**Week 2-PART 1: Case Projects Ch. 4, 5, and 6**

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**Case Project 4-3: Choose a file system for Windows 10**

The NTFS (New Technology File System), first introduced by Microsoft in 1993 with Windows NT 3.1, is a journaling file system that helps reduce data corruption by recording changes not yet committed to the file system in the event of a system failure. NTFS has many other advantages over older file systems such as FAT, such as file and folder-level security, ability to encrypt files, and indexing for faster file access.

File and folder-level security is accomplished in NTFS by assigning a security descriptor that defines ownership and access control lists outlining restrictions on file/folder interactions such as reading, writing, or executing. File encryption is accomplished with the Encrypting File System and Microsoft’s CryptoAPI, and is recognized under the federal government’s C2 security rating as a stable and secure file system. NTFS also utilizes B-trees, self-balancing tree data structures that allow searches and various other interactions in logarithmic time.

**Case Project 5-2: Decide to upgrade or not**

The primary concern, when deciding to upgrade from Win7/8 to Win10 or not, is application compatibility and overall security and support. At the time of the book’s publication Win7 was still supported by Microsoft, however that is not the case any longer and the debate to whether to upgrade or not becomes fifty percent easier in the affirmative. The department has options when it comes to their proprietary software issue: Windows allows applications to be opened in Compatibility Mode, emulating older versions of operating systems and hardware, as well as the ability to host the proprietary applications in a virtual machine isolated away from potentially dangerous network exposure.

**Challenge Lab 6-1 Connect to a shared printer**

Windows 10 makes it very straight forward to connect to networked printers with Plug and Play. While there may be configuration required on the router the printers are connected to, depending on the firmware installed on the printer, Windows 10 simply needs to allow the connected printer to be accessed by other nodes connected to the network. If another computer on the network happens to run Linux, the Line Printer Daemon (LPD), or in more recent distributions Common UNIX Printing System (CUPS), is the protocol utilized by the Linux system to install and interact with the networked printer. Linux users will need to access their Printer Settings application (whichever comes packaged with their Desktop Environment, or a separate third party alternative) and connect to the printer. Alternatively, Linux users may use the CUPS web admin tool by opening localhost:631 in their browser.

**References**

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