Module: Andrew Printing

Objectives:  
Print to an Andrew print queue from a Cluster machine or personal computer

* Monitor your print quota
* Select an appropriate print queue for common print jobs
* Configure a personal computer for printing to an Andrew print queue

### Introduction to Andrew Printing

Anshu has just put the finishing touches on his mid-semester biology project—he’s written a report for his professor, created a set of power-point slides to present this report to his class, and designed a color poster that he’ll use to support the presentation. His biology class is in a few hours, and he has other classes in the meantime. But before class, he needs to get print-outs of his final work—the report for his professor, slide handouts for his peers and a large, color poster—but he doesn’t have his own printer. How can he get these things printed? Is there a convenient way to print out all these items in time for his class? Does he have to pay for any of this?

To support students who don’t have access to their own printer, the University maintains a number of public printers with different capabilities in locations across the university. Students are able to print to and retrieve a limited number of documents from University and personal machines. Collectively Carnegie Mellon’s central printing service is known as Andrew Printing. If you need to print a paper for your class, print something in a larger format, or in color, you can accomplish all of these things using the Andrew Printing system.

In this module you’ll also learn what services are available to you as part of your Andrew Printing quota and how to track your quota usage. You’ll also learn how to select an appropriate printer and print to it using a university or personal computer. Finally, you’ll learn how to locate printers that provide specific services, including extended pick-up time, color and large format printing.

### Andrew Printing Quota

Like other shared resources, Andrew Printing is on the quota system. Printing is tracked on a per-page basis, with specific costs associated different types of printing. Each user starts the beginning of each semester with an allocation of $40.00 per semester; you are able to use your quota to create whatever print-outs best suit your needs.

It costs 5 cents per page to print a single or double-sided black and white document on letter-sized paper. Large format and color prints have an additional cost—10 cents for larger, tabloid-sized paper and 70-1.50 for color printing (depending on the specific size and printer that you choose) a page.

|  |  |
| --- | --- |
|  | **Price per sheet** |
| **Letter size paper** | |
| Black & White – single- or double-sided | $0.05 |
| Color - single- or double-sided (at Hunt Library 4th floor) | $0.70 |
| Color - single- or double-sided (at CFA Cluster) | $0.75 |
| **Tabloid paper (11x17)** | |
| Black & White - single- or double-sided | $0.10 |
| Color - single- or double-sided (at CFA Cluster) | $1.50 |

Your $40 print quota will let you print 800 pages per semester. If you print double sided (the default in the Clusters), you will be able to print 1600 pages with your quota.

Your initial $40 printing allocation gets used up over the course of the semester as you print. On the first day of classes next semester, you will have a new quota of exactly $40. There is no carry-over of your quota. The quota system is in place to meet the needs of students while encouraging green practices and cost containment. In addition, having a print quota allows us to have special features like color printing, and to allow printing from any machine, anywhere.

### Printing Beyond Your Quota

If you use your entire quota in a semester, you are still able to purchase additional print jobs. Any printing in excess of your $40 allocation will be charged paid for using your PlaidCa$h. If you do not have any money in your PlaidCa$h account, you will not be able to print.

### Keeping Track of Your Quota

You are able to monitor your Andrew Print quota usage from the My Carnegie Mellon web portal, either by selecting the Finances tab, or by going directly to the URL: <https://my.cmu.edu/portal/site/main/finances/>. In addition to viewing your current balance, you can also review your usage for the semester.

### Did I Get This:

* What is the size of your initial Andrew Print quota?
  + $10.00 (No, your allocation is larger than this)
  + 4000 pages (No, your quota isn’t measure in pages)
  + 400 pages (No; although you can use your quota to print pages, it is not measured in pages)
  + $40.00 (Yes—this allocation can be used to however you see fit)

Hint 1: How is your Andrew Print quota measured?

Hint 2: Remember that your quota is large enough to print 800 pages at 5 cents a page.

Hint 3: You are given an allocation of $40.00 for printing each semester

* How often does your Andrew Print quota reset?
  + Once a Month (No, not this frequently; the quota is tied to the start and end of classes).
  + Once an Academic Year (Not quote-- quota resets three times each academic year)
  + Once each Fiscal Year (No, the quota is on a semester system)
  + Once a Semester (Yes—the quota is reset on the first day of Spring, Summer and Fall classes)

Hint 1: Remember that quota is replenished on the first day of classes  
Hint 2: Andrew Print quota is reset three times a year  
Hint 3: Quota is replenished at the start of each semester

* Anshu needs to print out 4 pages of slide handouts for 10 of his classmates. He also needs to create two large, color posters to support a presentation. He checks the portal and finds that he has a balance of 1.50 on his Print quota, and $1.05 on his Plaid Ca$h [screencap?]
  + With this balance, is it possible to create his handouts?
    - No (If he prints the handouts in black and white, he has plenty of quota for his slides)
    - Yes (Correct—he can choose to print out single-sided or double-sided slides as long as they are in black and white)
  + With this balance, can he create his posters?
    - No (Correct—he will need to add money to his Plaid Ca$h account to create two posters and the handouts)
    - Yes (That’s not right—he can create at most a single 11 x 17 sized color poster)

Hint 1: Review the price lists.  
Hint 2: Remember that a document that is printed on two sides only counts as a single page.  
Hint 3: With double-sided printing Anshu can get his handouts, but he does not have quota or Plaid Ca$h to create his posters.

### Many Students Wonder:

How is the Andrew Print quota Allocation Determined?

The purpose of establishing an Andrew Print Quota is to reduce or eliminate waste and to encourage all users to be conservative in their printing habits. The current allocation was established based on research into the needs and practices of active students, faculty and staff. $40.00 per semester is adequate to satisfy 95% of the campus community’s black and white printing needs at the current prices.

### Using Andrew Printing

You have a variety of options for printing your work; where and how you choose to print can be influenced by a number of factors—how soon will you be picking up your work? What special options or features does your print job require? Where is it most convenient for you to retrieve your work? In this section of the course you will learn how to select an appropriate print queue, and

### Where Can I Print From?

Users can print from any computer the printing software is installed on. All Cluster computers and computers in the University Libraries are set up to print to Andrew Printing queues. You can review the list of these computers in the [CLUSTER SECTION OF COURSE.]

In addition, you are able to print to the Andrew Printing queues using your own personal computer, provided that your computer has the Andrew Printing software installed and has access to the internet. Detailed instructions for configuring your machine to use Andrew Printing are provided by Computing Services [http://www.cmu.edu/computing/doc/printing/personal/index.html]

Potential Walkthrough

Printing from off campus does not require a VPN connection to the campus network—you only need the Andrew Printing software and an Internet connection.

### Where Can I Print To?

The Andrew Printing system works off of a print queue system; a print queue is a temporary staging area for jobs that are waiting to be printed on a printer. When you select print from a computer, you are sending the file into a print queue. When you physically visit a printer to retrieve your work, the job is released from the print queue and printed on a specific printer.

Every public printer that is available to you has a print queue that is associated with it. If you select a specific print queue, you will only be able to retrieve your work from the printer that is associated with that specific queue. Be aware that print queues are temporary; normally individual queues will expire after 4 hours. This means that you have 4 hours to pick up your print job—after 4 hours you will need to resubmit your print job. Because your print quota is only charged at the time that you retrieve your print-outs, you are not charged for jobs that expire.

### Identifying Individual Print Queues

All print queues at Carnegie Mellon follow a set of naming conventions to make it easy to identify the location and printer to which you’ll be printing. The format is:

prn-FACILITY-BUILDING-PRINTER#

prn: all print queues begin with prn; this abbreviation identifies the resource as a printer

FACILITY: this section of the name identifies the facility or group to which the printer belongs:

|  |  |
| --- | --- |
| Abbreviation | Name |
| cl | Clusters |
| cs | Computer Science |
| gsia | Graduate School of Industrial Art |
| hou | Housing |
| lib | Library |

BUILDING: The building where the printer is located

PRINTER#: This number distinguishes printers for facilities that have more than one available.

Example:

prn-cl-baker-2

prn-hou-mudge-1

### Special Print Queues

In most cases, a print queue associated with an individual printer and has a 4 hour expiration. However, there are two special queues that have their own rules

University Center: The print queue associated with the University Center, prn-cl-uc-1, allows you to plan for an extended expiration time. Print jobs sent to this queue expire in 12 hours.

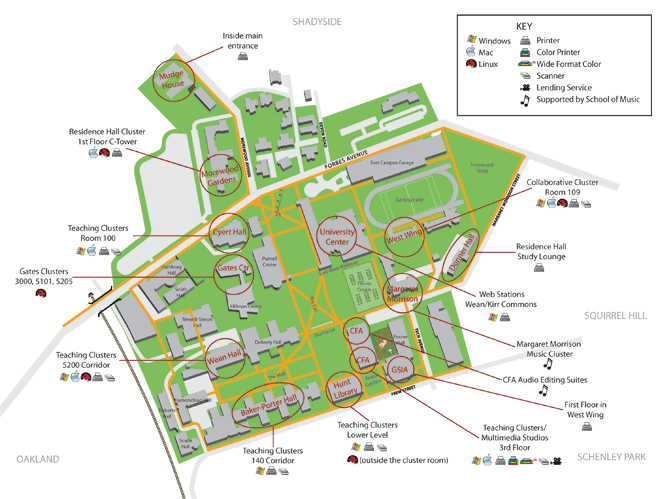
Andrew Central: Unlike other queues, the “Andrew Central queue is not associated with a specific printer; instead this queue can be released from any black and white Andrew Printing location.

### Printer Locations

Printers can be found in the following locations:

* All University Libraries
* All Computing Services Clusters
* The University Center
* Donner Hall, Mudge, West Wing, and Morewood dormitories
* The Tepper School undergraduate lounge
* Gates building 3rd and 5th floors

Consult the map below for more details on campus printing facilities

<http://www.cmu.edu/computing/clusters/facilities/clustermap.gif>

### Other Printing Considerations: Double Sided, Color and Large Format

Printing a single sided or double sided document costs the same amount on Andrew Printing. Double Sided printing is default in Clusters. Remember that part of the motivation behind using a quota system is to minimize waste—use double-sided printing when possible.

There are color printers available at 4th floor Hunt Library and 3rd floor College of Fine Arts building. Tabloid printing is available at CFA, Hunt, Wean and Cyert Hall. If your work requires a color or large format print out, you will need to select an appropriate print queue.

### Selecting a Print Queue

Selecting an appropriate print queue is a matter of considering your specific needs:

* Do you need to print in color or larger formats?
* How soon will you be able to pick your documents?
* What location is convenient to you?
* Other considerations: is my quota adequate?

Color or Large Formats: because only a limited number of printers are able to provide color or large format prints, these requirements restrict you to specific queues. Color queues are: prn-cl-cfa-c or prn-lib-hl4-arts-colorlaser.

How Soon: remember that only the University Center (pr-cl-uc-1) has an extended expiration time of 12 hours. All queues need to be picked up within 4 hours.

Location: If you would like to be able to pick up your black and white print job from any printer, the Andrew Central queue can be released at any public printer. Otherwise, you’ll want to consult a campus map and select a printer that is will be convenient for you.

Worked Example: Provide a scenario for Anshu that requires him to walk through the steps above. IE give his specific location and the timeline and needs, then step by step ask and answer the questions

Mini-Tutor (Learn By Doing?): Provide student with drop down of printer queues (probably in a mockup from an actual printing app). Give a scenario (type of print, where are you, etc) and ask students to pick an appropriate print queue form the list. Hints for these will essentially be the three steps above, maybe with a campus map that shows up and highlights. 2-3 scenarios:

Is this overkill? Would just questions w/o mockup and map do as well?

Do we need to incorporate quota management into this? How?

### Printing Problems

Cluster Services maintains a webpage that gives an overview of the current status of all printers on the Andrew Printing system. You can find out of a printer is functioning and the status of its toner and paper supply by visiting: [http://Clusters.andrew.cmu.edu/printerstats/](http://clusters.andrew.cmu.edu/printerstats/)

For any printing-related problems, you can contact a Cluster Consultant (CCon). These consultants are available at 412-268-8776 during staffed hours.

### Learn More

Additional information and documentation on Andrew Printing can be found at:  
Andrew Printing Documentation:  
http://www.cmu.edu/computing/doc/printing/index.html

Andrew Services Cluster Printing [http://www.cmu.edu/computing/clusters/printing/index.html]