

Setting up minikube and kubectl and deploying a project in kubernetes

Day - 3 and 4

24MCR029

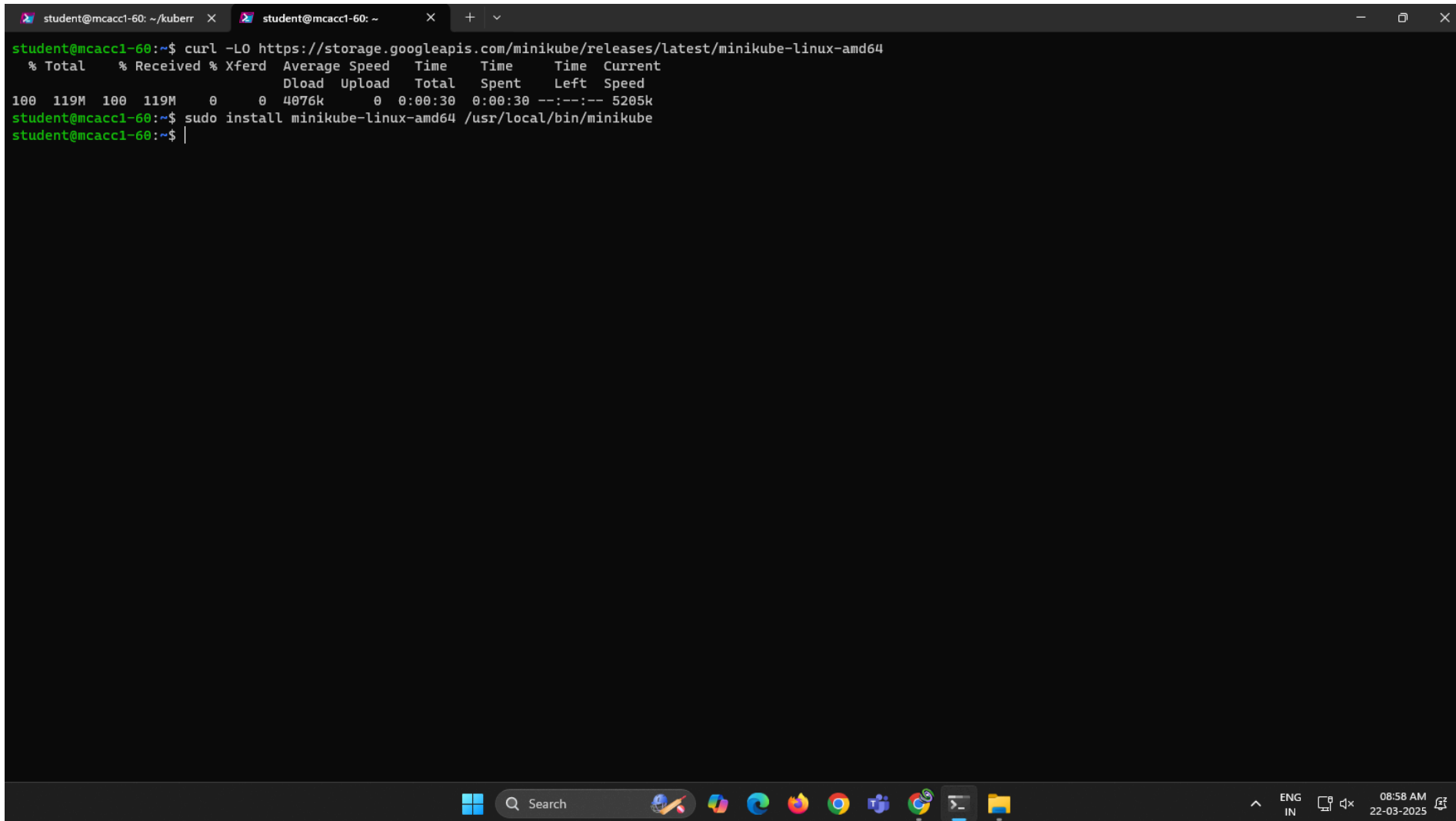
Harikrishnan N

Setting up minikube: Step 1

```
student@mcacc1-60: ~/kuberr X student@mcacc1-60: ~ X + | v
student@mcacc1-60:~$ curl -LO https://storage.googleapis.com/minikube/releases/latest/minikube-linux-amd64
% Total % Received % Xferd Average Speed Time Time Time Current
Dload Upload Total Spent Left Speed
100 119M 100 119M 0 0 4076k 0 0:00:30 0:00:30 --:--:-- 5205k
student@mcacc1-60:~$ |
```

Setting up minikube: Step 2

```
student@mcacc1-60: ~/kuberr X student@mcacc1-60: ~ X + | v
student@mcacc1-60:~$ curl -LO https://storage.googleapis.com/minikube/releases/latest/minikube-linux-amd64
  % Total    % Received % Xferd  Average Speed   Time    Time     Time  Current
                                 Dload  Upload   Total   Spent    Left   Speed
100 119M 100 119M    0     0 4076k      0  0:00:30  0:00:30 --:--:-- 5205k
student@mcacc1-60:~$ sudo install minikube-linux-amd64 /usr/local/bin/minikube
student@mcacc1-60:~$ |
```

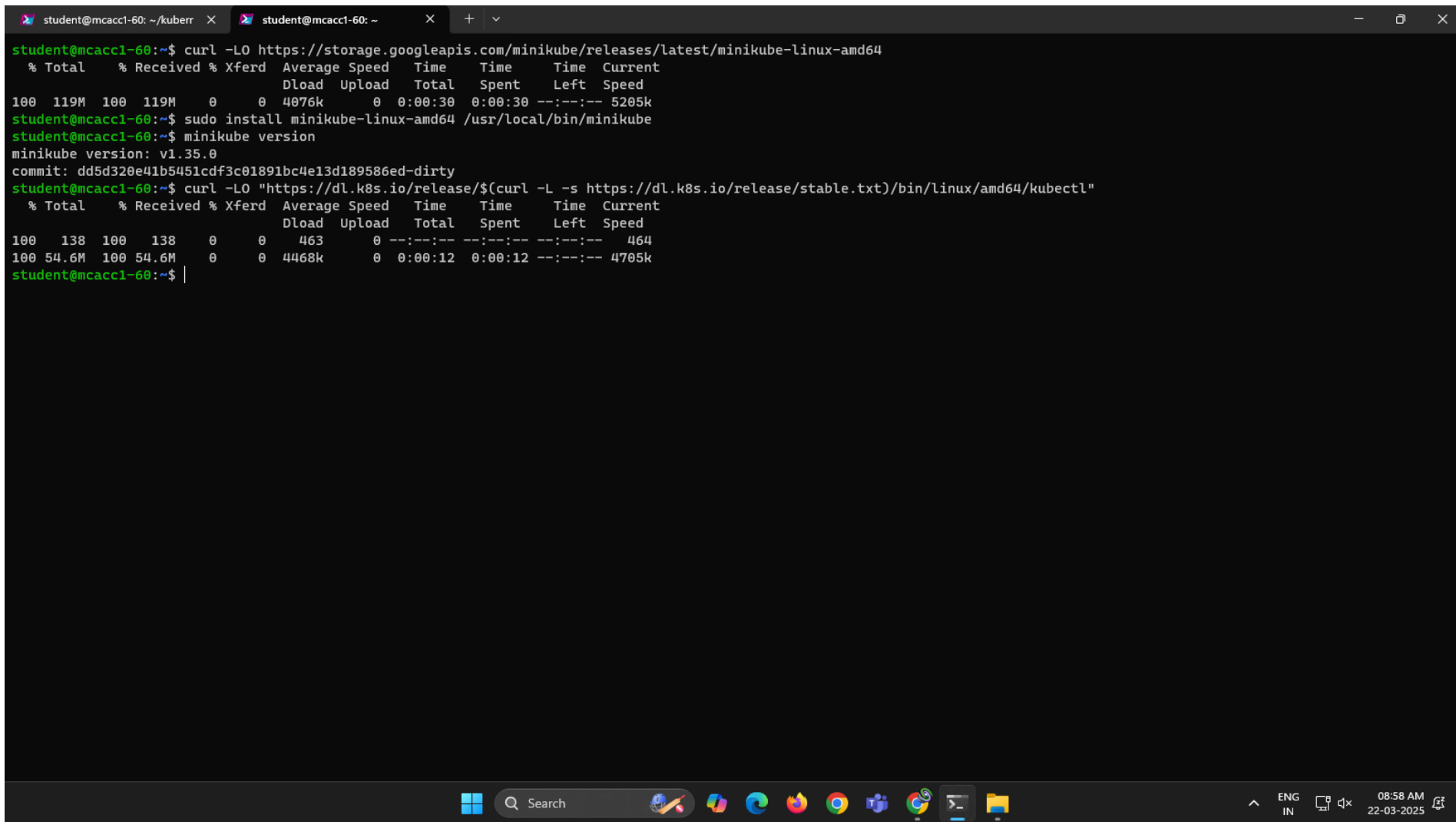


Setting up minikube: Step 3

```
student@mcacc1-60: ~/kuberr X student@mcacc1-60: ~ X + v
student@mcacc1-60:~$ curl -LO https://storage.googleapis.com/minikube/releases/latest/minikube-linux-amd64
  % Total    % Received % Xferd  Average Speed   Time    Time     Time  Current
                                 Dload  Upload   Total   Spent    Left   Speed
100 119M 100 119M    0     0 4076k      0  0:00:30  0:00:30 --:--:-- 5205k
student@mcacc1-60:~$ sudo install minikube-linux-amd64 /usr/local/bin/minikube
student@mcacc1-60:~$ minikube version
minikube version: v1.35.0
commit: dd5d320e41b5451cdf3c01891bc4e13d189586ed-dirty
student@mcacc1-60:~$
```

Setting up kubectl: Step 1

```
student@mcacc1-60: ~/kuberr X student@mcacc1-60: ~ X + v
student@mcacc1-60:~$ curl -LO https://storage.googleapis.com/minikube/releases/latest/minikube-linux-amd64
% Total % Received % Xferd Average Speed Time Time Time Current
Dload Upload Total Spent Left Speed
100 119M 100 119M 0 0 4076k 0 0:00:30 0:00:30 --:--:-- 5205k
student@mcacc1-60:~$ sudo install minikube-linux-amd64 /usr/local/bin/minikube
student@mcacc1-60:~$ minikube version
minikube version: v1.35.0
commit: dd5d320e41b5451cdf3c01891bc4e13d189586ed-dirty
student@mcacc1-60:~$ curl -LO "https://dl.k8s.io/release/$(curl -L -s https://dl.k8s.io/release/stable.txt)/bin/linux/amd64/kubectl"
% Total % Received % Xferd Average Speed Time Time Time Current
Dload Upload Total Spent Left Speed
100 138 100 138 0 0 463 0 --:--:-- --:--:-- --:--:-- 464
100 54.6M 100 54.6M 0 0 4468k 0 0:00:12 0:00:12 --:--:-- 4705k
student@mcacc1-60:~$
```



Setting up kubectl: Step 2


```
student@mcacc1-60: ~/kuberr X student@mcacc1-60: ~ X + v
student@mcacc1-60:~$ curl -LO https://storage.googleapis.com/minikube/releases/latest/minikube-linux-amd64
% Total % Received % Xferd Average Speed Time Time Time Current
Dload Upload Total Spent Left Speed
100 119M 100 119M 0 0 4076k 0 0:00:30 0:00:30 --:--:-- 5205k
student@mcacc1-60:~$ sudo install minikube-linux-amd64 /usr/local/bin/minikube
student@mcacc1-60:~$ minikube version
minikube version: v1.35.0
commit: dd5d320e41b5451cdf3c01891bc4e13d189586ed-dirty
student@mcacc1-60:~$ curl -LO "https://dl.k8s.io/release/$(curl -L -s https://dl.k8s.io/release/stable.txt)/bin/linux/amd64/kubectl"
% Total % Received % Xferd Average Speed Time Time Time Current
Dload Upload Total Spent Left Speed
100 138 100 138 0 0 463 0 --:--:-- --:--:-- --:--:-- 464
100 54.6M 100 54.6M 0 0 4468k 0 0:00:12 0:00:12 --:--:-- 4705k
student@mcacc1-60:~$ chmod +x kubectl
student@mcacc1-60:~$ |
```

Setting up kubectl: Step 3

```
student@mcacc1-60: ~/kuberr X student@mcacc1-60: ~ X + v
student@mcacc1-60:~$ curl -LO https://storage.googleapis.com/minikube/releases/latest/minikube-linux-amd64
% Total % Received % Xferd Average Speed Time Time Time Current
Dload Upload Total Spent Left Speed
100 119M 100 119M 0 0 4076k 0 0:00:30 0:00:30 --:--:-- 5205k
student@mcacc1-60:~$ sudo install minikube-linux-amd64 /usr/local/bin/minikube
student@mcacc1-60:~$ minikube version
minikube version: v1.35.0
commit: dd5d320e41b5451cdf3c01891bc4e13d189586ed-dirty
student@mcacc1-60:~$ curl -LO "https://dl.k8s.io/release/$(curl -L -s https://dl.k8s.io/release/stable.txt)/bin/linux/amd64/kubectl"
% Total % Received % Xferd Average Speed Time Time Time Current
Dload Upload Total Spent Left Speed
100 138 100 138 0 0 463 0 --:--:-- --:--:-- --:--:-- 464
100 54.6M 100 54.6M 0 0 4468k 0 0:00:12 0:00:12 --:--:-- 4705k
student@mcacc1-60:~$ chmod +x kubectl
student@mcacc1-60:~$ sudo mv kubectl /usr/local/bin/
student@mcacc1-60:~$ |
```

Setting up kubectl: Step 4

```
student@mcacc1-60: ~/kuberr X student@mcacc1-60: ~ X + v
student@mcacc1-60:~$ curl -LO https://storage.googleapis.com/minikube/releases/latest/minikube-linux-amd64
% Total % Received % Xferd Average Speed Time Time Time Current
Dload Upload Total Spent Left Speed
100 119M 100 119M 0 0 4076k 0 0:00:30 0:00:30 --:--:-- 5205k
student@mcacc1-60:~$ sudo install minikube-linux-amd64 /usr/local/bin/minikube
student@mcacc1-60:~$ minikube version
minikube version: v1.35.0
commit: dd5d320e41b5451cdf3c01891bc4e13d189586ed-dirty
student@mcacc1-60:~$ curl -LO "https://dl.k8s.io/release/$(curl -L -s https://dl.k8s.io/release/stable.txt)/bin/linux/amd64/kubectl"
% Total % Received % Xferd Average Speed Time Time Time Current
Dload Upload Total Spent Left Speed
100 138 100 138 0 0 463 0 --:--:-- --:--:-- --:--:-- 464
100 54.6M 100 54.6M 0 0 4468k 0 0:00:12 0:00:12 --:--:-- 4705k
student@mcacc1-60:~$ chmod +x kubectl
student@mcacc1-60:~$ sudo mv kubectl /usr/local/bin/
student@mcacc1-60:~$ kubectl version --client
Client Version: v1.32.3
Kustomize Version: v5.5.0
student@mcacc1-60:~$ |
```



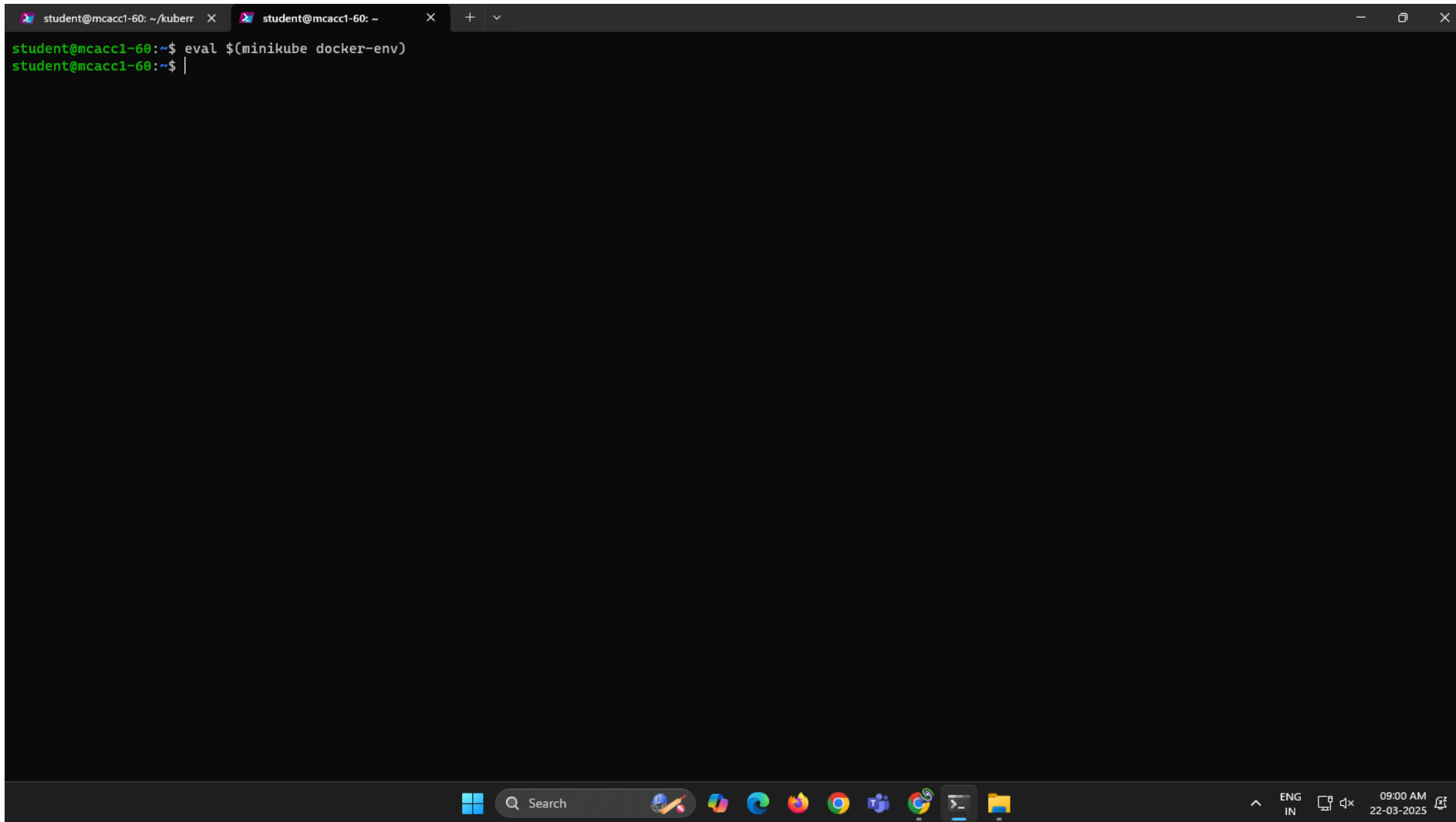
Kubernetes installation using minikube

```
student@mcacc1-60: ~/kubern X student@mcacc1-60: ~ X + v
student@mcacc1-60:~$ curl -LO https://storage.googleapis.com/minikube/releases/latest/minikube-linux-amd64
% Total % Received % Xferd Average Speed Time Time Time Current
Dload Upload Total Spent Left Speed
100 119M 100 119M 0 0 4076k 0 0:00:30 0:00:30 --:--:-- 5205k
student@mcacc1-60:~$ sudo install minikube-linux-amd64 /usr/local/bin/minikube
student@mcacc1-60:~$ minikube version
minikube version: v1.35.0
commit: dd5d320e41b5451cdf3c01891bc4e13d189586ed-dirty
student@mcacc1-60:~$ curl -LO "https://dl.k8s.io/release/$(curl -L -s https://dl.k8s.io/release/stable.txt)/bin/linux/amd64/kubectl"
% Total % Received % Xferd Average Speed Time Time Time Current
Dload Upload Total Spent Left Speed
100 138 100 138 0 0 463 0 --:--:-- --:--:-- --:--:-- 464
100 54.6M 100 54.6M 0 0 4468k 0 0:00:12 0:00:12 --:--:-- 4705k
student@mcacc1-60:~$ chmod +x kubectl
student@mcacc1-60:~$ sudo mv kubectl /usr/local/bin/
student@mcacc1-60:~$ kubectl version --client
Client Version: v1.32.3
Kustomize Version: v5.5.0
student@mcacc1-60:~$ minikube start
🐳 minikube v1.35.0 on Ubuntu 24.04 (amd64)
🌟 Using the docker driver based on existing profile
🔥 Starting "minikube" primary control-plane node in "minikube" cluster
📡 Pulling base image v0.0.46 ...
🔄 Restarting existing docker container for "minikube" ...
🔧 Preparing Kubernetes v1.32.0 on Docker 27.4.1 ...
🔍 Verifying Kubernetes components...
▪ Using image gcr.io/k8s-minikube/storage-provisioner:v5
🌟 Enabled addons: storage-provisioner, default-storageclass
🎉 Done! kubectl is now configured to use "minikube" cluster and "default" namespace by default
student@mcacc1-60:~$
```

List kubernetes nodes

```
student@mcacc1-60: ~/kubern X student@mcacc1-60: ~ X + v
student@mcacc1-60:~$ curl -LO https://storage.googleapis.com/minikube/releases/latest/minikube-linux-amd64
% Total % Received % Xferd Average Speed Time Time Time Current
Dload Upload Total Spent Left Speed
100 119M 100 119M 0 0 4076k 0 0:00:30 0:00:30 --:--:-- 5205k
student@mcacc1-60:~$ sudo install minikube-linux-amd64 /usr/local/bin/minikube
student@mcacc1-60:~$ minikube version
minikube version: v1.35.0
commit: dd5d320e41b5451cdf3c01891bc4e13d189586ed-dirty
student@mcacc1-60:~$ curl -LO "https://dl.k8s.io/release/$(curl -L -s https://dl.k8s.io/release/stable.txt)/bin/linux/amd64/kubectl"
% Total % Received % Xferd Average Speed Time Time Time Current
Dload Upload Total Spent Left Speed
100 138 100 138 0 0 463 0 --:--:-- --:--:-- --:--:-- 464
100 54.6M 100 54.6M 0 0 4468k 0 0:00:12 0:00:12 --:--:-- 4705k
student@mcacc1-60:~$ chmod +x kubectl
student@mcacc1-60:~$ sudo mv kubectl /usr/local/bin/
student@mcacc1-60:~$ kubectl version --client
Client Version: v1.32.3
Kustomize Version: v5.5.0
student@mcacc1-60:~$ minikube start
🐳 minikube v1.35.0 on Ubuntu 24.04 (amd64)
🌟 Using the docker driver based on existing profile
🔥 Starting "minikube" primary control-plane node in "minikube" cluster
📡 Pulling base image v0.0.46 ...
🔄 Restarting existing docker container for "minikube" ...
🔧 Preparing Kubernetes v1.32.0 on Docker 27.4.1 ...
🔍 Verifying Kubernetes components...
▪ Using image gcr.io/k8s-minikube/storage-provisioner:v5
🌟 Enabled addons: storage-provisioner, default-storageclass
🔥 Done! kubectl is now configured to use "minikube" cluster and "default" namespace by default
student@mcacc1-60:~$
```

Setting up environments



The image shows a Windows terminal window with a dark background. The title bar at the top indicates two open tabs: 'student@mcacc1-60: ~/kuberr' and 'student@mcacc1-60: ~'. The terminal content shows the user 'student@mcacc1-60' at the prompt '~\$' entering the command 'eval \$(minikube docker-env)'. The command is executed, and the prompt returns to '~\$'. The Windows taskbar is visible at the bottom, featuring the Start button, a search bar, and several application icons including File Explorer, Edge, and various utility programs. The system tray on the right shows the language set to 'ENG IN', volume and network icons, and the date and time as '09:00 AM 22-03-2025'.

```
student@mcacc1-60: ~/kuberr
student@mcacc1-60: ~
student@mcacc1-60:~$ eval $(minikube docker-env)
student@mcacc1-60:~$
```

Building image for backend

```
student@mcacc1-60: ~/kubern x student@mcacc1-60: ~/kubern x + v
student@mcacc1-60:~$ eval $(minikube docker-env)
student@mcacc1-60:~$ cd kubernetes
kubernetes/      kubernetes-pipeline-project/
student@mcacc1-60:~$ cd kubernetes
kubernetes/      kubernetes-pipeline-project/
student@mcacc1-60:~$ cd kubernetes/
.git/      backend/  frontend/  k8s/
student@mcacc1-60:~$ cd kubernetes/backend/
student@mcacc1-60:~/kubernetes/backend$ docker build -t backend:latest .
DEPRECATED: The legacy builder is deprecated and will be removed in a future release.
            Install the buildx component to build images with BuildKit:
            https://docs.docker.com/go/buildx/

Sending build context to Docker daemon   5.12kB
Step 1/6 : FROM python:3.9
3.9: Pulling from library/python
7cd785773db4: Pull complete
091eb8249475: Pull complete
255774e0027b: Pull complete
353e14e5cc47: Pull complete
f6d72b00ae7c: Pull complete
6e02a90e58ae: Pull complete
f299e0671245: Pull complete
Digest: sha256:bc2e05bca883473050fc3b7c134c28ab822be73126ba1ce29517d9e8b7f3703b
Status: Downloaded newer image for python:3.9
----> 859d4a0f1fd8
Step 2/6 : WORKDIR /app
----> Running in c5a2744761f5
----> Removed intermediate container c5a2744761f5
----> 407962337ed1
Step 3/6 : COPY requirements.txt .
----> 5829c6e5f89f
Step 4/6 : RUN pip install -r requirements.txt
----> Running in 836866cbfd11
Collecting flask
  Downloading flask-3.1.0-py3-none-any.whl (102 kB)
    _____ 103.0/103.0 kB 1.5 MB/s eta 0:00:00
Collecting pandas
  Downloading pandas-2.2.3-cp39-cp39-manylinux_2_17_x86_64.manylinux2014_x86_64.whl (13.1 MB)
```

Loading backend image in kubernetes

```
student@mcacc1-60: ~/kubern X student@mcacc1-60: ~/kubern X + v
Downloading itsdangerous-2.2.0-py3-none-any.whl (16 kB)
Collecting blinker>=1.9
  Downloading blinker-1.9.0-py3-none-any.whl (8.5 kB)
Collecting python-dateutil>=2.8.2
  Downloading python_dateutil-2.9.0.post0-py2.py3-none-any.whl (229 kB)
    229.9/229.9 kB 14.0 MB/s eta 0:00:00
Collecting tzdata>=2022.7
  Downloading tzdata-2025.1-py2.py3-none-any.whl (346 kB)
    346.8/346.8 kB 22.3 MB/s eta 0:00:00
Collecting numpy>=1.22.4
  Downloading numpy-2.0.2-cp39-cp39-manylinux_2_17_x86_64.manylinux2014_x86_64.whl (19.5 MB)
    19.5/19.5 MB 5.2 MB/s eta 0:00:00
Collecting pytz>=2020.1
  Downloading pytz-2025.1-py2.py3-none-any.whl (507 kB)
    507.9/507.9 kB 26.8 MB/s eta 0:00:00
Collecting zipp>=3.20
  Downloading zipp-3.21.0-py3-none-any.whl (9.6 kB)
Collecting MarkupSafe>=2.0
  Downloading MarkupSafe-3.0.2-cp39-cp39-manylinux_2_17_x86_64.manylinux2014_x86_64.whl (20 kB)
Collecting six>=1.5
  Downloading six-1.17.0-py2.py3-none-any.whl (11 kB)
Installing collected packages: pytz, zipp, tzdata, six, numpy, MarkupSafe, itsdangerous, click, blinker, Werkzeug, python-dateutil, Jinja2, importlib-metadata, pandas, flask, flask-cors
Successfully installed Jinja2-3.1.6 MarkupSafe-3.0.2 Werkzeug-3.1.3 blinker-1.9.0 click-8.1.8 flask-3.1.0 flask-cors-5.0.1 importlib-metadata-8.6.1 itsdangerous-2.2.0 numpy-2.0.2 pandas-2.2.3 python-dateutil-2.9.0.post0 pytz-2025.1 six-1.17.0 tzdata-2025.1 zipp-3.21.0
WARNING: Running pip as the 'root' user can result in broken permissions and conflicting behaviour with the system package manager. It is recommended to use a virtual environment instead: https://pip.pypa.io/warnings/venv

[notice] A new release of pip is available: 23.0.1 -> 25.0.1
[notice] To update, run: pip install --upgrade pip
---> Removed intermediate container 836866cbfd11
---> 4eb0666e680e
Step 5/6 : COPY . .
---> eb0dc36c1bd2
Step 6/6 : CMD ["python", "app.py"]
---> Running in 852b98df79e7
---> Removed intermediate container 852b98df79e7
---> 16348aef61be
Successfully built 16348aef61be
Successfully tagged backend:latest
student@mcacc1-60:~/kubernetes/backend$ minikube image load backend:latest
```

Just like this, load the frontend:latest image

Building image for frontend

```
student@mcacc1-60: ~/kubern X student@mcacc1-60: ~/kubern X + -
---> Removed intermediate container 852b98df79e7
---> 16348aef61be
Successfully built 16348aef61be
Successfully tagged backend:latest
student@mcacc1-60:~/kubernetes/backend$ minikube image load backend:latest
student@mcacc1-60:~/kubernetes/backend$ cd ..
student@mcacc1-60:~/kubernetes$ cd frontend/
student@mcacc1-60:~/kubernetes/frontend$ docker build -t frontend:latest
DEPRECATED: The legacy builder is deprecated and will be removed in a future release.
            Install the buildx component to build images with BuildKit:
            https://docs.docker.com/go/buildx/

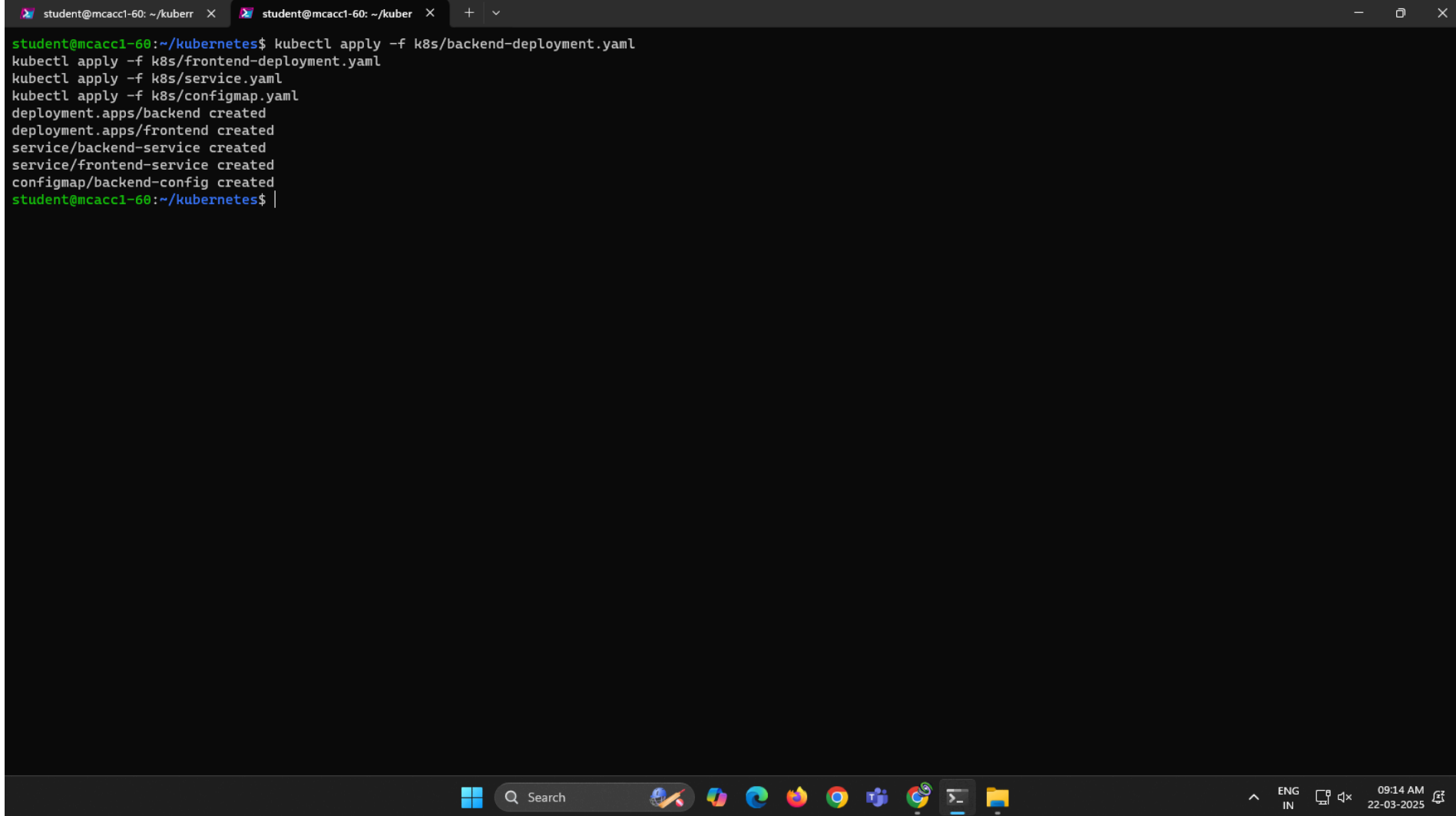
"docker build" requires exactly 1 argument.
See 'docker build --help'.

Usage:  docker build [OPTIONS] PATH | URL | -

Build an image from a Dockerfile
student@mcacc1-60:~/kubernetes/frontend$ docker build -t frontend:latest .
DEPRECATED: The legacy builder is deprecated and will be removed in a future release.
            Install the buildx component to build images with BuildKit:
            https://docs.docker.com/go/buildx/

Sending build context to Docker daemon  3.584kB
Step 1/2 : FROM nginx:alpine
alpine: Pulling from library/nginx
f18232174bc9: Already exists
ccc35e35d420: Pull complete
43f2ec460bdf: Pull complete
984583bcf083: Pull complete
8d27c072a58f: Pull complete
ab3286a73463: Pull complete
6d79cc6084d4: Pull complete
0c7e4c092ab7: Pull complete
Digest: sha256:4ff102c5d78d254a6f0da062b3cf39eaf07f01eec0927fd21e219d0af8bc0591
Status: Downloaded newer image for nginx:alpine
---> 1ff4bb4faebc
Step 2/2 : COPY index.html /usr/share/nginx/html/index.html
---> 3a9f78bbc594
Successfully built 3a9f78bbc594
Successfully tagged frontend:latest
student@mcacc1-60:~/kubernetes/frontend$
```

Applying k8s configurations



```
student@mcacc1-60: ~/kubern... X student@mcacc1-60: ~/kuber... X + | v
student@mcacc1-60:~/kubernetes$ kubectl apply -f k8s/backend-deployment.yaml
kubectl apply -f k8s/frontend-deployment.yaml
kubectl apply -f k8s/service.yaml
kubectl apply -f k8s/configmap.yaml
deployment.apps/backend created
deployment.apps/frontend created
service/backend-service created
service/frontend-service created
configmap/backend-config created
student@mcacc1-60:~/kubernetes$ |
```

The image shows a Windows terminal window with two tabs. The active tab is titled 'student@mcacc1-60: ~/kubern...'. The terminal displays a series of kubectl commands and their successful execution output. The commands are: 'kubectl apply -f k8s/backend-deployment.yaml', 'kubectl apply -f k8s/frontend-deployment.yaml', 'kubectl apply -f k8s/service.yaml', and 'kubectl apply -f k8s/configmap.yaml'. The output for each command indicates that the respective resource (deployment or service) has been created. The terminal window has a dark background and is set against a Windows taskbar at the bottom, which includes the Start button, a search bar, and several application icons. The system tray on the right shows the language set to 'ENG IN', volume and network icons, and the date and time '09:14 AM 22-03-2025'.

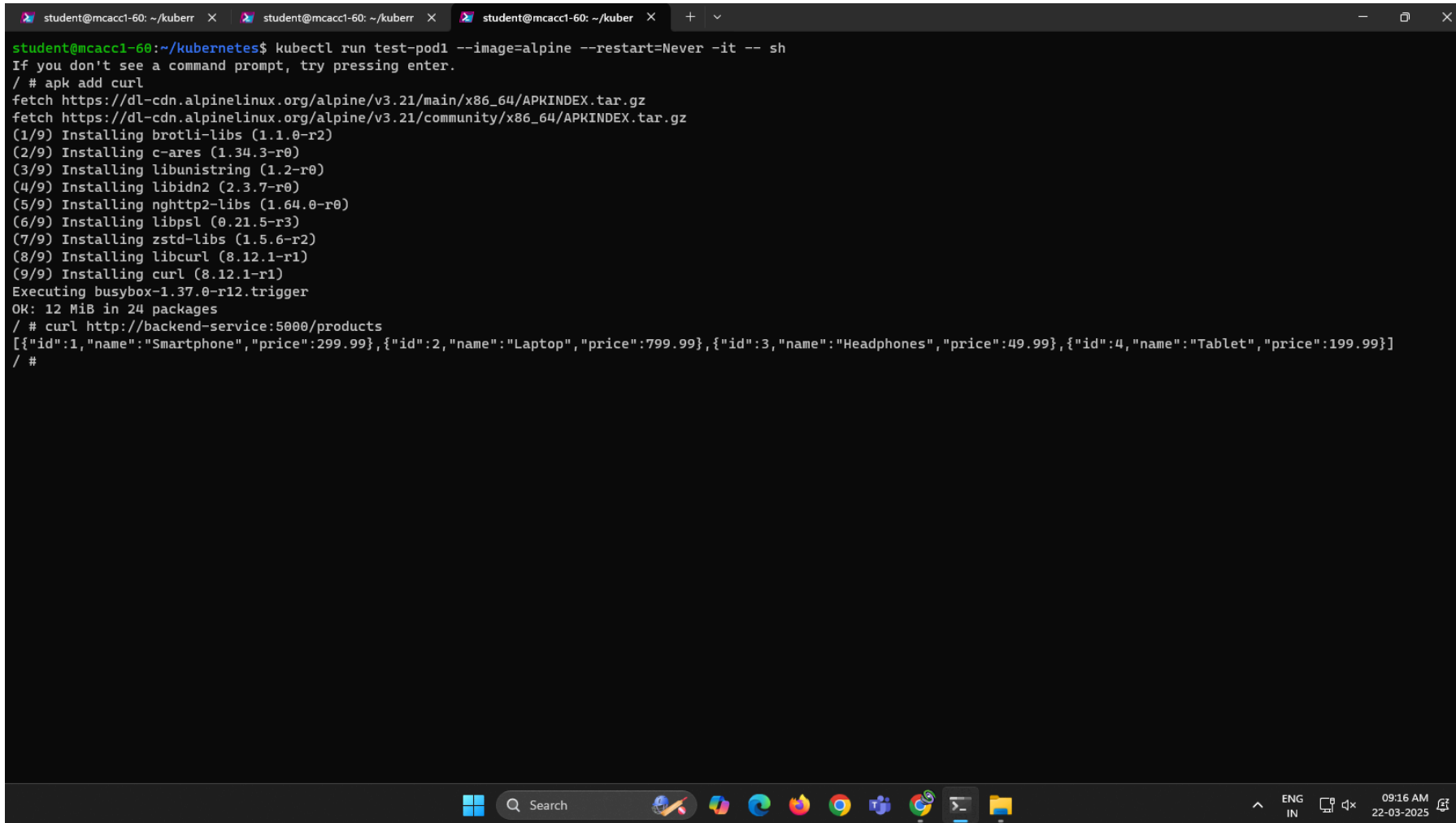
Running frontend services inside a pod

```
student@mcacc1-60: ~/kubern X student@mcacc1-60: ~/kuber X + v
student@mcacc1-60:~/kubernetes$ kubectl apply -f k8s/backend-deployment.yaml
kubectl apply -f k8s/frontend-deployment.yaml
kubectl apply -f k8s/service.yaml
kubectl apply -f k8s/configmap.yaml
deployment.apps/backend created
deployment.apps/frontend created
service/backend-service created
service/frontend-service created
configmap/backend-config created
student@mcacc1-60:~/kubernetes$ kubectl get pods
NAME                READY   STATUS    RESTARTS   AGE
backend-dfd8d5579-qzl6c  1/1     Running   0           15s
frontend-6cfd7c46-2hsw6  1/1     Running   0           15s
test-pod              0/1     ImagePullBackOff  0           18h
test-pod-1             0/1     Error      0           17h
test-pod-2             0/1     Error      0           16h
student@mcacc1-60:~/kubernetes$ kubectl get svc
NAME                TYPE        CLUSTER-IP   EXTERNAL-IP   PORT(S)          AGE
backend-service     ClusterIP   10.101.209.87 <none>        5000/TCP         22s
frontend-service    NodePort    10.111.59.254 <none>        3000:31922/TCP   22s
kubernetes          ClusterIP   10.96.0.1    <none>        443/TCP          18h
student@mcacc1-60:~/kubernetes$ minikube service frontend-service --url
http://127.0.0.1:37619
! Because you are using a Docker driver on linux, the terminal needs to be open to run it.
```


Running backend services inside a pod

```
student@mcacc1-60: ~/kubern X student@mcacc1-60: ~/kubern X student@mcacc1-60: ~/kuber X + v
student@mcacc1-60:~/kubernetes$ kubectl run test-pod1 --image=alpine --restart=Never -it -- sh
If you don't see a command prompt, try pressing enter.
/ # apk add curl
fetch https://dl-cdn.alpinelinux.org/alpine/v3.21/main/x86_64/APKINDEX.tar.gz
fetch https://dl-cdn.alpinelinux.org/alpine/v3.21/community/x86_64/APKINDEX.tar.gz
(1/9) Installing brotli-libs (1.1.0-r2)
(2/9) Installing c-ares (1.34.3-r0)
(3/9) Installing libunistring (1.2-r0)
(4/9) Installing libidn2 (2.3.7-r0)
(5/9) Installing nghttp2-libs (1.64.0-r0)
(6/9) Installing libpsl (0.21.5-r3)
(7/9) Installing zstd-libs (1.5.6-r2)
(8/9) Installing libcurl (8.12.1-r1)
(9/9) Installing curl (8.12.1-r1)
Executing busybox-1.37.0-r12.trigger
OK: 12 MiB in 24 packages
/ # curl http://backend-service:5000/products
[{"id":1,"name":"Smartphone","price":299.99},{"id":2,"name":"Laptop","price":799.99},{"id":3,"name":"Headphones","price":49.99},{"id":4,"name":"Tablet","price":199.99}]
/ #
```

Frontend service and backend service can be seen inside a browser



```
student@mcacc1-60: ~/kubern... student@mcacc1-60: ~/kubern... student@mcacc1-60: ~/kubern...  
student@mcacc1-60:~/kubernetes$ kubectl run test-pod1 --image=alpine --restart=Never -it -- sh  
If you don't see a command prompt, try pressing enter.  
/ # apk add curl  
fetch https://dl-cdn.alpinelinux.org/alpine/v3.21/main/x86_64/APKINDEX.tar.gz  
fetch https://dl-cdn.alpinelinux.org/alpine/v3.21/community/x86_64/APKINDEX.tar.gz  
(1/9) Installing brotli-libs (1.1.0-r2)  
(2/9) Installing c-ares (1.34.3-r0)  
(3/9) Installing libunistring (1.2-r0)  
(4/9) Installing libidn2 (2.3.7-r0)  
(5/9) Installing nghttp2-libs (1.64.0-r0)  
(6/9) Installing libpsl (0.21.5-r3)  
(7/9) Installing zstd-libs (1.5.6-r2)  
(8/9) Installing libcurl (8.12.1-r1)  
(9/9) Installing curl (8.12.1-r1)  
Executing busybox-1.37.0-r12.trigger  
OK: 12 MiB in 24 packages  
/ # curl http://backend-service:5000/products  
[{"id":1,"name":"Smartphone","price":299.99},{ "id":2,"name":"Laptop","price":799.99},{ "id":3,"name":"Headphones","price":49.99},{ "id":4,"name":"Tablet","price":199.99}]  
/ #
```

The fetch request moves to failed state as we are running the servies in wsl. Due to windows firewall and windows defender, accessing resources from an unknown http url is restricted

End of day 3 and 4 assignment