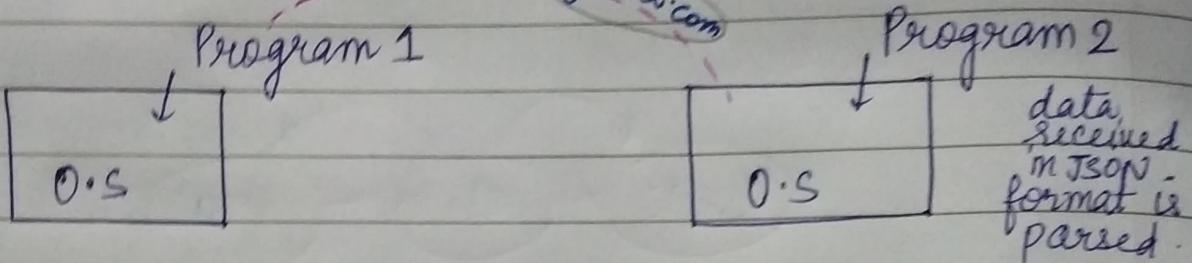


Day - 4

► JSON

The output of aws command shown is in JSON format

data sending
should be
converted to
JSON.



Let, program 1 would like to send information to program 2 , and program 2 will have to retrieve information to do some work .

Email variable → to extract data of specific fixed $\boxed{\text{var} = \text{value}}$ changes. value easily.

attribute
↓
Key

(Key-value pairs).

format → to manage your information.

↳ YAML → XML

→ JSON

[Java Script Object Notation]

AWS CLI → Information retrieved as asked through command is retrieved in JSON format.

→ aws ec2 describe-key-pairs > f.json

→ jq-win64.exe ← parser.

my.json

```
{  
  "name": "Vimal",  
  "email": "abc@lw.com"  
}
```

← JSON file

→ JSON is a way
to share information

all .

→ jq-win64.exe ". " my.json

→ jq-win64.exe "email" my.json.

top level {
 "myname": [
 [

→ jq-win64.exe ".myname[0:2]"
my.json .

```
  {  
    "name": "Vimal",  
    "email": "v@lw.com"  
  },
```

Tree
Object {1}

```
  {  
    "name":  
    "value":  
    {  
    }  
  ]  
}
```

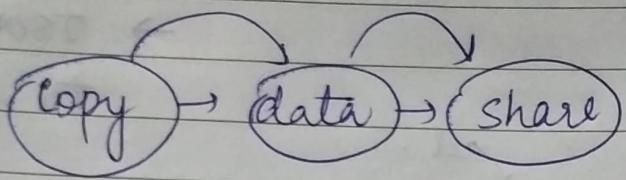
myname [3]
0 {2} < email
1 {2} name
2 {2}

▷ jq-win64.exe ".KeyPairs[0].KeyName" f.json.

▷ aws ec2 describe -key-pairs --output yaml

Managed Storage Service is provided by AWS where you don't have OS things

↓
AWS S3 (Simple Storage Service)



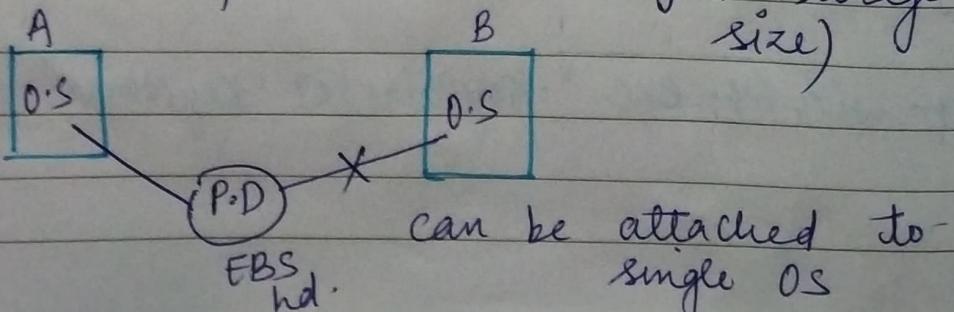
Limitations of Creating extra EBS volume.

If the EBS Volume (Hard-Disk) fails, you can't go and claim.

no guarantee of availability ↪ myhd -1 EBS - User is responsible to manage the backup.

▷ S3 - [AWS Managed Storage Service in AWS]

- 11's → 9 99.99999999% guarantee
- you won't lose data
- managed by AWS. → backups done by AWS
- durability very high and reliable
- Guarantee of high availability
- Unlimited size provided. (unlimited storage)

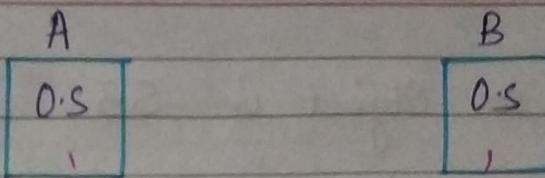


Cinder - only way to install OS in Openstack.

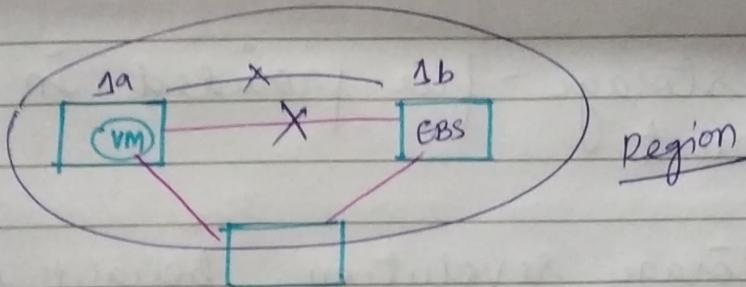
CLASSMATE

Date _____

Page _____



- many OS can the S3 be attached

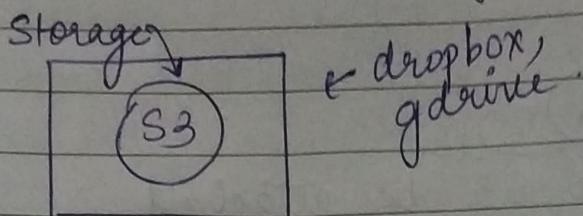


- I can't connect my VM running on 1a to the EBS volume connected in 1b. as EC2/EBS therefore is a regional service.
- This limitation is not there in S3. as S3 is Global Service.
- S3 is Global Service, therefore VM connected in one region can be connected to another S3 bucket in some other region.
- IAM is also a Global Service
- S3 gives you pre-created / pre-managed storage

Limitations of S3 :-

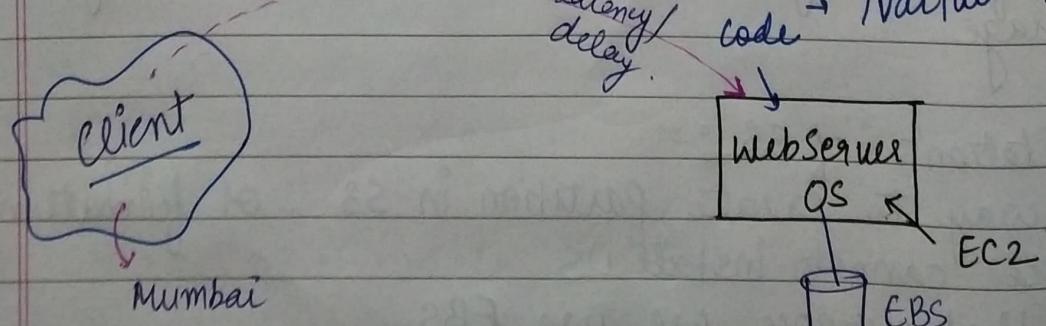
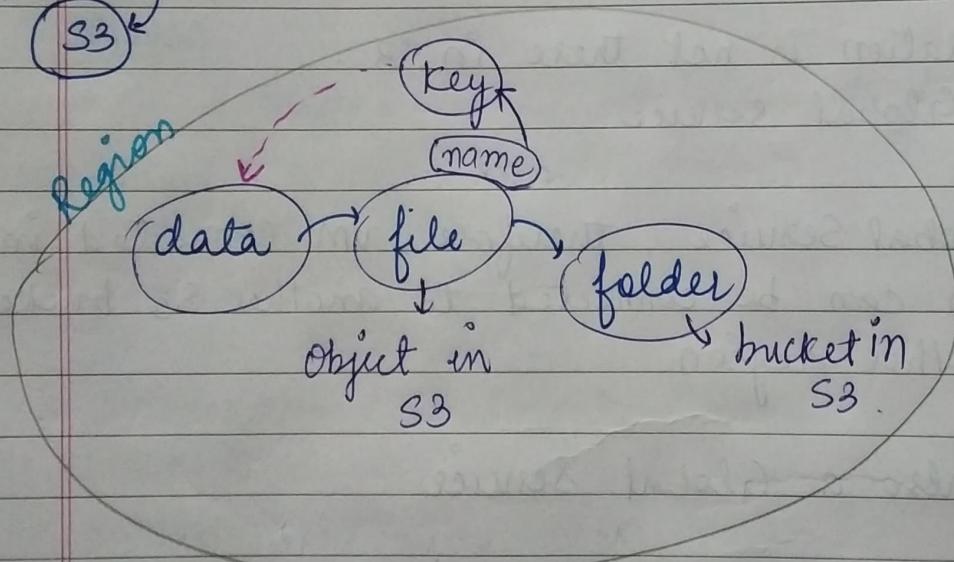
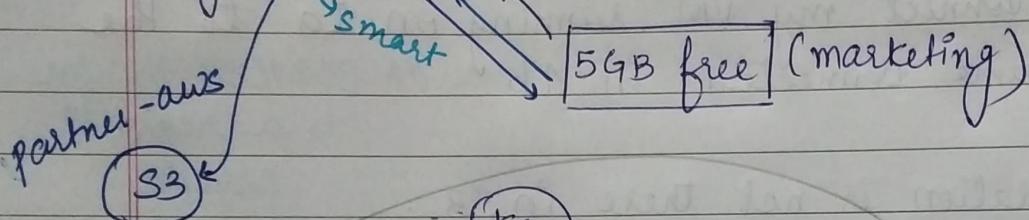
- NO way to create partition in S3 or formatting, hence cannot install OS.
for that purpose we use EBS.

→ files are known as Object in S3.



→ 5GB S3 storage - free provided in free account

→ Cloud - storage revolution bought up by "drop-box".

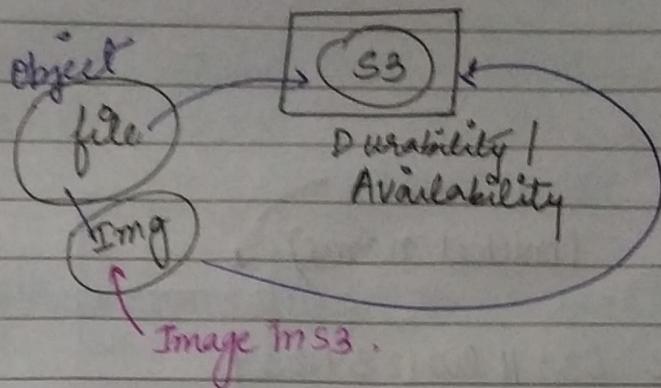


↳ you have to copy your data here and there therefore use S3

→ Systemctl restart httpd.

classmate

Date _____
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AWS → Services → S3 → Create bucket



- bucket would be "unique named".
- ① → bucket name (unique name)
→ select region

→ only one bucket of that name will exist in entire AWS.



Create

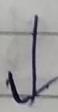


- ② Upload the object (file, images) in S3 bucket

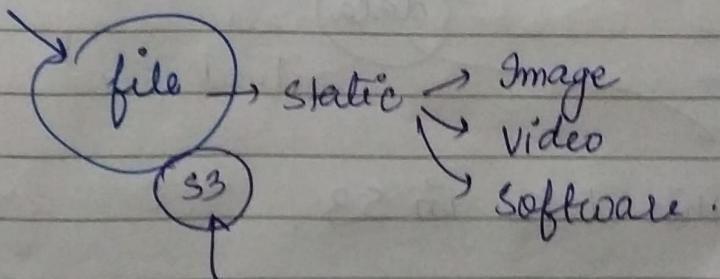
Object URL of every object uploaded on S3

(<https://...>) for every object is unique.

→ None of the person will therefore have same URL.



Make image-URL public so its public accessible
[Make Public]



Hadoop
(big data)

- ▷ aws s3 ls.
- ▷ aws s3 ls lw12341234
 (bucket name) →
s3://lw12341234
- ▷ cp jp-win64.exe s3://lw12341234

* ACL - Access control list

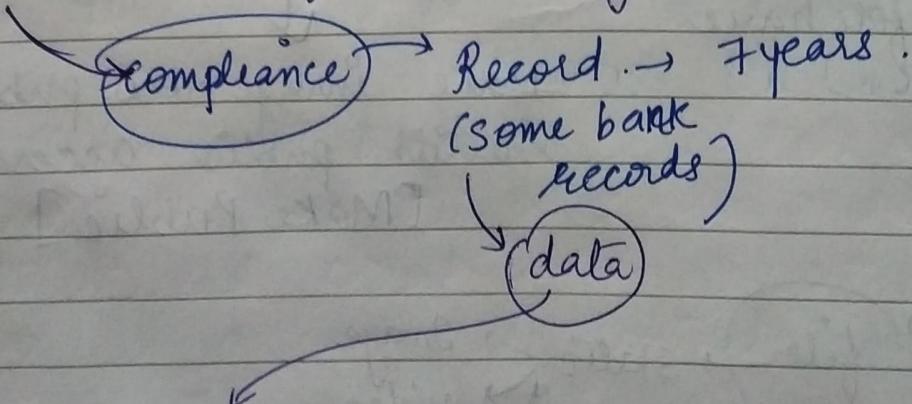
- whoever can access the bucket objects

- ▷ aws s3 rm s3://lw12341234/jp-win.exe.
- aws s3 ls s3://lw12341234.
- aws s3 cp

* Cloud Trails - show all major events
 ↓ - records events

→ last 15 min events shows .

→ stores record of last 90 days .



We store this data in S3 .

→ I can ask Cloud Trail whatever data its recording, send it to S3 for storing the data as long as we want.

Therefore, we have to integrate, S3 and Cloud Trail

→ Cloud Trail + Simple Storage Service (S3)

Trails

Trail (This integration is called Trail)

(Create Trail)

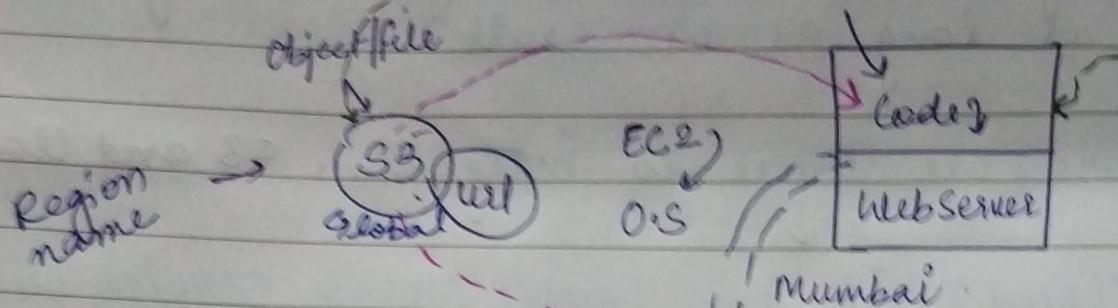
We can save the Cloud Trail record in pre-existing S3 bucket or create a new S3 bucket and store in it.

→ after your code is uploaded to S3 then we

can apply Hadoop for big data analytics. Splunk, and many other tech softwares and perform operations and retrieve useful information.

▷ aws cloudtrail describe-trails --query [" "]

► CloudFront



↓
We want our user from anywhere to face low latency

Global - for every object unique url is given

↓ If we want to remove latency we have to save the same data of S3 in every Region it wants to get accessible from.

↓
lets suppose we don't have DC in India, and the nearest DC in Singapore. If some person wants to access some file/image/record in India will have to face lots of latency issue, therefore to solve this problem AWS started creating small setups in every city for delivery the content (Content Delivery Network).

Edge locations . - only for CDN.

- Edge location - small datacenters
 - Any of person in delhi who wants to access something from Mumbai DC., the Delhi edge location senses of what you want and delivers you that without latency
 - Meant for delivering the content also known as CDN - content delivery network.

Q How is CDN (edge - location) related to Cloud Front?

- CloudFront is one of the service who does the required.
- CloudFront copies my nearby ^{clients} edge location to avoid latency.

→ Copy data to any edge - location across the world.