I2NSF Hackathon Manual

Hackathon, IETF 108, Online
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Environment

- OS: Ubuntu 16.04
- 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

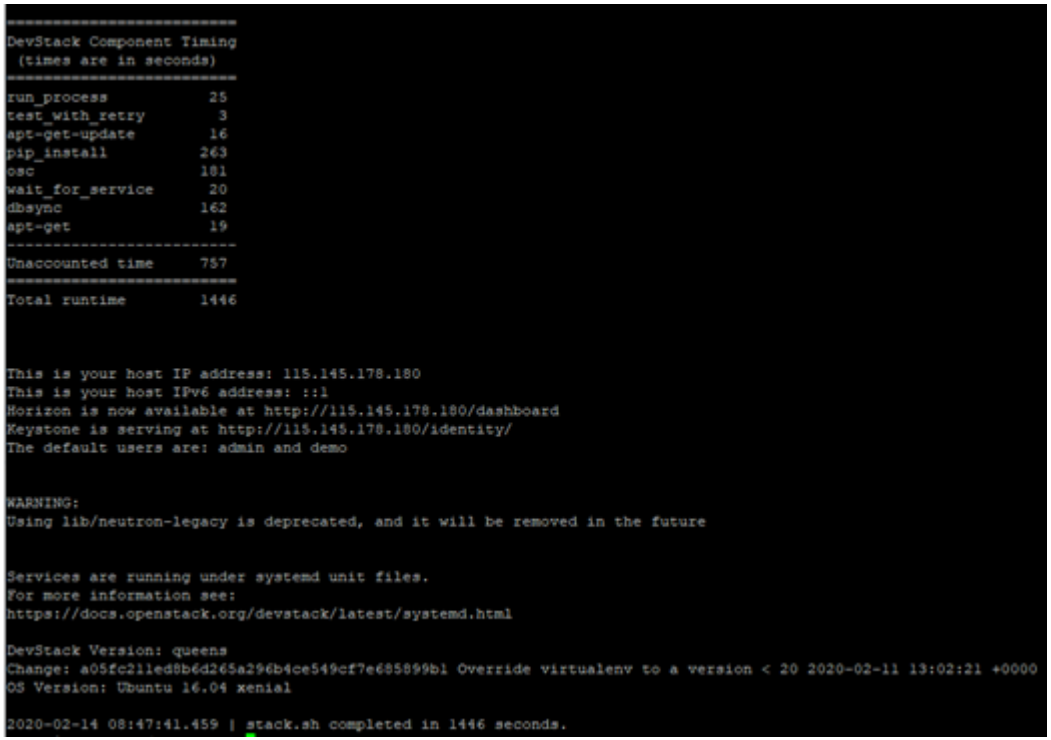
The installation is installed on a freshly installed Ubuntu 16.04 Desktop version.

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://github.com/jaehoonpaul/i2nsf-framework
   ```
4. Go to devstack folder
   ```
   $ cd devstack
   ```

Openstack Installation

5. Edit the local.conf based on your environment
6. Run stack.sh
   ```
   $ ./stack.sh
   ```
7. Wait until installation finish



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-de
v libmysqlclient-dev mysql-client-core-5.7 libxml2-utils mysql-se
rver apache2 php-pear libapache2-mod-php php-mysql php-fpm php-cl
i php-mysqlnd php-pgsql php-sqlite3 php-redis php-apcu php-intl p
hp-imagick php-json php-gd php-curl python3.6 python3-pip build-e
ssential 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 li
bmysqlclient-dev mysql-client-core-5.7 libxml2-utils mysql-server libx
ml2-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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