1.107.4
Install and configure local and remote printers
Weight 1

Linux Professional Institute Certification — 102

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2 Objective

Description of Objective

Candidates should be able to install a printer daemon, install and configure a print filter (eg apsfilter, magicfilter). This objective includes making local and remote printers accessible for a linux system, including postscript, non-postscript and samba printers.

Key files, terms, and utilities include:

lpd The Printing daemon

`/var/spool/lpd/*` — Spooler directories

`/etc/printcap` — `lpd` Configuration file

`/etc/apsfilter/*`

`/var/lib/apsfilter/*`

`/etc/magicfilter/*`

3 Resources

Resources of interest

Printing-HOWTO

Printing-Usage-HOWTO

www.linuxprinting.org

4 Overview of Linux Printing

Linux Printing

- There are several packages available for linux printing:
  - LPR
  - LPRng
  - Cups
- Previously LPR (or LPRng) was the default on most Linux distros...
- ... but now Cups is the default.
- Major components of the LPR subsystem are:
  - `lpd` — The printing daemon
  - **`lpr`** — A tool to submit jobs into the queue
  - **`lprm`** — A tool to remove jobs from the queue
  - **`lpq`** — A tool to view jobs in the queue
  - `lpc` — An administration tool for printers and queues
- The commands in **`red`** are also provided by Cups.

5 Setting up a Printer

Installing a Printer

- There are two ways to install a printer under Linux:
- The easy way! — Use a GUI like `printtool` or `system-config-printer` on Fedora systems.
- The hard way:
  - Edit `/etc/printcap`
  - Create the spool directory
  - Touch the log file
  - Restart lpd

6 /etc/printcap file

printcap — The configuration file

`/etc/printcap` contains information about **all** printers on the system (including remote printers)

An example looks like:

```
HPLjet|lp|lp0:\
        :ml=0:\
        :mx=0:\
        :sd=/var/spool/lpd/HPLjet:\
        :sh:\
        :lp=/dev/lp0:\
        :lf=/var/spool/lpd/HPLjet/log:\
        :if=/usr/share/printconf/util/mf_wrapper:
```

6.1 printcap file syntax

printcap — The configuration file

Key points to note about `printcap` format:

- Comments start with a '#'
- Any line not starting with a colon or pipe is the start of a printer definition
- Each line of a definition ends in a backslash except the last line
- lpd must be restarted each time `/etc/printcap` is edited
- Spool directory and log file need to be created manually
  - it is not created automatically by LPD

printcap — The configuration file

if Define the input filter

lf Define the printer log file

lo Define the lock file created when printer is in use

mx Define the maximum size of a print job

rm Specify printer is on remote machine. Eg `:rm=192.168.222.254:`

rp Define remote printer name. Eg `:rp=HPLjet:`

sh Tell lpd not to print banner pages

sd Specify spool directory

7 Creating spool directory and log file

Creating spool directory and log file

The spool directory should be owned by user `lp` and have permissions set to 700:

- `$ sudo mkdir /var/spool/lpd/HPLjet` ↩
- `$ sudo chown lp:lp /var/spool/lpd/HPLjet` ↩
- `$ sudo chmod 0700 /var/spool/lpd/HPLjet` ↩

The log file should have permissions set to 660 and have the same ownership as the spool directory:

- `$ sudo touch /var/spool/lpd/HPLjet/log` ↩
- `$ sudo chown lp:lp /var/spool/lpd/HPLjet/log` ↩
- `$ sudo chmod 0660 /var/spool/lpd/HPLjet/log` ↩

8 Access Control

Controlling printer access

- Printer access is controlled through `/etc/hosts.lpd`
- If the file does not exist, all access is granted
- If the file exists, only those in the list will be granted access
- The format is: `[host [user]]`

Example: All access from `box2.c222`, only `greg` from `box3.c222`

```
box2.c222
box3.c222 greg
```

9 Print Filters

Print Filters

- A print filter converts data to be printed into a language that your printer understands
- There are several print filter packages:
  - Foomatic
  - Apsfilter
  - Magicfilter

Key Point Summary

- Most Linux systems previously used LPR (or LPRng),
- but now most Linux systems use Cups
- Local & remote printer configs are stored in `/etc/printcap`
- The print spool directory & log file must be created manually
- Print access is controlled using `/etc/hosts.lpd`
- Print filters convert different data types to a language understood by the printer
- The `lpd` daemon is responsible for getting jobs from the user, putting them through the filter and delivering them to the spool directory.

Key Point Summary

- The `lpc` program is used to control the printer and print spools
- The `lpq` program is used to view the print queues
- The `lprm` program is used to remove jobs from the queues
- The `lpr` program is used to submit jobs into the queue.

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