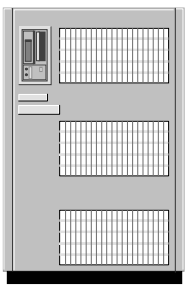# Create the `/etc/exports` File
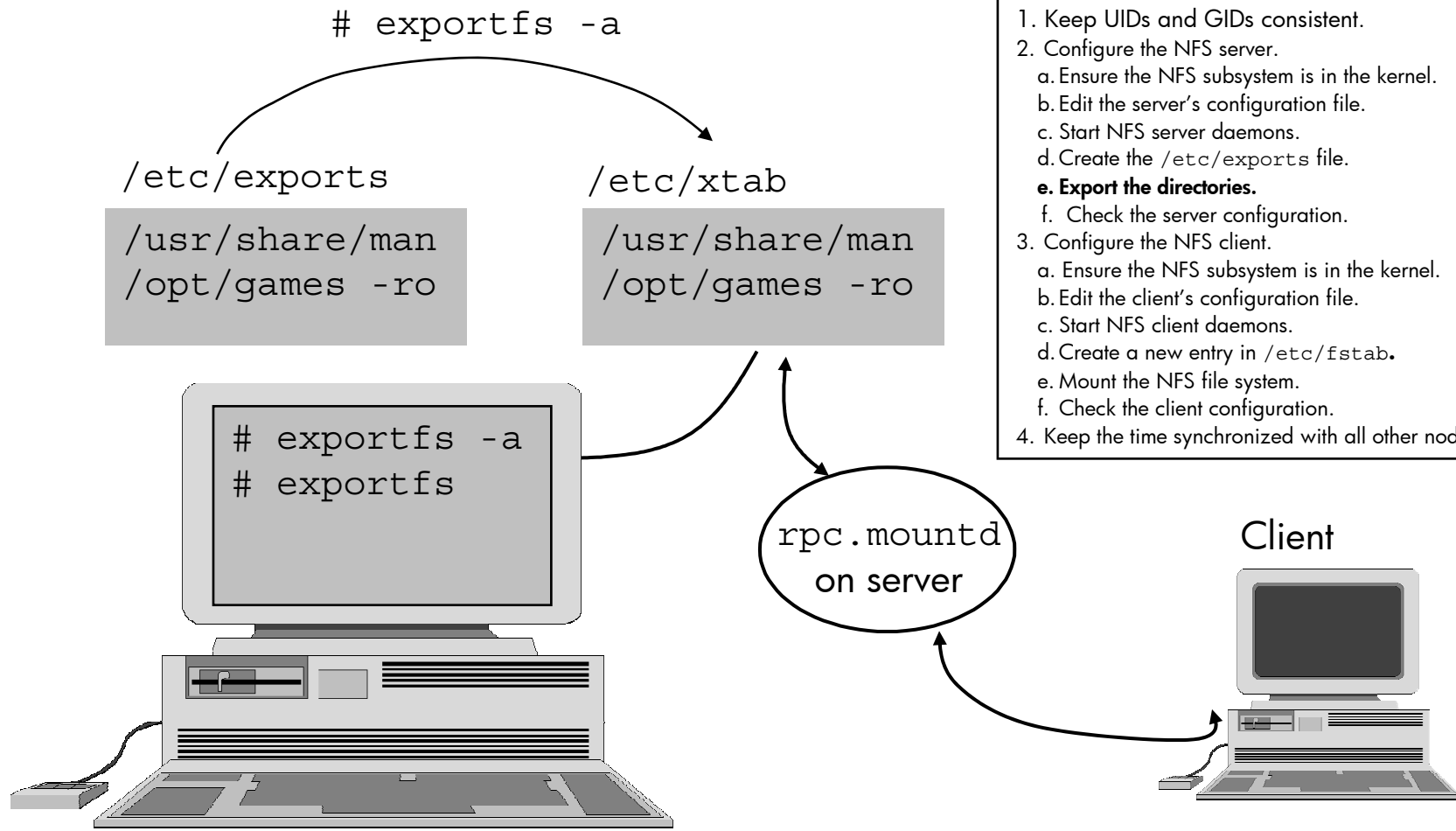
Examples:

1. `/usr/share/man`

2. `/home          -access=oakland:la`

3. `/opt/games     -ro`

4. `/opt/appl      -access=oakland:la,ro`

5. `/usr/local     -rw=oakland`

6. `/etc/opt/appl  -root=oakland,access=la`

---

1. Keep UIDs and GIDs consistent.
2. Configure the NFS server.
   a. Ensure the NFS subsystem is in the kernel.
   b. Edit the server's configuration file.
   c. Start NFS server daemons.
   d. Create the `/etc/exports` file.
   e. Export the directories.
   f. Check the server configuration.
3. Configure the NFS client.
   a. Ensure the NFS subsystem is in the kernel.
   b. Edit the client's configuration file.
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   d. Create a new entry in `/etc/fstab`.
   e. Mount the NFS file system.
   f. Check the client configuration.
4. Keep the time synchronized with all other nodes.

I can use the `/etc/exports` file to control which clients mount my file systems!

Export the Directories

exportfs -a

/etc/exports

```
/usr/share/man
/opt/games -ro
```

/etc/xtab

```
/usr/share/man
/opt/games -ro
```

```
# exportfs -a
# exportfs
```

rpc.mountd
on server

Client

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Check the Server Configuration

✓ Are the NFS server daemons registered?

```
# rpcinfo -p [server]
   program vers proto   port  service
    100003    2   tcp    2049  nfs
    100003    3   tcp    2049  nfs
```

✓ What file systems have been exported to whom?

```
# showmount -e [server]
/usr/share/man (everyone)
/opt/games     (everyone)
```

✓ What export options were specified?

```
# exportfs
/usr/share/man
/opt/games -ro
```

✓ Which clients currently have file systems mounted from the server?

```
# showmount -a [server]
client:/usr/share/man
client:/opt/games
```

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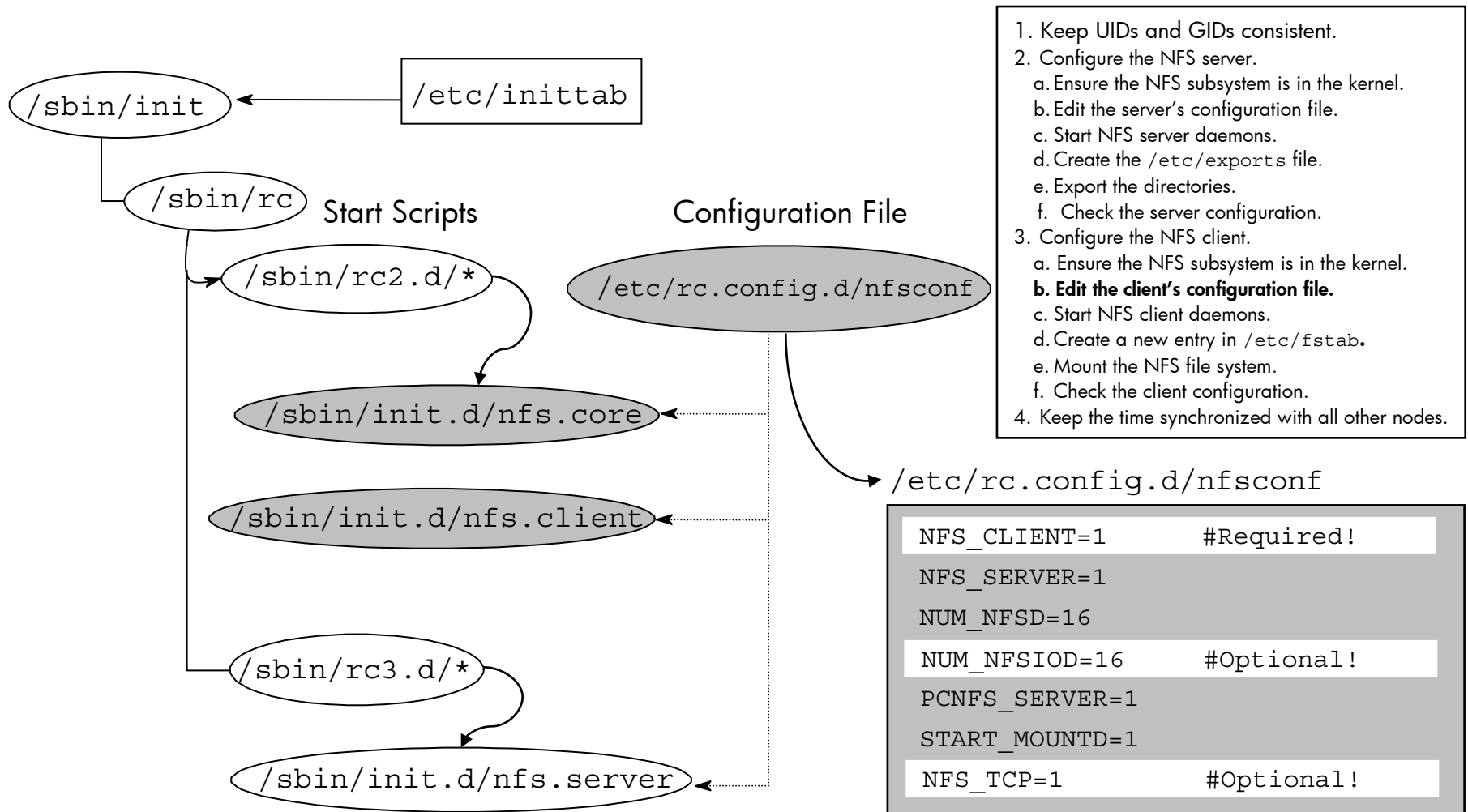4. Keep the time synchronized with all other nodes.
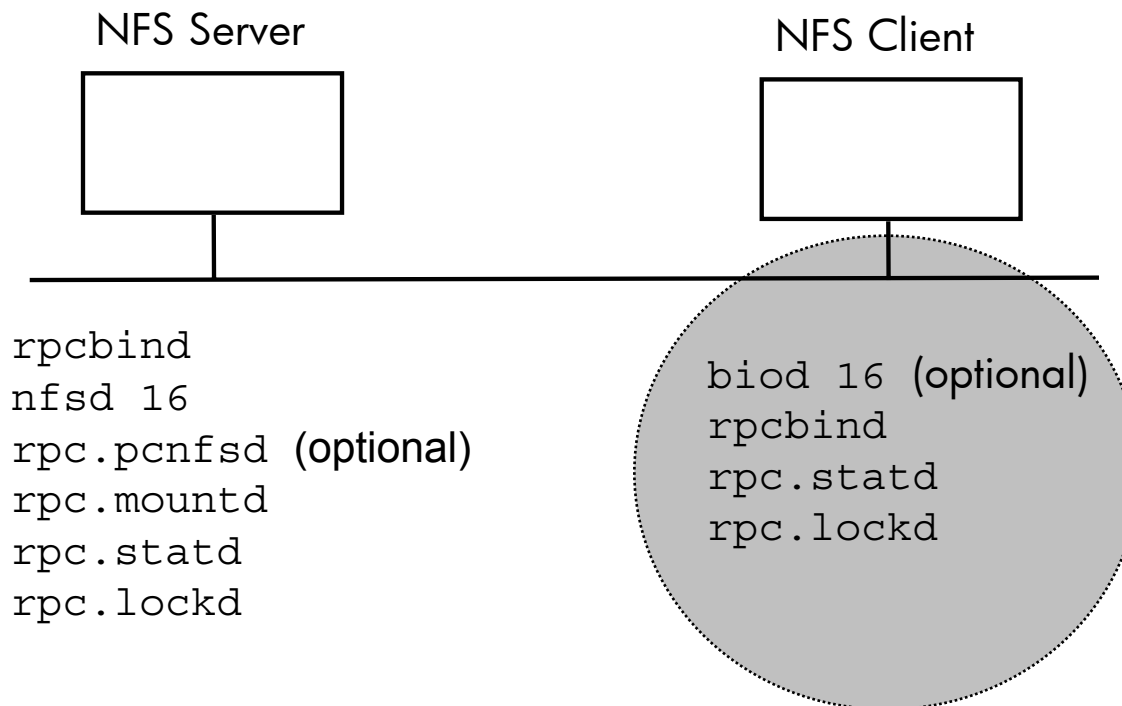
Ensure that the NFS Subsystem is in the Kernel

LANIC

Network Subsystem	NFS Subsystem

Kernel

Client
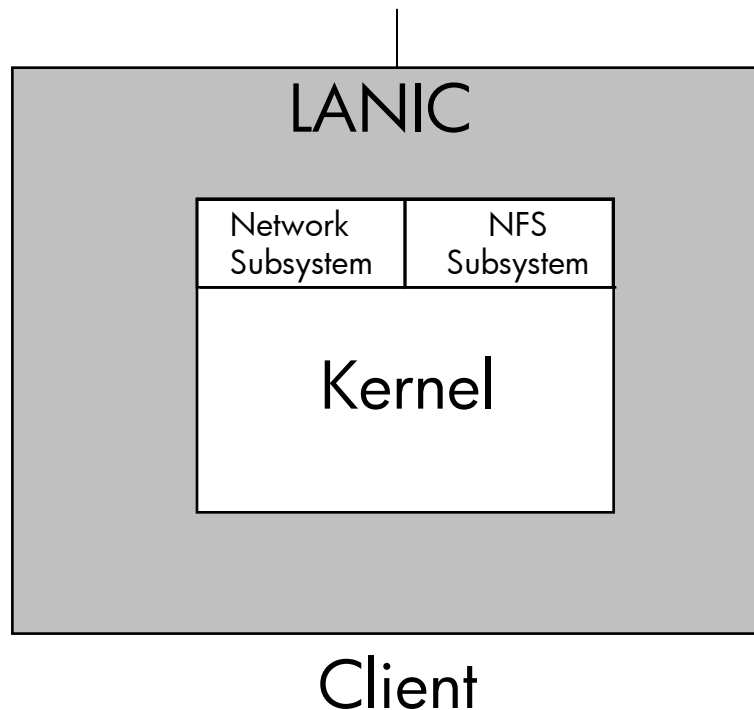
Verify that the NFS subsystem
is in the kernel

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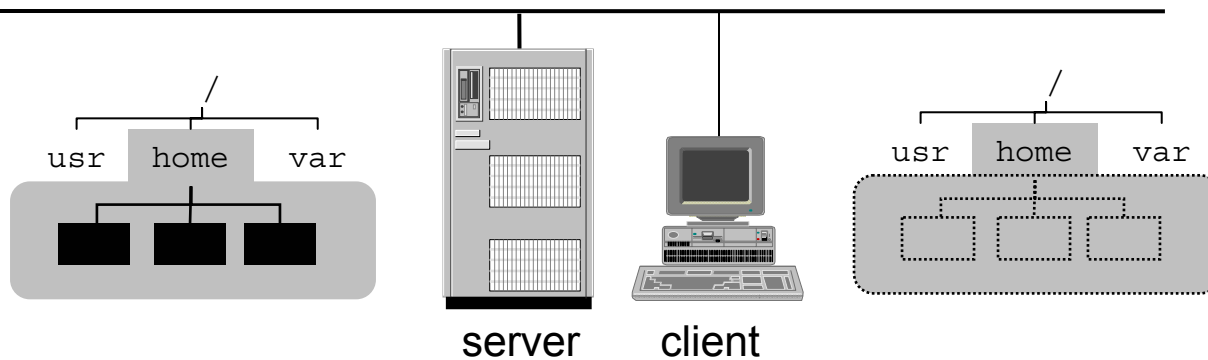
Edit the Client's Configuration File

```
/sbin/init  ◄─────────  /etc/inittab
    │
    │
    ▼
/sbin/rc       Start Scripts          Configuration File
    │
    ├──► /sbin/rc2.d/*         /etc/rc.config.d/nfsconf
    │              │
    │              ▼
    │      /sbin/init.d/nfs.core  ◄┄┄┄┄
    │
    │      /sbin/init.d/nfs.client ◄┄┄┄
    │
    └──► /sbin/rc3.d/*
                   │
                   ▼
           /sbin/init.d/nfs.server ◄┄┄┄
```

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/etc/rc.config.d/nfsconf

```
NFS_CLIENT=1        #Required!
NFS_SERVER=1
NUM_NFSD=16
NUM_NFSIOD=16       #Optional!
PCNFS_SERVER=1
START_MOUNTD=1
NFS_TCP=1           #Optional!
```

Start NFS Client Daemons

NFS Server   NFS Client

```
rpcbind
nfsd 16
rpc.pcnfsd (optional)
rpc.mountd
rpc.statd
rpc.lockd
```

```
biod 16 (optional)
rpcbind
rpc.statd
rpc.lockd
```

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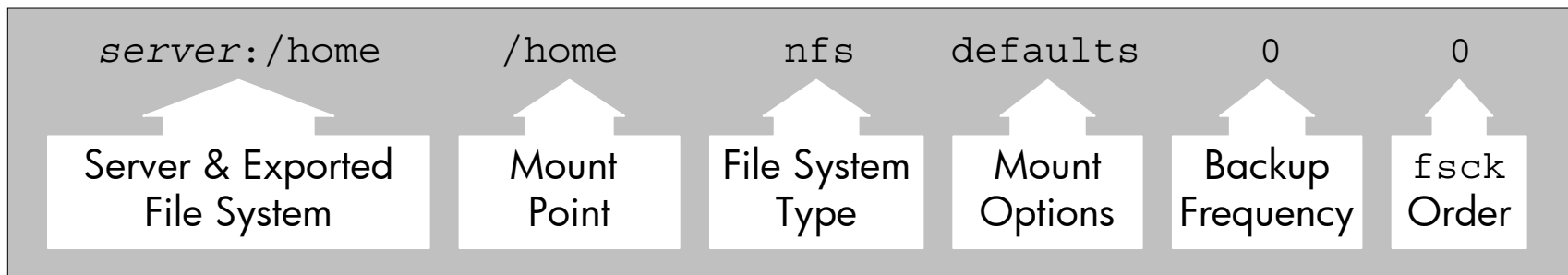
To start the client NFS daemons:
`/sbin/init.d/nfs.client start`
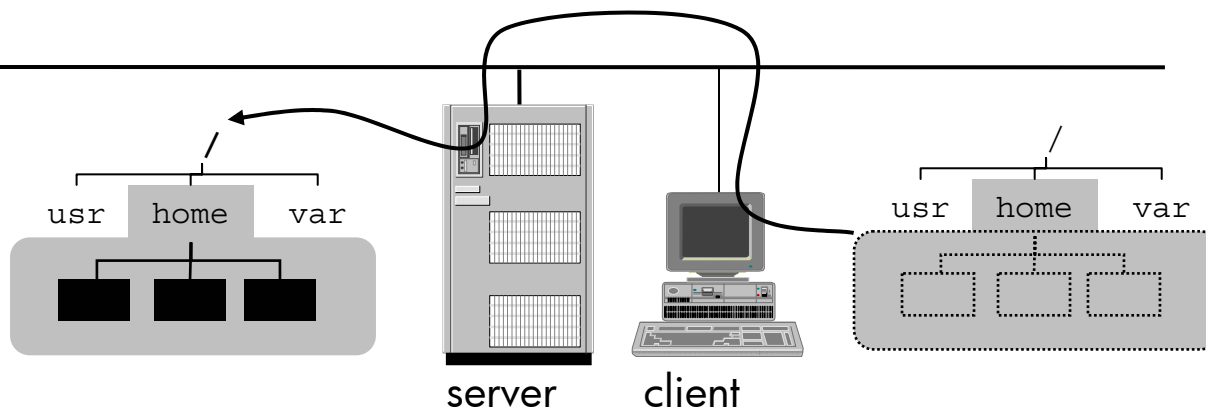
Create a New Entry in `/etc/fstab`

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server   client

`client:/etc/fstab`

server:/home	/home	nfs	defaults	0	0
Server & Exported File System	Mount Point	File System Type	Mount Options	Backup Frequency	`fsck` Order

Mount the NFS File System

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Mount Examples

```
# mount server:/home /home
# mount /home
# mount -aF nfs
# mount -a
# mount -v
```

Umount Examples

```
# umount server:/home
# umount /home
# umount -aF nfs
# umount -a
```

Check the Client Configuration

Are the NFS client daemons running?

```
# ps -e | grep -e rpc -e biod
   1000  ?  0:00 biod
   1010  ?  0:00 rpcbind
   1020  ?  0:00 rpc.lockd
   1030  ?  0:00 rpc.statd
```

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What file systems are available from the server?

```
# showmount -e server
   /usr/share/man (everyone)
   /opt/games     (everyone)
   /home          oakland,la
```

What file systems do I have mounted?

```
# mount -v
   /dev/vg00/lvol1 on /stand type hfs defaults on Sat Jan 1 2004
   /dev/vg00/lvol3 on / type vxfs defaults on Sat Jan 1 2004
   server:/home on /home type nfs defaults,NFSv3 on Sat Jan 1 2004
```

Review: Configuring NFS Servers and Clients

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