



I E T F[®]

I2NSF Hackathon Manual

Hackathon, IETF 108, Online
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Environment

- OS: Ubuntu 16.04 (64-bit)
- Openstack: Queens version
- ConfD: 6.6 version
- MySQL: 14.14 version
- RestConf: JETCONF server
- Suricata: 3.2.1 Release
- **Where to get code:**
<https://github.com/jaehoonpaul/i2nsf-framework>

Openstack Installation

The installation is installed on a freshly installed Ubuntu 16.04 Desktop version.

Installation Step:

1. Update Advanced package tool

```
$ sudo apt-get update
```

2. Create a stack user

```
$ sudo useradd -s /bin/bash -d /opt/stack -m stack
```

```
$ echo "stack ALL=(ALL) NOPASSWD: ALL" | sudo tee /etc/sudoers.d/stack
```

```
$ sudo su - stack
```

3. Download source code for from the github link

```
$ git clone https://opendev.org/openstack/devstack
```

4. Go to devstack folder

```
$ cd devstack
```

Openstack Installation

5. Create a local.conf file

```
$ touch local.conf
```

6. Edit the local.conf file with the file from:

<https://github.com/jaehoonpaul/i2nsf-framework/blob/master/Hackathon-108/devstack/local.conf>

Note: Make sure to change the IP address according to your IP address in local.conf

7. Run stack.sh

```
$ ./stack.sh
```

Openstack Installation

8. Wait until installation finish

```
=====
DevStack Component Timing
(times are in seconds)
=====
run_process          25
test_with_retry      3
apt-get-update       16
pip_install          263
osc                  181
wait_for_service     20
dbusync              162
apt-get              19
=====
Unaccounted time     757
=====
Total runtime        1446

This is your host IP address: 115.145.178.180
This is your host IPv6 address: ::1
Horizon is now available at http://115.145.178.180/dashboard
Keystone is serving at http://115.145.178.180/identity/
The default users are: admin and demo

WARNING:
Using lib/neutron-legacy is deprecated, and it will be removed in the future

Services are running under systemd unit files.
For more information see:
https://docs.openstack.org/devstack/latest/systemd.html

DevStack Version: queens
Change: a05fc211ed8b6d265a296b4ce549cf7e685899b1 Override virtualenv to a version < 20 2020-02-11 13:02:21 +0000
OS Version: Ubuntu 16.04 xenial

2020-02-14 08:47:41.459 | stack.sh completed in 1446 seconds.
```

I2NSF Framework Setup

- Security Controller, DMS Server, and employee example in Hackathon-108 use Ubuntu 16.04 cloud images.
- Download link:
<http://cloud-images.ubuntu.com/xenial/current/>
- Upload the image to OpenStack

```
$ glance image-create -visibility public -  
disk-format qcow2 xenial-server-cloudimg-  
amd64-disk1.img
```
- Setup Security groups in Openstack so Instances are able to connect to internet

Security Controller

Installation:

1. Create Security Controller instance using Ubuntu 16.04 Cloud image
2. Allocate Floating IP for Security Controller
3. Access Security Controller using SSH
4. Download the security controller source code from github
5. Update Advanced package tool
`$ sudo apt-get update`

Security Controller

6. Install packages

```
$ sudo add-apt-repository ppa:deadsnakes/ppa
$ sudo apt-get update
$ sudo apt-get install python python-pip python-mysqldb python-dev
libmysqlclient-dev mysql-client-core-5.7 libxml2-utils mysql-server
apache2 php-pear libapache2-mod-php php-mysql php-fpm php-cli
php-mysqlnd php-pgsql php-sqlite3 php-redis php-apcu php-intl
php-imagick php-json php-gd php-curl python3.6 python3-pip build-essential
nghttp2 libnghttp2-dev libssl-dev make

$ pip install numpy==1.14.6 MySQL-python
*Notes: In this Hackathon-108 MySQL Password = secu
```

7. Install confd

```
$ cp /home/ubuntu/i2nsf-framework/Hackathon-108/* /home/ubuntu/
$ cd /home/ubuntu/confd-basic-linux.x86_64/
$ sh confd-basic-6.6.linux.x86_64.installer.bin
/home/ubuntu/confd-6.6
$ source /home/ubuntu/confd-6.6/confdrc
```

8. Edit server.py with the proper IP address

Security Controller

9. Extract jetconf.tar in security_controller_web-v2

```
$ tar -xvf jetconf.tar  
$ mv jetconf.tar /home/ubuntu/works/jetconf
```

10. Install JETCONF

```
$ cd /home/ubuntu/works/jetconf  
$ pip install -r requirements.txt  
$ python3 -m pip install .
```

11. Activate I2NSF web server for user

```
$ sudo cp -r /security_controller_web-v2/html /var/www/
```

Security Controller

12.Start Security Controller

```
# ACCESS SECURITY CONTROLLER WITH 3 CONSOLES
# 1ST CONSOLE:
$ cd /home/ubuntu/Registration
$ sudo make clean all start

# 2nd CONSOLE:
$ cd /home/ubuntu
$ make target=testserver.py

# 3rd CONSOLE:
$ cd /home/ubuntu/works/jetconf
$ python3.6 run.py -c example.config
```

DMS Server

1. Create DMS server instance using Ubuntu 16.04 Cloud image
2. Allocate Floating IP for DMS Server
3. Access DMS Server using SSH
4. Download the security controller source code from github
5. Update Advanced package tool

```
$ sudo apt-get update
```

DMS Server

6. Install packages

```
$ sudo apt-get install python python-pip python-mysqldb python-dev libmysqlclient-dev mysql-client-core-5.7 libxml2-utils mysql-server libxml2-utils  
$ pip install numpy MySQL-python paramiko --user
```

7. Install confd

```
$ ./home/ubuntu/confd-basic-linux.x86_64/confd-basic-6.6.linux.x86_64.installer.bin /home/ubuntu/confd-6.6  
$ source /home/ubuntu/confd-6.6/confdrc
```

8. Edit dms_server.py with the proper IP address

9. Run dms

```
$ python dms_server.py
```

Thanks!

If you have any questions,
contact email:

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