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(Network Group 3)

**Description**: For this project, we will be using NFSv4 as our chosen network file system. For resources, we have 3 basic centos7 servers. One to be used as the NFS host(file server) and the others as client servers.

Networking:



**Use Case**: Having a Distributed File System creates opportunities for sharing data while still having full control and redundant data. To test this, we have decided to create an Authoritative server that will share a specified directory. This directory will be shared and synchronized with two client machines.

**Pros**: Easy to set up, has many options, easily managed

**Cons**: No\_Root\_Squash is a known exploit and it is essential to have connectivity to at least one machine

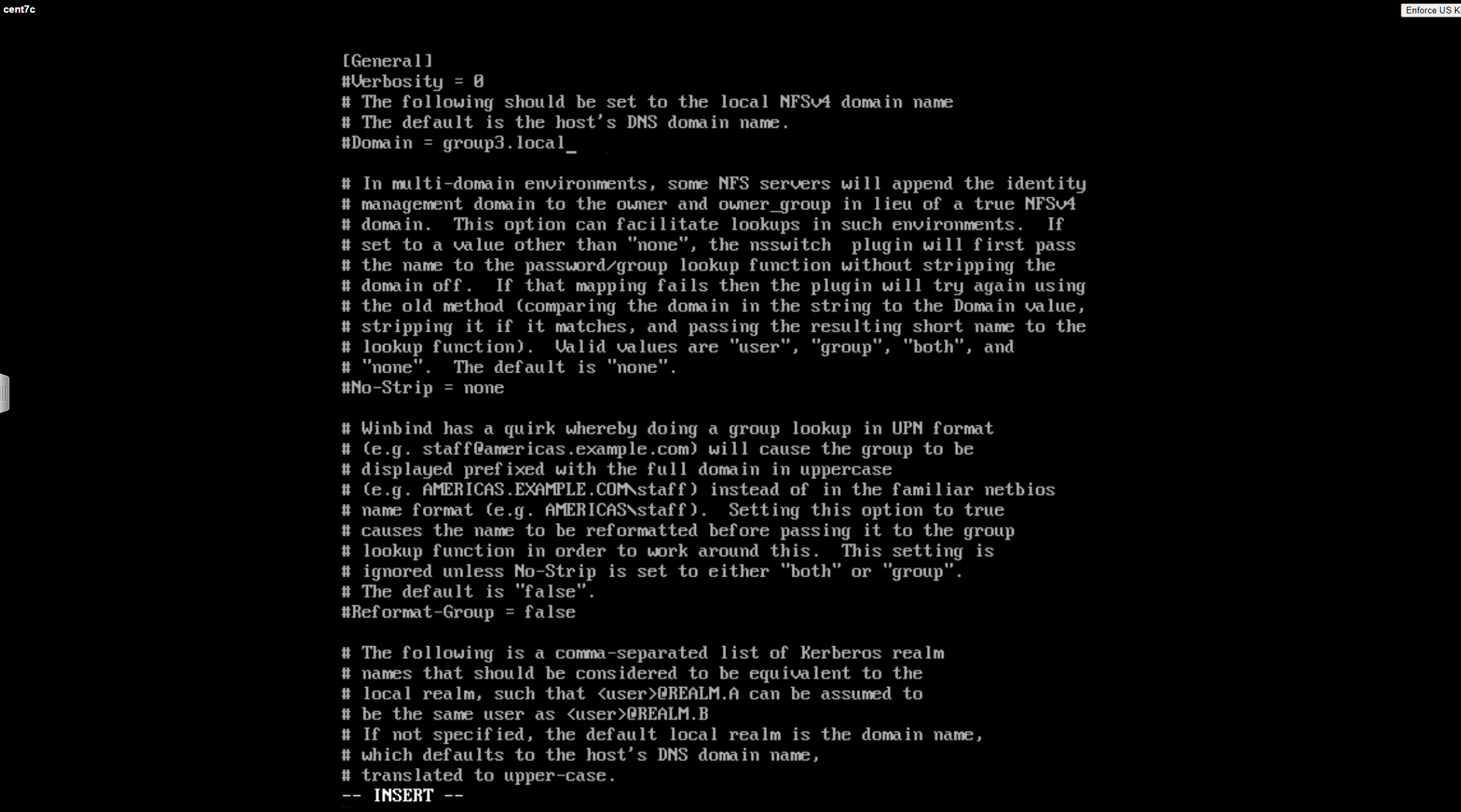
***Process****:*

The first step in the process is to install the nfs-utils package with the following command:

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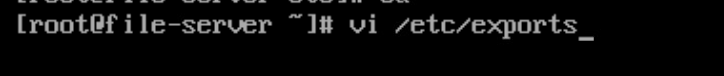
Next enter the following command: ***Vim /etc/idmap.conf***

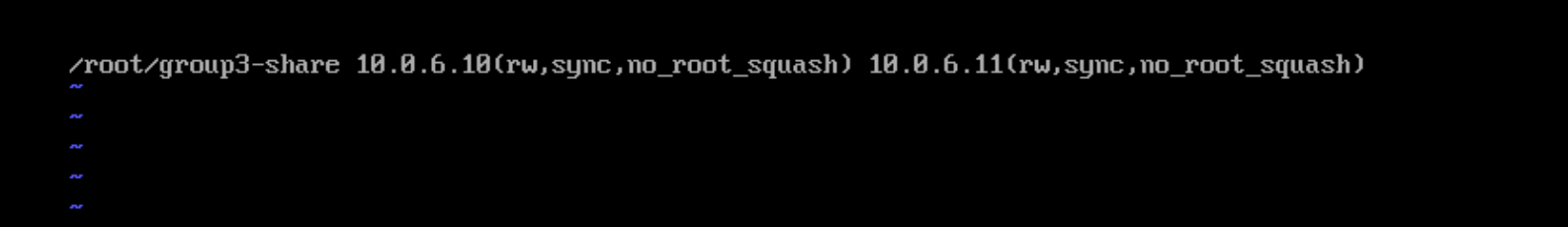
Here we will only be changing the domain section. Alter this to be your domain so that the client and host machines will be able to communicate freely with each other.

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***Vi /etc/exports***

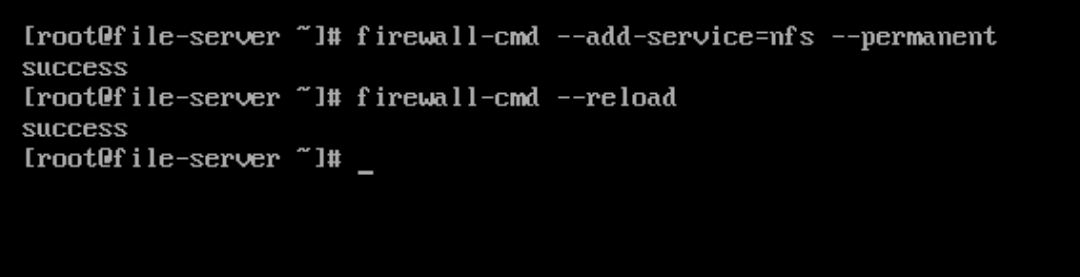
Within the /etc/exports file, list the directory you are sharing, then list the IP addresses of the clients you are sharing the directory with. To the right of the IP address are settings you can set to control how these clients interact with the directory. For example, “rw” gives the client the privileges of read and write. This means the clients can access and even change the files in the directory. The “sync” setting allows for the directory to be updated across all machines without needing to remount every time a change is made.

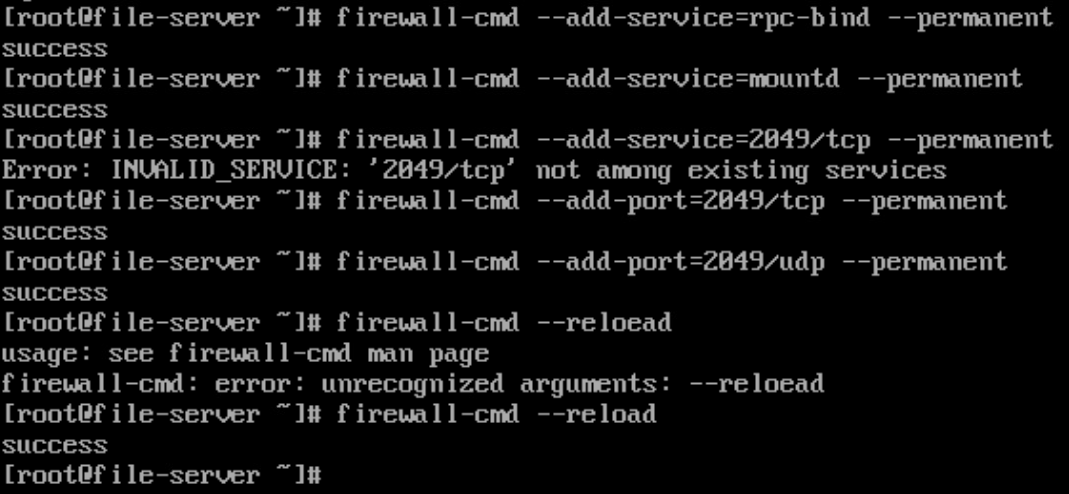
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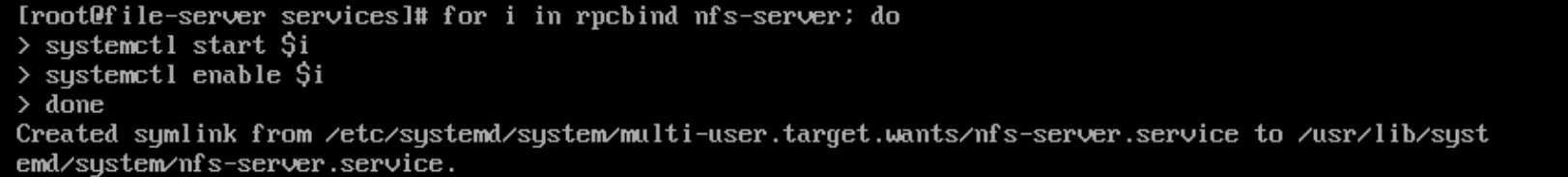
**Configuring Firewall**

The following commands are used to set up and configure the firewall.



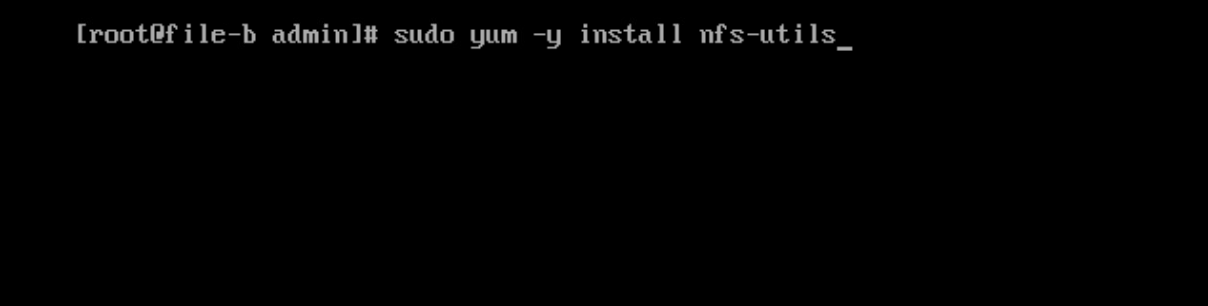


**rpcbind**



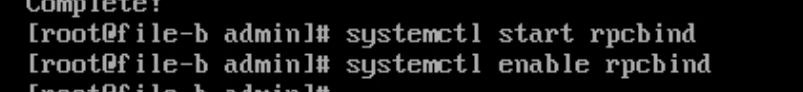
**Client Side**

Like on the previous machine, begin the process by installing the nfs-utils module.



**Start and enable rpcbind**

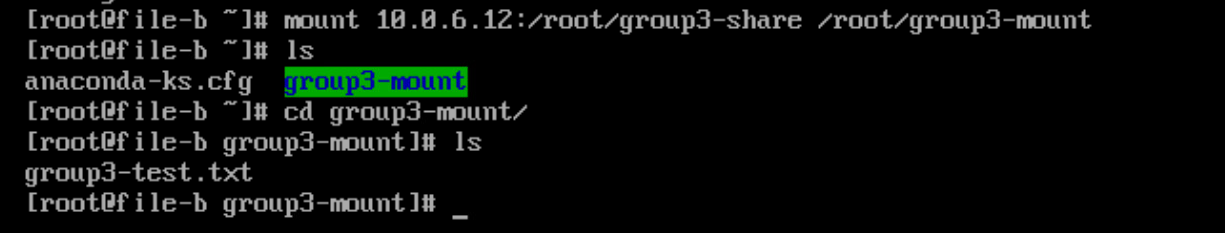
Enter the following commands to start and enable rpcbind.



**Mounting on clients**

Before you mount, make a new directory where you will want all of this data to be stored.

To mount on the client machine you will need to enter this command: mount ServerIP:”Shared Directory” “Client Directory”



**Demo**

[Group 3 - NFS Project.mp4](https://drive.google.com/file/d/1A1NXwoCf5GT2TgR_HZ9cfB7ILZPG9H5v/view)

**Sources**

<https://computingforgeeks.com/configure-nfsv3-and-nfsv4-on-centos-7/>

<https://www.stephenrlang.com/2016/01/setup-nfsv4-on-centos/>

<https://wiki.archlinux.org/index.php/NFS#Installation>

<https://access.redhat.com/documentation/en-us/red_hat_enterprise_linux/5/html/deployment_guide/s1-nfs-server-config-exports>

<https://www.youtube.com/watch?v=MBqZe5d9BNQ>

**Exploit**

[5.4.3. Do Not Use the no\_root\_squash Option Red Hat Enterprise Linux 4](https://access.redhat.com/documentation/en-us/red_hat_enterprise_linux/4/html/security_guide/s2-server-nfs-noroot)