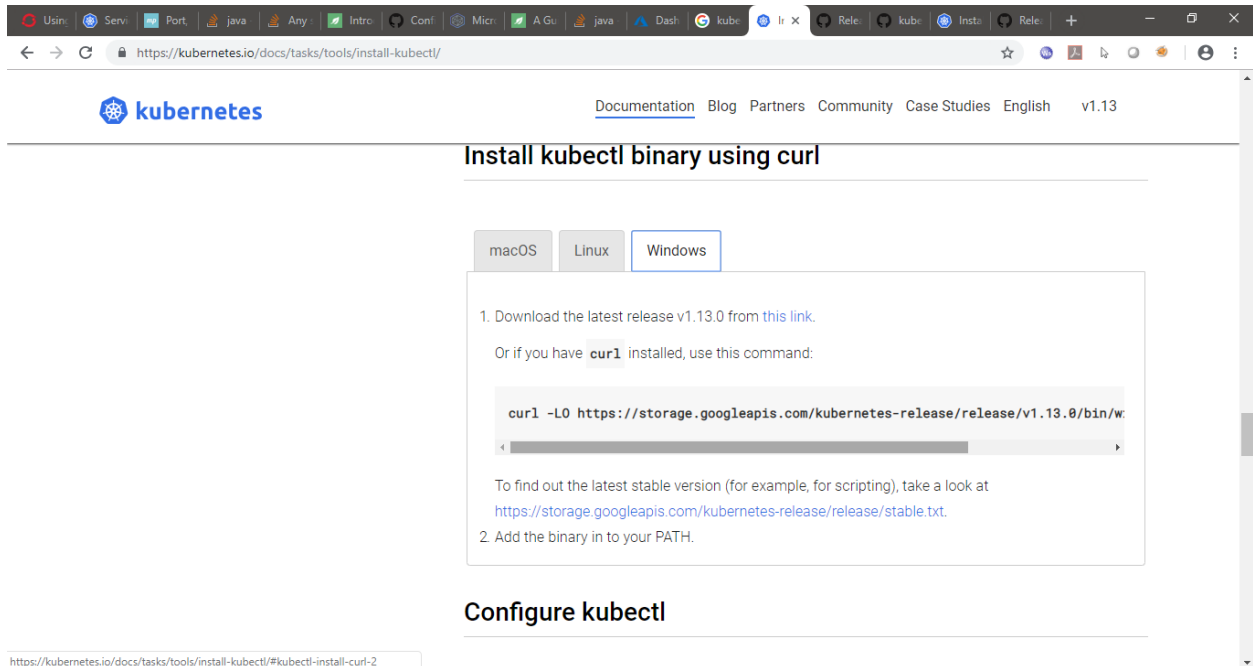


## Kubernetes Local setup

<https://kubernetes.io/docs/tasks/tools/install-kubect/>



The screenshot shows the Kubernetes documentation page for installing kubectl. The page title is "Install kubectl binary using curl". There are tabs for macOS, Linux, and Windows. The Windows tab is selected. The instructions are as follows:

1. Download the latest release v1.13.0 from [this link](#).

Or if you have `curl` installed, use this command:

```
curl -LO https://storage.googleapis.com/kubernetes-release/release/v1.13.0/bin/w
```

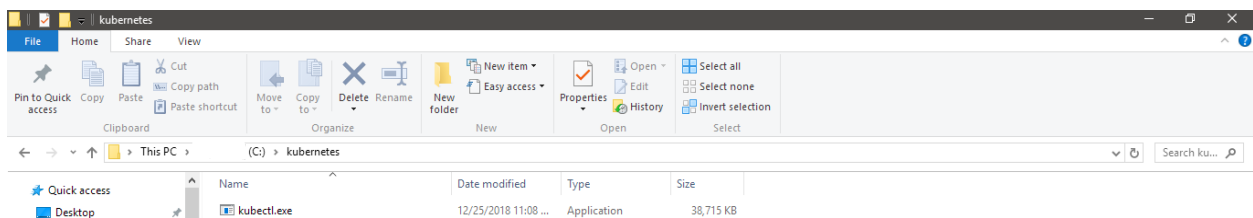
To find out the latest stable version (for example, for scripting), take a look at <https://storage.googleapis.com/kubernetes-release/release/stable.txt>.

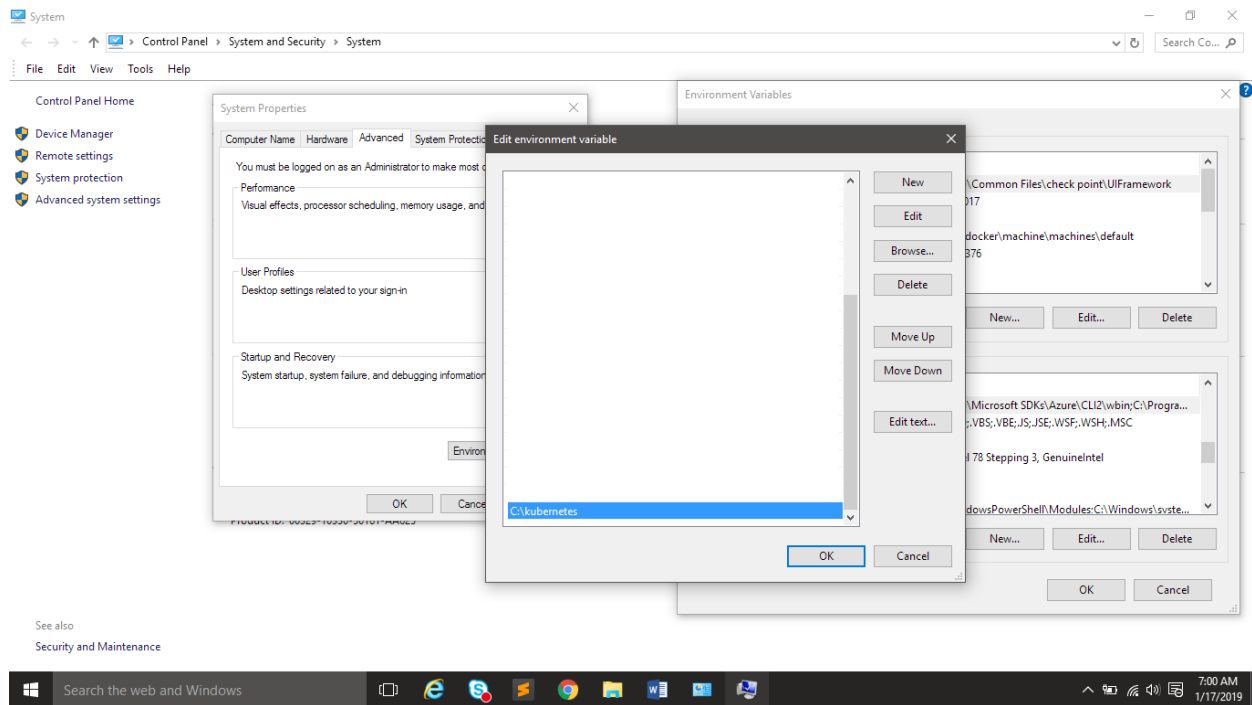
2. Add the binary in to your PATH.

Below the instructions, there is a section titled "Configure kubectl".

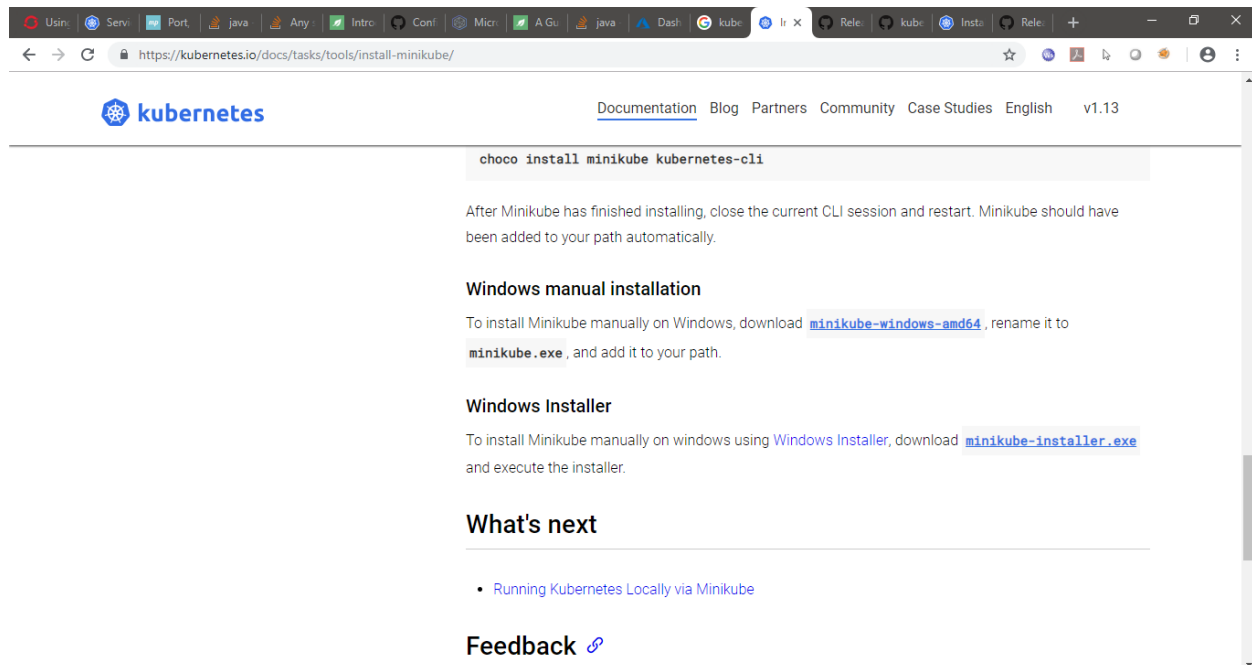
<https://storage.googleapis.com/kubernetes-release/release/v1.13.0/bin/windows/amd64/kubectl.exe>

Download above file and save in some folder (Better not have spaces in folder structure, as we add it to path in environment variables)

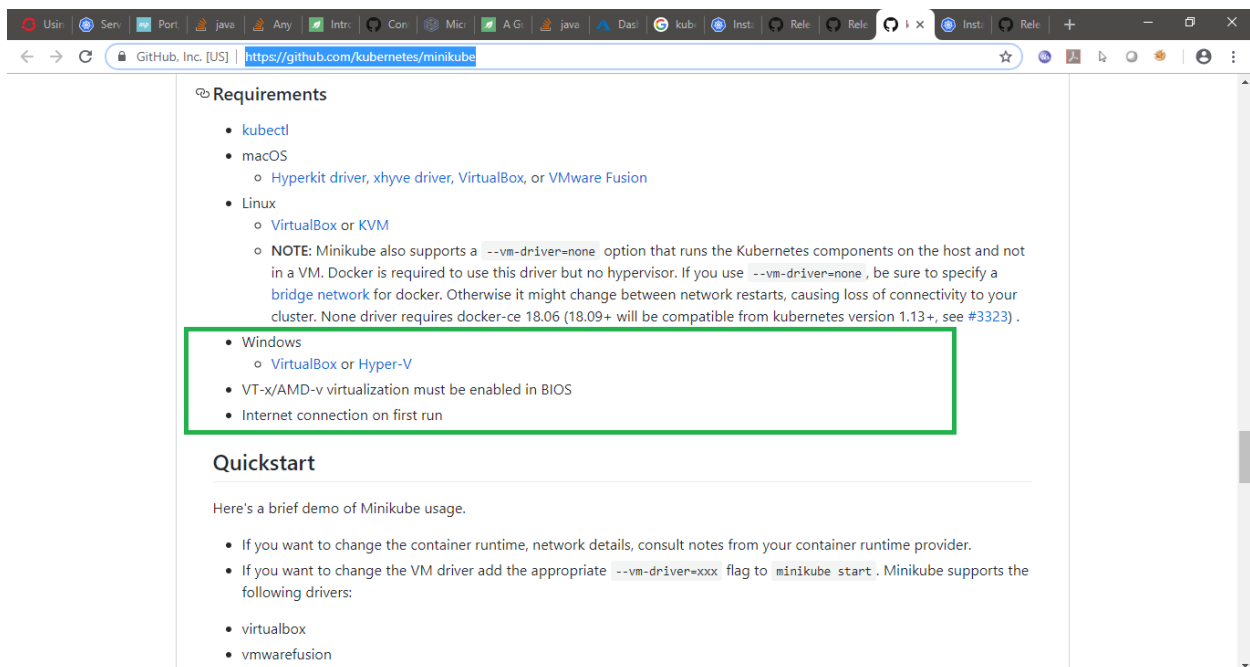
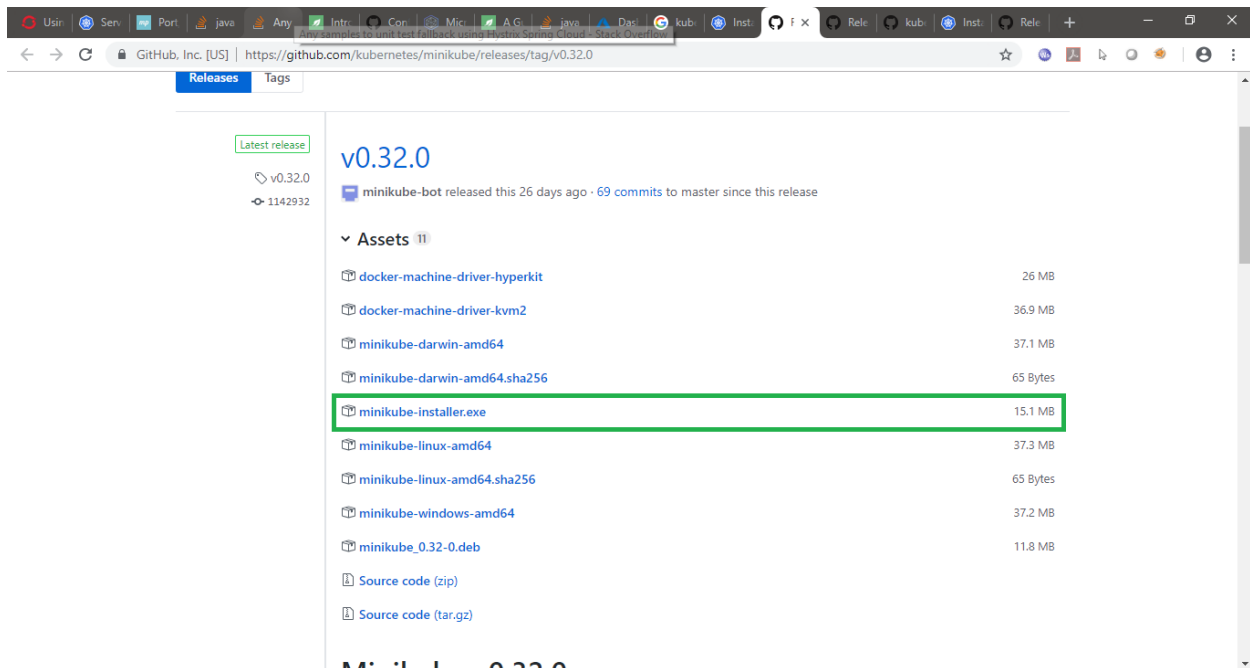




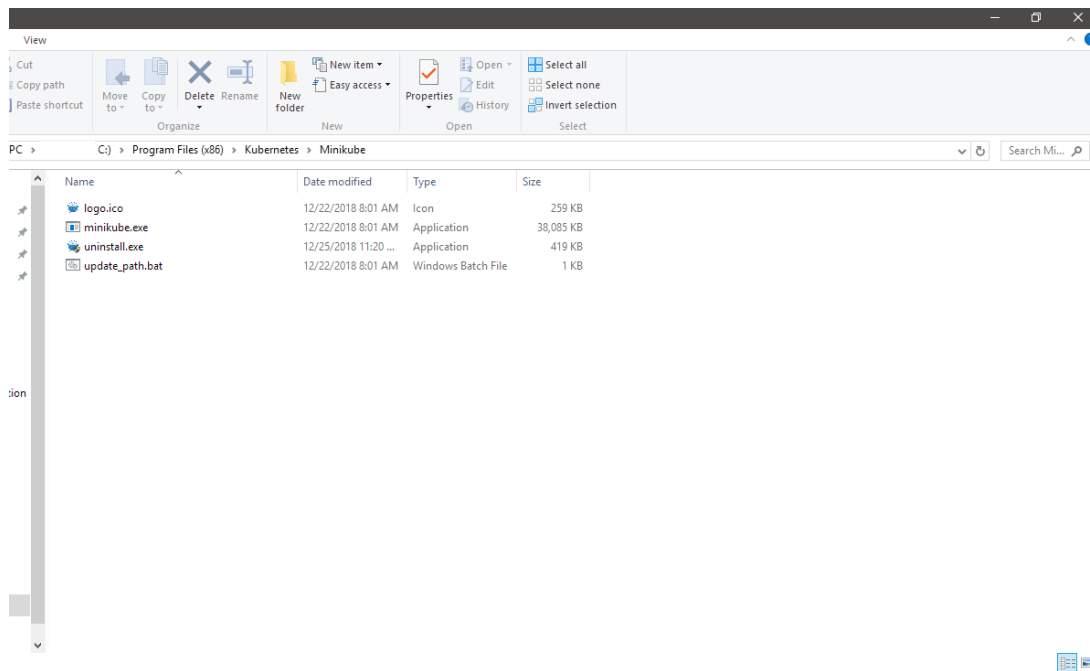
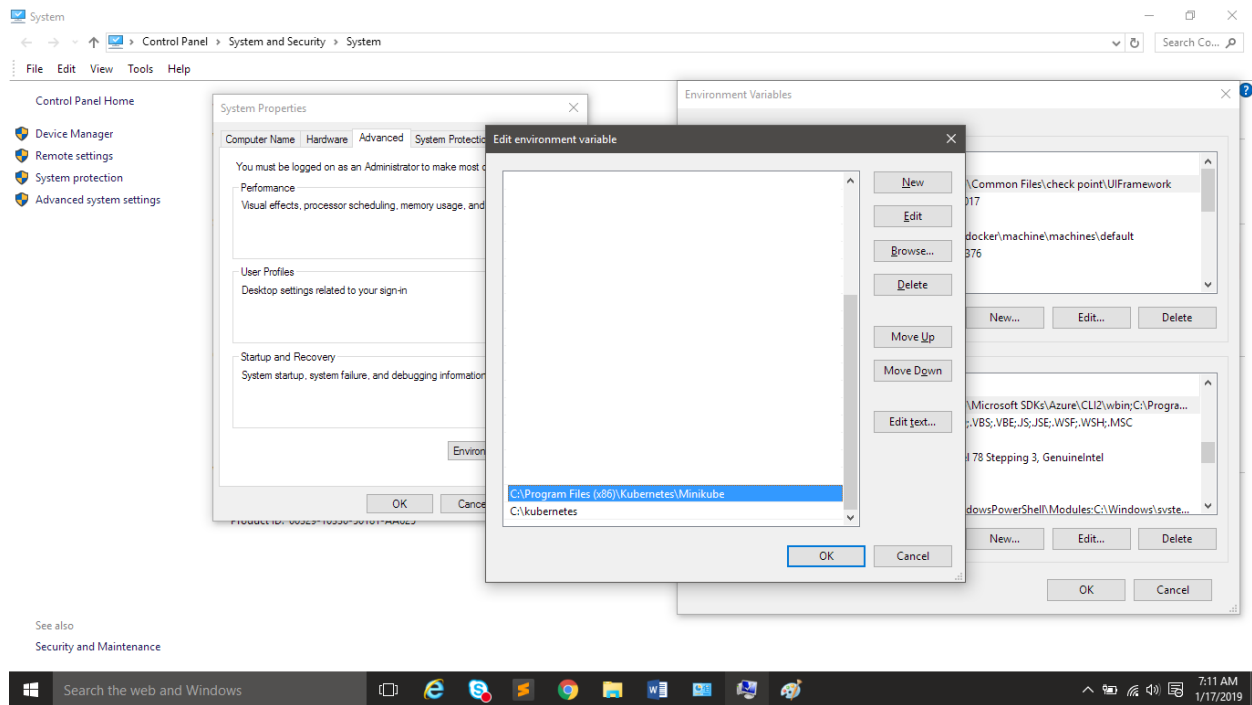
<https://kubernetes.io/docs/tasks/tools/install-minikube/>  
<https://github.com/kubernetes/minikube>



I have tried second option installer

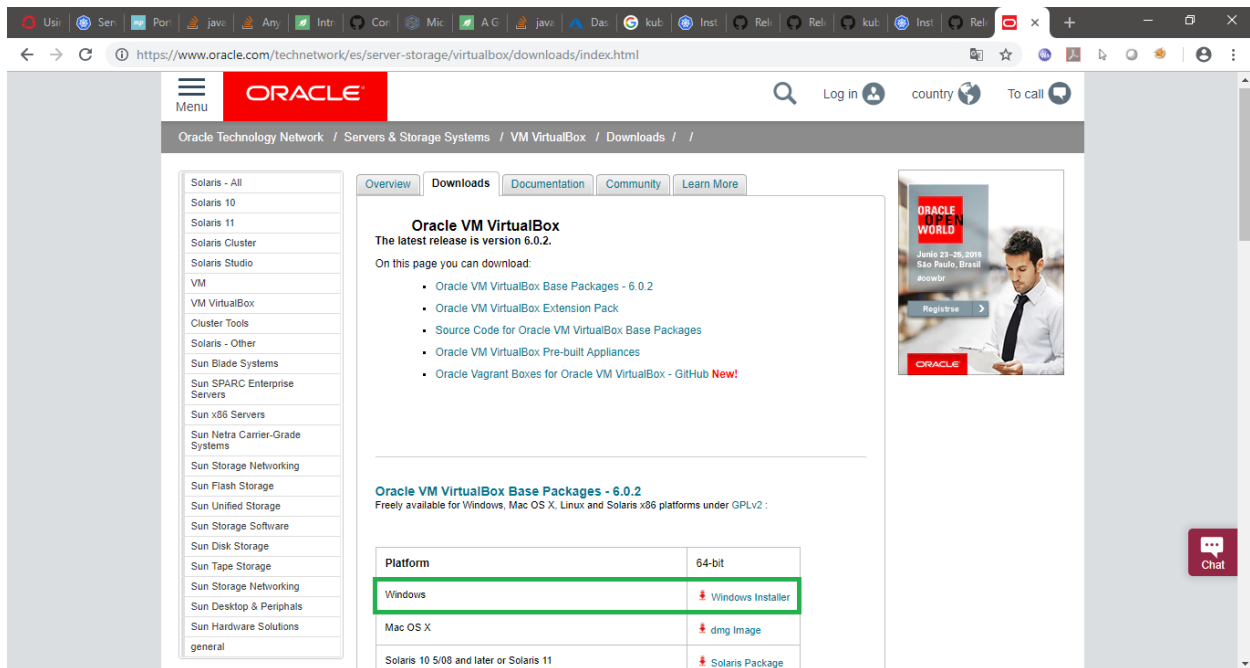


After installing add minikube path from program files to environment variables



Download Oracle VM box

<https://www.oracle.com/technetwork/es/server-storage/virtualbox/downloads/index.html>



To verify kubectl is working or not – try command **kubectl version**

```

C:\Program Files (x86)\Microsoft Visual Studio 14.0>kubectl version
Client Version: version.Info{Major:"1", Minor:"13", GitVersion:"v1.13.0", GitCommit:"ddf47ac13c1a9483ea035a79cd7c1005ff21a6d", GitTreeState:"clean", BuildDate:"2018-12-03T21:04:45Z", GoVersion:"go1.11.2", Compiler:"gc", Platform:"windows/amd64"}
Unable to connect to the server: dial tcp 127.0.0.1:8080: connectex: No connection could be made because the target machine actively refused it.

C:\Program Files (x86)\Microsoft Visual Studio 14.0>

```

Now run the command **minikube start**

This will download the required files initially, if any failures you observe. Please run the above command until it successfully downloads and starts.

```
C:\Windows\system32\cmd.exe - minikube start

D:\kubernetes-work>minikube start
Starting local Kubernetes v1.12.4 cluster...
Starting VM...
Downloading Minikube ISO
 137.92 MB / 178.88 MB [=====>-----] 77.10% 2m28s
E1225 11:40:59.507372 15612 start.go:187] Error starting host: unable to cache ISO: https://storage.googleapis.com/minikube/iso/minikube-v0.32.0.iso: failed to download: failed to download to temp file: failed to copy contents: read tcp 192.168.43.212:54841->216.58.197.48:443: wsarecv: A connection attempt failed because the connected party did not properly respond after a period of time, or established connection failed because connected host has failed to respond..

Retrying.
E1225 11:40:59.544481 15612 start.go:193] Error starting host: unable to cache ISO: https://storage.googleapis.com/minikube/iso/minikube-v0.32.0.iso: failed to download: failed to download to temp file: failed to copy contents: read tcp 192.168.43.212:54841->216.58.197.48:443: wsarecv: A connection attempt failed because the connected party did not properly respond after a period of time, or established connection failed because connected host has failed to respond.
=====
An error has occurred. Would you like to opt in to sending anonymized crash information to minikube to help prevent future errors?
To opt out of these messages, run the command:
    minikube config set WantReportErrorPrompt false
=====
Please enter your response [Y/n]:
D:\kubernetes-work>minikube start
Starting local Kubernetes v1.12.4 cluster...
Starting VM...
Downloading Minikube ISO
 152.69 MB / 178.88 MB [=====>-----] 85.36% 1m11s
```

```
C:\Windows\system32\cmd.exe - minikube start

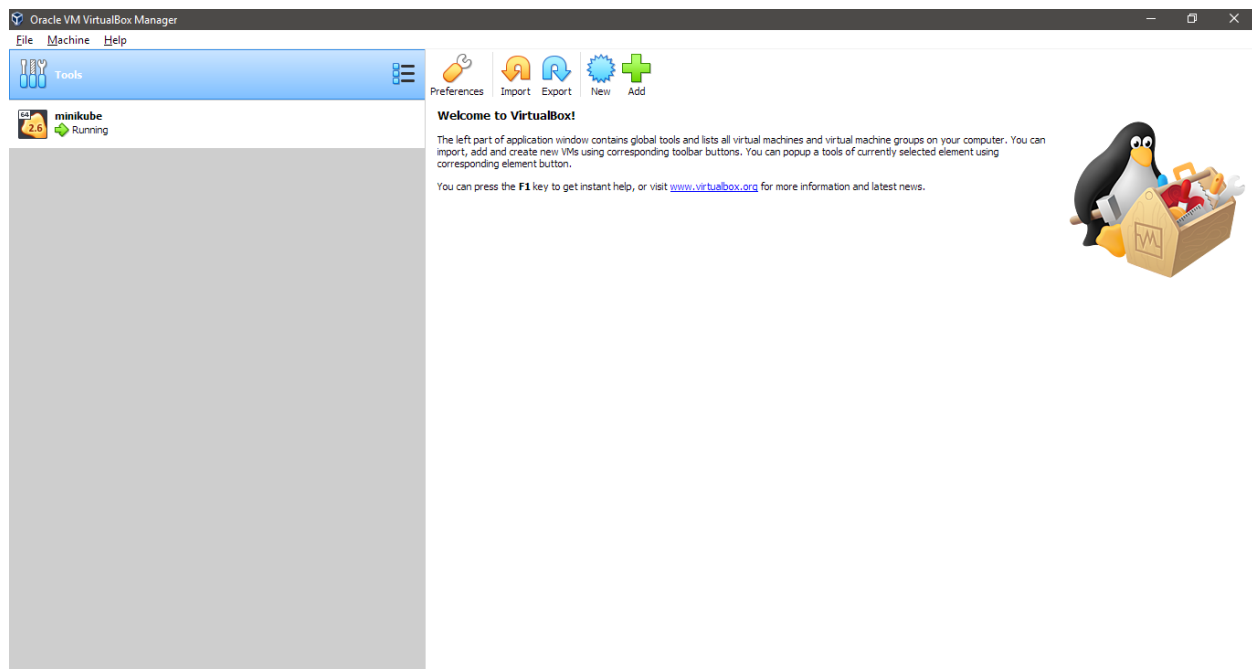
D:\kubernetes-work>minikube start
Starting local Kubernetes v1.12.4 cluster...
Starting VM...
Downloading Minikube ISO
 137.92 MB / 178.88 MB [=====>-----] 77.10% 2m28s
E1225 11:40:59.507372 15612 start.go:187] Error starting host: unable to cache ISO: https://storage.googleapis.com/minikube/iso/minikube-v0.32.0.iso: failed to download: failed to download to temp file: failed to copy contents: read tcp 192.168.43.212:54841->216.58.197.48:443: wsarecv: A connection attempt failed because the connected party did not properly respond after a period of time, or established connection failed because connected host has failed to respond..

Retrying.
E1225 11:40:59.544481 15612 start.go:193] Error starting host: unable to cache ISO: https://storage.googleapis.com/minikube/iso/minikube-v0.32.0.iso: failed to download: failed to download to temp file: failed to copy contents: read tcp 192.168.43.212:54841->216.58.197.48:443: wsarecv: A connection attempt failed because the connected party did not properly respond after a period of time, or established connection failed because connected host has failed to respond.
=====
An error has occurred. Would you like to opt in to sending anonymized crash information to minikube to help prevent future errors?
To opt out of these messages, run the command:
    minikube config set WantReportErrorPrompt false
=====
Please enter your response [Y/n]:
D:\kubernetes-work>minikube start
Starting local Kubernetes v1.12.4 cluster...
Starting VM...
Downloading Minikube ISO
 178.88 MB / 178.88 MB [=====] 100.00% 0s
E1225 11:50:27.820527 13720 start.go:187] Error starting host: Error creating host: Error executing step: Creating VM.
: open /Users/vkonduru3/.minikube/cache/iso/minikube-v0.32.0.iso: The system cannot find the path specified..

Retrying.
E1225 11:50:27.898451 13720 start.go:193] Error starting host: Error creating host: Error executing step: Creating VM.
: open /Users/vkonduru3/.minikube/cache/iso/minikube-v0.32.0.iso: The system cannot find the path specified.
=====
An error has occurred. Would you like to opt in to sending anonymized crash information to minikube to help prevent future errors?
To opt out of these messages, run the command:
    minikube config set WantReportErrorPrompt false
=====
Please enter your response [Y/n]: _
```

```
Administrator: Developer Command Prompt for VS2015 - minikube start
--vmodule moduleSpec      comma-separated list of pattern=N settings for file-filtered logging

C:\kubernetes-work>minikube start
Starting local Kubernetes v1.12.4 cluster...
Starting VM...
```



Meanwhile you can observe that on VM box, minikube is getting created and trying to start it

```
Administrator: Developer Command Prompt for VS2015
C:\kubernetes-work>minikube start
Starting local Kubernetes v1.12.4 cluster...
Starting VM...
Getting VM IP address...
Moving files into cluster...
Downloading kubeadm v1.12.4
Downloading kubelet v1.12.4
Finished Downloading kubeadm v1.12.4
Finished Downloading kubelet v1.12.4
Setting up certs...
Connecting to cluster...
Setting up kubeconfig...
Stopping extra container runtimes...
Starting cluster components...
Verifying kubelet health ...
Verifying apiserver health ...Kubectl is now configured to use the cluster.
Loading cached images from config file.

Everything looks great. Please enjoy minikube!
C:\kubernetes-work>
```

Now it is successfully started

<https://kubernetes.io/docs/home/>  
<https://kubernetes.io/docs/tutorials/>  
<https://kubernetes.io/docs/reference/kubectl/>  
<https://kubernetes.io/docs/reference/kubectl/cheatsheet/>

Some important commands are attached below, please verify. The cheat sheet given below is asset of the respective owners and is only used for knowledge sharing.

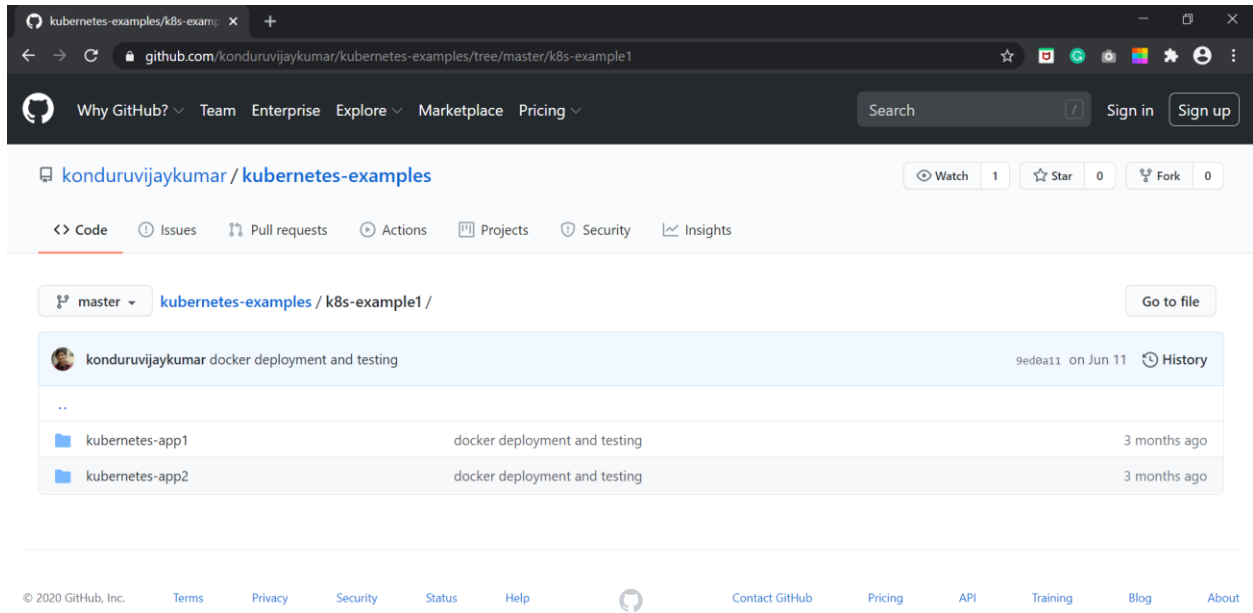


K8S-Command-Reference.pdf

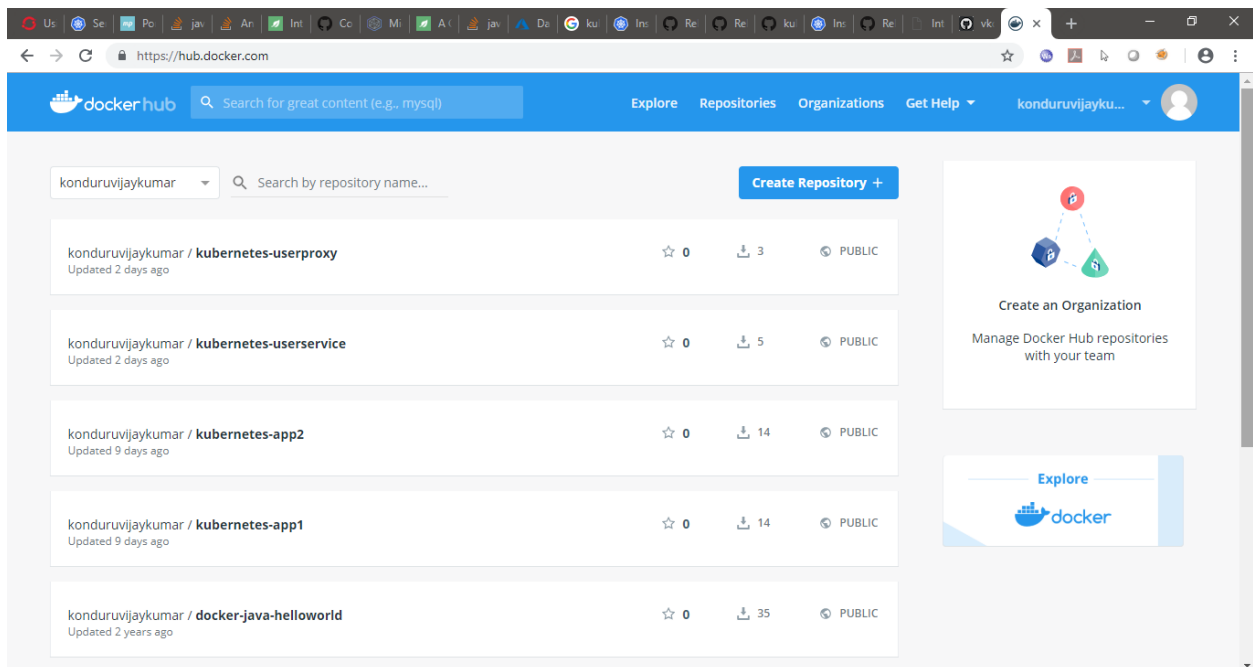
<https://github.com/konduruvijaykumar/kubernetes-examples>

Clone the above project and we will use kubernetes-app1 and kubernetes-app2 for deploying, testing and verifying service discovery.





Docker images for both applications are already created and published to docker hub.



Deployment files are already having the right image tag configured.

<https://fabric8.io/guide/develop/serviceDiscovery.html>

```
Developer Command Prompt for VS2015
01/08/2019 11:16 AM 477 kubernet-es-app1-service.yaml
2 File(s) 1,374 bytes
2 Dir(s) 66,981,056,512 bytes free

C:\Users\ [redacted] \kubernet-es-app1\kubernet-es-files>kubectl create -f kubernet-es-app1-service.yaml
The Service "service-app1" is invalid: spec.ports[0].nodePort: Invalid value: 8080: provided port is not in the valid range. The range of valid ports is 30000-32767

C:\Users\ [redacted] \kubernet-es-app1\kubernet-es-files>kubectl create -f kubernet-es-app1-service.yaml
service/service-app1 created

C:\Users\ [redacted] \kubernet-es-app1\kubernet-es-files>kubectl create -f kubernet-es-app1-deployment.yaml
deployment.apps/kubernet-es-app1-deployment created

C:\Users\ [redacted] \kubernet-es-app1\kubernet-es-files>cd ../../kubernet-es-app2/kubernet-es-files

C:\Users\ [redacted] \kubernet-es-app2\kubernet-es-files>kubectl create -f kubernet-es-app2-service.yaml
service/service-app2 created

C:\Users\ [redacted] \kubernet-es-app2\kubernet-es-files>kubectl create -f kubernet-es-app2-deployment.yaml
deployment.apps/kubernet-es-app2-deployment created

C:\Users\ [redacted] \kubernet-es-app2\kubernet-es-files>cd ../../kubernet-es-app1/kubernet-es-files

C:\Users\ [redacted] \kubernet-es-app1\kubernet-es-files>kubectl create -f kubernet-es-app1-service.yaml
service/service-app1 created

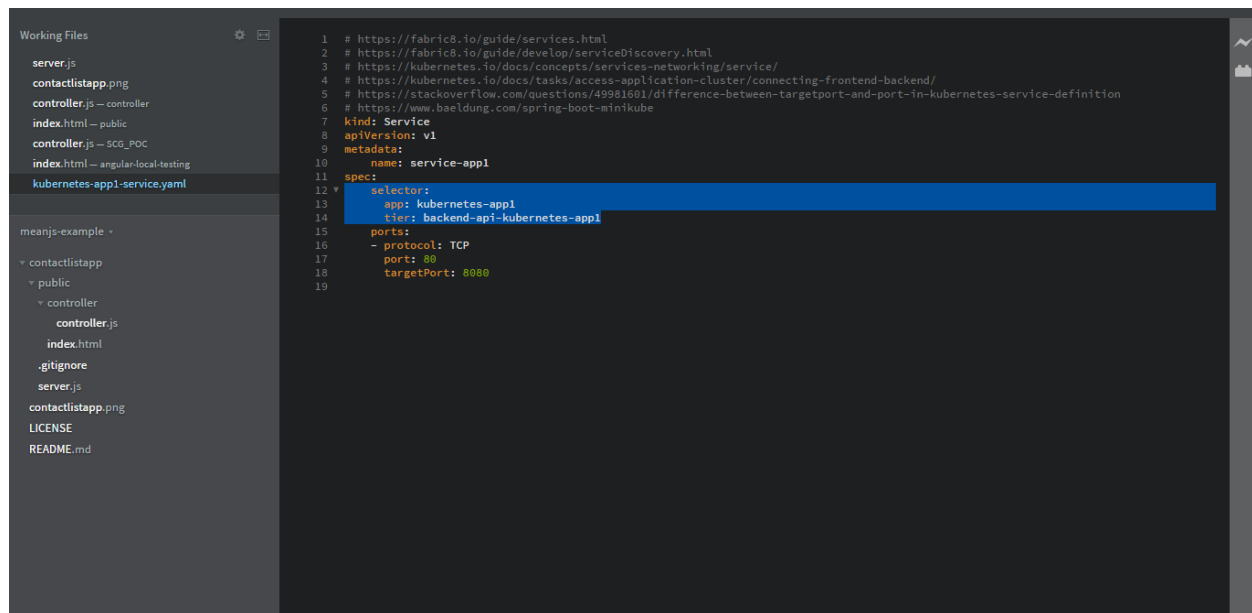
C:\Users\ [redacted] \kubernet-es-app1\kubernet-es-files>kubectl create -f kubernet-es-app1-deployment.yaml
deployment.apps/kubernet-es-app1-deployment created

C:\Users\ [redacted] \kubernet-es-app1\kubernet-es-files>kubectl expose deployment kubernet-es-app1-deployment --type=NodePort
service/kubernet-es-app1-deployment exposed

C:\Users\ [redacted] \kubernet-es-app1\kubernet-es-files>
```

I have executed steps in wrong order, after which I have deleted all deployments/pods, services and recreated services and then deployments.

This will create services first and when app/deployment with selector tags are created will get attached to this service



Important commands

**kubectl get nodes**

**kubectl get services**

**kubectl get pods**

**kubectl get deployments**

**kubectl describe deployments**

**kubectl describe deployment <deployment name>**

**kubectl describe pods**

**kubectl describe pod <pod name>**

**kubectl describe services**

**kubectl describe service <pod name>**

**kubectl describe nodes**

**kubectl describe node <node name>**

**kubectl rollout status <resource name (Ex: deployments/kubernetes-app1)>**

**kubectl rollout history < resource name (Ex: deployments/kubernetes-app1)>**

**kubectl get ep <service name>**

**kubectl cluster-info**

**kubectl delete service <service name>**

**kubectl delete pod <pod name>**

```

kubectrl create -f <deployment/service yml file>
kubectrl apply -f <deployment/service yml file>
kubectrl expose deployment <deployment name> --type=NodePort
kubectrl exec <specific deployment/pod name> -- printenv | grep SERVICE
minikube service <service name> --url

```

```

minikube start
minikube dashboard
minikube stop

```

Carefully Use the below commands, always against individual services instead of all (delete services can delete your main **kubernetes** service also, which is needed. This might get recreated on stop and start of minikube but might face some issues.)

```

kubectrl delete pods --all
kubectrl delete services --all

```

```

C:\Program Files (x86)\Microsoft Visual Studio 14.0>kubectrl get services
NAME                TYPE        CLUSTER-IP    EXTERNAL-IP    PORT(S)          AGE
app1-deployment     NodePort    10.109.92.22  <none>         8080:30958/TCP   3h
app2-deployment     NodePort    10.96.48.199  <none>         8080:32190/TCP   176m
kubernetes           ClusterIP   10.96.0.1     <none>         443/TCP           8h
service-app1        ClusterIP   10.109.5.234  <none>         80/TCP            3h
service-app2        ClusterIP   10.104.100.9  <none>         80/TCP            175m

C:\Program Files (x86)\Microsoft Visual Studio 14.0>kubectrl exec app1-deployment-64c85cc75b-b2xn2 -- printenv | grep SERVICE
SERVICE_APP1_PORT=tcp://10.90.73.76:80
SERVICE_APP1_SERVICE_HOST=10.99.73.76
KUBERNETES_SERVICE_PORT_HTTPS=443
SERVICE_APP2_SERVICE_HOST=10.98.165.219
SERVICE_APP2_PORT_80_TCP_ADDR=10.98.165.219
APP1_DEPLOYMENT_SERVICE_PORT=8080
APP2_DEPLOYMENT_SERVICE_PORT=8080
SERVICE_APP1_PORT_80_TCP=tcp://10.99.73.76:80
KUBERNETES_SERVICE_HOST=10.96.0.1
SERVICE_APP2_PORT_80_TCP=tcp://10.98.165.219:80
SERVICE_APP1_PORT_80_TCP_PROTO=tcp
SERVICE_APP1_PORT_80_TCP_ADDR=10.99.73.76
APP1_DEPLOYMENT_SERVICE_HOST=10.110.164.22
APP2_DEPLOYMENT_SERVICE_HOST=10.110.114.252
SERVICE_APP1_PORT_80_TCP_PORT=80
SERVICE_APP2_PORT=tcp://10.98.165.219:80
KUBERNETES_SERVICE_PORT=443
SERVICE_APP2_SERVICE_PORT=80
SERVICE_APP2_PORT_80_TCP_PROTO=tcp
SERVICE_APP2_PORT_80_TCP_PORT=80
SERVICE_APP1_SERVICE_PORT=80

C:\Program Files (x86)\Microsoft Visual Studio 14.0>kubectrl exec app1-deployment-64c85cc75b-b2xn2 -- printenv | grep SERVICE | grep SERVICE_APP2
SERVICE_APP2_SERVICE_HOST=10.98.165.219
SERVICE_APP2_PORT_80_TCP_ADDR=10.98.165.219
SERVICE_APP2_PORT_80_TCP=tcp://10.98.165.219:80
SERVICE_APP2_PORT=tcp://10.98.165.219:80
SERVICE_APP2_SERVICE_PORT=80
SERVICE_APP2_PORT_80_TCP_PROTO=tcp
SERVICE_APP2_PORT_80_TCP_PORT=80

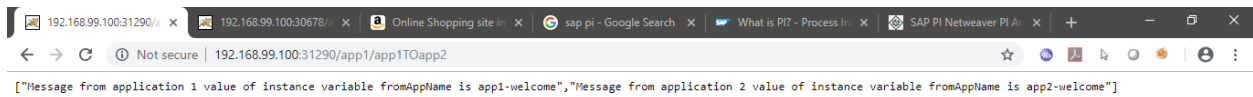
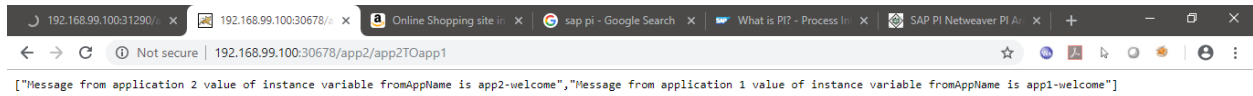
```

```

kubectrl exec kubernetes-app2-deployment-69d966bb9d-fjtdx -- printenv | grep SERVICE
kubectrl exec kubernetes-app2-deployment-69d966bb9d-fjtdx -- printenv | grep SERVICE_APP

```

The API End point can get changed, please verify the code for API end point URL's to be used



Finally, success after configuring service properly with target port as the port exposed by application deployment i.e., 8080

```
File Edit Refactor Navigate Search Project Run Tools Window Help
Application2Contr... Dockerfile Dockerfile Application1Contr... kubernet...-app1-s... kubernet...-app2-s... User.java kubernet...-app1-... kubernet...-app2-...
1 # https://fabric8.io/guide/services.html
2 # https://fabric8.io/guide/develop/serviceDiscovery.html
3 # https://kubernetes.io/docs/concepts/services-networking/service/
4 # https://kubernetes.io/docs/tasks/access-application-cluster/connecting-frontend-backend/
5 # https://stackoverflow.com/questions/49981601/difference-between-targetport-and-port-in-kubernetes-service-definition
6 # https://www.baeldung.com/spring-boot-minikube
7 kind: Service
8 apiVersion: v1
9 metadata:
10   name: service-appl
11 spec:
12   selector:
13     app: kubernet...-app1
14     tier: backend-api-kubernet...-app1
15   ports:
16     - protocol: TCP
17       port: 80
18       targetPort: 8080
19
```

```
C:\Program Files (x86)\Microsoft Visual Studio 14.0>kubectl get pod
NAME                                READY    STATUS    RESTARTS   AGE
kubernet...-app1-deployment-698d45f5f6-gk92h    1/1      Running   2           94m
kubernet...-app1-deployment-698d45f5f6-nbp52    1/1      Running   2           94m
kubernet...-app2-deployment-69d966bb9d-fjtdx    1/1      Running   2           94m
kubernet...-app2-deployment-69d966bb9d-xhxfh    1/1      Running   2           94m

C:\Program Files (x86)\Microsoft Visual Studio 14.0>kubectl get services
NAME                                TYPE                CLUSTER-IP      EXTERNAL-IP      PORT(S)          AGE
kubernet...-app1-deployment    ClusterIP           10.96.0.1       <none>           443/TCP          35h
kubernet...-app1-deployment    NodePort            10.106.180.44   <none>           8080:31290/TCP   93m
kubernet...-app2-deployment    NodePort            10.100.115.227  <none>           8080:30678/TCP   93m
service-appl1                  ClusterIP           10.99.164.177   <none>           80/TCP           95m
service-appl2                  ClusterIP           10.99.215.49    <none>           80/TCP           95m

C:\Program Files (x86)\Microsoft Visual Studio 14.0>kubectl describe service kubernet...-app1-deployment
Name:                                kubernet...-app1-deployment
Namespace:                            default
Labels:                               <none>
Annotations:                          <none>
Selector:                             app=kubernet...-app1,tier=backend-api-kubernet...-app1,track=dev
Type:                                  NodePort
IP:                                    10.106.180.44
Port:                                  <unset> 8080/TCP
TargetPort:                            8080/TCP
NodePort:                              <unset> 31290/TCP
Endpoints:                             172.17.0.5:8080,172.17.0.6:8080
Session Affinity:                      None
External Traffic Policy:               Cluster
Events:                               <none>

C:\Program Files (x86)\Microsoft Visual Studio 14.0>kubectl describe service service-appl1
Name:                                service-appl1
Namespace:                            default
Labels:                               <none>
Annotations:                          <none>
Selector:                             app=kubernet...-app1,tier=backend-api-kubernet...-app1
Type:                                  ClusterIP
IP:                                    10.99.164.177
Port:                                  <unset> 80/TCP
TargetPort:                            8080/TCP
Endpoints:                             172.17.0.5:8080,172.17.0.6:8080
Session Affinity:                      None
```

```
Select Developer Command Prompt for VS2015

C:\Program Files (x86)\Microsoft Visual Studio 14.0>kubectl describe service service-app1
Name: service-app1
Namespace: default
Labels: <none>
Annotations: <none>
Selector: app=kubernetes-app1,tier=backend-api-kubernetes-app1
Type: ClusterIP
IP: 10.99.164.177
Port: <unset> 80/TCP
TargetPort: 8080/TCP
Endpoints: 172.17.0.5:8080,172.17.0.6:8080
Session Affinity: None
Events: <none>

C:\Program Files (x86)\Microsoft Visual Studio 14.0>kubectl describe pod kubernetes-app1-deployment-698d45f5f6-gk92h
Name: kubernetes-app1-deployment-698d45f5f6-gk92h
Namespace: default
Priority: 0
PriorityClassName: <none>
Node: minikube/10.0.2.15
Start Time: Tue, 08 Jan 2019 16:03:26 +0530
Labels: app=kubernetes-app1
pod-template-hash=698d45f5f6
tier=backend-api-kubernetes-app1
track-dev
Annotations: <none>
Status: Running
IP: 172.17.0.5
Controlled By: ReplicaSet/kubernetes-app1-deployment-698d45f5f6
Containers:
  kubernetes-app1:
    Container ID: docker://fe7754fd84696609882973d9a13e640ab54bbbd24524974a7f12321d17260831
    Image: konduruvijaykumar/kubernetes-app1:1.0
    Image ID: docker-pullable://konduruvijaykumar/kubernetes-app1@sha256:4563ef72d60a7fa476b565d31453450d48b45046356cfcc053bb30a4b0f42aae
    Port: 8080/TCP
    Host Port: 0/TCP
    State: Running
      Started: Tue, 08 Jan 2019 17:22:03 +0530
    Ready: True
    Restart Count: 2
    Environment: <none>
    Mounts: <none>
```

```
Select Developer Command Prompt for VS2015

Selector: app=kubernetes-app1,tier=backend-api-kubernetes-app1
Type: ClusterIP
IP: 10.99.164.177
Port: <unset> 80/TCP
TargetPort: 8080/TCP
Endpoints: 172.17.0.5:8080,172.17.0.6:8080
Session Affinity: None
Events: <none>

C:\Program Files (x86)\Microsoft Visual Studio 14.0>kubectl describe pod kubernetes-app1-deployment-698d45f5f6-gk92h
Name: kubernetes-app1-deployment-698d45f5f6-gk92h
Namespace: default
Priority: 0
PriorityClassName: <none>
Node: minikube/10.0.2.15
Start Time: Tue, 08 Jan 2019 16:03:26 +0530
Labels: app=kubernetes-app1
pod-template-hash=698d45f5f6
tier=backend-api-kubernetes-app1
track-dev
Annotations: <none>
Status: Running
IP: 172.17.0.5
Controlled By: ReplicaSet/kubernetes-app1-deployment-698d45f5f6
Containers:
  kubernetes-app1:
    Container ID: docker://fe7754fd84696609882973d9a13e640ab54bbbd24524974a7f12321d17260831
    Image: konduruvijaykumar/kubernetes-app1:1.0
    Image ID: docker-pullable://konduruvijaykumar/kubernetes-app1@sha256:4563ef72d60a7fa476b565d31453450d48b45046356cfcc053bb30a4b0f42aae
    Port: 8080/TCP
    Host Port: 0/TCP
    State: Running
      Started: Tue, 08 Jan 2019 17:22:03 +0530
    Ready: True
    Restart Count: 2
    Environment: <none>
    Mounts:
      /var/run/secrets/kubernetes.io/serviceaccount from default-token-w4sgj (ro)
Conditions:
  Type Status
  Initialized True
  Ready True
  ContainersReady True
```

```

C:\> Select Developer Command Prompt for VS2015

Started: Tue, 08 Jan 2019 17:22:03 +0530
Ready: True
Restart Count: 2
Environment: <none>
Mounts:
  /var/run/secrets/kubernetes.io/serviceaccount from default-token-w4sgj (ro)
Conditions:
  Type      Status
  Initialized True
  Ready      True
  ContainersReady True
  PodScheduled True
Volumes:
  default-token-w4sgj:
    Type: Secret (a volume populated by a Secret)
    SecretName: default-token-w4sgj
    Optional: false
QoS Class: BestEffort
Node-Selectors: <none>
Tolerations:
  node.kubernetes.io/not-ready:NoExecute for 300s
  node.kubernetes.io/unreachable:NoExecute for 300s
Events: <none>

C:\Program Files (x86)\Microsoft Visual Studio 14.0>kubectl describe pod kubernet-es-app1-deployment-698d45f5f6-nbp52
Name: kubernet-es-app1-deployment-698d45f5f6-nbp52
Namespace: default
Priority: 0
PriorityClassName: <none>
Node: minikube/10.0.2.15
Start Time: Tue, 08 Jan 2019 16:03:26 +0530
Labels:
  app=kubernet-es-app1
  pod-template-hash=698d45f5f6
  tier=backend-api-kubernet-es-app1
Annotations:
  track=dev
Status: Running
IP: 172.17.0.6
Controlled By: ReplicaSet/kubernet-es-app1-deployment-698d45f5f6
Containers:
  kubernet-es-app1:
    Container ID: docker://84fe66869218923983fc7cae1247449251173327846e6092d4abd5957bb9df10
    Image: konduruvijaykumar/kubernet-es-app1:1.0
    Image ID: docker-pullable://konduruvijaykumar/kubernet-es-app1@sha256:4563ef72d60a7fa476b565d31453450d48b45046356cfc053bb30a4b0f42aae

```

192.168.99.100:31290/

192.168.99.100:30678/

Overview - Kubernetes

Rent Electronics Items

Samsung Galaxy Note

Home Appliances on F

127.0.0.1:56470/api/v1/namespaces/kube-system/services/http:kubernetes-dashboard/proxy/#/overview?namespace=default

kubernetes

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Workloads Statuses

100.00%

Deployments

100.00%

Pods

100.00%

Replica Sets

Deployments

Name	Labels	Pods	Age	Images
<div>✓</div> kubernet-es-app2-deployment	-	2 / 2	12 hours	konduruvijaykumar/kubernet...
<div>✓</div> kubernet-es-app1-deployment	-	2 / 2	12 hours	konduruvijaykumar/kubernet...



192.168.99.100:31290/ x 192.168.99.100:30678/ x Overview - Kubernetes: x Rent Electronics Items: x Samsung Galaxy Note: x Home Appliances on R: x + -

127.0.0.1:56470/api/v1/namespaces/kube-system/services/http:kubernetes-dashboard:/proxy/#/overview?namespace=default

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Pods

Name	Node	Status	Restarts	Age
kubernetes-app2-deployment-69d966bb9d-ftdx	minikube	Running	2	12 hours
kubernetes-app2-deployment-69d966bb9d-xhxfh	minikube	Running	2	12 hours
kubernetes-app1-deployment-698d45f5f6-gk92h	minikube	Running	2	12 hours
kubernetes-app1-deployment-698d45f5f6-nbp52	minikube	Running	2	12 hours

Replica Sets

Name	Labels	Pods	Age	Images
kubernetes-app2-deployment...	app: kubernetes-app2 pod-template-hash: 69d966bb9d tier: backend-api-kubernetes- track: dev	2 / 2	12 hours	konduruvijaykumar/kubernet...
kubernetes-app1-deployment...	app: kubernetes-app1 pod-template-hash: 698d45f5f6	2 / 2	12 hours	konduruvijaykumar/kubernet...

192.168.99.100:31290/ x 192.168.99.100:30678/ x Overview - Kubernetes: x Rent Electronics Items: x Samsung Galaxy Note: x Home Appliances on R: x + -

127.0.0.1:56470/api/v1/namespaces/kube-system/services/http:kubernetes-dashboard:/proxy/#/overview?namespace=default

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Replica Sets

Name	Labels	Pods	Age	Images
kubernetes-app2-deployment...	app: kubernetes-app2 pod-template-hash: 69d966bb9d tier: backend-api-kubernetes- track: dev	2 / 2	12 hours	konduruvijaykumar/kubernet...
kubernetes-app1-deployment...	app: kubernetes-app1 pod-template-hash: 698d45f5f6 tier: backend-api-kubernetes- track: dev	2 / 2	12 hours	konduruvijaykumar/kubernet...

Discovery and Load Balancing

Services

Name	Labels	Cluster IP	Internal endpoints	External endpoints	Age
kubernetes-app2-dep...	-	10.100.115.227	kubernetes-app2-dep... kubernetes-app2-dep...	-	12 hours

192.168.99.100:31290/ x 192.168.99.100:30678/ x Overview - Kubernetes: x Rent Electronics Items: x Samsung Galaxy Note: x Home Appliances on R: x + -

127.0.0.1:56470/api/v1/namespaces/kube-system/services/http:kubernetes-dashboard:/proxy/#/overview?namespace=default

kubernetes Search + CREATE

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Discovery and Load Balancing

Services

Name	Labels	Cluster IP	Internal endpoints	External endpoints	Age
✓ <a href="#">kubernetes-app2-dep...</a>	-	10.100.115.227	kubernetes-app2-dep... kubernetes-app2-dep...	-	12 hours
✓ <a href="#">kubernetes-app1-dep...</a>	-	10.106.180.44	kubernetes-app1-dep... kubernetes-app1-dep...	-	12 hours
✓ <a href="#">service-app2</a>	-	10.99.215.49	service-app2:80 TCP	-	12 hours
✓ <a href="#">service-app1</a>	-	10.99.164.177	service-app1:80 TCP	-	12 hours
✓ <a href="#">kubernetes</a>	component: apiserver provider: kubernetes	10.96.0.1	kubernetes:443 TCP	-	a day

Config and Storage

Secrets

Name	Type	Age
------	------	-----

192.168.99.100:31290/ x 192.168.99.100:30678/ x Overview - Kubernetes: x Rent Electronics Items: x Samsung Galaxy Note: x Home Appliances on R: x + -

127.0.0.1:56470/api/v1/namespaces/kube-system/services/http:kubernetes-dashboard:/proxy/#/overview?namespace=default

kubernetes Search + CREATE

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Services

Name	Labels	Cluster IP	Internal endpoints	External endpoints	Age
✓ <a href="#">kubernetes-app2-dep...</a>	-	10.100.115.227	kubernetes-app2-dep... kubernetes-app2-dep...	-	12 hours
✓ <a href="#">kubernetes-app1-dep...</a>	-	10.106.180.44	kubernetes-app1-dep... kubernetes-app1-dep...	-	12 hours
✓ <a href="#">service-app2</a>	-	10.99.215.49	service-app2:80 TCP	-	12 hours
✓ <a href="#">service-app1</a>	-	10.99.164.177	service-app1:80 TCP	-	12 hours
✓ <a href="#">kubernetes</a>	component: apiserver provider: kubernetes	10.96.0.1	kubernetes:443 TCP	-	a day

Config and Storage

Secrets

Name	Type	Age
<a href="#">default-token-w4sgj</a>	kubernetes.io/service-account-token	14 days

**Details**

<b>Name:</b>	service-app1	<b>Connection</b>	
<b>Namespace:</b>	default	<b>Cluster IP:</b>	10.99.164.177
<b>Creation Time:</b>	2019-01-08T10:32 UTC		
<b>Label selector:</b>	app: kubernetes-app1 tier: backend-api-kubernetes-app1		
<b>Type:</b>	ClusterIP		
<b>Session Affinity:</b>	None		

**Endpoints**

Host	Ports (Name, Port, Protocol)	Node	Ready
172.17.0.5	<unset>, 8080, TCP	minikube	true
172.17.0.6	<unset>, 8080, TCP	minikube	true

**Pods**

Name	Node	Status	Restarts	Age
------	------	--------	----------	-----

**Endpoints**

Host	Ports (Name, Port, Protocol)	Node	Ready
172.17.0.5	<unset>, 8080, TCP	minikube	true
172.17.0.6	<unset>, 8080, TCP	minikube	true

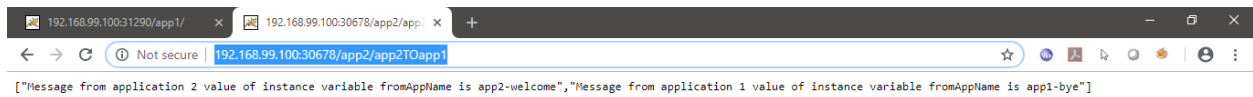
**Pods**

Name	Node	Status	Restarts	Age
✓ kubernetes-app1-deployment-698d45f5f6-gk92h	minikube	Running	2	12 hours
✓ kubernetes-app1-deployment-698d45f5f6-nbp52	minikube	Running	2	12 hours

**Events**

There is nothing to display here  
It is possible that all events have expired.

I have updated one app1 deployment with instance variable as app1-bye, as per below URL under the covers Kubernetes will load balance over all the service endpoints for you  
<https://fabric8.io/guide/develop/serviceDiscovery.html>



Hence proven

We can see that app1-bye and app1-welcome are shown randomly when we try the calls many times

