Assignment 26 EASY

NIS: Provides centralized authentication and network information sharing. Users created on the NIS server are accessible on all NIS clients, allowing consistent user accounts across a network.

NFS: Enables file sharing across the network by allowing directories from one machine to be mounted and accessed on another, making it appear as if the shared directory is local.

Objectives:

Set up an NIS server on a single machine to manage user accounts.

Configure NFS to share directories on the same machine, accessible by NIS-authenticated users.

Steps

1. Install Required Packages

Start by installing NIS, NFS, and additional tools.

**sudo apt update**

**sudo apt install nis nfs-kernel-server yp-tools ypbind -y**

2. Configure NIS Server

Set the NIS Domain Name: Set the domain name for NIS, which is used for organizing network users.

**sudo nano /etc/defaultdomain**

Add a domain name (for example, example.com).

example.com

Configure NIS Server Settings: Edit the NIS configuration to set it as the server.

**sudo nano /etc/ypserv.conf**

Ensure the file allows connections from local IPs and modify if necessary.

Edit the NIS Makefile: Configure which files to manage centrally by NIS. By default, it includes user accounts, passwords, groups, and hosts.

**sudo nano /var/yp/Makefile**

Ensure these lines are uncommented to include passwd, group, and hosts files in the NIS maps:

# Check these lines and uncomment them if necessary

all: passwd group hosts rpc services protocols netid ...

Initialize the NIS Database:

**sudo ypinit -m**

Follow the prompts, and enter 127.0.0.1 when it asks for a server.

Start and Enable NIS:

**sudo systemctl start ypserv**

**sudo systemctl enable ypserv**

3. Configure the NIS Client (Same Machine in This Case)

Edit the /etc/yp.conf file:

**sudo nano /etc/yp.conf**

Add the following line to specify the NIS domain and server:

domain example.com server 127.0.0.1

Set the NIS Domain Name for the client:

**sudo domainname example.com**

Configure the /etc/nsswitch.conf File: Ensure NIS is listed as a source for passwd, group, and shadow.

**sudo nano /etc/nsswitch.conf**

Modify these lines to look like:

*passwd: compat nis*

*group: compat nis*

*shadow: compat nis*

Start and Enable NIS Client Service:

**sudo systemctl start ypbind**

**sudo systemctl enable ypbind**

4. Set Up NFS for File Sharing

Create a Directory to Share:

**sudo mkdir -p /srv/shared\_folder**

**sudo chown nobody:nogroup /srv/shared\_folder**

**sudo chmod 777 /srv/shared\_folder**

Configure NFS Exports: Define the directory and network permissions in /etc/exports.

**sudo nano /etc/exports**

Add this line to export the directory to the local machine (127.0.0.1):

*/srv/shared\_folder 127.0.0.1(rw,sync,no\_subtree\_check)*

Export the Shared Directory:

**sudo exportfs -a**

Start and Enable NFS Server:

**sudo systemctl start nfs-kernel-server**

**sudo systemctl enable nfs-kernel-server**

5. Test NIS and NFS Setup

Create NIS Users and Groups:

Add users that will be shared via NIS.

**sudo adduser nisuser1**

**sudo adduser nisuser2**

Mount the NFS Directory (as a simulated client):

**sudo mount -t nfs 127.0.0.1:/srv/shared\_folder /mnt**

Switch User and Access Shared Folder:

Log in as an NIS user and navigate to the shared directory.

**su - nisuser1**

**cd /mnt**

Verify Access: Create or read files in /mnt as the NIS user to verify shared access.

Summary of Commands

This is a consolidated command list for your reference:

# Install required packages

**sudo apt update**

**sudo apt install nis nfs-kernel-server yp-tools ypbind -y**

# Set NIS domain

**echo "example.com" | sudo tee /etc/defaultdomain**

# Configure NIS Server (Initialize NIS)

**sudo nano /etc/ypserv.conf**

**sudo nano /var/yp/Makefile**

**sudo ypinit -m**

**sudo systemctl start ypserv**

**sudo systemctl enable ypserv**

# Configure NIS Client (on the same machine)

**sudo nano /etc/yp.conf**

**sudo nano /etc/nsswitch.conf**

**sudo domainname example.com**

**sudo systemctl start ypbind**

**sudo systemctl enable ypbind**

# NFS Setup

**sudo mkdir -p /srv/shared\_folder**

**sudo chown nobody:nogroup /srv/shared\_folder**

**sudo chmod 777 /srv/shared\_folder**

**echo "/srv/shared\_folder 127.0.0.1(rw,sync,no\_subtree\_check)" | sudo tee -a /etc/exports**

**sudo exportfs -a**

**sudo systemctl start nfs-kernel-server**

**sudo systemctl enable nfs-kernel-server**

# Test setup

**sudo adduser nisuser1**

**sudo adduser nisuser2**

**sudo mount -t nfs 127.0.0.1:/srv/shared\_folder /mnt**

**su - nisuser1**

**cd /mnt**

This setup will allow NIS-authenticated users to access an NFS shared folder on a single Ubuntu machine, simulating a centralized user and file-sharing environment.