Lab – Disk Management Tools in Windows 11 with DiskPart

Introduction

In this lab, you will work with both Disk Management and DiskPart to create, format, resize, and manage partitions and storage spaces.

Required Resources

- A Windows 11 PC with administrative privileges
- Access to Disk Management and Command Prompt for DiskPart

Instructions

Part 1: Access Disk Management and DiskPart

1. **Open Disk Management**:
   - Right-click on the **Start** menu and select **Disk Management**.

2. **Open DiskPart in Command Prompt**:
   - Open **Command Prompt** as an administrator.
   - Type `diskpart` and press Enter. You should see the `DISKPART>` prompt.

Questions:
- What is the file system of your primary disk partition (e.g., C:)?
- Is there any unallocated space available on your disk?

Type your answers here.

Part 2: Create and Format a New Partition

Using Disk Management:
1. **Create a New Volume**:
   - In Disk Management, locate any unallocated space, right-click, and select **New Simple Volume**.
   - Follow the wizard, assign a drive letter, and format the partition as **NTFS**.

2. **Verify the New Partition**:
   - Check Disk Management to confirm the new partition is listed with the assigned drive letter.

Using DiskPart:

1. **List Disks and Partitions**:
   - In the `DISKPART>` prompt, type `list disk` to view all disks.
   - Select the disk with unallocated space by typing `select disk X` (replace **X** with the disk number).
   - Type `create partition primary` to create a new primary partition.

2. **Assign a Drive Letter and Format**:
   - Assign a drive letter by typing `assign letter=X` (replace **X** with a desired letter).
   - Format the partition by typing `format fs=ntfs quick`.

Questions:

- What drive letter was assigned to the new partition?
- How much space was allocated?

Type your answers here.

Part 3: Shrinking and Extending Partitions

Using Disk Management:

1. **Shrink a Volume**:
   - Right-click on a primary partition (e.g., **C:** drive), choose **Shrink Volume**, and enter the amount to shrink.

2. **Create a New Partition from Unallocated Space**:
   - Use the unallocated space created to make a new partition as described in Part 2.

Using DiskPart:

1. **Select and Shrink a Volume**:
   - Type `list volume` to display all volumes.
   - Select the volume to shrink by typing `select volume X` (replace **X** with the volume number).
   - Type `shrink desired=500` to shrink the volume by 500 MB.

2. **Extend a Volume**:
   - After shrinking, select an adjacent volume with free space by typing `select volume Y` (replace **Y** with the volume number).
   - Type `extend` to add unallocated space to the selected volume.

Questions:

- How much space was reclaimed by shrinking the partition?
- What is the new total size of the extended partition?

Type your answers here.

Part 4: Changing Drive Letters

Using Disk Management:

1. **Change a Drive Letter**:
   - Right-click the desired partition, choose **Change Drive Letter and Paths**, and select a new letter.

Using DiskPart:

1. **Assign or Change a Drive Letter**:
   - Select the volume by typing `select volume X` (replace **X** with the volume number).
   - Change the drive letter with `assign letter=Y` (replace **Y** with the new letter).

Questions:

- What was the original and new drive letter?
- Did any shortcuts or paths break due to the change?

Type your answers here.

Part 5: Storage Spaces

Using Disk Management (Settings App):

1. **Create a Storage Space**:
   - Go to **Settings > System > Storage > Advanced storage settings > Storage Spaces**.
   - Choose **Create a new pool and storage space** and add at least two drives with a **Two-way mirror** configuration.

Using DiskPart (Alternative Storage Pool Setup):

1. **Select and Prepare Drives**:
   - In DiskPart, use `list disk` and `select disk X` (replace **X** with each disk number) to prepare multiple drives.
   - Set each drive as dynamic by typing `convert dynamic` (if supported).

Questions:

- What resiliency type did you choose for Storage Spaces?
- How does the system use available space with the chosen resiliency?

Type your answers here.

Part 6: Disk Cleanup and Optimization

1. **Run Disk Cleanup**:
   - Type **Disk Cleanup** in the search bar and select files to delete, such as temporary files.

2. **Optimize Drives**:
   - Open **Defragment and Optimize Drives**, select a drive, and click **Optimize** to defragment (for HDDs) or confirm SSD optimization.

- How much space was recovered after running Disk Cleanup?
- What was the status of each drive after optimization?

Type your answers here.

End of Lab

By completing this lab, you should now have hands-on experience with both the Disk Management GUI and DiskPart command-line tool for managing disk partitions and storage spaces in Windows 11.