Lab 6

Troubleshooting BootUP Issues

This lab contains the following exercises and activities:

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| Exercise 6.1 | Looking at Safe Mode |
| Exercise 6.2 | Using Last Known Good Configuration |
| Exercise 6.3 | Working with the Boot Environment |

BEFORE YOU BEGIN

The lab environment consists of student workstations connected to a local area network, along with a server that functions as the domain controller for a domain called contoso.com. The computers required for this lab are listed in Table 6-1.

Table 6-1

Computers required for Lab 6

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| Computer | Operating System | Computer Name |
| Server | Windows Server 2008 R2 | RWDC01 |
| Workstation1 | Windows 7 Enterprise | NYC-CL1 |

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| NOTE | In a classroom lab environment, there will be one classroom server and the students will have workstations named using consecutive numbers in place of the xx and yy variables. In a virtual lab environment, each student will have three virtual machines, named RWDC01, NYC-CL01, and NYC-CL02. |

In addition to the computers, you will also require the software listed in Table 6-2 to complete Lab 6.

Table 6-2

Software required for Lab 6

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| Software | Location |
| Lab 6 student worksheet | Lab06\_worksheet.rtf (provided by instructor) |

Working with Lab Worksheets

Each lab in this manual requires that you answer questions, make screen shots, and perform other activities that you will document on a worksheet named for the lab, such as Lab06\_worksheet.rtf. Your instructor will provide you with access to the worksheets. It is recommended that you use a USB flash drive to store your worksheets, so you can submit them to your instructor for review. As you perform the exercises in each lab, open the appropriate worksheet file using WordPad, fill in the required information, and save the file to your flash drive.

SCENARIO

You are a desktop technician for Contoso Ltd. You have a computer that is not booting properly. Therefore, you would like to determine what is causing it to fail and run a couple of tools to repair your system.

After completing this lab, you will be able to:

Start the computer in safe mode

Use the Last Known Good Configuration to roll back a driver

Repair components needed for boot up

Estimated lab time: 50 minutes

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| Exercise 6.1 | Looking at Safe Mode |
| Overview | You want to troubleshoot a program or device driver that is causing your computer not to run properly. Therefore, you want to start the computer in Safe Mode. |
| Completion time | 15 minutes |

1. Turn on the NYC-CL1 workstation and Restart windows. While booting press F8 before Windows loads. Note: You might need to press F8 repeatedly.
2. When the *Advanced Startup* menu appears, select **Safe mode**.
3. Log on using the **contoso\Administrator** account and the password **Pa$$w0rd**. When Windows has completed boot, notice the safe mode labels on all four corners.
4. Try to open Device Manager.

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| Question 1 | Did Device Manager open?  Yes. |

1. Try to open System Configuration (msconfig.exe).

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| Question 2 | Did System Configuration open?  Yes. |

1. Reboot the computer once more and press **F8** to access the Advanced Boot menu.
2. Select **Last Known Good Configuration** and boot the computer.
3. Log on using the **contoso\Administrator** account and the password **Pa$$w0rd**.
4. Click the **Start** button and execute the **msconfig** command in the *Search Programs and Files* text box.
5. Select the **Boot** tab.
6. Click the **Advanced options** button.
7. If you have more than one processor, make sure that the *Number of processors* option is selected and the maximum number of processors is selected for your system. Click the **OK** button.

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| Question 4 | What programs automatically execute during start up.  None. |

1. Click OK again to Close the *System Configuration*. A dialog box appears to restart the computer. Select the option to restart the computer.
2. Leave the computer logged on for the next exercise.

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| Exercise 6.2 | Using Last Known Good Configuration |
| Overview | If you load a driver or software package and the computer no longer boots, you can use the Last Known Good Configuration. Therefore, during this exercise, you will load an incompatible driver and use the Last Known Good Configuration to roll back the driver. |
| Completion time | 10 minutes |

1. Click the **Start** button, right-click **Computer**, and click **Properties**. Select **Device Manager**.
2. Expand *Keyboards*.
3. Right-click your keyboard and click **Properties**. Click the **Driver** tab.

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| Question 5 | What driver are you using?  Standard PS/2 Keyboard |

1. Click the **Update Driver** button.
2. Click **Browse my computer for driver software**.
3. Click **Let me pick from a list of device drivers on my computer**.
4. Uncheck the *Show compatible hardware* check box.
5. Select **Microsoft** as the *manufacturer*, select **Microsoft Keyboard Elite for Bluetooth (106/109)**, and click the **Next** button. If it says that is not recommended, click the **Yes** button to continue.
6. When the driver is installed, click the **Close** button.

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| Question 6 | What driver shows up now?  Microsoft Keyboard Elite for Bluetooth (106/109), 6.1.7600.16385 |

1. Click **Close** to close the *Keyboard Properties* dialog box. Click **yes** to restart the computer.

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| Question 7 | Can you log on?  No. |

1. Reboot once more.
2. As Windows is starting, press **F8** immediately to access the *Advanced Boot Options* menu.
3. When the *Advanced Boot* menu appears, use the keyboard to select **Last Known Good Configuration (advanced)**, and then press the **Enter** key.
4. Log in with the **contoso\administrator** and the password of **Pa$$w0rd**.
5. Open **Device Manager** to verify that you have the original keyboard driver loaded.
6. Leave the computer logged on for the next exercise.

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| Exercise 6.3 | Working with the Boot Environment |
| Overview | There will be times when certain components that are needed for boot up will become corrupted. Therefore, you will need to learn how to repair these components without reinstalling the system from scratch. |
| Completion time | 25 minutes |

1. Click the **Start** button, right-click **Computer**, and click **Properties**.
2. In *System*, click **Advanced system settings**.
3. Click the **Settings** button in the *Startup and Recovery* section.

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| Question 8 | What is the default operating system, the time to display the operating system, and the time to display recover options?  Default operating system: Windows 7  Time to display operating system: 30 seconds  Time to display recovery options when needed: 30 seconds |

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| Question 9 | If a dump is created, where is the dump file created?  %SystemRoot%\MEMORY.DMP |

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| Question 10 | Where is the %systemroot% folder?  C:/Windows |

1. Click **OK** to close the *Startup and Recovery* dialog box and click **OK** to close the *System Properties* dialog box.
2. Open an elevated command prompt by clicking the **Start** button, clicking **All Programs**, clicking **Accessories**, right-clicking **Command Prompt**, and clicking **Run as administrator**.
3. Execute the following command:

**Bcdedit /enum**

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| Question 11 | Where is the Windows Boot Manager located?  Partition=\Device\HarddiskVolume1 |

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| Question 12 | Where is the Windows Boot Loader?  Partition=C: |

1. At the command prompt, execute the following command

**Bcdedit /export C:\bcdback**

1. At the command prompt, execute the following command:

**Bcdedit /delete {bootmgr} /f**

1. Shut down and reboot the computer.

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| Question 13 | What error message did you get?  Windows failed to start. A recent hardware or software change might be the cause. To fix the problem:   1. Insert your Windows Installation disc and restart your computer. 2. Choose your language settings, and then click “Next”. 3. Click “Repair your computer”.   If you do not have this disc, contact your system administrator or computer manufacturer for assistance.  File: \Boot\BCD  Status: 0xc0000034  Info: The Windows Boot Configuration Data file is missing required information. |

**Note: You will see an error message stating “the *windows boot configuration data file is missing”.***