

CheatSheet: Kubernetes Cluster API

CLOUD

- PDF Link: [cheatsheet-clusterapi-A4.pdf](#), Category: Cloud
- Blog URL: <https://cheatsheet.dennyzhang.com/cheatsheet-clusterapi-A4>
- Related posts: [Kubernetes Yaml](#), [Kubectl CheatSheet](#), [#denny-cheatsheets](#)

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1.1 Cluster API - Basic

Name	Summary
Cluster API Project Milestone	v1alpha1(Due by 03/29/2019)
Key Initiatives	Declarative infra; CRD design model; Resource LCM
CAL (cloud abstraction layer)	
Bootstrap cluster	minikube by default
Machine Object	Machine CRD
Cluster Object	
clusterctl	GitHub: cluster-api/cmd/clusterctl , Might be merged into kubectl directly
Demo	Video: vSphere Cluster-API provider: self-service

1.2 Concepts

Core Kubernetes	Cluster API
Pod	Machine
ReplicaSet	MachineSet
Deployment	MachineDeployment

1.3 Components

Name	Summary
API Spec	Link: Kubernetes Cluster Management API
provider-components.yaml	
cluster.yaml	
machines.yaml	
addons.yaml	
2 pods in guest k8s clusters	cluster api controller, cloud provider controller
Reference	GitHub: kubernetes-sigs/cluster-api

1.4 Commands

Name	Summary
Deploy a k8s cluster	<code>clusterctl create cluster -p provider-components.yaml -c cluster.yaml -m machine</code>
Delete a k8s cluster	<code>clusterctl delete cluster --kubeconfig=kubeconfig -p provider-components.yaml --</code>
List all kind clusters	<code>kind get clusters</code>
Delete kind cluster	<code>kind delete cluster --name clusterapi</code>
Create kind cluster	<code>kind create cluster --name clusterapi</code>
SSH to K8S master/worker vm	<code>ssh -i /root/.ssh/vsphere_tmp ubuntu@\$vm_ip</code>
kubeconfig in new k8s clusters	<code>/etc/kubernetes/admin.conf</code> in master VM

1.5 Cluster API Providers - vsphere

Name	Summary
Check controller log	<code>kubectl logs -n vsphere-provider-system vsphere-provider-controller-manager-0 -f</code>
Vsphere	GitHub: Vsphere Example Files

1.6 Cluster API Related Works

Name	Summary
SAP gardener	
Gardener with cluster api	GitHub Issue: Adopt Cluster API Spec

1.7 clusterctl cli Online Help

```
> go/src/sigs.k8s.io/cluster-api-provider-gcp > ./bin/clusterctl create cluster --help
```

```
I0311 17:25:43.924329 50076 machineactuator.go:811] Using the default GCP client
Create a kubernetes cluster with one command
```

Usage:

```
clusterctl create cluster [flags]
```

Flags:

-a, --addon-components string	A yaml file containing cluster addons to apply to the internal
--bootstrap-cluster-cleanup	Whether to cleanup the bootstrap cluster after bootstrap. (default false)
-e, --bootstrap-cluster-kubeconfig string	Sets the bootstrap cluster to be an existing Kubernetes cluster
--bootstrap-flags strings	Command line flags to be passed to the chosen bootstrapper
--bootstrap-type string	The cluster bootstrapper to use. (default "none")
-c, --cluster string	A yaml file containing cluster object definition. Required.
-h, --help	help for cluster
--kubeconfig-out string	Where to output the kubeconfig for the provisioned cluster (default "")
-m, --machines string	A yaml file containing machine object definition(s). Required.
--provider string	Which provider deployment logic to use (google/vsphere/azure).
-p, --provider-components string	A yaml file containing cluster api provider controllers and suppliers

Global Flags:

--alsologtostderr	log to standard error as well as files
--kubeconfig string	Paths to a kubeconfig. Only required if out-of-cluster.
--log-flush-frequency duration	Maximum number of seconds between log flushes (default 5s)
--log_backtrace_at traceLocation	when logging hits line file:N, emit a stack trace (default :0)
--log_dir string	If non-empty, write log files in this directory
--log_file string	If non-empty, use this log file
--logtostderr	log to standard error instead of files (default true)
--master string	The address of the Kubernetes API server. Overrides any value in kubeconfig
--skip_headers	If true, avoid header prefixes in the log messages
--stderrthreshold severity	logs at or above this threshold go to stderr
-v, --v Level	number for the log level verbosity
--vmodule moduleSpec	comma-separated list of pattern=N settings for file-filtered logging

1.8 More Resources

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