

REVIEW LESSON

MTA Course: 98-367 Security Fundamentals

Lesson name: Understand Operating System Security

Topic: Understand permissions

(One 50-minute class period)

File name: SecurityFund_RL_2.2

Lesson Objective

2.2: Understand permissions. *This objective may include but is not limited to:* file; share; registry; Active Directory®; NTFS vs. FAT; enabling or disabling inheritance; behavior when moving or copying files within the same disk or onto another disk; multiple groups with different permissions; basic permissions and advanced permissions; take ownership; delegation.

Instructor preparation activities

- Windows® XP, Windows 7, or Windows Server® 2008 R2 installed on each computer

Resources, software, and additional files needed for this lesson

- SecurityFund_PPT_2.2

Teaching Guide

Essential Vocabulary

folder permissions—include **Full control, Modify, Read & execute, List folder Contents, Read,** and **Write.**

inheritance—permissions are those that are propagated to an object from a parent object. Inherited permissions ease the task of managing permissions and ensure consistency of permissions among all objects within a given container.

NTFS compared to FAT and FAT32—NTFS has always been a more powerful file system than FAT and FAT32. Windows 2000, Windows XP, and the Windows Server 2003 family include a new version of NTFS, with support for a variety of features, including Active Directory, which is needed for domains, user accounts, and other important security features. FAT and FAT32 are similar to each other, except that FAT32 is designed for larger disks than FAT. The file system that works most easily with large disks is NTFS.

permissions—in a networked or multiuser computer environment, the ability of a particular user to access a particular resource by means of his or her user account. Permissions are granted by the system administrator or other authorized person. Several levels of access can be given: read only, read and write (view and change), or read, write, and delete.

share and NTFS permissions on a file server—applies to Windows 7, Windows Server 2008 R2. Access to a folder on a file server can be determined through two sets of permission entries: the share permissions set on a folder and the NTFS permissions set on the folder (which can also be set on files). Share permissions are often used for managing computers with FAT32 file systems, or other computers that do not use the NTFS file system.

take ownership—allows or denies taking ownership of the file or folder. The owner of a file or folder can always change permissions on it, regardless of any existing permissions that protect the file or folder.

Lesson Sequence

Activating prior knowledge/lesson staging (Anticipatory Set: 10 minutes)

1. Student prompt (see PowerPoint® slide 3): On a sheet of paper, list the common types of permissions associated with users or groups.
2. Give students a few minutes to respond, allowing them to work until they have finished.
3. As time permits, call on a few students to report to the group with their responses.

Lesson activity (40 minutes)

1. Teacher Instruction (20 minutes, see PowerPoint slide 10)
 - Use PowerPoint slide and website to review NTFS and FAT file systems.
 - At the end of the slideshow, ask the students to do a “compare and contrast” or “advantages vs. disadvantages” of NTFS and FAT file systems.
 - In small groups, give the students 2 minutes to discuss answers.
 - Finally, have each small group of students share their answers with the whole group.

2. Guided Practice (20 minutes; see PowerPoint slide 11 regarding user access control (UAC)).
 - At the end of the slide, ask the students to create a report about UAC, identifying when the different messages are seen and why permissions are either “denied or granted.”
 - If time allows, you may review all or part of the report, discussing student responses to the questions.

Assessment/lesson reflection (10 minutes)

1. On the same paper they used for the Anticipatory Set, tell students to summarize the **Advanced Security Settings Properties Page – Permissions Tab** on their computer. (See PowerPoint slide 12.)
 - Be sure to give ample time for students to explore and write their summaries.
 - If time allows, pick a few students to read their summaries.
2. At the bottom of the page, tell students to write any questions they have or any topics about which they would like more assistance
3. After class, look through the student responses and follow up with any student requiring additional help.

Microsoft® resources and Web links

- **Advanced Security Settings Properties Page: Permissions Tab**
<http://technet.microsoft.com/en-us/library/cc730772.aspx>
- **TechNet: What Are Permissions?**
<http://technet.microsoft.com/en-us/library/cc771375.aspx>