

13. Appendix B: Answers to Comprehensive Practice

Chapter Details	
Chapter Goal	List of references and useful links
Chapter Sections	<i>13.1. Instructor Overview</i> <i>13.2. Answers to Creating new SSH User</i> <i>13.3. Answers to Creating a User and Tenant</i> <i>13.3.1. Add a Compute Node Answers</i> <i>13.4. Stacklight Monitoring Answers</i>

13.1. Instructor Overview

This is the answers section intended for instructors only! (But congrats if you found it)

13.2. Answers to Creating new SSH User

```
root@kvm01:~# ssh-keygen -f sally
```

```
# Open /root/.ssh/sally.pub and copy its contents for next step
```

```
root@kvm01:~# ssh cfg01
```

```
root@cfg01:~# mkdir /srv/salt/reclass/classes/cluster/lab28/infra/ssh
```

```
root@cfg01:~# vim /srv/salt/reclass/classes/cluster/lab28/infra/ssh/sally.yml
```

```
parameters:
  linux:
    system:
      user:
        sally:
          enabled: true
          name: sally
          sudo: ${_param:linux_system_user_sudo}
          full_name: Sally Draper
          home: /home/sally
          email: sally@domain.tld
  openssh:
    server:
      enabled: true
      user:
        sally:
          enabled: true
          public_keys:
            - key: <paste your public key here>
          user: ${linux:system:user:sally}
```

```
root@cfg01:~# vim /srv/salt/reclass/classes/cluster/lab28/infra/init.yml
```

```
# include the following class you created:
- cluster.lab28.infra.ssh.sally
```

```
root@cfg01:~# salt '*' saltutil.sync_all
```

```
root@cfg01:~# salt 'cfg01*' state.apply reclass
```

```
root@cfg01:~# salt '*' state.apply linux.system.user
```

```
root@cfg01:~# salt '*' state.apply openssh.server
```

13.3. Answers to Creating a User and Tenant

This parameter was defined in `cluster/lab28/openstack/project/friends.yml` and since this is a new file, a class was added to `cluster/lab28/openstack/control_init.yml` to import this.

```
parameters:
  keystone:
    client:
      enabled: true
    server:
      identity:
        project:
          friends:
            description: "Project for friends"
            user:
              Chandler:
                is_admin: true
                password: "stack"
                email: "chandler@bing.com"
```

```
root@cfg01:~# salt '*' saltutil.sync_all
```

```
root@cfg01:~# salt 'cfg01*' state.apply reclass
```

```
root@cfg01:~# salt 'ctl01*' state.apply keystone.client
```

Should read the following when successful:

```
-----
      ID: keystone_identity_tenant_friends
Function: keystoneeng.tenant_present
  Name: friends
  Result: True
Comment: Tenant / project "friends" has been added
Started: 21:42:03.706983
Duration: 727.207 ms
Changes:
```

```
-----
      Tenant:
        Created
```

```
-----
      ID: keystone_identity_tenant_friends_user_Chandler
Function: keystoneeng.user_present
  Name: Chandler
  Result: True
Comment: Keystone user Chandler has been added
Started: 21:42:04.437598
Duration: 1355.25 ms
Changes:
```

```
-----
      User:
        Created
```

13.3.1. Add a Compute Node Answers

Most of the steps are semi-laid out to students.

Add a new VM definition for *cmp002* node:

```
root@cfg01:~# cd mymodel/reclass/classes/cluster/lab28

root@cfg01:~# vim infra/kvm.yml
# Uncomment the following lines
cmp002:
  name: cmp002
  provider: ${_param:infra_kvm_node01_hostname}.${_param:cluster_domain}
  image: ${_param:salt_control_xenial_image}
  size: openstack.compute
```

Add a new compute node definition for OpenStack

```
root@cfg01:~# vim infra/config.yml

# Add the following lines under compute_node001 definition
openstack_compute_node002:
  name: ${_param:openstack_compute_rack01_hostname}002
  domain: ${_param:cluster_domain}
  classes:
  - cluster.${_param:cluster_name}.openstack.compute
  params:
    salt_master_host: ${_param:reclass_config_master}
    linux_system_codename: xenial
    single_address: ${_param:openstack_compute_rack01_single_subnet}.102
    deploy_address: ${_param:openstack_compute_rack01_deploy_subnet}.102
    tenant_address: ${_param:openstack_compute_rack01_tenant_subnet}.102
```

Submit changes to Gerrit

```
root@cfg01:~# git add .
root@cfg01:~# git commit -m "Add cmp002"
root@cfg01:~# git push
```

Review changes as admin on Gerrit UI:

```
https://192.168.2.80:8070
```

Pull the latest changes in */srv/salt/reclass* directory

```
root@cfg01:~# cd /srv/salt/reclass ; git pull

root@cfg01:~# salt '*' saltutil.sync_all

root@cfg01:~# salt 'cfg01*' state.apply reclass.storage

root@cfg01:~# salt 'kvm01*' state.apply salt.control

root@cfg01:~# logout
root@kvm01:~# virsh list
# make sure cmp002.trainings.local is running
```

Log-in to Jenkins and run the *Deploy OpenStack Compute* pipeline with parameter *TARGET_SERVERS: cmp002**

Log-in to Horizon and check the list of hypervisor

Horizon: <https://192.168.2.80/auth/login/>

Schedule a VM on the *cmp002*:

```
root@ctl01:~# source keystonercv3
root@ctl01:~# openstack server create --image cirros \
  --flavor small --nic net-id=internal --availability-zone nova:cmp002 \
  vm1
```

13.4. Stacklight Monitoring Answers

Create a new file in */srv/salt/reclass/cluster/lab28/stacklight/* called *cpu.yml*:

```
root@cfg01:~# touch /srv/salt/reclass/cluster/lab28/stacklight/cpu.yml
```

Populate the *cpu.yml* file with the following content:

```
parameters:
  prometheus:
    server:
      alert:
        cpu_util_host:
          if: "100 - cpu_usage_idle{host=$labels.host} > 80"
          for: 1m
          labels:
            route: email
            severity: warning
            service: system
          annotations:
            summary: "More than 80% cpu used on {{ $labels.host }}"
            description: "More than 80% cpu used on {{ $labels.host }}"
```

Checkpoint:

- Checkpoint 1