CompTIA IT Fundamentals+ (Exam FC0-U61)

Module 4 / Unit 4 / Using Shared Storage

Objectives

- List ways to share files and storage on a local network

- Describe means of sharing files and services on the Internet

- Explain the importance of backups and configure simple backup options

File Server (Direct Attached Storage)

- Any drive or folder attached to the computer can be shared on the network

- Fixed disks and removable drives can be shared

- The host computer must be turned on and the drive remain attached for the share to work
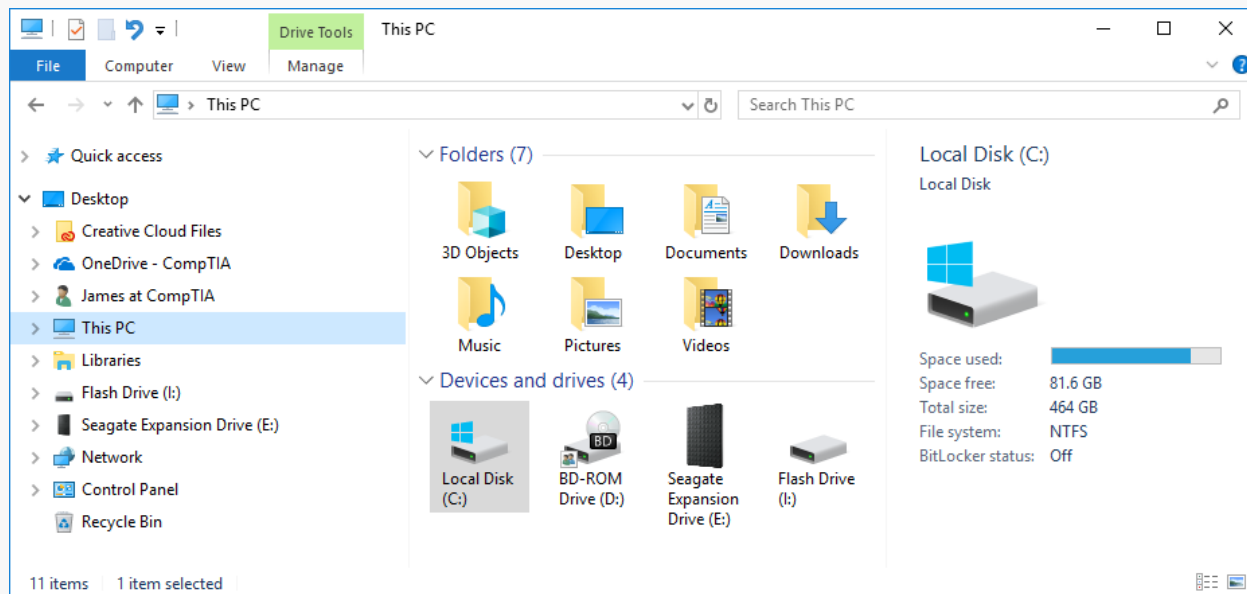
Network Attached Storage (NAS)

- Server appliance dedicated to file sharing

- Can be configured with multiple disks

- Supports multiple file sharing protocols

- Connected to the network and allocated an IP address (and possibly a hostname)

NAS office server
192.168.1.35

Network Printer Sharing

- **Share the printer via Windows**
  - Share any locally installed printer
  - Printer can be connected to Windows host by USB, Bluetooth, Ethernet, or Wi-Fi
  - Windows host must be switched on for share to be accessible

- **Use a hardware print server**
  - Network-enabled printers support direct connections to clients
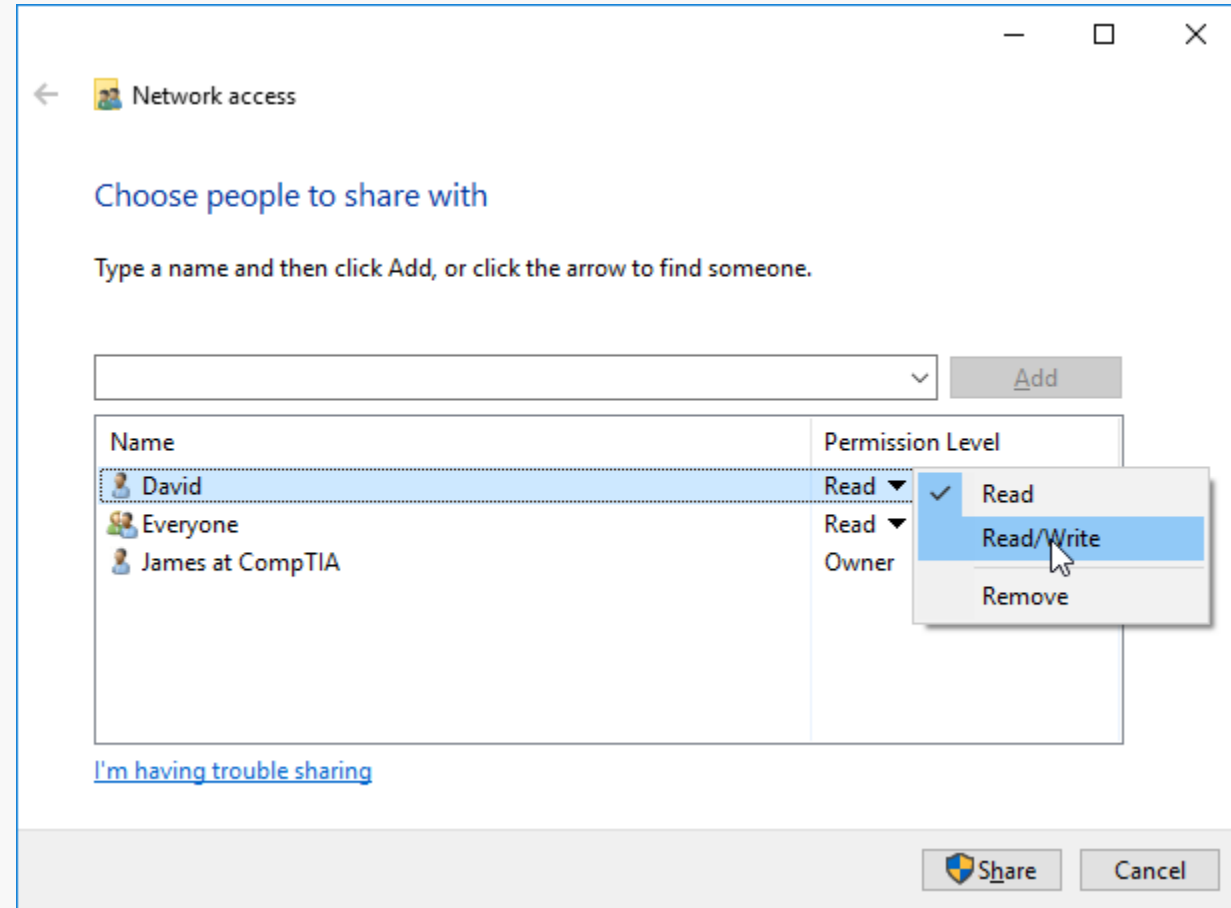 - Could also connect printer to NAS server or Internet router/modem
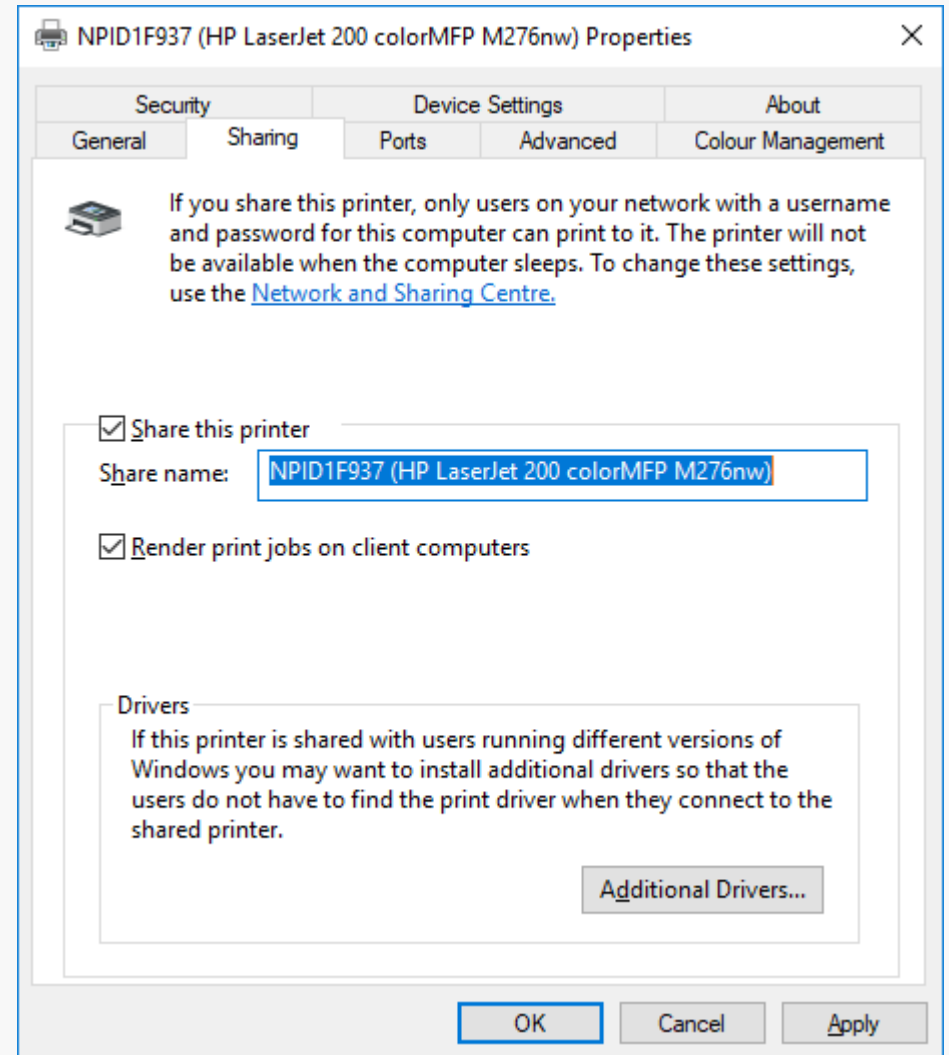
Joining a Workgroup or Domain

- Windows provides all the client and server software required for file sharing
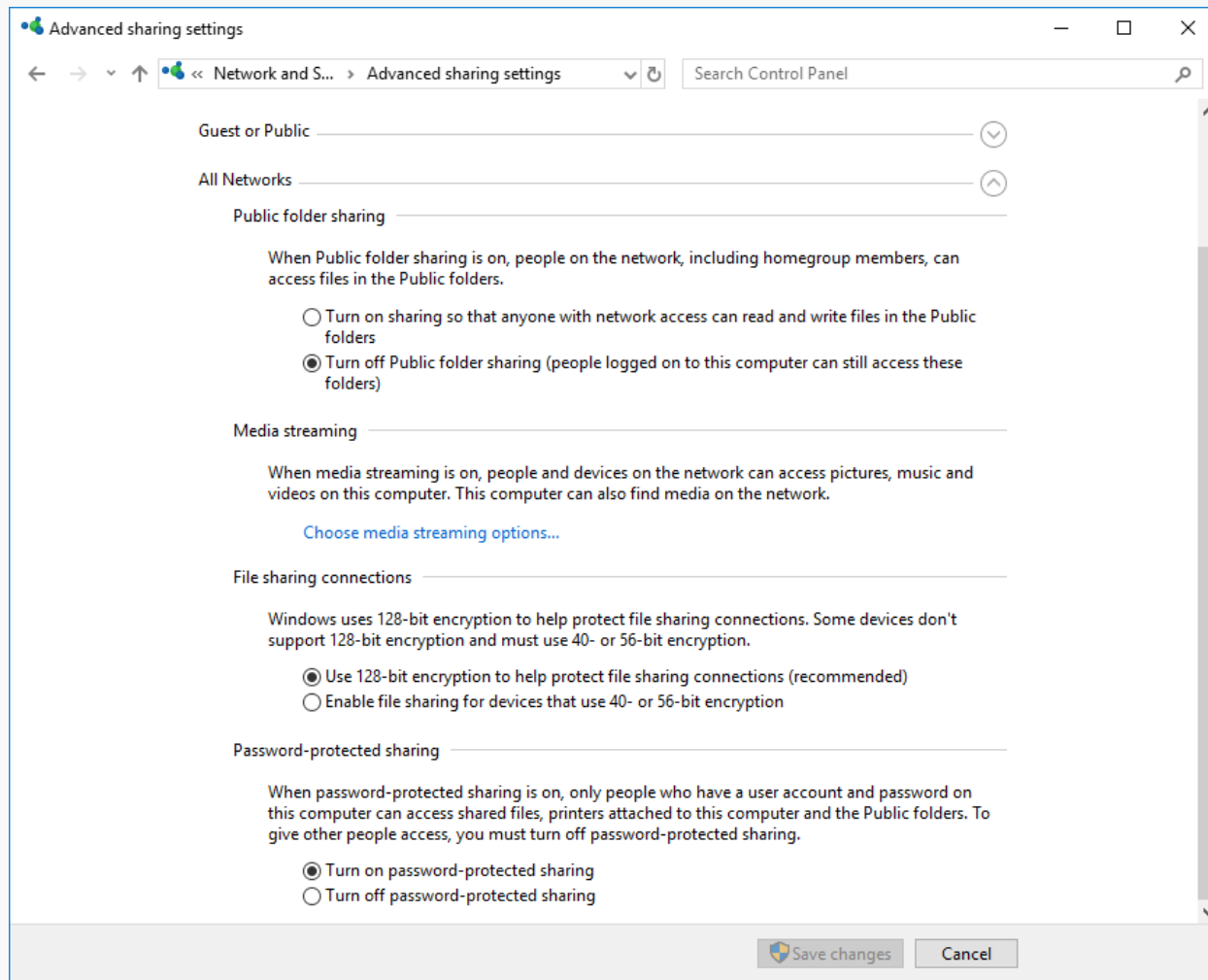- Workgroups versus domains
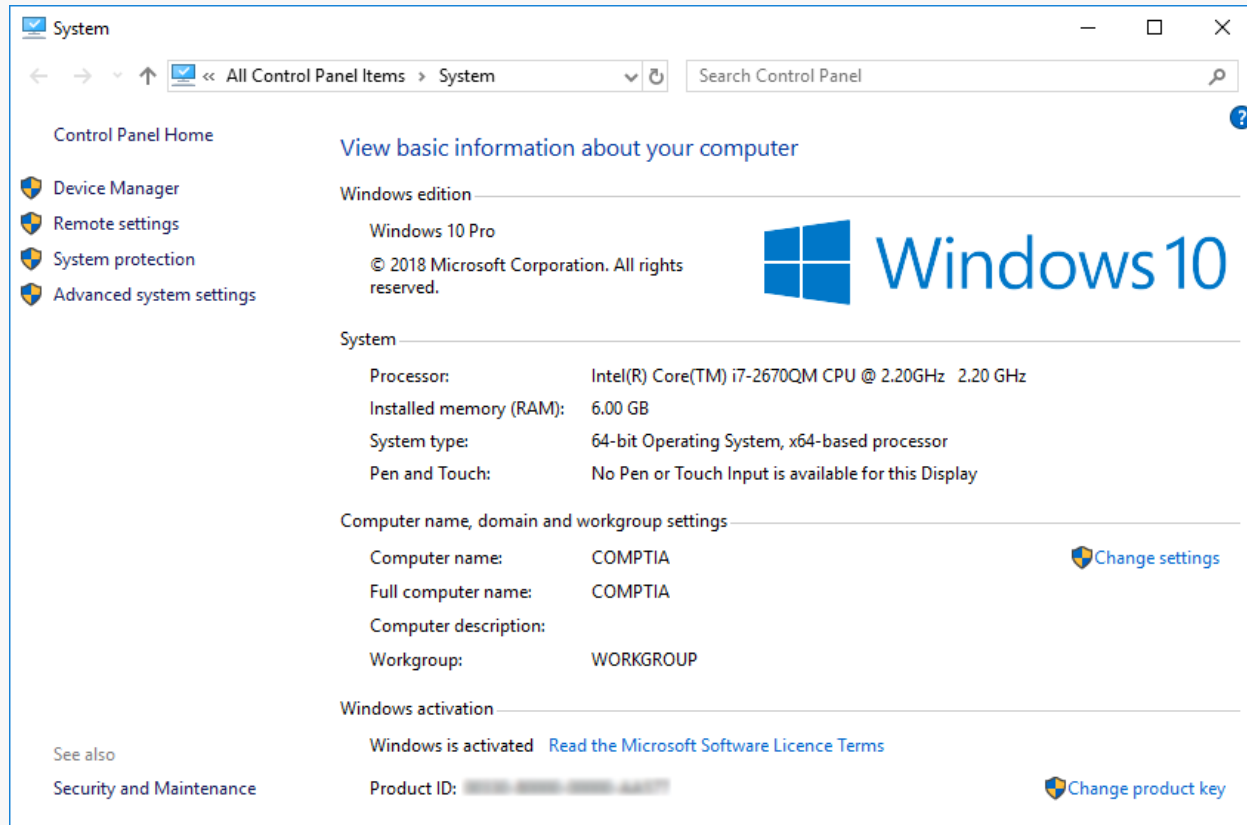
- Share any folder via shortcut menu or folder properties

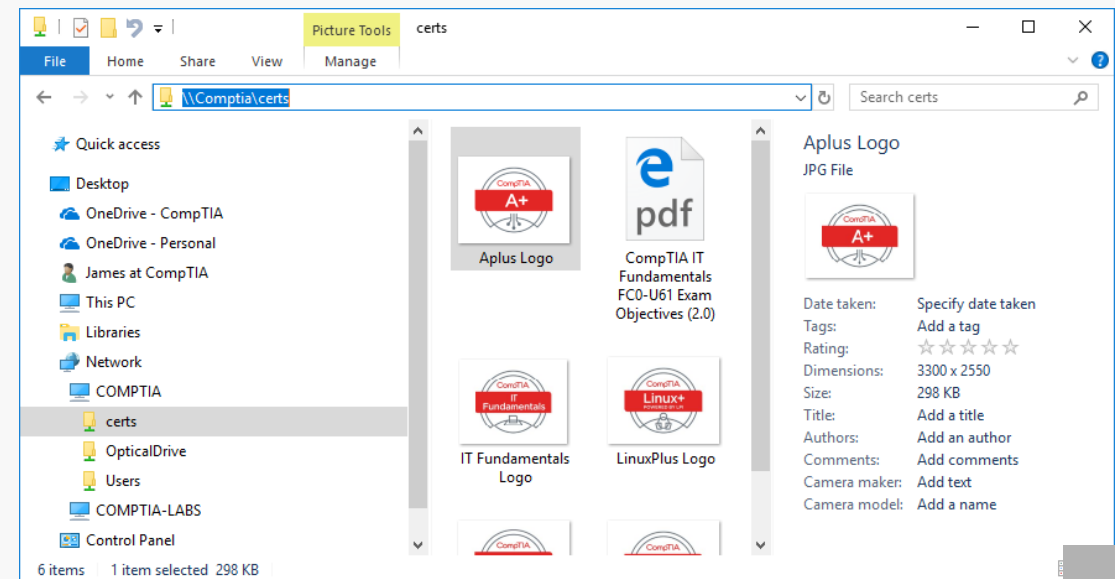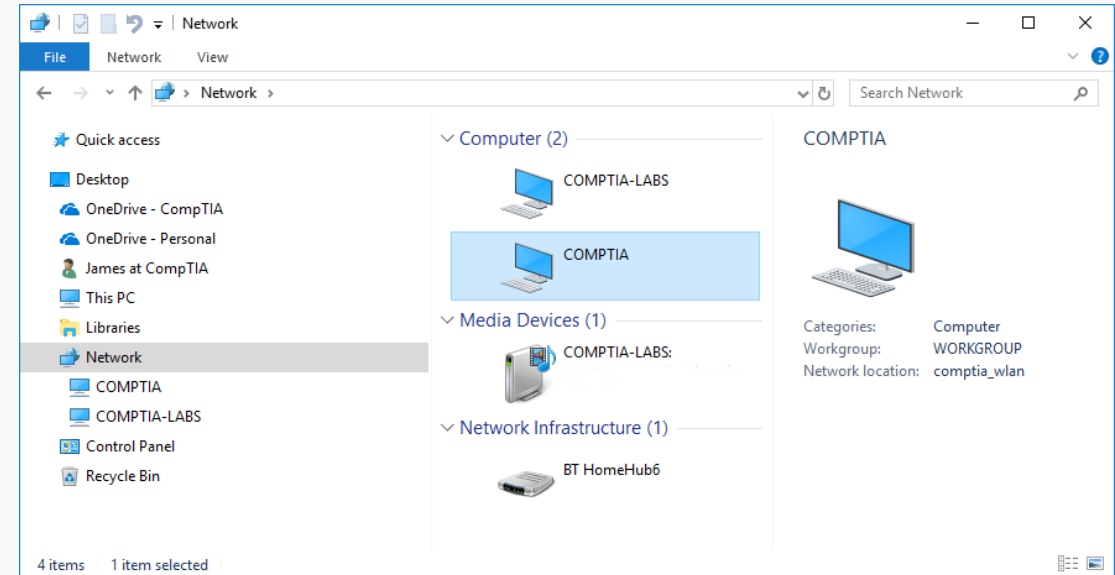- In a workgroup, each computer must be separately configured with the same user accounts

- Configure advanced settings to allow anonymous access—no security

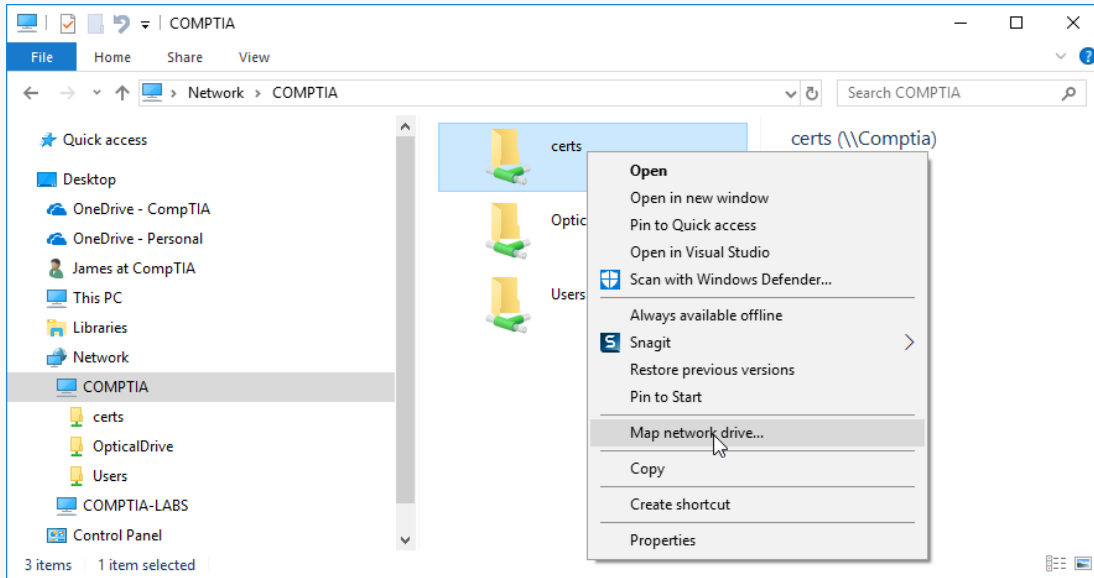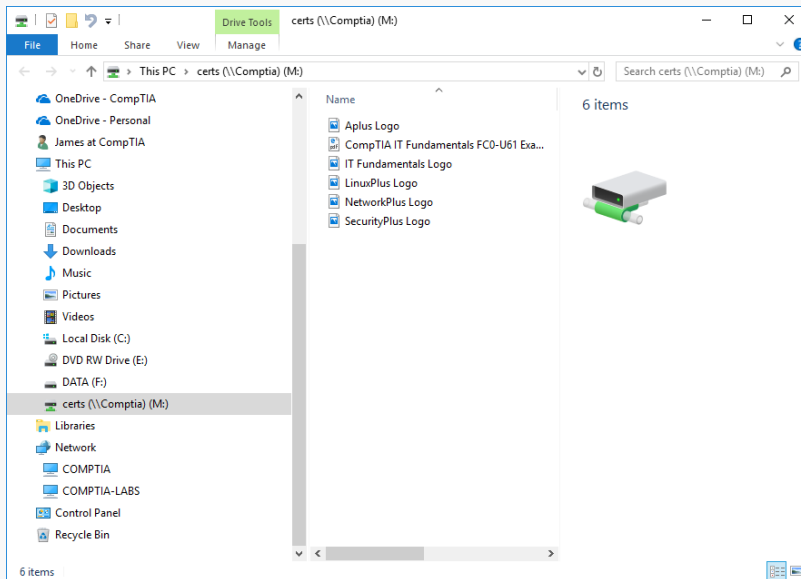- View computers, printers, routers (network infrastructure), and other devices via the Network object

- UNC (Universal Naming Convention) paths

Browsing Network Shares and Drives (2)

- Map a shared folder as a local drive

Hosted Sharing and Storage

- HTTP/HTTPS and file downloads

  o Upload files to a web server

  o Clients can download using a link or URL over HTTP/HTTPS

  o Website can require authentication if necessary

- File Transfer Protocol (FTP)

  o More efficient than HTTP/HTTPS

  o Most browsers support basic FTP functionality but a dedicated FTP client is usually preferable

  o More secure to use encrypted types of FTP
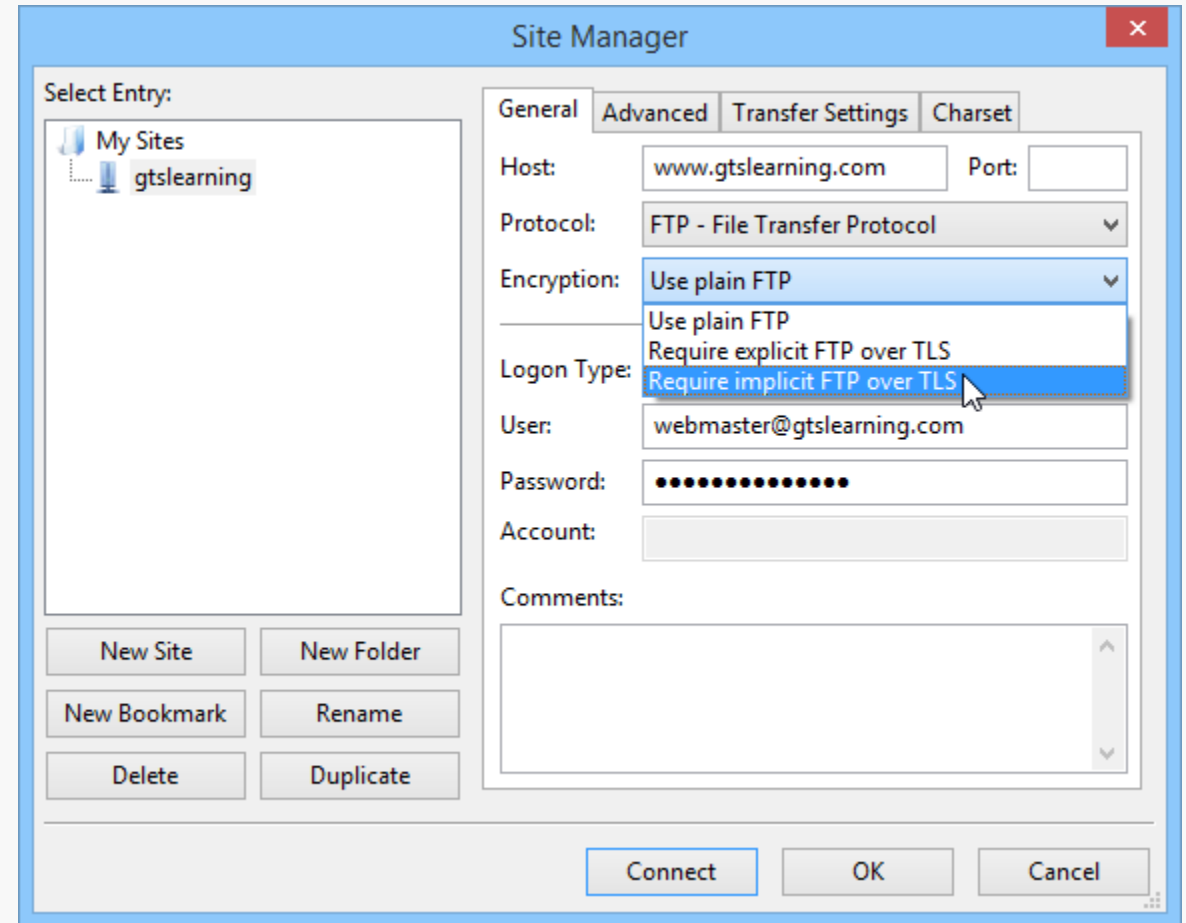
Cloud Computing

- Cloud computing versus hosted storage

  o Pay-per-use (metered service)

  o Rapid elasticity/scalability

- Cloud depends on resource pooling and virtualization

  o Less visibility and control about where your data is actually stored compared to hosted solutions
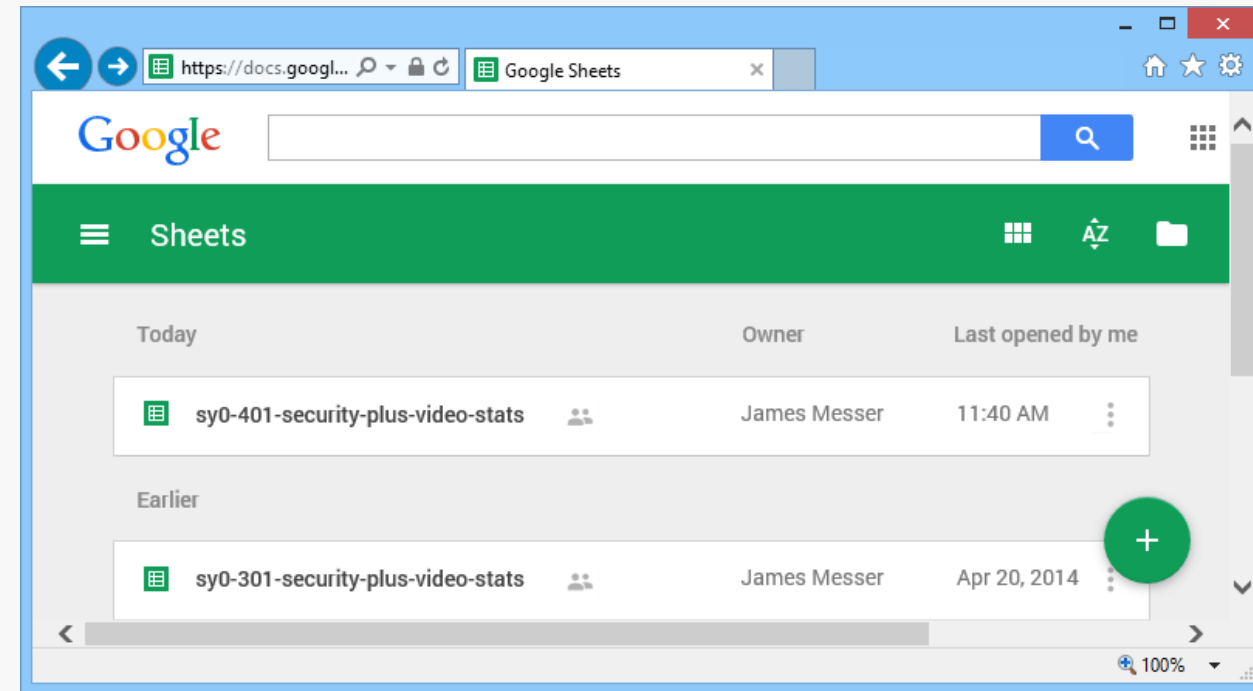
Cloud-based Storage
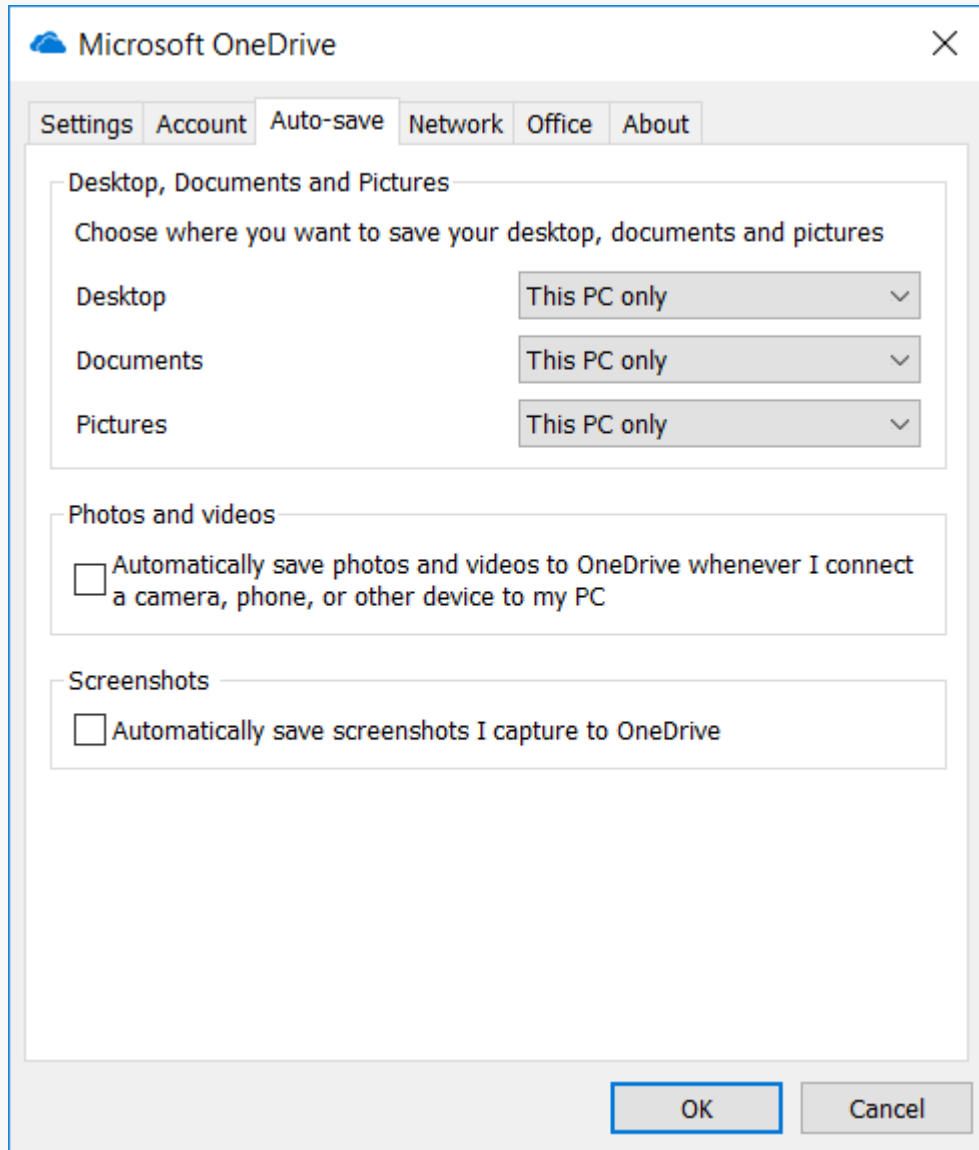
- Vendors—Apple, Google, Microsoft, DropBox, Amazon

- Access via a browser or client app

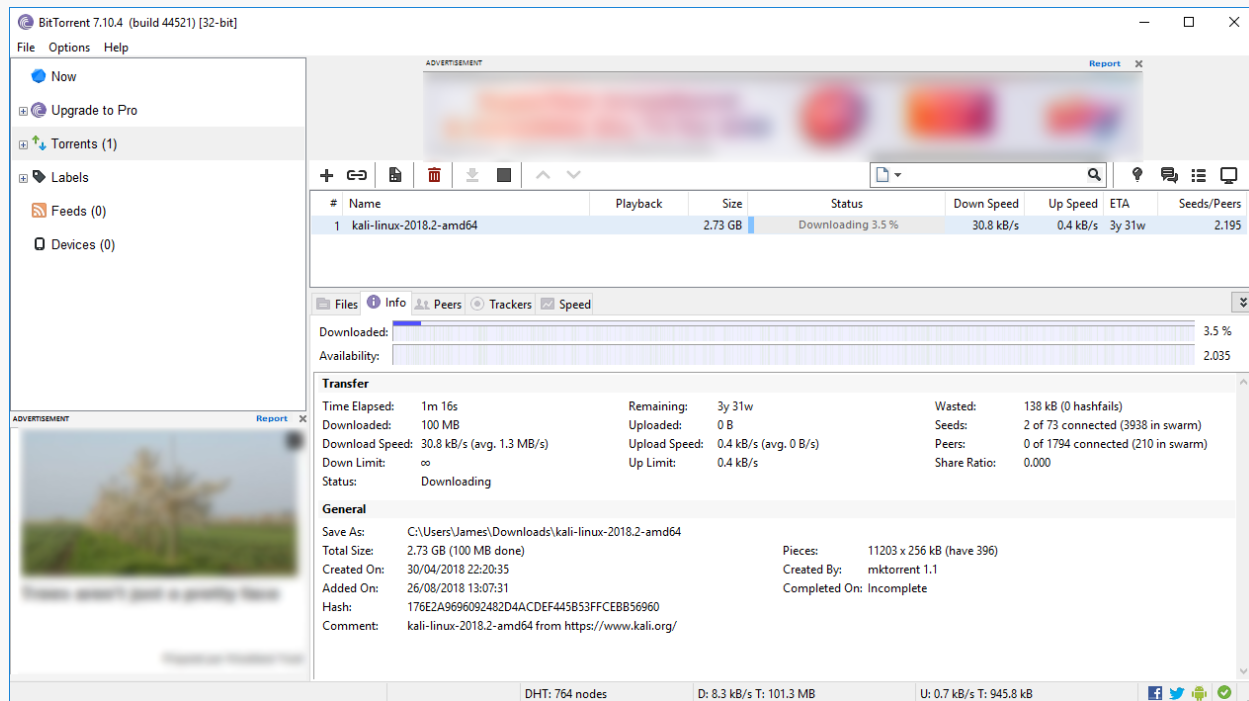- OneDrive can be integrated with File Explorer

Cloud-based Collaborative Applications

- Provide apps and collaboration features as well as basic storage

- Vendors—Microsoft Office 365, Google G Suite, Smartsheet

Peer-to-Peer File Sharing

- Files are uploaded to a network of peers

- Each peer hosts fragments of files

Backups

- Data files backup

- System configuration backup

- Backup considerations
  - On-site versus off-site
  - Backup media security
  - Point-in-time backups
  - Backup schedule

Backup Storage Types

- Locally attached storage

- Network Attached Storage

- Offsite/cloud-based

- Use multiple methods for comprehensive backup

  o Local storage for regular point-in-time backups

  o Cloud storage for periodic off-site backups

File Backups and Critical Data

- Selection of drives/folders/files to include in backup jobs

- Where is critical data stored?

- Do the locations selected cover all critical files?

Database Backups

- File copy methods are not sufficient to back up databases (in most cases)

- Database must preserve integrity by tracking operations as transactions

- Replication copies completed transactions between master and replica servers

- Point-in-time backups must still be made to recover from errors (transaction rollback)

- Snapshot backups can be used for "last ditch" recovery and for logging/auditing changes

OS Backups

- Restore a host without having to manually reinstall operating system and applications software

- Recover from file corruption, faulty disk storage, malware infection,…

- Bare metal/image-based backup

- Keep OS and data backups as separate jobs—use well-defined areas for user data storage
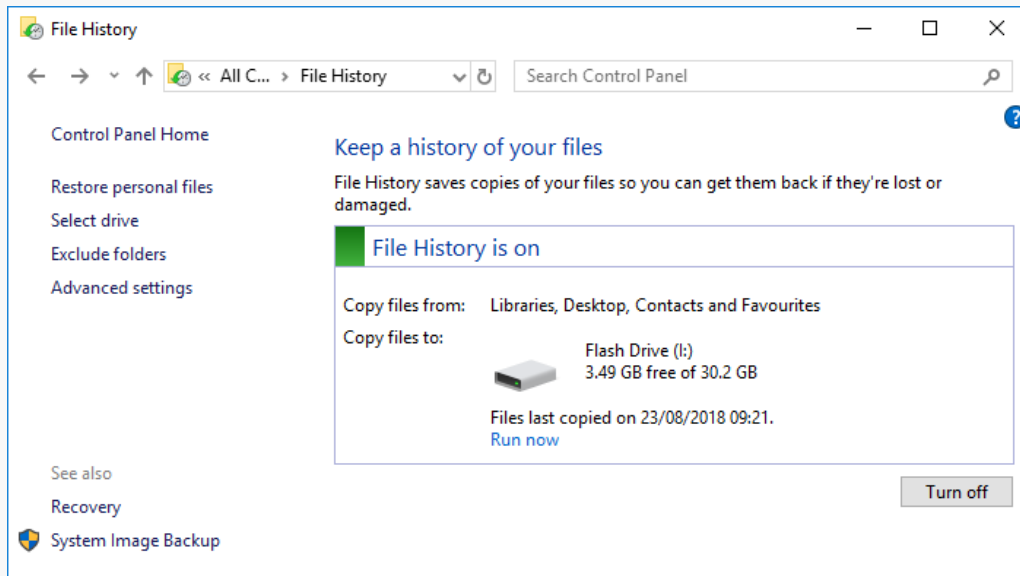
Windows Backup
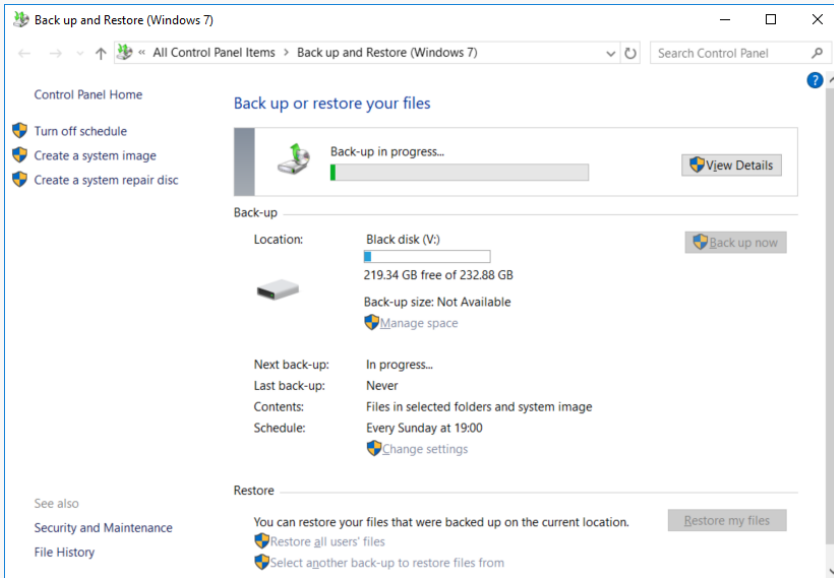
- **Backup and Restore (Windows 7)**
 - Enables you to perform selective, scheduled, and ad-hoc backups

- **File History (Windows 8 and Windows 10)**
  - As files are modified, the versions are tracked and backed up automatically
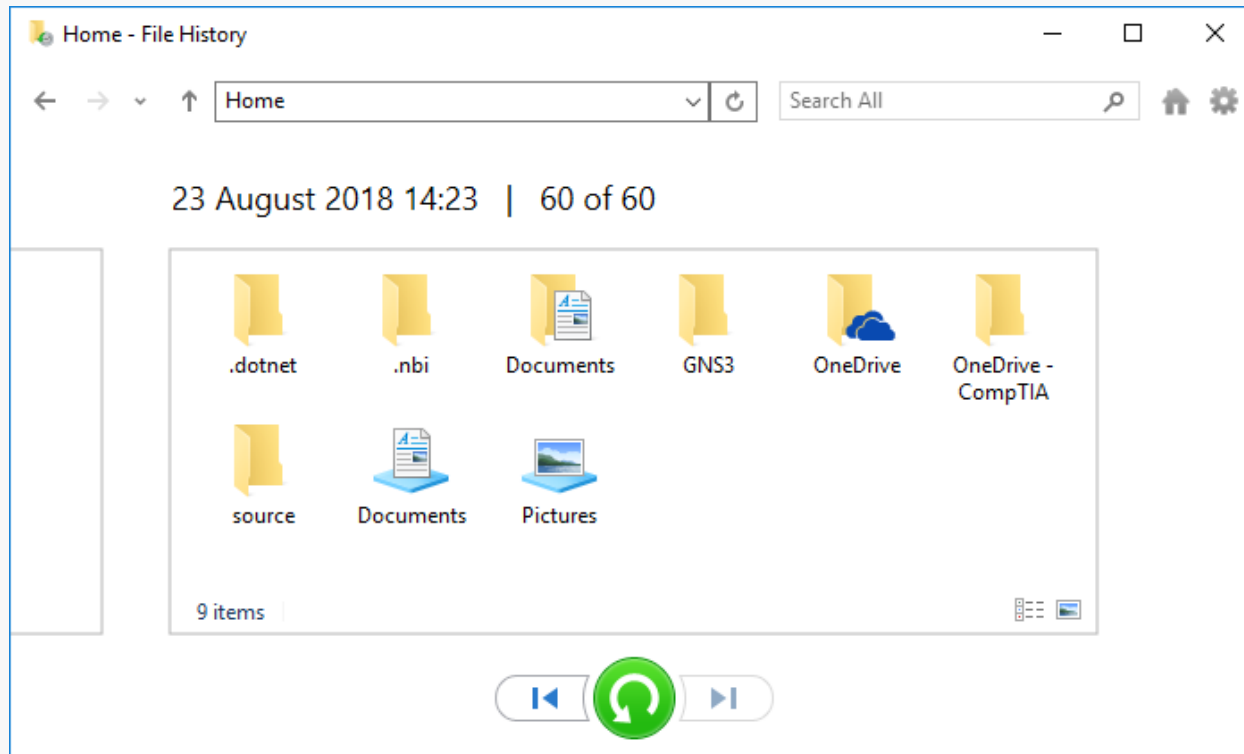
Scheduling and Frequency

- Scheduling and frequency require careful consideration

  - What are the recovery scenarios? When might we need to recover a file?

  - How much backup storage capacity is there?

  - How long do backups take to complete? Do they interfere with normal operations?

  - How can offsite backups be facilitated?
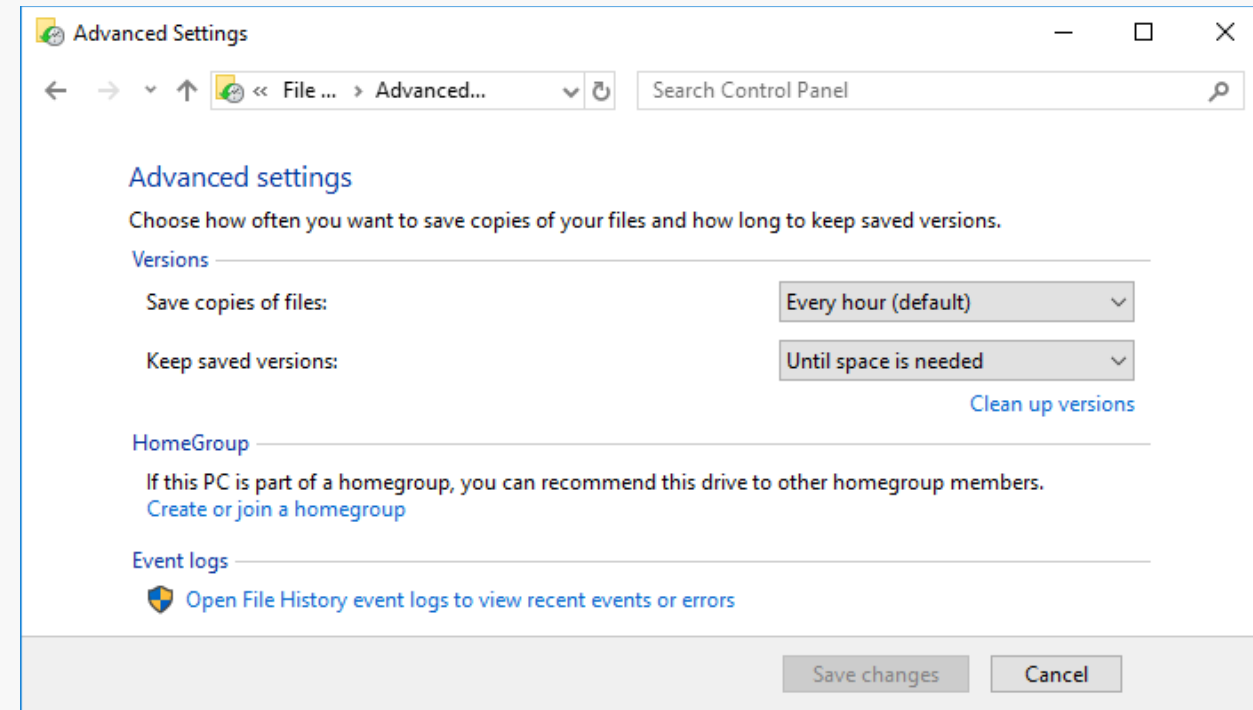
- **Error detection**
  - Do backups complete successfully?

- **Configuration**
  - Is all critical data being backed up?

- **Test restore**

Review

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