Using
CIS VLab
(Virtual Lab)

Third driving lesson

Command Line vs Graphical Desktop
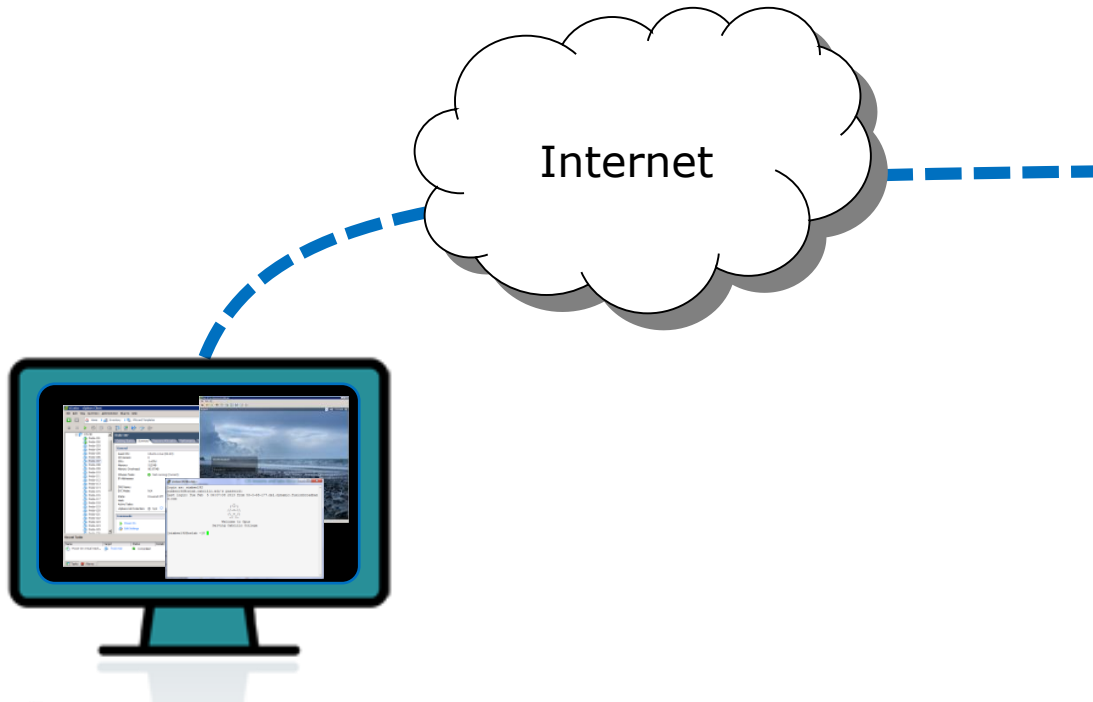
Should I use SSH or VLab?

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.

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Accessing CIS VLab VMs
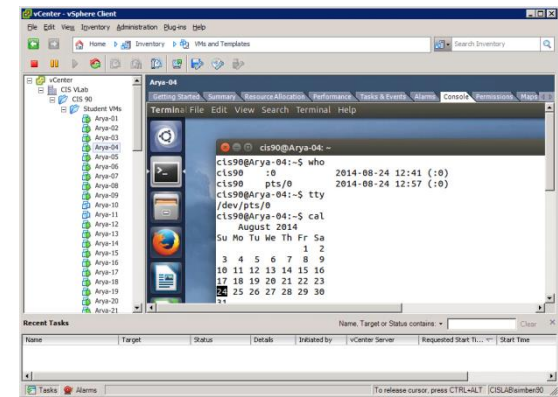

CIS Lab servers on the Aptos campus

Internet

Home   School   Travel

http://simms-teach.com/

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/

1

Cabrillo College
Web Advisor

VLab (web)
NETLAB+ VE
Annoying Issue List

CIS 90 VLab VM
Assignments
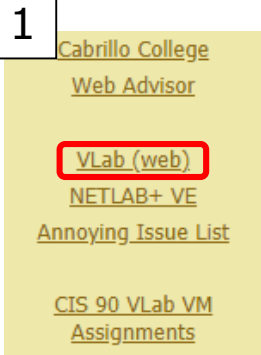
Click VLab (web) on
left pane of website

2
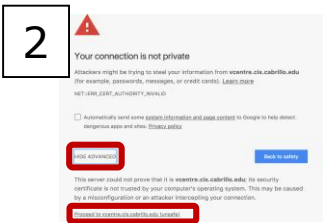
Select "Advanced" then
"Proceed to vcentre ..."

3
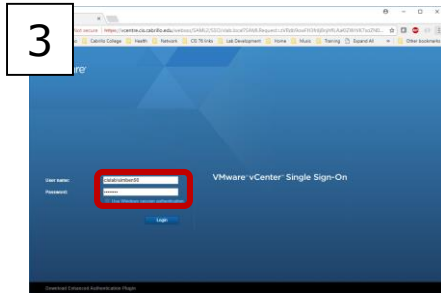
Login, username must
start with cislab\

4

Select VMs and Templates

5
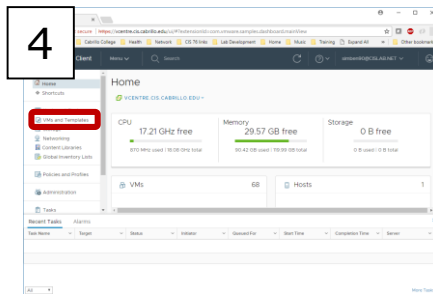
Expand tree by clicking each ">"
till you see Student Pods

6
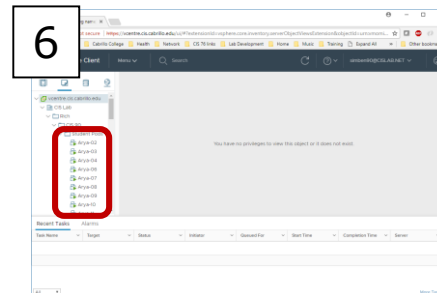
Scroll and select your Arya VM
in the Student Pods folder

7
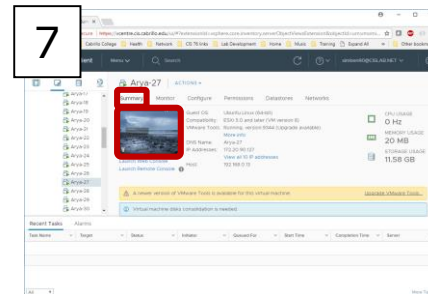
Under Summary tab, Click
on the mini-console

8
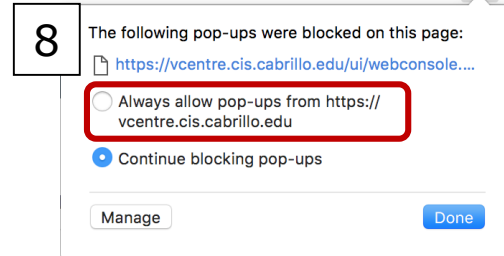
Always allow pop-ups
from vcentre

9
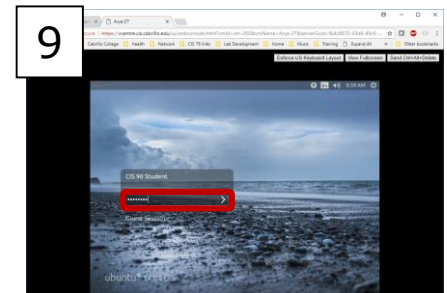
Enter password for
"CIS 90 Student"
(cis90 user)

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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
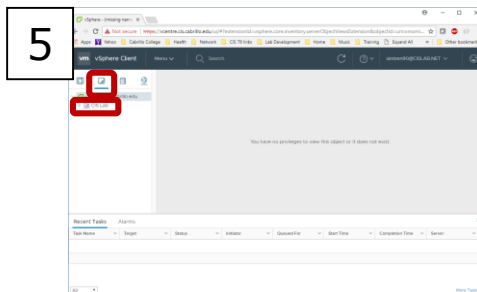- ❑ Find your Arya VM
- ❑ Click the mini-console for your Arya-VM
- ❑ Allow browser pop-ups

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

1) Log in as
CIS 90 Student
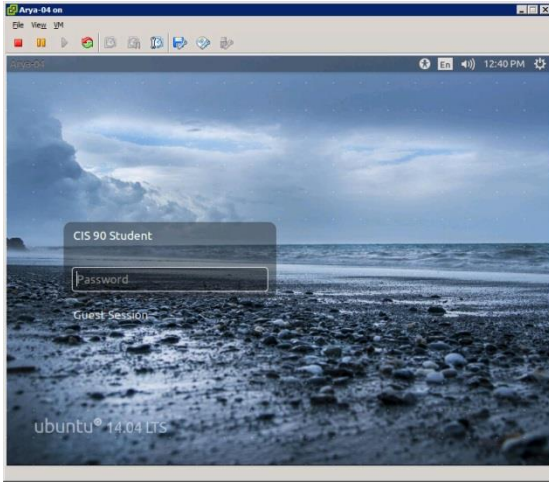
4) When finished
⚙ **Gear icon > Log Out…**

The Arya VM

ubuntu
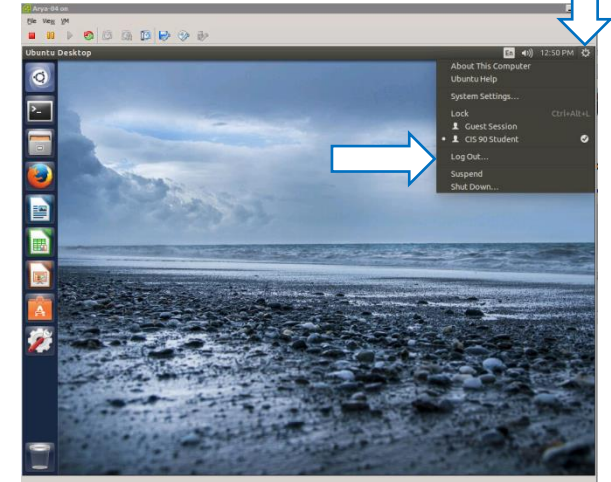
2) To get a graphical terminal
Terminal icon
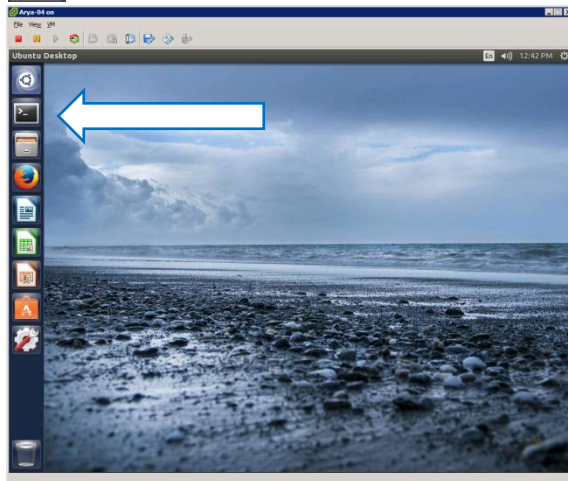
3) Enter commands in the
graphical terminal

*Use right click > Profiles
to customize colors*

*Use **exit** command to
quit graphical terminal*

7
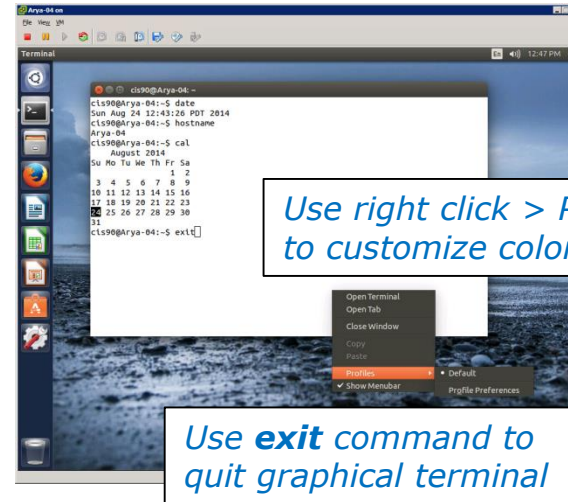
Using VLab VM Activity

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

Virtual Terminals (consoles)

Fourth driving lesson

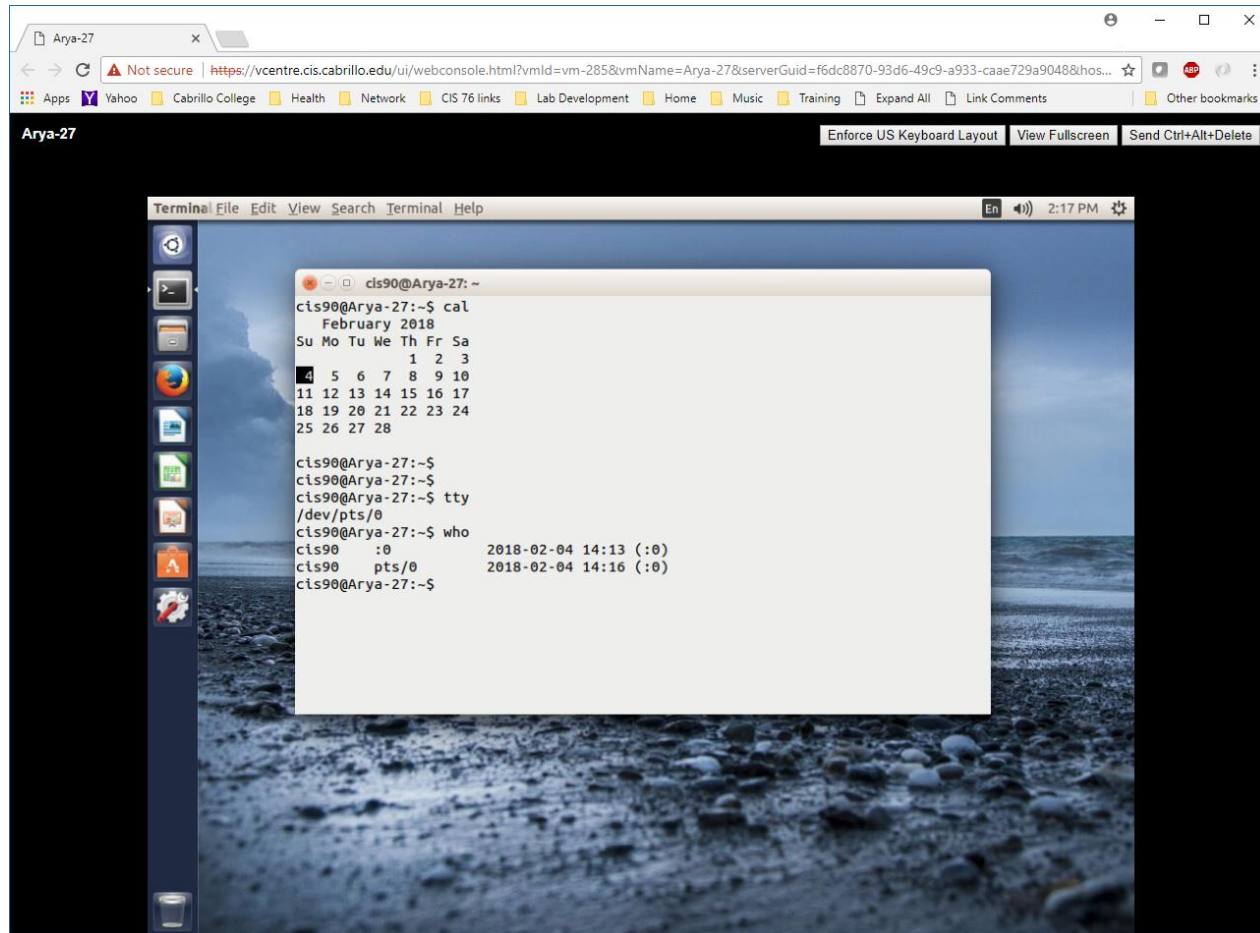# Remote Command Line Access
(via terminal emulator with SSH)


```
cis90@Arya-27: ~                                                    —  □  ×
/home/cis90/simben $ ssh cis90@arya-27
cis90@arya-27's password:
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

Last login: Sun Feb  4 12:12:26 2018 from opus-ii.cis.cabrillo.edu
cis90@Arya-27:~$
cis90@Arya-27:~$ cal
    February 2018
Su Mo Tu We Th Fr Sa
             1  2  3
 4  5  6  7  8  9 10
11 12 13 14 15 16 17
18 19 20 21 22 23 24
25 26 27 28

cis90@Arya-27:~$
cis90@Arya-27:~$ tty
/dev/pts/0
cis90@Arya-27:~$
```

Using a terminal emulator like Putty we can login to our Arya system

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

Using VLab we can login and use a graphical desktop on our Arya

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

Running the terminal app on Arya gives us a graphical terminal

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

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

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Keyboard Keys for using Virtual Terminals on VMware Linux VMs

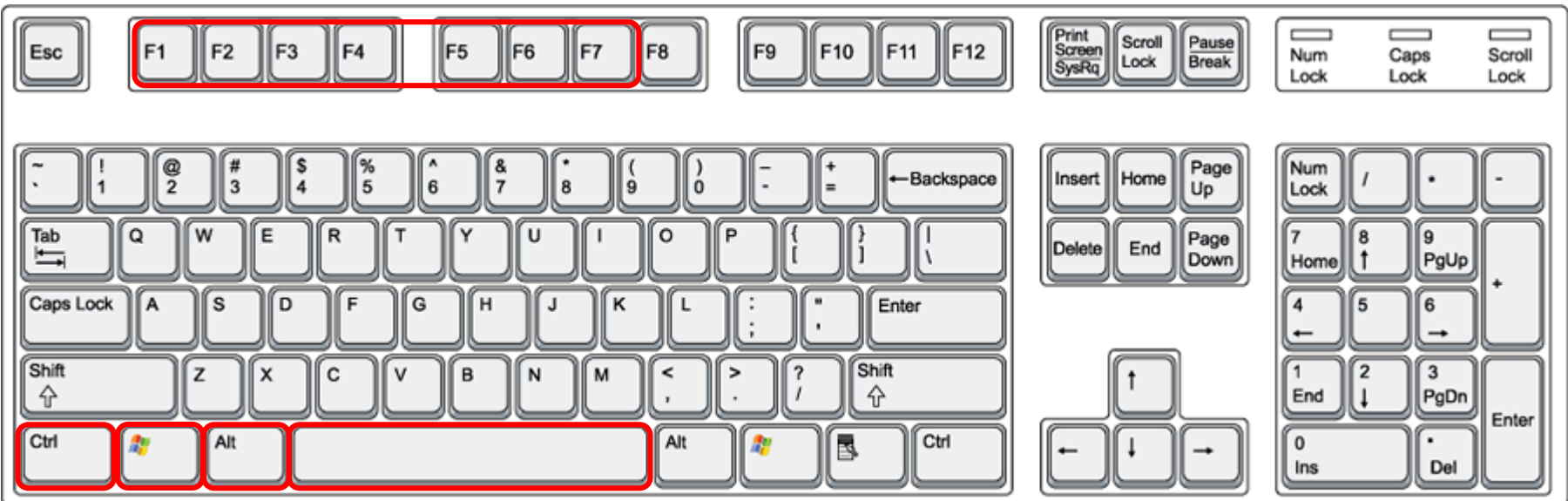| VMware virtual terminal operations	
On PC Keyboard:	While holding down the **Ctrl**-⊞-**Alt** keys, tap **spacebar** then tap **f1**, **f2**, ... or **f7**.
On Mac keyboard:	Hold down **fn**, **control** and **option** keys, tap the **spacebar**, then tap **f1**, **f2**, ... or **f7**.

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.

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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)

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VMware VM Operations
Macbook Pro keyboard

On Macbook Pro keyboard:
   While holding down the **fn-control-option** keys
      tap **Spacebar** then tap **f***n* key
      (where *n*=1-7 to specify a function key)
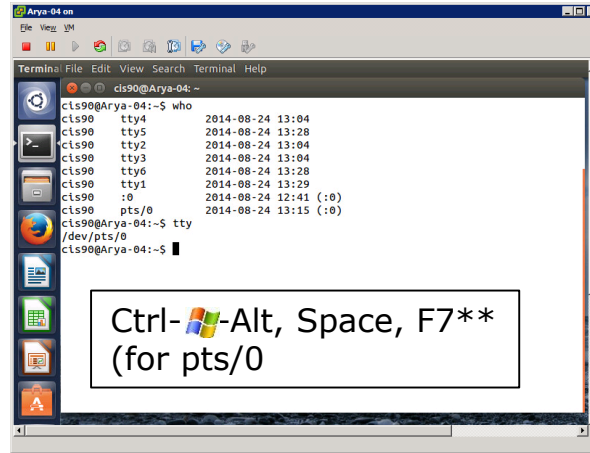
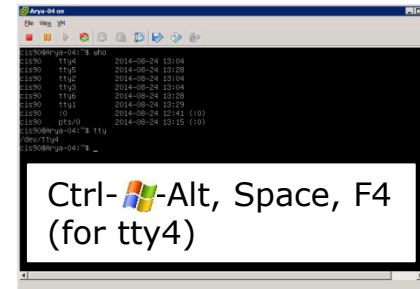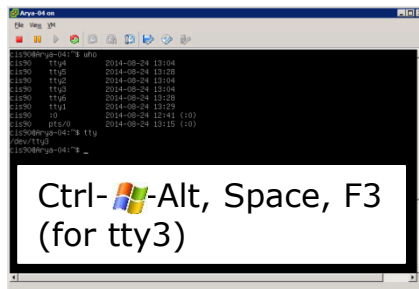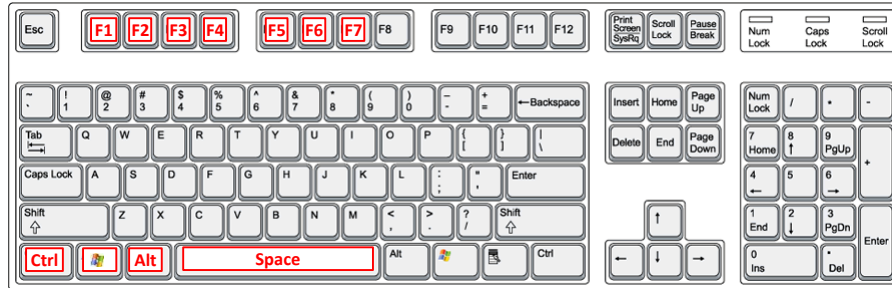# VMware VM Operations
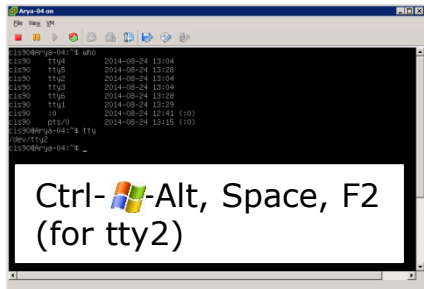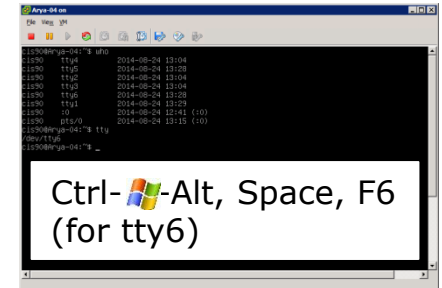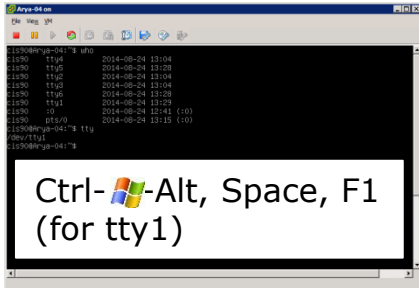## Mac keyboard

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

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Changing Virtual TTY Terminals using **VMware vSphere**

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

Ctrl-⊞-Alt, Space, F7**
(for pts/0

Ctrl-⊞-Alt, Space, F1
(for tty1)

Ctrl-⊞-Alt, Space, F6
(for tty6)

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

Ctrl-⊞-Alt, Space, F2
(for tty2)

Ctrl-⊞-Alt, Space, F5
(for tty5)

Ctrl-⊞-Alt, Space, F3
(for tty3)

Ctrl-⊞-Alt, Space, F4
(for tty4)
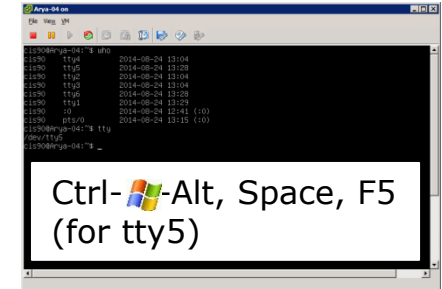
*On some PC keyboards it is not necessary to use the ⊞ key

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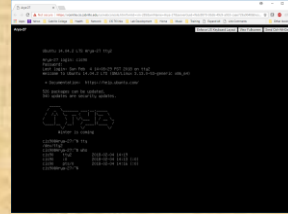
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Virtual Terminals

1) While holding down **crtl**-⊞-**alt** (PC) or **fn**-**control**-**option** (Mac) keys, tap **Space**, then tap **F*n*** key

2) or try: **chvt** *n*

3) or try: **sudo chvt** *n*

4) or try*: <alt-key> n (in an Ubuntu virtual terminal)*
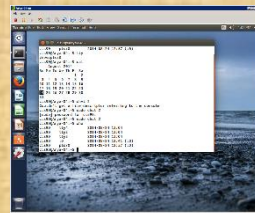

tty2

tty3

tty4

tty7

19
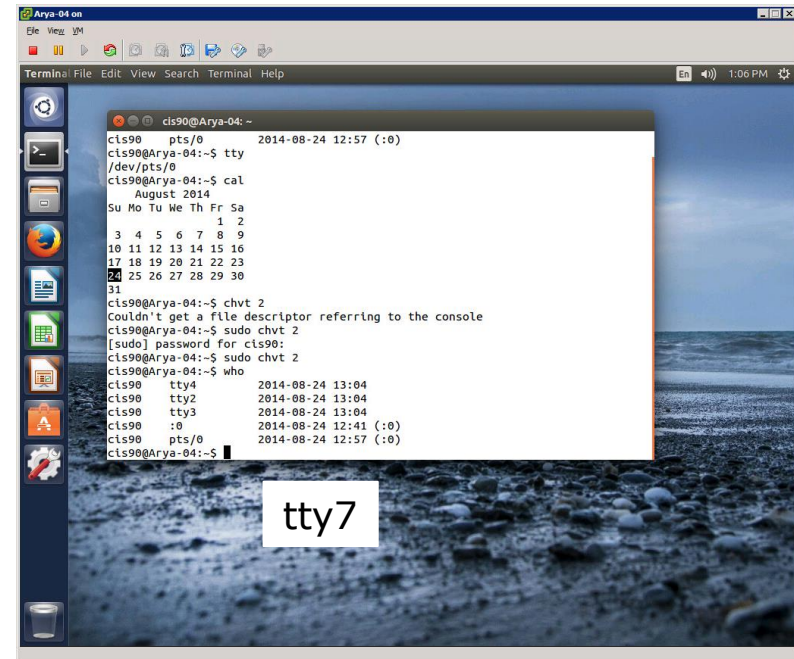
Virtual Terminal Class Activity

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

ctrl-🪟-**alt**-**Space**-**f2**

ctrl-🪟-**alt**-**space**-**f5**
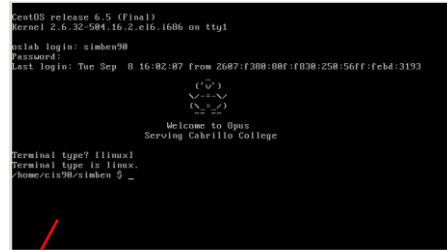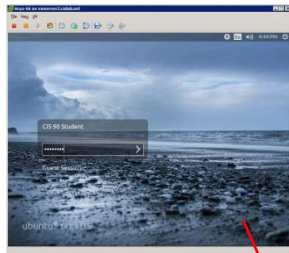
ctrl-🪟-**alt**-**space**-**f7**
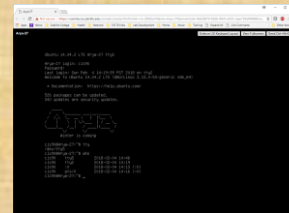
On your Arya:
- Try changing between the graphical desktop and the TTYs
- Login as cis90 on tty2 and tty5
- Run a terminal on the graphical desktop
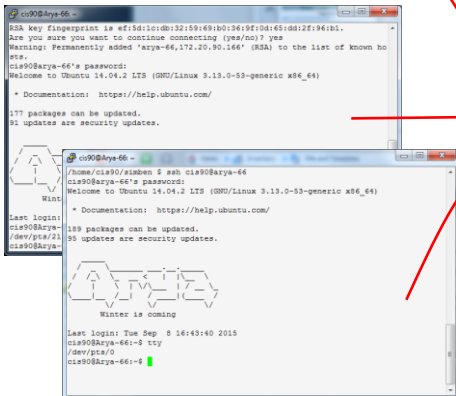- Use the who command to see how many logins there are
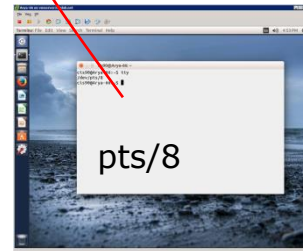
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Interpreting who output

:0

tty1

pts/21

```
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)
```
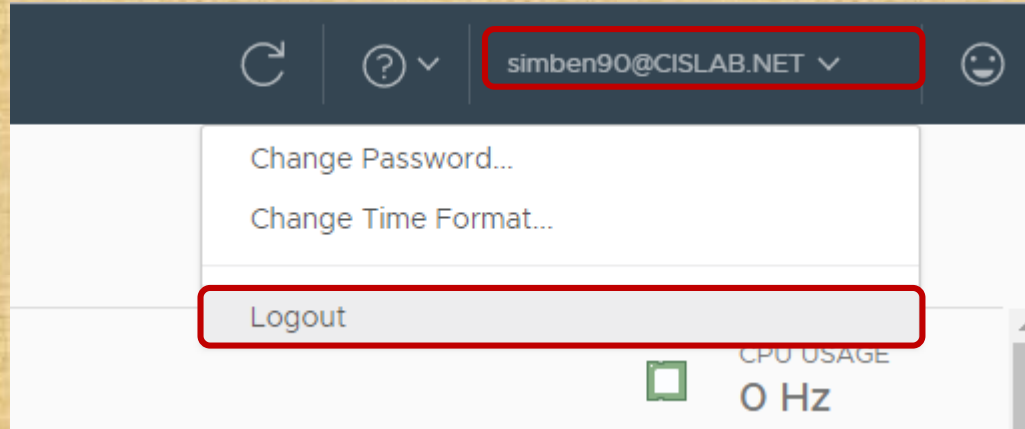
pts/0

pts/8

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

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