

Kubernetes – Intro

1.Installing Kubectl with choco

```
Administrator: PowerShell
PS C:\Users\Beqir> choco install kubernetes-cli
Chocolatey v2.4.0
Installing the following packages:
kubernetes-cli
By installing, you accept licenses for the packages.
Downloading package from source 'https://chocolatey.org/api/v2/'
Progress: Downloading kubernetes-cli 1.33.0 ... 100%

kubernetes-cli v1.33.0 [Approved]
kubernetes-cli package files install completed. Performing other installation steps.
The package kubernetes-cli wants to run 'chocolateyInstall.ps1'.
Note: If you don't run this script, the installation will fail.
Note: To confirm automatically next time, use '-y' or consider:
choco feature enable -n allowGlobalConfirmation
Do you want to run the script?([Y]es/[A]ll - yes to all/[N]o/[P]rint): A

Extracting 64-bit C:\ProgramData\chocolatey\lib\kubernetes-cli\tools\kubernetes-client-windows-amd64.tar.gz to C:\ProgramData\chocolatey\lib\kubernetes-cli\tools ...
C:\ProgramData\chocolatey\lib\kubernetes-cli\tools
Extracting 64-bit C:\ProgramData\chocolatey\lib\kubernetes-cli\tools\kubernetes-client-windows-amd64.tar to C:\ProgramData\chocolatey\lib\kubernetes-cli\tools ...
C:\ProgramData\chocolatey\lib\kubernetes-cli\tools
ShimGen has successfully created a shim for kubectl-convert.exe
ShimGen has successfully created a shim for kubectl.exe
The install of kubernetes-cli was successful.
Deployed to 'C:\ProgramData\chocolatey\lib\kubernetes-cli\tools'

Chocolatey installed 1/1 packages.
See the log for details (C:\ProgramData\chocolatey\logs\chocolatey.log).
PS C:\Users\Beqir> kubectl version --client
Client Version: v1.33.0
Kustomize Version: v5.6.0
PS C:\Users\Beqir> |
```

Бекир Фазли 191045

2.Installing K3D with choco

```
Administrator: PowerShell
PS C:\Users\Beqir> choco install k3d
Chocolatey v2.4.0
Installing the following packages:
k3d
By installing, you accept licenses for the packages.
Downloading package from source 'https://chocolatey.org/api/v2/'
Progress: Downloading k3d 5.8.3 ... 100%

k3d v5.8.3 [Approved]
k3d package files install completed. Performing other installation steps.
ShimGen has successfully created a shim for k3d.exe
The install of k3d was successful.
Deployed to 'C:\ProgramData\chocolatey\lib\k3d'

Chocolatey installed 1/1 packages.
See the log for details (C:\ProgramData\chocolatey\logs\chocolatey.log).
PS C:\Users\Beqir> k3d version
k3d version v5.8.3
k3s version v1.31.5-k3s1 (default)
PS C:\Users\Beqir> |
```

3.KubernetesLab cluster

```
Administrator: PowerShell
INFO[0001] Pulling image 'ghcr.io/k3d-io/k3d-tools:5.8.3'
INFO[0001] Pulling image 'docker.io/rancher/k3s:v1.31.5-k3s1'
INFO[0005] Starting node 'k3d-kubernetesLab-tools'
INFO[0011] Creating node 'k3d-kubernetesLab-server-1'
INFO[0012] Creating node 'k3d-kubernetesLab-server-2'
INFO[0012] Creating node 'k3d-kubernetesLab-agent-0'
INFO[0012] Creating node 'k3d-kubernetesLab-agent-1'
INFO[0013] Creating node 'k3d-kubernetesLab-agent-2'
INFO[0013] Creating node 'k3d-kubernetesLab-agent-3'
INFO[0013] Creating node 'k3d-kubernetesLab-agent-4'
INFO[0013] Creating LoadBalancer 'k3d-kubernetesLab-serverlb'
INFO[0014] Pulling image 'ghcr.io/k3d-io/k3d-proxy:5.8.3'
INFO[0019] Using the k3d-tools node to gather environment information
INFO[0019] Starting new tools node ...
INFO[0019] Starting node 'k3d-kubernetesLab-tools'
INFO[0021] Starting cluster 'kubernetesLab'
INFO[0021] Starting the initializing server ...
INFO[0021] Starting node 'k3d-kubernetesLab-server-0'
INFO[0025] Starting servers ...
INFO[0025] Starting node 'k3d-kubernetesLab-server-1'
INFO[0045] Starting node 'k3d-kubernetesLab-server-2'
INFO[0060] Starting agents ...
INFO[0061] Starting node 'k3d-kubernetesLab-agent-0'
INFO[0061] Starting node 'k3d-kubernetesLab-agent-3'
INFO[0061] Starting node 'k3d-kubernetesLab-agent-4'
INFO[0061] Starting node 'k3d-kubernetesLab-agent-2'
INFO[0061] Starting node 'k3d-kubernetesLab-agent-1'
INFO[0071] Starting helpers ...
INFO[0071] Starting node 'k3d-kubernetesLab-serverlb'
INFO[0079] Injecting records for hostAliases (incl. host.k3d.internal) and f
or 10 network members into CoreDNS configmap ...
INFO[0081] Cluster 'kubernetesLa
b' created successfully!
INFO[0082] You can now use it like this:
kubectl cluster-info
```

docker desktop PERSONAL

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Container CPU usage 27.19% / 800% (8 CPUs available) Container memory usage 3.05GB / 7.5GB [Show charts](#)

☐ Only running

<input type="checkbox"/>	Name	Container ID	Actions
<input type="checkbox"/>	k3d-kubernetesLab-tools	e152f78e0ce	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<input type="checkbox"/>	k3d-kubernetesLab-serverlb	6f1bfec1fc4d	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<input type="checkbox"/>	k3d-kubernetesLab-agent-4	1df8e052d467	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<input type="checkbox"/>	k3d-kubernetesLab-agent-3	6b5d2266011d	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<input type="checkbox"/>	k3d-kubernetesLab-agent-2	ac058efe5ed5	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<input type="checkbox"/>	k3d-kubernetesLab-agent-1	f21aa7a56025	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<input type="checkbox"/>	k3d-kubernetesLab-agent-0	ba00703bf97f	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<input type="checkbox"/>	k3d-kubernetesLab-server-2	dfa9b1768ed5	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<input type="checkbox"/>	k3d-kubernetesLab-server-1	a68cc7add31d	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<input type="checkbox"/>	k3d-kubernetesLab-server-0	74b15d91dda7	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

Showing 13 items

RAM 6.39 GB CPU 28.73% Disk: 8.97 GB used (limit 1006.85 GB)

```
PS C:\Users\Beqir> kubectl get nodes
```

NAME	STATUS	ROLES	AGE
k3d-kuberneteslab-agent-0 v1.31.5+k3s1	Ready	<none>	2m24s
k3d-kuberneteslab-agent-1 v1.31.5+k3s1	Ready	<none>	2m25s
k3d-kuberneteslab-agent-2 v1.31.5+k3s1	Ready	<none>	2m24s
k3d-kuberneteslab-agent-3 v1.31.5+k3s1	Ready	<none>	2m24s
k3d-kuberneteslab-agent-4 v1.31.5+k3s1	Ready	<none>	2m24s
k3d-kuberneteslab-server-0 v1.31.5+k3s1	Ready	control-plane,etcd,master	3m6s
k3d-kuberneteslab-server-1 v1.31.5+k3s1	Ready	control-plane,etcd,master	2m50s
k3d-kuberneteslab-server-2 v1.31.5+k3s1	Ready	control-plane,etcd,master	2m33s

```
PS C:\Users\Beqir> |
```

```
Administrator: PowerShell
```

```
PS C:\Users\Beqir> kubectl get pods --all-namespaces
```

NAMESPACE	NAME	READY	STATUS	RESTARTS	AGE
kube-system	coredns-ccb96694c-hg4mp	1/1	Running	0	3m53s
kube-system	helm-install-traefik-crd-tb9q9	0/1	Completed	0	3m53s
kube-system	helm-install-traefik-qvqfm	0/1	Completed	1	3m53s
kube-system	local-path-provisioner-5cf85fd84d-26w89	1/1	Running	0	3m53s
kube-system	metrics-server-5985cbc9d7-sszjn	1/1	Running	0	3m53s
kube-system	svclb-traefik-9928dc3-757mw	2/2	Running	0	3m16s
kube-system	svclb-traefik-9928dc3-cg8fr	2/2	Running	0	3m33s
kube-system	svclb-traefik-9928dc3-dcm6f	2/2	Running	0	3m16s
kube-system	svclb-traefik-9928dc3-dfcg4	2/2	Running	0	3m16s
kube-system	svclb-traefik-9928dc3-jbrmb	2/2	Running	0	3m32s
kube-system	svclb-traefik-9928dc3-q2dmq	2/2	Running	0	3m16s
kube-system	svclb-traefik-9928dc3-vx279	2/2	Running	0	3m26s
kube-system	svclb-traefik-9928dc3-w2xwk	2/2	Running	0	3m16s
kube-system	traefik-5d45fc8cc9-8nsdz	1/1	Running	0	3m33s

```
PS C:\Users\Beqir>
```

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4. Destoryed the cluster

Administrator: PowerShell

PS C:\Users\Beqir> k3d cluster delete kubernetesLab
INFO[0000] Deleting cluster 'kubernetesLab'
INFO[0015] Deleting cluster network 'k3d-kubernetesLab'
INFO[0015] Deleting 1 attached volumes ...
INFO[0015] Removing cluster details from default kubeconfig ...
INFO[0015] Removing standalone kubeconfig file (if there is one) ...
INFO[0015] Successfully deleted cluster kubernetesLab!
PS C:\Users\Beqir> |

docker:desktop PERSONAL

Containers

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Container CPU usage 800% / 8 CPUs available
Container memory usage 252.7MB / 7.5GB
Show charts

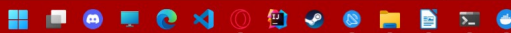
Search Only running

	Name	Container ID	Actions
	pi-port-checker	164129eb9ae2	<div></div> <div></div> <div></div>
	pi-network	-	<div></div> <div></div> <div></div>
	testnet2	c230eaf09563	<div></div> <div></div> <div></div>

Showing 3 items

RAM 2.77 GB CPU 1.64% Disk: 8.88 GB used (limit 1006.85 GB)

19°C
Mostly cloudy



ENG 16:38
12/05/2025