# 1 CheatSheet: Kubernetes Cluster API

CLOUD

Updated: May 8, 2019

- PDF Link: cheatsheet-clusterapi-A4.pdf, Category: Cloud
- Blog URL: https://cheatsheet.dennyzhang.com/cheatsheet-clusterapi-A4
- $\bullet$ Related posts: Kubernetes Yaml, Kubectl CheatSheet, #denny-cheatsheets

File me Issues or star this repo.

# 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)	
Boostrap 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 Clsuter-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	clusterctl create cluster -p provider-components.yaml -c cluster.yaml -m machine
Delete a k8s cluster	clusterctl delete clusterkubeconfig=kubeconfig -p provider-components.yaml
List all kind clusters	kind get clusters
Delete kind cluster	kind delete clustername clusterapi
Create kind clusrer	kind create clustername clusterapi
SSH to K8S master/worker vm	ssh -i /root/.ssh/vsphere_tmp ubuntu@\$vm_ip
kubeconfig in new k8s clusters	/etc/kubernetes/admin.conf in master VM

# 1.5 Cluster API Providers - vsphere

Name	Summary
Check controller log	kubectl logs -n vsphere-provider-system vsphere-provider-controller-manager-0 -f
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

## clusterctl cli Online Help

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

50076 machineactuator.go:811] Using the default GCP client I0311 17:25:43.924329 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. (defa
-е,	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 (def
-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 sup

### Global Flags:

alsolog	tostderr	log to standard error as well as files
kubecon	fig string	Paths to a kubeconfig. Only required if out-of-cluster.
log-flu	sh-frequency duration	Maximum number of seconds between log flushes (default 5s)
log_bac	ktrace_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	e string	If non-empty, use this log file
logtost	derr	log to standard error instead of files (default true)
master	string	The address of the Kubernetes API server. Overrides any value in kub
skip_he	aders	If true, avoid header prefixes in the log messages
stderrt	hreshold 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

### More Resources

License: Code is licensed under MIT License.

Updated: May 8, 2019