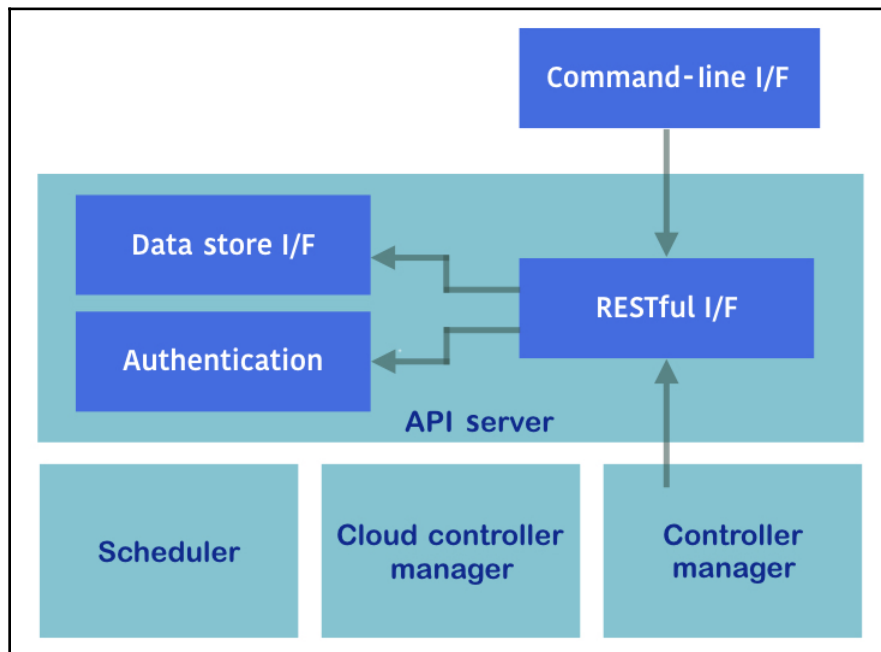
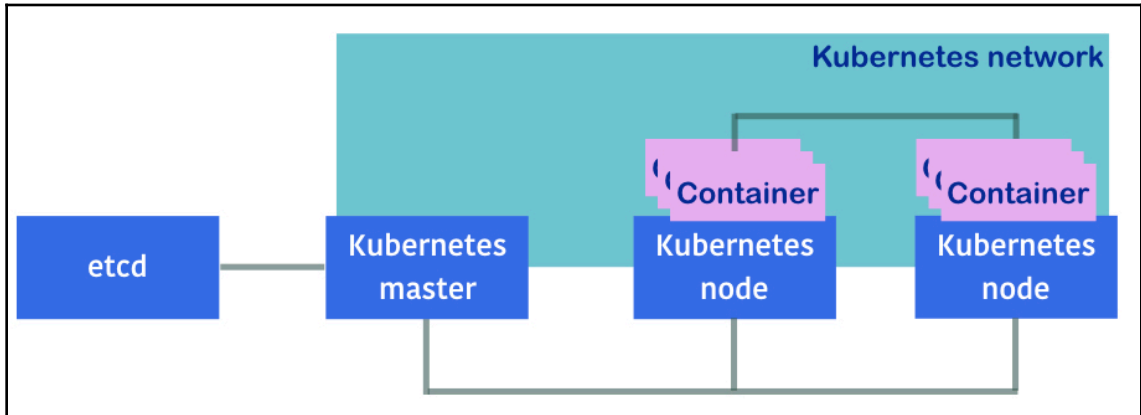
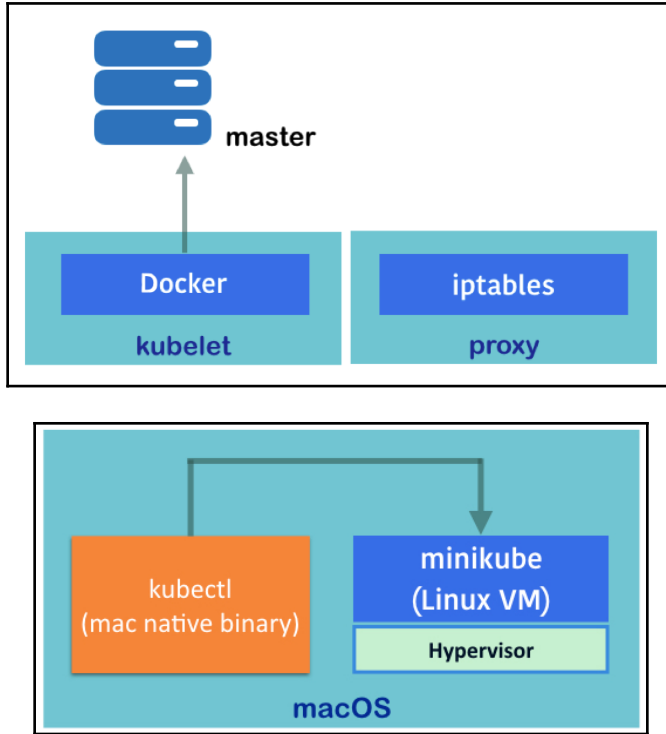


Chapter 01: Building Your Own Kubernetes Cluster





```

$ minikube dashboard
Opening kubernetes dashboard in default browser...
$

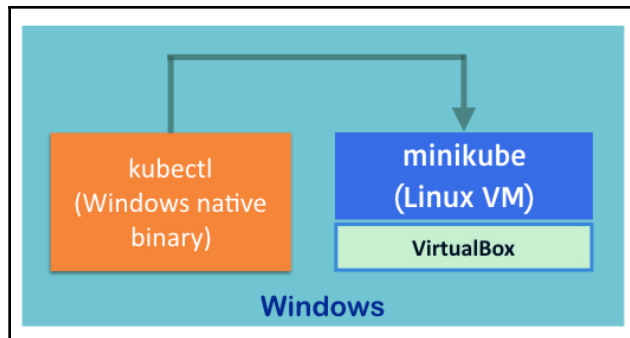
```

The screenshot shows the Kubernetes Dashboard interface. The 'Services' table contains the following data:

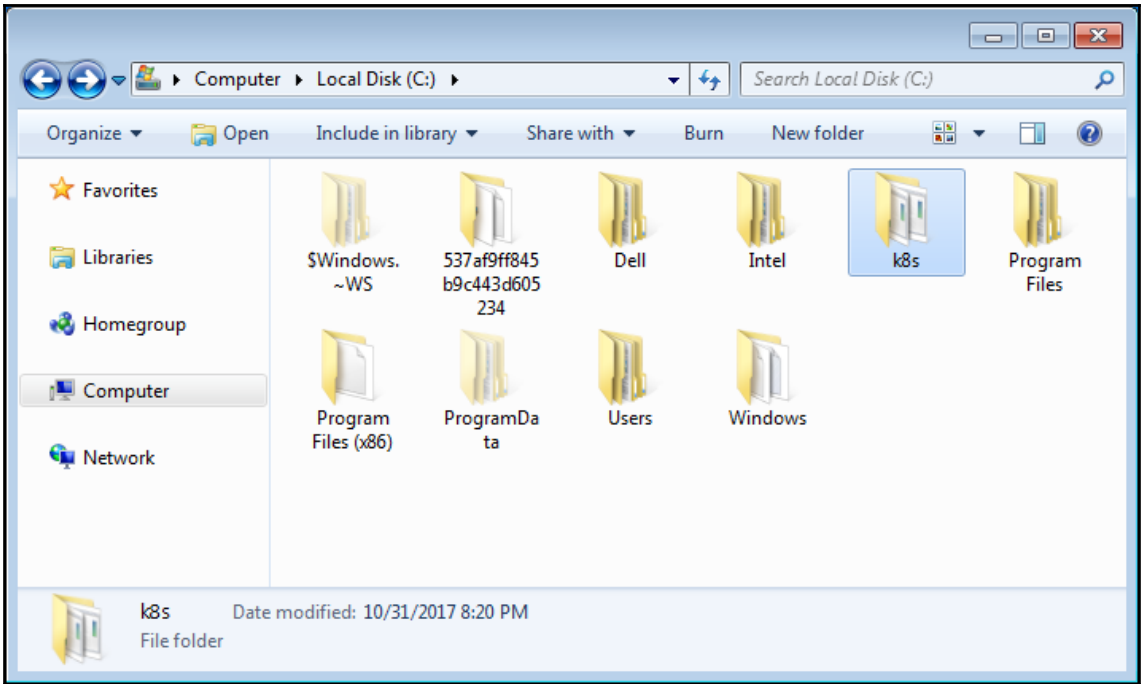
Name	Labels	Cluster IP	Internal endpoints	External endpoints	Age
kubernetes	component: ... provider: ku...	10.0.0.1	kubernetes:44: kubernetes:0 T	-	6 minutes

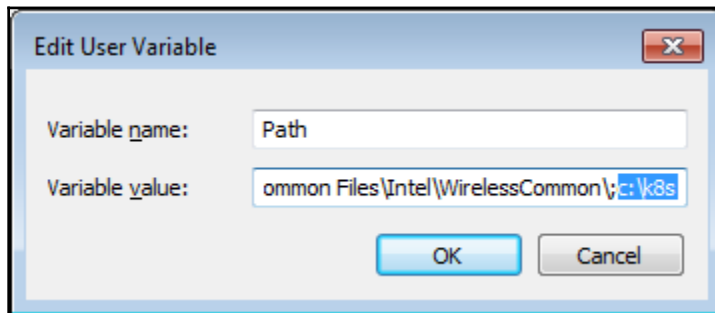
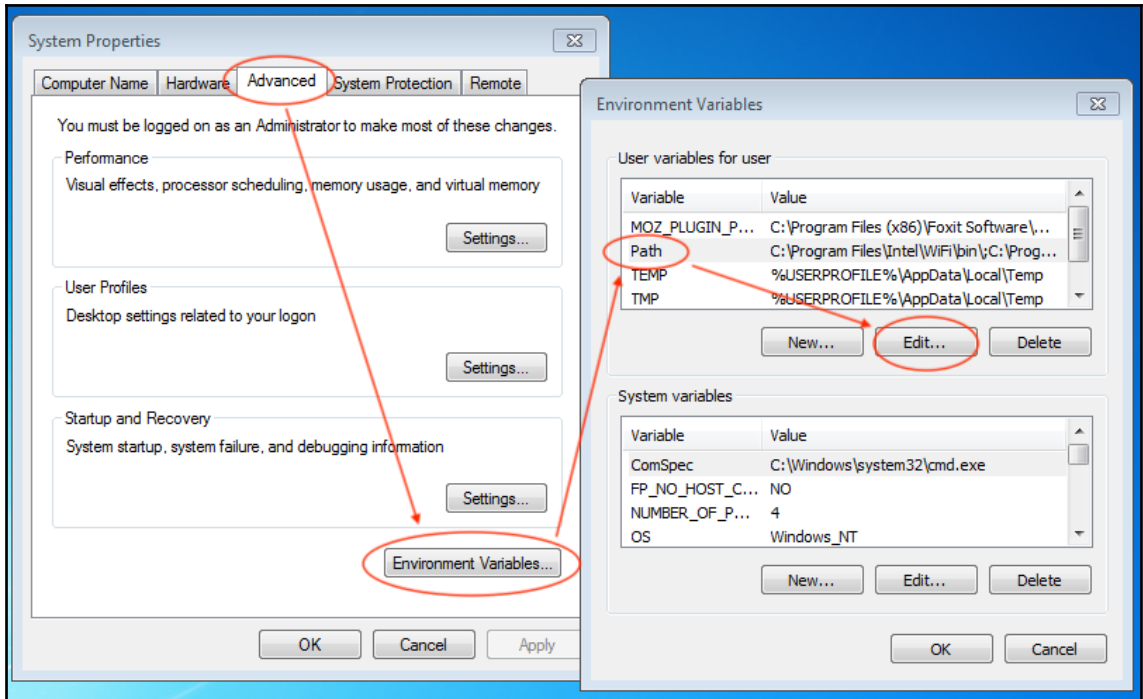
The 'Secrets' table contains the following data:

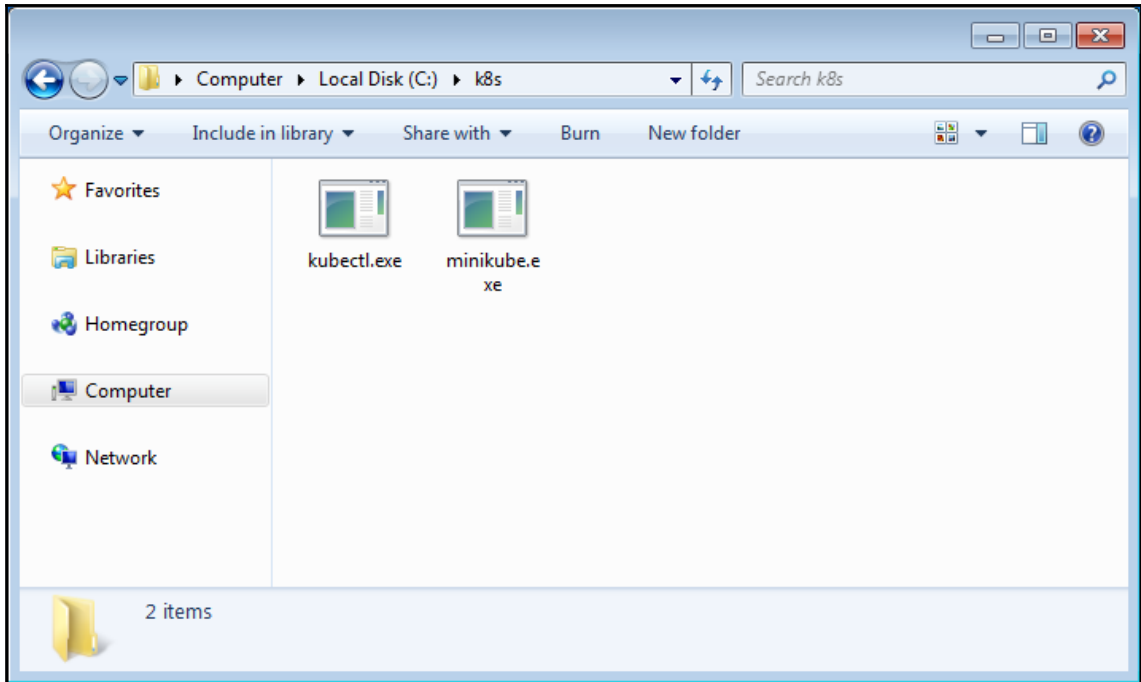
Name	Type	Age
default-token-wddrm	kubernetes.io/service-account-token	6 minutes





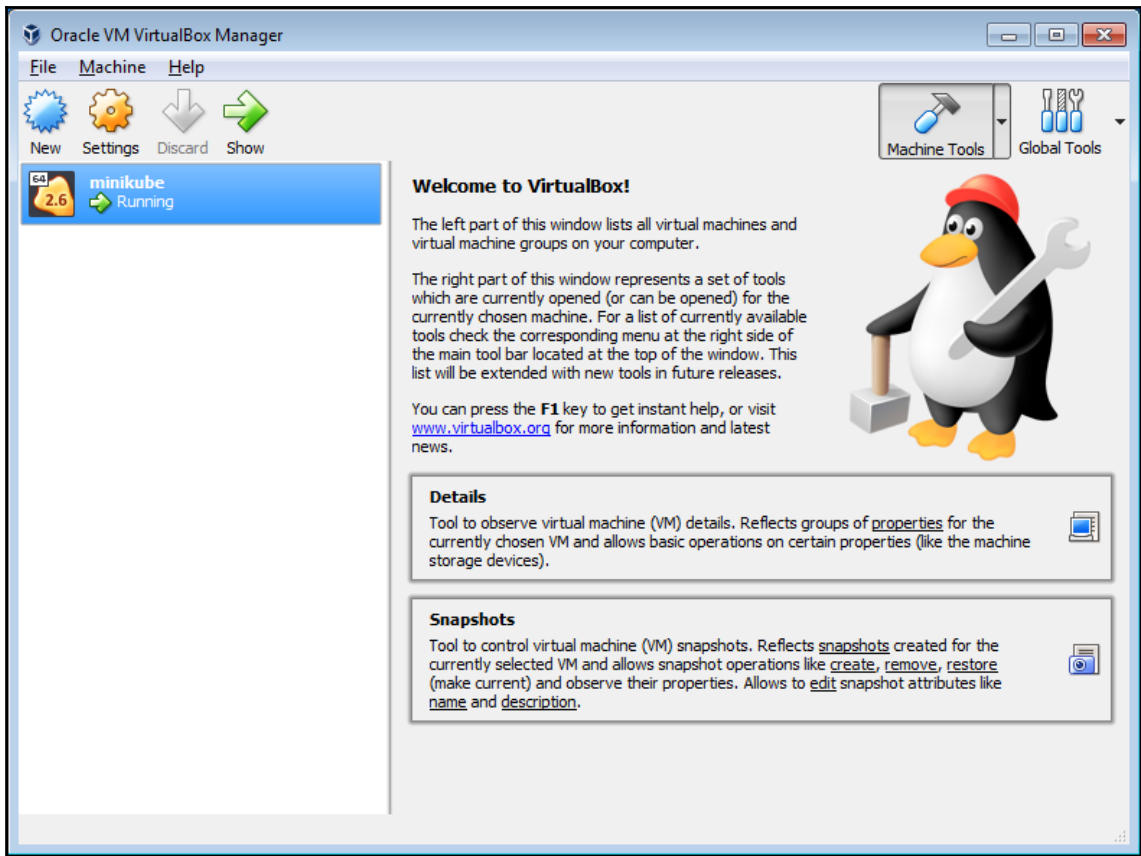






```
Command Prompt
c:\>minikube start
Starting local Kubernetes v1.10.0 cluster...
Starting VM...
Downloading Minikube ISO
 150.53 MB / 150.53 MB [=====] 100.00% 0s
Getting VM IP address...
Moving files into cluster...
Downloading kubelet v1.10.0
Downloading kubeadm v1.10.0
Finished Downloading kubeadm v1.10.0
Finished Downloading kubelet v1.10.0
Setting up certs...
Connecting to cluster...
Setting up kubeconfig...
Starting cluster components...
Kubectl is now configured to use the cluster.
Loading cached images from config file.

c:\>
```




```
Command Prompt
c:\>kubectl version --short
Client Version: v1.10.2
Server Version: v1.10.0

c:\>kubectl get nodes
NAME          STATUS    ROLES    AGE   VERSION
minikube     Ready    master   1m   v1.10.0

c:\>
```

```
Command Prompt
c:\>ver
Microsoft Windows [Version 6.1.7601]

c:\>minikube ssh

  ____  _  /_  /_  /_  /_  /_  /_  /_  /_  /_  /_  /_  /_  /_  /_  /_  /_  /_  /_  /_  /_
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$ uname -a
Linux minikube 4.9.64 #1 SMP Fri Mar 30 21:27:22 UTC 2018 x86_64 GNU/Linux
$ exit
logout
c:\>
```

Command Prompt

```
C:\Users\user>minikube ip
192.168.99.100

C:\Users\user>minikube dashboard
Opening kubernetes dashboard in default browser...

C:\Users\user>
```

Kubernetes Dashboard

Nodes - Kubernetes Dasl x

192.168.99.100:30000/#/node?namespace=default

kubernetes

Cluster > Nodes

Cluster

- Namespaces
- Nodes**
- Persistent Volumes
- Roles
- Storage Classes

Namespace

default

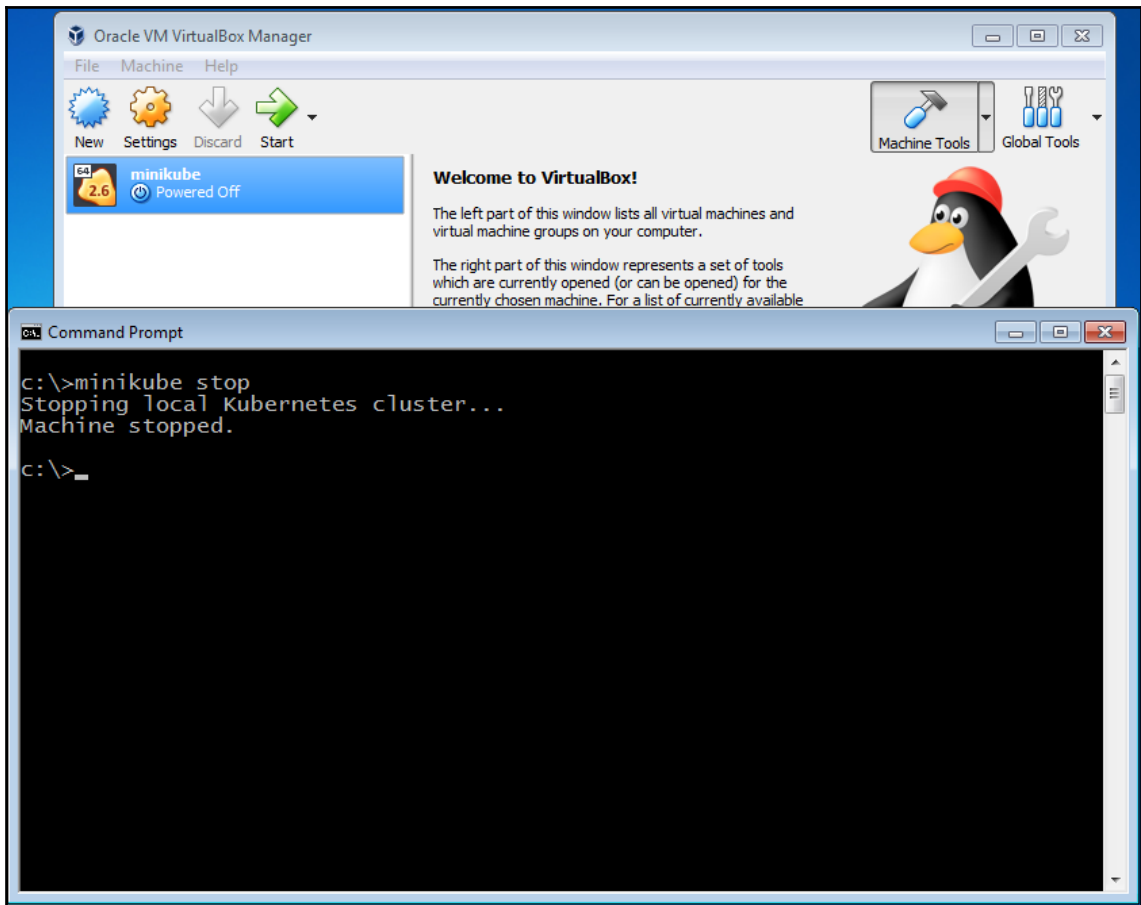
Overview

Workloads

Daemon Sets

Nodes

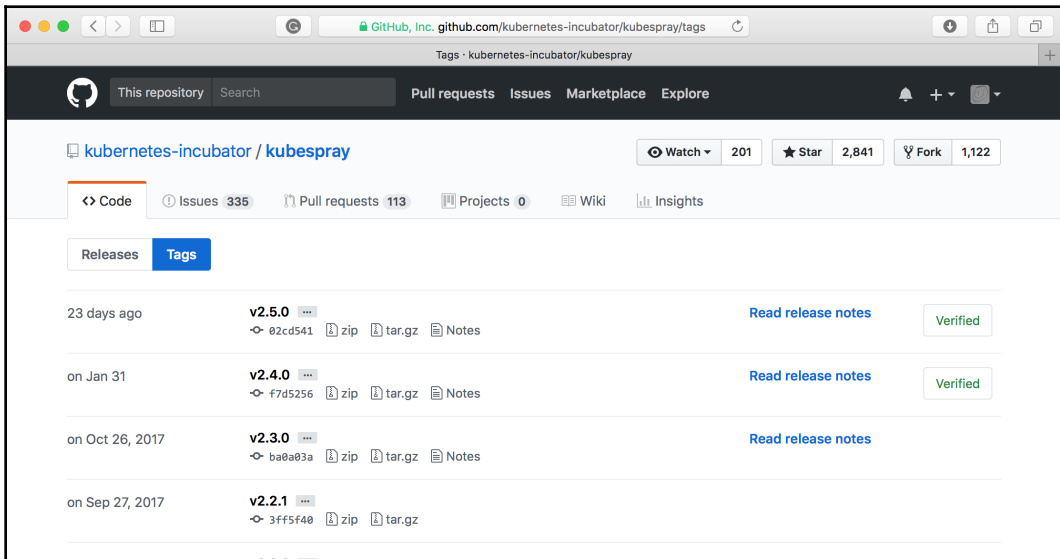
Name	Labels	Ready	CPU requests (cores)	CPU limits (cores)	Memory requests (bytes)	Memory limits (bytes)	Age
minikube	beta.kuber... beta.kuber... kuberne...	True	0.265 (13.25%)	0 (0.00%)	160 Mi (8.00%)	170 Mi (8.50%)	5 days



```
ansible_machine$ ssh-keygen -q
Enter file in which to save the key (/home/saito/.ssh/id_rsa):
Enter passphrase (empty for no passphrase):
Enter same passphrase again:
ansible_machine$ cat ~/.ssh/id_rsa.pub
ssh-rsa AAAAB3NzaC1yc2EAAAADAQABAAQCuAU7LhmqFxa2C0huT0wKIGy+G80UJLjv9Ko26W0mYFPBU5ubpZJubLgeTBpv
j4K4vTRGED18hIPag+Qy+tK2GV/rQY2T9A8xEQBA2kx8xQCfKxsXHHRy/XXdkmYTEbzjFZUqYxSgsYgQbz7v0iPEM6nZ/QzRk0fm
vBP7wiWwT5h0e7ps1FPHZ/z2Dqn8AX0rtEndYrZ00qFSb+htq3UHqXbB/iJeoCF4bokl3gARGJxuG04q+M/MUqaLsTEwg3IKvibL
8eYcEz329ZkHFxuvH1w9ndx354GmrUFhN6jKc+oxB5+0eX9NSMYCXIM1FC1ix6MNEgBl+4vwmZMTqins1_saito@ws
ansible_machine$

copy & paste

k8s-master-1$ cat >> ~/.ssh/authorized_keys
ssh-rsa AAAAB3NzaC1yc2EAAAADAQABAAQCuAU7LhmqFxa2C0huT0wKIGy+G80UJLjv9Ko26W0mYFPBU5ubpZJubLgeTBpv
j4K4vTRGED18hIPag+Qy+tK2GV/rQY2T9A8xEQBA2kx8xQCfKxsXHHRy/XXdkmYTEbzjFZUqYxSgsYgQbz7v0iPEM6nZ/QzRk0fm
vBP7wiWwT5h0e7ps1FPHZ/z2Dqn8AX0rtEndYrZ00qFSb+htq3UHqXbB/iJeoCF4bokl3gARGJxuG04q+M/MUqaLsTEwg3IKvibL
8eYcEz329ZkHFxuvH1w9ndx354GmrUFhN6jKc+oxB5+0eX9NSMYCXIM1FC1ix6MNEgBl+4vwmZMTqins1_saito@ws
k8s-master-1$
```



```
1-5 — vi inventory.cfg — 80x18
1 my-master-1 ansible_ssh_host=10.128.0.2
2 my-node-1 ansible_ssh_host=10.128.0.4
3
4
5 [kube-master]
6 my-master-1
7
8 [etcd]
9 my-master-1
10
11 [kube-node]
12 my-master-1
13 my-node-1
14
15 [k8s-cluster:children]
16 kube-node
17 kube-master
```

```
kubespray-2.5.0 — -bash — 80x12
ansible_machine$ ansible -i inventory/mycluster/hosts.ini -m ping all
my-master-1 | SUCCESS => {
  "changed": false,
  "ping": "pong"
}
my-node-1 | SUCCESS => {
  "changed": false,
  "ping": "pong"
}
ansible_machine$
```

```
kubespray-2.5.0 -- -bash -- 80x12
ansible_machine$ ansible -i inventory/mycluster/hosts.ini -m ping all
my-master-1 | SUCCESS => {
  "changed": false,
  "ping": "pong"
}
my-node-1 | UNREACHABLE! => {
  "changed": false,
  "msg": "SSH Error: data could not be sent to remote host \"10.128.0.4\". Make
e sure this host can be reached over ssh",
  "unreachable": true
}
ansible_machine$
```

```
kubespray-2.5.0 -- -bash -- 80x12
ansible_machine$ ansible -b -i inventory/mycluster/hosts.ini -m ping all
my-master-1 | SUCCESS => {
  "changed": false,
  "ping": "pong"
}
my-node-1 | SUCCESS => {
  "changed": false,
  "ping": "pong"
}
ansible_machine$
```

```
kubespray-2.5.0 -- -bash -- 80x16
ansible_machine$ ansible -b -i inventory/mycluster/hosts.ini -m ping all
my-master-1 | FAILED! => {
  "changed": false,
  "module_stderr": "sudo: a password is required\n",
  "module_stdout": "",
  "msg": "MODULE FAILURE",
  "rc": 1
}
my-node-1 | FAILED! => {
  "changed": false,
  "module_stderr": "sudo: a password is required\n",
  "module_stdout": "",
  "msg": "MODULE FAILURE",
  "rc": 1
}
ansible_machine$
```

```
kubespray-2.5.0 — python2.7 /usr/local/bin/ansible -b -K -i inventory/mycluster/hosts.ini -m ping all — 80x5
ansible_machine$ ansible -b -K -i inventory/mycluster/hosts.ini -m ping all
SUDO password: ?
```

```
saito — saito@ws:~/kubespray-2.3.0 — ssh 35.188.172.133 — 107x18
ansible_machine$ cat ansible.cfg
[ssh_connection]
pipelining=True
ansible_ssh_common_args = -o ControlMaster=auto -o ControlPersist=30m -o ConnectionAttempts=100
control_path = %(directory)s/%%h-%%r
forks = 50
timeout = 30

[defaults]
host_key_checking=False
gathering = smart
fact_caching = jsonfile
fact_caching_connection = /tmp
stdout_callback = skippy
library = ./library
callback_whitelist = profile_tasks
roles_path = roles:$VIRTUAL_ENV/usr/local/share/kubespray/roles:$VIRTUAL_ENV/usr/local/share/ansible/roles
ansible_machine$
```

```
kubespray-2.5.0 — vim inventory/mycluster/group_vars/all.yml — 80x11
1 # Valid bootstrap options (required): ubuntu, coreos, centos, none
2 bootstrap_os: ubuntu
3
4 #Directory where etcd data stored
5 etcd_data_dir: /var/lib/etcd
6
7 # Directory where the binaries will be installed
8 bin_dir: /usr/local/bin
9
10 ## The access_ip variable is used to define how other nodes should access
```

```

kubespray-2.5.0 -- -bash -- 117x30
ss] ***
Tuesday 08 May 2018 15:13:01 -0700 (0:00:00.045) 0:08:39.469 *****

PLAY RECAP *****
localhost : ok=2 changed=0 unreachable=0 failed=0
my-master-1 : ok=374 changed=121 unreachable=0 failed=0
my-node-1 : ok=239 changed=71 unreachable=0 failed=0

Tuesday 08 May 2018 15:13:01 -0700 (0:00:00.037) 0:08:39.506 *****
=====
kubernetes/preinstall : Update package management cache (YUM) ----- 34.29s
docker : ensure docker packages are installed ----- 32.01s
kubernetes/master : Master | wait for the apiserver to be running ----- 22.72s
download : container_download | Download containers if pull is required or told to always pull (all nodes) -- 20.98s
kubernetes-apps/ansible : Kubernetes Apps | Lay Down KubeDNS Template ----- 12.86s
kubernetes/preinstall : Install packages requirements ----- 11.95s
docker : Docker | pause while Docker restarts ----- 10.19s
download : container_download | Download containers if pull is required or told to always pull (all nodes) --- 9.48s
network_plugin/calico : Calico | Create calico manifests ----- 8.79s
kubernetes/master : Master | wait for kube-scheduler ----- 6.05s
download : container_download | Download containers if pull is required or told to always pull (all nodes) --- 5.86s
kubernetes-apps/ansible : Kubernetes Apps | Start Resources ----- 5.56s
kubernetes/secrets : Check certs | check if a cert already exists on node ----- 5.49s
download : container_download | Download containers if pull is required or told to always pull (all nodes) --- 5.21s
download : container_download | Download containers if pull is required or told to always pull (all nodes) --- 4.16s
kubernetes-apps/network_plugin/calico : Start Calico resources ----- 4.12s
etcd : wait for etcd up ----- 4.02s
kubernetes/node : write the kubecfg (auth) file for kubelet ----- 3.87s
bootstrap-os : Check presence of fastestmirror.conf ----- 2.87s
docker : Docker | reload docker ----- 2.76s

```

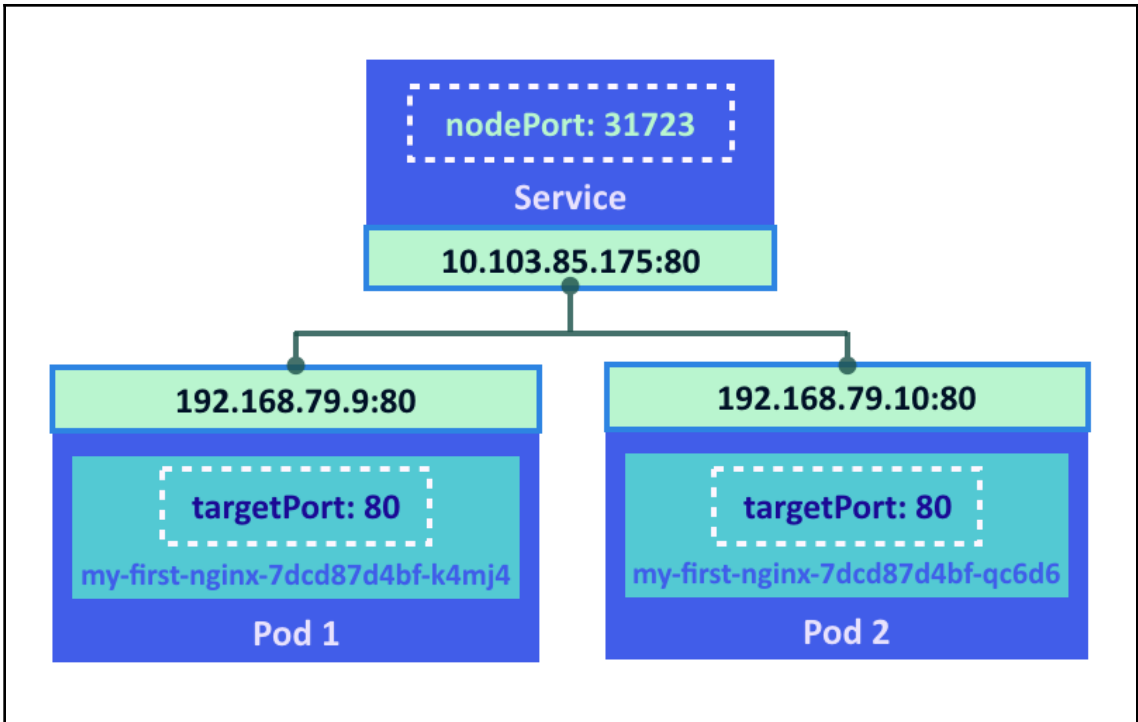
```

kubespray-2.5.0 -- saito@my-master-1:~ -- ssh -A saito@35.184.93.77 -- 80x15
ansible_machine$ ssh 10.128.0.2
The authenticity of host '10.128.0.2 (10.128.0.2)' can't be established.
ECDSA key fingerprint is SHA256:zv4pnlQkatt10pPuBBreAPiZdl14s/dTlrgOrY2m49s.
ECDSA key fingerprint is MD5:2a:91:5b:dd:6c:34:31:c5:fc:e7:bb:d7:4a:f7:34:bf.
Are you sure you want to continue connecting (yes/no)? yes
Warning: Permanently added '10.128.0.2' (ECDSA) to the list of known hosts.
Last login: Tue May 8 22:08:28 2018 from 209.194.91.4
[saito@my-master-1 ~]$ /usr/local/bin/kubectl get nodes
NAME          STATUS    ROLES    AGE    VERSION
my-master-1   Ready    master,node    5m    v1.10.2
my-node-1     Ready    node        5m    v1.10.2
[saito@my-master-1 ~]$ /usr/local/bin/kubectl version --short
Client Version: v1.10.2
Server Version: v1.10.2
[saito@my-master-1 ~]$

```



```
saïto — -bash — 80x12
$ ls /tmp/
com.apple.launchd.0oAMNfNmM      com.apple.launchd.fBjFzMOS82
com.apple.launchd.61Imdps55v     com.apple.launchd.iHPMagpIk5
com.apple.launchd.8Incf4Cjil     com.apple.launchd.rI5b0vejWE
com.apple.launchd.KfYesGcxZE     com.apple.launchd.y2tnFHiwr0
com.apple.launchd.QtdqaYzglA     my-master-1
com.apple.launchd.XVc7C4xBVm     my-node-1
com.apple.launchd.YSQtxsh9yI     powerlog
com.apple.launchd.bIdWcoPbG0
$ rm /tmp/my-master-1 /tmp/my-node-1
$
```



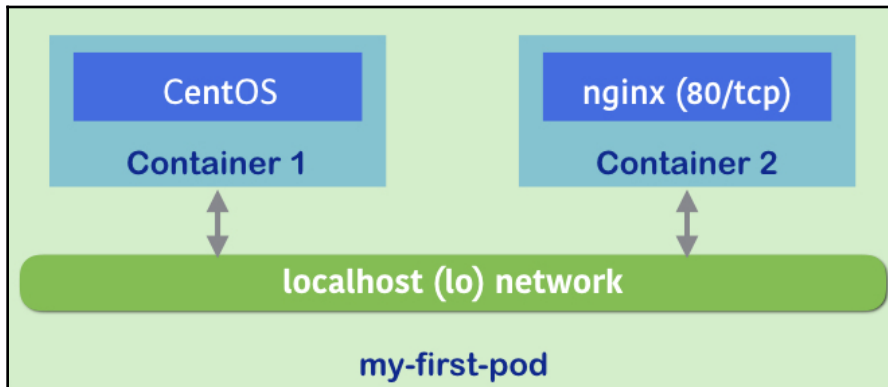
Welcome to nginx!

If you see this page, the nginx web server is successfully installed and working. Further configuration is required.

For online documentation and support please refer to nginx.org.
Commercial support is available at nginx.com.

Thank you for using nginx.

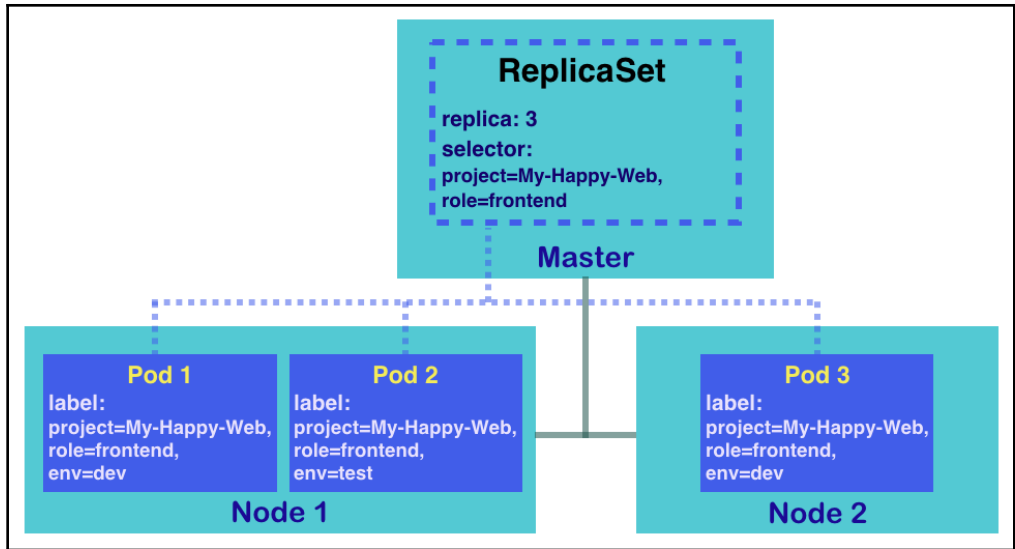
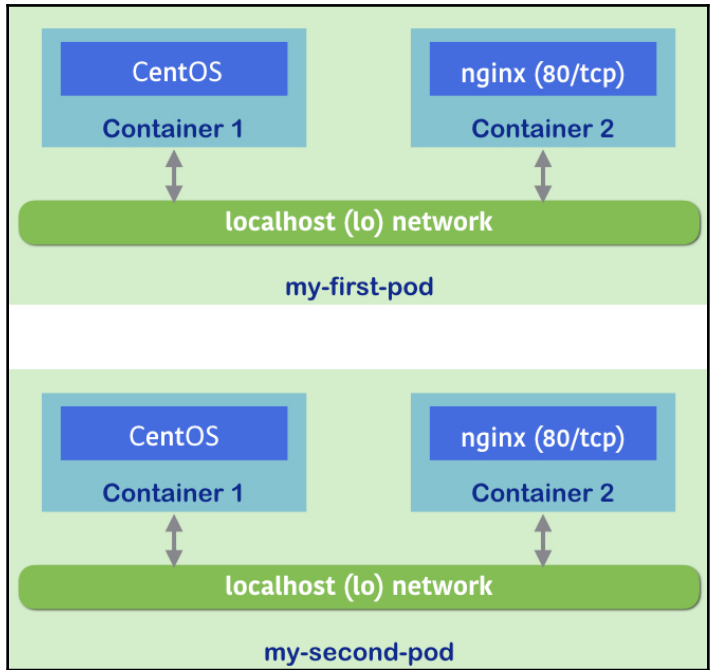
Chapter 02: Walking through Kubernetes Concepts

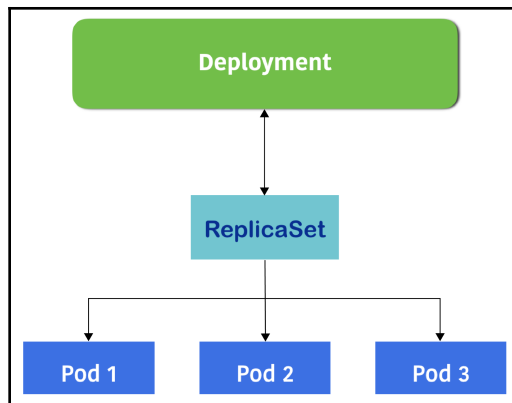
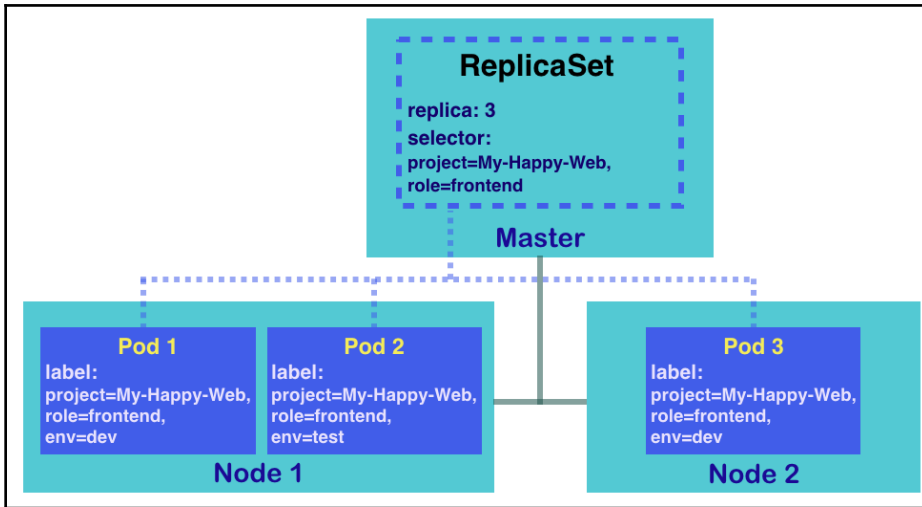


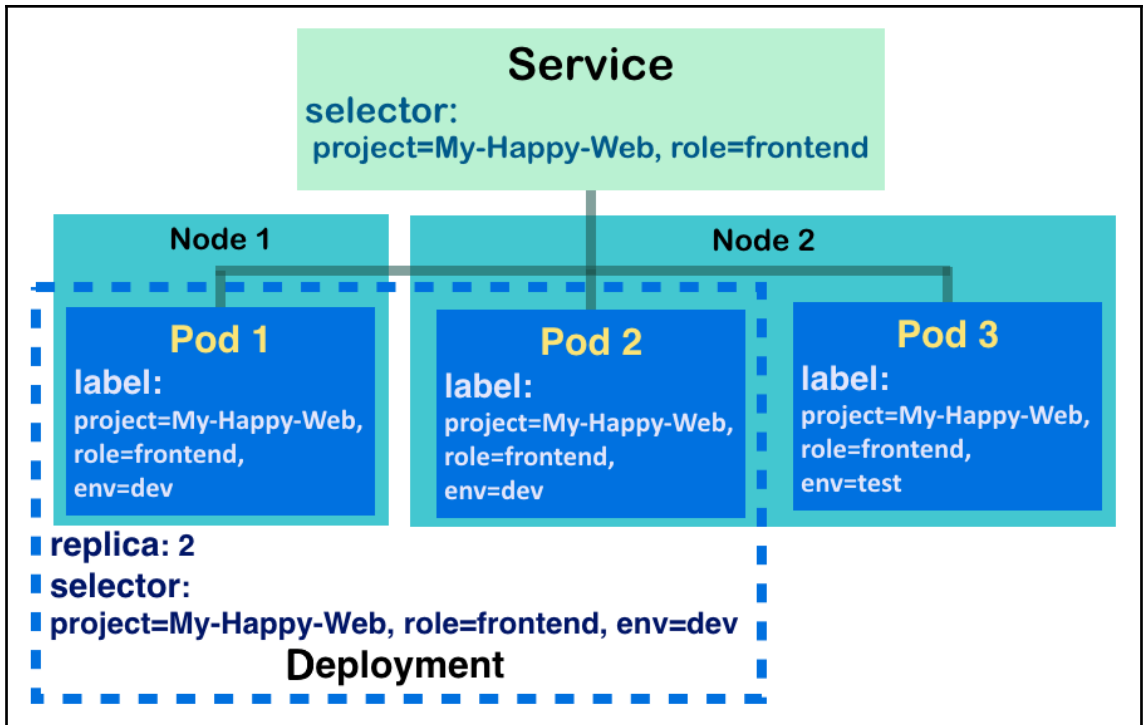
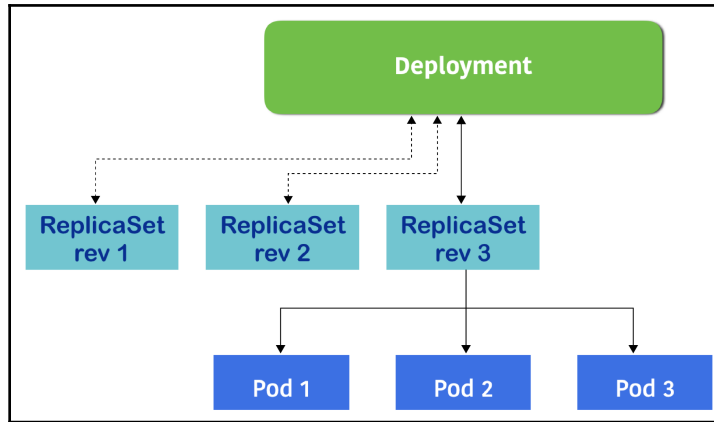
```
saïto — docker-machine-d · minikube ssh — 98x20
$ minikube ssh

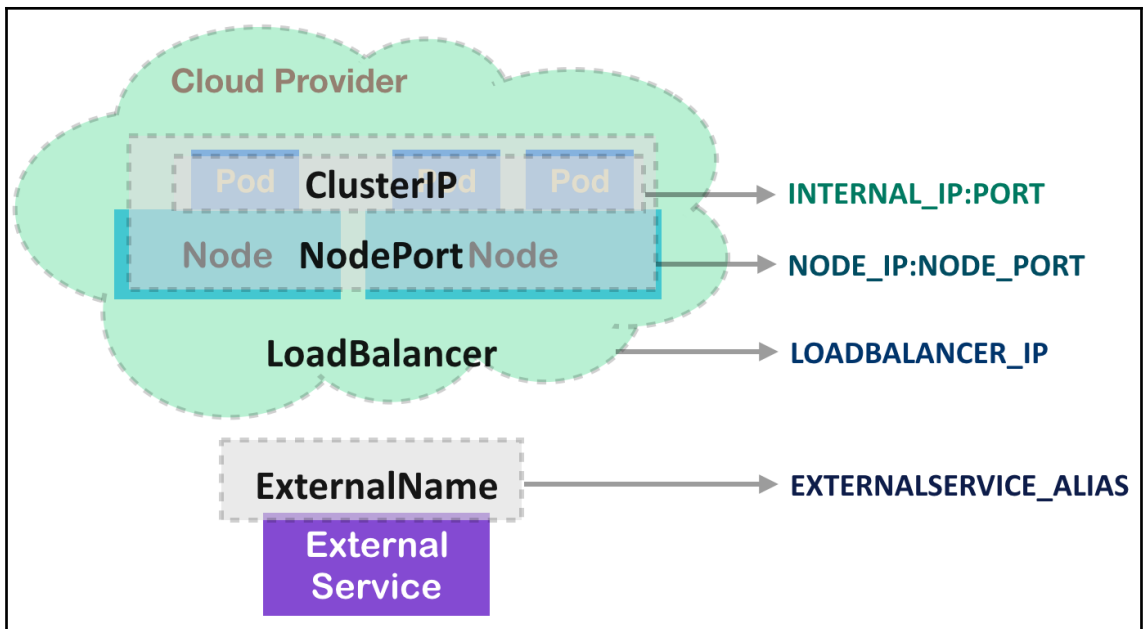
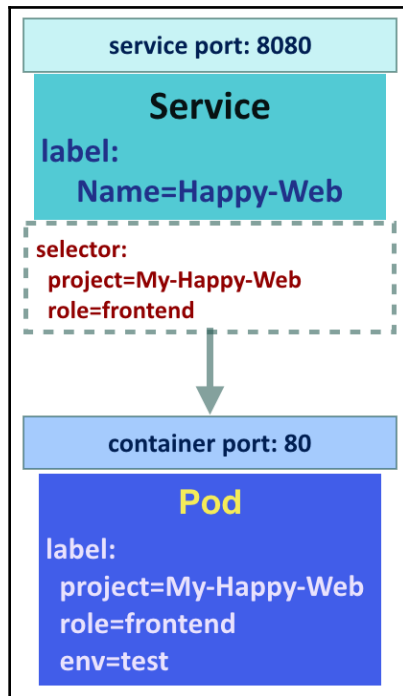
      _ _ _ _ _      _ _ _ _ _      _ _ _ _ _      _ _ _ _ _
     /   \   \   \   \   \   \   \   \   \   \   \   \   \   \   \   \   \
    |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
    (   )   (   )   (   )   (   )   (   )   (   )   (   )   (   )   (   )
    (   )   (   )   (   )   (   )   (   )   (   )   (   )   (   )   (   )

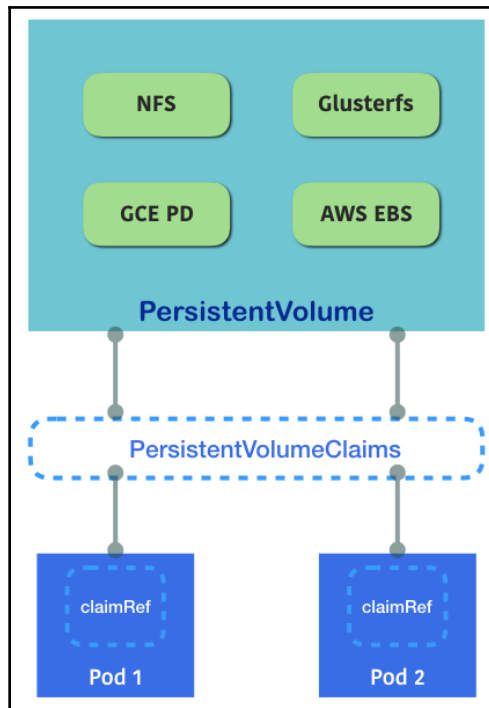
$ docker ps |grep my-first-pod
a65eef72df80      centos           "/bin/sh -c 'while..."
About an hour ago Up About an hour k8s_my-centos_my-first-pod_default_0c
de2bf1-c8ee-11e7-a37a-9e6f68c8e7b3_0
2655e09eb839      nginx           "nginx -g 'daemon ..."
About an hour ago Up About an hour k8s_my-nginx_my-first-pod_default_0cd
e2bf1-c8ee-11e7-a37a-9e6f68c8e7b3_0
7db97eafaf13      gcr.io/google_containers/pause-amd64:3.0 "/pause"
About an hour ago Up About an hour k8s_POD_my-first-pod_default_0cde2bf1
-c8ee-11e7-a37a-9e6f68c8e7b3_0
$
```

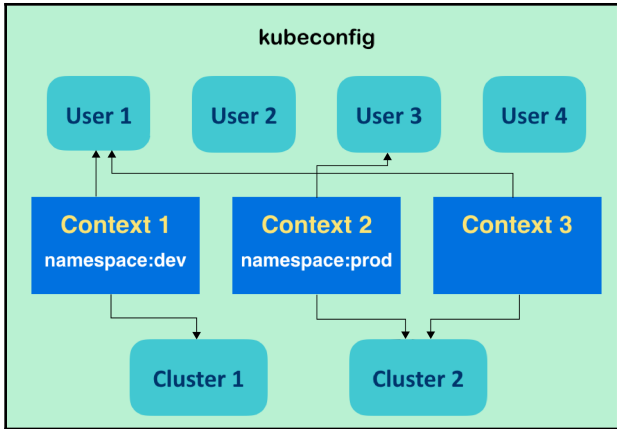
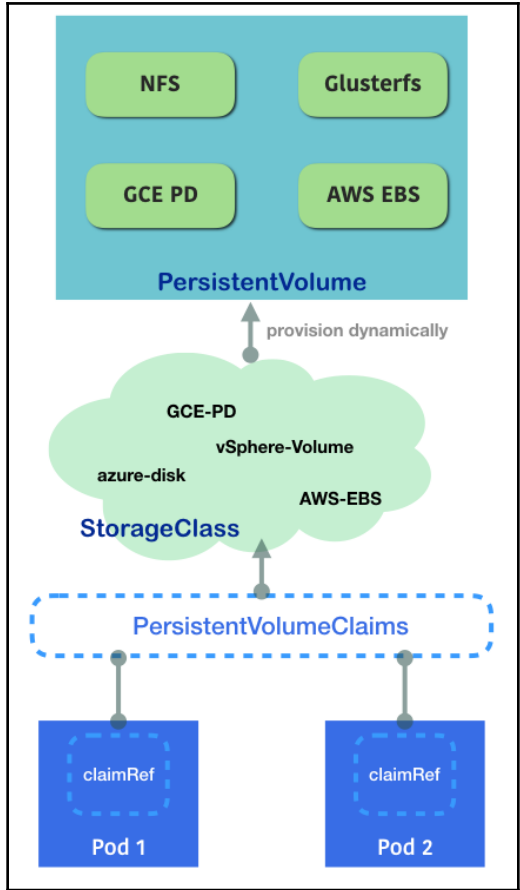


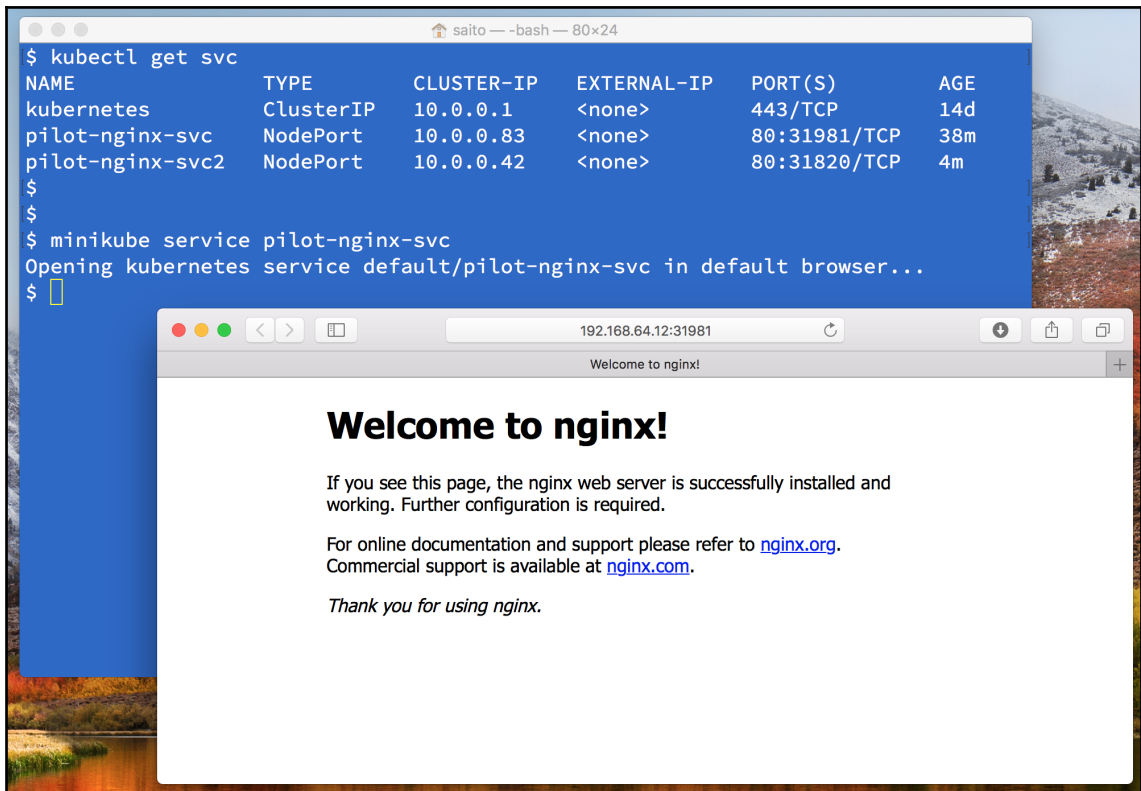




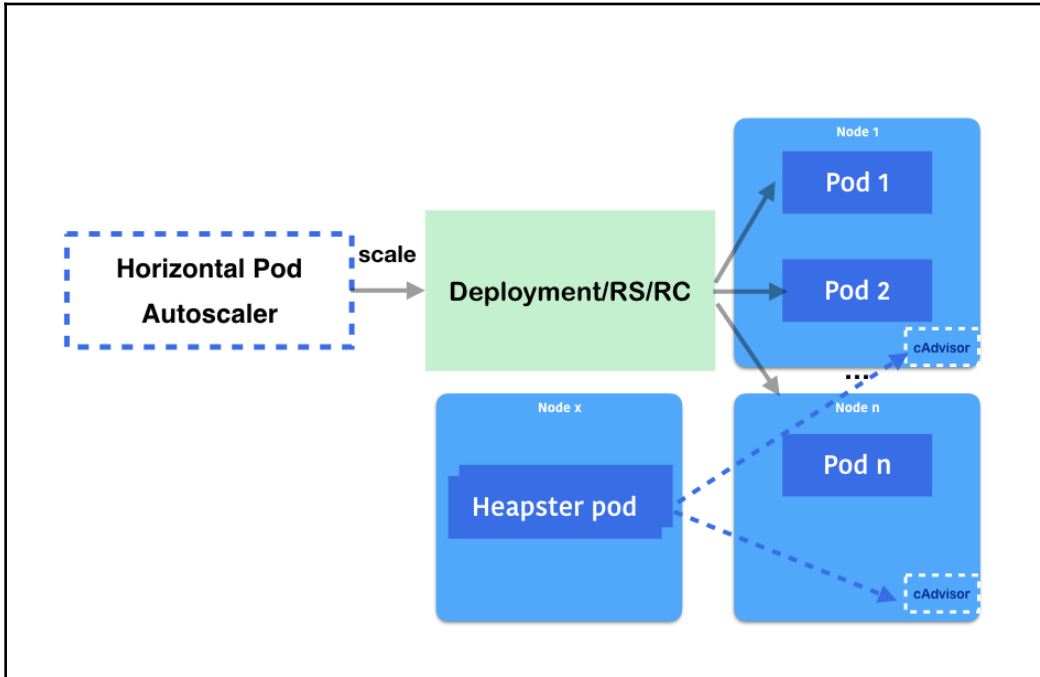


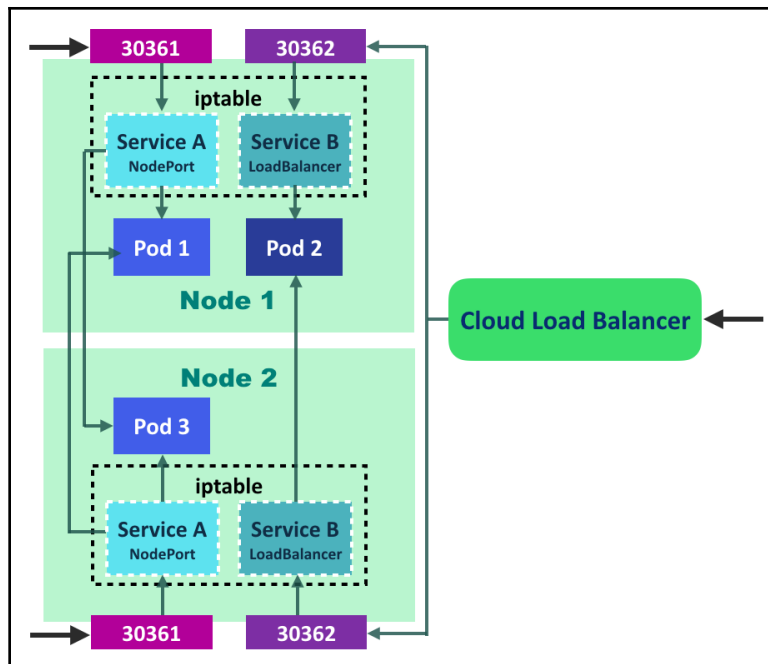
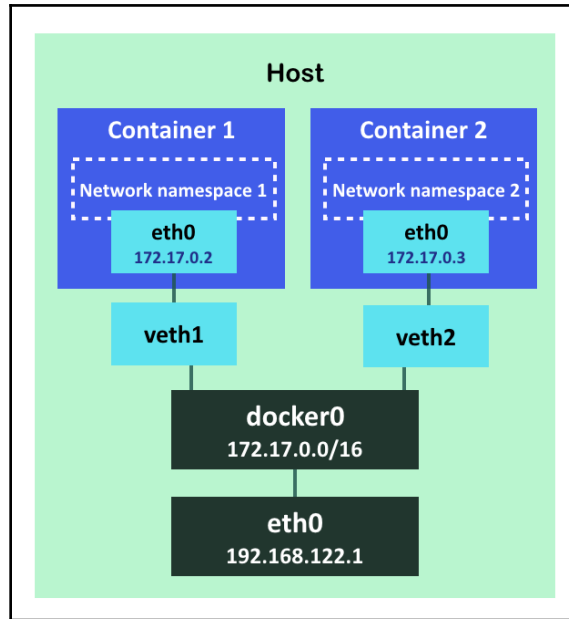


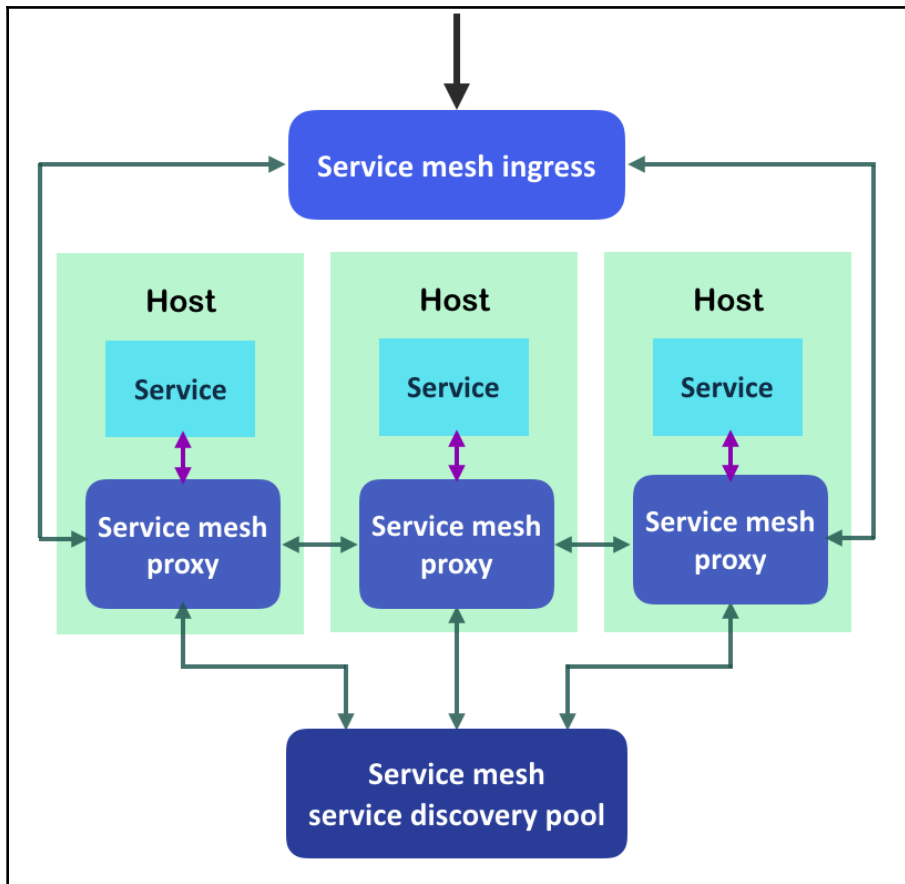




Chapter 03: Playing with Containers







127.0.0.1:60107/dfshealth.html#tab-datanode

Namenode information

Hadoop Overview **Datanodes** Datanode Volume Failures Snapshot Startup Progress Utilities

Datanode Information

In operation

Node	Last contact	Admin State	Capacity	Used	Non DFS Used	Remaining	Blocks	Block pool used	Failed Volumes	Version
hdfs-datanode-0.hdfs-datanode-svc.default.svc.cluster.local:50010 (10.52.1.24:50010)	2	In Service	94.29 GB	24 KB	4.63 GB	89.66 GB	0	24 KB (0%)	0	2.7.2
hdfs-datanode-2.hdfs-datanode-svc.default.svc.cluster.local:50010 (10.52.2.18:50010)	2	In Service	94.29 GB	24 KB	4.63 GB	89.66 GB	0	24 KB (0%)	0	2.7.2
hdfs-datanode-1.hdfs-datanode-svc.default.svc.cluster.local:50010 (10.52.0.19:50010)	0	In Service	94.29 GB	24 KB	4.63 GB	89.66 GB	0	24 KB (0%)	0	2.7.2

127.0.0.1:60107/dfshealth.html#tab-datanode

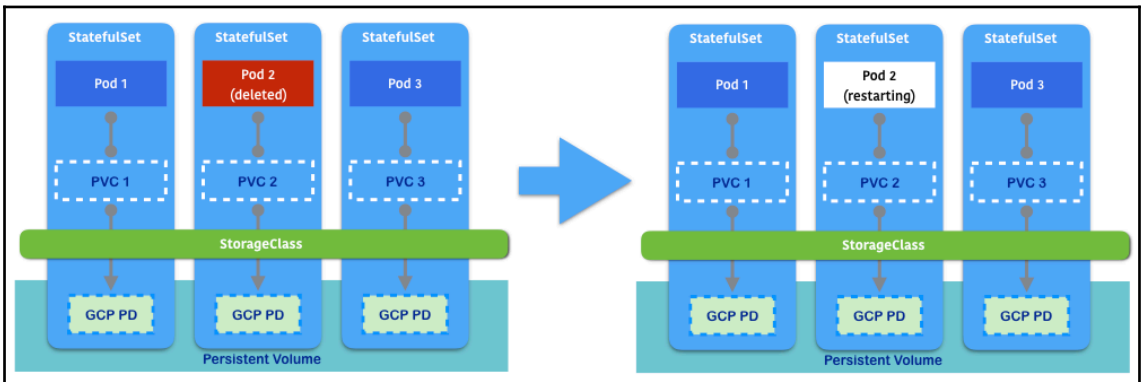
Namenode information

Hadoop Overview Datanodes Datanode Volume Failures Snapshot Startup Progress Utilities

Datanode Information

In operation

Node	Last contact	Admin State	Capacity	Used	Non DFS Used	Remaining	Blocks	Block pool used	Failed Volumes	Version
hdfs-datanode-0.hdfs-datanode-svc.default.svc.cluster.local:50010 (10.52.1.24:50010)	2	In Service	94.29 GB	28 KB	4.63 GB	89.65 GB	0	28 KB (0%)	0	2.7.2
hdfs-datanode-2.hdfs-datanode-svc.default.svc.cluster.local:50010 (10.52.2.18:50010)	2	In Service	94.29 GB	28 KB	4.63 GB	89.66 GB	0	28 KB (0%)	0	2.7.2
hdfs-datanode-1.hdfs-datanode-svc.default.svc.cluster.local:50010 (10.52.0.20:50010)	1	In Service	94.29 GB	28 KB	4.63 GB	89.66 GB	0	28 KB (0%)	0	2.7.2
hdfs-datanode-1.hdfs-datanode-svc.default.svc.cluster.local:50010 (10.52.0.19:50010)	Mon Jan 08 2018 23:53:50 GMT-0800 (PST)	Dead	-	-	-	-	-	-	-	-



API OVERVIEW

WORKLOADS

- Container v1 core
- CronJob v1beta1 batch
- DaemonSet v1 apps
- Deployment v1 apps
- Write Operations
- Read Operations
- Status Operations

- Job v1 batch
- Pod v1 core
- ReplicaSet v1 apps
- ReplicationController v1 core
- StatefulSet v1 apps

DISCOVERY & LOAD BALANCING

- Endpoints v1 core
- Ingress v1beta1 extensions
- Service v1 core

CONFIG & STORAGE

- ConfigMap v1 core
- Secret v1 core
- PersistentVolumeClaim v1 core

Deployment v1 apps

Group	Version	Kind
apps	v1	Deployment

i Other api versions of this object exist: [v1beta2](#) [v1beta1](#) [v1beta1](#)

Deployment enables declarative updates for Pods and ReplicaSets.

i Appears In:

- [DeploymentList apps/v1](#)

Field	Description
apiVersion <i>string</i>	APIVersion defines the versioned schema of this representation of an object. Servers should convert recognized schemas to the latest internal value, and may reject unrecognized values. More info: https://git.k8s.io/community/contributors/devel/api-conventions.md#resources
kind <i>string</i>	Kind is a string value representing the REST resource this object represents. Servers may infer this from the endpoint the client submits requests to. Cannot be updated. In CamelCase. More info: https://git.k8s.io/community/contributors/devel/api-conventions.md#types-kinds

kubectl
curl

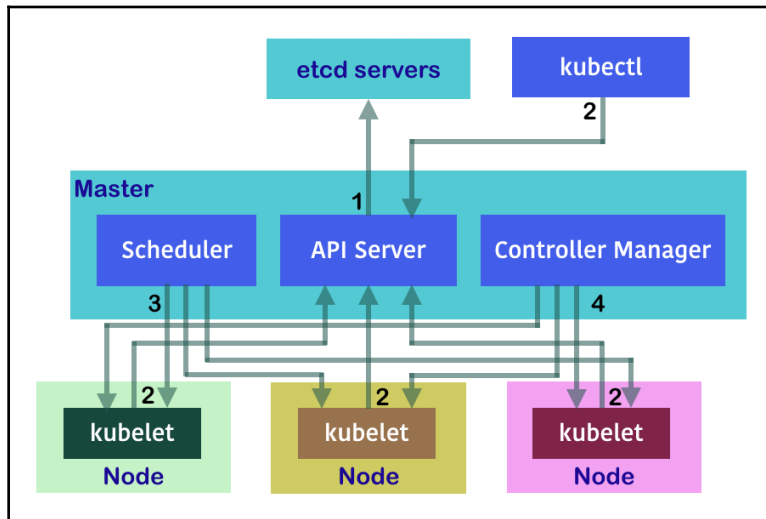
Deployment Config to run 3 nginx instances (max rollback set to 10 revisions).

```

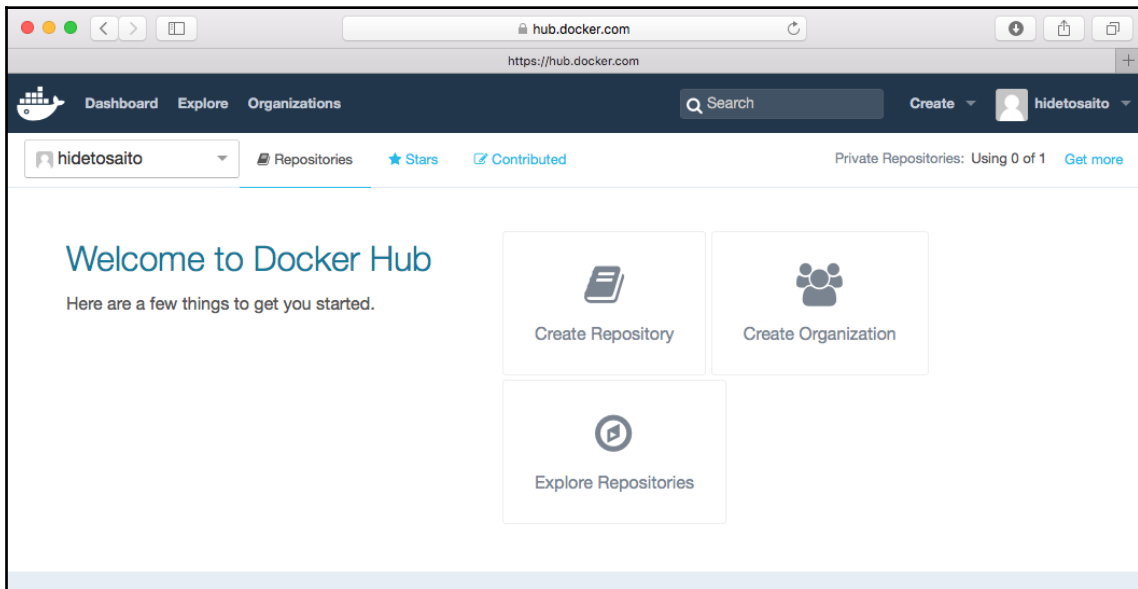
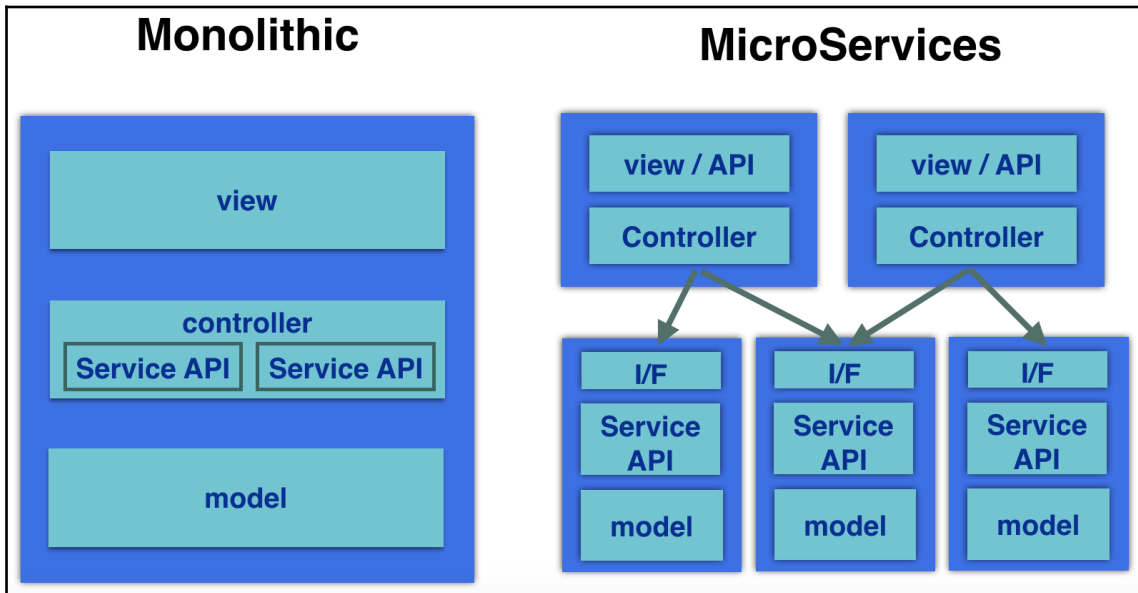
apiVersion: apps/v1beta1
kind: Deployment
metadata:
  # Unique key of the Deployment instance
  name: deployment-example
spec:
  # 3 Pods should exist at all times.
  replicas: 3
  template:
    metadata:
      labels:
        # Apply this label to pods and default
        # the Deployment label selector to this value
        app: nginx
    spec:
      containers:
        - name: nginx
          # Run this image
          image: nginx:1.10
          
```

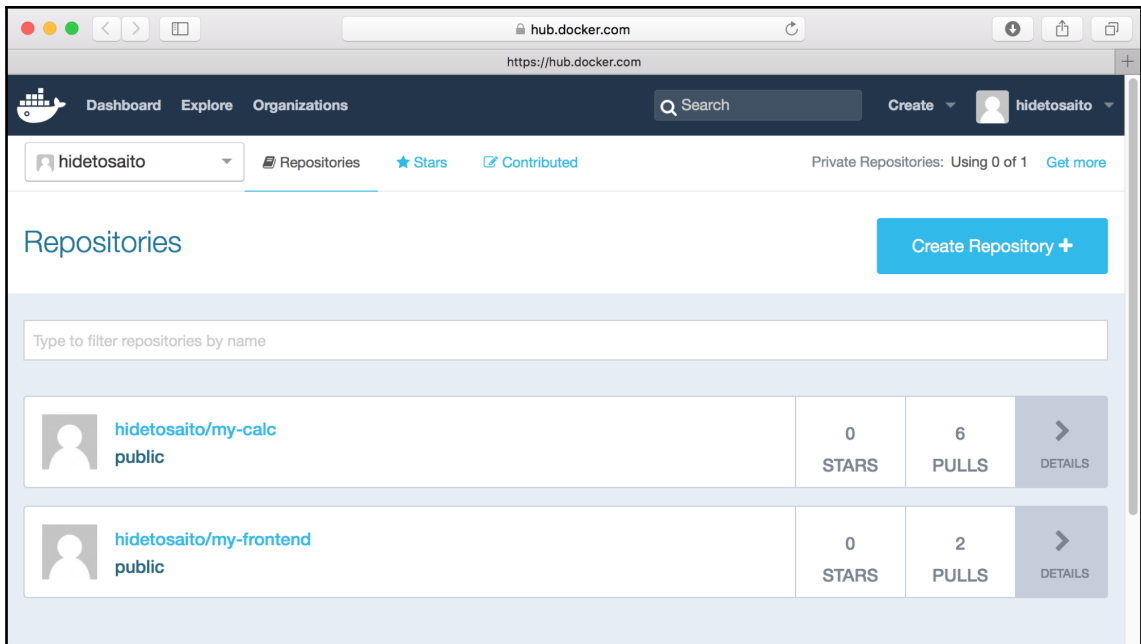
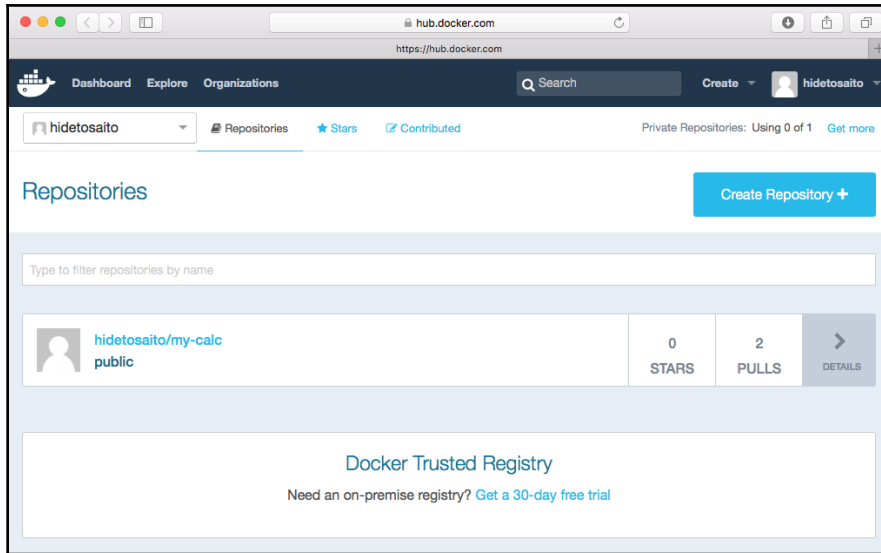

admissionregistration.k8s.io : get information of a group	Show/Hide	List Operations	Expand Operations	Raw
api : get available API versions	Show/Hide	List Operations	Expand Operations	Raw
apis : get available API versions	Show/Hide	List Operations	Expand Operations	Raw
apps : get information of a group	Show/Hide	List Operations	Expand Operations	Raw
authentication.k8s.io : get information of a group	Show/Hide	List Operations	Expand Operations	Raw
authorization.k8s.io : get information of a group	Show/Hide	List Operations	Expand Operations	Raw
autoscaling : get information of a group	Show/Hide	List Operations	Expand Operations	Raw
batch : get information of a group	Show/Hide	List Operations	Expand Operations	Raw
certificates.k8s.io : get information of a group	Show/Hide	List Operations	Expand Operations	Raw
extensions : get information of a group	Show/Hide	List Operations	Expand Operations	Raw
logs : get log files	Show/Hide	List Operations	Expand Operations	Raw
networking.k8s.io : get information of a group	Show/Hide	List Operations	Expand Operations	Raw
policy : get information of a group	Show/Hide	List Operations	Expand Operations	Raw
rbac.authorization.k8s.io : get information of a group	Show/Hide	List Operations	Expand Operations	Raw
scheduling.k8s.io : get information of a group	Show/Hide	List Operations	Expand Operations	Raw

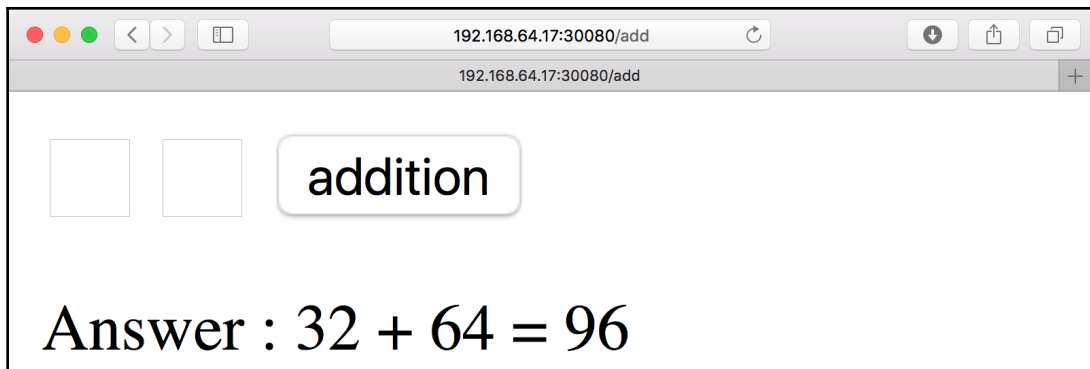
Chapter 04: Building High-Availability Clusters

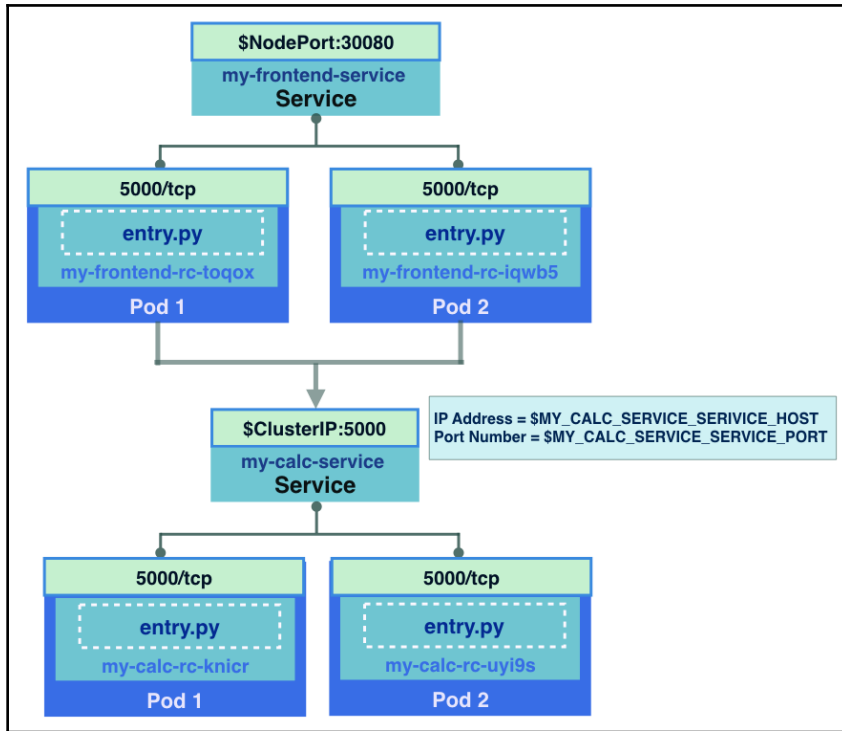


Chapter 05: Building Continuous Delivery Pipelines









Plans and Pricing

The Docker Hub Registry is free to use for public repositories. Plans with private repositories are available in different sizes. All plans allow collaboration with unlimited people.

Choose the Hub private repo plan that works for you.



Plan	Price	Private Repositories	Parallel Builds	
Free	\$0/mo	1	1	Current Plan
Micro	\$7/mo	5	5	Upgrade Plan
Small	\$12/mo	10	10	Upgrade Plan
Medium	\$22/mo	20	20	Upgrade Plan
Large	\$50/mo	50	50	Upgrade Plan
XLarge	\$100/mo	100	100	Upgrade Plan
XX-Large	\$250/mo	250	250	Upgrade Plan

Jenkins admin | log out

Jenkins > [ENABLE AUTO REFRESH](#)

- New Item
- People
- Build History
- Manage Jenkins**
- My Views

Manage Jenkins

-  [Configure System](#)
Configure global settings and paths.
-  [Configure Global Security](#)
Secure Jenkins; define who is allowed to access/use the system.

Cloud

Add a new cloud ▼

Docker

Save Apply

Open #127.0.0.1:58080/configure# on this page in a new tab

Page generated: Jan 24, 2018 6:46:19 PM UTC [REST API](#) Jenkins ver. 2.89.3

Jenkins > configuration

Cloud

Docker

Name

Docker Host URI

URI to the Docker Host you are using. May be left blank to use the Docker default (defined by DOCKER_HOST environment variable) (typically unix:///var/run/docker.sock or tcp://127.0.0.1:2376). (from [Docker Commons Plugin](#))

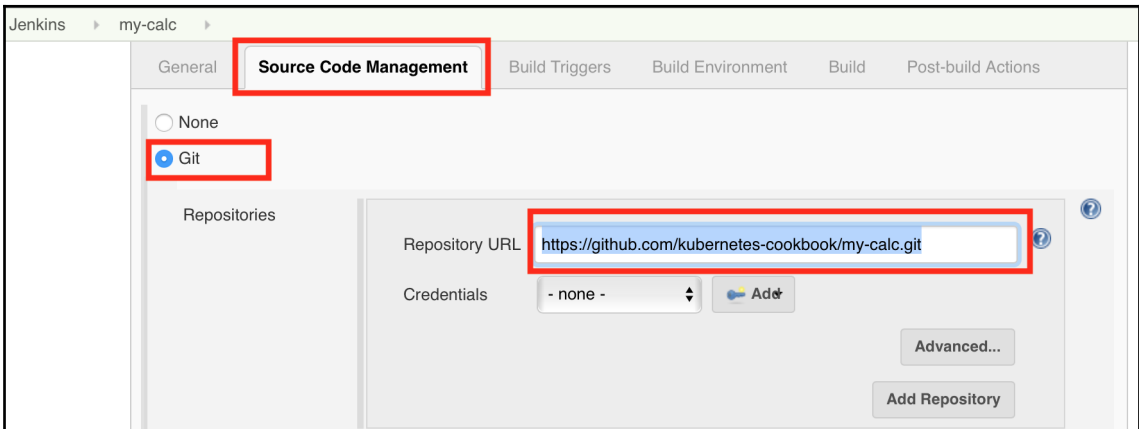
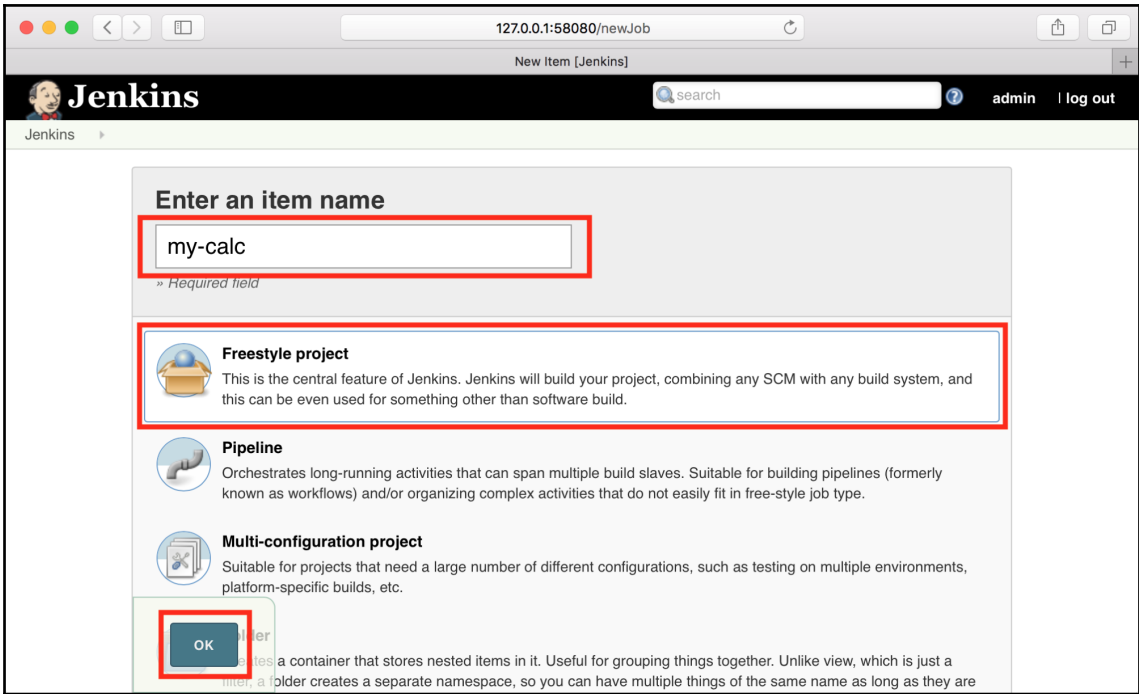
Jenkins admin | log out

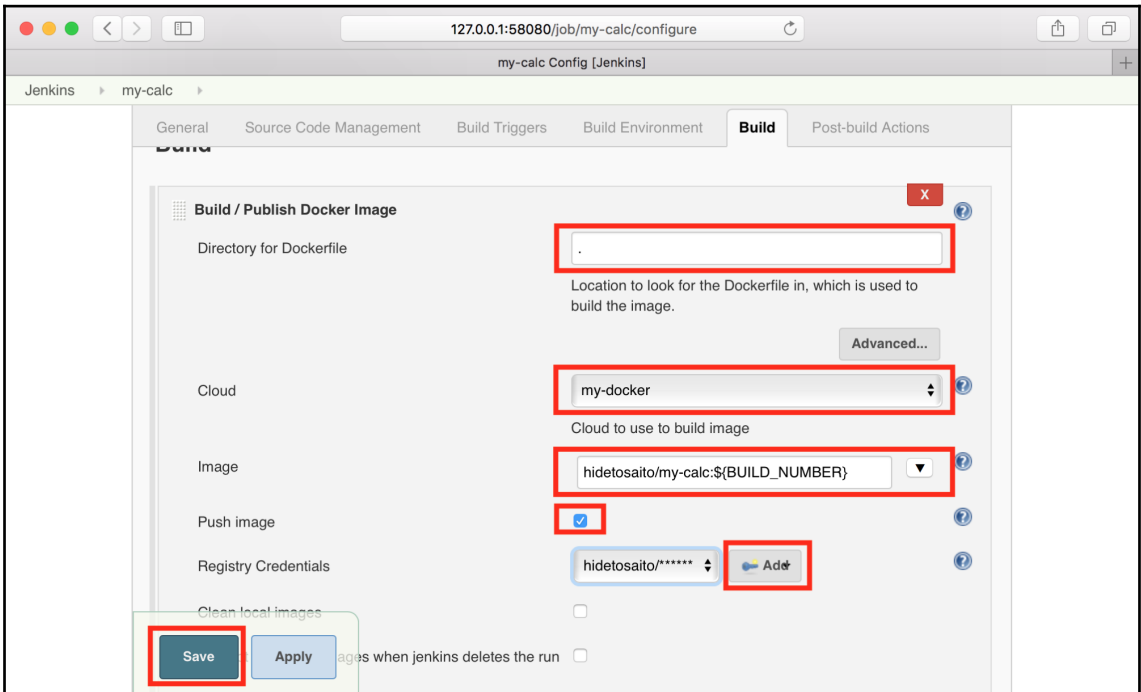
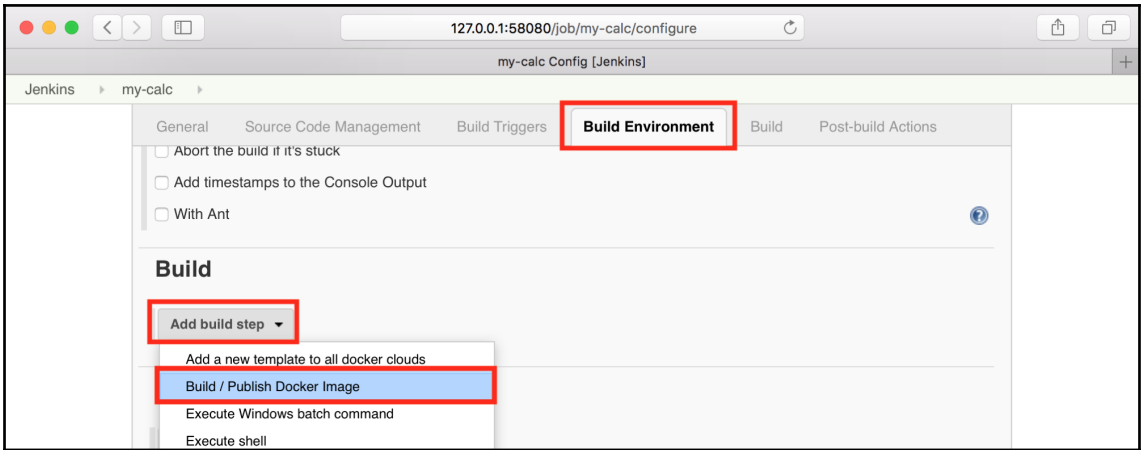
Jenkins > [ENABLE AUTO REFRESH](#) [add description](#)

- New Item**
- People
- Build History
- Manage Jenkins

Welcome to Jenkins!

Please **create new jobs** to get started.





Jenkins admin | log out

Jenkins > my-calc > [ENABLE AUTO REFRESH](#)

Project my-calc

- [Back to Dashboard](#)
- [Status](#)
- [Changes](#)
- [Workspace](#)
- [Build Now](#)**
- [Build scheduled](#)
- [Configure](#)

[add description](#)

[Disable Project](#)

[Workspace](#)

[Recent Changes](#)

```
127.0.0.1:58080/job/my-calc/1/console  
my-calc #1 Console [Jenkins]  
Jenkins > my-calc > #1  
Removing intermediate container d97940517e6b  
Step 9/9 : CMD python entry.py  
---> Running in be41c86589f5  
---> 1a3fa75ce52f  
Removing intermediate container be41c86589f5  
Successfully built 1a3fa75ce52f  
Tagging built image with hidetosaito/my-calc:1  
Docker Build Response : 1a3fa75ce52f  
Pushing [hidetosaito/my-calc:1]  
The push refers to a repository [docker.io/hidetosaito/my-calc]  
c5797ef44ab5: Preparing  
2f02397868d1: Preparing  
5bdfbfb9e91ec: Preparing  
3ec94359055d: Preparing  
20816cbced7a: Preparing  
b842alfe453a: Preparing  
3fcf246798ac: Preparing  
blc5a15ed80a: Preparing  
ef490fed81b5: Preparing  
d73c6118cd9c: Preparing  
b842alfe453a: Waiting  
3fcf246798ac: Waiting  
blc5a15ed80a: Waiting
```

Public repository page for `hidetosaito/my-calc`. The page shows the repository name, a star icon, and the last push time: "Last pushed: a few seconds ago". Below the repository name are tabs for Repo Info, Tags, Collaborators, Webhooks, and Settings. The Tags tab is active, displaying a table of tags.

Tag Name	Compressed Size	Last Updated	
5	124 MB	a few seconds ago	
4	124 MB	a few seconds ago	
3	124 MB	a few seconds ago	

Configuration page for a Jenkins build step. It includes options for "Clean local images" and "Attempt to remove images when Jenkins deletes the run", both with unchecked checkboxes. A red box highlights the "Add build step" dropdown menu, which is open and shows several options. The "Execute shell" option is highlighted with a blue background and a red border.

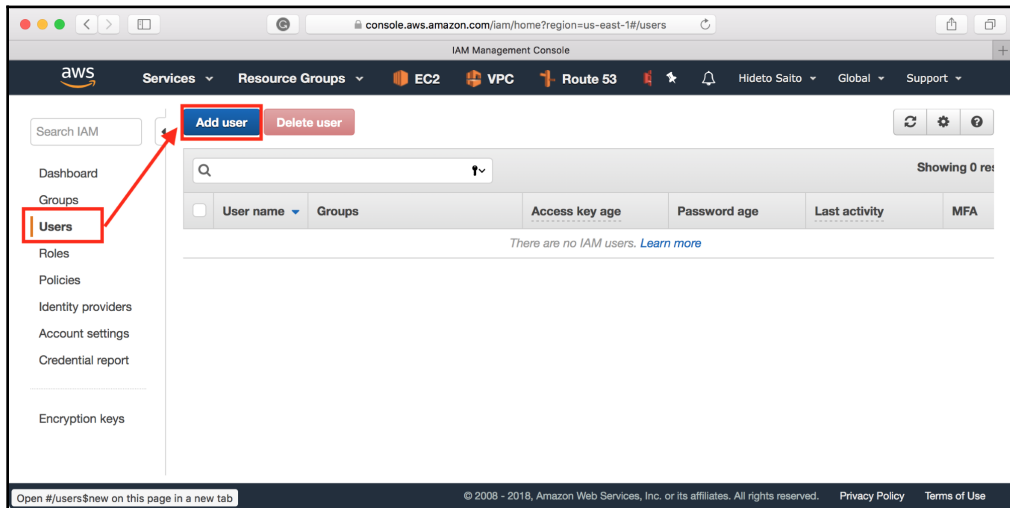
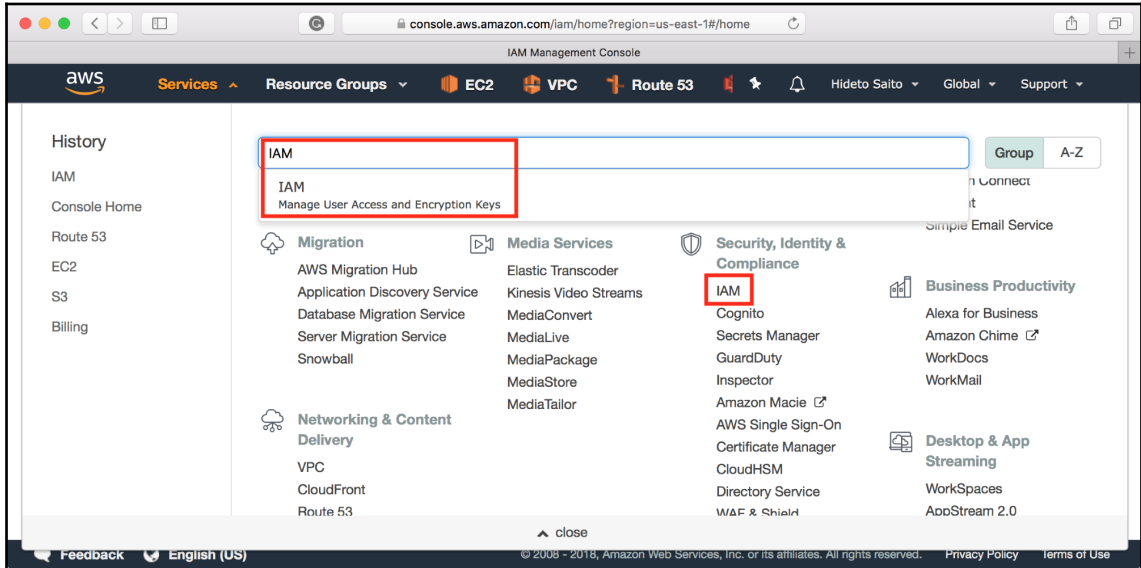
- Clean local images
- Attempt to remove images when Jenkins deletes the run
- Add build step** ▼
 - Add a new template to all Docker clouds
 - Build / Publish Docker Image
 - Execute Windows batch command
 - Execute shell**
 - Invoke Ant

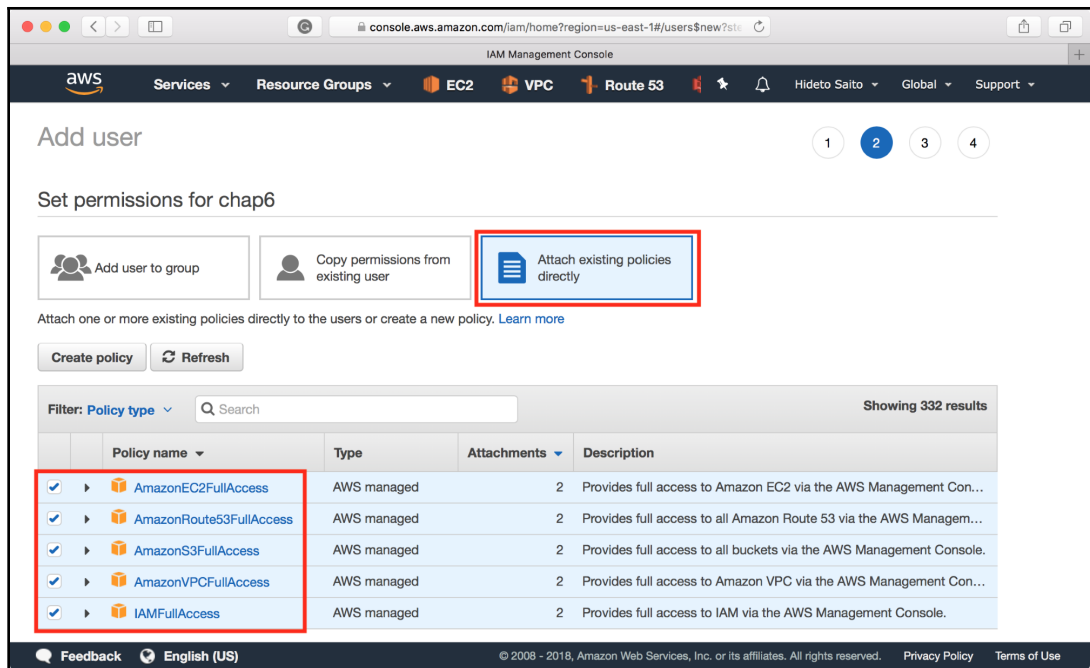
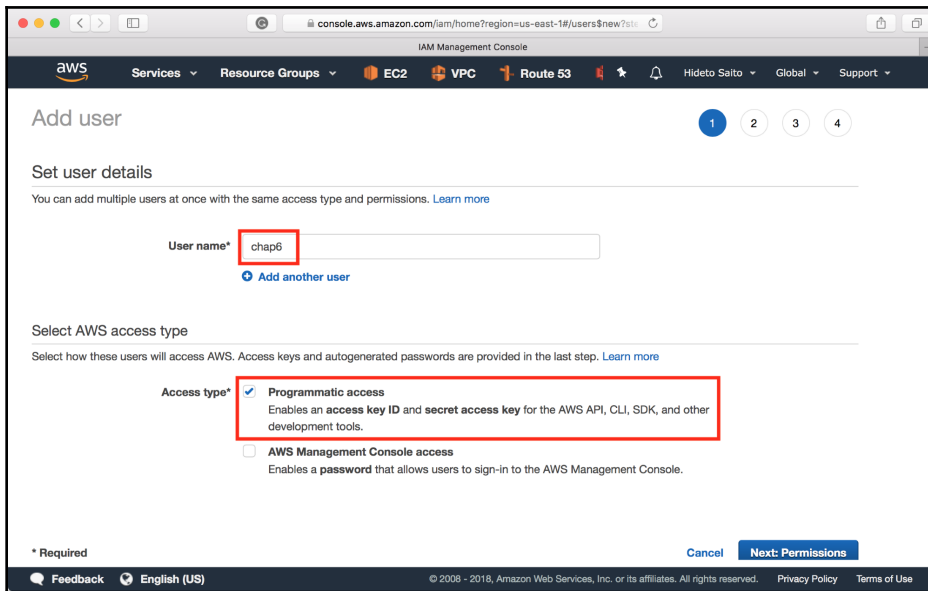
```
*****
*** before deploy ***
*****
deployments "my-calc-deploy"
REVISION  CHANGE-CAUSE
1          kubect1 create --filename=my-calc.yaml --record=true
2          kubect1 set image deployment my-calc-deploy my-calc=hidetosaito/my-calc:8
3          kubect1 set image deployment my-calc-deploy my-calc=hidetosaito/my-calc:9
4          kubect1 set image deployment my-calc-deploy my-calc=hidetosaito/my-calc:10
5          kubect1 set image deployment my-calc-deploy my-calc=hidetosaito/my-calc:11
6          kubect1 set image deployment my-calc-deploy my-calc=hidetosaito/my-calc:12
7          kubect1 set image deployment my-calc-deploy my-calc=hidetosaito/my-calc:13

deployment "my-calc-deploy" image updated
*****
*** waiting to complete rolling update ***
*****
Waiting for rollout to finish: 1 out of 2 new replicas have been updated...
Waiting for rollout to finish: 1 out of 2 new replicas have been updated...
Waiting for rollout to finish: 1 out of 2 new replicas have been updated...
Waiting for rollout to finish: 1 old replicas are pending termination...
Waiting for rollout to finish: 1 old replicas are pending termination...
deployment "my-calc-deploy" successfully rolled out
*****
*** after deploy ***
*****
deployments "my-calc-deploy"
REVISION  CHANGE-CAUSE
1          kubect1 create --filename=my-calc.yaml --record=true
2          kubect1 set image deployment my-calc-deploy my-calc=hidetosaito/my-calc:8
3          kubect1 set image deployment my-calc-deploy my-calc=hidetosaito/my-calc:9
4          kubect1 set image deployment my-calc-deploy my-calc=hidetosaito/my-calc:10
5          kubect1 set image deployment my-calc-deploy my-calc=hidetosaito/my-calc:11
6          kubect1 set image deployment my-calc-deploy my-calc=hidetosaito/my-calc:12
7          kubect1 set image deployment my-calc-deploy my-calc=hidetosaito/my-calc:13
8          kubect1 set image deployment my-calc-deploy my-calc=hidetosaito/my-calc:14

Finished: SUCCESS
```

Chapter 06: Building Kubernetes on AWS





console.aws.amazon.com/iam/home?region=us-east-1#/users\$new?sts

IAM Management Console

aws Services Resource Groups EC2 VPC Route 53 Hideto Saito Global Support

Add user

1 2 3 4

Success
You successfully created the users shown below. You can view and download user security credentials. You can also email users instructions for signing in to the AWS Management Console. This is the last time these credentials will be available to download. However, you can create new credentials at any time.
Users with AWS Management Console access can sign-in at: <https://hideto.signin.aws.amazon.com/console>

Download .csv

User	Access key ID	Secret access key
chap6	AKI [REDACTED]	[REDACTED]

Close

Feedback English (US) © 2008 - 2018, Amazon Web Services, Inc. or its affiliates. All rights reserved. Privacy Policy Terms of Use

AWS Command Line Interface Setup

Custom Setup

Select the way you want features to be installed.

Click the icons in the tree below to change the way features will be installed.

AWS Command Line Interface

The AWS Command Line Interface is a unified tool to manage your AWS services.

This feature requires 49MB on your hard drive.

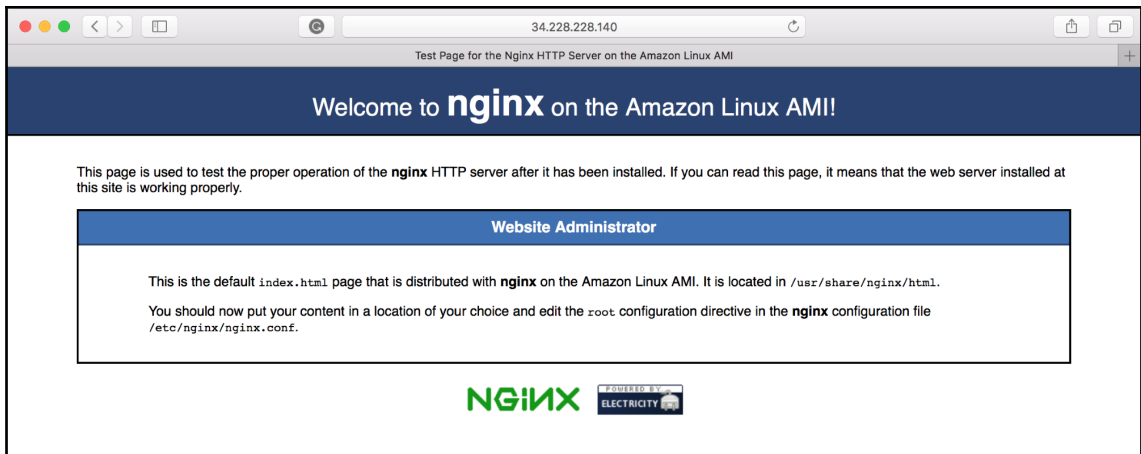
Location: C:\Program Files\Amazon\AWSCLI\ Browse...

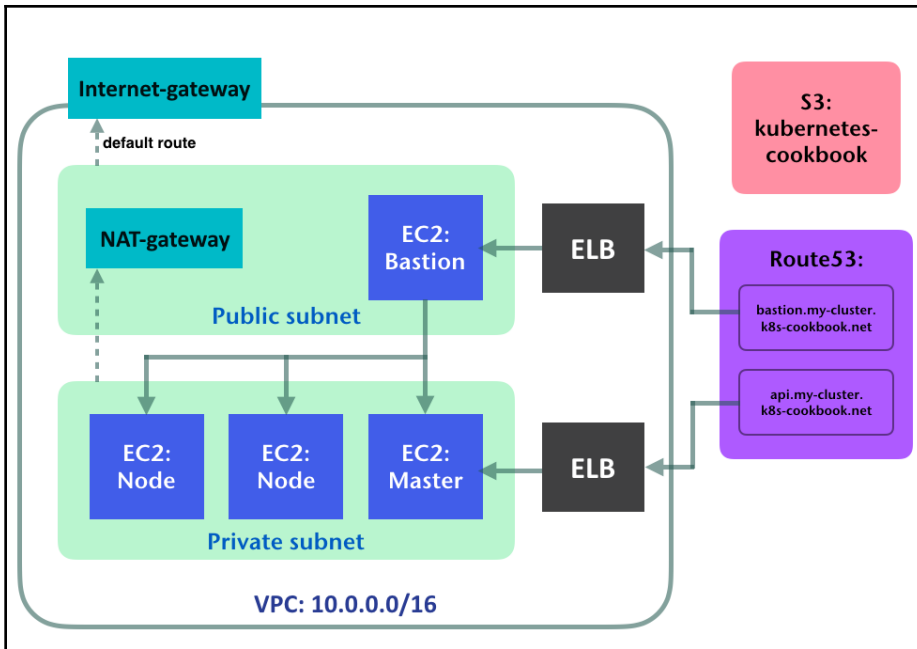
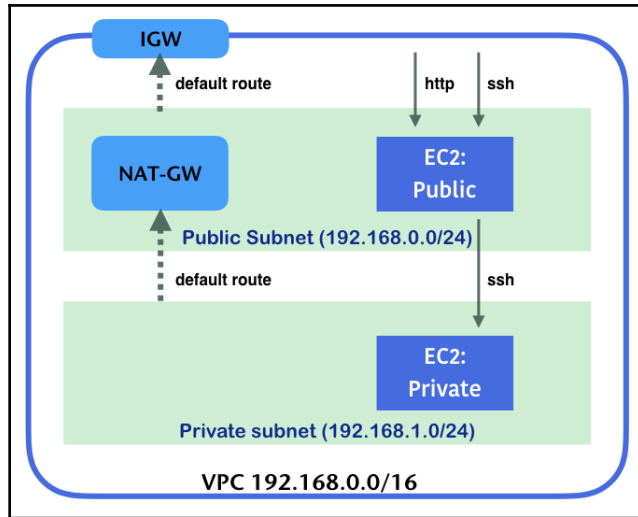
Reset Disk Usage Back **Next** Cancel

```
Command Prompt
Microsoft Windows [Version 6.1.7601]
Copyright (c) 2009 Microsoft Corporation. All rights reserved.

C:\Users\user>aws --version
aws-cli/1.15.4 Python/2.7.9 Windows/7 botocore/1.10.4

C:\Users\user>
```





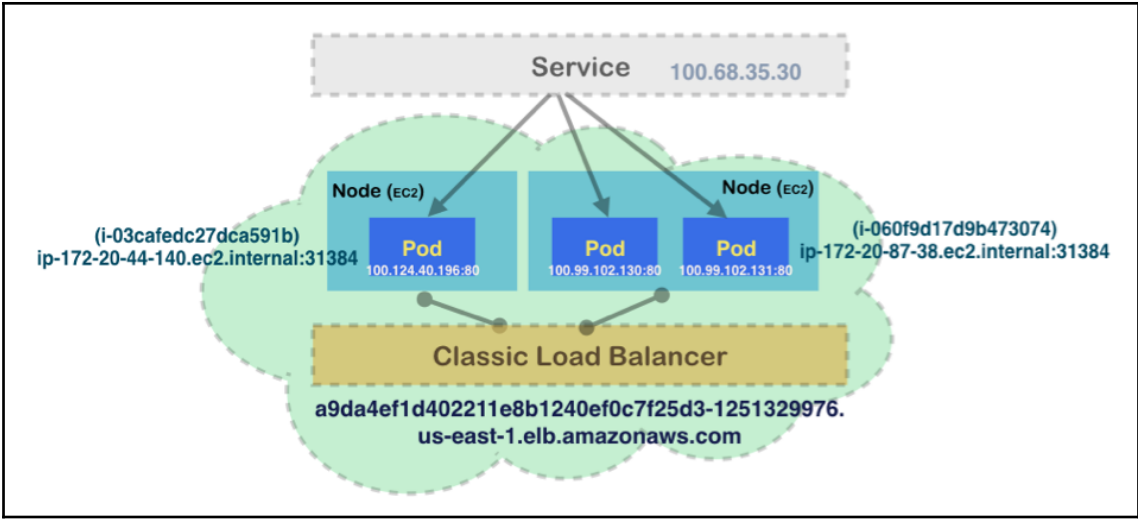
⓪ a9da4ef1d402211e8b1240ef0c7f25d3-1251329976.us-east-1.elb.amazonaws.com

Welcome to nginx!

If you see this page, the nginx web server is successfully installed and working. Further configuration is required.

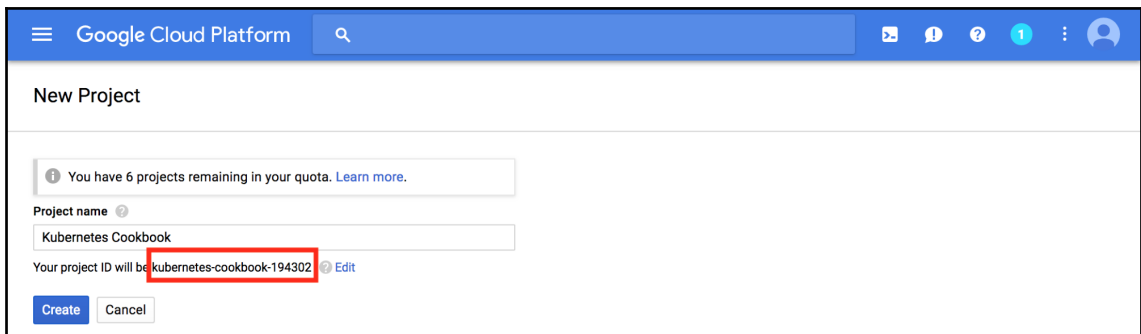
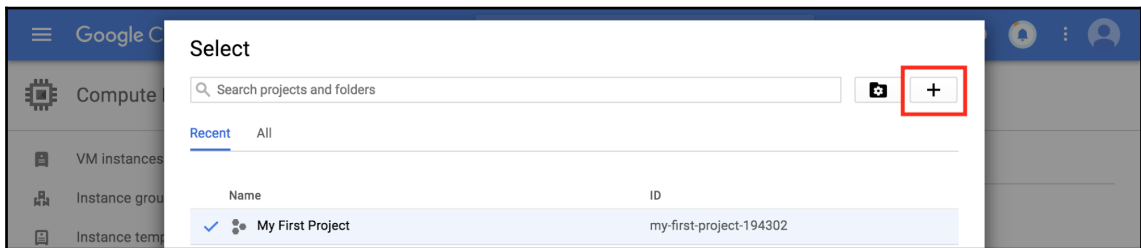
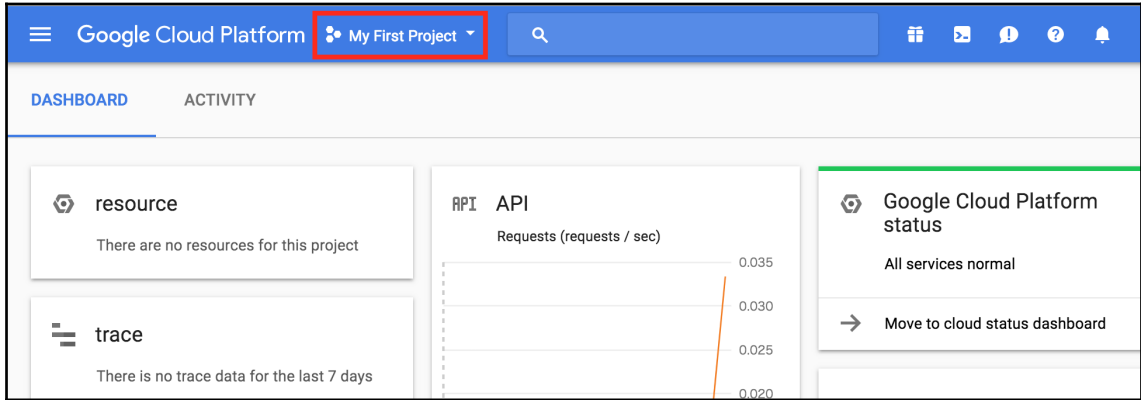
For online documentation and support please refer to nginx.org.
Commercial support is available at nginx.com.

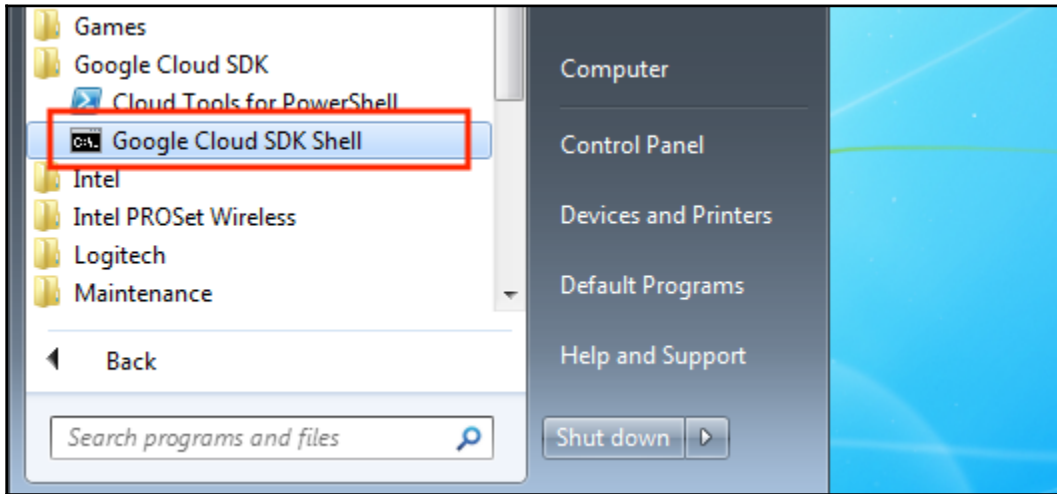
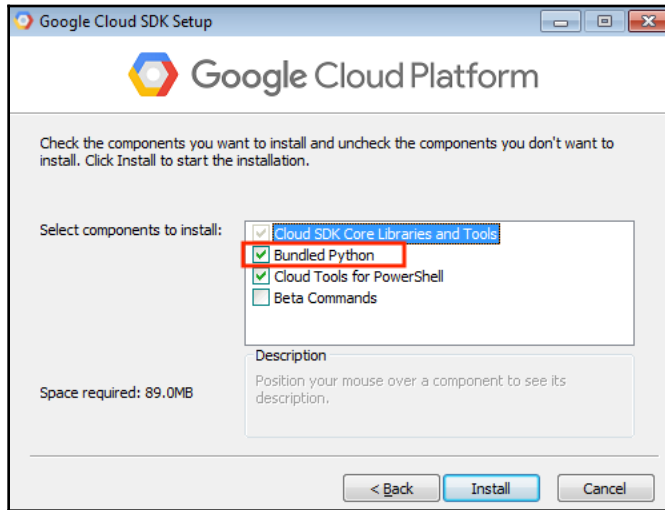
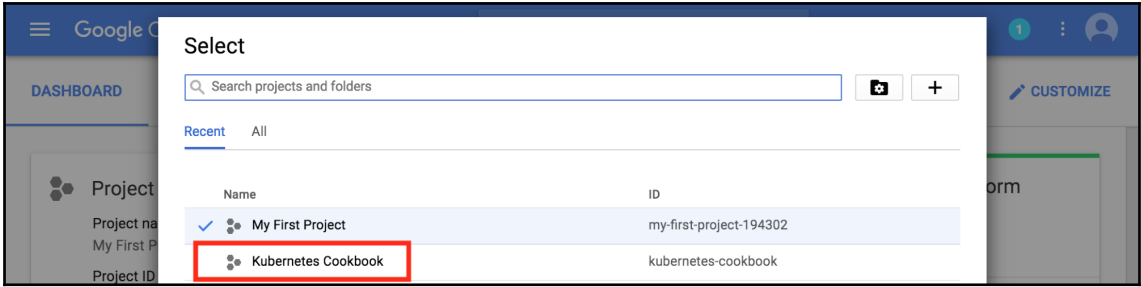
Thank you for using nginx.



Name	Launch Con	Instances	Desired	Min	Max	Availability Zones	Default Cooldown	Health Check Grac
<input checked="" type="checkbox"/> nodes.k8s-devops.net	nodes.k8s-...	2 ⓘ	3	3	3	us-east-1a, us-east-1b, us-e...	300	0
<input type="checkbox"/> master-us-east-1a.masters.k8s-devops.net	master-us-...	1	1	1	1	us-east-1a	300	0

Chapter 07: Building Kubernetes on GCP

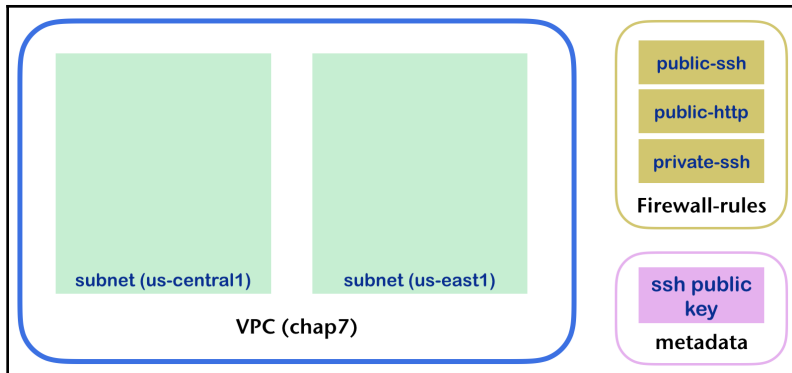




```
C:\> Google Cloud SDK Shell
Welcome to the Google Cloud SDK! Run "gcloud -h" to get the list of available co
mmands.
-----
C:\Users\user\AppData\Local\Google\Cloud SDK>gcloud info
Google Cloud SDK [187.0.0]

Platform: [Windows, x86_64] ('Windows', 'Dell', '7', '6.1.7601', 'AMD64', 'Intel
64 Family 6 Model 37 Stepping 2, GenuineIntel')
Python Version: [2.7.13 (v2.7.13:a06454b1afa1, Dec 17 2016, 20:53:40) [MSC v.150
0 64 bit (AMD64)]]
Python Location: [C:\Users\user\AppData\Local\Google\Cloud SDK\google-cloud-sdk\
platform\bundledpython\python.exe]
Site Packages: [Disabled]

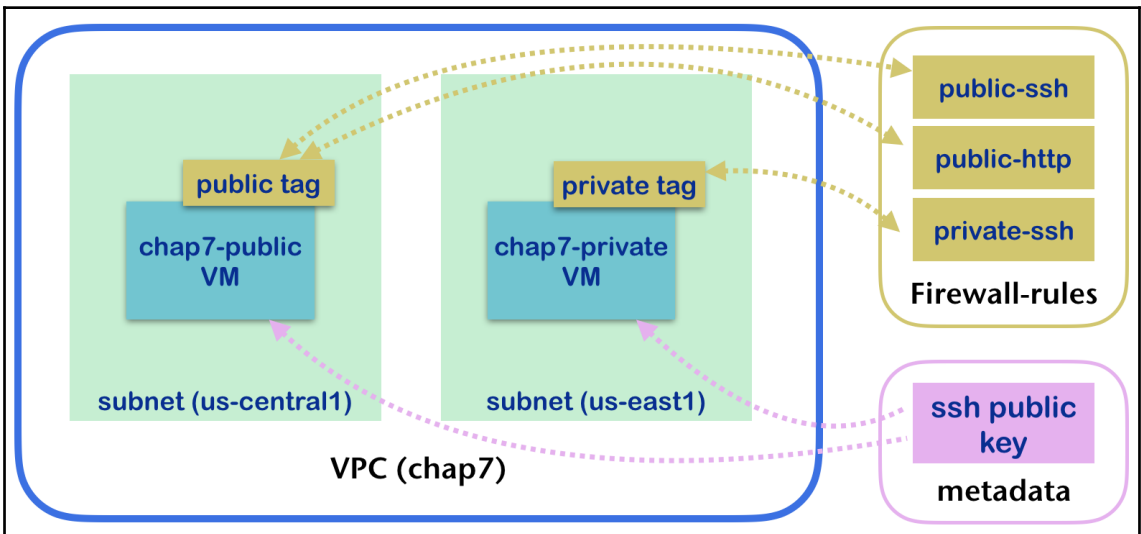
Installation Root: [C:\Users\user\AppData\Local\Google\Cloud SDK\google-cloud-sdk]
Installed Components:
  core: [2018.01.28]
  gsutil: [4.28]
  bq: [2.0.28]
System PATH: [C:\Users\user\AppData\Local\Google\Cloud SDK\google-cloud-sdk\bin\
..\bin\sdk;C:\Users\user\AppData\Local\Google\Cloud SDK\google-cloud-sdk\bin;C:\
Windows\system32;C:\Windows;C:\Windows\System32\Wbem;C:\Windows\System32\Windows
PowerShell\v1.0\;C:\Program Files\Intel\WiFi\bin\;C:\Program Files\Common Files\
```



```

$ gcloud compute regions list
NAME                CPUS  DISKS_GB  ADDRESSES  RESERVED_ADDRESSES  STATUS  TURNDOWN_DATE
asia-east1          0/8   0/2048    0/8        0/1                  UP      0/0
asia-northeast1     0/8   0/2048    0/8        0/1                  UP      0/0
asia-south1         0/8   0/2048    0/8        0/1                  UP      0/0
asia-southeast1     0/8   0/2048    0/8        0/1                  UP      0/0
australia-southeast1 0/8   0/2048    0/8        0/1                  UP      0/0
europe-west1        0/8   0/2048    0/8        0/1                  UP      0/0
europe-west2        0/8   0/2048    0/8        0/1                  UP      0/0
europe-west3        0/8   0/2048    0/8        0/1                  UP      0/0
europe-west4        0/8   0/2048    0/8        0/1                  UP      0/0
northamerica-northeast1 0/8   0/2048    0/8        0/1                  UP      0/0
southamerica-east1  0/8   0/2048    0/8        0/1                  UP      0/0
us-central1         0/8   0/2048    0/8        0/1                  UP      0/0
us-east1            0/8   0/2048    0/8        0/1                  UP      0/0
us-east4            0/8   0/2048    0/8        0/1                  UP      0/0
us-west1            0/8   0/2048    0/8        0/1                  UP      0/0
$

```



```
.ssh — saito@chap7-public: ~ — ssh -A saito@35.224.14.45 — 94x15
$ ssh -A saito@35.224.14.45
The authenticity of host '35.224.14.45 (35.224.14.45)' can't be established.
ECDSA key fingerprint is SHA256:EM98+dknUIGbvH/nCm6ztVdeM+qqJ7nLmKBjBF0lLUA.
Are you sure you want to continue connecting (yes/no)? yes
Warning: Permanently added '35.224.14.45' (ECDSA) to the list of known hosts.
Linux chap7-public 4.9.0-5-amd64 #1 SMP Debian 4.9.65-3+deb9u2 (2018-01-04) x86_64

The programs included with the Debian GNU/Linux system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Debian GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent
permitted by applicable law.
Last login: Mon Feb 5 07:19:34 2018 from 107.196.102.199
saito@chap7-public:~$
```

```
.ssh — saito@chap7-private: ~ — ssh -A saito@35.224.14.45 — 94x14
saito@chap7-public:~$ ssh saito@192.168.2.2
The authenticity of host '192.168.2.2 (192.168.2.2)' can't be established.
ECDSA key fingerprint is SHA256:WlhcoBpeuejmSrYrEEa/RD4louetw6bEau6N0Axa5k.
Are you sure you want to continue connecting (yes/no)? yes
Warning: Permanently added '192.168.2.2' (ECDSA) to the list of known hosts.
Linux chap7-private 4.9.0-5-amd64 #1 SMP Debian 4.9.65-3+deb9u2 (2018-01-04) x86_64

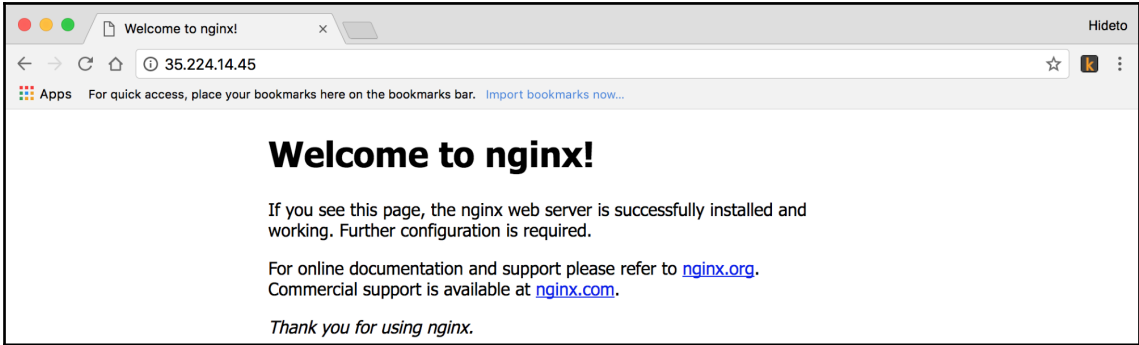
The programs included with the Debian GNU/Linux system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Debian GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent
permitted by applicable law.
saito@chap7-private:~$
```

```
.ssh — saito@chap7-public: ~ — ssh -A 35.224.14.45 — 94x13

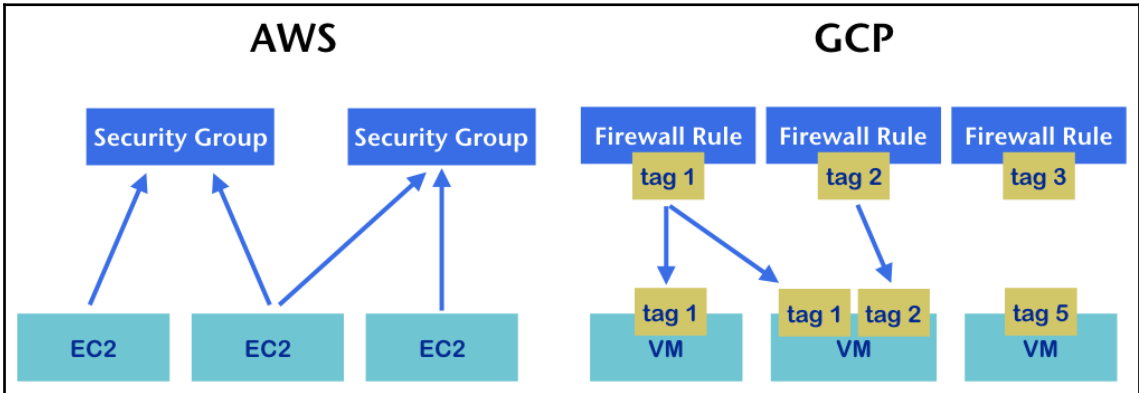
The programs included with the Debian GNU/Linux system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Debian GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent
permitted by applicable law.
Last login: Mon Feb 5 07:26:48 2018 from 192.168.1.2
saito@chap7-private:~$
saito@chap7-private:~$ exit
logout
Connection to 192.168.2.2 closed.
saito@chap7-public:~$ sudo apt-get -y install nginx
```



Name ^	Destination IP ranges	Priority	Instance tags	Next hop
<input checked="" type="checkbox"/> default-route-23110207a699e1b8	10.158.0.0/20	1000	None	Virtual network

<input type="checkbox"/> default-route-8f64e34aed068718	0.0.0.0/0	1000	None	Default internet gateway
---	-----------	------	------	--------------------------



```

{
  "kind": "Status",
  "apiVersion": "v1",
  "metadata": {
  },
  "status": "Failure",
  "message": "services \"https:kubernetes-dashboard:\" is forbidden: User \"system:anonymous\" cannot get services/proxy in the namespace \"kube-system\": Unknown user \"system:anonymous\"",
  "reason": "Forbidden",
  "details": {
    "name": "https:kubernetes-dashboard:",
    "kind": "services"
  },
  "code": 403
}

```


Kubernetes Dashboard

Kubeconfig

Please select the kubeconfig file that you have created to configure access to the cluster. To find out more about how to configure and use kubeconfig file, please refer to the [Configure Access to Multiple Clusters](#) section.

Token

Every Service Account has a Secret with valid Bearer Token that can be used to log in to Dashboard. To find out more about how to configure and use Bearer Tokens, please refer to the [Authentication](#) section.

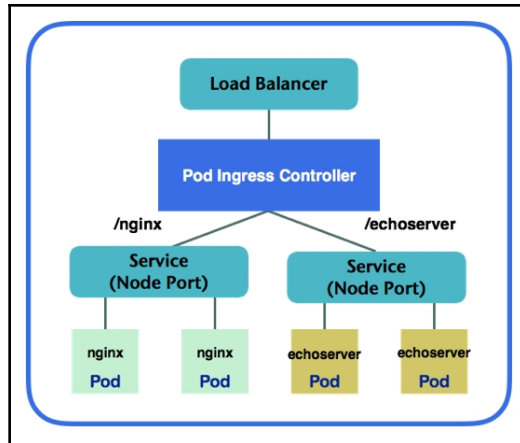
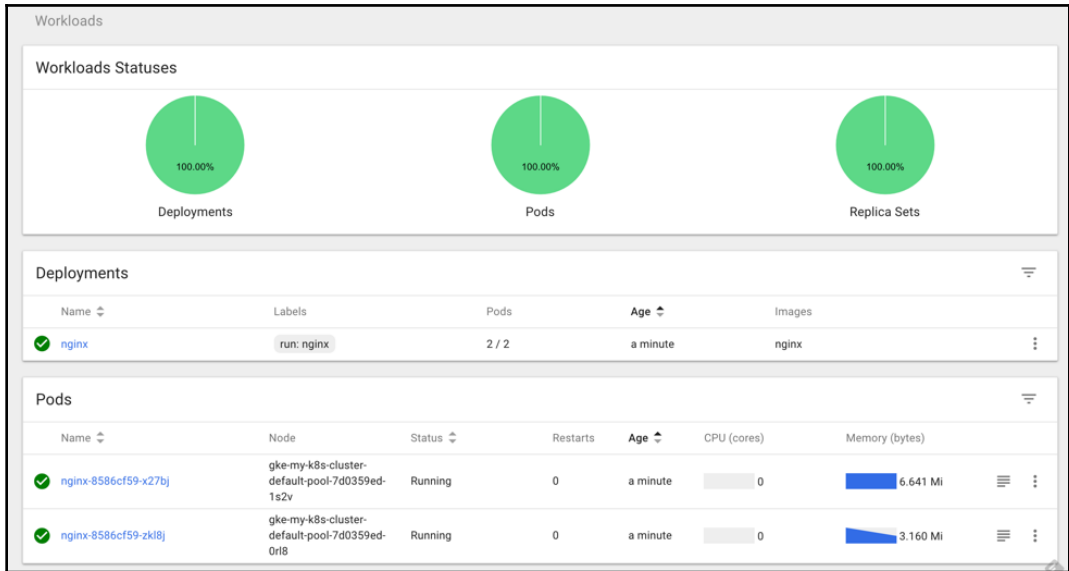
Choose kubeconfig file *

SIGN IN

SKIP

The screenshot displays the Kubernetes Dashboard interface. On the left, a sidebar menu includes sections for Cluster, Namespaces (with 'Nodes' selected), Persistent Volumes, Roles, Storage Classes, Namespace (set to 'default'), Overview, and Workloads (with sub-items like Cron Jobs, Daemon Sets, Deployments, Jobs, Pods, Replica Sets, and Replication Controllers). The main content area features two line graphs: 'CPU usage' showing a fluctuating green line between 0.035 and 0.158 cores over time, and 'Memory usage' showing a steady blue line at approximately 1.05 Gi. Below the graphs is a 'Nodes' table with columns for Name, Labels, Ready status, CPU requests/limits, Memory requests/limits, and Age. One node is listed with a green checkmark in the Ready column.

Name	Labels	Ready	CPU requests (cores)	CPU limits (cores)	Memory requests (bytes)	Memory limits (bytes)	Age
gke-my-k8s-cluster-defc	beta.kubernetes.io/arch: arm64, beta.kubernetes.io/flavor: g1, beta.kubernetes.io/instance-type: n1-standard-2, beta.kubernetes.io/os: linux, cloud.google.com/gke-series: n1-standard, show all	True	0.303 (30.30%)	0.248 (24.80%)	554 Mi (93.27%)	1.078 Gi (185.86%)	49 minutes



Ingress

Load balancer IP	35.190.46.137
Load balancer	k8s-um-default-my-ingress-91cf30ccf285becb
Target proxy	k8s-tp-default-my-ingress-91cf30ccf285becb
Forwarding rule	k8s-fw-default-my-ingress-91cf30ccf285becb
Backend services	<ul style="list-style-type: none"> k8s-be-31108-91cf30ccf285becb k8s-be-31250-91cf30ccf285becb k8s-be-32691-91cf30ccf285becb

Rules

Endpoint	Service
*/	nodeport-svc
*/nginx	nodeport-svc
*/echoserver	echoserver-svc

Serving pods

Service	Name	Status	Restarts	Created on
echoserver-svc	echoserver-deploy-5bb4d7f58c-bhqhq	Running	0	Mar 2, 2018, 10:18:40 AM
echoserver-svc	echoserver-deploy-5bb4d7f58c-xmkl6	Running	0	Mar 2, 2018, 10:18:39 AM
nodeport-svc	nodeport-deploy-577dd487d-prkm6	Running	0	Mar 2, 2018, 10:17:48 AM
nodeport-svc	nodeport-deploy-577dd487d-s792f	Running	0	Mar 2, 2018, 10:17:48 AM

Backend

Backend services

1. k8s-be-32691--91cf30ccf285becb
 Endpoint protocol: **HTTP** Named port: **port32691** Timeout: **30 seconds** Health check: [k8s-be-32691--91cf30ccf285becb](#) Session affinity: **None** Cloud CDN: **disabled**
[Advanced configurations](#)


Instance group ^	Zone	Healthy	Autoscaling	Balancing mode	Capacity
k8s-ig-91cf30ccf285becb	us-central1-a	3 / 3	Off	Max RPS: 1 (per instance)	100%

2. k8s-be-31108--91cf30ccf285becb
 Endpoint protocol: **HTTP** Named port: **port31108** Timeout: **30 seconds** Health check: [k8s-be-31108--91cf30ccf285becb](#) Session affinity: **None** Cloud CDN: **disabled**
[Advanced configurations](#)

Instance group ^	Zone	Healthy	Autoscaling	Balancing mode	Capacity
k8s-ig-91cf30ccf285becb	us-central1-a	3 / 3	Off	Max RPS: 1 (per instance)	100%

3. k8s-be-31250--91cf30ccf285becb
 Endpoint protocol: **HTTP** Named port: **port31250** Timeout: **30 seconds** Health check: [k8s-be-31250--91cf30ccf285becb](#) Session affinity: **None** Cloud CDN: **disabled**
[Advanced configurations](#)

Instance group ^	Zone	Healthy	Autoscaling	Balancing mode	Capacity
k8s-ig-91cf30ccf285becb	us-central1-a	3 / 3	Off	Max RPS: 1 (per instance)	100%

 **my-k8s-cluster**

[Details](#) [Storage](#) [Nodes](#)

Cluster

Master version	1.9.2-gke.1	Upgrade available
Endpoint	35.225.71.127	Show credentials

Change Kubernetes version of master in my-k8s-cluster

- 1.9.3-gke.0
- 1.9.2-gke.1 (current)

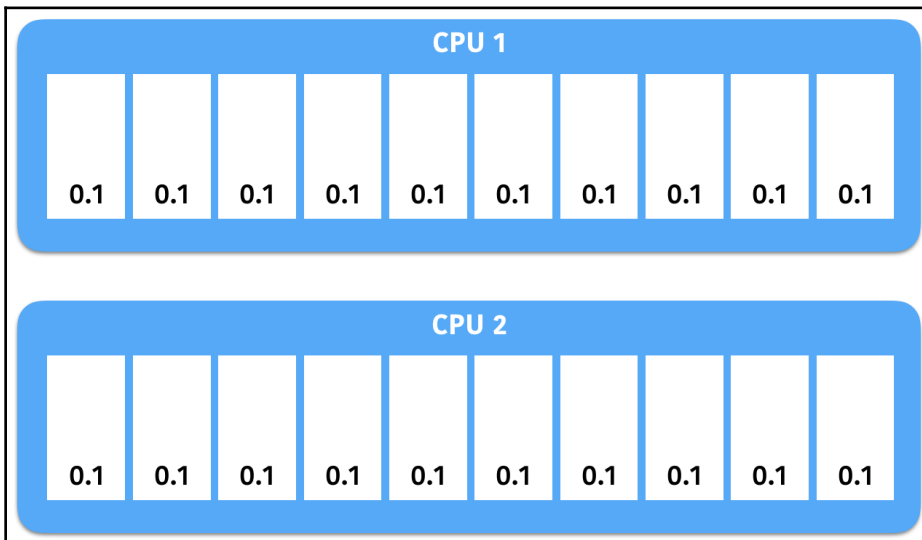
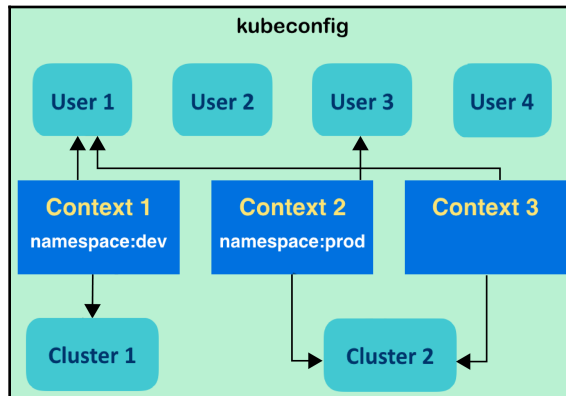
Changing the master version can result in several minutes of control plane downtime. During that period you will be unable to edit this cluster.

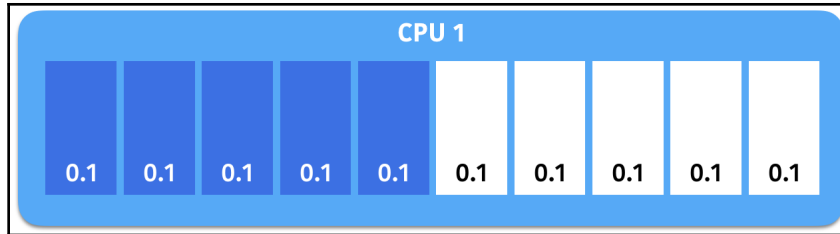
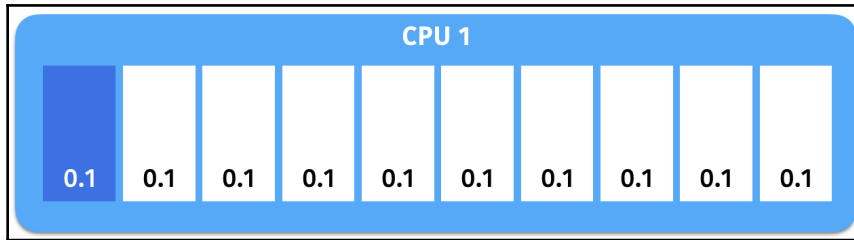
This operation starts immediately, and is not reversible.

[Learn more](#) [Release notes](#) 

CANCEL CHANGE

Chapter 08: Advanced Cluster Administration





Kubernetes Dashboard

Kubeconfig

Please select the kubeconfig file that you have created to configure access to the cluster. To find out more about how to configure and use kubeconfig file, please refer to the [Configure Access to Multiple Clusters](#) section.

Token

Every Service Account has a Secret with valid Bearer Token that can be used to log in to Dashboard. To find out more about how to configure and use Bearer Tokens, please refer to the [Authentication](#) section.

Choose kubeconfig file ...

SIGN IN SKIP

Kubernetes Dashboard

Kubeconfig

Please select the kubeconfig file that you have created to configure access to the cluster. To find out more about how to configure and use kubeconfig file, please refer to the [Configure Access to Multiple Clusters](#) section.

Token

Every Service Account has a Secret with valid Bearer Token that can be used to log in to Dashboard. To find out more about how to configure and use Bearer Tokens, please refer to the [Authentication](#) section.

Enter token

.....

SIGN IN

SKIP

kubernetes [+ CREATE](#)

Overview

Cluster Discovery and Load Balancing

Namespaces
Nodes
Persistent Volumes
Roles
Storage Classes

Namespace: **default**

Overview

Workloads
Cron Jobs
Daemon Sets
Deployments
Jobs
Pods
Replica Sets

Services

Name	Labels	Cluster IP	Internal endpoints	External endpoints	Age
✓ kubernetes	component: apiserver provider: kubernet...	10.96.0.1	kubernetes:443 TCP kubernetes:0 TCP	-	a month

Secrets

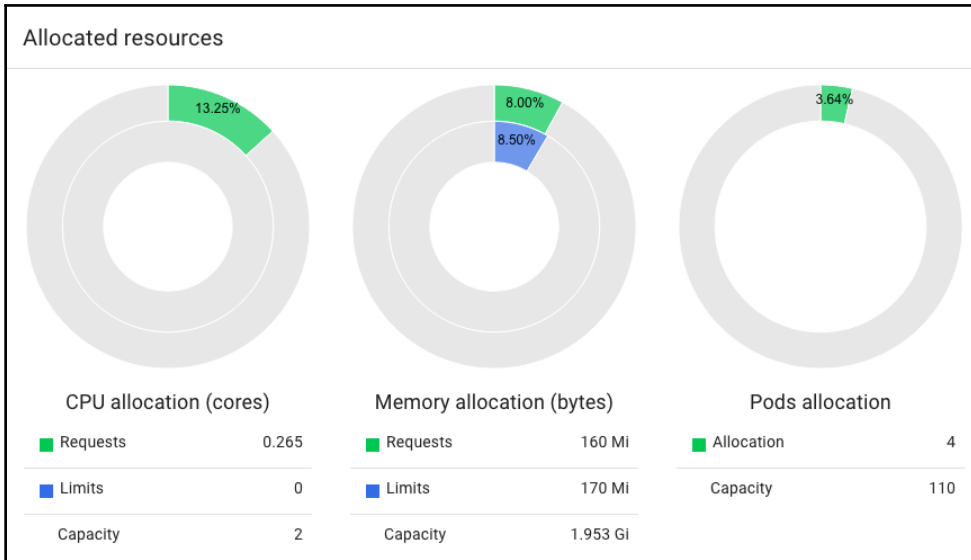
Name	Type	Age
default-token-c9q2p	kubernetes.io/service-account-token	a month

Cluster

Namespaces
Nodes
Persistent Volumes
Roles
Storage Classes

Nodes

Name	Labels	Ready	CPU requests (cores)	CPU limits (cores)	Memory requests (bytes)	Memory limits (bytes)	Age
✓ minikube	beta.kubernetes.io/arch: arm64 beta.kubernetes.io/os: linux kubernetes.io/hostname: minikube	True	0.265 (13.25%)	0 (0.00%)	160 Mi (8.00%)	170 Mi (8.50%)	an hour



Cluster

- Namespaces
- Nodes
- Persistent Volumes
- Roles
- Storage Classes

Namespace

kube-system

Overview

Workloads

- Cron Jobs
- Daemon Sets
- Deployments
- Jobs
- Pods
- Replica Sets
- Replication Controllers

Workloads

Workloads Statuses

Deployments

Pods

Replica Sets

Deployments

Name	Labels	Pods	Age	Images
✓ kube-dns	addonmanager.kubern... k8s-app: kube-dns version: v20	1 / 1	an hour	k8s.gcr.io/k8s-dns-kube- k8s.gcr.io/k8s-dns-dnsm k8s.gcr.io/k8s-dns-sidec
✓ kubernetes-dashboard	addonmanager.kubern... kubernetes.io/minikub... version: v1.8.1	1 / 1	an hour	k8s.gcr.io/kubernetes-da

Cluster

- Namespaces
- Nodes
- Persistent Volumes
- Roles
- Storage Classes

Namespace

kube-system ▾

Overview

Workloads

- Cron Jobs
- Daemon Sets
- Deployments
- Jobs
- Pods
- Replica Sets
- Replication Controllers

Details

Name: kubernetes-dashboard

Namespace: kube-system

Labels: addonmanager.kubernetes.io/mode: Reconcile kubernetes.io/minikube-addons: dashboard version: v1.8.1

Annotations: deployment.kubernetes.io/revision: 1 kubectl.kubernetes.io/last-applied-configuration

Creation Time: 2018-03-13T17:09 UTC

Selector: addonmanager.kubernetes.io/mode: Reconcile app: kubernetes-dashboard version: v1.8.1

Strategy: RollingUpdate

Min ready seconds: 0

Revision history limit: 10

Rolling update strategy: Max surge: 25%, Max unavailable: 25%

Status: 1 updated, 1 total, 1 available, 0 unavailable

New Replica Set

Name	Labels	Pods	Age	Images
✔ kubernetes-dashboard-7	addonmanager.kubern.. app: kubernetes-dashb.. pod-template-hash: 33.. version: v1.8.1	1 / 1	an hour	k8s.gcr.io/kubernetes-de

Logs from kubernetes-dashboard ▾ in kubernetes-dashboard-77d8b98585-qcjt ▾

```
2018/03/13 19:02:39 Metric client health check failed: the server could not find the requested resource
(get services heapster). Retrying in 30 seconds.
2018/03/13 19:03:09 Metric client health check failed: the server could not find the requested resource
(get services heapster). Retrying in 30 seconds.
2018/03/13 19:03:39 Metric client health check failed: the server could not find the requested resource
(get services heapster). Retrying in 30 seconds.
2018/03/13 19:04:09 Metric client health check failed: the server could not find the requested resource
(get services heapster). Retrying in 30 seconds.
2018/03/13 19:04:34 Getting application global configuration
2018/03/13 19:04:34 Application configuration {"serverTime":1520967874369}
2018/03/13 19:04:35 [2018-03-13T19:04:35Z] Incoming HTTP/1.1 GET /api/v1/settings/global request from
172.17.0.1:54386: {}
2018/03/13 19:04:35 [2018-03-13T19:04:35Z] Outcoming response to 172.17.0.1:54386 with 200 status code
2018/03/13 19:04:35 [2018-03-13T19:04:35Z] Incoming HTTP/1.1 GET /api/v1/login/status request from
172.17.0.1:54386: {}
2018/03/13 19:04:35 [2018-03-13T19:04:35Z] Outcoming response to 172.17.0.1:54386 with 200 status code
2018/03/13 19:04:35 [2018-03-13T19:04:35Z] Incoming HTTP/1.1 GET /api/v1/systembanner request from
172.17.0.1:54386: {}
2018/03/13 19:04:35 [2018-03-13T19:04:35Z] Outcoming response to 172.17.0.1:54386 with 200 status code
2018/03/13 19:04:35 [2018-03-13T19:04:35Z] Incoming HTTP/1.1 GET /api/v1/login/status request from
172.17.0.1:54386: {}
2018/03/13 19:04:35 [2018-03-13T19:04:35Z] Outcoming response to 172.17.0.1:54386 with 200 status code
2018/03/13 19:04:36 [2018-03-13T19:04:36Z] Incoming HTTP/1.1 GET /api/v1/rbac/status request from
172.17.0.1:54386: {}
2018/03/13 19:04:36 [2018-03-13T19:04:36Z] Outcoming response to 172.17.0.1:54386 with 200 status code
2018/03/13 19:04:36 [2018-03-13T19:04:36Z] Incoming HTTP/1.1 GET /api/v1/log/source/kube-system
/kubernetes-dashboard-77d8b98585/replicaset request from 172.17.0.1:54386: {}
2018/03/13 19:04:36 [2018-03-13T19:04:36Z] Outcoming response to 172.17.0.1:54386 with 200 status code
2018/03/13 19:04:36 [2018-03-13T19:04:36Z] Incoming HTTP/1.1 GET /api/v1/log/kube-system/kubernetes-
dashboard-77d8b98585-qcjt request from 172.17.0.1:54386: {}
```

Logs from 3/13/18 6:56 PM to 3/13/18 7:04 PM UTC

⏪ < > ⏩

CREATE FROM TEXT INPUT

CREATE FROM FILE

CREATE AN APP

Select YAML or JSON file specifying the resources to deploy to the currently selected namespace. [Learn more](#) 

Choose YAML or JSON file

my-nginx.yaml 

UPLOAD

CANCEL

Deploying file has failed

Your file specifies a namespace that is inconsistent with the namespace currently selected in Dashboard. Either edit the namespace entry in your file or select a different namespace in Dashboard to deploy to (eg. 'All namespaces' or the correct namespace provided in the file).

CLOSE

Cluster

- Namespaces
- Nodes
- Persistent Volumes
- Roles
- Storage Classes

Namespace

dashboard-test

CREATE FROM TEXT INPUT **CREATE FROM FILE** CREATE AN APP

Select YAML or JSON file specifying the resources to deploy to the currently selected namespace. [Learn more](#)

Choose YAML or JSON file

my-nginx.yaml

UPLOAD CANCEL

Workloads Statuses

100.00%

Deployments

100.00%

Pods

100.00%

Replica Sets

Deployments

Name	Labels	Pods	Age	Images
my-nginx	run: demo	0 / 3	-	nginx

API OVERVIEW

WORKLOADS

- Container v1 core
- CronJob v1beta1 batch
- DaemonSet v1 apps
- Deployment v1 apps 1
- Write Operations 2
- Create 3
- Patch
- Replace
- Delete
- Delete Collection
- Read Operations
- Status Operations
- Misc Operations

- Job v1 batch
- Pod v1 core
- ReplicaSet v1 apps
- ReplicationController v1 core
- StatefulSet v1 apps

Create

create a Deployment

HTTP Request

POST /apis/apps/v1/namespaces/{namespace}/deployments

Path Parameters

Parameter	Description
namespace	object name and auth scope, such as for teams and projects

Query Parameters

Parameter	Description
pretty	If 'true', then the output is pretty printed.

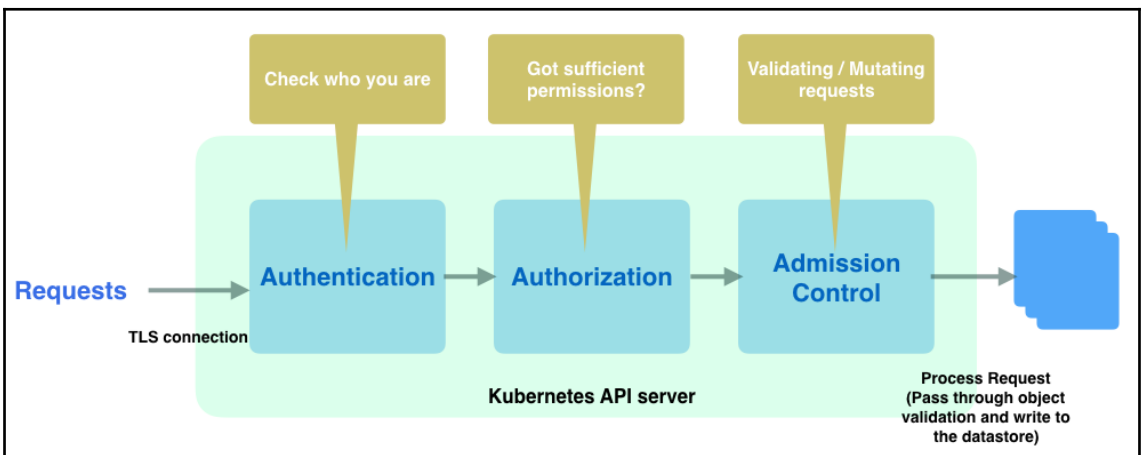
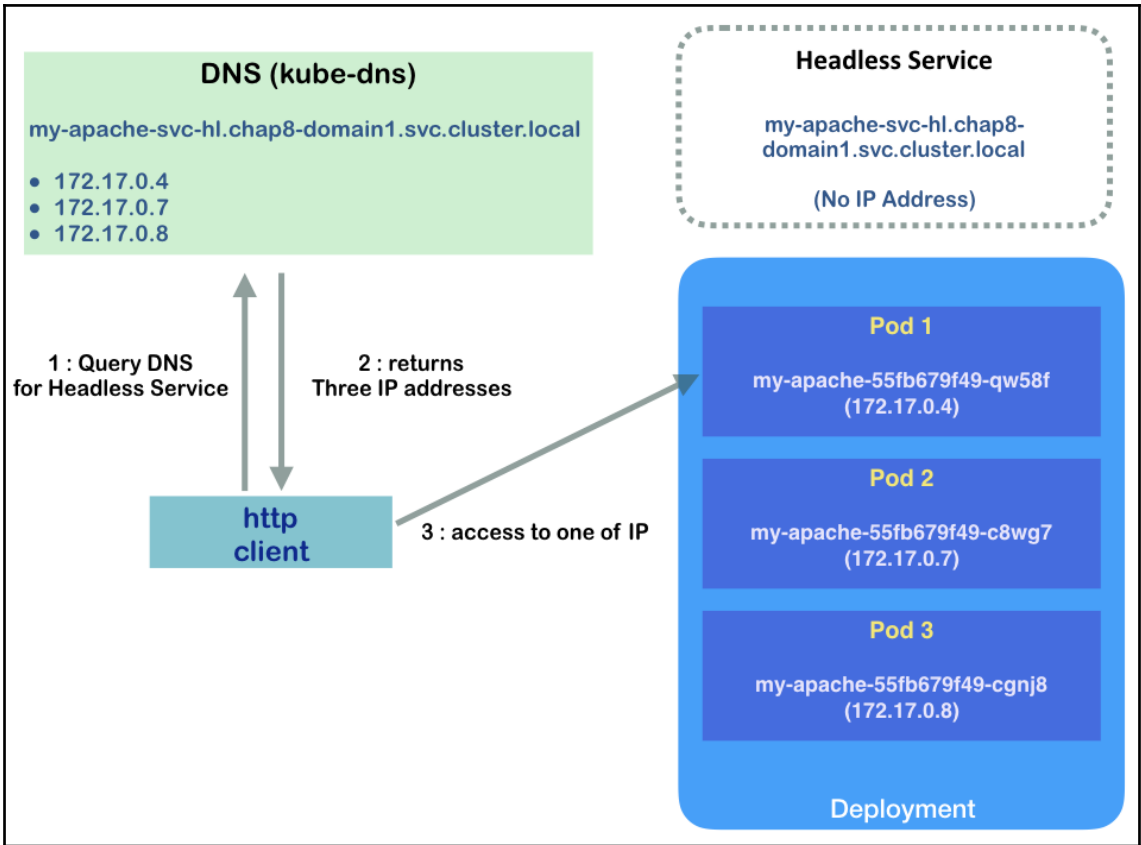
kubectl 4 curl

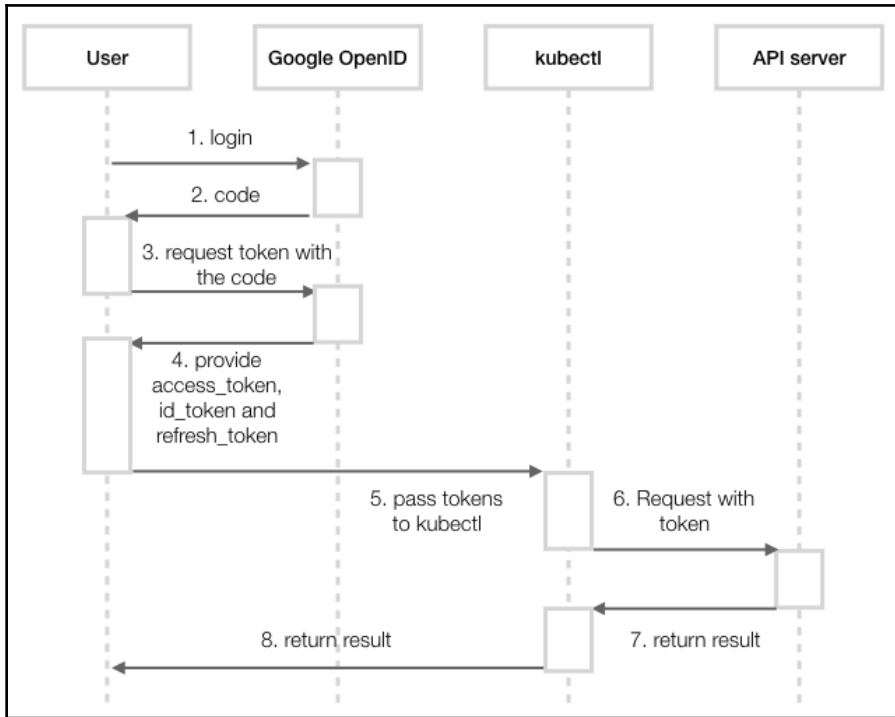
curl Command (requires kubectl proxy to be running)

```

$ kubectl proxy
$ curl -X POST -H 'Content-Type: application/yaml' --da
apiVersion: apps/v1beta1
kind: Deployment
metadata:
  name: deployment-example
spec:
  replicas: 3
  revisionHistoryLimit: 10
  template:
    metadata:
      labels:
        app: nginx
    spec:
      containers:
        - name: nginx
          image: nginx:1.10
          ports:
            - containerPort: 80
' http://127.0.0.1:8001/apis/apps/v1/namespaces/default

```



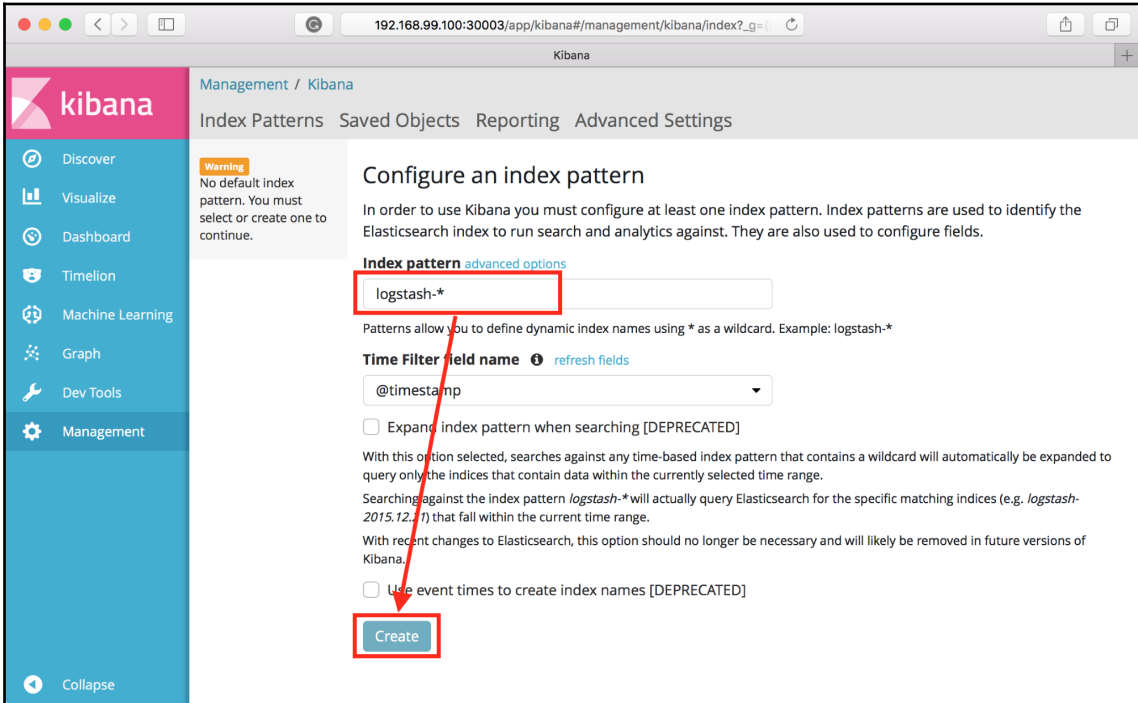


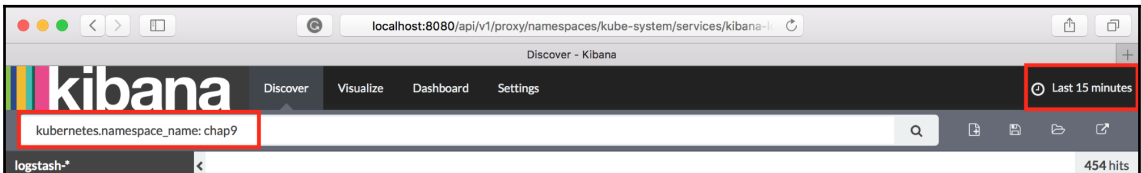
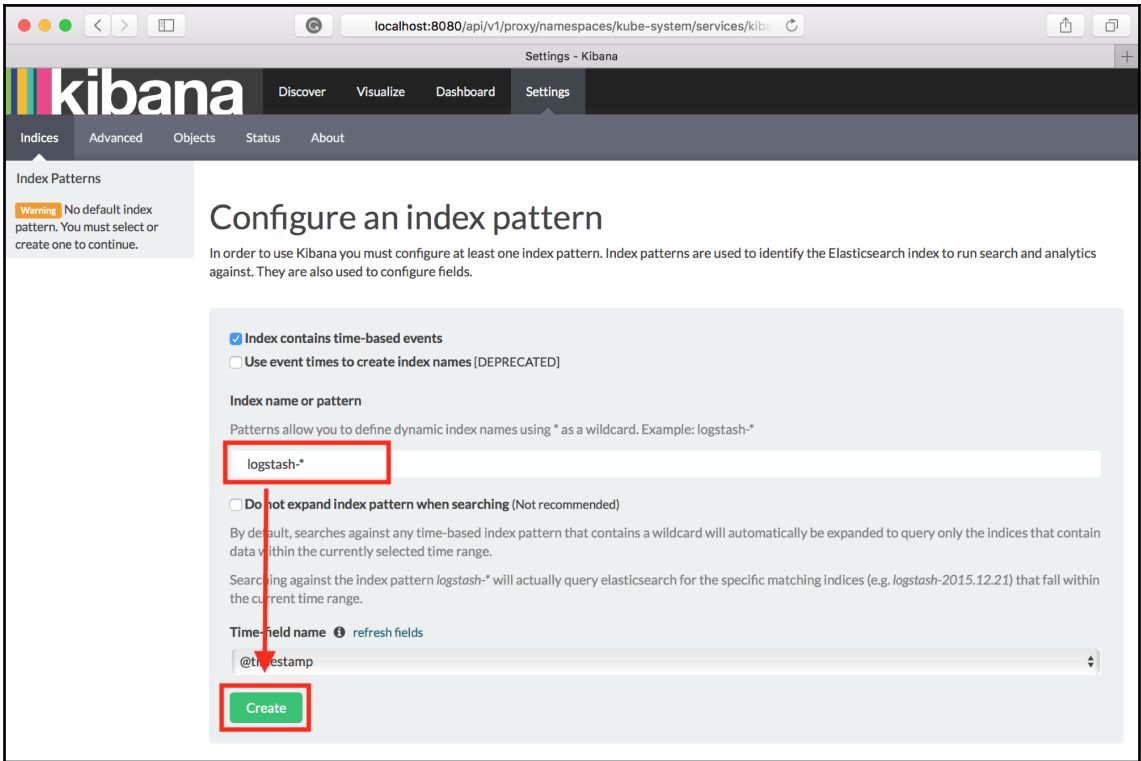
Sign in

Please copy this code, switch to your application and paste it there:

[4/AAAd5nqWFkpKmxo0b_HZGlcAh57zbJzggKmoOG0BH9gJhfgvQK0iu9w](https://oauth2auth.gcp.k8s.io/4/AAAd5nqWFkpKmxo0b_HZGlcAh57zbJzggKmoOG0BH9gJhfgvQK0iu9w)

Chapter 09: Logging and Monitoring





localhost:8080/api/v1/proxy/namespaces/kube-system/services/Kibana-
Kibana

Discover Visualize Dashboard Settings Last 15 minutes

kubernetes.namespace_name: chap9

logstash*

Selected Fields

Available Fields

Popular

- docker.container_id
- kubernetes.host
- kubernetes.namespace_name
- kubernetes.pod_name
- log

Count

March 25th 2018, 17:01:38.154 - March 25th 2018, 17:16:38.154 — by_30seconds

Time

Log entries:

```

March 25th 2018, 17:16:34.000 | kubernetes.namespace_name: chap9 | log: Mon Mar 26 00:16:34 UTC 2018 INFO hello stream: stdout
docker.container_id: 6bf1dd10dc18c9303c70d91c6daa9f08887c0afbe4a5d5646a80815bb4c26105
kubernetes.pod_id: b22afeb9-3086-11e8-8626-42010a8e0002 | kubernetes.pod_name: myapp
kubernetes.container_name: application | kubernetes.host: node-1 | tag: kubernetes.var.log.con
ainers.myapp_chap9_application-6bf1dd10dc18c9303c70d91c6daa9f08887c0afbe4a5d5646a80815bb4c2610

March 25th 2018, 17:16:33.000 | kubernetes.namespace_name: chap9 | log: Mon Mar 26 00:16:33 UTC 2018 INFO hello stream: stdout
docker.container_id: 6bf1dd10dc18c9303c70d91c6daa9f08887c0afbe4a5d5646a80815bb4c26105
kubernetes.pod_id: b22afeb9-3086-11e8-8626-42010a8e0002 | kubernetes.pod_name: myapp
kubernetes.container_name: application | kubernetes.host: node-1 | tag: kubernetes.var.log.con
ainers.myapp_chap9_application-6bf1dd10dc18c9303c70d91c6daa9f08887c0afbe4a5d5646a80815bb4c2610

March 25th 2018, 17:16:32.000 | kubernetes.namespace_name: chap9 | log: Mon Mar 26 00:16:32 UTC 2018 INFO hello stream: stdout

```

localhost:8080/api/v1/proxy/namespaces/kube-system/services/kibana-... Discover - Kibana

kubernetes.namespace_name: chap? 494 hits

logstash*

Selected Fields

- log
- kubernetes.host
- kubernetes.pod_name

Available Fields

- kubernetes.namespace_name
- @timestamp
- _id
- _index
- ._score
- _type
- docker.container_id
- kubernetes.container_name
- kubernetes.pod_id
- stream
- tag

March 25th 2018, 16:45:17.437 - March 25th 2018, 17:00:17.437 — by_30.seconds

Time	log	kubernetes.host	kubernetes.pod_name
March 25th 2018, 17:00:13.000	Mon Mar 26 00:00:13 UTC 2018 INFO hello	node-1	myapp
March 25th 2018, 17:00:12.000	Mon Mar 26 00:00:12 UTC 2018 INFO hello	node-1	myapp
March 25th 2018, 17:00:11.000	Mon Mar 26 00:00:11 UTC 2018 INFO hello	node-1	myapp
March 25th 2018, 17:00:10.000	Mon Mar 26 00:00:10 UTC 2018 INFO hello	node-1	myapp
March 25th 2018, 17:00:09.000	Mon Mar 26 00:00:09 UTC 2018 INFO hello	node-1	myapp
March 25th 2018, 17:00:08.000	Mon Mar 26 00:00:08 UTC 2018 INFO hello	node-1	myapp
March 25th 2018, 17:00:07.000	Mon Mar 26 00:00:07 UTC 2018 INFO hello	node-1	myapp
March 25th 2018, 17:00:06.000	Mon Mar 26 00:00:06 UTC 2018 INFO hello	node-1	myapp
March 25th 2018, 17:00:05.000	Mon Mar 26 00:00:05 UTC 2018 INFO hello	node-1	myapp

Configure an index pattern

In order to use Kibana you must configure at least one index pattern. Index patterns are used to identify the Elasticsearch index to run search and analytics against. They are also used to configure fields.

- Index contains time-based events
- Use event times to create index names [DEPRECATED]

Index name or pattern

Patterns allow you to define dynamic index names using * as a wildcard. Example: `logstash-*`

`heapster-*`

- Do not expand index pattern when searching (Not recommended)

By default, searches against any time-based index pattern that contains a wildcard will automatically be expanded to query only the indices that contain data within the currently selected time range.

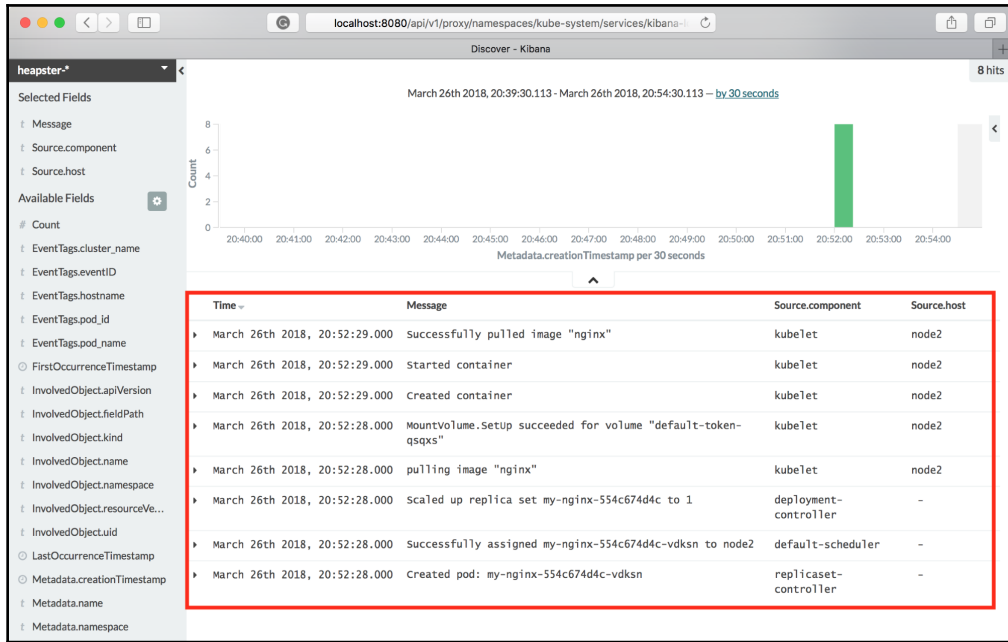
Searching against the index pattern `logstash-*` will actually query elasticsearch for the specific matching indices (e.g. `logstash-2015.12.21`) that fall within the current time range.

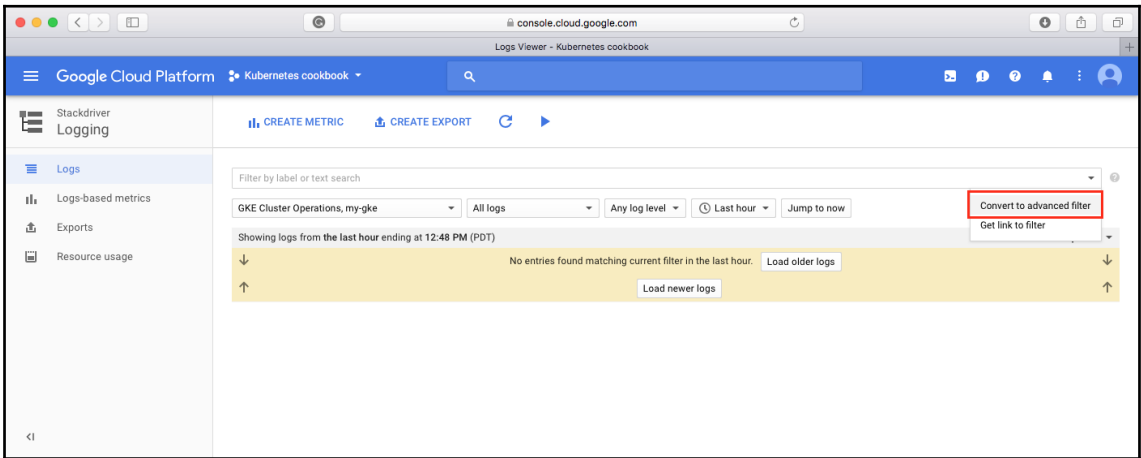
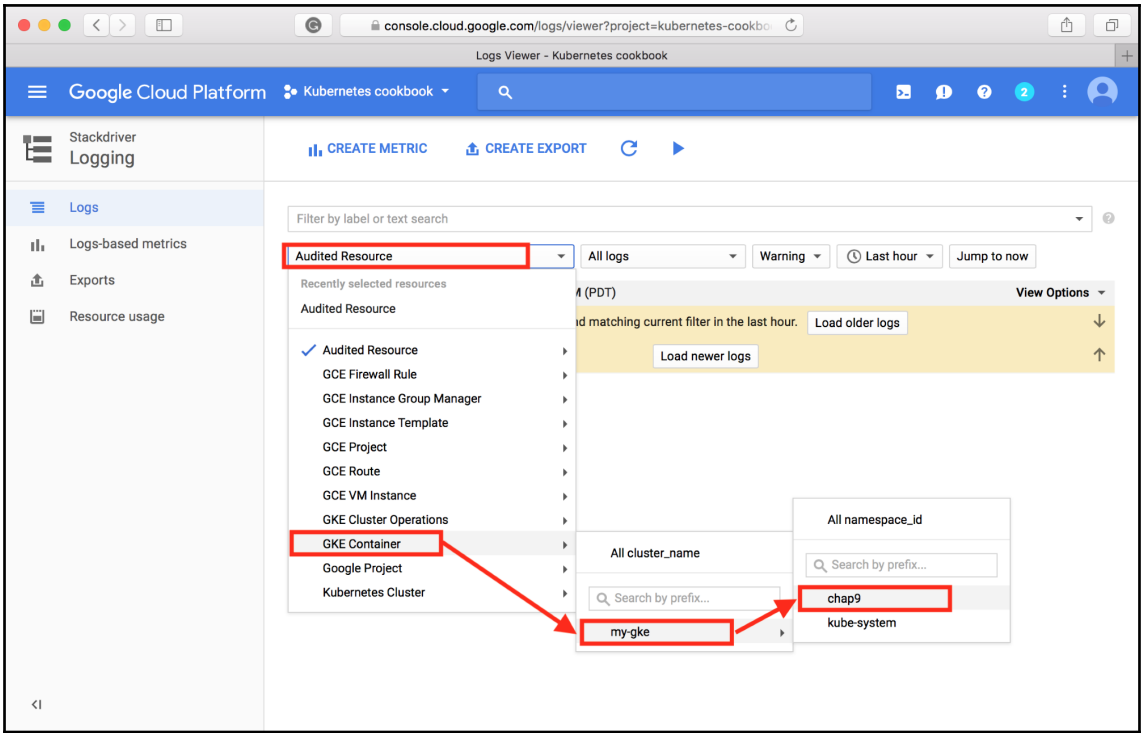
Time-field name refresh fields

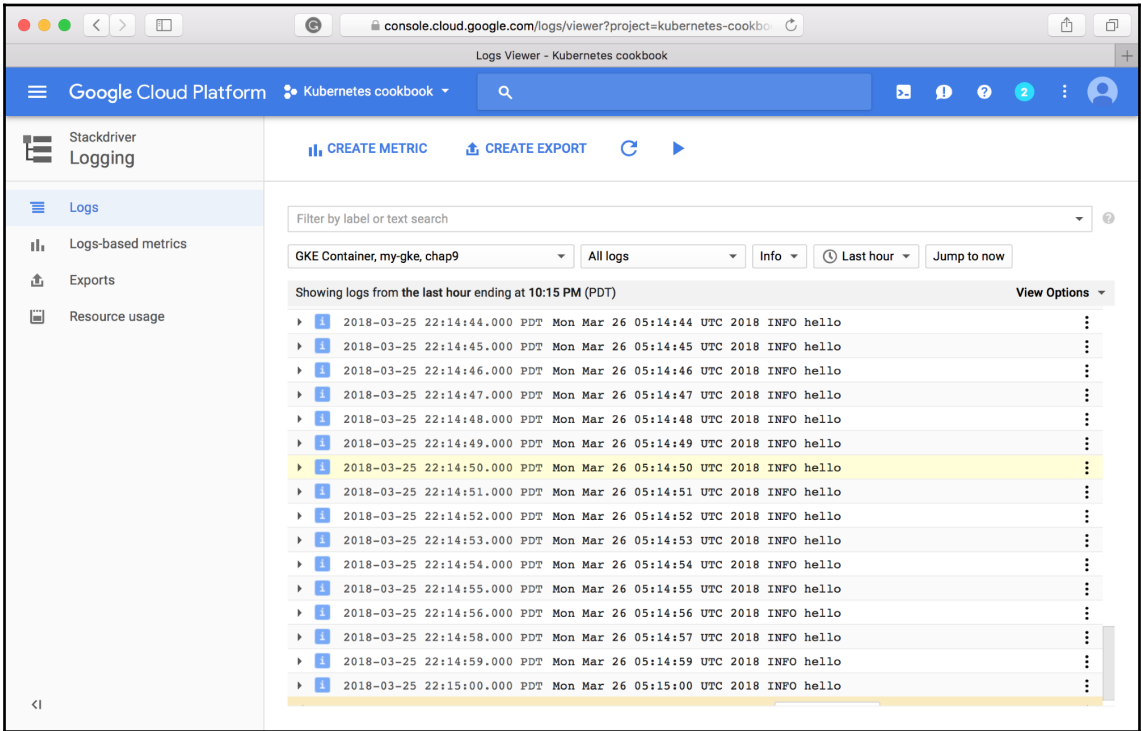
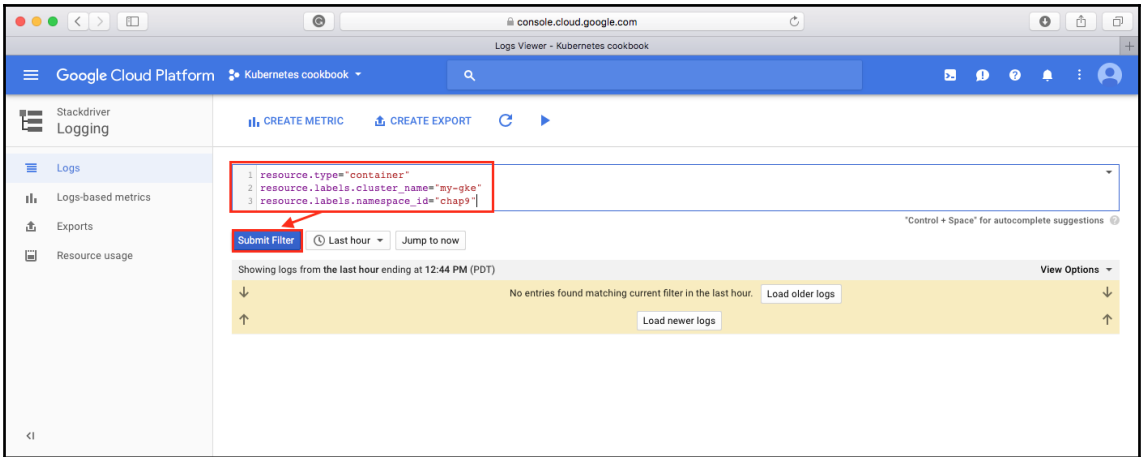
Metadata.creationTimestamp

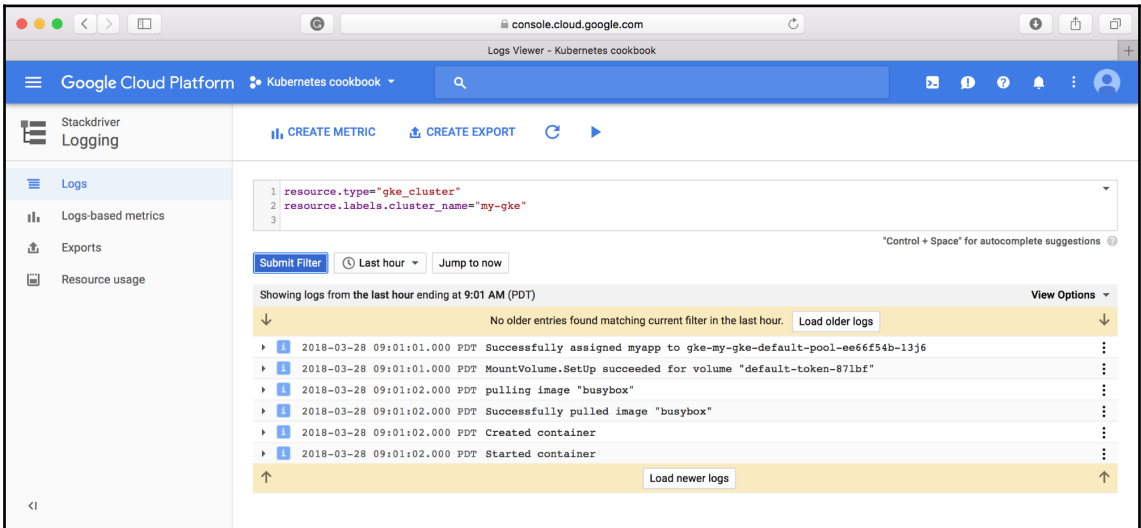
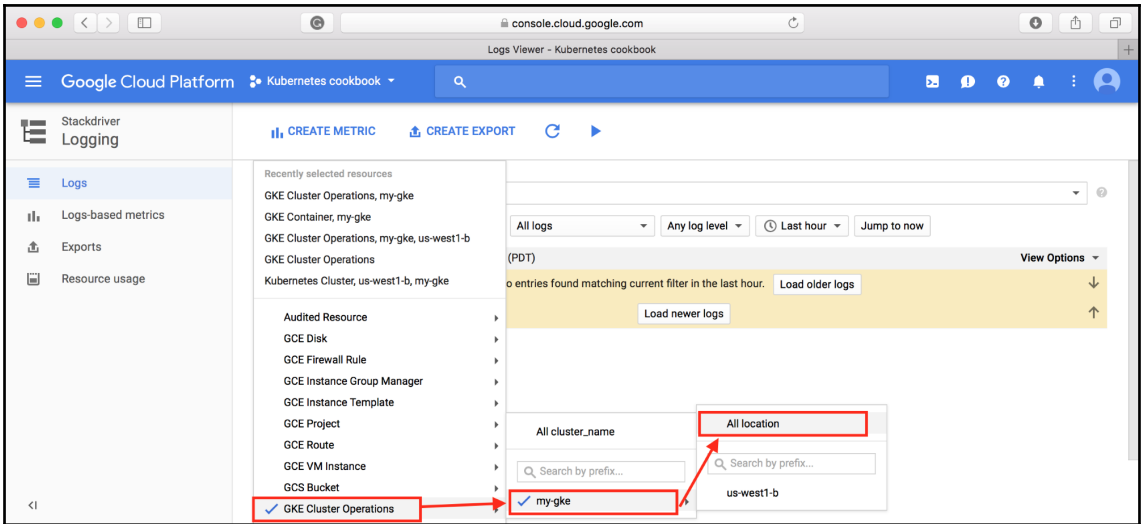
Create

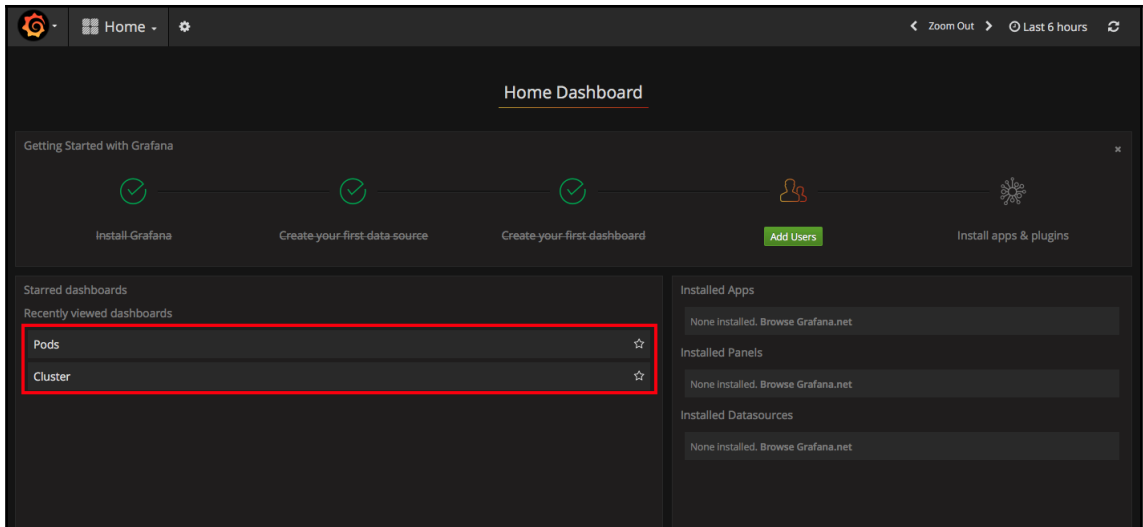
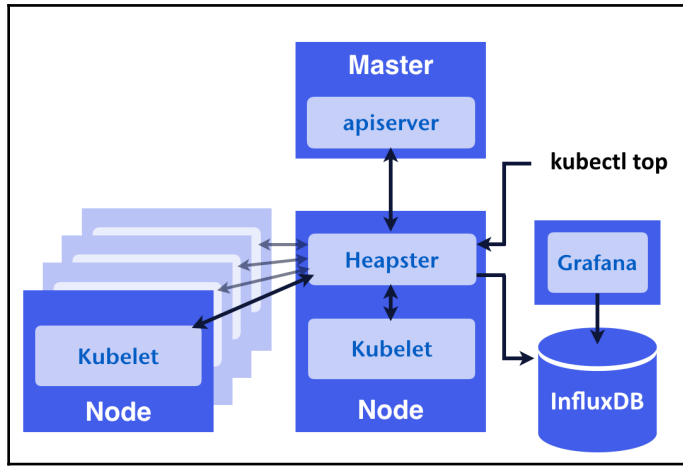
Field	Value
InvolvedObject.uid	Metadata.namespace: default Metadata.selfLink: /api/v1/namespaces/default/events/my-nginx-554c674d4c-vdksn.151faa937272ab85 Metadata.uid: 454a5b86-3172-11e8-9dfb-42010a8e0006 Metadata.resourceVersion: 1889 Metadata.creationTimestamp: March 26th 2018, 20:52:29.000
LastOccurrenceTimes...	
Message	<code>add</code>
Metadata.creationTim...	
Metadata.name	Count: 1 Metadata.name: my-nginx-554c674d4c-vdksn.151faa936e4d7b57
Metadata.namespace	Metadata.namespace: default Metadata.selfLink: /api/v1/namespaces/default/events/my-nginx-554c674d4c-vdksn.151faa936e4d7b57 Metadata.uid: 453fa786-3172-11e8-9dfb-42010a8e0006 Metadata.resourceVersion: 1888 Metadata.creationTimestamp: March 26th 2018, 20:52:29.000
Metadata.resourceVer...	
Metadata.selfLink	
Metadata.uid	
Reason	Count: 1 Metadata.name: my-nginx-554c674d4c-vdksn.151faa93337f2713
Source.component	Metadata.namespace: default Metadata.selfLink: /api/v1/namespaces/default/events/my-nginx-554c674d4c-vdksn.151faa93337f2713 Metadata.uid: 44a918a7-3172-11e8-9dfb-42010a8e0006 Metadata.resourceVersion: 1885 Metadata.creationTimestamp: March 26th 2018, 20:52:28.000
Source.host	
Type	

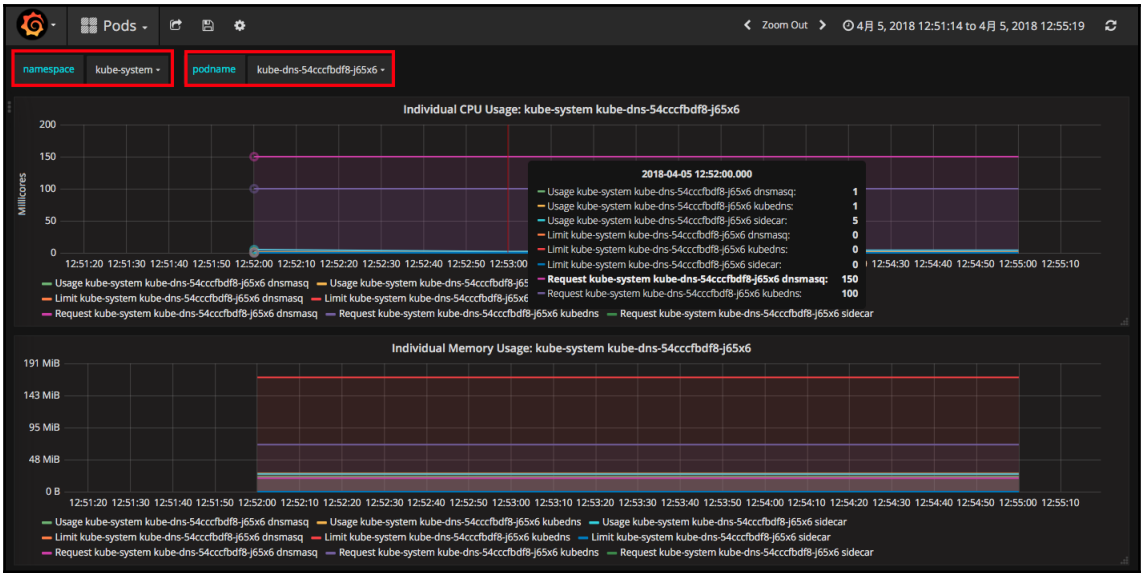










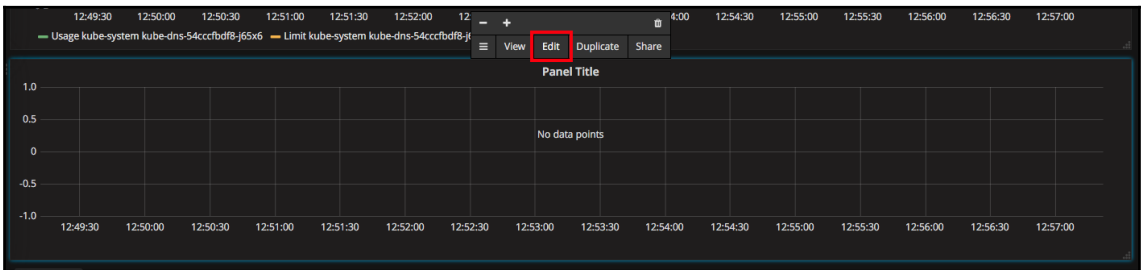


panel search filter

Graph Singletat Table Text Heatmap Alert List Dashboard list Plugin list

Empty Space

+ ADD ROW



Graph | General | Metrics | Axes | Legend | Display | Alert | Time range

Info		Dimensions		Templating	
Title	CPU Rate	Span	12	Repeat Panel	
Description	Panel description, supports markdown & links	Height	100px	Min span	
		Transparent	<input type="checkbox"/>		

Graph | General | Metrics | Axes | Legend | Display | Alert | Time range

FROM default cpu/usage_rate WHERE type = pod_container AND namespace_name =~ /^\$namespace\$/ AND pod_name =~ /^\$podname\$/ +

SELECT field (value) mean () +

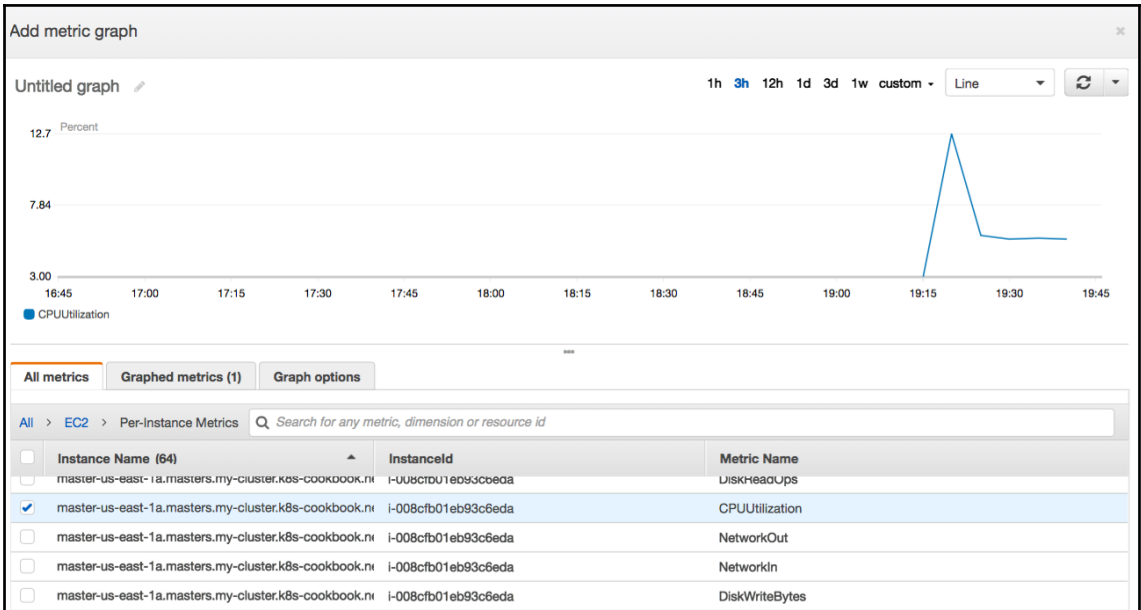
GROUP BY time (\$__interval) tag (container_name) fill (null) +

FORMAT AS Time series

ALIAS BY \$tag_container_name

Graph | General | Metrics | Axes | Legend | Display | Alert | Time range

Draw options	Draw Modes		Mode Options		Hover tooltip		Stacking & Null value	
	Series overrides (0)	Bars <input type="checkbox"/>	Fill	1	Mode	All series	Stack	<input type="checkbox"/>
	Thresholds (0)	Lines <input checked="" type="checkbox"/>	Line Width	2	Sort order	None	Null value	connected
	Points <input type="checkbox"/>	Staircase	<input type="checkbox"/>					



GKE / ● my-k8s-cluster 🔍 ⚙️ 📄 TIME 1h 6h 1d 1w 1m 6w custom

Filter...

Incidents Create Alerting Policy ▾

Apr 7, 7:07 pm - Apr 7, 8:07 pm [UTC -0400]

OPEN (0) ACKNOWLEDGED (0) RESOLVED (0)

● No open incidents

Events FILTER ADD EVENT ▾

No events matching this criteria.

Items per page: 5 ▾ 0 of 0 < >

GKE Cluster Details

Name	my-k8s-cluster
Created	Apr 7, 7:48 pm
Master Version	1.9.6-gke.0
Node Version	1.9.6-gke.0

CPU Usage

23% gke-my-k8s-cluster-default-pool-ef0c2ad4-62x1 - CPU Usage Apr 7, 2018 7:53 PM

Name	Value
gke-my-k8s-cluster-default-pool-ef0c2ad4-4z6q - CPU Usage	22%
gke-my-k8s-cluster-default-pool-ef0c2ad4-09fx - CPU Usage	23%
gke-my-k8s-cluster-default-pool-ef0c2ad4-62x1 - CPU Usage	22%