

HARDWARE & NETWORK TROUBLESHOOTING

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INTRODUCTION

- Hardware and network troubleshooting is the process of identifying and resolving problems with computer hardware and networks. This can be a challenging task, but it is essential for keeping your systems running smoothly.

TROUBLESHOOTING METHODOLOGY

- There is a general troubleshooting methodology that can be used to resolve most hardware and network problems. This methodology consists of the following steps:

STEPS

Identify the problem. What are the symptoms of the problem? When did the problem start? What changes were made to the system before the problem started?

Gather information. Collect as much information as possible about the system, including the hardware configuration, software configuration, and network configuration.

Form a hypothesis. Based on the information you have gathered, form a hypothesis about the cause of the problem.

Test the hypothesis. Perform tests to confirm or disprove your hypothesis.

Implement a solution. Once you have identified the cause of the problem, implement a solution to resolve it.

Verify the solution. Test the system to ensure that the solution has resolved the problem.

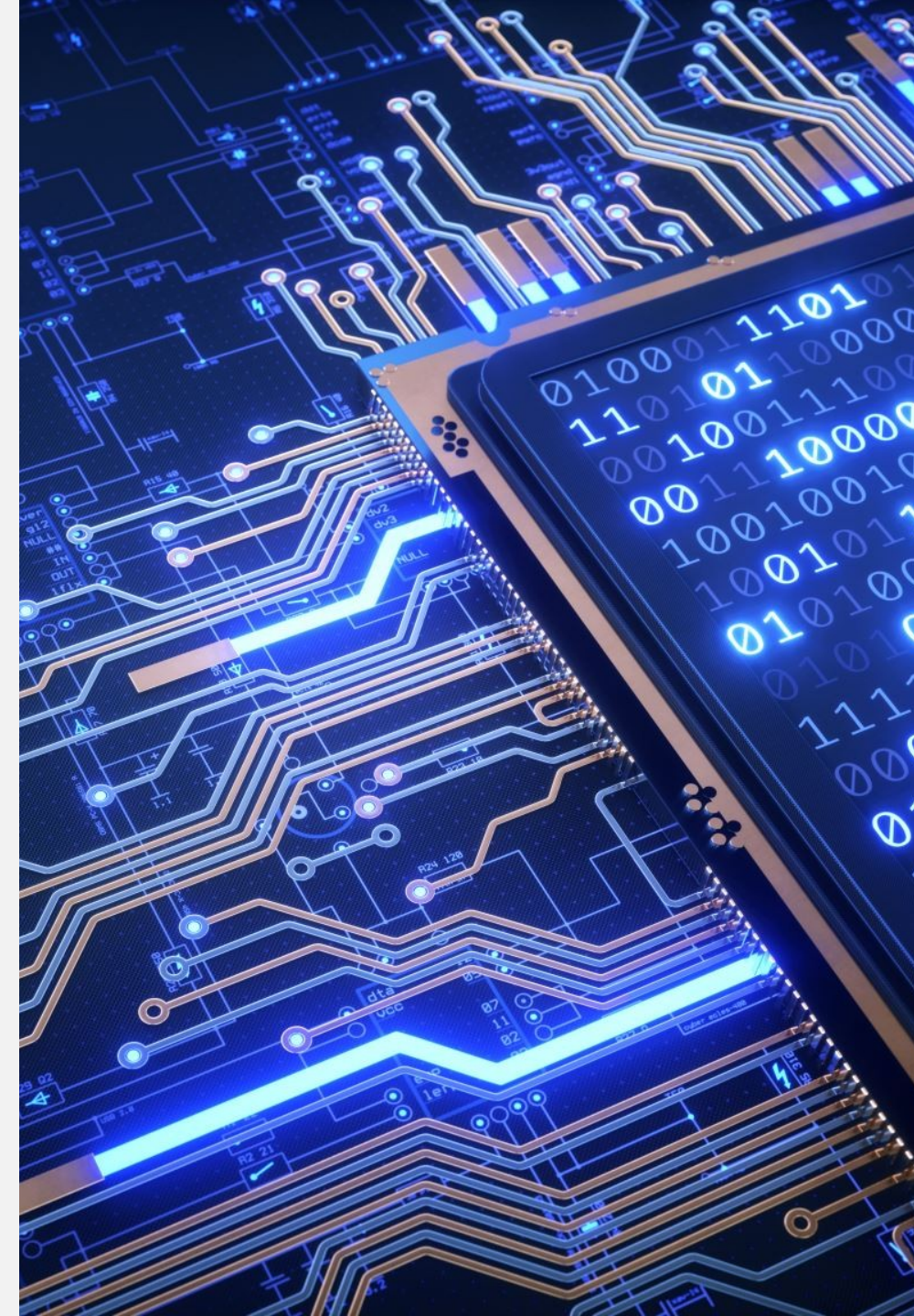
TROUBLESHOOTING HARDWARE ISSUES

Some common hardware problems include:

- Boot failures
- Computer crashes
- Blue screens of death
- Slow performance
- Overheating
- Hardware failures

TO TROUBLESHOOT HARDWARE PROBLEMS, YOU CAN USE THE FOLLOWING STEPS:

- Check the cables and connections. Make sure that all of the cables are properly connected.
- Update the drivers. Make sure that you have the latest drivers for all of your hardware devices.
- Run diagnostics. Many hardware devices have built-in diagnostics tools that can be used to identify problems.
- Test the hardware. If you have spare hardware, try swapping it out with the suspected faulty hardware to see if that resolves the problem.

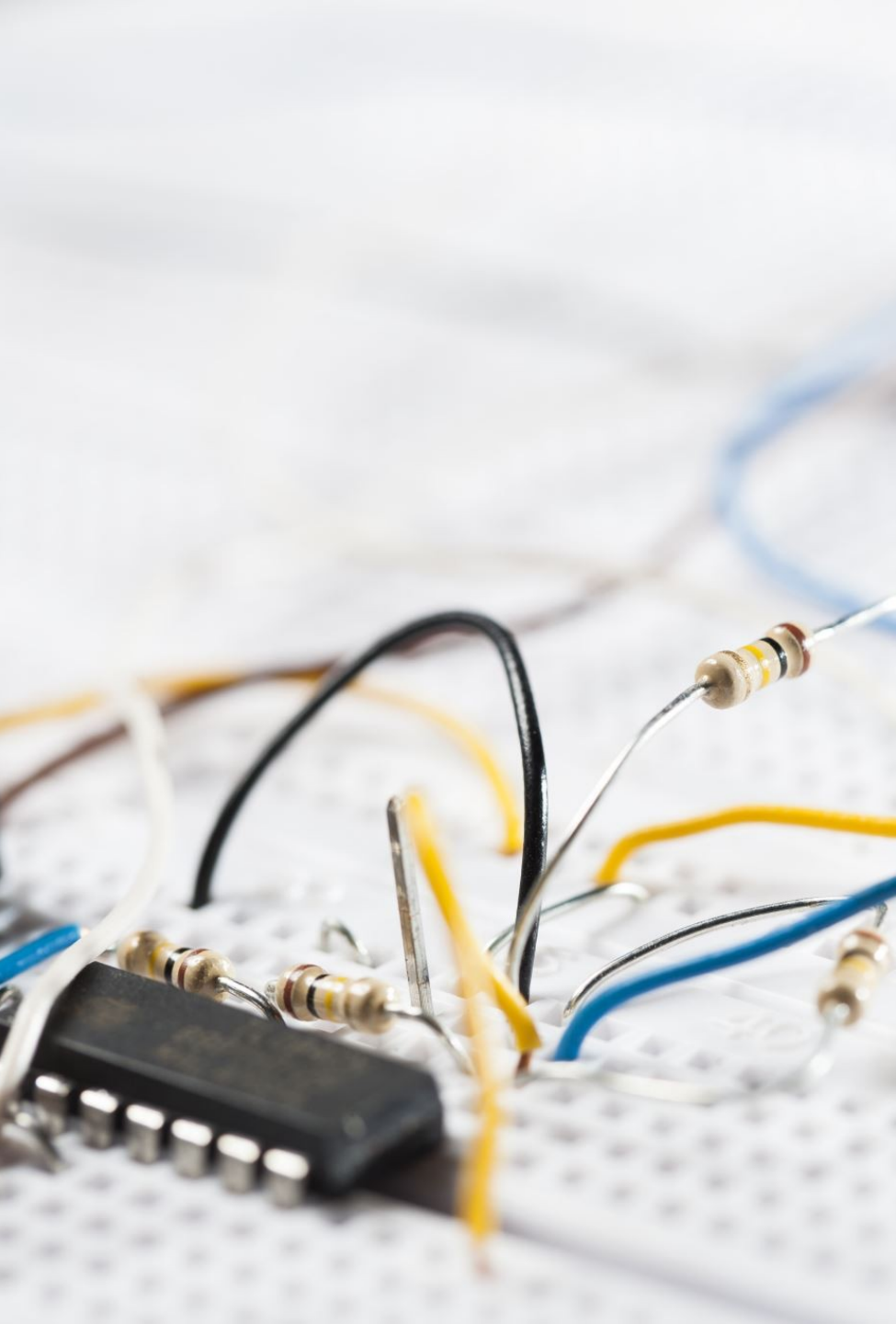


TROUBLESHOOTING NETWORKS

Some common network problems include:

- Slow internet speeds
- Lost connections
- Dropped packets
- DNS errors
- Routing problems





TO TROUBLESHOOT NETWORK PROBLEMS, YOU CAN USE THE FOLLOWING STEPS

- Check the physical connections. Make sure that all of the cables are properly connected.
- Check the network configuration. Make sure that the network configuration is correct.
- Ping devices. Use the ping command to test connectivity to other devices on the network.
- Trace routes. Use the traceroute command to trace the path of traffic between two devices.
- Check the logs. Check the logs for any errors or warnings.



CONCLUSION

- Hardware and network troubleshooting can be a challenging task, but it is essential for keeping your systems running smoothly. By following the troubleshooting methodology and using the tips provided in this presentation, you can effectively troubleshoot most hardware and network problems.

CASE STUDY





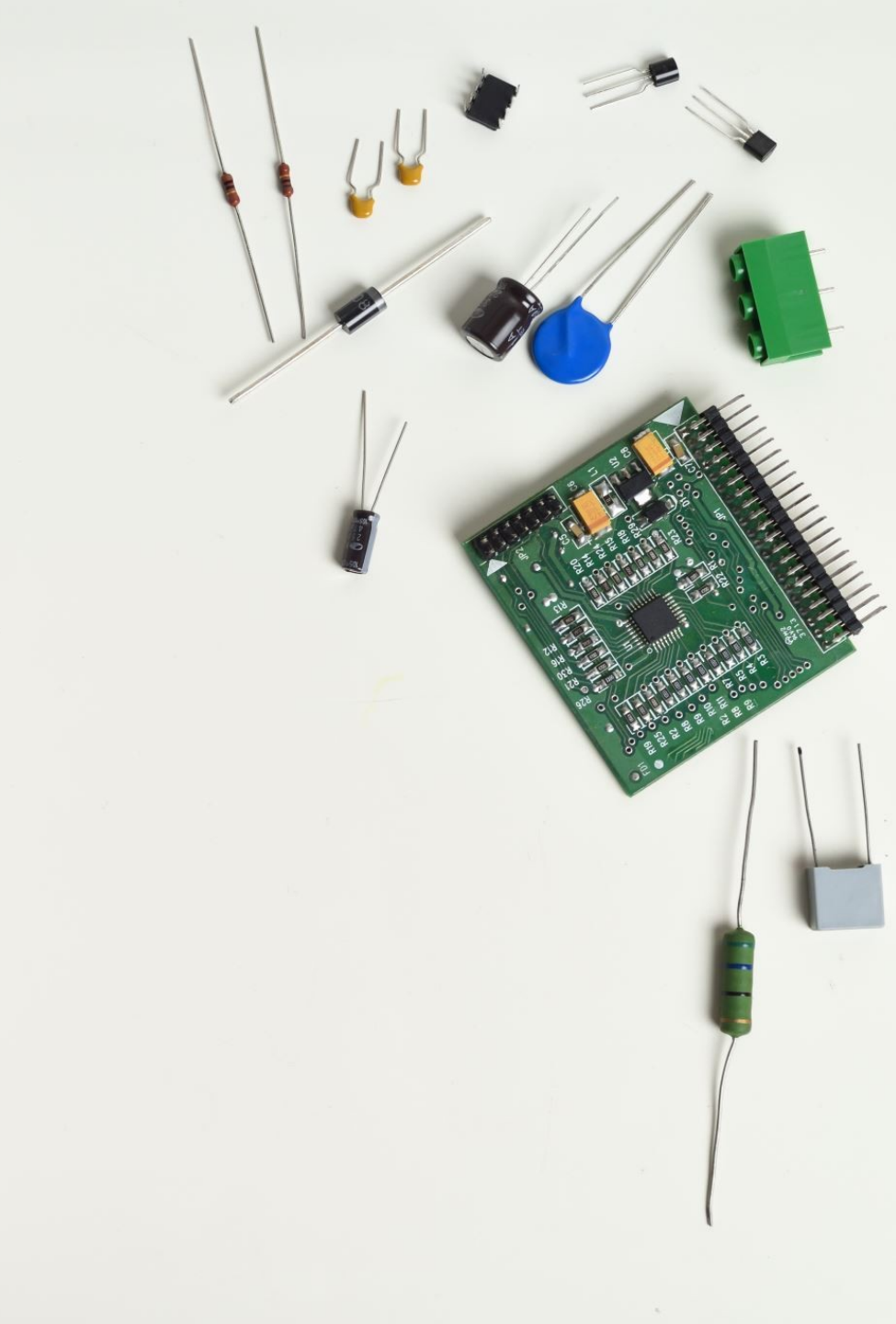
SCENARIO I

- A small business has a network of computers that is used by employees to access the internet and to share files. One day, the employees start to experience problems with their internet connection. The connection is slow and intermittent.
- The IT administrator investigates the problem and discovers that the router is the cause of the problem. The router is overheating and causing the connection to drop.
- The IT administrator replaces the router and the problem is resolved.



QUESTIONS:

1. What was the cause of the problem?
2. How did the IT administrator identify the cause of the problem?
3. What solution did the IT administrator implement to resolve the problem?



ANSWERS:

1. The cause of the problem was a faulty router.
2. The IT administrator identified the cause of the problem by checking the router's logs and by testing the router with a different cable.
3. The IT administrator resolved the problem by replacing the faulty router.

SCENARIO 2

- A home user has a computer that is running slowly. The user tries to restart the computer, but it still runs slowly. The user decides to troubleshoot the problem.
- The user checks the Task Manager and sees that a lot of CPU and memory is being used by a process called "svchost.exe". The user does some research and discovers that svchost.exe is a system process that is used to run various Windows services.
- The user decides to disable some of the unnecessary Windows services. After disabling a few services, the computer runs much faster.



QUESTIONS

- What was the cause of the problem?
- How did the user identify the cause of the problem?
- What solution did the user implement to resolve the problem?



ANSWERS

- The cause of the problem was that too many Windows services were running and using up CPU and memory.
- The user identified the cause of the problem by checking the Task Manager and by researching the svchost.exe process.
- The user resolved the problem by disabling some of the unnecessary Windows services.

SCENARIO 3

- A student is using a laptop computer to do homework in a coffee shop. The student connects to the coffee shop's Wi-Fi network, but the internet connection is very slow.
- The student tries restarting the laptop, but the internet connection is still slow. The student decides to troubleshoot the problem.
- The student checks the Wi-Fi signal strength and sees that it is weak. The student moves to a different location in the coffee shop where the Wi-Fi signal strength is stronger.
- The student also tries connecting to a different Wi-Fi network, and the internet connection is much faster.

QUESTIONS

- What was the cause of the problem?
- How did the student identify the cause of the problem?
- What solutions did the student implement to resolve the problem?

ANSWERS

- The cause of the problem was a weak Wi-Fi signal.
- The student identified the cause of the problem by checking the Wi-Fi signal strength.
- The student resolved the problem by moving to a different location in the coffee shop where the Wi-Fi signal strength was stronger and by connecting to a different Wi-Fi network.

END

