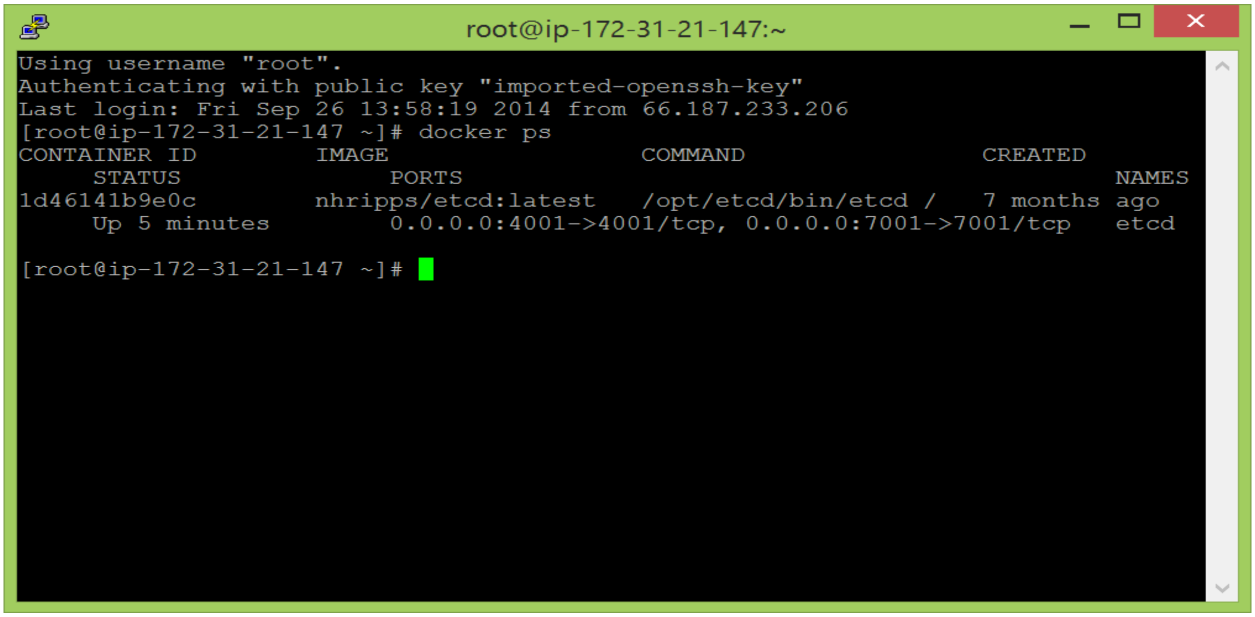
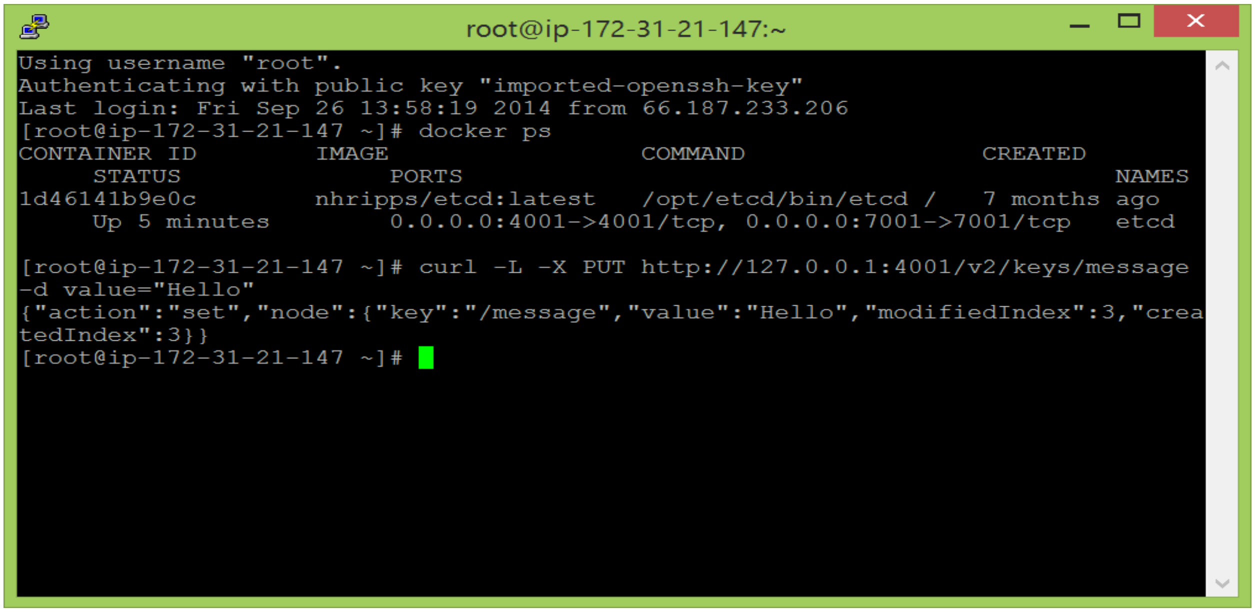
Lab #2: Kubernetes

- Run an instance of the publicly available images provided for the lab.
- Connect to the amazon web services using the putty connection like in the previous lab.
- To check the containers running in the local instance:
  docker ps



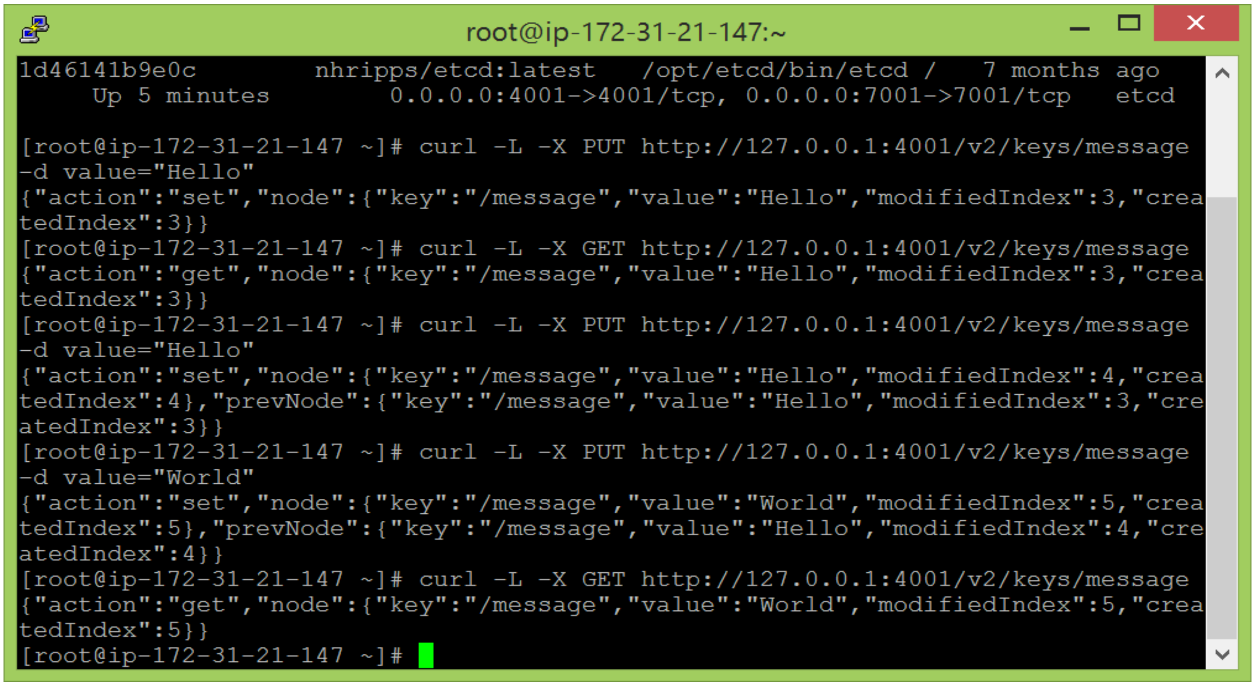
```
Using username "root".
Authenticating with public key "imported-openssh-key"
Last login: Fri Sep 26 13:58:19 2014 from 66.187.233.206
[root@ip-172-31-21-147 ~]# docker ps
CONTAINER ID        IMAGE                 COMMAND                CREATED
     STATUS              PORTS                                            NAMES
1d46141b9e0c        nhripps/etcd:latest   /opt/etcd/bin/etcd /   7 months ago
     Up 5 minutes        0.0.0.0:4001->4001/tcp, 0.0.0.0:7001->7001/tcp   etcd

[root@ip-172-31-21-147 ~]#
```

- The etcd shown here means that it is a data store where the data for the instance is going to be.
- There is no guarantee that a restful api needs a key value pair. There can be many other ways to get it running. But, we are using the ey value pair. To create a key value pair, we use:
  curl -L -X PUT http://127.0.0.1:4001/v2/keys/message -d value="Hello"



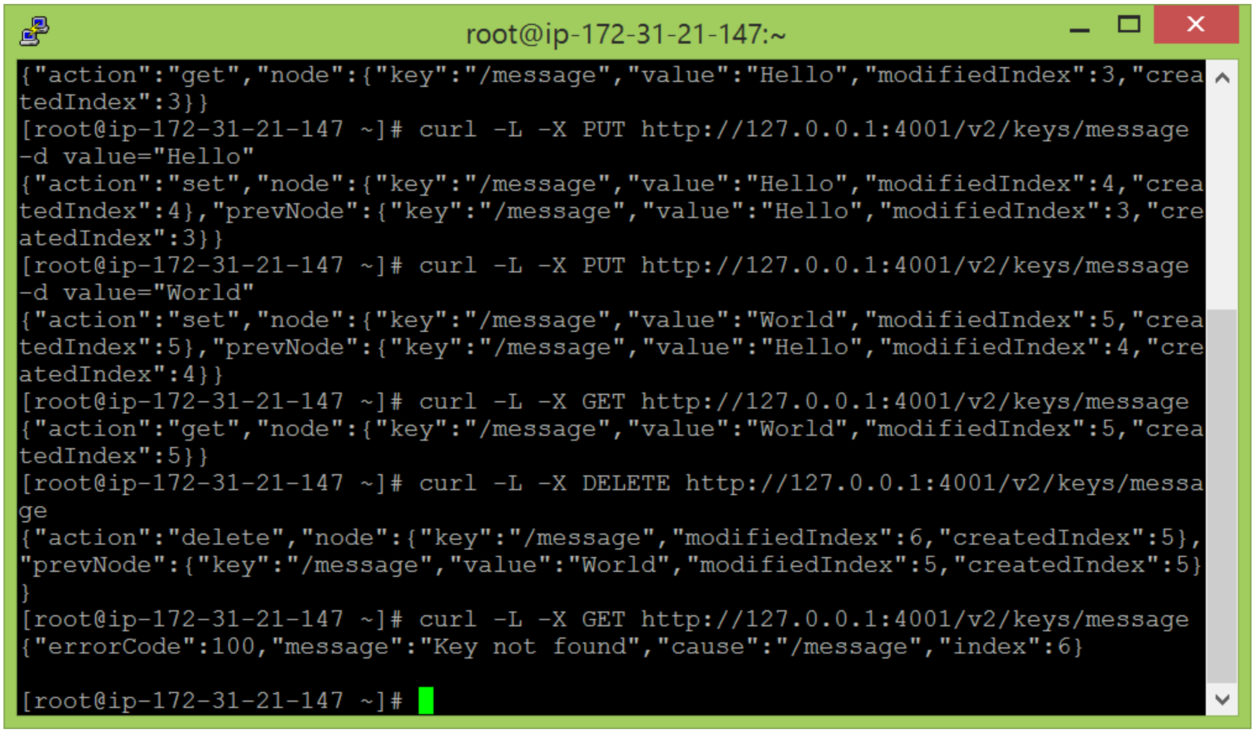
```
Using username "root".
Authenticating with public key "imported-openssh-key"
Last login: Fri Sep 26 13:58:19 2014 from 66.187.233.206
[root@ip-172-31-21-147 ~]# docker ps
CONTAINER ID        IMAGE                 COMMAND                CREATED
     STATUS              PORTS                                            NAMES
1d46141b9e0c        nhripps/etcd:latest   /opt/etcd/bin/etcd /   7 months ago
     Up 5 minutes        0.0.0.0:4001->4001/tcp, 0.0.0.0:7001->7001/tcp   etcd

[root@ip-172-31-21-147 ~]# curl -L -X PUT http://127.0.0.1:4001/v2/keys/message
-d value="Hello"
{"action":"set","node":{"key":"/message","value":"Hello","modifiedIndex":3,"crea
tedIndex":3}}
[root@ip-172-31-21-147 ~]#
```

- To get the key value pair which has been created, we use:
  curl -L -X GET http://127.0.0.1:4001/v2/keys/message



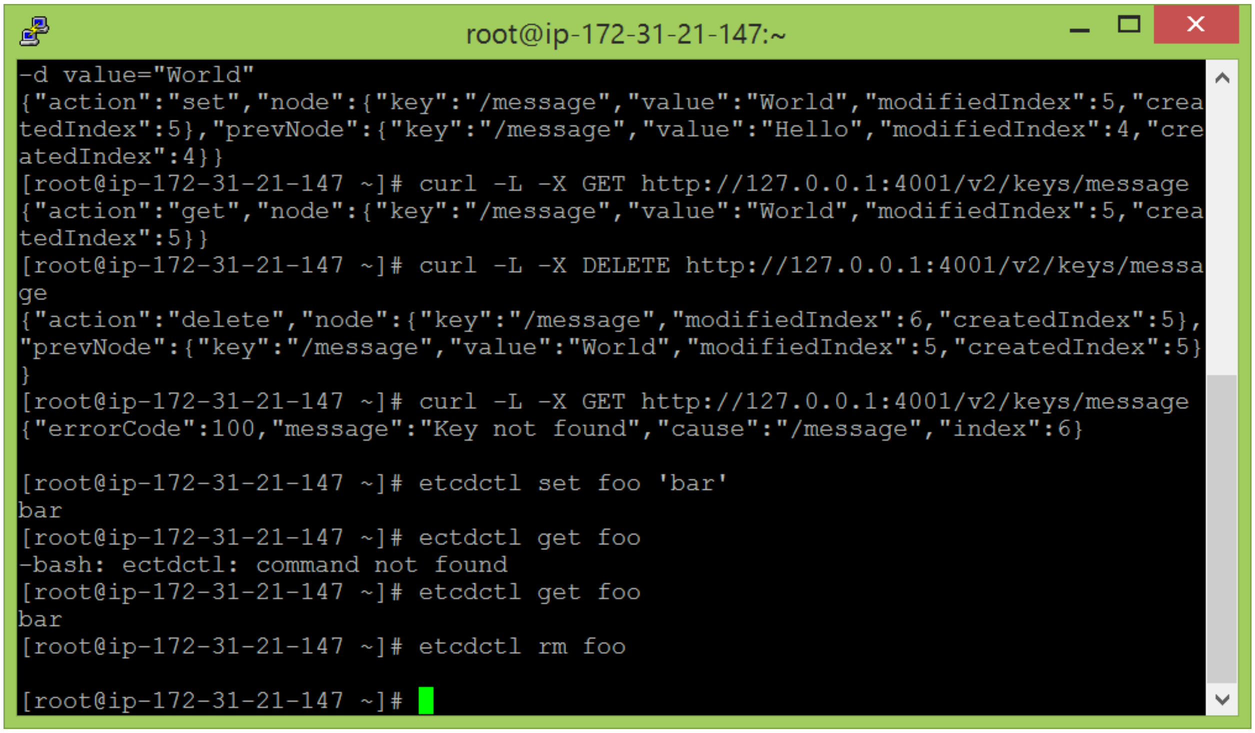
```
1d46141b9e0c        nhripps/etcd:latest   /opt/etcd/bin/etcd /    7 months ago
     Up 5 minutes         0.0.0.0:4001->4001/tcp, 0.0.0.0:7001->7001/tcp   etcd

[root@ip-172-31-21-147 ~]# curl -L -X PUT http://127.0.0.1:4001/v2/keys/message
-d value="Hello"
{"action":"set","node":{"key":"/message","value":"Hello","modifiedIndex":3,"crea
tedIndex":3}}
[root@ip-172-31-21-147 ~]# curl -L -X GET http://127.0.0.1:4001/v2/keys/message
{"action":"get","node":{"key":"/message","value":"Hello","modifiedIndex":3,"crea
tedIndex":3}}
[root@ip-172-31-21-147 ~]# curl -L -X PUT http://127.0.0.1:4001/v2/keys/message
-d value="Hello"
{"action":"set","node":{"key":"/message","value":"Hello","modifiedIndex":4,"crea
tedIndex":4},"prevNode":{"key":"/message","value":"Hello","modifiedIndex":3,"cre
atedIndex":3}}
[root@ip-172-31-21-147 ~]# curl -L -X PUT http://127.0.0.1:4001/v2/keys/message
-d value="World"
{"action":"set","node":{"key":"/message","value":"World","modifiedIndex":5,"crea
tedIndex":5},"prevNode":{"key":"/message","value":"Hello","modifiedIndex":4,"cre
atedIndex":4}}
[root@ip-172-31-21-147 ~]# curl -L -X GET http://127.0.0.1:4001/v2/keys/message
{"action":"get","node":{"key":"/message","value":"World","modifiedIndex":5,"crea
tedIndex":5}}
[root@ip-172-31-21-147 ~]#
```

- As shown in the screenshot above, I was just trying to see if the value could be changed for the same key and if it is being updated or not. When not needed anymore, the key value pair can be deleted using:
  curl -L -X DELETE http://127.0.0.1:4001/v2/keys/message
  I used get to verify if the key value pair was deleted.



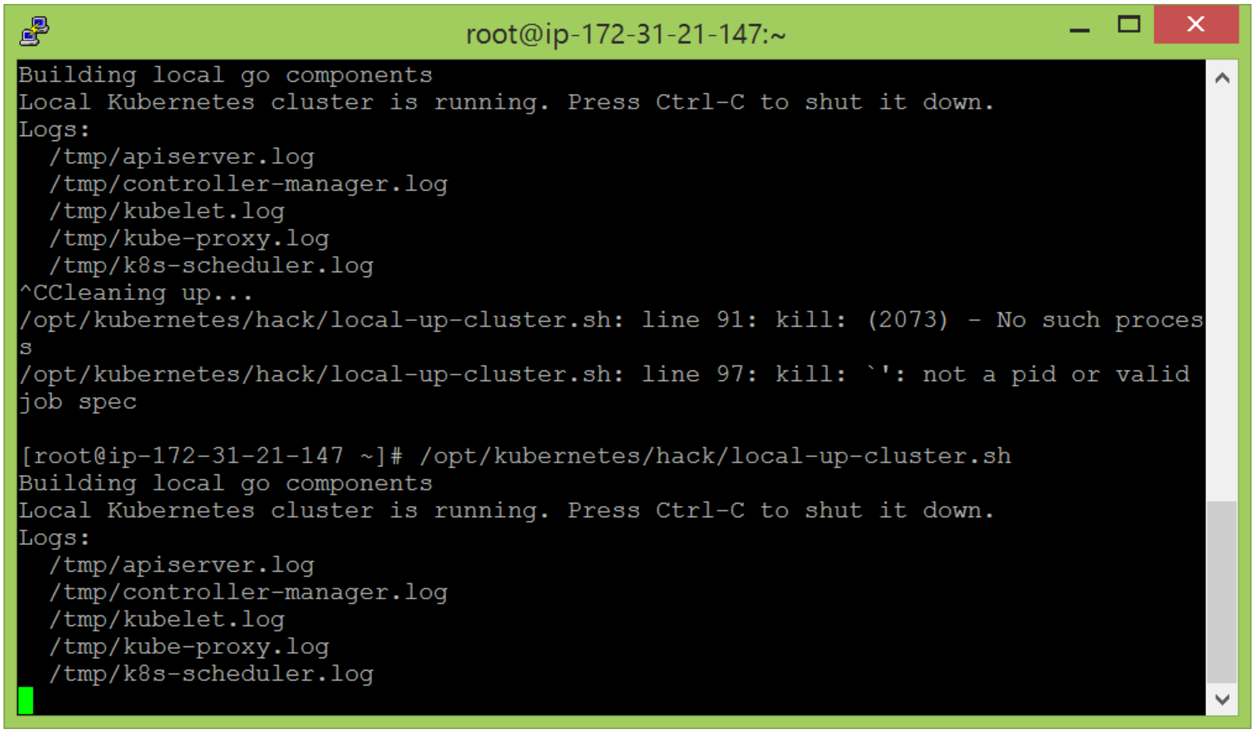
```
{"action":"get","node":{"key":"/message","value":"Hello","modifiedIndex":3,"crea
tedIndex":3}}
[root@ip-172-31-21-147 ~]# curl -L -X PUT http://127.0.0.1:4001/v2/keys/message
-d value="Hello"
{"action":"set","node":{"key":"/message","value":"Hello","modifiedIndex":4,"crea
tedIndex":4},"prevNode":{"key":"/message","value":"Hello","modifiedIndex":3,"cre
atedIndex":3}}
[root@ip-172-31-21-147 ~]# curl -L -X PUT http://127.0.0.1:4001/v2/keys/message
-d value="World"
{"action":"set","node":{"key":"/message","value":"World","modifiedIndex":5,"crea
tedIndex":5},"prevNode":{"key":"/message","value":"Hello","modifiedIndex":4,"cre
atedIndex":4}}
[root@ip-172-31-21-147 ~]# curl -L -X GET http://127.0.0.1:4001/v2/keys/message
{"action":"get","node":{"key":"/message","value":"World","modifiedIndex":5,"crea
tedIndex":5}}
[root@ip-172-31-21-147 ~]# curl -L -X DELETE http://127.0.0.1:4001/v2/keys/messa
ge
{"action":"delete","node":{"key":"/message","modifiedIndex":6,"createdIndex":5},
"prevNode":{"key":"/message","value":"World","modifiedIndex":5,"createdIndex":5}
}
[root@ip-172-31-21-147 ~]# curl -L -X GET http://127.0.0.1:4001/v2/keys/message
{"errorCode":100,"message":"Key not found","cause":"/message","index":6}

[root@ip-172-31-21-147 ~]# 
```

- The utility service: etcdctl command line tool.



```
-d value="World"
{"action":"set","node":{"key":"/message","value":"World","modifiedIndex":5,"crea
tedIndex":5},"prevNode":{"key":"/message","value":"Hello","modifiedIndex":4,"cre
atedIndex":4}}
[root@ip-172-31-21-147 ~]# curl -L -X GET http://127.0.0.1:4001/v2/keys/message
{"action":"get","node":{"key":"/message","value":"World","modifiedIndex":5,"crea
tedIndex":5}}
[root@ip-172-31-21-147 ~]# curl -L -X DELETE http://127.0.0.1:4001/v2/keys/messa
ge
{"action":"delete","node":{"key":"/message","modifiedIndex":6,"createdIndex":5},
"prevNode":{"key":"/message","value":"World","modifiedIndex":5,"createdIndex":5}
}
[root@ip-172-31-21-147 ~]# curl -L -X GET http://127.0.0.1:4001/v2/keys/message
{"errorCode":100,"message":"Key not found","cause":"/message","index":6}

[root@ip-172-31-21-147 ~]# etcdctl set foo 'bar'
bar
[root@ip-172-31-21-147 ~]# ectdctl get foo
-bash: ectdctl: command not found
[root@ip-172-31-21-147 ~]# etcdctl get foo
bar
[root@ip-172-31-21-147 ~]# etcdctl rm foo

[root@ip-172-31-21-147 ~]# 
```

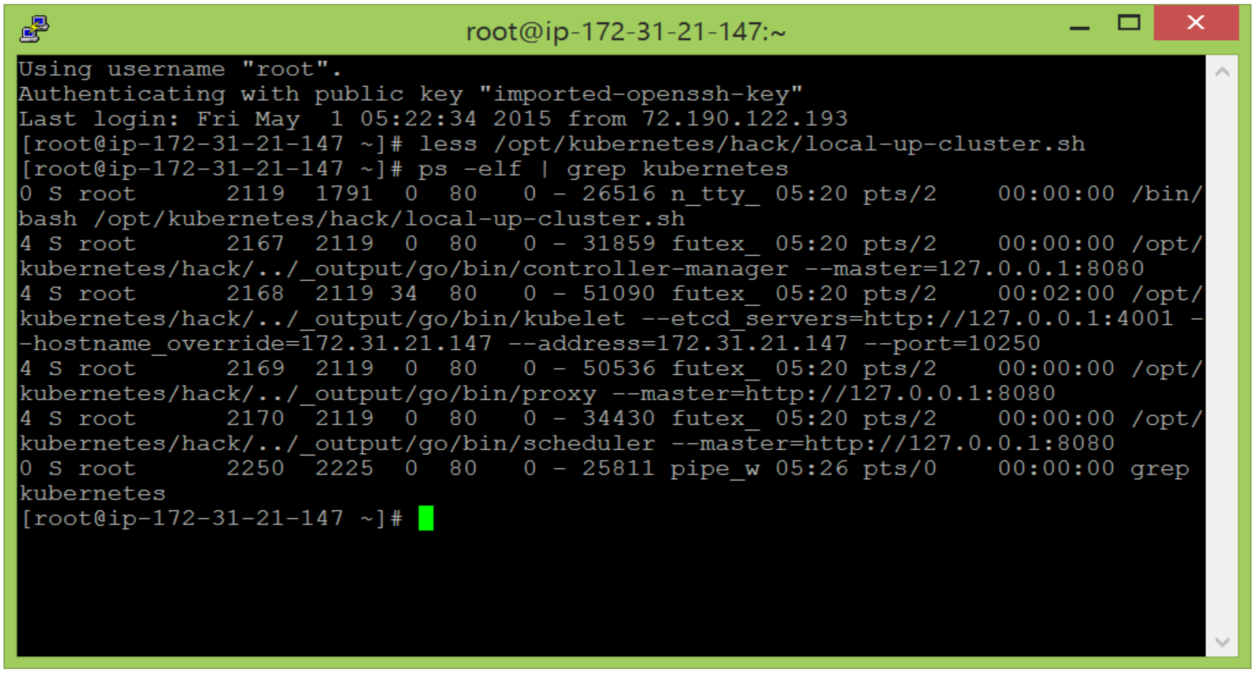
- To start the kubernetes service: /opt/kubernetes/hack/local-up-cluster.sh



```
Building local go components
Local Kubernetes cluster is running. Press Ctrl-C to shut it down.
Logs:
  /tmp/apiserver.log
  /tmp/controller-manager.log
  /tmp/kubelet.log
  /tmp/kube-proxy.log
  /tmp/k8s-scheduler.log
^CCleaning up...
/opt/kubernetes/hack/local-up-cluster.sh: line 91: kill: (2073) - No such proces
s
/opt/kubernetes/hack/local-up-cluster.sh: line 97: kill: `': not a pid or valid
job spec

[root@ip-172-31-21-147 ~]# /opt/kubernetes/hack/local-up-cluster.sh
Building local go components
Local Kubernetes cluster is running. Press Ctrl-C to shut it down.
Logs:
  /tmp/apiserver.log
  /tmp/controller-manager.log
  /tmp/kubelet.log
  /tmp/kube-proxy.log
  /tmp/k8s-scheduler.log
```

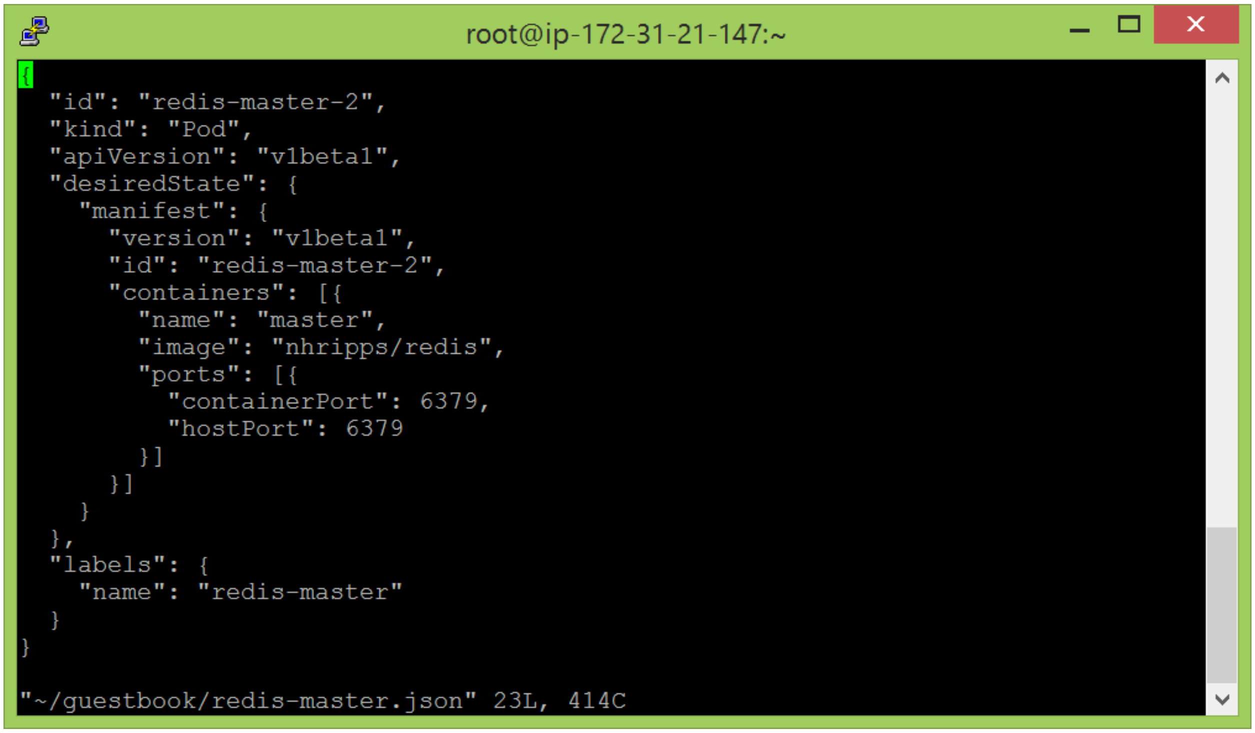
- Open a duplicate putty terminal and run the following command:
  less /opt/kubernetes/hack/local-up-cluster.sh
  and then :wq. The first command shows a script which has the functions to start minions, controllers, etc. the second exits from the script.

- To verify if all the processes are running, use:
  ps -elf | grep kubernetes

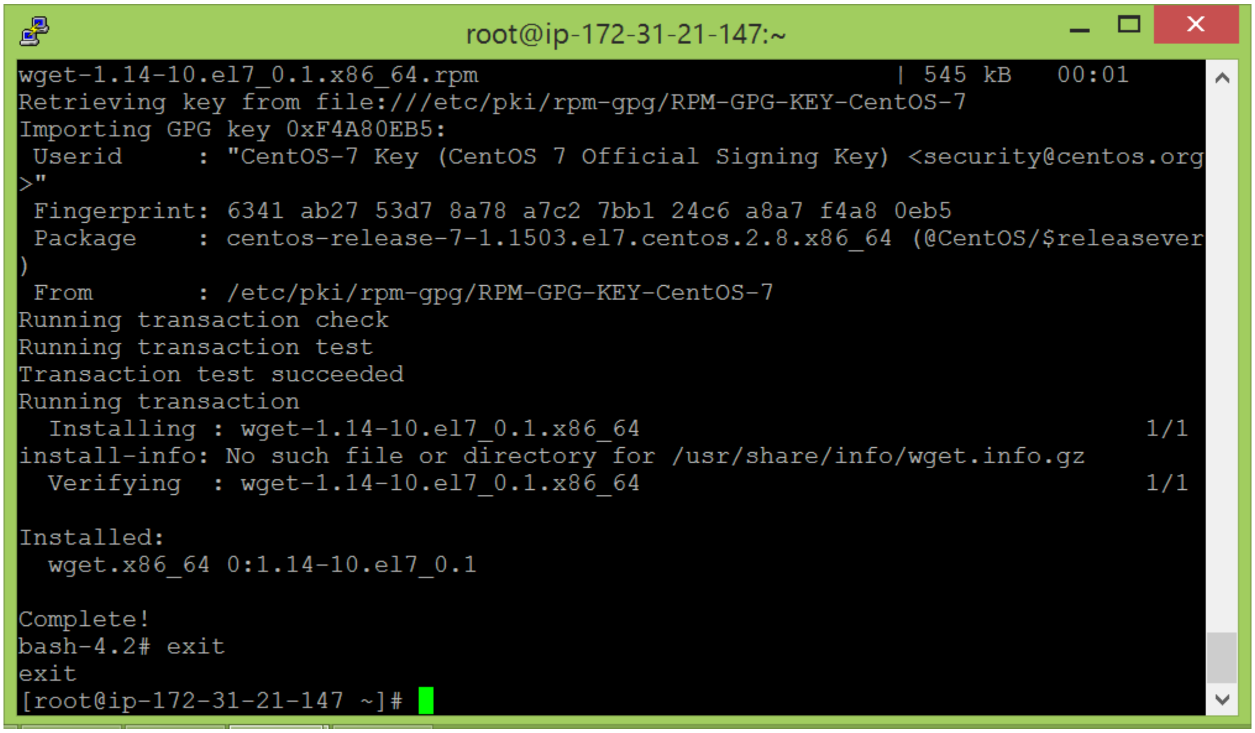


```
Using username "root".
Authenticating with public key "imported-openssh-key"
Last login: Fri May  1 05:22:34 2015 from 72.190.122.193
[root@ip-172-31-21-147 ~]# less /opt/kubernetes/hack/local-up-cluster.sh
[root@ip-172-31-21-147 ~]# ps -elf | grep kubernetes
0 S root      2119  1791  0  80   0 - 26516 n_tty_ 05:20 pts/2    00:00:00 /bin/
bash /opt/kubernetes/hack/local-up-cluster.sh
4 S root      2167  2119  0  80   0 - 31859 futex_ 05:20 pts/2    00:00:00 /opt/
kubernetes/hack/../_output/go/bin/controller-manager --master=127.0.0.1:8080
4 S root      2168  2119 34  80   0 - 51090 futex_ 05:20 pts/2    00:02:00 /opt/
kubernetes/hack/../_output/go/bin/kubelet --etcd_servers=http://127.0.0.1:4001 -
-hostname_override=172.31.21.147 --address=172.31.21.147 --port=10250
4 S root      2169  2119  0  80   0 - 50536 futex_ 05:20 pts/2    00:00:00 /opt/
kubernetes/hack/../_output/go/bin/proxy --master=http://127.0.0.1:8080
4 S root      2170  2119  0  80   0 - 34430 futex_ 05:20 pts/2    00:00:00 /opt/
kubernetes/hack/../_output/go/bin/scheduler --master=http://127.0.0.1:8080
0 S root      2250  2225  0  80   0 - 25811 pipe_w 05:26 pts/0    00:00:00 grep
kubernetes
[root@ip-172-31-21-147 ~]#
```

- To check another script to run a pod:
  vi /root/guestbook/redis-master.json

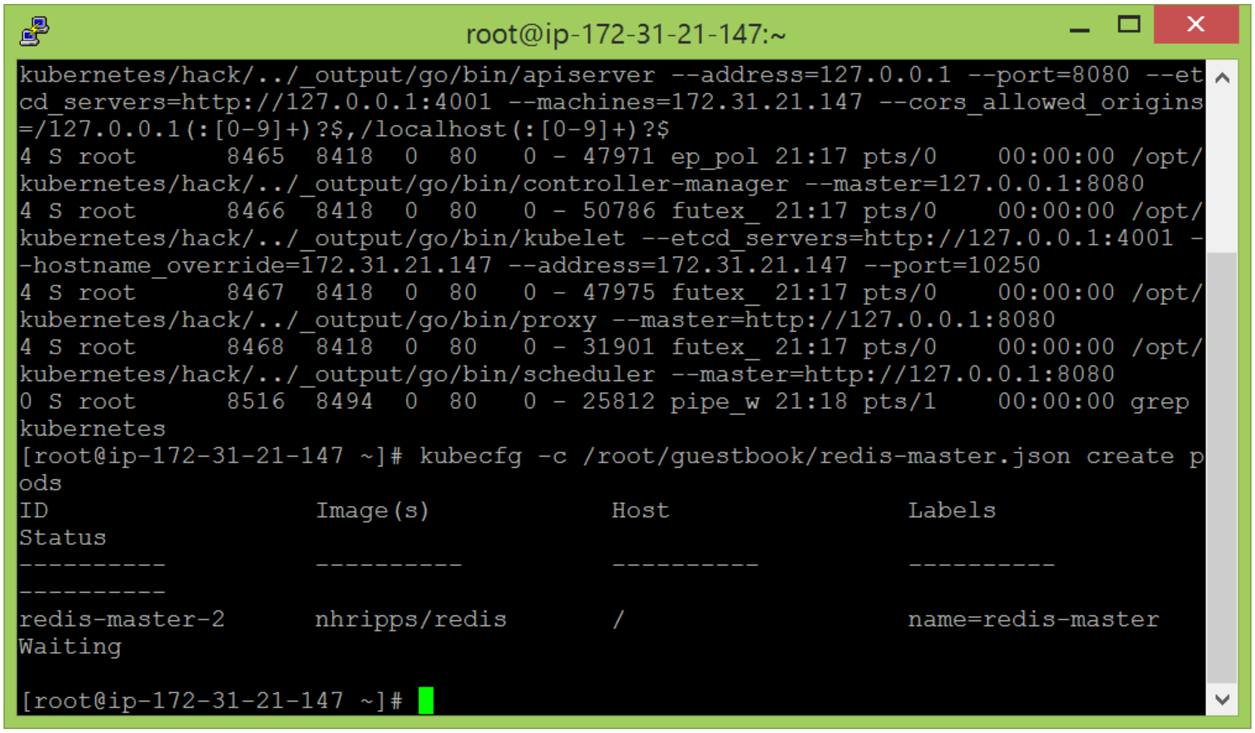


```
{
  "id": "redis-master-2",
  "kind": "Pod",
  "apiVersion": "v1beta1",
  "desiredState": {
    "manifest": {
      "version": "v1beta1",
      "id": "redis-master-2",
      "containers": [{
        "name": "master",
        "image": "nhripps/redis",
        "ports": [{
          "containerPort": 6379,
          "hostPort": 6379
        }]
      }]
    }
  },
  "labels": {
    "name": "redis-master"
  }
}

"~/guestbook/redis-master.json" 23L, 414C
```



```
wget-1.14-10.el7_0.1.x86_64.rpm                              | 545 kB   00:01
Retrieving key from file:///etc/pki/rpm-gpg/RPM-GPG-KEY-CentOS-7
Importing GPG key 0xF4A80EB5:
 Userid     : "CentOS-7 Key (CentOS 7 Official Signing Key) <security@centos.org
>"
 Fingerprint: 6341 ab27 53d7 8a78 a7c2 7bb1 24c6 a8a7 f4a8 0eb5
 Package    : centos-release-7-1.1503.el7.centos.2.8.x86_64 (@CentOS/$releasever
)
 From       : /etc/pki/rpm-gpg/RPM-GPG-KEY-CentOS-7
Running transaction check
Running transaction test
Transaction test succeeded
Running transaction
  Installing : wget-1.14-10.el7_0.1.x86_64                                  1/1
install-info: No such file or directory for /usr/share/info/wget.info.gz
  Verifying  : wget-1.14-10.el7_0.1.x86_64                                  1/1

Installed:
  wget.x86_64 0:1.14-10.el7_0.1

Complete!
bash-4.2# exit
exit
[root@ip-172-31-21-147 ~]# 
```

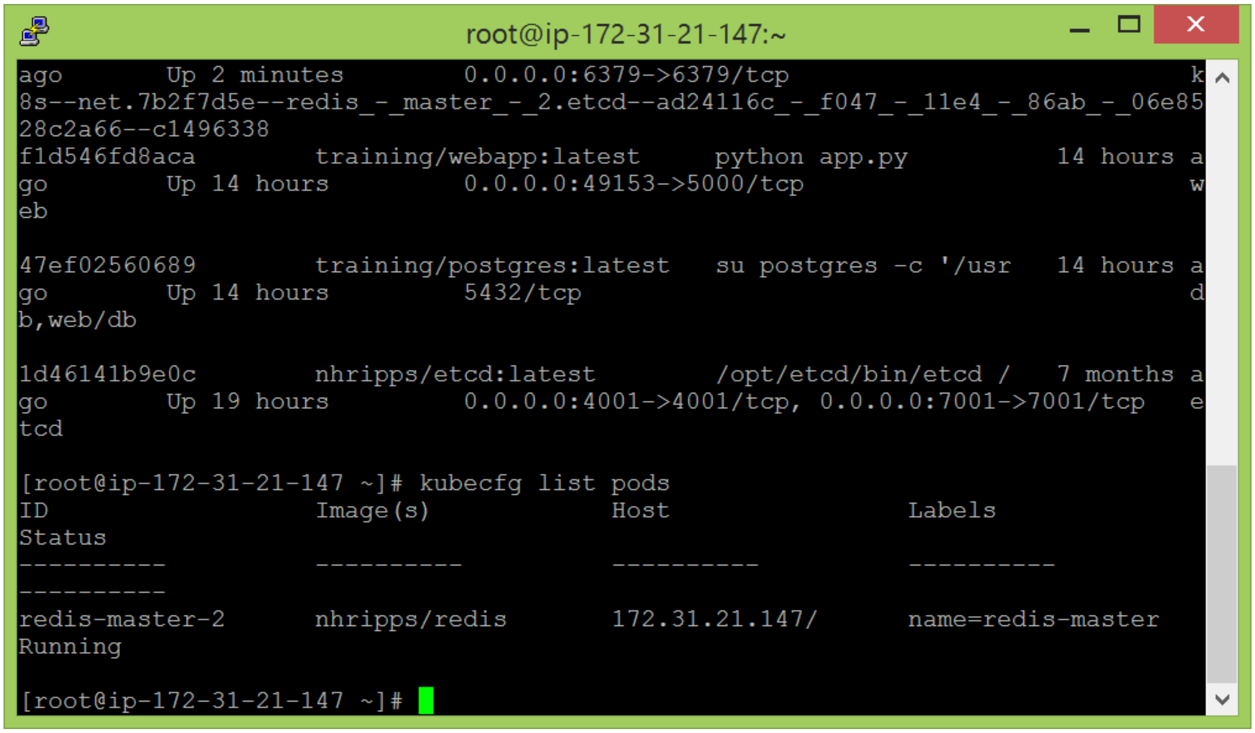
- To create new pods:
  kubecfg –c /root/guestbook/redis-master.json create pods



```
kubernetes/hack/../_output/go/bin/apiserver --address=127.0.0.1 --port=8080 --et
cd_servers=http://127.0.0.1:4001 --machines=172.31.21.147 --cors_allowed_origins
=/127.0.0.1(:[0-9]+)?$,/localhost(:[0-9]+)?$
4 S root      8465  8418  0  80   0 - 47971 ep_pol 21:17 pts/0    00:00:00 /opt/
kubernetes/hack/../_output/go/bin/controller-manager --master=127.0.0.1:8080
4 S root      8466  8418  0  80   0 - 50786 futex_ 21:17 pts/0    00:00:00 /opt/
kubernetes/hack/../_output/go/bin/kubelet --etcd_servers=http://127.0.0.1:4001 -
-hostname_override=172.31.21.147 --address=172.31.21.147 --port=10250
4 S root      8467  8418  0  80   0 - 47975 futex_ 21:17 pts/0    00:00:00 /opt/
kubernetes/hack/../_output/go/bin/proxy --master=http://127.0.0.1:8080
4 S root      8468  8418  0  80   0 - 31901 futex_ 21:17 pts/0    00:00:00 /opt/
kubernetes/hack/../_output/go/bin/scheduler --master=http://127.0.0.1:8080
0 S root      8516  8494  0  80   0 - 25812 pipe_w 21:18 pts/1    00:00:00 grep
kubernetes
[root@ip-172-31-21-147 ~]# kubecfg -c /root/guestbook/redis-master.json create p
ods
ID                  Image(s)            Host                Labels
Status
----------          ----------          ----------          ----------
----------
redis-master-2      nhripps/redis       /                   name=redis-master
Waiting

[root@ip-172-31-21-147 ~]#
```

docker ps

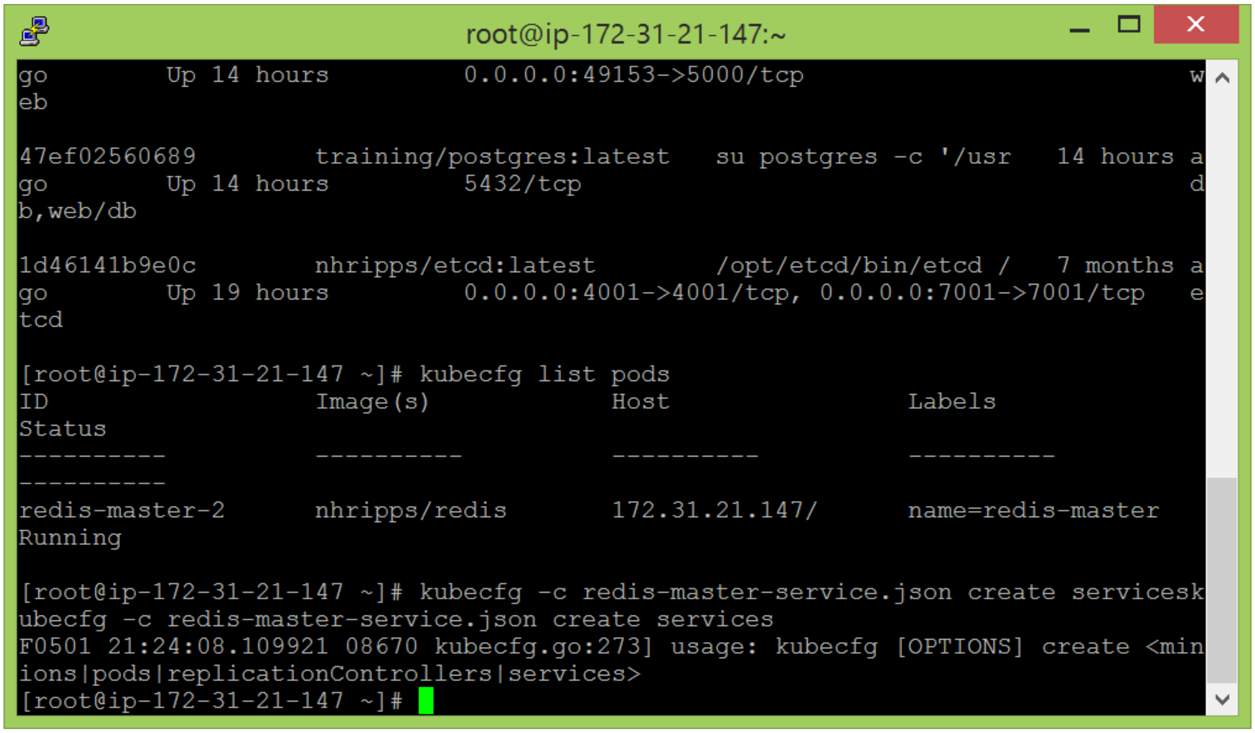
- To list all the pods that are in the local instance:
  kubecfg list pods



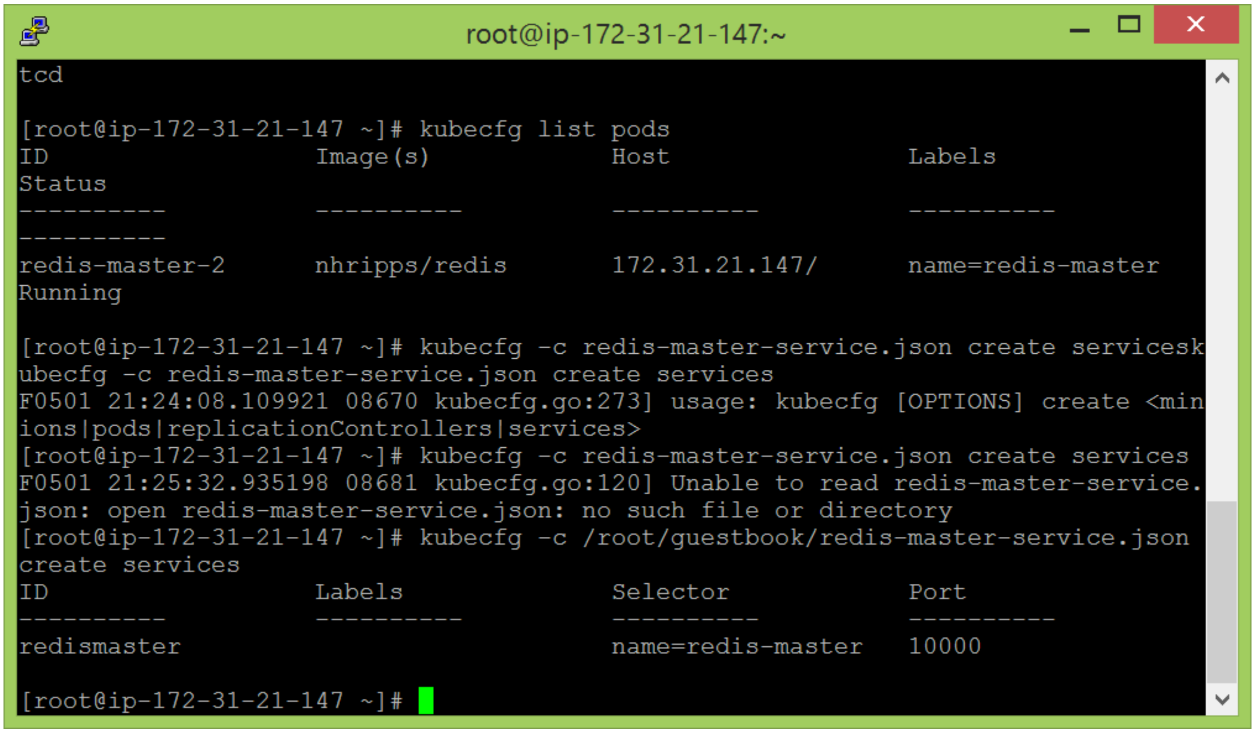
```
ago        Up 2 minutes        0.0.0.0:6379->6379/tcp                          k
8s--net.7b2f7d5e--redis_-_master_-_2.etcd--ad24116c_-_f047_-_11e4_-_86ab_-_06e85
28c2a66--c1496338
f1d546fd8aca        training/webapp:latest     python app.py          14 hours a
go         Up 14 hours         0.0.0.0:49153->5000/tcp                         w
eb

47ef02560689        training/postgres:latest   su postgres -c '/usr   14 hours a
go         Up 14 hours         5432/tcp                                        d
b,web/db

1d46141b9e0c        nhripps/etcd:latest        /opt/etcd/bin/etcd /   7 months a
go         Up 19 hours         0.0.0.0:4001->4001/tcp, 0.0.0.0:7001->7001/tcp   e
tcd

[root@ip-172-31-21-147 ~]# kubecfg list pods
ID                  Image(s)            Host                Labels
Status
----------          ----------          ----------          ----------
----------
redis-master-2      nhripps/redis       172.31.21.147/      name=redis-master
Running

[root@ip-172-31-21-147 ~]#
```

- After creation of pods, the services have to be created. To create services:

kubecfg -c /root/guestbook/redis-master-service.json create services



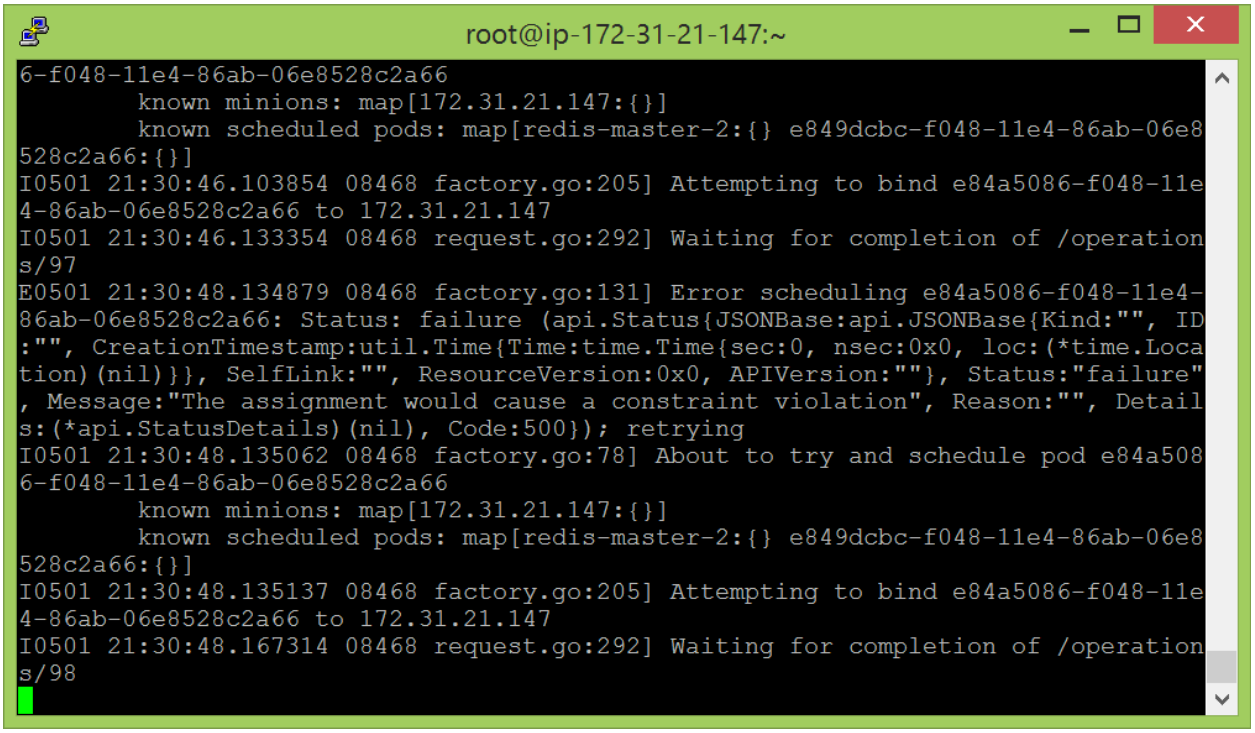
```
go        Up 14 hours         0.0.0.0:49153->5000/tcp                          w
eb

47ef02560689        training/postgres:latest   su postgres -c '/usr   14 hours a
go        Up 14 hours         5432/tcp                                         d
b,web/db

1d46141b9e0c        nhripps/etcd:latest        /opt/etcd/bin/etcd /   7 months a
go        Up 19 hours         0.0.0.0:4001->4001/tcp, 0.0.0.0:7001->7001/tcp   e
tcd

[root@ip-172-31-21-147 ~]# kubecfg list pods
ID                  Image(s)            Host                Labels
Status
----------          ----------          ----------          ----------
----------
redis-master-2      nhripps/redis       172.31.21.147/      name=redis-master
Running

[root@ip-172-31-21-147 ~]# kubecfg -c redis-master-service.json create servicesk
ubecfg -c redis-master-service.json create services
F0501 21:24:08.109921 08670 kubecfg.go:273] usage: kubecfg [OPTIONS] create <min
ions|pods|replicationControllers|services>
[root@ip-172-31-21-147 ~]#
```



```
tcd

[root@ip-172-31-21-147 ~]# kubecfg list pods
ID                  Image(s)            Host                Labels
Status
----------          ----------          ----------          ----------
----------
redis-master-2      nhripps/redis       172.31.21.147/      name=redis-master
Running

[root@ip-172-31-21-147 ~]# kubecfg -c redis-master-service.json create servicesk
ubecfg -c redis-master-service.json create services
F0501 21:24:08.109921 08670 kubecfg.go:273] usage: kubecfg [OPTIONS] create <min
ions|pods|replicationControllers|services>
[root@ip-172-31-21-147 ~]# kubecfg -c redis-master-service.json create services
F0501 21:25:32.935198 08681 kubecfg.go:120] Unable to read redis-master-service.
json: open redis-master-service.json: no such file or directory
[root@ip-172-31-21-147 ~]# kubecfg -c /root/guestbook/redis-master-service.json
create services
ID                  Labels              Selector            Port
----------          ----------          ----------          ----------
redismaster                             name=redis-master   10000

[root@ip-172-31-21-147 ~]#
```

- After the services being created, the controllers are also to be created.
  kubecfg -c /root/guestbook/redis-slave-controller.json create replicationControllers

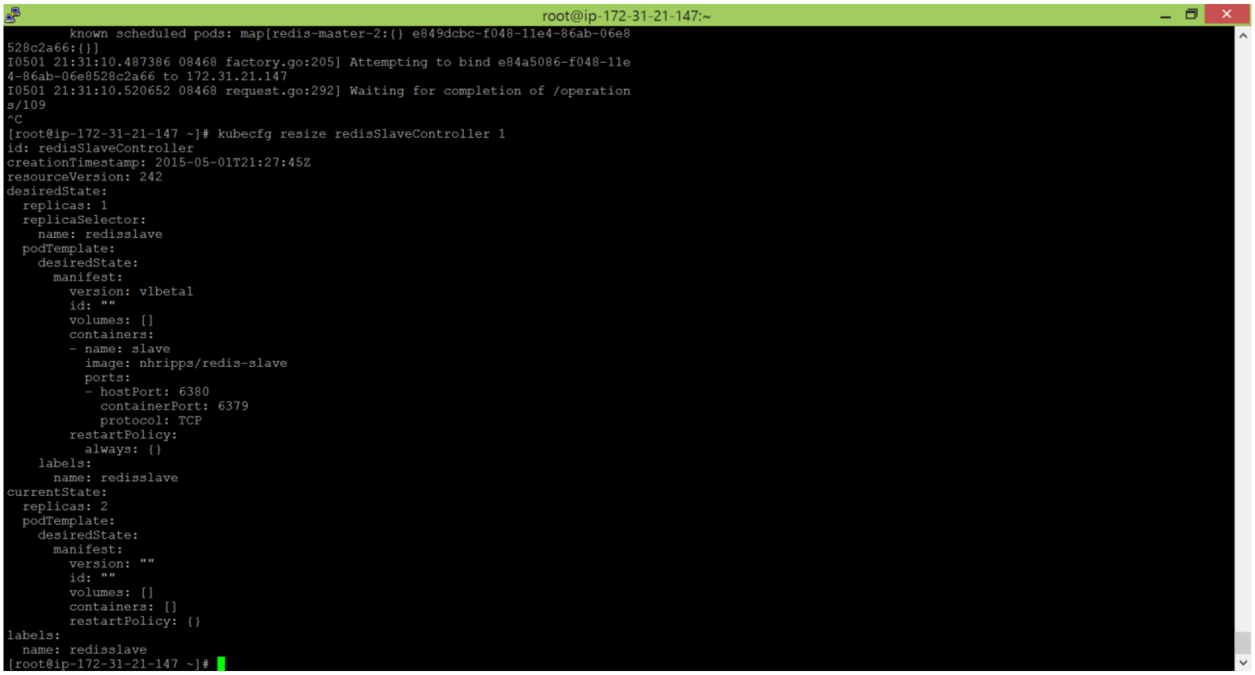
- To check the starting of the services. If the first service succeeds, then, the second one fails repeatedly.
  tail -f /tmp/k8s-scheduler.log



```
6-f048-11e4-86ab-06e8528c2a66
        known minions: map[172.31.21.147:{}]
        known scheduled pods: map[redis-master-2:{} e849dcbc-f048-11e4-86ab-06e8
528c2a66:{}]
I0501 21:30:46.103854 08468 factory.go:205] Attempting to bind e84a5086-f048-11e
4-86ab-06e8528c2a66 to 172.31.21.147
I0501 21:30:46.133354 08468 request.go:292] Waiting for completion of /operation
s/97
E0501 21:30:48.134879 08468 factory.go:131] Error scheduling e84a5086-f048-11e4-
86ab-06e8528c2a66: Status: failure (api.Status{JSONBase:api.JSONBase{Kind:"", ID
:"", CreationTimestamp:util.Time{Time:time.Time{sec:0, nsec:0x0, loc:(*time.Loca
tion)(nil)}}, SelfLink:"", ResourceVersion:0x0, APIVersion:""}, Status:"failure"
, Message:"The assignment would cause a constraint violation", Reason:"", Detail
s:(*api.StatusDetails)(nil), Code:500}); retrying
I0501 21:30:48.135062 08468 factory.go:78] About to try and schedule pod e84a508
6-f048-11e4-86ab-06e8528c2a66
        known minions: map[172.31.21.147:{}]
        known scheduled pods: map[redis-master-2:{} e849dcbc-f048-11e4-86ab-06e8
528c2a66:{}]
I0501 21:30:48.135137 08468 factory.go:205] Attempting to bind e84a5086-f048-11e
4-86ab-06e8528c2a66 to 172.31.21.147
I0501 21:30:48.167314 08468 request.go:292] Waiting for completion of /operation
s/98
```

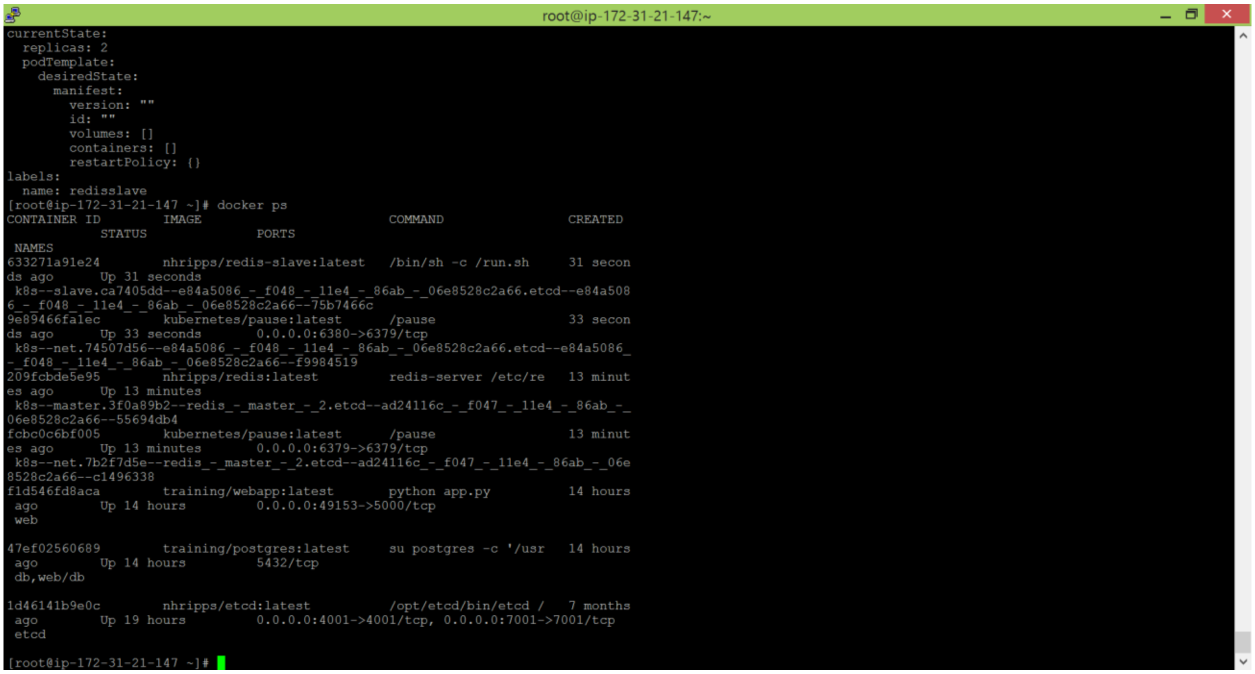
- Press <CTRL>+C to exit the tail.

- The controllers which mage the services can be modified in size using:
  kubecfg resize redisSlaveController 1



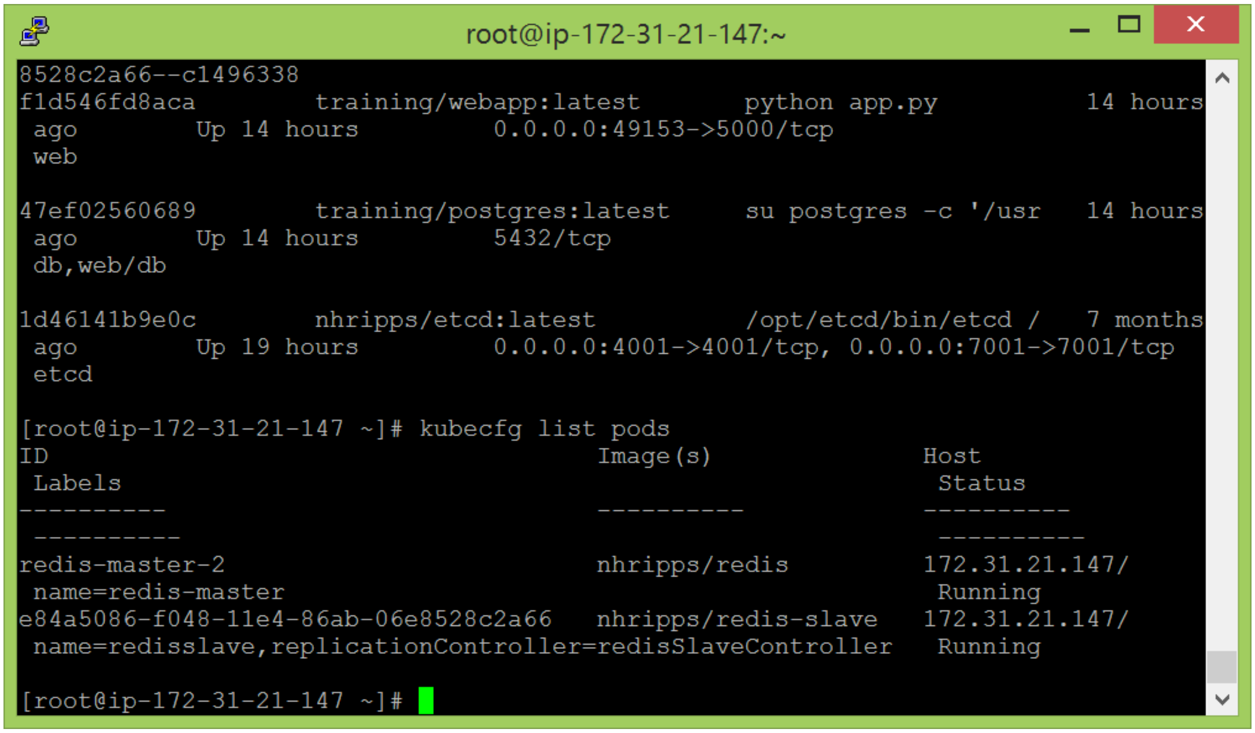
```
        known scheduled pods: map[redis-master-2:{} e849dcbc-f048-11e4-86ab-06e8
528c2a66:{}]
I0501 21:31:10.487386 08468 factory.go:205] Attempting to bind e84a5086-f048-11e
4-86ab-06e8528c2a66 to 172.31.21.147
I0501 21:31:10.520652 08468 request.go:292] Waiting for completion of /operation
s/109
^C
[root@ip-172-31-21-147 ~]# kubecfg resize redisSlaveController 1
id: redisSlaveController
creationTimestamp: 2015-05-01T21:27:45Z
resourceVersion: 242
desiredState:
  replicas: 1
  replicaSelector:
    name: redisslave
  podTemplate:
    desiredState:
      manifest:
        version: v1beta1
        id: ""
        volumes: []
        containers:
        - name: slave
          image: nhripps/redis-slave
          ports:
          - hostPort: 6380
            containerPort: 6379
            protocol: TCP
        restartPolicy:
          always: {}
    labels:
      name: redisslave
currentState:
  replicas: 2
  podTemplate:
    desiredState:
      manifest:
        version: ""
        id: ""
        volumes: []
        containers: []
        restartPolicy: {}
labels:
  name: redisslave
[root@ip-172-31-21-147 ~]#
```

- To check what is happening with the containers:
  docker ps



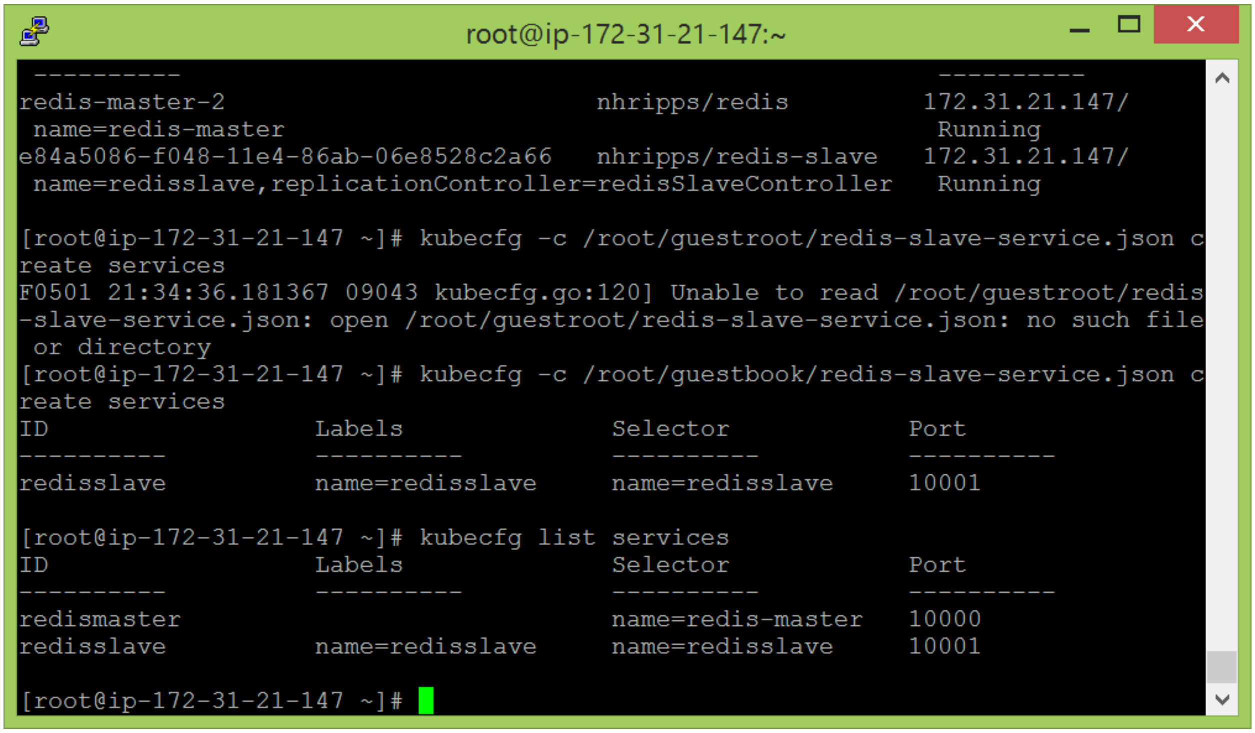
```
currentState:
  replicas: 2
  podTemplate:
    desiredState:
      manifest:
        version: ""
        id: ""
        volumes: []
        containers: []
        restartPolicy: {}
labels:
  name: redisslave
[root@ip-172-31-21-147 ~]# docker ps
CONTAINER ID        IMAGE                        COMMAND                CREATED
            STATUS              PORTS
 NAMES
633271a91e24        nhripps/redis-slave:latest   /bin/sh -c /run.sh     31 secon
ds ago      Up 31 seconds
 k8s--slave.ca7405dd--e84a5086_-_f048_-_11e4_-_86ab_-_06e8528c2a66.etcd--e84a508
6_-_f048_-_11e4_-_86ab_-_06e8528c2a66--75b7466c
9e89466fa1ec        kubernetes/pause:latest      /pause                 33 secon
ds ago      Up 33 seconds       0.0.0.0:6380->6379/tcp
 k8s--net.74507d56--e84a5086_-_f048_-_11e4_-_86ab_-_06e8528c2a66.etcd--e84a5086_
-_f048_-_11e4_-_86ab_-_06e8528c2a66--f9984519
209fcbde5e95        nhripps/redis:latest         redis-server /etc/re   13 minut
es ago      Up 13 minutes
 k8s--master.3f0a89b2--redis_-_master_-_2.etcd--ad24116c_-_f047_-_11e4_-_86ab_-_
06e8528c2a66--55694db4
fcbc0c6bf005        kubernetes/pause:latest      /pause                 13 minut
es ago      Up 13 minutes       0.0.0.0:6379->6379/tcp
 k8s--net.7b2f7d5e--redis_-_master_-_2.etcd--ad24116c_-_f047_-_11e4_-_86ab_-_06e
8528c2a66--c1496338
f1d546fd8aca        training/webapp:latest       python app.py          14 hours
 ago        Up 14 hours         0.0.0.0:49153->5000/tcp
 web

47ef02560689        training/postgres:latest     su postgres -c '/usr   14 hours
 ago        Up 14 hours         5432/tcp
 db,web/db

1d46141b9e0c        nhripps/etcd:latest          /opt/etcd/bin/etcd /   7 months
 ago        Up 19 hours         0.0.0.0:4001->4001/tcp, 0.0.0.0:7001->7001/tcp
 etcd

[root@ip-172-31-21-147 ~]#
```

- Again listing all the pods which are present:
  kubecfg list pods



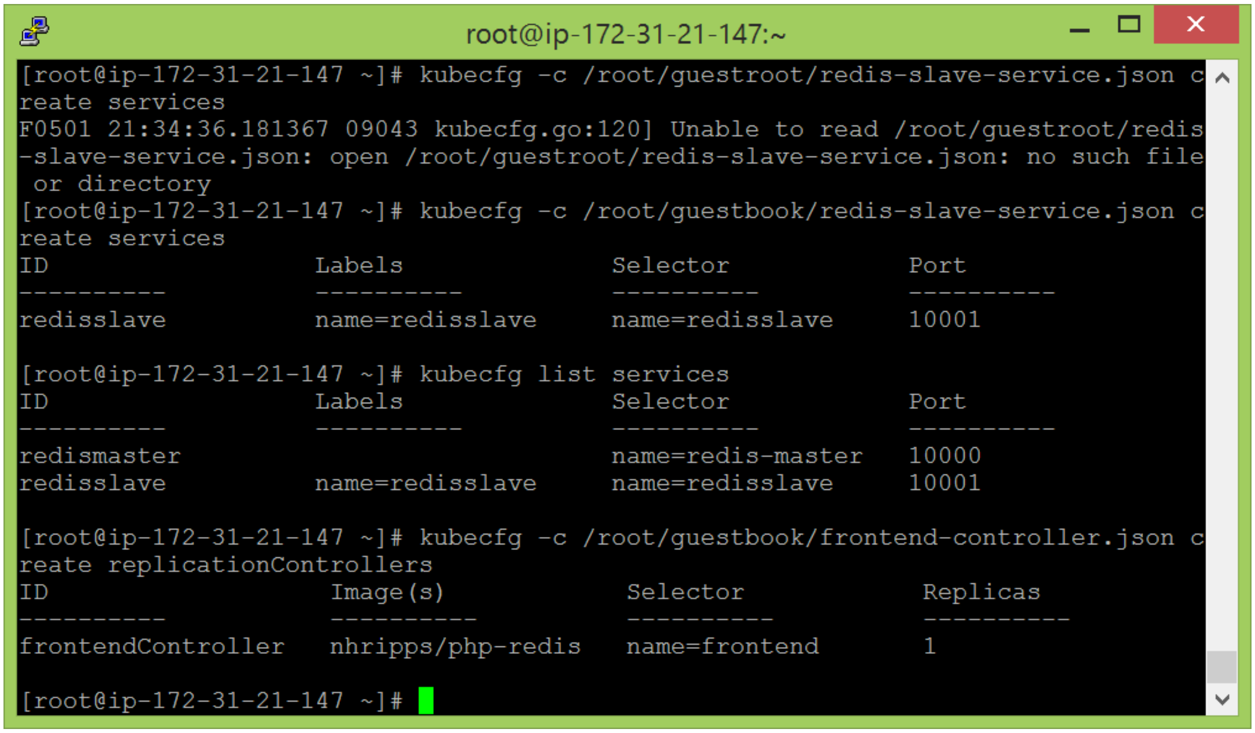
```
8528c2a66--c1496338
f1d546fd8aca        training/webapp:latest       python app.py          14 hours
 ago        Up 14 hours         0.0.0.0:49153->5000/tcp
 web

47ef02560689        training/postgres:latest     su postgres -c '/usr   14 hours
 ago        Up 14 hours         5432/tcp
 db,web/db

1d46141b9e0c        nhripps/etcd:latest          /opt/etcd/bin/etcd /   7 months
 ago        Up 19 hours         0.0.0.0:4001->4001/tcp, 0.0.0.0:7001->7001/tcp
 etcd

[root@ip-172-31-21-147 ~]# kubecfg list pods
ID                                       Image(s)              Host
 Labels                                                         Status
----------                               ----------            ----------
 ----------                                                     ----------
redis-master-2                           nhripps/redis         172.31.21.147/
 name=redis-master                                              Running
e84a5086-f048-11e4-86ab-06e8528c2a66     nhripps/redis-slave   172.31.21.147/
 name=redisslave,replicationController=redisSlaveController     Running

[root@ip-172-31-21-147 ~]#
```

- kubecfg -c redis-slave-service.json create services
- kubecfg list services



```
 ----------                                                   ----------
redis-master-2                         nhripps/redis        172.31.21.147/
 name=redis-master                                           Running
e84a5086-f048-11e4-86ab-06e8528c2a66   nhripps/redis-slave  172.31.21.147/
 name=redisslave,replicationController=redisSlaveController   Running

[root@ip-172-31-21-147 ~]# kubecfg -c /root/guestroot/redis-slave-service.json c
reate services
F0501 21:34:36.181367 09043 kubecfg.go:120] Unable to read /root/guestroot/redis
-slave-service.json: open /root/guestroot/redis-slave-service.json: no such file
 or directory
[root@ip-172-31-21-147 ~]# kubecfg -c /root/guestbook/redis-slave-service.json c
reate services
ID                  Labels              Selector            Port
----------          ----------          ----------          ----------
redisslave          name=redisslave     name=redisslave     10001

[root@ip-172-31-21-147 ~]# kubecfg list services
ID                  Labels              Selector            Port
----------          ----------          ----------          ----------
redismaster                             name=redis-master   10000
redisslave          name=redisslave     name=redisslave     10001

[root@ip-172-31-21-147 ~]#
```

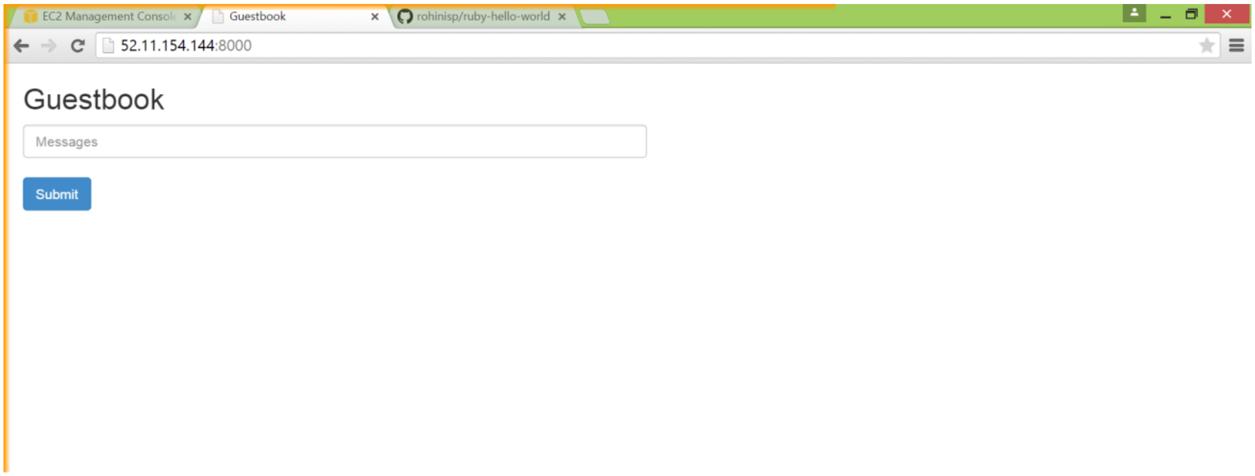
- kubecfg -c frontend-controller.json create replicationControllers



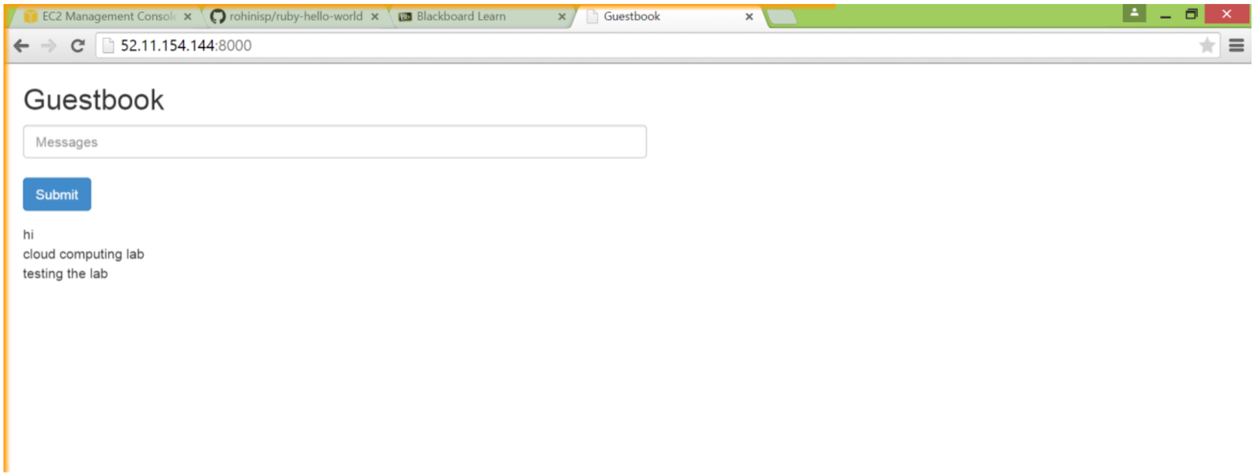
```
[root@ip-172-31-21-147 ~]# kubecfg -c /root/guestroot/redis-slave-service.json c
reate services
F0501 21:34:36.181367 09043 kubecfg.go:120] Unable to read /root/guestroot/redis
-slave-service.json: open /root/guestroot/redis-slave-service.json: no such file
 or directory
[root@ip-172-31-21-147 ~]# kubecfg -c /root/guestbook/redis-slave-service.json c
reate services
ID                  Labels              Selector            Port
----------          ----------          ----------          ----------
redisslave          name=redisslave     name=redisslave     10001

[root@ip-172-31-21-147 ~]# kubecfg list services
ID                  Labels              Selector            Port
----------          ----------          ----------          ----------
redismaster                             name=redis-master   10000
redisslave          name=redisslave     name=redisslave     10001

[root@ip-172-31-21-147 ~]# kubecfg -c /root/guestbook/frontend-controller.json c
reate replicationControllers
ID                   Image(s)            Selector            Replicas
----------           ----------          ----------          ----------
frontendController   nhripps/php-redis   name=frontend       1

[root@ip-172-31-21-147 ~]#
```

- A complete web application:
  http:// 52.24.66.11:8000/
- Initially, the guestbook was not opening in the web browser. So, had to change the security groups in the Amazon Web services – Ec2. I created a new security group and

added the inbound ports as all traffic. I bound this security group with my instance and ran the putty again. Now, open the web browser and used my public ip to open the link. It worked.



Guestbook



Guestbook

hi
cloud computing lab
testing the lab