



Cloud at Customer Academy 3.0

Exadata Database Machine X9M Implementations Essentials – Q&A

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Licenses and Systems

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LAD Partner Enablement Knowledge Team

September, 2023



Nuestros Valores

Integridad

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Compliance

Innovación

Trabajo en
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Utilice el código QR para acceder al Código de Ética y Conducta Comercial de Oracle.





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Oracle Exadata Cloud at Customer Academy

Para capacitar a nuestros Partners en Servicios OCI, creamos la nueva versión de la Academia Cloud at Customer.

Esta academia contará con **10 sesiones de capacitación**, a partir del **14 de julio**, que permitirán a los participantes conocer las principales características y funcionalidades de Oracle Exadata y PCA. ¡También será una excelente oportunidad para aclarar todas sus dudas para obtener su certificación!

Únase a esta capacitación y descubra por qué Oracle Cloud at Customer es la forma más sencilla de mover cargas de trabajo críticas de Oracle Database de una organización a la nube.

Consulte la agenda a continuación e inscríbase. ¡Contamos con su participación!

ExaC@C Overview 14 de julio 1:00 p.m. - 3:00 p.m. (Mexico Time)	Regístrate
PCA - Private Cloud Appliance 26 de julio 1:00 p.m. - 3:00 p.m. (Mexico Time)	Regístrate
C@C Patching – Demo Session 28 de julio 1:00 p.m. - 3:00 p.m. (Mexico Time)	Regístrate
C@C Backup & Restore – Demo Session 3 de agosto 1:00 p.m. - 2:30 p.m. (Mexico Time)	Regístrate
Migration and move to Cloud – Demo Session 10 de agosto 1:00 p.m. - 2:30 p.m. (Mexico Time)	Regístrate
Troubleshooting tools – Demo Session 24 de agosto 1:00 p.m. - 2:30 p.m. (Mexico Time)	Regístrate
Monitoring – Demo Session 31 de agosto 1:00 p.m. - 2:00 p.m. (Mexico Time)	Regístrate
Smart Scan, HCC compression & In-Memory – Demo Session 14 de septiembre 1:00 p.m. - 3:00 p.m. (Mexico Time)	Regístrate
A&Q for Certification 21 de septiembre 1:00 p.m. - 3:00 p.m. (Mexico Time)	Regístrate
C@C New Features - Demo Session 28 de septiembre 1:00 p.m. - 3:00 p.m. (Mexico Time)	Regístrate



Agenda

Exam 1Z0-092 Details and Topics

Exadata Smart Scan Deep Dive

Exadata Round 1 – Exam Q&A

Exadata Round 2 – Exam Q&A

Demo – Oracle Smart Scan (NO Exadata)

Demo – Oracle Smart Scan Monitoring

Exam 1Z0-902 Informations

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



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



Exadata X9M implementation Exam Topics

Exadata Database Machine Architecture and Key Capabilities

- Describe Exadata hardware architecture (2x database server types, 3x storage server types, power distribution, leaf and spine switches)
- Describe Exadata software architecture and deployment scenarios
- Describe Exadata Remote Direct Memory Access (RDMA) and Client network architecture (including multirack architecture, secure fabric)
- Explain the impact of various diskgroup failure group choices
- Describe the deployment options of Exadata including Virtualization and Bare Metal
- Exadata Database Machine Site and Implementation Planning (OECA&OEDA)

Describe the function of Oracle Exadata Configuration Assistant and Oracle Exadata Deployment Assistant

- Design an Exadata Database Machine with Oracle ZFS Storage in a single rack using Oracle Exadata Configuration Assistant
- Configure Exadata Database virtual deployment using Oracle Exadata Deployment Assistant
- Add additional database server to a physical Exadata Database Machine using Oracle Exadata Deployment Assistant
- Describe physical site requirements and safety best practices for implementing Exadata (site planning, cooling, power)
- Install and configure Oracle Exadata using Oracle Exadata Deployment Assistant
- Exadata Database Machine Installation



Exadata Database Machine Integration

- Describe the network integration options of Exadata Database Machine
- Connect Exadata Database Server in various scenarios, including client and backup networks
- Exadata Database Machine Configuration and Administration



Exadata Database Machine Security

- Configure Exadata security (storage, secure boot, cellwall, AIDE, ASM Scoped Security, Database Scoped Security, FIPS secure filesystem)
- Implement Access Control for REST API

Exadata Database Machine Monitoring

- Describe the monitoring recommendations for Exadata Database Machine database servers
- Use Cloud Control or DBMCLI to monitor Exadata Database Machine Database Servers
- Monitor Exadata Storage Server and Network using Command line or Cloud control
- Describe the Enterprise Manager cloud Control architecture as it specifically applies to Exadata Database Machine
- Use Enterprise Manager to discover Exadata Database Machine
- Describe the Auto Service Request (ASR) function and how it relates to Exadata Database Machine
- Describe Oracle Configuration Manager (OCM) and how it relates to Exadata Database Machine



Exadata Database Maintenance Tasks

- Power Database Machine on and off
- Safely shut down a single Exadata Storage Server
- Replace a damaged physical disk on a cell
- Replace a damaged flash card on a cell
- Add additional storage to Exadata Database Servers
- Use the Exadata Cell Software Rescue Procedure



Exadata Database Machine Installation

- Configure Exadata Database Server SP port (ILOM)
- Describe the procedure for receiving the rack on site
- Reconfigure the Exadata Database Machine to use a single power cable
- Verify the firmware of an Exadata Storage Server
- Set up Automatic Service Request (ASR) on the Exadata Database Machine

Exadata Database Machine Updates

- Describe how software is maintained on different Database Machine components
- Use Exadata Software to deploy an update to an Exadata Database Machine without downtime
- Use patchmgr to update a single storage server



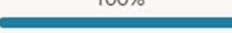
Exadata X9M Implementation Specialist learning path

Exadata X8M: Impl & Admin

Oracle Exadata Database Machine: Implementation And Administration

Course Lab

24h 52m

100%   

X9M: What's New

Oracle Exadata Database Machine X9M: What's New

Course

1h 6m

100%   

Online Certification Exam

Oracle Exadata Database Machine X9M Implementation Essentials (1Z0-902)

1h 30m

You must register, attend and pass this exam to receive your official credential for this certification.





SCAN ME

Exadata Database Machine Documentation

Welcome to the Oracle Exadata Database Machine documentation library. The Exadata Database Machine is a complete optimized package of software, servers, and storage. Simple and fast to implement, the Exadata Database Machine is ready to tackle your largest and most important database applications.

The Japanese documentation for Exadata Database Machine is at: <https://www.oracle.com/jp/database/technologies/oracle-exadata-database-machine-documentation.html>

Get Started

Learn about the new features available for the Oracle Exadata System Software. Also, find topics that will help you get started using Oracle Exadata Database Machine right away.



Learn About Oracle Exadata Database Machine

Learn about the new features available with each release of Oracle Exadata System Software.

[Learn about the technical architecture](#)

[New Features of Oracle Exadata System Software](#)

[Hardware Components of Oracle Exadata Database Machine](#)



Configuring Oracle Exadata Database Machine

Procedures that describe how to configure the system, accounts, and software for Oracle Exadata Database Machine.

[Using Oracle Exadata Deployment Assistant](#)

[Site Checklists](#)

[Site Requirements](#)



Access the Bookshelf

View the Exadata Database Machine books or download the entire library.

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Oracle Exadata X9M Installation guide

Engineered Systems / Exadata Database Machine

Installation and Configuration Guide for Exadata Database Machine



Expand

Title and Copyright Information

- ▶ Preface
- ▶ 1 Site Requirements for Oracle Exadata and Oracle Exadata Storage Expansion Rack
- ▶ 2 Understanding the Network Requirements for Oracle Exadata
- ▶ 3 Using Oracle Exadata Deployment Assistant

Oracle® Exadata Database Machine

Installation and Configuration Guide for Exadata Database Machine

23.1

F29249-23

August 2023



Oracle® Exadata Database Machine





Oracle Exadata Books Guide

Exadata Database Machine Documentation

Books

These books are used to document all the information needed for using Exadata Database Machine.

View

-All-



Group by Category

Exadata Database Machine - Concept and Administration Books





SCAN ME

Oracle Exadata Database Machine X9M

Exadata Server Hardware ^{1,2}

SERVER TYPE	CPU	MEMORY	DISK	FLASH	NETWORK
Database Server	2 x 32-core Intel® Xeon® 8358 processors (2.6 GHz)	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)	None	2 x 3.84 TB NVMe Flash SSD (hot swappable), (upgradeable to 4 x 3.84 TB)	<ul style="list-style-type: none"> Client/backup adapter 1: 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 Client/backup adapter 3 : 4 x 10 Gb copper Ethernet ports or 2 x 10/25 Gb optical Ethernet ports 1 x 1 Gb copper Ethernet port (mgmt) 1 x ILOM Ethernet port 2 x 100 Gb QSFP28 RoCE Fabric ports
Storage Server High Capacity (HC)	2 x 16-core Intel® Xeon® 8352Y processors (2.2 GHz)	256 GB 1.5 TB Persistent Memory	12 x 18 TB 7,200 RPM disks	4 x 6.4 TB NVMe PCIe4.0 Flash cards	<ul style="list-style-type: none"> 2 x 100 Gb QSFP28 RoCE Fabric ports 1 x 1 Gb copper Ethernet port (mgmt) 1 x ILOM Ethernet port
Storage Server Extreme Flash (EF)	2 x 16-core Intel® Xeon® 8352Y processors (2.2	256 GB 1.5 TB <small>Persistent</small>	None	8 x 6.4 TB NVMe PCIe4.0 Flash cards	

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Exadata Features

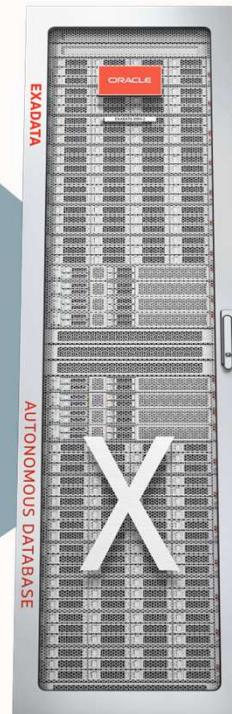
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Oracle Exadata Database and Platform Innovations

- Multitenant
- In-Memory DB
- Real Application Clusters
- Active Data Guard
- Partitioning
- Advanced Compression
- Advanced Security, Label Security, DB Vault
- Real Application Testing
- Advanced Analytics, Spatial and Graph
- Management Packs for Oracle Database

All Oracle Database Innovations



All Exadata Innovations

- Offload SQL to Storage
- RoCE Fabric
- PMEM Commit and Data Accelerators
- Smart Flash Cache
- Storage Indexes
- Columnar Flash Cache
- Hybrid Columnar Compression
- I/O Resource Management
- Network Resource Management
- In-Memory Fault Tolerance
- Exafusion Direct-to-Wire Protocol

Exadata Smart Scan

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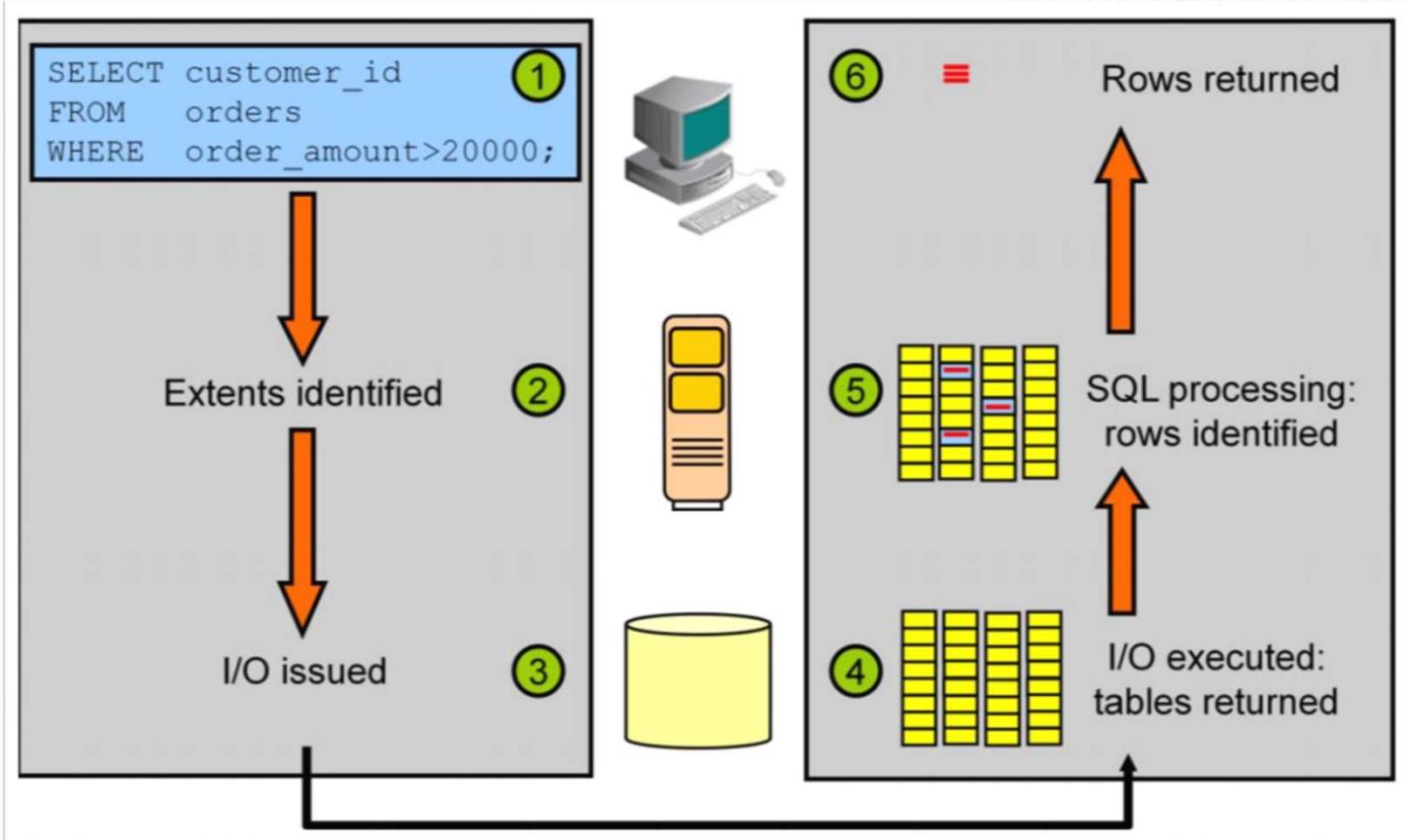


What Exadata Smart Scan Is?

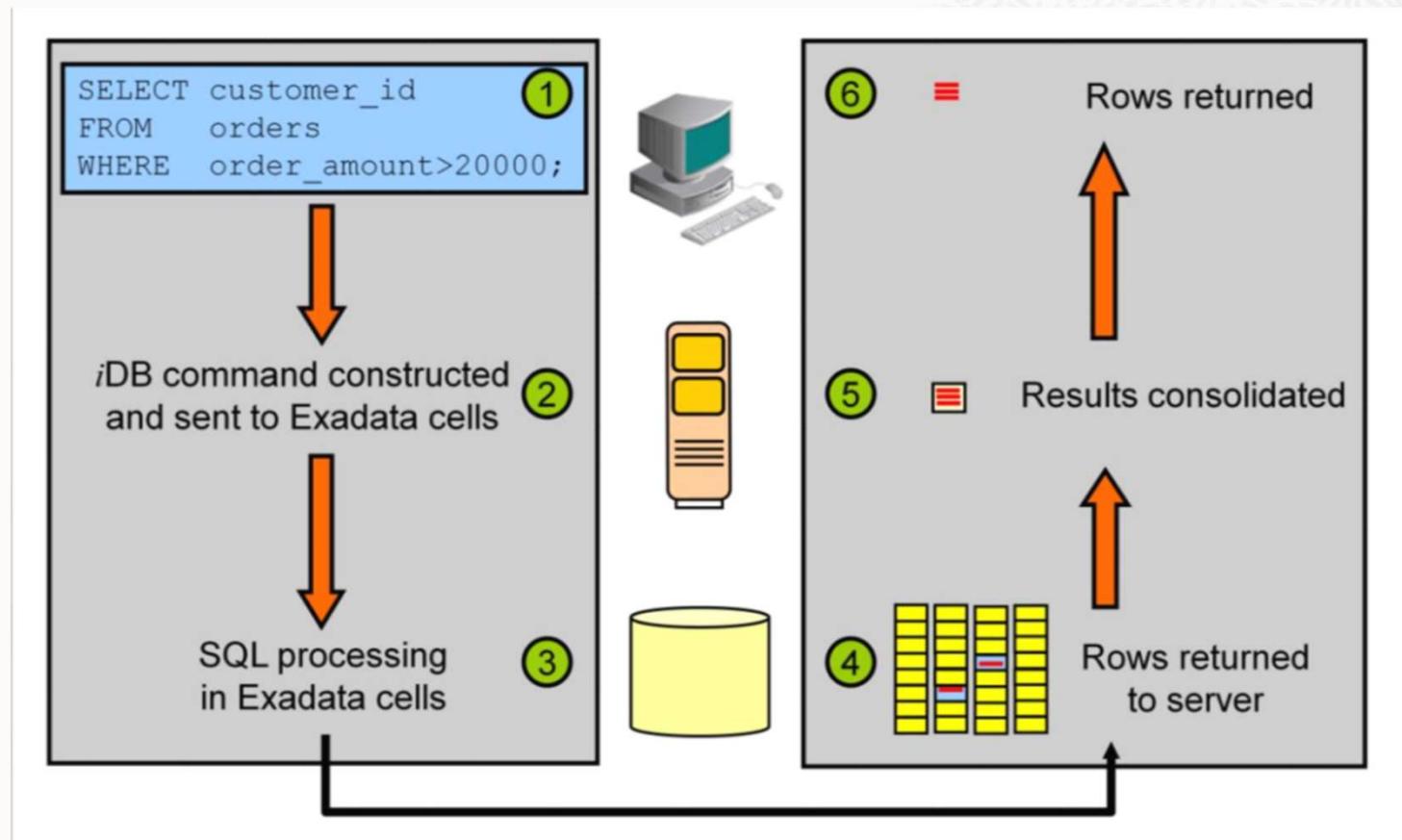


“Smart Scan is one of the great feature in Oracle Exadata. With this technology storage send only required rows to database node from **storage instead of entire Oracle Block**. Multiple rows are stored in one Oracle Block but non-exadata system return entire block even only one rows is required. On the other hand, Exadata Storage returns only **interested rows but not entire block.**”

Oracle Database | No Exadata System



Exadata Cloud a Smart Scan | Off Load Querying



When Exadata Smart Scan Happens



- Full Table Scans
- Direct-path reads
- Not used by default for serial scans of small tables Can be forced via _serial_direct_read=TRUE at either session or system level
- Full Index Scans
- Direct-path reads are automatically used for parallel queries

Exadata Smart Scan Why it's not working?

- Scan performed on a compressed table
- A Scan is performed on an index partitioned table
- Full scan is performed on a compressed index
- A full scan is performed on a reverse key index
- The table has row-level dependency tracking enabled.
- The optimizer wants the scan to return rows in ROWID order
- A BLOB or LONG column is being selected or queried
- A self-relation flashback query is being executed
- A query that references LOB columns is referenced

Query Execution plan | Traditional Database Vs Exadata System

```
SQL> select * from table(dbms_xplan.display);
PLAN_TABLE_OUTPUT
-----
Plan hash value: 970577077

| Id  | Operation          | Name      | Rows  | Bytes | Cost (%CPU)| Time     |
| 0   | SELECT STATEMENT   |           | 902   | 23452 |    10  (0) | 00:00:01 |
| 1   | TABLE ACCESS BY INDEX ROWID BATCHED | CUSTOMERS | 902   | 23452 |    10  (0) | 00:00:01 |
|* 2  | INDEX RANGE SCAN   | CUSTOMERS_ID_PK | 902   |       |       6  (0) | 00:00:01 |

Predicate Information (identified by operation id):
-----
```



```
PLAN_TABLE_OUTPUT
-----
Plan hash value: 2008213504

| Id  | Operation          | Name      | Rows  | Bytes | Cost (%CPU)| Time     |
| 0   | SELECT STATEMENT   |           | 902   | 23452 | 306K (1) | 00:00:12 |
|* 1  | TABLE ACCESS STORAGE FULL | CUSTOMERS | 902   | 23452 | 306K (1) | 00:00:12 |

Predicate Information (identified by operation id):
-----
1 - storage("ID"=<=1000 AND "ID">=100)
      filter("ID"=<=1000 AND "ID">=100)
```



Monitoring Smart Scan in SQL Execution Plan

- Relevant Initialization Parameters:
 - CELL_OFFLOAD_PROCESSING
 - TRUE | FALSE
 - Enables or disables Smart Scan and others smart storage capabilities
 - Dynamically modifiable at session or system level using ALTER SESSION or ALTER SYSTEM
 - CELL_OFFLOAD_PLAN_DISPLAY
 - NEVER | AUTO | ALWAYS
 - Allows execution plan to show offloaded predicates
 - Dynamically modifiable at session or system level using ALTER SESSION or ALTER SYSTEM



Others Stituations Affecting Smart Scan

- Seeing STORAGE in the execution plan does not guarantee that the query is satisfied using Smart Scan
- Even when Smart Scan is indicated by the execution plan, other block I/O might also :
 - If Exadata Storage Server is not sure that a block is current, it transfers that block read to the buffer cache
 - If chained or migrated rows are detected additional non-Smart Scan block reads may be required
 - I/O for dynamic sampling does not use Smart Scan
 - If Exadata Storage Server CPU utilization is significantly greater than CPU utilization on the database server, smart scan may send additional data to the database server
 - If all the required data already resides in the database buffer cache, the buffer cache copy is used and no disk I/O is performed
 - Smart Scan may de disabled if a statement is affected by a storage server quarantine
- Statistics and wait events can be used to confirm what is happening



Exadata Storage Server Statistics | Overview

```
SQL> select s.name, m.value/1024/1024 mb from v$mystat m, v$sysstat s
  where m.statistic#=s.statistic#
    and (s.name like '%physical IO%' or s.name like '%optimized%'
    or s.name like 'physical%total bytes');
V$SQL
```

NAME	MB
- SQL_Text	
----- PHYSICAL_READ_BYTES -----	
physical read_total_bytes	19.2192383
physical write_total_bytes	0
cell physical_IO_interconnect_bytes	19.5942383
cell physical_IO_BYTES_saved_during_optimized_file_creation	0
cell physical_IO_BYTES_saved_during_optimized_RMAN_file_restore	0
cell physical_IO_CELL_OFFLOAD_RETURNED_BYTES_load	0
cell physical-IOPIMIZED_BYTES_READREQUEST	0
cell physical_IO_bytes_saved_by_columnar_cache	0
cell physical_IO_bytes_saved_by_storage_index	0
cell physical_V\$SYSSTAT sent directly to DB node to balance CPU	0
cell physical_IO_NAME processed for IM capacity	0
cell physical_IO_VALUE processed for IM query	0
cell physical_IO_bytes_processed_for_no_memcompress	0
cell physical_IO_interconnect_bytes_returned_by_smart_scan	0
cell physical_write_bytes_saved_by_smart_file_initialization	0
cell IO_uncompressed_bytes	0
cell physical_write_IO_bytes_eligible_for_offload	0
cell physical_write_IO_host_network_bytes_written_during_offload	0



Exadata Smart Scan statistics sample

```
SQL> select count (*) from erp.orders where CUST_ID > 1;
```

Elapsed: 00:00:02.27

```
SQL> select s.name, m.value/1024/1024 mb from v$mystat m, v$sysstat s
      where m.statistic#=s.statistic#
        and (s.name like '%physical%total bytes' or s.name like '%cell phys%'
          or s.name like 'cell IO%');
```

NAME	MB
physical read total bytes	19.2192383
physical write total bytes	19.5942383
cell physical IO interconnect bytes	150.876445
cell physical IO bytes saved during optimized file creation	0
cell physical IO bytes saved during optimized RMAN file restore	0
cell physical IO bytes eligible for predicate offload	150.876445
cell physical IO bytes eligible for smart IOs	0
cell physical IO bytes saved by columnar cache	0
cell physical IO bytes saved by storage index	0
cell physical IO bytes sent directly to DB node to balance CPU	0
cell physical IO bytes processed for IM capacity	0
cell physical IO bytes processed for IM query	0
cell physical IO bytes processed for no memcompress	0
cell physical IO interconnect bytes returned by smart scan	150.876445
cell physical write bytes saved by smart file initialization	0



Extreme concurrent Transaction | Example

```
SQL> select count (*) from erp.orders where CUST_ID > 1;
```

Elapsed: 00:00:23.00

NAME	MB
physical read total bytes	19.2192383
physical write total bytes	19.5942383
cell physical IO interconnect bytes	150.876445
cell physical IO bytes saved during optimized file creation	0
cell physical IO bytes saved during optimized RMAN file restore	0
cell physical IO bytes eligible for predicate offload	0
cell physical IO bytes eligible for smart IOs	0
cell physical IO bytes saved by columnar cache	0
cell physical IO bytes saved by storage index	0
cell physical IO bytes sent directly to DB node to balance CPU	0
cell physical IO bytes processed for IM capacity	0
cell physical IO bytes processed for IM query	0
cell physical IO bytes processed for no memcompress	0
cell physical IO interconnect bytes returned by smart scan	150.876445
cell physical write bytes saved by smart file initialization	0



Exadata Wait events | Example

```
SQL> select count (*) from erp.orders where CUST_ID > 1;
```

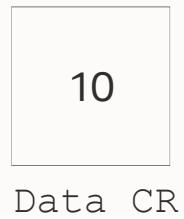
Elapsed: 00:00:23.00

```
SQL> select distinct event, total_waits, time_waited/100 wait_secs,  
average_wait/100 avg_wait_secs  
from V$session_event e, v$mystat s  
where event like 'cell%' and e.sid = s.sid
```

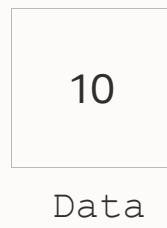
EVENT	TOTAL_WAITS	WAIT_SECS	AVG_WAIT_CECS
Cell list of blocks physical read	1	0	.0006
Cell single block physical read	1349704	683.94	.0005
Cell smart table scan	9191	3.29	.0004



Session 1
Update 10 -> 20
Select 20

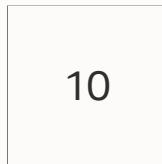


Session S2
Select 10 (CR)



Database Node (buffer cache)

Storage Cell



I/O Sent Directly to database Server to balance CPU usage sample

```
SQL> select count (*) from erp.orders where CUST_ID > 1;

SQL> select s.name, m.value/1024/1024 mb from v$mystat m, v$sysstat s
      where m.statistic#=s.statistic#
        and (s.name like '%physical%total bytes' or s.name like '%cell phys%'
        or s.name like 'cell IO%');

NAME                                     MB
-----
physical read total bytes           19.2192383
physical write total bytes         19.5942383
cell physical IO interconnect bytes          0
cell physical IO bytes saved during optimized file creation 0
cell physical IO bytes saved during optimized RMAN file restore 0
cell physical IO bytes eligible for predicate offload 0
cell physical IO bytes eligible for smart IOs 0
cell physical IO bytes saved by columnar cache 0
cell physical IO bytes saved by storage index 0
cell physical IO bytes sent directly to DB node to balance CPU 2396.9877
cell physical IO bytes processed for IM capacity 0
cell physical IO bytes processed for IM query 0
cell physical IO bytes processed for no memcompress 0
cell physical IO interconnect bytes returned by smart scan 0
cell physical write bytes saved by smart file initialization 0
cell IO uncompressed bytes 0
cell physical write IO bytes eligible for offload 0
cell physical write IO host network bytes written during offload 0
```



Exadata Storage Server Wait events | Overview

Connected to:

Oracle Database 19c EE Extreme Perf Release 19.0.0.0.0 -
Production
Version 19.19.0.0.0

```
SQL> select distinct event, total_waits, time_waited/100 wait_secs,  
average_wait/100 avg_wait_secs  
from V$session_event e, v$mystat s  
where event like 'cell%' and e.sid = s.sid
```

WAIT EVENT	DESCRIPTION
cell interconnect retransmit during physical read	Database wait during retransmission for an I/O of a single-block
cell list of block physical read	Cell equivalent of db file parallel read
cell single block physical read	Cell equivalent of db file sequential read
cell multiblock physical read	Cell equivalent of scattered read
cell smart table scan	Database wait for table scan to complete
cell smart index scan	Database Wait for index or IOT full scan
cell smart file creation	Database wait for file creation operation
cell smart incremental backup	Database wait for incremental backup operation
cell smart restore from backup	Database wait during file initialization for restore



Troubleshooting Smart Scan operations

Connected to:

Oracle Database 19c EE Extreme Perf Release 19.0.0.0.0 - Production
Version 19.19.0.0.0

```
SQL> alter session set tracefile_identifier='10046';  
  
SQL> alter session set timed_statistics = true;  
  
SQL> alter session set statistics_level=all;  
  
SQL> alter session set max_dump_file_size = unlimited;  
  
SQL> alter session set events '10046 trace name context forever,level 12';
```

Run the sql query that is giving low performance.==> we need trace file to be uploaded.

```
SQL> alter session set up_cell_offload_processing=false;
```

Run the sql query that is giving low performance.==> we need trace file to be uploaded.



When Exadata **Smart Scan** Happens



- **Exadata Smart Scan FAQ** (Doc ID 1927934.1)

APPLIES TO:

Exadata Database Machine V2 - Version All Versions to All Versions [Release All Releases]
Information in this document applies to any platform.

PURPOSE

This document addresses the frequently asked questions related to Exadata Smart Scan.

QUESTIONS AND ANSWERS

What is Smart Scan ?

The data search and retrieval processing can be offloaded to the Exadata Storage Servers. This feature is called Smart Scan. Using this Smart Scan, Oracle Database can optimize the performance of operations that perform table and index scans by performing the scans inside Exadata Storage Server, rather than transporting all the data to the database server.

Smart Scan capabilities includes :-

- 1) Predicate Filtering
- 2) Column filtering
- 3) Join Processing



- **Queries Generating High "Cell Single Block Physical Read" Wait Messages** ([Doc ID 2119510.1](#))

APPLIES TO:

Oracle Database Backup Service - Version N/A and later
Oracle Database - Enterprise Edition - Version 11.2.0.4 and later
Oracle Database Cloud Schema Service - Version N/A and later
Gen 1 Exadata Cloud at Customer (Oracle Exadata Database Cloud Machine) - Version N/A and later
Oracle Cloud Infrastructure - Database Service - Version N/A and later
Information in this document applies to any platform.

SYMPTOMS

Symptoms of this issue will appear as follows:

- Trace file entries that look similar to the following:

```
WAIT #5: nam='cell single block physical read' ela= 672 cellhash#=2520626383 diskhash#=1377492511 bytes=16384 obj#=63
tim=1280416903276618
```

- The "Top 10 Foreground Events by Total Wait Time" section of the AWR report shows an exceedingly high number of waits but few to no average wait time. For example:

Event	Waits	Total Wait Time (sec)	Wait Avg(ms)	% DB time	Wait Class
cell single block physical read	19,654,319	4847,1	0	9.7	User I/O

- All or most of the events in the "Top SQL with Top Events" section of the ASH report are INDEX - STORAGE FAST FULL SCAN.



- **Support Policy for Generic SQL Performance Issues** (Doc ID 1198303.1)

DETAILS

The following document outlines the policies that Oracle Support follows in order to provide the best Support experience and the shortest resolution time. Support will always strive to assist you in your efforts to make queries perform at their best and this document outlines what we can and cannot do to achieve this.

ACTIONS

Oracle Support Diagnoses Issues Relating to a Query's Performance

One of Oracle Support's roles is to assist its customers in the identification and resolution of SQL Performance Issues.

This is a complete cycle of activity within which, diagnosis is a key component.

Oracle Support can help with this diagnosis.

- If the diagnosis identifies RDBMS defects then Oracle Support will make efforts to provide workarounds and patches according to standing Oracle Support Policies.
- Additionally, Tuning the Query is a potential Solution to many SQL Performance issues.
If the diagnosis indicates that the query needs manual tuning it will be the customer's responsibility to take the appropriate steps to do the tuning. Manual tuning includes setting hints, using SQL Profiles generated by the SQL Tuning Advisor (if the license has been purchased), creating proper indexes or using other database features to improve the query.

Oracle Support does not provide a Query Tuning Service

Oracle Support does not provide an alternative to one of the advanced services that Oracle Support has available to execute a complete performance analysis on your system or to help you to tune your query.

See 'Limitations of Support under support policies tab' section in:



Exadata Skill Test

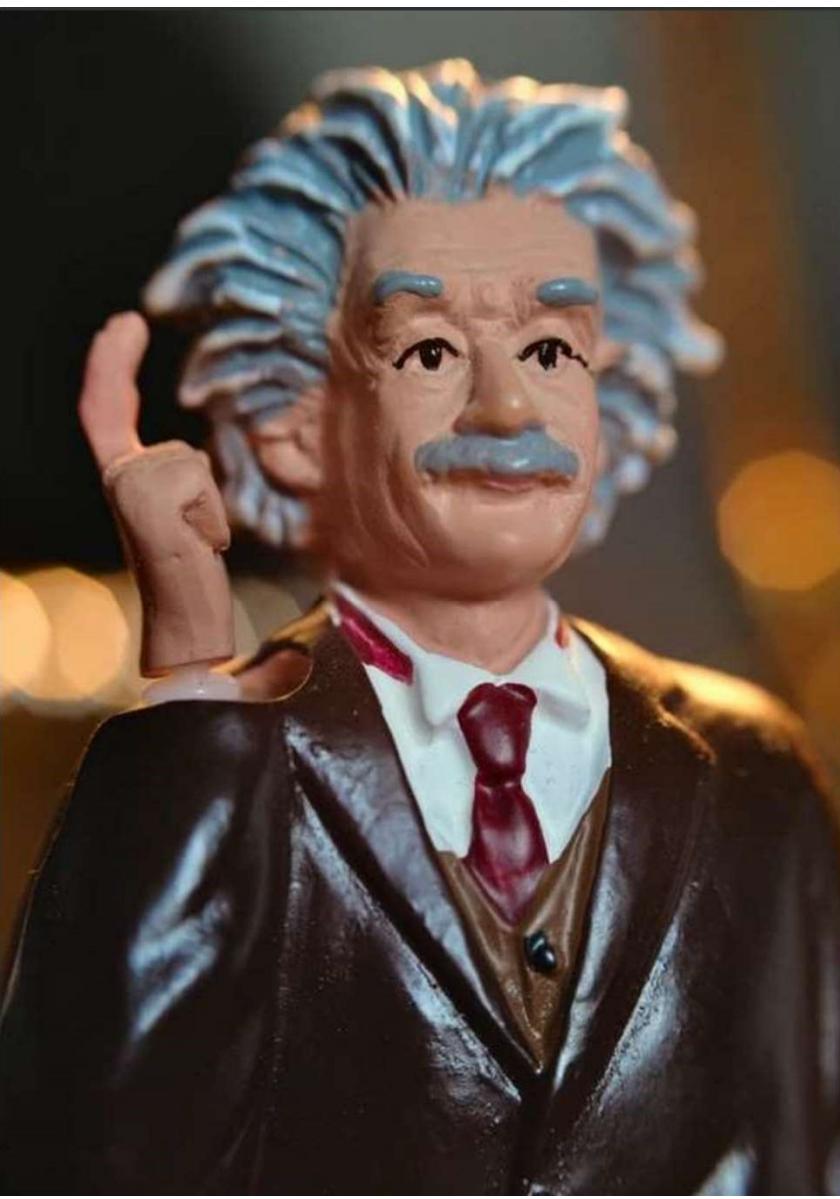
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**Time to test your skill!
Are you ready?**

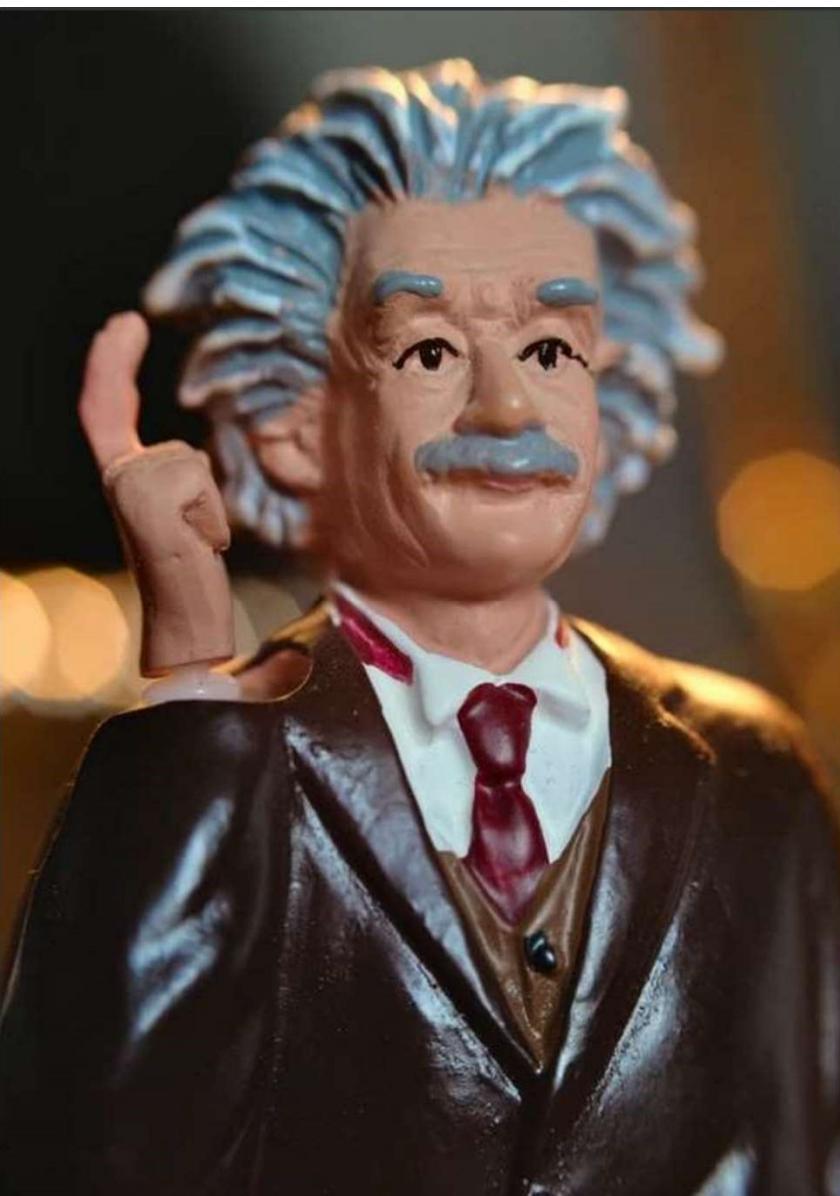
O



ROUND 1

O





ROUND 2

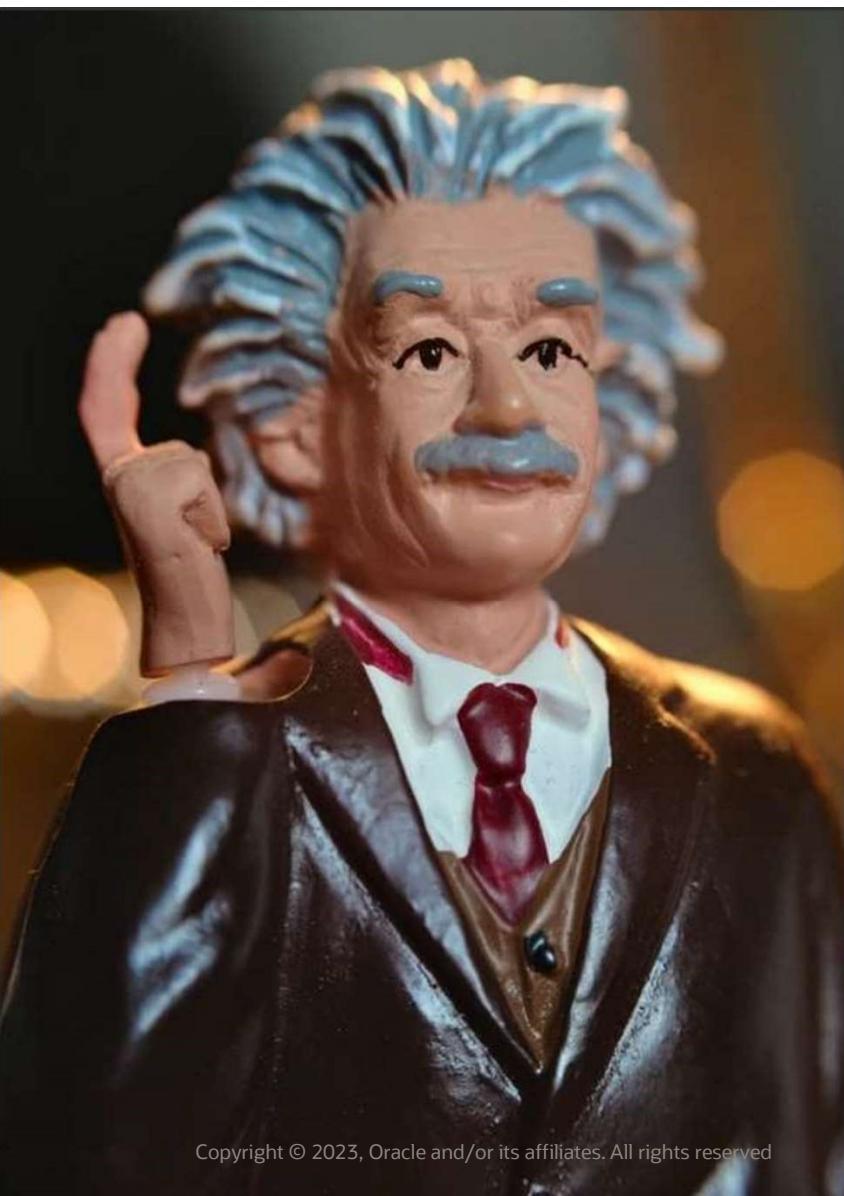
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Demo

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Demo 1 – Optimizer Smart Scan (No Exadata)

- Configuring parameter CELL_OFFLOAD_PLAN_DISPLAY
- Explain plan query report
- Changing index visibility
- Explain plan report part 2

Demo 2 – Monitoring Smart Scan

- Execution no Smart Select using hint
- Getting Dictionary Statistics
- Executing query with no hint
- Compare both results

Resources

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Exam 1Z0-1093-23: Oracle Database Services 2023 Professional



- Number of Questions **55**
- Format **Multiple Choice**
- Exam Length **90 minutes**
- Passing Score **68%**
- **Exadata C@C** and **Exadata Cloud Service** topics included





Thank You ☺

Questions / Feedback / Training Suggestions

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Ask for help ☺

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