College of Engineering
EECS Instructional Support Group
378/384/386 Cory, 333 Soda - inst@eecs.berkeley.edu

Printing from Instructional UNIX Computers

April 9, 2004

Printers available in general access computing labs:

Printer	Location	Access to Room	
lw274	(3 printers) 274 Soda	by card key, except 7am-6:30pm weekdays	
lw330	330 Soda	by card key, except 7am-6:30pm weekdays	
lw349	349 Soda	by card key at all times	
lw119	119 Cory	by card key, except 7am-6:30pm weekdays	
lw199	(2 printers) 199 Cory	by card key, except 7am-6:30pm weekdays	
lwh30	32 HFA C	by card key at all times (CS3 lab)	
lwh50	52 HFA C	by card key at all times (CS61A lab)	
lwh10	12 FHA C	for Self Paced Center only	
lw119a	119 Cory	color printer	*Color printers are slow and expensive to maintain,*
lw199c	199 Cory	color printer	*so we discourage use unless it is really needed.*

UNIX Commands for Printing:

To do this (for example)	Type this command
print "file" to lw199	lp -dlw199 file
print "file" to lw274 (double-sided)	**lpr -dduplex**lw274 *file*
print "file" to lw274 (single-sided)	**lpr -osimplex -d**lw274 *file*
print "file", 2 pages per sheet, with title	**enscript -2rGd**lw199 *file*
show queue; get your request id	**lpstat -o**lw199
remove a print request from lw199	**cancel** lw199-99
print multiple pages on a sheet of paper	**/usr/sww/bin/psnup -pletter** infile.ps outfile.ps
print pdf file	/usr/sww/bin/acroread file.pdf

You should always specify the printer that you want to use, since you may have a default printer set that is wrong for your location.

Large print jobs may take **several minutes** to be pre-processed before being sent to the printer. If there is a delay in printing, you can check the queue to see if that is the cause.

The two major families of UNIX (System V, BSD) have different sets of printer commands. You can use both on our computers, because we run the "LPRng" printing package.

lp, lpstat and cancel	are System V commands.
lpr, lpc and lprm	are BSD UNIX commands.

Other printing commands, such as enscript and psroff, exist on both types of systems, although the command line options may differ. For example, on BSD-style systems, the printer name is generally indicated by a "-P" option; on System V- style systems the printer name is indicated by a "-d". For more information, read the on-line manual pages (for example "*man lp*", "*man lpr*" or *"man enscript"*.)

(continued)

UNIX System V print commands

The printing commands used by Solaris and HP-UX are lp, cancel, and lpstat.

The lp command is used to submit a printjob to the print queue. You can specify the printer name using either the LPDEST environment variable or using the '-dprintername' command line option.

```
% setenv LPDEST lw274              OR      % lp -dlw274 your_file
% lp your_file                             request id is lw274-87 (1 file)
  request id is lw274-87 (1 file)
```

Our printers are set to print in duplex (both sides of the page) by default. To print single-sided, use the "-o simplex" option to lp. Here is an example:

```
% lp -dlw274 -o simplex your_file
```

The cancel command is used to remove a printjob from the print queue. You must specify the request id on the command line.

```
% cancel lw274-87
  request "lw274-87" cancelled
```

You can also place the printer name on the command line to cancel the currently printing job.

```
% cancel lw274
  request "lw274-88" cancelled
```

If you use the '-a' option with the printer name, you will cancel ALL of your printjobs in that printer's queue.

```
% cancel lw274 -a
  request "lw274-89" cancelled
  request "lw274-90" cancelled
  request "lw274-91" cancelled
```

The lpstat command is used to list ALL of your printjobs in the queues of ALL printers; if it returns nothing, then all of your requests have either printed or been cancelled.

```
% lpstat
```

With the '-a' option, it will report to you the list of available printers.

```
% lpstat -a
lw347 accepting requests since Jan 25 14:08
lw274 accepting requests since Dec  7 18:14
lw275 accepting requests since Dec  7 18:14
```

If you wish to see the printjobs other users have queued, use the '-o' option.

```
% lpstat -o
```

This may be a rather long listing; if you are only interested in seeing the queue for one particular printer, place the printer name after the

```
% lpstat -olw347
```

There are many other options available for these commands; but this should be enough to get you started. Feel free to browse the on-line manual pages using the 'man' command (i.e. "man lp").

(continued)

BSD UNIX print commands

The printing commands used by BSD UNIX are lpr, lprm, and lpq.

The lpr command is used to place a printjob in the printer queue. You can specify the printer name using either the PRINTER environment variable or using the '-Pprintername' command line option.

```
% setenv PRINTER lw199        OR        % lpr -Plw199 your_file
% lpr your_file
```

The lprm command is used to remove your printjob from the queue. You must specify the job id and the printer name on the command line.

```
% lprm -Plw199 539
pasteur.EECS.Berkeley.EDU: dfA539po.EECS.Berkeley.EDU dequeued
pasteur.EECS.Berkeley.EDU: cfA539po.EECS.Berkeley.EDU dequeued
```

Without any arguments, it will delete the currently active printjob if it is owned by you.

```
% lprm -Plw199
pasteur.EECS.Berkeley.EDU: dfA539po.EECS.Berkeley.EDU dequeued
pasteur.EECS.Berkeley.EDU: cfA539po.EECS.Berkeley.EDU dequeued
```

You can use '-' instead of a job id to remove ALL of your printjobs in that printer's queue.

```
% lprm -Plw199 -
pasteur.EECS.Berkeley.EDU: dfA540po.EECS.Berkeley.EDU dequeued
pasteur.EECS.Berkeley.EDU: cfA541po.EECS.Berkeley.EDU dequeued
```

The lpq command is used to list all people's jobs queue for a particular printer; it reports the ownership, status, and job id for each request.

```
% lpq -Plw199
```

There are many other options available for these commands; but this should be enough to get you started. Feel free to browse the on-line manual pages using the 'man' command (i.e. "man lpr").

Printer Use Policy:

The Instructional printers are for **EECS coursework only**.

Each EECS Instructional computer account has a **print page quota** that is currently set to 100 pages per course credit per semester. EE/CS majors are given an additional 100 pages per semester on their "named" accounts. This free page quota may be changed in future semesters.

If you exceed your print quota, your next print job will be replaced with a "QUOTA EXCEEDED" page. That page explains that you can logon to *http://inst.eecs.berkeley.edu/webacct* to view your print quota allocation and to purchase additional pages. Pages that you purchase will be billed to you. The print quotas are reset each semester. Unused pages will NOT be credited to you in future semesters

To save paper, please use the UNIX command "/usr/sww/bin/psnup" to print multiple pages on a single sheet of paper.

```
on Solaris:     % psnup -pletter -2 inputfile.ps outputfile.ps
on HP:          % psnup -n2 -p outputfile.ps inputfile.ps
help:           % man -M/usr/sww/man psnup
```

To the Staff:

Toners and paper for Instructional printers are delivered by Campus Supply and are stored in 251 Soda and 130A Cory. Used toners should be placed back in the storage area for later pickup and recycling.

Adminstering SysV

daemon running on spooler:	/usr/sbin/lpsched
daemon running on wkstns:	/usr/sbin/lpsched
daemons are started at bootup by:	/sbin/init.d/lp
to kill spooler daemon:	/sbin/init.d/lp stop
to restart spooler daemon:	/sbin/init.d/lp start
to clear print queue:	/bin/cancel -e {printer}
to enable printer boot software:	edit /etc/bootptab

Adminstering BSD

daemon running on spooler:	/usr/lbin/lpd
daemon running on wkstns:	/usr/lbin/lpd
daemons are started at bootup by:	/{etc,sbin}/init.d/lpd
to kill spooler daemon:	/{etc,sbin}/init.d/lpd stop
to restart spooler daemon:	/{etc,sbin}/init.d/lpd start
to clear print queue:	/usr/sbin/lpc clean
to enable printer boot software:	edit /etc/bootptab

Adminstering LPRng

LPRng is the spooling software on moebius.cs for ls119, lw199, lw274, lw330, lw349, lwh30, lwh50. LPRng has improved job filtering and logging. It does not require a printer daemon on the clients. On-line info is at http://www.astart.com/lprng/LPRng.html.

LPRng files on server: /usr/local/etc/{lpd.conf,printcap,lpd.perms}	/usr/local/sbin/{lpd,lpc}
daemon running on spooler:	/usr/local/sbin/lpd
daemons are started at bootup by:	/{etc,sbin}/init.d/lprng (home-grown)
to kill spooler daemon:	/usr/local/sbin/lpc abort
to restart spooler daemon:	/usr/local/sbin/lpd
to clear print queue:	/usr/local/sbin/lpc clean
to enable printer boot software:	edit /etc/bootptab
LPRng files on workstations:	/usr/local/bin/{lpr,lp}
daemon running on wkstns:	None. Uses tcp/ip to connect directly to the server. Users can cancel their jobs from any workstation.