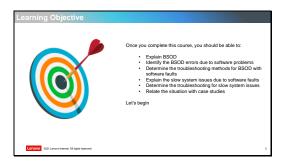
# Smarter technology for all

# Diagnosing Software faults

Participant Guide



Welcome again!! We all have used computers. At some times, the computer might crash or freeze suddenly irrespective of the situation.



In this course, we'll

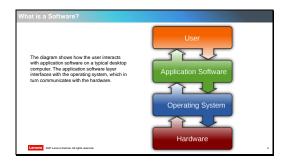
- Explain BSOD
- Identify the BSOD errors due to software problems
- Determine the troubleshooting methods for BSOD with software faults
- Explain the slow system issues due to software faults
- Determine the troubleshooting for slow system issues
- Relate the situation with case studies

Let's begin

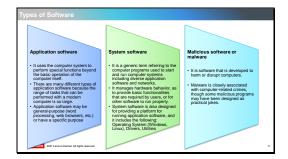
#### **Participant Guide**



- Software is a collection of instructions that enable the user to interact with a computer, its hardware, or perform tasks. In other words, Software is a collection of instructions that tells a computer how to perform a specific task.
- > This contrasts with hardware, from which the system is built, and which performs the work.
- ➤ In the 1980s, software began to be sold on floppy disks, and later CDs and DVDs. Today, most software is purchased and directly downloaded over the internet.
- For example, without your Internet browser software, you could not surf the Internet or read this page.
   Without an operating system, the browser could not run on your computer.



The diagram shows how the user interacts with application software on a typical desktop computer. The application software layer interfaces with the operating system, which in turn communicates with the hardware.



# **Application software**

- •It uses the computer system to perform special functions beyond the basic operation of the computer itself.
- •There are many different types of application software because the range of tasks that can be performed with a modern computer is so large.
- •Application software may be general-purpose (word processing, web browsers, etc.) or have a specific purpose

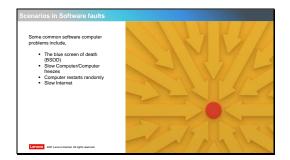
# **System software**

- •It is a generic term referring to the computer programs used to start and run computer systems including diverse application software and networks.
- •It manages hardware behavior, as to provide basic functionalities that are required by users, or for other software to run properly.
- •System software is also designed for providing a platform for running application software, and it includes the following: Operating System (Windows, Linux), Drivers, Utilities

# Malicious software or malware

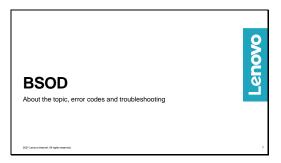
- •It is software that is developed to harm or disrupt computers.
- •Malware is closely associated with computerrelated crimes, though some malicious programs may have been designed as practical jokes.

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Some common software computer problems include,

- The blue screen of death (BSOD)
- Slow Computer/Computer freezes
- Computer restarts randomly
- Slow Internet



**BSOD** 



- ✓ A blue screen error (also called a stop error) can occur if a problem causes the PC to shut down or restart unexpectedly.
- ✓ A blue screen is sometimes referred as "Blue Screen of Death" (BSOD).
- ✓ When you experience this type of error, you won't be able to see things like the Start menu or the taskbar on the screen when the PC is turned on.
- ✓ Instead, you might see a blue screen with a message that the PC ran into a problem and needs to restart.

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The troubleshooting steps in this module are intended to help troubleshoot common stop error codes, such as the following:

1. CRITICAL\_PROCESS\_DIED
2. SYSTEM\_THREAD\_EXCEPTION\_NOT\_HANDLED
3. IRQL\_NOT\_LESS\_OR\_EQUAL
4. WIDEO\_TOR\_TIMEOUT\_DETECTED
5. PROSE\_FAULT\_IN\_NONPAGED\_AREA
6. SYSTEM\_SERVING\_EXCEPTION
7. DRC\_WARCHDOG\_VIOLATION
70 may also receive calls from customers having the hexadecimal error codes, such as 0x0000000A, 0x00000038\_0x00000000T\_S, 0x1000000T\_S, 0x100000T\_S, 0x1000

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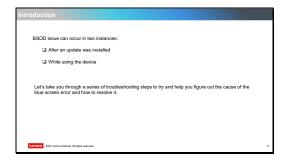
You may also receive calls from customers having the hexadecimal error codes, such as 0x0000000A, 0x0000003B, 0x000000EF, 0x000000133, 0x000000D1, 0x1000007E, 0xC0000021A, 0x0000007B, 0xC000000F, and more.

Many error codes have the same potential resolutions, your best bet is to follow the steps below to troubleshoot your blue screen error. Still, we advise you to verify the PD Guide for any troubleshooting contacts.



Troubleshooting BSOD Errors

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BSOD issue can occur in two instances:

- □ After an update was installed
- While using the device



- It's not always obvious what may have caused a blue screen error while you are using your device, it may be that you're using new hardware or third-party software that isn't compatible with your Windows device.
- Use the following troubleshooting steps in order to try and fix your blue screen error.



- Sometimes, your device's external devices can be the cause of blues screen stop errors.
  - Unplug any external storage devices and drives, docks, and other hardware plugged into your device that isn't needed for basic functionality, and then restart your device.
- If you don't experience the issue after restarting your device, the external device may be the cause of the problem, continue the troubleshooting for the device.

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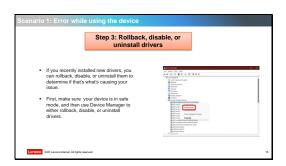
You can temporarily uninstall the recently installed software to determine if it is causing your issue, and

Some third-party software has been known to cause

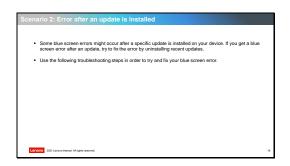
then reinstall the software after your device is back

 To do this, you'll need to sign into Windows using safe mode. Safe mode starts Windows in a basic state, using a limited set of files and drivers, and allows you to perform troubleshooting steps.

up and running.



- If you recently installed new drivers, you can rollback, disable, or uninstall them to determine if that's what's causing your issue.
- First, make sure your device is in safe mode, and then use Device Manager to either rollback, disable, or uninstall drivers.



- Some blue screen errors might occur after a specific update is installed on your device. If you get a blue screen error after an update, try to fix the error by uninstalling recent updates.
- Use the following troubleshooting steps in order to try and fix your blue screen error.

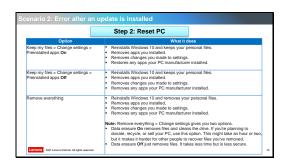
# **Participant Guide**



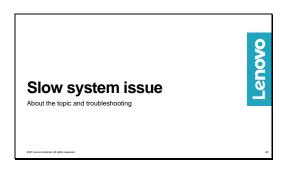
- To do this, you'll need to sign into Windows using safe mode. Also, before you enter Safe mode, you need to enter the Windows Recovery Environment (WinRE).
- Once your device is in safe mode, follow these steps to uninstall recent update in Control Panel.



- To do this, you'll need to sign into Windows using safe mode. Also, before you enter Safe mode, you need to enter the Windows Recovery Environment (WinRE).
- Once your device is in safe mode, you can go to setting to reset you PC.



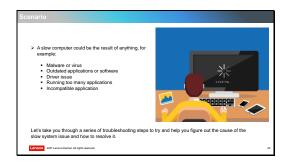
Reset PC options



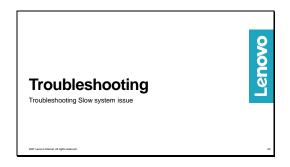
Slow system issue



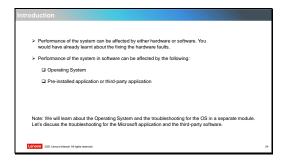
- When your computer begins to slow down, and unresponsiveness and long load times become the norm, what's the best way to solve the problem?
- Fixing a slow computer can seem like a daunting proposition, but it's not our guide will show you how to make fixes that can be done in minutes and instantly deliver lasting results



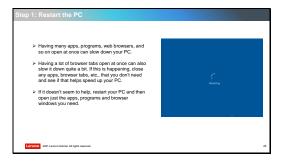
- A slow computer could be the result of anything, for example:
  - Malware or virus
  - Outdated applications or software
  - Driver issue
  - Running too many applications
  - Incompatible application



Troubleshooting Slow system issue

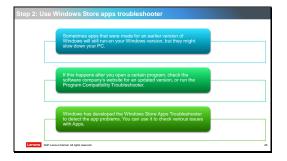


- Performance of the system can be affected by either hardware or software. You would have already learnt about the fixing the hardware faults.
- Performance of the system in software can be affected by the following:
  - Operating System
  - ☐ Pre-installed application or third-party application



- Having many apps, programs, web browsers, and so on open at once can slow down your PC.
- Having a lot of browser tabs open at once can also slow it down quite a bit. If this is happening, close any apps, browser tabs, etc., that you don't need and see if that helps speed up your PC.
- If it doesn't seem to help, restart your PC and then open just the apps, programs and browser windows you need.

#### **Participant Guide**

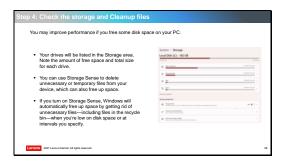


Sometimes apps that were made for an earlier version of Windows will still run-on your Windows version, but they might slow down your PC.

If this happens after you open a certain program, check the software company's website for an updated version, or run the Program Compatibility Troubleshooter. Windows has developed the Windows Store Apps Troubleshooter to detect the app problems. You can use it to check various issues with Apps.



- Sometimes, when the program take forever to open, it is not the Windows OS fault.
- Perhaps something happens to the app/program itself.
- Therefore, you need to make sure the program is up to date and compatible with your version of Windows operating system.



- Your drives will be listed in the Storage area. Note the amount of free space and total size for each drive.
- You can use Storage Sense to delete unnecessary or temporary files from your device, which can also free up space.
- If you turn on Storage Sense, Windows will automatically free up space by getting rid of unnecessary files—including files in the recycle bin when you're low on disk space or at intervals you specify.

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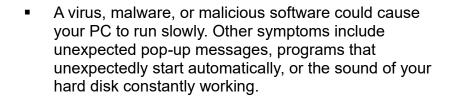
- Services of Startup applications/programs usually run in the background during booting process.
- The key is to choose the right apps to disable, for example, you want to keep your Antivirus running, but you might want to disable Skype or driver update software from starting with your Windows OS.
- Of course, you can manually start these services at any time if you need them.



One of the best ways to get the most out of your PC is to make sure you have the latest version of Windows installed. When you check for updates, your PC will also search for the latest device drivers, which can also help improve your PC's performance.

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- The best way to handle viruses and malicious software is to try to prevent them by running antimalware and antivirus software and keeping it up to date. However, even if you take precautions, your PC can still become infected.
- You can scan your PC for viruses or other malicious software by using Windows Security



Except checking for the update, if there is always one app that needs long time to load, you can reinstall the app to resolve the issue.

