

# 18th june:

```
pod2 - Notepad
File Edit Format View Help
apiVersion: v1
kind: Pod

metadata:
  name: mypod2
  labels:
    env: IN
    dc: dev

spec:
  containers:
  - name: "myconf1"
    image: "vimal13/apache-webserver-php"
```

```
C:\Users\user\Desktop\kube_cloud>kubectl create --validate=false -f pod1.yml
pod/mypod1 created
```

```
C:\Users\user\Desktop\kube_cloud>kubectl create --validate=false -f pod2.yml
pod/mypod2 created
```

```
C:\Users\user\Desktop\kube_cloud>kubectl get pods
NAME    READY   STATUS    RESTARTS   AGE
mypod1  1/1     Running   0           75s
mypod2  0/1     ContainerCreating  0           3s
```

```
C:\Users\user\Desktop\kube_cloud>kubectl get pods
NAME    READY   STATUS    RESTARTS   AGE
mypod1  1/1     Running   0           78s
mypod2  1/1     Running   0           6s
```

```
C:\Users\user\Desktop\kube_cloud>kubectl get pods --show-labels
NAME    READY   STATUS    RESTARTS   AGE   LABELS
mypod1  1/1     Running   0           92s   dc=dev,env=IN
mypod2  1/1     Running   0           20s   dc=dev,env=IN
```

## SELECTOR:

- Equality based selector
- Set based selector

```
C:\Users\user\Desktop\kube_cloud>kubectl get pods --show-labels --selector "env in (dev,IN)"
```

NAME	READY	STATUS	RESTARTS	AGE	LABELS
mypod1	1/1	Running	0	4m9s	dc=dev,env=IN
mypod2	1/1	Running	0	2m57s	dc=dev,env=IN

```
C:\Users\user\Desktop\kube_cloud>kubectl get pods --show-labels --selector "env in (dev)"
```

No resources found in default namespace.

```
C:\Users\user\Desktop\kube_cloud>kubectl get pods --show-labels --selector "env in (IN)"
```

NAME	READY	STATUS	RESTARTS	AGE	LABELS
mypod1	1/1	Running	0	4m30s	dc=dev,env=IN
mypod2	1/1	Running	0	3m18s	dc=dev,env=IN

```
C:\Users\user\Desktop\kube_cloud>kubectl get pods --show-labels --selector "env notin (dev)"
```

NAME	READY	STATUS	RESTARTS	AGE	LABELS
mypod1	1/1	Running	0	6m7s	dc=dev,env=IN
mypod2	1/1	Running	0	4m55s	dc=dev,env=IN

**In replication controller we used equality based selector behind the seen**

**Replica Sets. Replica Set ensures how many replica of pod should be running. ...**

**The key difference between the replica set and the replication controller is, the replication controller only supports equality-based selector whereas the replicaset**

supports set-based selector.

```
rs1 - Notepad
File Edit Format View Help
apiVersion: apps/v1
kind: ReplicaSet
metadata:
  name: myweb-rs
spec:
  replicas: 3
  selector:
    matchLabels:
      env: production
      region: IN
      dc: "2"
  template:
    metadata:
      name: myweb-pod
      labels:
        env: production
        region: IN
        dc: "2"
    spec:
      containers:
      - name: myweb-con
        image: vimal13/apache-webserver-php
```

```
rs1 - Notepad
File Edit Format View Help
apiVersion: apps/v1
kind: ReplicaSet
metadata:
  name: myweb-rs
spec:
  replicas: 3
  selector:
    matchLabels:
      env: production
      region: IN
      app: webserver
    matchExpressions:
      - { key: env, operator: In, values: [ production, dev ] }
      - { key: region, operator: In, values: [ IN, US ] }
      - { key: app, operator: In, values: [ webserver ] }
  template:
    metadata:
      name: myweb-pod
      labels:
        env: production
        region: IN
        app: webserver
    spec:
      containers:
      - name: myweb-con
        image: vimal13/apache-webserver-php
```

```
C:\Users\user\Desktop\kube_cloud>kubectl create -f rs1.yml
replicaset.apps/myweb-rs created
```

```
C:\Users\user\Desktop\kube_cloud>kubectl get pods
NAME          READY  STATUS  RESTARTS  AGE
```

```
myweb-rs-74ft6 1/1 Running 0 54s
myweb-rs-gckzg 1/1 Running 0 54s
myweb-rs-wrm4c 1/1 Running 0 54s
```

```
C:\Users\user\Desktop\kube_cloud>kubectl describe all
```

```
Name:      myweb-rs-74ft6
```

```
Namespace: default
```

```
Priority: 0
```

```
Node:      minikube/192.168.99.100
```

```
Start Time: Thu, 18 Jun 2020 19:17:16 +0530
```

```
Labels:    app=webserver
```

```
           env=production
```

```
           region=IN
```

```
Annotations: <none>
```

```
Status:    Running
```

```
IP:        172.17.0.8
```

```
C:\Users\user\Desktop\kube_cloud>kubectl get pods --show-labels --selector
```

```
"app=webserver,app in (webserver),env=production,env in
```

```
(dev,production),region=IN,region in (IN,US)"
```

```
NAME          READY STATUS RESTARTS AGE LABELS
```

```
myweb-rs-74ft6 1/1 Running 0 2m4s
```

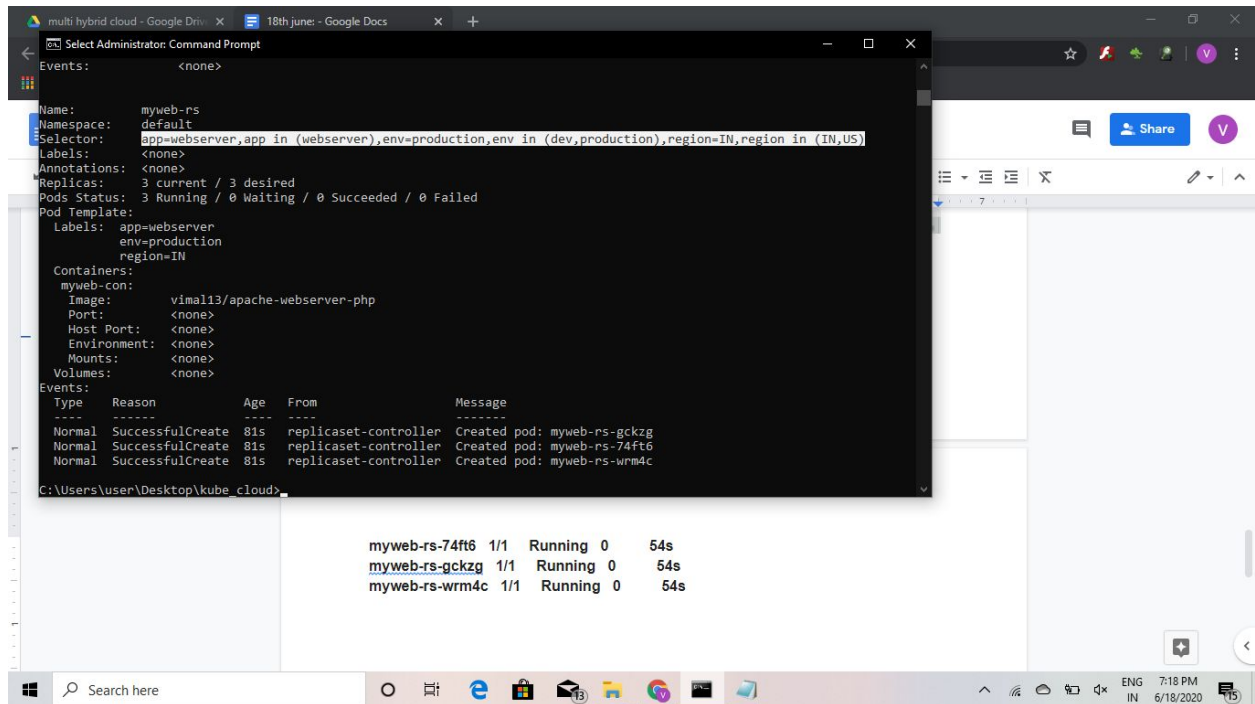
```
app=webserver,env=production,region=IN
```

```
myweb-rs-gckzg 1/1 Running 0 2m4s
```

```
app=webserver,env=production,region=IN
```

```
myweb-rs-wrm4c 1/1 Running 0 2m4s
```

```
app=webserver,env=production,region=IN
```



**1st all means rs,rc,pods**

**And 2nd all means all the names**

C:\Users\user\Desktop\kube\_cloud>kubectl delete all --all

pod "myweb-rs-74ft6" deleted

pod "myweb-rs-gckzg" deleted

pod "myweb-rs-wrm4c" deleted

service "kubernetes" deleted

replicaset.apps "myweb-rs" deleted

C:\Users\user\Desktop\kube\_cloud>kubectl create -f pod1.yml

pod/mypod1 created

C:\Users\user\Desktop\kube\_cloud>kubectl get pods

NAME	READY	STATUS	RESTARTS	AGE
mypod1	0/1	ContainerCreating	0	4s

C:\Users\user\Desktop\kube\_cloud>kubectl exec -it mypod1 bash

kubectl exec [POD] [COMMAND] is DEPRECATED and will be removed in a future version. Use kubectl kubectl exec [POD] -- [COMMAND] instead.

[root@mypod1 /]# ls

anaconda-post.log boot etc lib lost+found mnt proc run srv tmp var  
bin dev home lib64 media opt root sbin sys usr

[root@mypod1 /]# cd /var/www/html

```
[root@mypod1 html]# ls
```

```
index.php
```

```
[root@mypod1 html]# cat index.php
```

```
<body bgcolor='aqua'>
```

```
<pre>
```

```
<?php
```

```
print "welcome to vimal web server for testing";
```

```
print `ifconfig`;
```

```
?>
```

```
</pre>
```

```
[root@mypod1 html]# ifconfig
```

```
eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
```

```
inet 172.17.0.6 netmask 255.255.0.0 broadcast 172.17.255.255
```

```
ether 02:42:ac:11:00:06 txqueuelen 0 (Ethernet)
```

```
RX packets 0 bytes 0 (0.0 B)
```

```
RX errors 0 dropped 0 overruns 0 frame 0
```

```
TX packets 0 bytes 0 (0.0 B)
```

```
TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0
```

```
lo: flags=73<UP,LOOPBACK,RUNNING> mtu 65536
```

```
inet 127.0.0.1 netmask 255.0.0.0
```

```
loop txqueuelen 1000 (Local Loopback)
```

```
RX packets 0 bytes 0 (0.0 B)
```

```
RX errors 0 dropped 0 overruns 0 frame 0
```

```
TX packets 0 bytes 0 (0.0 B)
```

```
TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0
```

```
C:\Users\user\Desktop\kube_cloud>kubectl describe pods
```

```
Name:      mypod1
```

```
Namespace: default
```

```
Priority:   0
```

```
Node:      minikube/192.168.99.100
```

```
Start Time: Thu, 18 Jun 2020 19:21:46 +0530
```

```
Labels:    dc=IN
```

```
env=dev
Annotations: <none>
Status:      Running
IP:          172.17.0.6
IPs:
  IP: 172.17.0.6
Containers:
  myconf1:
    Container ID:
      docker://3753e1156500f8d2daf89cab7265908076f9218da433bd7abdc4767e454f0d8f
    Image:      vimal13/apache-webserver-php
    Image ID:
      docker-pullable://vimal13/apache-webserver-php@sha256:faed0a5afaf9f04b6915d73f7
      247f6f5a71db9274ca44118d38f4601c0080a91
C:\Users\user\Desktop\kube_cloud>kubectl create -f pod2.yml
pod/mypod2 created
```

```
C:\Users\user\Desktop\kube_cloud>kubectl get pods
NAME      READY   STATUS              RESTARTS   AGE
mypod1    1/1     Running             0           8m25s
mypod2    0/1     ContainerCreating   0           5s
C:\Users\user\Desktop\kube_cloud>kubectl exec -it mypod2 bash
kubectl exec [POD] [COMMAND] is DEPRECATED and will be removed in a future
version. Use kubectl kubectl exec [POD] -- [COMMAND] instead.
[root@mypod2 /]# ping 172.17.0.6
PING 172.17.0.6 (172.17.0.6) 56(84) bytes of data.
64 bytes from 172.17.0.6: icmp_seq=1 ttl=64 time=0.175 ms
64 bytes from 172.17.0.6: icmp_seq=2 ttl=64 time=0.064 ms
^C
--- 172.17.0.6 ping statistics ---
2 packets transmitted, 2 received, 0% packet loss, time 1001ms
rtt min/avg/max/mdev = 0.064/0.119/0.175/0.056 ms
C:\Users\user\Desktop\kube_cloud>kubectl exec -it mypod2 bash
kubectl exec [POD] [COMMAND] is DEPRECATED and will be removed in a future
version. Use kubectl kubectl exec [POD] -- [COMMAND] instead.
[root@mypod2 /]# ping mypod1
ping: mypod1: Name or service not known
C:\Users\user\Desktop\kube_cloud>kubectl delete all --all
pod "mypod1" deleted
```

pod "mypod2" deleted  
service "kubernetes" deleted

C:\Users\user\Desktop\kube\_cloud>kubectl create -f rs1.yml  
replicaset.apps/myweb-rs created

C:\Users\user\Desktop\kube\_cloud>kubectl get pods  
NAME READY STATUS RESTARTS AGE  
myweb-rs-vbwkm 0/1 ContainerCreating 0 5s

C:\Users\user\Desktop\kube\_cloud>kubectl exec -it myweb-rs-vbwkm -- bash  
[root@myweb-rs-vbwkm /]# x=5  
[root@myweb-rs-vbwkm /]# echo \$x  
5  
[root@myweb-rs-vbwkm /]# exit  
exit

C:\Users\user\Desktop\kube\_cloud>kubectl exec -it myweb-rs-vbwkm -- bash  
[root@myweb-rs-vbwkm /]# echo \$x

C:\Users\user\Desktop\kube\_cloud>kubectl exec -it myweb-rs-vbwkm -- bash  
[root@myweb-rs-vbwkm /]# echo \$x

[root@myweb-rs-vbwkm /]# vi root/.bashrc  
[root@myweb-rs-vbwkm /]# echo \$x

[root@myweb-rs-vbwkm /]# echo \$y

[root@myweb-rs-vbwkm /]# vi root/.bashrc  
[root@myweb-rs-vbwkm /]# echo \$x

[root@myweb-rs-vbwkm /]# exit  
exit

C:\Users\user\Desktop\kube\_cloud>kubectl exec -it myweb-rs-vbwkm -- bash  
[root@myweb-rs-vbwkm /]# echo \$x  
5



```
@myweb-rs-vbwmr/
# .bashrc

# User specific aliases and functions

alias rm='rm -i'
alias cp='cp -i'
alias mv='mv -i'

# Source global definitions
if [ -f /etc/bashrc ]; then
    . /etc/bashrc
fi

x=5
y=10_

-- INSERT --
```

```
C:\Users\user\Desktop\kube_cloud>kubectl create -f rs1.yml
replicaset.apps/myweb-rs created
```

```
C:\Users\user\Desktop\kube_cloud>kubectl get pods
NAME          READY  STATUS          RESTARTS  AGE
myweb-rs-qqvdh 0/1    ContainerCreating 0          5s
```

```
C:\Users\user\Desktop\kube_cloud>kubectl exec -it myweb-rs-qqvdh -- bash
[root@myweb-rs-qqvdh /]# echo $c
```

```
[root@myweb-rs-qqvdh /]# echo $x
```

```
C:\Users\user\Desktop\kube_cloud>kubectl create -f pod3.yml
pod/mypod1 created
```

```
C:\Users\user\Desktop\kube_cloud>kubectl get pods
NAME    READY  STATUS   RESTARTS  AGE
mypod1  1/1    Running  0          6s
```

```
C:\Users\user\Desktop\kube_cloud>kubectl delete all --all
pod "mypod1" deleted
service "kubernetes" deleted
```

```
pod3 - Notepad
File Edit Format View Help
apiVersion: v1
kind: Pod

metadata:
  name: mypod1
  labels:
    env: dev
    dc: IN

spec:
  containers:
  - name: "myconf1"
    image: "vimal13/apache-webserver-php"
    env:
      - name: x
        value: "5"
      - name: y
        value: "10"
```

```
C:\Users\user\Desktop\kube_cloud>kubectl create -f pod3.yml
pod/mypod1 created
```

```
C:\Users\user\Desktop\kube_cloud>kubectl get pods
NAME    READY   STATUS    RESTARTS   AGE
mypod1  1/1     Running   0           12s
```

```
C:\Users\user\Desktop\kube_cloud>kubectl exec -it mypod1 -- bash
e[root@mypod1 /]# echo $x
5
```

```
rs1 - Notepad
File Edit Format View Help
name: myweb-rs
spec:
  replicas: 1
  selector:
    matchLabels:
      env: production
      region: IN
      app: webserver
    matchExpressions:
      - { key: env, operator: In, values: [ production, dev ] }
      - { key: region, operator: In, values: [ IN, US ] }
      - { key: app, operator: In, values: [ webserver ] }
  template:
    metadata:
      name: myweb-pod
      labels:
        env: production
        region: IN
        app: webserver
    spec:
      containers:
        - name: myweb-con
          image: vimal13/apache-webserver-php
          env:
            - name: x
              value: "5"
```

```
C:\Users\user\Desktop\kube_cloud>kubectl create -f rs1.yml
replicaset.apps/myweb-rs created
```

```
C:\Users\user\Desktop\kube_cloud>kubectl get pods
NAME          READY  STATUS          RESTARTS  AGE
myweb-rs-9v2cg 0/1    ContainerCreating 0          4s
```

```
C:\Users\user\Desktop\kube_cloud>kubectl exec -it myweb-rs-9v2cg -- bash
[root@myweb-rs-9v2cg /]# echo $x
5
```

```
mysql - Notepad
File Edit Format View Help
apiVersion: apps/v1
kind: ReplicaSet
metadata:
  name: myweb-rs
spec:
  replicas: 1
  selector:
    matchLabels:
      env: production
      region: IN
      app: webserver
    matchExpressions:
      - { key: env, operator: In, values: [ production, dev ] }
      - { key: region, operator: In, values: [ IN, US ] }
      - { key: app, operator: In, values: [ webserver ] }
  template:
    metadata:
      name: myweb-mysql
      labels:
        env: production
        region: IN
        app: webserver
    spec:
      containers:
        - name: myweb-con
          image: "mysql:5.6"
          env:
            - name: x
              value: "5"
```

```
C:\Users\user\Desktop\kube_cloud>kubectl create -f mysql.yml
replicaset.apps/myweb-rs created
```

```
C:\Users\user\Desktop\kube_cloud>kubectl get pods
NAME          READY  STATUS          RESTARTS  AGE
myweb-rs-hgfmx 0/1    ContainerCreating 0          2s
```

```
C:\Users\user\Desktop\kube_cloud>kubectl get pods
NAME          READY  STATUS          RESTARTS  AGE
myweb-rs-hgfmx 0/1    ContainerCreating 0          7s
```

```
C:\Users\user\Desktop\kube_cloud>kubectl get all
NAME          READY  STATUS          RESTARTS  AGE
pod/myweb-rs-hgfmx 0/1    ContainerCreating 0          16s
```

```
NAME          TYPE      CLUSTER-IP  EXTERNAL-IP  PORT(S)  AGE
service/kubernetes  ClusterIP  10.96.0.1   <none>       443/TCP  28s
```

```
NAME          DESIRED  CURRENT  READY  AGE
replicaset.apps/myweb-rs 1      1      0      16s
```

```
C:\Users\user\Desktop\kube_cloud>kubectl logs pod/myweb-rs-hgfmx
```

2020-06-18 14:30:57+00:00 [Note] [Entrypoint]: Entrypoint script for MySQL Server 5.6.48-1debian9 started.

2020-06-18 14:30:57+00:00 [Note] [Entrypoint]: Switching to dedicated user 'mysql'

2020-06-18 14:30:57+00:00 [Note] [Entrypoint]: Entrypoint script for MySQL Server 5.6.48-1debian9 started.

2020-06-18 14:30:57+00:00 [ERROR] [Entrypoint]: Database is uninitialized and password option is not specified

You need to specify one of MYSQL\_ROOT\_PASSWORD,  
MYSQL\_ALLOW\_EMPTY\_PASSWORD and MYSQL\_RANDOM\_ROOT\_PASSWORD  
root@myweb-rs-tjvz4:/# mysql -u root -predhat

Warning: Using a password on the command line interface can be insecure.

Welcome to the MySQL monitor. Commands end with ; or \g.

Your MySQL connection id is 5

Server version: 5.6.48 MySQL Community Server (GPL)

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Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> show databases;

```
+-----+
| Database          |
+-----+
| information_schema |
| mysql              |
| performance_schema |
+-----+
```

3 rows in set (0.00 sec)

C:\Users\user\Desktop\kube\_cloud>kubectl delete all --all

pod "myweb-rs-tjvz4" deleted

service "kubernetes" deleted

replicaset.apps "myweb-rs" deleted

C:\Users\user\Desktop\kube\_cloud>kubectl create -f mysql.yml

replicaset.apps/myweb-rs created

```
C:\Users\user\Desktop\kube_cloud>kubectl get all
```

NAME	READY	STATUS	RESTARTS	AGE
pod/myweb-rs-8vlzp	1/1	Running	0	4s

NAME	TYPE	CLUSTER-IP	EXTERNAL-IP	PORT(S)	AGE
service/kubernetes	ClusterIP	10.96.0.1	<none>	443/TCP	13s

NAME	DESIRED	CURRENT	READY	AGE
replicaset.apps/myweb-rs	1	1	1	4s

```
C:\Users\user\Desktop\kube_cloud>kubectl exec -it pod/myweb-rs-8vlzp -- bash
```

```
root@myweb-rs-8vlzp:/# mysql -u root -predhat
```

Warning: Using a password on the command line interface can be insecure.

Welcome to the MySQL monitor. Commands end with ; or \g.

Your MySQL connection id is 1

Server version: 5.6.48 MySQL Community Server (GPL)

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Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

```
mysql> show databases;
```

```
+-----+
```

```
| Database      |
```

```
+-----+
```

```
| information_schema |
```

```
| mysql          |
```

```
| performance_schema |
```

```
+-----+
```

```
3 rows in set (0.00 sec)
```

```
mysql - Notepad
File Edit Format View Help
metadata:
  name: myweb-rs
spec:
  replicas: 1
  selector:
    matchLabels:
      env: production
      region: IN
      app: webserver
    matchExpressions:
      - { key: env, operator: In, values: [ production, dev ] }
      - { key: region, operator: In, values: [ IN, US ] }
      - { key: app, operator: In, values: [ webserver ] }
  template:
    metadata:
      name: myweb-mysql
      labels:
        env: production
        region: IN
        app: webserver
    spec:
      containers:
        - name: myweb-con
          image: "mysql:5.6"
          env:
            - name: MYSQL_ROOT_PASSWORD
              value: redhat
            - name: MYSQL_DATABASES
              value: mylb
            - name: MYSQL_USER
              value: vishesh
            - name: MYSQL_PASSWORD
              value: redhat
```

```
wp1 - Notepad
File Edit Format View Help
apiVersion: apps/v1
kind: ReplicaSet
metadata:
  name: myweb-rs
spec:
  replicas: 1
  selector:
    matchLabels:
      env: production
      region: IN
      app: webserver
    matchExpressions:
      - { key: env, operator: In, values: [ production, dev ] }
      - { key: region, operator: In, values: [ IN, US ] }
      - { key: app, operator: In, values: [ webserver ] }
  template:
    metadata:
      name: myword-press
      labels:
        env: production
        region: IN
        app: webserver
    spec:
      containers:
        - name: "mywp-con"
          image: "wordpress:4.8-apache"
```

C:\Users\user\Desktop\kube\_cloud>kubectl create -f wp1.yml  
replicaset.apps/myweb-rs created

C:\Users\user\Desktop\kube\_cloud>kubectl get all

NAME	READY	STATUS	RESTARTS	AGE
pod/myweb-rs-6kn9l	0/1	ContainerCreating	0	3s

NAME	TYPE	CLUSTER-IP	EXTERNAL-IP	PORT(S)	AGE
service/kubernetes	ClusterIP	10.96.0.1	<none>	443/TCP	114s

NAME	DESIRED	CURRENT	READY	AGE
replicaset.apps/myweb-rs	1	1	0	3s

C:\Users\user\Desktop\kube\_cloud>kubectl expose pods myweb-rs-6kn9l

--type=NodePort --port 80

service/myweb-rs-6kn9l exposed

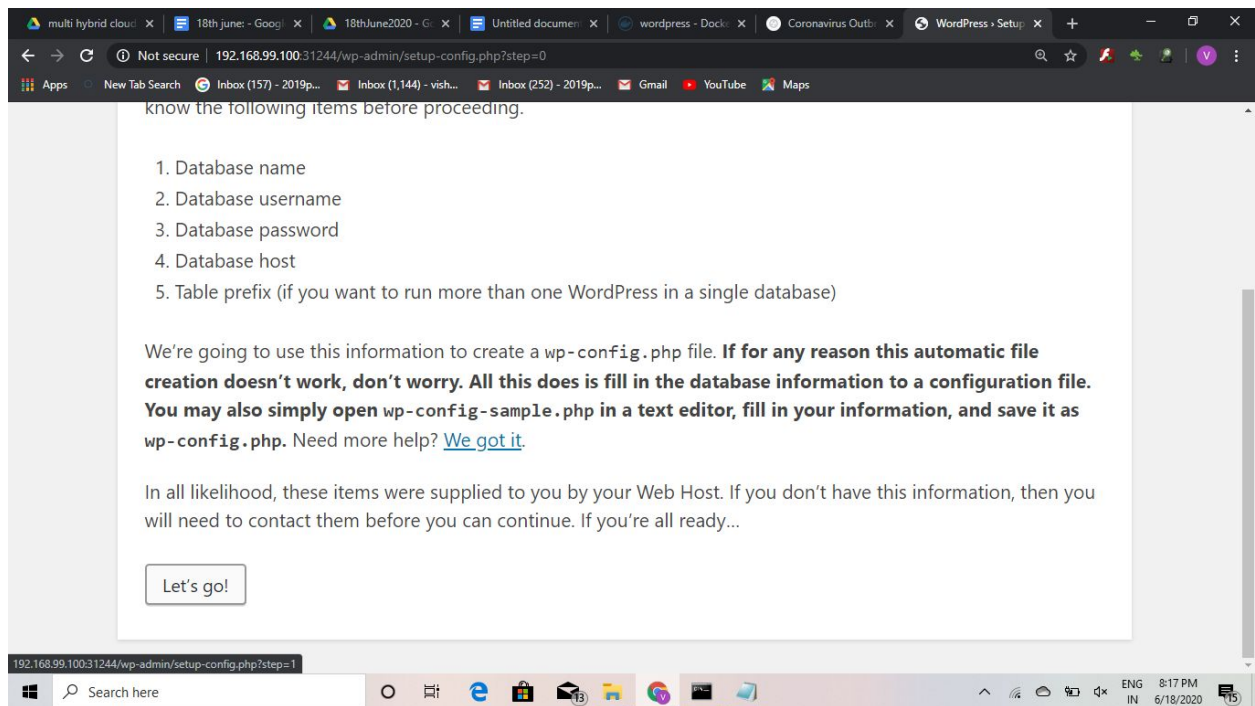
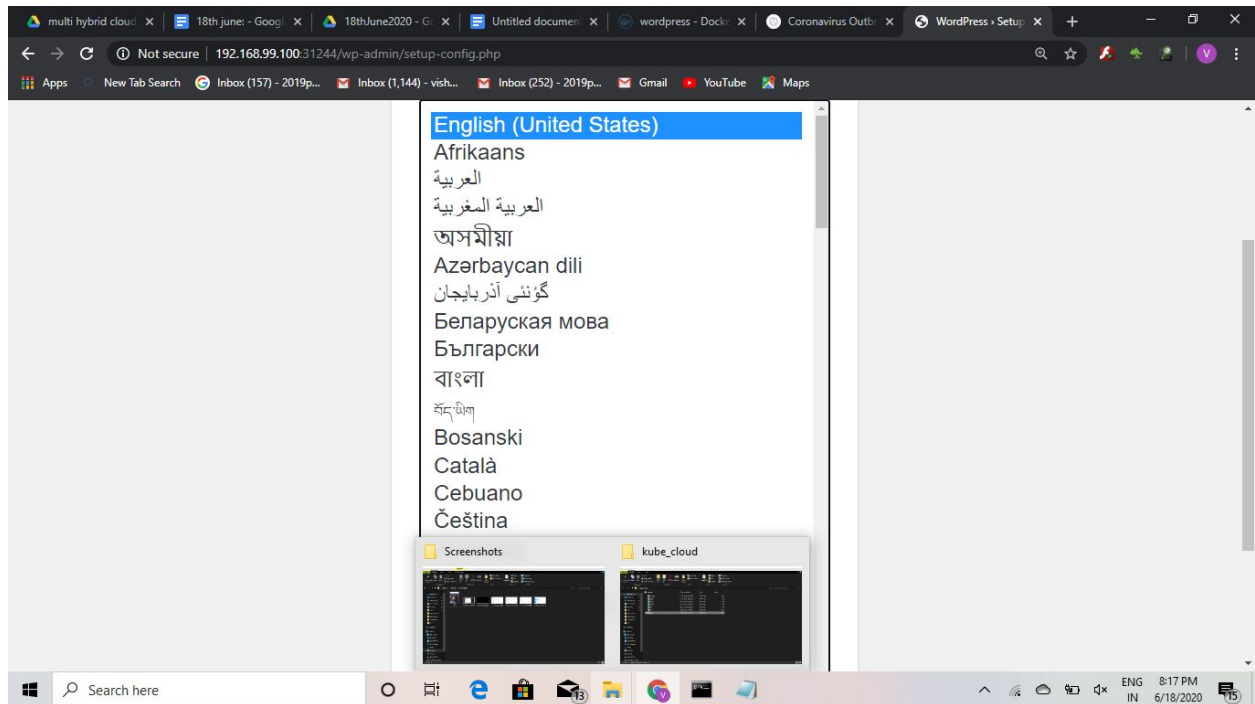
C:\Users\user\Desktop\kube\_cloud>kubectl get all

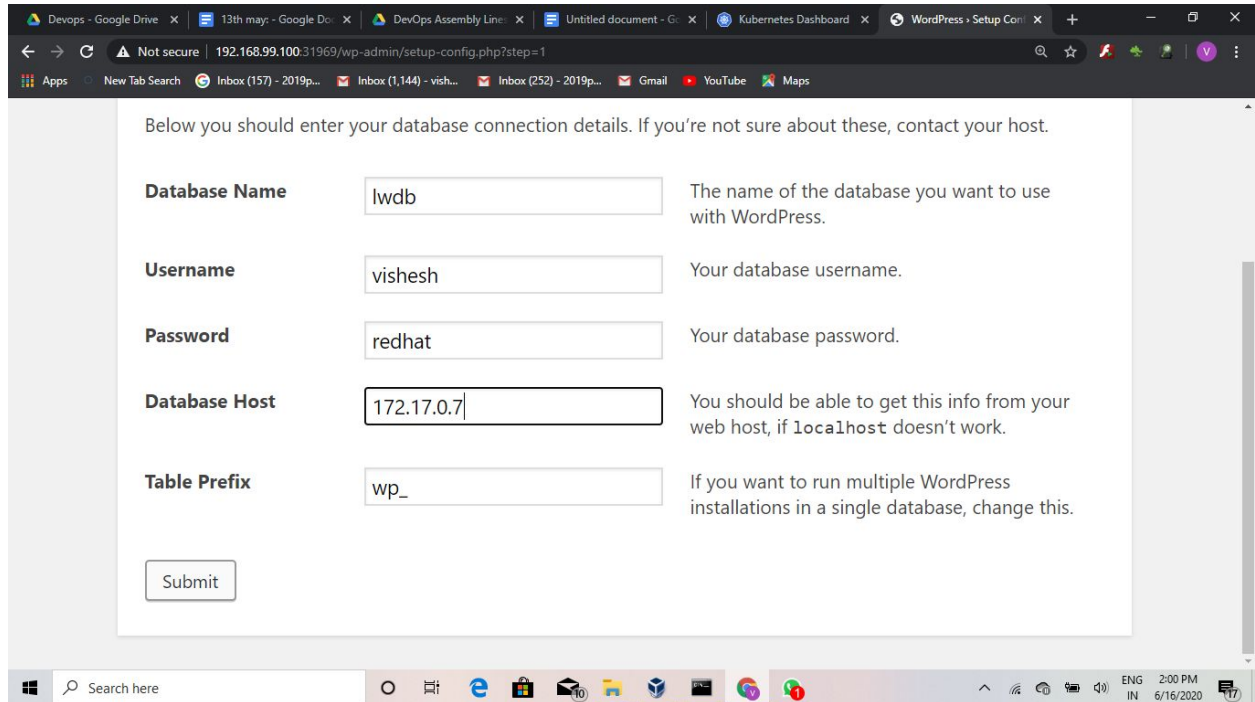
NAME	READY	STATUS	RESTARTS	AGE
pod/myweb-rs-6kn9l	1/1	Running	0	3m9s

NAME	TYPE	CLUSTER-IP	EXTERNAL-IP	PORT(S)	AGE
service/kubernetes	ClusterIP	10.96.0.1	<none>	443/TCP	5m
service/myweb-rs-6kn9l	NodePort	10.107.107.120	<none>	80:31244/TCP	5s

NAME	DESIRED	CURRENT	READY	AGE
replicaset.apps/myweb-rs	1	1	1	3m9s







```
C:\Users\user\Desktop\kube_cloud>kubectl describe all
```

```
Name:      myweb-rs-6kn9l
```

```
Namespace: default
```

```
Priority:   0
```

```
Node:      minikube/192.168.99.100
```

```
Start Time: Thu, 18 Jun 2020 20:12:28 +0530
```

```
Labels:    app=webserver
```

```
           env=production
```

```
           region=IN
```

```
Annotations: <none>
```

```
Status:     Running
```

```
IP:         172.17.0.6
```

```
IPs:
```

```
IP:         172.17.0.6
```

```
Controlled By: ReplicaSet/myweb-rs
```

```
Containers:
```

```
mywp-con:
```

```
Container ID:
```

```
docker://9dc2d4a7d95ab784537bf290709de2bbfb895cc2e786dd4dc930cd4495601689
```

```
Image:      wordpress:4.8-apache
```

```
Image ID:
```

```
docker-pullable://wordpress@sha256:6216f64ab88fc51d311e38c7f69ca3f9aaba621492b4f1fa93ddf63093768845
```

```
Port:       <none>
```

```
Host Port:  <none>
```

State: Running  
Started: Thu, 18 Jun 2020 20:13:22 +0530  
Ready: True  
Restart Count: 0  
Environment: <none>  
Mounts:  
/var/run/secrets/kubernetes.io/servic

