# **NFS(Network File System)**

### 

## Prerequisites

a regular, non-root user with sudo privileges configured on server.

OS - Ubuntu 12.04

**Packages required:**

nfs-kernel-server

portmap

### About NFS (Network File System) Mounts

NFS mounts work to share a directory between several virtual servers. This has the advantage of saving disk space, as the home directory is only kept on one virtual private server, and others can connect to it over the network. When setting up mounts, NFS is most effective for permanent fixtures that should always be accessible.

## Setup (Example)

An NFS mount is set up between at least two virtual servers. The machine hosting the shared network is called the server, while the ones that connect to it are called ‘clients’.

This tutorial requires 2 servers: one acting as the server and one as the client. We will set up the server machine first, followed by the client. The following IP addresses will refer to each one:

**Master: 12.34.56.789**

**Client: 12.33.44.555**

The system should be set up as root. You can access the root user by typing

sudo su-

## Setting Up the NFS Server

### Step One—Download the Required Software

apt-get install nfs-kernel-server portmap

### Step Two—Export the Shared Directory

The directory to be shared should then be added to the /etc/exports file, which specifies both the directory to be shared and the details of how it is shared.

Second, we should change the ownership of the directory to the user, nobody and the group, no group.

chown nobody:nogroup /var/nfs

After completing those steps, it’s time to export the directories to the other VPS:

vim /etc/exports

E.g.

Add the following lines to the bottom of the file, sharing both directories with the client:

/home 12.33.44.555(rw,sync,no\_root\_squash,no\_subtree\_check)  
/var/nfs 12.33.44.555(rw,sync,no\_subtree\_check)

These settings accomplish several tasks:

* **rw:** This option allows the client server to both read and write within the shared directory
* **sync:** Sync confirms requests to the shared directory only once the changes have been committed.
* **no\_subtree\_check:** This option prevents the subtree checking. When a shared directory is the subdirectory of a larger filesystem, nfs performs scans of every directory above it, in order to verify its permissions and details. Disabling the subtree check may increase the reliability of NFS, but reduce security.
* **no\_root\_squash:** This phrase allows root to connect to the designated directory

Once you have entered in the settings for each directory, run the following command to export them:

exportfs -a

## Setting Up the NFS Client

### Step One—Download the Required Software

apt-get install nfs-common portmap

### Step Two—Mount the Directories

Once the programs have been downloaded to the the client server, create the directories that will contain the NFS shared files

mkdir -p /mnt/nfs/home  
mkdir -p /mnt/nfs/var/nfs

Then go ahead and mount them

mount 12.34.56.789:/home /mnt/nfs/home  
mount 12.34.56.789:/var/nfs /mnt/nfs/var/nfs

You can use the df -h command to check that the directories have been mounted.

df -h

Additionally, use the mount command to see the entire list of mounted file systems.

mount

## Testing the NFS Mount

You can ensure that the mount is always active by adding the directories to the fstab file on the client. This will ensure that the mounts start up after the server reboots.

vim /etc/fstab

12.34.56.789:/home /mnt/nfs/home nfs auto,noatime,nolock,bg,nfsvers=3,intr,tcp,actimeo=1800 0 0  
12.34.56.789:/var/nfs /mnt/nfs/var/nfs nfs auto,noatime,nolock,bg,nfsvers=3,intr,tcp,actimeo=1800 0 0

## Removing the NFS Mount

sudo umount /*directory name*

Also remove entry from /etc/fstab file if it is there.

https://www.digitalocean.com/community/tutorials/how-to-set-up-an-nfs-mount-on-ubuntu-12-04