Troubleshooting commands

Overview of troubleshooting commands

**A number of software utility programs are available that can help identify network problems.**

**Most of these utilities are provided by the operating sys. As command line interface (CLI) commands.**

The syntax for the commands may vary between operating systems.

Some are:

**Ipconfig** - display IP config info

**Ping** - tests connections to other IP

**Netstat** - displays network connections

**Tracert** - displays the route taken to the destination

**Nslookup** - directly queries the name server for info on a destination domain

Ipconfig

**On Windows devices, you can view the IP configuration information with the ipconfig command at the command prompt**. The ipconfig command has several options that are helpful including:

/all   
 **displays additional information including the MAC address, IP addresses of the default gateway, and the DNS servers**. It also **indicates if DHCP is enabled, the DHCP server address, and lease information.**

/release and /renew

***If IP addressing information is assigned dynamically***, **the command ipconfig /release will release the current DHCP bindings**. ipconfig /renew **will request fresh configuration information from the DHCP server.**

Ping

**It exist in order to test whether or not network devices are reachable through the IP network**

Ping results

**If ping commands to both the name and IP address are successful, but the user is still unable to access the application**, then the problem most likely resides in the application on the destination host.

**If neither ping is successful**, then network connectivity along the path to the destination is most likely the problem. If this occurs, it is common practice to ping the default gateway.

**If the ping to the default gateway is successful**, the problem is not local. **If the ping to the default gateway fails**, the problem resides on the local network.

In some cases, the ping may fail but network connectivity is not the problem. A ping may fail due to the firewall on the sending or receiving device, or a router along the path that is blocking the pings.