**What Is FTP?**

FTP (File Transfer Protocol) is a standard network protocol used to transfer files between a client and server over a TCP-based network, such as the Internet. It allows users to upload, download, delete, rename, move and copy files on a server.

**How would you manage number of FTP clients that connect to your FTP server?**\ You can manage the number of FTP clients by configuring the FTP server settings. For example, in **VSFTPD**, you can set:

* max\_clients=10 – limits the number of simultaneous clients
* max\_per\_ip=2 – limits the number of connections per IP\ These settings are defined in the /etc/vsftpd/vsftpd.conf file.

**What is the Difference between FTP and FTP Server?**

* **FTP** is the protocol used for transferring files.
* **FTP Server** is the software (like VSFTPD, ProFTPD) that implements the FTP protocol and allows clients to connect and transfer files.

**How would you disabled downloads from FTP server?**\ To disable downloads:

* Set download\_enable=NO in the VSFTPD configuration file (/etc/vsftpd/vsftpd.conf)
* Ensure proper file permissions are set to prevent read access
* Restart the FTP service after changes: systemctl restart vsftpd

**What are the most features of VSFTPD, How to display certain text message before a client connects to FTP server. How would you get this done?**\ **Features of VSFTPD** include:

* High performance
* Security (supports SSL/TLS)
* Configurable access controls
* IPv6 support\ To display a message before login:
* Create a banner file, e.g., /etc/vsftpd/banner.txt
* Add banner\_file=/etc/vsftpd/banner.txt to vsftpd.conf
* Restart the service: systemctl restart vsftpd

**What are different versions of NFS Server ?**\ NFS has the following versions:

* **NFSv2** – simple and widely supported, but outdated
* **NFSv3** – adds support for larger files and asynchronous writes
* **NFSv4** – includes security enhancements, performance improvements, and stateful protocol features

**What are configuration files of NFS server ?, What are different options used in /etc/exports file ?**

* **Configuration files**:
  + /etc/exports – defines shared directories
  + /etc/fstab – used on clients for mounting
* **Options in /etc/exports**:
  + rw – read/write access
  + ro – read-only
  + sync – synchronous writes
  + no\_root\_squash – allows root access
  + subtree\_check – checks if the file is within the exported directory

**Create an NFS share on Linux machine as " \ \ \"**\ Steps:

1. Create the directory:
2. mkdir -p /srv/nfs/&lt;classname&gt;\_&lt;teamno&gt;\_&lt;PSno&gt;\_&lt;sysno&gt;
3. ¨G0G

1. Add users to groups:
2. usermod -aG Managers user1
3. usermod -aG Employees user2
4. Set permissions:
   * Managers: chmod 750
   * Employees: chmod 740
5. Export the share in /etc/exports
6. Ensure it's accessible from Windows using Samba or NFS client tools

**Describe the process of setting up an NFS server and client.**\ **On Server:**

* Install NFS: yum install nfs-utils
* Create shared directory
* Add entry to /etc/exports
* Start services: systemctl start nfs-server\ **On Client:**
* Install NFS utilities
* Mount using: mount server:/share /mnt

**What are the different types of NFS protocols and how do they differ?**

* **NFSv2**: Simple, limited features
* **NFSv3**: Supports large files, stateless
* **NFSv4**: Stateful, secure (Kerberos), better performance

**What are the security considerations when setting up an NFS server?**

* Use no\_root\_squash cautiously
* Restrict access using IPs in /etc/exports
* Use firewalls to limit access
* Prefer NFSv4 with Kerberos authentication
* Regularly audit logs

**on which ports Samba server works**\ Samba uses:

* TCP 139 (NetBIOS Session Service)
* TCP 445 (Direct SMB over TCP)
* UDP 137, 138 (NetBIOS Name and Datagram Service)

**How do you check and configure network settings in Linux?**

* Use ip a, nmcli, ifconfig (deprecated)
* Edit config files like /etc/sysconfig/network-scripts/ifcfg-<interface>
* Restart network: systemctl restart network

**What are some common reasons for a Linux system not booting up, and how would you troubleshoot them?**

* **Reasons**:
  + Corrupt bootloader
  + Missing kernel/initramfs
  + Disk errors
  + Misconfigured fstab
* **Troubleshooting**:
  + Boot into rescue mode
  + Check logs in /var/log
  + Use fsck for disk checks
  + Reinstall GRUB if needed

**How do you troubleshoot an NFS server when it is not responding?**

* Check service status: systemctl status nfs-server
* Verify exports: exportfs -v
* Check firewall and SELinux
* Use showmount -e <server> from client
* Check logs: /var/log/messages

**What are the performance considerations when designing an NFS system?**

* Use NFSv4 for better performance
* Optimize mount options (async, noatime)
* Use faster disks and network interfaces
* Monitor with tools like nfsstat, iotop

**Describe the difference between nslookup and dig commands?**

* **nslookup**: Simple DNS query tool, deprecated in some systems
* **dig**: More powerful, detailed output, supports scripting\ Both are used to query DNS records.

**Describe the significance of log files in troubleshooting, and provide examples of important log files used in troubleshooting.**\ Log files help identify system issues. Examples:

* /var/log/messages – general system logs
* /var/log/syslog – system events
* /var/log/secure – authentication logs
* /var/log/httpd/ – web server logs
* /var/log/audit/audit.log – SELinux logs

**Which permission allows a user to run an executable with the permissions of the owner or group owner instead of with their own permissions.?**

* **SetUID (Set User ID)** – chmod u+s <file>
* **SetGID (Set Group ID)** – chmod g+s <file>\ These allow execution with the file owner's or group's privileges.

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