Yardstick Framework Documentation

Release draft (ff5cb95)

OPNFV

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INSTALLATION

Yardstick currently supports installation on Ubuntu 14.04 or by using a Docker image. Detailed steps about installing Yardstick using both of these options can be found below.

To use Yardstick you should have access to an OpenStack environment, with at least Nova, Neutron, Glance, Keystone and Heat installed.

The steps needed to run Yardstick are:

1. Install Yardstick and create the test configuration .yaml file.

2. Build a guest image and load the image into the OpenStack environment.

3. Create a Neutron external network and load OpenStack environment variables.

4. Run the test case.

1.1 Installing Yardstick on Ubuntu 14.04

1.1.1 Installing Yardstick framework

Install dependencies:

```
sudo apt-get install python-virtualenv python-dev
sudo apt-get install libffi-dev libssl-dev git
```

Create a python virtual environment, source it and update setuptools:

```
virtualenv ~/yardstick_venv
source ~/yardstick_venv/bin/activate
easy_install -U setuptools
```

Download source code and install python dependencies:

```
git clone https://gerrit.opnfv.org/gerrit/yardstick
cd yardstick
python setup.py install
```

There is also a YouTube video, showing the above steps:

1.1.2 Installing extra tools

yardstick-plot

Yardstick has an internal plotting tool `yardstick-plot`, which can be installed using the following command:

```
python setup.py develop easy_install yardstick[plot]
```

1.1.3 Building a guest image

Yardstick has a tool for building an Ubuntu Cloud Server image containing all the required tools to run test cases supported by Yardstick. It is necessary to have sudo rights to use this tool.

This image can be built using the following command while in the directory where Yardstick is installed (`~/yardstick` if the framework is installed by following the commands above):

```
sudo ./tools/yardstick-img-modify tools/ubuntu-server-cloudimg-modify.sh
```

Warning: the script will create files by default in: `/tmp/workspace/yardstick` and the files will be owned by root!

The created image can be added to OpenStack using the `glance image-create` or via the OpenStack Dashboard.

Example command:

```
glance --os-image-api-version 1 image-create \
--name yardstick-trusty-server --is-public true \
--disk-format qcow2 --container-format bare \
--file /tmp/workspace/yardstick/yardstick-trusty-server.img
```

1.2 Installing Yardstick using Docker

Yardstick has two Docker images, first one (**Yardstick-framework**) serves as a replacement for installing the Yardstick framework in a virtual environment (for example as done in *Installing Yardstick framework*), while the other image is mostly for CI purposes (**Yardstick-CI**).

1.2.1 Yardstick-framework image

Download the source code:

```
git clone https://gerrit.opnfv.org/gerrit/yardstick
```

Build the Docker image and tag it as *yardstick-framework*:

```
cd yardstick
docker build -t yardstick-framework .
```

Run the Docker instance:

```
docker run --name yardstick_instance -i -t yardstick-framework
```

To build a guest image for Yardstick, see *Building a guest image*.

1.2.2 Yardstick-CI image

Pull the Yardstick-CI Docker image from Docker hub:

```
docker pull opnfv/yardstick-ci
```

Run the Docker image:

```
docker run \
 --privileged=true \
  --rm \
  -t \
  -e "INSTALLER_TYPE=${INSTALLER_TYPE}" \
  -e "INSTALLER_IP=${INSTALLER_IP}" \
  opnfv/yardstick-ci \
  run_benchmarks
```

Where `${INSTALLER_TYPE}` can be fuel, foreman or compass and `${INSTALLER_IP}` is the installer master node IP address (i.e. 10.20.0.2 is default for fuel).

Basic steps performed by the **Yardstick-CI** container:

1. clone yardstick and releng repos

2. setup OS credentials (releng scripts)

3. install yardstick and dependencies

4. build yardstick cloud image and upload it to glance

5. upload cirros-0.3.3 cloud image to glance

6. run yardstick test scenarios

7. cleanup

1.3 OpenStack parameters and credentials

1.3.1 Yardstick-flavor

Most of the sample test cases in Yardstick are using an OpenStack flavor called *yardstick-flavor* which deviates from the OpenStack standard m1.tiny flavor by the disk size - instead of 1GB it has 3GB. Other parameters are the same as in m1.tiny.

1.3.2 Environment variables

Before running Yardstick it is necessary to export OpenStack environment variables from the Open-Stack *openrc* file (using the `source` command) and export the external network name `export EXTERNAL_NETWORK="external-network-name"`, the default name for the external network is `net04_ext`.

Credential environment variables in the *openrc* file have to include at least:

- OS_AUTH_URL
- OS_USERNAME
- OS_PASSWORD
- OS_TENANT_NAME

1.3.3 Yardstick default key pair

Yardstick uses a SSH key pair to connect to the guest image. This key pair can be found in the `resources/files` directory. To run the `ping-hot.yaml` test sample, this key pair needs to be imported to the OpenStack environment.

1.4 Examples and verifying the install

It is recommended to verify that Yardstick was installed successfully by executing some simple commands and test samples. Below is an example invocation of yardstick help command and ping.py test sample:

```
yardstick -h
yardstick task start samples/ping.yaml
```

Each testing tool supported by Yardstick has a sample configuration file. These configuration files can be found in the **samples** directory.

Example invocation of `yardstick-plot` tool:

```
yardstick-plot -i /tmp/yardstick.out -o /tmp/plots/
```

Default location for the output is `/tmp/yardstick.out.`

More info about the tool can be found by executing:

```
yardstick-plot -h
```