Lab 8: Printing

In this lab, you will create and manage printers, and practice common services required to administer printers on a UNIX/Linux computer.
These activities include:

1. Creating Local and Network Printers
2. Configuring the spooler
3. Managing Print Jobs
4. Deleting a Printer

Supplies

- VMWare Server 1.05 or higher
- Benji VM

Preconfiguration

- NA

Forum

If you get stuck on one of the steps below don't beat your head against the wall. Use the forum to ask for assistance or post any valuable tips and hints once you have finished.
Forum is at: http://simms-teach.com/forum/viewforum.php?f=13

Background

As with most UNIX/Linux services, printing can be managed at any one of three levels:

1. editing text files
2. using system commands from the command line
3. graphical utilities

Most modern varieties of UNIX use the Common UNIX Print System (CUPS), which is designed with a client/server architecture and uses the ipp protocol which is an extension of HTTP. Therefore, the CUPS daemon, (cupsd) offers a web-based interface for configuring

and managing printers as well as the more traditional command line interface and graphical applets. The port number used by cupsd to communicate with clients is 631, and therefore requires root privileges to run.

An Introduction to CUPS

1. Verify that the CUPS daemon is running:
   service cups status or
   lpstat -r
   If the service is not running, start it as root with the command:
   service cups start
2. Using a web browser, visit your CUPS server on your network.
   http://localhost:631
   Note which areas you can visit as a regular user, and which areas require root privileges. (Note the extensive online Documentation.)

Creating Local and Network Printers

Since we don't have a physical printer for everyone, we will use the CUPS wizard to create two imaginary printers in a disabled state.

1. Create a networked HP LaserJet 1320n:

   Name: laser
   Location: Room 2501
   Description: HP LaserJet 1320n
   Device URI: socket://172.30.4.100:9100
   Model/Driver: HP LaserJet 1320 series Postscript (recommended) (en)

2. Create a HP PhotoSmart 7550:

   Name: hp7550
   Location: Room 2501
   Description: HP PhotoSmart 7550
   Device URI: socket://172.30.4.102:9100
   Model/Driver: HP PhotoSmart 7550 Foomatic/hpijs (recommended) (en)

Configure and print

Refer to Lesson 10 slides and perform the following tasks on your two printers:

- Enable remote administration of your CUPS service
- Obtain the IP address of your Benji VM
- Remotely SSH into your Benji VM using Putty
- Browse in to your Benji VM's CUPS web based management tool

In your browser session:

- Stop Printing on both printers
- Make the LaserJet the default printer

In your remote SSH session:

- Make copies of the following two files in your home directory:
  - /opt/lampp/htdocs/sample.html
  - /opt/lampp/htdocs/xampp/img/benji-500x420.jpg

- Print sample.html to the LaserJet using lp
- Print sample.html to the LaserJet using lpr
- View the LaserJet print queue with lpq
- Delete the second print job with cancel

- Convert the benji-500x420.jpg file to postscript
- Print the converted file to the hp7550 using lp
- Print the converted file to the hp7550 using lpr
- View the hp7550 print queue with lpstat
- Delete the second print job with lprm

To Turn in

```
lpstat > lab08
lpstat –p –d >> lab08
cat /etc/printcap >> lab08
ls –lR /var/spool/cups >> lab08
cat /etc/cups/printers.conf >> lab08
```

Review you work in lab08 before submitting to make sure you have covered each area of the grading rubric. Then submit your work using:

```
scp lab08 cis191@opus.cabrillo.edu:lab08.lastname
```

Grading rubric (30 points)

5 points for correct submittal including all outputs in lab08 file
5 points for adding the LaserJet printer as specified
5 points for adding the PhotoSmart printer as specified
5 points for correctly setting default printer
5 points for correctly having two print jobs cancelled and two pending
5 points for correctly printing jpeg image