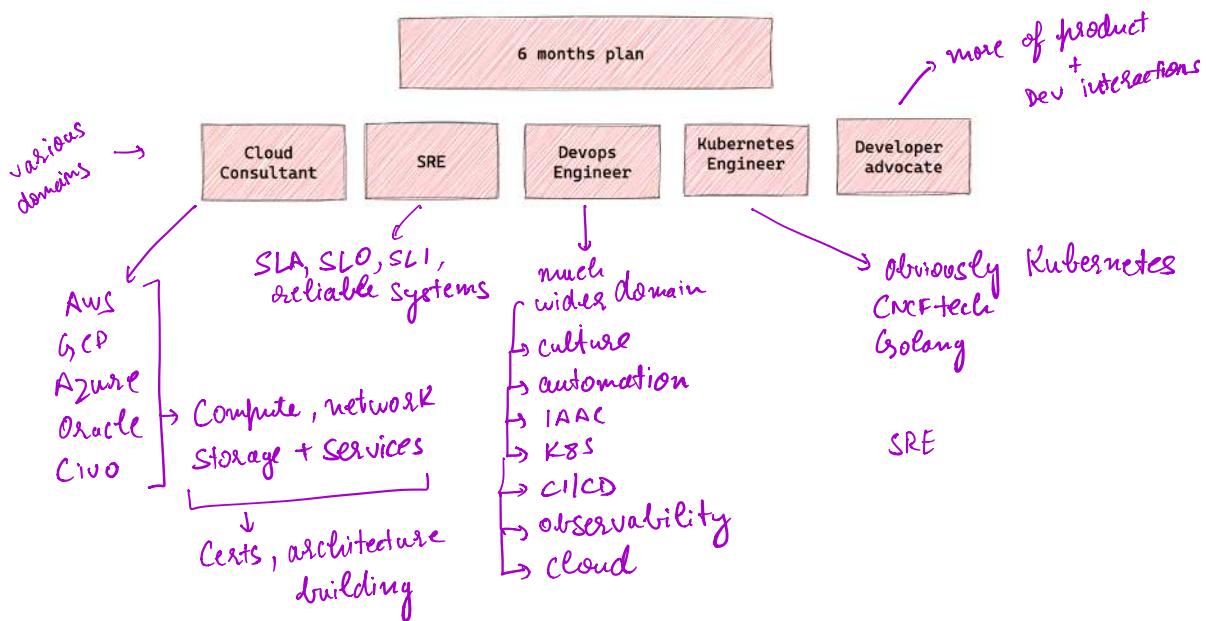
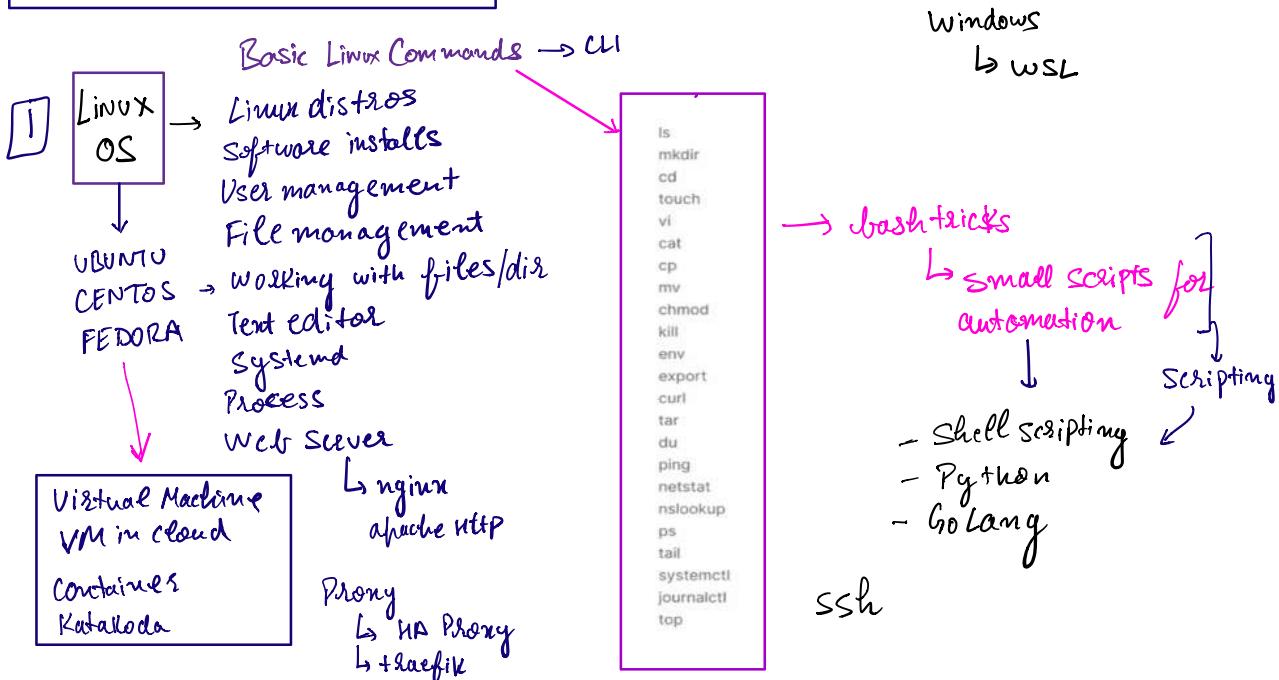


Roadmap 2022

ANYONE CAN LEARN



Prerequisites



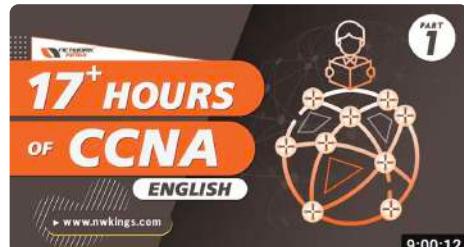
Resources → edx linux course by LF
Devops Prerequisites Course → YouTube



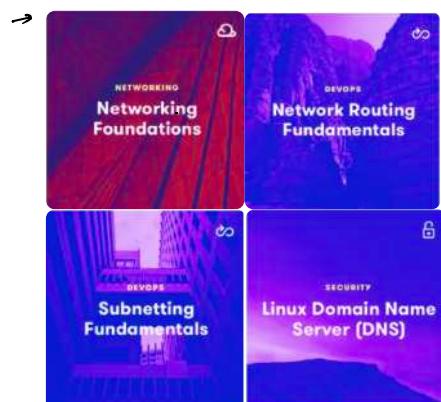
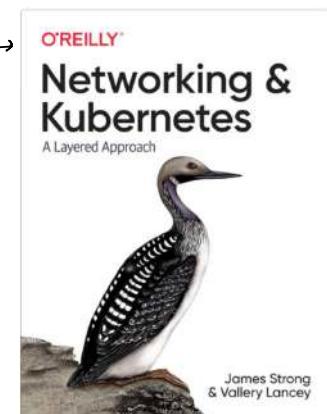
(2)

Basic Networking

- How system communicate
- LAN / WAN
- What is a switch, router, ISP ?
- IP address and types
- OSI model
- Basic Subnetting
- DNS basics
- Switching + Routing



Part 1 (Enough)



(3)

Introduction to YAML



(4) GIT → Source code
↳ has to live somewhere.

GitHub
GitLab

- How to work with git
- setup
- Create repo
- Commit and Push code
- Branching
- PR
- Public/Private repo
- Pull, rebase, fork, clone

Resources



FreeCodeCamp
YouTube



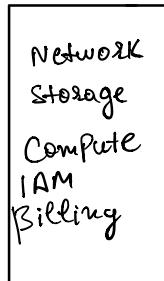
Kunal Kushwaha
YouTube



FreeCodeCamp
YouTube

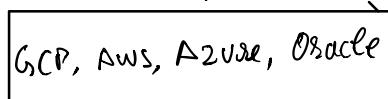
⑤ CLOUD

↳ Any Cloud provider



→ you have different services

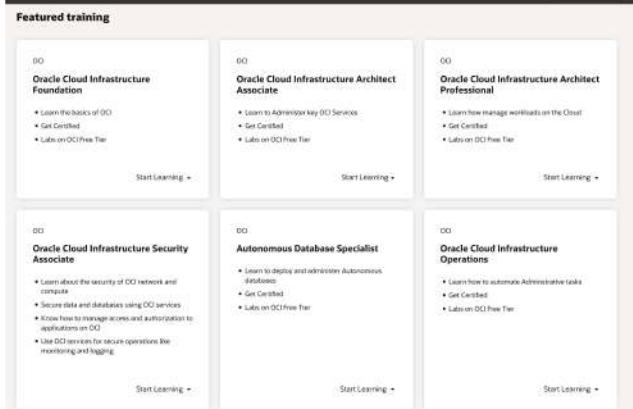
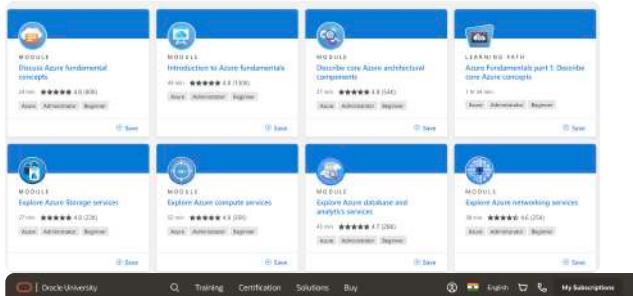
→ You need cloud account
use free credits for learning.



→ Big data, Databases
→ ML, Kubernetes

Civo → Cloud Native approach → managed Kubernetes

Azure ↴



Terms

- IAAS
- SAAS
- PAAS

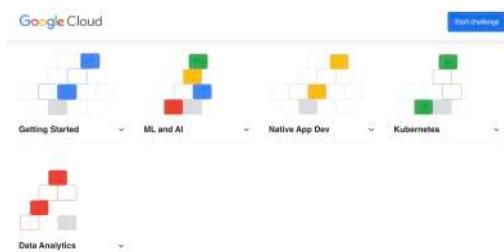
What is
- cloud concepts
- Benefits
- Infra

Resources



Associate

Devops Professional



GCP ↴

Oracle

→ You should be able to work with cloud
→ Learn quickly
→ Certs are add-on

⑥ Virtualization and Containers

→ Servers → virtualization → containers

What is → VM → Difference
Container

Container technology → Docker

→ Podman + Buildah

→ Kata

Build via Buildah
Run via Podman

build from dockerfile
inside container
K8S Cluster

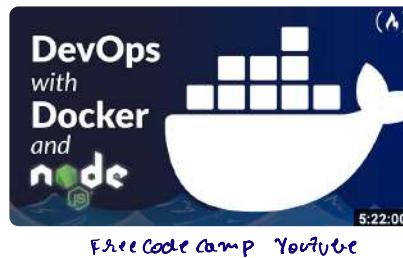
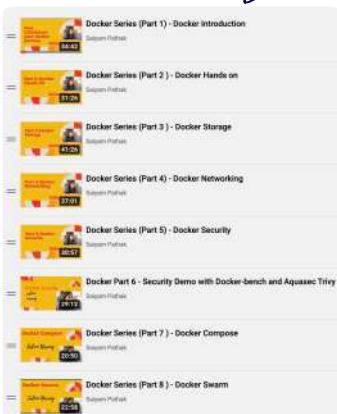
→ K8S → go off

→ K8S → CRI, containerd,
buildkit

All these are
open source projects.

Resources → Docker playlist
(My YouTube) ← Start simple

Docker (Many free
courses)



Advanced → Docker Security
Dockerfile Best Practices
Container scanning (trivy)



Ivan Blog Series

Dockercon



Docker deep dive ↑ (my YouTube)

Hackerspoil
YouTube

Concepts

↓
OCI

CRI

How to
↳ build
Push
Pull
tag
Run



OCI, CRI, ??: Making Sense of
the Container Runtime
Landscape in Kubernetes

Phil Estes, IBM

⑦ KUBERNETES → Container orchestration.
↓ a must learn for all domains

lot of Resources

What is
K8's
Architecture
Objects
Secrets
Configmaps
PV, PVC
Networking
Services

Mind Map
FOR COMPLETE
Kubernetes Engineer

HA install → Kubevirt
→ KAProny

How to setup
K8s on compute
using containerd

OBSERVABILITY

Security

CI/CD

Terraform
Pulumi
Crossplane
CAPI

Velero

Flux
Argo
Fleet

KUBERNETES

chaos
mesh
Litmus

auto-
Scaling

Service
mesh

Resources

① → Civo Academy

Before Kubernetes
8 videos • 0:26 mins
Discover the basics required to understand Kubernetes from the ground up, including a primer on Linux and Docker which acts as a quick refresher for people who are already familiar with them and helpful for anyone getting started.

Kubernetes introduction
8 videos • 0:16 mins
In this section we discuss Cloud Native Computing Foundation (CNCF) Landscape, what exactly Kubernetes is and the problems it aims to solve, and where K8s fits into this.

Kubernetes concepts
8 videos • 0:17 mins
Learn about the Kubernetes and K8s architectures and how they differ. We'll also cover the high-level concepts such as Kubernetes objects, namespaces, labels and selectors.

Kubernetes setup
7 videos • 0:43 mins
You'll learn how to get Kubernetes set up locally, installing and using Kubectl - the k8s command-line tool. Plus we'll look at minikube, kubeadm and containerd, as well as Civo Kubernetes cluster administration and our CLI.

Kubernetes objects
13 videos • 0:21 mins
This thorough course looks at all the must-know objects you'll encounter when managing your Kubernetes infrastructure. This includes the pod lifecycle, containers, resource management, deployment, and StatefulSets.

Kubernetes networking
6 videos • 0:27 mins
Things get a little more technical as we delve into Kubernetes networking. You'll learn networking basics before diving further into CNI, pod to pod, node to node and container to container networking.

Kubernetes service
4 videos • 0:38 mins
In this section you'll learn about Kubernetes services and why they are vital for exposing applications running on your cluster. Get to grips with ClusterIP, NodePort and LoadBalancer.

Kubernetes volumes
11 videos • 0:40 mins
Get a base understanding of volumes in our introduction chapter, before running through theory and demos for EmptyDir + HostPath, EmptyDir Volume, HostPath Volume, Remote Storage, and NFS PersistentVolumes.

Kubernetes config and security
8 videos • 0:31 mins
In this section we'll walk you through configuring and securing your Kubernetes cluster. With guides and demos we'll cover ConfigMaps, Secrets, access control (RBAC, authentication), and more.

KUBERNETES FROM ZERO TO HERO!
3:36:55
Techworld with Nana YouTube.

④ Kube.academy



③ → edn, course by LF

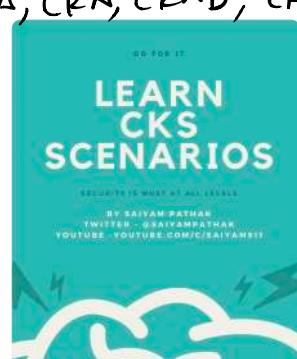
Introduction to Kubernetes
Want to learn Kubernetes? Get an in-depth primer on this powerful system for managing containerized applications.
Send by email



KCNA
KUBERNETES AND CLOUD NATIVE ASSOCIATE

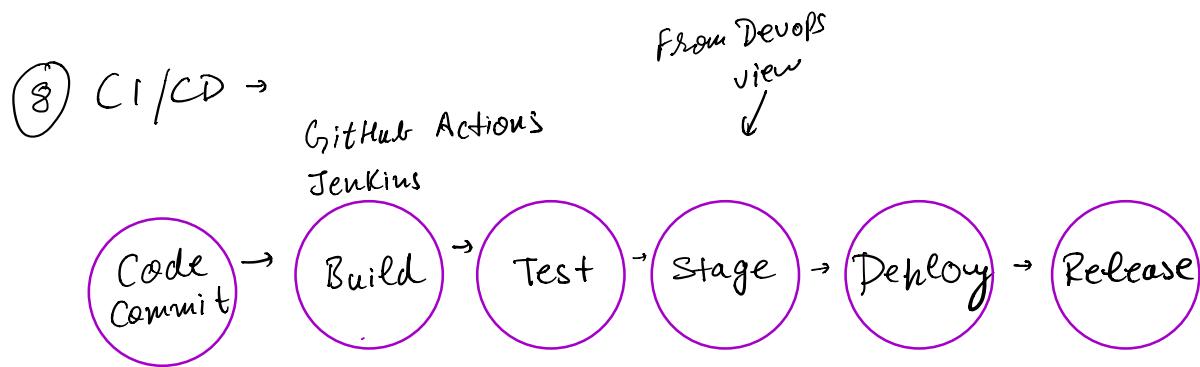
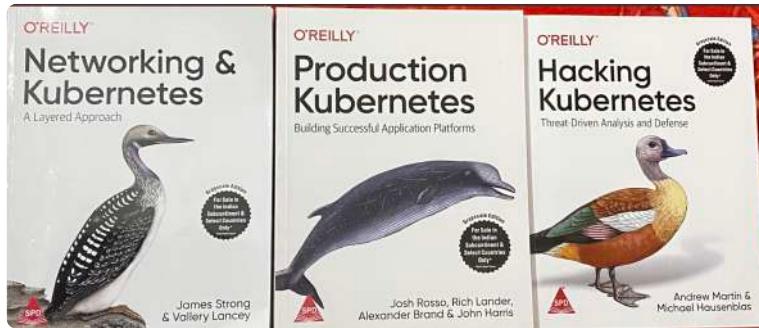


→ Certs magic show
→ Certs official
My
CKS Book



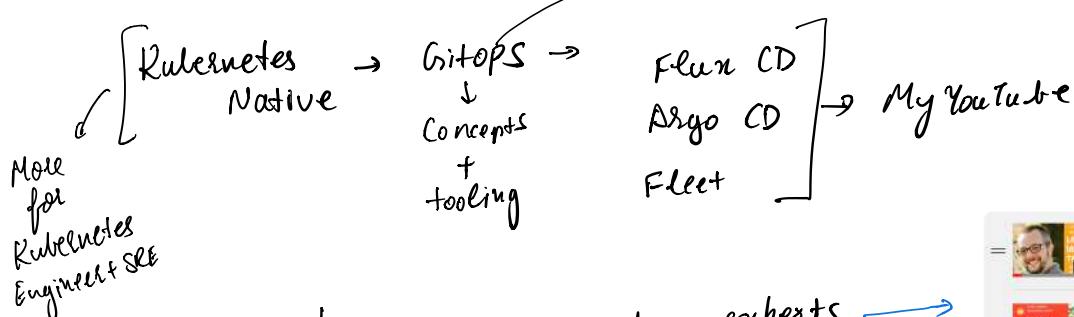
Path to certification
→ KCNA, CKA, CKAD, CKS
→ Certs magic show
→ Certs official
My
CKS Book

More depth
knowledge →



What are the concepts → CI/CD

Landscape → CD Foundation



CI/CD → must watch from experts

Week



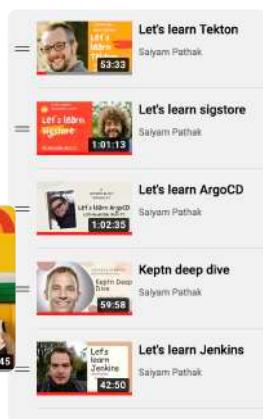
Simplilearn YouTube



Techworld with Nana



My YouTube



⑨ IAC → Infrastructure as Code

- DO - Terraform
- ~~RE SRE~~ - Crossplane
- ~~RE SRE~~ - Pulumi

Terraform →



IAC concepts

- code to create infra
- automate → creation, updating, deleting infra
- no manual errors
- no misconfiguration
- state of your infra.

Crossplane → my youtube

- CNCF Minutes Crossplane
- Crossplane deep dive
- Crossplane composition deep dive



Ansible



⑩ Observability

Monitoring → Nagios

Monitoring → Prometheus

TSDB

Thanos for HA



Logging → Loki

Logging → Elastic



Grafana
visualisation

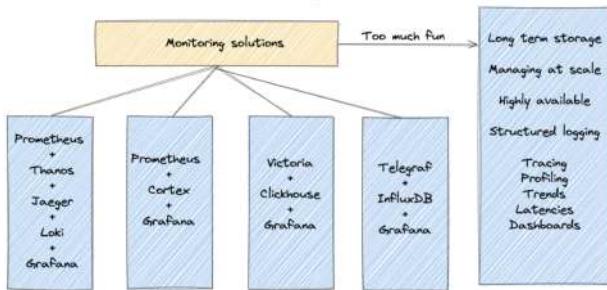
Tracing → Jaeger

Profiling → Parga

- what is observability?
- observability pillars
- tools
 - ↳ setup, configuration
- OpenTelemetry
- OpenTracing



Resources



(11) Chaos Engineering

↳ chaos mesh

Litmus



(12) Policy

↳ Kubewarden
↳ OPA
→ Kyverno
↳ js Policy



Introduction to Kyverno
Learn how to improve the security posture of your Kubernetes cluster using Kyverno.

Kyverno in Production
Improve the security posture of your Kubernetes cluster.

Styra Academy

OPA Policy Authoring

```
package authz
# allow all GET requests
#   to /pets
default allow = false
allow [
  input.method == "GET"
  input.path == "/pets"
]
```

↳ Istio
Linkerd

(13) Service Mesh

Introduction to Service Mesh with Linkerd

Learn the basics of the service mesh and get hands-on practical experience with Linkerd, the open source, open governance, ultra-light CNCF service mesh for Kubernetes, including transparent mTLS, gRPC metrics, traffic sharding, and multi-cluster communication.

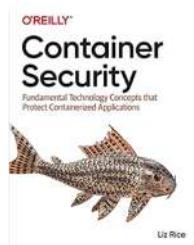
> Send by email



(14) Others → Supply chain security

Kubernetes Security

↳ CKS



→ CNCF Landscape

↳ Operators

↳ what are they

↳ how to write Kubernetes operator

↳ operator SDK

KF VI

YOU CAN DO IT!!!

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SHARE THIS ROADMAP

GET INTO THE WORLD OF TECH