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## 1 Context

### Topic 107 Printing [3]

#### 1.107.2 Manage printers and print queues [1]

#### 1.107.3 Print files [1]

#### 1.107.4 Install and configure local and remote printers [1]

## 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](http://www.linuxprinting.org)

## 1.107.4

# Install and configure local and remote printers

## Weight 1

Linux Professional Institute Certification — 102

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### Outline

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## 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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