Module 4: Troubleshooting devices and device drivers

Lab: Troubleshooting devices and device drivers

**Scenario**

You’re reviewing a number of helpdesk tickets that are still open from earlier today. You notice a couple relate to peripherals. You decide to investigate. One user’s computer requires that you add a new driver. You also decide to add a driver to the driver store on the same computer. The second user has reported an issue with starting their computer, and you suspect a driver problem.

**Objectives**

After completing this lab, you will be able:

* Update a device driver
* Add a driver to the driver store
* Resolve a startup problem

Exercise 1: Updating a device driver

**Scenario**

In this exercise, you will learn how you can update an existing driver by using Device Manager. If the updated driver causes issues, you will also see how you can roll back the driver to the previous version that the same device was using.

The main tasks for this exercise are as follows:

1. Update a driver in Device Manager.
2. Roll back a driver.

Task 1: Update a driver in Device Manager

1. In [**LON-CL1**](urn:gd:lg:a:select-vm), right-click **Start**, and then select **Device Manager**.
2. In Device Manager, expand **Keyboards**, right-click **Microsoft Hyper-V Virtual Keyboard**, and then click **Properties**.
3. In the **Microsoft Hyper-V Virtual Keyboard Properties** dialog box, select the **Driver** tab, and then confirm that the **Roll Back Driver** button is not available. Click **Update Driver**.
4. In the **Update Drivers - Microsoft Hyper-V Virtual Keyboard** dialog box, click **Browse my computer for drivers**.
5. On the **Browse for drivers on your computer** page, click **Let me pick from a list of available drivers on my computer**.
6. On the **Select the device driver you want to install for this hardware** page, clear the **Show compatible hardware** check box.
7. In the **Manufacturer** section, click **Microsoft**, in the **Model** section, click **Microsoft USB Internet Keyboard**, click **Next**, in the **Update Driver Warning** box, click **Yes**, and then click **Close** twice.
8. Click **Start**, and click **Notepad**.
9. Attempt to enter some text. This is unsuccessful. Close Notepad.

Task 2: Roll back a driver

1. Right-click **Start**, and then click **Device Manager**.
2. In Device Manager, right-click **Microsoft USB Internet Keyboard**, click **Disable device**, and then click **Yes**.
3. Right-click **Microsoft USB Internet Keyboard**, click **Properties**, and then read the device status.
4. In the **Microsoft USB Internet Keyboard Properties** dialog box, select the **Driver** tab.
5. Confirm that Roll Back Driver is available, and click **Roll Back Driver**.
6. Select **Previous version of the driver had more features** , and then click **Yes**.
7. Confirm that the **Roll Back Driver** option is no longer available, as driver rollback can go back by only one version,and then click **Close**.
8. Open **Notepad**, type your name to confirm that the keyboard is working again, and then close Notepad without saving changes.

**Results** : After completing this exercise, you will have used Device Manager to update and roll back a driver.

Exercise 2: Adding a driver to the driver store

**Scenario**

In this exercise, you will test the process of adding a driver package for a device that is not currently connected to the driver store. You will verify that you successfully added the driver package.

The main tasks for this exercise are as follows:

1. Update a driver in Device Manager

Task 1: Install a driver package into the driver store

1. On [**LON-CL1**](urn:gd:lg:a:select-vm), sign in as [**ADATUM\AdatumAdmin**](urn:gd:lg:a:send-vm-keys) with the password [**Pa55w.rd**](urn:gd:lg:a:send-vm-keys).
2. On the taskbar, click **File Explorer**.
3. In File Explorer, in the navigation pane, expand **This PC** , expand **Local Disk (C:)**, expand **Windows** , expand **System32** , expand **DriverStore** , and then click **FileRepository**.
4. In the details pane, click the **Date modified** column, and then verify that the highest folder was created most recently.
5. Right-click the **Start** icon, and then click **Windows Terminal (Admin)**.
6. At the **User Account Control** prompt, click **Yes**.
7. At the Windows PowerShell prompt, type the following two commands, and press Enter after each command:
8. cd d:\Labfiles\mod04\dc3dh
9. dir

Review the list of files that the driver package includes.

1. Add a device package to the driver store by typing the following command, and then pressing Enter:
2. pnputil /add-driver dc3dh.inf
3. In File Explorer, in the address bar, click **FileRepository** to refresh the view. In the details pane, confirm that the top folder was created when you installed the driver package and that its name starts with **dc3dh** , as was the name of the .inf file.
4. In the details pane, double-click the top folder and confirm that it contains the same driver package files that you listed in step 4.
5. Close File Explorer and the Windows PowerShell prompt.

**Results** : After completing this exercise, you will have added a driver package to the driver store.

Exercise 3: Resolving Hardware Problems

**Scenario**

In this exercise, you will resolve the reported hardware problem that a tier 1 help-desk staff member could not resolve.

| **Incident Record** |
| --- |
| **Incident Reference Number:** 711016 |
| Date and time of call: October 1, 3:30 |
| User: Bruno Lees (Development Department) |
| Status: OPEN |
| **Incident Details** |
| **Bruno reports that his computer mouse is nonfunctional.** |
| --- |
| **Additional Information** |
| User reports that he attempted to install a new mouse but abandoned the installation midway through the process. |
| I attended the user's computer and was unable to resolve the problem because the mouse was completely nonfunctional. |
| **Plan of Action** |
| **Resolution** |

Task 1: Review the help-desk Incident Record for incident 711016

* Review the help-desk Incident Record 711016 in the Student Handbook's exercise scenario.

Task 2: Update the Plan of Action section of the Incident Record

1. Review the **Additional Information** section of the Incident Record in the Student Handbook.
2. Update the **Plan of Action** section of the Incident Record with your recommendations:
   * Visit the user's computer and attempt to resolve the problem by trying a driver rollback, if necessary, in Safe Mode.
   * If that does not work, attempt a System Restore.

Task 3: Simulate the problem

1. On **LON-CL1**, at the Windows PowerShell prompt, type **cd..** and press Enter.
2. cd..
3. Type **.\Scenario1.ps1** and press Enter and, if prompted, accept execution policy change.
4. .\Scenario1.ps1
5. Wait until **LON-CL1** restarts.

Task 4: Attempt to resolve the problem

1. On [**LON-CL1**](urn:gd:lg:a:select-vm) and login as [**ADATUM\AdatumAdmin**](urn:gd:lg:a:send-vm-keys) with the password [**Pa55w.rd**](urn:gd:lg:a:send-vm-keys)
2. On the taskbar, select **File Explorer**, and then verify that File Explorer does not open.
3. Select **Start**, and then verify that the Start menu does not open.
4. Try to open Device Manager. You will find that this is very challenging when the mouse is not working.
5. Try to use the Advanced startup options to restart the computer into Safe Mode. You will find that this is very challenging, as well, when the mouse is not working.

**Note:** The computer mouse does not work. Without a working mouse, you cannot go to Device Manager to try to roll back the driver or use Safe Mode. System Restore is the only tool available to resolve this driver issue.

1. Using the Power options in the lab environment Home tab reset [**LON-CL1**](urn:gd:lg:a:select-vm) When the message **Press any key to boot from CD or DVD** appears, press the space bar.
2. On the **Windows Setup** page, select **Next**, and then select **Repair your computer**.
3. On the **Choose an option** page, select **Troubleshoot**.
4. On the **Advanced options** page, select **System Restore**.
5. On the **System Restore** page, select **Windows 11**.
6. On the **Restore** **system files and settings** page, select**Next**.
7. On the **Restore your computer to the state it was in before the selected event** page, select **Before Lab 4**, and then select **Next**.
8. On the **Confirm your restore point** page, select **Finish**.
9. In the **Once started**,**System Restore cannot be interrupted**. **Do you want to continue?** dialog box, select **Yes**. The System Restore process begins.

**Note:** System Restore takes some time to apply the restore point.

1. When prompted, select **Restart**.
2. After [**LON-CL1**](urn:gd:lg:a:select-vm) restarts, sign in as [**ADATUM\AdatumAdmin**](urn:gd:lg:a:send-vm-keys) by using the password [**Pa55w.rd**](urn:gd:lg:a:send-vm-keys)
3. In the **System Restore** dialog box, select **Close**.
4. On the taskbar, select **File Explorer**, and then verify that File Explorer opens. The mouse is now functional. Close File Explorer.

**Resolution**

1. Option to roll back the mouse driver was not available because the mouse was not functional.
2. Option to access Safe Mode was not available because mouse was not functional.
3. When the computer is restarted into the Windows Recovery Environment (Windows RE), you were able to access System Restore to recover the computer. This solved the issue of the nonfunctioning mouse.

**Results**: After you complete the exercise, you will have resolved the issue with a nonfunctional mouse.

**Congratulations!** You have now completed this lab. To continue to the next lab click End Lab in the Tools Menu . If you wish to contiue with this lab at a later date ensure you save the lab environment rather than ending it.