Week 6

Session 2

Cloud computing

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Preparation

I created a VM running Ubuntu on the university resources with 4GB RAM and 4 CPUs

Install OpenStack and create your first project

In the terminal run `sudo snap install microstack --devmode --beta`
(I did not use GUI at all, because it is not provided on the university machines)

```
root@VM-lab12001:~# sudo snap install microstack --devmode --beta
microstack (beta) ussuri from Canonical✓ installed
```

Then I configured it running `sudo microstack init --auto --control`
and waited for approximately half an hour

Create 1 instance out of the existing image.

First increase the swap area up to 4GB [following this tutorial]

```
root@VM-lab12001:~# grep SwapTotal /proc/meminfo
SwapTotal:       4194300 kB
```

run the following to create a cirros-based image `microstack launch cirros --name test`

```
root@VM-lab12001:~# microstack launch cirros --name test
Creating local "microstack" ssh key at /home/root/snap/microstack/common/.ssh/id_microstack
Launching server ...
Allocating floating ip ...
Server test launched! (status is BUILD)

Access it with `ssh -i /home/root/snap/microstack/common/.ssh/id_microstack cirros@10.20.20.
You can also visit the OpenStack dashboard at http://10.20.20.1:80
root@VM-lab12001:~#
```

Check its status:

```
root@VM-lab12001:~# microstack.openstack image list
+--------------------------------------+--------+--------+
| ID                                   | Name   | Status |
+--------------------------------------+--------+--------+
| 5d0d37c7-6377-4dca-bb37-bee1a474d1bd | cirros | active |
+--------------------------------------+--------+--------+
```

Add 2 more images to OpenStack.

I added 2 ubuntu images - `img1 and img2`

First it was needed to create a custom flavor with 512gb RAM and 10gb disk space, since the existed did not fit - m1.micro was too small and m1.small was too big

```
root@VM-lab12001:~# microstack.openstack flavor create --ram 512 --disk 10 custom_flavor
+----------------------------+--------------------------------------+
| Field                      | Value                                |
+----------------------------+--------------------------------------+
| OS-FLV-DISABLED:disabled   | False                                |
| OS-FLV-EXT-DATA:ephemeral  | 0                                    |
| disk                       | 10                                   |
| id                         | f59698d6-2214-44fd-907b-d45ee5efb2ae |
| name                       | custom_flavor                        |
| os-flavor-access:is_public | True                                 |
| properties                 |                                      |
| ram                        | 512                                  |
| rxtx_factor                | 1.0                                  |
| swap                       |                                      |
| vcpus                      | 1                                    |
+----------------------------+--------------------------------------+
```

Then following this tutorial I downloaded ubuntu image
and made img1 and img2:

`microstack.openstack image create --file images/img.img --public --container-format=bare --disk-format=qcow2 img1`

```
root@VM-lab12001:~# microstack.openstack image list
+--------------------------------------+--------+--------+
| ID                                   | Name   | Status |
+--------------------------------------+--------+--------+
| 5d0d37c7-6377-4dca-bb37-bee1a474d1bd | cirros | active |
| e0b50c87-81b2-419b-892d-7eab6f806c76 | img1   | active |
| ced3f9c1-2e18-4d18-9bc2-7b0183a36477 | img2   | active |
+--------------------------------------+--------+--------+
```

Create one more instance using the new image and connect it to the same network as your first instance.

I launched the instance by running `microstack launch img1 -w -f custom_flavor --name img1_test`

```
root@VM-lab12001:~# microstack.openstack server list
+--------------------------------------+-----------+--------+-----------------------------------+--------+--------------+
| ID                                   | Name      | Status | Networks                          | Image  | Flavor       |
+--------------------------------------+-----------+--------+-----------------------------------+--------+--------------+
| 6510a37d-2df8-42ce-b1f4-512ef5493600 | img1_test | ACTIVE | test=192.168.222.91, 10.20.20.19  | img1   | custom_flavor |
| e9a05e36-33db-4c64-b56c-cadeea09f655 | test      | ACTIVE | test=192.168.222.242, 10.20.20.192 | cirros | m1.tiny      |
+--------------------------------------+-----------+--------+-----------------------------------+--------+--------------+
```

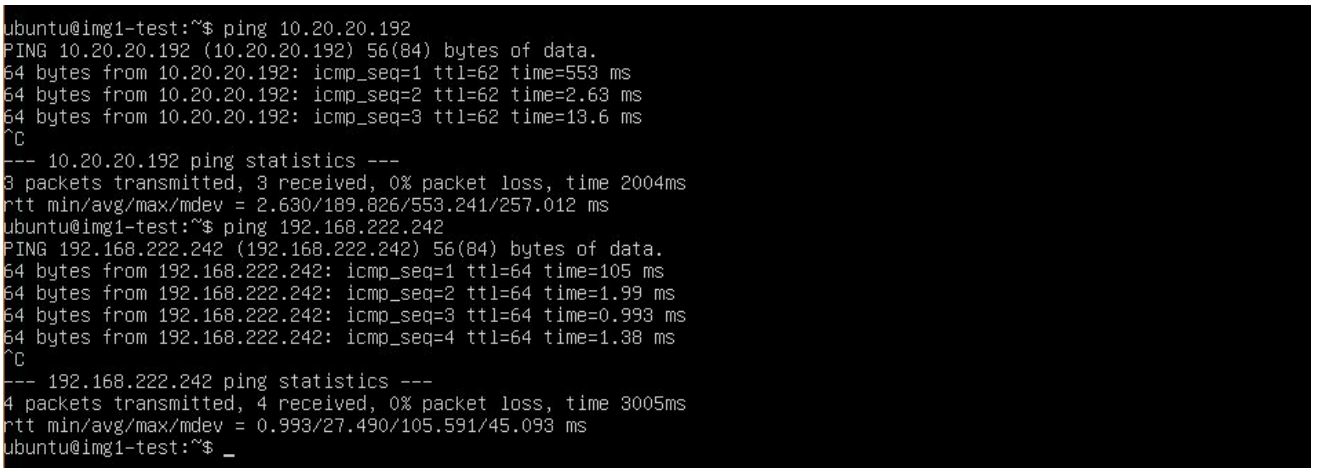
Check the connectivity in the new network.

The IPs of the instances are listed on the picture above

1.1) ssh to img1_test:

```
root@VM-lab12001:~# ssh -i /home/root/snap/microstack/common/.ssh/id_microstack ubuntu@10.20.20.19
Welcome to Ubuntu 18.04.5 LTS (GNU/Linux 4.15.0-124-generic x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:     https://landscape.canonical.com
 * Support:        https://ubuntu.com/advantage

 System information disabled due to load higher than 1.0


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

Failed to connect to https://changelogs.ubuntu.com/meta-release-lts. Check your Internet connection or proxy settings


Last login: Tue Dec  1 14:35:17 2020 from 10.20.20.1
To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.
```

1.2) ping test from img1_test:



2) ssh to test and ping img1_test: