Discussion-8 Identify a scenario where you would utilize CMD Network tools

Discussion Topic:

All systems (Windows, Mac, or Linux) come with a range of CMD tools that help troubleshoot network issues. The most common are ping, tracert, nslookup, ipconfig (or ifconfig in Linux), netstat, nmap, and arp. Identify a scenario where you would utilize one of those tools to troubleshoot a problem. Explain why your chosen tool is the best option for that specific scenario.

My Post:

Hello Class,

A scenario where I will use CMD based network tools is to troubleshoot a company web application that is extremely slow, and the application is hosted at the company's headquarters. Company employees in a branch office complained that accessing the web application hosted at the company's headquarters is extremely slow, or times out. Additionally, *pinging* the server application from the branch showed high latency, requests timed out, and packet loss, but did not give much more information.

I think that for this example, I will use *traceroute* on Linux/macOS from my Mac PC. Because *tracert* will show the path that the packets are taking to reach the server. Additionally, it shows potential delay (latency) existing at each hop on the path.
This is very useful as it can reveal potential bottlenecks within the network helping to pinpoint the location of the issue(s). It can also reveal if the high latency is located on the first hops suggesting that the problem resides in the local network (faulty switch, congested link, or misconfigured router). On the other hand, if the latency is fine within the company network but is significantly higher at the company's ISP gateway, the problem resides within the IPS network. Furthermore, *tracert* can sometimes reveal unknown routing loops and inefficient paths, providing an opportunity to optimize the network further.

Finally, based on the information provided by *tracert*, if the problem is within the company's network, I would inspect switch and router configurations, and check for congested links. If the problem is external to the network, I would contact the company's ISP and share with them the *tracert* information/data, if needed.

-Alex