Q & A

Ansible Demo 3

- **Ansible Demo 1:** Interact with OpenStack API and provisioned two VMs on MRC

- **Ansible Demo 2:** Configure the VMs and deploy a WordPress stack with Docker Compose

- <u>**Ansible Demo 3**</u>**:** Combine the Demo 1 and Demo 2
  - Combined the *host_vars* and *roles* together
  - Removed some optional roles (*openstack-images* and *openstack-volume-snapshot*)
  - Append the *playbook* file for demo 2 to the *playbook* file for demo 1
  - Modified the *inventory* file

Ansible Demo 3 - Playbook

```yaml
- hosts: localhost
  vars_files:
    - host_vars/nectar.yaml
  gather_facts: true

  roles:
    - role: openstack-common
    - role: openstack-volume
    - role: openstack-security-group
    - role: openstack-instance

- hosts: COMP90024
  vars_files:
    - host_vars/wordpress.yaml
  gather_facts: true

  roles:
    - role: wp-common
    - role: wp-volumes
    - role: wp-docker
    - role: wp-wordpress
```

Ansible Demo 3 - Inventory

Inventory file: *hosts*

[COMP90024]

[COMP90024:vars]

ansible_python_interpreter=/usr/bin/python3

ansible_user=ubuntu

ansible_ssh_private_key_file=*<my private key file>*

ansible-playbook -u ubuntu --key-file *<private key> ...*

ansible_ssh_common_args='-o StrictHostKeyChecking=no'

```
# Add hosts to Ansible in-memory inventory
- name: Add host
  add_host:
    name: '{{ item.openstack.public_v4 }}'
    groups: COMP90024
  loop: '{{ os_instance.results }}'
  when: item.openstack is defined
```

[How to build your inventory](#)

Ansible Quiz

- Retrieve facts about the instance created
  - Create an instance and retrieve facts about that instance

  Use in-memory inventory to interact with a newly created instance (see demo 3)

- Attach existing volume(s) to an existing instance

  - Create a new volume

  - Attach the new volume to an existing instance

    Hint:

    - *Go to the Ansible Documentation and search docs for "os volume"*

    - *Find relevant Ansible module -> os_server_volume*

os_server_volume – Attach/Detach **Volumes** from OpenStack VM's — Ansible Do...
os_server_volume – Attach/Detach **Volumes** from OpenStack VM's¶ · Roadmaps Ansible Roadmap
Ansible Docs » os_server_volume – Attach/Detach Volumes from OpenStack VM's Edit on GitHub

Ansible Quiz

- Add / remove existing Security Group to existing instance
  - Create a new Security Group
  - Add Security Group Rules
  - Attach the Security Group to an existing instance

  Hint: os_server

Remember to include the existing security groups while adding / removing security groups

Question 1

I am trying to set up a CouchDB cluster, and in order to do that I'd have to modify my security group setting to open up the ports that CouchDB nodes need to use for communication. ... I don't really feel like using a nested loop, ... Just wondering if there is any other way of doing this?

Server A: open 5984, 5986, 4369, 9100 – 9200 to Server B and Server C
Server B: open 5984, 5986, 4369, 9100 – 9200 to Server A and Server C
Server C: open 5984, 5986, 4369, 9100 – 9200 to Server A and Server B

```
- name: Create rules for each security group
  os_security_group_rule:
    security_group: '{{ "couchdb_port[" + item|string + "]" }}'
    protocol: "tcp"
    port_range_min: '{{ item }}'
    port_range_max: '{{ item }}'
    remote_ip_prefix: '{{ ip_list }}'
    state: present
  loop: '{{ db_ports }}'
```

Problem: remote_ip_prefix only takes a single CIDR notation.

Solution? A nested loop with "with_nested"? Try and tell me if it works ;p

Solution! Use the security group as the source of the remote in a security rule.
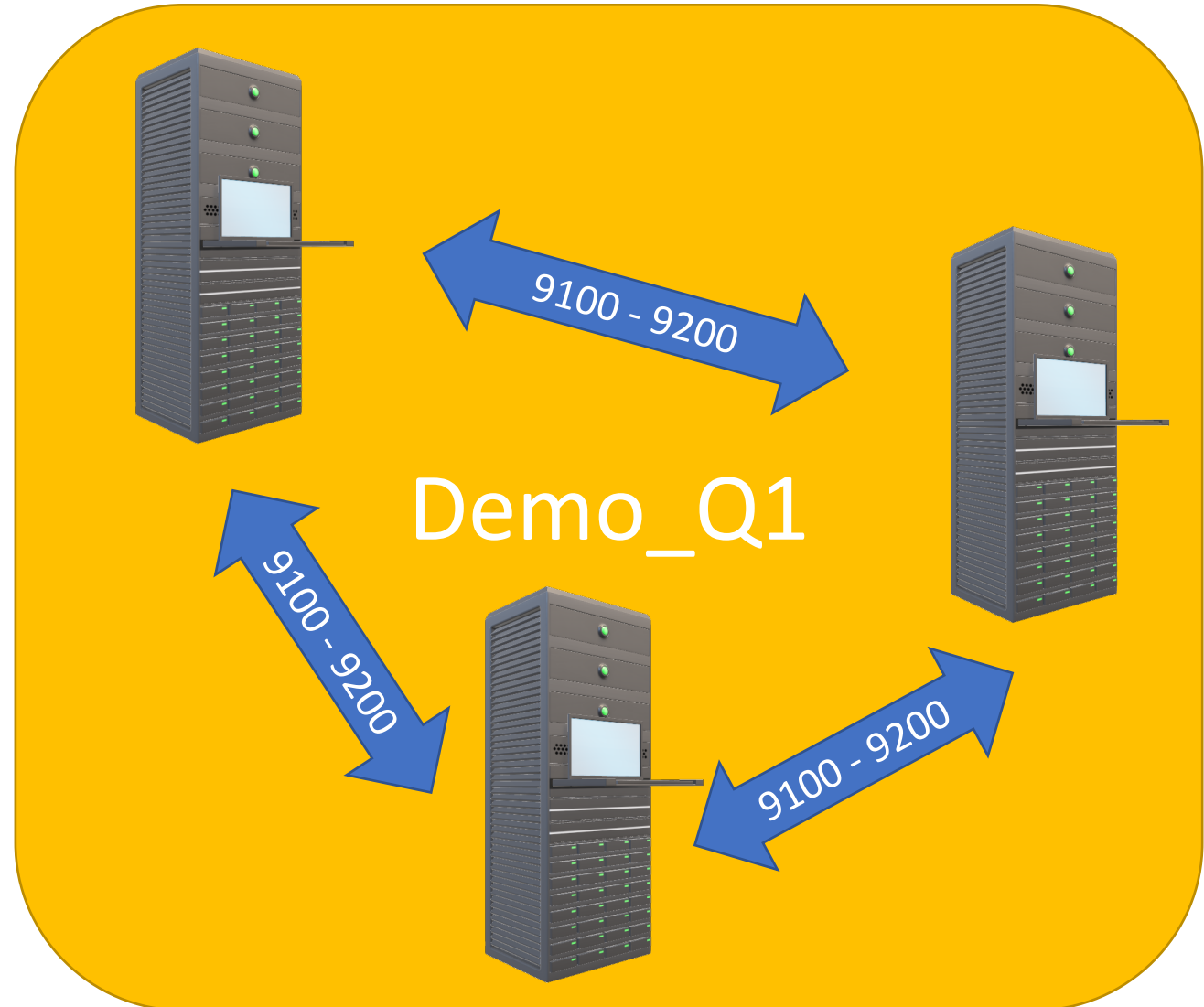
Question 1

Question 2

Q: Random errors, even when run simple "hello world" playbook or the playbooks used in demo.

```
TASK [wordpress : Run docker compose] *********************************
fatal: [172.26.38.146]: FAILED! => {"changed": false, "msg": "Cannot have both t
he docker-py and docker python modules installed together as they use the same n
amespace and cause a corrupt installation. Please uninstall both packages, and r
e-install only the docker-py or docker python module. It is recommended to insta
ll the docker module if no support for Python 2.6 is required. Please note that
simply uninstalling one of the modules can leave the other module in a broken st
ate."}
```

A: Check Ansible version and make sure the latest Ansible has been installed.

ansible --version

Question 3

Q: Cannot SSH to the server just created on NeCTAR / MRC

```
- name: Wait for connection
  wait_for:
    host: "{{ item.openstack.public_v4 }}"
    port: 22
    timeout: 120
    search_regex: OpenSSH
  loop: '{{ os_instance.results }}'
  when: item.openstack is defined
```

A: The servers are not ready. Use wait_for module to wait until the servers are ready.

Question 4

Q: I created an instance on MRC and the status showing "Error"

A: Welcome to the FREE cloud. It happens, try to delete the instance if you can. Otherwise Submit a Ticket and the MRC staff will help you out.

Question 5

Q: How to check the host key fingerprint?

Overview   Interfaces   Log   Console   Action Log

Log Length 35   Go   View Full Log

Instance Console Log

```
[   21.135514] cloud-init[684]: Cloud-init v. 19.4-33-gbb4131a2-0ubuntu1~18.04.1 running 'modules:config' at Tue,
                                                                      NG]: Could not find module named cc_snap_
```

```
TASK [Install Python2] *********************************************************
The authenticity of host                                          can't be established.
ECDSA key fingerprint is SHA256:RlCrnUF2thr                        NYfSAJc.
Are you sure you want to continue connecting (yes/no/[fingerprint])?
```

```
                                                                      8.04.1 running 'modules:final' at Tue,
[   23.063115] cloud-init[760]: 2020-03-31 01:44:50,694 - stages.py[WARNING]: Could not find module named cc_snapp
ci-info: ++++++++ +++++++++++++++++Authorized keys from /home/ubuntu/.ssh/authorized_keys for user ubuntu++++++++++
ci-info: +----------+                                                   +---------+----------+
ci-info: | Keytype  |              Fingerprint (md5)                    | Options |          Comment
ci-info: +----------+                                                   +---------+----------+
ci-info: | ssh-rsa  |
ci-info: +----------+                                                   +---------+----------+
<14>Mar 31 01:44:50 ec2:
<14>Mar 31 01:44:50 ec2: ####################################################################
<14>Mar 31 01:44:50 ec2: -----BEGIN SSH HOST KEY FINGERPRINTS-----
<14>Mar 31 01:44:50 ec2: 1024 SHA256:QqTUdoMcU1Of2                       root@cv19 (DSA)
<14>Mar 31 01:44:50 ec2: 256 SHA256:RlCrnUF2thrMw+                       root@cv19 (ECDSA)
<14>Mar 31 01:44:50 ec2: 256 SHA256:1ujs9nMr8OWkNV                       root@cv19 (ED25519)
<14>Mar 31 01:44:50 ec2: 2048 SHA256:d/Aaio4N+al/s                       root@cv19 (RSA)
<14>Mar 31 01:44:50 ec2: -----END SSH HOST KEY FINGERPRINTS-----
```

Question 6

Q: Ansible keeps prompting host key confirmation, sometimes type "yes" only works for the first host.

```
TASK [Install Python2] **********************************************************
The authenticity of host                                    can't be established.
ECDSA key fingerprint is
Are you sure you want to continue connecting (yes/no/[fingerprint])?

The authenticity of host                                    can't be established.
ECDSA key fingerprint is
Are you sure you want to continue connecting (yes/no/[fingerprint])?

The authenticity of host                                    can't be established.
ECDSA key fingerprint is
Are you sure you want to continue connecting (yes/no/[fingerprint])?

The authenticity of host                                    can't be established.
ECDSA key fingerprint is
Are you sure you want to continue connecting (yes/no/[fingerprint])?
```

Question 6

A: SSH with "-o StrictHostKeyChecking=no" option

[COMP90024]

[COMP90024:vars]

ansible_python_interpreter=/usr/bin/python3

ansible_user=ubuntu

ansible_ssh_private_key_file=<some private key>

ansible_ssh_common_args='-o StrictHostKeyChecking=no'

Question 7

Q: How to safely store the Ansible variables for credentials in a Git repo?

A: Don't push it or use Ansible Vault.

To encrypt a file: *ansible-vault encrypt file.yaml*

To decrypt a file: *ansible-vault decrypt file.yaml*

To view an encrypted file: *ansible-vault view file.yaml*

To run an encrypted playbook file:

ansible-playbook --vault-id @prompt file.yaml

Question 8

Q: How to create an instance with a specific network provider (e.g. qh2-uom-internal)?

A: Use "network" in "os_server"

```yaml
- name: Create an instance with specific network provider (qh2-uom-internal)
  os_server:
    name: '{{ instance_name }}'
    image: '{{ instance_image }}'
    key_name: '{{ instance_key_name }}'
    flavor: '{{ instance_flavor }}'
    availability_zone: '{{ instance_az }}'
    network: qh2-uom-internal
    timeout: 600
    state: present
```

Question 9

Q: What can we do if we want multiple instances to access data stored in a volume? Can we do this by Ansible?

A: Yes and No.

Yes: OpenStack supports multi-attach since Cinder version 3.50.

⚠ Warning

It is the responsibility of the user to ensure that a multiattach or clustered file system is used on the volumes. Otherwise there may be a high probability of data corruption.

No: NeCTAR / MRC does not support multi-attach

Question 10

Q: How to use Ansible to add the proxy?

A: reboot

blockinfile