

NFS

Here are exercises focused on setting up a basic NFS (Network File System) server and client using dnf for package installation. These exercises will guide you through the installation and configuration process.

Part 1: Setting Up the NFS Server

Exercise 1: Install NFS Server

Objective: Install the NFS server package.

1. Open your terminal on the server machine.
2. Install the NFS server package:

```
sudo dnf install nfs-utils
```

Exercise 2: Create Export Directory

Objective: Create a directory to share over NFS.

1. Create a directory that you want to share (e.g., /srv/nfs_share):

```
sudo mkdir -p /srv/nfs_share
```

2. Set permissions for the directory (make it writable by everyone for demonstration purposes):

```
sudo chmod 777 /srv/nfs_share
```

Exercise 3: Configure NFS Exports

Objective: Configure NFS exports in the configuration file.

1. Open the NFS exports configuration file:

```
sudo nano /etc/exports
```

2. Add the following line to allow access to the NFS share from the network (adjust the subnet as needed):

```
/srv/nfs_share 192.168.4.0/24(rw,sync,no_root_squash)
```

- rw : Read and write permissions.
- sync : All changes are written to disk before responding.
- no_root_squash : Allows root access from the client.

3. Save and exit the editor.

Exercise 4: Start and Enable NFS Services

Objective: Start the NFS service and enable it to start on boot.

1. Start the NFS server:

```
sudo systemctl start nfs-server
```

2. Enable the NFS server to start on boot:

```
sudo systemctl enable nfs-server
```

Exercise 5: Export the NFS Shares

Objective: Export the NFS shares defined in the configuration.

1. Run the export command to make the shared directory available:

```
sudo exportfs -a
```

2. Verify that the NFS share is active:

```
sudo exportfs -v
```

Part 2: Setting Up the NFS Client

Exercise 6: Install NFS Client

Objective: Install the NFS client package.

1. Open your terminal on the client machine.

2. Install the NFS client package:

```
sudo dnf install nfs-utils
```

Exercise 7: Create Mount Point

Objective: Create a directory to mount the NFS share.

1. Create a directory to mount the NFS share (e.g., /mnt/nfs_share):

```
sudo mkdir -p /mnt/nfs_share
```

Exercise 8: Mount the NFS Share

Objective: Mount the NFS share from the server.

1. Mount the NFS share using the following command (replace 192.168.4.X with the actual server IP):

```
sudo mount 192.168.4.X:/srv/nfs_share /mnt/nfs_share
```

2. Verify that the NFS share is mounted:

```
df -h
```

Exercise 9: Test the NFS Share

Objective: Test the NFS share by creating a file.

1. Navigate to the mounted directory:

```
cd /mnt/nfs_share
```

2. Create a test file:

```
echo "This is a test file on the NFS share." > testfile.txt
```

3. Check that the file is created:

```
cat testfile.txt
```

Part 3: Automating NFS Mount on Boot

Exercise 10: Configure fstab for NFS Mount

Objective: Ensure the NFS share mounts automatically on boot.

1. Open the fstab file in an editor:

```
sudo nano /etc/fstab
```

2. Add the following line to the end of the file (replace 192.168.4.X with the actual server IP):

```
192.168.4.X:/srv/nfs_share /mnt/nfs_share nfs defaults 0 0
```

3. Save and exit the editor.

4. Test the configuration by unmounting the NFS share and remounting all:

```
sudo umount /mnt/nfs_share  
sudo mount -a
```

5. Verify that the NFS share is mounted again:

```
df -h
```

Part 4: Cleaning Up

Objective: Clean up the setup.

1. If you want to remove the NFS setup, you can unmount the NFS share and remove the directories:

```
sudo umount /mnt/nfs_share  
sudo rmdir /mnt/nfs_share
```

2. On the server, you can remove the export directory if no longer needed:

```
sudo rmdir /srv/nfs_share
```

3. Do not forget to also remove the nfs entry from **/etc/fstab!**