
kubernetes-python-client Documentation

Kubernetes

Sep 20, 2021

Contents

1	Kubernetes Python Client	3
1.1	Installation	3
1.2	Examples	3
1.3	Documentation	4
1.4	Compatibility	4
1.5	Homogenizing the Kubernetes Python Client versions	5
1.6	Community, Support, Discussion	5
1.7	Troubleshooting	6
2	Installation	7
3	Usage	9
3.1	Deployments	9
4	kubernetes	11
4.1	kubernetes package	11
5	Contributing Guidelines	39
5.1	How to become a contributor and submit your own code	39
5.2	Composition of This Repository and Where/How to Contribute	39
5.3	Running Tests Locally	41
5.4	Update the Base Submodule in the Main Repo After Your python-base PR Is Merged	41
6	Indices and tables	43

Contents:

Python client for the [kubernetes API](#).

1.1 Installation

From source:

```
git clone --recursive https://github.com/kubernetes-client/python.git
cd python
python setup.py install
```

From PyPI directly:

```
pip install kubernetes
```

1.2 Examples

list all pods:

```
from kubernetes import client, config

# Configs can be set in Configuration class directly or using helper utility
config.load_kube_config()

v1 = client.CoreV1Api()
print("Listing pods with their IPs:")
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))
```

watch on namespace object:

```
from kubernetes import client, config, watch

# Configs can be set in Configuration class directly or using helper utility
config.load_kube_config()

v1 = client.CoreV1Api()
count = 10
w = watch.Watch()
for event in w.stream(v1.list_namespace, _request_timeout=60):
    print("Event: %s %s" % (event['type'], event['object'].metadata.name))
    count -= 1
    if not count:
        w.stop()

print("Ended.")
```

More examples can be found in [examples](#) folder. To run examples, run this command:

```
python -m examples.example1
```

(replace example1 with one of the filenames in the examples folder)

1.3 Documentation

All APIs and Models' documentation can be found at the [Generated client's README file](#)

1.4 Compatibility

`client-python` follows [semver](#), so until the major version of `client-python` gets increased, your code will continue to work with explicitly supported versions of Kubernetes clusters.

1.4.1 Compatibility matrix of supported client versions

- `client 9.y.z`: Kubernetes 1.12 or below (+-), Kubernetes 1.13 (✓), Kubernetes 1.14 or above (+-)
 - `client 10.y.z`: Kubernetes 1.13 or below (+-), Kubernetes 1.14 (✓), Kubernetes 1.14 or above (+-)
 - `client 11.y.z`: Kubernetes 1.14 or below (+-), Kubernetes 1.15 (✓), Kubernetes 1.16 or above (+-)
 - `client 12.y.z`: Kubernetes 1.15 or below (+-), Kubernetes 1.16 (✓), Kubernetes 1.17 or above (+-)
 - `client 17.y.z`: Kubernetes 1.16 or below (+-), Kubernetes 1.17 (✓), Kubernetes 1.18 or above (+-)
 - `client 18.y.z`: Kubernetes 1.17 or below (+-), Kubernetes 1.18 (✓), Kubernetes 1.19 or above (+-)
 - `client 19.y.z`: Kubernetes 1.18 or below (+-), Kubernetes 1.19 (✓), Kubernetes 1.20 or above (+-)
- See [here](#) for an explanation of why there is no v13-v16 release.

Key:

- ✓ Exactly the same features / API objects in both `client-python` and the Kubernetes version.

- + client-python has features or API objects that may not be present in the Kubernetes cluster, either due to that client-python has additional new API, or that the server has removed old API. However, everything they have in common (i.e., most APIs) will work. Please note that alpha APIs may vanish or change significantly in a single release.
- – The Kubernetes cluster has features the client-python library can't use, either due to the server has additional new API, or that client-python has removed old API. However, everything they share in common (i.e., most APIs) will work.

See the [CHANGELOG](#) for a detailed description of changes between client-python versions.

See [here](#) for an explanation of why there is no v13-v16 release.

Key:

- ✓ Changes in main Kubernetes repo are manually (**should be automated**) published to client-python when they are available.
- No longer maintained; please upgrade.

Kubernetes supports [three minor releases](#) at a time. “Support” means we expect users to be running that version in production, though we may not port fixes back before the latest minor version. For example, when v1.3 comes out, v1.0 will no longer be supported. In consistent with Kubernetes support policy, we expect to support **three GA major releases** (corresponding to three Kubernetes minor releases) at a time.

Note: There would be no maintenance for alpha/beta releases except the latest one.

Exception to the above support rule: Since we are running behind on releases, we will support Alpha/Beta releases for a greater number of clients until we catch up with the upstream version.

1.5 Homogenizing the Kubernetes Python Client versions

The client releases v12 and before following a versioning schema where the major version was 4 integer positions behind the Kubernetes minor on which the client is based on. For example, v12.0.0 is based on Kubernetes v1.16, v11.0.0 is based on Kubernetes v1.15 and so on.

This created a lot of confusion tracking two different version numbers for each client release. It was decided to homogenize the version scheme starting from the Kubernetes Python client based on Kubernetes v1.17. The versioning scheme of the client from this release would be vY.Z.P where Y and Z are the Kubernetes minor and patch release numbers from Kubernetes v1.Y.Z and P is the client specific patch release numbers to accomodate changes and fixes done specifically to the client. For more details, refer [this issue](#).

1.6 Community, Support, Discussion

If you have any problem on using the package or any suggestions, please start with reaching the [Kubernetes clients slack channel](#), or filing an [issue](#) to let us know. You can also reach the maintainers of this project at [SIG API Machinery](#), where this project falls under.

1.6.1 Code of Conduct

Participation in the Kubernetes community is governed by the [CNCF Code of Conduct](#).

1.7 Troubleshooting

1.7.1 SSLError on macOS

If you get an `SSLError`, you likely need to update your version of python. The version that ships with macOS may not be supported.

Install the latest version of python with `brew`:

```
brew install python
```

Once installed, you can query the version of OpenSSL like so:

```
python -c "import ssl; print ssl.OPENSSL_VERSION"
```

You'll need a version with OpenSSL version 1.0.0 or later.

1.7.2 Hostname doesn't match

If you get an `ssl.CertificateError` complaining about hostname match, your installed packages does not meet version requirements. Specifically check `ipaddress` and `urllib3` package versions to make sure they met requirements in `requirements.txt` file.

1.7.3 Why Exec/Attach calls doesn't work

Starting from 4.0 release, we do not support directly calling `exec` or `attach` calls. you should use `stream` module to call them. so instead of `resp = api.connect_get_namespaced_pod_exec(name, ...)` you should call `resp = stream(api.connect_get_namespaced_pod_exec, name, ...)`

Using `Stream` will overwrite the requests protocol in `core_v1_api.CoreV1Api()` This will cause a failure in non-`exec/attach` calls. If you reuse your api client object, you will need to recreate it between api calls that use `stream` and other api calls.

See more at [exec example](#).

CHAPTER 2

Installation

At the command line:

```
$ pip install kubernetes
```

Or, if you have virtualenvwrapper installed:

```
$ mkvirtualenv kubernetes  
$ pip install kubernetes
```


The directory `examples` contains a few examples on how to use the client.

3.1 Deployments

Here is a simple usage of creating a deployment from a yaml file:

The following example demonstrates how to create, update and delete deployments without the need to read a file from the disk:

4.1 kubernetes package

4.1.1 Subpackages

kubernetes.client package

Subpackages

kubernetes.client.apis package

Submodules

kubernetes.client.apis.apis_api module

kubernetes.client.apis.apps_api module

kubernetes.client.apis.apps_v1beta1_api module

kubernetes.client.apis.authentication_api module

kubernetes.client.apis.authentication_v1beta1_api module

kubernetes.client.apis.authorization_api module

kubernetes.client.apis.authorization_v1beta1_api module

`kubernetes.client.apis.autoscaling_api` module

`kubernetes.client.apis.autoscaling_v1_api` module

`kubernetes.client.apis.batch_api` module

`kubernetes.client.apis.batch_v1_api` module

`kubernetes.client.apis.batch_v2alpha1_api` module

`kubernetes.client.apis.certificates_api` module

`kubernetes.client.apis.certificates_v1alpha1_api` module

`kubernetes.client.apis.core_api` module

`kubernetes.client.apis.core_v1_api` module

`kubernetes.client.apis.extensions_api` module

`kubernetes.client.apis.extensions_v1beta1_api` module

`kubernetes.client.apis.logs_api` module

`kubernetes.client.apis.policy_api` module

`kubernetes.client.apis.policy_v1beta1_api` module

`kubernetes.client.apis.rbac_authorization_api` module

`kubernetes.client.apis.rbac_authorization_v1alpha1_api` module

`kubernetes.client.apis.storage_api` module

`kubernetes.client.apis.storage_v1beta1_api` module

`kubernetes.client.apis.version_api` module

Module contents

`kubernetes.client.models` package

Submodules

`kubernetes.client.models.intstr_int_or_string` module

`kubernetes.client.models.resource_quantity` module

`kubernetes.client.models.runtime_raw_extension` module

`kubernetes.client.models.unversioned_api_group` module

`kubernetes.client.models.unversioned_api_group_list` module

`kubernetes.client.models.unversioned_api_resource` module

`kubernetes.client.models.unversioned_api_resource_list` module

`kubernetes.client.models.unversioned_api_versions` module

`kubernetes.client.models.unversioned_group_version_for_discovery` module

`kubernetes.client.models.unversioned_label_selector` module

`kubernetes.client.models.unversioned_label_selector_requirement` module

`kubernetes.client.models.unversioned_list_meta` module

`kubernetes.client.models.unversioned_server_address_by_client_cidr` module

`kubernetes.client.models.unversioned_status` module

`kubernetes.client.models.unversioned_status_cause` module

`kubernetes.client.models.unversioned_status_details` module

`kubernetes.client.models.unversioned_time` module

`kubernetes.client.models.v1_attached_volume` module

`kubernetes.client.models.v1_aws_elastic_block_store_volume_source` module

`kubernetes.client.models.v1_azure_disk_volume_source` module

`kubernetes.client.models.v1_azure_file_volume_source` module

`kubernetes.client.models.v1_binding` module

`kubernetes.client.models.v1_capabilities` module

`kubernetes.client.models.v1_ceph_fs_volume_source` module

kubernetes.client.models.v1_cinder_volume_source module

kubernetes.client.models.v1_component_condition module

kubernetes.client.models.v1_component_status module

kubernetes.client.models.v1_component_status_list module

kubernetes.client.models.v1_config_map module

kubernetes.client.models.v1_config_map_key_selector module

kubernetes.client.models.v1_config_map_list module

kubernetes.client.models.v1_config_map_volume_source module

kubernetes.client.models.v1_container module

kubernetes.client.models.v1_container_image module

kubernetes.client.models.v1_container_port module

kubernetes.client.models.v1_container_state module

kubernetes.client.models.v1_container_state_running module

kubernetes.client.models.v1_container_state_terminated module

kubernetes.client.models.v1_container_state_waiting module

kubernetes.client.models.v1_container_status module

kubernetes.client.models.v1_cross_version_object_reference module

kubernetes.client.models.v1_daemon_endpoint module

kubernetes.client.models.v1_delete_options module

kubernetes.client.models.v1_downward_api_volume_file module

kubernetes.client.models.v1_downward_api_volume_source module

kubernetes.client.models.v1_empty_dir_volume_source module

kubernetes.client.models.v1_endpoint_address module

`kubernetes.client.models.v1_endpoint_port` module

`kubernetes.client.models.v1_endpoint_subset` module

`kubernetes.client.models.v1_endpoints` module

`kubernetes.client.models.v1_endpoints_list` module

`kubernetes.client.models.v1_env_var` module

`kubernetes.client.models.v1_env_var_source` module

`kubernetes.client.models.v1_event` module

`kubernetes.client.models.v1_event_list` module

`kubernetes.client.models.v1_event_source` module

`kubernetes.client.models.v1_exec_action` module

`kubernetes.client.models.v1_fc_volume_source` module

`kubernetes.client.models.v1_flex_volume_source` module

`kubernetes.client.models.v1_flocker_volume_source` module

`kubernetes.client.models.v1_gce_persistent_disk_volume_source` module

`kubernetes.client.models.v1_git_repo_volume_source` module

`kubernetes.client.models.v1_glusterfs_volume_source` module

`kubernetes.client.models.v1_handler` module

`kubernetes.client.models.v1_horizontal_pod_autoscaler` module

`kubernetes.client.models.v1_horizontal_pod_autoscaler_list` module

`kubernetes.client.models.v1_horizontal_pod_autoscaler_spec` module

`kubernetes.client.models.v1_horizontal_pod_autoscaler_status` module

`kubernetes.client.models.v1_host_path_volume_source` module

`kubernetes.client.models.v1_http_get_action` module

`kubernetes.client.models.v1_http_header` module

`kubernetes.client.models.v1_iscsi_volume_source` module

`kubernetes.client.models.v1_job` module

`kubernetes.client.models.v1_job_condition` module

`kubernetes.client.models.v1_job_list` module

`kubernetes.client.models.v1_job_spec` module

`kubernetes.client.models.v1_job_status` module

`kubernetes.client.models.v1_key_to_path` module

`kubernetes.client.models.v1_lifecycle` module

`kubernetes.client.models.v1_limit_range` module

`kubernetes.client.models.v1_limit_range_item` module

`kubernetes.client.models.v1_limit_range_list` module

`kubernetes.client.models.v1_limit_range_spec` module

`kubernetes.client.models.v1_load_balancer_ingress` module

`kubernetes.client.models.v1_load_balancer_status` module

`kubernetes.client.models.v1_local_object_reference` module

`kubernetes.client.models.v1_namespace` module

`kubernetes.client.models.v1_namespace_list` module

`kubernetes.client.models.v1_namespace_spec` module

`kubernetes.client.models.v1_namespace_status` module

`kubernetes.client.models.v1_nfs_volume_source` module

`kubernetes.client.models.v1_node` module

`kubernetes.client.models.v1_node_address` module

kubernetes.client.models.v1_node_condition module

kubernetes.client.models.v1_node_daemon_endpoints module

kubernetes.client.models.v1_node_list module

kubernetes.client.models.v1_node_spec module

kubernetes.client.models.v1_node_status module

kubernetes.client.models.v1_node_system_info module

kubernetes.client.models.v1_object_field_selector module

kubernetes.client.models.v1_object_meta module

kubernetes.client.models.v1_object_reference module

kubernetes.client.models.v1_owner_reference module

kubernetes.client.models.v1_persistent_volume module

kubernetes.client.models.v1_persistent_volume_claim module

kubernetes.client.models.v1_persistent_volume_claim_list module

kubernetes.client.models.v1_persistent_volume_claim_spec module

kubernetes.client.models.v1_persistent_volume_claim_status module

kubernetes.client.models.v1_persistent_volume_claim_volume_source module

kubernetes.client.models.v1_persistent_volume_list module

kubernetes.client.models.v1_persistent_volume_spec module

kubernetes.client.models.v1_persistent_volume_status module

kubernetes.client.models.v1_photon_persistent_disk_volume_source module

kubernetes.client.models.v1_pod module

kubernetes.client.models.v1_pod_condition module

kubernetes.client.models.v1_pod_list module

`kubernetes.client.models.v1_pod_security_context` module

`kubernetes.client.models.v1_pod_spec` module

`kubernetes.client.models.v1_pod_status` module

`kubernetes.client.models.v1_pod_template` module

`kubernetes.client.models.v1_pod_template_list` module

`kubernetes.client.models.v1_pod_template_spec` module

`kubernetes.client.models.v1_preconditions` module

`kubernetes.client.models.v1_probe` module

`kubernetes.client.models.v1_quobyte_volume_source` module

`kubernetes.client.models.v1_rbd_volume_source` module

`kubernetes.client.models.v1_replication_controller` module

`kubernetes.client.models.v1_replication_controller_condition` module

`kubernetes.client.models.v1_replication_controller_list` module

`kubernetes.client.models.v1_replication_controller_spec` module

`kubernetes.client.models.v1_replication_controller_status` module

`kubernetes.client.models.v1_resource_field_selector` module

`kubernetes.client.models.v1_resource_quota` module

`kubernetes.client.models.v1_resource_quota_list` module

`kubernetes.client.models.v1_resource_quota_spec` module

`kubernetes.client.models.v1_resource_quota_status` module

`kubernetes.client.models.v1_resource_requirements` module

`kubernetes.client.models.v1_scale` module

`kubernetes.client.models.v1_scale_spec` module

`kubernetes.client.models.v1_scale_status` module

`kubernetes.client.models.v1_se_linux_options` module

`kubernetes.client.models.v1_secret` module

`kubernetes.client.models.v1_secret_key_selector` module

`kubernetes.client.models.v1_secret_list` module

`kubernetes.client.models.v1_secret_volume_source` module

`kubernetes.client.models.v1_security_context` module

`kubernetes.client.models.v1_service` module

`kubernetes.client.models.v1_service_account` module

`kubernetes.client.models.v1_service_account_list` module

`kubernetes.client.models.v1_service_list` module

`kubernetes.client.models.v1_service_port` module

`kubernetes.client.models.v1_service_spec` module

`kubernetes.client.models.v1_service_status` module

`kubernetes.client.models.v1_tcp_socket_action` module

`kubernetes.client.models.v1_volume` module

`kubernetes.client.models.v1_volume_mount` module

`kubernetes.client.models.v1_vsphere_virtual_disk_volume_source` module

`kubernetes.client.models.v1alpha1_certificate_signing_request` module

`kubernetes.client.models.v1alpha1_certificate_signing_request_condition` module

`kubernetes.client.models.v1alpha1_certificate_signing_request_list` module

`kubernetes.client.models.v1alpha1_certificate_signing_request_spec` module

`kubernetes.client.models.v1alpha1_certificate_signing_request_status` module

`kubernetes.client.models.v1alpha1_cluster_role` module

`kubernetes.client.models.v1alpha1_cluster_role_binding` module

`kubernetes.client.models.v1alpha1_cluster_role_binding_list` module

`kubernetes.client.models.v1alpha1_cluster_role_list` module

`kubernetes.client.models.v1alpha1_policy_rule` module

`kubernetes.client.models.v1alpha1_role` module

`kubernetes.client.models.v1alpha1_role_binding` module

`kubernetes.client.models.v1alpha1_role_binding_list` module

`kubernetes.client.models.v1alpha1_role_list` module

`kubernetes.client.models.v1alpha1_role_ref` module

`kubernetes.client.models.v1alpha1_subject` module

`kubernetes.client.models.v1beta1_api_version` module

`kubernetes.client.models.v1beta1_cpu_target_utilization` module

`kubernetes.client.models.v1beta1_daemon_set` module

`kubernetes.client.models.v1beta1_daemon_set_list` module

`kubernetes.client.models.v1beta1_daemon_set_spec` module

`kubernetes.client.models.v1beta1_daemon_set_status` module

`kubernetes.client.models.v1beta1_deployment` module

`kubernetes.client.models.v1beta1_deployment_condition` module

`kubernetes.client.models.v1beta1_deployment_list` module

`kubernetes.client.models.v1beta1_deployment_rollback` module

`kubernetes.client.models.v1beta1_deployment_spec` module

`kubernetes.client.models.v1beta1_deployment_status` module

`kubernetes.client.models.v1beta1_deployment_strategy` module

`kubernetes.client.models.v1beta1_eviction` module

`kubernetes.client.models.v1beta1_horizontal_pod_autoscaler` module

`kubernetes.client.models.v1beta1_horizontal_pod_autoscaler_list` module

`kubernetes.client.models.v1beta1_horizontal_pod_autoscaler_spec` module

`kubernetes.client.models.v1beta1_horizontal_pod_autoscaler_status` module

`kubernetes.client.models.v1beta1_http_ingress_path` module

`kubernetes.client.models.v1beta1_http_ingress_rule_value` module

`kubernetes.client.models.v1beta1_ingress` module

`kubernetes.client.models.v1beta1_ingress_backend` module

`kubernetes.client.models.v1beta1_ingress_list` module

`kubernetes.client.models.v1beta1_ingress_rule` module

`kubernetes.client.models.v1beta1_ingress_spec` module

`kubernetes.client.models.v1beta1_ingress_status` module

`kubernetes.client.models.v1beta1_ingress_tls` module

`kubernetes.client.models.v1beta1_job` module

`kubernetes.client.models.v1beta1_job_condition` module

`kubernetes.client.models.v1beta1_job_list` module

`kubernetes.client.models.v1beta1_job_spec` module

`kubernetes.client.models.v1beta1_job_status` module

`kubernetes.client.models.v1beta1_local_subject_access_review` module

`kubernetes.client.models.v1beta1_network_policy` module

`kubernetes.client.models.v1beta1_network_policy_ingress_rule` module

`kubernetes.client.models.v1beta1_network_policy_list` module

`kubernetes.client.models.v1beta1_network_policy_peer` module

`kubernetes.client.models.v1beta1_network_policy_port` module

`kubernetes.client.models.v1beta1_network_policy_spec` module

`kubernetes.client.models.v1beta1_non_resource_attributes` module

`kubernetes.client.models.v1beta1_pod_disruption_budget` module

`kubernetes.client.models.v1beta1_pod_disruption_budget_list` module

`kubernetes.client.models.v1beta1_pod_disruption_budget_spec` module

`kubernetes.client.models.v1beta1_pod_disruption_budget_status` module

`kubernetes.client.models.v1beta1_replica_set` module

`kubernetes.client.models.v1beta1_replica_set_condition` module

`kubernetes.client.models.v1beta1_replica_set_list` module

`kubernetes.client.models.v1beta1_replica_set_spec` module

`kubernetes.client.models.v1beta1_replica_set_status` module

`kubernetes.client.models.v1beta1_resource_attributes` module

`kubernetes.client.models.v1beta1_rollback_config` module

`kubernetes.client.models.v1beta1_rolling_update_deployment` module

`kubernetes.client.models.v1beta1_scale` module

`kubernetes.client.models.v1beta1_scale_spec` module

`kubernetes.client.models.v1beta1_scale_status` module

`kubernetes.client.models.v1beta1_self_subject_access_review` module

`kubernetes.client.models.v1beta1_self_subject_access_review_spec` module

`kubernetes.client.models.v1beta1_stateful_set` module

`kubernetes.client.models.v1beta1_stateful_set_list` module

`kubernetes.client.models.v1beta1_stateful_set_spec` module

`kubernetes.client.models.v1beta1_stateful_set_status` module

`kubernetes.client.models.v1beta1_storage_class` module

`kubernetes.client.models.v1beta1_storage_class_list` module

`kubernetes.client.models.v1beta1_subject_access_review` module

`kubernetes.client.models.v1beta1_subject_access_review_spec` module

`kubernetes.client.models.v1beta1_subject_access_review_status` module

`kubernetes.client.models.v1beta1_subresource_reference` module

`kubernetes.client.models.v1beta1_third_party_resource` module

`kubernetes.client.models.v1beta1_third_party_resource_list` module

`kubernetes.client.models.v1beta1_token_review` module

`kubernetes.client.models.v1beta1_token_review_spec` module

`kubernetes.client.models.v1beta1_token_review_status` module

`kubernetes.client.models.v1beta1_user_info` module

`kubernetes.client.models.v2alpha1_cron_job` module

`kubernetes.client.models.v2alpha1_cron_job_list` module

`kubernetes.client.models.v2alpha1_cron_job_spec` module

`kubernetes.client.models.v2alpha1_cron_job_status` module

`kubernetes.client.models.v2alpha1_job` module

`kubernetes.client.models.v2alpha1_job_condition` module

`kubernetes.client.models.v2alpha1_job_list` module

`kubernetes.client.models.v2alpha1_job_spec` module

`kubernetes.client.models.v2alpha1_job_status` module

`kubernetes.client.models.v2alpha1_job_template_spec` module

`kubernetes.client.models.version_info` module

`kubernetes.client.models.versioned_event` module

Module contents

Submodules

`kubernetes.client.api_client` module

`kubernetes.client.configuration` module

`kubernetes.client.rest` module

Module contents

`kubernetes.config` package

Submodules

`kubernetes.config.config_exception` module

`kubernetes.config.incluster_config` module

`kubernetes.config.incluster_config_test` module

`kubernetes.config.kube_config` module

`kubernetes.config.kube_config_test` module

Module contents

`kubernetes.test` package

Submodules

`kubernetes.test.test_apis_api` module

`kubernetes.test.test_apps_api` module

`kubernetes.test.test_apps_v1beta1_api` module

kubernetes.test.test_authentication_api module

kubernetes.test.test_authentication_v1beta1_api module

kubernetes.test.test_authorization_api module

kubernetes.test.test_authorization_v1beta1_api module

kubernetes.test.test_autoscaling_api module

kubernetes.test.test_autoscaling_v1_api module

kubernetes.test.test_batch_api module

kubernetes.test.test_batch_v1_api module

kubernetes.test.test_batch_v2alpha1_api module

kubernetes.test.test_certificates_api module

kubernetes.test.test_certificates_v1alpha1_api module

kubernetes.test.test_core_api module

kubernetes.test.test_core_v1_api module

kubernetes.test.test_extensions_api module

kubernetes.test.test_extensions_v1beta1_api module

kubernetes.test.test_intstr_int_or_string module

kubernetes.test.test_logs_api module

kubernetes.test.test_policy_api module

kubernetes.test.test_policy_v1beta1_api module

kubernetes.test.test_rbac_authorization_api module

kubernetes.test.test_rbac_authorization_v1alpha1_api module

kubernetes.test.test_resource_quantity module

kubernetes.test.test_runtime_raw_extension module

kubernetes.test.test_storage_api module

kubernetes.test.test_storage_v1beta1_api module

kubernetes.test.test_unversioned_api_group module

kubernetes.test.test_unversioned_api_group_list module

kubernetes.test.test_unversioned_api_resource module

kubernetes.test.test_unversioned_api_resource_list module

kubernetes.test.test_unversioned_api_versions module

kubernetes.test.test_unversioned_group_version_for_discovery module

kubernetes.test.test_unversioned_label_selector module

kubernetes.test.test_unversioned_label_selector_requirement module

kubernetes.test.test_unversioned_list_meta module

kubernetes.test.test_unversioned_server_address_by_client_cidr module

kubernetes.test.test_unversioned_status module

kubernetes.test.test_unversioned_status_cause module

kubernetes.test.test_unversioned_status_details module

kubernetes.test.test_unversioned_time module

kubernetes.test.test_v1_attached_volume module

kubernetes.test.test_v1_aws_elastic_block_store_volume_source module

kubernetes.test.test_v1_azure_disk_volume_source module

kubernetes.test.test_v1_azure_file_volume_source module

kubernetes.test.test_v1_binding module

kubernetes.test.test_v1_capabilities module

kubernetes.test.test_v1_ceph_fs_volume_source module

kubernetes.test.test_v1_cinder_volume_source module

kubernetes.test.test_v1_component_condition module

kubernetes.test.test_v1_component_status module

kubernetes.test.test_v1_component_status_list module

kubernetes.test.test_v1_config_map module

kubernetes.test.test_v1_config_map_key_selector module

kubernetes.test.test_v1_config_map_list module

kubernetes.test.test_v1_config_map_volume_source module

kubernetes.test.test_v1_container module

kubernetes.test.test_v1_container_image module

kubernetes.test.test_v1_container_port module

kubernetes.test.test_v1_container_state module

kubernetes.test.test_v1_container_state_running module

kubernetes.test.test_v1_container_state_terminated module

kubernetes.test.test_v1_container_state_waiting module

kubernetes.test.test_v1_container_status module

kubernetes.test.test_v1_cross_version_object_reference module

kubernetes.test.test_v1_daemon_endpoint module

kubernetes.test.test_v1_delete_options module

kubernetes.test.test_v1_downward_api_volume_file module

kubernetes.test.test_v1_downward_api_volume_source module

kubernetes.test.test_v1_empty_dir_volume_source module

kubernetes.test.test_v1_endpoint_address module

kubernetes.test.test_v1_endpoint_port module

kubernetes.test.test_v1_endpoint_subset module

kubernetes.test.test_v1_endpoints module

kubernetes.test.test_v1_endpoints_list module

kubernetes.test.test_v1_env_var module

kubernetes.test.test_v1_env_var_source module

kubernetes.test.test_v1_event module

kubernetes.test.test_v1_event_list module

kubernetes.test.test_v1_event_source module

kubernetes.test.test_v1_exec_action module

kubernetes.test.test_v1_fc_volume_source module

kubernetes.test.test_v1_flex_volume_source module

kubernetes.test.test_v1_flocker_volume_source module

kubernetes.test.test_v1_gce_persistent_disk_volume_source module

kubernetes.test.test_v1_git_repo_volume_source module

kubernetes.test.test_v1_glusterfs_volume_source module

kubernetes.test.test_v1_handler module

kubernetes.test.test_v1_horizontal_pod_autoscaler module

kubernetes.test.test_v1_horizontal_pod_autoscaler_list module

kubernetes.test.test_v1_horizontal_pod_autoscaler_spec module

kubernetes.test.test_v1_horizontal_pod_autoscaler_status module

kubernetes.test.test_v1_host_path_volume_source module

kubernetes.test.test_v1_http_get_action module

kubernetes.test.test_v1_http_header module

kubernetes.test.test_v1_iscsi_volume_source module

kubernetes.test.test_v1_job module

kubernetes.test.test_v1_job_condition module

kubernetes.test.test_v1_job_list module

kubernetes.test.test_v1_job_spec module

kubernetes.test.test_v1_job_status module

kubernetes.test.test_v1_key_to_path module

kubernetes.test.test_v1_lifecycle module

kubernetes.test.test_v1_limit_range module

kubernetes.test.test_v1_limit_range_item module

kubernetes.test.test_v1_limit_range_list module

kubernetes.test.test_v1_limit_range_spec module

kubernetes.test.test_v1_load_balancer_ingress module

kubernetes.test.test_v1_load_balancer_status module

kubernetes.test.test_v1_local_object_reference module

kubernetes.test.test_v1_namespace module

kubernetes.test.test_v1_namespace_list module

kubernetes.test.test_v1_namespace_spec module

kubernetes.test.test_v1_namespace_status module

kubernetes.test.test_v1_nfs_volume_source module

kubernetes.test.test_v1_node module

kubernetes.test.test_v1_node_address module

kubernetes.test.test_v1_node_condition module

kubernetes.test.test_v1_node_daemon_endpoints module

kubernetes.test.test_v1_node_list module

kubernetes.test.test_v1_node_spec module

kubernetes.test.test_v1_node_status module

kubernetes.test.test_v1_node_system_info module

kubernetes.test.test_v1_object_field_selector module

kubernetes.test.test_v1_object_meta module

kubernetes.test.test_v1_object_reference module

kubernetes.test.test_v1_owner_reference module

kubernetes.test.test_v1_persistent_volume module

kubernetes.test.test_v1_persistent_volume_claim module

kubernetes.test.test_v1_persistent_volume_claim_list module

kubernetes.test.test_v1_persistent_volume_claim_spec module

kubernetes.test.test_v1_persistent_volume_claim_status module

kubernetes.test.test_v1_persistent_volume_claim_volume_source module

kubernetes.test.test_v1_persistent_volume_list module

kubernetes.test.test_v1_persistent_volume_spec module

kubernetes.test.test_v1_persistent_volume_status module

kubernetes.test.test_v1_photon_persistent_disk_volume_source module

kubernetes.test.test_v1_pod module

kubernetes.test.test_v1_pod_condition module

kubernetes.test.test_v1_pod_list module

kubernetes.test.test_v1_pod_security_context module

kubernetes.test.test_v1_pod_spec module

kubernetes.test.test_v1_pod_status module

kubernetes.test.test_v1_pod_template module

kubernetes.test.test_v1_pod_template_list module

kubernetes.test.test_v1_pod_template_spec module

kubernetes.test.test_v1_preconditions module

kubernetes.test.test_v1_probe module

kubernetes.test.test_v1_quobyte_volume_source module

kubernetes.test.test_v1_rbd_volume_source module

kubernetes.test.test_v1_replication_controller module

kubernetes.test.test_v1_replication_controller_condition module

kubernetes.test.test_v1_replication_controller_list module

kubernetes.test.test_v1_replication_controller_spec module

kubernetes.test.test_v1_replication_controller_status module

kubernetes.test.test_v1_resource_field_selector module

kubernetes.test.test_v1_resource_quota module

kubernetes.test.test_v1_resource_quota_list module

kubernetes.test.test_v1_resource_quota_spec module

kubernetes.test.test_v1_resource_quota_status module

kubernetes.test.test_v1_resource_requirements module

kubernetes.test.test_v1_scale module

kubernetes.test.test_v1_scale_spec module

kubernetes.test.test_v1_scale_status module

kubernetes.test.test_v1_se_linux_options module

kubernetes.test.test_v1_secret module

kubernetes.test.test_v1_secret_key_selector module

kubernetes.test.test_v1_secret_list module

kubernetes.test.test_v1_secret_volume_source module

kubernetes.test.test_v1_security_context module

kubernetes.test.test_v1_service module

kubernetes.test.test_v1_service_account module

kubernetes.test.test_v1_service_account_list module

kubernetes.test.test_v1_service_list module

kubernetes.test.test_v1_service_port module

kubernetes.test.test_v1_service_spec module

kubernetes.test.test_v1_service_status module

kubernetes.test.test_v1_tcp_socket_action module

kubernetes.test.test_v1_volume module

kubernetes.test.test_v1_volume_mount module

kubernetes.test.test_v1_vsphere_virtual_disk_volume_source module

kubernetes.test.test_v1alpha1_certificate_signing_request module

kubernetes.test.test_v1alpha1_certificate_signing_request_condition module

kubernetes.test.test_v1alpha1_certificate_signing_request_list module

kubernetes.test.test_v1alpha1_certificate_signing_request_spec module

kubernetes.test.test_v1alpha1_certificate_signing_request_status module

kubernetes.test.test_v1alpha1_cluster_role module

kubernetes.test.test_v1alpha1_cluster_role_binding module

kubernetes.test.test_v1alpha1_cluster_role_binding_list module

kubernetes.test.test_v1alpha1_cluster_role_list module

kubernetes.test.test_v1alpha1_policy_rule module

kubernetes.test.test_v1alpha1_role module

kubernetes.test.test_v1alpha1_role_binding module

kubernetes.test.test_v1alpha1_role_binding_list module

kubernetes.test.test_v1alpha1_role_list module

kubernetes.test.test_v1alpha1_role_ref module

kubernetes.test.test_v1alpha1_subject module

kubernetes.test.test_v1beta1_api_version module

kubernetes.test.test_v1beta1_cpu_target_utilization module

kubernetes.test.test_v1beta1_daemon_set module

kubernetes.test.test_v1beta1_daemon_set_list module

kubernetes.test.test_v1beta1_daemon_set_spec module

kubernetes.test.test_v1beta1_daemon_set_status module

kubernetes.test.test_v1beta1_deployment module

kubernetes.test.test_v1beta1_deployment_condition module

kubernetes.test.test_v1beta1_deployment_list module

kubernetes.test.test_v1beta1_deployment_rollback module

kubernetes.test.test_v1beta1_deployment_spec module

kubernetes.test.test_v1beta1_deployment_status module

kubernetes.test.test_v1beta1_deployment_strategy module

kubernetes.test.test_v1beta1_eviction module

kubernetes.test.test_v1beta1_horizontal_pod_autoscaler module

kubernetes.test.test_v1beta1_horizontal_pod_autoscaler_list module

kubernetes.test.test_v1beta1_horizontal_pod_autoscaler_spec module

kubernetes.test.test_v1beta1_horizontal_pod_autoscaler_status module

kubernetes.test.test_v1beta1_http_ingress_path module

kubernetes.test.test_v1beta1_http_ingress_rule_value module

kubernetes.test.test_v1beta1_ingress module

kubernetes.test.test_v1beta1_ingress_backend module

kubernetes.test.test_v1beta1_ingress_list module

kubernetes.test.test_v1beta1_ingress_rule module

kubernetes.test.test_v1beta1_ingress_spec module

kubernetes.test.test_v1beta1_ingress_status module

kubernetes.test.test_v1beta1_ingress_tls module

kubernetes.test.test_v1beta1_job module

kubernetes.test.test_v1beta1_job_condition module

kubernetes.test.test_v1beta1_job_list module

kubernetes.test.test_v1beta1_job_spec module

kubernetes.test.test_v1beta1_job_status module

kubernetes.test.test_v1beta1_local_subject_access_review module

kubernetes.test.test_v1beta1_network_policy module

kubernetes.test.test_v1beta1_network_policy_ingress_rule module

kubernetes.test.test_v1beta1_network_policy_list module

kubernetes.test.test_v1beta1_network_policy_peer module

kubernetes.test.test_v1beta1_network_policy_port module

kubernetes.test.test_v1beta1_network_policy_spec module

kubernetes.test.test_v1beta1_non_resource_attributes module

kubernetes.test.test_v1beta1_pod_disruption_budget module

kubernetes.test.test_v1beta1_pod_disruption_budget_list module

kubernetes.test.test_v1beta1_pod_disruption_budget_spec module

kubernetes.test.test_v1beta1_pod_disruption_budget_status module

kubernetes.test.test_v1beta1_replica_set module

kubernetes.test.test_v1beta1_replica_set_condition module

kubernetes.test.test_v1beta1_replica_set_list module

kubernetes.test.test_v1beta1_replica_set_spec module

kubernetes.test.test_v1beta1_replica_set_status module

kubernetes.test.test_v1beta1_resource_attributes module

kubernetes.test.test_v1beta1_rollback_config module

kubernetes.test.test_v1beta1_rolling_update_deployment module

kubernetes.test.test_v1beta1_scale module

kubernetes.test.test_v1beta1_scale_spec module

kubernetes.test.test_v1beta1_scale_status module

kubernetes.test.test_v1beta1_self_subject_access_review module

kubernetes.test.test_v1beta1_self_subject_access_review_spec module

kubernetes.test.test_v1beta1_stateful_set module

kubernetes.test.test_v1beta1_stateful_set_list module

kubernetes.test.test_v1beta1_stateful_set_spec module

kubernetes.test.test_v1beta1_stateful_set_status module

kubernetes.test.test_v1beta1_storage_class module

kubernetes.test.test_v1beta1_storage_class_list module

kubernetes.test.test_v1beta1_subject_access_review module

kubernetes.test.test_v1beta1_subject_access_review_spec module

kubernetes.test.test_v1beta1_subject_access_review_status module

kubernetes.test.test_v1beta1_subresource_reference module

kubernetes.test.test_v1beta1_third_party_resource module

kubernetes.test.test_v1beta1_third_party_resource_list module

kubernetes.test.test_v1beta1_token_review module

kubernetes.test.test_v1beta1_token_review_spec module

kubernetes.test.test_v1beta1_token_review_status module

kubernetes.test.test_v1beta1_user_info module

kubernetes.test.test_v2alpha1_cron_job module

kubernetes.test.test_v2alpha1_cron_job_list module

kubernetes.test.test_v2alpha1_cron_job_spec module

kubernetes.test.test_v2alpha1_cron_job_status module

kubernetes.test.test_v2alpha1_job module

kubernetes.test.test_v2alpha1_job_condition module

kubernetes.test.test_v2alpha1_job_list module

kubernetes.test.test_v2alpha1_job_spec module

`kubernetes.test.test_v2alpha1_job_status` module

`kubernetes.test.test_v2alpha1_job_template_spec` module

`kubernetes.test.test_version_api` module

`kubernetes.test.test_version_info` module

`kubernetes.test.test_versioned_event` module

Module contents

`kubernetes.watch` package

Submodules

`kubernetes.watch.watch` module

`kubernetes.watch.watch_test` module

Module contents

4.1.2 Module contents

5.1 How to become a contributor and submit your own code

5.1.1 Contributor License Agreements

We'd love to accept your patches! Before we can take them, we have to jump a couple of legal hurdles.

Please fill out either the individual or corporate Contributor License Agreement (CLA).

- If you are an individual writing original source code and you're sure you own the intellectual property, then you'll need to sign an [individual CLA](#).
- If you work for a company that wants to allow you to contribute your work, then you'll need to sign a [corporate CLA](#).

Follow either of the two links above to access the appropriate CLA and instructions for how to sign and return it. Once we receive it, we'll be able to accept your pull requests.

5.2 Composition of This Repository and Where/How to Contribute

The Kubernetes Python client consists of this main repository (repo) and the base repo, the [python-base](#) repository. The main repository contains mostly files that are generated by the OpenAPI generator from [this OpenAPI spec](#). The base repo is the utility part of the python client and allows developers to create their own kubernetes clients. The base repo is a submodule of the main repo.

5.2.1 Where to Submit Your Patch

The following folders are automatically generated. You will need to submit a patch to the upstream Kubernetes repo [kubernetes](#) or the OpenAPI generator repo [openapi-generator](#).

- [kubernetes/client](#)

- [kubernetes/test](#)
- [kubernetes/docs](#).

In this main repo, the following folders contain developer written codes and the patches should be submitted as pull requests here:

- [kubernetes/e2e_test](#)
- [kubernetes/utils](#)
- [examples](#)
- [scripts](#).

The following folders and symbolic links in this main repo are in fact from the base repo. The base repo contains developer written codes only. The patches should be sent to the base repo instead:

- [kubernetes/base](#)
- [kubernetes/config](#)
- [kubernetes/stream](#)
- [kubernetes/watch](#).

5.2.2 Contributing A Patch

1. Submit an issue describing your proposed change to the repo in question.
2. The [repo owners](#) will respond to your issue promptly.
3. If your proposed change is accepted, and you haven't already done so, sign a Contributor License Agreement (see details above).
4. Fork the desired repo, develop and test your code changes. Add a test if possible.
5. Submit a pull request.

5.2.3 Adding Dependencies

If your patch depends on new packages, add those packages to [requirements.txt](#) and/or [setup.py](#). If these package are for testing only, add those to [test-requirements.txt](#).

5.2.4 Commits

Generally we would like to see one commit per pull request. However, if the pull request is reasonably large, the PR can be divided into several commits that make logical sense. The commit message should be clear and indicative of the aim of the fix. Sometimes multiple commits in a single pull request is acceptable if it meets the [Kubernetes pull request guidelines](#).

If you have several commits in a pull request and have been asked to squash your commits, please use `git reset --soft HEAD~N_COMMITS` and commit again to make your PR a single commit.

5.2.5 Windows Developers

The symbolic links contained in this repo do not work for Windows operating systems. If you are a Windows developer, please run the [fix](#) inside the [scripts](#) folder or manually copy the content of the [kubernetes/base](#) folder into the [kubernetes](#) folder.

5.2.6 Writing Tests

In addition to running the fix yourself and telling us that your fix works, you can demonstrate that your fix really works by using unit tests and end to end tests. Tests are mainly located in three places. You should put your tests into the places that they fit in.

1. **Generated tests** by OpenAPI generator: these tests should pass and do not require modification.
2. **End to end tests**: these are tests that can only be verified with a live kubernetes server.
3. **Base repo tests** in the `base` repo, in which the test files are named `test_*.py`: These tests use the package `Mock` and confirms the functionality of the base repo files.

5.2.7 Coding Style

We use an automatic coding style checker by using the `diff` of the `autopep8` output and your code file. To make sure that your code passes the coding style checker, run `autopep8 --in-place --aggressive --aggressive your_code.py` before committing and submitting.

5.3 Running Tests Locally

If you write a new end to end (e2e) test, or change behaviors that affect e2e tests, you should set up a local cluster and test them on your machine. The following steps will help you run the unit tests.

1. Acquire a local cluster. `Minikube` is a good choice for Windows and Linux developers. Alternatively if you are on Linux, you can clone the `kubernetes` repo and run `install-etcd.sh` and then `local-up-cluster.sh` to get a local cluster up and running.
2. Run the unit tests. In the root directory of the main repo, run `python -m unittest discover`.
3. Check the test results and make corresponding fixes.

5.4 Update the Base Submodule in the Main Repo After Your python-base PR Is Merged

Your contribution to the base repo will not be automatically reflected in the main repo after your PR is merged. Instead, please update the `base` submodule in your fork of the main repo as follows:

```
$ git submodule update --remote
```

You may now add a release note to `CHANGELOG.md` if needed and then commit and push to your fork. You can now send a PR to this main repo to complete your contribution.

CHAPTER 6

Indices and tables

- `genindex`
- `modindex`
- `search`