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# Effective Computing

* Introductory scenario (student is on campus, needs to verify an assignment on blackboard, then save it via custer only software, so must retrieve from AFS, find a cluster, report a problem, save, submit and print it out. Or something similarly common (but touching on more than a few areas
* Other Common Questions
* Big Picture
* Self Evaluation/Pretest

# Cluster Services

* Cluster Resources
  + Introduction to Cluster Resources
    - Simple Student Scenario
    - Big Picture
    - Describe the resources provided by Cluster Services.

## Computer Clusters

* + - What is a Cluster?
      * A place to access specialized software.
      * A place to use a Mac, Windows or Linux computer and peripherals.
      * A place where some of your classes may be held.
      * A place for you to complete academic work, meet with peers, and access resources you need.
    - What’s in a Cluster?
      * Mac, Windows and Linux computers
      * Different sets of software, depending on location
        + File Storage available by OS
      * Scanners, card readers, Tablets, and other hardware and software
      * Collaborative workspace amenities
      * Projection and classroom amenities
    - Where are the Clusters?
      * Computing Services Clusters
        + Computing Services directly manages Clusters in Baker, CFA, Cyert, Hunt, Morewood, Wean and West Wing. (Map picture)
        + These spaces are open to every student on campus and have different resources available, depending on the location and focus of the Cluster.
      * Computing Services Partner Spaces
        + Computing Services partners with departments on campus to provide all students with access to some additional spaces.

School of Music facilities: CFA, Margaret Morrison

School of Computer Science: Gates 3rd and 5th floors

* + - * MSW > Departmental Clusters
        + Some departments have their own Clusters or computer labs that may be open to everyone, students in that department, or students registered for specific classes.
    - When can I use a Cluster?
      * 24X7 Clusters and course scheduling (link to Cluster reservations page)
      * Clusters with restricted access & closures (Hunt, School of Music)
      * Clusters not reserved for classes
      * MSW > Breaks & Summer Hours
      * .
    - How do I get help with using Clusters?
      * How to give a good problem report
        + Why is a good report necessary
        + What are the components of a good report
      * I’m having problems with a Cluster resource! What information do I need to report?
        + What Cluster resource are you using? (A piece of hardware? A software application or file access service? Environmental or facilities questions?)
        + Where are you located?

Finding out what computer you are on, or what space you are in

What locations are staffed?

* + - * + What symptoms are you seeing? What did you expect to see?
      * Now I know what I need to ask about. Who do I ask?
        + Ask a CCon: Staffed locations, CCon phone number, CCon hours
        + Ask a Clusters Staff Member: Wean & CFA hours during the academic year
        + Ask the Help Center: email/phone or walk-in (Link to Help Center hours of operation)
      * Worked Example(s)
      * DIGT: Some kind of scenario based multi-question piece

## Multimedia Facilities & Lending

* + - What is available using the lending service?
    - How do I request a multimedia lending card?
    - How do I reserve the sound editing room?

## WebStations

* + - WebStations are not the same as computer Clusters, but are maintained and managed by Cluster Services. They have the same complement of software and peripherals as a normal computer Cluster.
    - WebStations have a time limit of 15 minutes, and are located in areas where foot traffic and printing traffic are high. These are currently located in the University Center and Kirr Commons.
    - You can check your webmail, Blackboard and other web resources.
    - You cannot make changes to any documents, nor can you access documents from your AFS or MyFiles space.
    - DIGT > WebStations (select features of WebStations – highlight those that are common misconceptions for students i.e. thinking they can open a file in a software application not installed)
  + Tools Review:
    - People: CCons, Help Center Staff, Cluster Staff
    - Web: Cluster Website, Cluster Reservations, Cluster Map, Cluster Software List
    - Multimedia: Sound Room, Multimedia Lending, CFA Cluster
  + Activities:
    - Here are some scenarios that you may find yourself in during your career here at Carnegie Mellon. What Cluster resources would you use to make sure you are getting what you need?
      * You are taking the Statistics course 36-201. You have a homework assignment due and need to use Minitab to complete it. You are a Windows user. It’s Thursday at 1pm and you want to complete the assignment before midnight. When and where can you plan to access Minitab and complete your assignment?
        + What web resources did you need to make this decision?

Maybe this is a multiple-choice question?

* + - * + What Clusters have Minitab?

Select all from a list of Clusters.

* + - * + What Clusters have Windows OS?
        + What Clusters are available between now and midnight?

Clusters Reservations Site Mockup

* + - Other potential activities:
      * You are in a class that has a group project. You need to meet to discuss your work, use a specific piece of software, and use a scanner to scan in photographs. Where do you meet?
      * Your class has an assignment to make a video illustrating how to perform some task. Where can you get a video camera? How long will it take for you to get access? Where can you do voice-over work on top of your video? How do you get help?

## Andrew Printing

* + - Andrew Printing Overview
      * Simple Student Scenario
      * Big Picture
      * Definition: Andrew Printing is a service that gives every user on campus access to printers and a free printing allocation.
    - Andrew Printing Quota
      * Andrew Printing is on the quota system. This means that each user starts the beginning of each semester with an allocation of $40 per semester that they can use to print whatever they want. The quota is set at a rate to allow for the black & white printing habits of over 95% of campus.
      * How much can I print?
        + 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 $40. There is no carry-over of your quota.
        + Andrew Printing costs 5 cents per black and white page, 10 cents for a larger, tabloid-sized page. Color Printing costs 75cents a sheet/1.50 for tabloid at the CFA Cluster. The University Libraries color printer costs 70 cents a page.
        + This amount of print quota will let you print 800 pages per semester. If you print double sided (the default in the Clusters), you will be able to print 1600 pages with your quota.
        + If you go over your quota, Andrew Printing will use your PlaidCa$h to pay for any additional printing you need.
      * Where can I check my quota?
        + <https://my.cmu.edu/portal/site/main/finances/>
      * DIGT on quota
    - Selecting an Andrew Print Queue
      * Where can I print?
        + Libraries
        + Clusters
        + UC
        + Dormitories
        + Tepper
        + Gates
        + Music
        + Can I print from my own computer?

Yes! http://www.cmu.edu/computing/doc/printing/personal/index.html

You can print from any computer with Internet access that has Andrew Printing software installed. You do not need to VPN.

* + - * Can I print in color? Tabloid size? Double sided?
        + Double Sided default in Clusters
        + Color 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.
      * Selecting the right print queue for your needs
        + Individual Queues last 4 hours.
        + The Andrew Central queue can be released at any printer, but will only print black and white.
        + The University Center queue expires after 12 hours.
        + Please print to the individual queues for CFA and Hunt color printers to ensure you are using the correct drivers and get color printing output.
        + Print Queue naming conventions
      * How can I tell if the printer I am trying to use is broken or out of supplies?
        + [http://Clusters.andrew.cmu.edu/printerstats/](http://clusters.andrew.cmu.edu/printerstats/)
      * Activities:
        + You are off campus working with friends and need to print your job from your laptop and release it after dinner, 7 hours from now. Which queue do you print to? When can you pick it up?
        + You need to print a color 11X17 poster for a class project. What location and queue should you print to?

## Getting Help

* + - * CCon
      * Cluster Staff
      * [Clusters@andrew.cmu.edu](mailto:clusters@andrew.cmu.edu)
      * Help Center

# File Storage & Sharing

* File Storage & Sharing
  + Introduction to File Storage & Sharing
    - Common Student Scenario
    - Big Picture
  + File Management
    - Defining Quotas
      * What is a quota?
        + DIGT > Defining Quotas
    - Managing Quotas
      * Describe basic strategies for managing quotas (deleting unneeded files, compressing files and using project volumes)
        + DIGT > Managing Quotas
    - File Structures (Mac/Windows)
      * Explain how files are structured within file storage spaces by constructing a directory tree.
        + DIGT > Directory Tree Structures
    - Path Names
      * What is a path name?
      * Use a directory tree structure to determine the path name for a file or directory.
        + LBD > Path Names

Matching path names and directory tree structures

Drag-and-drop elements of a path name to construct a directory tree structure

* + - Naming Conventions
      * Define the relevant naming conventions (using lower-case letters and avoiding special characters)
        + DIGT > Naming Conventions

## File Storage & Sharing Options

* + - Overview of Options
      * Define the features that students should consider when selecting a file storage option.
      * My Response > File Storage & Sharing Options
        + Students select the options they currently use for storing and sharing files.
        + Students can share an experience about file storage and sharing.

Did they ever choose the wrong option and lose a file, etc.?

* + - Carnegie Mellon Options
      * Define specific options available to Carnegie Mellon users (MyFiles and AFS).
      * DIGT > File Storage & Sharing Options
        + Multiple-choice questions on features available in a given option.
      * DIGT > Choosing an Option
        + Students review common scenarios and select the best option by applying strategies for choosing an option based on available features.

## MyFiles

* + - Recap of MyFiles storage space
    - MyFiles Quota
      * Demonstrate how to view MyFiles quota consumption.
        + Walkthrough > Monitor MyFiles Quota
    - MyFiles File Structure
      * Explain how MyFiles is structured
    - Using MyFiles
      * Walkthrough > Using MyFiles
        + Demonstrate steps to save and open files stored to MyFiles.
      * DIGT > Using MyFiles
      * MSW > MyFiles Self-Restore
      * MSW > MyFiles on Personal Computer

## Andrew File System

* + - Recap of AFS storage space
    - AFS Quota
      * Walkthrough > Monitor AFS Quota
      * MSW > Quota Increase Tool
    - AFS File Structure
      * Explain how AFS is structured.
    - AFS Path Names
      * Determine the path name for a file or directory on AFS.
        + DIGT > AFS Path Names
      * Absolute & Relative Path Names
        + Explain the difference between absolute and relative path names.

DIGT > Absolute & Relative Path Names

* + - * Define the path name shortcuts for a file or directory on AFS.
        + DIGT > AFS Path Name Shortcuts
    - Accessing AFS
      * Explain the tools that students can use to access AFS (MyAFS and FTP).
        + DIGT > Accessing AFS
    - Using MyAFS
      * Explain the relationship between the MyAFS shortcut on a local computer and the AFS storage space.
      * Demonstrate how to save and open files using MyAFS.
        + Walkthrough > Using MyAFS
    - Using SFTP/Fetch
      * Demonstrate how to save and open files using SFTP/Fetch.
        + Walkthrough > Using SFTP/Fetch
      * MSW > Transfer Modes
      * LBD > Using SFTP/Fetch
    - SFTP/Fetch File Management
      * Demonstrate how to add, rename files and directories.
        + Walkthrough > SFTP/Fetch File Management
        + LBD > SFTP/Fetch File Management
    - Andrew Linux
      * Brief overview of Andrew Linux and how it’s used to share files on AFS.
        + MSW > Andrew Linux
      * Explain how the Access Control List is used to manage who can access a student’s AFS files and what access they will have.
    - Using Andrew Linux
      * Demonstrate how to connect to AFS via Andrew Linux.
        + Walkthrough > Connecting to AFS
      * UNIX Command Line
        + Introduce the UNIX command line.
      * Navigation & Directory Commands
        + Define the navigation and directory commands and provide examples of the actions they will cause.

DIGT > Navigation & Directory Commands

* + - * Access Rights
        + Define the various access rights that can be assigned to share files.

MSW > Default Access Rights

* + - * + Explain how access rights can be combined, those that must be assigned together and shortcuts for common combinations.

DIGT > Access Rights

* + - * + Viewing Access Control Lists

Demonstrate how to view the Access Control List for AFS directories.

Walkthrough > Viewing Access Control Lists

* + - * + Modifying Access Control Lists

Demonstrate how to modify the Access Control List by assigning rights and changing or removing the assigned rights.

Walkthrough > Modifying Access Control Lists

* + - * LBD > Using Andrew Linux (activity to put everything together – connecting to AFS, navigating to a directory, viewing and assigning access)
      * MSW > User Groups
  + Posttest

# Enrollment Services

* Enrollment Services

## Introduction to Enrollment Services

* + - Student Scenario
    - Big Picture

## Scheduling Tools

* + - Describe the tools students will use for scheduling (University Course Assessment, Academic Audit, Course Information Online and Schedule of Classes).
    - Demonstrate the steps for viewing University Course Assessment results.
      * Walkthrough > University Course Assessment
    - Demonstrate the steps for running an Academic Audit.
      * Walkthrough > Academic Audit
    - Demonstrate the steps for viewing Course Information Online.
      * Walkthrough > Course Information Online
    - Demonstrate the steps for viewing the Schedule of Classes.
      * Walkthrough > Schedule of Classes
    - LBD > Using Scheduling Tools (scenario where students use all of the above tools to create a mock schedule)

## Enrollment & Financial Information

* + - Describe the enrollment and financial information students can view and manage using Student Information Online.
      * Screen captures of relevant sections of SIO.
      * Information to maintain
        + Details of the information they need to maintain (billing, contact, etc.).
        + A few problems w not maintaining

# Blackboard

* Blackboard

## Introduction to Blackboard

* + - Student scenario
    - Big Picture
    - What is Blackboard?

## Submitting Files

* + - Describe the tools used to submit files to a course instructor (Digital Dropbox and Assignment tools) and highlight the differences between the two.
    - Demonstrate how to add and send a file using the Digital Dropbox.
      * Walkthrough > Using Digital Dropbox
    - Demonstrate how to submit files using the Assignment tool.
      * Walkthrough > Submitting Assignments

## Naming Conventions

* + - Define the naming conventions that must be following when submitting files via Blackboard.
    - DIGT > Naming Conventions

## Collaboration Tools

* + - Describe the various tools students can use to collaborate with their classmates (discussion board, group pages, chat and email).
      * Include screen captures of tool interface with definitions, pointers to left-menu item where tools can be found.

## Getting Help

* + - FAQs – quick description of common problems.
    - Who to contact – Help Center

# Components for Digital Citizenship/Computing Components

# Bandwidth

* Bandwidth

## Introduction to Network Bandwidth

* + - Student Scenario
    - Big Picture
    - Definition: What is Bandwidth

## Bandwidth Guidelines

* + - Summarize the network bandwidth guidelines.
    - Describe the monitoring and enforcement procedures.
      * DIGT > A few questions on guidelines and enforcement
    - Demonstrate how to monitor network bandwidth usage.
      * Walkthrough > Bandwidth Monitoring
    - Identify common causes for bandwidth violations (malicious attacks, games, streaming music/video, downloads).
      * LBD > Bandwidth Violations (screen captures of bandwidth monitoring tool with usage data that reflects common sources of violation and have students identify possible causes)

# Communication

* Communication
  + Introduction to Communication Tools
    - Student Scenario
    - Big Picture

## Andrew Email

* + - Andrew Email (Cyrus) Quota
      * Demonstrate how to view Cyrus quota consumption.
        + Walkthrough > Monitor Cyrus Quota
      * Strategies for managing quota (archiving messages, expunging sent mail and spam folders, and deleting old messages).
    - Email Forwarding
      * Describe email forwarding and associated risks.
      * Screen capture of email forwarding portlet.
    - CMU Names
      * Define CMU Names, considerations to be made when selecting a CMU Name and associated risks.
      * Screen capture of CMU Name portlet.

## Mailing Lists

* + - * Describe the Andrew Mailman mailing lists service.
      * Demonstrate how to subscribe to mailing lists and how to manage subscriptions.
        + Walkthrough > Mailing Lists

## Emergency Alert Service

* + - * Describe the Emergency Alert Service.
      * Screen capture of Emergency Alert Service subscription web page.