CCNA – 200-120

* Every network must have it 3 part

IP – Port – Protocol

* IP = 192.168.69.50
* Port = 80 and any system have port from 0 to 65536
* Protocol = Http or Https

IP

The Ip consists of the cells of each field called octet and the range for ipstrat from 0 and end 255 and every ip consists of 32 bits and every octet consists of 8 bits

Example = 20.100.0.254

IANA create ip

To make or create ip must now who many host you won’t so IANA make table to help you and host mean computer or device

|  |  |  |  |
| --- | --- | --- | --- |
| Class | ip | submask | Host |
| A | (1) – (126) | 255.0.0.0 | 16777771 |
| B | (128) – (191) | 255.255.0.0 | 65534 |
| C | (192) – (223) | 255.255.255.0 | 254 |

Example : if you have 500 host so any class you select

**For any network must be take care for broadcast its mean lob for send**

Create mask

To create mask must now how card network read the ip from binary and decimal

Example : you have ip 192.168.0.10

How change ip to binary

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| card | 128 | 64 | 32 | 16 | 8 | 4 | 2 | 1 |
| Ip | 192 | 64 | 0 | 0 | 0 | 0 | 0 | 0 |
| - | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ip | 168 | 40 | 40 | 8 | 8 | 0 | 0 | 0 |
| - | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 |
| Ip | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| - | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ip | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| - | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 |

Now change the decimal to binary must see where number 1 and plus with anther cell it have number 1

Under octet (128) = 1 and under (64) = 1

if plus 128+64 give you 192

plus 128 + 32 + 8 = 168

0

8 + 2 = 10

Use math in network

2h– 2

29 – 2 = 512 -2 =510 host

Is mean host = 9

Also 9 is mean 000000000

32 – 9 = 11111111.11111111.11111110.00000000

= 225 .255 .254 .0

Anther way = how many zero you have like 29– 2

Example 5000 hosts

213 – 2 = 8192

11111111.1111111.11110000.000000000

Submask 255.255.224.0

example:

\* icmp = internet control messaing prtocol

\*close in firewill or getway

\*ping = to call anyther pc

\*ipconfig = know your ip

\*ping /all = know all information about ip and submask and gatway

\*tracert = tracert router

**ROUTER-L3**

router work with ip

CPU-RAM-flash-nvram have ios-rom

roll over

routing table-R1

|  |  |  |
| --- | --- | --- |
| Network | Interface | Metric |
| 100.100.96.0/19 | F0/0 or 96.10 | 0 |
| 100.100.128.0/19 | F0/1 or 128.10 | 0 |

**SWITCH-L2**

switch work with mac-arp

mac = Media Access Control

arp=Address Resolution Protocol