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1. What is the IP address of the CIL LMS platform?

108.156.28.7
108.156.28.30
108.156.28.21
108.156.28.100

2. What are the NS IP addresses for Google, Facebook and Tesla?

a. Google

ns2.google.com internet address = 216.239.34.10
ns2.google.com AAAA IPv6 address = 2001:4860:4802:34::a
ns3.google.com internet address = 216.239.36.10
ns3.google.com AAAA IPv6 address = 2001:4860:4802:36::a
ns1.google.com internet address = 216.239.32.10
ns1.google.com AAAA IPv6 address = 2001:4860:4802:32::a
ns4.google.com internet address = 216.239.38.10
ns4.google.com AAAA IPv6 address = 2001:4860:4802:38::a

b. Facebook

c.ns.facebook.com AAAA IPv6 address = 2a03:2880:f1fc:c:face:b00c:0:35
c.ns.facebook.com internet address = 185.89.218.12
a.ns.facebook.com AAAA IPv6 address = 2a03:2880:f0fc:c:face:b00c:0:35
a.ns.facebook.com internet address = 129.134.30.12
b.ns.facebook.com AAAA IPv6 address = 2a03:2880:f0fd:c:face:b00c:0:35
b.ns.facebook.com internet address = 129.134.31.12
d.ns.facebook.com AAAA IPv6 address = 2a03:2880:f1fd:c:face:b00c:0:35
d.ns.facebook.com internet address = 185.89.219.12

c. Tesla

nameserver = a28-65.akam.net - 95.100.173.65
nameserver = a9-67.akam.net - 184.85.248.67
nameserver = edns69.ultradns.com - 204.74.66.69
nameserver = a10-67.akam.net - 96.7.50.67
nameserver = a7-66.akam.net - 23.61.199.66
nameserver = a1-12.akam.net - 193.108.91.12
nameserver = a12-64.akam.net - 184.26.160.64

3. What are the main differences between IPv4 and IPv6 addresses?

The main differences between IPv4 and IPv6 addresses are:

1. The address space. IPv4 is 32 bits long while IPv6 is 128 bits long.
2. Number of addresses. IPv4 is capable of about 4.3 billion addresses, while IPv6 is capable of an infinite number of addresses. So much that, every atom on earth can have 100 addresses
3. The appearance. IPv4 uses decimal numbers separated by dots while IPv6 uses hexadecimal numbers separated by colons

4. Identify the different classes of IPv4 addresses and provide the range of each class (a.b.c.d-m.n.p.q)?

Class A 1.0.0.1 to 126.255.255.254
Class B 128.1.0.1 to 191.255.255.254
Class C 192.0.1.1 to 223.255.254.254
Class D 224.0.0.0 to 239.255.255.255
Class E 240.0.0.0 to 254.255.255.254

5. What is a MAC address? What is special about the MAC address with this hexadecimal value "FF:FF:FF:FF:FF:FF"

- a. A MAC address is a unique identifier assigned to to network interface controller for communicating withing a network segment. It is the physical address of the device.
- b. MAC address with the value "FF:FF:FF:FF:FF:FF" is used to broadcast to all NICs within the network

6. Provide the actual IPv4 address for the following special IP address types:

- a. Local loopback address - 127.0.0.1
- b. Limited Broadcast address - 255.255.255.255