Exam Guide – Content Outline

No Domain Weighting

- ? Cloud Concepts
- ? OCI Infrastructure
- ? OCI Core Services
- ? Security
- ? Billing and Pricing

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What is Cloud Computing?

cloud com·put·ing

noun

the practice of using a network of remote servers hosted on the Internet to store, manage, and process data, rather than a local server or a personal computer.

On-Premise

- You own the servers
- You hire the IT people
- You pay or rent the real-estate
- You take all the risk

Cloud Providers

- Someone else owns the servers
- Someone else hires the IT people
- Someone else pays or rents the real-estate
- You are responsible for your configuring cloud services and code, someone else takes care of the rest.

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What is Cloud Computing?

Dedicated Server

One physical machine dedicated **to single a business**.
Runs a single web-app/site.
Very Expensive, High Maintenance, High Security*

Virtual Private Server

One physical machine dedicated **to a single business**.
The physical machine is virtualized **into sub-machines**
Runs multiple web-apps/sites

Shared Hosting

One physical machine, shared by **hundred of businesses**
Relies on most tenants under-utilizing their resources.
Very Cheap, Very Limited.

Cloud Hosting

Multiple physical machines that act as one system.
The system is abstracted into multiple **cloud services**
Flexible, Scalable, Secure, Cost-Effective, High Configurability

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What is Oracle?

An American multinational computer technology corporation headquartered **in Redwood Shores, California**.

Oracle was **the second-largest** software company by revenue and market capitalization (2019)

Oracle has been around since the late 1970s and is well known for their **databases**.

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What is Oracle Cloud Infrastructure?

Oracle calls their cloud service provider

Oracle Cloud Infrastructure

Commonly referred to as **OCI** or **Oracle Cloud**

ORACLE

Cloud Infrastructure

ORACLE

CLOUD

just so you don't get confused and that
is what we're focused

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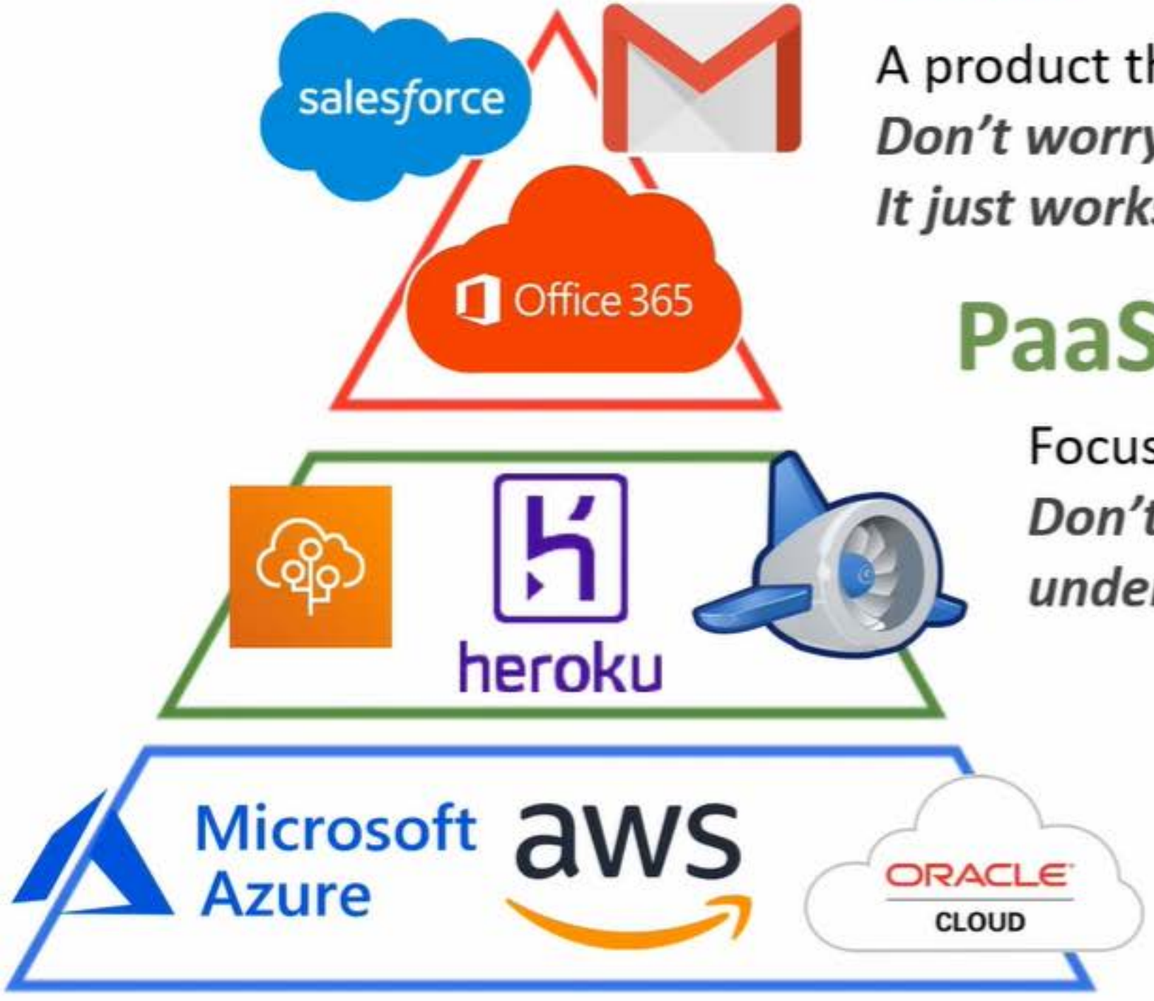
Types of Cloud Computing



SaaS Software as a Service **For Customers**

A product that is run and managed by the service provider
Don't worry about how the service is maintained.
It just works and remains available.

PaaS Platform as a Service **For Developers**

Focus on the deployment and management of your apps.
Don't worry about, provisioning, configuring or understanding the hardware or OS.

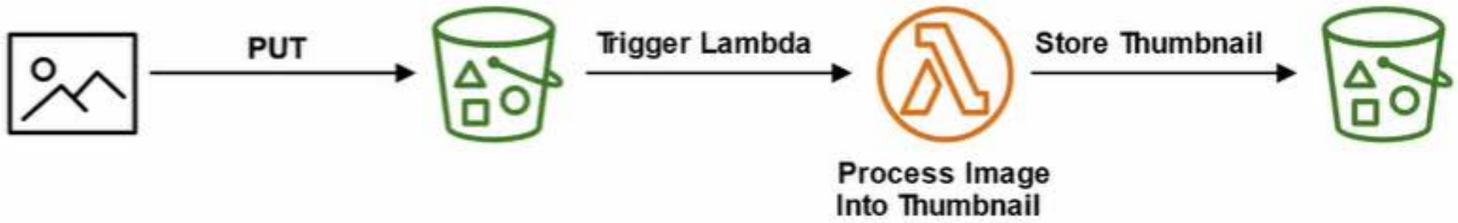
IaaS Infrastructure as a Service **For Admins**

The basic building blocks for cloud IT. Provides access to networking features, computers and data storage space.
Don't worry about IT staff, data centers and hardwa

Cloud Deployment Models

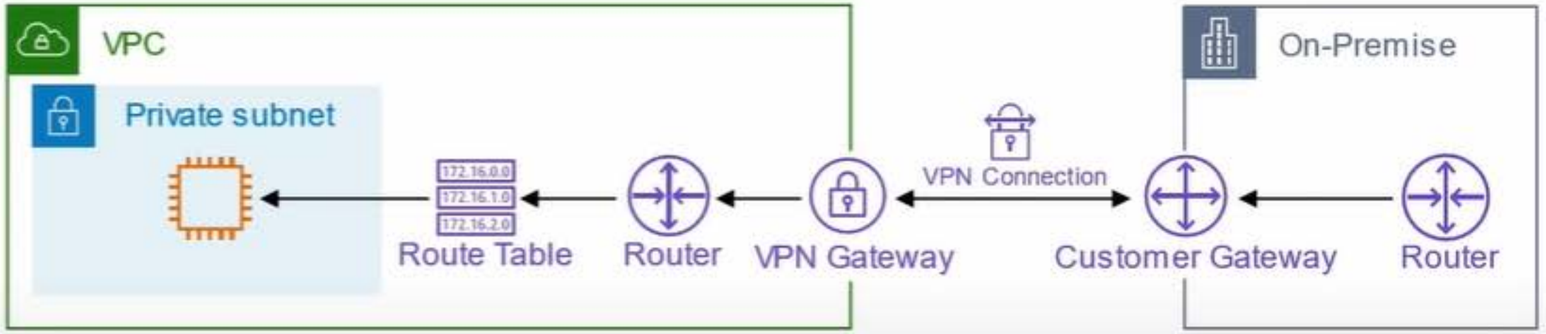
Cloud-Native

Everything built on the Cloud



Hybrid-Architecture

Using both **On-Premise** and the **Cloud**



Cross-Cloud

Using **Multiple Cloud Providers**

Aka multi-cloud, hybrid-cloud

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Cloud Architecture Terminologies

Availability - The ability for a service (web-application) remains available
Highly Available (HA)

Scalability – The ability to grow rapidly or unimpeded

Elasticity – The ability or shrink and grow to meet the demand

Fault Tolerance – The ability to prevent a failure

Disaster Recovery - The ability to recover from a failure
Highly Durable (DR)

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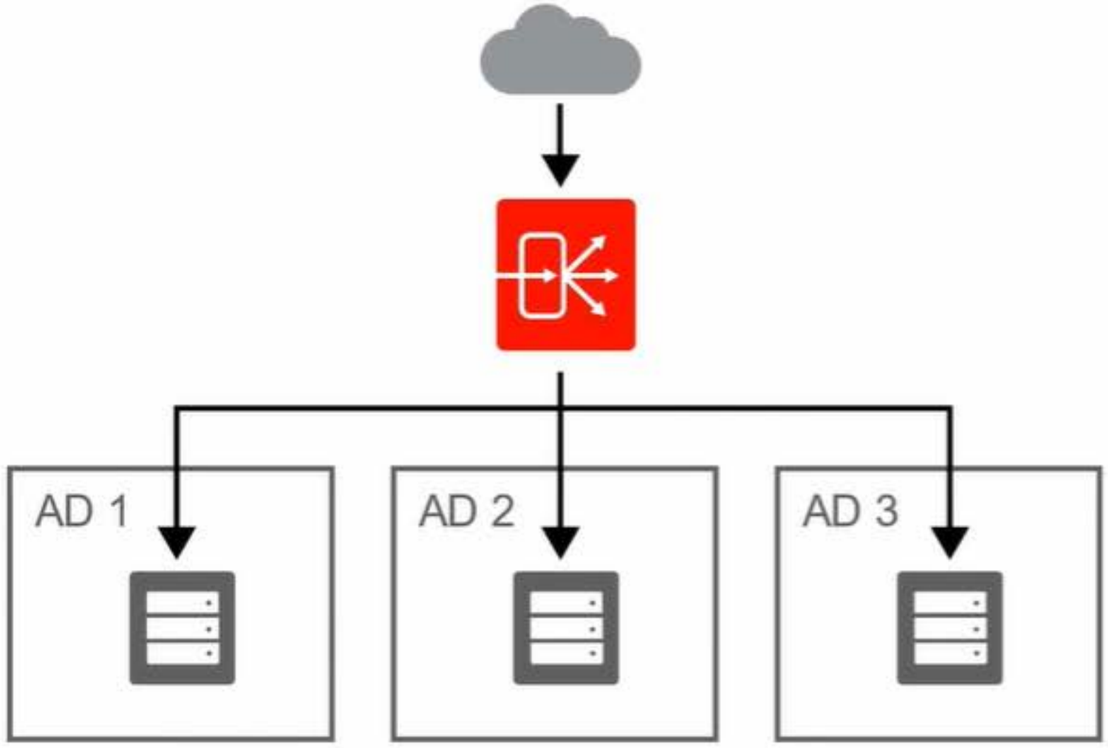
High Availability

Your ability for your service to **remain available** by ensuring there is ***no single point of failure** and/or ensure a certain level of performance



Oracle Load Balancer

A load balancer allows you to evenly distribute traffic to multiple servers in one or multiple datacenters. If a decenter or server because unavailable (unhealthy) the load balancer would route the traffic to only health datacenters and servers

Running your workload across multiple **Availability Domains** ensures that if 1 or 2 **ADs** because unavailable your service / applications remains available.

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High Scalability

Your ability to **increase your capacity** based on the increasing demand of traffic, memory and computing power

Vertical Scaling

Scaling **Up**

Upgrade to a bigger server

Horizonal Scaling

Scaling **Out**

Add more servers of the same size

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High Elasticity

Your ability to **automatically** increase or decrease your capacity based on the current demand of traffic, memory and computing power

AutoScaling Configuration

IN OCI you can configure scaling rules for your Instances with Oracle AutoScaling Configuration

Horizonal Scaling

Scaling **Out** — Add more servers of the size

Scaling **In** — Removing more servers of the same size

Vertical Scaling is generally hard for traditional architecture so you'll usually Only see horizontal scaling described with Elasticity.

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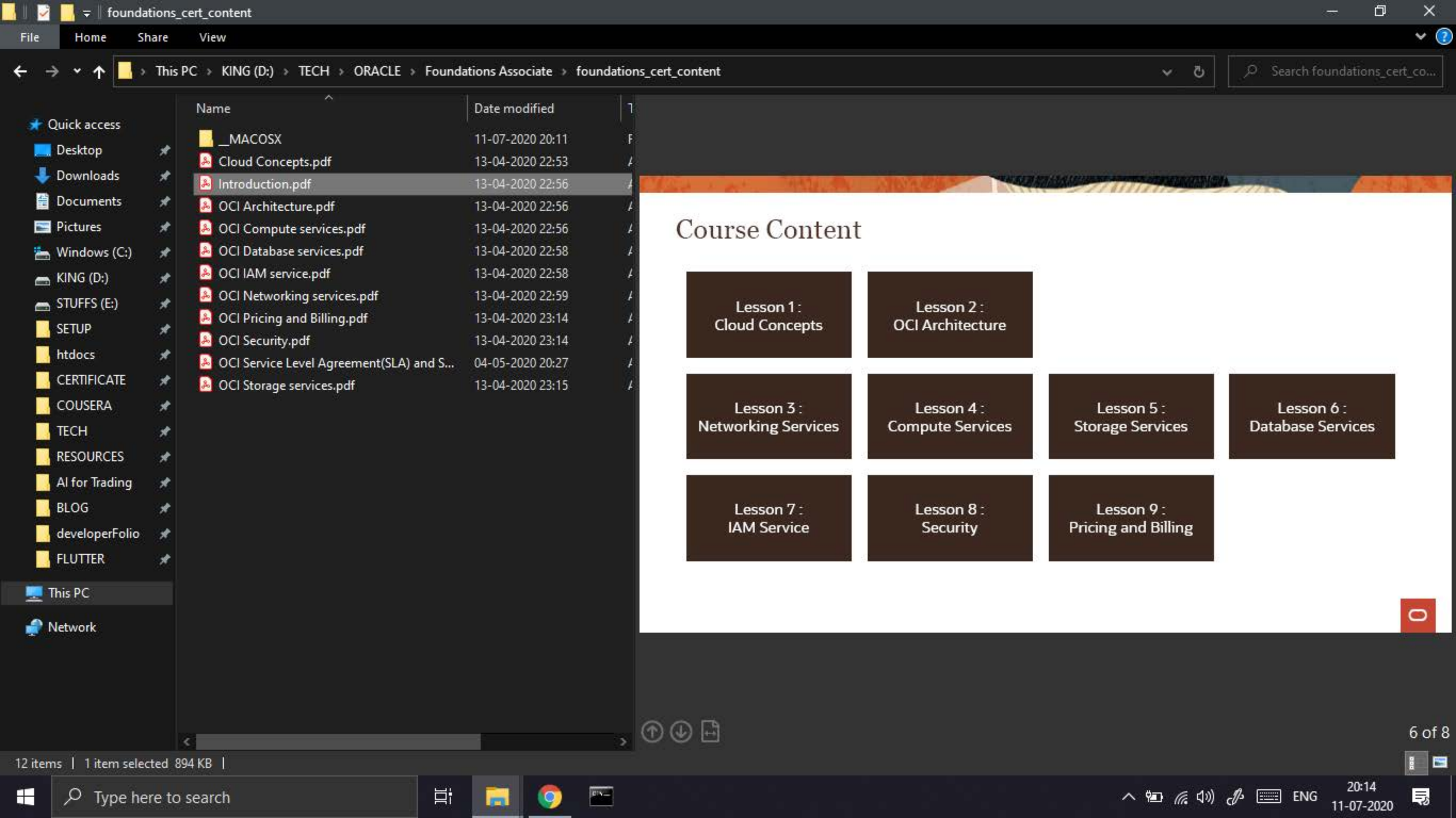
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Lesson 2 : OCI Architecture
Lesson 3 : Networking Services
Lesson 4 : Compute Services
Lesson 5 : Storage Services
Lesson 6 : Database Services
Lesson 7 : IAM Service
Lesson 8 : Security
Lesson 9 : Pricing and Billing
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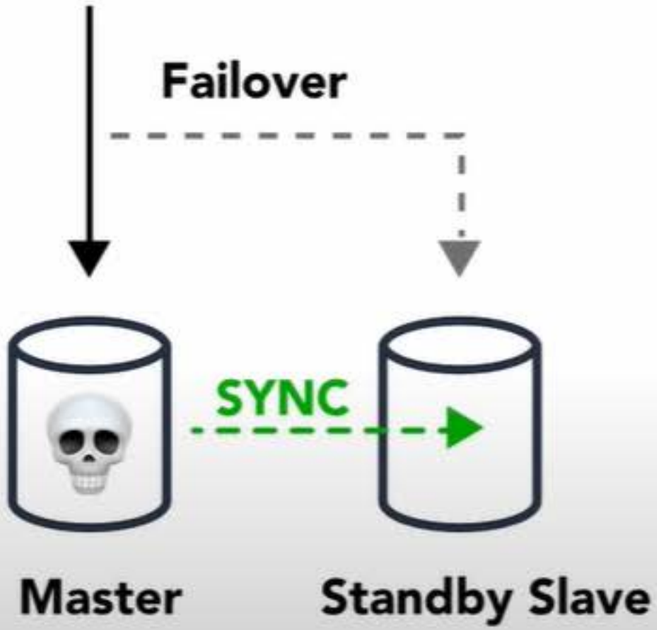
Highly Fault Tolerant

Your ability for your service to ensure there is no
no single point of failure. Preventing the chance of failure



Fail-overs is when you have a plan to shift traffic to a redundant system in case the primary system fails

A common example is having a copy (slave) of your database where all ongoing changes are synced. The Slave is not in-use until a fail over occurs and it becomes the primary database.

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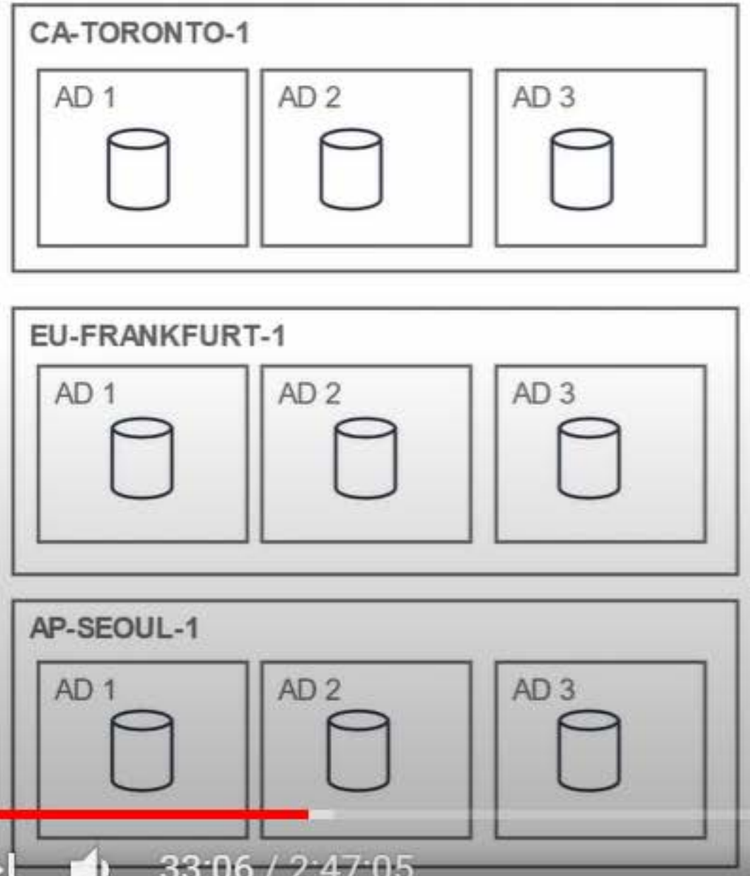
High Durability

Your ability to **recover** from a disaster and to prevent **the loss** of data
Solutions that recover from a disaster is known as **Disaster Recovery (DR)**



Do you have a backup?
How fast can you restore that backup?
Does your backup still work?
How do you ensure current live data is not corrupt?

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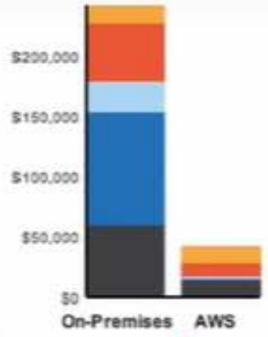
Total Cost of Ownership (TCO)

CAPEX

On-Premise

Software license Fees



OPEX

OCI

Subscription Fees

- Implementation
- Configuration
- Training
- Physical Security
- Hardware
- IT Personal
- Maintenance

- Implementation
- Configuration
- Training

75% Savings

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