UMass Lowell
Computer Science Department
Connecting to and using the CS Labs and Servers
Technology

- Using 4 subnets of the UML network
- Over 20 servers
  - Research, Instructional, Infrastructure
- Over 200 desktop systems
  - Research/Student labs, Faculty/Staff Offices
- Several printers (lab, offices)
- 2 full time support staff
  - 3-4 lab assistants
Technology

- Operating Systems in use
  - Linux (Ubuntu, CentOS, RedHat)
  - Windows 7
  - Windows XP
  - Windows Server 2003/2008
  - OS X Snow Leopard / Lion
Computer Science Account

- A computer science linux account is needed in order to log into the departmental linux systems.

- This is not the same as your student.uml.edu account.

- Request one by visiting Olsen 312 with your schedule and student ID card.
Getting Help

- Sending an email to help@cs.uml.edu
- Visiting Olsen 312
  - M-F 8am to 9pm
- Calling 978 934 3636 (CS Help Desk)
- CS Operations staff cannot assist you with your homework
CS.UML.EDU

The CS department maintains a DEBIAN GNU/linux based server known as ‘cs.uml.edu’. Its IP address is 129.63.8.2.

This server can be accessed from the campus lan or the internet via the Secure Shell (ssh) protocol.

Your CS username and password is used to log into this server.

Once logged in, you’ll be able to use your account to access your files and directories necessary for homework purposes.
This server is actually 4 servers in a clustered environment. A ‘round robin’ approach is used to direct your SSH session to the next server in the list to log you in.

Once logged in, you can see which of the servers you are connected to by running the `/sbin/ifconfig` command and viewing the line that looks like this:

```
eth0  Link encap:Ethernet  Hwaddr
```

The numbers next to ‘inet addr:’ are the IP address of this server.

The 4 server IP addresses are:

Each CS user account is a Linux user account. Associated with the account is a personal storage space called a ‘home directory’. This home directory is a location on a file server that you can store your homework assignments on. Most of the programming assignments you work on will be saved onto this home directory.

A home directory is a lot like a filing cabinet. You can have several directories (folders) where each directory can store files and other directories (folders). The preferred and recommended method for storing your files is with directories.
CS Account Basics

For example, you might have a ‘Computing 1’ folder, where inside that folder is a folder for each assignment and inside each assignment folder are the programs that you have written for that assignment.

The directories and files inside your home directory are manipulated with specific commands that let you create, edit, copy, move, remove, rename those objects. You type these commands in at a ‘command line’. In Linux, the command line is known as a ‘shell’.
ACCESSING YOUR ACCOUNT

Your CS linux account gives you access to that shell and therefore your files and directories, but it is accessed in different ways depending on the type of operating system you are using:
ACCESSING YOUR ACCOUNT FROM WINDOWS

**Windows:** To access your linux account and shell from a Windows operating system, you must use the ‘SSH’ protocol to remotely log into the cs.uml.edu linux server. On Windows, the preferred program to do this with is called **putty**. **PUTTY is not a standard Windows program and must be downloaded and installed by visiting**

http://www.chiark.greenend.org.uk/~sgtatham/putty/
SSH KEY (WINDOWS)

When connecting to the cs.uml.edu cluster/server for the first time from a system using putty, you will be prompted to accept the ‘host key’ to connect.

If a message occurs saying the host key may have changed, DO NOT connect and email help@cs.uml.edu to ensure that you are entering a secure session.
OS X: The MAC OS X system has a built in ‘command line’ (shell) that you access via running the ‘Terminal’ application. The Terminal application is found under Applications/Utilities.

Once you open up the Terminal app, type in 

`ssh username@cs.uml.edu`

and type in your CS password when prompted.
SSH KEY (OS X / LINUX)

When connecting to the **cs.uml.edu** cluster/server for the first time from a system running linux or OS X, you will be prompted to accept the ‘host key’ from a prompt such as the one below. Typing **yes** will connect you.

The authenticity of host 'cs.uml.edu (129.63.8.2)' can't be established. RSA key fingerprint is 12:f0:a2:98:6c:40:f7:35:9c:01:d8:2d:4f:45:68:d1.

Are you sure you want to continue connecting (yes/no)?

If a message occurs saying the host key may have changed, DO NOT connect, email help@cs.uml.edu to ensure that you are entering a secure session.
ACCESSING YOUR ACCOUNT FROM LINUX

LINUX: If you are using the LINUX computers in Olsen 308 or 310, you can access your linux shell (and files/directories) by simply opening up the Terminal program found under the Applications menu.

YOU DO NOT NEED TO SSH INTO CS.UML.EDU TO ACCESS YOUR ACCOUNT FROM THE LINUX WORKSTATIONS
ACCESSING YOUR ACCOUNT FROM LINUX

If you are using your own computer running linux, simply open up the Terminal program on your computer and type in

```
ssh username@cs.uml.edu
```

to access your CS user account shell.
When you use the cs.uml.edu server and/or the Linux workstations with your user account, you have the ability to create/edit/remove/modify files and directories under your ‘home directory’. These files and directories are stored on a large capacity file server that is maintained by the system administrators in the CS department.

These files are shared in such a way that multiple computers can utilize them at the same time. The file server is called galaxy.
ACCOUNT STORAGE and SECURITY

Each account is put into a category when it is created, based on the type of account. The categories are actually directories that contain other common user accounts. Categories include undergraduate, graduate, doctoral and noncs. A home directory may appear as:

/usr/cs/undergrad/2015/username

Each account directory contains security attributes, which protect it from being accessible by other user accounts. Although every attempt is made to ensure your data is kept secure, it is up to YOU to not store personal or identifiable information (like credit card numbers, bank account information, social security numbers, etc) on this server or OTHER campus systems.
ACCOUNT STORAGE and SECURITY

Each user account has a unique ‘ID’ and that ID has access to all the files and directories that were created with it. It is important that you DO NOT grant others access to your username and password. Operations executed with user accounts are logged continuously and those logs will be used should misuse of the computer systems be suspected.

Each evening any file that has been changed on this file server is backed up to other disk systems and magnetic tape to ensure that it can be retrieved should something be accidentally deleted. Please send an email to help@cs.uml.edu should you need something restored. Restoration of files changed/restored between backups is not possible (i.e. if a file is created and then deleted between backup times, that file is forever lost).
PASSWORDS

When your user account was created, you were given a random password to access your account. To ensure that your account stays secure, please remember to change your CS password if you have not yet done this, and at least once per semester.

You can do so by typing the command `passwd` command when logged into the `cs.uml.edu` linux server. Your CS username and password are not in sync with your `student.uml.edu` password.
COMPUTER LABS

Olsen 308: Apple iMac computers running OSX 10.6 (Snow Leopard) and Ubuntu Linux 10.04

Olsen 310: HP Touchsmart Systems running Windows 7 64bit Enterprise and Ubuntu Linux 10.04

Olsen 314: DELL Optiplex systems (30) running Windows 7 64bit Enterprise
COMPUTER LAB HOURS

Olsen 308: 24x7 access, using your student ID card

Olsen 310: 24x7 access, using your student ID card

Olsen 314: M-F from 7am to 5pm, CLOSED on weekends

Some classes reserve these labs at various times, which will be posted on the lab doors. Please don’t use the rooms at those times.
ACCESSING THE LAB

Your UMass Lowell Student ID Card is used for gaining access to the lab. Place your ID card in front of the door card reader – when the light turns green, pull the door handle to open it. If the light turns a different color see a system operator in Olsen 312 for assistance OR email help@cs.uml.edu.
WHO CAN USE THE LABS?

ANY student taking a CS course can use the 3 computer labs. DO NOT let your non-CS student friends into the lab and DO NOT open the door for those you don’t know. Report those who shouldn’t be in the lab to the system administrators in Olsen 312 OR help@cs.uml.edu.
LAB RULES

• NO EATING OR DRINKING IN THE LABS
• CLEAN UP YOUR PAPER/MESS WHEN YOU LEAVE
• DON’T POWER OFF THE SYSTEMS, JUST LOG OFF
• DON’T LOCK SCREENS UNLESS YOU WILL BE BACK IN ½ HOUR
STORING AND ACCESSING FILES

Windows computers in Olsen 310 and 314:

Anything you save into your Documents folder will be saved onto a Windows server. You can access those files from any Windows system in OS310 or OS314 you log into. To access your Linux home directory files, you can use the putty program to remotely log into the cs.uml.edu server. You can also use the winscp program to transfer files between the cs.uml.edu server and Windows system.
USING WINSCP

The freely available WINSCP can be used to transfer files to/from cs.uml.edu from lab or personal computers.

A simple google search for winscp will locate the download location.

When using winscp connect to cs.uml.edu and login with your username and password.
STORING AND ACCESSING FILES

Linux computers in Olsen 308 and 310:

Your linux ‘home directory’ is accessible directly from the computers running linux. The files you have on the cs.uml.edu linux server are available on the linux workstations. You can access them via a terminal window (using linux commands) or via the GUI environment on the linux desktop. Any files you change on the linux workstations are available on your account in the cs.uml.edu linux server.
STORING AND ACCESSING FILES

OS X computers in Olsen 308:

All files created and accessed on the OS X systems are local to the computer’s hard drive. To use your cs.uml.edu account:

Use the OS X terminal app and ‘ssh’ to the cs.uml.edu server.

Files stored on the local OS X computer hard disk are NOT backed up. Care should be taken to save them to external sources such as USB drives, etc.
FILE TRANSFER ON OS X

To transfer files to/from a MAC (to cs.uml.edu) running OS X use the freely downloadable ‘fugu’ application.

You can also use the built in scp program to copy files to/from a MAC running OS X.
USING SCP

scp SYNTAX:

scp  [-r ]  source destination

If the file is on the computer you are copying from, use:

scp  localfilename  username@cs.uml.edu:~/

(this copies it to the home directory, use a directory name after ~/ to have it go elsewhere)
USING SCP

If the file is on the cs.uml.edu server and you want to copy it to the local system:

```
scp username@cs.uml.edu:~/path/to/file localname
```

In either case, if it is a directory that is being transferred, use the –r option.
CS EMAIL

By default, your CS linux account has an email address associated with it: username@cs.uml.edu

When your account was created, the .forward file in your home directory was auto populated with your student.uml.edu email address.

Because of this, all email sent to username@cs.uml.edu will be instead sent to your student.uml.edu address.
CS EMAIL

To change where your CS Email is forwarded to, log into the `cs.uml.edu` server (or from a terminal in the linux workstation lab), use a text editor (vi / emacs) and change the email address inside of the `.forward` file to whichever address you would like.

**IMPORTANT** CS department related messages go to this email address, so it’s important to ensure that your cs email address does get forwarded!
PERSONAL CS WEB SPACE

Each CS account has built into it a personal web space. The `public_html` directory under your CS account is where you can put html code and related web files.

Your website address is [http://www.cs.uml.edu/~username](http://www.cs.uml.edu/~username)

To ‘enable’ the site, you must first change the permissions of the `public_html` directory to be readable by ‘others’:

```
chmod 755 ~/public_html
```
By default, any file or directory you create is accessible only by your account. This is important as it keeps your files secure from others.

In order to a web site to work, the files and directories under **public_html** have to be readable (and traversable) by the ‘other’ permission category.

To ensure these permissions are in place, you must do this for each file you create under **public_html**:

```
chmod 604 filename
```

And you must do this for each directory created under **public_html**:

```
chmod 705 directoryname
```

OR change everything at once in your website with:

```
chmod -R g-rwx,o+rx ~/public_html
```