

Oracle Cloud: SaaS + PaaS + IaaS

Oracle on Oracle Cloud, why this decision matters



1 Exabyte+ Storage
45 Billion+ Daily Transactions



27 Tier IV Data Centers
All Geographies



70,000+ Companies
52 Million+ Daily Users



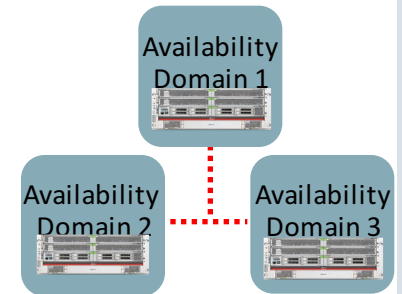
Overview

Oracle on Oracle Cloud, why this decision matters

- Oracle Cloud IaaS (compartments, network, engineered, security)
- Deployment Targets (Express, VM, Bare Metal, Engineered)
- RAC & DG (Local vs AD failover, Enterprise HA vs Storage Replication)
- Multitenant (Cost, Agility, Dev-Test, ISV ready)
- Developer LCM (iBackup, Test Master, Masking, Snapshot, Cloning)
- Online Maintenance (RAG and DG online patch/upgrade, Multitenant)
- Data Management Platform (Big Data, Big Data SQL, NoSQL, Oracle)
- Hybrid Automation and Operations (Cloud Machines, EM, Multitenant)
- CI/CD pipeline integration (Developer CS, App Container CS, Java CS)

Re-Thinking IaaS in the Cloud

Enterprise requirements, Oracle on Oracle Cloud IaaS matters



- Cloud Native – built for the scale-out web application, variable workloads
- Enterprise – systems of record, consistent performance, data security, governance & control, steady state workloads with business critical management and oversight
- Re-Thinking IaaS – **Cloud for Enterprise**
 - Classic cloud elasticity, reliability, cost effectiveness **AND**
 - Not shared, but completely isolated and dedicated IaaS resources for each tenant – Predictable
 - No restrictions tied to virtualization technology – VMWare, KVM, etc
 - Native role based access management & sub-account billing - Compartments
 - Engineered for specific workloads e.g. Database – Software in silicon, Query & Storage Offloading

Service Choice of Deployment Target

Requirements driven, cost optimized, Oracle on Oracle Cloud true pay per use



	Exadata Express	Database - EC	Database - BM	Exadata
Editions	EE	SE2, EE, HP, EP	SE2, EE, HP, EP	EP
Implementation	1 Dedicated PDB	1 Dedicated CDB	1+ Dedicated DBs	1+ Dedicated DBs
Management	Oracle	Customer	Customer	Customer
Max DB size	20GB, 50GB, 50IM	50GB – 11.2TB	4.2TB – 9.6TB	42TB – Petabytes
CPU range	~1	1 – 24	2 – 36	16 – 100's
Storage	Exadata,Flash:Fixed	Block: Elastic per GB	Local NVMe:Fixed	Exadata,Flash:Fixed

Shared

Dedicated
Virtualized

Dedicated
Bare Metal

Engineered

a427075 | Preferences robert.c.greene@oracle.com ▼

ORACLE® CLOUD My Services

Dashboard

Users

Notifications

Dashboard

Identity Domain a427075

Account Management Customize Dashboard Create Instance

Cloud Services

0 Important Notifications

Bare Metal

0 Instances

MySQL Cloud Service

Instance 1

GGCS

Instance 1

Database Backup

0 Instances

11	13	15	17
3	1	4	5

Storage Capacity (GB-Months)

Exadata

0 Instances

Database

Instances 4

No data to display

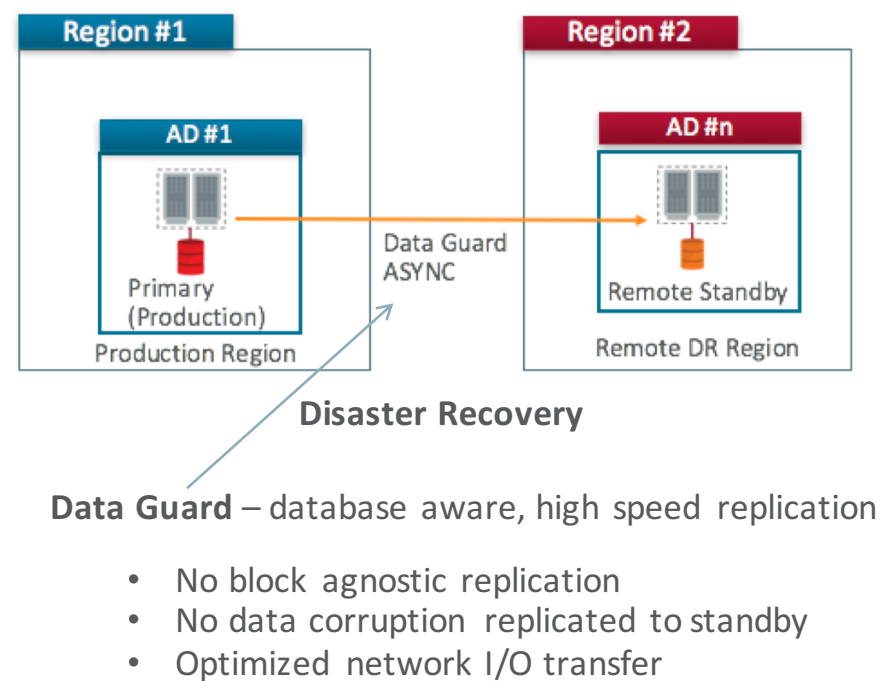
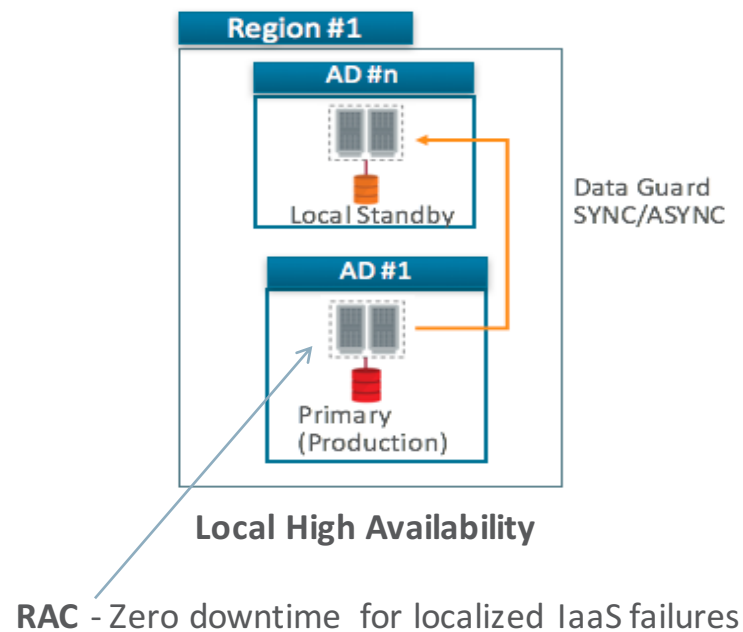
3 AM	7 AM
0.06	0.12

EE OCPU Months (General Purpose)

CPU (%) DemoSingleInstance/db_1/...

HA and DR in a Cloud IaaS

Enterprise availability, Oracle on Oracle Cloud proven best practices





Oracle Database Cloud Service

Create Service

Cancel



Next >

Service

Provide basic service instance information.

* Service Name ?Description * Service Level ?* Metering Frequency ?* Software Release ?* Software Edition ?

* Database Type

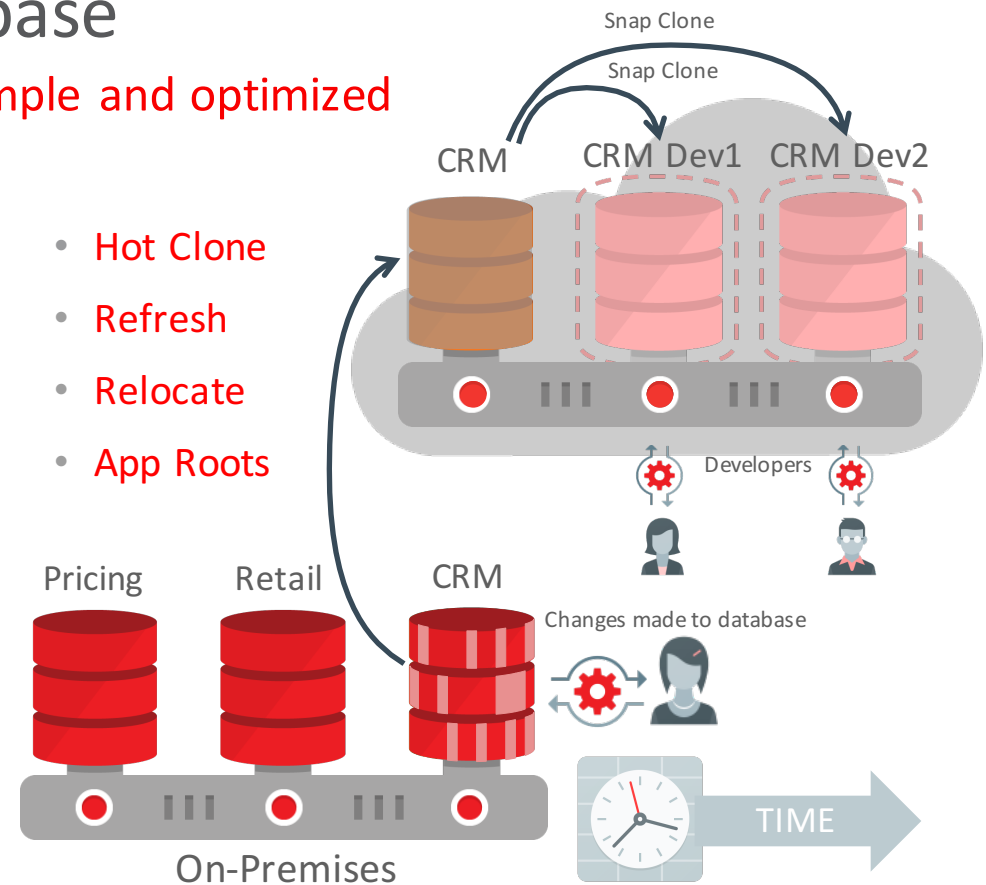
- ✓ Single Instance
- Database Clustering with RAC
- Single Instance with Data Guard Standby
- Database Clustering with RAC and Data Guard Standby

A primary cluster database replicated to a second, standby cluster database using Oracle Data Guard.

Containerization for the Database

Multitenant, Oracle on Oracle Cloud agile, simple and optimized

- Costs less
- ISV Ready
- Dev-Test efficient
- Agility of Docker for Database
- Ultimate consolidation platform





Overview

1
Node

Administration

0
Patches available

1
Snapshot available

Service Overview

1
Nodes

1
OCPU

Status: Ready

Connect String: DemoSingleInst

Backup Destination: Both Cloud Sto

PDB Name: PDB1

[Show more...](#)

Resources



Host Name: DemoSingleInstance

Public IP: 129.144.147.157

SID: ORCL

As of May 17, 2017 4:27:45 PM UTC ↺

370
GB
Storage

Version: 12.2.0.1

Edition: Enterprise Edition - High Performance

Container: Storage-a427075/FirstCont...

Name: ORCL

OCPU: 1

Memory: 7.5 GB

Storage: 370 GB

Associations

Open DBaaS Monitor Console

Open Application Express Console

Open EM Console

Start

Stop

Restart

Scale Up/Down

Access Rules

SSH Access

Replace Database using Backup

Containers

Change Resource Plan

Configure Oracle-Managed Files

Page Refreshed 4:35:25 PM GMT

Status

Database

Up Time 19 days, 14 hours, 58 minutes

Type CDB (3 PDBs)

Archive Log Enabled Yes

Local Undo Enabled Yes

Using Oracle-Managed Files Yes

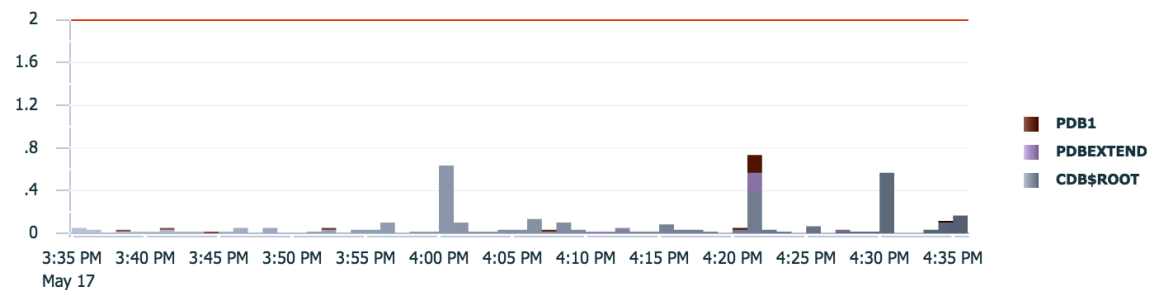
Resource Limits

Active Resource Plan None

Default PDB Directive N/A

Active Sessions

☐ Show CPU Activity Only ☐ Show Top PDBs Only ☒ CPU Limits

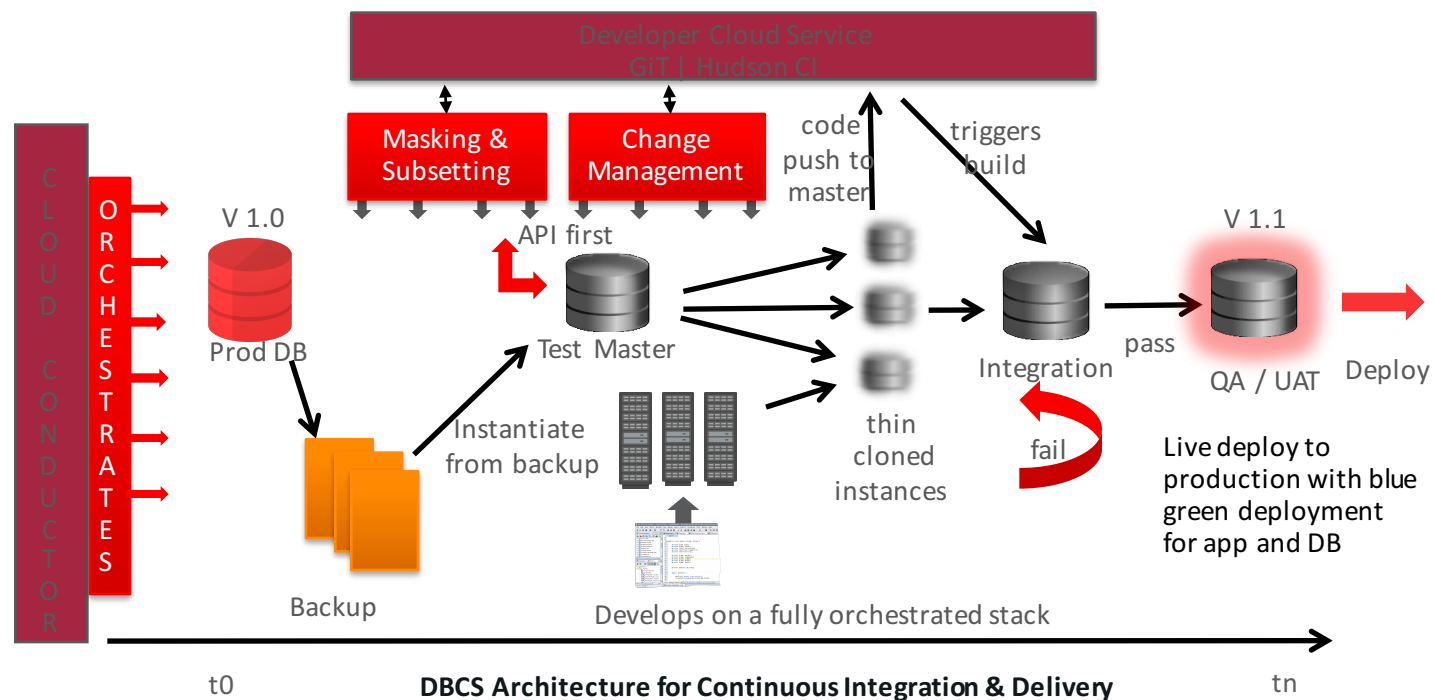


Top Containers

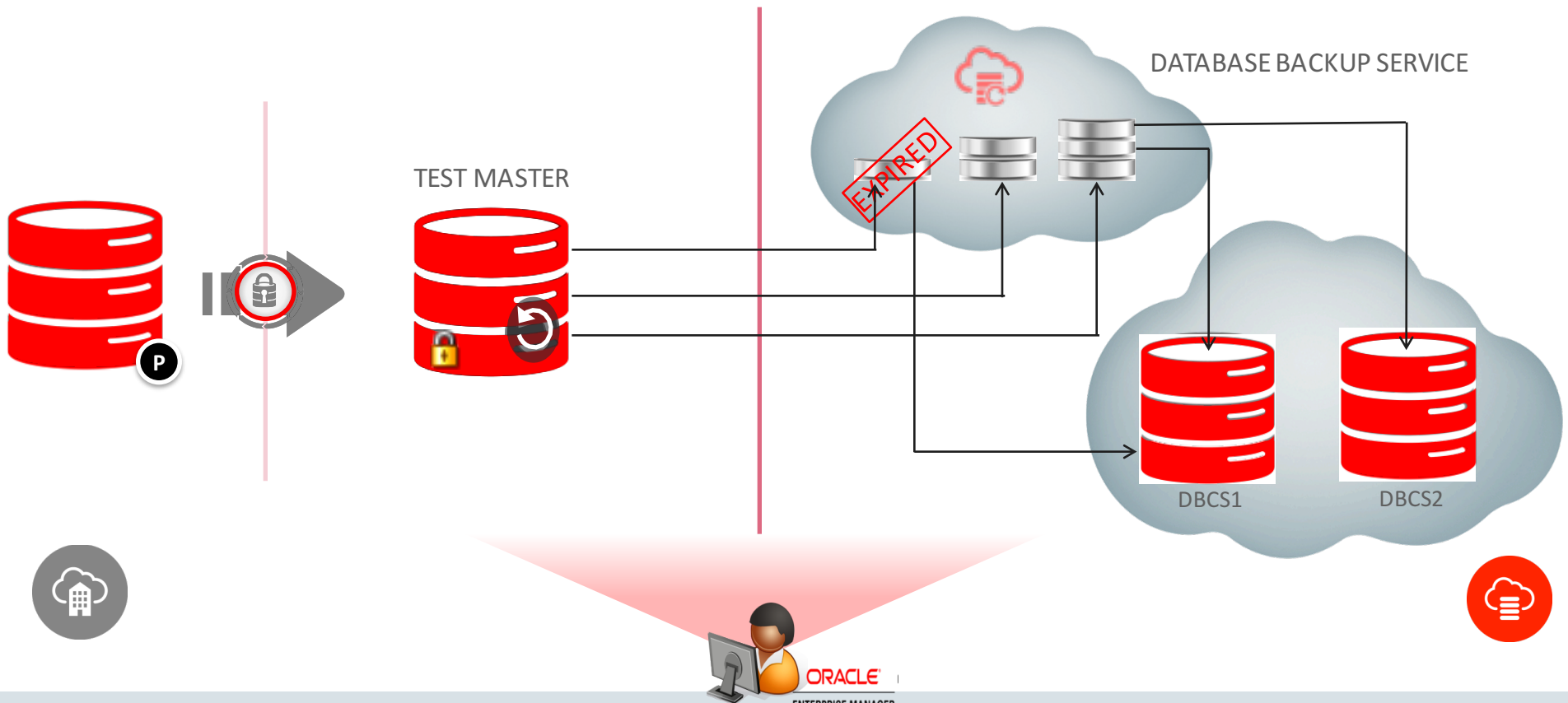
Actions ▾		Top 100 By		CPU ▾	<div><div>Create</div><div>Clone</div><div>Plug</div><div>Unplug</div><div>Performance Hub</div><div>Memory</div></div>	Container Name ▾					<div><div></div></div>
Container Name ▲	Type	Open ...	Open Time	Restri...	Size	Violat...	Active Sessions	Memory Used	IO Requests	IO Throughput	
DEMOS			19 days, 14...		<div><div></div></div> 5GB						
PDB1			19 days, 14...		<div><div></div></div> 1GB			<div><div></div></div> 329MB	<div><div></div></div> < 1/s	<div><div></div></div> < 1 B/s	
PDBEXTEND			19 days, 46...		<div><div></div></div> 2GB		0.02	<div><div></div></div> 330MB	<div><div></div></div> < 1/s		

Agile Development for Database apps

Complete dev-test LCM, Oracle on Oracle Cloud makes CI/CD easy



Data Refresh on PaaS from On-premises Production



Data Cloning & Refresh for DevOps

ORACLE[®] 13^c
ENTERPRISE MANAGER



Production



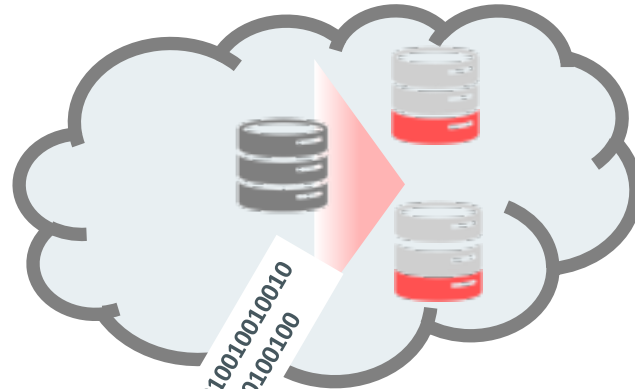
Masking



Test Master



01001011001010010010010010
0100100100100100100100100



Snap Clones



49 clones/month

60X faster with **180TB**
savings over EMC



60,000 refreshes per year
supporting DevOps for
2000+ Developers



Overview

1
Node

Administration

0
Patches available

1
Snapshot available

Backup Patching **Snapshots**

As of May 17, 2017 4:15:45 PM UTC ↻

Create and delete point-in-time snapshots for storage volumes of this service. These snapshots can be used to create New Database Cloud Service instances as linked clones.

Available Storage Snapshots

Create Storage Snapshot



DemoSnap

Created: Apr 28, 2017 03:02:01 PM UTC

▲ Linked Clones: 1

DBClone Created: Apr 28, 2017 03:14:47 PM UTC

Description: A snap to base clones

Create Database Clone

Delete

Overview

1
Node

Administration

0
Patches available

1
Snapshot available

Service Overview

As of May 17, 2017 4:34:05 PM UTC 

1	1	7.5 GB	370 GB
Nodes	OCPUs	Memory	Storage

Status: Ready

Version: 12.2.0.1

Connect String: DemoSingleInstance:1521/P...

Edition: Enterprise Edition - High Performance

Backup Destination: Both Cloud Storage and...

Cloud Storage Container: Storage-a427075/FirstCont...

PDB Name: PDB1

Container Name: ORCL

[Show more...](#)

Resources



Host Name: DemoSingleInstance

Public IP: 129.144.147.157

SID: ORCL

OCPUs: 1

Memory: 7.5 GB

Storage: 370 GB

Associations



Service Name: [DBClone](#)

Type: Oracle Database Cloud Service

Status: Ready



Service Name: [GGService](#)

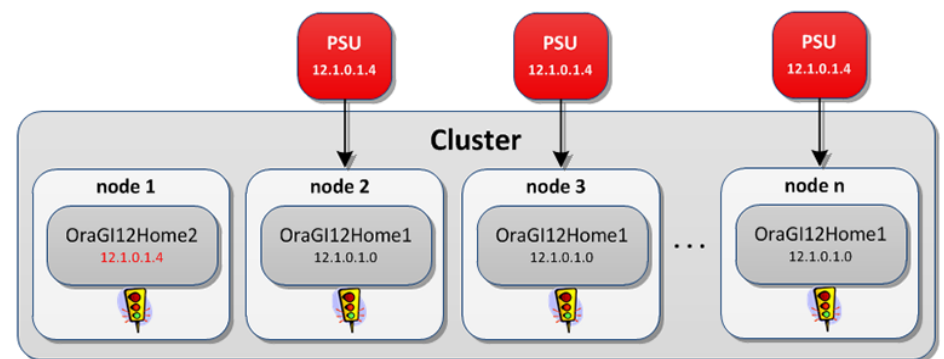
Type: Oracle Golden Gate Cloud Service

Status: Ready

Online maintenance for elevated SLAs

Rolling patching, self managed containers, Oracle on Oracle Cloud provides best up time

- Oracle 12.2 Grid Infrastructure online patching
- RAC rolling patch automation
- Data Guard rolling patch automation
- Multitenant CDB with online PDB relocate





Overview

2
Nodes

Administration

1
Patches available

Backup

Patching

As of May 17, 2017 4:20:43 PM UTC



Available Patches



PSU Update 12.1.0.2.170117

[Readme](#)

Release Date: Jan 17, 2017 1:40:00 AM UTC

Affected Component: RAC Database

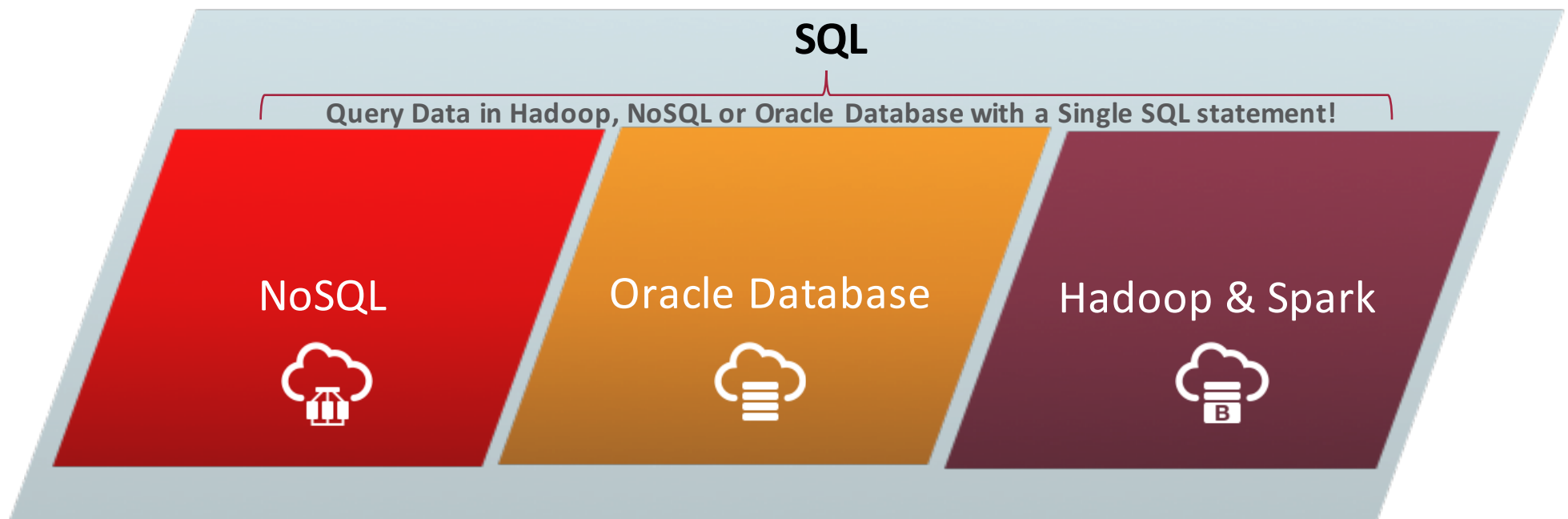
Requires Restart: Yes

Precheck

Patch

Oracle Cloud Data Management Platform

Any data type, any workload, any scale – Oracle on Oracle Cloud simplifies modern apps





Service Details: Oracle Big Data Cloud Service

Open Service Console

Overview

1 provisioned instances

Billing Metrics

Resource Quotas

Business Metrics

Documents

Status

Additional Information

Plan: Oracle Big Data Cloud Service
Service Start Date: 27-Jul-2016
Subscription ID: 537050936
Service Instance ID: 548257714
Customer Account:
CSI Number: 50209015

Data Jurisdiction: US Commercial 2
Identity Domain Name: a422306
Identity Domain Id: a422306
Status: Active
Domain SFTP Host & Port: sftp.us2.cloud.oracle.com:22

Service Instances

Create Service Instance



Show: Active



bigdataappliance

Service Type: BigData
Instance Id: 548258743
Status: Active
Plan: Oracle Big Data Cloud Service
Additional Nodes: 2
Starter Pack: 1
Additional Number of OCPU (Cores): 0

Administrator:
Requested By:

Open Service Console

Delete

Modify

Create Like

Modify Oracle Big Data Cloud Service Instance

Cancel

Instance Details

Modify

Next ➔

Instance Details

Provide the details to modify the configuration of the instance. The instance will be modified with the additional resources specified. For example: if the current value for an attribute of the instance is 100 units and you set to update with 50 units below, the instance will be modified to have 150 units for that attribute once the request is completed.

i You are permitted to use resources marked with *Overage Enabled* above your subscription rate at additional cost. [Details](#)

☰

Instance Details

➤

* Name

bigdataappliance

Additional Nodes

2 Current

No Balance Available + Overage Enabled **i**

Additional Number of OCPU (Cores)

0 Current

No Balance Available + Overage Enabled **i**

Add Big Data SQL (1 if yes)

1

* Cloudera Manager admin password

?

* Confirm Cloudera Manager admin password

?

👤

Administrator Details

* Email

?

* User Name

First Name

Last Name

Admin

bigdata.us.oraclecloud.com/bdcsul/app/index.html#service/38768F7F873BCAD3E050C10A1194079D/c50f89e3-d612-4de5-9...

ORACLE[®] Big Data Cloud Service Clusters Dashboard Users Notifications

Service Detail a422306 jean-pierre.dijcks@oracle.com

Overview Applications Available nodes Requests

BDCSDevTest As of Apr 3, 2017 3:41:32 PM

5 Nodes	160 OCPU's	1.3 TB Memory	240 TB Storage
-------------------	----------------------	-------------------------	--------------------------

Applications

BigDataSQL configuration

Please select database to be installed

Available databases: Database SID: dbaf4cec, version 12.1.0.2

* Cloudera Administrator Password: Database SID: dbaf4cec, version 12.1.0.2

Database SID: dbe682e1, version 12.1.0.2

Database SID: dbe8d10e, version 12.1.0.2

Install **Cancel**

Display a menu

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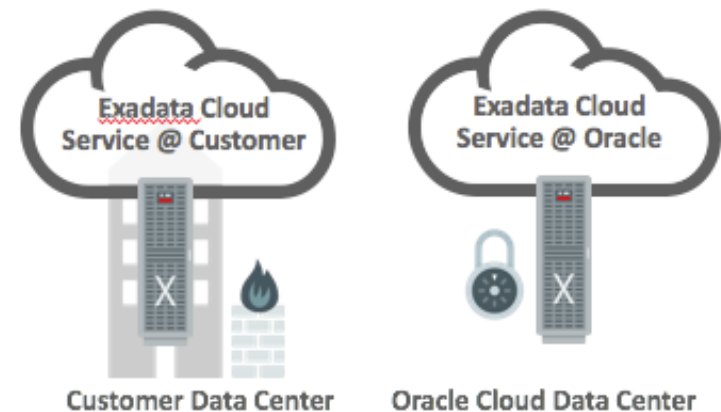
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Hybrid Cloud that works

Cloud @ Customer, Oracle on Oracle Cloud even behind your firewall

- EM Cloud Control
 - Single pane of glass
- Same DBCS and ExaCS deployments
 - On-premises behind your firewall
- Same web console, REST API's
- Same pay-per-use subscriptions
- Same minimum cores for ExaCM
- Oracle Multitenant portability : Dev-Test

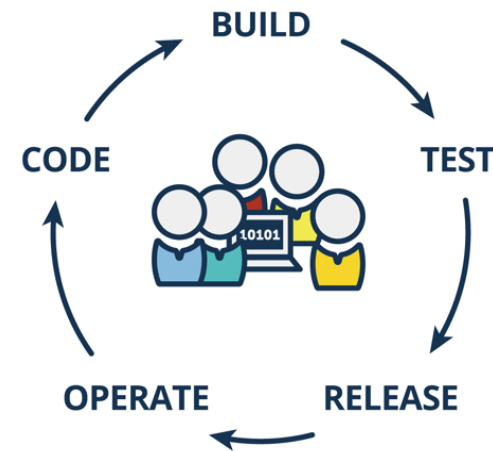


Same architecture, software, skills!

Development Process simplification

Cloud services support CI/CD, Oracle on Oracle Cloud makes agile development easier

- Developer Cloud Service target
 - Git, JIRA, Hudson, Netbeans/Eclipse
- Test Master LCM
- Post commit SQL artifact versioning
- Full Stack Orchestration
- Schema update before test regression





Service Details: developer89604(Oracle Developer Cloud Service)

Open Service Console



Overview
(for March 2017)

100% uptime

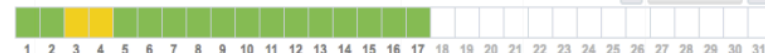
Business Metrics

(as of 3 hours 52 minutes ago)

61,833,983 current disk u...

Service Status - March 2017

Month View | Quarterly View | Year View | Current Month



Time Zone: Central European Time (CET)

Legend: Before Activation Service Up Planned Outage Service Incident

Additional Information

Plan: Trial Developer Service	Identity Domain Name: dbdevcs12
Service Start Date: 5-Aug-2016	Identity Domain Id: dbdevcs12
Service End Date: Not available	Version: 16.1.0.0.0
Subscription ID: 537850209	Status: Active
Customer Account: Oracle (GB)	Service Instance URL: https://developer.em2.oracle.com
CSI Number: Not available	Domain SFTP Host & Port: sftp2.em2.cloud.oracle.com:22
Data Center: EMEA Commercial 2 - Amsterdam	Domain SFTP User Name: em227100

Project

Code

Maven

Snippets

Merge Requests

Issues

Agile

Build

Deploy

Wiki

Administration

ORACLE Developer Cloud Service

arindam.bose@oracle.com

GameRentals.com

Search Not Available

< Jobs Overview LocFeatBuild Configure build job

Save Cancel

Main Build Parameters Source Control Triggers Environment Build Steps Post Build Advanced

Configure Build Steps

Add Build Step

Invoke SQLcl

Username dbdevuser1

Password

Connect String dev1:1521/PDB1.dbdevcs12.oraclecloud.internal

* Source

SQL File

Inline SQL

SQL File Path src/sql/schema_script.sql

Role Default

Restriction Level 0

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25

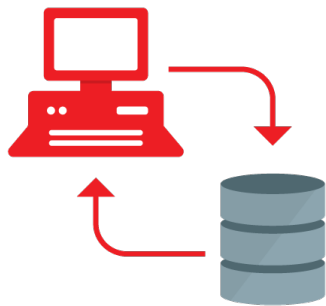
The Oracle Database PaaS advantage

Database PaaS capabilities found only in Oracle on Oracle Cloud

- RAC & ADG
- Multitenant
- In-Memory
- RAT
- EM Grid Cntrl
- ASM
- DB Vault
- Label Security
- Spatial & Property Graph
- More: Streams, Java, Locator, etc

Oracle Database Continuously Innovates

Adds state-of-the-art technology while preserving customer investments



Client-Server

Row Locking
Stored Procedures
Partitioning
Parallel Query
User Defined Types



Internet

Real Application Clusters
Data Guard
Recovery Manager
Java, XML
Exadata



Cloud

Multitenant
Big Data SQL
In-Memory
Sharding
JSON

Summary

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