

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

Linux Professional Institute Certification — 102

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Outline

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1 Context

Topic 113 Networking Services [24]

- 1.113.1 Configure and manage inetd, xinetd, and related services [4]
- 1.113.2 Operate and perform basic configuration of sendmail [4]
- 1.113.3 Operate and perform basic configuration of Apache [4]
- 1.113.4 Properly manage the NFS, smb, and nmb daemons [4]
- 1.113.5 Setup and configure basic DNS services [4]
- 1.113.7 Set up secure shell (OpenSSH) [4]

2 Objectives

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`

3 Resources

Properly manage the NFS, smb, and nmb daemons

NFS: <http://nfs.sourceforge.net/>
Samba: <http://au1.samba.org/samba/docs/>

- Especially important are the two online books:
 - <http://au1.samba.org/samba/docs/man/Samba3-HOWTO/>, and
 - <http://au1.samba.org/samba/docs/man/Samba3-ByExample/>

4 NFS

4.1 About NFS

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)

4.2 NFS on client

NFS

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

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

Some options:

rsiz/**wsiz** Read/write size

intr Allow signals to interrupt timed-out operations

soft Don't retry indefinitely

4.3 NFS: server configuration

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)

5 Samba

5.1 About Samba

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

6 smb.conf

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)`)

6.1 smb.conf sections

Samba

[global] Global configuration

[homes] Triggers creation of automatic user home directory shares

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

6.2 Web configuration with swat

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 directives such as `include`

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