

Student Activities Manual



*Preparing Students for
MTA Certification*

MICROSOFT TECHNOLOGY ASSOCIATE

Exam Review Kit

EXAM 98-349

**Windows® Operating System
Fundamentals**



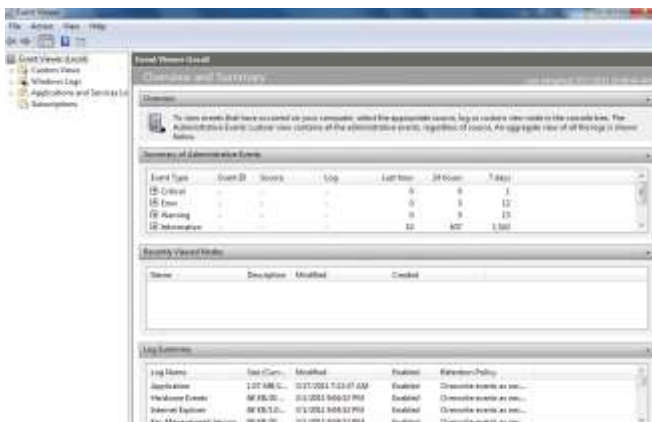
STUDENT ACTIVITY 1.1

CONFIGURING CONTROL PANEL OPTIONS AND DESKTOP SETTINGS

1. What feature in Windows 7 allows users to put information such as news or pictures on their desktop?
2. What can be created on the desktop that a user can double-click to launch an application, file, or web page immediately?
3. What is included when applying a theme to personalize your Windows 7 experience?

Configure Control Panel Options

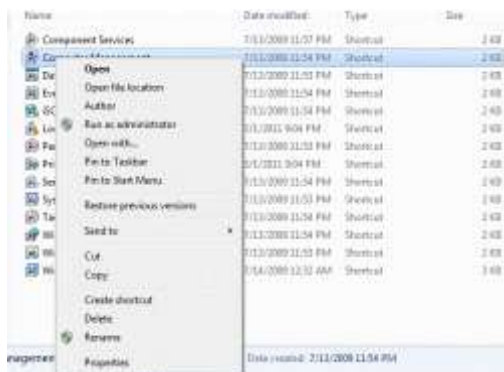
1. Authenticate into your system using the credentials provided by your instructor.
2. Click Start and click the Control Panel menu option.
3. What is the default view of Control Panel?
4. Select Small icons from the View by options.
5. Locate and click Administrative Tools.
6. Locate and double-click Event Viewer, which should look similar to the following image.



7. In the Summary of Administrative Events panel, list the five event types:
 - a. _____
 - b. _____
 - c. _____
 - d. _____
 - e. _____

8. Close Event Viewer by clicking the red X in the upper-right corner. This should return you to the Administrative Tools area within Control Panel.
9. Locate and double-click Computer Management.
10. List the applications found under System Tools within Computer Management:
 - a. _____
 - b. _____
 - c. _____
 - d. _____
 - e. _____
 - f. _____
11. Expand Services And Applications.
12. Click Services. A list of services should be displayed in the right panel.
13. Locate and focus on the Themes service by clicking it.
14. What does the Themes service do? (HINT: a description is listed in the left column).

15. Close Computer Management by clicking the red X in the upper-right corner. This should return you to the Administrative Tools area within Control Panel.
16. Right-click Computer Management to display the action menu as displayed here.



17. Select Pin To Taskbar. This should create a shortcut icon on the taskbar for Computer Management. You can also select Pin To Start Menu, which would create a shortcut icon to Computer Management on the Start menu. This can be done with any shortcut or application.
18. Close the Administrative Tools window by clicking the red X in the upper-right corner. This should return you to all the Control Panel Items.
19. Change back to Small icons in the View by options.

Configure Desktop Settings

1. Open Control Panel, if it is not already displayed.
2. Click Change The Theme under the Appearance and Personalization category, as displayed here.



3. Click Architecture within Aero Themes.
4. Minimize the Personalization window by clicking the (-) button in the upper-right corner.
5. Did the desktop background change?
 - a. Yes
 - b. No
6. Reset the theme to the Aero Windows 7 theme.
7. Minimize the Personalization window by clicking the (-) button in the upper-right corner.
8. Right-click anywhere on the desktop to display the Action menu as displayed here.



9. Note the three Action menu options:
 - a. Screen resolution—Changes the size of the desktop.
 - b. Gadgets—Adds Gadgets such as a clock or the Weather gadget to your desktop
 - c. Personalize—Changes themes, backgrounds, and screen savers.
10. Each of these options quickly takes you to the options within the Categories in Control Panel.

11. Click Gadgets, as displayed here.



- 12.** Double-click Weather. This should display the Weather gadget in the upper-right corner of the desktop.
- 13.** Right-click the Weather gadget and click the larger option. This will display the three-day weather forecast.
- 14.** Right-click the Weather gadget, click the wrench icon, and enter the ZIP code or city where you are currently located. Then click OK.
- 15.** Did the weather forecast adjust to your current location?

1. What console can be used to access several Administrative Tools?
2. What tool can be used to make the display easier to see or read?
3. Which theme requires more resources, Aero or Basic and High Contrast themes?

STUDENT ACTIVITY 1.2

UNDERSTAND NATIVE APPLICATIONS AND TOOLS

1. What is the difference between Windows Media Center and Windows Media Player?
2. How is the Snipping Tool different from performing a Print Screen?
3. What system utility allows you to configure your system to boot in Safe Mode on the next reboot?

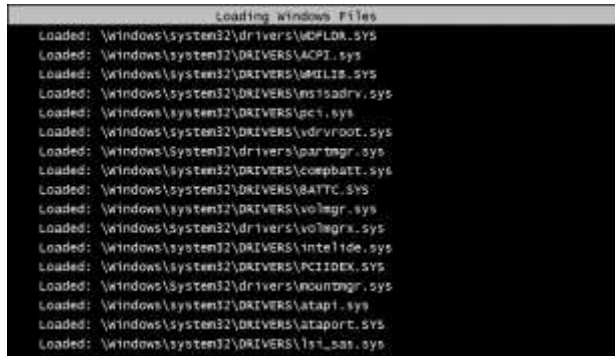
Safe boot using MSCONFIG (System Configuration)

1. Authenticate into your system using the credentials provided by your instructor.
2. Click Start and type **msconfig** in the Search programs and files box.
3. Note that the System Configuration application starts.
4. Close the System Configuration application by clicking the red X in the upper-right corner.
5. Click Start and type **System Configuration** in the Search programs and files field. The System Configuration application should appear again.
 - Note: Microsoft commands and searches are not case-sensitive. **System Configuration** is the same as **system configuration**. Other operating systems may vary. Passwords however, are case-sensitive.
6. Click the Boot tab, as shown here.



7. Select the Safe Boot check box and click OK.
8. A prompt will ask you if you wish to restart or exit without restarting. Click Restart.

9. Observe how the system boots. It will display a black screen that states that it is loading Windows files as shown here. This is normal behavior for a safe boot.



```

Loading windows files
Loaded: \Windows\System32\drivers\WDFLDR.SYS
Loaded: \Windows\System32\DRIVERS\ACPI.sys
Loaded: \Windows\System32\DRIVERS\WMILIB.SYS
Loaded: \Windows\System32\DRIVERS\msisadrv.sys
Loaded: \Windows\System32\DRIVERS\pci.sys
Loaded: \Windows\System32\drivers\vdrvroot.sys
Loaded: \Windows\System32\drivers\partmgr.sys
Loaded: \Windows\System32\DRIVERS\compbatt.sys
Loaded: \Windows\System32\DRIVERS\BATTC.SYS
Loaded: \Windows\System32\DRIVERS\volmgr.sys
Loaded: \Windows\System32\drivers\volmgrx.sys
Loaded: \Windows\System32\DRIVERS\intelide.sys
Loaded: \Windows\System32\DRIVERS\PCIIDEX.SYS
Loaded: \Windows\System32\drivers\mountmgr.sys
Loaded: \Windows\System32\DRIVERS\atapi.sys
Loaded: \Windows\System32\DRIVERS\ataport.sys
Loaded: \Windows\System32\DRIVERS\lsi_sas.sys
  
```

10. Authenticate into your system using the credentials provided by your instructor.
11. Your display should look different than previously displayed; it should look as shown here. The system is operating in Safe Mode, which loads only basic files and drivers for troubleshooting purposes.



12. Your system configuration needs to be reset to the original configuration. Using what you have learned so far, remove the Safe Boot setting.
13. Authenticate into your system using the credentials provided by your instructor.
14. Your system should return to its normal display.
15. Start System Configuration again and click the Tools tab.
16. Click Computer Management. Note the selected command box:
`C:\Windows\System32\compmgmt.msc`. This is the location of the Computer Management tool.
17. Click Launch. This should open the Computer Management console.
18. Close the Computer Management console and the System Configuration application.
19. Leave your system logged in for the next exercise.

Exploring Windows Media Player and Windows Media Center

1. Click Start and type **Windows Media**. The system should have found both Windows Media Player and Windows Media Center, as shown here. The Windows Explorer search feature returns all applications and files that meet the criteria in the Search box.



2. Select Windows Media Player and follow the Recommended Settings to configure Windows Media Player.
3. Close Windows Media Player.
4. Click Start, and type **Windows Media** again and then select Windows Media Center.
5. Note the options that you have available from Internet TV, Movies, and Pictures + Videos. This application can be configured as the source for your media libraries and streamed from one Media Center-capable device to another.

Pinning a website to the taskbar in Internet Explorer 9

1. Start Internet Explorer 9 by clicking Start and typing **Internet Explorer** in the Search box.
2. In the address bar, browse to *http://www.bing.com*.
3. Move the mouse so that it is to the left of the Uniform Resource Locator (URL) address and pause over the website icon. A message box saying “Drag to taskbar to pin site” should be displayed. Click and hold the left mouse button over the icon and drag it to the taskbar until a message box saying “Pin to taskbar” is displayed. Release the mouse button. The icon should now be located on your taskbar.
4. Close Internet Explorer.
5. Click the newly created icon on your taskbar. This should start Internet Explorer with *http://www.bing.com* displayed.
6. Close Internet Explorer.
7. To remove (unpin) the icon from the taskbar, right-click the icon and select Unpin This Program From Taskbar.

Pinning a folder to a jump list in Windows Explorer

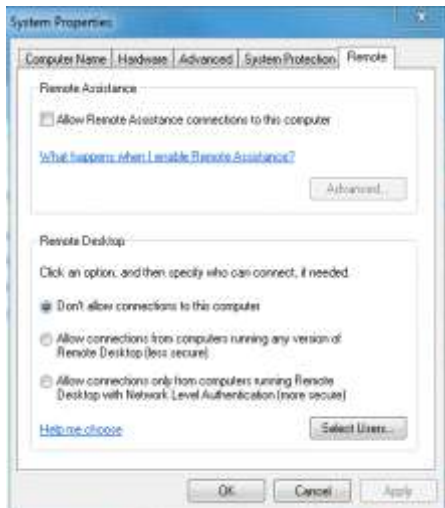
1. Authenticate into your system using the credentials provided by your instructor.
 2. Click Start and type **Windows Explorer** in the Search Programs And Files box and press Enter.
 3. Expand the Computer tree in the left panel.
 4. Click Local Disk (C:).
 5. Click the New Folder option below the address bar.
 6. This should create a folder named New Folder, which is highlighted. Rename the folder Test.
 7. Open the Test folder and create a new text document by right-clicking in the white space, selecting New on the Action menu, and then selecting Text Document. Name the new document Hello.
 8. Open the Hello text document by double-clicking the file.
 9. Type **Hello World** and then save and close the file.
 10. Close Windows Explorer
 11. Right-click the Windows Explorer icon on the taskbar.
 12. Pause the mouse over the Test folder and click the thumbtack icon on the right of the menu to pin it to the jump list.
-
1. What Windows Media application allows you to watch TV programs over the Internet?
 2. What feature in Windows Explorer allows you to pin frequently used documents, folders, or applications to the Start menu?
 3. What feature in Internet Explorer allows a user to browse websites without keeping information about the websites visited in the browsing history on the computer?

STUDENT ACTIVITY 1.3**UNDERSTAND MOBILITY, REMOTE MANAGEMENT, AND ASSISTANCE**

1. What Windows application can be used to view the desktop of a remote Windows computer?
2. List three items you might see in Windows Mobility Center.
3. What is the difference between Remote Desktop and Remote Assistance?

Configuring Remote Desktop Connection

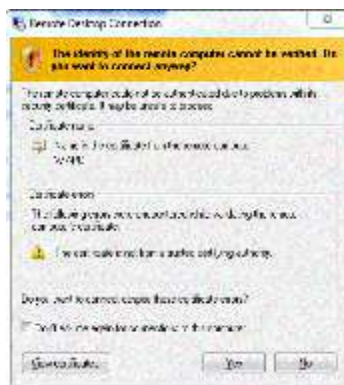
1. Authenticate into your system using the credentials provided by your instructor.
2. Click the Start Button, Control Panel, System and Security, System, and click Remote Settings in the left panel.
3. The remote settings screen should appear as follows.



4. Select the option Allow Connections Only From Computers Running Remote Desktop With Network Level Authentication (more secure) and click OK.
 - a. Note: If you wanted non-administrative users to have Remote Desktop access, you would have to **Select Users** from your Local Users And Groups. Users who are a member of the Administrators group have access by default.
5. Exchange the computer name or IP address and authentication information with your partner.
6. Open Remote Desktop Connection by clicking Start and Type Remote Desktop Connection in the Search Programs And Files box and press ENTER. The Remote Desktop Connection should appear as shown here.



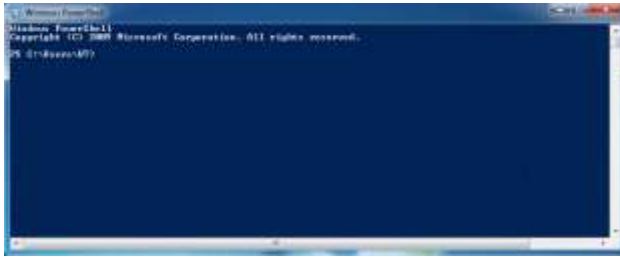
7. Type in your partner's computer name or IP address and click Connect.
Note: only one person can connect at a time. Once the connection is established, the other user will be logged out and will have to wait until the user completes the task.
8. The user name should be in the following format:
 - a. Computername\username
 - b. i.e.: windows7-PC\Sanjay.Patel
9. You may receive a warning stating the identity of the remote computer cannot be verified, as shown here. This is acceptable. Click Yes.



10. You should now see the desktop of your partner's computer. Your partner will be logged off during this session because both users cannot be logged in simultaneously.
11. Right-click the desktop, select New...Text Document, and provide your name for the file.
12. Click Start and select Log Off.
13. Your partner should now attempt a Remote Desktop Connection.
14. Once complete, have your instructor verify that the text documents were created successfully on each desktop.

Using Windows PowerShell

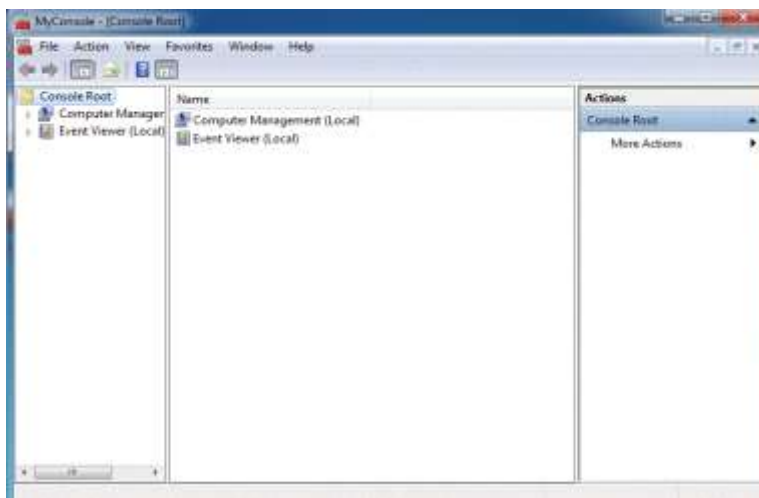
1. Authenticate into your system using the credentials provided by your instructor.
2. Click Start, All Programs, Accessories, Windows PowerShell, and select Windows PowerShell.
3. You should see a window similar to the following:



4. To create a Hypertext Markup Language (HTML) file of all services on the local computer, type **Get-Service | ConvertTo-HTML | Out-File Services.html** and press ENTER.
Note: we didn't specify a location for the output file, so the file will be saved in your current working directory. This information will be important later.
 5. You will not see a confirmation on your screen. If you have incorrectly typed the command, you will see the related error that will explain what was incorrectly typed. If you continue to receive an error, have your instructor review your syntax.
 6. Using Windows Explorer, browse to the path displayed in your Windows PowerShell window.
 7. Find the file called Services.html. Double-click the Services.html file to open it. You should see a great deal of information. We will modify our command to have a more readable output.
 8. Return to your Windows PowerShell window.
 9. Type:
Get-Service | Select DisplayName, Status, ConvertTo-HTML | Out-File Services-Name.html and press ENTER.
 10. Find the file called Services-Name.html. Double-click the Services-Name.html file to open it. The output should display only the Display Name and Status of the service.
 11. Return to your Windows PowerShell window.
 12. Type **Get-help** and press ENTER. Review the help information provided.
 13. Type **Get-help Get-Service** and press ENTER.
 14. What is the **SYNOPSIS** of the Get-Service cmdlet?
-
15. Review the **SYNTAX** portion of this help file. What could we add to our Select statement to view the Dependent Services as well? Change your command to include the Dependent Services and have your instructor verify.

Creating a Custom Microsoft Management Console (MMC)

1. Authenticate into your system using the credentials provided by your instructor.
2. Click Start, type **MMC** in the Search Programs And Files box, and press ENTER.
 - a. Note: If you are not a member of the Administrators group, you will be prompted by User Account Control for the credentials of a user with those rights.
3. An empty MMC should be displayed. Click File and select Add/Remove Snap-in.
4. Select Computer Management and click Add to add it to the Selected snap-ins panel. It will ask you if you wish to manage the local computer or another computer. Click Finish to accept Local computer.
5. Repeat the last step and choose Event Viewer and click OK to accept the choices for the Add/Remove Snap-ins screen.
6. You should now have Computer Management and Event Viewer in your console as shown here.



7. Click File, select Save As, select Desktop, and enter **MyConsole** for the file name.
 8. Close your console, and you should see an icon on your desktop called MyConsole.
 9. You can modify this console to include any tools that you feel are important. You can create other consoles as well, based on task or functions.
-
1. What scripting language was designed especially for system administration?
 2. What is the advantage of having Windows Mobility Center available on a mobile laptop?
 3. What application enables a user to connect to a computer in a remote location?

STUDENT ACTIVITY 2.1

IDENTIFY WINDOWS EDITIONS AND UPGRADE PATHS

1. Which Windows 7 edition does not include Windows Media Center?
2. Does Windows 7 Home Premium edition have the ability to connect to a business network or domain?
3. What tool can be used to investigate your current computer to identify issues that may arise if you upgrade to Windows 7?

Identify Windows editions

1. Authenticate into your system using the credentials provided by your instructor.
2. Click Start, right-click the Computer option, and select Properties.
3. What edition of Windows 7 is running?

4. What processor do you have?

5. What is the system type?

Determine PC upgrade compatibility

1. Authenticate into your system using the credentials provided by your instructor.
2. Open your web browser and navigate to the following address:
<http://www.microsoft.com/windows/windows-7/get/upgrade-advisor.aspx>
3. Download and install Windows 7 Upgrade Advisor.
4. Run the Windows 7 Upgrade Advisor on your PC by clicking the Windows button and selecting Windows 7 Upgrade Advisor. Even if you are already running Windows 7, the report may suggest items to improve your Windows 7 experience.

5. Note on the initial Startup page, shown here, that you should connect and turn on all devices so the software can check them as well.



6. Click Start Check.
7. List any issues and their details and solutions to resolve the problem.

STUDENT ACTIVITY 2.2

UNDERSTANDING INSTALLATION TYPES

1. What can be created to automate a Windows 7 installation?
2. What types of media can be used to install Windows 7?
3. What tool can be used to strip an existing Windows 7 installation of all unique identifiers?

Product Identification

1. Authenticate into your system using the credentials provided by your instructor.
 2. Click Start. Select Control Panel, System and Security, and then System. What is your Product ID?
-

Microsoft Deployment Toolkit

1. Authenticate into your system using the credentials provided by your instructor.
2. Obtain the Microsoft Deployment Toolkit (MDT) from your instructor or browse the following website and download the appropriate file for your operating system (x64 or x86):
<http://www.microsoft.com/downloads/en/details.aspx?FamilyID=3bd8561f-77ac-4400-a0c1-fe871c461a89&displayLang=en>
3. Install the MDT on your system.
4. Click the Getting Started icon, as shown here.



5. List the 10 steps in the deployment process.

6. Click the Components option in MDT.
7. Highlight Windows Automated Installation Kit (WAIK).
8. Click download in the lower portion of the screen.
9. Once the download is completed, install the toolkit from within MDT. You can skip the download if the instructor has provided the software for your use. It is important to note that you can use WAIK as your deployment workbench and obtain the necessary tools through the MDT console.
10. Once WAIK is installed, click Start and select Windows System Image Manager. This tool can be used to manage all image files and create answer files for Lite Touch Installations (LTIs) or Zero-Touch Installations (ZTI).
11. Click Start. Select All Programs, Microsoft Windows AIK, and then Deployment Tools Command Prompt. This utility contains various tools to create WindowsPE tools, boot devices such as a bootable USB containing WindowsPE, and imaging/duplication tools.
12. A command window will open. Navigate to C:\Program Files\Windows AIK\Tools.
13. Type **DIR** and press ENTER.
14. What directories are listed?
- a. _____
 - b. _____
 - c. _____
15. What do these directories signify?
- _____
16. Navigate to C:\Program Files\Windows AIK\Tools\amd64.

17. Type **dir** and press ENTER. You should see the list shown here.

```

Deployment Tools Command Prompt
C:\Program Files\Windows AIK\Tools\amd64>dir
Volume in drive C has no label.
Volume Serial Number is F454-P9F0

Directory of C:\Program Files\Windows AIK\Tools\amd64

03/20/2011  08:31 PM  <DIR>          .
03/20/2011  08:31 PM  <DIR>          ..
07/14/2009  07:10 AM             101,632 bootstrapper.exe
03/20/2011  08:31 PM  <DIR>          es-us
07/14/2009  07:10 AM             581,088 imagex.exe
07/14/2009  07:10 AM             274,832 laticfg.exe
07/14/2009  07:10 AM             131,784 wcding.exe
03/20/2011  08:31 PM  <DIR>          servicing
07/14/2009  07:11 AM             127,872 sshin.dll
07/14/2009  07:10 AM             829,328 wdsinst.exe
07/14/2009  07:11 AM             509,312 wdsapi.dll
06/10/2009  02:06 PM              2,457 winmount.inf
07/13/2009  06:48 PM             22,096 winmount.syn
07/14/2009  07:10 AM             36,240 winmountinstall.exe
07/14/2009  07:10 AM             489,984 winser.exe
    11 File(s)          3,186,745 bytes
    4 Dir(s)          14,323,281,520 bytes free

C:\Program Files\Windows AIK\Tools\amd64>

```

18. This folder contains tools used to create duplicated or cloned systems. These tools will work on AMD64 processors.

19. Notice the Imagex.exe file, which is a duplication tool that can be used to create cloned images of an operating system. Imagex.exe is the tool used to create Windows Image files.

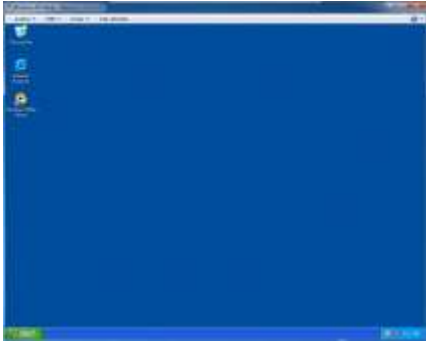
20. Type **exit** and press ENTER to leave the Deployment Tools command prompt.

1. What Microsoft utility is used for creating or modifying unattended answer files and configurations?
2. What is required to activate Windows 7?
3. What tool resets Windows product activation?

STUDENT ACTIVITY 2.3

UNDERSTAND VIRTUALIZED CLIENTS

1. What desktop virtualization software is required to use Windows XP Mode?
 2. What Windows Server 2008 R2 server role was formerly called Terminal Services?
 3. What feature of Windows 7 is used to connect to an RDS server?
-
1. Authenticate into your system using the credentials provided by your instructor.
 2. Locate the files provided by your instructor.
 3. Double-click the WindowsXPMode_en-us.exe file to install the Windows XP Mode application.
 4. Double-click the Windows6.1-KB958559-x64-FreshPkg.msu to install Microsoft Virtual PC.
 5. Upon completion of the Virtual PC installation, you will be asked to restart your system.
 6. Double-click the Windows6.1-KB977206-x64.msu to install the XP Mode update.
 7. You will be asked to restart your system upon completion of the XP Mode update.
 8. Authenticate into your system using the credentials provided by your instructor.
 9. Click Start, All Programs, Windows Virtual PC, Windows XP Mode. This will begin the setup process for Windows XP Mode.
 10. Check that you accept the XP Mode licensing agreement and click Next.
 11. Provide a password for XPMUser and click Next.
 - a. Password, Pa\$\$w0rd
 12. Choose the recommended update settings and click Next.
 13. Click Next at the drive sharing screen, which will finish the initial setup process.
 14. Once the XP Mode setup process has completed, you should have a new Windows XP screen on your desktop, as shown here.



15. Have your instructor verify your installation.

1. What user account is created when you install Windows XP Mode?
2. What are the benefits of VDI?
3. Which editions of Windows 7 support XP Mode?

STUDENT ACTIVITY 3.1

UNDERSTANDING APPLICATION INSTALLATIONS

1. What methods can be used to install software?
2. What is required to perform a local installation?
3. What do you need to do to install software on a local system?

Installing an Application Locally

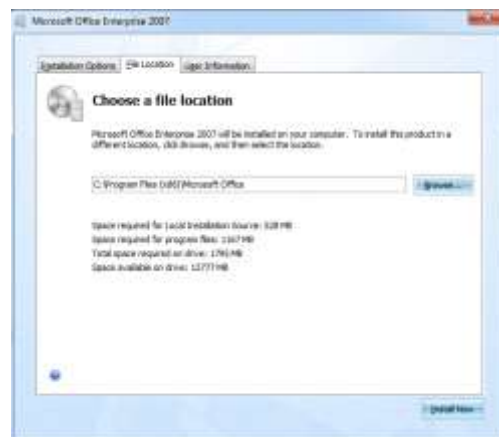
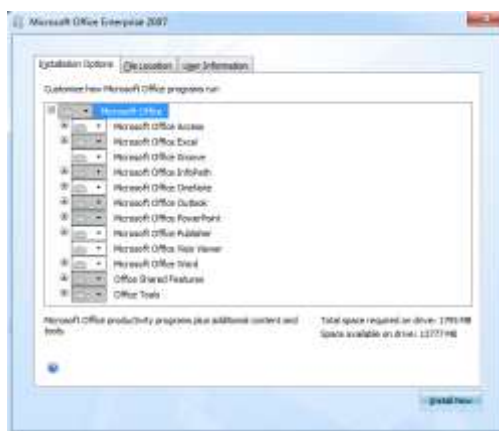
1. Authenticate into your system using the credentials provided by your instructor.
2. Obtain the Microsoft Office installation media from your instructor.
3. Insert media into the CD/DVD tray.
4. You should see a dialog box similar to the window shown here.



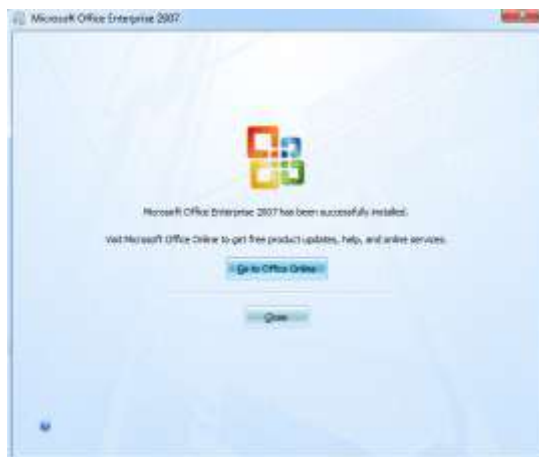
5. Click Run SETUP.EXE.
 - a. If the software doesn't play automatically, open Windows Explorer and browse to the root of the DVD drive.
 - b. Locate the Setup.exe file at the root of the DVD drive.
 - c. Double-click Setup.exe.
6. You will be asked if you want to allow the following program to make changes to this computer, as shown here.



7. Click Yes. The software installation should begin.
8. If prompted, provide the product key provided by your instructor and click Continue.
9. At this point, you have the option to perform a typical installation, which will install the default applications to the default directory structure. If you would like to install only specific applications, click Customize. The default applications and file location windows are seen here.



10. If you have selected Customize, click Install now; otherwise, click Typical.
11. Office begins to install based on your selections. The installation time will vary based on system configuration.
12. You should see the screen shown here when the installation completes.



13. Note that you have the option to obtain product updates online. Most software companies provide a method to update their products. It is a good practice to obtain the product updates upon completion of the installation. However, this can also be configured to be completed automatically through Microsoft Updates.

14. Click Close.
15. Click Start and select All Programs. Microsoft Office should now be listed in your programs list.
16. Select Microsoft Office and open Microsoft Word.
17. You will be greeted with a Welcome screen with various options. Click OK.
18. Have your instructor verify that you have completed your installation.
19. Close Microsoft Word by clicking the button in the upper-left corner and selecting Exit Word.

Uninstalling an Application

1. Authenticate into your system using the credentials provided by your instructor.
 2. Click Start and select Control Panel.
 3. Click the Programs category.
 4. Under Programs And Features, click Uninstall A Program.
 5. Highlight the Office product that you just installed by clicking it. Notice the menu options above it have changed. The options should read “Uninstall or Change.”
 6. At this point, you have the option to change or add to your Office installation.
 7. Click Uninstall to remove the application from your system.
 8. The uninstall program will begin. You will be asked to confirm your selection. Click Yes.
 9. The process will begin to uninstall Office.
 10. Upon completion, it is a good practice to restart your system.
-
1. What technology allows a standard user to install software without having to authenticate as an administrative user?
 2. What is required to use Group Policy to install software?
 3. What files are *typically* used to perform an installation if the software does not contain an AutoPlay feature?

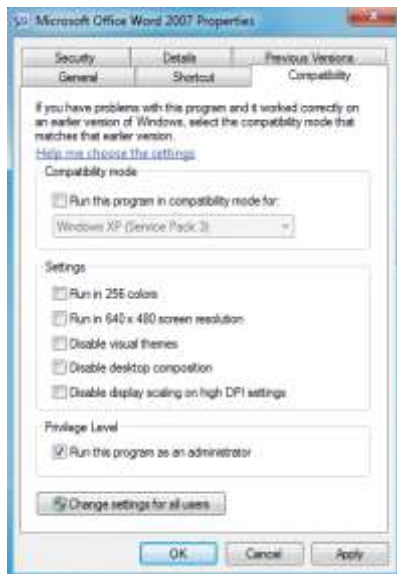
STUDENT ACTIVITY 3.2

UNDERSTAND USER ACCOUNT CONTROL

1. What is the most important rule for controlling access to resources?
2. What is a malicious program or software?
3. What does the UAC do?

Configuring an application to always run elevated

1. Authenticate into your system using the credentials provided by your instructor.
2. Click Start. Select All Programs, Microsoft Office.
3. Right-click Microsoft Office Word and select Properties.
4. Click the Compatibility tab.
5. Under Privilege Level, check Run This Program As An Administrator, as shown here.



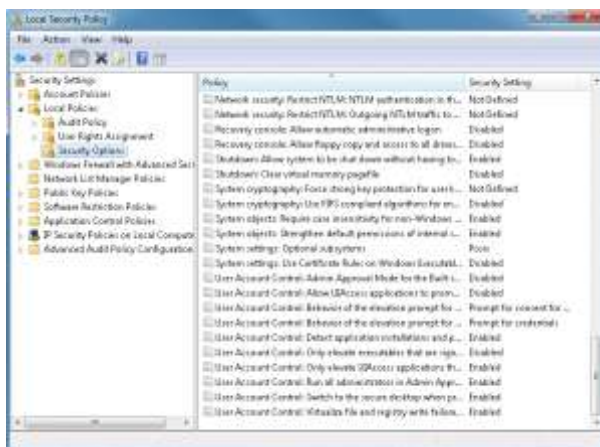
6. This effectively will launch Microsoft Word as an administrator for the logged-in user. To make this setting effective for all users, click Change Settings For All Users and make the same setting change under Privilege Level.
7. You can change the privilege level for any application by following the previous steps.

Modifying User Account Control System Settings

1. Authenticate into your system using the credentials provided by your instructor.
2. Click Start and click Control Panel.
3. Click User Accounts And Family Safety.
4. Click User Accounts.
5. Click Change User Account Control Settings.
6. Click and drag the slide button to Never Notify.
7. For what changes will you never receive notifications?
 - a. _____
 - b. _____
8. Is this setting recommended?
 - a. Yes
 - b. No
9. When should you use this setting?
 - a. _____

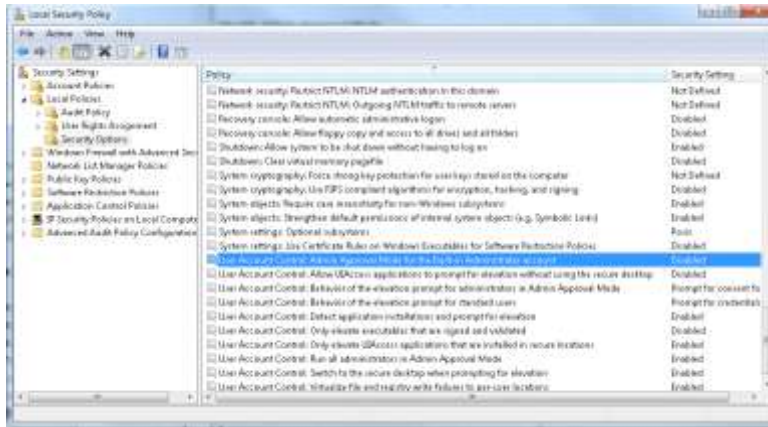
Disable Admin Approval Mode

1. Authenticate into your system using the credentials provided by your instructor.
2. Click Start, type **Local Security Policy** in the Search programs and files field, and press Enter. This will open the local system security policies as shown here.



3. Double-click Local Policies and select Security Options.
4. Scroll to the bottom of the list in the right pane.

5. Double-click the User Account Control: Use Admin Approval Mode For The Built-in Administrator Account policy setting, as shown here.



6. Click the Explain tab.
7. What happens when you select Enabled?
a. _____
8. Select the Local Security Setting tab, select Enabled, and click OK.
9. What is the status of the security setting?
a. _____
10. Close the Local Security Policy console.

1. What is a digital signature?
2. Identify three things that a standard user cannot do.
3. What does UAC help prevent?

STUDENT ACTIVITY 3.3

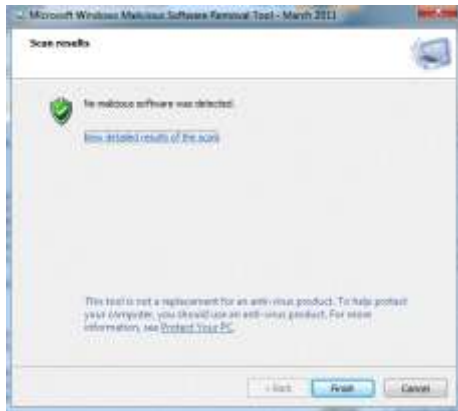
REMOVE MALICIOUS SOFTWARE

1. What is a computer virus?
2. What is Windows Defender?
3. What is a firewall?

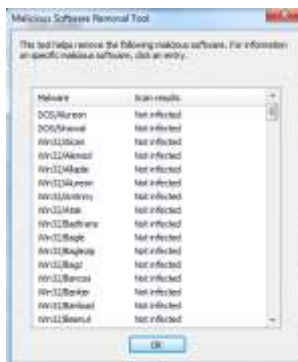
Malicious Software Removal Tool

1. Authenticate into your system using the credentials provided by your instructor.
2. Obtain the Malicious Software Removal Tool from your instructor, or browse to and download the appropriate tool here:
 - a. x86(32-Bit) version:
<http://www.microsoft.com/downloads/en/details.aspx?FamilyId=AD724AE0-E72D-4F54-9AB3-75B8EB148356&displaylang=en>
 - b. x64 (64-Bit) version:
<http://www.microsoft.com/downloads/en/details.aspx?FamilyId=585D2BDE-367F-495E-94E7-6349F4E7FC74&displaylang=en>
3. Save the file to your hard drive.
4. Run the file after it has finished downloading.
5. Note the statement on the first screen that this is not a replacement for an antivirus product. Click Next.
6. Select Quick Scan.
7. What does the Quick Scan do?
 - a. _____
8. Click Next.

9. When the scan completes, you should see the message shown here.

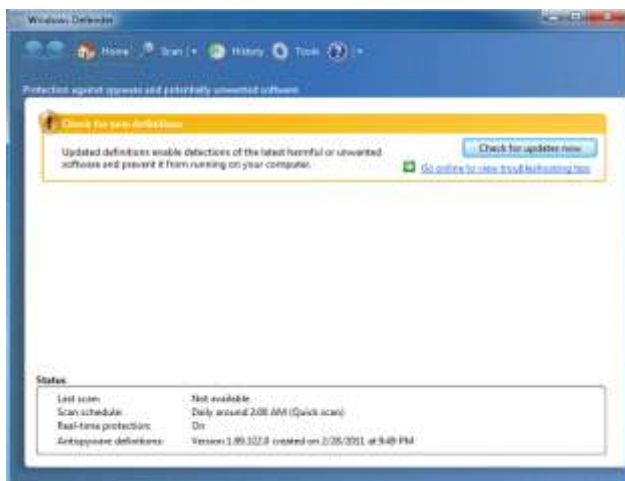


10. Click View Detailed Results Of The Scan.
11. You should see a list of malware; scan results are shown here.



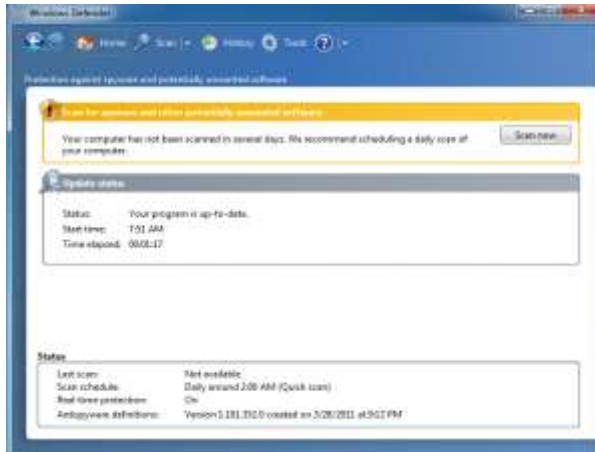
Windows Defender or Microsoft Security Essentials

1. Authenticate into your system using the credentials provided by your instructor.
2. Click Start and select Control Panel. Type **Windows Defender** in the Search field and press ENTER.

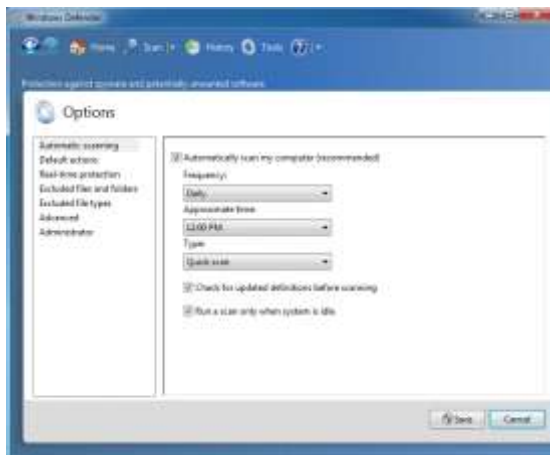


3. Windows Defender may need to check for new updates. Click **Check For Updates Now** to get the latest definitions.

4. After the updates are completed, you receive a warning, as shown here, that your system hasn't been scanned in several days and it is recommended that you schedule a daily scan. Click Scan.



5. Take note of the resources that Windows Defender scans. The software not only scans the important files but also thoroughly scans the registry files, which are files used to personalize each user's experience and maintains configurations of installed software and profiles.
6. After the scan completes, click the Tools icon on the upper menu.
7. To schedule this program to scan on a regular basis, click the Options link in the Settings area.
8. Select the Automatically Scan My Computer (Recommended) check box.
9. Change the approximate time to 12:00 P.M., as shown here.



10. Click the Default Actions option in the left pane.
11. What are the three options for severe alert items?
 - a. _____
 - b. _____
 - c. _____
12. Click the Advanced option in the left pane.

13. What are the five options available on the Advanced menu?

- a. _____
- b. _____
- c. _____
- d. _____
- e. _____

14. Select the Scan Removable Drives check box.

15. Click Save.

1. What tool can be used to remove malware from an infected system?
2. What feature of Windows is the central location to view alerts and take actions to help keep the system running smoothly?
3. What is the name given to a malicious program installed on a computer that is part of a bot network?

STUDENT ACTIVITY 3.4

UNDERSTAND SERVICES

1. List the four startup types for Windows services.
2. How can you start the Services snap-in from Search Programs And Files?
3. A service has failed to start; what application would you first use to determine the cause?

Managing Windows Services

1. Authenticate into your system using the credentials provided by the instructor.
2. Click Start, type **services** in the Search programs and files field, and hit ENTER. This will open the Services console.
3. In the Services (Local) pane, scroll down and select the Print Spooler service. Note that most services, when selected, will display a description of the service. This description is visible only when the Extended tab (at the bottom of the screen) is selected.

4. What is the description of the Print Spooler service?

5. Double-click the Print Spooler service.
6. What is the Service Name located at the top of the dialog box?

7. Close the Print Spooler Properties (Local Computer) dialog box.
8. Find the Secondary Logon service. Read the description for this service's responsibility.
9. Double-click this service. What is the Status of this service?

10. What is the Startup Type for this service?

11. What account is this service logging on as?

12. Right-click the Secondary Logon service and note the options that you can execute from the Action menu.

13. Select the Start option to start the service. What has the Status of this service changed to?

14. Right-click the Secondary Logon service and select Properties from the Action menu.

15. Stop the Secondary Logon service by clicking Stop on the General tab.

16. What is the Service Name located at the top of the dialog box?

17. Click the drop-down arrow next to the Startup Type option. List the four Startup Types:

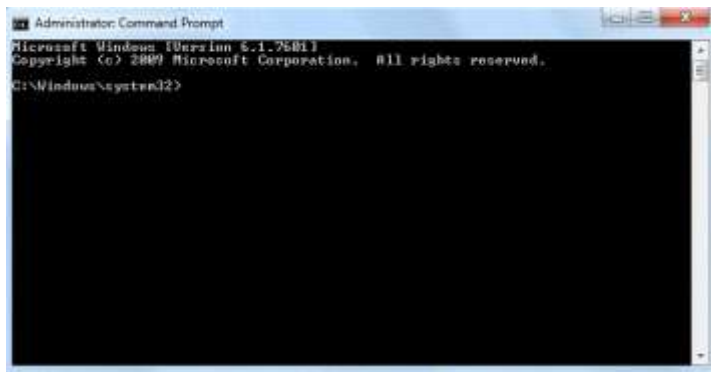
a. _____

b. _____

c. _____

d. _____

18. Open an administrative command prompt by clicking Start; select All Programs and then Accessories. Right-click Command Prompt and select Run As Administrator. In the User Account Control window, click Yes. This should open a command prompt as shown here.



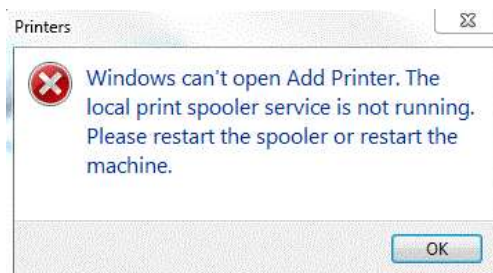
19. Using the information obtained above, stop the Print Spooler service by typing the following at the command prompt: **net stop service name** and then press ENTER.

a. *Service name* is the information found in step 6.

20. You should see a message that the service has stopped.

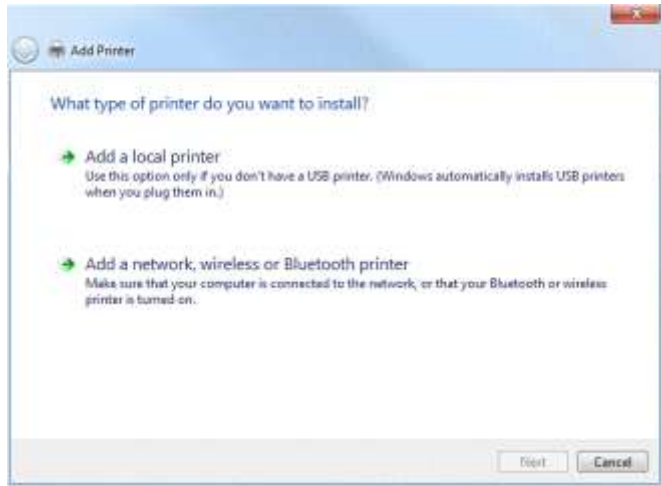
21. Click Start and select Devices And Printers.

22. Click Add Printer. A message will appear as shown here.



23. Start the Print Spooler service in the Command Prompt window by typing **net start service name** and press ENTER.

24. Return to the Devices And Printers console and click Add Printer again. The Add Printer wizard will appear, as shown here.



1. What application reports why a particular service failed to start?
2. When would a user choose to disable a particular service?
3. What command can stop the spooler service at the command prompt?

STUDENT ACTIVITY 3.5

UNDERSTAND APPLICATION VIRTUALIZATION

1. What is application virtualization?
2. What Windows Server role can be used for application virtualization?
3. What are the benefits of application virtualization?

Application Virtualization Video

1. Authenticate into your system using the credentials provided by your instructor.
2. Browse to the following website and view the Microsoft webcast and answer the following questions regarding App-V: <http://www.microsoft.com/showcase/en/US/details/40d695e1-e486-41ee-a085-71f7a7079142>

a. What is the first step in desktop virtualization?

b. Are applications installed on the client workstations when the users start the application?

c. List three benefits of application virtualization.

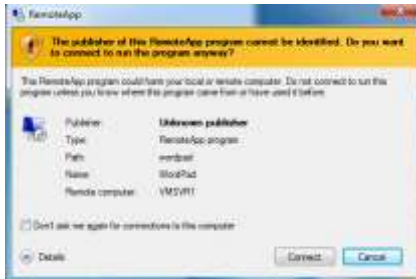
d. What processor architecture does App-V run on?

Using RemoteApp

1. Obtain the Wordpad.rdp file from your instructor and copy to your desktop.
2. Double-click wordpad which will appear on the desktop as shown here.



3. You will be warned that the publisher of the RemoteApp cannot be identified, as shown here. Click Connect.



4. You may be notified that the identity of the remote computer cannot be verified, as shown here. Click Yes to connect anyway.



5. You will be prompted to authenticate to the RemoteApp server. Input the credentials provided by your instructor in this format—**Servername\username**—as shown here:



6. Click OK after credentials have been provided. The application will take a few moments to start the first time. The application will open more quickly when it is launched the second time.
7. Close the application.
8. Double-click wordpad again. Acknowledge the warnings as stated above. The application should have started more quickly this time.

1. Which Microsoft application is used to support MED-V?
2. What methods can be used to access programs using RemoteApp?

STUDENT ACTIVITY 4.1

UNDERSTAND FILE SYSTEMS

1. What is the file size limit on a FAT32-formatted volume?
2. Does NTFS support encryption?
3. Can you convert an NTFS-formatted volume to a FAT32-formatted volume?

Identify file systems using the command line:

1. Authenticate into your system using the credentials provided by your instructor.
2. Click Start, type **command prompt** in the Search box, and press ENTER.
3. At the command prompt, type **diskpart** and press ENTER.
4. Click Yes if prompted by User Account Control.
5. Type **Help** at the diskpart prompt and press ENTER. A list of available commands will be provided. All functions that can be done within the Disk Management Console can also be accomplished using diskpart.
6. At the diskpart prompt, type **list** and press ENTER.
7. List the four available options and a description of each:
 - a. _____
 - b. _____
 - c. _____
 - d. _____
8. While at the **diskpart** prompt, type **list volume** and press ENTER.
9. Use the following table to record the volumes displayed. Include the volume, Letter (Ltr), Label, and File System (Fs). You may have only three volumes.

Volume	Letter (Ltr)	Label	File System (Fs)

10. Type **exit** and press ENTER to leave Diskpart.

Identify file systems using the Graphical User Interface (GUI):

1. Click Start, and then click Computer.
2. Right-click a drive listed under Hard Disk Drives and select Properties.
3. What is the drive letter and file system type?
 - a. Drive Letter: _____
 - b. File System: _____

In the following steps, you will convert a volume to NTFS and use features of NTFS.

4. Open Windows Explorer.
5. Navigate to the secondary volume.
6. What is the drive letter associated with your secondary volume?

7. Create a folder and name it **FAT32Folder**.
8. Right-click this new folder and select Properties.
9. List the tabs that are available:
 - a. _____
 - b. _____
 - c. _____
 - d. _____

10. On the General tab, is there a button labeled Advanced?

- a. Yes
- b. No

11. Close the Properties box.
12. Open FAT32Folder by double-clicking it.
13. Right-click within the folder and select New and then Text Document.
14. Name the file **MyTextDocument**.
15. Open the text document in Notepad by double-clicking the file.
16. Type **Hello World** at the top of the document.
17. Save and close Notepad.
18. Right-click MyTextDocument and select Properties.

19. List the tabs that are available:

- a. _____
- b. _____
- c. _____
- d. _____

20. Click OK to close the Properties box.

In the following steps, you will convert the secondary volume from a FAT32 volume to NTFS.

21. Open a command prompt using what you learned earlier in this lesson.

22. Perform the following steps:

- a. Type **Convert** <*secondary drive letter*>: /fs:NTFS using information listed in the table above and step 3a and then press ENTER.
- b. Type the current volume label from the table above. If it doesn't have a label, press ENTER. The volume should be converted.

23. Using what you have learned, use **diskpart** to verify if your volume has been converted.

24. Type **exit** to close the command prompt.

25. Open Windows Explorer and navigate to your secondary volume.

26. Right-click the Fat32Folder that you created and select Properties.

27. List the tabs that are available:

- a. _____
- b. _____
- c. _____
- d. _____
- e. _____

28. Click OK to close the Properties box.

29. Double-click Fat32Folder to open it.

30. What color is the name of the MyTextDocument file?

31. Right-click MyTextDocument and select Properties.

32. List the tabs that are available:

- a. _____
- b. _____
- c. _____
- d. _____
- e. _____

33. Click the General tab.

34. Is there an Advanced button?

- a. Yes
- b. No

35. Click the Advanced button.

36. Select the Compress Contents To Save Disk Space checkbox, as shown here, and click OK.



37. Click OK to close the Properties box for MyTextDocument.

38. What is the color of the MyTextDocument file now?

39. Return to the Advance Attributes dialog box of the MyTextDocument file and select the Encrypt Contents To Secure Data checkbox. What happened to the option to compress the file?

40. Click OK to save and close the attribute settings.

41. Click OK to close the Properties box.

42. What is the color of the file?

43. Return to FAT32Folder.

44. Right-click on the folder and select the Properties.

45. Click the Security tab.

46. What groups are listed in the Group or User name box?

- a. _____
- b. _____
- c. _____
- d. _____

1. What is the maximum volume size when using FAT32?

2. Does FAT32 have built-in security features?

3. Can you encrypt and compress a folder or file on an NTFS volume?

STUDENT ACTIVITY 4.2

UNDERSTAND FILE AND PRINT SHARING

1. What advanced share permission allows the user to grant access to a resource to other users?
2. What permissions are effective when accessing a folder through a share?
3. What service allows file and printer sharing?

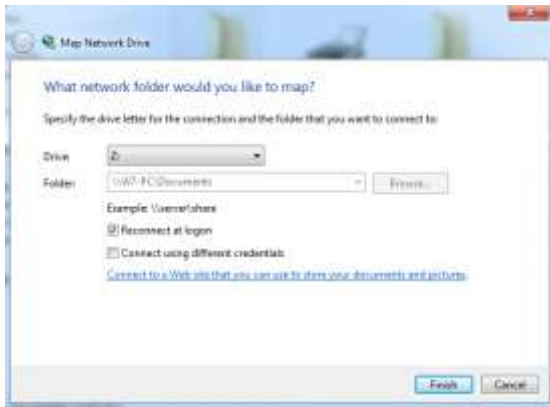
Create a file share:

1. Authenticate into your system using the credentials provided by your instructor.
2. Open Windows Explorer. Double-click your secondary drive (if available; otherwise, double-click your system drive).
3. Click the New Folder button on the menu bar and name the folder **Documents**.
4. With the Documents folder selected, click the Share With button on the menu bar and select Specific People.
5. Type in the user name that you logged on with and click Add.
6. Set the permission level by selecting Administrator, clicking the drop-down arrow, and selecting Read/Write. Click Share.
7. Click Done on the next page to confirm that the folder has been shared successfully.

Work with a partner for the following steps:

8. Exchange computer names with your partner.
9. With Windows Explorer open, expand the Network option and locate your partner's computer. An Information bar will prompt you to turn on Network Discovery. Enable Network Discovery.
10. Double-click your partner's computer. (You may be asked to provide credentials if you are logging on with a different user account name. If so, provide your partner's credentials.)
11. Locate the Documents share that your partner created.
12. Right-click the Documents share and select Map Network Drive.

13. Review the default settings as shown here. Do not change the settings.



14. Click Finish.

15. You should now see a Z: drive added to your computer in Windows Explorer.

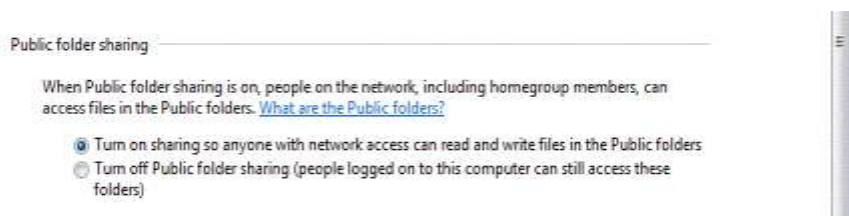
16. Double-click the Z: drive to open the shared folder.

17. Create a text document in the folder and save the file, using your name as the file name.

18. On your own system, open up the shared folder and see if your partner's file has been created.

Allow public folder sharing:

1. Allow public folder sharing by clicking Start, opening Control Panel, clicking Network And Internet, Network And Sharing Center, and Change Advanced Sharing Settings in the left panel.
2. Turn on Public Folder Sharing, as shown here.



3. Click Save Changes.
4. Return to Windows Explorer and browse to your partner's computer.
5. You should see a share named Users.
6. Double-click the Users share.
7. Double-click the Public folder.

8. What folders are available under the Public folder?

- a. _____
- b. _____
- c. _____
- d. _____
- e. _____
- f. _____

9. Open the Public Documents folder.**10. Create a folder and name it, using your name.**

Were you able to accomplish this? ____ Yes ____ No

Why or why not? _____

11. Click your local libraries. Open Documents, and then open Public Documents.**12. Is your partner's folder created? ____ Yes ____ No****Sharing printers:**

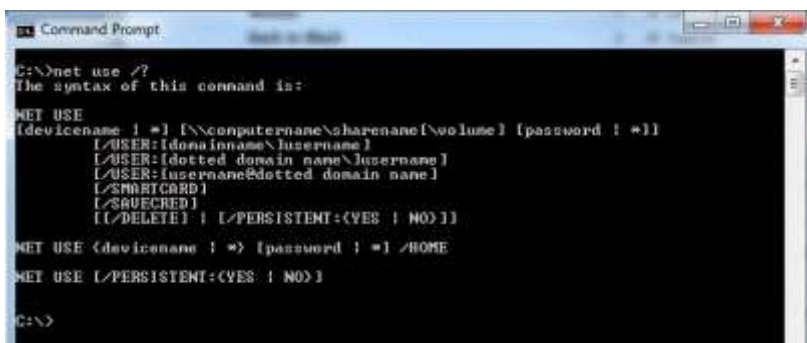
1. Verify that the File And Printer Share option is enabled for your firewall profile. Use what you have learned by turning on Public Folders to verify if your printer sharing is enabled. This setting must be enabled for you to continue this activity.
2. Access the Devices and Printers window by clicking Start, then clicking Devices And Printers.
3. Locate your locally attached printer.
4. Right-click your printer and select Printer Properties.
5. Click the Sharing tab, as shown here.



6. Click Change Sharing Options.
7. Check Share This Printer.
8. Use your name for the Share Name.
9. Click OK to close the printer Properties dialog box.
10. Using what you have learned, browse to your partner's computer and locate the shared printer.
11. Right-click the printer and select Connect. This will download and install any necessary drivers to allow you to print to the shared printer.
12. You may be asked if you trust this printer. Click Install Driver.
13. Open your Devices And Printers console.
14. Is your partner's printer installed? ____ Yes ____ No
15. Open the text file that you created in your partner's share.
16. Add the following text to the document: **Hello Partner!**
17. Print this text file to your partner's printer by choosing File and then Print.
18. Select the printer that you installed from your partner's computer.
19. Did the document successfully print? ____ Yes ____ No

Command-line drive mapping (time permitting):

1. You can map network drives to shares using the command line.
2. Open a command prompt by clicking Start, typing **command** in the Search Programs And Files box, and pressing ENTER.
3. At the command prompt, type the following:
 - a. `net use /?`
4. This will display the syntax for using the `net use` command, as shown here.



```

C:\>net use /?
The syntax of this command is:

NET USE
[deviceName : *] [\\computerName\shareName [volume] [password : *]]
[ /USER:dotted domain name\username ]
[ /USER:username@dotted domain name ]
[ /SMARTCARD ]
[ /SAVECRED ]
[ [/DELETE] | [/PERSISTENT:(YES | NO)] ]

NET USE <deviceName : *> [password : *] /HOME
NET USE [/PERSISTENT:(YES | NO)]

C:\>

```

5. At the command prompt, type **net use** and press ENTER.
6. What is displayed?_____

7. Now type the following:

net use y: \\partnerscomputername\documents and press ENTER.

Hint: net{space}use{space}y:{space}\\partnerscomputername\documents

Be sure to put spaces between commands and arguments.

8. Open Windows Explorer. Do you have a Y: drive now mapped to your partner's document share? ____ Yes ____ No

9. Type the following:

net use *\partnerscomputername\documents and press ENTER.

10. Return to Windows Explorer. What just happened?

11. At the command prompt, type **net use** and press ENTER.

12. You should now have drives mapped to X:, Y:, and Z:

1. When do NTFS permissions apply?

2. What is a homegroup?

3. What does the Reconnect At Logon setting accomplish when mapping a network drive?

STUDENT ACTIVITY 4.3

UNDERSTAND ENCRYPTION

1. What feature of Windows 7 allows you to secure your files on portable devices such as laptops?
2. Within Windows, can you encrypt and compress a file?
3. How are Encrypting File System (EFS) keys protected?

Encrypting a folder and file

1. Authenticate into your system using the first user account provided by your instructor.
2. Open Windows Explorer. Double-click your secondary logical drive (if available; otherwise, double-click your system drive).
3. Click the New Folder button on the menu bar and name the folder **Secret**.
4. Right-click the Secret folder and select Properties.
5. Click the General tab and then click Advanced.
6. In the Advance Attributes window, select the Encrypt Contents To Secure Data checkbox.
7. Click OK to close the Advance Attributes window and then click OK to close the folder Properties dialog box.
8. What color is the Secret folder?
 - a. _____
9. Open the Secret folder.
10. Create a new text document and name it Private.
11. What is the color of the Private file?
 - a. _____
12. Open the Private file and type **Confidential**. Save and close the file.
13. Click the back arrow to get back to the root of the drive.
14. Create a new text document and name it **Public**.
15. Open the Public file and type **Hello World**. Save and close the file.
16. Copy the Public file to the Secret folder.
17. Open the Secret folder.

18. What color is the Public file?

a. _____

19. What does that mean?

a. _____

20. Close Windows Explorer.

21. Log out and log on again with the second user account provided by your instructor.

22. Open Windows Explorer and navigate to the Secret folder.

23. Open the Private file. Did the file open? ____Yes ____No

24. Open the Public file. Did the file open? ____Yes ____No

25. Return to the root of the drive. Open the Public file that you first created.

26. Did the file open? ____Yes ____No

27. Log out and log back on with the first user account.

28. Navigate to the Secret folder. Use what you have learned to encrypt this folder. Repeat those same steps and remove the encryption.

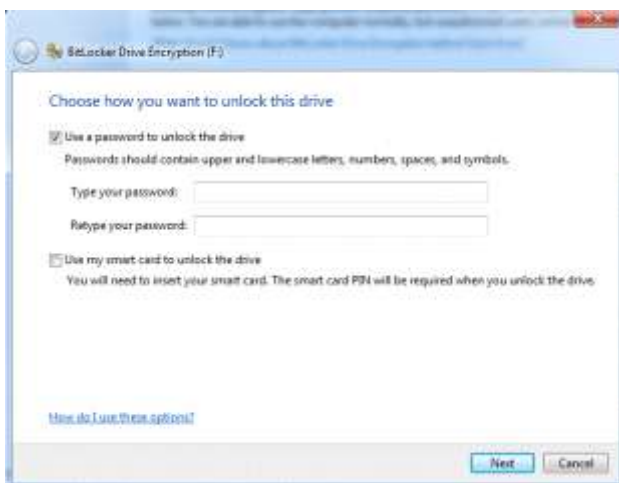
29. Do you have the option to decrypt the contents of the folder? ____Yes ____No

30. What is the color of the Secret folder?

a. _____

Enabling BitLocker To Go

1. Be sure that you are logged on as a user that is a member of the Administrators group.
2. Click Start, Control Panel, System and Security, and then BitLocker Drive Encryption.
3. Choose your secondary volume to secure and click Turn On BitLocker. This will start the BitLocker setup, as shown here.



4. Select Use A Password To Unlock The Drive: Specify the password as: **Pa\$\$w0rd**
5. Choose to save the recovery key and save the recovery key to your desktop and then click Next.

6. Click Start Encrypting. The time it will take to encrypt will vary based on the size of your volume.
7. Using Windows Explorer, navigate to that volume once the encryption process is finished.
8. Create a new text document named **MySecureText**. Were you able to do this? ____Yes ____No
9. Using what you have learned, return to the BitLocker Drive Encryption console in Control Panel.
10. Locate the volume that you have just secured. Click Manage BitLocker.
11. List the options that are available to manage.
 - a. _____
 - b. _____
 - c. _____
 - d. _____
 - e. _____
12. Click Close to exit the Options page.
13. When your drive has finished encrypting, log off your system.
14. Log back onto your system and open the encrypted drive.
15. Did it open successfully? ____Yes ____No
16. Right-click the encrypted drive, select Unlock Drive, and provide the password that you used to lock the drive.
17. Open the BitLocker Drive Encryption console and click Turn Off Bitlocker. Acknowledge the warning by clicking Decrypt Drive.
18. Have your instructor verify your answers.

1. What file type or extension is a zipped folder?
2. What is public key encryption?
3. What type of encryption does EFS use?

STUDENT ACTIVITY 4.4

UNDERSTAND LIBRARIES

1. What locations are supported when using libraries?
2. What is a benefit of using offline files?
3. Can you share libraries with your homegroup?

Configuring and adding libraries

1. Authenticate into your system using the first user account provided by your instructor.
2. Open Windows Explorer. Expand the Libraries icon on the left side.
3. What are the four library folders located here?
 - a. _____
 - b. _____
 - c. _____
 - d. _____
4. Right-click the Documents library and select Properties.
5. What are the default locations for this library?
 - a. _____
 - b. _____
6. What is this library optimized for? Optimizing a library for a certain file type changes the options that are available for arranging the files in that library.

7. What are the other options for optimization?
 - a. _____
 - b. _____
 - c. _____
 - d. _____
 - e. _____
8. Click Include A Folder and add the Documents folder that you created on your secondary volume. (If this folder is not available, create a new Documents folder on the secondary volume.)

9. After the location has been added to this library, click the new location and then click Set Save Location. A check should appear next to the new location that was just added. This will now be the default save location for document files.
10. Open WordPad by typing **WordPad** in the Search Programs And Files box and pressing ENTER.
11. Type **Hello World** in the WordPad document.
12. Click Save and then click Save again to accept default save location.
13. Close WordPad.
14. Return to your Documents library.
15. Is the file named Document located in the Documents library? ____Yes ____No
16. Browse to your secondary volume and open the Documents folder.
17. Is the file named Document located here? ____Yes ____No
18. Return to Libraries in Windows Explorer.
19. Right-click the Libraries icon and select New, Library.
20. Name the library **Custom**.
21. Open the Properties dialog box for the Custom library.
22. Click Include A Folder.
23. Add the Documents folder to your secondary volume.
24. Optimize for General Items.

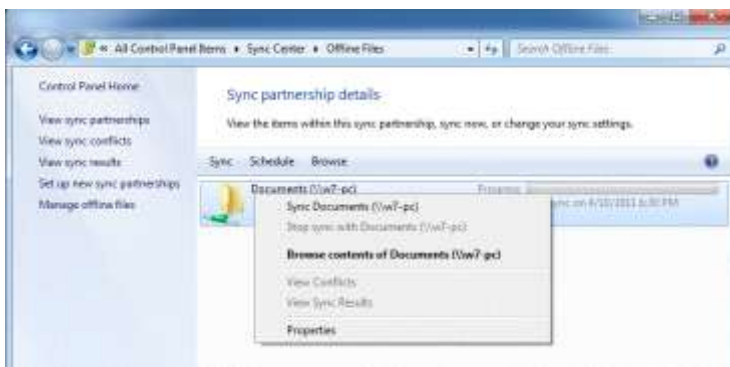
Configuring offline folders (begin working with a partner)

1. Exchange computer names with your partner. If your systems still have the Documents share from Student Activity 4.2, you may skip to step 8.
2. Open Windows Explorer. Double-click your secondary volume partition (if not available, double-click your system drive).
3. Click the New Folder button on the menu bar and name the folder **Documents**.
4. With the Documents folder selected, click the Share With button on the menu bar and select Specific People.
5. Type the user name that you logged on with and click Add.
6. Set the permission level by selecting Administrator, clicking the drop-down arrow, and selecting Read/Write. Click Share.
7. Click Done on the next screen, which confirms a successfully shared folder.
8. With Windows Explorer open, expand the network option and locate your partner's computer.
9. Double-click that computer. (You may be asked to provide credentials if you are logging on with a different user account name. If so, provide your partner's credentials.)
10. Locate the Documents share that your partner created.

11. Right-click the Documents share and select Always Available Offline.
12. Open the Sync Center by typing **Sync Center** in the Search Programs And Files field and pressing ENTER.
13. The Sync Center should open, listing one folder listed under Folders, as shown here.



14. Double-click Offline Files. Right-click the Documents folder and select Sync Documents. You can also click the Sync button shown in the previous screenshot, as well as the Browse button as shown here).



15. After the folder synchronizes, your partner should shut down his or her computer.
16. Once the computer is completely off, return to the Sync Center and browse the contents of the Documents folder.
17. Are the folder contents available? ____Yes ____No
18. Create a new text document in this folder and save it with your name.
19. Have your partner start his or her computer and log back on. Is the file in the Documents share? ____Yes ____No
20. Repeat this exercise, allowing your partner to configure offline files.

1. What console can be used to manage your offline files?
2. How must a network folder be configured to be added to a library?
3. What does the Set Save Location option in library Properties dialog box do?

STUDENT ACTIVITY 5.1

CONNECT DEVICES AND UNDERSTAND STORAGE

1. What can be used to view and update the device drivers installed on your computer and check to see if hardware is working properly?

2. What technology detects newly attached devices and attempts to load the proper drivers?

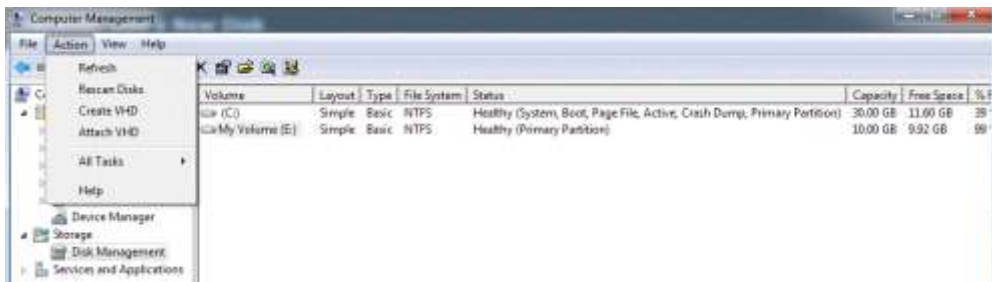
3. What disk type in Windows supports RAID-1?

Directions to the student:

Complete the following hands-on activities. Note that the screenshots in the activity may look different from your system. Answer the questions as you work through the activities. You will be asked to work with a partner during this activity. Verify your answers with the instructor.

Creating, attaching, and extending a virtual hard disk

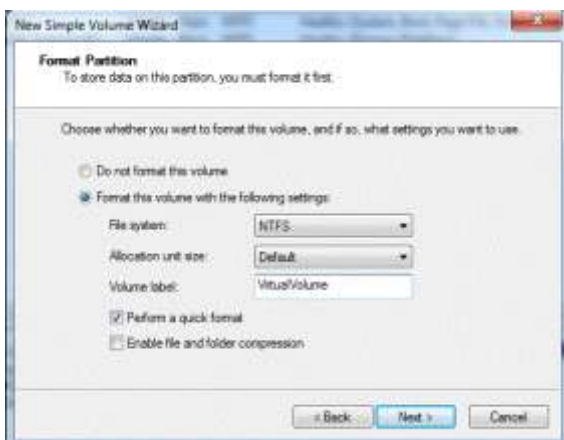
1. Authenticate into your system using the account credentials provided by your instructor.
2. Open the Computer Management console by clicking Start, typing **Computer Management** in the Search Programs And Files box, and pressing ENTER.
3. Expand the Storage option in the left pane.
4. Click Disk Management.
5. Click the Action menu item and select Create VHD, as shown here.



6. Browse to the secondary volume, name the virtual hard disk (VHD)**MyVirtualDrive**, set the Virtual Hard Disk size to 2000 MB, as shown here, and click OK.



7. After the virtual hard disk is created, it will be displayed as Unknown. Right-click the disk and select Initialize Disk. This is necessary for the Logical Disk Manager to access it.
8. Confirm that you have the correct disk selected in the Initialize Disk screen. Click OK.
9. Right-click in the Unallocated space and select New Simple Volume.
10. Click Next on the Welcome page of the New Simple Volume Wizard.
11. Enter **1000 MB** for the simple volume size and click Next.
12. Accept the default drive letter and click Next.
13. Perform a quick format of the partition using the NTFS for the file system type. Type **VirtualVolume** in the volume label box, as shown here. Click Next.

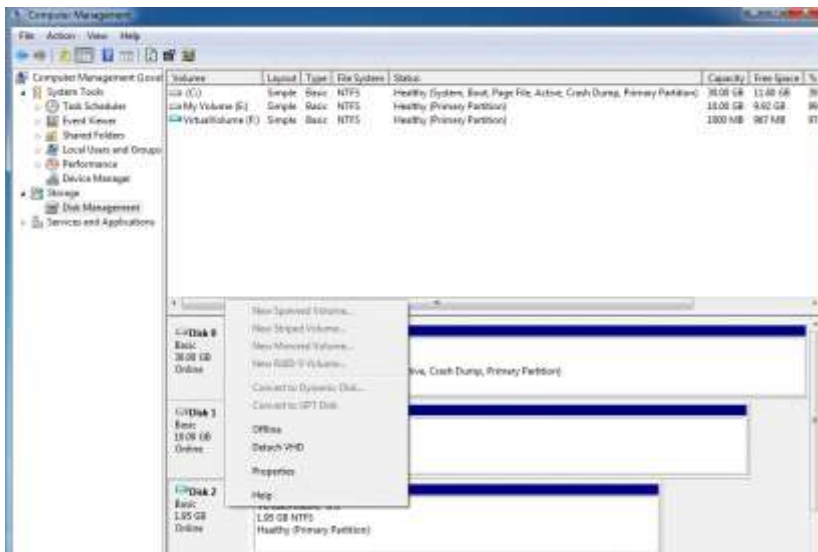


14. Confirm the settings and click Finish.
15. Once VirtualVolume is created, an AutoPlay dialog box is displayed, prompting the user to open the folder to view the files. Close the dialog box.
16. Right-click the new volume and select Shrink Volume.
17. What is the size of available shrink space in MB?
 - a. _____
18. Click Cancel.
19. Right-click the new volume and select Extend Volume.
20. Click Next on the Welcome screen of the Extend Volume Wizard.
21. What is the maximum available space in MB?
 - a. _____

22. Accept the default setting and click Next.
23. Confirm the settings and click Finish.
24. Close Computer Management.
25. Open Windows Explorer by clicking the Explorer icon on the taskbar.
26. Navigate to the secondary volume and locate the file named MyVirtualDrive.
27. What is the size of this file?
a. _____
28. What does this file represent?
a. _____

Detach and remove a virtual hard disk

1. Open Computer Management again and navigate to Disk Management.
2. Right-click your VHD and select Detach VHD, as shown here.



3. Click OK in the Detach Virtual Hard Disk window, as shown here. This will allow you to copy MyVirtualDrive.vhd and attach it to another system. Note: you have the option to delete this file from the disk, and any data on the virtual hard disk will be deleted as well.



4. Verify that the VHD file is still located on the secondary volume.
5. Delete the VHD from the secondary volume.
6. Have the instructor verify your answers.

1. List three printer connection methods.
2. What features does a dynamic disk support?
3. List three benefits of cloud storage.

STUDENT ACTIVITY 5.2

UNDERSTAND PRINTING DEVICES

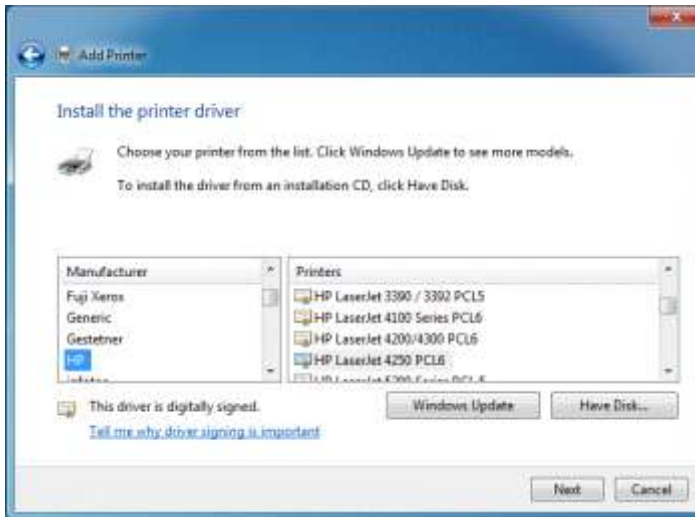
1. What service loads files into memory for later printing?
2. What is a print queue?
3. What is Internet printing?

Connecting and installing a local printer:

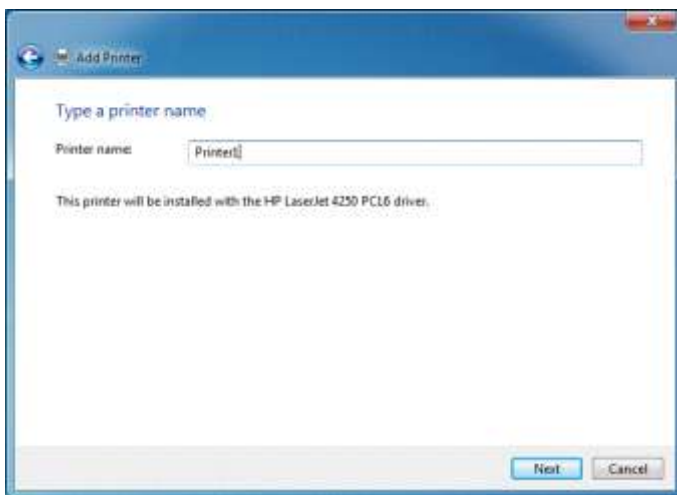
1. Obtain the printer cable and attach it to the appropriate port on the computer.
2. Turn on the printer.
3. Authenticate into your system using the first user account provided by your instructor.
4. Click Start, and then click Devices And Printers.
5. Click Add A Printer.
6. Windows will start the wizard on the Add Printer page, select Add A Local Printer and click Next.
7. On the Choose A Printer Port page, select Use An Existing Port, choose the appropriate port, as shown here, and then click Next.



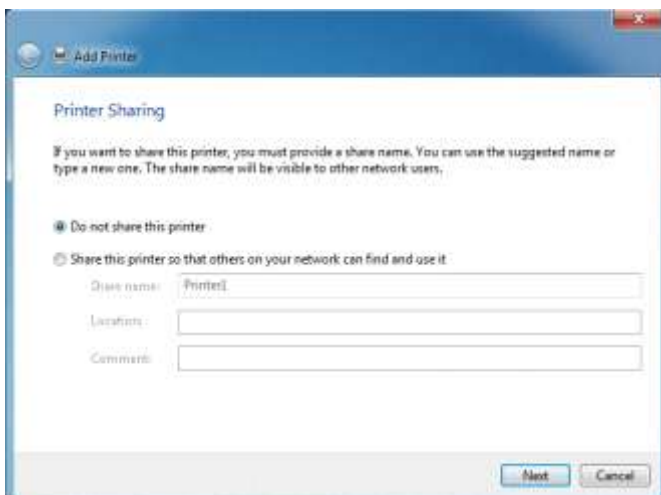
8. On the Install The Printer Driver Page, select the appropriate driver or choose Have Disk, as shown here, and then click Next.
 - a. Browse to the printer driver location provided by the instructor.



9. Enter **Printer1** for the printer name and click Next.



10. Select Do Not Share This Printer, as shown here, and click Next.

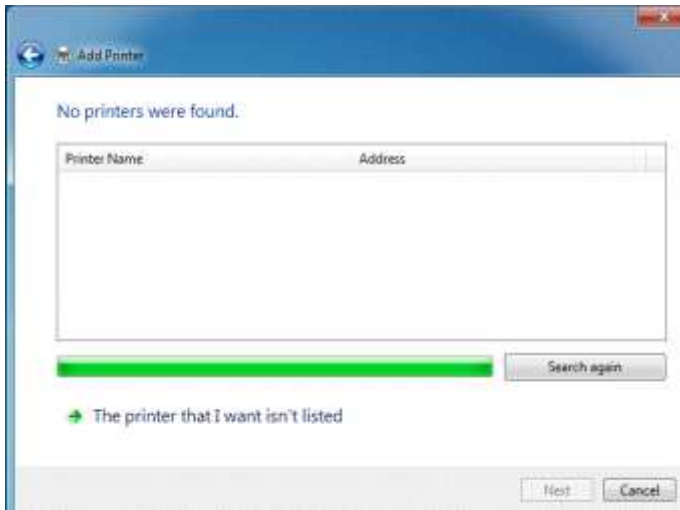


11. Click Print A Test Page.

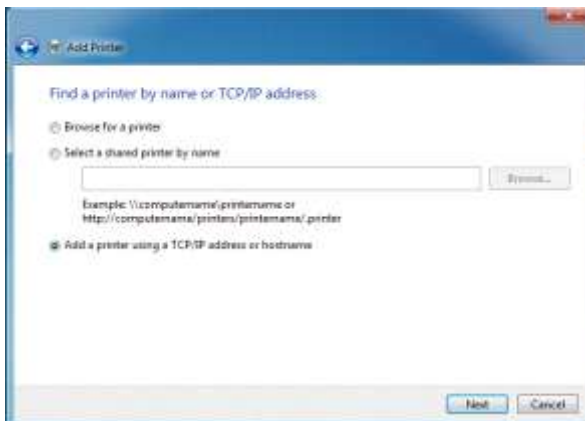
12. Click Finish to complete the installation.

Connecting and installing a network printer:

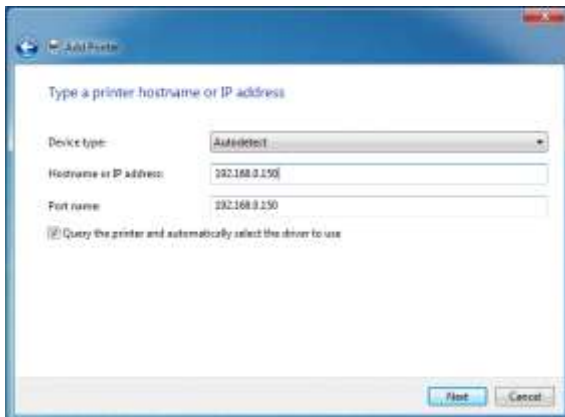
1. Click Start and then click Devices And Printers.
2. Click Add A Printer.
3. Windows will start the wizard on the Add Printer page, select Add A Network, Wireless, or Bluetooth Printer and click Next.
4. The system will begin to search for printers on the network. At this point, you will enter the network information manually. Click Stop and then click The printer that I want isn't listed, as shown here.



5. Click Add A Printer Using A TCP/IP Address Or Hostname, as shown here, and click Next.



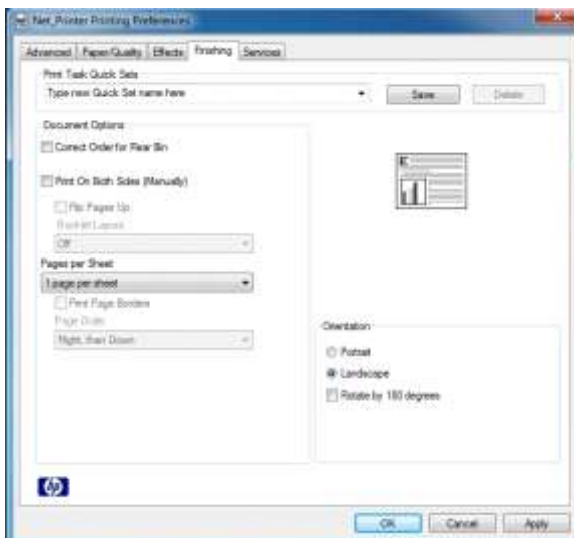
- a. Enter the IP address of the network-attached printer in the Hostname Or IP address box, as shown here, and click Next. Note: the instructor will provide the IP address of the network-attached printer.



6. Install the appropriate driver using what you have already learned in this activity and click Next.
7. Type **Net_Printer** as the printer name and click Next.
8. Select Do Not Share This Printer and click Next.
9. Click Print A Test Page and click Finish.

Managing printer preferences and settings:

1. Return to Devices And Printers.
2. Right-click the network printer you just created, labeled Net_Printer, and select Printing Preferences.
3. Click the Finishing tab, change the orientation to Landscape, as shown here, and click OK.



4. Right-click Net_Printer, select Printer Properties, click Print Test Page, and click OK.
5. Did the test page print with landscape orientation?
 - a. Yes

- b.** No
 - 6.** Right-click Net_Printer and select Set As Default Printer, if it is not already selected.
 - 7.** Open WordPad by clicking Start, typing **WordPad** in the Search Programs And Files field, and pressing Enter.
 - 8.** Type **Hello World** and print this document. Did the document print in landscape orientation?
 - a.** Yes
 - b.** No
-
- 1. What protocol does Internet printing use to send print jobs over the Internet?
 - 2. What is managed by the Print Spooler service?
 - 3. What is required by a print queue to send jobs to a physical print device?

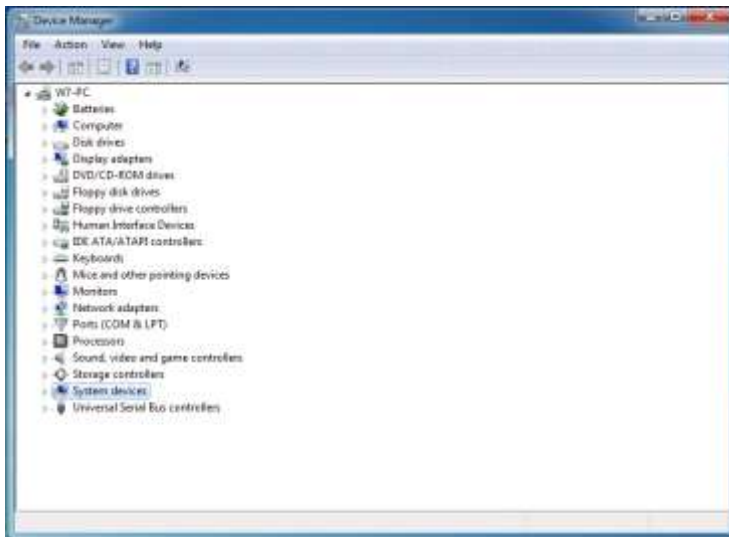
STUDENT ACTIVITY 5.3

UNDERSTAND SYSTEM DEVICES

1. What can be used to install, manage, and troubleshoot system devices?
2. What does the “Compatible with Windows 7” logo mean?
3. What can be used to shut down some devices to save power?

Managing devices using Device Manager:

1. Authenticate into your system using the first user account provided by your instructor.
2. Open Device Manager by clicking Start, typing **Device Manager** into the Search Programs And Files field and press Enter.
3. Device Manager should load, as shown here.



4. Expand Network Adapters.

5. List the adapter(s) installed.

- a. _____
- b. _____
- c. _____

6. Right-click a network adapter and select Properties.
7. What is the manufacturer listed on the General tab?
 - a. _____
8. Click the Advanced tab and record the values for the following properties.
 - a. Flow Control _____
 - b. Speed And Duplex _____
9. Click the Driver tab.
10. Record the following information.
 - a. Driver Provider: _____
 - b. Driver Date: _____
 - c. Driver Version: _____
 - d. Digital Signer: _____
11. Click OK to close the Properties dialog box of the network adapter device.
12. Right-click the same adapter, select Uninstall, and click yes to acknowledge the warning.
13. Try to browse to the Internet. Are you able to?
 - a. Yes
 - b. No
14. Did the appearance of the network icon in the system tray change? If so, in what way?
 - a. _____
15. Return to Device Manager and click the Action menu at the top of the window and select Scan For Hardware Changes.
16. Did the system find the network adapter?
 - a. Yes
 - b. No
17. Can you browse to the Internet now?
 - a. Yes
 - b. No

Device compatibility:

1. Browse to the Windows 7 Compatibility Center, located at <http://www.microsoft.com/windows/compatibility/windows-7/en-us/default.aspx> (You may also search for “Windows Compatibility Center” at <http://www.bing.com>.)
2. Find three non-Microsoft but compatible devices in the following categories.

Laser Jet Printers	Graphics Cards	Infrared Mice	Biometrics Input Devices

3. Find three non-Microsoft devices that are not compatible in the following categories. Hint: sort by compatibility on the left side of the web page.

Laser Jet Printers	Graphics Cards	Infrared Mice	Biometrics Input Devices

4. Have the instructor verify that you have completed this exercise successfully by checking your answers.

1. What website will help determine if a hardware device is compatible with Windows 7?
2. List three things you can do within Device Manager.
3. What strategy can be employed if a device driver has been updated and the device no longer works?

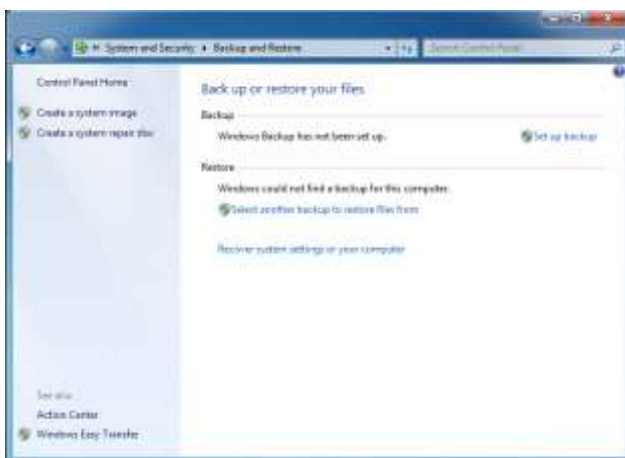
STUDENT ACTIVITY 6.1

UNDERSTAND BACKUP AND RECOVERY METHODS

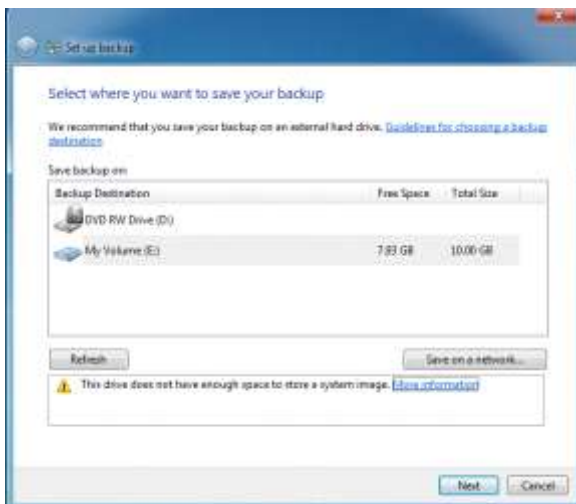
1. What is included in a system image backup?
2. What advanced option allows you to start Microsoft Windows with the last registry and driver configuration that worked successfully?
3. How are previous versions used?

Set up Windows backup and recover a folder and file:

1. Authenticate into your system using the account credentials provided by your instructor.
2. Open Windows Explorer and navigate to your C: drive.
3. Create a folder named Documents at the root of your C: drive.
4. Open the newly created folder and create a text file named Company Information.
5. Open Backup and Restore by clicking Start, Control Panel, System and Security, and then Back Up Your Computer.
6. Windows Backup will need to be set up if this is the first time it has been used. Click Set Up Backup, as shown here.



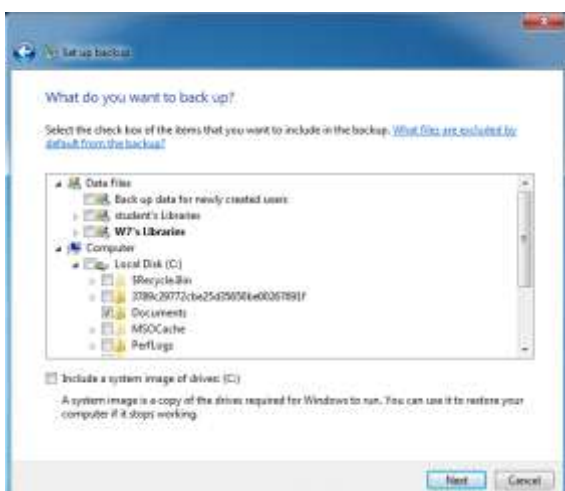
7. On the Select Where You Want To Save Your Backup page, click the secondary volume, as shown here. You will be warned that this drive does not have enough space to store a system image. Click Next.



8. On the What Do You Want To Backup? page, click Let Me Choose, as shown here. This will allow you to select individual files and folders. Read the descriptions for each option carefully. Click Next.



9. On the next screen, clear all the checkboxes under Data Files and select the Documents folder checkbox that you created earlier. Also clear the checkbox to Include A System Image Of Drives: (C:), as shown here. Click Next.



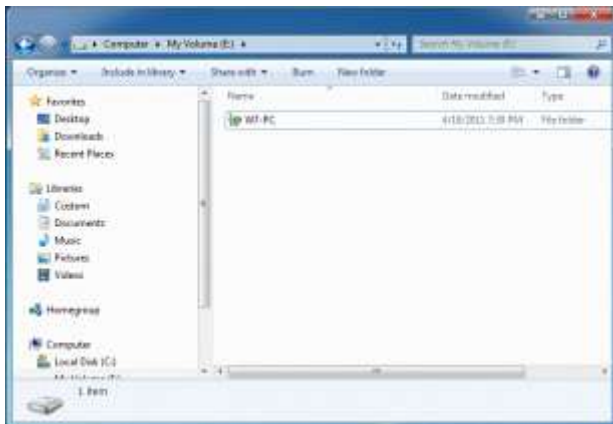
10. What time is the backup scheduled to run?

11. Click Change Schedule and set the backup to run every Friday at 5:00 PM.

12. Click Save Settings and start the backup procedure.

13. Once the backup has completed, open Windows Explorer and browse to your secondary volume where the backup was stored.

14. You should see a file folder with the name of your PC at the root of your secondary volume, as shown here.



15. Double-click this file.

16. What three options are available?

- a. _____
- b. _____
- c. _____

17. Click Close.

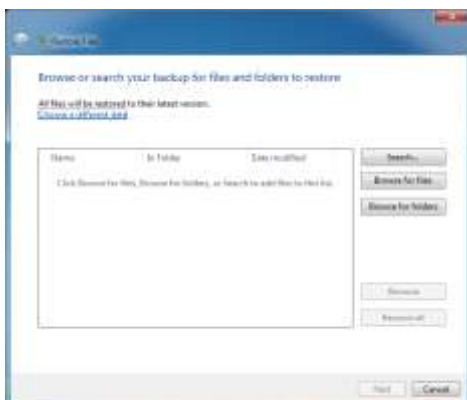
18. Navigate to your C: drive.

19. Locate and delete the Documents folder.

20. Return to Windows Backup and Restore.

21. Click Restore My Files.

22. Click Browse For Folders on the Restore files screen, as shown here.



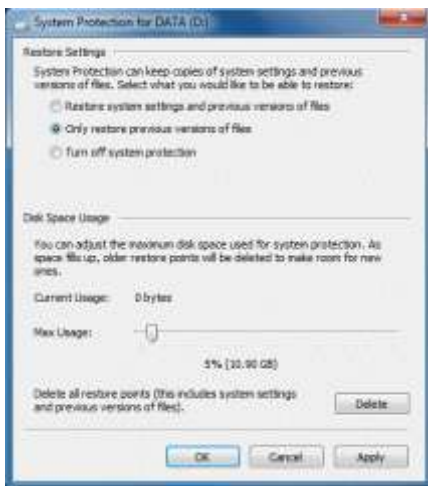
23. Choose the Backup of C: folder and click Add Folder.
24. Click Next.
25. Restore the files to their original location and click Restore and then click Finish.
26. Return to Windows Explorer and verify that your Documents folder has been restored.

Enabling Previous Versions for a volume:

1. Open your system settings by clicking Start, Control Panel, System and Security, and then System.
2. Click System Protection in the left pane, as shown here.



3. Highlight your secondary volume in the Protection Settings and click Configure.
4. Select Only Restore Previous Versions Of Files and set the Disk Space Usage, Max Usage to 5% of the drive, as shown here, and click OK.



5. Navigate to your secondary volume and create a folder named PreviousFolder.
6. Open PreviousFolder and create a text file named PreviousFile.
7. Open PreviousFile, type **My first change**, and save and close the file.
8. Right-click the file and select Properties, and then click the Previous Versions tab.
9. Are there any files listed?
 - a. Yes
 - b. No

10. Return to the System Protection screen.



11. Under Protection Settings, click Create to create a restore point. Restore points are created by default once a day, which creates the previous versions of files in a protected volume.

12. After the restore point is created, open the file and type **Hello Again. Save and close the file.**

13. Right-click the files and select Properties. Click the Previous Versions tab.

14. Is there a previous version listed?

- a. Yes**
- b. No**

1. What advanced boot mode loads basic files and drivers necessary to run Windows?

2. What does a system restore accomplish?

3. What is backed up by default with Backup and Restore?

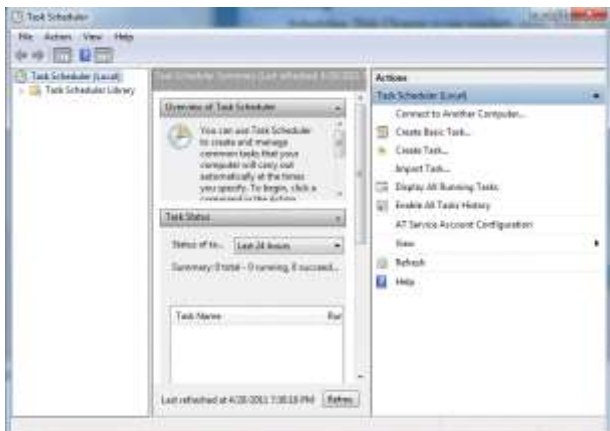
STUDENT ACTIVITY 6.2-6.3

CONNECT DEVICES AND UNDERSTAND STORAGE

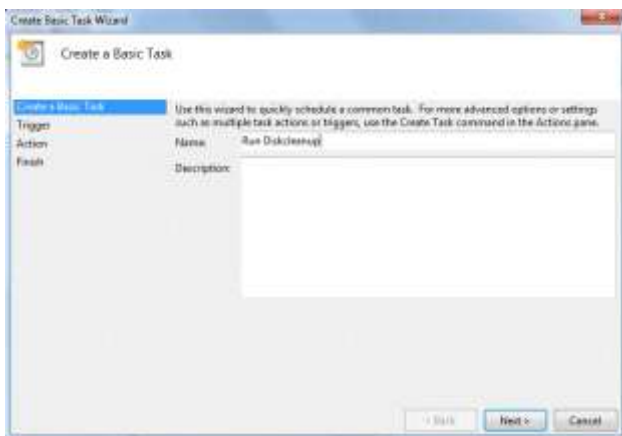
1. What is fragmentation?
2. Which Windows tool can configure applications to run automatically?
3. What is Disk Defragmenter used for?

Schedule Disk Cleanup to run automatically

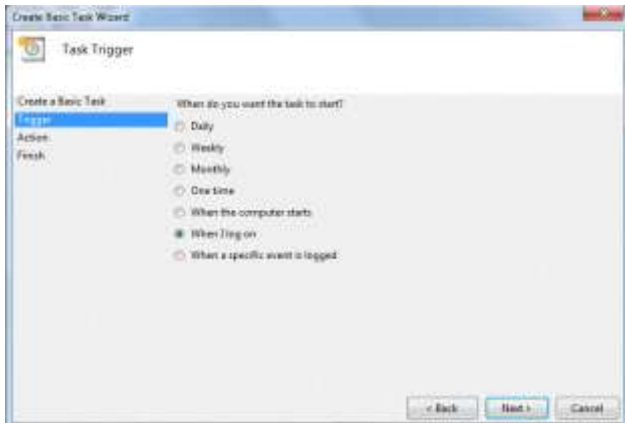
1. Authenticate into your system using the user account provided by the instructor.
2. Open the Task Scheduler by clicking Start, typing **Task Scheduler** in the Search Programs And Files field and pressing ENTER. Task Scheduler will open, as shown here.



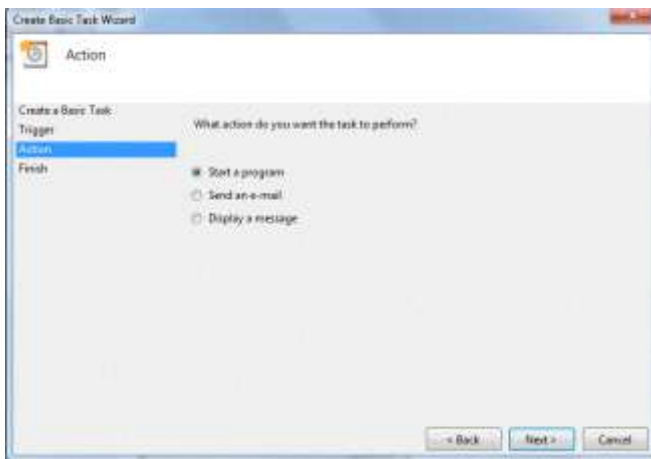
3. Click Action and then click Create Basic Task. Type the name **Run Disk Cleanup**, as shown here, and click Next.



4. Set this task to run when you log in, as shown here. Click Next. Realistically, Disk Cleanup should run monthly; however, for the purposes of this activity, set it to run when you log in.



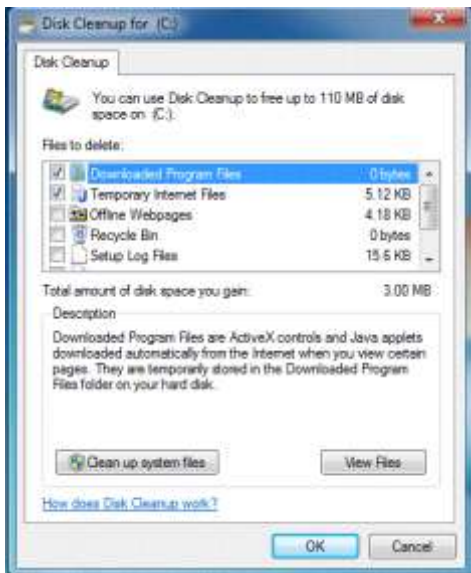
5. Click Start A Program, as shown here, and click Next.



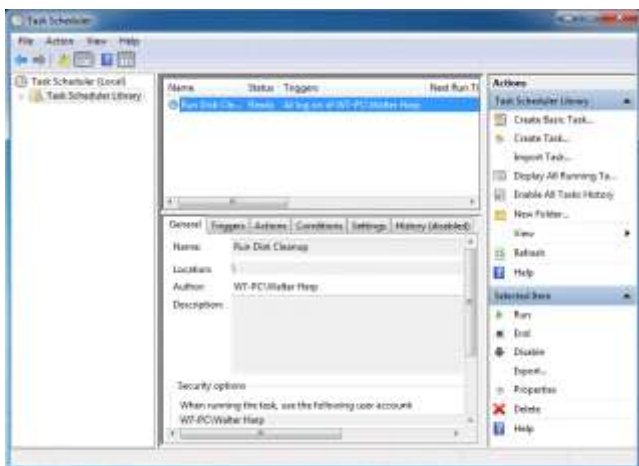
6. Click Browse and navigate to the C:\Windows\System32 folder. Type **cleanmgr.exe** in the file name field and click Next, as shown here.



7. Click Finish. Log off the system and then log back in.
8. Disk Cleanup will start when you log in. You will be prompted for a drive to clean. Choose the C:\ drive and click OK.
9. Leave the default file choices as shown here and click OK.



10. Return to Task Scheduler. In the left pane, click Task Scheduler Library. Select the task that you just created and click Delete, as shown here. Close Task Scheduler.



Using Windows Update

1. To open Windows Update, click Start, type **Windows Update** in the Search Programs And Files field, and press ENTER. Windows Update should open, as shown here.



2. Click Change Settings in the left pane.
3. How are Windows updates being installed?

4. When are new updates installed?

5. What are Microsoft Updates?

6. Click OK on the Change Settings page to return to Windows Update.

7. Click Installed Updates in the left pane.

8. Record the categories of updates listed under the Name column. There may be more than five.

a. _____

b. _____

c. _____

d. _____

e. _____

1. What is a service pack?

2. What does Action Center do?

3. What does Disk Cleanup do?