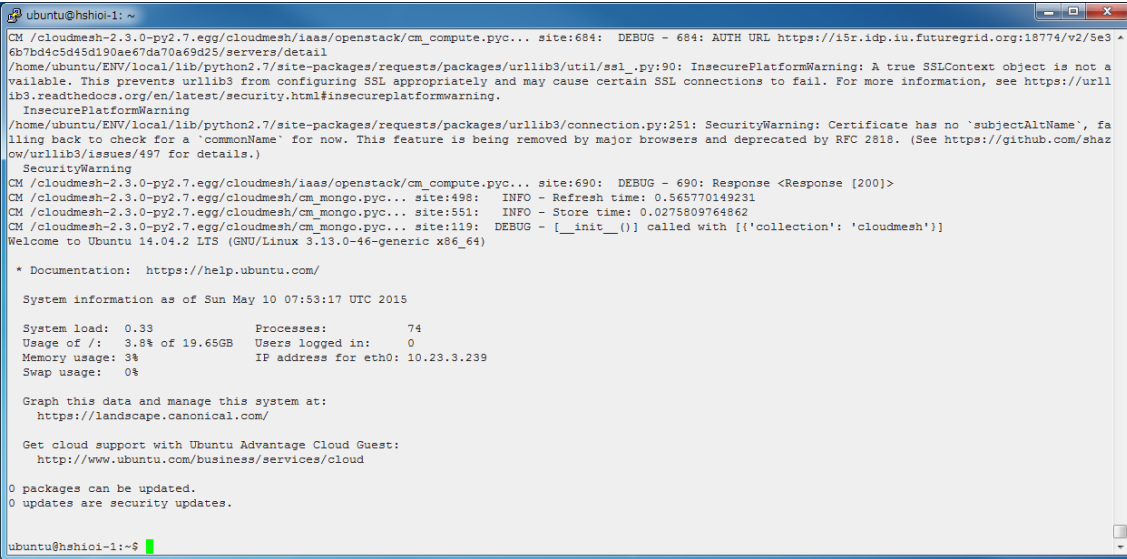


HW6 Virtual Cluster

Exercise

- Try to access a master node of your cluster. (Make a screenshot)



```
ubuntu@hshioi-1: ~  
CM /cloudmesh-2.3.0-py2.7.egg/cloudmesh/iaas/openstack/cm_compute.pyc... site:684: DEBUG - 684: AUTH URL https://i5x.idp.iu.futuregrid.org:18774/v2/5e3  
6b7bd4c5d45d190ae67da70a69d25/servers/detail  
/home/ubuntu/ENV/local/lib/python2.7/site-packages/requests/packages/urllib3/util/ssl_.py:90: InsecurePlatformWarning: A true SSLContext object is not a  
vailable. This prevents urllib3 from configuring SSL appropriately and may cause certain SSL connections to fail. For more information, see https://urll  
ib3.readthedocs.org/en/latest/security.html#insecureplatformwarning.  
InsecurePlatformWarning  
/home/ubuntu/ENV/local/lib/python2.7/site-packages/requests/packages/urllib3/connection.py:251: SecurityWarning: Certificate has no 'subjectAltName', fa  
lling back to check for a 'commonName' for now. This feature is being removed by major browsers and deprecated by RFC 2818. (See https://github.com/shaz  
ow/urllib3/issues/497 for details.)  
SecurityWarning  
CM /cloudmesh-2.3.0-py2.7.egg/cloudmesh/iaas/openstack/cm_compute.pyc... site:690: DEBUG - 690: Response <Response [200]>  
CM /cloudmesh-2.3.0-py2.7.egg/cloudmesh/cm_mongo.pyc... site:498: INFO - Refresh time: 0.565770149231  
CM /cloudmesh-2.3.0-py2.7.egg/cloudmesh/cm_mongo.pyc... site:551: INFO - Store time: 0.0275809764862  
CM /cloudmesh-2.3.0-py2.7.egg/cloudmesh/cm_mongo.pyc... site:119: DEBUG - [__init__()] called with [{'collection': 'cloudmesh'}]  
Welcome to Ubuntu 14.04.2 LTS (GNU/Linux 3.13.0-46-generic x86_64)  
  
* Documentation:  https://help.ubuntu.com/  
  
System information as of Sun May 10 07:53:17 UTC 2015  
  
System load:  0.33           Processes:           74  
Usage of /:   3.8% of 19.65GB Users logged in:       0  
Memory usage: 3%           IP address for eth0: 10.23.3.239  
Swap usage:   0%  
  
Graph this data and manage this system at:  
https://landscape.canonical.com/  
  
Get cloud support with Ubuntu Advantage Cloud Guest:  
http://www.ubuntu.com/business/services/cloud  
  
0 packages can be updated.  
0 updates are security updates.  
  
ubuntu@hshioi-1:~$
```

Figure 1 VM1 login

- Create a Virtual Cluster with 2 VMs. (Make a screenshot)

After the command below, I got the screen shots below.

“cm cluster create virtual_cluster_ext --count=2 --ln=ubuntu --cloud=india --flavor=m1.small --image=futuresystems/ubuntu-14.04”

```

ubuntu@hshioi-002b: ~/cloudmesh
'name': u'hshioi_2',
'u'server': (u'OS-DCF:diskConfig': u'MANUAL',
u'adminPass': '*****',
u'id': u'0828313c-b762-4f2f-8461-f3772eed21c5',
u'links': [{u'href': u'http://15r.idp.iu.futuregrid.org/v2/5e36b7bd4c5d45d190ae67da70a69d25/servers/0828313c-b762-4f2f-8461-f3772eed21c5',
u'rel': u'self'},
(u'href': u'http://15r.idp.iu.futuregrid.org/5e36b7bd4c5d45d190ae67da70a69d25/servers/0828313c-b762-4f2f-8461-f3772eed21c5',
u'rel': u'bookmark'}],
u'security_groups': [{u'name': u'default'}])
checking(1)...
assigning public ips...
checking(1)...
CM /cloudmesh-2.3.0-py2.7.egg/cloudmesh/cm_mongo.pyc... site:119: DEBUG - [_init__()] called with [{u'collection': 'cloudmesh'}]
CM /cloudmesh-2.3.0-py2.7.egg/cloudmesh/cm_mongo.pyc... site:140: INFO - Activating -> india
CM /cloudmesh-2.3.0-py2.7.egg/cloudmesh/cm_mongo.pyc... site:236: DEBUG - [get_cloud()] called with [{u'cm_user_id': 'hshioi', 'cloud_name': 'india', 'force': False}]
CM /cloudmesh-2.3.0-py2.7.egg/cloudmesh/cm_mongo.pyc... site:192: DEBUG - [get_cloud_info()] called with [{u'cm_user_id': 'hshioi', 'cloudname': 'india'}]
CM /cloudmesh-2.3.0-py2.7.egg/cloudmesh/cm_mongo.pyc... site:162: DEBUG - [get_credential()] called with [{u'cm_user_id': 'hshioi', 'cloud': 'india'}]
CM /cloudmesh-2.3.0-py2.7.egg/cloudmesh/iaas/openstack/cm_compute.pyc... site:411: INFO - Activation of cloud india and user hshioi Succeeded!
CM /cloudmesh-2.3.0-py2.7.egg/cloudmesh/iaas/openstack/cm_compute.pyc... site:684: DEBUG - 684: AUTH URL https://15r.idp.iu.futuregrid.org:18774/v2/5e36b7bd4c5d45d190ae67da70a69d25/os-keypairs
/home/ubuntu/ENV/local/lib/python2.7/site-packages/requests/packages/urllib3/util/ssl_.py:90: InsecurePlatformWarning: A true SSLContext object is not available. This prevents urllib3 from configuring SSL appropriately and may cause certain SSL connections to fail. For more information, see https://urllib3.readthedocs.org/en/latest/security.html#insecureplatformwarning.
InsecurePlatformWarning
/home/ubuntu/ENV/local/lib/python2.7/site-packages/requests/packages/urllib3/connection.py:251: SecurityWarning: Certificate has no 'subjectAltName', falling back to check for a 'commonName' for now. This feature is being removed by major browsers and deprecated by RFC 2818. (See https://github.com/shazow/urllib3/issues/497 for details.)
SecurityWarning
CM /cloudmesh-2.3.0-py2.7.egg/cloudmesh/iaas/openstack/cm_compute.pyc... site:690: DEBUG - 690: Response <Response [200]>
Generating SSH Keys...
ssh: connect to host 149.165.159.95 port 22: Connection refused
ssh: connect to host 149.165.159.95 port 22: Connection refused
Warning: Permanently added '149.165.159.95' (ECDSA) to the list of known hosts.
copying the files...
Warning: Permanently added '149.165.159.95' (ECDSA) to the list of known hosts.
sudo: unable to resolve host hshioi-2
sudo: unable to resolve host hshioi-2
sudo: unable to resolve host hshioi-1
sudo: unable to resolve host hshioi-1
finishing...
DONE
cluster group: virtual_cluster_ext2
hshioi_2 149.165.159.95, 10.23.3.247
hshioi_1 149.165.159.96, 10.23.3.239
(host name for private ip will have -i at the end of VM name, e.g. testVM -> testVM-i)

```

Figure 2 Finish in creating 2 VM instances

The second VM login is as below. (1st VM login was shown in exercise above.)

```

ubuntu@hshioi-2: ~
CM /cloudmesh-2.3.0-py2.7.egg/cloudmesh/iaas/openstack/cm_compute.pyc... site:684: DEBUG - 684: AUTH URL https://15r.idp.iu.futuregrid.org:18774/v2/5e36b7bd4c5d45d190ae67da70a69d25/servers/detail
/home/ubuntu/ENV/local/lib/python2.7/site-packages/requests/packages/urllib3/util/ssl_.py:90: InsecurePlatformWarning: A true SSLContext object is not available. This prevents urllib3 from configuring SSL appropriately and may cause certain SSL connections to fail. For more information, see https://urllib3.readthedocs.org/en/latest/security.html#insecureplatformwarning.
InsecurePlatformWarning
/home/ubuntu/ENV/local/lib/python2.7/site-packages/requests/packages/urllib3/connection.py:251: SecurityWarning: Certificate has no 'subjectAltName', falling back to check for a 'commonName' for now. This feature is being removed by major browsers and deprecated by RFC 2818. (See https://github.com/shazow/urllib3/issues/497 for details.)
SecurityWarning
CM /cloudmesh-2.3.0-py2.7.egg/cloudmesh/iaas/openstack/cm_compute.pyc... site:690: DEBUG - 690: Response <Response [200]>
CM /cloudmesh-2.3.0-py2.7.egg/cloudmesh/cm_mongo.pyc... site:498: INFO - Refresh time: 0.639881849289
CM /cloudmesh-2.3.0-py2.7.egg/cloudmesh/cm_mongo.pyc... site:551: INFO - Store time: 0.0378179550171
CM /cloudmesh-2.3.0-py2.7.egg/cloudmesh/cm_mongo.pyc... site:119: DEBUG - [_init__()] called with [{u'collection': 'cloudmesh'}]
Welcome to Ubuntu 14.04.2 LTS (GNU/Linux 3.13.0-46-generic x86_64)

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

System information as of Sun May 10 07:53:15 UTC 2015

System load: 0.29          Processes:           74
Usage of /:  3.8% of 19.65GB Users logged in:       0
Memory usage: 3%          IP address for eth0: 10.23.3.247
Swap usage:  0%

Graph this data and manage this system at:
https://landscape.canonical.com/

Get cloud support with Ubuntu Advantage Cloud Guest:
http://www.ubuntu.com/business/services/cloud

0 packages can be updated.
0 updates are security updates.

ubuntu@hshioi-2:~$

```

Figure 3 2nd VM login

Questions:

why does it fail to connect to VM first with “connection refused” messages? (In Fig. 2)

Request for fixation

http://cloudmesh.github.io/introduction_to_cloud_computing/class/vc_sp15/hadoop_cluster_manual.html#ref-class-lesson-deploying-hadoop-cluster-manual

The command below is not updated.

It should be “cm default image --name=futuresystems/ubuntu-14.04”

5 set image of VMs, e.g.:

```
cm default image --name=futuregrid/ubuntu-14.04
```

http://cloudmesh.github.io/introduction_to_cloud_computing/class/vc_sp15/hadoop_cluster_manual.html#ref-class-lesson-deploying-hadoop-cluster-manual

A way of expressing “manager” and “worker nodes” is confusing. These words look first general words.

“Manager” = “Namenodes”

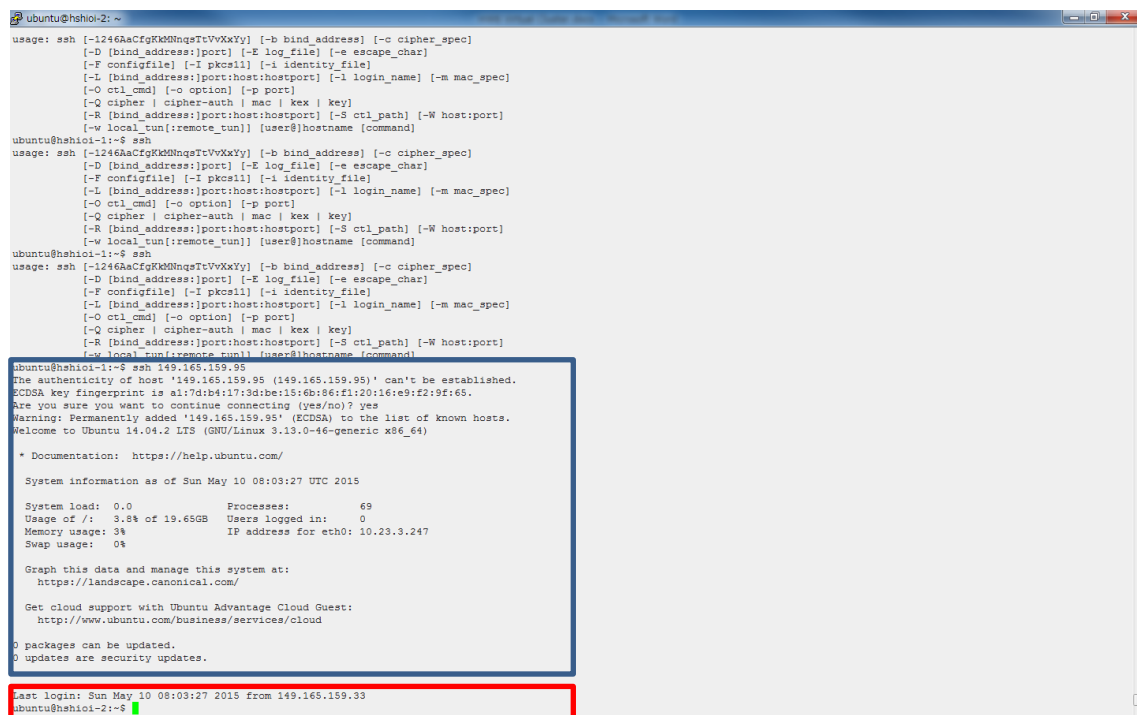
“Worker nodes” = “Datanodes”

Lab session for `cluster` Cloudmesh Command for Virtual Clusters

Exercise

- Create a Virtual Cluster with 2 virtual machine instances
- Use m1.small flavor
- Use ubuntu 14.04 image
- Login to the first VM instance using `cm vm login` command
- **On your first VM, login to other VM instance (i.e. slave)**
- Make a screenshot or save outputs in a text file
- Submit your screenshots or text files

Only 5th exercise was not shown before. So please look at the below screen shot.



```
ubuntu@hshoi-2: ~$ ssh [-1246AaCfGkKMnQsTtVvXxYy] [-b bind_address] [-c cipher_spec]
usage: ssh [-1246AaCfGkKMnQsTtVvXxYy] [-b bind_address] [-c cipher_spec]
        [-D [bind_address]:port] [-E log_file] [-e escape_char]
        [-F configfile] [-I pkcs11] [-l identity_file]
        [-L [bind_address]:port:host:hostport] [-l login_name] [-m mac_spec]
        [-O ctl_cmd] [-o option] [-p port]
        [-Q cipher | cipher-auth | mac | kex | key]
        [-R [bind_address]:port:host:hostport] [-S ctl_path] [-W host:port]
        [-w local_tun[:remote_tun]] [user@]hostname [command]
ubuntu@hshoi-1:~$ ssh
usage: ssh [-1246AaCfGkKMnQsTtVvXxYy] [-b bind_address] [-c cipher_spec]
        [-D [bind_address]:port] [-E log_file] [-e escape_char]
        [-F configfile] [-I pkcs11] [-l identity_file]
        [-L [bind_address]:port:host:hostport] [-l login_name] [-m mac_spec]
        [-O ctl_cmd] [-o option] [-p port]
        [-Q cipher | cipher-auth | mac | kex | key]
        [-R [bind_address]:port:host:hostport] [-S ctl_path] [-W host:port]
        [-w local_tun[:remote_tun]] [user@]hostname [command]
ubuntu@hshoi-1:~$ ssh
usage: ssh [-1246AaCfGkKMnQsTtVvXxYy] [-b bind_address] [-c cipher_spec]
        [-D [bind_address]:port] [-E log_file] [-e escape_char]
        [-F configfile] [-I pkcs11] [-l identity_file]
        [-L [bind_address]:port:host:hostport] [-l login_name] [-m mac_spec]
        [-O ctl_cmd] [-o option] [-p port]
        [-Q cipher | cipher-auth | mac | kex | key]
        [-R [bind_address]:port:host:hostport] [-S ctl_path] [-W host:port]
        [-w local_tun[:remote_tun]] [user@]hostname [command]
ubuntu@hshoi-1:~$ ssh 149.165.159.95
The authenticity of host '149.165.159.95 (149.165.159.95)' can't be established.
ECDSA key fingerprint is al:7d:b4:17:3d:be:15:6b:96:f1:20:16:e9:f2:9f:65.
Are you sure you want to continue connecting (yes/no)? yes
Warning: Permanently added '149.165.159.95' (ECDSA) to the list of known hosts.
Welcome to Ubuntu 14.04.2 LTS (GNU/Linux 3.13.0-46-generic x86_64)

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

System information as of Sun May 10 08:03:27 UTC 2015

System load:  0.0               Processes:    69
Usage of /:   3.8% of 19.65GB    Users logged in:  0
Memory usage: 3%                IP address for eth0: 10.23.3.247
Swap usage:   0%

Graph this data and manage this system at:
https://landscape.canonical.com/

Get cloud support with Ubuntu Advantage Cloud Guest:
http://www.ubuntu.com/business/services/cloud

0 packages can be updated.
0 updates are security updates.

Last login: Sun May 10 08:03:27 2015 from 149.165.159.33
ubuntu@hshoi-2:~$
```

Figure 4 Login to VM 2 from VM 1