

NFS

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Contents

- 1 NFS (Network File System) 5**
- 1.1 Introduction 5
- 1.2 NFS Exports 5
 - 1.2.1 Adding an Export 6
- 1.3 NFS Clients 6

Chapter 1

NFS (Network File System)

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1.1 Introduction

1.2 NFS Exports

To allow other machines to connect to a server, you must **export** directories from the server to the clients.

Traditionally, the list of exported directories has been defined in a file (`/etc/exports`). However, under Mac OS X Server, the list of exports is stored in NetInfo (Apple's directory service).

In general, an **exports** entry must specify the following:

- The directory path(s) to export
- The clients to export to
- Access restrictions on the paths

Note that NFS is an inherently *insecure* protocol, so great care should be taken to prevent abuse. If possible, attempt to follow these guidelines:

- Export filesystems to as few clients as possible. Use a restricted network, or a specific client list to prevent unauthorized access.

- Export filesystems as **read-only** to prevent attacks from other machines.

The examples below follow these guidelines.

1.2.1 Adding an Export

Note: Apple's NFS daemon requires that all shared paths on a single device be mentioned in the same configuration directive. So, if you have three directories on a disk you'd like to share, all three must be in the same configuration directive (you can **not** list them individually).

Let's suppose we wish to export a few directories, all on a single device. The device is mounted at `/Volumes/Snapshots/`, and the folders we wish to share are called `Users`, `Groups`, and `Web`.

Keeping in line with our security recommendations, we'll be exporting these directories only to a specific subnet. Additionally, we'll export the filesystem as read-only to prevent changes from external clients.

To add the export directive, run the following in a terminal:

(**Note:** order is important; the "name" property must be set last!)

```
sudo niutil -create . /exports/Snapshots
sudo niutil -createprop . /exports/Snapshots opts 'ro'
sudo niutil -appendprop . /exports/Snapshots opts 'maproot=root'
sudo niutil -createprop . /exports/Snapshots opts 'network=192.168.1.0'
sudo niutil -createprop . /exports/Snapshots opts 'mask=255.255.255.0'
sudo niutil -createprop . /exports/Snapshots name '/Volumes/Snapshots/Users /Volumes/Snapshots/Groups /Volu
```

Now restart the nfs daemon:

```
sudo killall -HUP mountd
```

Look for any startup errors in the system log:

```
tail -f /var/log/system.log
```

If the logs are clean, you're ready to connect from an NFS client.

1.3 NFS Clients

This section not yet complete.