Cloud Computing Models:

Public Cloud - Owned and Operated by third party. Resources over the internet.
AWS / Google Cloud / Azure.
Not Exclusive. (CFrontend)

Private Cloud - Dedicated hardware for the owning company. Can be setup by Public Cloud. (CBackend & Database)

Hybrid - Combined, by technology that allows the sharing of data b/w public & private clouds. VPN Tunnelling

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Services

SaaS → Software as a Service
Eg: Gmail, Google Cloud
Running on a remote server and you're getting it as a service.

↑ only control over your app

PaaS → Platform → Platform to upload and host your code/applications/websites

Control over ↑ what you do ↓

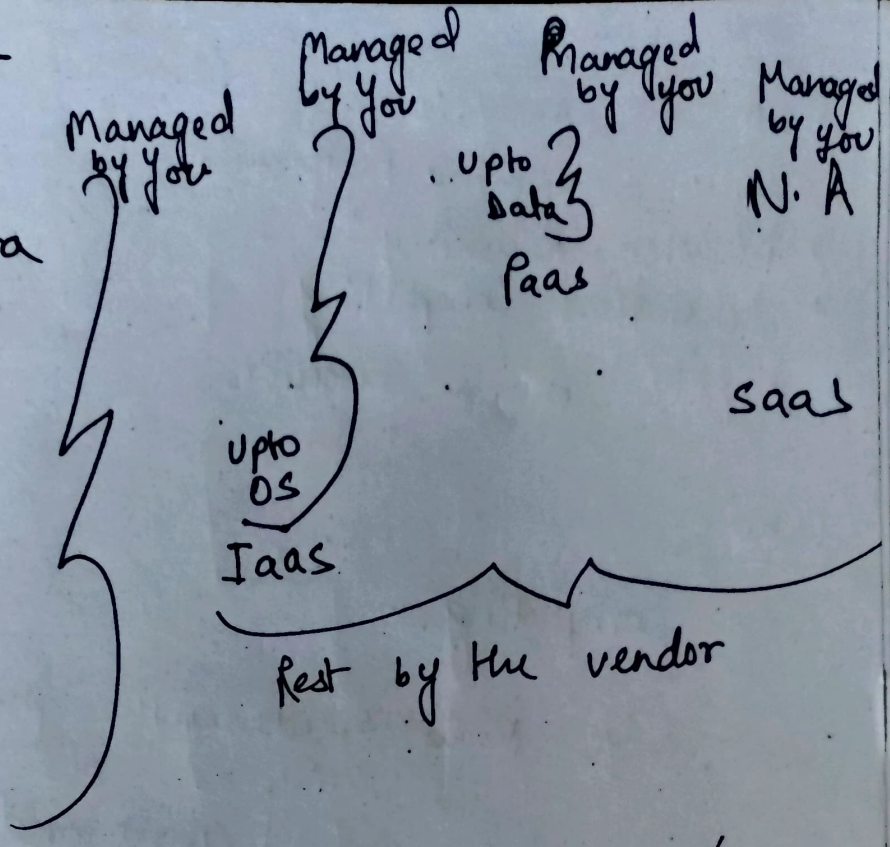
IaaS → Infrastructure → Any kind of infra over the internet.
Eg. Servers, OS, Storage

OS LvL control

Clear differences

On Premise

- Application
- Data
- Runtime
- Middleware ✲
- OS
- Virtualization
- Servers
- Storage
- Networking



✲ A piece of software running b/w the O/S and application Layer. The glue b/w the lowest level and the app which actually executes the function.

Benifits

→ Reduced It costs
→ Scalability ⟶ Cloud computing allows the work of setting up of multiple servers if accomodation is reqd.
→ Global Infrastructure
→ Up-to-date
→ Reliable data backup & disaster recovery.

Use Cases

→ Big Data Analysis
→ Video Streaming Platforms
→ Disaster Recovery
→ Serverless Computing
→ AI/ML as a service

Future

Edge Computing :-

Edge Nodes: Speeds up the process by acting as the middle man b/w Cloud and Data Centres

→ Massive Market
→ Cloud Shift Approaches by Most

IMP Starts

Amazon EC2 (Iaas)

→ Provides Scalable Computing Capacity in the aws cloud.
→ Eliminates need to invest in hardware up front, applications are deployed faster.

we can create windows/linux/Mac machines

Elastic Compute Cloud
(EC2)

No need to forecast traffic, as scalable.

The virtual computing servers are known as Instances.

AMI (Amazon Machine Image)

- Template that contains a software configuration. From an AMI, you launch an instance, which is the copy of the AMI running as a virtual server.
- The root device for your instance contains the image used to boot the instance.
  (AmazonEBS) (Elastic Book Store)
  or an instance store volume.
- Instance Type - determines the hardware of the host computer used for your instance.

Look up Instance Types

- General Purpose → General/Practice
- Compute optimized → High performance processor
- Memory optimized → Large datasets
- Storage optimized → High read/write outputs.

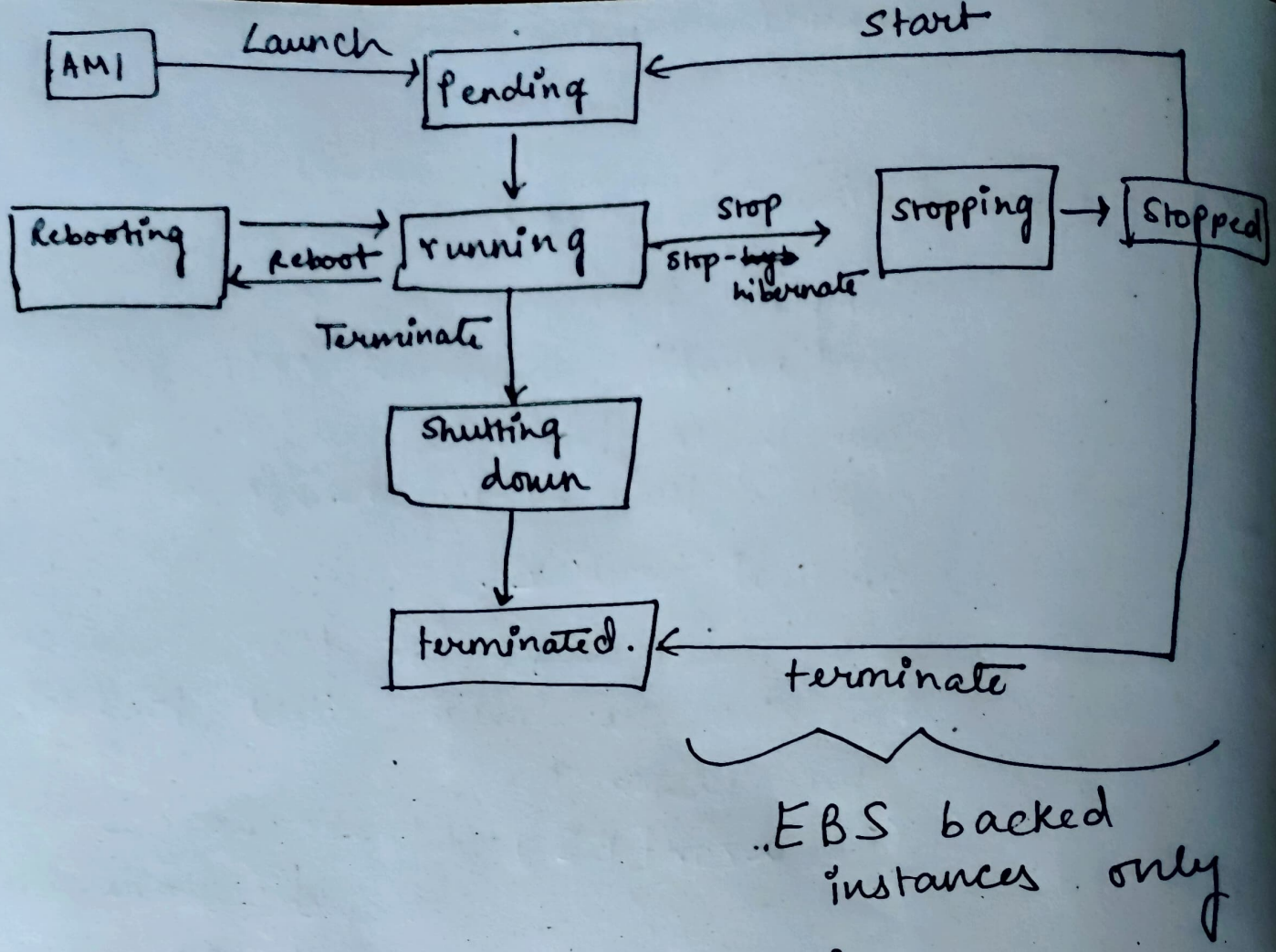


Fig: EC2 Transitions