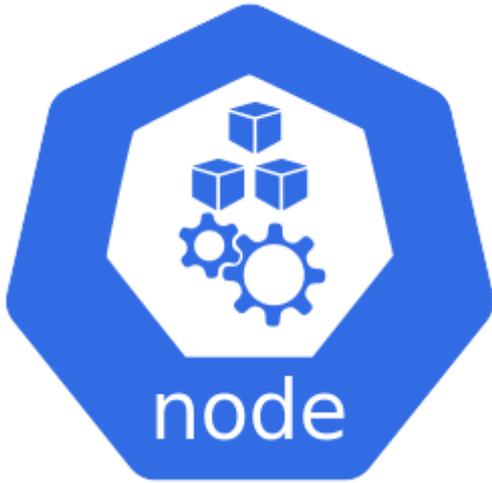


# 1GB 메모리로 100개의 노드 올리고 1000개의 파드 배포 하기 (w KWOK)

조훈 (Hoon Jo) - CCIE DC, CK{ A | AD | S }, VCIX-NV6

 <https://github.com/SysNet4Admin>

 <https://www.linkedin.com/in/hoonjo>



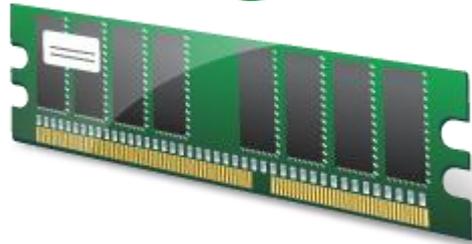
x100



x1000

---

1GB



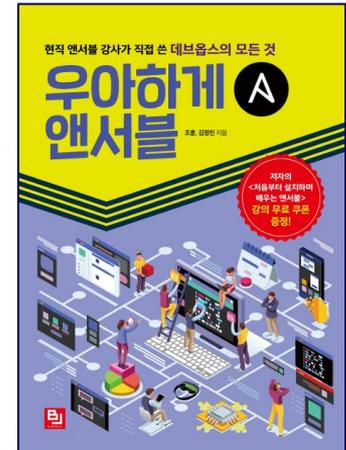
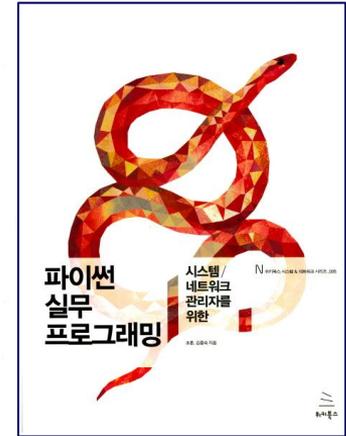
[ 클라우드 솔루션\_아키텍트 ]@Magazone

CNCF Ambassador | CCIE DC, CK{A | AD | S}, VCIX-NV6



시스템/네트워크 IT 벤더의 경험 이후, 메가존 GCP 클라우드 팀에서 쿠버네티스와 연관된 모든 프로젝트에 대한 Tech Advisor 및 Container Architecture Design을 제공하고 있습니다. 그 외에 페이스북 'IT 인프라 엔지니어 그룹'의 운영진을 맡고 있으며, 오픈 소스 컨트리뷰터로도 활동하고 있습니다.

그 외에 가지고 있는 지식을 공유하는 것을 좋아하여, 인프런/유데미에서 앤서블 및 쿠버네티스에 관한 강의를 기재하고 있으며, 또한 아는 지식을 문서로 남겨야 한다고 생각하기에 책(『시스템/네트워크 관리자를 위한 파이썬 실무 프로그래밍』, 『우아하게 앤서블』), 『컨테이너 인프라 환경 구축을 위한 쿠버네티스/도커』(길벗) 이 있고, IT 잡지에 기고문을 쓰는 활동도 함께하고 있습니다. **CNCF 앰버서더 및 네이버 클라우드 앰버서더**로서도 쿠버네티스 생태계가 더 활발하게 퍼질 수 있도록 기여하고 있습니다.

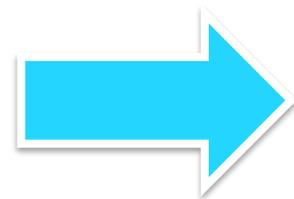


<https://github.com/SysNet4Admin>



<https://www.linkedin.com/in/hoonjo>

About KWOK | OpenInfra 2023





# Kubernetes SIGs ( <https://github.com/kubernetes-sigs/> )

Org for Kubernetes SIG-related work

Follow

## ► Special Interest Groups

### Popular repositories

**kubespray** Public

Deploy a Production Ready Kubernetes Cluster

● Jinja ☆ 14.1k 🍴 5.9k

**kind** Public

Kubernetes IN Docker - local clusters for testing Kubernetes

● Go ☆ 11.7k 🍴 1.4k

**kustomize** Public

Customization of kubernetes YAML configurations

● Go ☆ 9.8k 🍴 2.1k

**kubebuilder** Public

Kubebuilder - SDK for building Kubernetes APIs using CRDs

● Go ☆ 6.6k 🍴 1.3k

**external-dns** Public

Configure external DNS servers (AWS Route53, Google CloudDNS and others) for Kubernetes Ingresses and Services

● Go ☆ 6.4k 🍴 2.3k

**krew** Public

📖 Find and install kubectl plugins

● Go ☆ 5.6k 🍴 335



### People



[View all](#)

### Top languages

- Go
- Shell
- JavaScript
- Python
- PowerShell

### Most used topics

- kubernetes
- k8s-sig-cluster-lifecycle
- k8s-sig-api-machinery
- k8s-sig-storage
- k8s-sig-cloud-provider

Report abuse

### 📖 Repositories

🔍 Find a repository...

Type ▾

Language ▾

Sort ▾



# Kubernetes SIGs

Org for Kubernetes SIG-related work

Follow

kwok

Public

Kubernetes Without Kubelet - Simulates thousands of Nodes and Clusters.

Go 1,703 Apache-2.0 125 40 (1 issue needs help) 18 Updated 3 hours ago



external-dns

Public

Configure external DNS servers (AWS Route53, Google CloudDNS and others) for Kubernetes Ingresses and Services

Go 6,440 Apache-2.0 2,330 143 (4 issues need help) 80 Updated 3 hours ago



cluster-api-operator

Public

Home for Cluster API Operator, a subproject of sig-cluster-lifecycle

Go 84 Apache-2.0 25 9 (3 issues need help) 4 Updated 4 hours ago



kustomize

Public

Customization of kubernetes YAML configurations

Go 9,800 Apache-2.0 2,117 168 (22 issues need help) 49 Updated 4 hours ago



cri-tools

Public

CLI and validation tools for Kubelet Container Runtime Interface (CRI).

Go 1,346 Apache-2.0 403 17 (1 issue needs help) 4 Updated 8 hours ago



## People



View all

## Top languages

- Go
- Shell
- JavaScript
- Python
- PowerShell

## Most used topics

- kubernetes
- k8s-sig-cluster-lifecycle
- k8s-sig-api-machinery
- k8s-sig-storage
- k8s-sig-cloud-provider

Report abuse

main 6 branches 7 tags

Go to file Add file Code

wzshiming Merge pull request #690 from wzshiming/clean/clientset ... a6f049e 3 days ago 841 commits

.github	change log path	3 days ago
cmd	Cleanup for revive	6 months ago
demo	Add release scripts	2 weeks ago
hack	Add crd and clientset	3 days ago
images	Promote 0.3.0	2 weeks ago
kustomize	Add crd and clientset	3 days ago
logo	Add logo	7 months ago
pkg	Clean up clientset	3 days ago
site	Add crd and clientset	3 days ago
stages	Add a quote function for the value of the stage template	3 days ago
test	Merge pull request #683 from Zhuzhenghao/log-path	3 days ago
.gitignore	Add docs of node service	3 months ago
.golangci.yaml	Refactor the pki and the subcommand 'get kubeconfig'	3 weeks ago
.yamllint.conf	Add scripts for yamllint	4 months ago

About

Kubernetes WithOut Kubelet - Simulates thousands of Nodes and Clusters.

kwok.sigs.k8s.io

- docker
- kubernetes
- golang
- simulator
- k8s-sig-scheduling
- mult-cluster
- nerdctl

- Readme
- Apache-2.0 license
- Code of conduct
- Security policy
- Activity
- 1.7k stars
- 15 watching
- 125 forks
- Report repository

Releases 7

v0.3.0 Latest 2 weeks ago





# Vagrantfile



```
1  # -*- mode: ruby -*-
2  # vi: set ft=ruby :
3
4  # each of components to install
5  k8s_V = '1.26.00-00'      # Kubernetes (applying TBD)
6  docker_V = '5:23.0.1-1~ubuntu.22.04~jammy' # Docker
7  ctrd_V = '1.6.18-1'     # Containerd
8  ## /configuration variables ##
9
10 Vagrant.configure("2") do |config|
11   config.vm.define "kwok-cluster" do |cfg|
12     cfg.vm.box = "sysnet4admin/Ubuntu-k8s"
13     cfg.vm.provider "virtualbox" do |vb|
14       vb.name = "kwok-cluster"
15       vb.cpus = 1
16       vb.memory = 1024
17       vb.customize ["modifyvm", :id, "--groups", "/k8s-demo-set(github_SysNet4Admin)"]
18     end
19     cfg.vm.host_name = "kwok-cluster"
20     cfg.vm.network "private_network", ip: "192.168.1.202"
21     cfg.vm.network "forwarded_port", guest: 22, host: 60202, auto_correct: true, id: "ssh"
22     cfg.vm.synced_folder "../data", "/vagrant", disabled: true
23     cfg.vm.provision "shell", path: "kwok-build.sh", args: [ k8s_V, docker_V, ctrd_V ], env: { "PATH" => "$PATH:/usr/local/bin" }
24   end
25 end
```

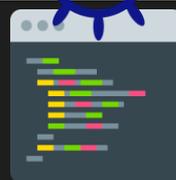


# Kwok-build.sh

```
22 # KWOK!!! Variables preparation #
23 ## KWOK repository
24 KWOK_REPO=kubernetes-sigs/kwok
25 ## Get latest
26 # KWOK_LATEST_RELEASE=$(curl "https://api.github.com/repos/${KWOK_REPO}/releases/latest" | jq -r '.tag_name')
27 ### Fixed version
28 KWOK_LATEST_RELEASE="v0.3.0"
29
30 # Install kwokctl #
31 wget -O kwokctl -c "https://github.com/${KWOK_REPO}/releases/download/${KWOK_LATEST_RELEASE}/kwokctl-${go env GOOS}-${go env GOARCH}"
32 chmod +x kwokctl
33 sudo mv kwokctl /usr/local/bin/kwokctl
34
35 # Install kwok #
36 wget -O kwok -c "https://github.com/${KWOK_REPO}/releases/download/${KWOK_LATEST_RELEASE}/kwok-${go env GOOS}-${go env GOARCH}"
37 chmod +x kwok
38 sudo mv kwok /usr/local/bin/kwok
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
61
62
63
64
65 # Deploy KWOK Cluster
66 kwokctl create cluster --name=demo
67
68 # Set context for KWOK Cluster
69 kubectl config use-context kwok-demo
70
71 # Add 9 nodes for kwok
72 kubectl apply -f https://raw.githubusercontent.com/sysnet4admin/_Lecture_k8s_learning.kit/main/A/A.029/9-bulk-nodes-w-taints.yaml
```



# 9-bulk-nodes-w-taints.yaml



```
1 # Source from: https://github.com/kubernetes-sigs/kwok
2
3 apiVersion: v1
4 kind: Node
5 metadata:
6   annotations:
7     kwok.x-k8s.io/node: w1-k8s
8     node.alpha.kubernetes.io/ttl: "0"
9   labels:
10    beta.kubernetes.io/arch: amd64
11    beta.kubernetes.io/os: linux
12    kubernetes.io/arch: amd64
13    kubernetes.io/hostname: w1-k8s
14    kubernetes.io/os: linux
15    kubernetes.io/role: agent
16    node-role.kubernetes.io/agent: ""
17    type: kwok-controller
18   name: w1-k8s
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38 ---
39 apiVersion: v1
40 kind: Node
41 metadata:
42   annotations:
43     kwok.x-k8s.io/node: w9-k8s
44     node.alpha.kubernetes.io/ttl: "0"
45   labels:
46    beta.kubernetes.io/arch: amd64
47    beta.kubernetes.io/os: linux
48    kubernetes.io/arch: amd64
49    kubernetes.io/hostname: w9-k8s
50    kubernetes.io/os: linux
51    kubernetes.io/role: agent
52    node-role.kubernetes.io/agent: ""
53    type: kwok-controller
54   name: w9-k8s
55   spec:
56     taints:
57     - effect: NoSchedule
58       key: kwok-controller/provider
59       value: test
```







→ kwok git:(main) (🌀 |hj-istio-classic:default)

00:00:00

Save Reset Start

Round: 1 00:00:00 ✎



**TL; DR**

1. KWOK은 시뮬레이션 용도이다.
2. 매우 적은 리소스로 스케줄링 및 테스트의 용도로 사용 가능하다.
3. 부가적으로 환경을 보호할 수 있다.

(#tag-environmental-sustainability, [랜드스케이프](#), 10월에 행사 예정)





감사  
!  
!  
!  
!  
!



압도적  
감사..!



질문 시간 입니다!!!

