Lab - Troubleshoot Operating System Problems (Instructor Version)

**Instructor Note**: Red font color or gray highlights indicate text that appears in the instructor copy only.

# Introduction

In this lab, you will diagnose the cause of various operating system problems and solve them.

# Recommended Equipment

* A computer with Windows installed
* Windows installation media

# Scenario

You must solve operating system problems for a customer. Make sure you document and solve the problems, and then document the solutions.

There are several possible errors. Follow through the lab, solving one problem at a time until you can successfully start the computer, the desktop contains the appropriate open programs, and the display is set to the native resolution or the resolution given to you by your instructor.

# Lab Setup

**Note**: Set up a computer with one or more of the problems in the list below

**List of Problems**:

* + - 1. The computer will not boot.
      2. The display resolution is not correct for the monitor.
      3. Change mouse to left-handed setting.
      4. Increase or decrease mouse speeds or keyboard repeat speeds.
      5. Change keyboard input language settings to a different language.
      6. Provide student with incorrect standard user account information. However, provide correct information for an account with administrative privileges.

**Note**: Students may not solve problems in the same order shown in the instructor document. Students might notice more than one problem at a time while troubleshooting. Remind students to correct and document one problem at a time.

1. Unable to boot into Windows

**Delete bootmgr from the EFI System Partition in Windows 11 using CLI:**

To delete the file **bootmgr**, you must assign a drive letter to the EFI System Partition and delete the file.

* 1. Click **Start** > select **Disk Management**. Determine and note the disk and partition number of the EFI system Partition. Exit when done. It is probably disk 0 partition 1.
  2. DiskPart is used to assign a drive letter to the EFI System partition. Click **Start**. Search for d**iskpart** and select **Run as administrator**. In this example, disk 0, partition 1, and drive letter Z will be used.

DISKPART > **list disk**

DISKPART > **select disk 0**

DISKPART > **list partition**

DISKPART > **select partition 1**

DISKPART > **assign letter=z**

* 1. When DiskPart has successfully assigned the drive letter, exit DiskPart.
  2. Open a command prompt as an administrator to delete all the bootmgr files.
  3. Navigate to Z:\EFI\Microsoft\Boot and Z:\EFI\Boot to delete the boot related files.

C:\Windows\System32> **z:**

Z:\> **cd efi/Microsoft/boot**

Z:\EFI\Microsoft\Boot> **del bootmgr.efi bootmgfw.efi**

Z:\> **cd efi/boot**

Z:\EFI\Boot> **del bootx64.efi**

* 1. Restart the system.

**Delete bootmgr from the System Reserved partition in Windows 10:**

To delete the file **bootmgr**, you must assign a drive letter to the System Reserved partition, unhide the file, take ownership of the file, and change the permission settings of the file.

* 1. Assign a drive letter to the System Reserved partition. Right-click **Start >** click **Disk Management >** right-click the **System Reserved** partition **>** click **Change Drive Letter and Paths >** click **Add >** assign a letter to the System Reserved partition, use the letter **S** for example >click **OK**. Close the **Disk Management** window.
  2. Click **Start > Control Panel >** click **File Explorer Options.** Click the **View** tab. Select the radio button **Show hidden files, folders, and drives**.
  3. Uncheck the box next to **Hide protected operating system files (Recommended)** and then click **Yes** when prompted with the **Warning** window.
  4. Click **OK** to accept all changes and close the **File Explorer Options** window.
  5. Navigate to the **System Reserved (S:)** in File Explorer. If there are no files shown, click **View** to show hidden items. Right-click **bootmgr** **> Properties**.
  6. Select the **Security** tab **> Advanced**.
  7. In the Advanced Security Settings for bootmgr window, click **Change**. Enter the user you are logged on as > Click **OK** > Click **OK**.
  8. Click **OK** to close all open windows.
  9. Navigate to the **System Reserved (S:)** window. Right-click **bootmgr >** select **Properties > Security** tab **> Edit**. Add the user you are logged on as if necessary.
  10. Select the user you are logged on as **>** click in the **Full control** box **> OK > OK**.
  11. Right-click **bootmgr** **>** select **Delete**. Click **Yes** if prompted.
  12. Restart the computer.

**Restore bootmgr**

* 1. Start the computer and press F8 or F11 to access the recovery options. This option may not be available for all PCs. Verify with the documentation provided by the PC maker to determine the key sequence to access the recovery mode.

If the Windows installation media is available, insert the installation media. Make sure that the installation media is the first boot device. Press any key when you are asked to Press any key to boot from installation media. Click **Next** at the Install Windows window. Click **Repair your computer**.

* 1. Click **Troubleshoot**.
  2. In **Advanced options**, click **Startup Repair**.
  3. Select the target operating system.
  4. When prompted, choose the account to repair and enter the password.
  5. The computer should now successfully boot to Windows.

1. Undesired display resolution

**Decrease the resolution of the monitor to the lowest possible setting in the list of available resolutions.**

* 1. Right-click the desktop and select **Display Settings**.
  2. Decrease the screen resolution to the lowest possible setting.
  3. Click **OK > Keep changes**.
  4. Close the **Settings** window.

**Restore the desired screen resolution:**

* 1. Right-click the desktop and select **Display Settings**.
  2. Increase the screen resolution to the native resolution or the original resolution of your monitor and click **OK > Keep changes**.

1. Left-handed mouse settings

In the **Control Panel**, select **Mouse** > select **Switch primary and secondary button settings**.

1. Keyboard or mouse speed settings

In the Control Panel, select **Mouse** or **Keyboard**. Decrease mouse motion speeds or decrease keyboard repeat rate.

1. Keyboard language

Click **Start** and search for **Language**. Click **Add a language** > select the desired language. Verify the desired language is displayed in the drop-down list. Restart the PC or sign out and log back in. Depending on the chosen language, the keyboard and display language may behave differently.

1. Incorrect standard user account information

In the Control Panel, select **User Accounts**. Create a normal user account with a password. Provide the student with an incorrect password.

# Instructions

## Start the computer.

* + - 1. Start the computer.

#### Question:

Does the computer boot properly?

Type your answers here.

Answers may vary.

* + - 1. If the computer started Windows, log on to the computer using a **Standard User** account provided by your instructor.

#### Question:

Were you able to log in?

Type your answers here.

Answers may vary.

If you are unable to log in, log in as an administrator and change the credentials of the standard user.

## Troubleshoot the operating system problems.

* + 1. If the computer did not start Windows, troubleshoot the operating system until the computer successfully boots. Because all hardware is correctly connected, you do not need to troubleshoot hardware in this lab.
       1. If the operating system is missing the required files to boot the computer, you can replace these files by booting the computer with the Windows installation media or pressing the key sequence during startup to access the recovery mode. Use the Startup Repair option to replace any missing files.

#### Questions:

* + - 1. Is the mouse working properly?

Type your answers here.

Answers may vary.

If the mouse is not working properly, modify the mouse settings so that it works correctly.

* + - 1. Is the keyboard working properly?

Type your answers here.

Answers may vary.

If the keyboard is not working properly, modify the keyboard settings so that it works correctly.

* + - 1. Is the resolution of the screen the native resolution or the resolution chosen by your instructor?

Type your answers here.

Answers may vary.

If the screen resolution is not native or the resolution chosen by your instructor, configure Windows to display the desktop at the native resolution of the monitor or the resolution chosen by your instructor.

* + - 1. What problems did you find?

Type your answers here.

* + - 1. Answers may vary, for example: The computer does not boot.
      2. Answers may vary, for example: The display settings are not optimized for the monitor.
      3. Answers may vary, for example: The mouse does not function properly.
      4. Answers may vary, for example: The mouse or keyboard is over-reactive.
      5. Answers may vary, for example: When typing, letters for a different language are shown.
      6. Answers may vary, for example: Cannot logon as a normal user.
      7. What steps did you take to determine the problems?

Type your answers here.

* + - 1. Turn the computer on.
      2. After logging in, the desktop items are very large.
      3. Used the mouse.
      4. Used the mouse or keyboard for a few tasks.
      5. Typed text.
      6. Tried to login as a standard user.
      7. What is causing the problems?

Type your answers here.

* + - 1. Bootmgr is missing from the root directory of the C: drive.
      2. The display settings have been changed to lower settings.
      3. Incorrect mouse settings.
      4. Incorrect mouse or keyboard settings.
      5. Keyboard input language settings are set to a different language.
      6. Incorrect standard user credentials.
      7. List the steps taken to fix the problems.

Type your answers here.

* + - 1. Start the computer with the installation media and run the Startup Repair to replace missing startup files.
      2. Change the display settings to the native resolution of the monitor or the resolution chosen by your instructor.
      3. Change the mouse settings to right-handed.
      4. Decreased the mouse or keyboard speeds.
      5. Open Language in Settings. Reset the default language to the proper language and restart the computer or sign out and log back in.
      6. Logged on as an administrator, reset the user password, and then logged back on as the user.

End of Document