



ORACLE

Oracle Cloud Infrastructure Compute Services

Oracle Corporation
Feb 2020

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Agenda



Bare Metal

VMs

Scaling

Container Engine

Functions

Oracle Cloud Infrastructure Compute Services



Bare Metal

Code
App Container
Language Runtime
Operating System
Virtualization



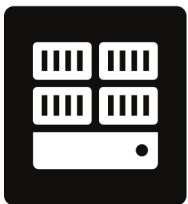
**Dedicated
Virtual Hosts**

Code
App Container
Language Runtime
Operating System



**Virtual
machines**

Code
App Container
Language Runtime
Operating System



**Container
Engine**

Code
App Container



Functions

Code

Bare Metal, VM and Dedicated Hosts

Bare Metal (BM)

Direct Hardware Access –
customers get the full bare
metal server
(single-tenant server)

No VMs

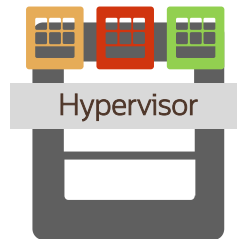


Bare Metal Server

Virtual Machine (VM)

A hypervisor to virtualize the
underlying bare metal server into
smaller VMs
(multi-tenant VMs)

VMs (multi-tenant)

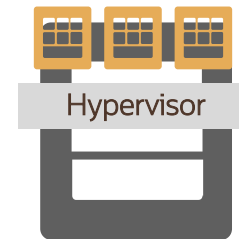


Bare Metal Server

Dedicated VM Hosts (DVH)

Run your VMs instances
on dedicated bare metal
servers (single-tenant VMs)

VMs (single-tenant)



Bare Metal Server

VM compute instances runs on the same hardware as a Bare Metal instances, leveraging the same cloud-optimized hardware, firmware, software stack, and networking infrastructure

Bare Metal use cases

Direct Hardware Access with all the Security, Capabilities, Elasticity and Scalability of Oracle Cloud Infrastructure



Workloads that are
Performance-intensive



Workloads that are
not virtualized

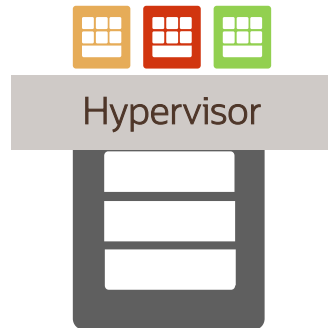


Workloads that require
a specific hypervisor



Workloads that
require BYO Licensing

VM use cases



Use VMs when you want to control all aspects of an environment

Use VMs when you want to deploy a legacy app running on Windows or Linux

You can use VMs to move applications from on-premises to Oracle Cloud Infrastructure

VMs require work – OS patch management, security configuration, monitoring, application configuration and scaling to handle variable traffic

Instance basics

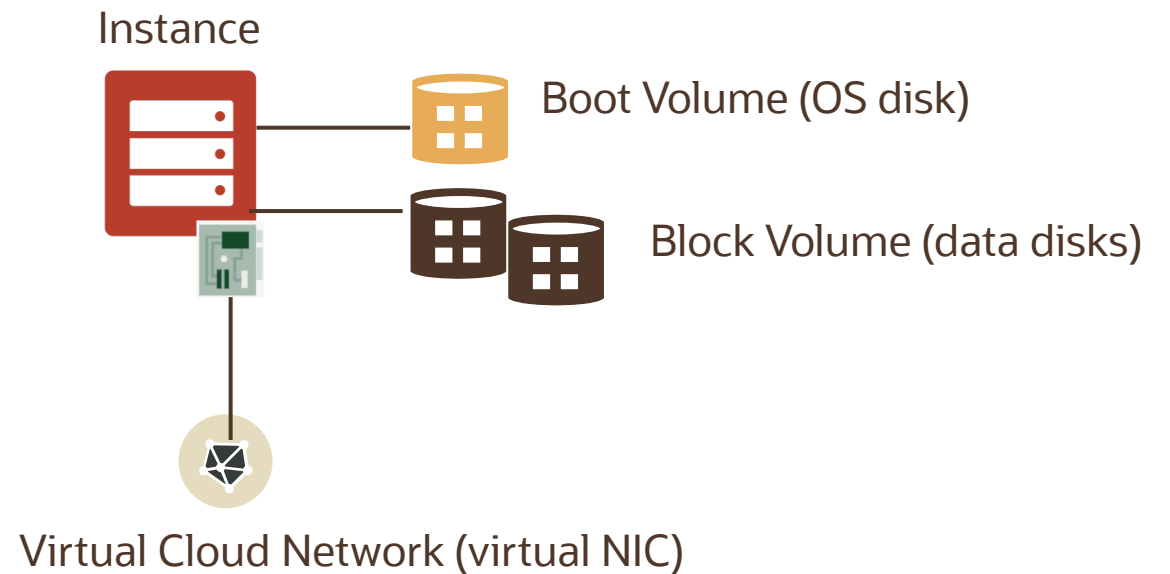
Various instance sizes for every workloads (CPU, RAM, Bandwidth)

Supports both Intel and AMD processors with industry leading price/performance

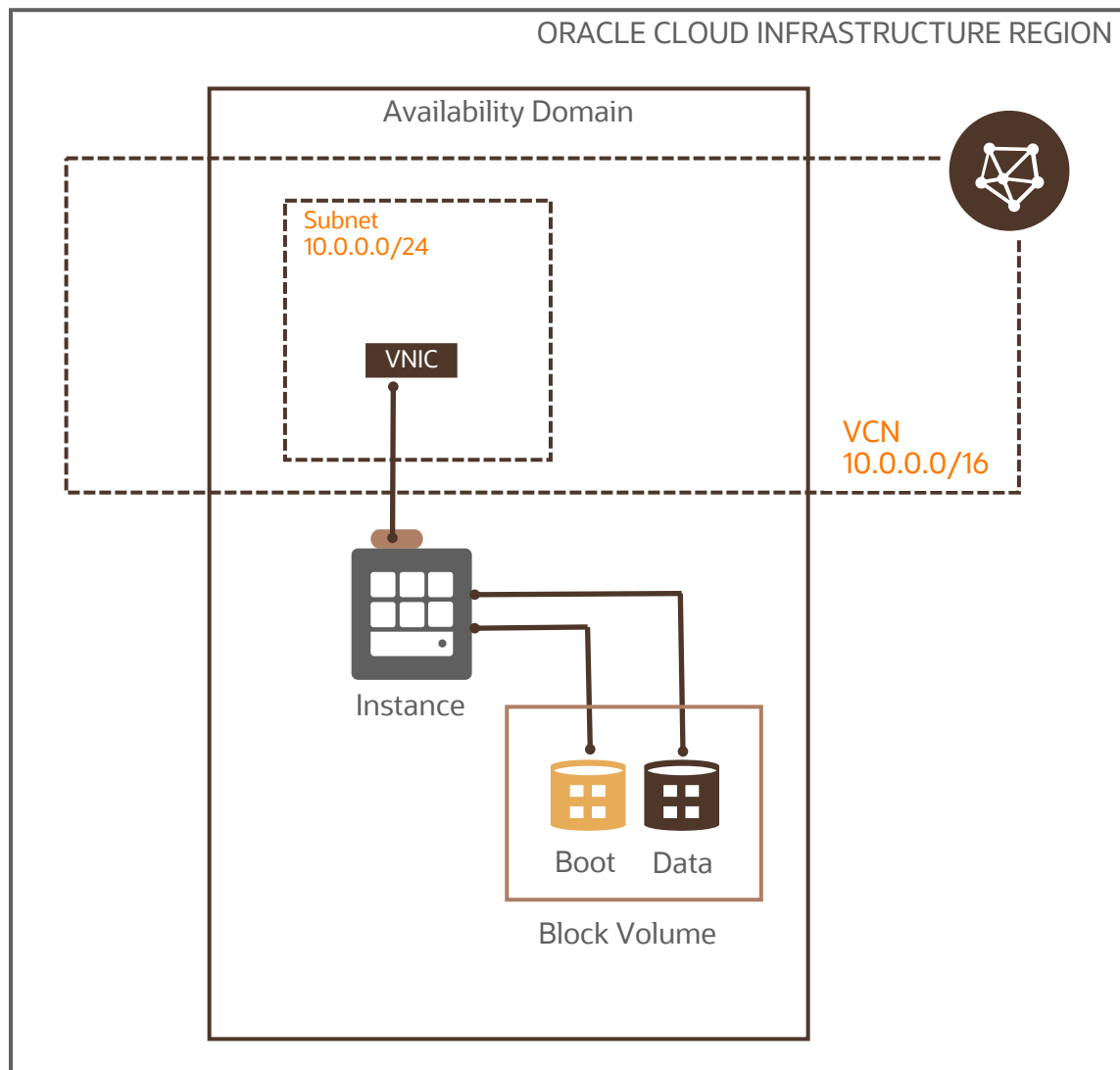
Provide GPU and HPC instance options

Instances are placed on virtual network with powerful connectivity options (incl. on-premises)

Compute instances depend on other Oracle Cloud Infrastructure services such as Block Volume and VCN



Instance basics




Vertical Scaling

- Scale-up and Scale-down instance shape supported
- New shape must have the same hardware architecture.
- Downtime is required. The instance must be stopped before resize it

Resize Instance [help](#) [cancel](#)

Change the size of your instance to support changes in application workload.

Current Shape: VM.Standard2.1

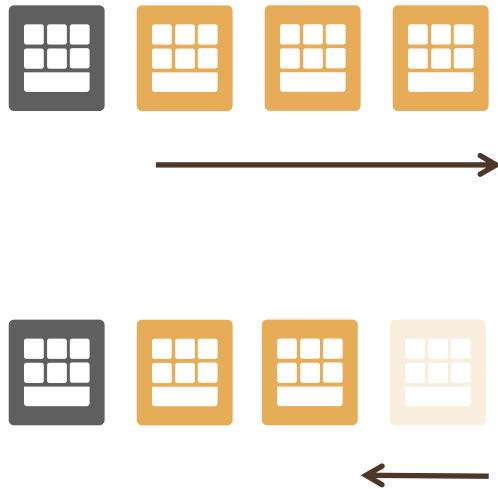
 This instance is running. You must stop the instance before you resize it. [Learn more](#) about resizing instances.

	Shape Name	OCPU	Memory (GB)	Local Disk (TB)	Network Bandwidth	Max Total VNICs
<input checked="" type="checkbox"/>	VM.Standard2.1	1	15	Block Storage only	1 Gbps	2
<input type="checkbox"/>	VM.Standard2.2	2	30	Block Storage only	2 Gbps	2
<input type="checkbox"/>	VM.Standard2.4	4	60	Block Storage only	4.1 Gbps	2
<input type="checkbox"/>	VM.Standard2.8	8	120	Block Storage only	8.2 Gbps	4
<input type="checkbox"/>	VM.Standard2.16	16	240	Block Storage only	16.4 Gbps	8
<input type="checkbox"/>	VM.Standard2.24	24	320	Block Storage only	24.6 Gbps	12

1 Selected Showing 6 Item(s)

Resize Cancel

Autoscaling



Enables large scale deployment of VMs from a single gold image with automatic configuration

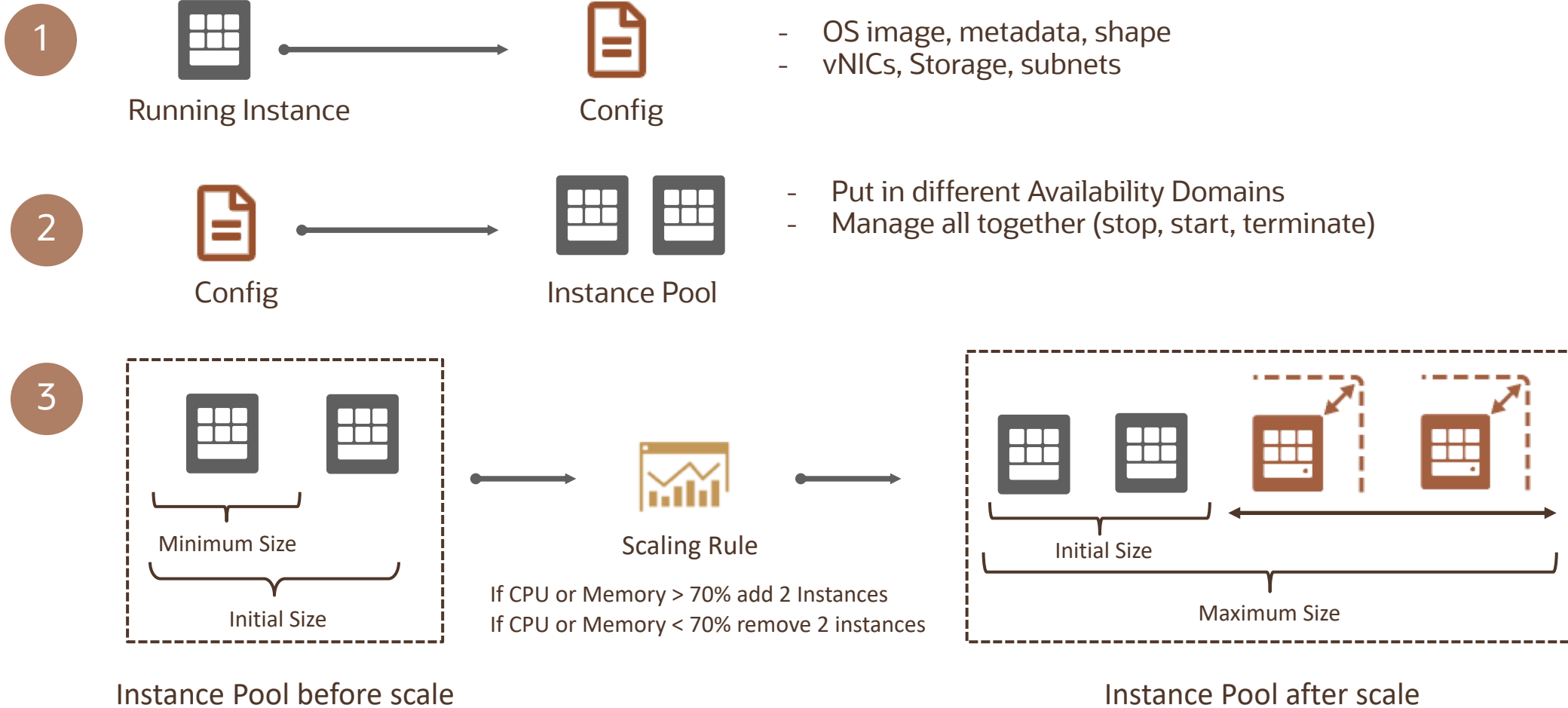
Referred to as scale-out or scale-in

If one VMs fails in the Autoscaling group, others will keep working

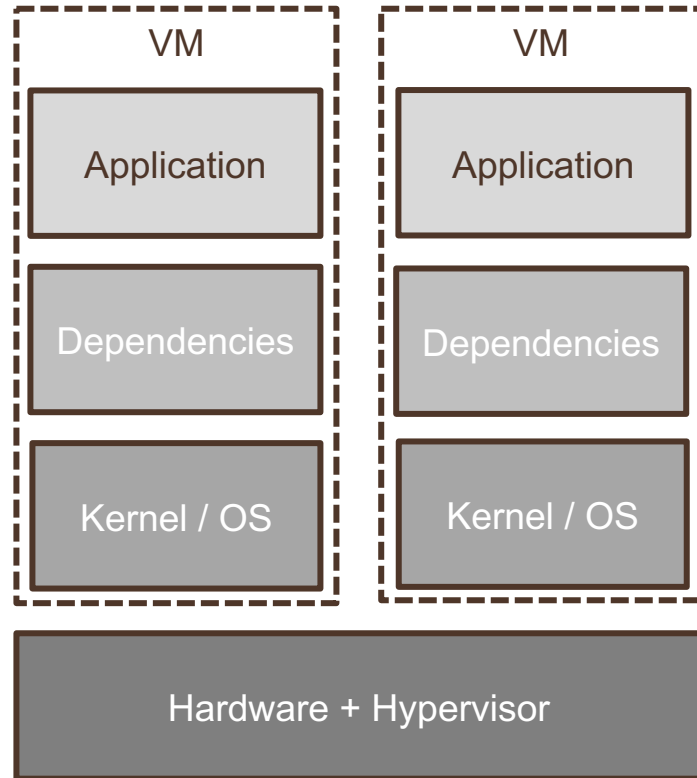
Match traffic demand by adding or removing VMs automatically (supports auto scaling based on metrics – CPU or Memory utilization)

No extra cost for using Autoscaling

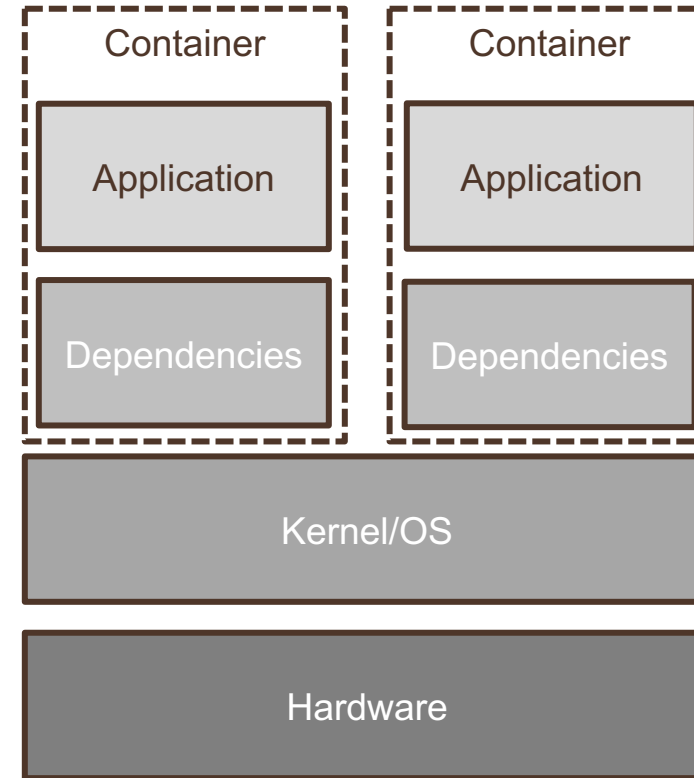
Autoscaling



Containers v/s VMs



Each virtual machine (VM) includes the app, the necessary binaries and libraries and an entire guest operating system



Containers include the app & all of its dependencies, but share the kernel/OS with other containers. Containers are not tied to any specific infrastructure and can run anywhere

How to deploy Containers?

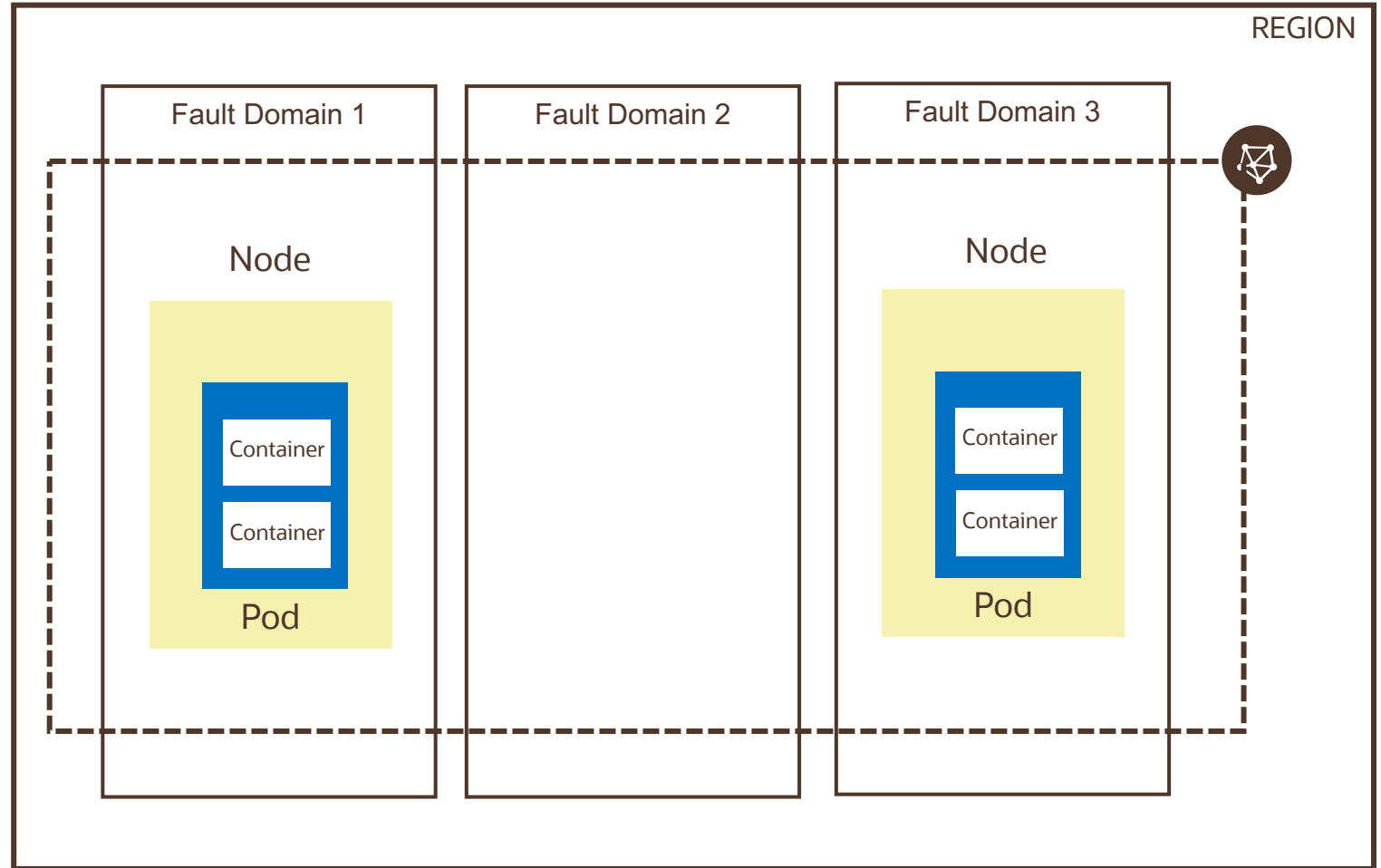
- Manually SSH into machines and run Docker
 - Pro: Simple and easily understood
 - Con: Not automated, no reproducible, doesn't scale, doesn't self heal
- Scripting or config management tools
 - Pro: Integrates with existing environments, easily understood
 - Con: Doesn't scale, doesn't self heal, no scheduling mechanism
- Orchestration Systems
 - Pro: Automated, reproducible, self healing, scalable
 - Con: additional tooling and training required, some overhead

Oracle Kubernetes Engine

Kubernetes is an open source system for automating deployment, scaling and management of containerized applications

OKE is a fully-managed, scalable, and highly available service that you can use to deploy your containerized applications in Oracle Cloud Infrastructure

OCIR is a managed Docker container registry service and can be used to pull images for k8s deployments



Functions

In Oracle Functions, functions are:

- small but powerful blocks of code that generally do one simple thing
- stored as Docker images in a specified Docker registry
- invoked in response to a CLI command or signed HTTP request



Push container
to registry



Configure function
trigger



Code runs only
when triggered



Pay for code
execution time only

Summary



Bare Metal

VMs

Scaling

Container Engine

Functions



Oracle Cloud always free tier:

oracle.com/cloud/free/

OCI training and certification:

cloud.oracle.com/en_US/iaas/training

cloud.oracle.com/en_US/iaas/training/certification

education.oracle.com/oracle-certification-path/pFamily_647

OCI hands-on labs:

ocitraining.qcloudable.com/provider/oracle

Oracle learning library videos on YouTube:

youtube.com/user/OracleLearning

Thank you

