
Tobiko

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1.1 Tobiko Quick Start Guide

1.1.1 Document Overview

This document describes how to install execute Tobiko scenarios test cases using [Tox](#).

See also

To install Tobiko inside a virutalenv please read [Tobiko Installation Guide](#).

To configure Tobiko please read [Tobiko Configuration Guide](#).

To run Tobiko scenario test cases please look at [Tobiko Test Cases Execution Guide](#).

1.1.2 Install Required Packages

Make sure Gcc, Git and base Python packages are installed on your system.

For instance on RHEL Linux you could type:

```
sudo yum install -y gcc git python python-devel
```

For instance on RHEL Linux 8 or CentOS 8 you could type:

```
sudo dnf install -y gcc git python3 python3-devel wget  
sudo alternatives --set python /usr/bin/python3
```

Make sure pip and setuptools are installed and up-to date:

```
wget https://bootstrap.pypa.io/get-pip.py
sudo python get-pip.py
PIP=$(which pip)
```

Make sure `setuptools`, `wheel`, `virtualenv`, and `tox` are installed and up to date:

```
sudo $PIP install --upgrade setuptools wheel virtualenv tox
```

1.1.3 Get Tobiko

Get Tobiko source code using Git:

```
git clone https://opendev.org/x/tobiko.git
cd tobiko
```

1.1.4 Configure Tobiko Credentials

In order to run the tests successfully you'll need to set up OpenStack credentials. You can do it in one of below ways:

- *Set Tobiko Credentials Via Environment Variables*
- *Set Tobiko Credentials Via `tobiko-conf` File*

Set Tobiko Credentials Via Environment Variables

See also

For more details about supported environment variables please read *Authentication Environment Variables* section.

You can use an existing shell RC file that is valid for [Python OpenStack client](#)

```
source openstackrc
```

An example of 'openstackrc' file could looks like below:

```
export OS_IDENTITY_API_VERSION=3
export OS_AUTH_URL=https://my_cloud:13000/v3
export OS_USERNAME=admin
export OS_PASSWORD=secret
export OS_PROJECT_NAME=admin
export OS_USER_DOMAIN_NAME=Default
export OS_PROJECT_DOMAIN_NAME=Default
```

Set Tobiko Credentials Via `tobiko.conf` File

See also

For more details about supported configuration options please read *Authentication Configuration* section.

Create a file at `~/tobiko/tobiko.conf` adding a section like below:

```
[keystone]
api_version = 3
auth_url = http://my_cloud:13000/v3
username = admin
password = secret
project_name = admin
user_domain_name = Default
project_domain_name = Default
```

Setup Required Resources

To be able to execute Tobiko scenario test cases there some OpenStack resources that has to be created before running test cases.

To execute commands from a virtualenv created by Tox you can type as below:

```
tox -e venv -- <your-commands>
```

You need to make sure `ref:authentication-environment-variables` are properly set:

```
tox -e venv -- openstack network list
```

Add reference to the network where Tobiko should create floating IP instances in `tobiko.conf` file:

```
[neutron]
floating_network = public
```

1.1.5 Run Test Cases

Finally run Tobiko scenario test cases using Tox:

```
tox -e scenario
```

List resources stacks created by test cases:

```
tox -e venv -- openstack stack list
```

1.2 Tobiko Installation Guide

1.2.1 Document Overview

This document describes how to install Tobiko inside a Python Virtualenv.

See also

For a quick and simpler start you can jump to the *Tobiko Quick Start Guide*.

To configure Tobiko please read *Tobiko Configuration Guide*.

To run Tobiko scenario test cases please look at *Tobiko Test Cases Execution Guide*.

1.2.2 Install Tobiko Using Virtualenv

Make sure Gcc, Git and base Python packages are installed on your system.

For instance on RHEL Linux 7.6 or CentOS 7 you could type:

```
sudo yum install -y gcc git python python-devel wget
```

For instance on RHEL Linux 8 or CentOS 8 you could type:

```
sudo dnf install -y gcc git python3 python3-devel wget
sudo alternatives --set python /usr/bin/python3
```

Make sure pip is installed and up-to date:

```
wget https://bootstrap.pypa.io/get-pip.py
sudo python get-pip.py
PIP=$(which pip)
```

Make sure setuptools, virtualenv and wheel are installed and up to date:

```
sudo $PIP install --upgrade setuptools virtualenv wheel
```

Get Tobiko source code using Git and enter into Tobiko source folder:

```
git clone https://opendev.org/x/tobiko.git
cd tobiko
```

To install Tobiko and its dependencies is safer to create a clean Virtualenv where to install it. Create a Virtualenv and activate it:

```
virtualenv .tobiko-env
source .tobiko-env/bin/activate
```

Install Tobiko and its requirements:

```
pip install \
  -c https://opendev.org/openstack/requirements/raw/branch/master/upper-constraints.
  ↪txt \
  .
```

1.2.3 What's Next

To know how to configure Tobiko please read *Tobiko Configuration Guide*.

1.3 Tobiko Configuration Guide

1.3.1 Document Overview

This document describes how to configure Tobiko.

See also

For a quick and simpler start you can jump to the *Tobiko Quick Start Guide*.

To install Tobiko inside a virtualenv please read *Tobiko Installation Guide*.

To run Tobiko scenario test cases please look at *Tobiko Test Cases Execution Guide*.

1.3.2 Configure Tobiko Framework

In order to make sure Tobiko tools can connect to OpenStack services via Rest API configuration parameters can be passed either via environment variables or via a ini configuration file (referred here as *tobiko.conf*). Please look at *Authentication Methods* for more details.

To be able to execute scenario test cases there some OpenStack resources that has to be created before running test cases. Please look at *Setup Required Resources* for more details.

tobiko.conf

Tobiko tries to load *tobiko.conf* file from one of below locations:

- current directory:

```
./tobiko.conf
```

- user home directory:

```
~/.tobiko/tobiko.conf
```

- system directory:

```
/etc/tobiko/tobiko.conf
```

Configure Logging

Tobiko can configure logging system to write messages to a log file. You can edit below options in *tobiko.conf* to enable it as below:

```
[DEFAULT]
# Whenever to allow debugging messages to be written out or not
debug = true

# Name of the file where log messages will be appended.
log_file = tobiko.log

# The base directory used for relative log_file paths.
log_dir = .
```

Authentication Methods

Tobiko uses [OpenStack client](#) to connect to OpenStack services.

Authentication Environment Variables

To configure how Tobiko can connect to services you can use the same [environment variables](#) you would use for OpenStack Python client CLI.

Currently supported variables are:

```
# Identity API version
export OS_IDENTITY_API_VERSION=3

# URL to be used to connect to OpenStack Identity Rest API service
export OS_AUTH_URL=http://10.0.0.109:5000/v3

# Authentication username (name or ID)
export OS_USERNAME=admin
export OS_USER_ID=...

# Authentication password
export OS_PASSWORD=...

# Project-level authentication scope (name or ID)
export OS_PROJECT_NAME=admin
export OS_TENANT_NAME=admin
export OS_PROJECT_ID=...
export OS_TENANT_ID=...

# Domain-level authorization scope (name or ID)
export OS_DOMAIN_NAME=Default
export OS_DOMAIN_ID=...

# Domain name or ID containing user
export OS_USER_DOMAIN_NAME=Default
export OS_USER_DOMAIN_ID=...

# Domain name or ID containing project
export OS_PROJECT_DOMAIN_NAME=Default
export OS_PROJECT_DOMAIN_ID=...

# ID of the trust to use as a trustee user
export OS_TRUST_ID=...
```

Authentication Configuration

You can also configure the same authentication parameters by editing 'keystone' section in *tobiko.conf* file. For example:

```
[keystone]
# Identity API version
api_version = 3

# URL to be used to connect to OpenStack Identity Rest API service
auth_url=http://10.0.0.109:5000/v3

# Authentication username (name or ID)
username = admin
```

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```
# Authentication password
password = ...

# Project-level authentication scope (name or ID)
project_name = admin

# Domain-level authorization scope (name or ID)
domain = default

# Domain name or ID containing user
user_domain_name = default

# Domain name or ID containing project
project_domain_name = default

# ID of the trust to use as a trustee user
trust_id = ...
```

Proxy Server Configuration

The first thing to make sure is Tobiko can reach OpenStack services. In case OpenStack is not directly accessible from where test cases or Tobiko CLI are executed it is possible to use an HTTP proxy server running on a network that is able to reach all OpenStack Rest API service. This can be performed by using below standard environment variables:

```
export http_proxy=http://<proxy-host>:<proxy-port>/
export https_proxy=http://<proxy-host>:<proxy-port>/
export no_proxy=127.0.0.1,...
```

For convenience it is also possible to specify the same parameters via *tobiko.conf*:

```
[http]
http_proxy = http://<proxy-host>:<proxy-port>/
https_proxy = http://<proxy-host>:<proxy-port>/
no_proxy = 127.0.0.1,...
```

Because Tobiko test cases could execute local commands (like for example ping) to reach network services we have to specify in *tobiko.conf* file a shell (like OpenSSH client) to be used instead of the default local one ('/bin/sh'):

```
[shell]
command = /usr/bin/ssh <proxy-host>
```

Please make sure it is possible to execute commands on local system without having to pass a password:

```
/usr/bin/ssh <proxy-host> echo 'Yes it works!'
```

To archive it please follow one of the [many guides available on Internet](#) .

Setup Required Resources

To be able to execute Tobiko scenario test cases there some OpenStack resources that has to be created before running test cases.

Install required Python OpenStack clients:

```
pip install --upgrade \  
-c https://opendev.org/openstack/requirements/raw/branch/master/upper-constraints.  
→txt \  
python-openstackclient \  
python-neutronclient
```

You need to make sure *Authentication Environment Variables* are properly set:

```
source openstackrc  
openstack network list
```

Add reference to the network where Tobiko should create floating IP instances in *tobiko.conf* file:

```
[neutron]  
floating_network = public
```

Skipping resources creation

In some cases, for example when Tobiko is run after upgrade of cloud, it may be expected that resources used for tests should be already created. Tobiko should not try to create resources than and just run tests using what is already created. To configure Tobiko to not create test resources, environment variable `TOBIKO_PREVENT_CREATE` can be used:

```
export TOBIKO_PREVENT_CREATE=True
```

If this is set to `True` or `1` then Tobiko will not try to create resources like VMs, networks, routers or images and just run validation of what is exists in the cloud already.

1.3.3 What's Next

To know how to run Tobiko scenario test cases you can look at *Tobiko Test Cases Execution Guide*

1.4 Tobiko Test Cases Execution Guide

This document describes how to execute Tobiko scenario test cases.

See also

For a quick and simpler start you can jump to the *Tobiko Quick Start Guide*.

To install Tobiko inside a virtualenv please read *Tobiko Installation Guide*.

To configure Tobiko please read *Tobiko Configuration Guide*.

1.4.1 Prepare Your System

Before running Tobiko test cases you need to be sure you are doing it from Tobiko source files folder and that you have activated a Virtualenv where Tobiko and its requirements are installed. Please refers to *Tobiko Installation Guide* and *Tobiko Configuration Guide* to know how to setup your system before running test cases.

1.4.2 Run Scenario Test Cases

To run test cases you need a test runner able to execute Python test cases. Test cases delivered with Tobiko has been tested using `stestr`

From Tobiko source folder you can run scenario test cases using below command:

```
stestr run --test-path tobiko/tests/scenario/
```


CHAPTER 2

Project Contributor Guide

Tobiko Framework Reference Guide

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- [search](#)

4.1 Tobiko Configuration Options

This section provides a list of all configuration options for Tobiko. These are auto-generated from Tobiko code when this documentation is built.

4.1.1 Configuration Reference

tobiko.conf

centos

image_name

Type string

Default <None>

Default centos image name

image_url

Type string

Default <None>

Default centos image URL

image_file

Type string

Default <None>

Default centos image filename

container_format

Type string

Default <None>

Default centos container format

disk_format

Type string

Default <None>

Default centos disk format

username

Type string

Default <None>

Default centos username

password

Type string

Default <None>

Default centos password

cirros

image_name

Type string

Default <None>

Default cirros image name

image_url

Type string

Default <None>

Default cirros image URL

image_file

Type string

Default <None>

Default cirros image filename

container_format

Type string

Default <None>

Default cirros container format

disk_format

Type string

Default <None>

Default cirros disk format

username

Type string

Default <None>

Default cirros username

password

Type string

Default <None>

Default cirros password

glance**image_dir**

Type string

Default ~/.tobiko/cache/glance/images

Default directory where to look for image files

http**http_proxy**

Type string

Default <None>

HTTP proxy URL for Rest APIs

https_proxy

Type string

Default <None>

HTTPS proxy URL for Rest APIs

no_proxy

Type string

Default <None>

Don't use proxy server to connect to listed hosts

keystone**api_version**

Type integer

Default <None>

Identity API version

auth_url

Type string

Default <None>

Identity service URL

username

Type string

Default <None>

Username

project_name

Type string

Default <None>

Project name

password

Type string

Default <None>

Password

domain_name

Type string

Default <None>

Domain name

user_domain_name

Type string

Default <None>

User domain name

project_domain_name

Type string

Default <None>

Project domain name

project_domain_id

Type string

Default <None>

Project domain ID

trust_id

Type string

Default <None>

Trust ID for trust scoping.

cloud_name**Type** string**Default** <None>

Cloud name used pick authentication parameters from clouds.*

clouds_file_dirs**Type** list**Default** ., ~/.config/openstack,/etc/openstack

Directories where to look for clouds files

clouds_file_names**Type** list**Default** clouds.yaml, clouds.yml, clouds.json

Clouds file names

neutron**floating_network****Type** string**Default** <None>

Network for creating floating IPs

ipv4_cidr**Type** string**Default** 10.100.0.0/16

The CIDR block to allocate IPv4 subnets from

ipv4_prefixlen**Type** integer**Default** 24

The mask bits for IPv4 subnets

ipv6_cidr**Type** string**Default** 2001:db8::/48

The CIDR block to allocate IPv6 subnets from

ipv6_prefixlen**Type** integer**Default** 64

The mask bits for IPv6 subnets

custom_mtu_size**Type** integer

Default 1350

Customized maximum transfer unit size Notes:

- MTU values as small as 1000 has been seen breaking networking binding due to an unknown cause.
- Too big MTU values (like greater than 1400) may be refused during network creation

nova

key_file

Type string

Default ~/.ssh/id_rsa

Default SSH key to login to server instances

octavia

check_interval

Type integer

Default 5

Interval to check for status changes, in seconds.

check_timeout

Type integer

Default 360

Timeout, in seconds, to wait for a status change.

os_faults

config_dirnames

Type list

Default ., ~/.config/os-faults, /etc/openstack

Directories where to look for os-faults config file

config_filenames

Type list

Default os-faults.json, os-faults.yaml, os-faults.yml

Base file names used to look for os-faults config file

template_dirnames

Type list

Default ., /home/docs/checkouts/readthedocs.org/user_builds/tobiko/
checkouts/latest/tobiko/openstack/os-faults/templates

location where to look for a template file to be used to generate os-faults config file

generate_config_dirname**Type** string**Default** ~/.tobiko/os-faults

location where to generate config file from template

services**Type** list**Default** openvswitch, tripleo_cinder_api, tripleo_cinder_api_cron,
tripleo_cinder_scheduler, tripleo_clustercheck,
tripleo_glance_api, tripleo_horizon

List of services to be handler with os-faults

containers**Type** list**Default** neutron_ovs_agent, neutron_metadata_agent, neutron_api

List of containers to be handler with os-faults

ping**count****Type** integer**Default** 1

Number of ICMP messages to wait before ending ping command execution

deadline**Type** integer**Default** 5

Max seconds waited from ping command before self terminating himself

fragmentation**Type** string**Default** <None>

If False it will not allow ICMP messages to be delivered in smaller fragments

interval**Type** string**Default** 1

Seconds of time interval between consecutive before ICMP messages

packet_size**Type** integer**Default** <None>

Size in bytes of ICMP messages (including headers and payload)

timeout

Type integer

Default 90.0

Maximum time in seconds a sequence of ICMP messages is sent to a destination host before reporting as a failure

shell

command

Type string

Default /bin/sh -c

Default shell command used for executing local commands

sudo

Type string

Default sudo

Default sudo command used for executing commands as superuser or another user

ssh

debug

Type boolean

Default false

Logout debugging messages of paramiko library

command

Type string

Default /usr/bin/ssh

Default SSH client command

port

Type string

Default <None>

Default SSH port

username

Type string

Default <None>

Default SSH username

config_files

Type list

Default /etc/ssh/ssh_config, ~/.ssh/config, ./ssh_config

Default user SSH configuration files

key_file

Type string

Default ~/.ssh/id_rsa

Default SSH private key file

allow_agent

Type boolean

Default false

Set to False to disable connecting to the SSH agent

compress

Type boolean

Default false

Set to True to turn on compression

timeout

Type floating point

Default 10.0

SSH connect timeout in seconds

connection_attempts

Type integer

Default 60

Maximum number of connection attempts to be tried before timeout

connection_interval

Type floating point

Default 10.0

Minimal seconds to wait between every failed SSH connection attempt

proxy_jump

Type string

Default <None>

Default SSH proxy server

proxy_command

Type string

Default <None>

Default proxy command

topology

nodes

Type list

Default <None>

List of hostname nodes

key_file

Type string

Default ~/.ssh/id_rsa

Default SSH key to login to cloud nodes

username

Type string

Default <None>

Default username for SSH login

port

Type string

Default <None>

Default port for SSH login

ip_version

Type string

Default <None>

Valid Values “, 4, 6

Limit connectivity to cloud to IPv4 o IPv6

tripleo

undercloud_ssh_hostname

Type string

Default <None>

hostname or IP address to be used to connect to undercloud host

undercloud_ssh_port

Type integer

Default <None>

TCP port of SSH server on undercloud host

undercloud_ssh_username

Type string

Default stack

Username with access to stackrc and overcloudrc files

undercloud_ssh_key_filename

Type string

Default ~/.ssh/id_rsa

SSH key filename used to login to Undercloud node

undercloud_rcfile

Type string

Default ~/stackrc

Undercloud RC filename

overcloud_ssh_port

Type integer

Default <None>

TCP port of SSH server on overcloud hosts

overcloud_ssh_username

Type string

Default heat-admin

Default username used to connect to overcloud nodes

overcloud_ssh_key_filename

Type string

Default ~/.ssh/id_overcloud

SSH key filename used to login to Overcloud nodes

overcloud_rcfile

Type string

Default ~/overcloudrc

Overcloud RC filename

overcloud_ip_version

Type integer

Default <None>

Default IP address version to be used to connect to overcloud nodes

overcloud_network_name

Type string

Default <None>

Name of network used to connect to overcloud nodes

ubuntu

image_name

Type string

Default <None>

Default ubuntu image name

image_url

Type string

Default <None>

Default ubuntu image URL

image_file

Type string

Default <None>

Default ubuntu image filename

container_format

Type string

Default <None>

Default ubuntu container format

disk_format

Type string

Default <None>

Default ubuntu disk format

username

Type string

Default <None>

Default ubuntu username

password

Type string

Default <None>

Default ubuntu password

4.1.2 Sample Configuration Files

Sample tobiko.conf

This sample configuration can also be viewed in [the raw format](#).

```
[DEFAULT]

[centos]

#
# From tobiko
#

# Default centos image name (string value)
#image_name = <None>

# Default centos image URL (string value)
#image_url = <None>

# Default centos image filename (string value)
#image_file = <None>

# Default centos container format (string value)
#container_format = <None>

# Default centos disk format (string value)
#disk_format = <None>

# Default centos username (string value)
#username = <None>

# Default centos password (string value)
#password = <None>

[cirros]

#
# From tobiko
#

# Default cirros image name (string value)
#image_name = <None>

# Default cirros image URL (string value)
#image_url = <None>

# Default cirros image filename (string value)
#image_file = <None>

# Default cirros container format (string value)
#container_format = <None>

# Default cirros disk format (string value)
#disk_format = <None>

# Default cirros username (string value)
#username = <None>

# Default cirros password (string value)
#password = <None>
```

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```
[glance]

#
# From tobiko
#

# Default directory where to look for image files (string value)
#image_dir = ~/.tobiko/cache/glance/images

[http]

#
# From tobiko
#

# HTTP proxy URL for Rest APIs (string value)
#http_proxy = <None>

# HTTPS proxy URL for Rest APIs (string value)
#https_proxy = <None>

# Don't use proxy server to connect to listed hosts (string value)
#no_proxy = <None>

[keystone]

#
# From tobiko
#

# Identity API version (integer value)
#api_version = <None>

# Identity service URL (string value)
#auth_url = <None>

# Username (string value)
#username = <None>

# Project name (string value)
#project_name = <None>

# Password (string value)
#password = <None>

# Domain name (string value)
#domain_name = <None>

# User domain name (string value)
#user_domain_name = <None>

# Project domain name (string value)
#project_domain_name = <None>
```

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```
# Project domain ID (string value)
#project_domain_id = <None>

# Trust ID for trust scoping. (string value)
#trust_id = <None>

# Cloud name used pick authentication parameters from clouds.* (string value)
#cloud_name = <None>

# Directories where to look for clouds files (list value)
#clouds_file_dirs = .,~/config/openstack,/etc/openstack

# Clouds file names (list value)
#clouds_file_names = clouds.yaml,clouds.yml,clouds.json

[neutron]

#
# From tobiko
#

# Network for creating floating IPs (string value)
#floating_network = <None>

# The CIDR block to allocate IPv4 subnets from (string value)
#ipv4_cidr = 10.100.0.0/16

# The mask bits for IPv4 subnets (integer value)
#ipv4_prefixlen = 24

# The CIDR block to allocate IPv6 subnets from (string value)
#ipv6_cidr = 2001:db8::/48

# The mask bits for IPv6 subnets (integer value)
#ipv6_prefixlen = 64

# Customized maximum transfer unit size
# Notes:
# - MTU values as small as 1000 has been seen breaking networking binding due
# to an unknown cause.
# - Too big MTU values (like greater than 1400) may be refused during network
# creation (integer value)
#custom_mtu_size = 1350

[nova]

#
# From tobiko
#

# Default SSH key to login to server instances (string value)
#key_file = ~/.ssh/id_rsa
```

(continues on next page)

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```
[octavia]

#
# From tobiko
#

# Interval to check for status changes, in seconds. (integer value)
#check_interval = 5

# Timeout, in seconds, to wait for a status change. (integer value)
#check_timeout = 360

[os_faults]

#
# From tobiko
#

# Directories where to look for os-faults config file (list value)
#config_dirnames = ., ~/.config/os-faults, /etc/openstack

# Base file names used to look for os-faults config file (list value)
#config_filenames = os-faults.json, os-faults.yaml, os-faults.yml

# location where to look for a template file to be used to generate os-faults
# config file (list value)
#template_dirnames = ./home/docs/checkouts/readthedocs.org/user_builds/tobiko/
↪checkouts/latest/tobiko/openstack/os_faults/templates

# location where to generate config file from template (string value)
#generate_config_dirname = ~/.tobiko/os-faults

# List of services to be handler with os-faults (list value)
#services = openvswitch, tripleo_cinder_api, tripleo_cinder_api_cron, tripleo_cinder_
↪scheduler, tripleo_clustercheck, tripleo_glance_api, tripleo_horizon

# List of containers to be handler with os-faults (list value)
#containers = neutron_ovs_agent, neutron_metadata_agent, neutron_api

[ping]

#
# From tobiko
#

# Number of ICMP messages to wait before ending ping command execution (integer
# value)
#count = 1

# Max seconds waited from ping command before self terminating himself (integer
# value)
#deadline = 5

# If False it will not allow ICMP messages to be delivered in smaller fragments
# (string value)
```

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```
#fragmentation = <None>

# Seconds of time interval between consecutive before ICMP messages (string
# value)
#interval = 1

# Size in bytes of ICMP messages (including headers and payload) (integer
# value)
#packet_size = <None>

# Maximum time in seconds a sequence of ICMP messages is sent to a destination
# host before reporting as a failure (integer value)
#timeout = 90.0

[shell]

#
# From tobiko
#

# Default shell command used for executing local commands (string value)
#command = /bin/sh -c

# Default sudo command used for executing commands as superuser or another user
# (string value)
#sudo = sudo

[ssh]

#
# From tobiko
#

# Logout debugging messages of paramiko library (boolean value)
#debug = false

# Default SSH client command (string value)
#command = /usr/bin/ssh

# Default SSH port (string value)
#port = <None>

# Default SSH username (string value)
#username = <None>

# Default user SSH configuration files (list value)
#config_files = /etc/ssh/ssh_config, ~/.ssh/config, ./ssh_config

# Default SSH private key file (string value)
#key_file = ~/.ssh/id_rsa

# Set to False to disable connecting to the SSH agent (boolean value)
#allow_agent = false

# Set to True to turn on compression (boolean value)
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#compress = false

# SSH connect timeout in seconds (floating point value)
#timeout = 10.0

# Maximum number of connection attempts to be tried before timeout (integer
# value)
#connection_attempts = 60

# Minimal seconds to wait between every failed SSH connection attempt (floating
# point value)
#connection_interval = 10.0

# Default SSH proxy server (string value)
#proxy_jump = <None>

# Default proxy command (string value)
#proxy_command = <None>

[topology]

#
# From tobiko
#

# List of hostname nodes (list value)
#nodes = <None>

# Default SSH key to login to cloud nodes (string value)
#key_file = ~/.ssh/id_rsa

# Default username for SSH login (string value)
#username = <None>

# Default port for SSH login (string value)
#port = <None>

# Limit connectivity to cloud to IPv4 o IPv6 (string value)
# Possible values:
# ' ' - <No description provided>
# 4 - <No description provided>
# 6 - <No description provided>
#ip_version = <None>

[tripleo]

#
# From tobiko
#

# hostname or IP address to be used to connect to undercloud host (string
# value)
#undercloud_ssh_hostname = <None>

# TCP port of SSH server on undercloud host (integer value)
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#undercloud_ssh_port = <None>

# Username with access to stackrc and overcloudrc files (string value)
#undercloud_ssh_username = stack

# SSH key filename used to login to Undercloud node (string value)
#undercloud_ssh_key_filename = ~/.ssh/id_rsa

# Undercloud RC filename (string value)
#undercloud_rcfile = ~/stackrc

# TCP port of SSH server on overcloud hosts (integer value)
#overcloud_ssh_port = <None>

# Default username used to connect to overcloud nodes (string value)
#overcloud_ssh_username = heat-admin

# SSH key filename used to login to Overcloud nodes (string value)
#overcloud_ssh_key_filename = ~/.ssh/id_overcloud

# Overcloud RC filename (string value)
#overcloud_rcfile = ~/overcloudrc

# Default IP address version to be used to connect to overcloud nodes (integer
# value)
#overcloud_ip_version = <None>

# Name of network used to connect to overcloud nodes (string value)
#overcloud_network_name = <None>

[ubuntu]

#
# From tobiko
#

# Default ubuntu image name (string value)
#image_name = <None>

# Default ubuntu image URL (string value)
#image_url = <None>

# Default ubuntu image filename (string value)
#image_file = <None>

# Default ubuntu container format (string value)
#container_format = <None>

# Default ubuntu disk format (string value)
#disk_format = <None>

# Default ubuntu username (string value)
#username = <None>

# Default ubuntu password (string value)
#password = <None>
```