Backup and Restore

Introduction and/or Background

Tx-Rig would like to implement daily backup on all production servers on the network.

Objectives

In this project/lab the student will:

- Use Windows Server Backup
- Restore from a Backup
- Mount a backup virtual hard disk
- Backup the System State Data
- Develop a Disaster Recovery Plan

Equipment/Supplies Needed

- VMWare Workstation Pro
- Windows Server 2019 Virtual Machine

Assessment Criteria

- Take a screenshot of your Windows Server Backup Installation (PrtScr#1)
- Take a screenshot of your completed backup Installation (PrtScr#2)
- Take a screenshot of your successfully restored files (PrtScr#3)
- Take a screenshot of your completed System State Backup (PrtScr#4)
- Disaster Recovery Plan recommendations document
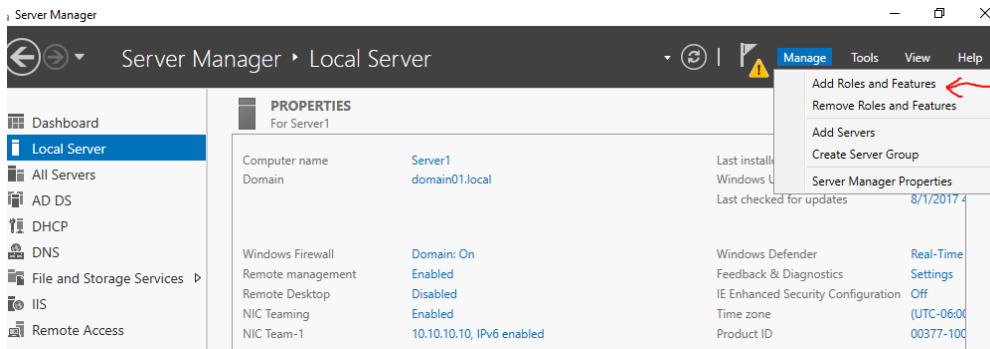- Answers to the Reflection questions in a text file

Assignment

Part 1

Purpose of Activity: In this activity, you will install the Windows Backup feature on the Windows Server operating system.

1. Create a Snapshot of your Server VM and name it **BeforeBackup**.

2. Log onto your server as ***Administrator***.

3. Open **Server Manager**. Click **Manage** then **Add Roles and Features**.

4. On the **Before you begin** screen, click **Next.**
5. On the **Select installation type** screen, accept the default and click **Next.**
6. On the **Select destination server** screen, make sure your server is highlighted and **click Next**.
7. On the **Select server roles** screen, click **Next**. The backup service is a feature, not a role.

8. On the **Select features** screen, scroll down and select **Windows Server Backup** and click **Next.** Click **Install.**
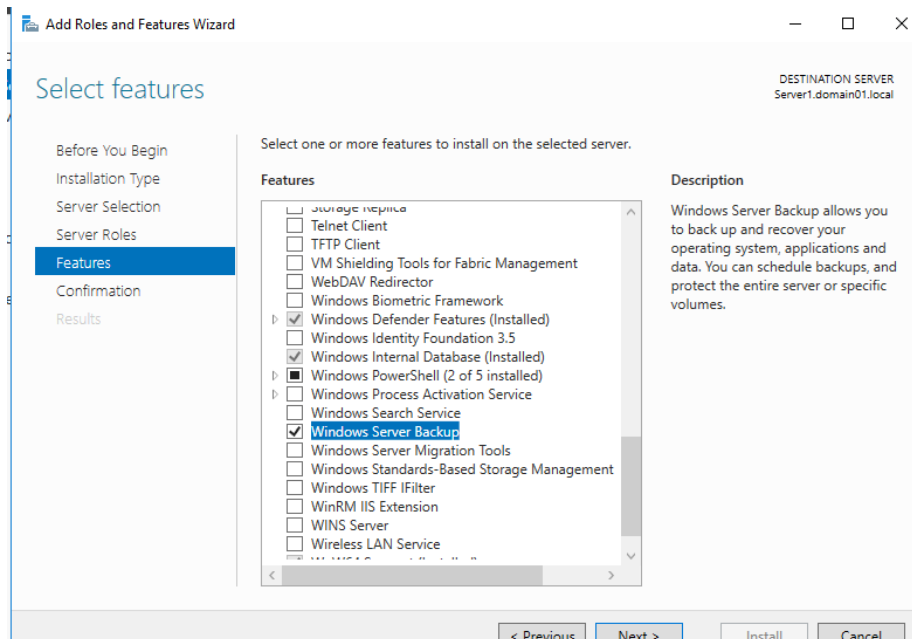
9. When the installation completes, click **Close** and open the **Window Server Backup** from the **Tools** Menu in Server Manager.
10. Take a screenshot of your Windows Server Backup screen (PrtScr#1)

Part 2

Purpose of Activity: In this activity, you will perform a backup of the Windows operating system using the Windows Server Backup feature.

1. Log onto your server as ***Administrator***.

2. Open **File Explorer** and create a folder in the C:\ drive named **TestXX**, where XX are your initials.

3. Create 3 text files in this folder named File1XX, File2XX, and File3XX. Type some text in the files.

4. Open **Windows Server Backup** from the **Tools** menu in **Server Manager** if it is not already open**.**

5. Click on **Local Backup** in the left pane. After a few moments, you will see the backup status.

6. In the **Actions** pane on the right, click **Backup Once** to start the Backup Once Wizard. In the Backup Options window. Because it's your first backup, **Different Options** is selected (and is the only available option). Click **Next**.
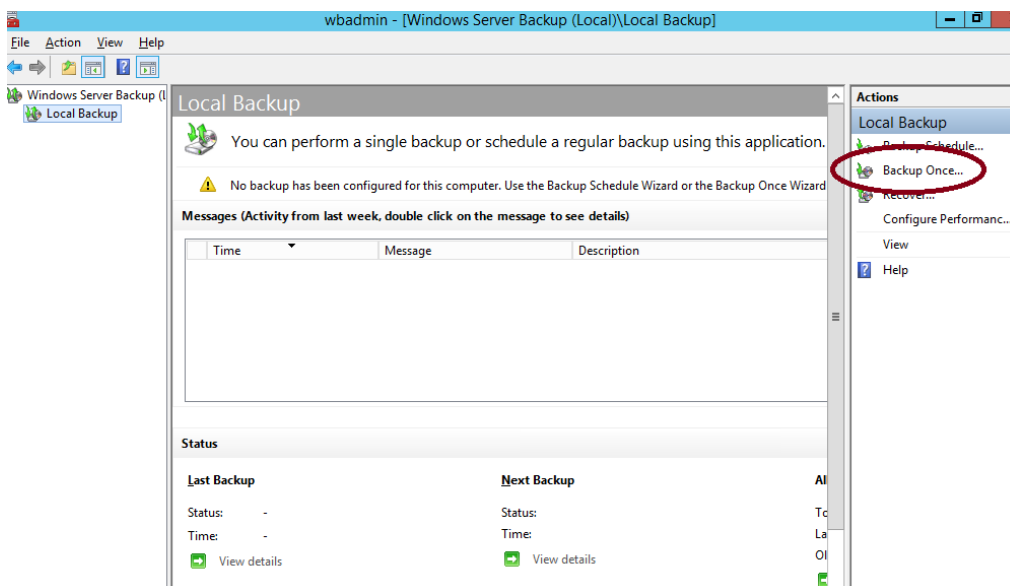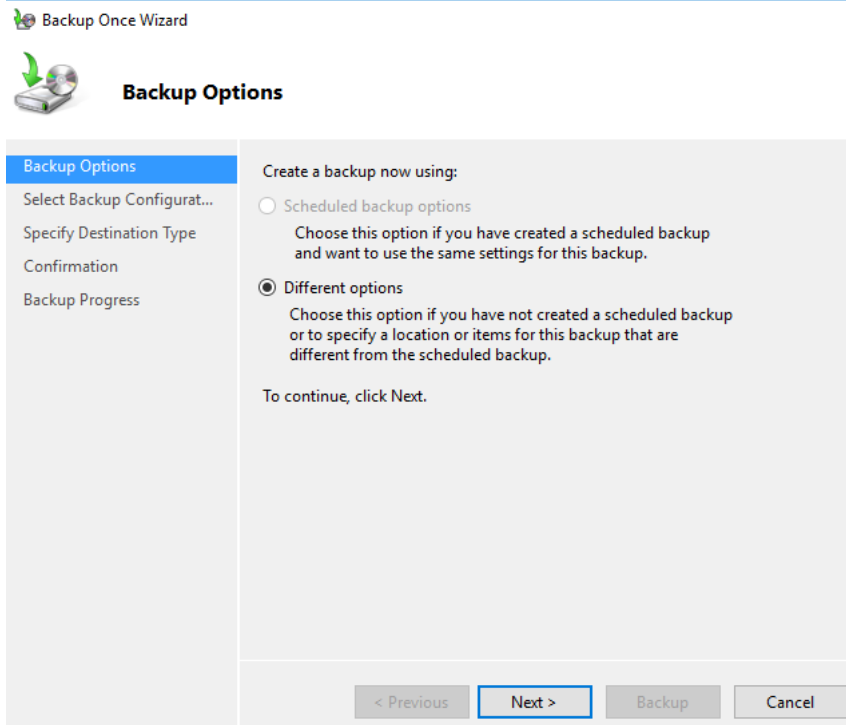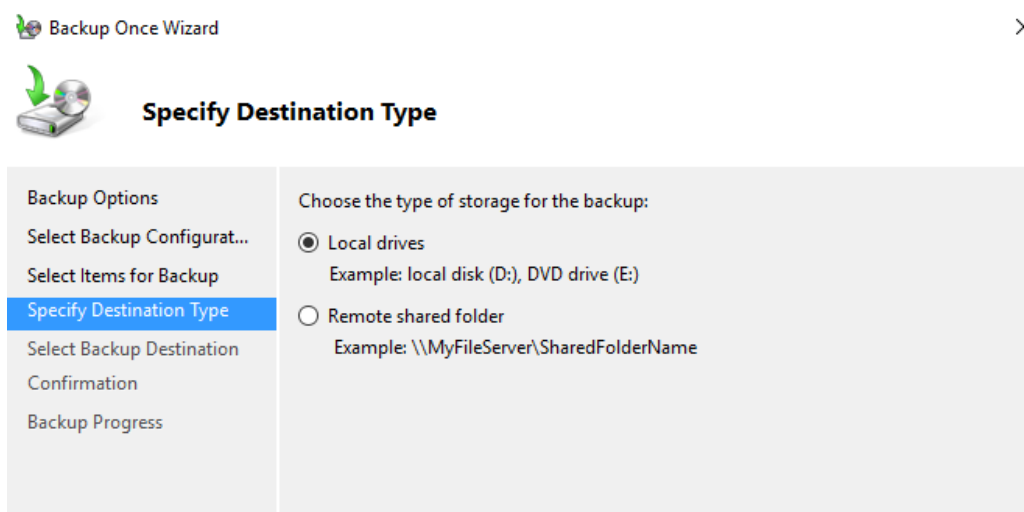
7. In the **Select backup configuration** window, the options are **Full server (recommended)**, which backs up all volumes on the server, or **Custom**, which enables you to select backup options. Click **Custom**, and then click **Next**.
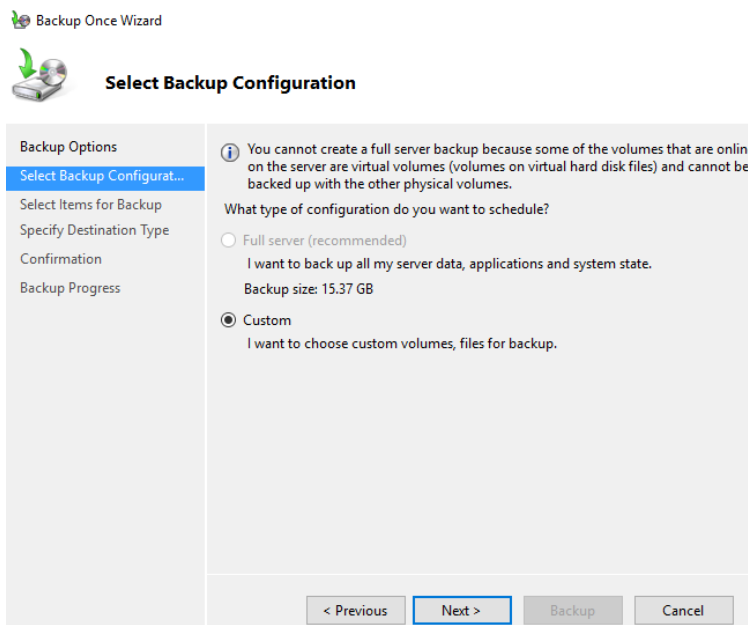
8. In the **Select Items for Backup** window, Click on **Add Items**.

9. Click the + sign by **Local disk (C:)** and place a check mark by **Program Files**.

10. Place a checkmark by your **TestXX** folder and click **OK** and then **Next**.

11. In the Specify destination type window, verify that the default **Local drives** is selected. Click **Next**.


12. In the **Select Backup Destination** window, click the **Backup destination** list arrow, click **RAID-5 (Q:)**, if necessary, and then click **Next**.

13. In the **Confirmation** window, review your selections, and then click **Backup**. The backup process will take a few minutes to complete.

14. When the backup is completed, take a screenshot (PrtScr#2).

15. Close all open windows but stay logged on for the next activity.

Part 3

Purpose of Activity: In this activity, you will mount a backup virtual hard disk using the Disk Management Console on the Windows Server operating system and recover some files.

1. Log onto your server as *Administrator*.
2. Open File Explorer, browse to the C:\TestXX folder you created, and delete all 3 text files.
3. Open **Computer Management** from the **Tools** menu in **Server Manager.**
4. Click **Disk Management** to expand.

5. Right-click **Disk Management** and select **Attach VHD.**
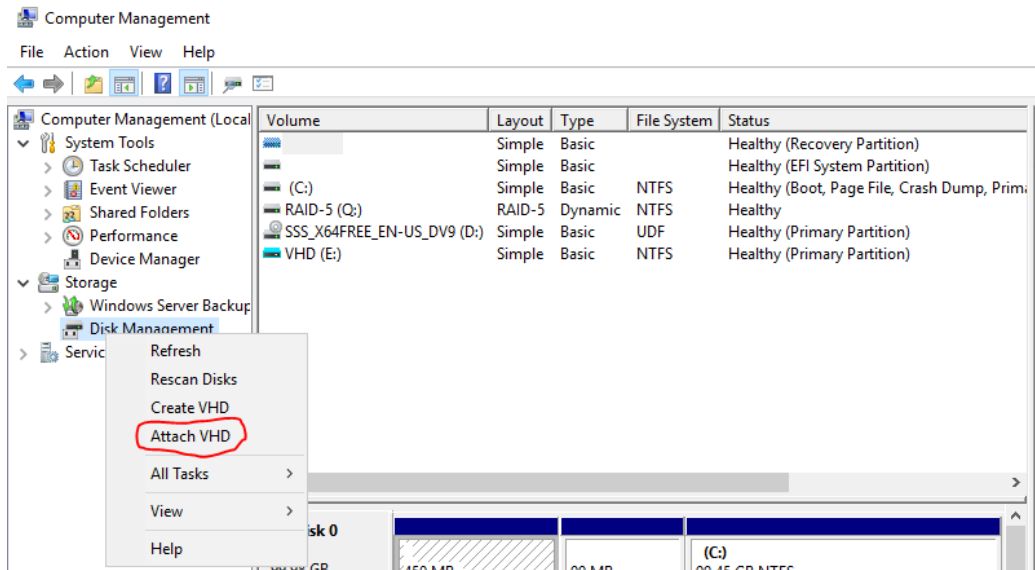

6. In the **Attach Virtual Hard Disk** window, select **Browse,** click on **RAID-5 (Q:),** double-click **WindowsImageBackup**, double-click the **Serverxx** folder, double-click the **Backup (date)** folder, select the Hard Disk Image File (**NOT** the Esp.vhdx file), and click **Open.** Then click **OK.**
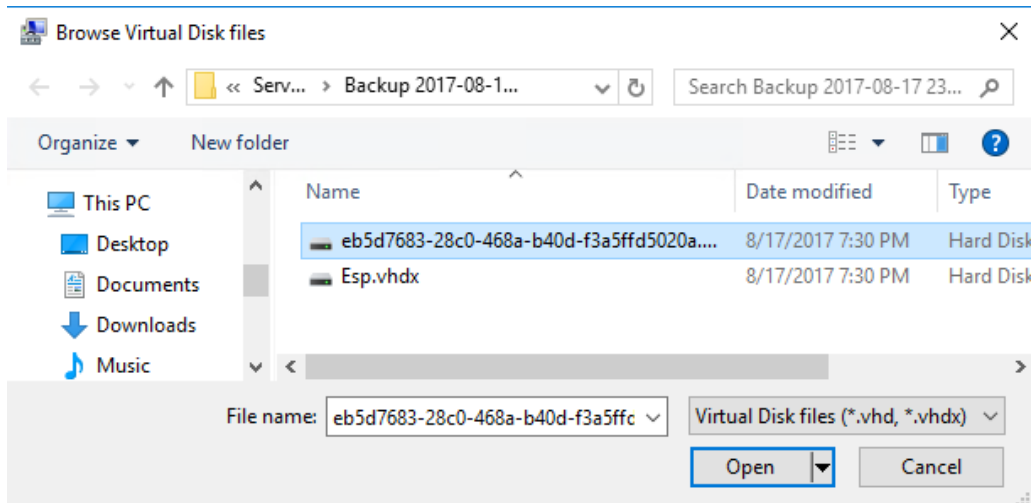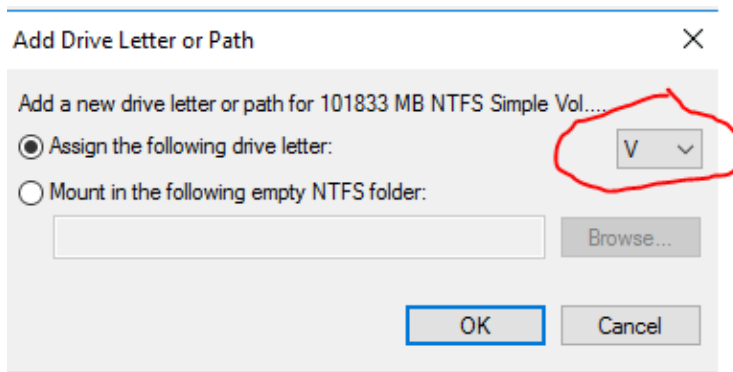

7. You may receive an error message stating the virtual disk is being used by another process. Click OK.
8. In Disk Management, scroll down to **Disk 4.** Right-click Disk 4 and select **Change Drive Letter and Paths...**

9. On the next screen, click **Add**.
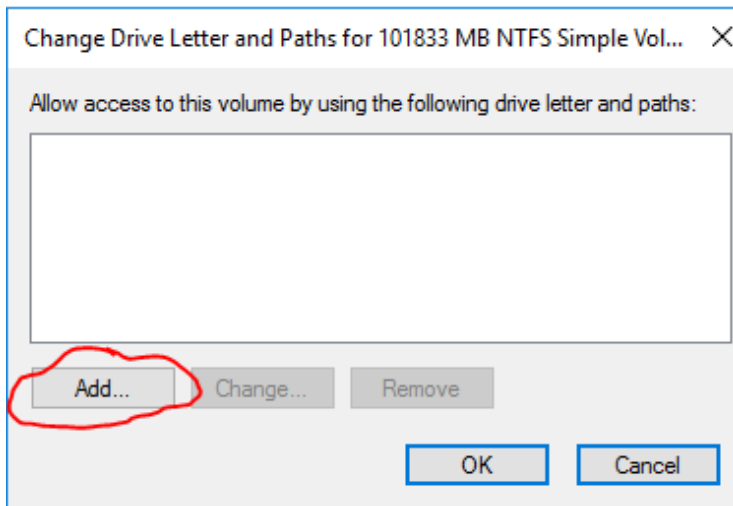
10. On the **Add Drive Letter or Path** screen assign this drive letter **V** and click **OK.**
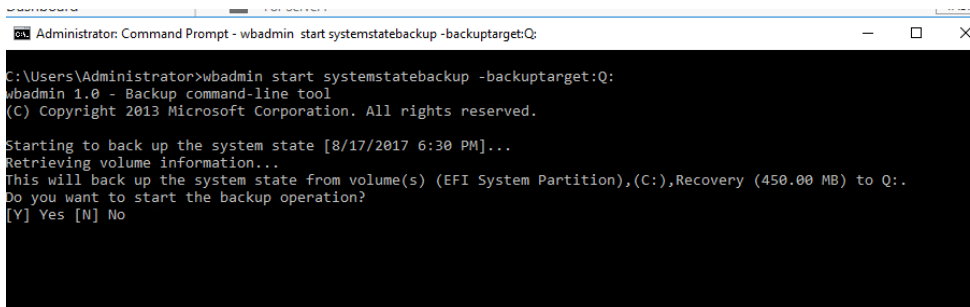

11. Right-click on drive **(V:)** and select **Explore.** You will notice the file structure you backed up. Browse to v:\TestXX. Open a second File Explorer and browse to your C:\TestXX folder. Drag and Drop the 3 files you deleted from the backup on the V drive back to your TestXX folder on the C drive. Take a screenshot showing you have successfully restored your files (PrtScr#3).

12. Right-click Disk 4, select **Detach VHD**, and click **OK**.

13. Close all open Windows.

Part 4

Purpose of Activity: In this activity, you will backup the System State Data using the command line on the Windows Server operating system.

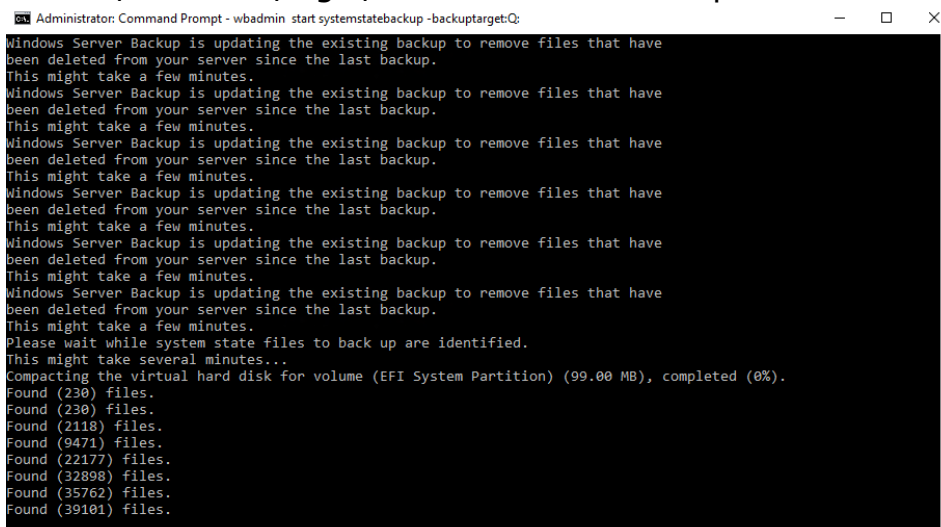1. Login to **Serverxx** as *Administrator*.

2. Right-click the Start button and select **Command Prompt (Admin)**, then type

    wbadmin start systemstatebackup -backuptarget:Q: and press **Enter**.

3. You're prompted to start the backup from Local Disk (C:) to Q:. Type **y** and press

    Enter.

4. The backup must first identify all system state files, create shadow copies, and you see progress displays as Wbadmin finds the files. When the files are found, the backup begins. (It might take quite a while, maybe 30-45 minutes.) Wbadmin displays progress lines periodically to show the percentage complete. When the backup is finished, a log of files backed up successfully are created in the C:\Windows\Logs\WindowsServerBackup folder.

5. Take a screenshot after the backup completes (PrtScr#4).

6. Close the command prompt window.

Part 5

Purpose of Activity: In this activity, you will develop a Disaster Recovery Plan to ensure infrastructure data is protected.

Scenario: TXRig recently experienced an issue with data that was lost and not recoverable, which has raised concerns for the safety of company data. Management

has requested your assistance in developing a disaster recovery plan to ensure the integrity of data and to prevent future loss of critical data. Data to be protected includes the following:

- Server Operating Systems   sizes vary
- Payroll Database   5GB
- Customer Database   12GB
- Financial Records   6GB
- Oil and Gas Production Records   2TB
- 16 Departments Critical Files   125GB

Mission critical data that is required to be available 24/7 include:

- Customer Database
- Oil and Gas Production Records
- Department Critical Files

Assignment: Students will develop a plan to guard against future data loss. This is to be a short description (not to exceed 1 page) of the steps you would recommend to protect company data. Options include in-house backups as well as third party online backup options, including Microsoft Azure or Amazon Web Services. Upload this document for grading.

Reflection
1. How could this be applied in the real world?
2. What is the purpose of the lab?

Rubric
    Checklist/Single Point Mastery

Concerns Working Towards Proficiency	Criteria Standards for This Competency	Accomplished Evidence of Mastering Competency
	Criteria #1: Take a screenshot of your Windows Server Backup Installation (PrtScr#1) (15 points)	
	Criteria #2:Take a screenshot of your completed backup Installation (PrtScr#2) (15 points)	
	Criteria #3:Take a screenshot of your successfully restored files (PrtScr#3) (15 points)	

	Criteria #4: Take a screenshot of your completed System State Backup (PrtScr#4)(15 points)	
	Criteria #5: Disaster Recovery Plan recommendations document (30 points)	
	Criteria #6: Answer the Reflection questions in a text file (10 points)	