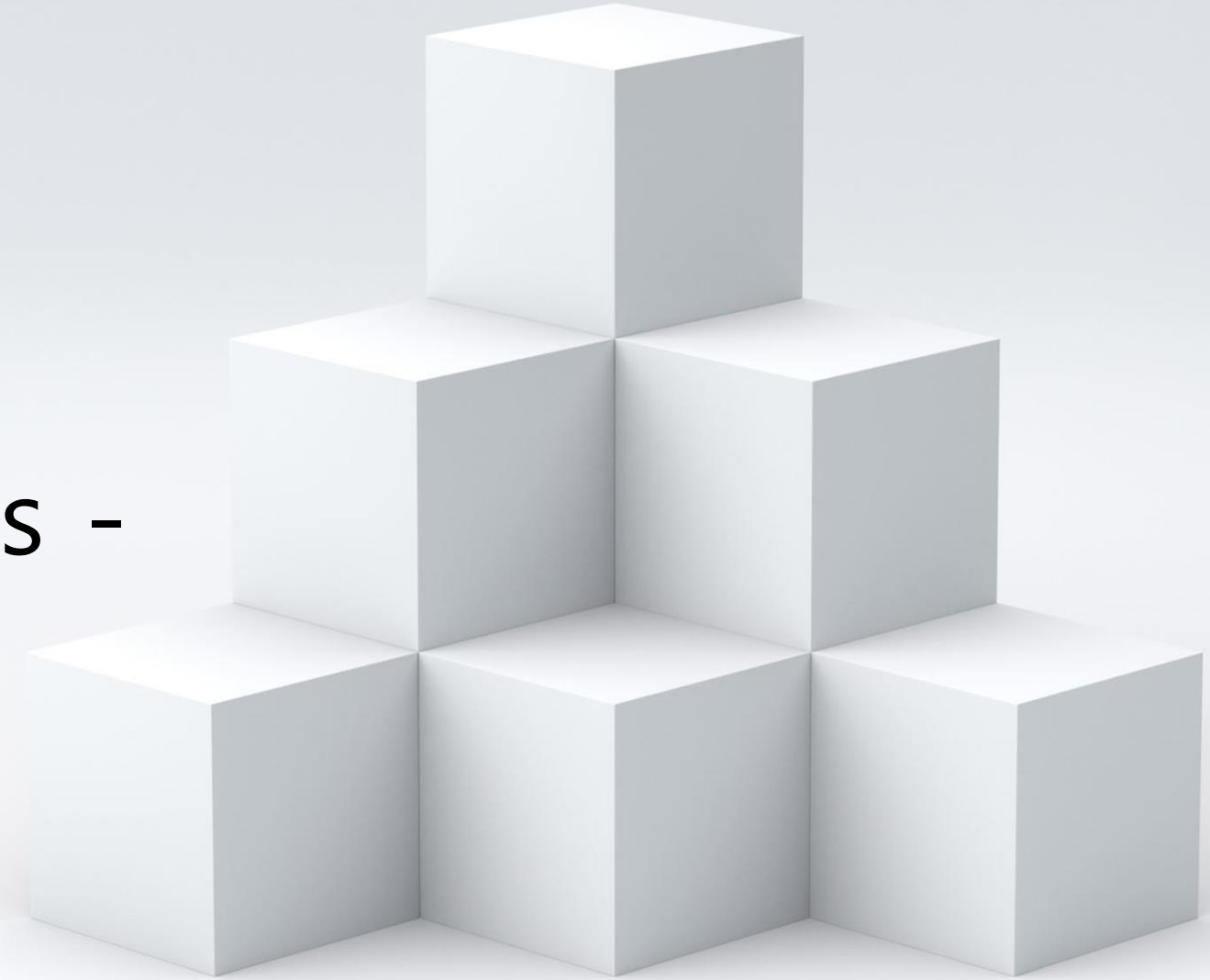
Software Engineering

- Kubernetes Implementations -



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2022

Installing k8s with kubedmin

- 공식 사이트
  - https://kubernetes.io/docs/setup/production-environment/tools/kubeadm/install-kubeadm/#verify-mac-address
- Kubedmin – k8s cluster를 시작하고 유지하는 도구
- K8s 1.24 version부터 dockershim을 지원하지 않아서 설치에 조금 더 번거롭고 복잡해 졌으나 kubedmin을 설치하는 과정을 통해 k8s 의 구성 요소에 대해 보다 깊이 있게 이해할 수 있음
- 실습에는 t2.medium(유료) EC2 기계 2 대가 필요
  - 비용은 사용 시간 당 미화 5.8 cents (우리 돈 70원) – 실습 연습을 위한 전체 사용 비용은 700원 정도 미만이 들 것으로 예상

TCP ports in K8s cluster deployment

- On master node,
  - 6443 : Kubernetes API server : Used by All
  - 2379–2380 : etcd server client API : used by kube-apiserver, etcd
  - 10250 : Kubelet API : Used by Self, Control plane
  - 10251 : kube-scheduler : used by self
  - 10252 : kube-controller-manager : used by self

- On worker nodes,
  - 10250 : Kubelet API : Used by Self, Control plane
  - 30000–32767 : NodePort Services : used by All

- On full fledged CSP' K8s services, there are many more ports required:

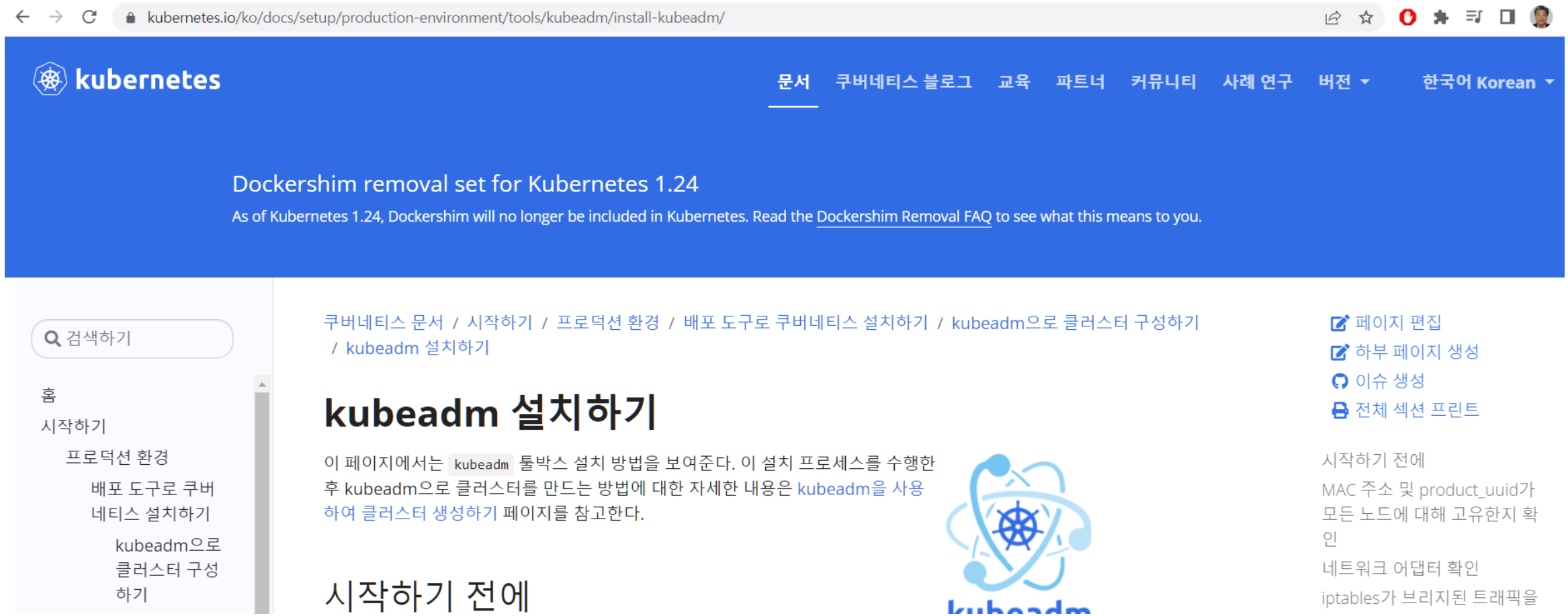
Procedures to deploy K8s clusters on bare machines

- Prerequisites
  - Configure hostnames (etc/hosts or hostnamectl set-hostname master-node)
  - K8s REQUIRES to turn the swap off on all the nodes (swapoff –a)
  - Firewall (allow nodes, containers, pods to communicate across the cluster, firewall-cmd)
  - Configure Iptables (/etc/sysctl.d/k8s.conf)
  - Make sure containers access host file system (in CentOS, disable SELinux)

- Kubernetes cluster deployment
  - Add Kubernetes Repository
  - Install kubelet, kubeadm, kubectl and docker
  - Enable and start the kubelet and docker service
  - Create Cluster with kubeadm
  - Setup Pod network
  - Join Worker Nodes
  - Test the cluster by creating a test pod

Kubeadmin

- https://kubernetes.io/ko/docs/setup/production-environment/tools/kubeadm/install-kubeadm/



설치 script 상세 안내 사이트

- https://computingforgeeks.com/deploy-kubernetes-cluster-on-ubuntu-with-kubeadm/