

Agenda (24 - Nov)

10 to 11:30 AM

- Elastic Load Balancers
- Auto Scaling
- Route 53

11:45 to 1:15 PM

- S3 (Simple Storage Service)

2:15 to 4:15 PM

- Security and Network Management

Automation

EC2
ECS DB

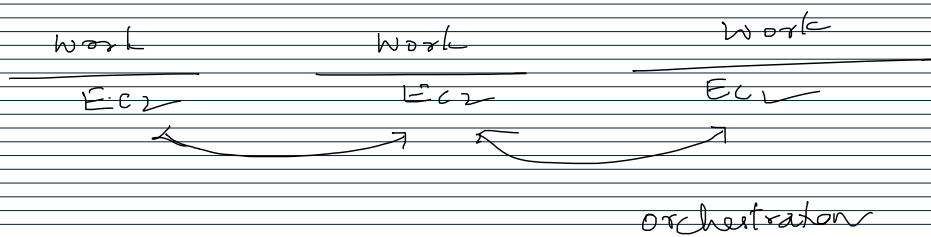
~~AWS~~
→ CloudFormation

→ Puppet
Chef
Ansible
Terraform

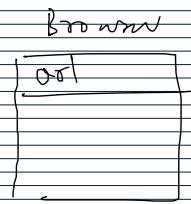
non-AWS

- time consuming
- prone to error

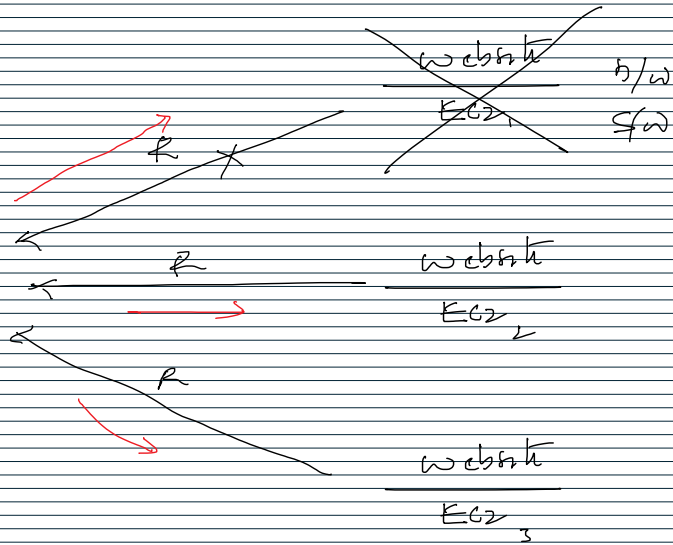
Requirements →



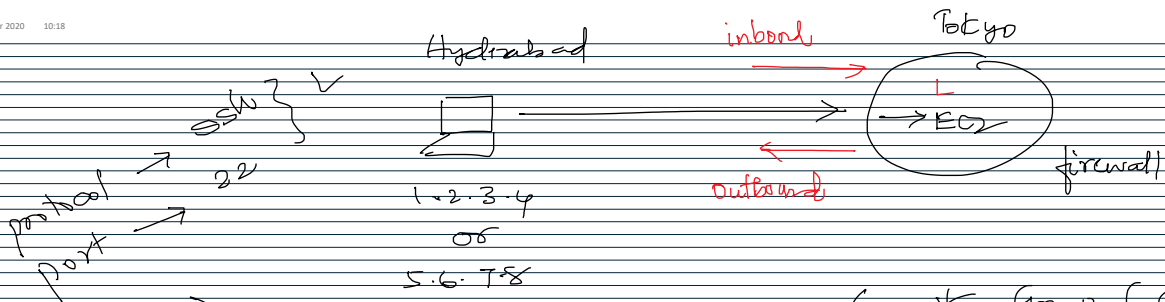
- health checker



ELB
(url)



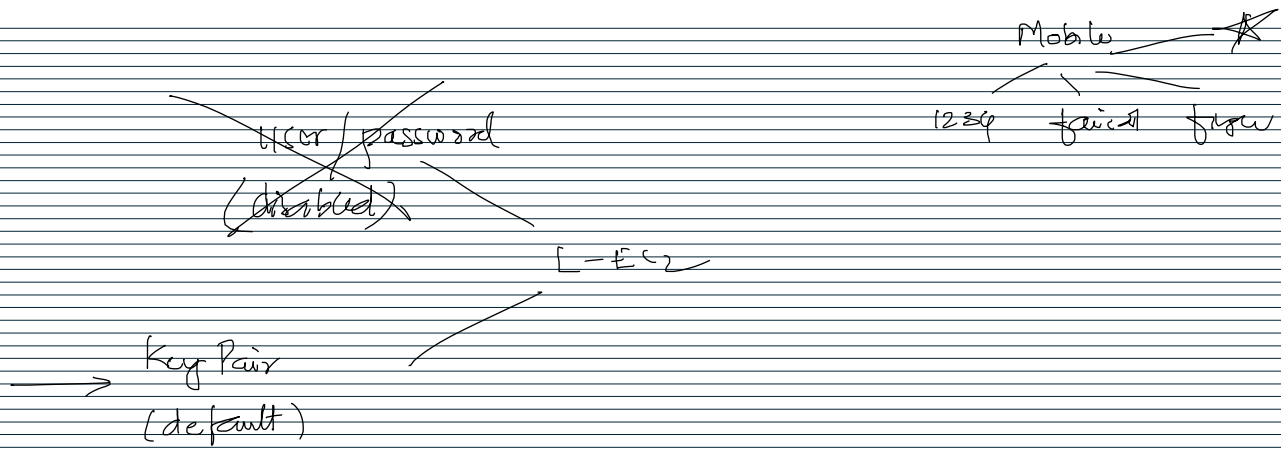
Routing {
- Round Robin Routing
- Weight Based Routing



Security Group (change to firewall)

inbound allow
outbound allow

22 - ssh - 0.0.0.0/0



- ✓ 1) Key pair
- ✓ 2) Security Group

Host

Path

- username

- ip : 22

- keypair

NV

EC2

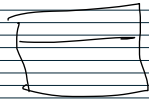
SG

IP

EC2

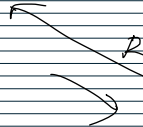
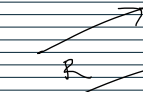
2

- remove index.html
- rm -rf index.html
- stop / terminate EWS
- stop apache2



Classic
EBS
(40t)

2 trans



index.html (I am wss)

apache2

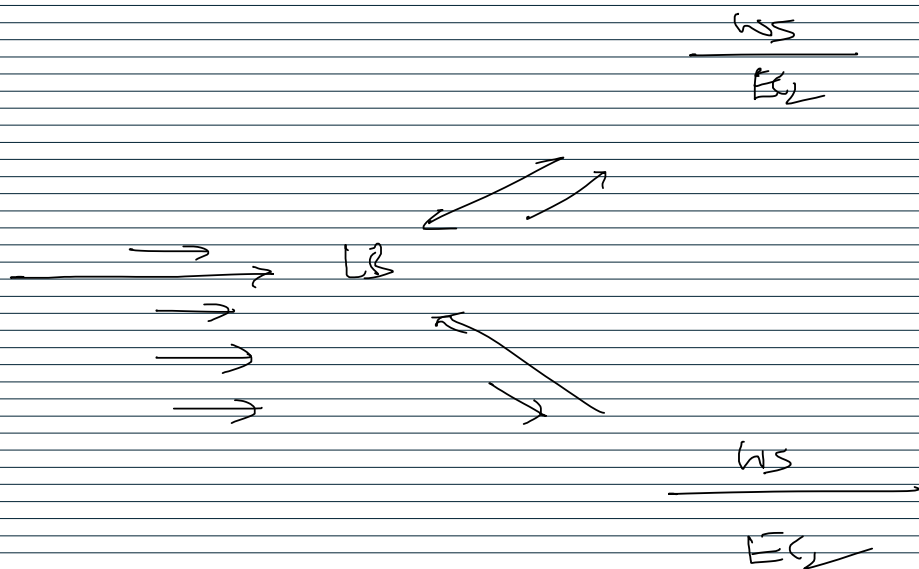
u = EWS₁ (ip₁)

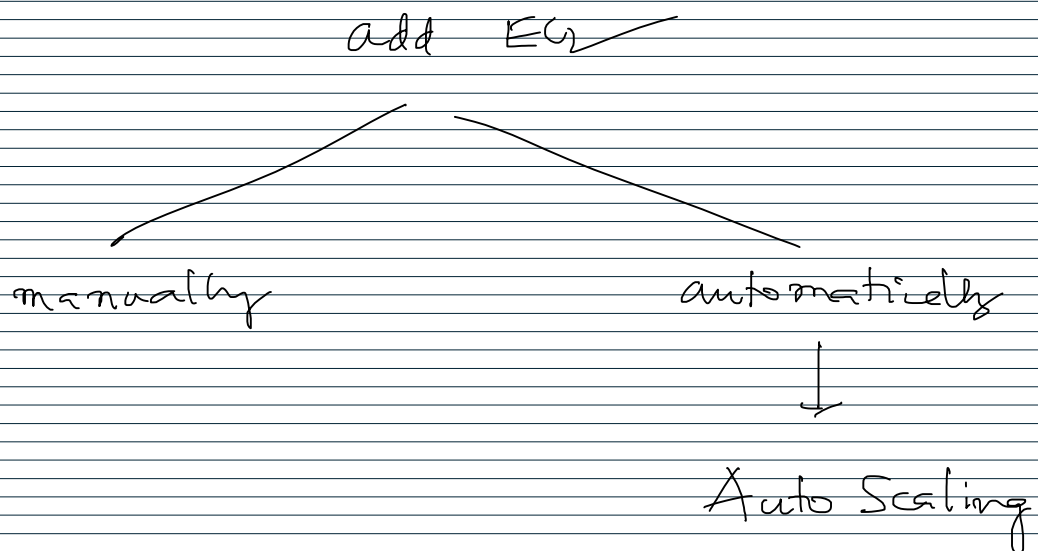
~~index.html (I am wss)~~

~~apache2~~

~~u = EWS₂ (ip₂)~~

Putty





IPL \rightarrow Hot stan

Netflix

150 server
10 server

100 server

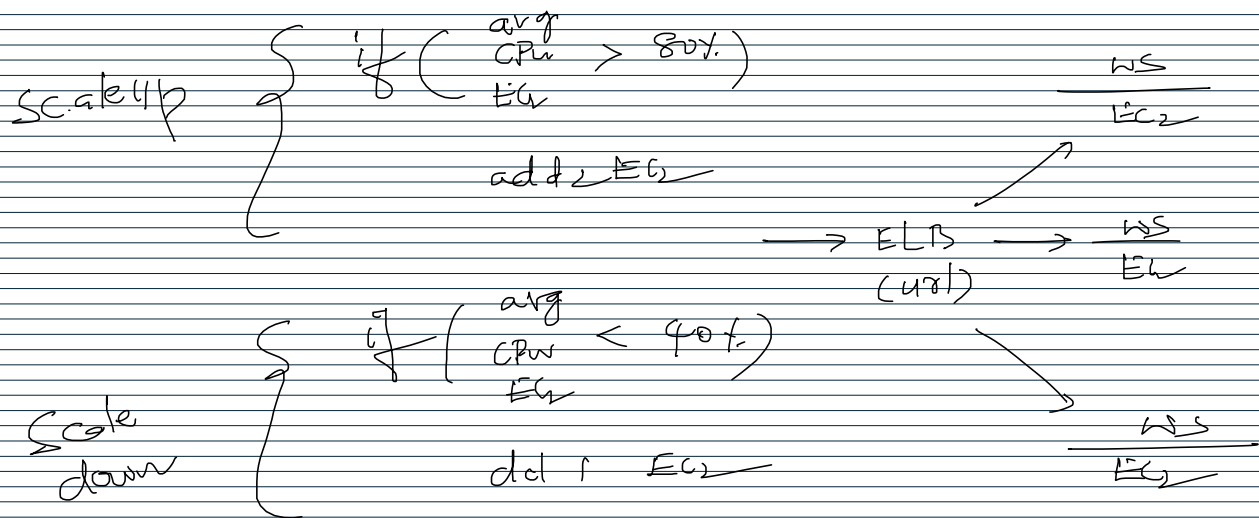
IPL Pool

20 server

IPL Pool

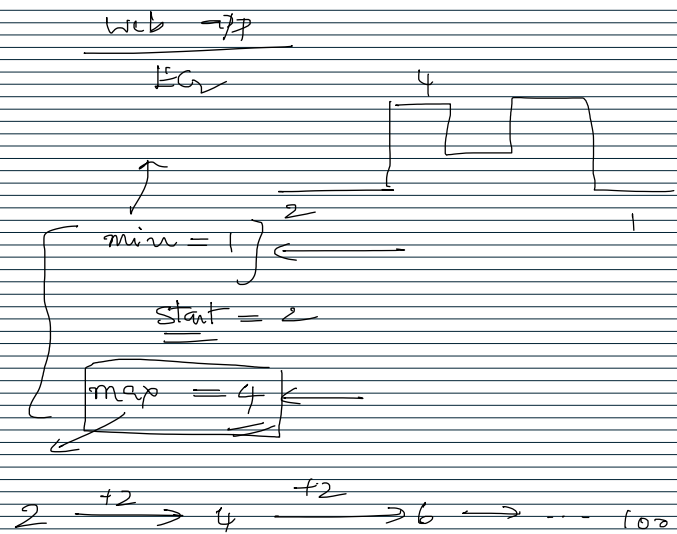
Auto Scaling (free)

24 November 2020 11:16



Scale up } if ($\frac{\text{number of}}{\text{logged users}} > 1000$)
add 2 E2

Scale down } if ($\frac{\text{number of}}{\text{logged users}} < 1000$)
del 1 E2

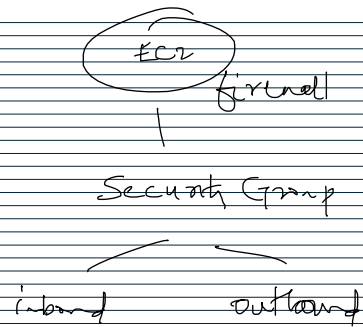


— 2500 SG in a Region

Service Ticket SG ↑

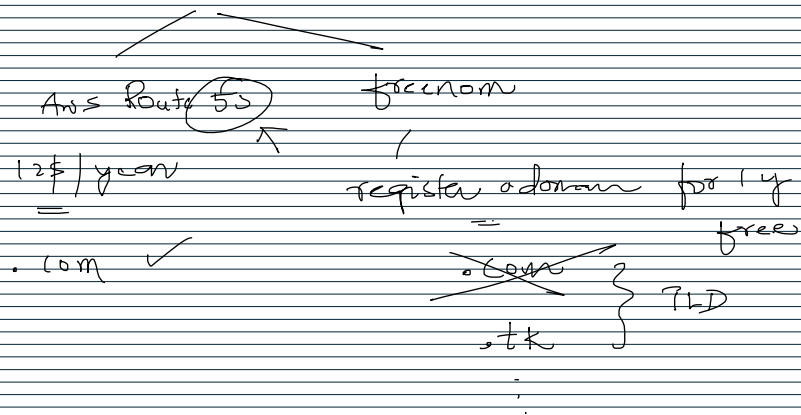
100 usdg → X

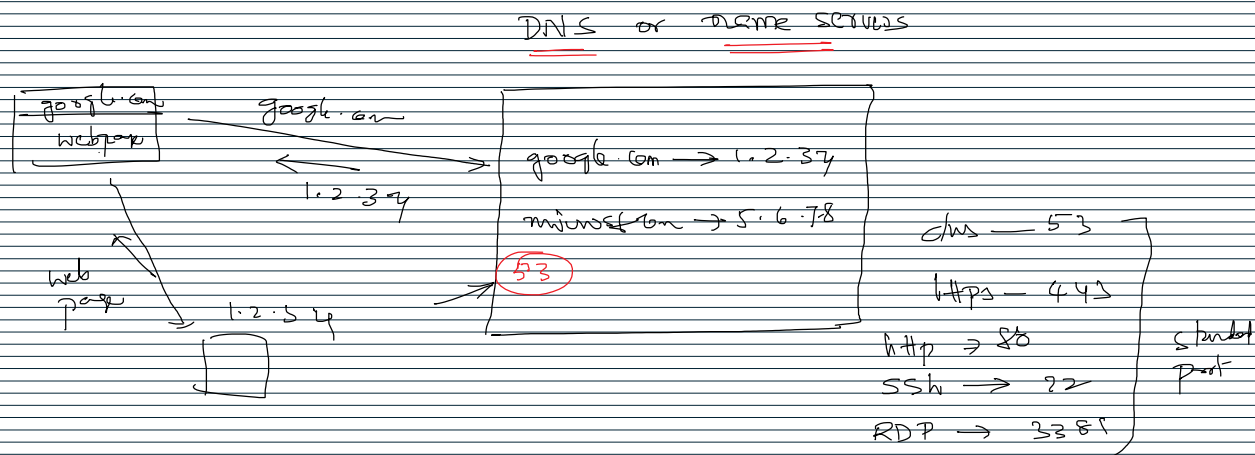
2300 or 2400 → ✓



12\$/year

1) Register a domain name

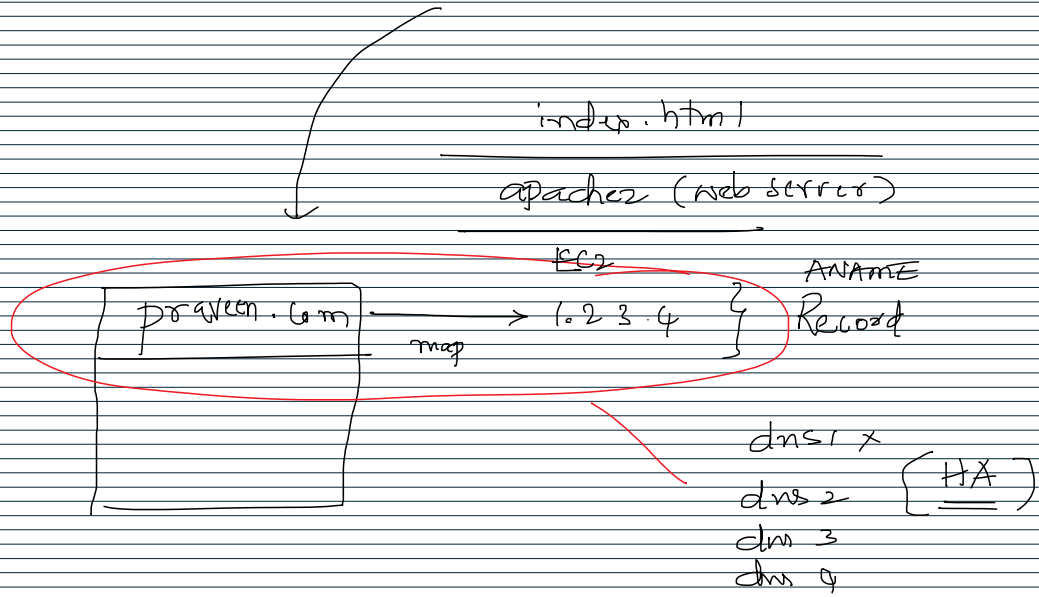




12/1/18

free-dom.com
-tk
-...

- 1) Register a domain
- 2) Create Records



Hosted Zone (collection of records)

$\left\{ \begin{array}{l} \underline{\text{ec2-abc-com}} \rightarrow 126.58.96.23 \\ \underline{\text{elb-abc-com}} \rightarrow \dots \text{lengthy elb url} \dots \end{array} \right.$

Hosted Zone — 50¢ / HZ / month

if (HZ deleted in 12 hrs) \rightarrow free

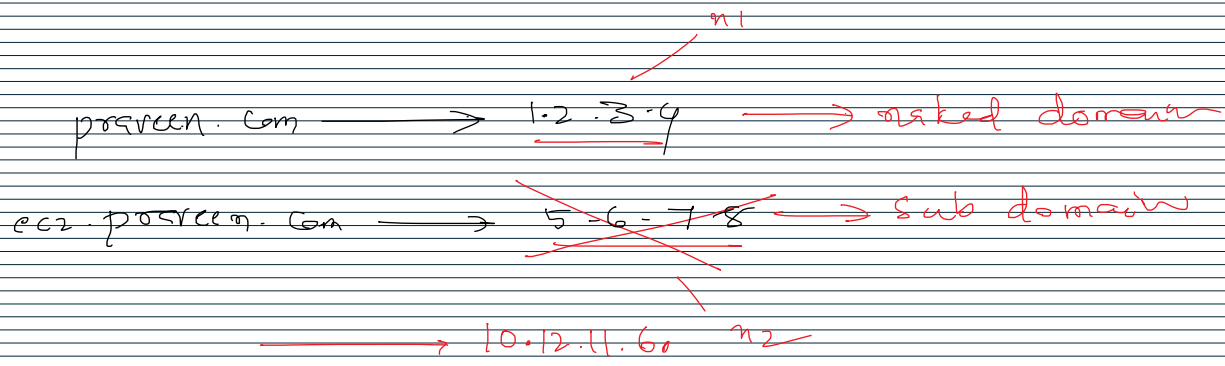
② Register a domain
abu.com

index.html

apache

E6

③ blog.abu.com → 1.2.3.4 ①
Record
index.html



- AWS Route 53

S3 (Simple storage service)

24 November 2020 12:20

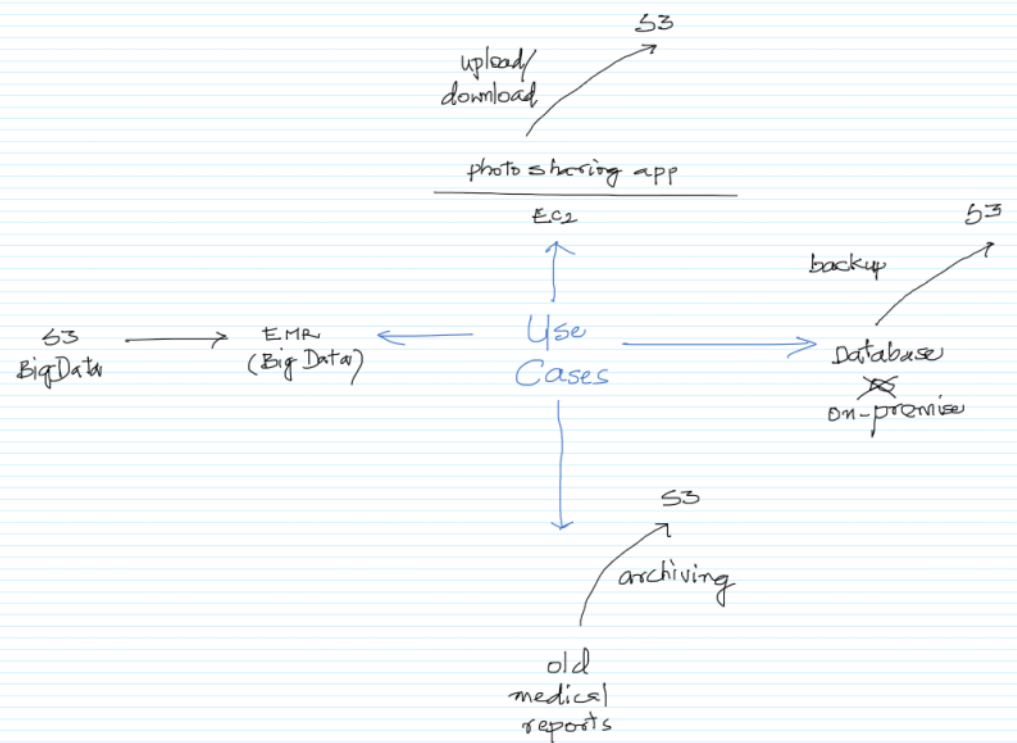
- Google Drive
- Dropbox

7GB

- 5GB 1 year free

2GB — \$ \$

(??)



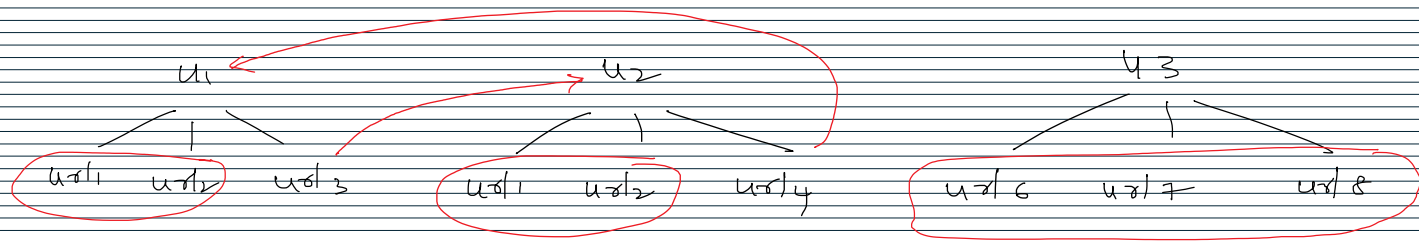
click stream data

24 November 2020 12:26

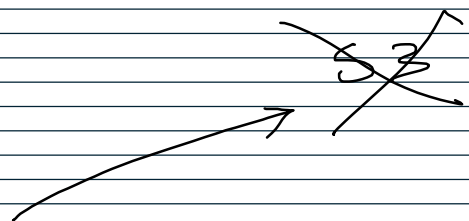
userid , ip , date , time , device , os , loc , url _____ ?

123 , - - - - - , m1 }
123 , - - - - - , m✓ }

Customer Intent



website



Serverless model

24 November 2020 12:32

— We don't need to think about servers

developing
app

cloud Provider

- ~~└ Capacity planning~~
- ~~└ Auto Scaling~~
- ~~└ High Availability~~

name to be unique
across accounts
and globally

proven = 123-abc

①
Bucket (~ folder)

└> File or File

map
5GB

└> File or File

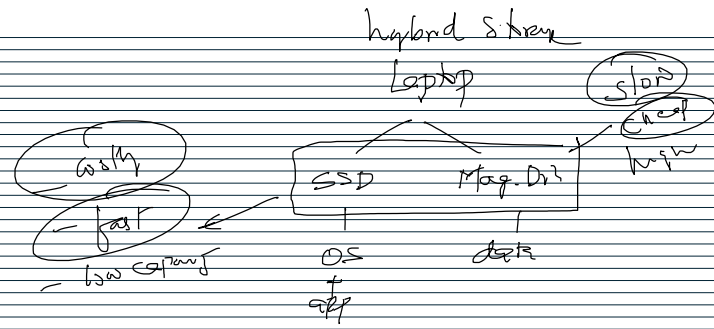
my
|
proven

kyo

~~proven~~

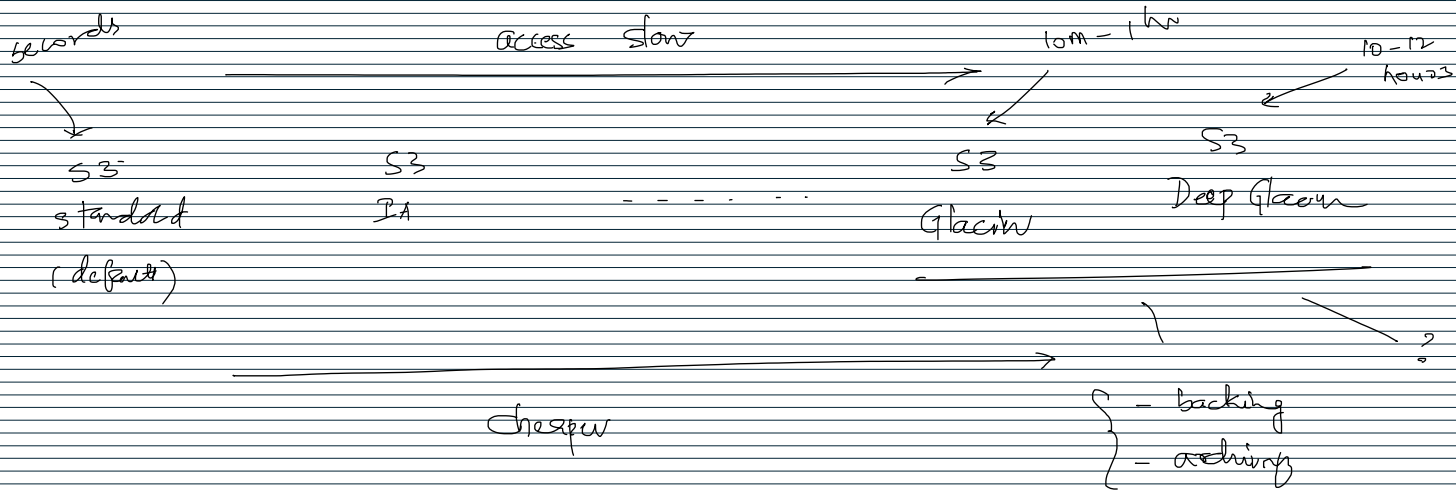
my
Ans
sent
↓
b1

your
ans
sent
↓
~~X~~



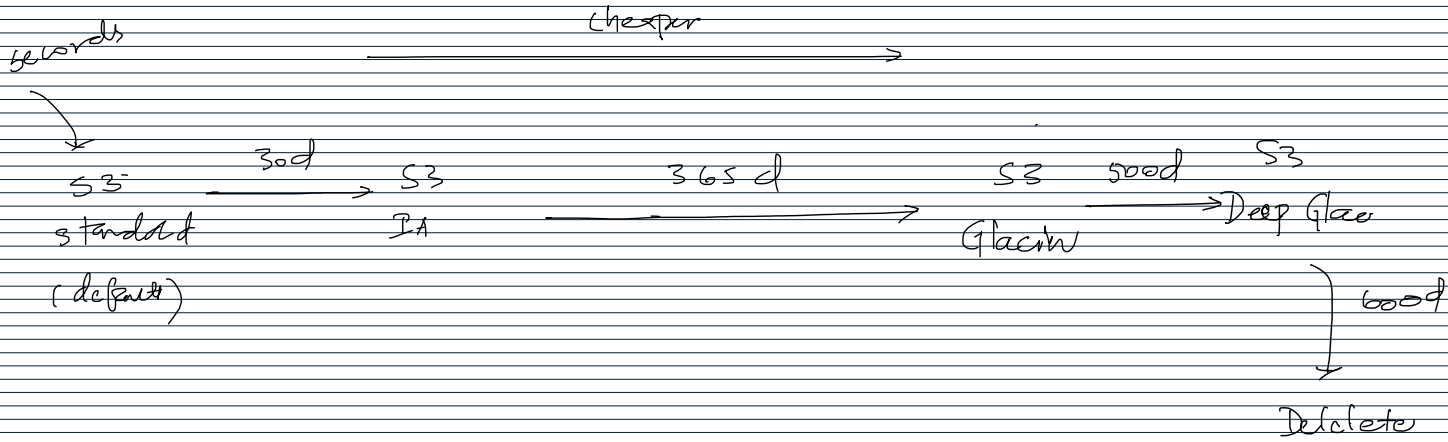
Storage Class

24 November 2020 13:45

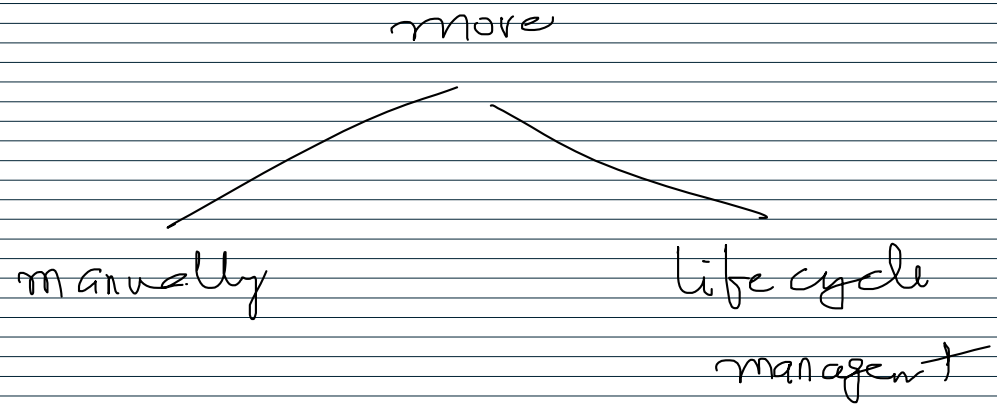


Storage Class

24 November 2020 18:45



older → less often
→ Access value



CKR (Cross Region Replication)

24 November 2020 13:00

PAM
Role

Use case

- Latency
- disaster recovery
- compliance

CKR

Tokyo
Bucket

Mumbai
Bucket

(Source)

(Destination)

bucket

(except delete operation)

enable
versioning

bucket

RBI \rightarrow all custom in India only

Mumbai
Region \leftarrow RBI
Bank

Member
Report

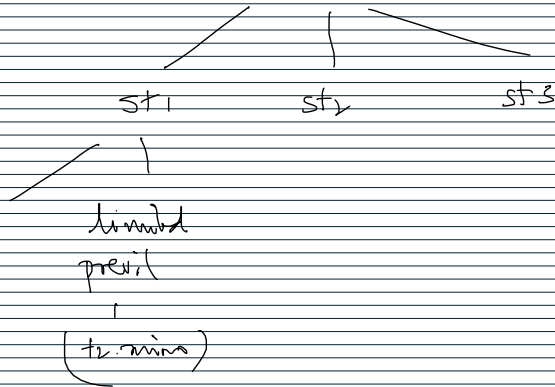
Index

53

- versioning
- Snow devices

Security & Network Management

AWS
Account ← CC/DC
Org.



M-F
9am - 6pm
↓
clerk
=

EL
/ 4000 GB
= 1200 ✓

disabled \rightarrow enable

S3 bucket

\rightarrow ~~file.txt~~ = v1 = 1 M 1000

file.txt = v2 = 1.1 M

file.txt = v3 = 1.2 M

3.3 M

github.com

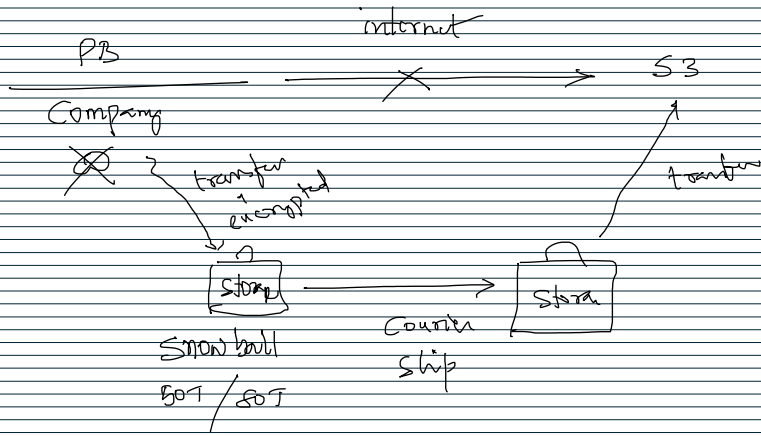


hello-jane (me) - v1

~~hello-jane (you)~~ - v2

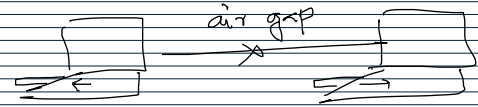
- v3

slow
costly

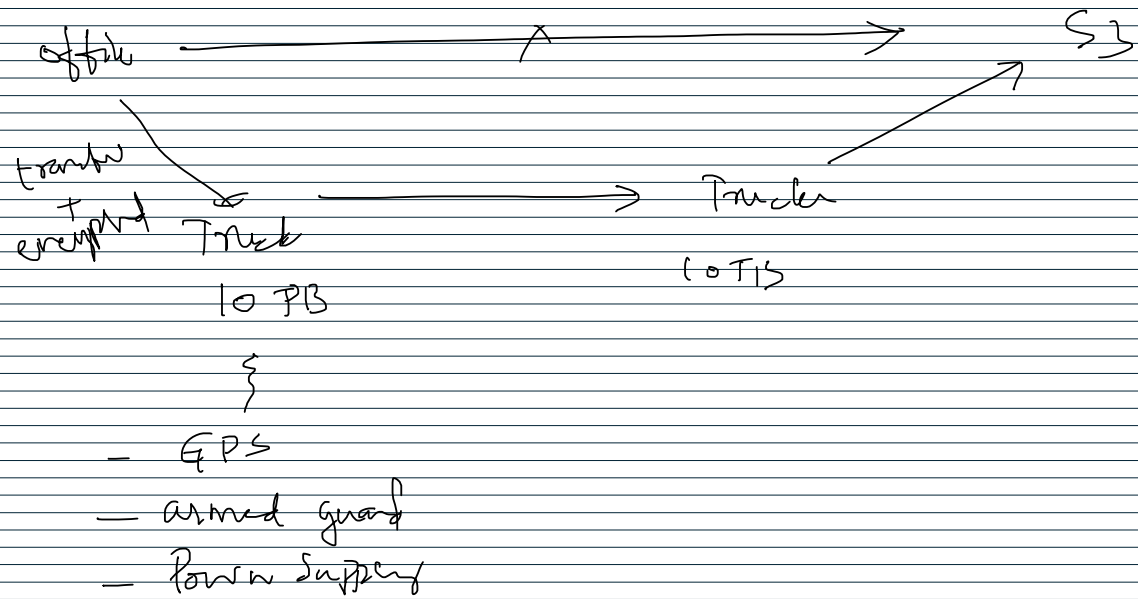


→ **PB** - 1024 x 1024 GB

- Satellite Image
- Oil Drags
- Movie Prod.



Snow Mobile



multi cloud strategies

/

Big Data

ML / AI

GCP

import

Rest

Ans

export

Ans - S3, Route 53, EC2 - - - - 200+

GCP - Big Data

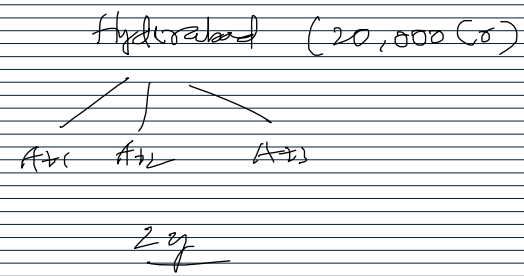
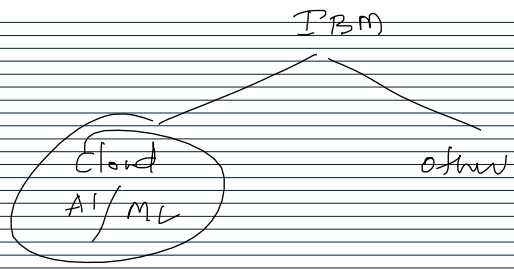
ML

AI

CPU → TPU (Tensor Processing Unit)

SW → TF (TensorFlow)

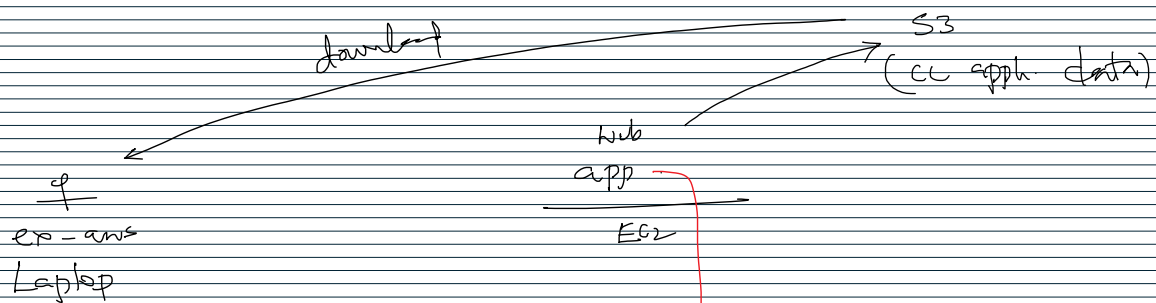
ML/AI - cheaper
faster



Security - Capital one + 30 org.

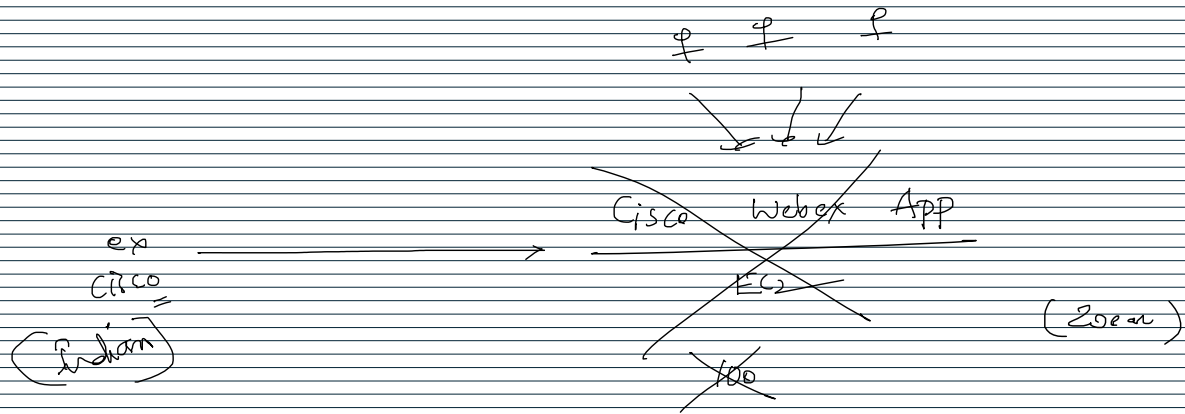
24 November 2020 15:47

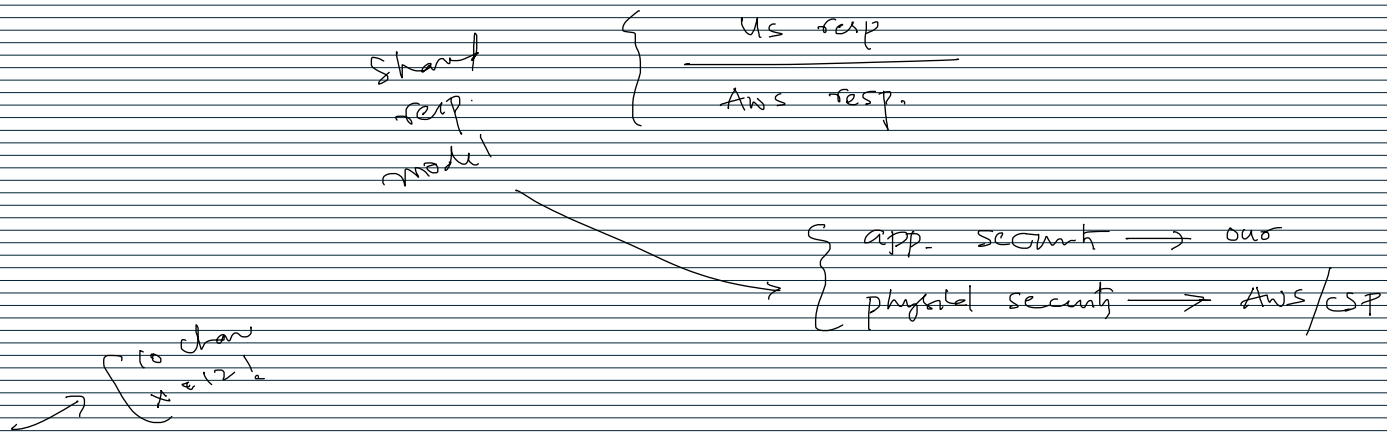
good

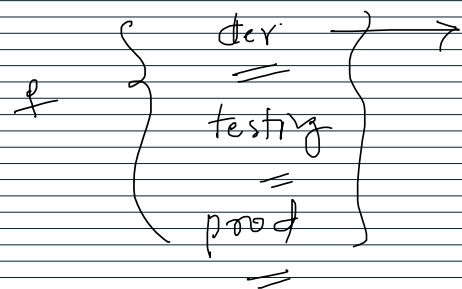
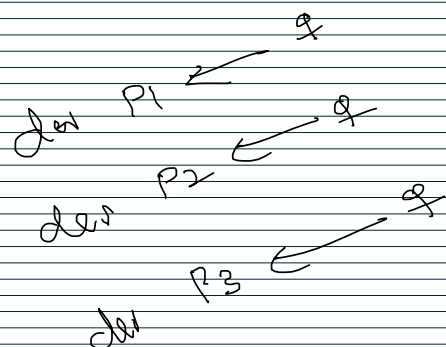


- SQL Injection
- XSS
- SSRF ✓

- Name
- dob
- SSN
- address





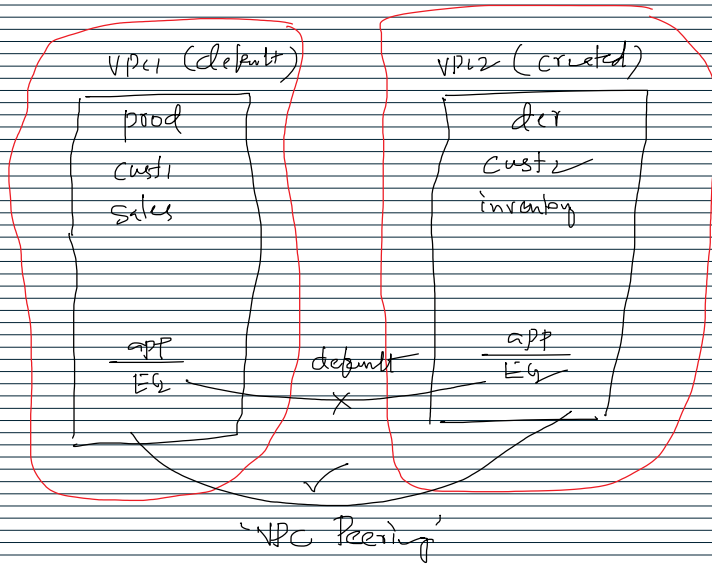


Pen Testing

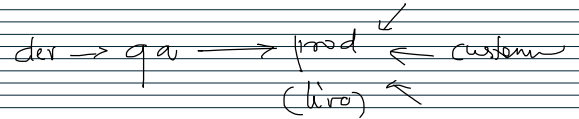
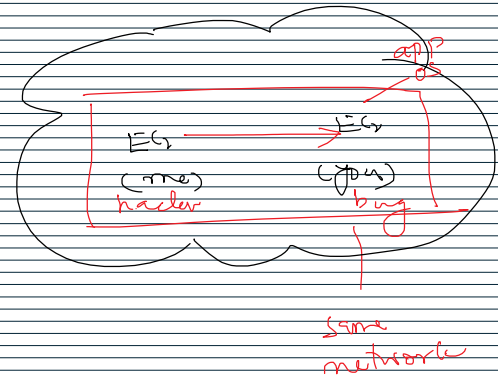
VPC (Virtual Private Cloud)

24 November 2020 13:00

= logically isolated network

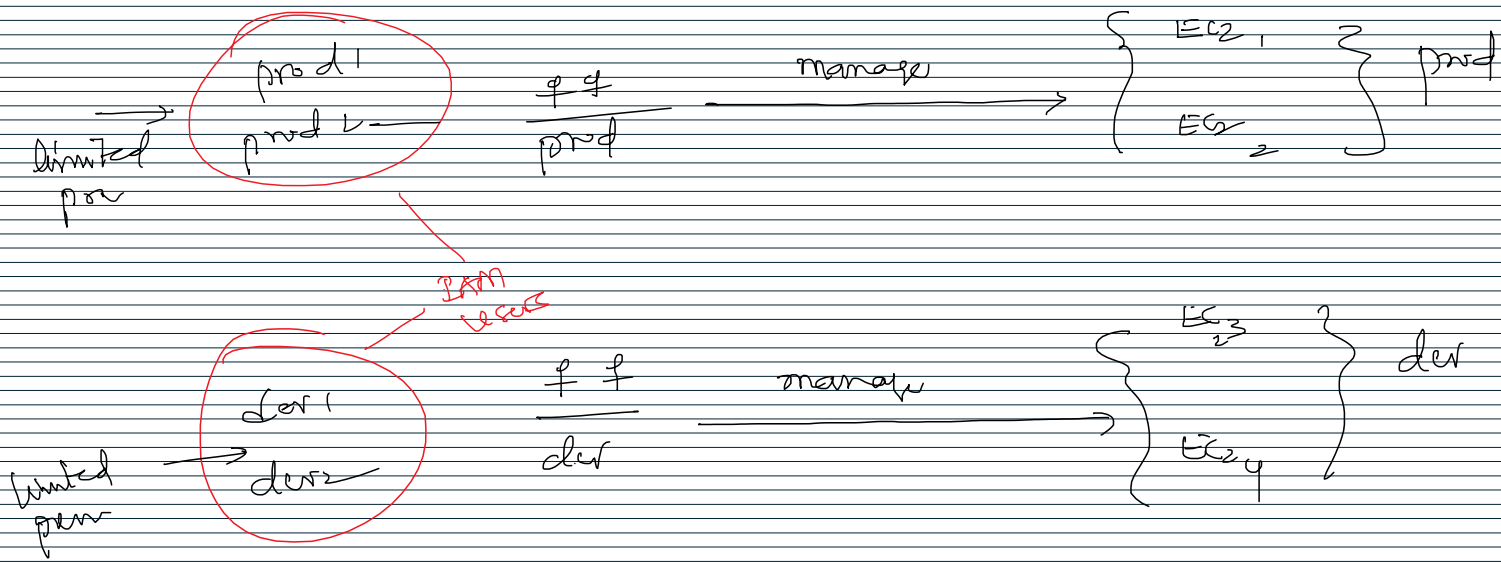


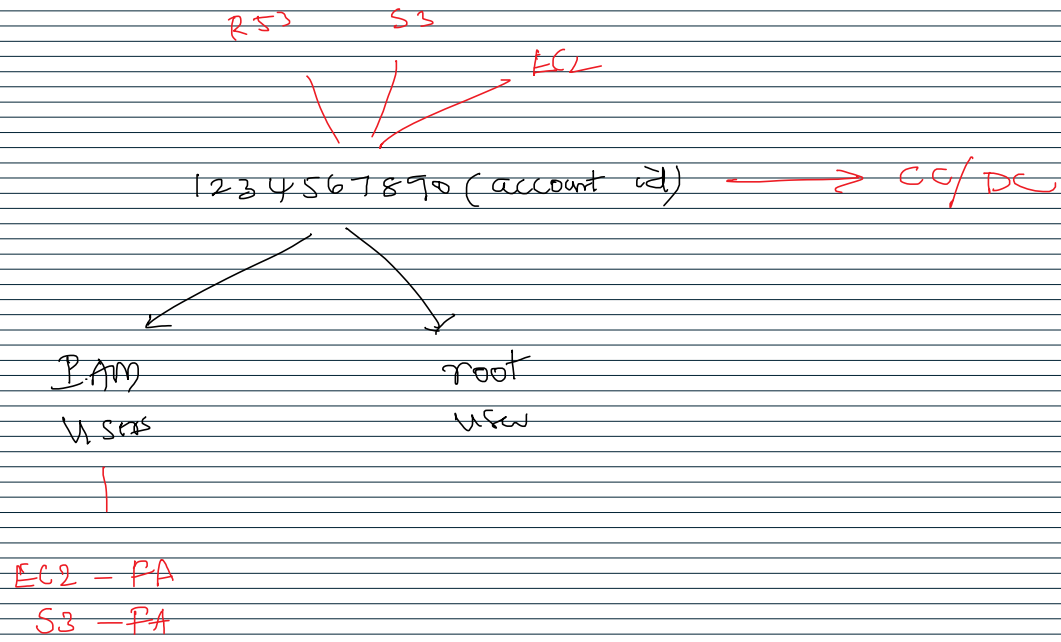
poc - VPC - era



- VPC ≡
 - Subnets ≡
 - SG, NACL ≡
 - Internet Gateway
 - Nat Gateway
 - Routing Table ≡ Routes
-

— Create EC2 ✓
=

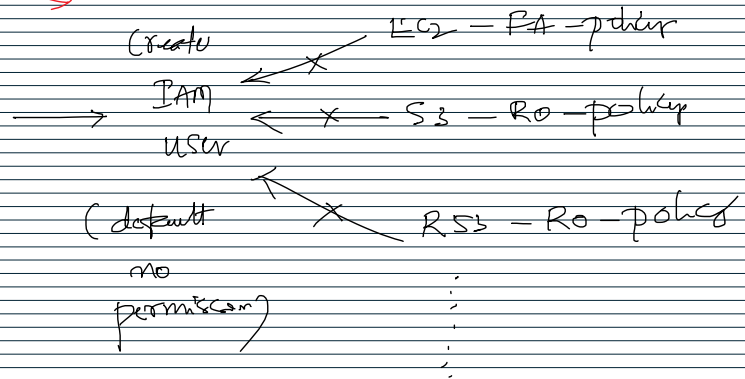


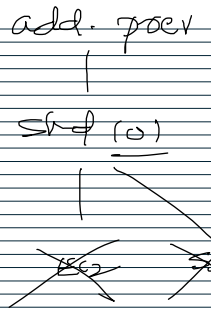
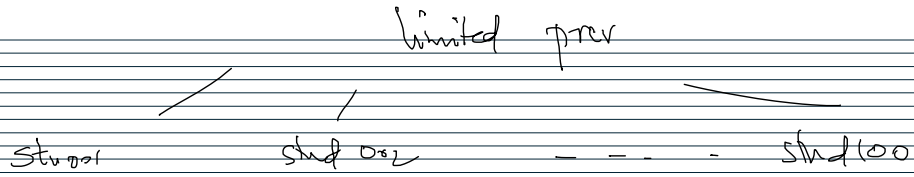


→ 600+ policies

Console.aws.amazon.com → root

S3-PA-policy





Ans CloudTrail (auditing)
 = default on

<u>date-time</u>	<u>user</u>	<u>action</u>	<u>resource</u>
26/Nov - 3:51 PM	stn101	terminated ec2	ec2 100

dw

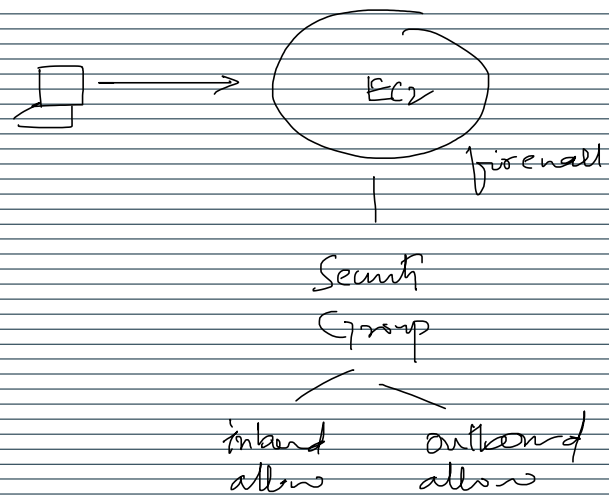
clw

ga

ga

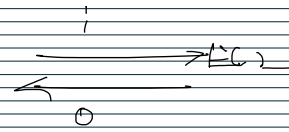
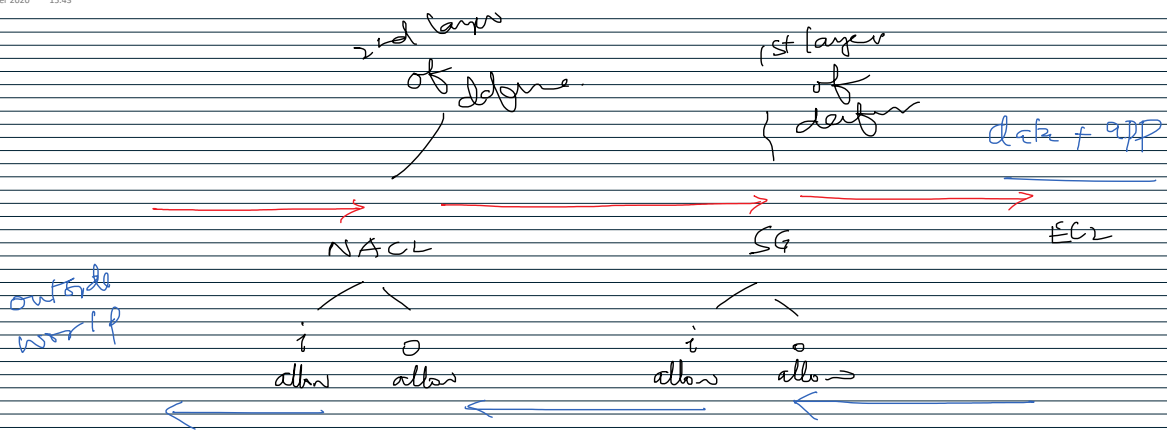
Stu001 ← ~~EC2 → RA policy~~

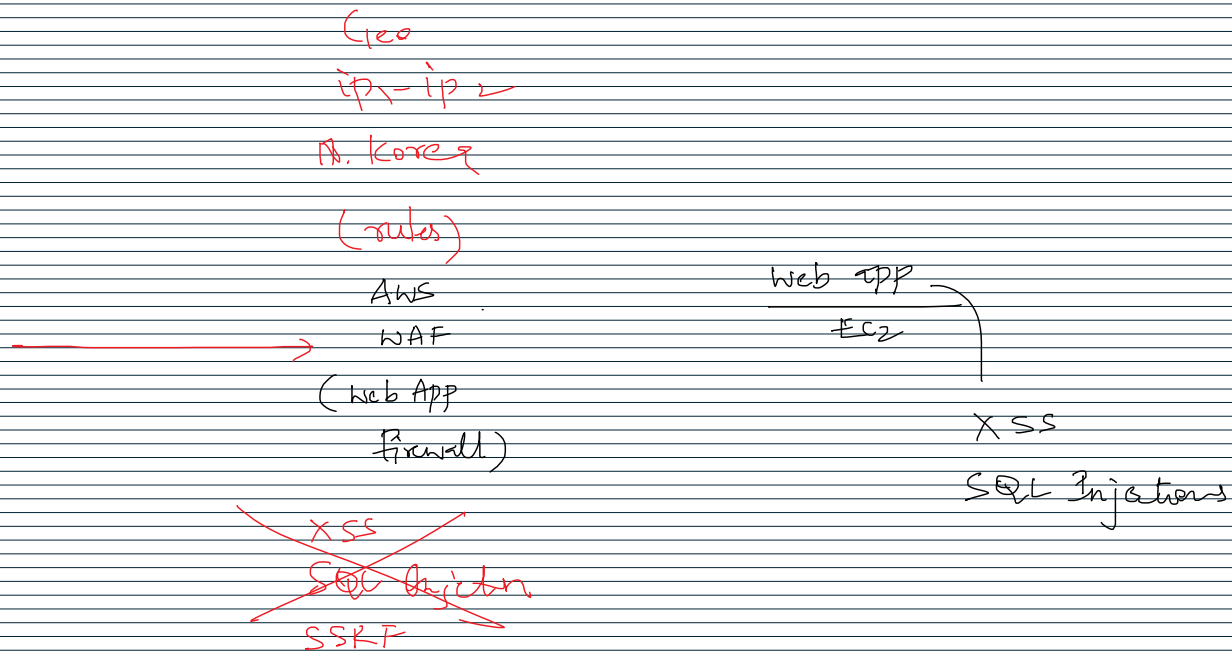
EC2 — 4000 GB RAM — 14\$/hr



Network Access Control List

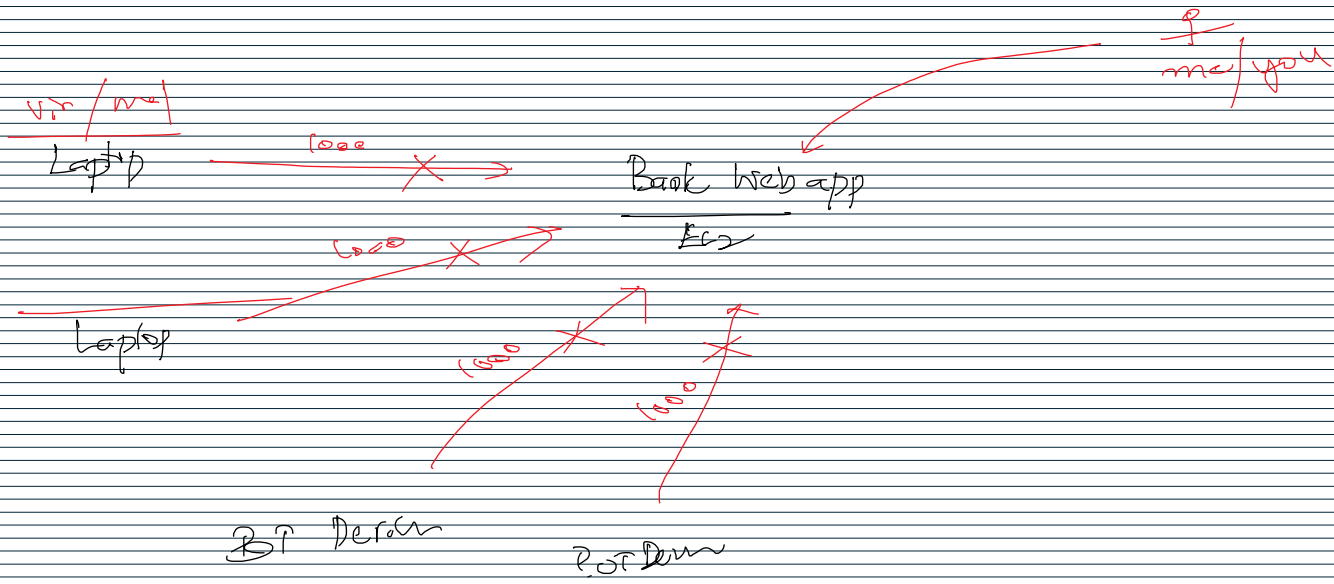
24 November 2020 15:43





Ans Shield (DDoS Attacks)

24 November 2020 15:52



anomalies

alert

spam
emails

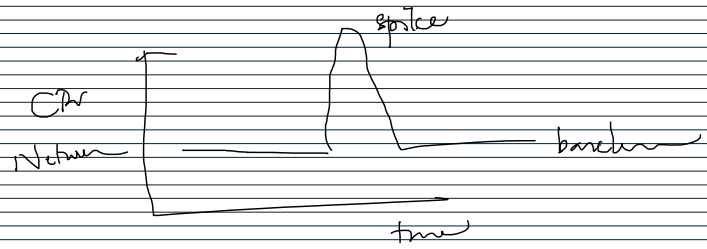
web
application

bitcoins

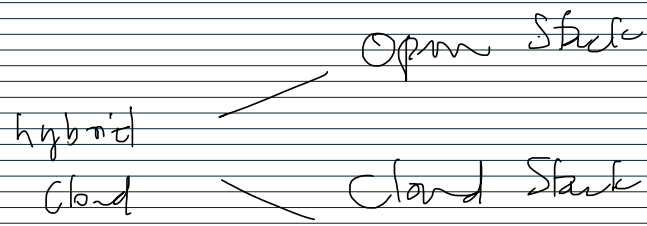
(module)

EC2

header



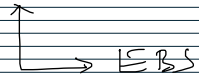
default
on {
- VPC
- CloudTrail
- Shield / standard (free/default on)
 DDoS / advanced (3000 USD/month)



Ans

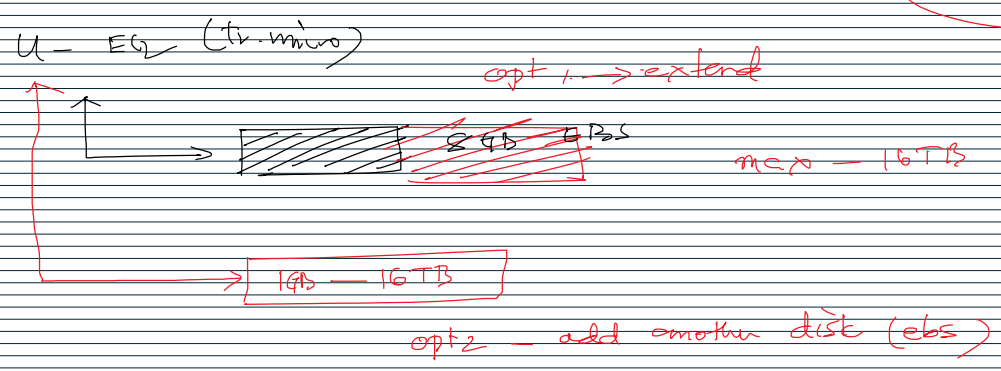
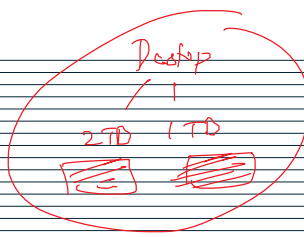
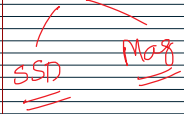
EBS (Elastic Block Storage) HD

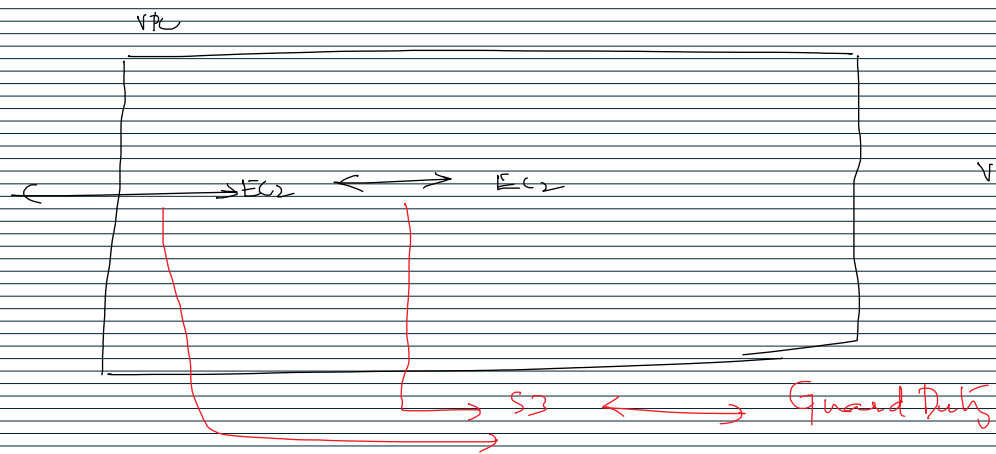
EC2 (t2.micro) = 1 CPU / 1 GB RAM

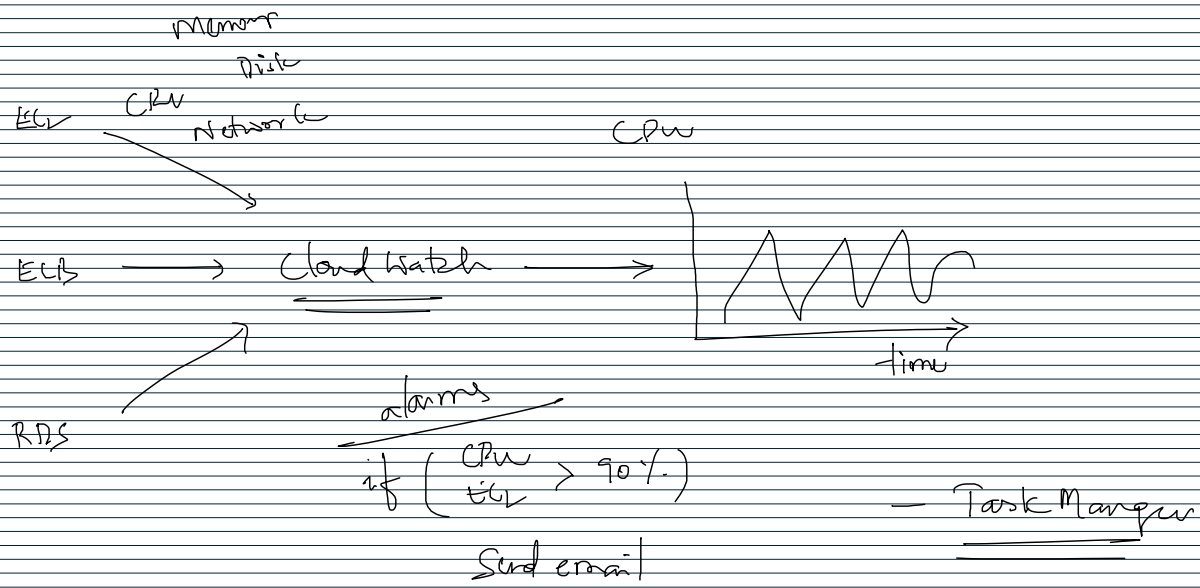


L - EC2 \Rightarrow 8 GB EBS

M5 - EC2 \Rightarrow 30 GB EBS







AWS

|

~~ML, AD~~

200+ EC2, S3, EBS, R53