

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:

```
ubuntu@img1-test:~$ ping 10.20.20.192
PING 10.20.20.192 (10.20.20.192) 56(84) bytes of data.
64 bytes from 10.20.20.192: icmp_seq=1 ttl=62 time=553 ms
64 bytes from 10.20.20.192: icmp_seq=2 ttl=62 time=2.63 ms
64 bytes from 10.20.20.192: icmp_seq=3 ttl=62 time=13.6 ms
^C
--- 10.20.20.192 ping statistics ---
3 packets transmitted, 3 received, 0% packet loss, time 2004ms
rtt min/avg/max/mdev = 2.630/189.826/553.241/257.012 ms
ubuntu@img1-test:~$ ping 192.168.222.242
PING 192.168.222.242 (192.168.222.242) 56(84) bytes of data.
64 bytes from 192.168.222.242: icmp_seq=1 ttl=64 time=105 ms
64 bytes from 192.168.222.242: icmp_seq=2 ttl=64 time=1.99 ms
64 bytes from 192.168.222.242: icmp_seq=3 ttl=64 time=0.993 ms
64 bytes from 192.168.222.242: icmp_seq=4 ttl=64 time=1.38 ms
^C
--- 192.168.222.242 ping statistics ---
4 packets transmitted, 4 received, 0% packet loss, time 3005ms
rtt min/avg/max/mdev = 0.993/27.490/105.591/45.093 ms
ubuntu@img1-test:~$ _
```

2) ssh to test and ping img1_test:

```
root@VM-lab12001:~# ssh -i /home/root/snap/microstack/common/.ssh/id_microstack cirros@10.20.20.192
$ ping 10.20.20.19
PING 10.20.20.19 (10.20.20.19): 56 data bytes
64 bytes from 10.20.20.19: seq=0 ttl=62 time=60.072 ms
64 bytes from 10.20.20.19: seq=1 ttl=62 time=2.268 ms
64 bytes from 10.20.20.19: seq=2 ttl=62 time=2.233 ms
^C
--- 10.20.20.19 ping statistics ---
3 packets transmitted, 3 packets received, 0% packet loss
round-trip min/avg/max = 2.233/21.524/60.072 ms
$ ping 192.168.222.91
PING 192.168.222.91 (192.168.222.91): 56 data bytes
64 bytes from 192.168.222.91: seq=0 ttl=64 time=3.130 ms
64 bytes from 192.168.222.91: seq=1 ttl=64 time=1.743 ms
64 bytes from 192.168.222.91: seq=2 ttl=64 time=1.656 ms
^C
--- 192.168.222.91 ping statistics ---
3 packets transmitted, 3 packets received, 0% packet loss
round-trip min/avg/max = 1.656/2.176/3.130 ms
$
```