1 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)	
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 cluster --kubeconfig=kubeconfig -p provider-components.yaml --`
List all kind clusters	`kind get clusters`
Delete kind cluster	`kind delete cluster --name clusterapi`
Create kind clusrer	`kind create cluster --name 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

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. (defa
  -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 (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:
      --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 kub
      --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