Oracle Cloud Infrastructure Products

Oracle Container Engine for Kubernetes (OKE) & Oracle Cloud Infrastructure Registry (OCIR)

—

Sárecz Lajos

June 2020

Safe harbor slide

The following is intended to outline our general product direction. It is intended for information purposes only, and may not be incorporated into any contract. It is not a commitment to deliver any material, code, or functionality, and should not be relied upon in making purchasing decisions.
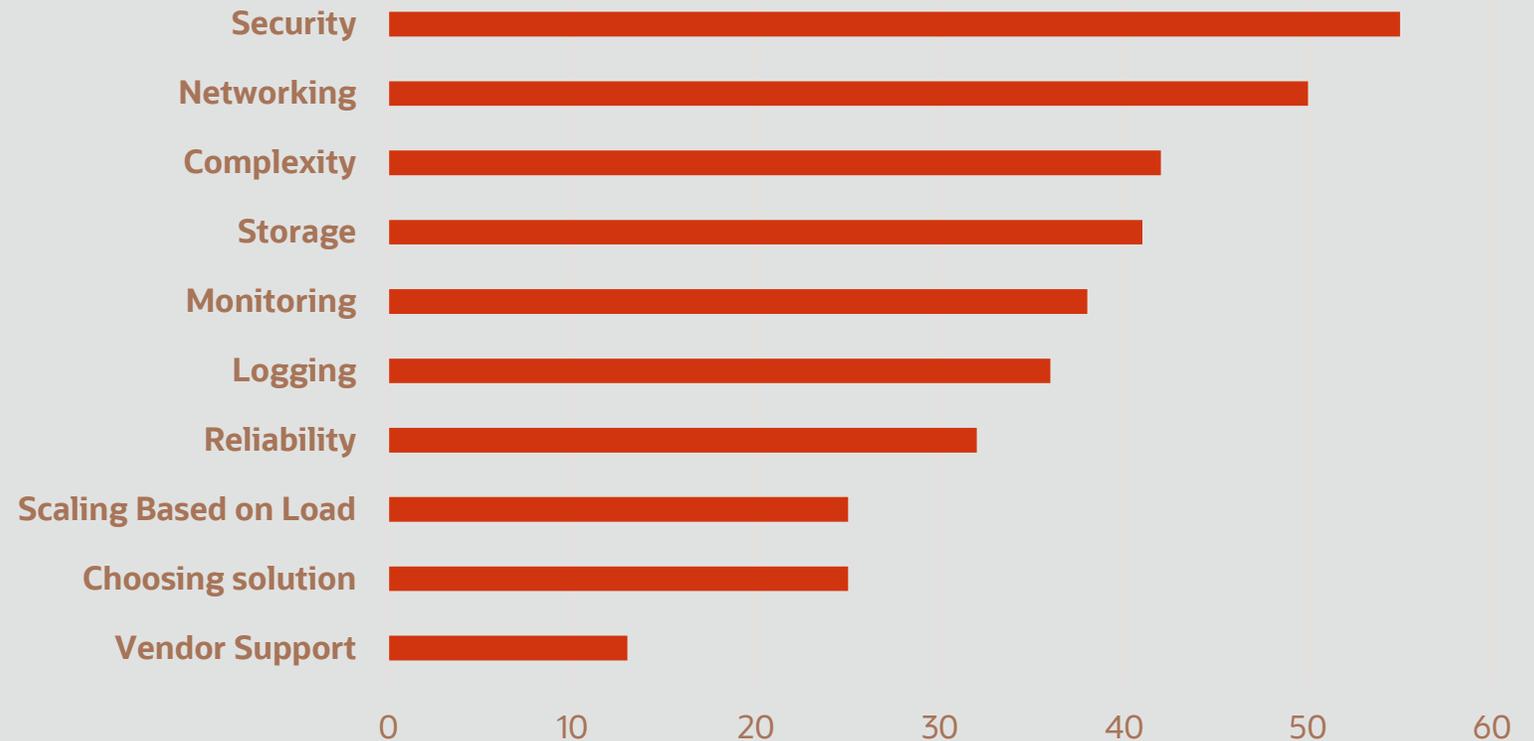
The development, release, timing, and pricing of any features or functionality described for Oracle's products may change and remains at the sole discretion of Oracle Corporation.

Agenda

- **Kubernetes Challenges & Oracle Cloud Infrastructure (OCI)**
- **OCI Products**
  - **Oracle Container Engine for Kubernetes (OKE)**
  - **Oracle Cloud Infrastructure Registry (OCIR)**
- **Pricing**
- **Use Cases**
- **Demo**

Kubernetes Challenges

➢ **Managing Kubernetes Infrastructure, upgrading, security**

➢ **Container networking & persistent storage**

➢ **Managing Teams & Access**

➢ **CI/CD Integration, automated testing, conditional release**

Challenge	Percentage
Security	55
Networking	49
Complexity	42
Storage	41
Monitoring	38
Logging	36
Reliability	32
Scaling Based on Load	25
Choosing solution	25
Vendor Support	13

■ **Percentages reported by companies with >1,000 containers**
(Source: CNCF Survey, The New Stack, 22 Mar 2018)

Oracle Cloud Infrastructure: Complete services

Governance	Security	Management	Automation
IAM, Tagging, Cost Analysis	IAM, Audit, KMS, CASB	Monitoring, Notifications, Alarms	Resource Manager, Ansible

Analytics / Integration / SOA Suite / Identity / Management / Content / API Platform / Developer / Visual Builder / Digital Assistant/ DataFlow / Data Science / Data Safe
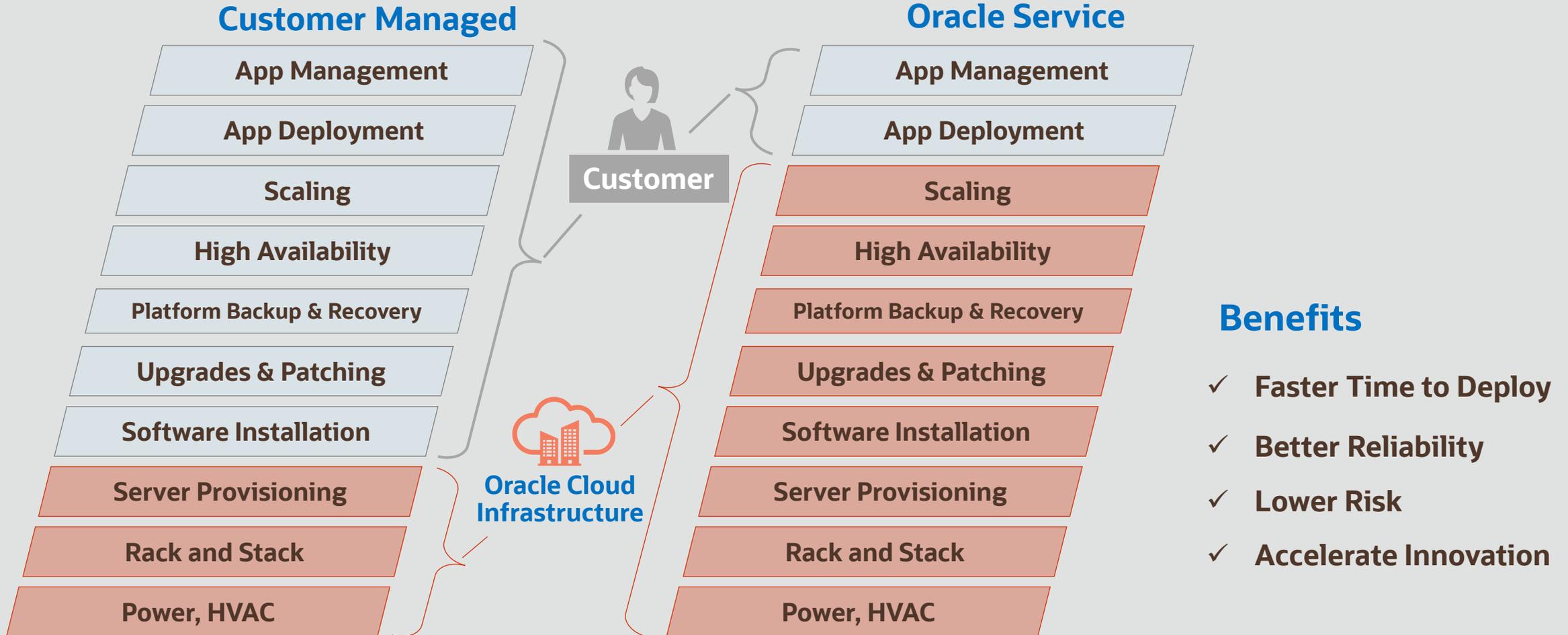
Containers
Containers and Kubernetes

Fully managed, certified Kubernetes service with Docker containers

Data Movement
Storage appliance, Data Transfer

Software NAS gateway, data ingest service with full chain of custody (HDD or appliance)

Autonomous Database
Transactions, Data Warehouse

Fast provisioning. Automatic tuning, patching, securing. 99.995% availability.

Cloud Native
Events, Streaming, Functions

Fully-managed FaaS, event-triggered functions, high-volume data ingest, notifications

Compute
Bare metal/VM, CPUs/GPUs

Up to 64 CPU cores, 8 GPUs, 768 GB RAM, 51 TB local NVMe SSD, 5M IOPS, AMD and Intel processors

Storage
NVMe, Block, File, Object, Archive

Predictable IOPS Block Storage for up to 98% less, storage for whole lifecycle

Database
Bare metal, VMs, Exadata

Millions of TPS; Full RAC and Active Data Guard support

Networking
VCN, LBaaS, FastConnect, VPN

Isolated networks with reserved IPs, security lists, firewalls, lowest cost private connectivity

Public regions   **Government regions**

Oracle Kubernetes-as-a-Service

Customer Managed

- App Management
- App Deployment
- Scaling
- High Availability
- Platform Backup & Recovery
- Upgrades & Patching
- Software Installation
- Server Provisioning
- Rack and Stack
- Power, HVAC

Customer

Oracle Cloud Infrastructure

Oracle Service

- App Management
- App Deployment
- Scaling
- High Availability
- Platform Backup & Recovery
- Upgrades & Patching
- Software Installation
- Server Provisioning
- Rack and Stack
- Power, HVAC

Benefits

- ✓ Faster Time to Deploy
- ✓ Better Reliability
- ✓ Lower Risk
- ✓ Accelerate Innovation

Introducing OKE

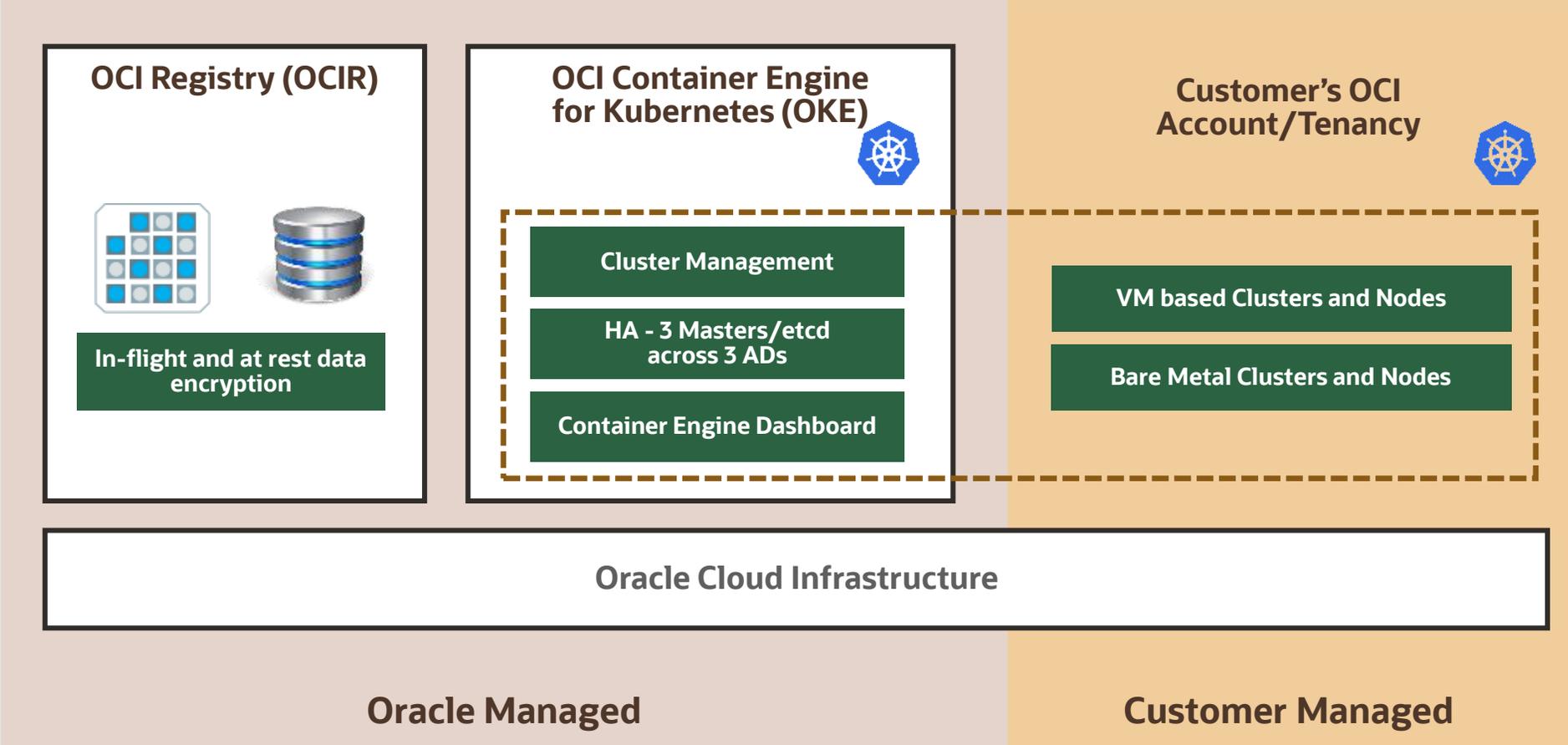**Oracle Cloud Infrastructure Container Engine for Kubernetes (OKE)**

What is it?

- ❖ **Enterprise grade & developer friendly container orchestration service based on Kubernetes**

- ❖ **Fully managed**

- ❖ **Cloud Native Compute Foundation (CNCF) conformant,**

- ❖ **Provides cloud portability due to non-proprietary, unmodified upstream Kubernetes implementation**

- ❖ **Integrated private registry**
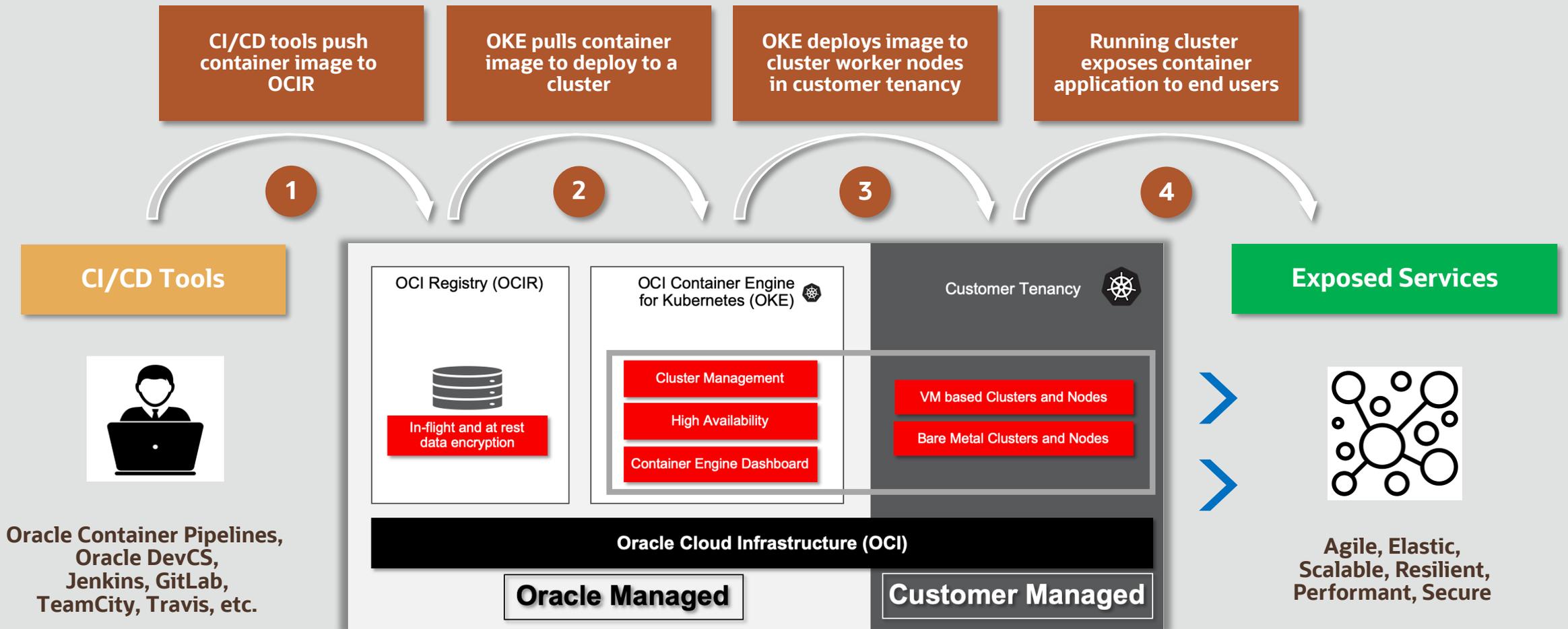
- ❖ **Available in all OCI commercial regions**

What benefits does it provide?

- ❖ **High predictable performance**

- ❖ **Faster Time to Market**

- ❖ **Lower Costs**

Working with OKE and OCIR on OCI

OCI Registry (OCIR)

In-flight and at rest data encryption

OCI Container Engine for Kubernetes (OKE)

Cluster Management

HA - 3 Masters/etcd across 3 ADs

Container Engine Dashboard

Customer's OCI Account/Tenancy

VM based Clusters and Nodes

Bare Metal Clusters and Nodes

Oracle Cloud Infrastructure

Oracle Managed

Customer Managed

OKE & OCIR: Container Application Life Cycle

CI/CD tools push container image to OCIR

OKE pulls container image to deploy to a cluster

OKE deploys image to cluster worker nodes in customer tenancy

Running cluster exposes container application to end users

1　**2**　**3**　**4**

CI/CD Tools

Exposed Services

OCI Registry (OCIR)

OCI Container Engine for Kubernetes (OKE)

Customer Tenancy

In-flight and at rest data encryption

Cluster Management

High Availability

Container Engine Dashboard

VM based Clusters and Nodes

Bare Metal Clusters and Nodes

Oracle Cloud Infrastructure (OCI)

Oracle Managed　**Customer Managed**

Oracle Container Pipelines, Oracle DevCS, Jenkins, GitLab, TeamCity, Travis, etc.

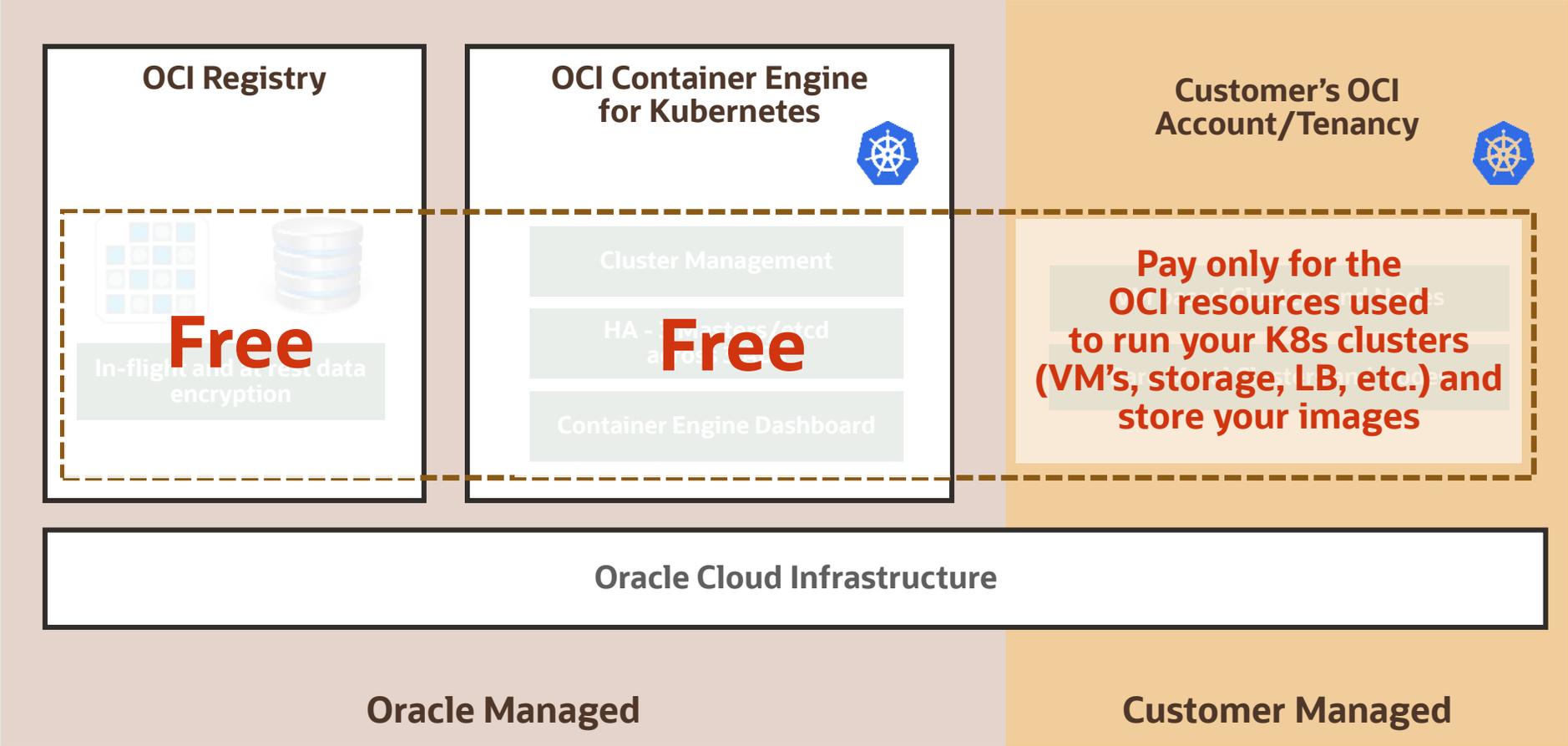**Agile, Elastic, Scalable, Resilient, Performant, Secure**

OKE Differentiation

How does Oracle differentiate itself from other managed Kubernetes offerings from major cloud service providers?

- ✓ Highly available control plane

- ✓ No management fees

- ✓ Enterprise support is included

- ✓ Better performance per dollar

- ✓ Second generation, enterprise-grade cloud

- ✓ Use both bare metal and VMs

- ✓ Consistent performance (no over-subscribe)
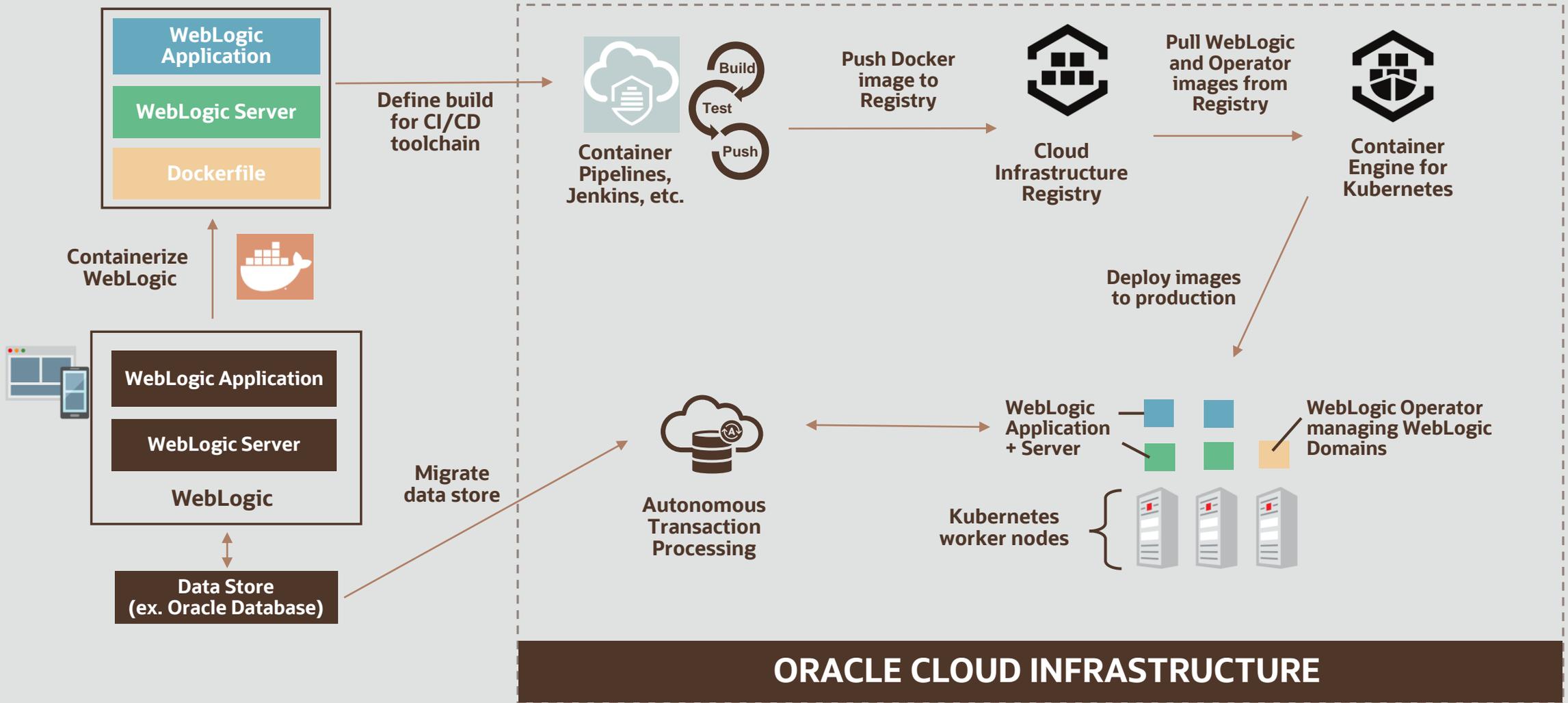
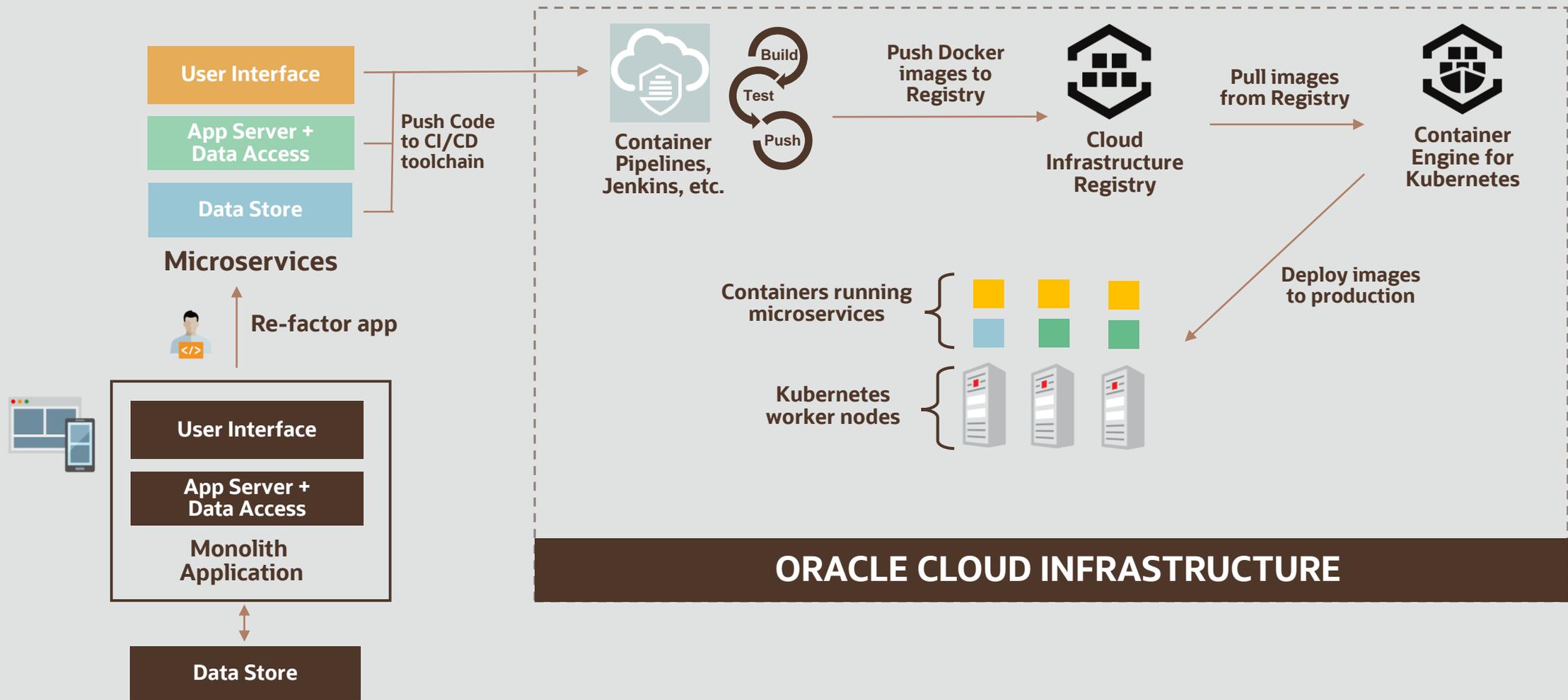- ✓ Industry leading cost effectiveness

OKE/OCIR Pricing and Packaging

OCI Registry

Free

In-flight and at rest data encryption

OCI Container Engine for Kubernetes

Cluster Management

HA - Masters/etcd and OS

Container Engine Dashboard

Free

Customer's OCI Account/Tenancy

Pay only for the OCI resources used to run your K8s clusters (VM's, storage, LB, etc.) and store your images

Oracle Cloud Infrastructure

Oracle Managed

Customer Managed

OKE Regional Footprint tracks with OCI Commercial Datacenters

World map showing commercial datacenter locations:

- TORONTO
- MONTREAL
- BAY AREA
- PHOENIX
- ASHBURN, VA
- NEWPORT, WALES
- LONDON
- AMSTERDAM
- FRANKFURT
- ZURICH
- ISRAEL
- CHUNCHEON
- SEOUL
- TOKYO
- OSAKA
- JEDDAH
- SAUDI 2
- DUBAI
- UAE 2
- MUMBAI
- HYDERABAD
- SINGAPORE
- VINHEDO
- SAO PAULO
- SANTIAGO, CHILE
- JOHANNESBURG
- SYDNEY
- MELBOURNE

Commercial

Containers Use Case: Lift & Shift WebLogic Application

Containerize WebLogic

Define build for CI/CD toolchain

WebLogic Application
WebLogic Server
Dockerfile

WebLogic Application
WebLogic Server
WebLogic

Data Store
(ex. Oracle Database)

Container Pipelines, Jenkins, etc.

Build
Test
Push

Push Docker image to Registry

Cloud Infrastructure Registry

Pull WebLogic and Operator images from Registry

Container Engine for Kubernetes

Deploy images to production

Migrate data store

Autonomous Transaction Processing

WebLogic Application + Server

WebLogic Operator managing WebLogic Domains

Kubernetes worker nodes

ORACLE CLOUD INFRASTRUCTURE

Containers Use Case: Refactor an Existing Application

User Interface

App Server + Data Access

Data Store

Microservices

Push Code to CI/CD toolchain

Re-factor app

User Interface

App Server + Data Access

Monolith Application

Data Store

Container Pipelines, Jenkins, etc.

Build
Test
Push

Push Docker images to Registry

Cloud Infrastructure Registry

Pull images from Registry

Container Engine for Kubernetes

Deploy images to production

Containers running microservices

Kubernetes worker nodes

ORACLE CLOUD INFRASTRUCTURE

Demo