

Satybaldiev Alimansur (<https://github.com/alimansur1812>)

Task 0000: The pc can ping 192.168.0.1 (the router), but cannot ping google.com or open websites. This means the device can reach the network, but anything with a name (google.com) fails.

What is the most likely reason?

DNS is the service that translates a domain name into a numerical IP address. If the PC's DNS server address is missing or wrong, the computer cannot find the IP address for google.com and reach it.

Task 0001: Two computers on the same network are using the same IP address. This usually happens when someone sets a static IP that already exists or dhcp gives the same address twice.

Explain what problems this creates and why it happens.

Both computers will lose their connection. Data packets sent to that shared address go to the wrong place, or nowhere at all. The network switch gets confused because it sees two different physical devices trying to use the one IP address, causing the connection to fail for everyone involved.

Task 0002: The wifi signal shows full bars, but everything loads very slowly. The signal strength is good, so the problem is somewhere else.

Give me two possible reasons.

1) Your Wi-Fi signal only shows the connection to your router, not your actual internet speed. The provider might be having issues, or the internet plan may be too slow for what you're doing. 2) Even if Wifi is strong, bad cable or weak connection between router and modem might be the reason for slow speeds.

Task 0003: A device connects to the internet when using a cable, but cannot connect when using wi-fi at all. This means the internet connection is fine, but something about wireless connection is failing.

Identify what might be causing the issue

1) The router's wireless settings are blocking the device: MAC filtering, parental controls, or device blocking could prevent Wi-Fi access even though the cable works. 2) Wrong Wi-Fi password or authentication issue: If the password is old, typed incorrectly, or the router uses a security type the device doesn't support, it won't connect.

Task 0004: The youtube opens normally, but the university website does not load. The device clearly has internet access, so the problem is related to only some sites.

Explain why this situation can happen

The site could be blocked by: a firewall or antivirus, the university network, your ISP. A router between you and the university is malfunctioning, but the path to YouTube is fine.

Task 0005: A laptop shows "connected, secured" on wifi, but every website shows no internet. You try pinging 8.8.8.8 and it fails.

Explain what might be causing this problem

1) Wrong router settings (DNS, IP, login or password). 2) The ISP connection is down or blocked (not paid in time, outage). 3) The router failed to authenticate with the provider.

Task 0006: If you can open Google, youtube, and gmail, but WhatsApp web and Instagram do not load. Other devices on the same wifi work normally.

Give the most likely reason why only some services are failing

The device is using outdated or incorrect DNS settings, causing some domains to fail while others work. Google services work because they use their own DNS system, while WhatsApp and Instagram rely on different servers that the device can't reach.

Task 0007: All computers are on the same network. The printer is connected to Wifi but shows offline for everyone. The printer's IP address also cannot be pinged.

Explain two possible causes of why the printer becomes unreachable

1) The printer got a new IP address. Devices still try to reach the old one, so it appears offline and cannot be pinged. 2) Wifi connection failed, it may still show "connected" on the screen, but it isn't fully authenticated or linked to the router, so it becomes unreachable on the network.

Task 0008: Five computers can share files with each other, but none of them can access the internet. Internal communication works, external communication fails.

Explain what device or configuration might be the problem.

If the computers can communicate with each other, that means that the local network (LAN) is working, but the router is not providing a path to the internet, either because the WAN cable is disconnected, the ISP settings are wrong, or the router failed to route traffic outside the LAN.

Task 0009: Wifi works normally for the entire house, but one phone is extremely slow or disconnects often. All other devices have full speed.

Explain what could cause only one device to have poor network performance

1) Software might be outdated or bugged. 2) The saved Wifi profile or settings might be corrupted. 3) The phone has weak Wifi signal (antenna damaged or poor reception). 4) The Wifi chip in the phone might be failing.