

LAB: Basic Windows 10 Network Commands

1. Ping

Of all the Windows 10 network commands, Ping is probably the one almost everyone knows about and has used before. The Ping command allows you to test the reachability of a device on a network. Pinging a host should return four data packets, if the data packets are not returned you know there is a problem with your network connection.

To run the basic command, at the prompt type:

```
ping [host]
```

Where [host] is the name or IP address of a common host server (google.com)

2. IPConfig

The IPConfig command is one of the more useful basic Windows network commands everyone should know and use to troubleshoot problems. The IPConfig command displays basic IP address configuration information for the Windows device you are working on. In fact, the command will display information for every network adapter that has ever been installed on your Windows 10 computer.

To run the basic command, at the prompt type:

```
ipconfig
```

OR

```
ipconfig /all
```

The general information includes IP Addresses for both IPv4 and IPv6, the Default Gateway, and the Subnet Mask. Adding the parameter /all to the command will display DNS Server information and details concerning IP Address leases.

3. Getmac

Every network capable device on the internet has a unique identifying number called its MAC address. The number is assigned during manufacture and is established in the hardware of the device. Using the Getmac command, a user can determine the MAC address of their various network devices. Some administrators will use the unique MAC addresses of devices to limit what can and cannot connect to a network.

To run the basic command, at the prompt type:

```
getmac
```

4. HostName

The Windows 10 HostName network command will simply display the current name of your Windows 10 computer. This is the name your computer uses to identify itself to the other devices and servers on your local network. You can find this name in the System information screen in the GUI, but this command is quicker.

To run the basic command, at the prompt type:

```
hostname
```

5. NSLookUp

The NSLookUp Windows 10 network command displays information that you can use to diagnose Domain Name System (DNS) infrastructure. Using NSLookUp without a parameter will show the DNS server your PC is currently using to resolve domain names into IP addresses.

To run the basic command, at the prompt type:

```
nslookup
```

6. Tracert

Another handy tool for troubleshooting network connections in Windows 10 is the Tracert command. This command will trace the route a data packet takes before reaching its destination, displaying information on each hop along the route.

To run the basic command, at the prompt type:

```
tracert [host]
```

Where [host] is the name or IP address of a common host server (google.com)

7. Netstat

The Netstat command displays active TCP connections, ports on which the computer is listening, Ethernet statistics, the IP routing table, IPv4 statistics, and IPv6 statistics. When used without parameters, this command displays active TCP connections. The information this command provides can be useful in pinpointing problems in your network connections.

To run the basic command, at the prompt type:

```
netstat
```

8. Arp

The Windows 10 network command Arp displays entries in the Address Resolution Protocol (ARP) cache, which contains one or more tables that are used to store IP addresses and their resolved Ethernet physical addresses. To get useful information from the Arp command you must provide a parameter. The most general parameter is /a, which displays current Arp cache tables for all interfaces.

To run the basic command, at the prompt type:

```
arp /a
```

9. PathPing

Generally speaking, the Windows 10 network command PathPing combines the ping command with the tracert command, providing information about network latency and network loss at intermediate hops between a source and destination.

To run the basic command, at the prompt type:

```
pathping [host]
```

Where [host] is the name or IP address of a common host server (google.com)

10. SystemInfo

The last command on our list is the SystemInfo command, which displays a detailed list of configuration information about your Windows 10 PC. The information listed by this command is too lengthy to mention in full but includes the installed version of Windows 10, the host name, the Product ID, the type and number of CPUs, RAM configuration, network card details and installed hotfixes.

To run the basic command, at the prompt type:

```
systeminfo
```