

All the tasks are finished and uploaded in following links.

<https://hub.docker.com/r/ellenxujuan/go-web-hello-world>

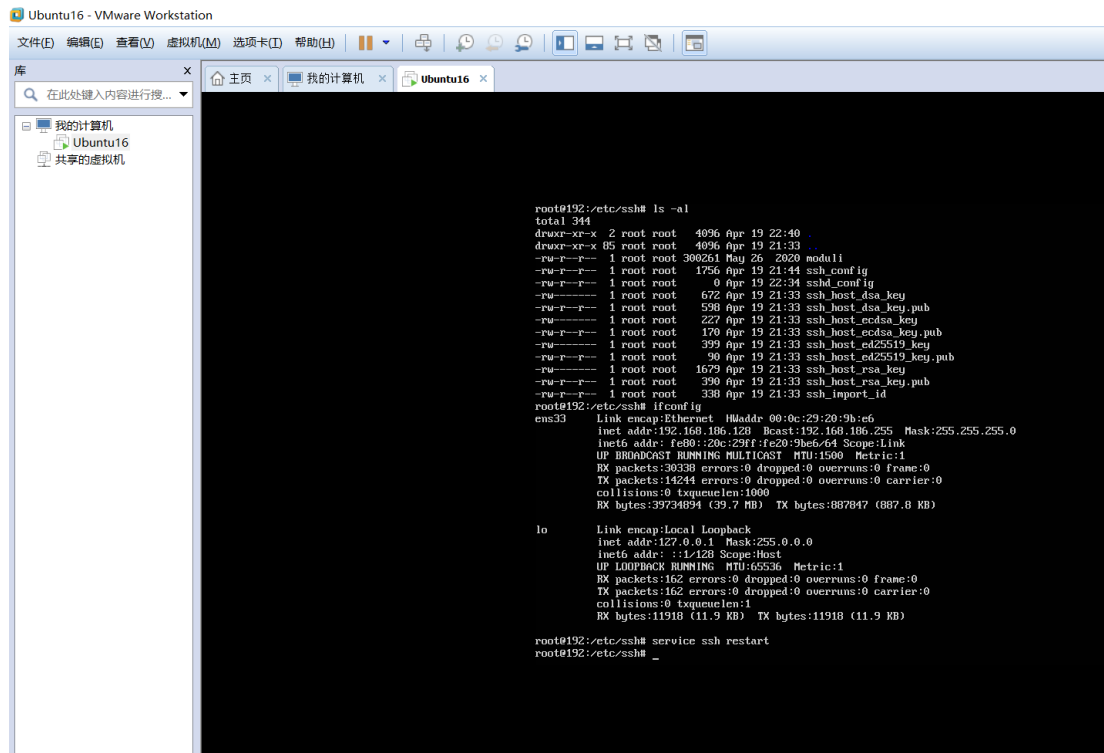
<https://github.com/ellenxujuan/go-web-hello-world>

Detailed steps and screenshot as below.

=====

Task 0: Install a ubuntu 16.04 server 64-bit

on a virtual machine, installation done.



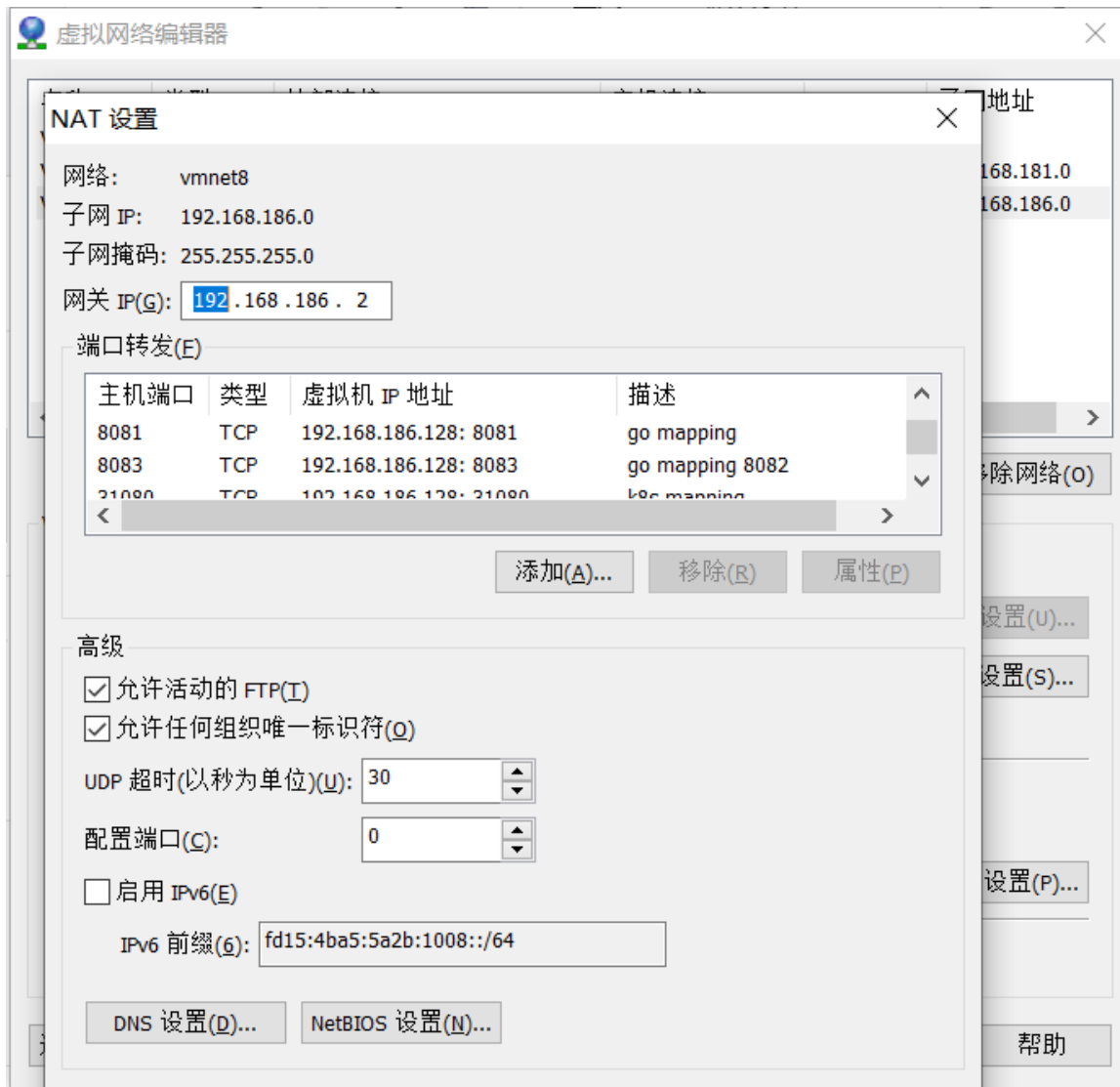
```
root@192:/etc/ssh# ls -al
total 344
drwxr-xr-x  2 root root  4096 Apr 19 22:40 .
drwxr-xr-x 85 root root  4096 Apr 19 21:33 ..
-rw-r--r--  1 root root 308261 May 26 2020 moduli
-rw-r--r--  1 root root  1756 Apr 19 21:44 ssh_config
-rw-r--r--  1 root root    90 Apr 19 22:34 sshd_config
-rw-r--r--  1 root root  672 Apr 19 21:33 ssh_host_dsa_key
-rw-r--r--  1 root root  598 Apr 19 21:33 ssh_host_dsa_key.pub
-rw-r--r--  1 root root  227 Apr 19 21:33 ssh_host_ecdsa_key
-rw-r--r--  1 root root  170 Apr 19 21:33 ssh_host_ecdsa_key.pub
-rw-r--r--  1 root root  399 Apr 19 21:33 ssh_host_ed25519_key
-rw-r--r--  1 root root   90 Apr 19 21:33 ssh_host_ed25519_key.pub
-rw-r--r--  1 root root 1679 Apr 19 21:33 ssh_host_rsa_key
-rw-r--r--  1 root root  390 Apr 19 21:33 ssh_host_rsa_key.pub
-rw-r--r--  1 root root  338 Apr 19 21:33 ssh_import_id
root@192:/etc/ssh# ifconfig
ens33:  Link encap:Ethernet  HWaddr 00:0c:29:20:9b:e6
         inet addr:192.168.186.128  Bcast:192.168.186.255  Mask:255.255.255.0
         inet6 addr: fe80::20c:29ff:fe20:9bec/64 Scope:Link
         UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
         RX packets:30330 errors:0 dropped:0 overruns:0 frame:0
         TX packets:14244 errors:0 dropped:0 overruns:0 carrier:0
         collisions:0 txqueuelen:1000
         RX bytes:39734094 (39.7 MB)  TX bytes:807847 (807.8 KB)

lo:      Link encap:Local Loopback
         inet addr:127.0.0.1  Mask:255.0.0.0
         inet6 addr: ::1/128 Scope:Host
         UP LOOPBACK RUNNING  MTU:65536  Metric:1
         RX packets:162 errors:0 dropped:0 overruns:0 frame:0
         TX packets:162 errors:0 dropped:0 overruns:0 carrier:0
         collisions:0 txqueuelen:1
         RX bytes:11918 (11.9 KB)  TX bytes:11918 (11.9 KB)

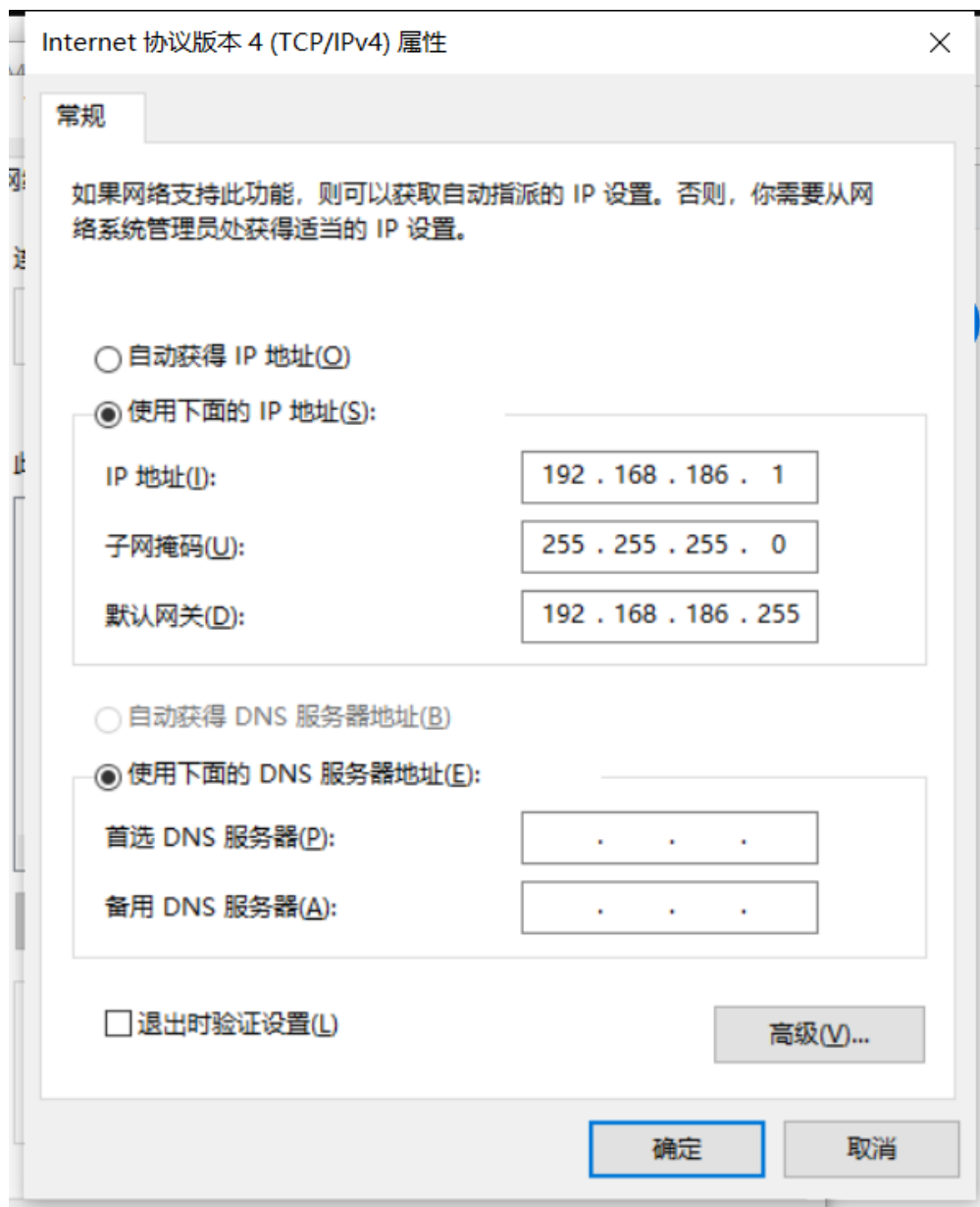
root@192:/etc/ssh# service ssh restart
root@192:/etc/ssh# _
```

for VM, use NAT network and forward required ports to host machine --done

- 22->2222 for ssh
- 80->8080 for gitlab
- 8081/8083->8081/8083 for go app
- 31080/31081->31080/31081 for go app in k8s



Update VMnet8 config, to make sure it's in the same subnet as the IP of virtual machine:Ubuntu16



Task 1: Update system

(\$ ssh user@localhost -p 2222) -- done

```
Xshell 6 (Build 0204)
Copyright (c) 2002 NetSarang Computer, Inc. All rights reserved.

Type 'help' to learn how to use Xshell prompt.
[ C:\~ ]$

Host 'localhost' resolved to ::1.
Connecting to ::1:2222...
Host 'localhost' resolved to 127.0.0.1.
Connecting to 127.0.0.1:2222...
Connection established.
To escape to local shell, press 'Ctrl+Alt+J'.

WARNING! The remote SSH server rejected X11 forwarding request.
Last login: Tue Apr 20 08:01:58 2021 from 192.168.186.1
ellen@192:~$
```

upgrade the kernel to the 16.04 latest -- [done](#)

```
root@192:/etc/apt# cp sources.list sources.list.backup
root@192:/etc/apt# vi sources.list
root@192:/etc/apt# apt-get update
Get:1 http://mirrors.aliyun.com/ubuntu xenial InRelease [247 kB]
Get:2 http://mirrors.aliyun.com/ubuntu xenial-security InRelease [109 kB]
Get:3 http://mirrors.aliyun.com/ubuntu xenial-updates InRelease [109 kB]
Get:4 http://mirrors.aliyun.com/ubuntu xenial-proposed InRelease [260 kB]
Get:5 http://mirrors.aliyun.com/ubuntu xenial-backports InRelease [107 kB]
Get:6 http://mirrors.aliyun.com/ubuntu xenial/main Sources [868 kB]
Get:7 http://mirrors.aliyun.com/ubuntu xenial/restricted Sources [4,808 B]
Get:8 http://mirrors.aliyun.com/ubuntu xenial/universe Sources [7,728 kB]
Get:9 http://mirrors.aliyun.com/ubuntu xenial/multiverse Sources [179 kB]
Get:10 http://mirrors.aliyun.com/ubuntu xenial/main amd64 Packages [1,201 kB]
Get:11 http://mirrors.aliyun.com/ubuntu xenial/main i386 Packages [1,196 kB]
Get:12 http://mirrors.aliyun.com/ubuntu xenial/main Translation-en [568 kB]
Get:13 http://mirrors.aliyun.com/ubuntu xenial/restricted amd64 Packages [8,344 B]
Get:14 http://mirrors.aliyun.com/ubuntu xenial/restricted i386 Packages [8,684 B]
Get:15 http://mirrors.aliyun.com/ubuntu xenial/restricted Translation-en [2,908 B]
Get:16 http://mirrors.aliyun.com/ubuntu xenial/universe amd64 Packages [7,552 kB]
Get:17 http://mirrors.aliyun.com/ubuntu xenial/universe i386 Packages [7,512 kB]
Get:18 http://mirrors.aliyun.com/ubuntu xenial/universe Translation-en [4,354 kB]
Get:19 http://mirrors.aliyun.com/ubuntu xenial/multiverse amd64 Packages [144 kB]
Get:20 http://mirrors.aliyun.com/ubuntu xenial/multiverse i386 Packages [140 kB]
Get:21 http://mirrors.aliyun.com/ubuntu xenial/multiverse Translation-en [186 kB]
Get:22 http://mirrors.aliyun.com/ubuntu xenial-security/main Sources [249 kB]
Get:23 http://mirrors.aliyun.com/ubuntu xenial-security/restricted Sources [2,976 B]
Get:24 http://mirrors.aliyun.com/ubuntu xenial-security/universe Sources [211 kB]
Get:25 http://mirrors.aliyun.com/ubuntu xenial-security/multiverse Sources [4,636 B]
Get:26 http://mirrors.aliyun.com/ubuntu xenial-security/main amd64 Packages [1,638 kB]
Get:27 http://mirrors.aliyun.com/ubuntu xenial-security/main i386 Packages [1,153 kB]
Get:28 http://mirrors.aliyun.com/ubuntu xenial-security/main Translation-en [378 kB]
Get:29 http://mirrors.aliyun.com/ubuntu xenial-security/restricted amd64 Packages [9,824 B]
Get:30 http://mirrors.aliyun.com/ubuntu xenial-security/restricted i386 Packages [9,808 B]
Get:31 http://mirrors.aliyun.com/ubuntu xenial-security/restricted Translation-en [2,152 B]
Get:32 http://mirrors.aliyun.com/ubuntu xenial-security/universe amd64 Packages [788 kB]
Get:33 http://mirrors.aliyun.com/ubuntu xenial-security/universe i386 Packages [665 kB]
Get:34 http://mirrors.aliyun.com/ubuntu xenial-security/universe Translation-en [226 kB]
Get:35 http://mirrors.aliyun.com/ubuntu xenial-security/multiverse amd64 Packages [7,864 B]
Get:36 http://mirrors.aliyun.com/ubuntu xenial-security/multiverse i386 Packages [8,884 B]
Get:37 http://mirrors.aliyun.com/ubuntu xenial-security/multiverse Translation-en [2,672 B]
Get:38 http://mirrors.aliyun.com/ubuntu xenial-updates/main Sources [535 kB]
Get:39 http://mirrors.aliyun.com/ubuntu xenial-updates/restricted Sources [3,688 B]
```

```

Get:31 http://mirrors.aliyun.com/ubuntu xenial-security/restricted Translation-en [2,152 B]
Get:32 http://mirrors.aliyun.com/ubuntu xenial-security/universe amd64 Packages [786 kB]
Get:33 http://mirrors.aliyun.com/ubuntu xenial-security/universe i386 Packages [665 kB]
Get:34 http://mirrors.aliyun.com/ubuntu xenial-security/universe Translation-en [226 kB]
Get:35 http://mirrors.aliyun.com/ubuntu xenial-security/multiverse amd64 Packages [7,864 B]
Get:36 http://mirrors.aliyun.com/ubuntu xenial-security/multiverse i386 Packages [8,084 B]
Get:37 http://mirrors.aliyun.com/ubuntu xenial-security/multiverse Translation-en [2,672 B]
Get:38 http://mirrors.aliyun.com/ubuntu xenial-updates/main Sources [535 kB]
Get:39 http://mirrors.aliyun.com/ubuntu xenial-updates/restricted Sources [3,608 B]
Get:40 http://mirrors.aliyun.com/ubuntu xenial-updates/universe Sources [446 kB]
Get:41 http://mirrors.aliyun.com/ubuntu xenial-updates/multiverse Sources [12.3 kB]
Get:42 http://mirrors.aliyun.com/ubuntu xenial-updates/main amd64 Packages [2,047 kB]
Get:43 http://mirrors.aliyun.com/ubuntu xenial-updates/main i386 Packages [1,523 kB]
Get:44 http://mirrors.aliyun.com/ubuntu xenial-updates/main Translation-en [482 kB]
Get:45 http://mirrors.aliyun.com/ubuntu xenial-updates/restricted amd64 Packages [10.2 kB]
Get:46 http://mirrors.aliyun.com/ubuntu xenial-updates/restricted i386 Packages [10.2 kB]
Get:47 http://mirrors.aliyun.com/ubuntu xenial-updates/restricted Translation-en [2,272 B]
Get:48 http://mirrors.aliyun.com/ubuntu xenial-updates/universe amd64 Packages [1,221 kB]
Get:49 http://mirrors.aliyun.com/ubuntu xenial-updates/universe i386 Packages [1,087 kB]
Get:50 http://mirrors.aliyun.com/ubuntu xenial-updates/universe Translation-en [358 kB]
Get:51 http://mirrors.aliyun.com/ubuntu xenial-updates/multiverse amd64 Packages [22.6 kB]
Get:52 http://mirrors.aliyun.com/ubuntu xenial-updates/multiverse i386 Packages [21.4 kB]
Get:53 http://mirrors.aliyun.com/ubuntu xenial-updates/multiverse Translation-en [8,476 B]
Get:54 http://mirrors.aliyun.com/ubuntu xenial-proposed/main Sources [12.8 kB]
Get:55 http://mirrors.aliyun.com/ubuntu xenial-proposed/universe Sources [5,592 B]
Get:56 http://mirrors.aliyun.com/ubuntu xenial-proposed/main amd64 Packages [58.5 kB]
Get:57 http://mirrors.aliyun.com/ubuntu xenial-proposed/main i386 Packages [39.0 kB]
Get:58 http://mirrors.aliyun.com/ubuntu xenial-proposed/main Translation-en [16.5 kB]
Get:59 http://mirrors.aliyun.com/ubuntu xenial-proposed/universe amd64 Packages [6,776 B]
Get:60 http://mirrors.aliyun.com/ubuntu xenial-proposed/universe i386 Packages [7,032 B]
Get:61 http://mirrors.aliyun.com/ubuntu xenial-proposed/universe Translation-en [6,008 B]
Get:62 http://mirrors.aliyun.com/ubuntu xenial-backports/main Sources [6,720 B]
Get:63 http://mirrors.aliyun.com/ubuntu xenial-backports/universe Sources [11.0 kB]
Get:64 http://mirrors.aliyun.com/ubuntu xenial-backports/main amd64 Packages [9,812 B]
Get:65 http://mirrors.aliyun.com/ubuntu xenial-backports/main i386 Packages [9,784 B]
Get:66 http://mirrors.aliyun.com/ubuntu xenial-backports/main Translation-en [4,456 B]
Get:67 http://mirrors.aliyun.com/ubuntu xenial-backports/universe amd64 Packages [11.3 kB]
Get:68 http://mirrors.aliyun.com/ubuntu xenial-backports/universe i386 Packages [10.9 kB]
Get:69 http://mirrors.aliyun.com/ubuntu xenial-backports/universe Translation-en [4,476 B]
Fetched 45.7 MB in 8s (5,652 kB/s)
Reading package lists... Done
root@192:/etc/apt#

```


Task 2: install gitlab-ce version in the host

Expect output: Gitlab is up and running at <http://127.0.0.1> (no tls or FQDN required)

Access it from host machine <http://127.0.0.1:8080> -- done

← → ↻ 127.0.0.1:8080/users/sign_in

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GitLab

A complete DevOps platform

GitLab is a single application for the entire software development lifecycle. From project planning and source code management to CI/CD, monitoring, and security.

This is a self-managed instance of GitLab.

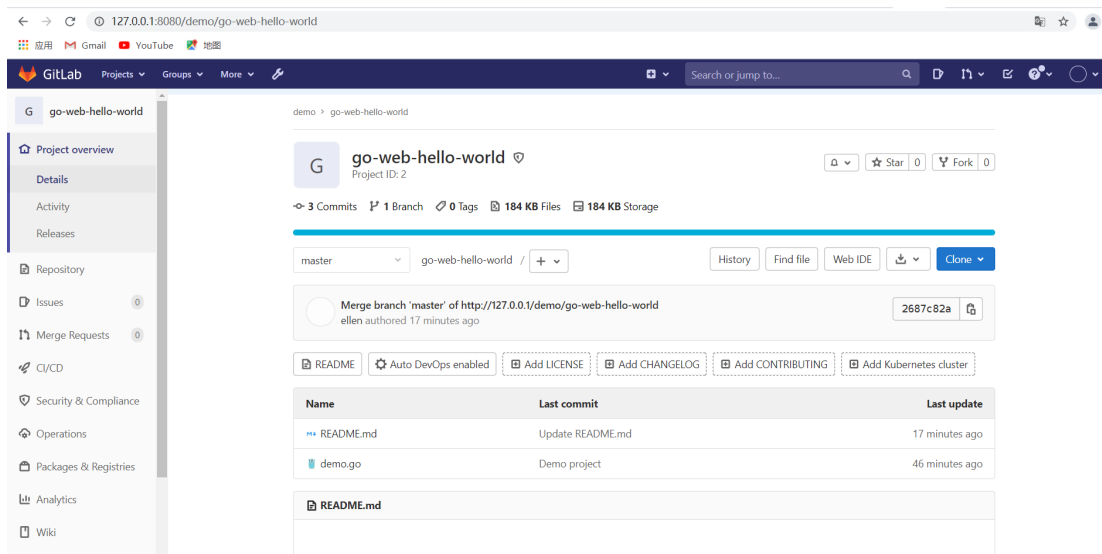
☐ Remember me [Forgot your password?](#)

[Sign in](#)

Don't have an account yet? [Register now](#)

Task 3: create a demo group/project in gitlab

Expected source code at <http://127.0.0.1:8080/demo/go-web-hello-world> -- done



Task 4: build the app and expose (\$ go run) the service to 8081 port

Expect output: -- done

...

curl http://127.0.0.1:8081

Go Web Hello World!

...

```
ellen@192:/data/go-web-hello-world$ vi demo.go
ellen@192:/data/go-web-hello-world$ go build demo.go
ellen@192:/data/go-web-hello-world$ go run demo.go
```

```
ellen@192:/data/go-web-hello-world$
ellen@192:/data/go-web-hello-world$ curl http://127.0.0.1:8081
Go Web Hello World!
ellen@192:/data/go-web-hello-world$
```

Task 5: install docker

--done

```
go web hello world:
ellen@192:/data/go-web-hello-world$ docker --version
Docker version 20.10.6, build 370c289
ellen@192:/data/go-web-hello-world$
```

Task 6: run the app in container

1) build a docker image (\$ docker build) for the web app and run that in a container (\$ docker run), expose the service to 8083 (-p)

please note 8082 was used by other app. -- done

```
root@192:~# netstat -pna | grep 8082
tcp        0      0 127.0.0.1:8082          0.0.0.0:*               LISTEN      29752/sidekiq 5.2.9
tcp        0      0 127.0.0.1:8082          127.0.0.1:58546         ESTABLISHED 29752/sidekiq 5.2.9
tcp        0      0 127.0.0.1:58546         127.0.0.1:8082          ESTABLISHED 29716/prometheus
root@192:~# docker images
```

```
^X^Cellen@192:/data/go-web-hello-world$ docker build --rm -t ellen/mydemo .
Sending build context to Docker daemon 7.706MB
Step 1/10 : FROM golang:1.14.9-alpine as builder
--> 0223ac8ea40d
Step 2/10 : RUN mkdir /www
--> Using cache
--> f5161a1e43a4
Step 3/10 : WORKDIR /www
--> Using cache
--> 7d6308be3e02
Step 4/10 : COPY . .
--> Using cache
--> 8787e37abdaf
Step 5/10 : RUN go build -o demo /www/demo.go
--> Using cache
--> bde4743f13a6
Step 6/10 : FROM alpine:latest
--> 6dbb9cc54074
Step 7/10 : WORKDIR /www/
--> Using cache
--> b348bbb8c210
Step 8/10 : EXPOSE 8083
--> Using cache
--> 1950fd550ae3
Step 9/10 : COPY --from=builder /www/ /www/
--> Using cache
--> 34f37836b98a
Step 10/10 : CMD ./demo
--> Using cache
--> e613e7995d42
Successfully built e613e7995d42
Successfully tagged ellen/mydemo:latest
```

```
ellen@192:/data/go-web-hello-world$ docker run --rm -p 8083:8083 --name mydemo ellen/mydemo
```

2) Expected output: -- done

...

curl http://127.0.0.1:8083

Go Web Hello World!

...

```
ellen@192:/data/go-web-hello-world$ curl http://127.0.0.1:8083
Go Web Hello World!
```

← → ↺ ⓘ 127.0.0.1:8083

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Go Web Hello World!

3) Check in the Dockerfile into gitlab -- done

localhost:8080/demo/go-web-hello-world

GitLab Projects Groups More

demo > go-web-hello-world

go-web-hello-world

Project overview

Details

Activity

Releases

Repository

Issues 0

Merge Requests 0

CI/CD

Security & Compliance

Operations

Packages & Registries

Analytics

Wiki

go-web-hello-world

Project ID: 2

5 Commits 1 Branch 0 Tags 246 KB Files 246 KB Storage

master go-web-hello-world / +

History Find file Web IDE Clone

docker file
ellen authored 1 minute ago

README Auto DevOps enabled Add LICENSE Add CHANGELOG Add CONTRIBUTING Add Kubernetes cluster

Name	Last commit	Last update
Dockerfile	docker file	1 minute ago
README.md	Update README.md	10 hours ago
demo.go	docker file	1 minute ago

README

Task 7: push image to dockerhub

tag the docker image using your_dockerhub_id/go-web-hello-world:v0.1 and push it to docker hub
(<https://hub.docker.com/>)

-- done

```
ellen@192:/data/go-web-hello-world$ docker tag ellen/mydemo:latest ellenxujuan/go-web-hello-world:v0.1
ellen@192:/data/go-web-hello-world$ docker images
```

REPOSITORY	TAG	IMAGE ID	CREATED	SIZE
<none>	<none>	db09b54fe7e3	6 minutes ago	295MB
ellen/mydemo	latest	dc1ef8994f22	6 minutes ago	13.4MB
ellenxujuan/go-web-hello-world	v0.1	dc1ef8994f22	6 minutes ago	13.4MB
quay.io/coreos/flannel	v0.14.0-rc1	0a1a2818ce59	6 days ago	67.9MB
alpine	latest	6dbb9cc54074	7 days ago	5.61MB
hello-world	latest	d1165f221234	6 weeks ago	13.3kB
registry.aliyuncs.com/google_containers/kube-proxy	v1.20.0	10cc881966cf	4 months ago	118MB
registry.aliyuncs.com/google_containers/kube-controller-manager	v1.20.0	b9fa1895dcaa	4 months ago	116MB
registry.aliyuncs.com/google_containers/kube-apiserver	v1.20.0	ca9843d3b545	4 months ago	122MB
registry.aliyuncs.com/google_containers/kube-scheduler	v1.20.0	3138b6e3d471	4 months ago	46.4MB
golang	1.14.9-alpine	0223ac8ea40d	7 months ago	287MB
registry.aliyuncs.com/google_containers/etcd	3.4.13-0	0369cf4303ff	7 months ago	253MB
registry.aliyuncs.com/google_containers/coredns	1.7.0	bfe3a36ebd25	10 months ago	45.2MB
registry.aliyuncs.com/google_containers/pause	3.2	80d28bedfe5d	14 months ago	683kB
dockersamples/static-site	latest	f589ccde7957	5 years ago	191MB


```

ellen@192:/data/go-web-hello-world$ docker login
Login with your Docker ID to push and pull images from Docker Hub. If you don't have a Docker ID, head over to https://hub.docker.com to create one.
Username: ellenxujuan
Password:
Error response from daemon: Get https://registry-1.docker.io/v2/: unauthorized: incorrect username or password
ellen@192:/data/go-web-hello-world$ docker login
Login with your Docker ID to push and pull images from Docker Hub. If you don't have a Docker ID, head over to https://hub.docker.com to create one.
Username: ellenxujuan
Password:
WARNING! Your password will be stored unencrypted in /home/ellen/.docker/config.json.
Configure a credential helper to remove this warning. See
https://docs.docker.com/engine/reference/commandline/login/#credentials-store

Login Succeeded
ellen@192:/data/go-web-hello-world$ docker push ellenxujuan/go-web-hello-world:v0.1
The push refers to repository [docker.io/ellenxujuan/go-web-hello-world]
7bcea21b1bea: Pushed
bd359048809b: Pushed
b2d5eeeaba3a: Mounted from library/alpine
v0.1: digest: sha256:ddb9c1431f97fddfc0dce2574381142aae49403acb5b7e55166ae3be87a1893 size: 945
ellen@192:/data/go-web-hello-world$

```

Expected output:

<https://hub.docker.com/r/ellenxujuan/go-web-hello-world>

The screenshot shows the Docker Hub interface for the image `ellenxujuan/go-web-hello-world:v0.1`. The page includes a search bar, navigation links (Explore, Repositories, Organizations, Get Help), and a user profile dropdown for `ellenxujuan`. The main content area displays the image details, including the digest `sha256:ddb9c1431f97fddfc0dce2574381142aae49403acb5b7e55166ae3be87a1893`, the OS/ARCH `linux/amd64`, the compressed size `6.46 MB`, and the last pushed time `a minute ago by ellenxujuan`. The page also has tabs for `Image Layers` and `Vulnerabilities`.

Task 9: install a single node Kubernetes cluster using kubeadm

<https://kubernetes.io/docs/setup/independent/create-cluster-kubeadm/>

Check in the admin.conf file into the gitlab repo

-- done

detail steps:

```
sudo curl -fsSLo /usr/share/keyrings/kubernetes-archive-keyring.gpg
```

```
https://mirrors.aliyun.com/kubernetes/apt/doc/apt-key.gpg
```

```
curl https://mirrors.aliyun.com/kubernetes/apt/doc/apt-key.gpg | apt-key add -
```

```
echo "deb https://mirrors.aliyun.com/kubernetes/apt/ kubernetes-xenial main" | sudo tee -a
/etc/apt/sources.list.d/kubernetes.list
```

```
{
```

```
"exec-opts": ["native.cgroupdriver=systemd"]
```

```
}
```

```
tee /etc/default/kubelet <<- 'EOF'KUBELET_EXTRA_ARGS="--fail-swap-on=false"EOF
```

kubeadm config print init-defaults > kubeadm.conf

- update it

imageRepository: registry.aliyuncs.com/google_containers

kubeadm config images pull --config kubeadm.conf

root@192:~# kubeadm init --image-repository=registry.aliyuncs.com/google_containers --pod-network-cidr=10.244.0.0/16 --kubernetes-version=v1.20.0

```
[bootstrap-token] Using token: weqq56.yi9p0oua20sn1zb1
[bootstrap-token] Configuring bootstrap tokens, cluster-info ConfigMap, RBAC Roles
[bootstrap-token] configured RBAC rules to allow Node Bootstrap tokens to get nodes
[bootstrap-token] configured RBAC rules to allow Node Bootstrap tokens to post CSRs in order for nodes to get long term certificate credentials
[bootstrap-token] configured RBAC rules to allow the csrapprover controller automatically approve CSRs from a Node Bootstrap Token
[bootstrap-token] configured RBAC rules to allow certificate rotation for all node client certificates in the cluster
[bootstrap-token] Creating the "cluster-info" ConfigMap in the "kube-public" namespace
[kubelet-finalize] Updating "/etc/kubernetes/kubelet.conf" to point to a rotatable kubelet client certificate and key
[addons] Applied essential addon: CoreDNS
[addons] Applied essential addon: kube-proxy

Your Kubernetes control-plane has initialized successfully!

To start using your cluster, you need to run the following as a regular user:

  mkdir -p $HOME/.kube
  sudo cp -i /etc/kubernetes/admin.conf $HOME/.kube/config
  sudo chown $(id -u):$(id -g) $HOME/.kube/config

Alternatively, if you are the root user, you can run:

  export KUBECONFIG=/etc/kubernetes/admin.conf

You should now deploy a pod network to the cluster.
Run "kubectl apply -f [podnetwork].yaml" with one of the options listed at:
  https://kubernetes.io/docs/concepts/cluster-administration/addons/

Then you can join any number of worker nodes by running the following on each as root:

kubeadm join 192.168.186.128:6443 --token weqq56.yi9p0oua20sn1zb1 \
  --discovery-token-ca-cert-hash sha256:fc769cc803ff8381c37a52582755587e5c012cddb5781f5f0c398a4b1055cda8
root@192:~# kubeadm config print init-defaults > kubeadm.conf^C
root@192:~# kubeadm config images list
I0422 00:33:42.455240 49689 version.go:251] remote version is much newer: v1.21.0; falling back to: stable-1.20
k8s.gcr.io/kube-apiserver:v1.20.6
k8s.gcr.io/kube-controller-manager:v1.20.6
k8s.gcr.io/kube-scheduler:v1.20.6
k8s.gcr.io/kube-proxy:v1.20.6
k8s.gcr.io/pause:3.2
k8s.gcr.io/etcd:3.4.13-0
k8s.gcr.io/coredns:1.7.0
root@192:~#
```

Task 10: deploy the hello world container

-- done

ellen@192:/data/go-web-hello-world\$ docker pull ell enxujuan/go-web-hello-world:v0.1

v0.1: Pulling from ell enxujuan/go-web-hello-world

Digest: sha256:ddb9c1431f97fddfcfa0dce2574381142aae49403acb5b7e55166ae3be87a1893

Status: Image is up to date for ell enxujuan/go-web-hello-world:v0.1

docker.io/ell enxujuan/go-web-hello-world:v0.1

```

root@192:/data/go-web-hello-world# more service.yaml
apiVersion: v1
kind: Service
metadata:
  name: hello-world-service
  labels:
    k8s-app: hello-world-service
spec:
  type: NodePort
  ports:
    - name: hello-world-api
      port: 8083
      targetPort: 8083
      nodePort: 31080
  selector:
    app: hello-world
root@192:/data/go-web-hello-world#

```

kubectl apply -f deployment.yaml

kubectl apply -f service.yaml

kubectl describe svc hello-world-service

kubectl describe deployment hello-world

```

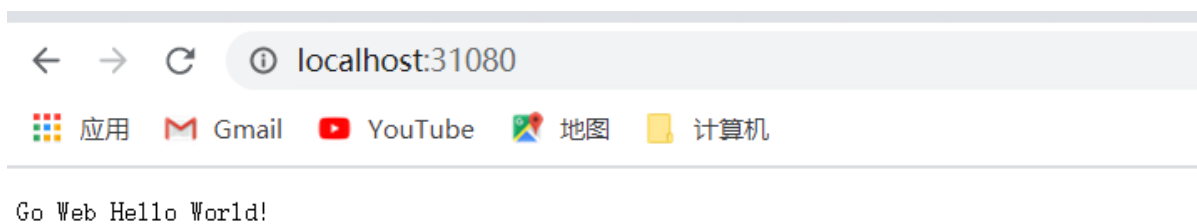
error: the server doesn't have a resource type "hello-world"
root@192:/data/go-web-hello-world# kubectl describe deployment hello-world
Name:                hello-world
Namespace:            default
CreationTimestamp:    Thu, 22 Apr 2021 06:17:25 -0700
Labels:               app=hello-world
Annotations:          deployment.kubernetes.io/revision: 2
Selector:             app=hello-world
Replicas:             1 desired | 1 updated | 1 total | 1 available | 0 unavailable
StrategyType:         RollingUpdate
MinReadySeconds:      0
RollingUpdateStrategy: 25% max unavailable, 25% max surge
Pod Template:
  Labels:  app=hello-world
  Containers:
    go-web-hello-world:
      Image:        ellenxujuan/go-web-hello-world:v0.1
      Port:         8083/TCP
      Host Port:    0/TCP
      Environment:  <none>
      Mounts:       <none>
      Volumes:      <none>
Conditions:
  Type           Status  Reason
  ----           -
  Available      True    MinimumReplicasAvailable
  Progressing    True    NewReplicaSetAvailable
OldReplicaSets:  <none>
NewReplicaSet:   hello-world-67445ff44d (1/1 replicas created)
Events:
  Type           Reason             Age   From                  Message
  ----           -
  Normal        ScalingReplicaSet   29m   deployment-controller  Scaled up replica set hello-world-5f9dfb5cb5 to 1
  Normal        ScalingReplicaSet   13m   deployment-controller  Scaled up replica set hello-world-67445ff44d to 1
  Normal        ScalingReplicaSet   13m   deployment-controller  Scaled down replica set hello-world-5f9dfb5cb5 to 0

```

```

root@192:/data/go-web-hello-world# kubectl describe svc hello-world-service
Name:                hello-world-service
Namespace:            default
Labels:               k8s-app=hello-world-service
Annotations:          <none>
Selector:             app=hello-world
Type:                 NodePort
IP Families:          <none>
IP:                   10.106.111.210
IPs:                  10.106.111.210
Port:                 hello-world-api 8083/TCP
TargetPort:           8083/TCP
NodePort:             hello-world-api 31080/TCP
Endpoints:            10.244.0.5:8083
Session Affinity:     None
External Traffic Policy: Cluster
Events:               <none>
root@192:/data/go-web-hello-world# curl http://127.0.0.1:31080
Go Web Hello World!
root@192:/data/go-web-hello-world# █

```



Task 11: install kubernetes dashboard

and expose the service to nodeport 31081

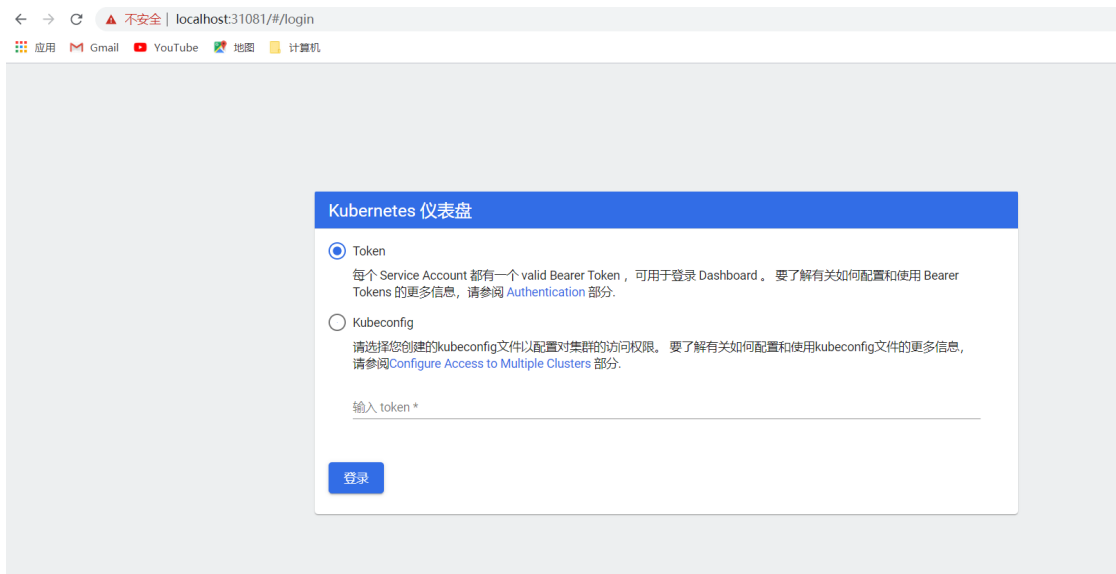
--done

```

labels:
  k8s-app: kubernetes-dashboard
name: kubernetes-dashboard
namespace: kubernetes-dashboard
---
kind: Service
apiVersion: v1
metadata:
  labels:
    k8s-app: kubernetes-dashboard
    name: kubernetes-dashboard
    namespace: kubernetes-dashboard
spec:
  type: NodePort
  ports:
    - port: 443
      targetPort: 8443
      nodePort: 31081
  selector:
    k8s-app: kubernetes-dashboard
---
apiVersion: v1

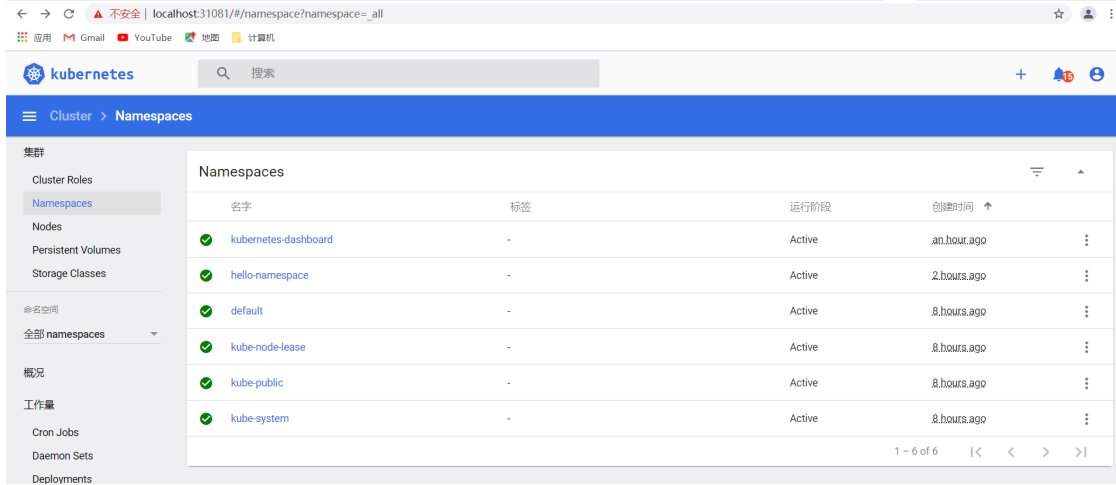
```

Expected output: https://127.0.0.1:31081 (asking for token)



```
kubectl get pods --all-namespaces
root@192:/data/go-web-hello-world# vi admin-user.yaml
root@192:/data/go-web-hello-world# kubectl create -f admin-user.yaml
kubectl create -f admin-user-role-binding.yaml
root@192:/data/go-web-hello-world# kubectl get secret -n kubernetes-dashboard|grep admin
admin-user-token-p9zmg kubernetes.io/service-account-token 3 11m

root@192:/data/go-web-hello-world# kubectl -n kubernetes-dashboard describe secret $(kubectl -n
kubernetes-dashboard get secret | grep admin-user | awk '{print $1}')
```



Task 13: publish your work

--done

push all files/procedures in your local gitlab repo to remote github repo
<https://github.com/ellenxujuan/go-web-hello-world>

[📂 master](#) [🌿 1 branch](#) [🏷️ 0 tags](#)

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ellenxujuan Update admin.token 6a4be06 33 minutes ago 11 commits		
images	Update README.md, images/1.jpg files	yesterday
Dockerfile	after k8s deployment	2 hours ago
README.md	Update README.md, images/1.jpg files	yesterday
admin-user-role-binding.yaml	generate token for k8s ui	1 hour ago
admin-user.yaml	generate token for k8s ui	1 hour ago
admin.conf	after k8s deployment	2 hours ago
admin_token.md	Update admin.token	33 minutes ago
demo.go	docker file	yesterday
deployment.yaml	after k8s deployment	2 hours ago
recommended.yaml	generate token for k8s ui	1 hour ago

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