Kubernetes Application Deployment (Simplified Guide)

Minimum Requirements

- Windows OS

- Internet Connection

- Admin rights on PC

Step-by-Step Setup (Easy Version)

1. Install kubectl

1. Open PowerShell as Administrator

2. Run:

   curl.exe -LO "https://dl.k8s.io/release/v1.33.0/bin/windows/amd64/kubectl.exe"

3. Create folder C:\kubectl and move kubectl.exe there

4. Add C:\kubectl to your System Environment Variables > Path

5. Verify installation:

   kubectl version --client

2. Install Minikube

1. Open PowerShell as Administrator

2. Create folder:

   New-Item -Path 'C:\' -Name 'minikube' -ItemType Directory -Force

3. Download Minikube:

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```
         Invoke-WebRequest      -OutFile      'C:\minikube\minikube.exe'      -Uri
"https://github.com/kubernetes/minikube/releases/latest/download/minikube-windows-amd64.exe"
-UseBasicParsing
```

4. Add C:\minikube to the System Path

3. Install VirtualBox

Download from: https://www.virtualbox.org/wiki/Downloads

Install for Windows Hosts

Running the Kubernetes Cluster

1. Start Minikube:

   minikube start --driver=virtualbox

   Or if errors:

   minikube start --no-vtx-check

2. Check status:

   minikube status

   kubectl get nodes

Deploy an Application

1. Create deployment:

   kubectl create deployment hello-minikube --image=kicbase/echo-server:1.0

2. Expose it:

   kubectl expose deployment hello-minikube --type=NodePort --port=8080

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3. Open in browser:

    minikube service hello-minikube --url

Clean Up

kubectl delete service hello-minikube

kubectl delete deployment hello-minikube

minikube stop