

Linux Quiz-3

1. What is the Network ID, Broadcast Address, and first & last valid IP on the subnetwork that the host 192.168.1.15/26 belongs to?

Ans.

Network ID: 192.168.1.0

Broadcast Address: 192.168.1.63

First valid IP: 192.168.1.1

Last valid IP: 192.168.1.62

2. What is the broadcast address of network 10.14.64.0/20?

Ans.

10.14.79.255

3. Which of the following is a valid IP host address given the network ID of 191.254.0.0 while using 11 bits for sub netting?

a. 191.254.0.32

b. 191.254.0.96

c. 191.254.1.29

d. 191.54.1.64

Ans. C

4. List the valid host range for subnet 192.168.15.48/28.

Ans. **192.168.15.49 – 192.168.15.63 (14 hosts/ net)**

5. What is DNS and explain its usefulness.

Ans. Domain name system (DNS) is a server that translates the domain names to a IP address. It makes the life of a user easy because it is easy to remember the name rather than remembering a series of numbers (IPV4 or IPV6 addresses). The DNS system maps the name with the appropriate user and then connects to that IP address. DNS itself has its own network if one DNS server doesn't have a corresponding IP for a domain name it just communicates with other servers until it gets the appropriate IP address.

6. Explain the purpose of NS records and CNAME records in DNS?

Ans. **CNAME (Canonical Name record):**

CNAME is a resource record which is used to specify whether the given domain is an alias for another domain or not. Let us consider this example, www.facebook.com is the name of the domain and let us think there is an alias name for the same domain as www.fb.com the DNS should return the same IP address for both the domain names. So it will keep the fb.com as the canonical name record with facebook.com as its value and then redirects it to the same IP address.

NS (Name Server Records):

NS records specify the servers which are providing DNS services for that domain name. It allows you to delegate a subdomain of your server to another name server.

7. Describe the purpose of load balancing and list out the load balancing algorithms.

Ans: Load balancing does the distribution of all the network traffic across a group of backend servers, server pool or server farm. Below is the list of load balancing algorithms:

- a) Round robin- sequential distribution of requests
- b) Least connections- A new request is sent to the server with the least number of connections. The least number of connections for a server is known by the computing capacity of the server.
- c) IP hash- The IP address of the client is used to determine which sever receives the request.

8. List out the benefits of Proxy Server.

Ans: A proxy server is a server that act as an intermediate between a client computer and a web server. Which allows client computers to make indirect requests through it for resources or services such as web page Proxy servers will speed up access to frequently accessed web pages, by building a cache of frequently requested web pages or files. By speeding up the network traffic, which indeed relieves the load on the servers.

9. What is NAT and explain its purpose.

Ans: Network Address Translation (NAT) is a server which converts your private IP into a public IP. It is done to hide your computer from the internet.

10. Explain terms a) TLD b) FQDN c) sub domain in DNS

Ans:

Top Level Domain(TLD): It is a part of the domain name at the highest level in the hierarchical domain name system.

Ex: com, org, net etc.,

Fully Qualified Domain Name (FQDN): It is the complete domain name for a specific computer, or host, on the Internet. It consists of two parts: the hostname and the domain name.

Ex: myhost.domainname.com

Sub Domain: It is a part of larger domain. For example, east.us.com and west.us.com, both are subdomains of us.com.