

# Linux Network Administration

Common UNIX Printing System  
COMP1071 Summer 2017

# Introduction

- **CUPS** is a software package which provides print service and tools
- Open source, owned by Apple
- Uses **IPP** (Internet Printing Protocol) for client/server communications
- Provides BSD and AT&T command line tools, as well as a web-based interface for print service management

# Installation

- Package name is `cups`, service name is `cups`
- Installed with `apt`, CUPS server is live when install completes
- Network printers are auto-discovered, existing pre-CUPS printers are auto-configured into CUPS



**KEEP  
CALM  
and  
SUDO  
APT-GET IT**

# Overview

- Things to be printed are turned into print jobs by programs that can print
- Print jobs are submitted to print queues to be printed when the destination printer is ready
- Clients use **IPP** on port **631** to talk to the CUPS daemon
- Web browsers can use port **631** to access a management interface

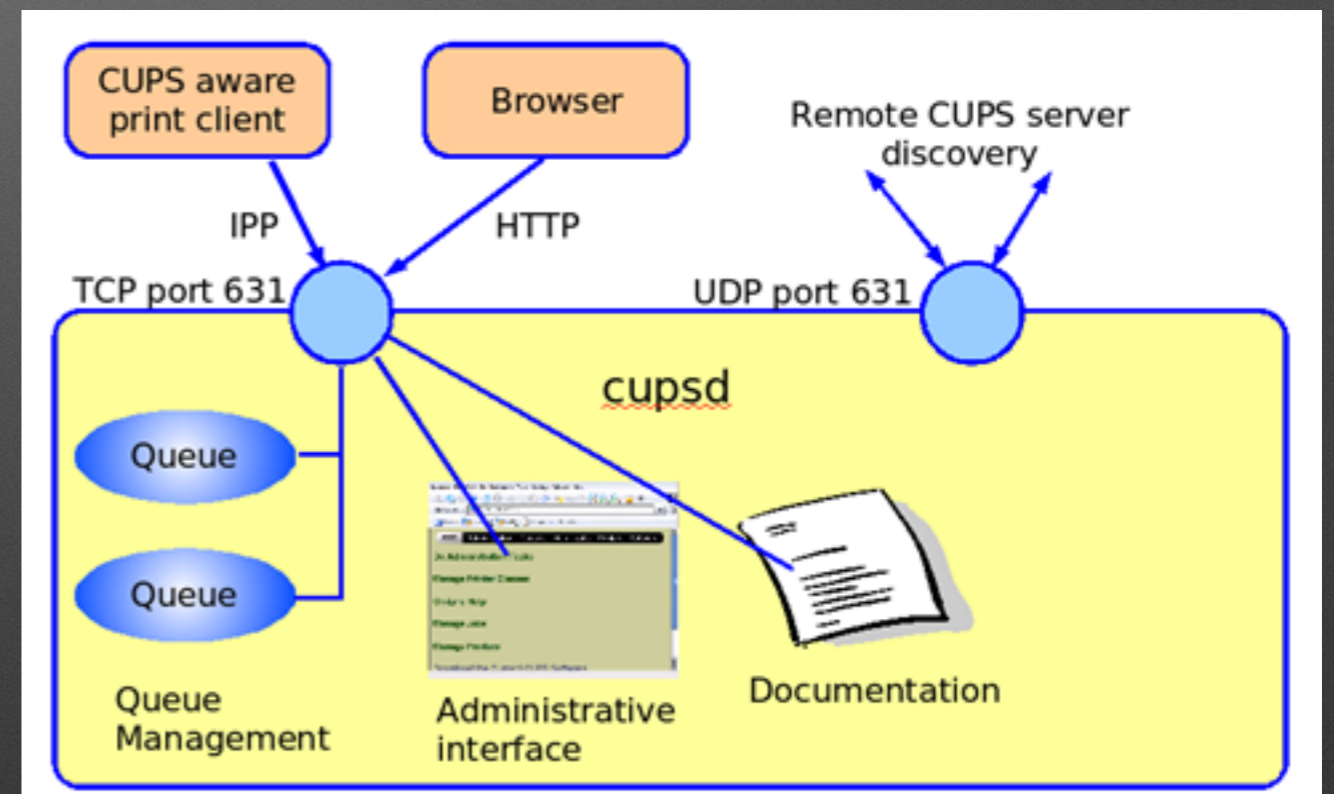


Image from <https://en.wikibooks.org/wiki/Ict-innovation/LPI/108.4>

# CUPS Configuration

- Actively maintained device support means most printers are automatically supported to some level
- Global configuration of CUPS service is in `cupsd.conf`, CUPS configuration files are kept in `/etc/cups`
- Discovery of remote printers is configured in `cups-browsed.conf`
- Locations of config, auxiliary, spool, and device files is in `cups-files.conf`
- Active printer queue definitions are in `printers.conf`
- Individual printers may have `conf` files added to `/etc/cups`

# cupsd.conf

- Contains service configuration, including web interface configuration
- At a minimum, review:
  - **WebInterface**
  - **Listen vs. Port**
- Use **cupscctl** to modify running service, or edit a config file then do **service cups restart**

```
# Only listen for connections from the local machine.
Listen localhost:631
Listen /var/run/cups/cups.sock

# Show shared printers on the local network.
Browsing Off
BrowseLocalProtocols dnssd

# Default authentication type, when authentication is required...
DefaultAuthType Basic

# Web interface setting...
WebInterface Yes
```

# Print Queue Tools

- **lpinfo** can show available devices (**-v**) or drivers (**-m**)
- **ippfind** can browse the network for printers, requires **avahi-daemon**
- **lpstat** can show status of queues

# Print Queue Tools

- **cupsenable, cupsdisable** can enable/disable output devices
- **cupsaccept, cupsreject** can enable/disable job submission to a queue
- **lpadmin** can configure queues and classes and set system default printer



# Print Job Tools

- **lp** can be used to print simple files
- **lpmove** and **cancel** can be used to change existing print jobs in the queue
- **lpoptions** can be used to change print setting defaults on a per user basis

# lpadmin

- The UNIX group **lpadmin** has permission to modify print service configuration with the web interface and command-line tools
- For the group permission to take effect, users in the group must have a password
- The web interface is a very good supplement to the **lpadmin** command when you can use it, better than **webmin**

# cups-pdf

- A commonly installed virtual PDF printer
- Installing `cups-pdf` with `apt` creates a PDF queue
- Configured in `/etc/cups/cups-pdf.conf`
- User print output can be stored automatically in their home directory

# Log Files

- [/var/log/cups](#) holds the log files for the CUPS service
- Apache2-style [access\\_log](#) and [error\\_log](#) files are used
- The log files are automatically aged
- The man pages for the various CUPS commands and files, as well as the [cups.org](http://cups.org) website are useful resources for configuration and troubleshooting