Lab - Identifying IPV4 Addresses

Pedro Luis González Roa A01651517

Part 1

Step 1: Analyze the table shown below and identify the network portion and host portion of the given IPv4 addresses.

Key for table:

- **N = all 8 bits for an octet are in the netwrok portion of the address.**
- **n = all bits in the network portion of the address.**
- **H = all 8 bits for an octet are in the host portions of the address.**
- **h = a bit in the host portion of the address.**

IP Address/Prefix	Network/Host	Subnet Mask	Network Address	
192.168.10.10/24	N.N.N.H	255.255.255.0	192.168.10.0	192
10.101.99.17/23	N.N.nnnnnnnh.H	255.255.254.0	10.101.98.0	10.1
209.165.200.227/27	N.N.N.nnnhhhhh	255.255.255.3	209.165.200.96	209
172.31.45.252/24	N.N.N.H	255.255.255.0	172.31.45.0	172
10.1.8.200/26	N.N.N.nnhhhhhh	255.255.255.2	10.1.8.64	10.1
172.16.117.77/20	N.N.nnnnhhhh.H	255.255.250.0	172.16.112.0	172
10.1.1.101/25	N.N.N.nhhhhhhh	255.255.255.1	10.1.1.0	10.1
209.165.202.140/27	N.N.N.nnnhhhhh	255.255.255.3	209.165.202.64	209

IP Address/Prefix	Network/Host	Subnet Mask	Network Address	
192.168.28.45/28	N.N.N.nnnnhhhh	255.255.255.4	192.168.28.32	192

Step 2: Analyze the table below and list the range of host and broadcast addresses given a network/prefix mask pair.

IP Address/Prefix	First Host Address	Last Host Address	Broadcast Address	
192.168.10.10/24	192.168.10.1	192.168.10.254	192.168.10.255	
10.101.99.17/23	10.101.98.1	10.101.99.254	10.101.99.255	
209.165.200.227/27	209.165.200.97	209.165.200.254	209.165.200.127	
172.31.45.252/24	172.31.45.1	172.31.45.254	172.31.45.255	
10.1.8.200/26	10.1.8.193	10.1.8.254	10.1.8.127	
172.16.117.77/20	172.16.112.1	172.16.112.254	172.16.127.255	
10.1.1.101/25	10.1.1.1	10.1.1.254	10.1.1.127	
209.165.202.140/27	209.165.202.129	209.165.202.254	209.165.202.95	
192.168.28.45/28	192.168.28.33	192.168.28.254	192.168.28.47	

Part 2

Step 1 Analyze the table shown below and identify the type of address (network, host, multicast, broadcast address)

IP Address	Subnet Mask	Address Type
10.1.1.1	255.255.255.252	host
192.168.33.63	255.255.255.192	network
239.192.1.100	255.252.0.0	multicast
172.25.12.52	255.255.255.0	host
10.255.0.0	255.0.0.0	host
172.16.128.48	255.255.255.240	network
209.165.202.159	255.255.255.240	broadcast
172.16.0.255	255.255.0.0	host
224.10.1.11	255.255.255.0	multicast

Step 2: Analyze the table shown below and identigy as public or private.

IP Address/Prefix	Public or Private
209.165.201.30/27	Public
192.168.255.253/24	Private
10.100.11.103/16	Private
172.30.1.100/28	Private
192.31.7.11/24	Public
172.30.1.100/28	Private
192.31.7.11/24	Public
172.20.18.150/22	Private

IP Address/Prefix	Public or Private
128.107.10.1/16	Public
192.135.250.10/24	Public

Step 3: Analyze the table shown below and identify whether the address/prefix pair is a valid host address.

IP Address/Prefix	Network	Valid Host Address?	Reason
127.1.0.10/24	127.1.0.0	Yes	
172.16.255.0/16	172.16.0.0	Yes	
241.19.19.100/24	241.19.19.0	No	Reserved
192.168.0.254/24	192.168.0.254	Yes	
192.31.7.255/24	192.31.7.0	No	Broadcast
64.102.255.255/14	64.100.0.0	Yes	
224.0.0.5/16	224.0.0.0	No	Multicast
10.0.255.255/8	10.0.0.0	Yes	
198.133.219.8/24	198.133.219.0	Yes	

Reflection

Why should we continue to study and learn about IPv4 addressing if the available IPv4 address space is depleted?

Because most of the tecnology used today is using IPv4