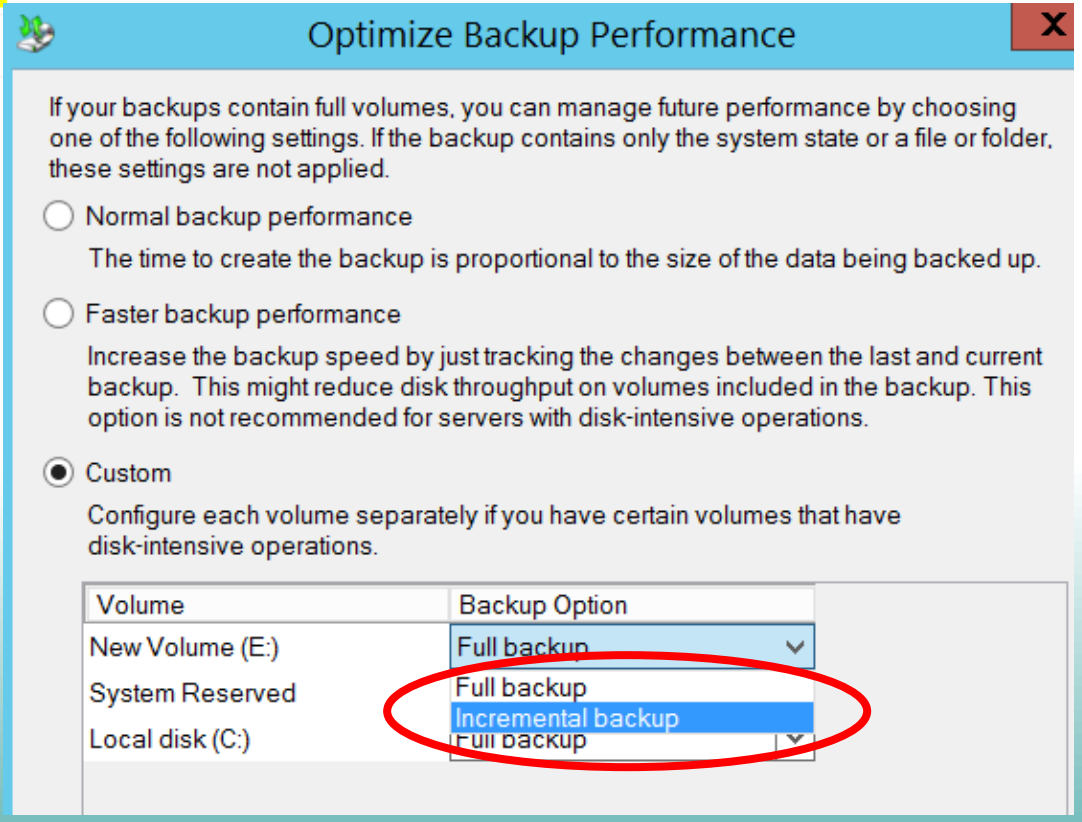


Bare metal recovery – backup the server such that restore can be done without an Operating System (but need the Windows Server install media) eg. Server cannot start.

System state backup protects your operating system files. If a server can start but can't access system files or the registry, you can recover using a system state backup eg. OS errors.

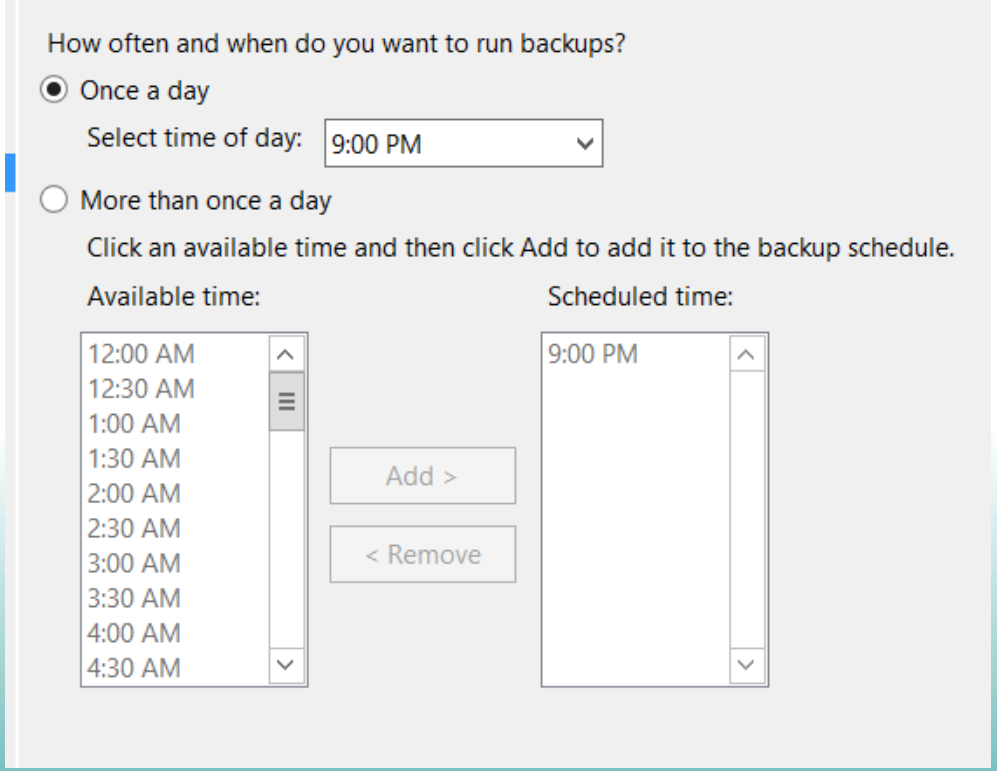
Incremental Backup





Scheduling Backups

- Windows Server Backup includes a scheduling capability - can have the server automatically start backups after regular work hours or at a specific time of day



Performing a Recovery

- The Windows Server Backup tool enables you to recover any of the following:
  - Files
  - Folders
  - Volumes
  - Applications and application data
  - The backup catalog (of information in the backup)
  - The operating system (to the same computer or to another computer using identical hardware)

Performing a Recovery (continued)

- Before you start, determine the following information:
  - Date of the backup from which to recover
  - Type of recovery, such as files and folders or applications
  - What to recover
  - Where to recover, such as in the original location or another location

Backup and Restore from Command Line

- Command-line program has flexibility to perform more specific tasks.
- **Wbadmin.exe**
- Can use with batch file or scripts.
- Special tasks:
  - Perform a system state backup. A system state backup on a DC includes Registry, boot files, AD database, Sysvol folder, some system and other files, depending on server roles.
  - Recover the system state.
  - Delete a system state backup.
  - Restore or delete a backup catalog.
- Must be member of Backup Operators or Administrators group.

Shadow Copies of Shared Folders

- Purpose of this utility is to make recovery of user files in shared folders easy without requiring an administrator
- Advantages for users:
  - Restoration of accidentally deleted files
  - Recovery of previous versions of files
  - Comparison of previous version to current version
- Shadow Copies not enabled by default, must be explicitly enabled from Properties of a drive

Shadow Copies of Shared Folders (continued)

- Shadow Copies is enabled for entire volume (cannot shadow specific files or folders)
- Copies are made on a pre-defined schedule
- By default, Shadow Copies uses 10% of available disk space (minimum 100 MB)
  - When limit is reached, older copies are deleted

Shadow Copies of Shared Folders (continued)

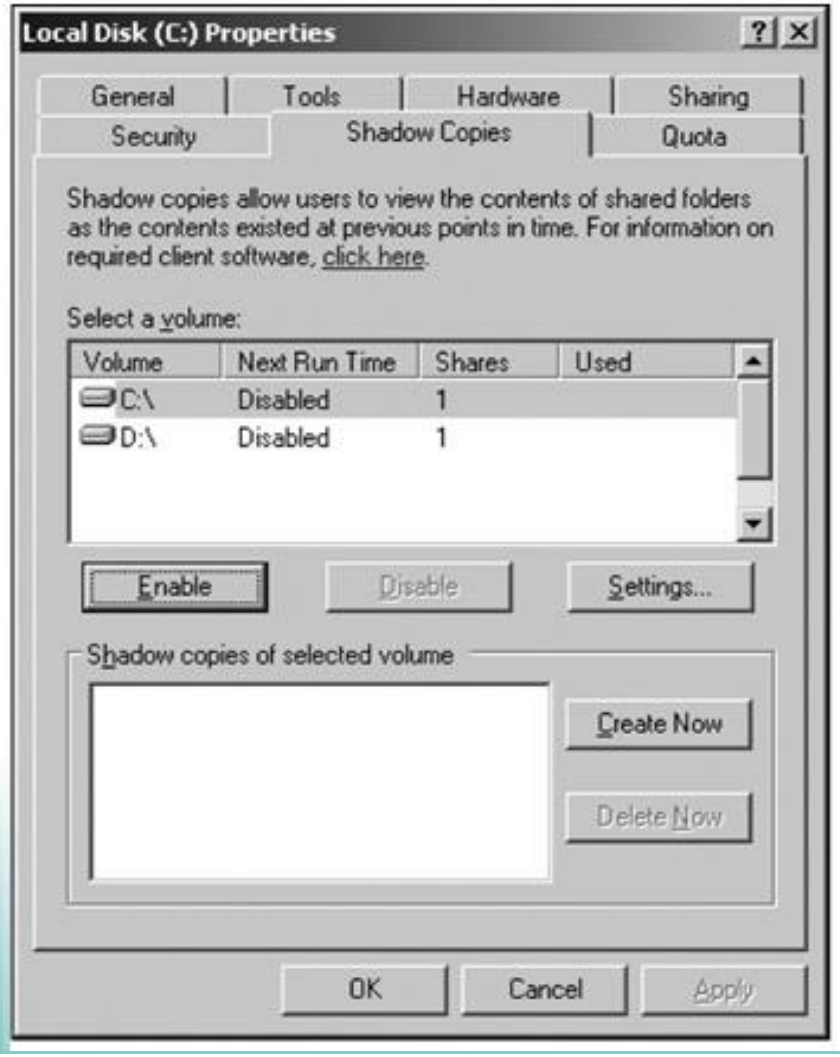


Figure 12-15 The Shadow Copies tab in the properties of a volume or partition

Previous Versions

- Network users must install additional software on their systems to access previous versions of files via Shadow Copies
- Vista and Windows 7 are configured to access Previous Versions.
- Windows XP client need to install software – http://technet.microsoft.com/en-us/windowsserver/bb405951.aspx
- Adds an additional tab (Previous Versions) to Properties of files stored in shared Folders

Summary

- Administrators prepare for disaster recovery through backups and startup recovery mechanisms
- Backup utility
  - Full, Incremental, Custom
  - System State, Bare metal
- Schedule back up
- Shadow Copies of Shared Folders gives users direct control over restoring deleted files or returning to previous versions of files