

BIOS-basic input output system: it's firmware (low level software) built in the motherboard; it initializes the computer's hardware as the computer is being booted. Then it initializes the hardware then searches for the boot devices such as storage drive or optical drive to boot the software such as OS.

When you start the computers: it does the Power On Self-Test (P.O.S.T.) run by BIOS, it checks all the requirement are made such as mouse, keyboard, CD ROM, Hard Drive, Video Card. Then internal speaker does the single beep means it passed all the requirement

CMOS chip it is volatile not like BIOS which is non-volatile, it needs battery called CMOS battery

**BIOS (Basic Input/Output System)** is firmware that initializes hardware during the boot process and provides an interface between the operating system and the hardware.

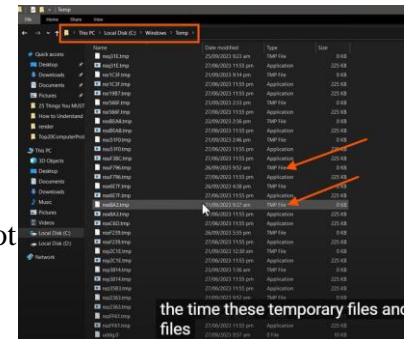
**CMOS (Complementary Metal-Oxide-Semiconductor)** refers to a technology used to store BIOS settings, including the system clock and configuration data, on a small chip powered by a battery.

**Key difference:** BIOS is the software that runs on startup, while CMOS is the hardware chip that stores the BIOS settings.

## Top 20 Computer and Problems with Solutions

### 1. Your system gets slower:

- clean drive by deleting some files and uninstall unwanted software from control Panel > Programs and features and right click on the program and uninstall it
  - remove temporary files: right click on C drive > properties from the disk capacity go to the details and see the temporary files and removes all the temporary files or do as below
  - from the system go to the storage and clean up
  - from the task manager check if there are unwanted apps are started up (right click and disable it)
- Go to the process and check which app is consuming Most memory and if the apps are not needing end task  
Got the start up and check the apps that are running  
When the computer started then disabled the apps if not needed



### 2. Software running slow:

Two reasons; processor not providing enough resource to the software or not enough RAM

- Sometimes closing some apps as in the previous case could work next you can

Processors	Usage	Cores	Threads	Clock Cycles
i3	Normal	4	8	2.8 - 5 GHz
Ryzen 3	Normal	4	8	4.8 - 5.7 GHz
i5	Average Gaming	14	20	3.5 - 5.1 GHz
Ryzen 5	Average Gaming	6	12	4.7 - 5.7 GHz
i7	Graphics editing	16	24	3.4 - 5.4 GHz
Ryzen 7	Graphics editing	8	16	4.7 - 5.7 GHz
i9	High-end Performance	24	32	3 - 5.5 GHz
Ryzen 9	High-end Performance	16	32	4.5 - 5.7 GHz

- upgrade the RAM according to the availability of the slot in the computer
- Sometimes updating the drivers could work such as graphics and chipset drivers
- Upgrade the CPU
- upgrading to SSD from HDD and avoid low disk space
- Update the software
- Scan for malware or viruses
- Ensure the proper cooling for PC

Ryzen are AMD and i-series are intel

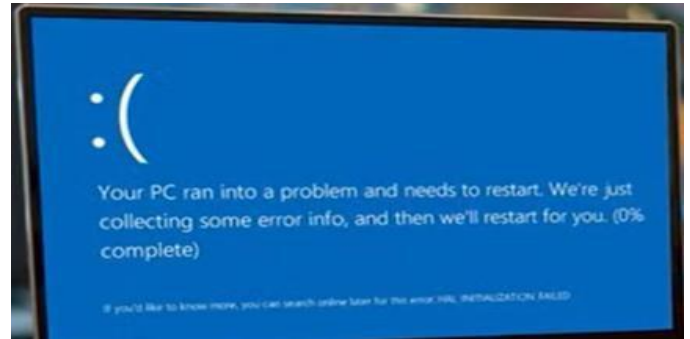
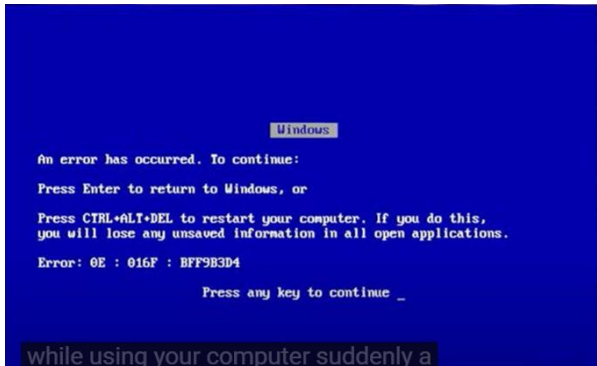
### 3. Hanging of system; Causes

- Because of the virus,

The **solution** is getting licensed antivirus software.

- B. SMPS (switch mode power supply), it will supply power as needed if it is damaged it will provide more power than needed so system will get overloaded.
- C. cooling system not providing cooling to motherboard, **solution** is replacing cooling system
- D. not updating pc, solution update pc in auto mode.

#### 4. **Blue Screen**



- a. Remove any new hardware: if any new hardware is added before the error, turn off the pc and remove the hardware and restart it
- b. Start your pc in safe mode and perform the troubleshooting
- c. Go to device manager and check if any devices are marked with exclamation point (!), right click on the device and select update driver. If it does not work, then disable or uninstall it.
- d. Check for sufficient free space on the hard drive. Always try to have 10 to 15 % of free space available.
- e. Install the latest version of the windows updates
- f. Try the blue screen troubleshooter
- g. Restore windows

#### Advanced Troubleshooting:

Check the event viewer for the error message from system log and look for the critical errors.

Run the windows memory diagnostics tools and then go to the event viewer log and diagnose it.  
Memory dump analysis

#### **Cause**

- **memory problem**

Solution: Detach ram and reinsert. Then restart still showing issue change ram.

- **hard drive problem.**

Solution: If I have an error with blue screen with code then copy that code and search online.

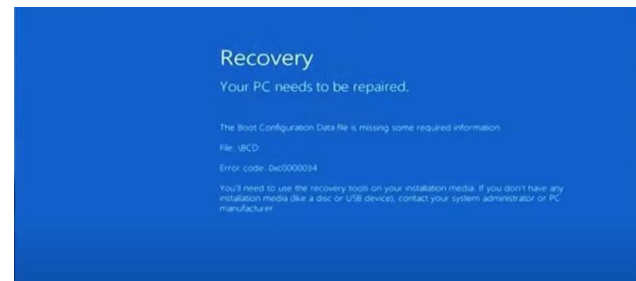
## 5. Boot Error

In the context of a PC, **boot** refers to the process of starting up a computer from a powered-off state.

Solution: use recovery mode to repair window or enter safe mode and undo last change. I can reset pc by pressing F8 as soon as we boot windows.

### 6. Internet not working

- Ensure ethernet cable is securely plugged in for wired connections
- Check if the router or modem are powered on and properly connected
- Restart your computer
- Restart your modem/router -> unplug for 30 seconds and wait and plug it back
- Verify Wi-Fi is turned on and connected to the correct network

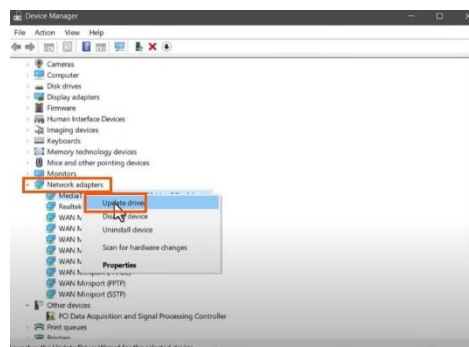


## Intermediate troubleshooting

- Run the network troubleshooting-> go to network and internet > status and Network troubleshooting
- Go to device manager and right click on network adapter (Wi-Fi or Ethernet) and select disable wait for 10 seconds then enable device or type `ncpa.cpl` and do the above steps
- Clear DNS cache: cmd use `ipconfig/release` then `ipconfig/renew` `ipconfig /flushdns`
- Check IP address `ipconfig /all` if it is APIP or not

## Advanced

- Device manager and expand network adapters > right click and uninstall device then restart your computer and it will automatically reinstall the drive or download and install latest version from the manufacturer website.
- Check the DNS you can use 8.8.8.8



## 7. Hard Drive Failure

Solution: Install new hard drive and operating system. So, to save files from lost we can back up in external drive or in cloud.

### 8. Computer Won't turn on

SkillsBuild

TO FIX THE PROBLEM

- ✓ Ensure that your computer is properly plugged into a working power outlet.
- ✓ Ensure the power cable is connected to the computer and the power source.
- ✓ Make sure that the power button on your computer is not stuck or damaged.
- ✓ Hard Reset your computer.
- ✓ For desktop computers, unplug it from the power source.
- ✓ Disconnect all external devices, and try turning on the computer.

Hard reset: remove the laptop battery and press the power button for 20-30 seconds and it will remove the residual charges and reinstall the battery and restart the laptop for desktop unplug and wait for 2 minutes and plug it back

- Keyboard and mouse failure** if system hand follow the steps above  
 Remove the keyboard/mouse and reattach it or also try to attach another keyboard and mouse to see if it is working or not in same pc.

## 10. Frozen screen

Solution: 1. press control +Alt + Delete  
 Check mother board issue or any hardware issue.

## 11. Fan noise

- Clean the fan using condensed air
- Change the power state of process or other Goto  
 Control panel>power option

Powercfg.cpl

Control Panel Home

Change when the computer sleeps

Change settings for the plan: Balanced

Turn off the display: 20 minutes

Put the computer to sleep: 20 minutes

Advanced settings

Minimum power state could be in between 5-10 % for both on battery

Maximum power state could be around 85-95 %

## 12. Overheating

Cause: heavy use, poor ventilation, dust accumulation

Solution: stay in a good environment and use cooling pads if necessary.

## 13. Unable to install software

Cause: less memory, important files missing/requirement not fulfilled

Get the all the requirement fulfilled for that software and install it  
Provide the sufficient memory and disk space for the software  
Sometimes **switch off antivirus**, reinstall software, it could work  
Run the executable file as **administrator**

#### 14. Automatic restarting system

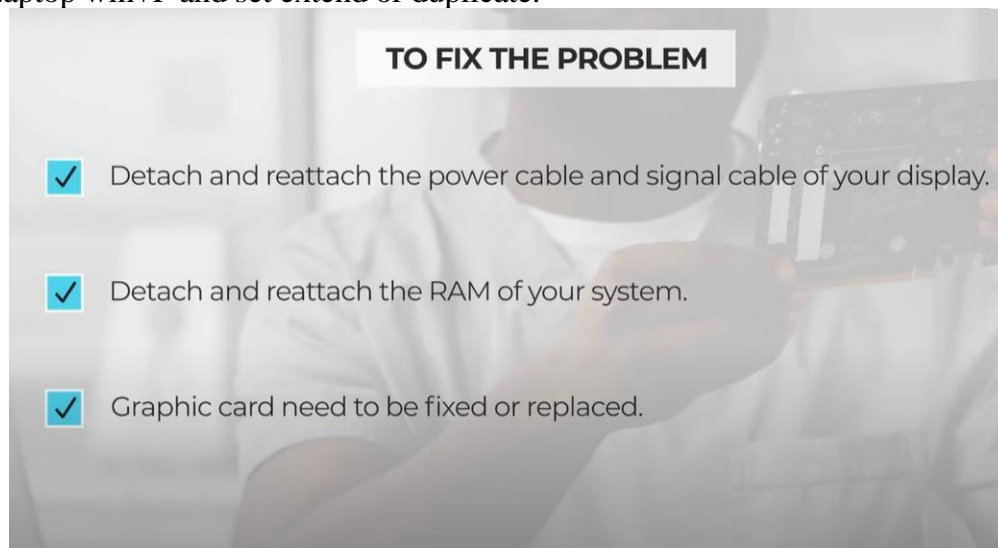
Software crashes, hardware failures, overheating, power supply such as insufficient power or voltage fluctuation (& sleep mode settings), driver conflicts or outdated drivers (incompatible or outdated), malware infections (malicious software can interfere with system processes), bugs or corruption in OS, faulty or improperly seated RAM

Check for overheating, update drivers, scan for malware, check system log, check hardware RAM & memory diagnostic, reinstall operating system, check the power supply, disable automatically restart under system failure (sysdm.cpl) and advanced and follow the instructions

#### 15. Display not showing anything

solution: Sometimes restarting PC could resolve the issue

For Laptop win+P and set extend or duplicate.

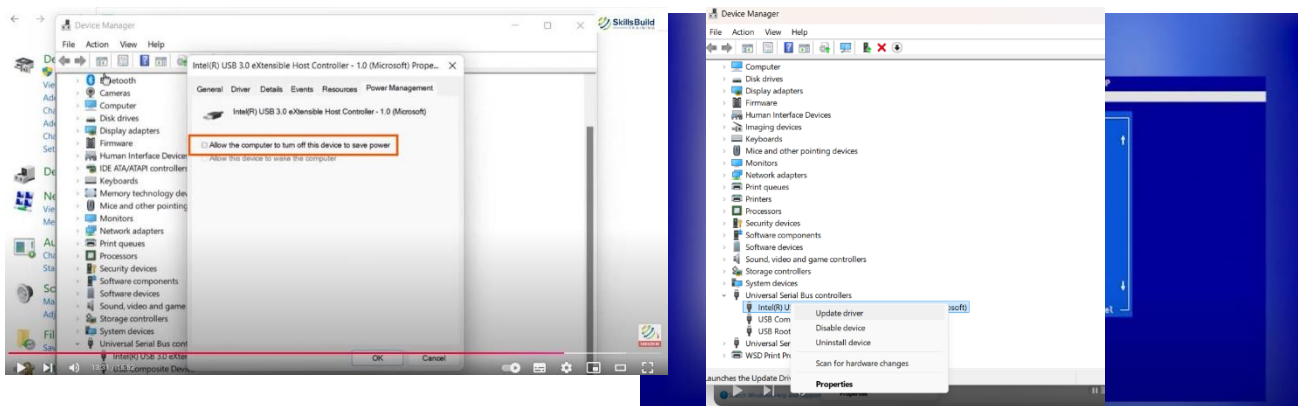


#### 16. USB port not working.

Make sure there is not any physical damage to the port. Clean the port using pin and cotton to make sure device and port are connected without the dust

From the device manager update the drive

Go to the properties and from power management uncheck 'allow the computer to turn off this device to save the power'





Go to the BIOS and check if it has enabled all the USB ports and restart your system

### 17. Error OX80300024

Cause: installing windows in SSD, hard drive damage

Solution: select large space drive.

### 18. Microsoft edge not working

Solution: 1. edge < settings < privacy, search and services, choose what to clear and (choose what you want to clear).

Reset settings < Reset < ok

### 19. YouTube not playing videos

Control panel > internet option > check on Use software rendering instead of GPU rendering

### 20. The Print spooler service stops unexpectedly in windows

It's a background process in windows that manages the print jobs sent to a printer

Control panel > program & features and then turn on program and features then go to the print and document services and check LPD (line printer Daemon) used to print in the network printing protocol and LPR

