

Hardware troubleshooting

Group 1

Our Team

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Introduction

Hardware troubleshooting is the process of identifying and fixing problems related to the physical components of a computer system, such as the CPU, RAM, hard drive, motherboard, or power supply.

In this presentation, we will provide a clear understanding of hardware troubleshooting, including how to identify common hardware issues, diagnose faulty components, and apply appropriate solutions to ensure proper system performance.

1□ Problem: Computer Won't Turn On

🔍 Symptoms:
No lights

No fan movement
No sound at all

⚠ Possible Problems:
Loose or unplugged power cable

Faulty power outlet

Dead Power Supply Unit (PSU)

Faulty motherboard

Damaged power button

🔧 Solutions:

Check wall socket with another device

Replace power cable

Test with another PSU

Inspect motherboard for burn marks

Check front panel power switch connection

2□ Problem: Beeping Sound When Turning On

- 🔎 Symptoms:
- Continuous beeping
Series of short or long beeps

- ! Possible Problems:
 - RAM not seated properly
 - Faulty RAM
 - GPU issue
 - Motherboard error
 - CPU problem

- 🛠 Solutions:
 - Reseat RAM
 - Clean RAM slots
 - Test with one RAM stick
 - Reseat GPU

3□ Problem: Computer Turns On but No Display

🔍 Symptoms:

Fans spinning

Power light on

Monitor shows “No Signal”

⚠ Possible Problems:

Loose HDMI/VGA/DisplayPort cable

Faulty monitor

RAM not properly installed

GPU failure

KBIOS issue

🔧 Solutions:

Reconnect display cables

Test with another monitor

Remove and reinstall RAM

Try integrated graphics (if available)

Reset BIOS (CMOS reset)

4□ Problem: Overheating Computer

🔍 Symptoms:

Automatic shutdown

Slow performance

Loud fan noise

High temperature warning

⚠ Possible Problems:

Dust inside case

Faulty cooling fan

Dried thermal paste

Blocked airflow

Poor ventilation

🔧 Solutions:

Clean dust using compressed air

Replace damaged fan

Reapply thermal paste

Improve airflow inside case

Ensure proper room ventilation

5□ Problem: Clicking Noise from Hard Drive

🔍 Symptoms:

Repeated clicking sound

System freezing

Slow boot

Hard drive not detected

⚠ Possible Problems:

Mechanical hard drive failure

Read/write head damage

Power supply instability

Loose SATA cable

🔧 Solutions:

Immediately back up data

Check SATA and power cables

Test drive in another PC

Replace the hard drive

Consider upgrading to SSD

Conclusion

hardware troubleshooting is a logical process of identifying and fixing physical computer problems. Instead of guessing, a technician checks simple causes first and follows clear steps to find the real issue.

An important part of this process is POST (Power-On Self-Test). When a computer is turned on, POST checks essential components like the RAM, CPU, graphics card, and storage before the operating system loads. If there is a problem, it gives beep codes or error messages to help identify the faulty part.

Understanding troubleshooting steps and POST helps save time, avoid unnecessary part replacement, and ensure accurate repairs.

**Thank
You**