

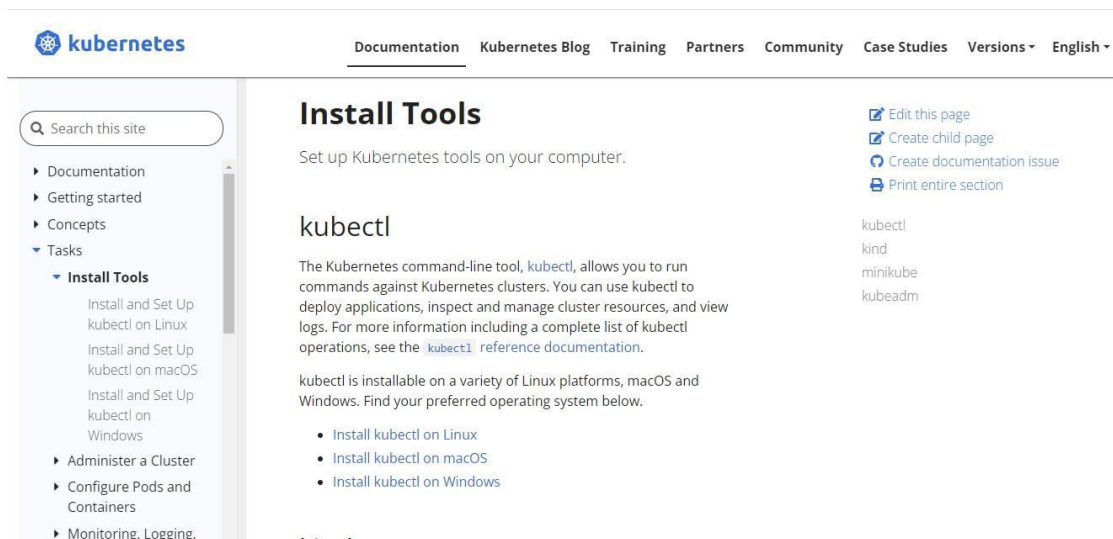
AdvDevops Assignment 4

Aim : To install Kubernetes

Theory and Outcome:

Kubernetes is a portable, extensible, open-source platform for managing containerized workloads and services, that facilitates both declarative configuration and automation. It has a large, rapidly growing ecosystem. Kubernetes services, support, and tools are widely available. The name Kubernetes originates from Greek, meaning helmsman or pilot. K8s as an abbreviation results from counting the eight letters between the "K" and the "s". Google open-sourced the Kubernetes project in 2014. Kubernetes combines over 15 years of Google's experience running production workloads at scale with best-of-breed ideas and practices from the community.

Go to kubernetes website for installation.



The screenshot shows the Kubernetes documentation website. The top navigation bar includes links for Documentation, Kubernetes Blog, Training, Partners, Community, Case Studies, Versions, and English. A search bar is located on the left. The left sidebar menu shows a hierarchy: Documentation > Getting started > Concepts > Tasks > Install Tools. The main content area is titled 'Install Tools' and contains the text: 'Set up Kubernetes tools on your computer.' Below this, the 'kubectl' section is highlighted, describing it as the Kubernetes command-line tool. To the right of the main content, there are links to 'Edit this page', 'Create child page', 'Create documentation issue', and 'Print entire section'. Below these links, a list of tools is shown: kubectl, kind, minikube, and kubeadm. At the bottom of the kubectl section, there are links to 'Install kubectl on Linux', 'Install kubectl on macOS', and 'Install kubectl on Windows'.

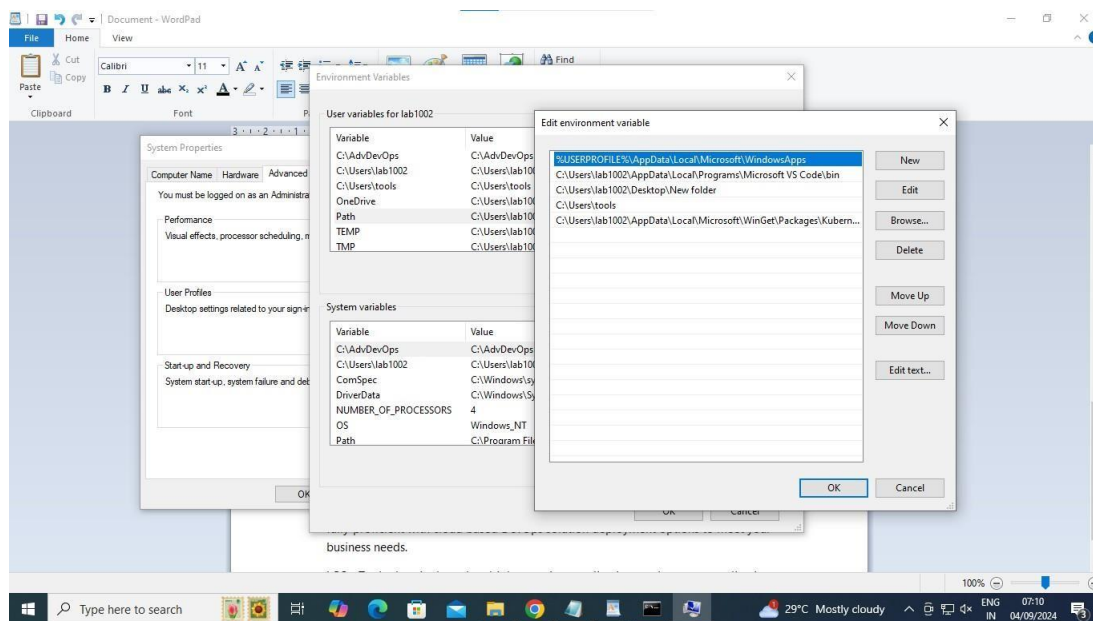
Select your appropriate OS.

v1.31.0	windows	386	kubectl-convert.exe	dl.k8s.io/v1.31.0/bin/v convert.exe (checksum
v1.31.0	windows	386	kubectl.exe	dl.k8s.io/v1.31.0/bin/v (checksum signature
v1.31.0	windows	amd64	kube-log- runner.exe	dl.k8s.io/v1.31.0/bin/v runner.exe (checksum
v1.31.0	windows	amd64	kube- proxy.exe	dl.k8s.io/v1.31.0/bin/v proxy.exe (checksum s
v1.31.0	windows	amd64	kubeadm.exe	dl.k8s.io/v1.31.0/bin/win (checksum signature

Install the Kubernetes .

Downloads	Advdevops Manual (1)	13/08/2024 06:46	Compressed (zipp...	9,649 KB
Music	curl-8.9.1.tar.gz	12/08/2024 06:41	GZ File	4,102 KB
Pictures	kubectl	12/08/2024 06:40	Application	51,594 KB

Edit the path in systems environment variables



Open cmd and run and kubernetes command to check for successful installation

```
Command Prompt
C:\Users\lab1002\Downloads>kubernetes
'kubernetes' is not recognized as an internal or external command,
operable program or batch file.

C:\Users\lab1002\Downloads>kubect1 version
Client Version: v1.30.0
Kustomize Version: v5.0.4-0.20230601165947-6ce0bf390ce3
Unable to connect to the server: dial tcp [::1]:8080: connectex: No connection could be made because the target machine actively refused it.

C:\Users\lab1002\Downloads>kubect1
kubect1 controls the Kubernetes cluster manager.

Find more information at: https://kubernetes.io/docs/reference/kubect1/

Basic Commands (Beginner):
  create      Create a resource from a file or from stdin
  expose      Take a replication controller, service, deployment or pod and expose it as a new Kubernetes service
  run         Run a particular image on the cluster
  set         Set specific features on objects

Basic Commands (Intermediate):
  explain     Get documentation for a resource
  get         Display one or many resources
  edit        Edit a resource on the server
  delete      Delete resources by file names, stdin, resources and names, or by resources and label selector

Deploy Commands:
  rollout     Manage the rollout of a resource
  scale       Set a new size for a deployment, replica set, or replication controller
  autoscale   Auto-scale a deployment, replica set, stateful set, or replication controller

Cluster Management Commands:
  certificate Modify certificate resources
  cluster-info Display cluster information
  top          Display resource (CPU/memory) usage
  cordon       Mark node as unschedulable
  uncordon     Mark node as schedulable
  drain        Drain node in preparation for maintenance
  taint        Update the taints on one or more nodes

Troubleshooting and Debugging Commands:
  describe    Show details of a specific resource or group of resources
  logs        Print the logs for a container in a pod
  attach      Attach to a running container
```

Kubernetes is successfully installed.