TO KNOW IF CONNECTIONS ARE SUCCESSFUL:
ipconfig:
- IPv4m subnet, and default gateway.

ipconfig /all:
- MAC address
- IPv4, subnet, and default gateway,
- DHCP server, DNS server

ipconfig /release:
- To release the current DHCP bindings

ipconfig /renew:
- To request fresh configuration information from the DHCP server

ping «Website or IP address»

```
C:\>ping ciscolearn.web.com

Pinging 172.16.15.200 with 32 bytes of data:

Reply from 172.16.15.200: bytes=32 time=1ms TTL=126
Reply from 172.16.15.200: bytes=32 time=36ms TTL=126
Reply from 172.16.15.200: bytes=32 time=50ms TTL=126
Reply from 172.16.15.200: bytes=32 time=33ms TTL=126

Ping statistics for 172.16.15.200:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 1ms, Maximum = 50ms, Average = 30ms
```

TO KNOW THE MAC ADDRESS OF DEVICES:
arp -a:
- Display arp table

arp -d:
- Delete arp table

NSLOOKUP command:
nslookup to discover the IP addresses for any domain name.

TRACERT:

- Displays the route taken to the destination.

Transport Control Protocol (TCP) and User Datagram Protocol (UDP)

Port Number	Transport	Application Protocol
20	TCP	File Transfer Protocol (FTP) – Data
21	TCP	FTP – Control
22	TCP	Secure Shell (SSH)
23	TCP	Telnet
25	TCP	Simple Mail Transfer Protocol (SMTP)
53	UDP, TCP	Domain Name Service (DNS)
67	UDP	Dynamic Host Configuration Protocol (DHCP) – Server
68	UDP	DHCP – Client
69	UDP	Trivial File Transfer Protocol (TFTP)
80	TCP	Hypertext Transfer Protocol (HTTP)
110	TCP	Post Office Protocol version 3 (POP3)
143	TCP	Internet Message Access Protocol (IMAP)
161	UDP	Simple Network Management Protocol (SNMP)
443	TCP	Hypertext Transfer Protocol Secure (HTTPS)

NETSTAT command:
netstat to list the protocols in use.

```
C:\> netstat

Active Connections

  Proto Local Address          Foreign Address          State
   TCP   192.168.1.124:3126     192.168.0.2:netbios-ssn  ESTABLISHED
   TCP   192.168.1.124:3158     207.138.126.152:http     ESTABLISHED
   TCP   192.168.1.124:3159     207.138.126.169:http     ESTABLISHED
   TCP   192.168.1.124:3161     sc.msn.com:http          ESTABLISHED
   TCP   192.168.1.124:3166     www.cisco.com:http       ESTABLISHED
 (output omitted)
C:\> netstat
```

TELNET and SSH:
telnet provides a way to use a computer, connected via the network, to access a network device as if the keyboard and monitor were directly connected to the device, as if you were using a command line session on the server itself. Data transported as plaintext not encrypted.

ssh (Secure Shell) has the same job as Telnet bu is more secured than Telnet with encrypted data.

The summary in an image
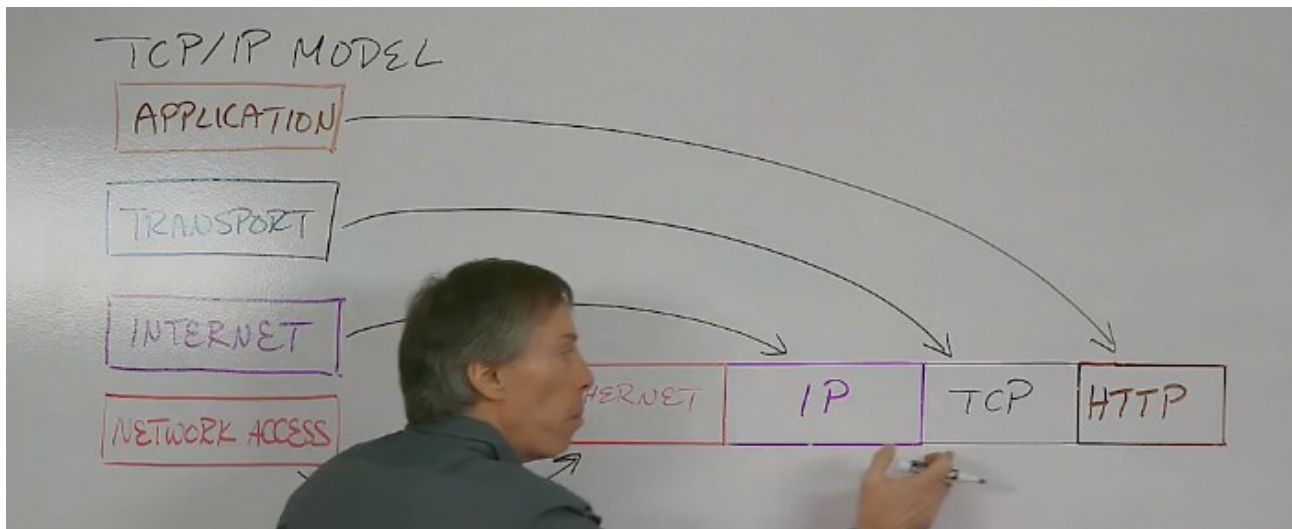
: To know the vendor of Network Interface Controller (NIC)