

Using the Cloud SDK

This document gives a quick introduction to using the Openstack Python client to discover and consume compute resources.

Before beginning, get an account as described in the [Introduction](#) . This is the right place to read about writing python scripts. A companion document shows how to use the [Command Line](#) .

Installation

From a suitable host (this was done on linux.cs.uchicago.edu), create your environment.

```
$ python3 -m venv cloudsdk
$ source cloudsdk/bin/activate
$ pip3 install openstacksdk
$ python -m openstack version
```

Configuration

Obtain your configuration from the [Web Interface](#) . The preceding link is for authenticated and authorized users only. Please read [Intro](#) for access. After logging in to the web interface at <https://overcloud.cs.uchicago.edu>, click the menu on the left side, Project→API Access. On the right side of the top of the page, click "Download Openstack RC File"→"Openstack clouds.yaml file".

Save the clouds.yaml file to the current working directory, or see the [Upstream Docs](#) about config file search order:

```
USER_CONFIG_DIR
  Linux: ~/.config/openstack
  OSX: ~/Library/Application Support/openstack
  Windows: C:\Users\USERNAME\AppData\Local\OpenStack\openstack
SITE_CONFIG_DIR
  Linux: /etc/openstack
  OSX: /Library/Application Support/openstack
  Windows: C:\ProgramData\OpenStack\openstack
```

Sample Configuration File

```
clouds:
  openstack:
    auth:
      auth_url: https://overcloud.cs.uchicago.edu:5000
      username: "CNetID"
      password: "sekret"
```

```
project_id: YOUR PROJECT UUID
project_name: "CNetID"
user_domain_name: "CS_LDAP"
region_name: "RegionOne"
interface: "public"
identity_api_version: 3
```

The main flaw here is that you are using your University credentials inappropriately. Instead, you can use the API or web interface to create an Application Credential.

Testing and Usage

Ensure you can load the python module

```
python -m openstack version
```

Check your configuration

```
python -m openstack.config.loader
```

Check the exact error if one is displayed. For example, if you see

```
keystoneauth1.exceptions.auth_plugins.MissingRequiredOptions: Auth plugin
requires parameters which were not given: auth_url
```

You have failed to provide a configuration file. This is different from a syntax error, but not so different from a permission problem, for example.

Demo Code

The following code shows how to create and destroy a server, and obtain information about Networks, Images, and Flavors. Consult the [API Resource Documentation](#) to see what else is possible.

```
import openstack
from openstack.config import loader
# openstack.enable_logging(True)
config = loader.OpenStackConfig()
cloud = openstack.connect(cloud='openstack')
flavor = cloud.get_flavor_by_ram(2048)
# print(flavor.name)
image = cloud.get_image('20.04')
# cloud.pprint(image)
# network = cloud.network.find_network('campus37')
network = cloud.get_network('campus37')
# cloud.pprint(network)
```

```
try:
    server = cloud.create_server('myserver', image=image, flavor=flavor,
network=network, wait=True, auto_ip=True)
    # cloud.pprint(server)
    # cloud.pprint(cloud.get_server('myserver', detailed=False))
    cloud.pprint(cloud.get_server('myserver', bare=True))
finally:
    cloud.delete_server('myserver', wait=True, delete_ips=True)
```

From:
<https://howto.cs.uchicago.edu/> - **How do I?**

Permanent link:
<https://howto.cs.uchicago.edu/cloud:recipe:coding?rev=1589483201>

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