❋ Physical Physical Server.
— Enterprise

.war
Tom
java
OS

↔

[One Server] ↔ [Application]

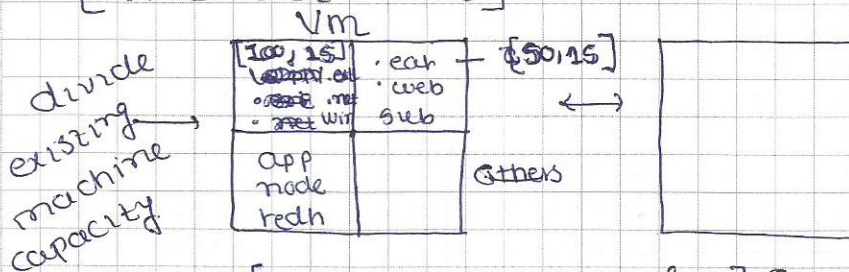300 G (RAM) [Not Needed by Tomcate 2GB RAM.
32 cpus   java + total (could be 100 GB]
1000Gb (HD)

↳ One Appli. ↔ One Server (wasting Resources then)

↳ Disk speed, HD measurement Not possible Before.
(Physical Server)

* [Virtualization]
        Vm

divide
existing
machine
capacity

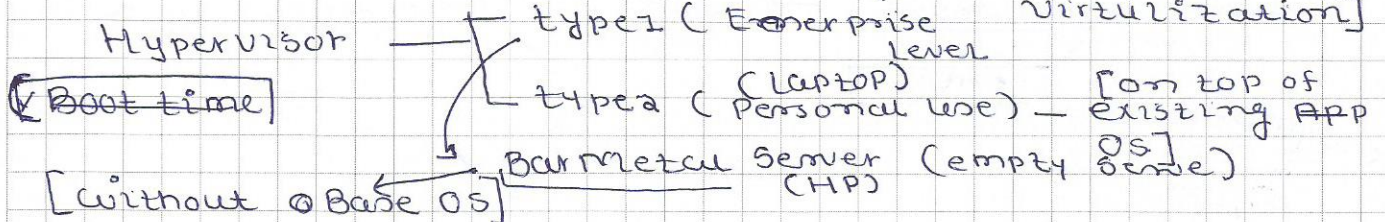| 100, 15 | . each | — [$50,15] |
xxx .net	. web	
xxx win	sub	
app node redh	Others	

↔

→ [Hardware Virtualization] [Hardware divide]
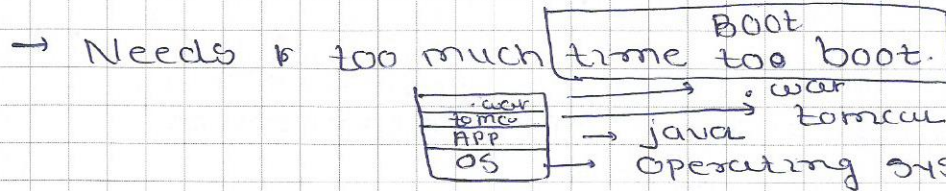   100 GB RAM,
    — own IP, Own Hardware — [each machine → each WIN]

Oracle VM2 virtualBox Manager
    Ubuntu — 3.5MB RAM
            20 GB.

→ VirtualBox (Software called Hypervisor to enable
                                    Virtulization]

Hypervisor ———[type1 (Enterprise
                            Lever
              [type2 (Laptop)   [on top of
                    (Personal use) — existing App
[without @ Base OS] ↳ BarMetal Server (empty state)   OS]
                        (HP)

  → Hardware Lever Virtualization (own OS, own
                                        resources on
                                        Hardware Level)

  → Needs ᵣ too much | time too boot. |
                    BOOT

| .war | → ; war
| tomca | tomcat   [wait after
| APP | → java   Boot]
| OS | → Operating System

  → [OS maintance] - Patching OS, OS Øversion
    [along APP, keep applying   (decommission)
                Patch)

↳ [Dynamic Allocation] Application
    — 100gb assign to windows App. [Need more
    — dynamically not possible (Need to do memory]
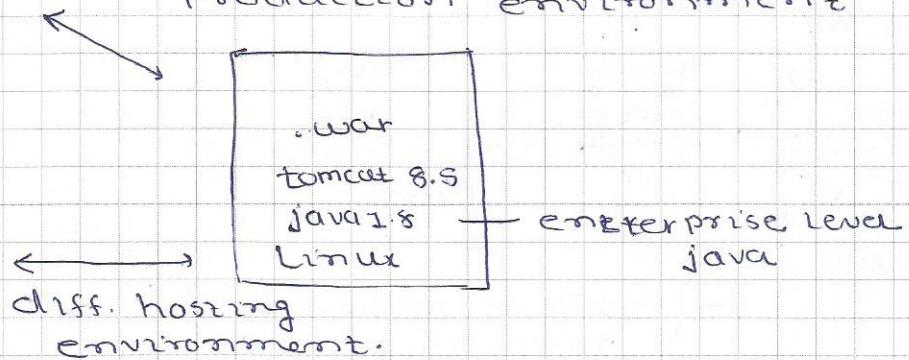   manually

* — [Scalability] — increasing Capacity.
     [Amazon app.] → more capacity.
   → number of windows or new VM

 — Request to of D.M before 3-months.
        → install OS (ubuntu, window]
        — middleware.
        — deploying APP.

 — take more time to scale up.
 — challenge of high available. (test server)(need
                                              more
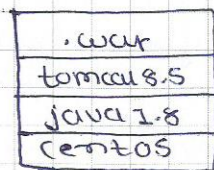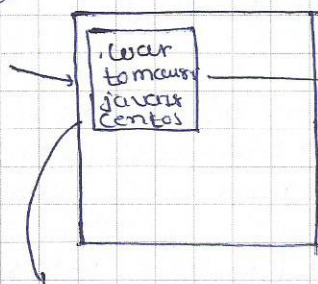   test)
                                            Before

. war
testserver
java
eclips
window

APP works locally But Not in
Production environment

. war
tomcat 8.5
java 1.8
Linux

— enterprise level
       java

diff. hosting
environment.

* Devops (collaboration with Dev)
    — prepare common environment

. war
tomcal 8.5
java 1.8
centos

← test APP here.

1000 Production
          machine
1000 OS
1000 java
1000 Deployment

(Readymat)

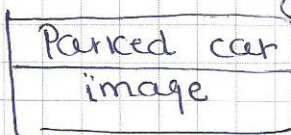| . war |
| tomaust |
| javark |
| centos |

[put same snapshot on production.]
    [with include everything]

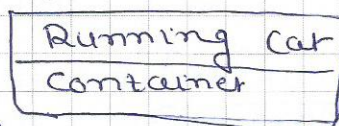Snapshot called image. (APP. → dependencies
                              — (sleeping
                                    mode)
        Run ←
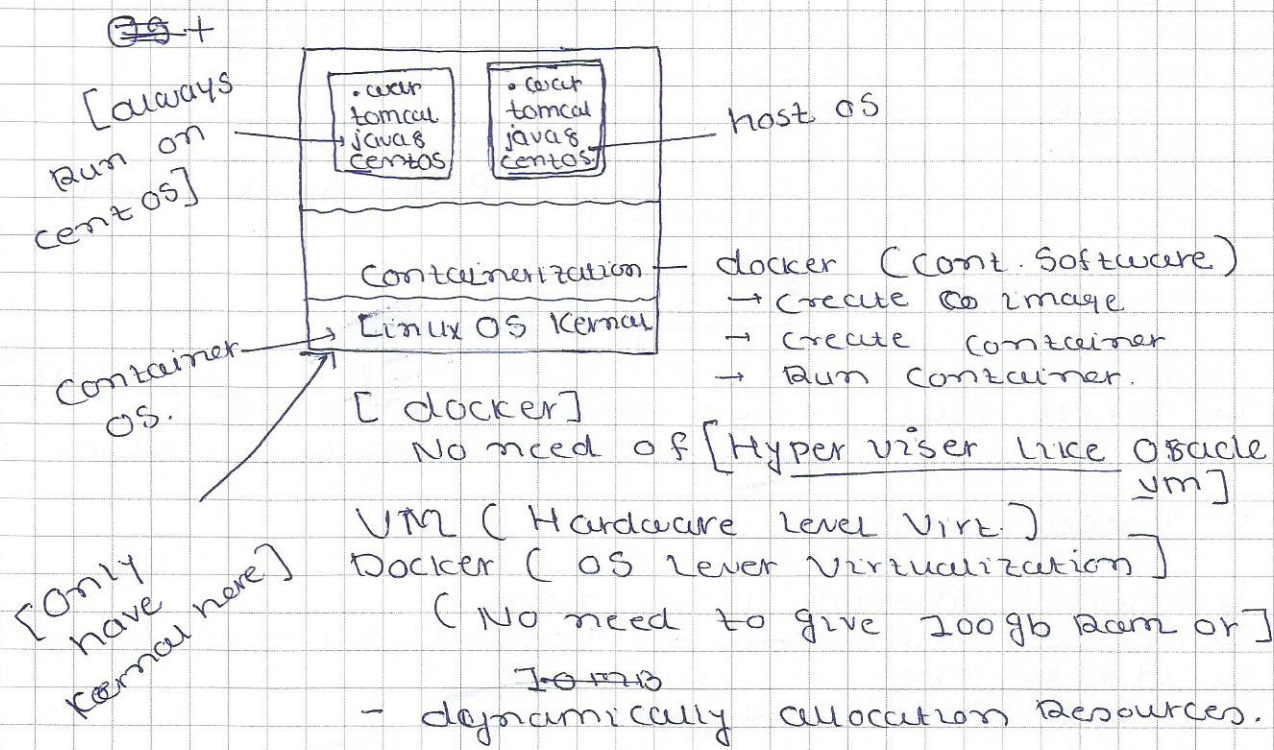   time formate of image container]

→ tomcate container
       Running   (dynamic) [container]

Parked car
image

Running car
container

[capability to
response to user
request]

                stop
Engine Stae   engine started

* How to Run Container? [OS Required, Linux OS]

- Containerization Software - alloues to Run Container
  pres.

OS +

[always Run on cent OS]

. cush tomcal java 8 centos

. cush tomcal java 8 centos

host os

Containerization — docker (Cont. Software)
→ Create an image
→ Create container
→ Run container.

Linux OS Kernal

Container OS.

[docker]
No need of [Hyper viser Like Oracle
vm]

[Only have kernal here]
kernal
VM (Hardware Level Virt.)
Docker (OS Level Virtualization)
(No need to give 100 gb Ram or]
10 rb
- dynamically allocation Resources.

→ Light weight OS - (mast be light weight os)

→ CentOS, {Ubuntu} Suse
      ↓   ↓   ↓
  ↳ PS command
  ↳ Vim editor
  ↳ many feature.
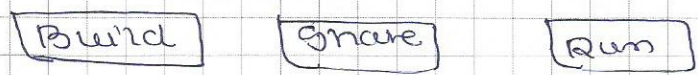
APP
+
Dependencies
-image-
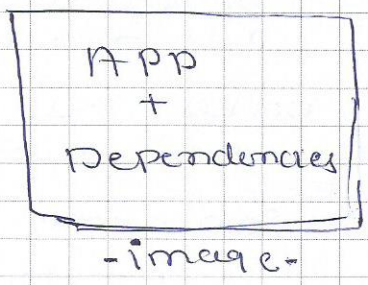
→ OS with 5.6 rnb of with available (No have kernal]

→ Kernal - main problem. (

→ Start app quickly in 2 second (boot time issue)

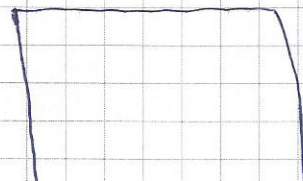→ more Container available from image (a-second)
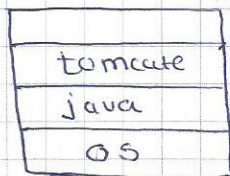
→ Create an image → Run as container

[Build]   [Share]   [Run]

      - Prod
      - dev.

→ NO Config issue.
→ NO envu. issue.
→

* hub-docker — pre-build image — tomcate
                                 — centOS image
                    (offically   — suse linux
                    organized created) — Apache
                                — Ngix

tomcate image

| tomcate |
| java |
| OS |

Prep-build images.

↳ Docker pull Lead devops/petclinic:37 (version number)
                  ↳ by default connect to docker hub.

↳ docker images

↳ Docker history image-name
↳ Docker run -d -P Leaddevops/petclinic:37
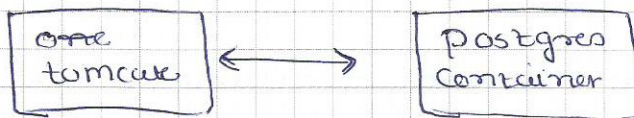↳ docker exec -it id   -
     cat   /etc/../ debian

↳ docker ps   ✓ web sever container
↳ docker run -d -p ngix
   — unable to find locally
     pull from hub.

↳ Docker pull alpine
  alpine — 5.6 MB (lightweight)

     Container as service

| one tomcate | ←→ | Postgres Container |

        one

→ docker volume → host machine.
                   ↑ data storage.

→ Docker-swarm (cluster level)
                 functionality.