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

Linux Professional Institute Certification — 102

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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]
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:

1.113.4 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

Resources

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/
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“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)
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NFS
Client-side usage

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
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/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)
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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
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*

`smb.conf`

Configured through `/etc/samba/smb.conf`

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smb.conf – Special sections

[global] Global configuration

[homes] Triggers creation of automatic user home directory shares

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