

Crash-course on the Computational Infrastructure

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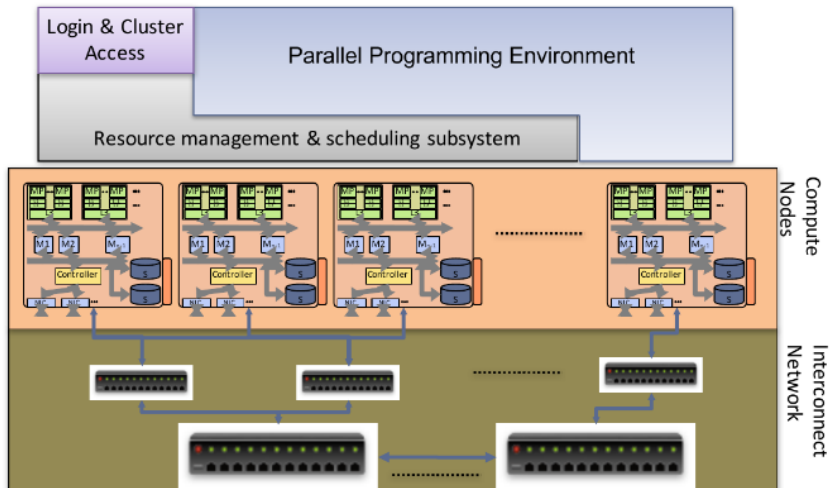
September 15th, 2025

- ▶ Crash-course on the Computational Infrastructure
 - ▶ Make first steps on a Linux Cluster (Login, short overview of basic unix commands like cd, pwd, cp, scp,...)
 - ▶ Get lecture notes/codes for the lecture
- ▶ Hello World in Python

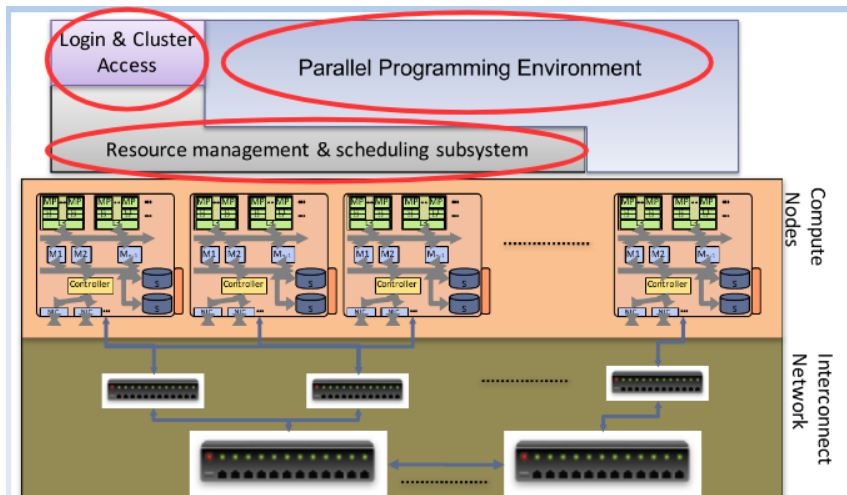
**MORE DETAILS IN THE TA
SESSION**

- ▶ For this course, we use Alphacruncher/Nuolos.cloud
- ▶ Its setup is very similar to any other system
- ▶ Register on *Moodle*, get the *enrollment key*, and open an account.

An abstract compute cluster



An abstract compute cluster



A real compute cluster



Credit: Blue Waters research cluster at NCSA, Illinois, USA (active 2007-2021).

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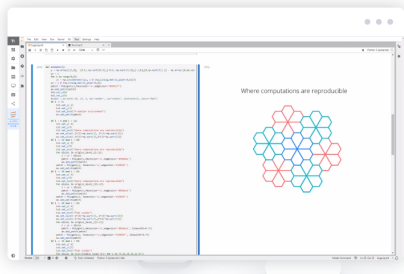
About

Sign In

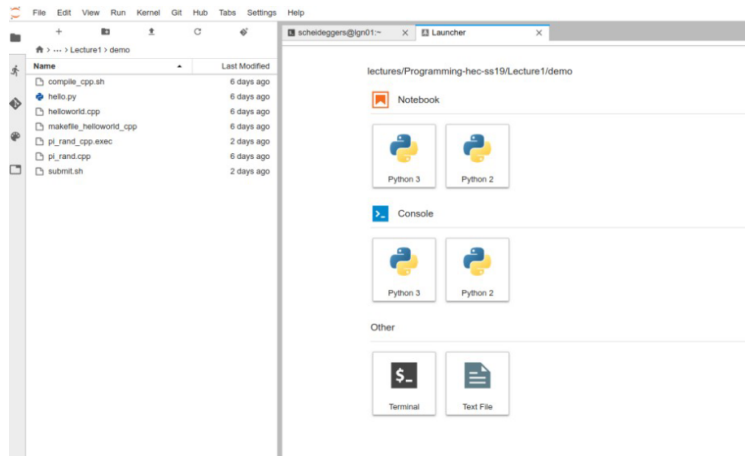
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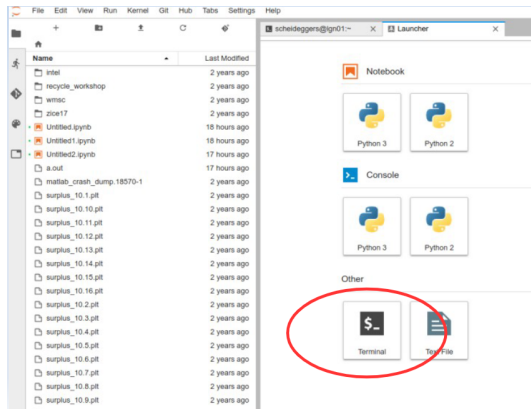
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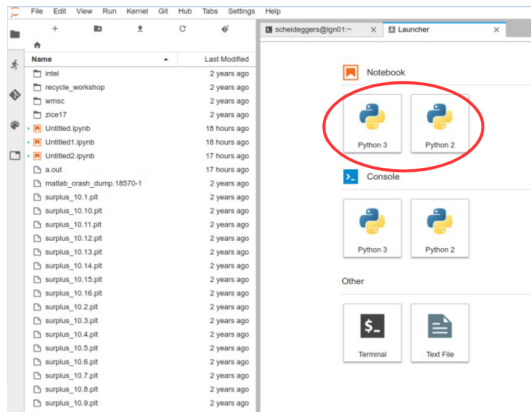
Login via Browser



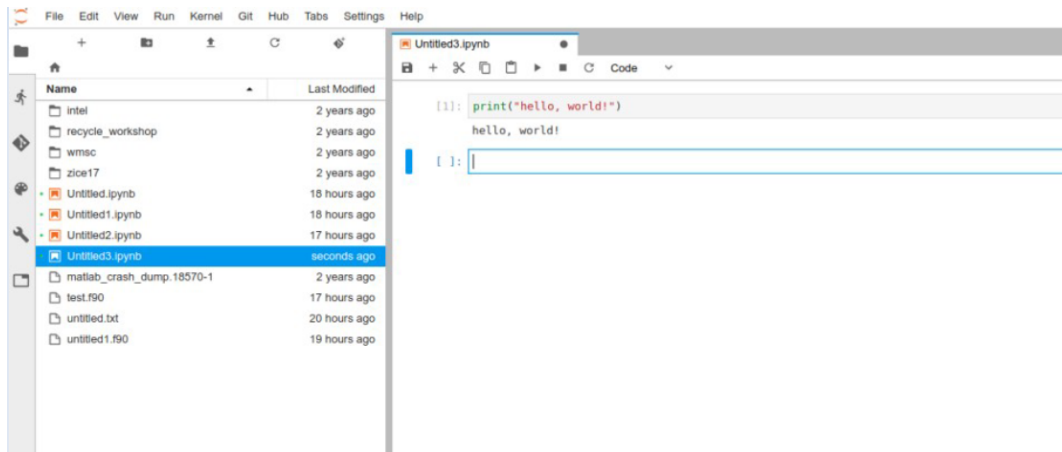
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Login via Browser



Login via Browser — Jupyter



Basic Linux commands

Command	Description
<code>pwd</code>	Print name of current/working directory
<code>cd [Directory]</code>	Change directory (no directory → change to home)
<code>ls [Directory]</code>	List directory contents (no directory → list current)
<code>cat FILE</code>	Concatenate files and print on the standard output
<code>mkdir DIRECTORY</code>	Make directories
<code>mkdir -p DIRECTORY</code>	Make directories, make parent directories as needed
<code>cp SOURCE. . . DIRECTORY</code>	Copy files and directories
<code>cp -r SOURCE. . . DIRECTORY</code>	Copy files and directories, copy directories recursively
<code>mv SOURCE. . . DIRECTORY</code>	Move (rename) files
<code>man COMMAND</code>	An interface to the on-line reference manuals

Basic Linux commands

Command	Description
<code>ssh -X foo@host.com</code>	OpenSSH SSH client (remote login program), access to host.com with user foo
<code>scp foo@host.com:/home/bar ./</code>	Secure copy (remote file copy program), copy file bar from /home on host.com to directory
<code>scp bar foo@host.com:/home/</code>	Secure copy (remote file copy program), copy file bar from the local host to /home on host.com
<code>git clone git@github.com:whatever folder-name</code>	The stupid content tracker, Clone a repository (whatever) into a new directory (folder-name)
<code>git checkout</code>	Checkout a branch or paths to the working tree.