



KubeCon



CloudNativeCon

Europe 2020

Developing the Kubernetes Python Client

Virtual

Scott Lee

Expectations



KubeCon



CloudNativeCon

Europe 2020

Virtual

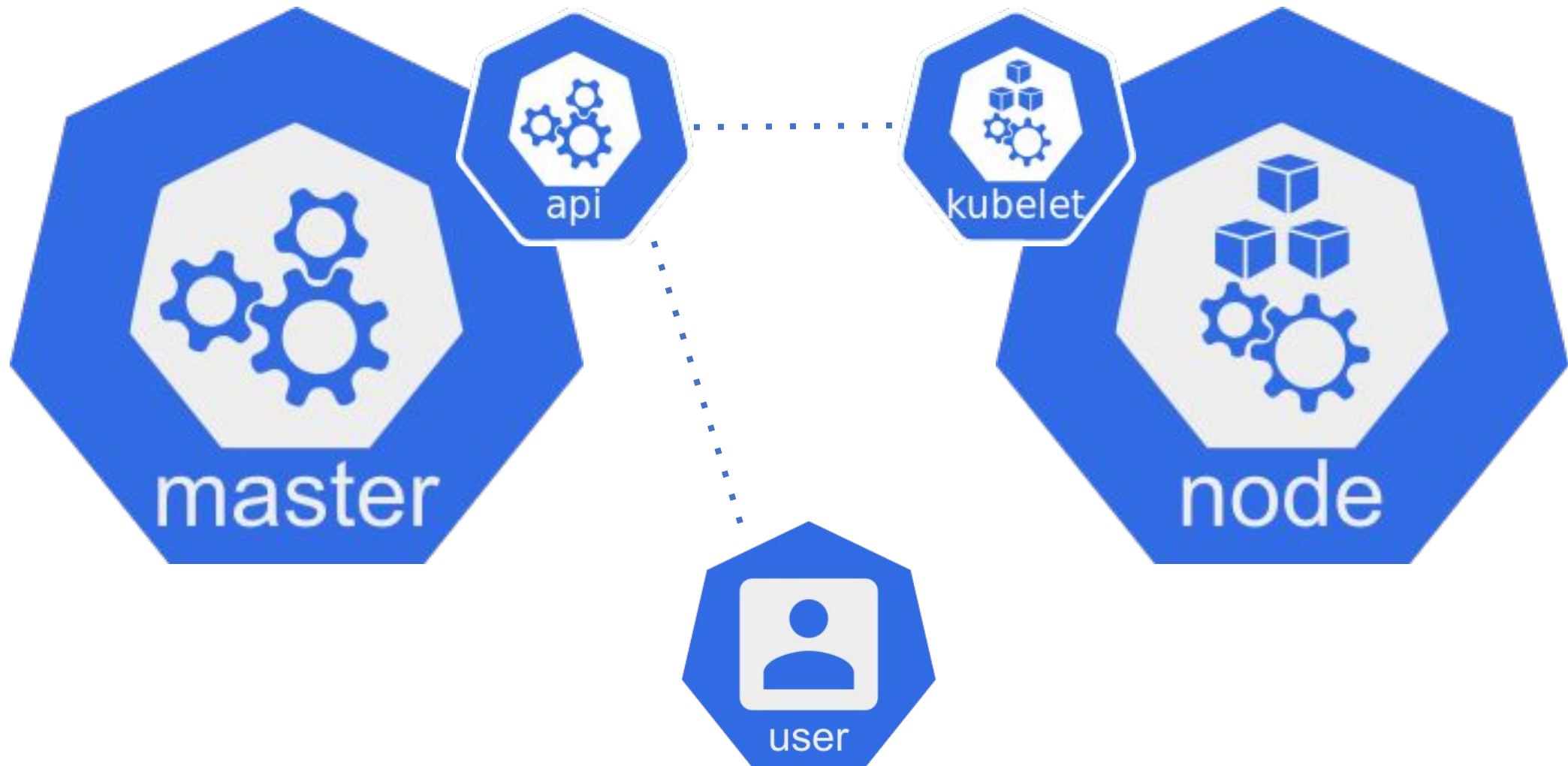


kubernetes



- Background
- Clients
- Setup
- Examples
- Client Repositories
- Contribution

Background



Clients



github.com/kubernetes-client/go



github.com/kubernetes-client/python



github.com/kubernetes-client/java



github.com/kubernetes-client/csharp



github.com/kubernetes-client/javascript



github.com/kubernetes-client/haskell



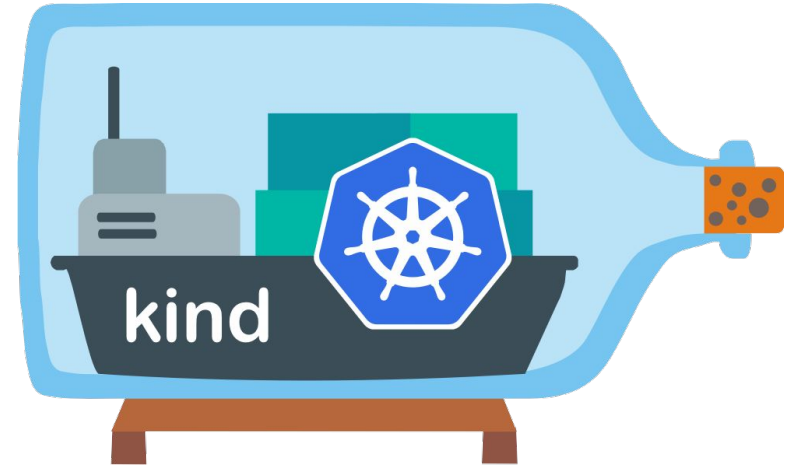


```
pip install  
kubernetes
```

Cluster



minikube



```

$ kind create cluster
Creating cluster "kind" ...
  ✓ Ensuring node image (kindest/node:v1.15.0) 📦
  ✓ Preparing nodes 📦
  ✓ Creating kubeadm config 📄
  ✓ Starting control-plane 🚧
  ✓ Installing CNI 🚧
  ✓ Installing StorageClass 📄
Cluster creation complete. You can now use the cluster with:

export KUBECONFIG="$(kind get kubeconfig-path --name="kind")"
kubectl cluster-info

$ kubectl cluster-info
Kubernetes master is running at https://127.0.0.1:64717
KubeDNS is running at https://127.0.0.1:64717/api/v1/namespaces/kube-system/services/kube-dns:dns/proxy

To further debug and diagnose cluster problems, use 'kubectl cluster-info dump'.
```


kubectl get pods --all-namespaces



```
from kubernetes import client, config

config.load_kube_config()

v1 = client.CoreV1Api()
ret = v1.list_pod_for_all_namespaces(watch=False)
for i in ret.items:
    print("%s\t%s\t%s" % (i.status.pod_ip, i.metadata.namespace, i.metadata.name))
```



```
from kubernetes import client, config

config.load_incluster_config()

v1 = client.CoreV1Api()
ret = v1.list_pod_for_all_namespaces(watch=False)
for i in ret.items:
    print("%s\t%s\t%s" %
          (i.status.pod_ip, i.metadata.namespace, i.metadata.name))
```

```
kubectl create -f nginx-deployment.yaml
```

```
from os import path

import yaml

from kubernetes import client, config

config.load_kube_config()

with open(path.join(path.dirname(__file__), "nginx-deployment.yaml")) as f:
    dep = yaml.safe_load(f)
    k8s_apps_v1 = client.AppsV1Api()
    resp = k8s_apps_v1.create_namespaced_deployment(
        body=dep,
        namespace="default")
    print("Deployment created. status='%s'" % resp.metadata.name)
```

Examples



```
1 apiVersion: apps/v1
2 kind: Deployment
3 metadata:
4   name: nginx-deployment
5   labels:
6     app: nginx
7 spec:
8   replicas: 3
9   selector:
10    matchLabels:
11      app: nginx
12   template:
13     metadata:
14       labels:
15         app: nginx
16     spec:
17       containers:
18         - name: nginx
19           image: nginx:1.15.4
20           ports:
21             - containerPort: 80
```

kubectl label node kubernetes-control-plane "foo"="bar"

```
from kubernetes import client, config

config.load_kube_config()

api_instance = client.CoreV1Api()

body = {
    "metadata": {
        "labels": {
            "foo": "bar",
            "baz": None
        }
    }
}

api_response = api_instance.patch_node("kubernetes-control-plane", body)

print(api_response)
```

Examples



KubeCon



CloudNativeCon

Europe 2020



kubernetes-client / python

Used by 4.7k Watch 101 Star 2.4k Fork 1.5k

Code Issues 75 Pull requests 7 Actions Projects 0 Security Insights

Branch: master python / examples / Create new file Upload files Find file History

roycaihw debug log example Latest commit de596e9 5 days ago

..		
notebooks	884: Cleanup examples folder	5 months ago
README.md	Address PR comments	5 months ago
__init__.py	884: Cleanup examples folder	5 months ago
api_discovery.py	Address PR comments	5 months ago
custom_object.py	Fix custom object API example	2 months ago
deployment_create.py	884: Cleanup examples folder	5 months ago
deployment_crud.py	debug log example	5 days ago
in_cluster_config.py	Address PR comments	5 months ago
ingress_create.py	Address PR comments	5 months ago
job_crud.py	Address PR comments	5 months ago
multiple_clusters.py	Address PR comments	5 months ago
nginx-deployment.yaml	Deprecate extensions/v1beta1 deployment	7 months ago
node_labels.py	884: Cleanup examples folder	5 months ago
out_of_cluster_config.py	Address PR comments	5 months ago
pi-job.yaml	884: Cleanup examples folder	5 months ago
pick_kube_config_context.py	884: Cleanup examples folder	5 months ago
pod_config_list.py	884: Cleanup examples folder	5 months ago
pod_exec.py	use new module name in example	3 months ago
pod_namespace_watch.py	Address PR comments	5 months ago
remote_cluster.py	884: Cleanup examples folder	5 months ago

kubernetes-client / [gen](#)

Watch 9

Star 56

Fork 65

Code

Issues 5

Pull requests 0

Actions

Projects 0

Wiki

Security

Insights

Common generator scripts for all client libraries

171 commits

5 branches

0 packages

0 releases

30 contributors

Apache-2.0

Branch: master


New pull request

Create new file

Upload files

Find file

Clone or download

 tomplus feat: switch python-asyncio to use openapi-generator v4.2.3 (#146)	Latest commit 9f439b6 4 days ago
openapi	feat: switch python-asyncio to use openapi-generator v4.2.3 (#146) 4 days ago
proto	Add missing autoscaling api and fic admissionregistration version (#100) 13 months ago
.gitignore	Add javascript generator 3 years ago
CONTRIBUTING.md	Add CONTRIBUTING.md (#77) 2 years ago
LICENSE	Initial commit 3 years ago
OWNERS	Add OWNERS file (#78) 2 years ago
README.md	Improve kubernetes-client/gen documentation for {CLIENT_LANGUAGE}.sh ... (15 months ago
SECURITY_CONTACTS	add SECURITY_CONTACTS (#66) 2 years ago
code-of-conduct.md	Add code-of-conduct.md (#41) 2 years ago

Python



KubeCon



CloudNativeCon

Europe 2020

Virtual

kubernetes-client / python Used by 4.5k Watch 99 Star 2.4k Fork 1.4k

[Code](#) [Issues 76](#) [Pull requests 6](#) [Actions](#) [Projects 0](#) [Security](#) [Insights](#)

Official Python client library for kubernetes <http://kubernetes.io/>

[kubernetes](#) [client-python](#) [k8s](#) [library](#) [k8s-sig-api-machinery](#)

699 commits 16 branches 0 packages 43 releases 63 contributors Apache-2.0

Branch: master [New pull request](#) [Create new file](#) [Upload files](#) [Find file](#) [Clone or download](#)

k8s-ci-robot Merge pull request #1038 from micw523/contrib-1 Latest commit 390f3cf 4 days ago

<code>.github/ISSUE_TEMPLATE</code>	Add issue templates (#916)	6 months ago
<code>devel</code>	Document hot issues in release process	5 days ago
<code>doc</code>	Update examples (#922)	6 months ago
<code>examples</code>	Fix custom object API example	last month
<code>kubernetes</code>	Add test to ensure kubernetes client threadpool is cleaned up	9 days ago
<code>scripts</code>	generated client change for 11.0.0-snapshot	3 months ago
<code>.gitignore</code>	Multiple docs fixes	7 months ago
<code>.gitmodules</code>	Add kubernetes-client/python-base as submodule to this repo	3 years ago
<code>.travis.yml</code>	Enable testing for Python 3.8	4 months ago
<code>CHANGELOG.md</code>	update changelog	3 months ago
<code>CONTRIBUTING.md</code>	more fixes and add more information	last month
<code>LICENSE</code>	Generated client	3 years ago
<code>MANIFEST.in</code>	Add files in root directory to dist	2 years ago
<code>OWNERS</code>	Move inactive members to emeritus	7 months ago
<code>README.md</code>	update README	3 months ago
<code>RELEASE.md</code>	Remove old client versions (>v1.9) from support matrix	6 months ago
<code>SECURITY_CONTACTS</code>	Add SECURITY_CONTACTS	2 years ago
<code>code-of-conduct.md</code>	Update code-of-conduct.md	2 years ago
<code>requirements.txt</code>	Update urllib3 for CVE-2019-11324	7 months ago
<code>setup.cfg</code>	Initial cut at documentation	3 years ago
<code>setup.py</code>	fix: add client.api package to setup.py	3 months ago
<code>test-requirements.txt</code>	Moves coverage report generation to pytest from nosetests	4 months ago
<code>tox.ini</code>	Enable testing for Python 3.8	4 months ago

kubernetes-client / python-base

Watch 10 Star 40 Fork 130

Code Issues 10 Pull requests 11 Actions Projects 0 Wiki Security Insights

No description, website, or topics provided.

169 commits 5 branches 0 packages 0 releases 43 contributors Apache-2.0

Branch: master New pull request Create new file Upload files Find file Clone or download

k8s-ci-robot Merge pull request #152 from sergei-maertens/master Latest commit a25f49e 2 days ago

config	Add option to refresh gcp token when config is cmd-path	last month
dynamic	Use explicit API version for retrieving CRD API	5 months ago
hack	Remove all shebangs from Python modules and checker	6 months ago
stream	Merge pull request #152 from sergei-maertens/master	2 days ago
watch	Remove all shebangs from Python modules and checker	6 months ago
.gitignore	Ignore IDE files	3 years ago
.travis.yml	Adds Python 3.8 to the Travis CI test jobs	4 months ago
CONTRIBUTING.md	Remove all shebangs from Python modules and checker	6 months ago
LICENSE	Initial commit	3 years ago
OWNERS	Updated OWNERS to include link to docs	13 months ago
README.md	Remove link to kubernetes-client/community	2 years ago
SECURITY_CONTACTS	Add SECURITY_CONTACTS	2 years ago
code-of-conduct.md	Add code-of-conduct.md	2 years ago
run_tox.sh	Verify Boilerplate fix	15 months ago
tox.ini	Migrate to pytest	5 months ago

Help make Open Source a better place and start building better software today!

 **kubernetes-client / python**  build passing

Current [Branches](#) [Build History](#) [Pull Requests](#)

More options 

✓ **release-12.0** Merge pull request #1217 from scottilee/release-1 🔗 #1700 passed

Release 12.0.0a1

🕒 Ran for 6 min 18 sec

🔗 Commit 2ed00a9 [🔗](#)

🕒 Total time 20 min 54 sec

🔗 Compare 442ebc0...2ed00a9 [🔗](#)

📅 a day ago

🔗 Branch release-12.0 [🔗](#)

 k8s-ci-robot



Kubernetes Python Client 10.0 -> Kubernetes 1.14

Kubernetes Python Client 11.0 -> Kubernetes 1.15

Kubernetes Python Client 12.0 -> Kubernetes 1.16

Kubernetes Python Client 13.0 -> Kubernetes 1.17

Contribute



KubeCon



CloudNativeCon

Europe 2020

Virtual

#kubernetes-client



KubeCon



CloudNativeCon

Europe 2020



Virtual



KEEP CLOUD NATIVE

CONNECTED

