# 1.113.4
# Properly manage the NFS, smb, and nmb daemons
# Weight 4

Linux Professional Institute Certification — 102

Angus Lees `gus@inodes.org`

Geoffrey Robertson `ge@ffrey.com`

Nick Urbanik `nicku@nicku.org`

2005 July

**Description of Objective**

Candidate should know how to mount remote filesystems using NFS, configure NFS for exporting local filesystems, start, stop, and restart the NFS server. Install and configure Samba using the included GUI tools or direct edit of the /etc/smb.conf file (Note: this deliberately excludes advanced NT domain issues but includes simple sharing of home directories and printers, as well as correctly setting the nmbd as a WINS client).

**Key files, terms, and utilities include:**

```
/etc/exports
/etc/fstab
/etc/smb.conf
mount
umount
```

**Properly manage the NFS, smb and nmbs daemons**

Candidate should know how to mount remote filesystems using NFS, configure NFS for exporting local filesystems, start, stop, and restart the NFS server. Install and configure Samba using the included GUI tools or direct edit of the /etc/smb.conf file (Note: this deliberately excludes advanced NT domain issues but includes simple sharing of home directories and printers, as well as correctly setting the nmbd as a WINS client).

**Properly manage the NFS, smb, and nmb daemons**

```
/etc/exports
/etc/fstab
/etc/smb.conf
mount
umount
```

**Properly manage the NFS, smb, and nmb daemons**

| | |
|---|---|
| **NFS:** | http://nfs.sourceforge.net/ |
| **Samba:** | http://au1.samba.org/samba/docs/ |

**NFS**

- "Network File System"
- Extremely widely used protocol for sharing files between Unix machines
- Built over RPC
- Almost always uses UDP
- Unlike alternatives, the NFS protocol is **stateless**—the server can reboot and the client carries on
- NFSv2 is very simple; v3 is an evolution of v2; v4 is complex (and stateful)

**NFS**

```
mount -o options server:/path /mnt_point

# typical /etc/fstab line - see nfs(5)
server:/exports/home /home nfs rw,intr,rsize=8192,wsize=8192
```

Some options:

**rsize/wsize** Read/write size

**intr** Allow signals to interrupt timed-out operations

**soft** Don't retry indefinitely

**NFS**

/etc/exports controls what gets exported to where

```
# /etc/exports.  See exports(5)
/home   10.0.128.0/24(rw,no_root_squash)
/cdrom  *(ro,all_squash)
```

Information is actually communicated to mountd and kernel NFS server via **exportfs**(8)

**Note:** No whitespace is allowed between client and client options

(**showmount**(8) will query this information from a server)

**Samba**

- Implementation of Windows networking protocols (SMB/CIFS, NMB) for Unix

- Samba version 3 (just released) gives PDC/BDC functionality, NT4 domain member support, much improved printing, etc

- Full suite of tools, including smbd and nmbd daemons, but also client tools: smbclient, rpcclient, net, smbstatus, nmblookup, smbtar, smbspool, etc

**Samba**

Configured through /etc/samba/smb.conf

win.ini-esque sections describing shares

```
[public]
comment = Public files
path = /home/ftp/pub
read only = yes
guest ok = yes
```

Various %X string substitutions available (see smb.conf(5))

**Samba**

**[global]** Global configuration

**[homes]** Triggers creation of automatic user home directory shares

**[printers]** Triggers creation of printer shares for each system printer

**Samba**

"Samba Web Administration Tool"

Usual install is http://localhost:901/

Easy to use, links to relevant documentation, etc.

Rewrites smb.conf, loses comments, reorders and destroys hand crafted include, etc directives.

**License Of This Document**