

LAB 3

Lab No	Description (Title)
2	CAT6 UTP EIA/TIA 568A/B straight and cross-over wiring, testing
3	Networking Commands using DOS Prompt
4	Overview of IP Addressing and sub-netting, static ip setting on linux machine, testing

Objective(s):

- To understand basic command line operation with Windows operating system and network configuration, testing and verification.

Apparatus: Windows 10

Basic Windows Commands

Command	Example	Description
ARP	C:\>arp -a	is short for address resolution protocol, It will show the IP address of your computer along with the IP address and MAC address of your router.
Hostname	C:\>hostname	This is the simplest of all TCP/IP commands. It simply displays the name of your computer.
ipconfig	C:\>ipconfig	The ipconfig command displays information about the host (the computer your sitting at)computer TCP/IP configuration.
	ipconfig /all	This command displays detailed configuration information about your TCP/IP connection including Router, Gateway, DNS, DHCP, and type of Ethernet adapter in your system.
	Ipconfig /renew	Using this command will renew all your IP addresses that you are currently (leasing) borrowing from the DHCP server. This command is a quick problem solver if you are having connection issues, but does not work if you have been configured with a static IP address.
	Ipconifg /release	This command allows you to drop the IP lease from the DHCP server.
	ipconfig /flushdns	This command is only needed if you're having trouble with your networks DNS configuration. The best time to use this command is after network configuration frustration sets in, and you really need the computer to reply with flushed.
Nbtstat	C:\>nbtstat -a	This command helps solve problems with NetBIOS name resolution. (Nbt stands for NetBIOS over TCP/IP)
Netdiag	C:\>netdiag	Netdiag is a network testing utility that performs a variety of network diagnostic tests, allowing you to pinpoint problems in your network. Netdiag isn't installed by default
Netstat	C:\>netstat	Netstat displays a variety of statistics about a computers active TCP/IP connections. This tool is most useful when you're having trouble with TCP/IP applications such as HTTP, and FTP.
Nslookup	C:\>nslookup	Nslookup is used for diagnosing DNS problems. If you can access a resource by specifying an IP address but not it's DNS you have a DNS problem.
Pathping	C:\>pathping	Pathping is unique to Window's, and is basically a combination of the Ping and Tracert commands. Pathping traces the route to the destination address then launches a 25 second test of each router along the way, gathering statistics on the rate of data loss along each hop.

Ping	C:\>ping	<p>Ping is the most basic TCP/IP command, and it's the same as placing a phone call to your best friend. You pick up your telephone and dial a number, expecting your best friend to reply with "Hello" on the other end. Computers make phone calls to each other over a network by using a Ping command.</p> <p>The Ping commands main purpose is to place a phone call to another computer on the network, and request an answer. Ping has 2 options it can use to place a phone call to another computer on the network. It can use the computers name or IP address.</p>
Rout	C:\>route	<p>The route command displays the computers routing table. A typical computer, with a single network interface, connected to a LAN, with a router is fairly simple and generally doesn't pose any network problems. But if you're having trouble accessing other computers on your network, you can use the route command to make sure the entries in the routing table are correct.</p>
Tracert	C:\>tracert	<p>The tracert command displays a list of all the routers that a packet has to go through to get from the computer where tracert is run to any other computer on the internet.</p>