TCP/IP Addressing

- TCP/IP uses 32 bits, or four numbers between 0 and 255, to address a computer.
- IP Addresses
  - Each computer must have an IP address before it can connect to the Internet.
  - Each IP packet must have an address before it can be sent to another computer.
  - This is an IP address: 192.68.20.50
    This might be the same IP address: www.w3schools.com

An IP Address Contains 4 Numbers.

- Each computer must have a unique IP address.
- This is your IP address: 124.81.133.88
- TCP/IP uses four numbers to address a computer. The numbers are always between 0 and 255.
- IP addresses are normally written as four numbers separated by a period, like this: 192.168.1.50.

32 Bits = 4 Bytes

- TCP/IP uses 32 bits addressing. One computer byte is 8 bits. So TCP/IP uses 4 computer bytes.
- A computer byte can contain 256 different values:
- 00000000, 00000001, 00000010, 00000011, 00000100, 00000101, 00000110, 00000111, 00001000 .....and all the way up to 11111111.
- Now you know why a TCP/IP address is four numbers between 0 and 255.

Domain Names

- A name is much easier to remember than a 12 digit number.
- Names used for TCP/IP addresses are called domain names.
- w3schools.com is a domain name.
- When you address a web site, like http://www.w3schools.com, the name is translated to a number by a Domain Name Server (DNS).
- All over the world, DNS servers are connected to the Internet. DNS servers are responsible for translating domain names into TCP/IP addresses.
- When a new domain name is registered together with a TCP/IP address, DNS servers all over the world are updated with this information.