**Download Command (PowerShell)**

Invoke-WebRequest -Uri https://kind.sigs.k8s.io/dl/v0.24.0/kind-windows-amd64 -OutFile kind.exe

This will download kind.exe into your current folder (probably C:\Windows\System32 since that’s where you ran it).

**Verify Install**

kind –version

**Install kubectl on Windows (PowerShell)**

Run this command in **PowerShell**:

Invoke-WebRequest -Uri [https://dl.k8s.io/release/v1.31.0/bin/windows/amd64/kubectl.exe -OutFile kubectl.exe](https://dl.k8s.io/release/v1.31.0/bin/windows/amd64/kubectl.exe%20-OutFile%20kubectl.exe)

Verify it works:

kubectl version –client  
  
kube-config.yaml

kind: Cluster

apiVersion: kind.x-k8s.io/v1alpha4

nodes:

- role: control-plane

  image: kindest/node:v1.31.2

- role: worker

  image: kindest/node:v1.31.2

- role: worker

  image: kindest/node:v1.31.2

- role: worker

  image: kindest/node:v1.31.2

  extraPortMappings:

  - containerPort: 80

    hostPort: 80

    protocol: TCP

  - containerPort: 443

    hostPort: 443

    protocol: TCP

kind create cluster --name himanshu --config .\kube-config.yaml

**Kubernetes Lab Documentation (Kind on Windows)**

**1. Verify Setup**

kubectl version --client

kind --version

**2. Create Namespace**

**File: namespace.yml**

apiVersion: v1

kind: Namespace

metadata:

name: nginx

Apply it:

kubectl apply -f namespace.yml

kubectl get ns

**3. Create Pod**

**File: pod.yml**

apiVersion: v1

kind: Pod

metadata:

name: nginx-pod

namespace: nginx

spec:

containers:

- name: nginx

image: nginx:latest

ports:

- containerPort: 80

Apply it:

kubectl apply -f pod.yml

kubectl get pods -n nginx

**4. Create Deployment**

**File: deployment.yml**

apiVersion: apps/v1

kind: Deployment

metadata:

name: nginx-deployment

namespace: nginx

spec:

replicas: 2

selector:

matchLabels:

app: nginx

template:

metadata:

labels:

app: nginx

spec:

containers:

- name: nginx

image: nginx:latest

ports:

- containerPort: 80

Apply it:

kubectl apply -f deployment.yml

kubectl get deployments -n nginx

kubectl get pods -n nginx