1.107.4
Install and configure
local and remote
printers
Weight 1

Andrew Eager

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Linux Professional Institute Certification — 102

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Outline

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Topic 107 Printing [3]
Where we are up to

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Context

Objective

Resources

Overview of Linux
Printing

Setting up a Printer

/etc/printcap file

spool dir and log file

Access Control

Print Filters

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document

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]

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Description of Objective
1.107.4 Install and configure local and remote printers [1]

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

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lpd The Printing daemon

/var/spool/lpd/* — Spooler directories

/etc/printcap — lpd Configuration file

/etc/apsfilter/*

/var/lib/apsfilter/*

/etc/magicfilter/*

Resources of interest

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Printing-HOWTO
Printing-Usage-HOWTO
www.linuxprinting.org

Linux Printing

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- ► 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.

Installing a Printer

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- 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

printcap — The configuration file

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/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:
```

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printcap — The configuration file
Syntax

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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

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- **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

Creating spool directory and log file

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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**
  ↩

Controlling printer access

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- 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
```

Print Filters

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- ▶ 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

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- 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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