

QUESTION 3

Study the scenario below and answer the question that follows:

Heinrich, a Network Intern at the Bloemfontein campus, can successfully connect to the server using its IP address. However, when attempting to connect using the server's hostname, the connection fails, and he receives the following error message:



What might be causing Heinrich's network connectivity issue, and what solutions would you recommend to help him resolve it based on your words and understanding? (20 Marks)

Possible Issues

Outdated DNS Cache

- Outdated DNS cache: The DNS using a cache to store temporary information of previous IP address of websites you've visited and if that information changes/corrupted the DNS will fail to connect as we see from the example above

Device-Specific Issues

- Outdated network drivers: Outdated drivers prevent your DNS from translating domain names into IP address

Modem & Router Troubleshooting

- DNS modem problems: sometimes the modem and router could be affecting the network causing it to lead to DNS issues

Possible Solutions

Flushing DNS Cache:

Flushing the DNS cache allows for the DNS to request for new information from website it is trying to connect to as it flushes/erases out all the previous IP address

Steps:

1. Open cmd as an Administrator
2. type the following in the terminal: `ipconfig /flushdns`
3. once done you should get a message saying "successfully flushed the DNS Resolver cache"
4. Close the cmd

Updating Network Drivers

Updating your network drivers will ensure that your hardware communicates properly with the OS

Steps:

1. Open the Device Manager by searching in your taskbar for the following "devmgmt"
2. Look for a network adapter and expand it by right clicking on to it
3. Find the outdated driver and update it by right-clicking on it then selecting the update option (note that the installing this will be handled by windows)
4. Restart your computer so that the driver can be fully loaded

Modem & Router Troubleshooting:

Restart Your Modem and Router usually does the trick but if it is still not resolved try flushing the DNS Cache

Steps:

1. Take out the power cord for both the router & modem
2. After taking it out wait about 30 seconds for the router & modem to fully boot down
3. Plug the power cord back in for the modem and wait for it to connect back on to the network
4. Then, follow same process for the modem for the router

References

Ballejos, L., 2025. *How to Fix the "DNS Server Not Responding Error"*. [Online]
Available at: <https://www.ninjaone.com/blog/dns-server-not-responding-error/#:~:text=Restarting%20the%20router%20and%20modem,for%20it%20to%20fully%20restart.>
[Accessed 13 06 2025].

bytagig.com, n.d.. *How to Fix Internet Issues Caused by Outdated Systems*. [Online]
Available at: <https://www.bytagig.com/articles/how-to-fix-internet-issues-caused-by-outdated-systems/>
[Accessed 13 06 2025].

keycdn.com, 2023. *What Is DNS Cache and How to Flush It*. [Online]
Available at: <https://www.keycdn.com/support/dns-cache>
[Accessed 13 06 2025].