DevOps Process/Phase
CI/CD

CI → Automation

Jenkins   Manual

- Clone Repo (Source Code) = git
- Build (Tool → Maven)
- Test (JUnit + Maven)
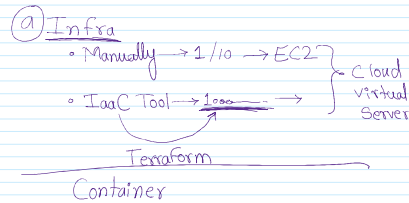   └→ Simple ——→ Mvn & Junit

- Deployment

Infra → Ready → Monitor → Notify → RollBack

- VBox → Virt
- Cloud → Aws

ⓐ Infra
- Manually → 1/10 → EC2 ⎫ Cloud
- IaaC Tool → 1000 → ⎭ Virtual Server

Terraform

Container

Deploy

Infra

Resources

| Aws | EC2 |
| VBox | VM |

→ Java, Maven, Tomcat.

Running/Service/Tool

Cloud
↓
Terraform

- Web Server/App Server/Database Server.
- Container

Configuration Tool = Ansible

—— Build (Cloud = IaaC = TF)

—— Stay (Process/Tool = Ansible)

DO

(git) code
Plan/Ticket
(TF) Cloud/Docker Infra + ... → Deploy
→ Config → Ansible

Maven — Dev   Ops — Monitoring

Test

Development   Operation

DevOps (SE)   SysOps

SO:
- TF
- Ansible
- Docker
- K8S

Docker → K8S

Linux ⟨
Cloud → TF → P1,2
      → Ansible → P1,2
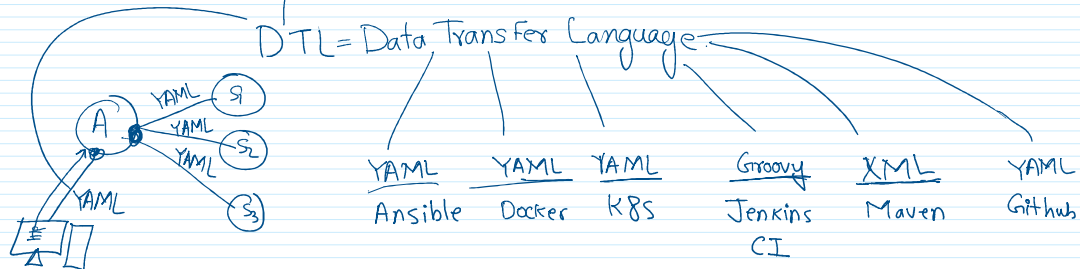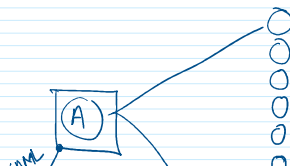
Configuration Tool
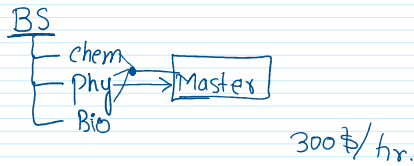- Provides details
  +
  Manage Service/Server

Leader ———→ Ansible (YAML)

DTL = Data Transfer Language

A — YAML — S1
  — YAML — S2
  — YAML — S3
  — YAML —

| YAML | YAML | YAML | Groovy | XML | YAML |
| Ansible | Docker | K8S | Jenkins CI | Maven | Github |

DTL
① XML
  ↓
② Groovy
  ↓
③ JSon
  ↓
④ YAML ✓

A
○
○
○
○
○
○

A

YAML

YAML

Ad Hoc Command   Groovy
                        Pipeline

Jenkins

Code → Build → Test → Deploy - - - - -

SysOps

✓ IaaC Tool = Terraform

Configuration Tool = Ansible

AI → predict
              70/80

Expertization   Known

                       DevOps

BS
├ chem
├ phy → Master
└ Bio

300 $/ hr.

DevOps   SysOps   Cloud

Manually   ≡   DO = CI/CD/CD
                TF/Ans
Automation J   Manually

            Sol
                                             SO = ∘ IaaC
              Demand   +   ∘ Archi
                                             DO
Infra   +   ∘ pattern
① Virtualization = Practice   Cloud ∘ process.
                            Server Service
② Cloud = Industry   ①   Tool

                                Web   Database
                                Server   Server

                                ngnix.   MySQL

Web Server

nginx.   Mysql
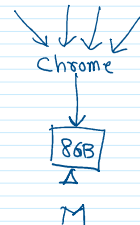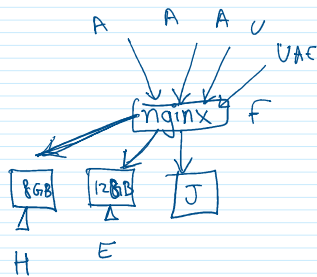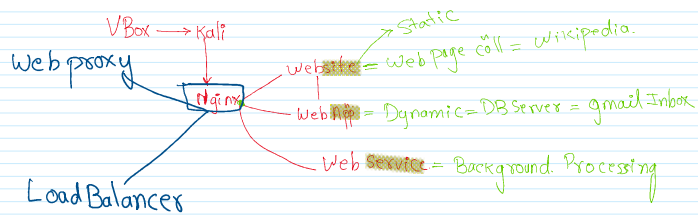
Web Server
↳ Infinite Program
↳ Service's

○ Tomcat = Java.
Fastest 80% ○ Nginx = Go, Custom, PHP, etc
   ○ ~~JBB~~ JBoss ⎫
   ○ WebLogic ⎬ = Java.
   ○ MS IIS = MS.Net (C#.Net)
   ○ flask = Python

VBox → Kali
Web proxy   → Static
              website = Web Page coll = wikipedia.
         nginx
              Web App = Dynamic = DB Server = gmail Inbox
LoadBalancer
              Web Service = Background Processing

A   A   A U
              UAE
    nginx   F
8GB 12GB J   Chrome

H   E   8GB

                           M

              1 → charge → Bill →
(Linux) = AWS = 12 month →
    +
(MS   = MS Azure
 windows)   SG   750
                 (firewall) (EC2)
              Always

    A₂   Aws   A₂
    C₁   C₂   C₃

              C   B2B

         ① AWS = 2006 to 2023 = Leader → CV
   TF ← ② MS Azure

TF ──② MS Azure
   ──③ GCP
35+

I)   mod   workflow
Linux   Shell   Pipeline
> ls   Prog   ◯
                    |
> pwd   ◯
                    |
①   ◯