Linux Server - Server to Client:

1. What is the role of a Linux server in a client-server architecture?

A Linux server in a client-server architecture provides resources, data, services, or programs to clients over a network. It handles client requests and processes them accordingly, using services like HTTP (Apache/Nginx), SSH, FTP, etc.

2. How do you configure SSH on a Linux server to allow client connections?

To configure SSH, install OpenSSH Server (`sudo apt install openssh-server`), start the SSH service (`sudo systemctl start ssh`), enable it on boot (`sudo systemctl enable ssh`), and configure `/etc/ssh/sshd_config` as needed.

3. Practical: Setup an HTTP web server on Linux and access it from a client.

Install Apache (`sudo apt install apache2`), enable the service (`sudo systemctl enable apache2`), and ensure port 80 is open in the firewall. Access from client via browser using server IP (e.g., http://192.168.1.100).

4. How do Linux servers authenticate clients in a secure environment?

Authentication methods include SSH keys, PAM (Pluggable Authentication Modules), LDAP, Kerberos, and third-party authentication tools like FreeIPA or Active Directory integration.

5. Practical: Share files between Linux server and client using NFS.

Install NFS server (`sudo apt install nfs-kernel-server`) and create a shared directory. Add the export to `/etc/exports`, then run `sudo exportfs -a`. On the client, mount the directory using `mount server_ip:/path /mountpoint`.

6. Which modern technologies are used in the Linux server to manage client requests efficiently?

Technologies include containers (Docker), orchestration (Kubernetes), reverse proxies (Nginx, HAProxy), load balancers, and systemd for service management.

7. Practical: How do you configure a Samba server on Linux for Windows clients?

Install Samba (`sudo apt install samba`), configure `/etc/samba/smb.conf`, create a Samba user, and restart the service. Access from Windows using `\\server_ip\sharename`.

8. How can you monitor and log client connections to a Linux server?

Use tools like `journalctl`, `syslog`, `auditd`, and third-party tools like Prometheus, Grafana, ELK stack for logging and monitoring client activity.

9. Practical: Use SSH key-based authentication for a client to access a Linux server.

Generate a key on the client using `ssh-keygen`, then copy it to the server using `ssh-copy-id user@server`. Disable password login in `sshd_config` for added security.

10. What are the current trends in Linux server-client deployment?

Trends include cloud-based deployments (AWS EC2, Azure VMs), Infrastructure as Code (Terraform, Ansible), microservices architecture, and use of CI/CD pipelines.