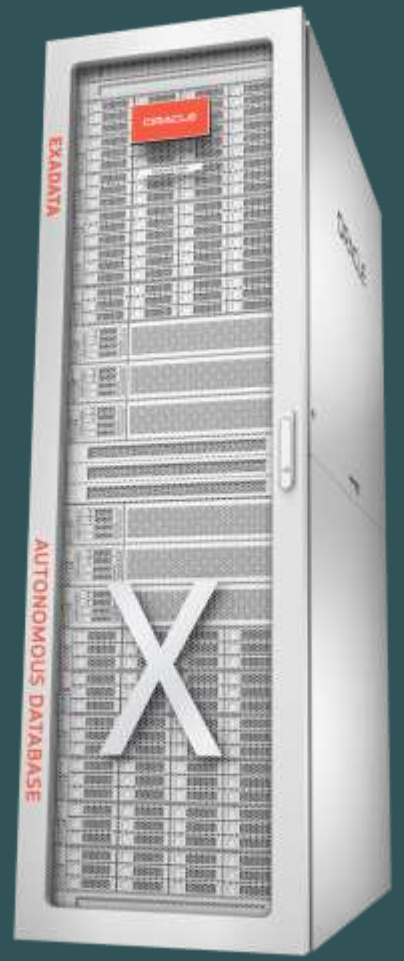
ORACLE

Exadata Database Machine X9M

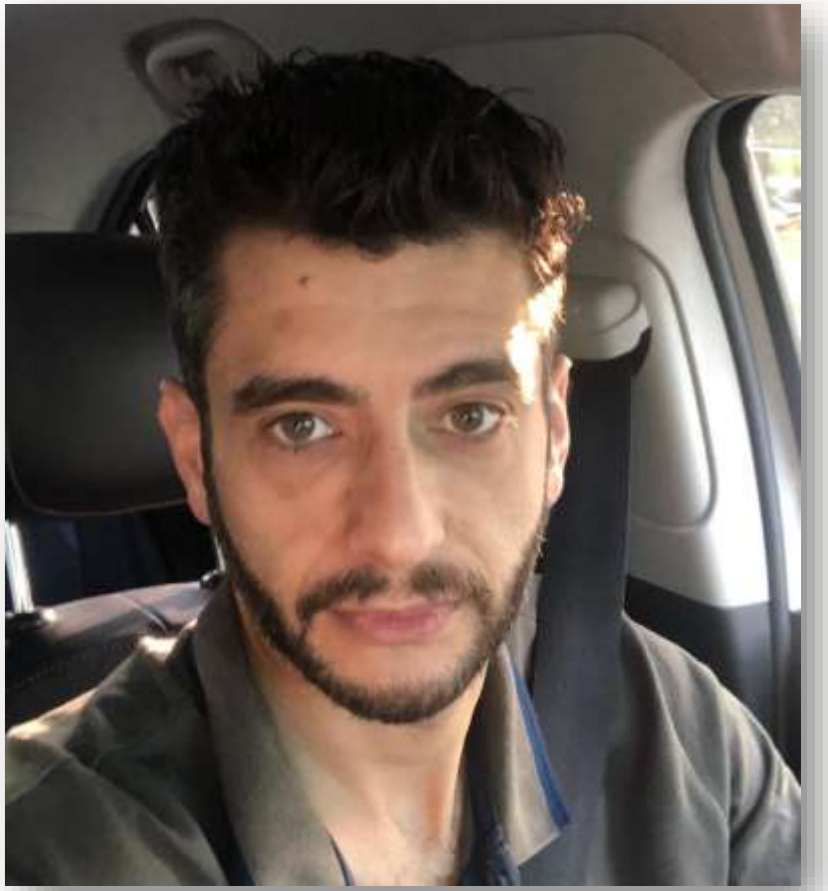
Exclusive session for Accenture Brasil – Exam 1Z0-902



Marcel Lamarca
Exadata Cloud Specialist
Oracle, Alliances and Channels LAD
December, 2023

SQL> select * from person where name = 'Marcel Lamarca'

SCAN ME



Father, husband, Cooker and son!

Graduated in Business Administration (FMU-SP)

Oracle DBA
21 Years dedicated to study and support Oracle Databases.
12 Years working with Exadata (On-prem, C@C and Cloud Services) .
4 Year working for Oracle do Brasil
1 Year on Alliances LAD knowledge Team

Oracle Cloud Specialist (OCS)
Exadata Database Machine X9M Certified Specialist
OCI Foundation 2020 / 2023
Oracle Autonomous Database Administrator
Oracle Cloud Database Migration and Integration
OCI Cloud Certified Architect Associate 2022
OCI Cloud Certified Architect Professional 2022
OCI Multi-Cloud Architect Professional

Oracle Certified Professional (OCP)
10g, 11g, 12c and 19c.

Oracle Certified Specialist (OCE)
Grid/RAC Database Administrator 11g

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Agenda

1. Why Oracle Certificate?
2. How to manage your account
3. Exadata X9M Implementation Exam (1Z0-092) Tips
4. Resources

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Why Oracle Certificate ?

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Oracle Certification Benefits

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Becoming Oracle Certified will make you a better technologist.

Preparing for an Oracle Certification Exam will assess & challenge your ability to think & perform. Earning a highly-recognized & valued Oracle Certification will improve your job prospects & job stability, accelerating your career growth.

Professional credibility

Professional credibility comes from training and certification combined. Learning is retained longer through the process of certification preparation.

91%
"Gives me more professional credibility with those I interact with on the job."

89%
"Makes me more valuable to my employer."

84%
"Helps me retain acquired knowledge over a longer period"

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Value of Expertise to Customers

PROFICIENCY

- ✓ A system of preference that reflects the capabilities and competencies of the partner
- ✓ Customers can select the right partner by solution, product and geography

QUALITY

- ✓ A consistent set of qualifiers that meet the Oracle standard for partners to attain
- ✓ Reflects partners achievements and relevance through qualification

OUTCOMES

- ✓ Proven and repeatable track record of customer successes
- ✓ Value realization based on know-how and experience

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How to manage your account

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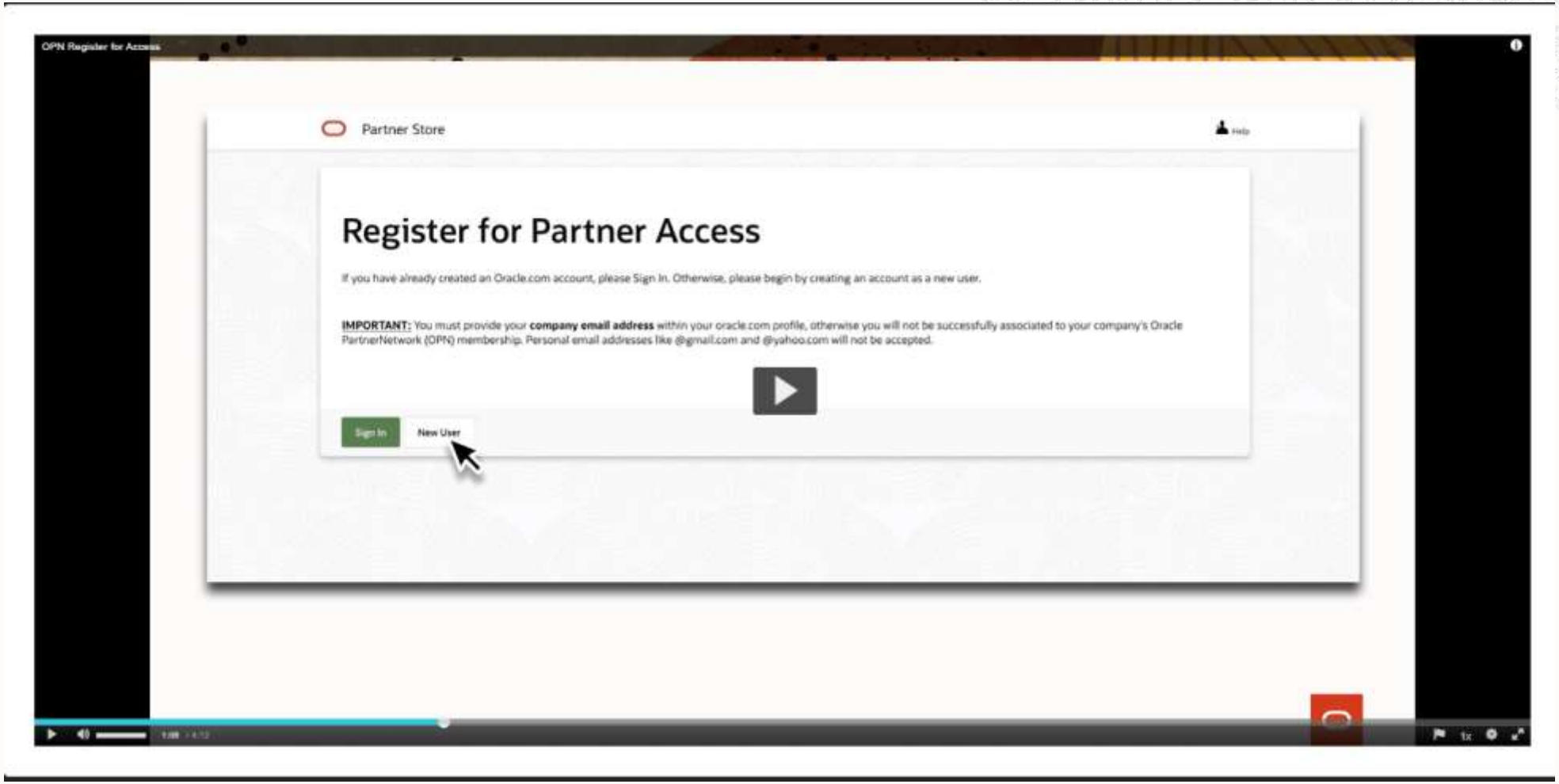
Registering For Access To Partner Resources



Video: [Things to know before you register]

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Update Your Account

How do I update my Username for my Oracle account and CertView?

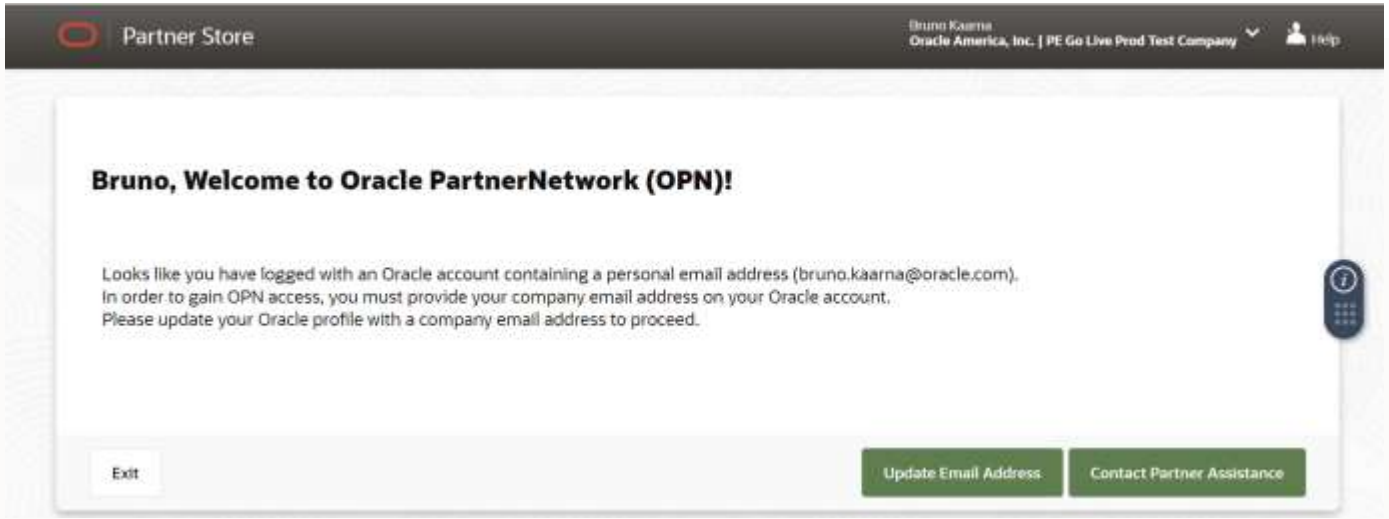
Your Oracle Account login is also your CertView login, so it is very important to keep this information updated in your Oracle Account. If your email address (which is typically the username for your Oracle Account) changes, you can update your username in your Oracle Profile.

- After updating your email address, you will need to submit a Support Request (SR) to Oracle Certification Support requesting to have your CertView account updated with your new username
- The first time you log in to CertView after the support team has updated your CertView account using your updated email address/username, you will need to authenticate your account with the new details. You will be prompted to do so
- Do not create a new Oracle Account. Rather, you should update your existing account. If you have any questions, you can contact Oracle Certification Support

Update_email_here

Manage_certification_here

Problems?: OU SUPPORT



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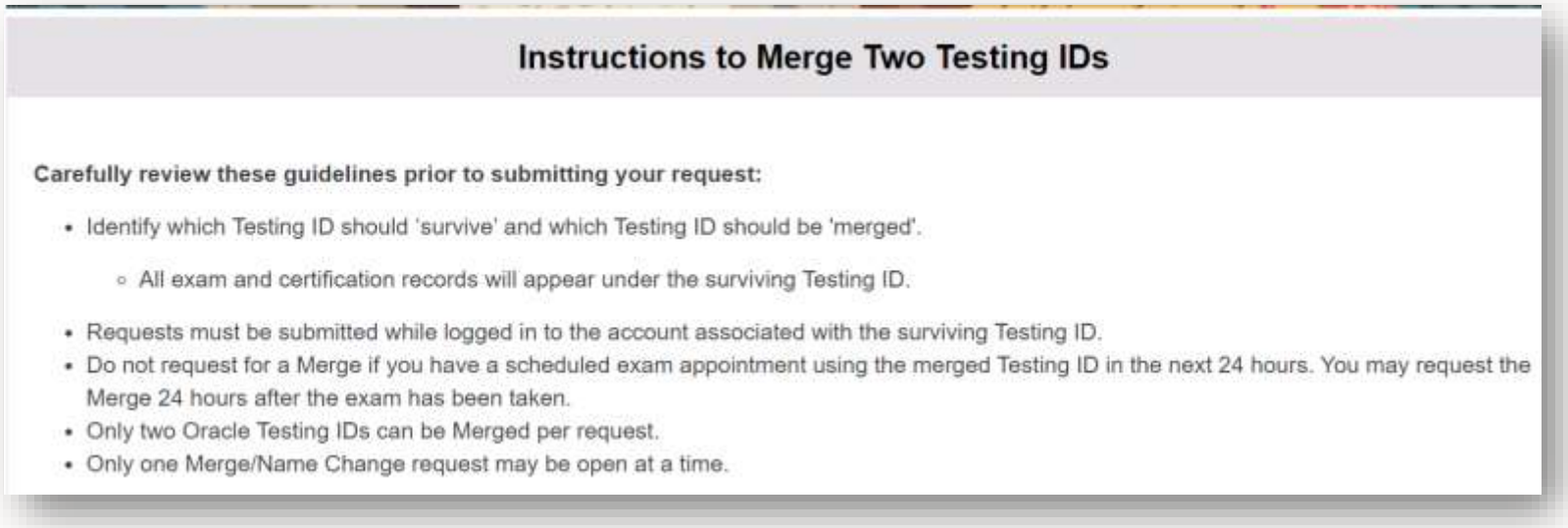
Certview - Merge

SCAN ME

CertView is your self-service tool for Oracle Certification. In CertView, you can do the following:
•Creation and management of your Oracle Certification Profile.
•Merging Accounts
•Name Change
•Scheduling, re-scheduling and cancelling exam appointments
•Updating OPN Company Details
•Completing your Course Submission Forms
Note: You will no longer sign into Pearson VUE for any Oracle Certification activity.



Instructions to Merge Two Testing IDs

Carefully review these guidelines prior to submitting your request:

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- Do not request for a Merge if you have a scheduled exam appointment using the merged Testing ID in the next 24 hours. You may request the Merge 24 hours after the exam has been taken.
- Only two Oracle Testing IDs can be Merged per request.
- Only one Merge/Name Change request may be open at a time.

Problems?: OU SUPPORT

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Exam 1Z0-902 characteristics

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Exam 1Z0-902: Oracle Exadata Database Machine X9M Implementation Essentials

SCAN ME

- Number of Questions **60**
- Format **Multiple Choice**
- Duration **90 minutes**
- Passing Score **64%**
- Oracle **RAC** and **GRID** administration knowledge required

Skills :

- Oracle Exadata Database Machine
- Exadata Implementation
- Oracle Exadata Configuration Assistant
- Automatic Service Request
- ILOM

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Datacenter and Site Requirements

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Exadata Database Machine Installation and configuration Guide

SCAN ME

- Understanding Oracle Exadata Deployment Assistant
  - Site Requirements for Oracle Exadata Database Machine
  - Network Requirements for Oracle Exadata Database Machine

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Exadata X9M Hardware and Features

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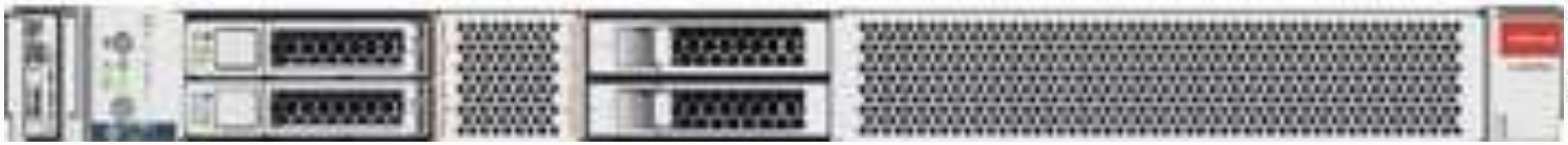
Exadata X9M-2 Database Machine Database Node



Memory

- **512 GB** (factory option)
- **1024 GB** (factory option and field upgrade)
- **1536 GB** (field upgrade from 512 GB only)
- **2048 GB** (factory option and field upgrade, max)

CPU's

- 2 x 32-core Intel® Xeon® 8358 processors (2.6 GHz)

Network

- Client/backup adapter **1: 4 x 10 Gb copper** Ethernet ports
  or **2 x10/25 Gb optical** Ethernet ports
- Client/backup adapter **2 (optional): 4 x 10 Gb copper** Ethernet ports
  or **2 x 10/25 Gb optical** Ethernet ports
- Client/backup adapter **2 (optional): 4 x 10 Gb copper** Ethernet ports
  or **2 x 10/25 Gb optical** Ethernet ports
- **1 x 1 Gb copper** Ethernet port (mgmt)
- **2 x 100 Gb QSFP28 RoCE** Fabric ports

Local Disk's

- **2 x 3.84 TB NVMe Flash SSD** (hot swappable)
- Upgradeable to **4 x 3.84 TB** (Optional)

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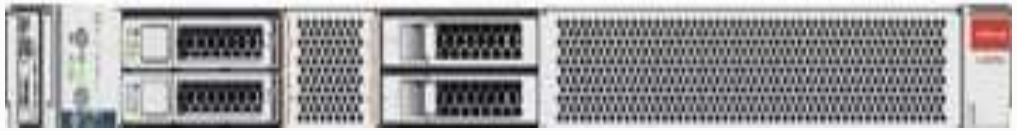
Exadata Database Machine Software Components

Database Node



- Oracle KVM Guest
- Oracle Enterprise Manager Agent
- ASM instance
- RDBMS instance
- Automatic Diagnostic Repository Command Interpreter (ADRCI) **both**
- Diskmon
- Restart Server (RS) **both**
- Management Server (MS) **Both**

Storage Nodes

- Cellcli
- Cell Server(CELLSRV)
- Automatic Diagnostic Repository Command Interpreter (ADRCI) **Both**
- Restart Server (RS) **Both**
- Management Server (MS) **both**

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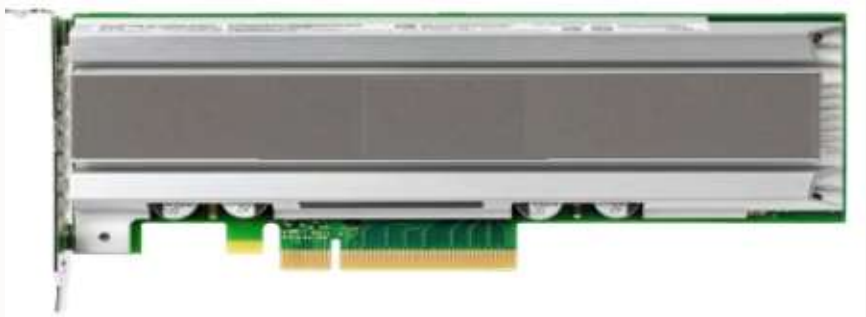
Exadata X9m Persistent Memory Commit Accelerator

- Persistent Memory Commit Accelerator reduces redo log write latency by using Persistent Memory and RDMA before flushing to Flash then disk.



- Log writes are directed to disk and Exadata Smart Flash Log
- Processing continues after acknowledgment
- Exadata Storage Server automatically manages Smart Flash Log and ensures all log entries are persistant to disk

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Exadata Troubleshooting Tools

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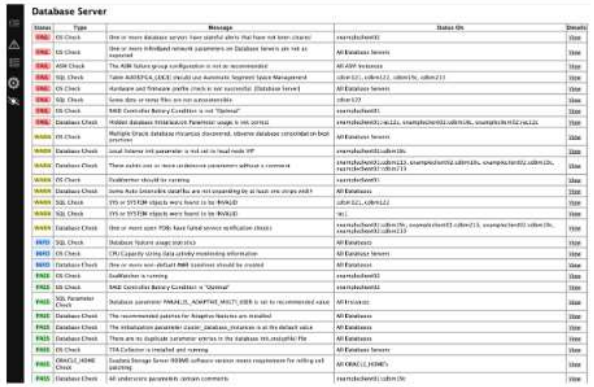
Autonomous Health Framework (AHF) - Including TFA and ORAchk/EXAchk (Doc ID 2550798.1)

START HERE | INSTALLATION | WHAT'S INCLUDED | WHAT'S NEW | USER GUIDE | FAQ | SUPPORT

Autonomous Health Framework (AHF)

The Diagnostic Framework Every Good DBA Needs

Proactively check if your system drifts from best practice configuration and how to fix it again with automatic health checks



$ ahfctl compliance

Get notified as problems occur, or run on-demand to collect everything Oracle Support needs to help you resolve problems

$ tfactl diagcollect

Get a bird's eye view of your entire system, spot problems, drill into the root cause and understand how to resolve

$ ahf analysis create --type insights

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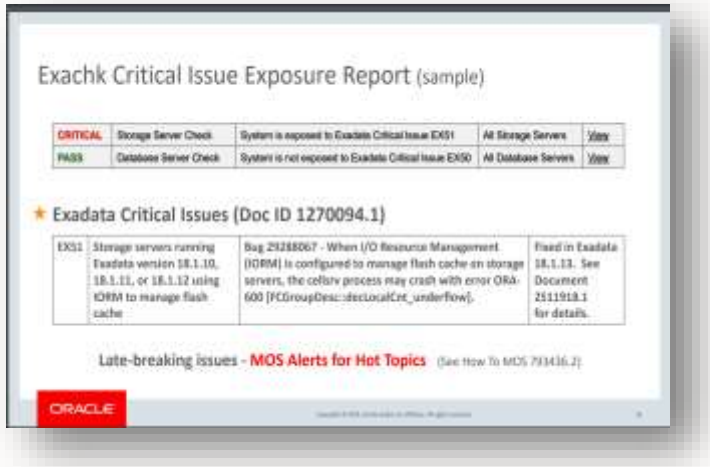
Exachk evaluates Exadata Database Machine engineered systems



- Firmware
- Operating System (e.g. Oracle Linux)
- Exadata software / Grid Infrastructure and ASM / Database
- MAA Configuration Review / Exadata Software Planner
- Exadata Critical Issue alerts / Critical Issue Avoidance
- Prereq checks for DB and GI software updates

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- **Oracle Exadata Database Machine Exachk** (Doc ID 1070954.1)

PURPOSE

This document describes how to obtain, install, execute, and update Exachk for Oracle Exadata Database Machine based implementations. It also describes common use cases and best practices to ensure that your Exadata deployment and configurations remain compliant with Exadata Maximum Availability Architecture (MAA) best practices.

SCOPE

This document applies to all Oracle Exadata Database Machine based implementations:

- Exadata Cloud at Customer, Exadata Cloud Service, and Autonomous Database Services
- Exadata On-Premises
  - Bare Metal
  - Virtual Machines

DETAILS

Exachk Overview

Exachk holistically evaluates Exadata Database Machine engineered systems.

It includes:

- Configuration checks for Database Servers, Storage Servers, and Network Fabric Switches:
  - Firmware
  - Operating System (e.g. Oracle Linux)
  - Exadata software
  - Grid Infrastructure and ASM
  - Database
- MAA Scorecard:
  - MAA Configuration Review
  - Exadata Software Planner
  - Exadata Critical Issue alerts
- Automatic Correction (when applicable):
  - Configuration Correction
  - Critical Issue Avoidance
- Prerequisite checks for DB and GI software updates
- Prerequisite checks for DB and GI upgrades
- Prerequisite checks for application continuity readiness

- **ExaWatcher Utility On Exadata Compute and Storage Nodes** (Doc ID 1617454.1)

APPLIES TO:

Oracle Exadata Storage Server Software - Version 11.2.3.3.0 and later
Information in this document applies to any platform.

PURPOSE

This document describes a newly designed system data collection and diagnostic tool called ExaWatcher. ExaWatcher replaces OSWatcher in Exadata engineered systems.

DETAILS

LOCATION

ExaWatcher resides on both the Exadata compute nodes and storage cell servers. It can be found in /opt/oracle.ExaWatcher.

MANAGEMENT

The ExaWatcher utility is started automatically during boot time. If you need to manually stop and start ExaWatcher you can do the following:

For 11.x, 12.x and 18.x Exadata Images

To stop ExaWatcher:

```
# ./StopExaWatcher.sh
```

To start ExaWatcher:

```
# /opt/oracle.cellos/vldrun -script oswatcher
```

What Exadata Cloud at Customer ExaWatcher tool does ?

- **CPU Charts**

The CPU charts show CPU utilization for the server. These statistics are from iostat (avg-cpu: %user, %system, %iowait).

- **IO Charts**

IO charts show IO performance for an entire server or for individual disks in the storage server.

- **Memory Charts**

Shows Oracle Linux memory consumption during report range data requested

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Oracle RAC and Grid Database 19c

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Oracle RAC 19c, ASM and Grid Administrator Workshop

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19c: Clusterware Admin

Oracle Database 19c: Clusterware Administration Workshop

Course Lab

12h 18m

0%

19c: ASM Admin

Oracle Database 19c: ASM Administration Workshop

Course Lab

8h 7m

0%

19c: RAC Admin

Oracle Database 19c: RAC Administration Workshop

Course Lab

20h 11m

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Oracle Database 19c Administration

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19c: Fundamentals for Devs and SysAdmins

Oracle Database 19c: Fundamentals for Devs and SysAdmins

Course Lab

7h 35m

0%

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Oracle Database 19c: Administration Workshop

Course Lab

24h 39m

0%

19c: Mutitenancy

Oracle Database 19c: Multitenant Architecture

Course Lab

17h 0m

2%

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Exadata Database Machine Pathing

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- **Exadata Database and Exadata Storage Server Supported Versions** (Doc ID 888828.1)

Oracle Database

The following table lists the Exadata Storage Server software versions that are compatible with each supported Oracle Database software version.

Oracle Database Software version	**Required Exadata System Software version (with corresponding switch version)** **For additional GI/DB Release Update or interim patch requirements, review the Exadata release-specific Supplemental README and the version tables shown below.**
21c Innovation Release	Supported: Exadata 21.2.0.0.0 or higher Database 21c requires storage server and database server Exadata version to be 21.2.0.0.0 or higher, and fabric switch version to be that which is supplied with Exadata 21.2.0.0.0 or higher. It is not supported to use lower versions on storage servers, database servers, or fabric switches.[This section is not visible to customers.]
19c Long Term Release	Supported: Exadata 19.1.2.0.0 or higher Database 19c requires storage server and database server Exadata version to be 19.1.2.0.0 or higher, and InfiniBand switch version to be 2.2.11-2 or higher (that which is supplied with Exadata 19.1.2.0.0). It is not supported to use lower versions on storage servers, database servers, or InfiniBand switches.[This section is not visible to customers.]
18c Release (18.0.0.0.0)	Supported: Exadata 18.1.4.0.0 or higher Database 18c requires storage server and database server Exadata version to be 18.1.4.0.0 or higher, and InfiniBand switch version to be 2.2.7-1 or higher (that which is supplied with Exadata 18.1.4.0.0). It is not supported to use lower versions on storage servers, database servers, or InfiniBand switches.[This section

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- **Exadata Critical Issues** (Doc ID1270094.1)

#	Applies to	Issue	Fix or Workaround	Date
IB9	Sun Datacenter InfiniBand Switch 36 software 2.2.15-1 and lower	Bug 30303098 - Excessive network traffic on the management network, such as that caused by a broadcast storm, can lead to simultaneous reset of all InfiniBand switches, causing an InfiniBand network outage and/or database node evictions.	Fixed in 2.2.16. See Document 2773989.1 for details. Review issue DB49 before updating InfiniBand Switch software.	2021-May-04
IB8	Sun Datacenter InfiniBand Switch 36 software 2.2.6, 2.2.7, and 2.2.8 with network partitioning configured.	Bug 27611791 - When InfiniBand network partitioning is in use and the Primary subnet manager (SM) receives a constant flood of P_Key violation traps, the current partition policy may be reset to the default partition policy, which causes connection failure amongst servers communicating in the non-default partition(s). This can lead to dismounted ASM disk groups and node evictions.	Fixed in 2.2.9. See Document 2413649.1 for details. Review issue EX38 below for additional detail.	2018-Jun-29
IB7	Sun Datacenter InfiniBand Switch 36 software 2.1.5 and earlier.	Bug 17482244 - If the Primary subnet manager (SM) on an InfiniBand switch becomes overloaded one of the standby SMs will become a second Primary SM. After the original Primary SM becomes active again and the switches negotiate to return back to having a single Primary SM, some database servers and/or storage servers may no longer be able to communicate on the InfiniBand network, which can lead to node eviction or cluster outage.	Fixed in 2.1.6. See Document 2400204.1 for details.	2018-Jun-14
IB6	Sun Datacenter InfiniBand Switch 36 software 2.1.x through 2.2.7.	Bug 26678971 - The real time clock (RTC) on an InfiniBand switch may become corrupt, which may cause the switch to become unbootable when attempting to upgrade.	Fixed in 2.2.8. See Document 2309926.1 for details.	2017-Sep-27
IB5	Sun Datacenter InfiniBand Switch 36 software 2.1.8 and earlier	Bug 23528420 - InfiniBand switches may experience high CPU utilization after receiving a malformed POST request via HTTP or HTTPS, which may result in subnet manager unable to get CPU to respond to network management duties, which can lead to database server or storage server eviction. Such requests are often initiated by a security scan tool.	Fixed in 2.2.2. See Document 2169026.1 for details.	2016-Aug-11
IB4	Sun Datacenter InfiniBand Switch 36 software 2.1.3-4 (supplied with Exadata 11.2.3.3.0) when connected to Exalogic Virtual environment over the InfiniBand network.	Bug 17936962 - Invalid pkey values in partition definitions in Exalogic Virtual environments prevents add or delete members of a partition. Note: From Exadata perspective, this issue only applies when an Exalogic Virtual environment is connected to Exadata via the InfiniBand network.	Apply April PSU to Exalogic prior to Exadata InfiniBand switch upgrade to 2.1.3-4. Review Document 1301247.1 for additional details about Exalogic April PSU. Prior to Exalogic April PSU availability, the recommendation was to apply patch 18034691. Details are available in Document 1630396.1. Note that patch 18034691 is not compatible with patch 18175326, which may be applied to address guest vServers connectivity issues (see Document 1615444.1). Both issues are fixed in Exalogic April PSU.[This section is not visible to customers.]	2013-Dec-16

Resources

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- **Exadata Database Machine X9M**

https://www.oracle.com/a/ocom/docs/engineered-systems/exadata/exadata-x9m-2-ds.pdf

- **Exadata Database Machine Documentation**

https://docs.oracle.com/en/engineered-systems/exadata-database-machine

- **Oracle Architecture Center Site**

https://docs.oracle.com/solutions

- **Oracle Live Labs**

https://apexapps.oracle.com/pls/apex/r/dbpm/livelabs/home

- **Oracle Luna Labs**

https://luna.oracle.com

- **Ask Ton Official Site**

https://asktom.oracle.com

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- **Oracle RAC 19c Administrator Guide**

https://docs.oracle.com/en/database/oracle/oracle-database/19/racad/real-application-clusters-administration-and-deployment-guide.pdf

- **Oracle RAC 19c Workshop Oracle University**

https://mylearn.oracle.com/ou/course/oracle-database-19c-rac-administration-workshop/108002

- **Oracle Database 19C Admininistrator Professional Workshop University**

https://mylearn.oracle.com/ou/learning-path/earn-the-oracle-database-19c-admin-professional-credential/80836

- **Exadata Database Machine X9M Datasheet**

https://www.oracle.com/a/ocom/docs/engineered-systems/exadata/exadata-x9m-2-ds.pdf

- **Persistent Memory Magic in Exadata Blog**

https://blogs.oracle.com/exadata/post/persistent-memory-magic-in-exadata

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- **Oracle Advanced Support Gateway Instalation Guide**

https://docs.oracle.com/en/engineered-systems/advanced-support-gateway/install/E40642.pdf

- **Exadata Database Machine Maintenance Guide**

https://docs.oracle.com/en/engineered-systems/exadata-database-machine/dbmmn/maintaining-exadata-components.html#GUID-91B78D98-96CA-43AC-B175-BF9D6CEC1C07

- **Exadata Database Machine Maintenance Guide**

https://docs.oracle.com/en/servers/x86/x9-2/exa-database/servicing-dimms.html#GUID-F4CC2572-D4BD-49DC-956D-D7B89A5376E5

- **Exadata Database Machine User Guide**

https://docs.oracle.com/en/engineered-systems/exadata-database-machine/sagug/index.html#Oracle%C2%AE-Exadata-System-Software

- **Exadata Database Machine User Guide**

https://docs.oracle.com/en/engineered-systems/exadata-database-machine/sagug/index.html#Oracle%C2%AE-Exadata-System-Software

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- **Using AWR report on Exadata**

https://www.oracle.com/docs/tech/database/exadata-awr.pdf

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Oracle Live Labs

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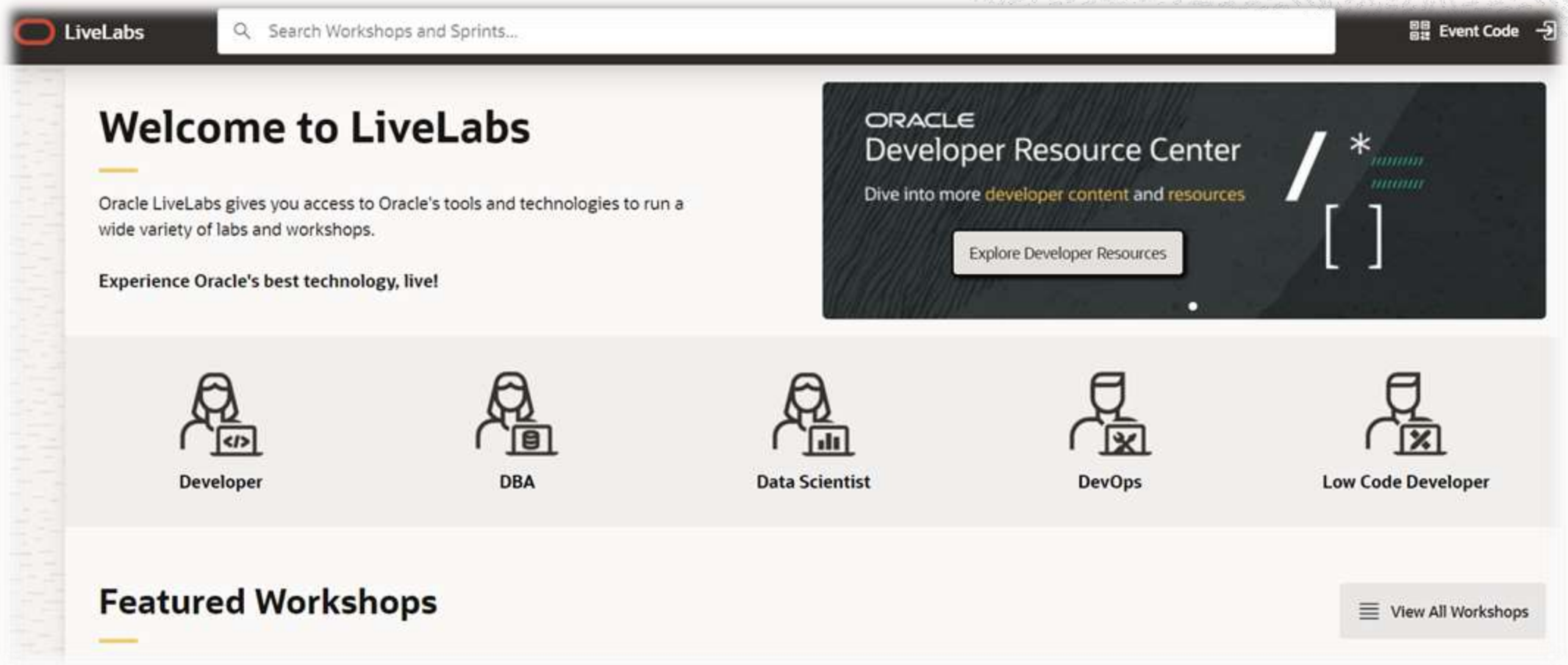

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Oracle Luna Labs

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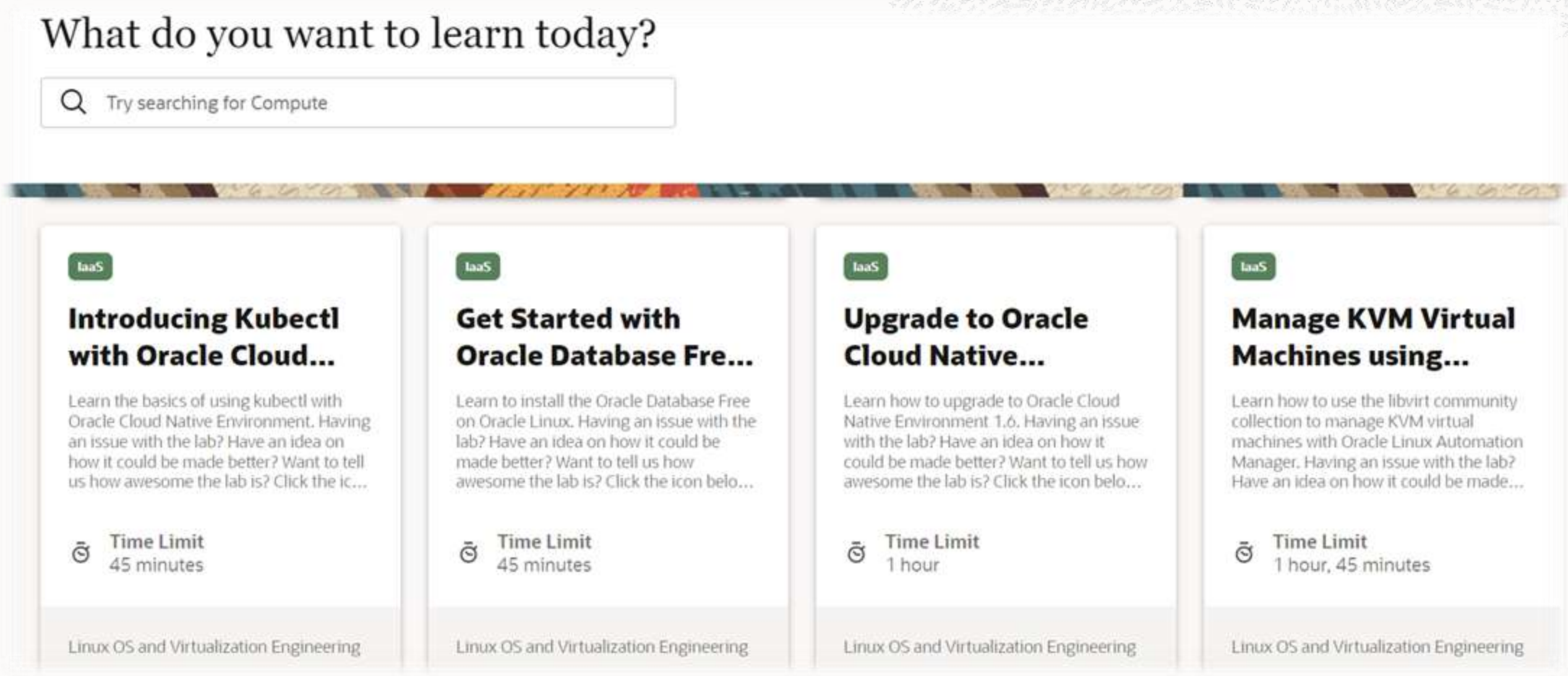

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Ask Tom Oracle Site

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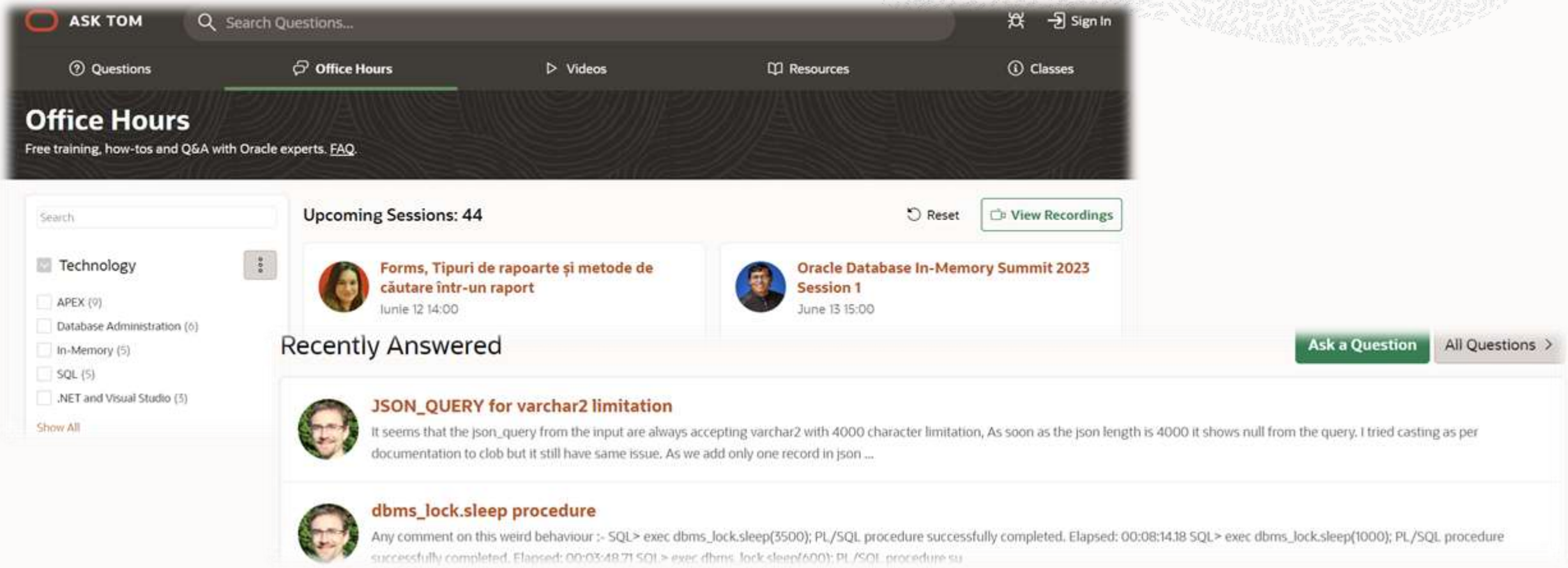

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Oracle Architecture Center

SCAN ME

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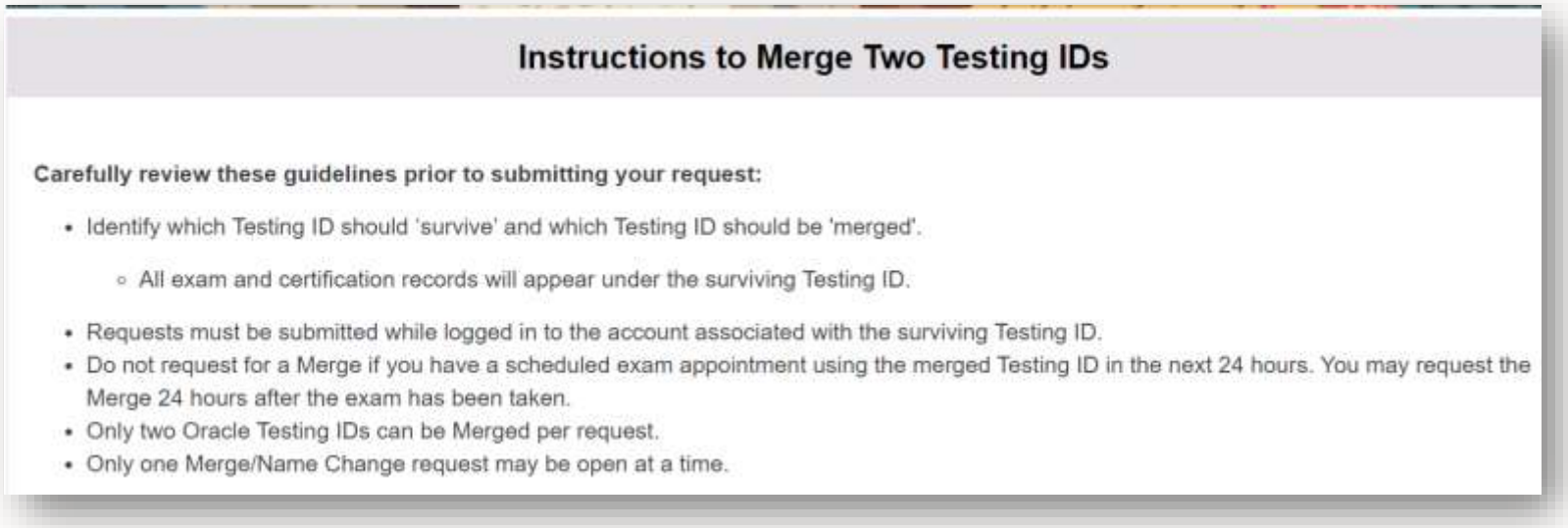
Certview - Merge

SCAN ME

CertView is your self-service tool for Oracle Certification. In CertView, you can do the following:
•Creation and management of your Oracle Certification Profile.
•Merging Accounts
•Name Change
•Scheduling, re-scheduling and cancelling exam appointments
•Updating OPN Company Details
•Completing your Course Submission Forms
Note: You will no longer sign into Pearson VUE for any Oracle Certification activity.



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Problems?: OU SUPPORT

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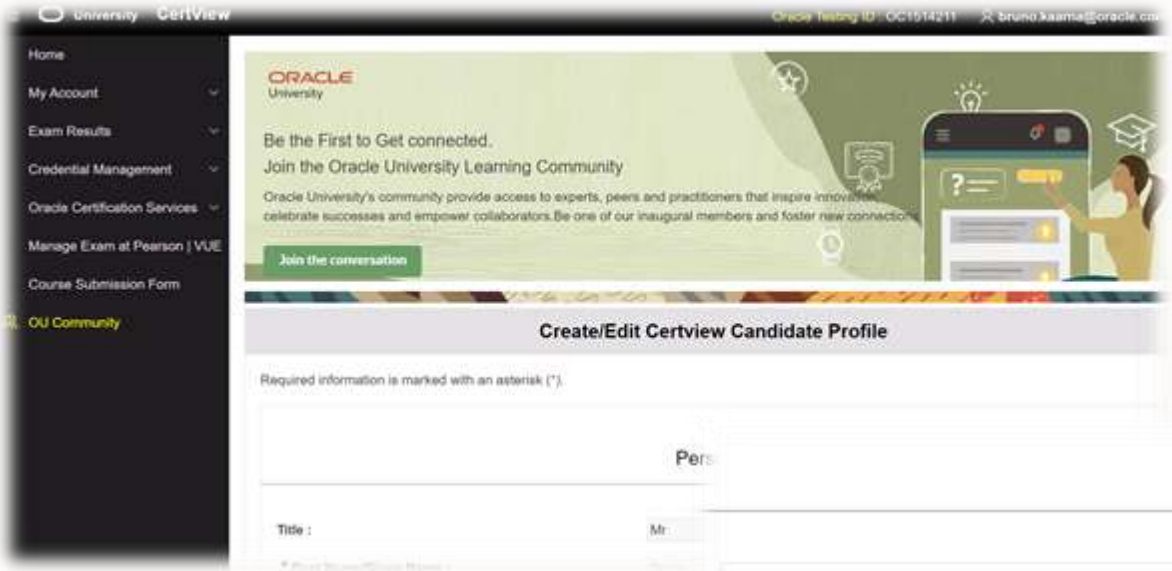
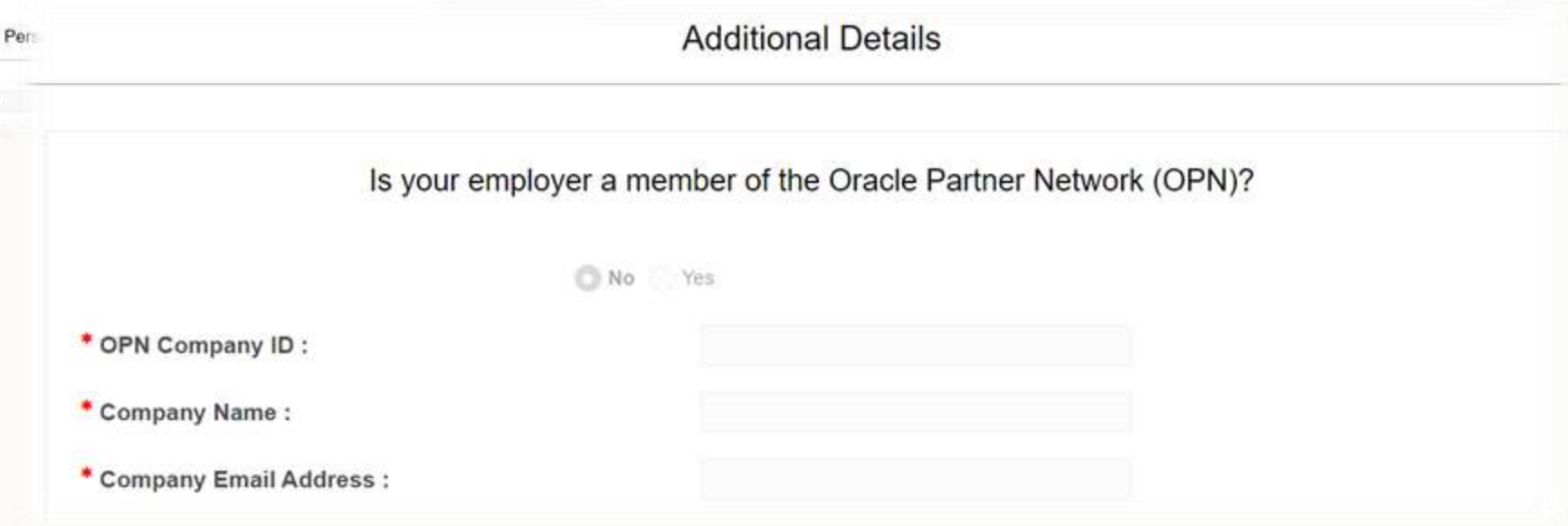
Certview - Profile



You can update your contact information in CertView:

- Sign in to **CertView**
- Click on **"My Account"**, go to **My profile**
- Edit the profile details
- Click **"Update Profile"**
- Click on **"Save and continue"**



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OCI Documentation

- No required SSO enabled
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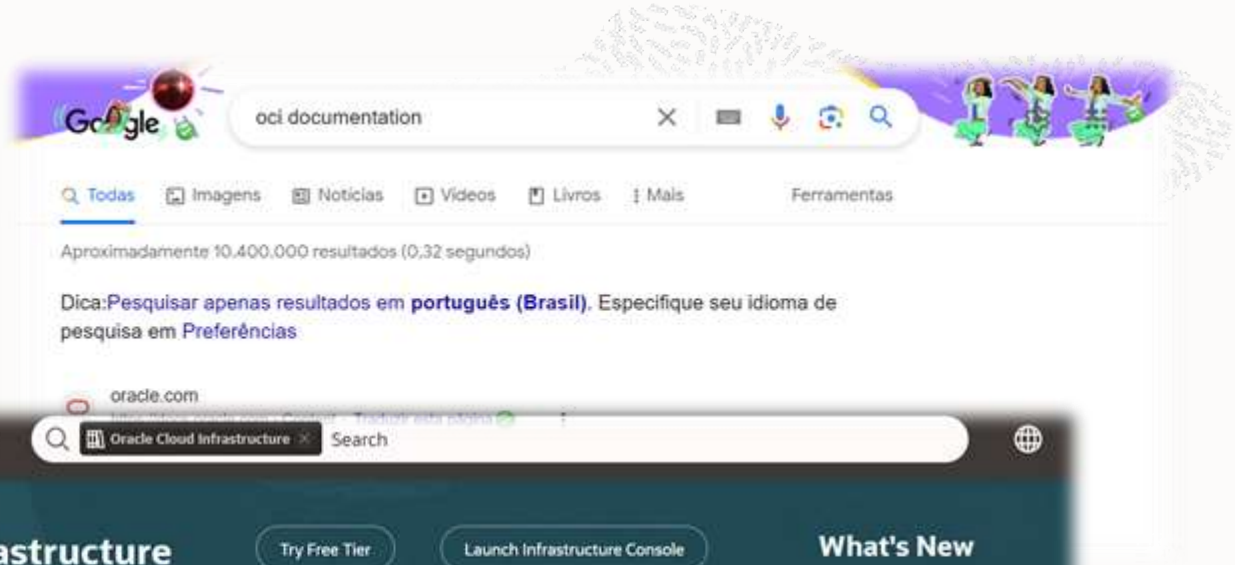

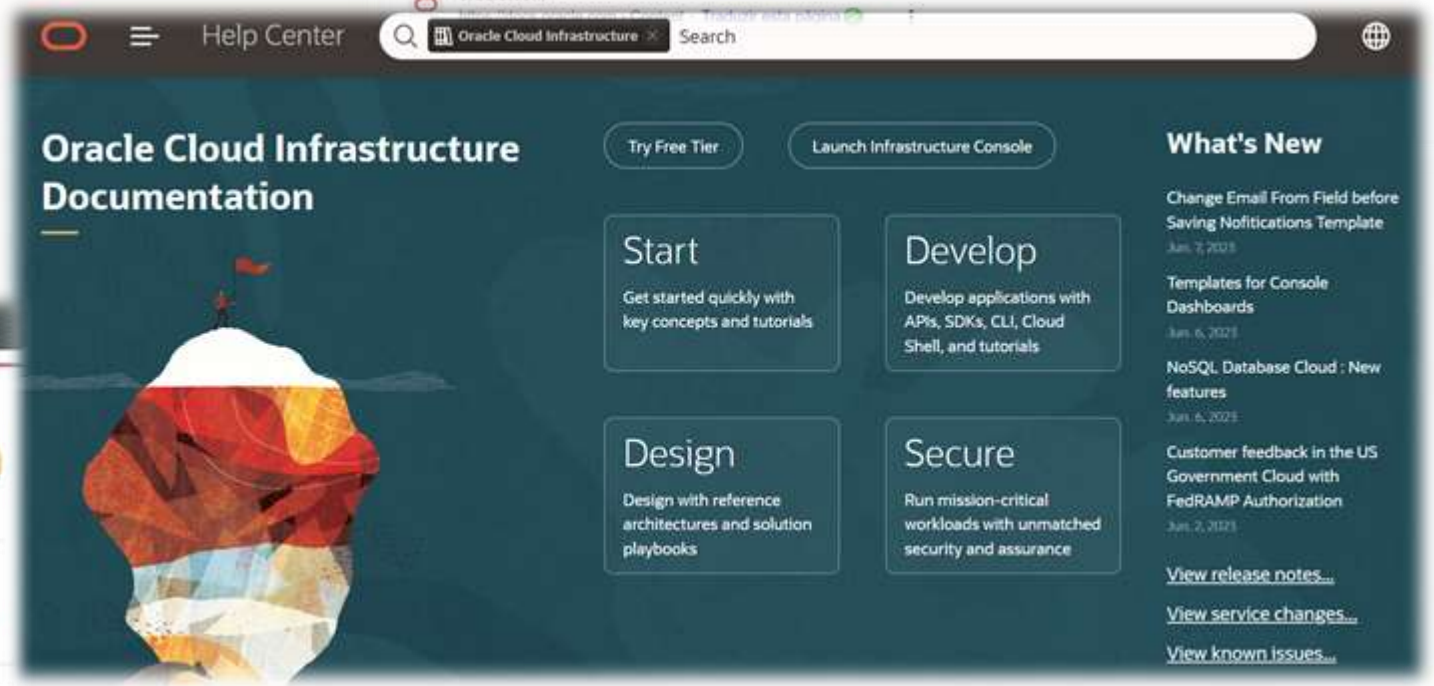

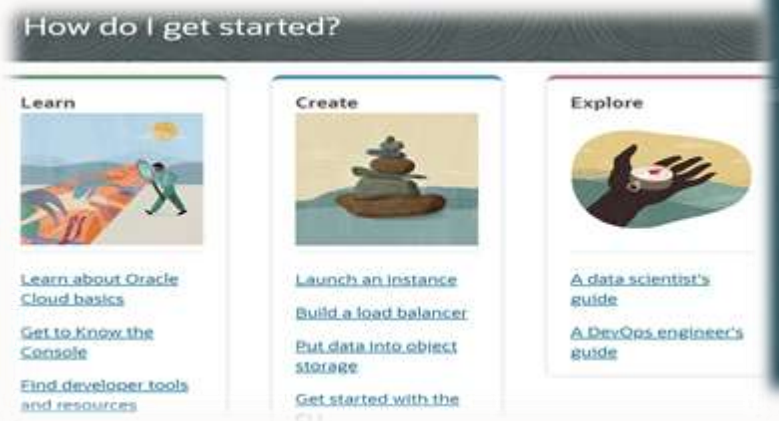

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Thank you

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