Computing at RSI

Linux, Athena, and more

RSI 2015 Staff

Research Science Institute
Massachusetts Institute of Technology

Table of Contents

1 Basics
- Getting Started
- Computer Clusters

2 Linux
- About Linux
- The Shell
- Files and Folders

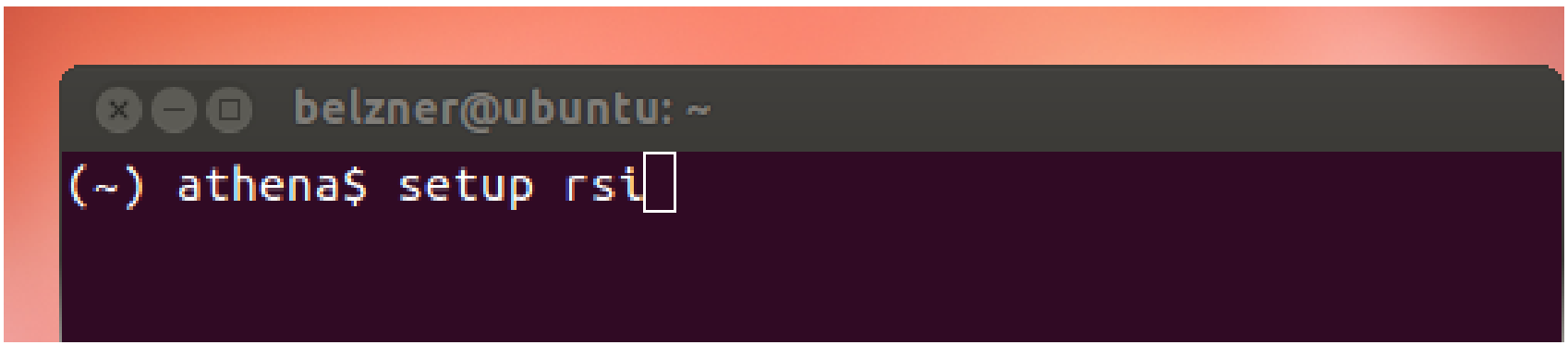
3 Athena
- Using Athena
- Beyond Athena

Getting Set Up

Log in using your username and password

- Your Athena (computer) account is the same as your MIT email account

Type `setup rsi` at the command prompt and press enter



If the output says it worked, log out and log back in

MIT Email

You can check your email at `owa.mit.edu`

You should expect to check your MIT email regularly, as we will be sending important information

If you want to forward your email to another address or set up an email program, instructions have been sent to your MIT emails

The RSI Website

The website has all sorts of useful resources!

- Calendar of events
- Contact information
- These slides and links to other resources
- Information on assignments
- And more!

The RSI website can be found at `web.mit.edu/rsi/www/`

Rules of Use

- Don't tell **anyone** your password
- Don't let others use your account
- Don't reconfigure cluster hardware or software
- Don't turn the power off on any equipment
- Don't eat or drink in the Athena clusters
- Don't make excessive noise in the clusters
- Don't log in to multiple machines at once
- Don't use Athena resources to make money
- **Use common sense**

Workstations

- W20-575 (Student Center 5th floor)
- Maseeh basement (printer, very few computers)
- 4-167 (just off the infinite corridor)
- 56-129 (near tutor rooms/first-week classrooms)
- 37-312 (near Vassar Street)
- 66-080 (basement, near Ames Street)

Use the door combination #57721, or your ID for W20-575

Table of Contents

1 Basics
- Getting Started
- Computer Clusters

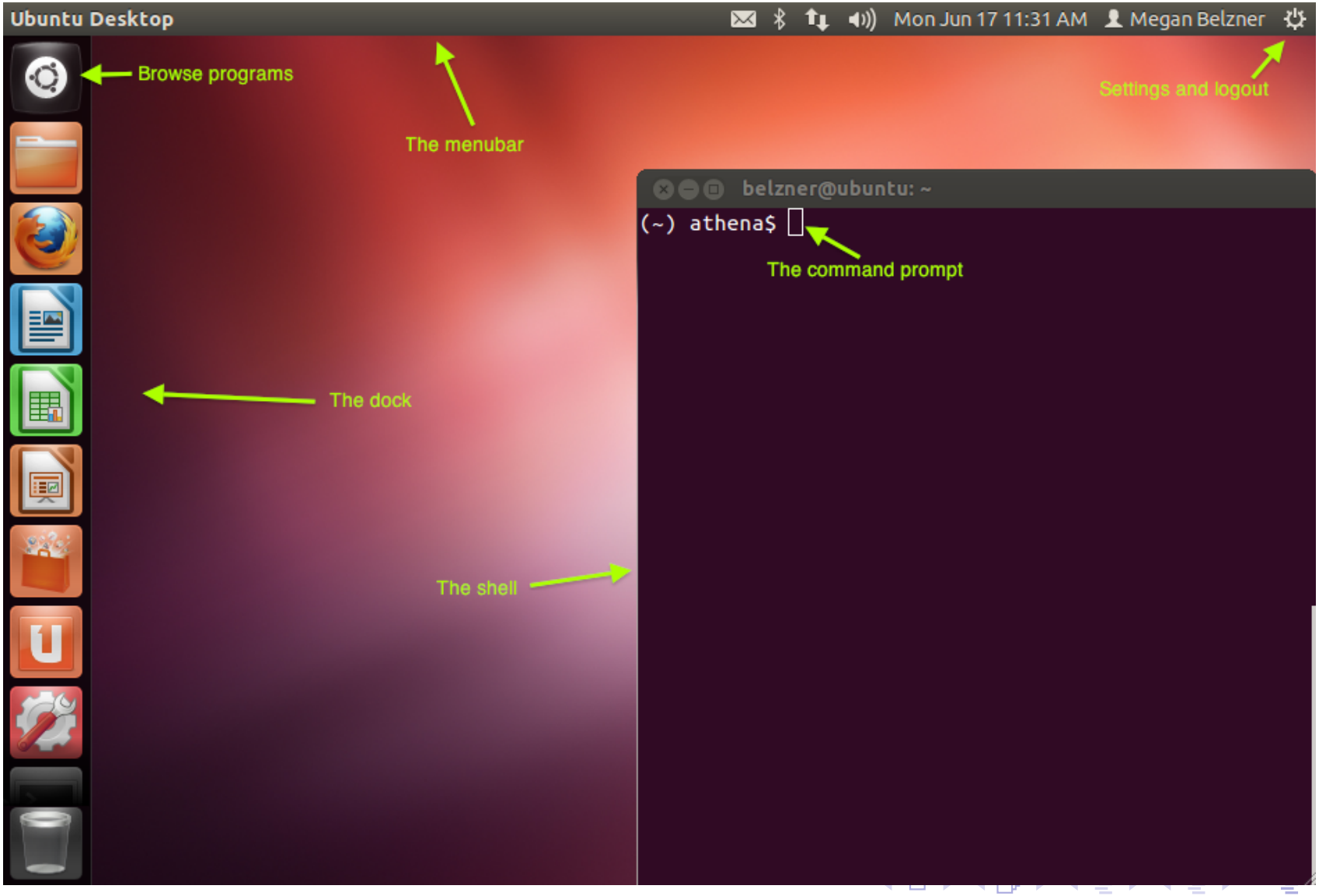
2 Linux
- About Linux
- The Shell
- Files and Folders

3 Athena
- Using Athena
- Beyond Athena

What is Linux?

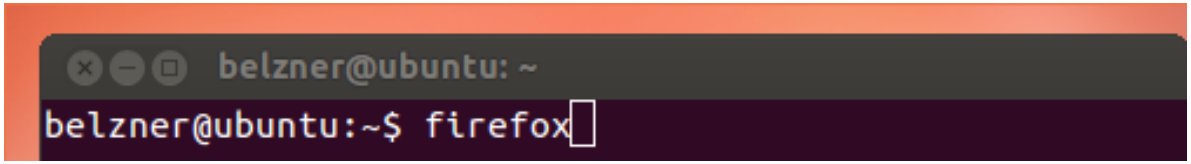
- The leading operating system for servers and for scientific computing
- Gives the user much more control over the underlying system
- The command line (shell) is an important component
  - The shell is a text-based way of doing many of the things you can do graphically, plus a whole lot more

The Screen Before You

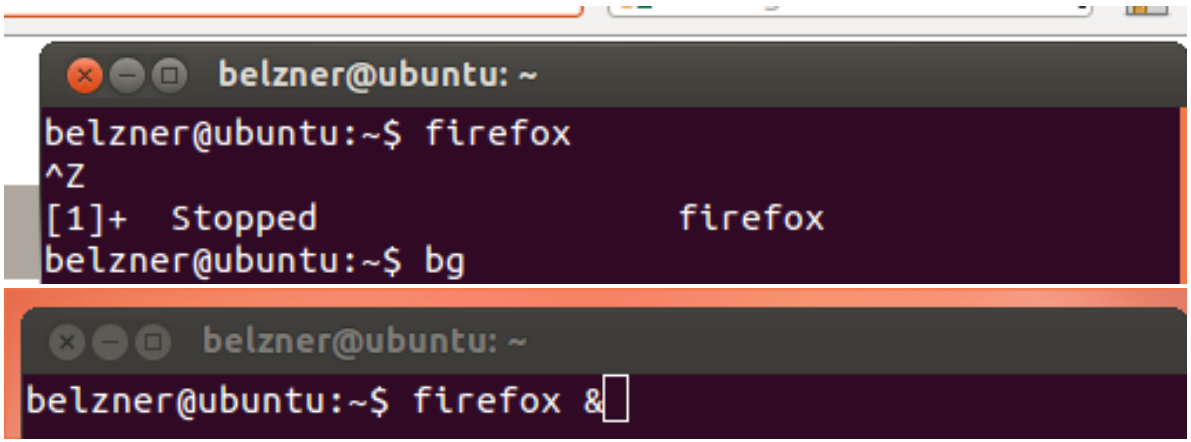


Running Programs

It's as simple as typing the name of the program . . . almost
Try opening Firefox from the command line:



You don't get your command prompt back
Use `ctrl-c` to kill a process, `ctrl-z` to pause, bg to resume it in the background — or use *`programname`* `&` when opening it



Command Structure

Not all commands are just the name of a program

Arguments

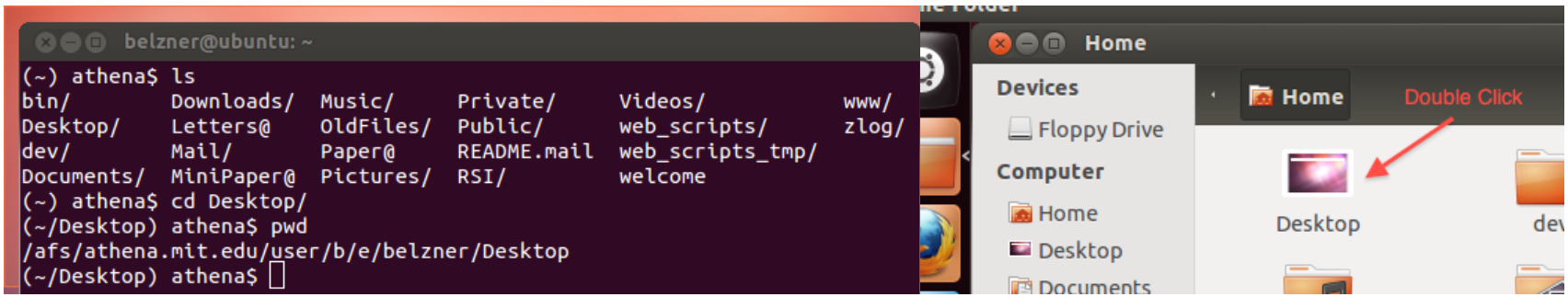
Arguments give the program input (often a filename)
Ex. `rm file.txt` — file.txt is the file that rm deletes

Options

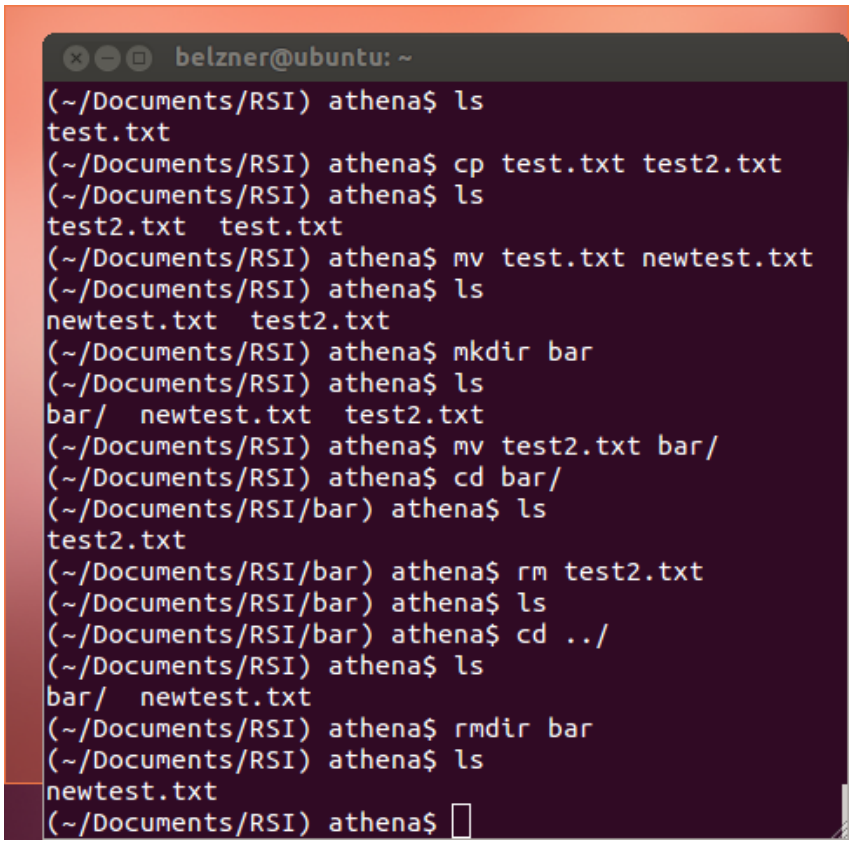
Options change the way the program works
Ex. `ls -a` — while `ls` lists only visible files, the `-a` option causes it to list hidden files as well

Navigating Your Files

- `ls` to list the files in your current directory (folder)
- `cd` *`foldername`* to move between directories, `cd ../` to move back a directory, and `cd ~/` to move to your home directory
- `pwd` to see what directory you're in



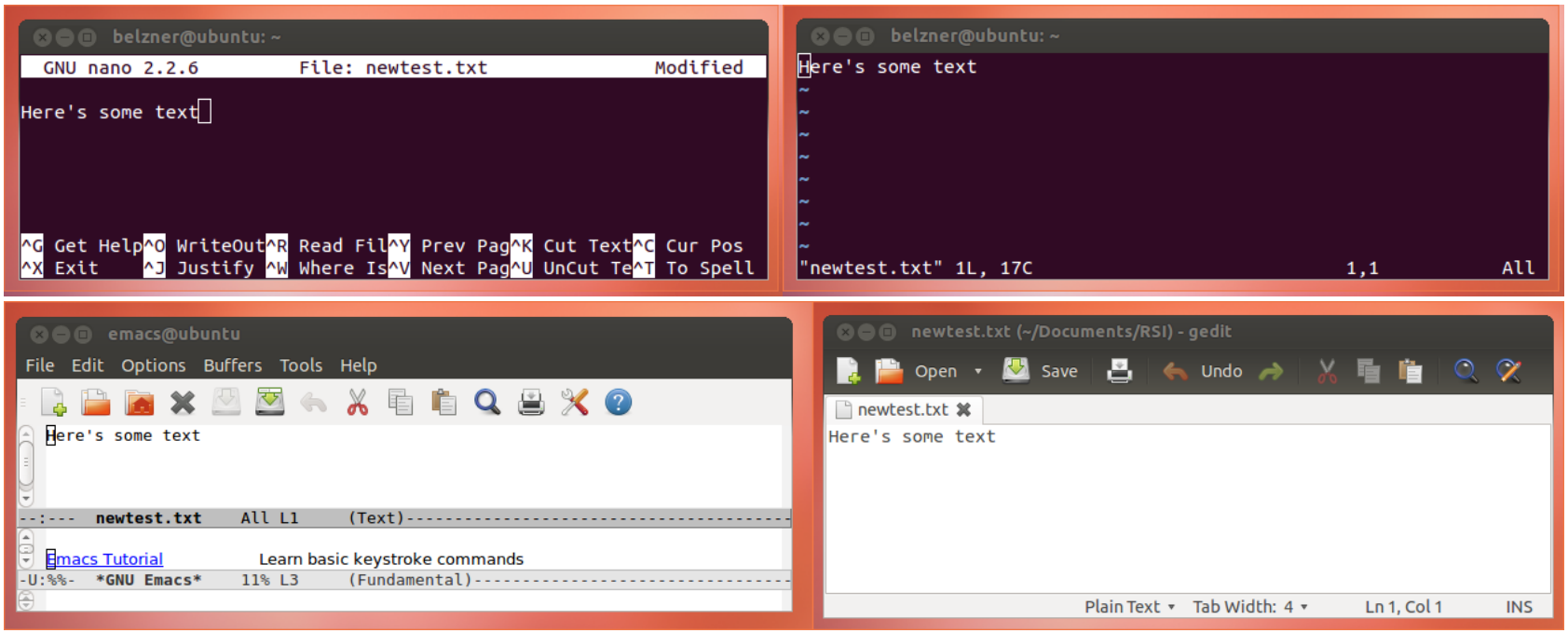
Manipulating Your Files



- `cp` *`file newfile`* to copy a file
- `mv` *`file newfile`* to rename a file, or move it to a new folder
- `rm` *`filename`* to delete a file
- `mkdir` *`foldername`* to make a directory
- `rmdir` *`foldername`* to remove an empty directory

Editing Your Files

To write your paper, you will be using a text editor
You have several options: `nano`, `vim`, `emacs`, `gedit`



A note: **don't use spaces in your filenames!** You should use only letters, numbers, hyphens, and underscores

Exercise

Through the command line interface:

1. navigate to RSI folder
2. create a new directory named Test in RSI
3. navigate into Test
4. create a file named "test.txt" in the Test directory (hint: in Test directory, type "gedit test.txt", then click save on the gedit editor)
   - you may also use nano, vim, or emacs to do this
5. remove test.txt
6. navigate back into RSI
7. remove the Test directory

Table of Contents

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What is Athena?

Athena is MIT's computing environment, built on top of Ubuntu

- It uses a networked filesystem called AFS — you can access your files from any workstation on campus
- Athena accounts start with a standard set of folders:
  - Files in `Public` are available to the world, at `web.mit.edu/`*`username`*`/Public/`
  - Files in `Private`, meanwhile, are available only to you
  - Files in `www` make up your personal website, at `web.mit.edu/`*`username`*`/www/`
  - `OldFiles` contains a backup of your home folder
- RSI Accounts have additional important directories contained in the `RSI` folder — `MiniPaper`, `Paper`, and `Letters`

Accessing Athena & More

To access parts of MIT's computer system, you need to authenticate yourself

Tickets

Tickets prove to AFS that you're really you and that you have the permissions you have. They expire after 10 hours logged in, so to renew them, type `renew` at the command prompt

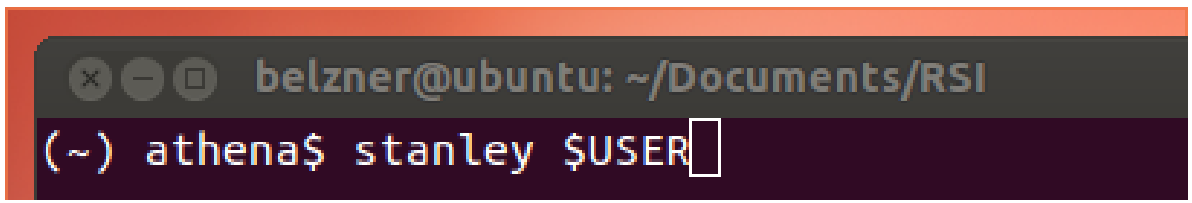
Certificates

Certificates are like tickets, but for the internet! You'll use them to access various web services

Getting Certificates

To obtain a certificate for any browser, go to `https://ca.mit.edu/` with that browser and enter your username and password

To find your MIT ID, either find the email containing it or type `stanley $USER` at the command prompt



Click next, accept the default settings, click next, and follow the instructions to install the MIT Certificate Authority if necessary

Using Programs

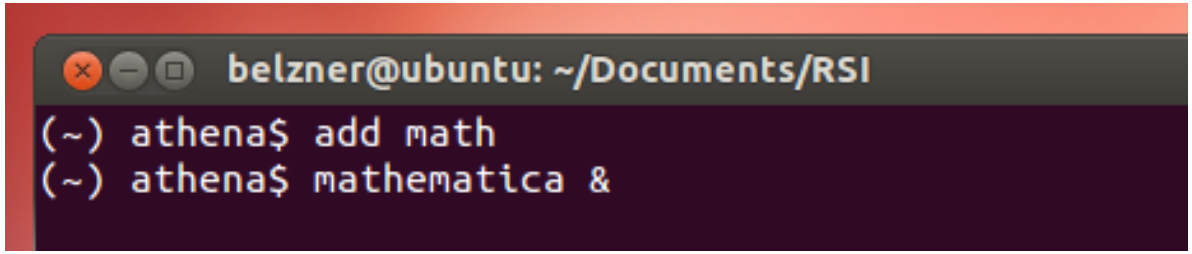
Not all programs can be accessed by default

Lockers

Lockers contain programs and other files. Every entity on Athena has a locker

To find what locker a program is in, check `ist.mit.edu/software/athena/table` or use `whichlocker` *`programname`* at the command prompt

To access programs in a given locker, use `add` *`lockername`* at the command prompt



Printing

- From a graphical print dialog, print to ‘mitprint’ (for black and white) or ‘mitprint-color’ (for color)
- Pick up your print job from any printer by swiping your card
- Black and white printers are available in all clusters and most quickstations around campus
- There is a color printer in W20-575 – use sparingly, only if necessary!
- *Please* don’t abuse the free printing

Working Remotely

Command-line only:

- From a web browser, go to `athena.dialup.mit.edu`
- From a command line (Mac or Linux only), use `ssh` *`username`*`@athena.dialup.mit.edu`
- On windows, install PuTTY from `www.chiark.greenend.org.uk/~sgtatham/putty/`

Graphical:

- From a command line (Mac or Linux only), use `ssh -Y` *`username`*`@athena.dialup.mit.edu`
- On windows, install Xming from `sourceforge.net/projects/xming/`
- If you use Ubuntu, you can also install Athena on top of your normal OS from `debathena.mit.edu`

Getting Help and Learning More

- IS&T (`ist.mit.edu`) has many resources for Athena and other MIT computing needs
- To get more information about a command, type `man` *`command`* at the command prompt
- To learn more about the shell in general, try `linuxcommand.org`
- The RSI website has many resources and FAQs

Google is your best friend!