



Using CIS VLab (Virtual Lab)

Third driving lesson

Command Line vs Graphical Desktop

Should I use SSH or VLab?

SSH when:

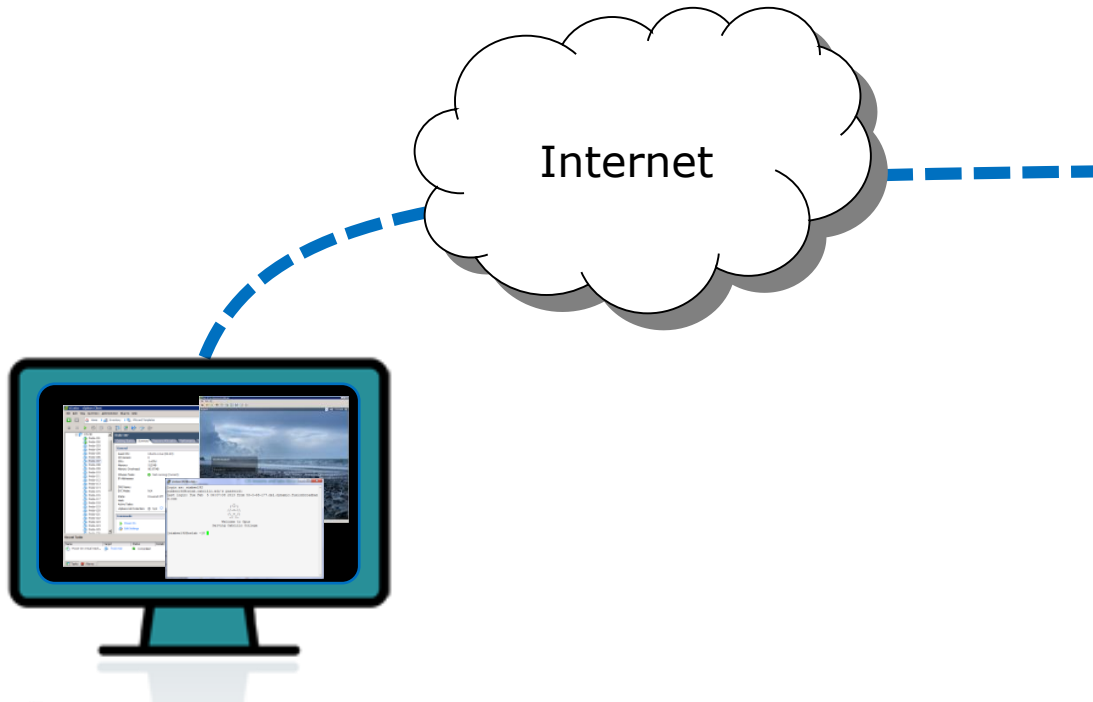
- You just need a command line.
- Have a low or high speed network connection.

VLab when:

- You need to use a graphical desktop.
- You need to use virtual terminals (the very basic black consoles).
- Higher speed network connection is needed for the graphics.

VLab = using the VMware vSphere Web Client over the Internet to access course VMs.

Accessing CIS VLab VMs



CIS Lab servers on the Aptos campus



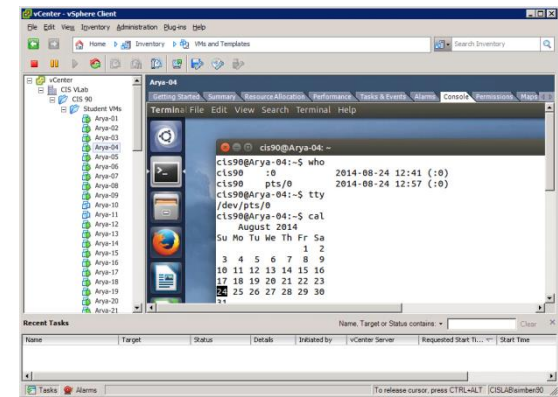
Home



School



Travel



<http://simms-teach.com/>

Rich's Cabrillo College CIS Classes Home Page

Home Resources Forums CIS Lab Canvas

Login
Flashcards
Admin

CIS 90
[Previous Terms](#)

1 day till term starts!

Cabrillo College Web Advisor

VLab (web)
NETLAB+ VE
[Annoying Issue List](#)

CIS 90 VLab VM Assignments

RIP Dennis Ritchie

Opus Status: UP

Rich Simms

Contact

- Email: risimms@cabrillo.edu
- Office hours: [directory page](#)

My Spring 2018 Cabrillo Classes

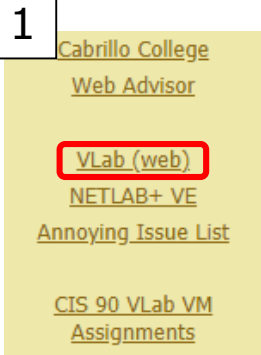
- CIS 90 - Introduction to UNIX/Linux

CIS 90 VLab Assignments	
Araya	Araya 21
Araya	Araya 22
Araya	Araya 23
Araya	Araya 24
Araya	Araya 25
Araya	Araya 26
Araya	Araya 27
Araya	Araya 28
Araya	Araya 29
Araya	Araya 30
Araya	Araya 31
Araya	Araya 32
Araya	Araya 33
Araya	Araya 34
Araya	Araya 35
Araya	Araya 36
Araya	Araya 37
Araya	Araya 38
Araya	Araya 39
Araya	Araya 40
Araya	Araya 41
Araya	Araya 42
Araya	Araya 43
Araya	Araya 44
Araya	Araya 45
Araya	Araya 46
Araya	Araya 47
Araya	Araya 48
Araya	Araya 49
Araya	Araya 50
Araya	Araya 51
Araya	Araya 52
Araya	Araya 53
Araya	Araya 54
Araya	Araya 55
Araya	Araya 56
Araya	Araya 57
Araya	Araya 58
Araya	Araya 59
Araya	Araya 60
Araya	Araya 61
Araya	Araya 62
Araya	Araya 63
Araya	Araya 64
Araya	Araya 65
Araya	Araya 66
Araya	Araya 67
Araya	Araya 68
Araya	Araya 69
Araya	Araya 70
Araya	Araya 71
Araya	Araya 72
Araya	Araya 73
Araya	Araya 74
Araya	Araya 75
Araya	Araya 76
Araya	Araya 77
Araya	Araya 78
Araya	Araya 79
Araya	Araya 80
Araya	Araya 81
Araya	Araya 82
Araya	Araya 83
Araya	Araya 84
Araya	Araya 85
Araya	Araya 86
Araya	Araya 87
Araya	Araya 88
Araya	Araya 89
Araya	Araya 90
Araya	Araya 91
Araya	Araya 92
Araya	Araya 93
Araya	Araya 94
Araya	Araya 95
Araya	Araya 96
Araya	Araya 97
Araya	Araya 98
Araya	Araya 99
Araya	Araya 100

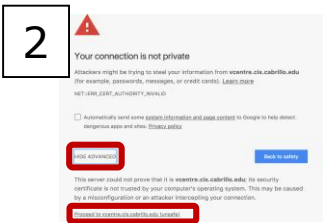
To see which Arya VM is yours use the link on the class website

Accessing CIS VLab via vSphere Web (HTML5) Client Using Chrome Browser on PC or Mac

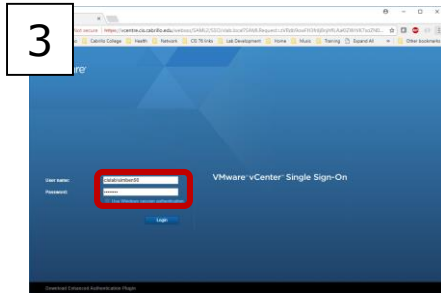
<http://simms-teach.com/>



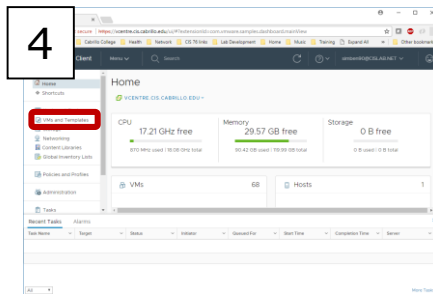
Click VLab (web) on left pane of website



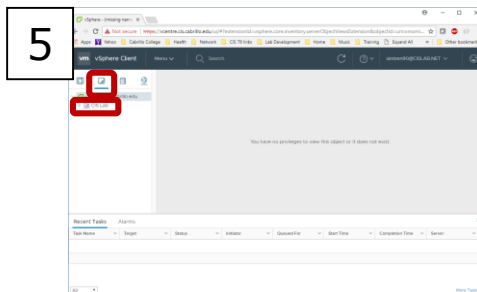
Select "Advanced" then "Proceed to vcentre ..."



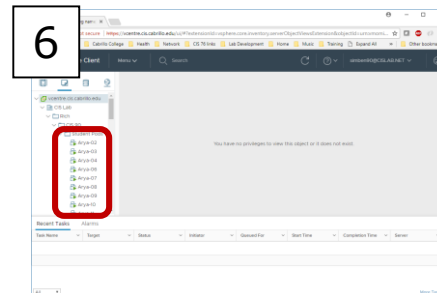
Login, username must start with cislab\



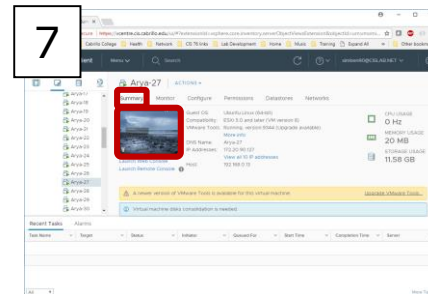
Select VMs and Templates



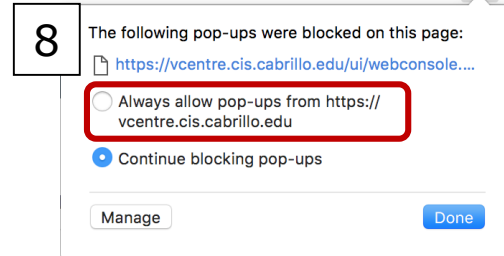
Expand tree by clicking each ">" till you see Student Pods



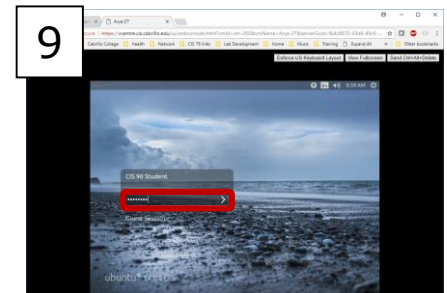
Scroll and select your Arya VM in the Student Pods folder



Under Summary tab, Click on the mini-console



Always allow pop-ups from vcentre



Enter password for "CIS 90 Student" (cis90 user)

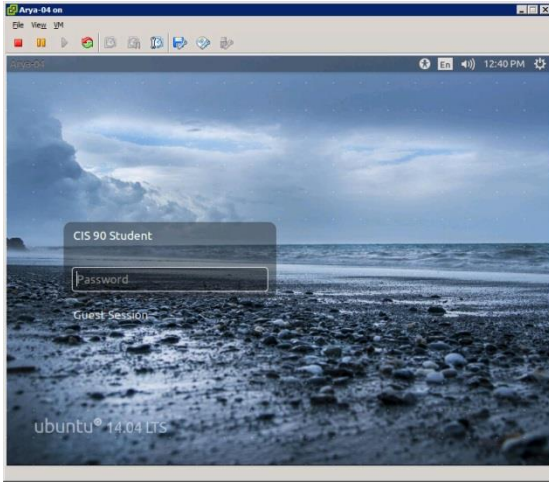
Accessing VLab Activity

Follow the instructor to open a graphical user desktop on your Arya-xx VM

- Browse to <http://simms-teach.com>
- Click VLab (web) link
- Accept warning
- Login with VLab credentials*
- Select VMs and Templates view
- Expand navigation tree
- Find your Arya VM
- Click the mini-console for your Arya-VM
- Allow browser pop-ups

*See the CIS 90 announcement in Canvas from the instructor for VLab login credentials

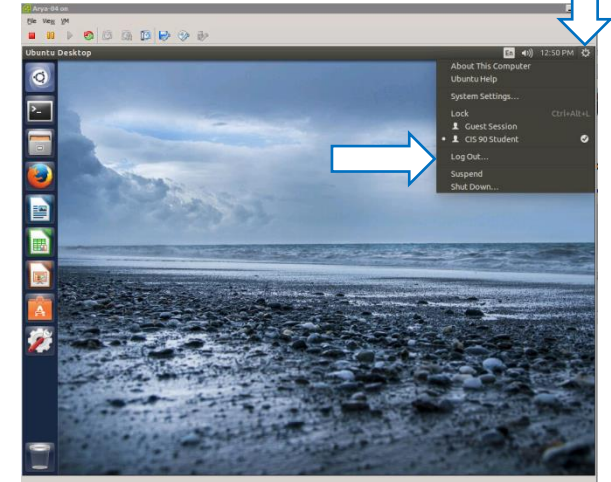
1) Log in as
CIS 90 Student



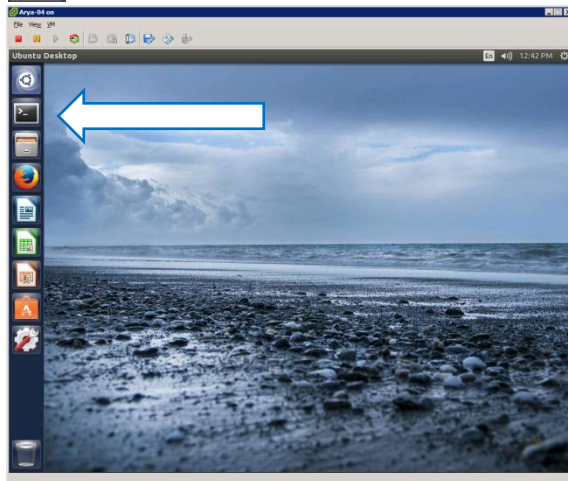
The Arya VM



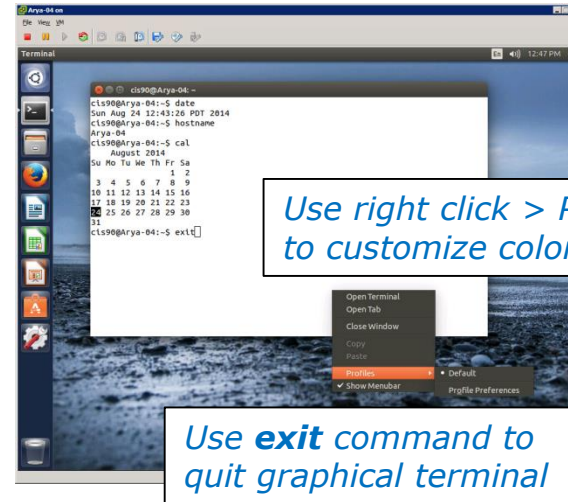
4) When finished
Gear icon > Log Out...



2) To get a graphical terminal
Terminal icon



3) Enter commands in the
graphical terminal



Using VLab VM Activity

Follow the instructor to login and use your VM

- Login to your Arya VM*
- Open a graphical terminal
- Use who command to see logins
- Find the “toothed gear” icon to logoff, restart or shutdown

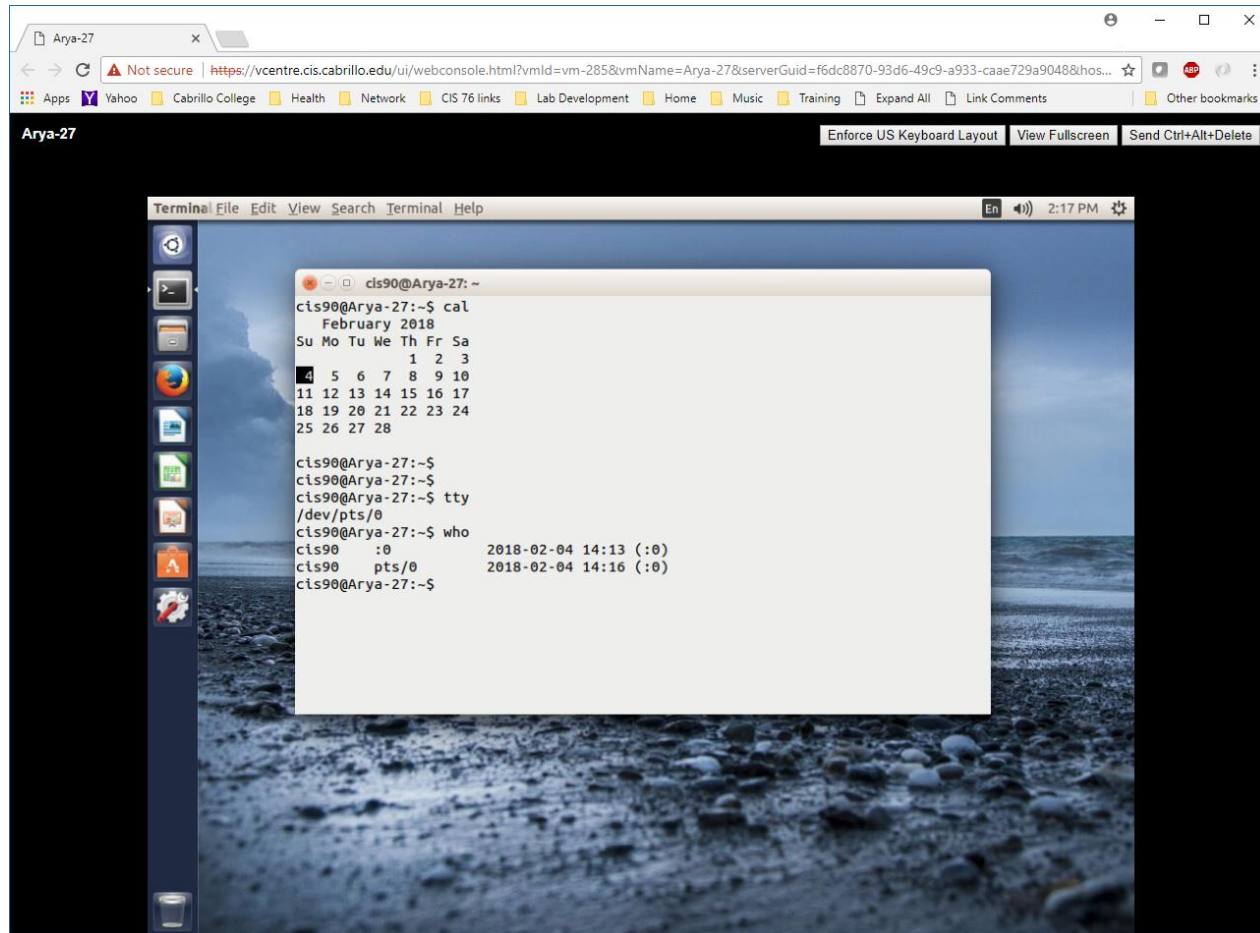
*See the CIS 90 announcement in Canvas from the instructor for Arya login credentials

A photograph of a residential street with houses, trees, and a utility pole. The street is paved and has a utility pole on the right side. There are houses on both sides, some with lawns and trees. The sky is blue and clear.

Virtual Terminals (consoles)

Fourth driving lesson

Local Graphical Command Line Access (via connected monitor or virtualization product console)



Running the terminal app on Arya gives us a graphical terminal

Local Command Line access (via connected monitor or virtualization tool)

The screenshot shows a web browser window with the address bar containing the URL: `https://vcentre.cis.cabrillo.edu/ui/webconsole.html?vmlid=vm-285&vmName=Arya-27&serverGuid=f6dc8870-93d6-49c9-a933-caae729a9048&hos...`. The terminal content is as follows:

```

Arya-27
Enforce US Keyboard Layout View Fullscreen Send Ctrl+Alt+Delete

Ubuntu 14.04.2 LTS Arya-27 tty2

Arya-27 login: cis90
Password:
Last login: Sun Feb  4 14:08:29 PST 2018 on tty2
Welcome to Ubuntu 14.04.2 LTS (GNU/Linux 3.13.0-53-generic x86_64)

 * Documentation:  https://help.ubuntu.com/

526 packages can be updated.
340 updates are security updates.

      ____
     /   /
    /___/
   /___/
  /___/
 /___/
/___/

Winter is coming

cis90@Arya-27:~$ tty
/dev/tty2
cis90@Arya-27:~$ who
cis90    tty2          2018-02-04 14:19
cis90    :0             2018-02-04 14:13 (:0)
cis90    pts/0         2018-02-04 14:16 (:0)
cis90@Arya-27:~$ _
  
```

*We can also use one of several very basic TTY virtual terminals
(no mouse, no scrolling, no fonts, etc.)*

Keyboard Keys for using Virtual Terminals on VMware Linux VMs

VMware virtual terminal operations

On PC Keyboard:

While holding down the **Ctrl--Alt** keys, tap **spacebar** then tap **f1, f2, ... or f7**.

On Mac keyboard:

Hold down **fn, control** and **option** keys, tap the **spacebar**, then tap **f1, f2, ... or f7**.

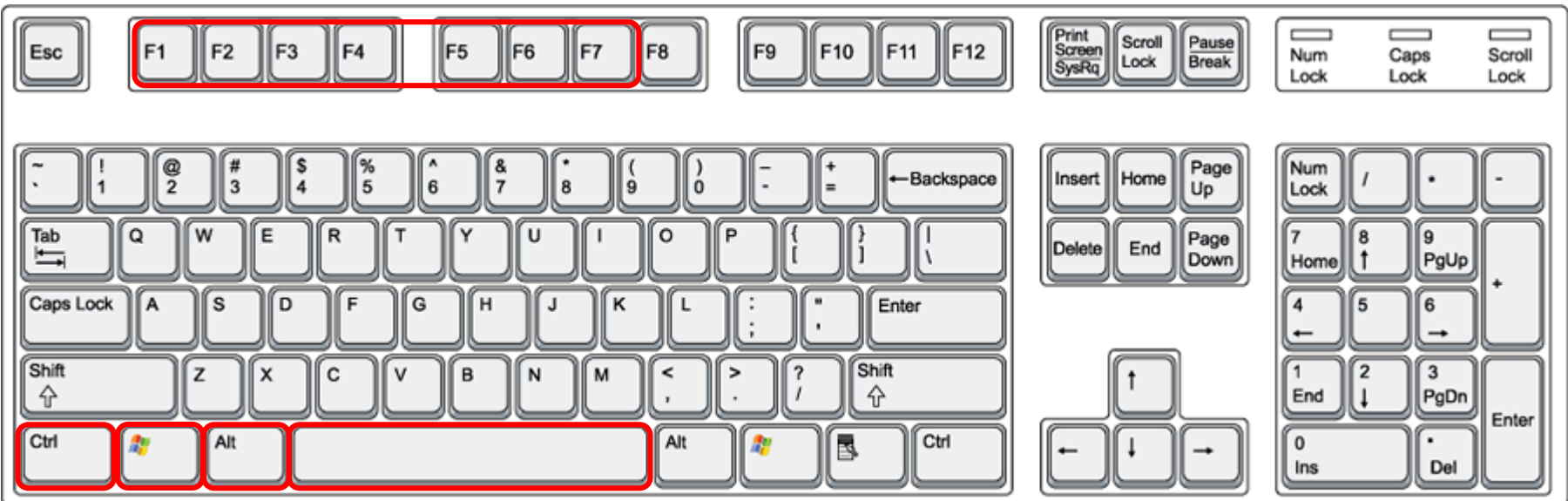
Pressing the  on some Windows keyboards may not be necessary

F7 is graphics mode for the Ubuntu VMs.

The Centos VMs, Like Opus-II, do not have a graphics mode components installed (run level 3 only)

Note: the spacebar does not need to be tapped on a physical (non-VM) system. This is only required when changing virtual terminals on VMware VMs.

VMware VM Operations PC keyboard



On PC keyboard:

While holding down the **Ctrl--Alt** keys,
tap **Spacebar** then tap **F n** key
(where $n=1-7$ to specify a function key)

VMware VM Operations Macbook Pro keyboard



On Macbook Pro keyboard:

While holding down the **fn-control-option** keys
tap **Spacebar** then tap **fn** key
(where *n*=1-7 to specify a function key)


VMware VM Operations Mac keyboard

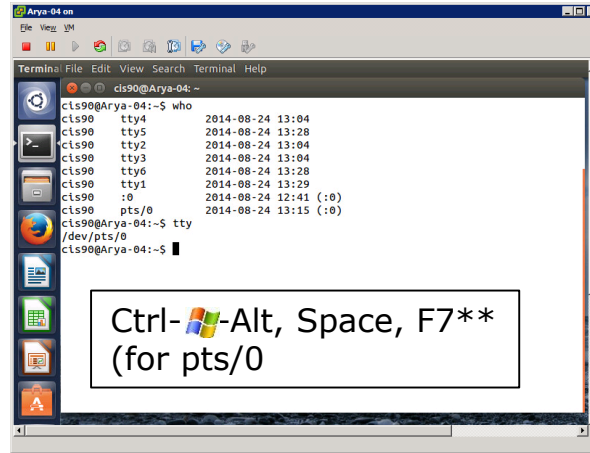



On Mac keyboard:

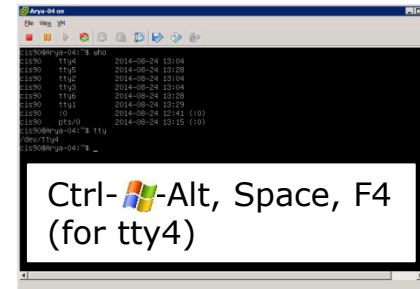
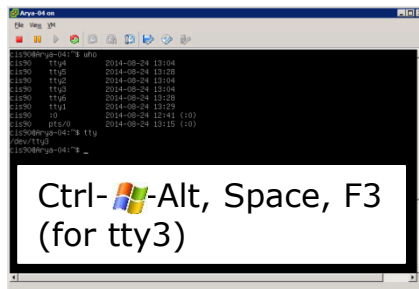
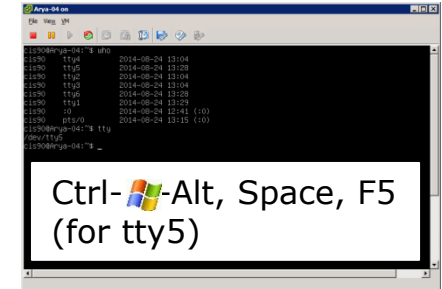
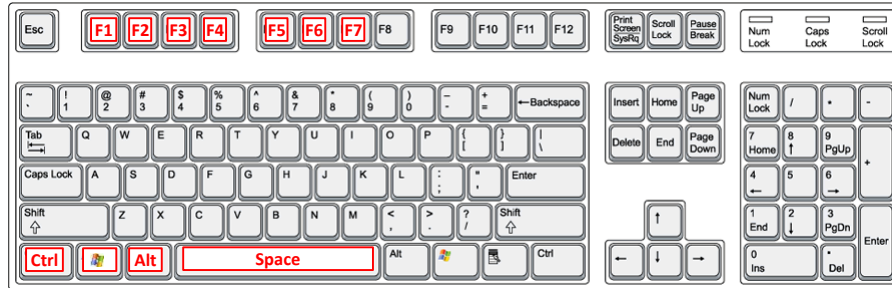
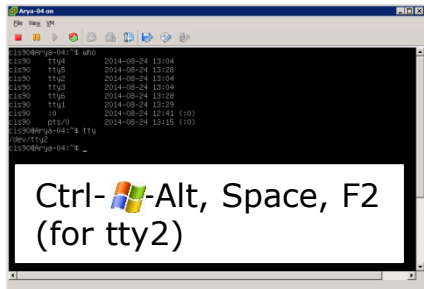
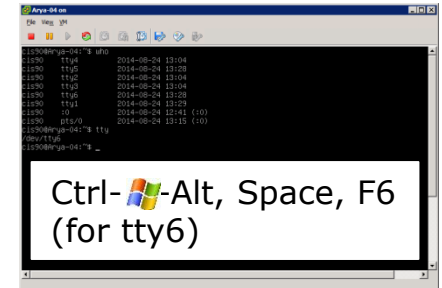
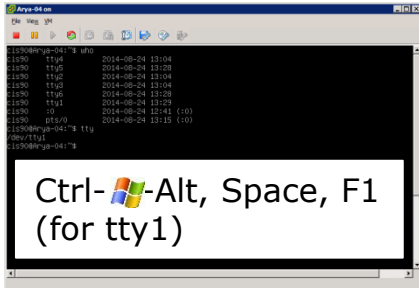
While holding down the **fn-control-option** keys
tap **Spacebar** then tap **fn** key
(where *n*=1-7 to specify a function key)


Changing Virtual TTY Terminals using VMware vSphere


Mac users replace **ctrl--alt** with **fn-control-option**




While holding down Ctrl--Alt keys, tap Space, then tap Fn key*

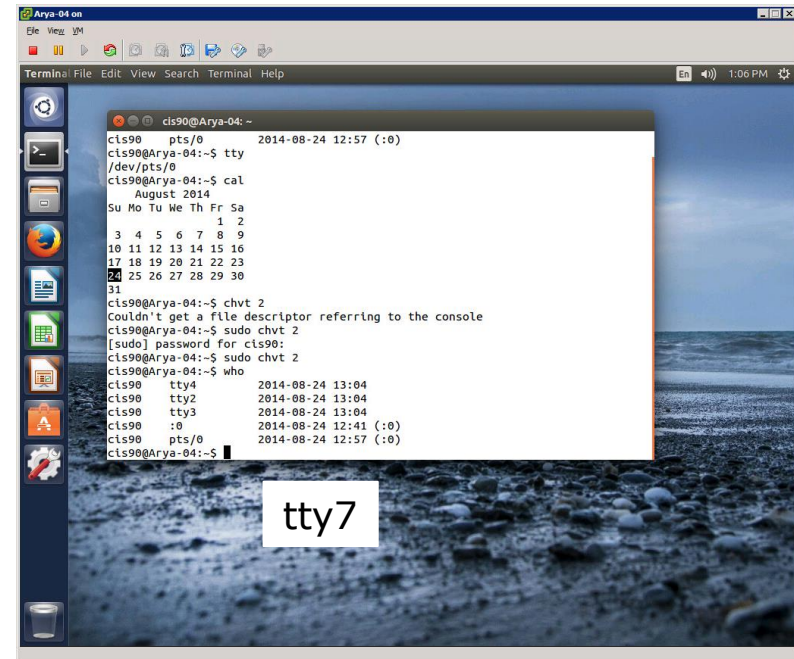


*On some PC keyboards it is not necessary to use the  key

Note: This is for vSphere only. The  key and Space bar are not pressed for physical (non-VM) servers

Virtual Terminals

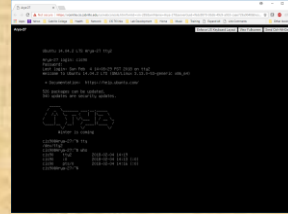
- 1) While holding down **ctrl--alt** (PC) or **fn-control-option** (Mac) keys, tap **Space**, then tap **Fn** key
- 2) or try: **chvt n**
- 3) or try: **sudo chvt n**
- 4) or try: **<alt-key> n**
(in an Ubuntu virtual terminal)



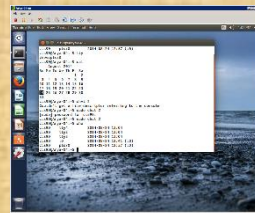
Virtual Terminal Class Activity

Mac users replace
ctrl--alt
with **fn-control-option**

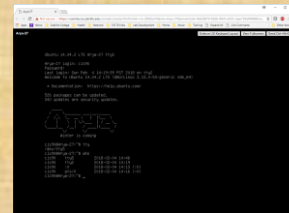
ctrl--alt-Space-f2



ctrl--alt-space-f5



ctrl--alt-space-f7

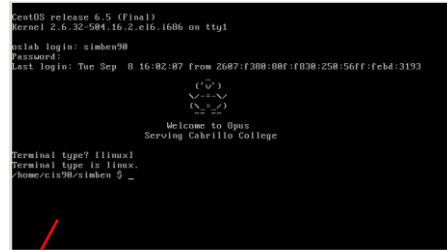
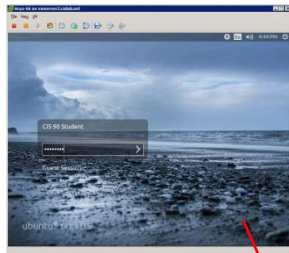


On your Arya:

- Try changing between the graphical desktop and the TTYS
- Login as cis90 on tty2 and tty5
- Run a terminal on the graphical desktop
- Use the who command to see how many logins there are

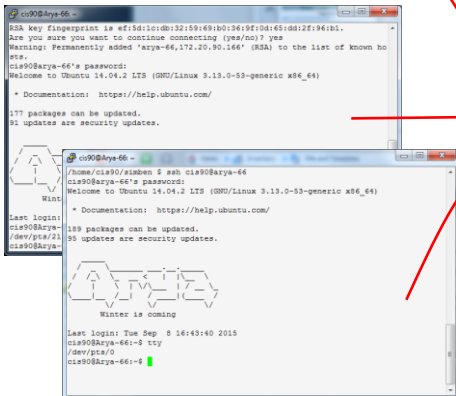
Interpreting who output

:0



tty1

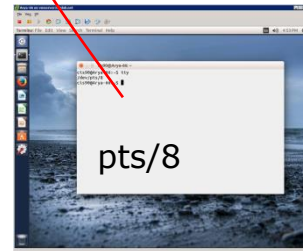
pts/21



pts/0

```
cis90@Arya-66:~$ who
```

cis90	tty1	2015-09-08	16:43	
cis90	:0	2015-09-08	16:53	(:0)
cis90	pts/21	2015-09-08	16:39	(opus.cis.cabrillo.edu)
cis90	pts/0	2015-09-08	16:55	(opus.cis.cabrillo.edu)
cis90	pts/8	2015-09-08	16:53	(:0)

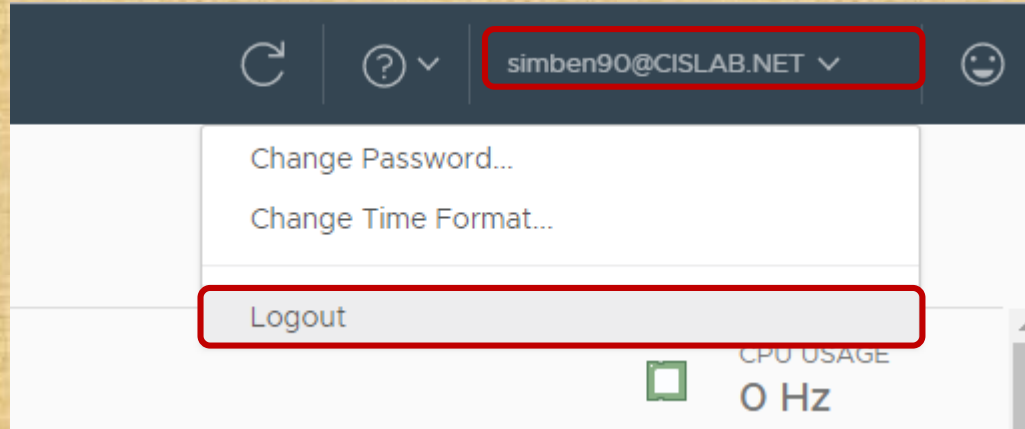


Let's login to an Arya using a virtual terminal, a graphical desktop, two ssh sessions and a graphical terminal on the graphical desktop



Logging out of VLab

Logging out of VLab



Logout of Vlab's vCenter

Your Arya VM will keep running even though you disconnect from vCenter