John Michael Guevarra Plat Tech

BSIT – 2B

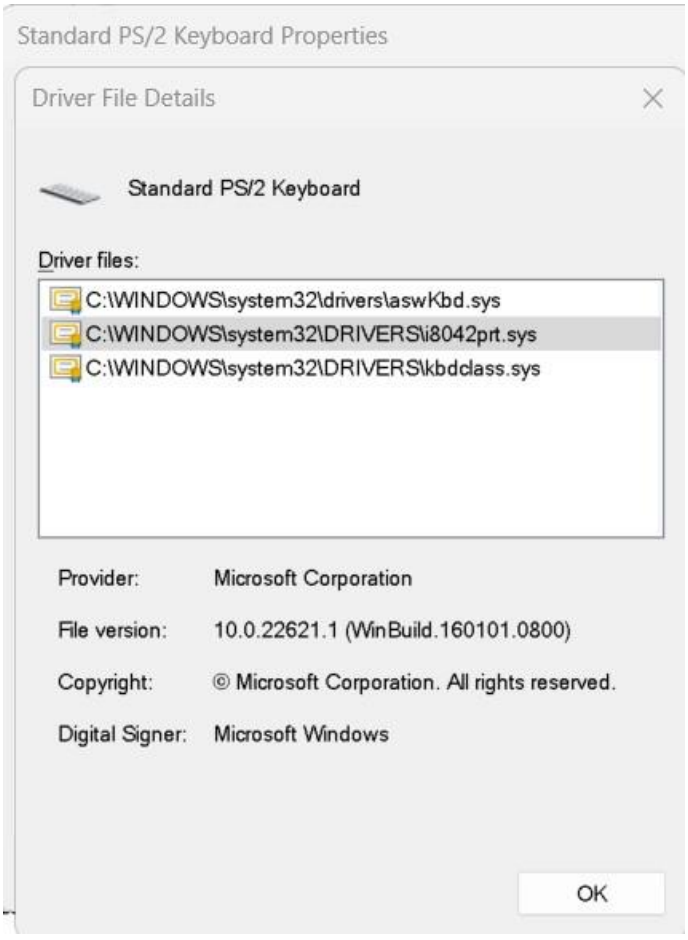
Exercise 3

I. View Devices and Device Drivers in Windows

1. Start your Windows 10 computer and log on, if necessary.
2. Right-click Start, and then click Device Manager.
3. Double-click Keyboards.
4. Double-click the keyboard description under Keyboards to open the keyboard Properties dialog box.
5. Click the Driver tab. *Who is the provider of the keyboard device driver, and is the device driver digitally signed (for security)? Record your observations.*

*-The provider of the keyboard device driver is **Microsoft Corporation**, as shown in the image. Additionally, the device driver is digitally signed by **Microsoft Windows**, which ensures the driver's authenticity and security.*

6. Click the Driver Details button to see the names of the driver files



7. Click OK, click Cancel, and then close the Device Manager window.

II. Examine Multitasking in Windows

1. Press Ctrl+Alt+Del. Click Task Manager. Or Right click the task bar then select Task Manager.
2. In Task Manager, you see the list of running programs. This list only shows programs you started that have an open window. Click More details. Ensure that the Processes tab is selected. You see three sections in the left pane of Task

Manager: Apps, Background processes, and Windows processes. (You may have

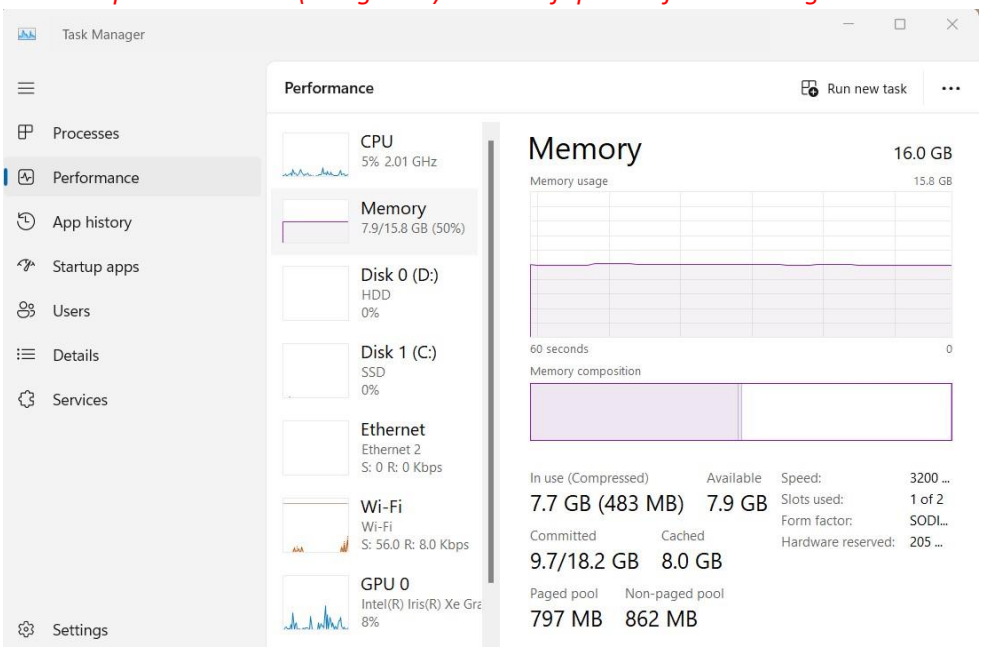
to scroll down to see Windows processes.) For each app or process, you see the percentage of CPU each is using, and the amount of memory, disk, and network bandwidth.

3. In Task Manager, click the Performance tab. This tab displays information about the system resources in use, such as the CPU (processor) and memory usage.

Close one or two applications and observe the effect on the use of resources.

Close Task Manager.

4. *Write and explain the menu (navigation) on the left panel of task manager.*

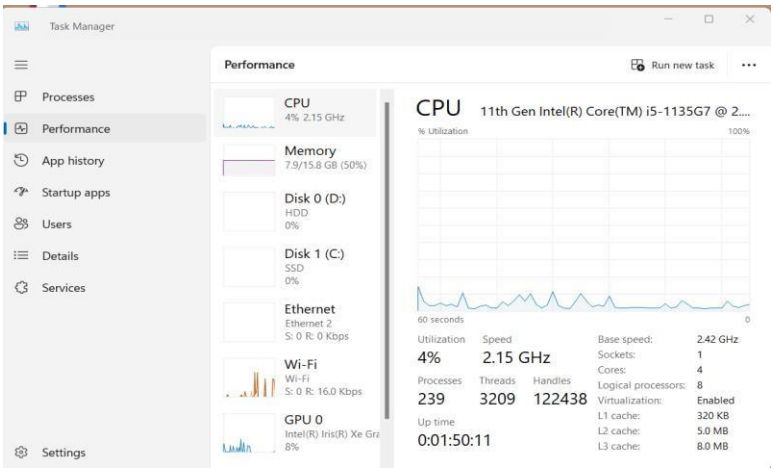


-The left panel of the Windows Task Manager consists of several key tabs for system monitoring and management. The **Processes** tab shows all running applications and background processes with their resource usage (CPU, memory, disk, network, and GPU). **Performance** provides a real-time overview of

system resources like CPU, memory, disk, and network. The **App history** tab tracks resource consumption by apps over time, helpful for identifying performance-heavy apps. **Startup apps** displays programs set to run at startup, allowing users to manage their impact on boot time. The **Users** tab shows logged-in users and their resource usage, while **Details** offers more advanced information on running processes like PID and technical resource usage. Lastly, the **Services** tab lets users manage Windows services by starting or stopping them and checking their status. Together, these tabs give comprehensive control over system resources and processes.

III. Monitor Processor Usage with Task Manager

1. Right-click the taskbar and click Task Manager on the shortcut menu. Click the More details button, if necessary.
2. Click the Performance tab and click CPU in the left pane, if necessary .
3. Watch the CPU history graph and note how it changes over time. Open and close a Web browser three or four times. Look at the CPU history graph now. You should see a distinct increase in CPU utilization.
4. Review the other information you can learn about the CPU. In Figure 3-3, you see the CPU model at the top of the graph. Below the graph, you see the maximum speed of the CPU, the number of cores, the number of logical processors, and the amount of L1, L2, and L3 cache, as well as other information. Your display will likely look different depending on the type of CPU running on your system. *Can you tell by looking at Figure below if the CPU that is being monitored supports Hyper-Threading? How can you tell?*

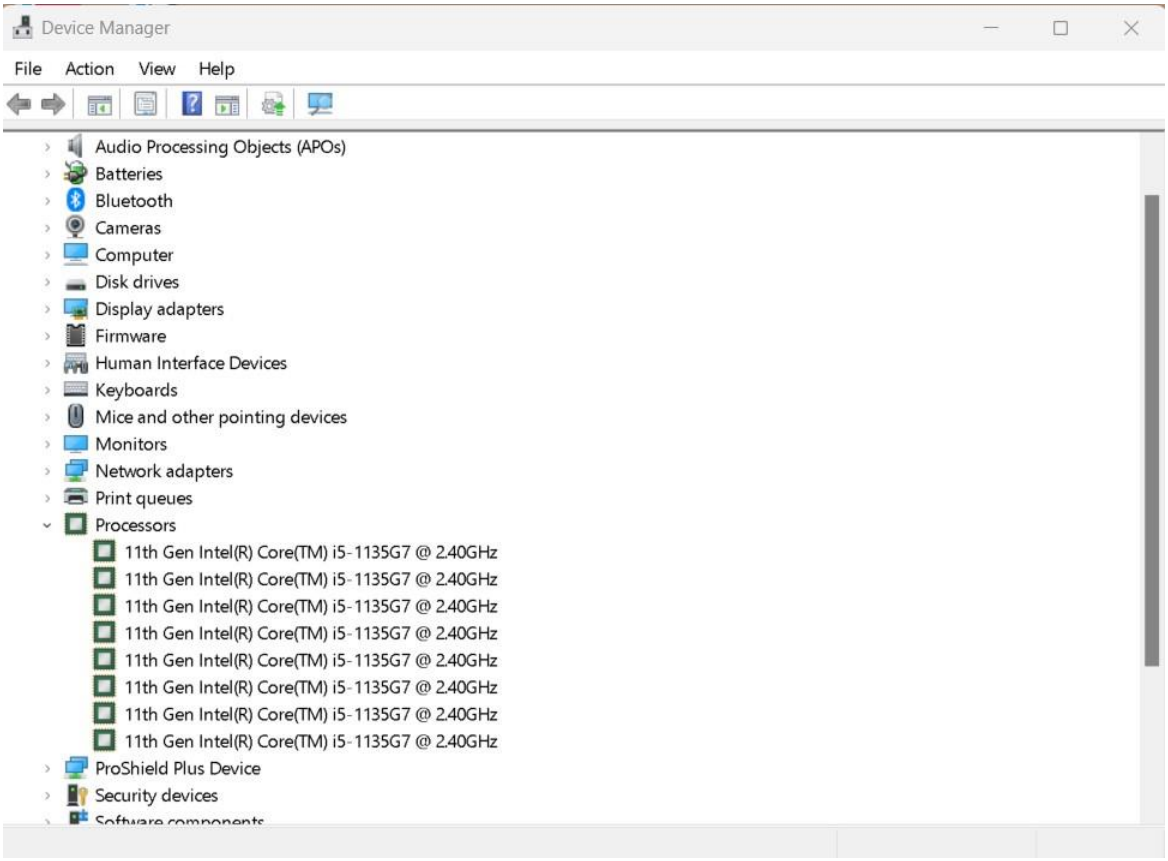


-Yes, the CPU shown in the image supports Hyper-Threading. You can tell because the "Cores" and "Logical processors" information is listed. The CPU has 4 cores and 8 logical processors.

In a CPU with Hyper-Threading, each physical core can handle two threads simultaneously, which effectively doubles the number of logical processors compared to the physical cores. In this case, the 4 cores are handling 8 logical processors, indicating that HyperThreading is enabled.

IV. Check Processor Status in Device Manager

1. Right-click Start, and click Device Manager.
2. Double-click Processors. How many processors are displayed? Double-click a processor in the list?
3. Double-click a processor in the list



4. Click the General tab, if necessary. The General tab shows the manufacturer and model of the CPU, and the Device status box shows the status.
5. Click the Details tab. Here, you can see a variety of information about the device and the device driver. Click the selection arrow under Property and browse through the properties. Click Power data to see the various power states supported by the CPU.
6. Click Cancel to close the Processor Properties dialog box, and then close Device Manager.
7. Questions:

a. What did you do to sort the list of processes?

-In Task Manager, you can sort the list of processes by clicking on any of the column headers like "CPU," "Memory," or "Disk" in the Processes tab. For example, clicking on the "CPU" column will sort processes

based on their current CPU usage, either in ascending or descending order. *b. How did you add columns to the Details tab?*

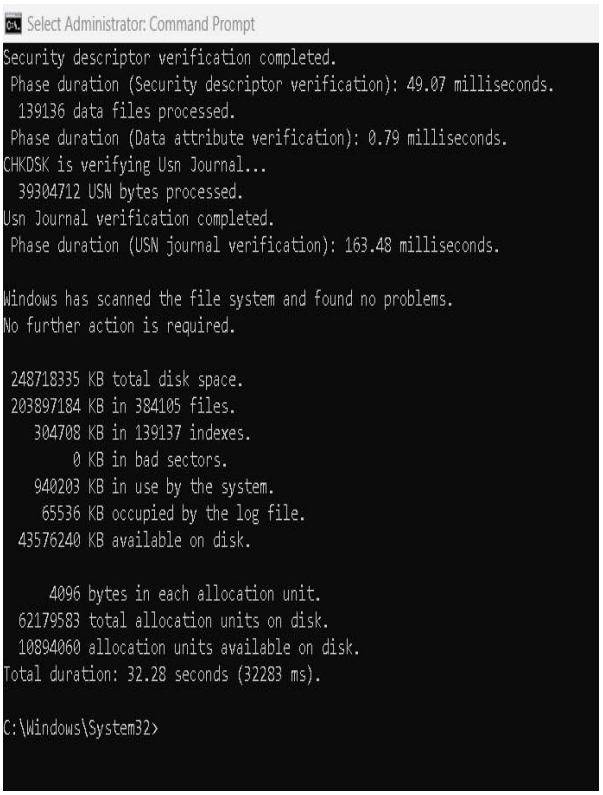
-In the **Details** tab of Task Manager, you can add more columns by right-clicking on any of the existing column headers, then selecting "Select columns" from the drop-down menu. You can then choose from various metrics to add, such as "CPU Time," "Memory (Private Working Set)," or "I/O Reads."

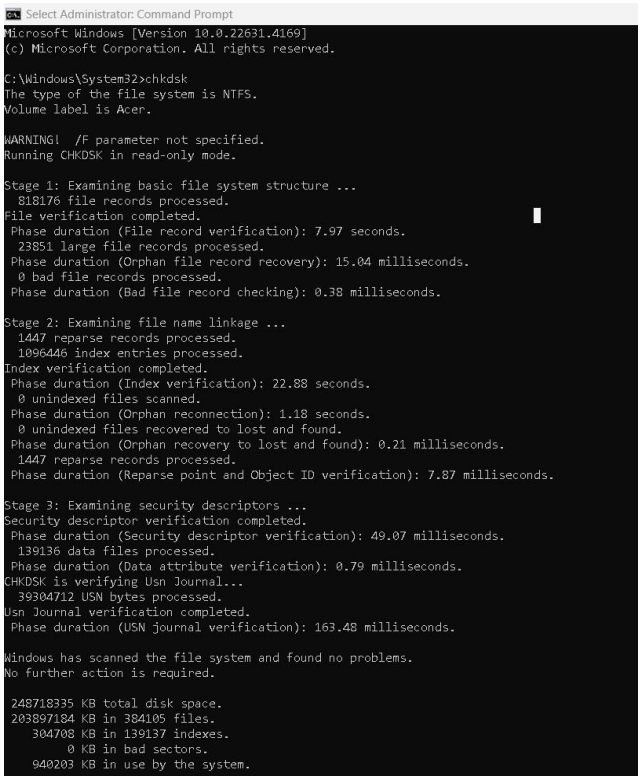
c. What process used the most CPU time? What do you think is the purpose of this process?

-To find the process that used the most CPU time, go to the **Details** tab in Task Manager and sort by the "CPU Time" column. The process with the highest value indicates the one that has consumed the most CPU resources over time. Common processes with high CPU time could be system services like "System Idle Process," which is used to indicate unused CPU capacity, or an application that's been running for a long time and is resource-intensive, like a browser or software development environment. The purpose of the process would depend on what the process is designed to do—system tasks manage the operating system, while application tasks serve userspecific purposes.

V. Run chkdsk in Windows

1. Right-click Start, and then click Command Prompt (Admin) to run the command prompt as an administrator. Click Yes at the UAC prompt, if necessary.
2. Type chkdsk and press Enter.
3. Chkdsk examines your disk drive and verifies the integrity of the file system. If any errors are found, they will be reported but not fixed. Notice the second line of output from the command that reads "WARNING! /F parameter not specified. Running CHKDSK in read-only mode." This means that errors will not be fixed.
4. Type chkdsk /f and press Enter. You see a prompt indicating that chkdsk cannot run because the volume is in use. You cannot run chkdsk with the /f parameter on the drive where Windows is installed unless you run the command before Windows starts. If you type Y, chkdsk /f will run the next time Windows starts. Type N and press Enter
5. *What does /F means in CHKDSK command?*





- In the CHKDSK command, the /F option stands for "fix" and is used to instruct the tool to locate and repair file system errors on the disk. When you run CHKDSK /F, it checks for problems such as file system corruption, incorrect file entries, or other issues that may affect the integrity of the disk. Without this option, CHKDSK will only report errors without attempting to fix them. If you use /F, it automatically repairs the issues it encounters, which may require a system restart if the drive being scanned is in use, like the system or boot drive. For instance, CHKDSK C: /F checks and fixes errors on the C: drive.

VI. Using Device manager

1. Right-click Start and click Device Manager.
2. Click to expand Display adapters.
3. Double-click the specific adapter under Display adapters.
4. Make sure that the General tab is displayed. You see the device status, which tells you the device is working properly.
5. Click the Driver tab (see Figure below). Notice that you can click the Update Driver button to obtain an updated driver or install a driver if one is not already installed. Also, click the Roll Back Driver button to revert to a previously installed driver if there is a problem with an updated driver. (This button is disabled if you are installing the first driver.) You can click Disable to disable a device without actually installing it, and you can click the Uninstall button to remove a driver.

6. Click the Driver Details button.

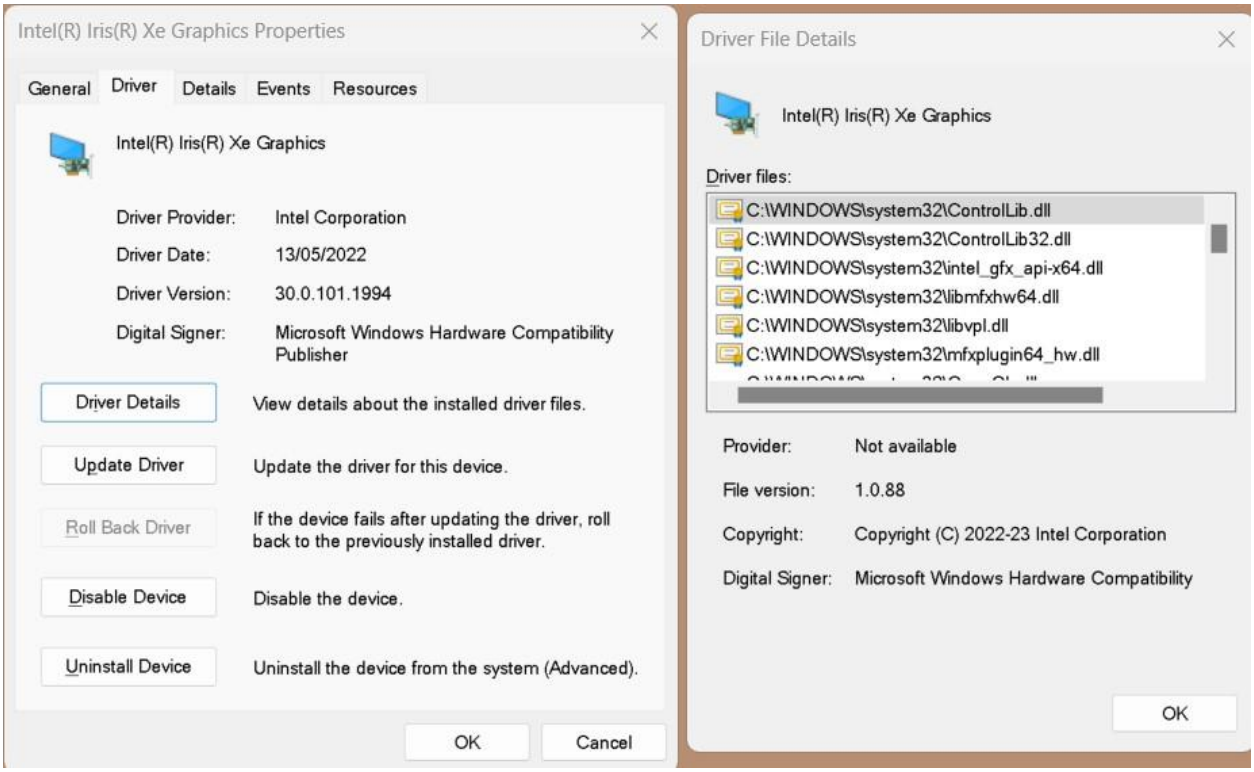
7. Display drivers usually have a number of associated files. The Driver File Details dialog box lets you view the name and location of the driver files. Click OK. 8. Click the Resources tab to see the resource settings for the display adapter.

Notice there are one or more I/O ranges, one or more memory ranges, and an

IRQ setting. A message at the bottom of the dialog box tells you if any conflicts are detected.

9. Click Cancel and then close Device Manager.

10. *Give examples of Device Driver you have in your laptop. Write its information*



- **1. Display Adapter (Graphics Driver)**
    - **Intel(R) Iris(R) Xe Graphics**

- This is the graphics driver responsible for controlling the integrated GPU (Graphics Processing Unit) in the laptop. It allows the system to handle visual tasks, including rendering the user interface, playing videos, and running 3D applications like games. The driver ensures proper communication between the operating system and the hardware, enabling high-resolution display, multi-monitor support, and hardware acceleration for graphical tasks.

2. Network Adapter (Wi-Fi Driver)

- **Intel(R) Wi-Fi 6 AX201 160MHz**
- This is the wireless network driver that allows the laptop to connect to Wi-Fi networks. It handles tasks such as managing wireless communication, data transmission, and security protocols like WPA3. The driver ensures smooth interaction between the operating system and the Wi-Fi hardware, enabling internet connectivity and other network functions.

3. Sound Driver (Audio Driver)

- **Realtek High Definition Audio**
- This audio driver manages the laptop's sound system, enabling it to produce audio output through the speakers and headphones. It also facilitates microphone input. The driver handles everything from digital-to-analog audio conversion to volume control and audio effects. It ensures that applications can play sound and that external audio devices (like headsets or speakers) work correctly with the laptop.

4. Touchpad Driver

- **Synaptics SMBus TouchPad**
- This driver controls the laptop's touchpad, allowing for navigation, gestures (like pinch to zoom, two-finger scrolling), and tap-to-click functionality. The driver interprets touch input and translates it into cursor movements or actions on the screen. It also allows customization of touchpad settings, such as sensitivity and multi-touch gestures.

5. Bluetooth Driver

- **Intel(R) Wireless Bluetooth(R)**
- This driver is responsible for managing the Bluetooth functionality on the laptop. It allows the system to connect to Bluetooth devices such as headphones, keyboards, and mobile phones. The driver facilitates wireless data transfer, pairing, and communication between the laptop and Bluetooth-enabled devices.

VII. Use the Windows Disk management Tool

1. Right-click Start and click Disk Management. Notice that Disk 0 has two volumes:

System Reserved and (C:). These volumes contain the system and boot partitions for

Windows, so be careful not to make any changes to Disk. 2. If you see a message

about initializing a disk, click OK. There are two panes in Disk Management: The

upper pane shows a summary of configured volumes and basic information about each volume. The lower pane shows installed disks and how each disk is being used.

3. Right-click the (C:) volume in the upper pane and write some of the options you have.
4. Right-click Start and click Disk Management.
5. In the lower pane, find Disk 1.
6. Right-click the Disk 1, and select shrink.

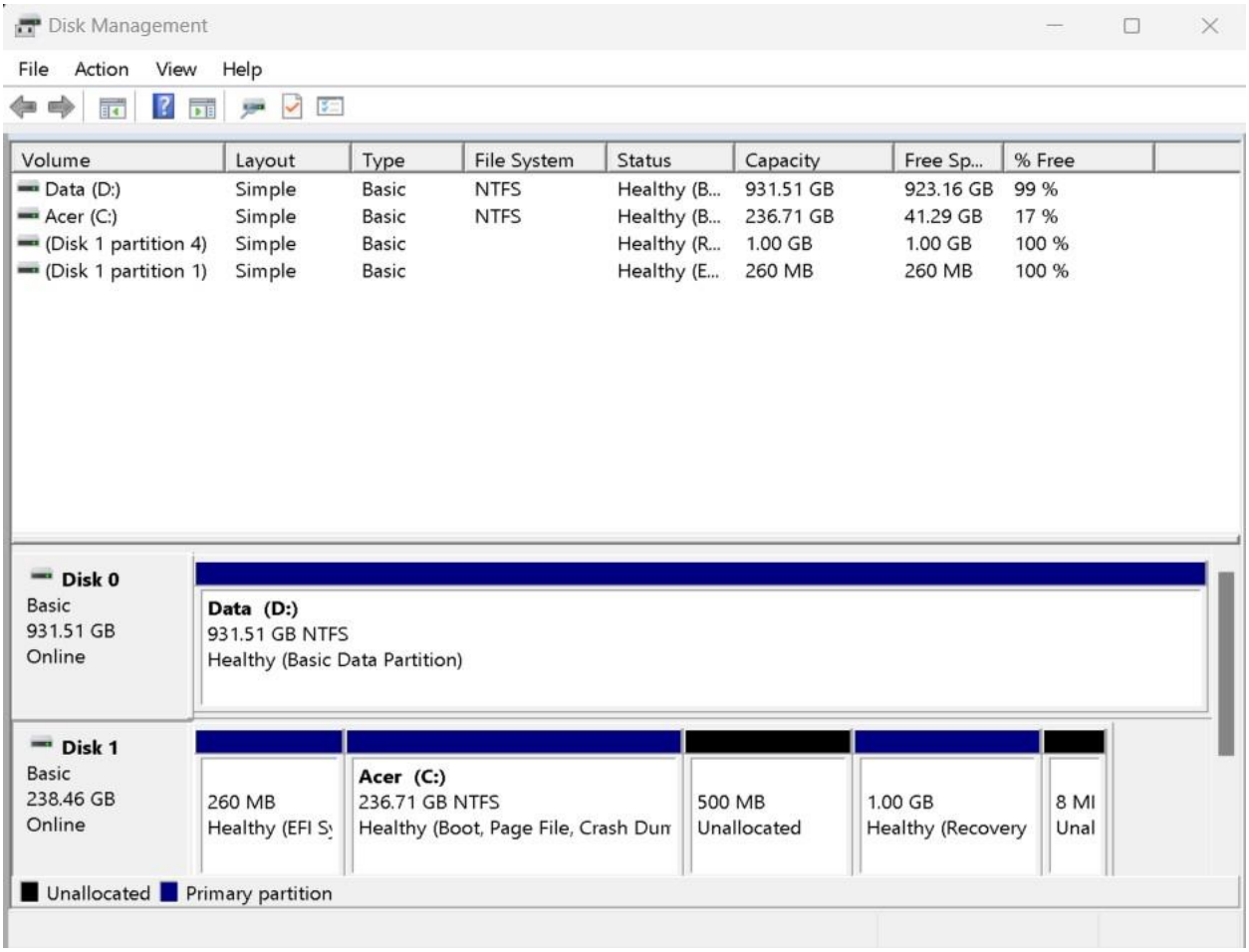
7. Enter the amount to shrink: 500. In Windows XP and Windows Server 2003, the term partition was used instead of volume. In Windows Vista and Windows Server 2008 and newer versions, the term volume is often used instead when preparing disks for use.
8. Click New Simple Volume to start the New Simple Volume Wizard. I
9. In the Assign Drive Letter or Path window, you have the option to assign a drive

letter or mount the new volume into a folder on another volume. From the drop- down menu next to “Assign the following drive letter,” click drive letter S (or any

letter if S is not available, and then click Next.

10. In the Format Partition window, click the File system list arrow, and note the available options. Click NTFS to select it as the file system. In the Volume label text box, type DataVol1, and then click Next
11. Review the settings summary, and then click Finish. Watch the space where the new volume has been created. After a short pause, the volume should begin to format. When formatting is finished, the volume status should be Healthy (Primary Partition).

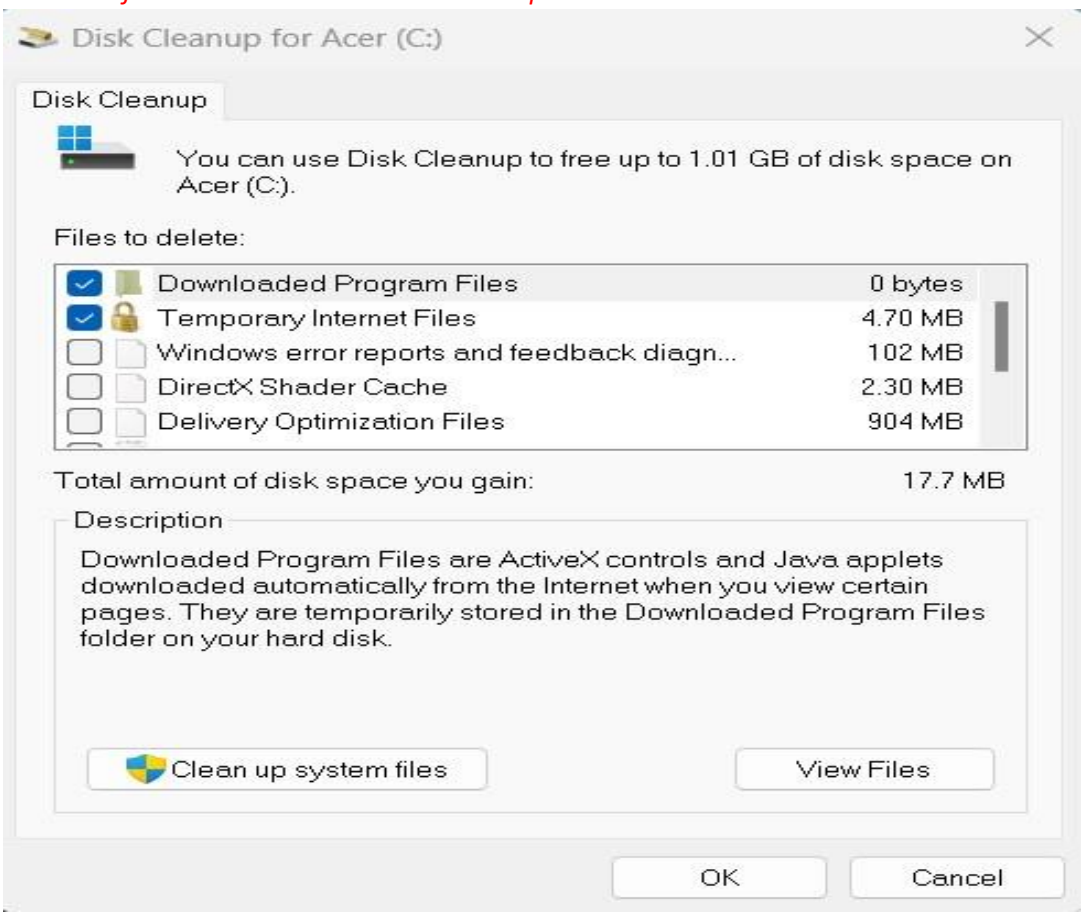
12. Write the steps to combine the 500MB again to the original



-To combine the 500MB partition back to the original partition, start by opening Disk Management by right-clicking the Start button and selecting it from the menu. Locate the disk that contains both the original partition and the 500MB partition you want to combine. Ensure that the 500MB partition is unallocated; if not, right-click the partition and choose Delete Volume to make it unallocated space. Once the 500MB space is unallocated and adjacent to the original partition, right-click the original partition and select Extend Volume. The Extend Volume Wizard will guide you through extending the partition by adding the unallocated space. After following the prompts and confirming the size to extend, click Finish to complete the process. The original partition will now be extended to include the 500MB space, increasing its size accordingly.

VIII. Use Disk Cleanup in Windows

1. In the search box on the taskbar, type Disk Cleanup and then click Disk Cleanup in the search results.
2. In the Disk Cleanup: Drive Selection dialog box, be sure that the drive where Windows is installed is selected, and click OK.
3. In the Disk Cleanup for (C:) dialog box (see Figure below), click to select the boxes for Temporary Internet Files and Temporary files. Remove checks from any other boxes. Click OK.
4. Click Delete Files to verify that you want to delete the files. The Disk Cleanup utility begins. Depending on how many files you're deleting, the process could take a few seconds or several minutes.
5. *List the files that can be deleted to clean up the disks.*



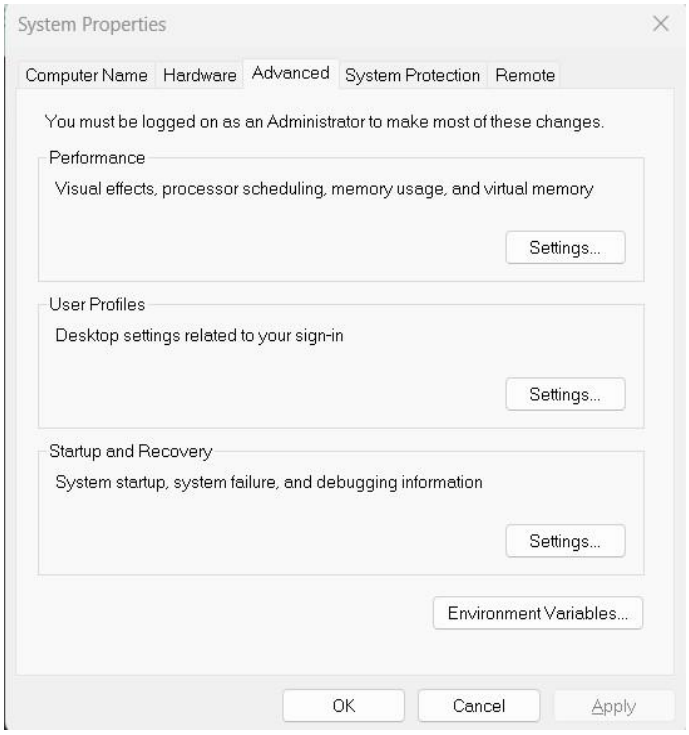
- Download Program Files
- Temporary Internet Files
- Windows error reports and feedback diagnostics
- DirectX Shader Cache
- Delivery Optimization Files

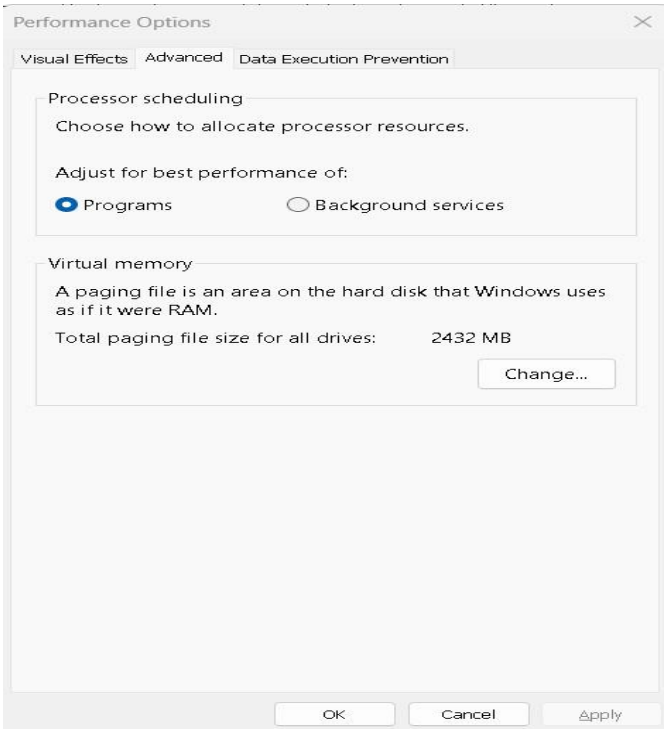
- Recycle Bin
- Temporary Files
- Thumbnails

IX. View Virtual Memory Configuration in Windows

1. Right-click Start and click System.
2. Click Advanced system settings in the left pane.
3. In the System Properties dialog box, click the Advanced tab.
4. On the Advanced tab, click Settings under the Performance section.

5. Click the Advanced tab in the Performance Options dialog box.
6. Under Virtual memory, you can see the total amount of virtual memory that has been allocated. Click the Change button.
7. At the bottom of the Virtual Memory dialog box, notice the minimum, recommended, and currently allocated sizes set for virtual memory.
8. What is the minimum, recommended, and currently allocated sizes set for your virtual Memory? -2432 MB





9. Notice the check box (Automatically manage paging file size for all drives) at the top of the dialog box. If you cleared this check box, you could make changes to virtual memory, if needed. For example, you could put the page file on a different physical disk to optimize performance. For now, leave the check box selected.

Click Cancel to close the Virtual Memory dialog box.

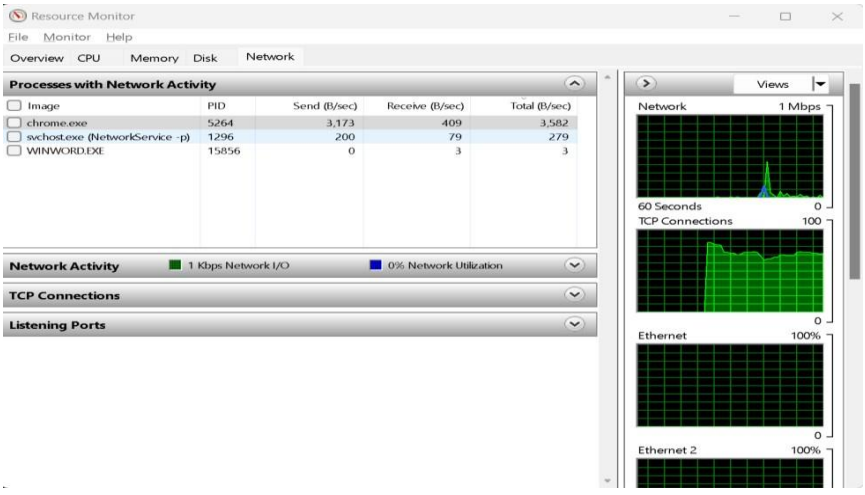
10.Click Cancel in the Performance Options dialog box and then click Cancel in the System Properties dialog box.

X. Check Network Utilization

1. Right-click the taskbar and click Task Manager.
2. Click More details, if necessary, to see more information in the Performance tab.

Click the Performance tab.

3. In the left pane, click Ethernet. In the right pane, you see a graph of network utilization on the Ethernet interface. Create some network activity by opening a Web browser and browsing to some Web sites. You should see activity in the graph. Keep the Web browser window open.
4. To see more details of network usage, click Open Resource Monitor at the bottom of the Task Manager window. Click the Network tab.
5. The top pane displays processes that are using the network. Your browser should be displayed in the list. Browse to some other Web sites, such as Microsoft.com or Youtube.com, to create some network traffic.
6. The graphs in the right pane should show plenty of activity. *Describe the network traffic flow of your computer.*



- The screenshot from the Windows Resource Monitor displays network traffic activity with a focus on processes with network activity. The Chrome browser, represented by *chrome.exe*, is the primary source of data transfer, sending 3,173 bytes per second and receiving 409 bytes per second, resulting in a total of 3,582 bytes per second. In contrast, the system process *svchost.exe (NetworkService.p)* exhibits significantly lower activity, with 200 bytes per second sent and 79 bytes per second received, totaling 279 bytes per second. Microsoft Word, shown as *WINWORD.EXE*, has minimal network activity, with no data sent and only 3 bytes received. Overall, the network activity indicates low utilization, with only 1 Kbps of network I/O and a network utilization rate of 0%, suggesting that the network is not being fully utilized. The chart of TCP connections shows a peak around 100 active connections over the last 60 seconds but appears stable. Additionally, two network adapters are displayed, with the Ethernet adapter showing 100% activity while the second Ethernet adapter reports 0% activity. This flow of information suggests that the majority of network activity is driven by Chrome, likely due to web browsing or online services, while other processes, including system services and applications like Word, show minimal to no significant network usage.

7. Close Resource Monitor and Task Manager.