

## Safe harbor statement

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ORACLE

# Excel with Engineered Systems

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**Björn Bolltoft**

Consulting Product Manager  
Oracle Product Development

# Enterprise Manager 13c Exadata Management



## Exadata Monitoring

Single pane of glass to monitor Exadata hardware and software

New hardware targets for incident management specific to hardware targets

Monitoring of Exadata Storage Server faults



## VM Provisioning

Exadata Create and delete a RAC Cluster including:

- VMs, Oracle Database (DB), Grid Infrastructure, and ASM

Scale up and scale down a RAC Cluster by adding or removing VMs including

- DB, Grid Infrastructure, and ASM



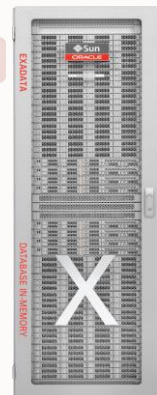
## Exadata Management

Support for Columnar flash and IORM Profiles

Execute cell CLI

Execute commands on IB switches

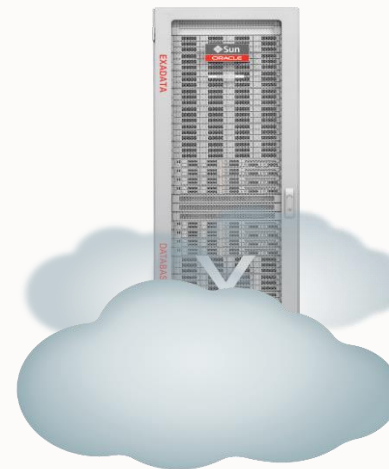
# Enterprise Manager 13c Exadata Management



## Exadata Migration and Cloning

Database Consolidation  
Workbench for all phases of  
consolidation from planning  
to deployment

Exadata Sparse Disk cloning  
for test/dev provisioning



## Exadata Cloud Service

OPC Admin: Remotely  
monitor Exadata hardware

OPC Admin: No access to  
customer databases and  
host targets

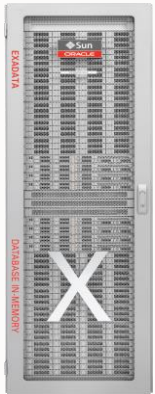
Customer DBA: Hybrid  
management of databases,  
VMs targets (hosts)



# Exadata Gains from EM Framework

- Discovery and Topology Modeling
  - Ability to discover target installations and present in a topology model
  - Associations with external targets in a topology model
- Monitoring and Incident Management
  - Monitoring by exception using metrics and thresholds
  - Incident management and integration with 3<sup>rd</sup> party ticketing system
- Configuration Management
  - Collection of configuration items
  - Search, compare and run configuration health checks using Compliance framework
- Reporting dashboard for Monitoring, Service Level Management, Compliance
- Automation and Active management
  - Jobs, Deployment Procedures, Software Library
  - EMCLI based operations
- Security and Access Control
  - Preferred credentials
  - Target level privileges to administrators

# Enterprise Manager 13c Exadata Management



## Exadata Monitoring

Single pane of glass to monitor Exadata hardware and software

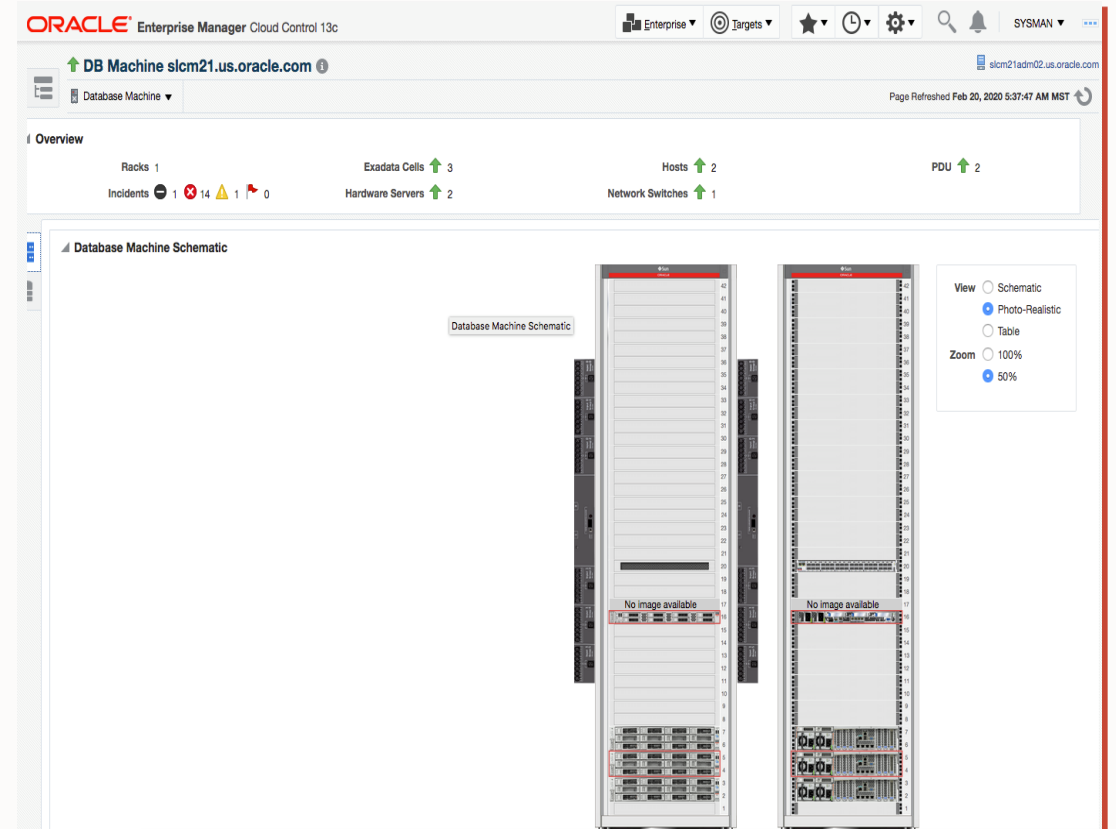
New hardware targets for incident management specific to hardware targets

Monitoring of Exadata Storage Server faults

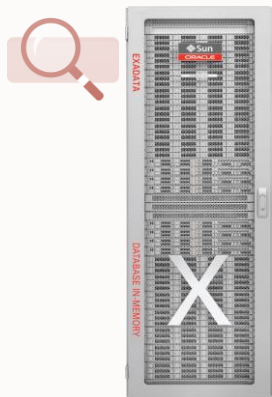
# Exadata Monitor

Single pane of glass to monitor Exadata hardware and software

- Hardware view
  - Schematic of cells, compute nodes and switches
  - Hardware components views and alerts
  - Photo-realistic schematic
  - Integrated with Ops Center
- Software/system view
  - Performance, availability, usage by databases, services, clusters
  - Software alerts DB, Cluster, ASM
  - Topology view of DB systems/clusters
- Configuration view
  - Version summary of all components along with patch recommendations



# Enterprise Manager 13c Exadata Management

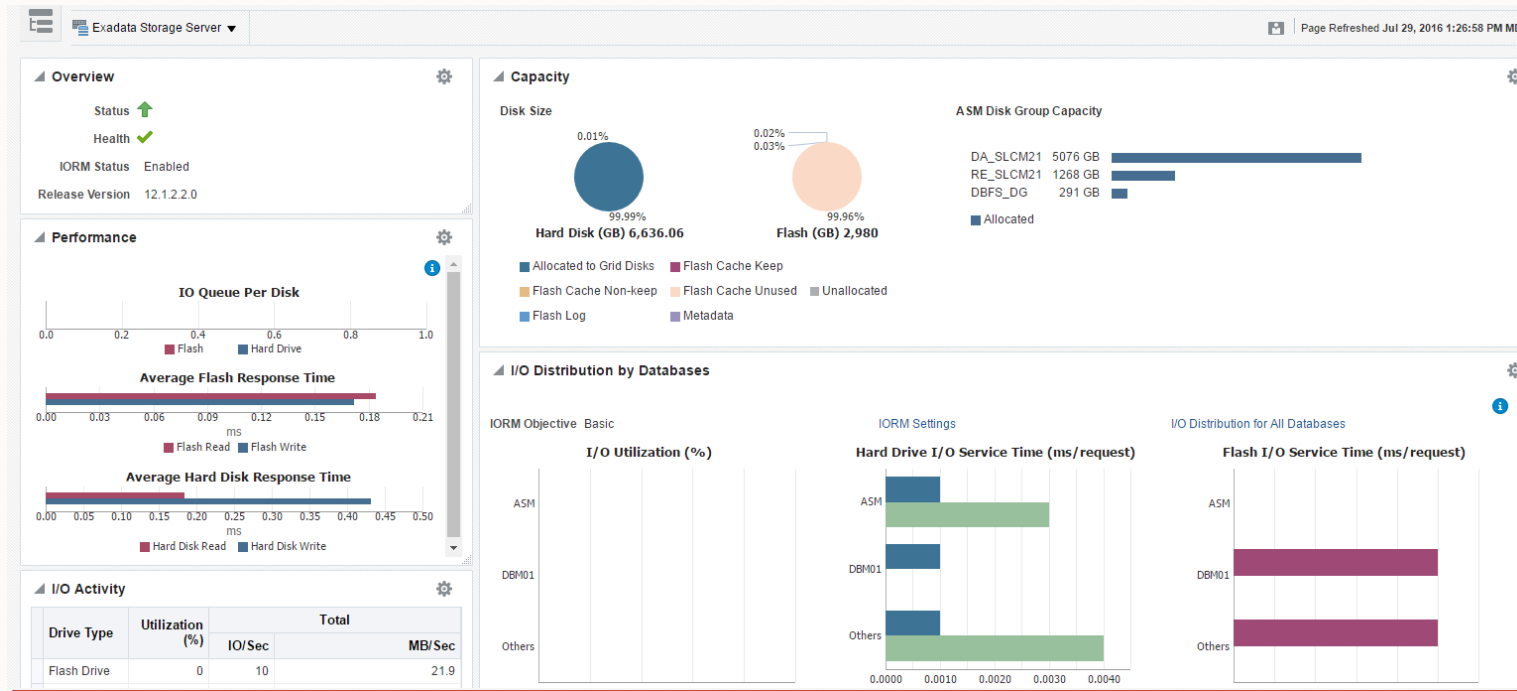


## Exadata Management

- Support for Columnar flash and IORM Profiles
- Execute cell CLI
- Execute commands on IB switches



# Storage Cell Management



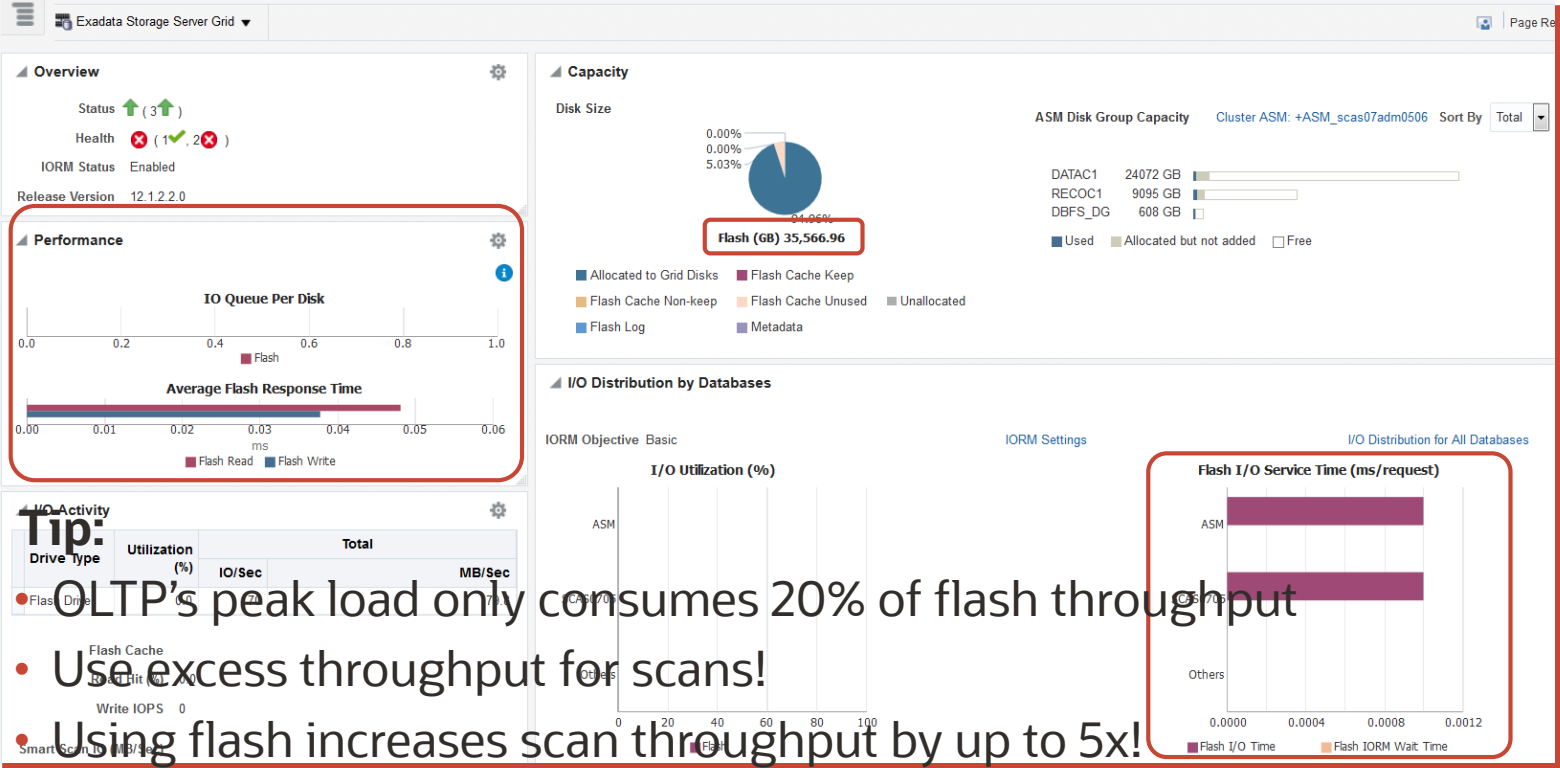
- Storage Cell monitoring and administration support
  - Cell Home page and performance pages
  - Actions supported: Run cellcli/Exaccli, setup IORM

# Monitor “Extreme Flash” Configuration

From Target Navigation Icon → Exadata Storage Server Grid

1. Target Navigation Icon →

2. Perf. Section for Flash Read & Write →

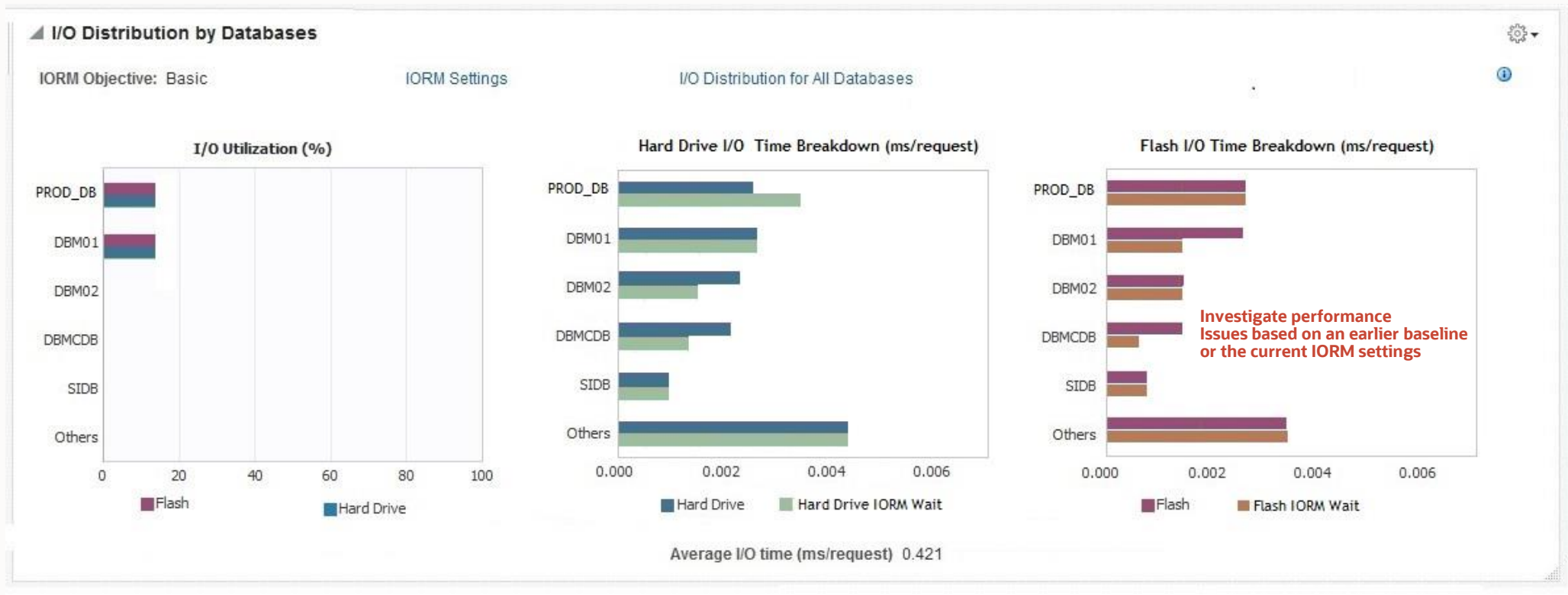


- Tip:** OLTP's peak load only consumes 20% of flash throughput
- Use excess throughput for scans!
  - Using flash increases scan throughput by up to 5x!



# Charts on Cell and Grid Home Page

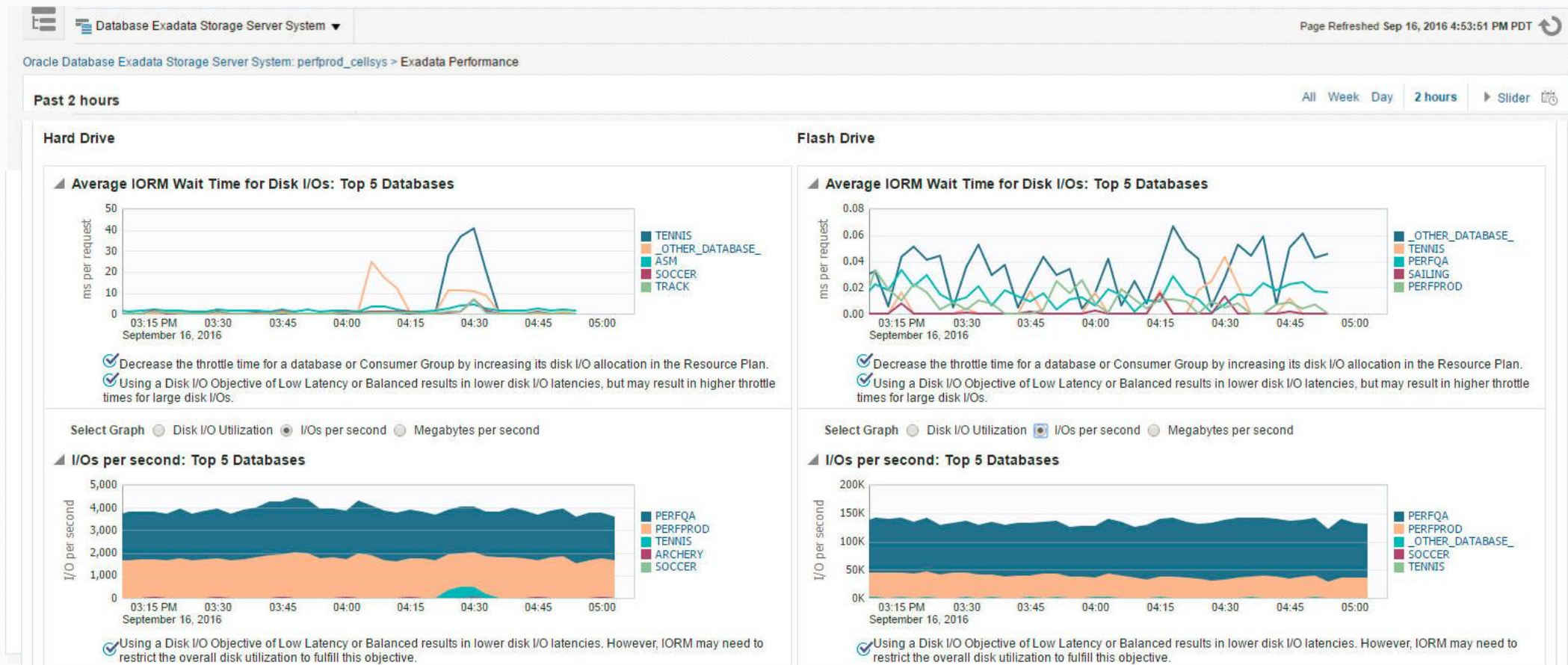
## Cell and Grid Home page



**Monitor Flash performance and IORM waits**

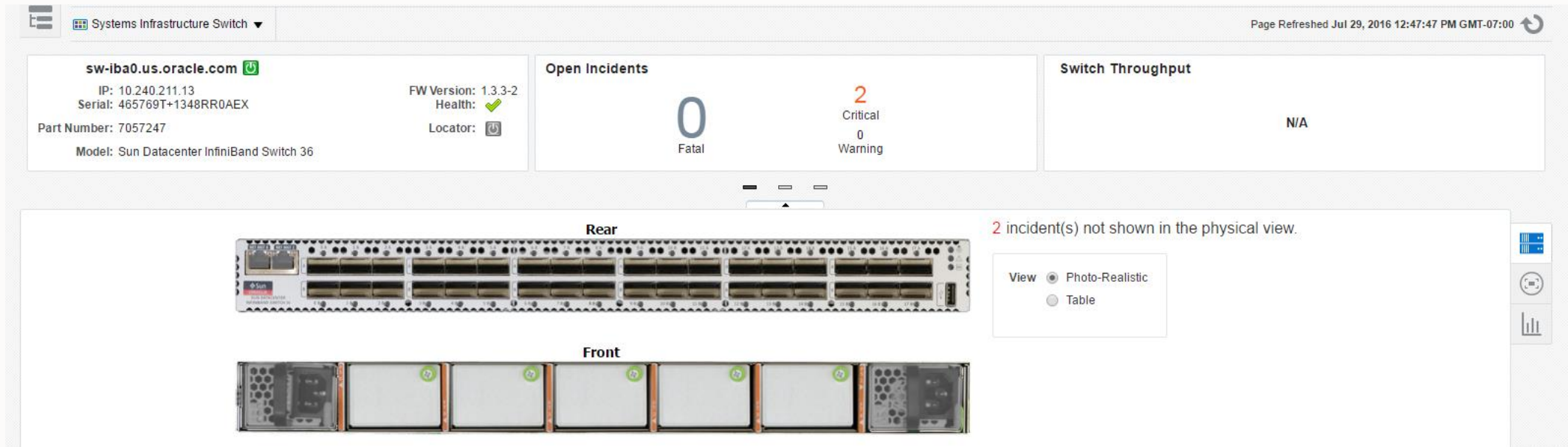
# Cell and Grid Performance Page

From Target Navigation Icon → Exadata Storage Server Grid → Performance





# Infiniband Network Management



- Comprehensive monitoring
  - Alerts (switch generated and EM generated)
  - Performance metrics
  - Configuration metrics – detect and notify configuration changes/best practice violations

# Monitoring: ILOM, Cisco Switches, PDU

Database Machine Schematic									
Slot Number	Component Name	Component Type	Status	Temperature	✖	⚠	⬇		
22	sw-ibb0	InfiniBand Switch	↑	47°C	2				
20	sw-iba0	InfiniBand Switch	↑	52°C	2				
17	adm02/server	Server	↑	41°C					
16	adm01-ilom	Server	↑	41°C					
6-7	celadm03	Storage Server	↑	29°C					
4-5	celadm02	Storage Server	↑	28°C					
2-3	celadm01	Storage Server	↑	28°C					
	sw-pdua0	PDU	↑						
	sw-pdub0	PDU	↑						

View ☐ Schematic ☐ Photo-Realistic ☒ Table

Show ☐ Empty Slot

Status  
↑ Up  
↓ Down  
✂ Blackout

Incidents							
View ▾	Category All ▾	⬇ 0	✖ 4	⚠ 0	🔴 0		
Summary	Target	Severity	Status	Escalation Level	Type	Time Since Last Update	
Access point - ibb0.us.oracle.com_ILOM_AP1/snmp is down	🌐	✖	New	-	Incident	0 days 4 hours	
Access point - ibb0.us.oracle.com_ILOM_AP2/snmp is down	🌐	✖	New	-	Incident	0 days 4 hours	
Access point - iba0.us.oracle.com_ILOM_AP1/snmp is down	🌐	✖	New	-	Incident	0 days 4 hours	

- Metrics monitored
  - Power supply failure, Fan failure, Temperature out of range
  - Configuration change tracking and reporting, SNMP access issues

# Enterprise Manager 13c Exadata Management



## VM Provisioning

Exadata Create and delete a RAC Cluster including:

- VMs, Oracle Database (DB), Grid Infrastructure, and ASM

Scale up and scale down a RAC Cluster by adding or removing VMs including

- DB, Grid Infrastructure, and ASM

# Exadata Virtualization Provisioning

VM provisioning on Virtualized Exadata involves reliable, automated, & scheduled mass deployment of RAC Cluster

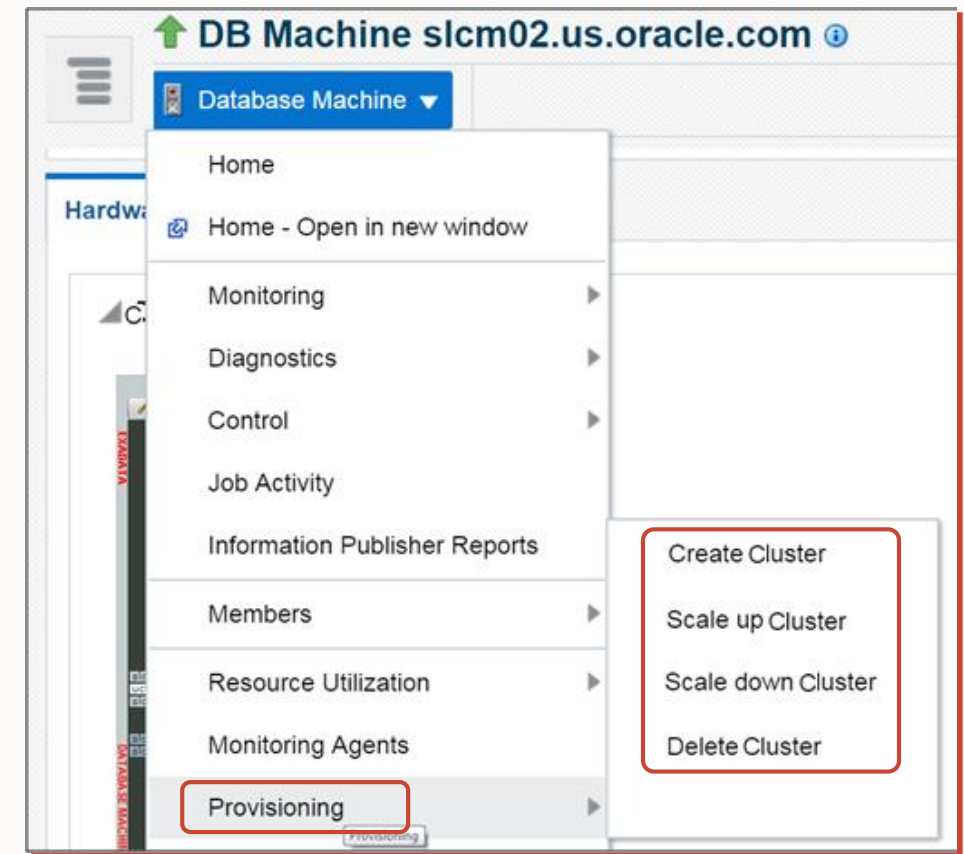
- Includes VMs/DB/GI/ASM

Create / delete RAC Cluster

- Including DB/GI/ASM

Scale up / down RAC Cluster by adding or removing VMs

- Includes DB/GI/ASM



**Increase Operational Efficiency by Deploying RAC Cluster Faster on Virtualized Exadata**



# Exadata Virtualization Provisioning

Cluster

Credentials

Virtual Machines

Network

Grid Infrastructure and Initial Database

Schedule

Review

Exadata Provisioning: Grid Infrastructure and Initial Database

BackStep 5 of 7NextCancel

Cluster

\* SCAN Name

slcm02vm06-scan5.us.oracle.com

Check Availability

\* SCAN Port

1521

ASM Password

The same password will be used for ASMSNMP and SYS users

\* Password

.....

\* Confirm Password

.....

Initial Database

Create Initial Database

Database Identification

Database Type

Transaction Processing

Data Warehouse

\* Global Database Name

CRM

\* SID

CRM

Block Size

8192

Disk Group

+ Add

✕ Remove

Validate

Disk group Name	Redundancy	Size(GB)
DATA06	NORMAL	10
RECOC6	NORMAL	10

Administrator Credentials

Specify passwords for the administrative users(SYS,SYSTEM and DBSNMP) in the new database.

Use the same password

\* Password

.....

\* Confirm Password

.....

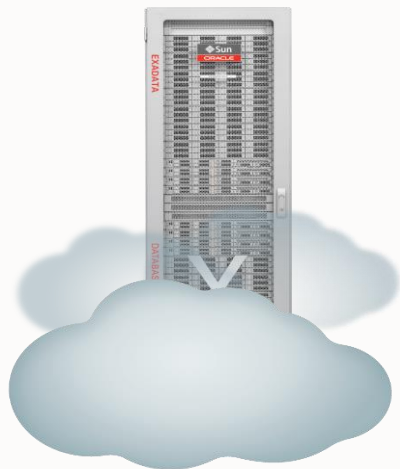
Use different passwords

User name	Password	Confirm Password
SYS		
SYSTEM		

## Exadata Provisioning Workflow

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# Enterprise Manager 13c Exadata Management



## Exadata Cloud Service

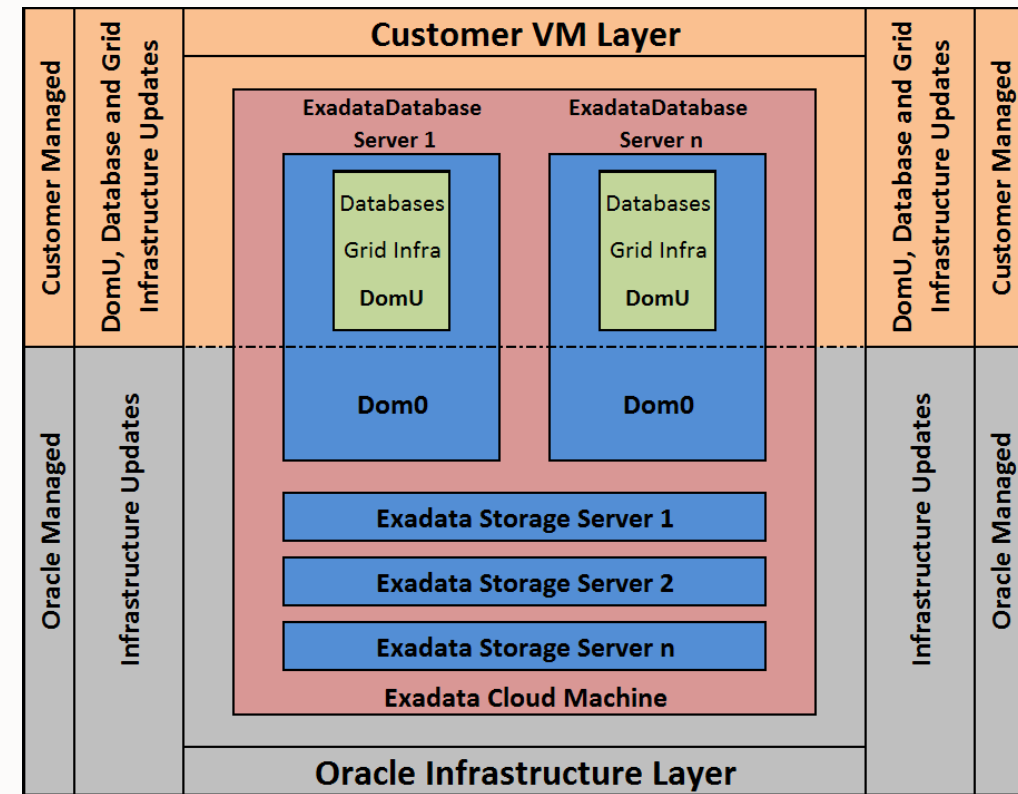
OPC Admin: Remotely monitor Exadata hardware

OPC Admin: No access to customer databases and host targets

Customer DBA: Hybrid management of databases, VMs targets (hosts)

# Exadata Cloud: Shared Responsibility model

- Oracle Cloud Operations manages the physical infrastructure up to and including the compute node hypervisor and dom0's
  - ILOMs, compute nodes, storage servers, network switches, PDUs
- Customer manages the software running on the compute node DomU's and the allocation of resources
  - Customer does not discover the Exadata Database Machine target in EM



# Exadata Cloud Target

EM 13.4

- First-class EM target for Exadata Cloud
  - Automatically identifies and organizes related targets
  - Provides an integration point for Exadata Cloud specific functionality
- Improved Performance Monitoring
  - Adds Exadata Storage Server and Exadata Storage Grid targets
  - Offers visualization of storage and compute performance for Exadata Cloud
  - Enables use of the same MAA KPIs developed for on-premises Exadata
- Scripted CLI-based discovery
  - Script the discovery of Exadata Cloud, including existing host, cluster, ASM, database and related targets, and adding storage servers



# Exadata Cloud Target

## EM 13.4

Provides a single pane of glass for Exadata and Exadata Cloud

- Monitor and Manage Exadata, Exadata Cloud systems together via Targets -> Exadata menu
- Consistent experience across Exadata Cloud at Customer and Exadata Cloud Service

ORACLE Enterprise Manager Cloud Control 13c

Enterprise Targets Favorites History Setup

Oracle Exadata Database Machines and Cloud Services

Auto Refresh Off Page Refreshed Oct 23, 2019 10:19:34 AM PDT

Target Name	Target Type	Status	Members	Member Status Summary					Incidents			
				↓	↑	⚙	⌛	✖	⚠	✖	⚠	🚩
▲ DB Machine slcc15.us.oracle.com	Oracle Exadata Database Machine	↑	Systems Infrastructure Server(2), Systems Infrastructure Rack(1), Systems Infrastructure PDU(2), ... More	1	13	-	-	-	1	8	-	-
DB Machine slcc15 Rack AK00018783	Systems Infrastructure Rack	Not Applicable		-	-	-	-	-	1	8	-	-
Exadata Grid slcc15.us.oracle.com	Oracle Exadata Storage Server Grid		Oracle Exadata Storage Server(3)	-	3	-	-	-	-	-	-	-
▲ ExaCC_HR	Oracle Exadata Cloud Service	Not Applicable	Cluster Database(1), Automatic Storage Management(2), Cluster ASM(1), ... More	-	-	-	-	1	-	12	9	-
+ASM_slcm08adm0102	Cluster ASM		Automatic Storage Management(2)	-	-	-	-	-	-	4	3	-
Exadata Grid ExaCC_HR	Oracle Exadata Storage Server Grid		Oracle Exadata Storage Server(2)	-	-	-	-	-	-	-	-	-
SLCM0801	Cluster Database		Pluggable Database(2), Database Instance(2)	-	-	-	-	-	-	7	4	-

# Exadata Cloud Target

## EM 13.4

### Visualization

- Visualize the databases and related targets associated with each ExaCC and ExaCS

The screenshot displays the Oracle Enterprise Manager Cloud Control 13c interface for the ExaCC\_HR target. The top navigation bar includes the Oracle logo, 'Enterprise Manager Cloud Control 13c', and various utility icons like Enterprise, Targets, Favorites, History, Setup, and a search bar. The main content area is divided into a left sidebar and a main pane. The sidebar shows 'General' information for 'ExaCC\_HR', including Region (US East (Ashburn)), Service Type (Customer 500), Tenancy (ExaCC), and Incidents (0 critical, 15 warning, 9 error). Below this is a cloud icon and a list of targets: slcm08adm01vm01.us.oracle.com, slcm08adm02vm01.us.oracle.com, slcm08celadm01, and slcm08celadm03, with a legend for Virtual Server and Storage. The main pane shows a 'Members' table with columns: Target Name, Target Type, Status, a set of three status icons (green up, red down, yellow warning), Lifecycle Status, and Version. The table lists several targets including Hosts, Oracle Exadata Storage Servers, an Exadata Grid, a Cluster ASM, and a Cluster Database. At the bottom, there is a 'Summary' section with two incidents: 'Filesystem /u01/app/xyz5 is 91% full' and '84 object(s) are invalid in the FS\_LSQ schema', each with a severity icon, status (New), escalation level, type (Incident), and time since last update (2 days 7 hours).

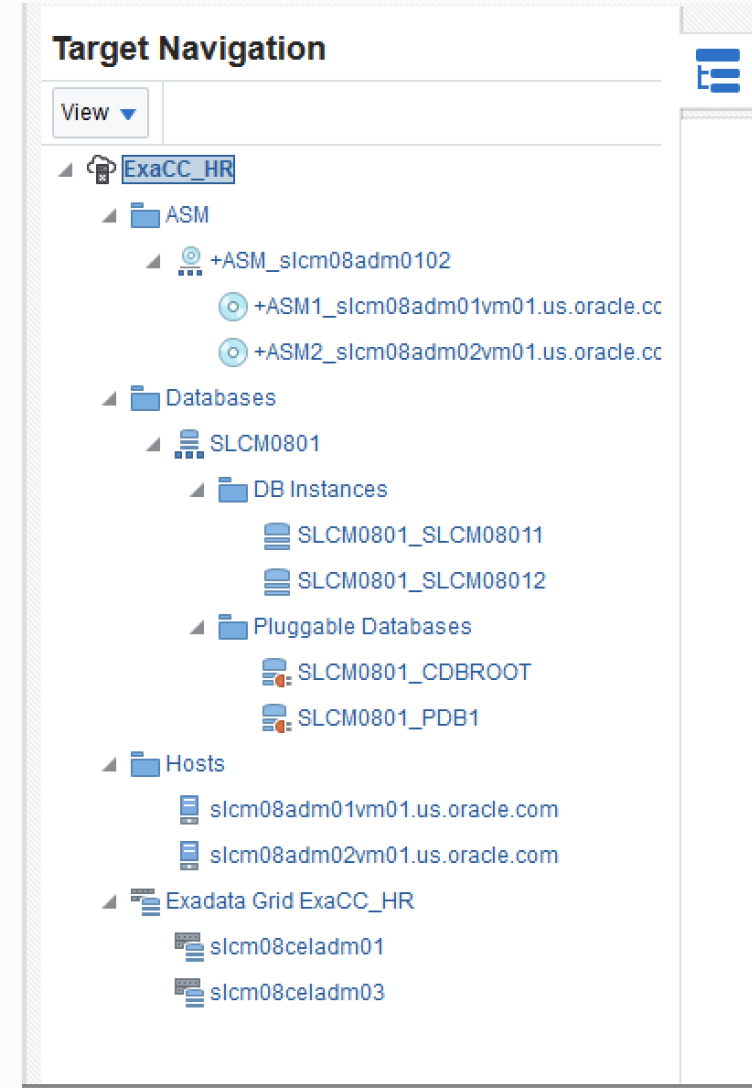
Target Name	Target Type	Status	Green Up	Red Down	Yellow Warning	Lifecycle Status	Version
slcm08adm01vm01.us.oracle.com	Host	Green Up	0	1	1	Production	7.6.0.0.0
slcm08adm02vm01.us.oracle.com	Host	Green Up	0	3	1	Production	7.6.0.0.0
slcm08celadm01	Oracle Exadata Storage Server	Green Up	0	0	0	Production	19.2.1.0.0
slcm08celadm03	Oracle Exadata Storage Server	Green Up	0	0	0	Production	19.2.1.0.0
Exadata Grid ExaCC_HR	Oracle Exadata Storage Server Grid	Green Up	0	0	0	Production	NA
+ASM_slcm08adm0102	Cluster ASM	Green Up	0	4	3	Production	19.0.0.0.0
SLCM0801	Cluster Database	Green Up	0	7	4	Production	19.3.0.0.0

Summary	Target	Severity	Status	Escalation Level	Type	Time Since Last Update
Filesystem /u01/app/xyz5 is 91% full	...	Red Down	New	-	Incident	2 days 7 hours
84 object(s) are invalid in the FS_LSQ schema	...	Yellow Warning	New	-	Incident	2 days 7 hours

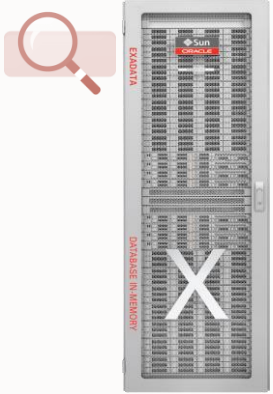
# Exadata Cloud Target

## EM 13.4

### Exadata Target Navigation



# Enterprise Manager 13c Exadata Management



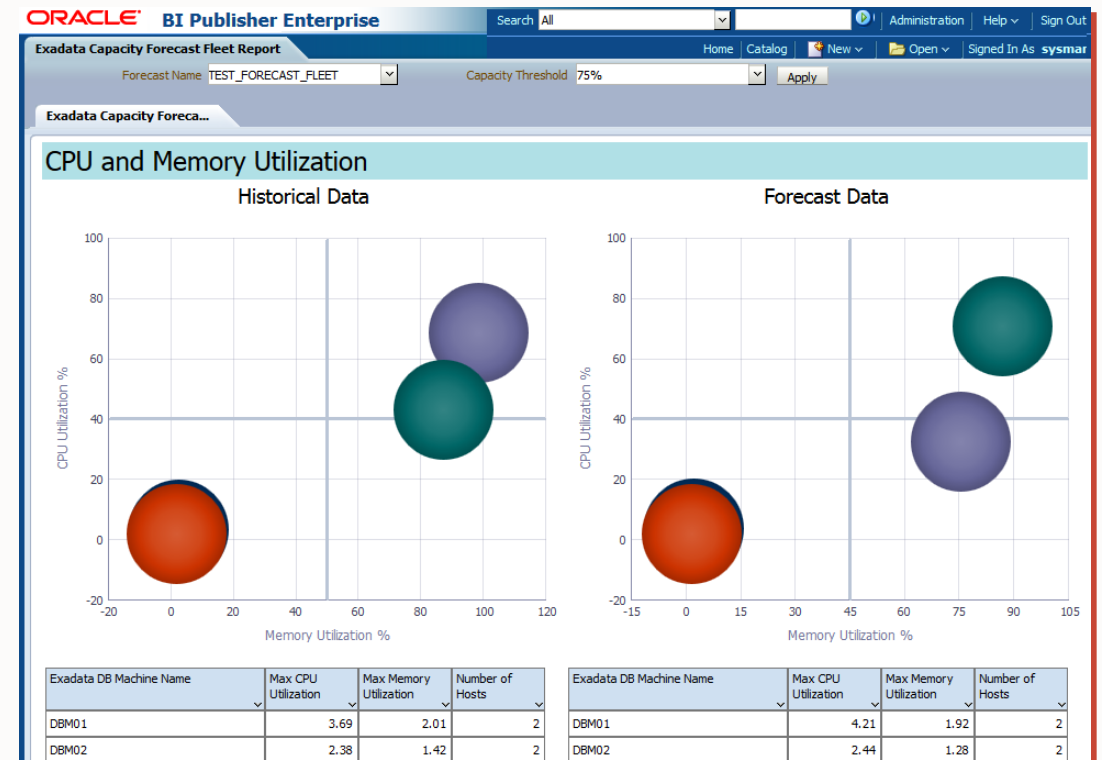
## Exadata Migration and Cloning

- Exadata Capacity Planning using Exadata Warehouse
- Database Migration Planner for all phases of consolidation from planning to deployment
- Exadata Sparse Disk cloning for test/dev provisioning

# Smart Insights from Exadata Warehouse

Post 13.4

- **Proactively optimize Exadata utilization through Enterprise Manager**
  - **Warehouse** stores very fine-grained Exadata storage, cell and host data along with AWR DB performance data
  - **Forecasting algorithms** identify resource issues
  - **Retention of analytic results** for use in BI tools
- **Drive consolidation onto ExaCS, ExaCC and Autonomous Databases**
  - **Integrated capacity planning** for both on-premises and cloud-based Exadata



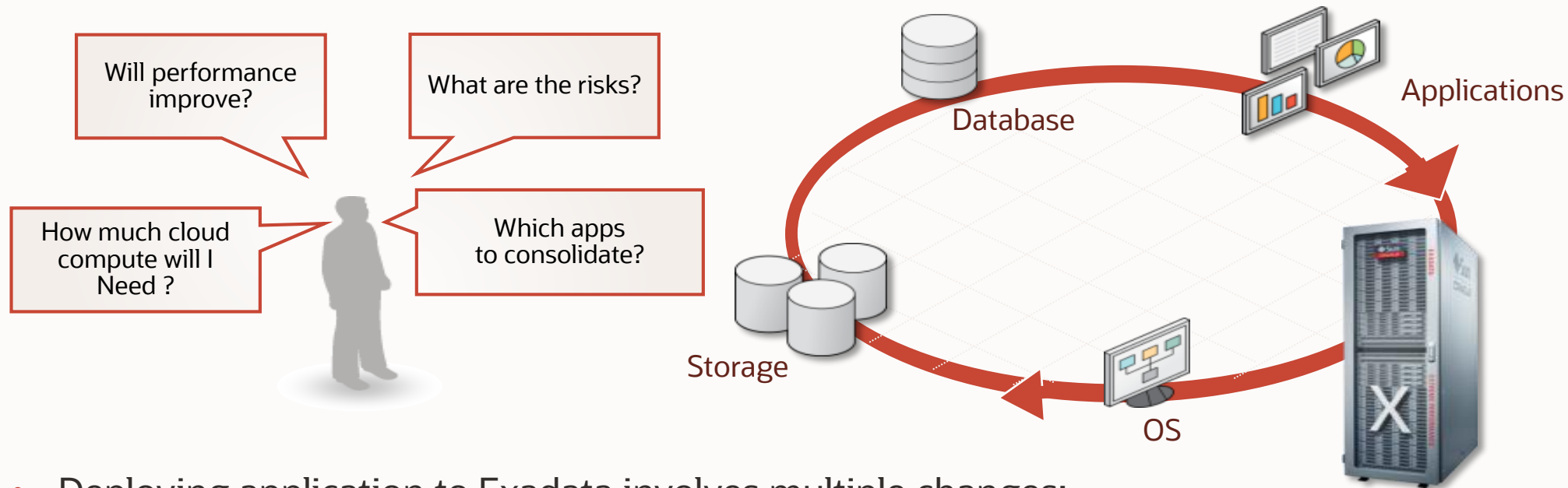


# Exadata Capacity Report

Post 13.4

- Integrated view of current and projected resource utilization across Exadata fleet
  - Compute (CPU & Memory), Storage (IOPS, Disk space)
- Identify lead time to expand capacity using machine learning based forecast
  - Project resource growth vs. configured capacity headroom
  - Use seasonality to identify growth patterns, e.g. weekly peaks vs. daily peaks

# Provisioning and Deployment Challenges



- Deploying application to Exadata involves multiple changes:
  - O/S migrations
  - Storage subsystem changes
  - Database upgrades
  - Single database instance to RAC
- Proper testing required for risk mitigation

# Database Migration Planner

End-to-end Consolidation Solution

## Plan

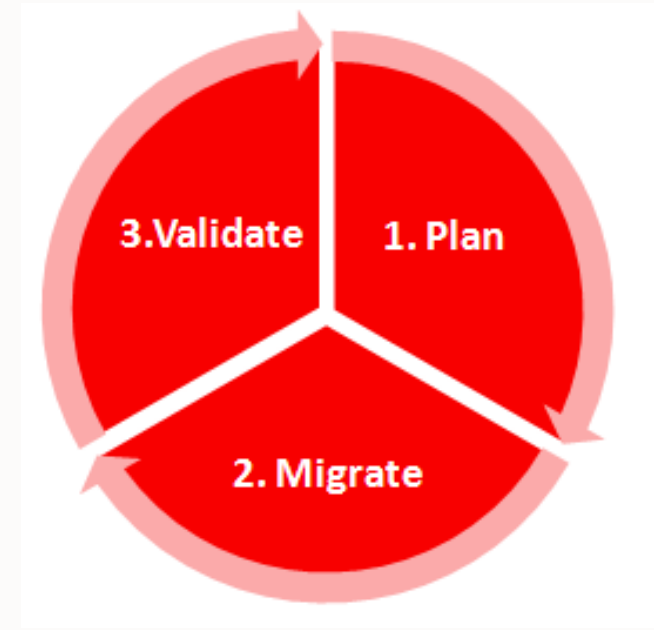
- Gives consolidation advice by identifying candidate databases for the designated consolidation platform using AWR data
- Accurately estimates requirements for Cloud migration

## Migrate

- Implements consolidation plan by migrating databases to new consolidation platform using EM's provisioning features

## Validate

- Validates consolidation plan with Real Application Testing (SPA) by running test workloads on consolidated databases



# Database Migration Planner

## Key Features

Estimates resource utilization under various consolidation scenarios

- Ultra Conservative (peak maximum) → Aggressive (average)

Supported consolidation modes

- Database-to-Database (Multitenant) consolidation
- Database-to-Server (Server, e.g. Exadata) consolidation
- Oracle Exadata Cloud Service migration

Consolidation optimization advice

- Identifies conflicts based on workload characteristics, Exadata suitability
- Storage/Platform advice: Impact of compression on I/O & storage, impact of I/O offloading & Flash Cache
- Accurately estimate required Oracle cloud compute size and shape for Exadata Cloud Service Instances



# Migration Planner – Screen Shot demo

ORACLE® Enterprise Manager Cloud Control 13c

Enterprise Targets Favorites History Setup

Database Consolidation Workbench Page Refreshed Oct 16, 2020 6:38:15 AM PDT

Actions View Create Project Create Scenario Re-run Scenario Implement Scenario Report Delete Detach

Project (Scenario)	Type	Status	Sources	Destination	Ratio	Mapping	Co (%)	Violations	Exclusions	Schema Conflicts	Advisor Findings	Creation Date (UTC)	Description
<b>OOW_DEMO</b>	D2S	Collecting over maximum	9	0							5	9/5/2019 9:16 PM	
Scenario_X7-2_Compression	Custom	Analysis completed	8	3	3.7	Auto...	✓	✓	⚠ 2		6	11/20/2019 7:06 AM	Consolidate to X7-2 eighth rack with Flash disk and estim...
Scenario_X7-2_Compressed_Estimates	Custom	Analysis completed	9	4	3.3	Auto...	✓	✓	⚠ 2		17	11/19/2019 12:30 ...	Consolidate to phantom Exadata X7-2 eighth rack specify...
Scenario_X7-2_HalfRack	Custom	Analysis completed	9	2	6.5	Auto...	✓	✓	⚠ 1		27	11/19/2019 4:51 AM	
Scenario_OCI_BM	Custom	Analysis completed	9	2	6.5	Auto...	✓	✓	✓		20	11/19/2019 4:43 AM	

Project\_1420

General **Source Candidates** Source Workload Destination Candidates Advisor Findings

Hide

If the value in column "Estimated Compression Ratio" is "Not Available," then compression estimates may not be available for the target. If you want to estimate compressed storage requirements, submit this job on such targets to run compression advice and collect estimates before creating scenarios: [Deploy Database Consolidation Workbench Packages](#). It may take up to 24 hours after the compression advice is run for metrics to upload the data into Enterprise Manager for scenario analysis. (The upload can be checked using the Last Upload field for Compression Advice metric from the All Metrics page of the database target.) Also, when planning consolidation to Exadata, to estimate the impact of Exadata storage cells on the I/O requirement of the source databases, run Exadata Simulation from SPA using a tuning set which is representative of each database's workload before creating scenarios.

View Source Candidates 4 Source Candidates with Usage Data Collected 1 Start Date 8/18/2019 End Date 10/16/2020

Database Name	CPU Capacity (SPEC metric)	CPU Utilization (%)	Memory Capacity (GB)	Memory Utilization (%)	Allocated Storage (GB)	Used Storage (GB)	Estimated Compression Ratio	Estimated Workload Type	I/O Usage (Requests/Second)	I/O Usage (MB/Second)	Database Version	Operating System
dbm01	5632.0 (Estimated)	<div><div></div></div>	8061.76	<div><div></div></div> 5	569.30	84.78	1.33 - 16.34	OLTP	108.80	1.60	12.1.0.2.0	
exadb1	5632.0 (Estimated)	<div><div></div></div>	8061.76	<div><div></div></div> 13	1900.53	1816.89	1 - 146.64	Insufficient ...	1247390.40	9795.20	12.1.0.2.0	
exadb2	5632.0 (Estimated)	<div><div></div></div>	8061.76	<div><div></div></div> 16	615.91	585.05	1 - 146.64	Insufficient ...	76019.20	67227.20	12.1.0.2.0	
s193.us.oracle.com	151.0 (Estimated)	<div><div></div></div>	14.09	<div><div></div></div> 23	26.36	16.76	Not Available	Insufficient ...	1053.40	501.90	19.0.0.0.0	Oracle Linux Server release 7.4





# Migration Planner – Screen Shot demo

ORACLE Enterprise Manager Cloud Control 13c

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Database Consolidation Workbench

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OOO DEMO	D2S	Collecting over maximum	9	0							5	9/5/2019 9:16 PM	
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Scenario_X7-2_HalfRack	Custom	Analysis completed	9	2	6.5	Auto...	✓	✓	1		27	11/19/2019 4:51 AM	
Scenario_OCI_BM	Custom	Analysis completed	9	2	6.5	Auto...	✓	✓			20	11/19/2019 4:43 AM	

Scenario\_X7-2\_Compression (OOO DEMO)

General Sources Destinations Ratio Mapping Storage Confidence Violations Exclusions Advisor Findings

View Start Date 5/31/2019 End Date 11/20/2019

Destination Server	CPU Capacity (SPEC metric)	CPU Utilization (%)	Memory (GB)	Memory Utilization (%)
DB_MACHINE				
RACK_0001.NODE	1070.0 (Estimated)	74.8	384.00	85.6
RACK_0001.NODE	1070.0 (Estimated)	72.5	384.00	76.8
RACK_0002.NODE	1070.0 (Estimated)	20.9	384.00	4.0

https://den00yov.us.oracle.com:7804/em/faces/cat-cpa-cpaHome?cpa\_ctx\_type=db#

# Migration Planner – Screen Shot demo

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Scenario_X7-2_HalfRack	Custom	Analysis completed	9	2	6.5	Auto...	✓	✓	⚠ 1		27	11/19/2019 4:51 AM	
Scenario_OCI_BM	Custom	Analysis completed	9	2	6.5	Auto...	✓	✓	✓		20	11/19/2019 4:43 AM	

Scenario\_X7-2\_Compression (OOW\_DEMO)

General Sources Destinations **Ratio** Mapping Storage Confidence Violations Exclusions Advisor Findings

View Databases to be Consolidated 8 Target Servers 3 Consolidation Ratio 3.7

Destination Server	Source Databases	Source Database
▲ DB_MACHINE		
▲ RACK_0001.NODE_01	5	BB19PROD.us.oracle.com
		EMREP.us.oracle.com
		exadb2
		dbm02
		dbm01
▶ RACK_0001.NODE_02	5	
▲ RACK_0002.NODE_01	1	BB12.us.oracle.com

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ORACLE Enterprise Manager Cloud Control 13c

Enterprise Targets Favorites History Setup

Database Consolidation Workbench

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Project (Scenario)	Type	Status	Sources	Destination	Ratio	Mapping	Co (%)	Violations	Exclusions	Schema Conflicts	Advisor Findings	Creation Date (UTC)	Description
OOW_DEMO	D2S	Collecting over maximum	9	0							5	9/5/2019 9:16 PM	
Scenario_X7-2_Compression	Custom	Analysis completed	8	3	3.7	Auto...	✓	✓	2		6	11/20/2019 7:06 AM	Consolidate to X7-2 eighth rack with Flash disk and estim...
Scenario_X7-2_Compressed_Estimates	Custom	Analysis completed	9	4	3.3	Auto...	✓	✓	2		17	11/19/2019 12:30 ...	Consolidate to phantom Exadata X7-2 eighth rack specify...
Scenario_X7-2_HalfRack	Custom	Analysis completed	9	2	6.5	Auto...	✓	✓	1		27	11/19/2019 4:51 AM	
Scenario_OCI_BM	Custom	Analysis completed	9	2	6.5	Auto...	✓	✓			20	11/19/2019 4:43 AM	

Scenario\_X7-2\_Compression (OOW\_DEMO)

General Sources Destinations Ratio Mapping Storage Confidence Violations Exclusions Advisor Findings

View As Heat Map Destination Server All Resource Type All Month 2019-11

Total Data Points Evaluated 1111 Data Points Meeting Requirements 1032 Data Points Not Meeting Requirements 79 (A) Confidence (%) 93

	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9	Day 10	Day 11	Day 12	Day 13	Day 14	Day 15	Day 16	Day 17	Day 18	Day 19	Day 20	Day 21	Day 22	Day 23	Day 24	Day 25	Day 26	Day 27	Day 28	Day 29	Day 30	
Hour 0	23	22	22	22	22	22	22	19	23	25	25	25	41	33	32	33	A	A											
Hour 1	23	22	22	22	22	22	22	19	23	25	25	25	41	33	33	32	A	A											
Hour 2	23	22	22	22	22	22	22	19	23	25	25	25	37	33	32	32	A	A											
Hour 3	23	22	22	22	22	22	22	19	23	25	25	25	37	33	32	32	A	A											
Hour 4	23	22	22	22	22	22	22	19	23	25	25	25	35	33	32	32	A	A											
Hour 5	23	22	22	22	22	22	22	19	23	25	25	25	35	33	32	32	A	A											
Hour 6	23	22	22	22	22	22	21	19	23	25	25	25	35	33	32	32	A												
Hour 7		22	22	22	22	22	19	19	23	25	25	25	35	32	32	32	A												
Hour 8	23	22	22	22	22	22	19	24	25	25	25	25	35	32	32	40	A												
Hour 9	23	22	22	22	22	22	19	23	25	25	25	25	35	32	32	37	A												

# Migration Planner – Screen Shot demo

ORACLE Enterprise Manager Cloud Control 13c

Enterprise Targets Favorites History Setup

Database Consolidation Workbench Page Refreshed Oct 16, 2020 6:38:15 AM PDT

Actions View Create Project Create Scenario Re-run Scenario Implement Scenario Report Delete Detach

Project (Scenario)	Type	Status	Sources	Destination	Ratio	Mapping	Co (%)	Violations	Exclusions	Schema Conflicts	Advisor Findings	Creation Date (UTC)	Description
OOO DEMO	D2S	Collecting over maximum	9	0							5	9/5/2019 9:16 PM	
Scenario_X7-2_Compression	Custom	Analysis completed	8	3	3.7	Auto...	✓	✓	2		6	11/20/2019 7:06 AM	Consolidate to X7-2 eighth rack with Flash disk and estim...
Scenario_X7-2_Compressed_Estimates	Custom	Analysis completed	9	4	3.3	Auto...	✓	✓	2		17	11/19/2019 12:30 ...	Consolidate to phantom Exadata X7-2 eighth rack specify...
Scenario_X7-2_HalfRack	Custom	Analysis completed	9	2	6.5	Auto...	✓	✓	1		27	11/19/2019 4:51 AM	
Scenario_OCI_BM	Custom	Analysis completed	9	2	6.5	Auto...	✓	✓	✓		20	11/19/2019 4:43 AM	

Scenario\_X7-2\_Compression (OOO DEMO)

General Sources Destinations Ratio Mapping Storage Confidence Violations Exclusions **Advisor Findings**

View Show Severities Warning

Target Name	Target Type	Rule	Severity	Finding
BB12.us.oracle.com	Database Instance	Buffer Cache Hit Ratio	⚠	The Buffer Cache Hit Ratio for this source database is 96.18%. This may require tuning SQL and/or buffer cache to eliminate excessive I/O load prior to consolidation planning.
BB12P.us.oracle.c...	Database Instance	Log File Write Time	⚠	The average wait time for the log file sync event for this source database is 21.79ms. This indicates excessive time to write redo information to redo log files on disk possibly due to slow disk...
BB19PROD.us.ora...	Database Instance	Log File Write Time	⚠	The average wait time for the log file sync event for this source database is 17.42ms. This indicates excessive time to write redo information to redo log files on disk possibly due to slow disk...
dbm02	Cluster Database	DB File Read Time	⚠	The average wait time for the db file sequential read event for this source database is 15.18ms. This may be indicative of poorly tuned SQL or slow I/O subsystem. Investigation of SQL state...
exadb2	Cluster Database	Log File Write Time	⚠	The average wait time for the log file sync event for this source database is 12ms. This indicates excessive time to write redo information to redo log files on disk possibly due to slow disks th...
exadb2	Cluster Database	CPU-Bound	⚠	Detected potentially CPU-bound source database with average active session count of 114.81 that exceeds its core count. Consider tuning this database to eliminate any CPU bottleneck pri...

# Migration Planner – Screen Shot demo

ORACLE<sup>®</sup> Enterprise Manager Cloud Control 13c

Enterprise

Targets

Favorites

History

Setup

SYSMAN

Database Consolidation Workbench

Page Refreshed Oct 16, 2020 6:38:15 AM PDT

ActionsView

Create ProjectCreate ScenarioRe-run ScenarioImplement ScenarioReportDelete

Detach

Project (Scenario)	Type	Status	Sources	Destination	Ratio	Mapping	Co (%)	Viola	Exclusions	Schema Conflicts	Advisor Findings	Creation Date (UTC)	Description
▲ OOW_DEMO	D2S	Collecting over maximum	9	0							5	9/5/2019 9:16 PM	
Scenario_X7-2_Compression	Custom	Analysis completed	8	3	3.7	Auto...		✓	⚠ 2		6	11/20/2019 7:06 AM	Consolidate to X7-2 eighth rack with Flash disk and estim...
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Scenario_OCI_BM	Custom	Analysis completed	9	2	6.5	Auto...		✓	✓		20	11/19/2019 4:43 AM	

Scenario\_X7-2\_HalfRack (OOW\_DEMO)

GeneralSourcesDestinationsRatioMappingStorageConfidenceViolationsExclusionsAdvisor Findings

ViewStart Date 5/31/2019End Date 11/18/2019

Destination Server	CPU Capacity (SPEC metric)	CPU Utilization (%)	Memory (GB)	Memory Utilization (%)
▲ DB_MACHINE				
RACK_0001.NODE	2140.0 (Estimated)	11.1	384.00	57
RACK_0001.NODE	2140.0 (Estimated)	6.1	384.00	41.2





# Migration Planner – Screen Shot demo

ORACLE Enterprise Manager Cloud Control 13c

Enterprise Targets Favorites History Setup

Database Consolidation Workbench Page Refreshed Oct 16, 2020 6:38:15 AM PDT

Actions View Create Project Create Scenario Re-run Scenario Implement Scenario Report Delete Detach

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Scenario_OCI_BM	Custom	Analysis completed	9	2	6.5	Auto...	✓	✓	✓		20	11/19/2019 4:43 AM	

Scenario\_X7-2\_HalfRack (OOW\_DEMO)

General Sources Destinations Ratio Mapping Storage Confidence Violations Exclusions Advisor Findings

View Start Date 5/31/2019 End Date 11/18/2019 Destination Mapping Automatic Configuration New servers: Oracle Exadata Database Machine X7-2 (Half Rack) Number of Racks Required 1

Destination Server	Source Databases	Source Database	CPU (SPEC metric)	CPU Utilization (%)	CPU Usage (SPEC Metric)	Memory (GB)	Memory Utilization (%)	Memory Usage (GB)	Operating System	Operating System Base Version
▲ DB_MACHINE										
▶ RACK_0001.NODE_01	9		2,140 (Est...)	11.1	236.5	384	57	219.01		
▶ RACK_0001.NODE_02	4		2,140 (Est...)	6.1	129.7	384	41.2	158.20		

# Migration Planner – Screen Shot demo

ORACLE Enterprise Manager Cloud Control 13c

Enterprise Targets Favorites History Setup

Database Consolidation Workbench

Page Refreshed Oct 16, 2020 6:38:15 AM PDT

Actions View Create Project Create Scenario Re-run Scenario Implement Scenario Report Delete Detach

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Scenario_X7-2_Compressed_Estimates	Custom	Analysis completed	9	4	3.3	Auto...	✓	✓	2		17	11/19/2019 12:30 ...	Consolidate to phantom Exadata X7-2 eighth rack specify...
Scenario_X7-2_HalfRack	Custom	Analysis completed	9	2	6.5	Auto...	✓	✓	1		27	11/19/2019 4:51 AM	
Scenario_OCI_BM	Custom	Analysis completed	9	2	6.5	Auto...	✓	✓	✓		20	11/19/2019 4:43 AM	

Scenario\_X7-2\_HalfRack (OOO DEMO)

General Sources Destinations Ratio Mapping Storage Confidence Violations Exclusions Advisor Findings

View Start Date 5/31/2019 End Date 11/18/2019 Destination Mapping Automatic Configuration New servers: Oracle Exadata Database Machine X7-2 (Half Rack) Number of Racks Required 1

Destination Server	Source Databases	Source Database	CPU (SPEC metric)	CPU Utilization (%)	CPU Usage (SPEC Metric)	Memory (GB)	Memory Utilization (%)	Memory Usage (GB)	Operating System	Operating System Base Version
RACK_0001.NODE_01	9		2,140 (Est...)	11.1	236.5	384	57	219.01		
		BB12.us.oracle.com		1.8	37.9		2.0	7.74	Oracle Linux Server release 7.4	4.1.12
		BB12P.us.oracle.com		0.025	0.5		2.1	8.17	Oracle Linux Server release 7.4	4.1.12
		BB19PROD.us.oracle.com		3.1	66.5		4.6	17.84	Oracle Linux Server release 7.4	4.1.12
		BBPROD12.us.oracle.com		0.025	0.5		2.0	7.52	Oracle Linux Server release 7.4	4.1.12
		exadb2		3.0	64.8		7.7	29.73		
		dbm01		0.46	9.9		9.4	36.28		
		dbm02		0.20	4.2		17.6	67.52		
		exadb1		2.7	57.0		6.8	26.20		
		EMREP.us.oracle.com		0.062	1.3		5.1	19.56	Oracle Linux Server release 7.4	4.1.12
RACK_0001.NODE_02	4		2,140 (Est...)	6.1	129.7	384	41.2	158.20		

# Migration Planner – Screen Shot demo

ORACLE Enterprise Manager Cloud Control 13c

Enterprise Targets Favorites History Setup

Database Consolidation Workbench

Page Refreshed Oct 16, 2020 6:38:15 AM PDT

Actions View Create Project Create Scenario Re-run Scenario Implement Scenario Report Delete Detach

Project (Scenario)	Type	Status	Sources	Destination	Ratio	Mapping	Co (%)	Viola	Exclusions	Schema Conflicts	Advisor Findings	Creation Date (UTC)	Description
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Scenario_X7-2_HalfRack	Custom	Analysis completed	9	2	6.5	Auto...	✓	✓	1		27	11/19/2019 4:51 AM	
Scenario_OCI_BM	Custom	Analysis completed	9	2	6.5	Auto...	✓	✓	✓		20	11/19/2019 4:43 AM	

Scenario\_X7-2\_HalfRack (OWO\_DEMO)

General Sources Destinations Ratio Mapping **Storage** Confidence Violations Exclusions Advisor Findings

View Exclusions 1 Shared Storage Unit Oracle Exadata Storage Server X7-2 with Extreme Flash Disks Total Number of Storage Units Required 3 ASM Redundancy Normal Compression Specification

Source Database	Space (GB)	Workload Type	IOPS (Requests/Second) (Estimated)	I/O Bandwidth (MB/Second) (Estimated)
All Source Databases Including Headroom	2059.91		204357.11	7737.72
BB12.us.oracle.com	96.35	OLTP	3030.01	309.83
BB12P.us.oracle.com	6.98	OLTP	52.96	0.42
BB19PROD.us.oracle.com	20.19		92.01	26.59
BBPROD12.us.oracle.com	3.06	OLTP	10.43	0.15
EMREP.us.oracle.com	20.85	OLTP	29.72	0.36
dbm01	85.03	Mixed	59.28	27.29
dbm02	7.01		20.35	0.30
exadb1	1211.92	OLTP	174329.39	1607.24
exadb2	196.54	OLTP	6297.22	4991.78

https://den00yov.us.oracle.com:7804/em/faces/cat-cpa-cpaHome?cpa\_ctx\_type=db#



# Migration Planner – Screen Shot demo

**ORACLE** Enterprise Manager Cloud Control 13c

Enterprise Targets Favorites History Setup

**Database Consolidation Workbench** Page Refreshed Oct 16, 2020 6:38:15 AM PDT

Actions View Create Project Create Scenario Re-run Scenario Implement Scenario Report Delete Detach

Project (Scenario)	Type	Status	Sources	Destination	Ratio	Mapping	Co (%)	Viola	Exclusions	Schema Conflicts	Advisor Findings	Creation Date (UTC)	Description
▲ OOW_DEMO	D2S	Collecting over maximum	9	0							5	9/5/2019 9:16 PM	
Scenario_X7-2_Compression	Custom	Analysis completed	8	3	3.7	Auto...	✓	✓	⚠ 2		6	11/20/2019 7:06 AM	Consolidate to X7-2 eighth rack with Flash disk and estim...
Scenario_X7-2_Compressed_Estimates	Custom	Analysis completed	9	4	3.3	Auto...	✓	✓	⚠ 2		17	11/19/2019 12:30 ...	Consolidate to phantom Exadata X7-2 eighth rack specify...
Scenario_X7-2_HalfRack	Custom	Analysis completed	9	2	6.5	Auto...	✓	✓	⚠ 1		27	11/19/2019 4:51 AM	
Scenario_OCI_BM	Custom	Analysis completed	9	2	6.5	Auto...	✓	✓	✓		20	11/19/2019 4:43 AM	

Scenario\_X7-2\_HalfRack (OOW\_DEMO)

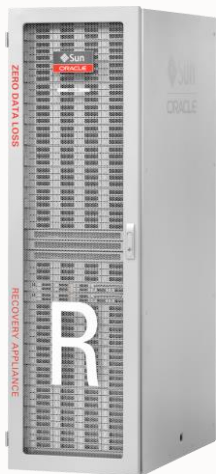
General Sources Destinations Ratio Mapping Storage **Confidence** Violations Exclusions Advisor Findings

View As Heat Map Destination Server All Resource Type CPU (%) Month 2019-11

Total Data Points Evaluated 839 Data Points Meeting Requirements 839 Data Points Not Meeting Requirements 0 Confidence (%) 100

	Hourly (UTC) Resource Utilization (%)																											
	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9	Day 10	Day 11	Day 12	Day 13	Day 14	Day 15	Day 16	Day 17	Day 18	Day 19	Day 20	Day 21	Day 22	Day 23	Day 24	Day 25	Day 26	Day 27	Day 28
Hour 0	0	0	1	1	0	0	0	0	0	1	1	0	0	0	6	35	25	25										
Hour 1	0	0	1	1	0	0	0	0	0	1	1	0	0	0	7	35	25	25										
Hour 2	0	0	1	0	1	0	0	0	0	1	1	1	0	0	6	35	25	25										
Hour 3	0	0	1	1	1	0	0	0	0	1	1	1	0	0	7	35	25	25										
Hour 4	0	0	0	1	1	0	0	0	0	0	1	1	0	0	6	35	25	25										
Hour 5	0	0	0	1	1	0	0	0	0	0	1	1	0	0	7	35	25	25										
Hour 6	0	0	0	1	0	1	0	1	1	0	1	1	1	1	7	25	25	25										
Hour 7	0	0	0	1	1	1	0	0	0	0	1	1	1	0	7	25	25	25										
Hour 8	0	0	0	0	1	1	0	0	0	0	0	1	1	0	6	25	25	33										
Hour 9	0	0	0	0	1	1	0	0	0	0	0	1	1	0	7	25	25	34										

# Enterprise Manager 13c ZDLRA Management



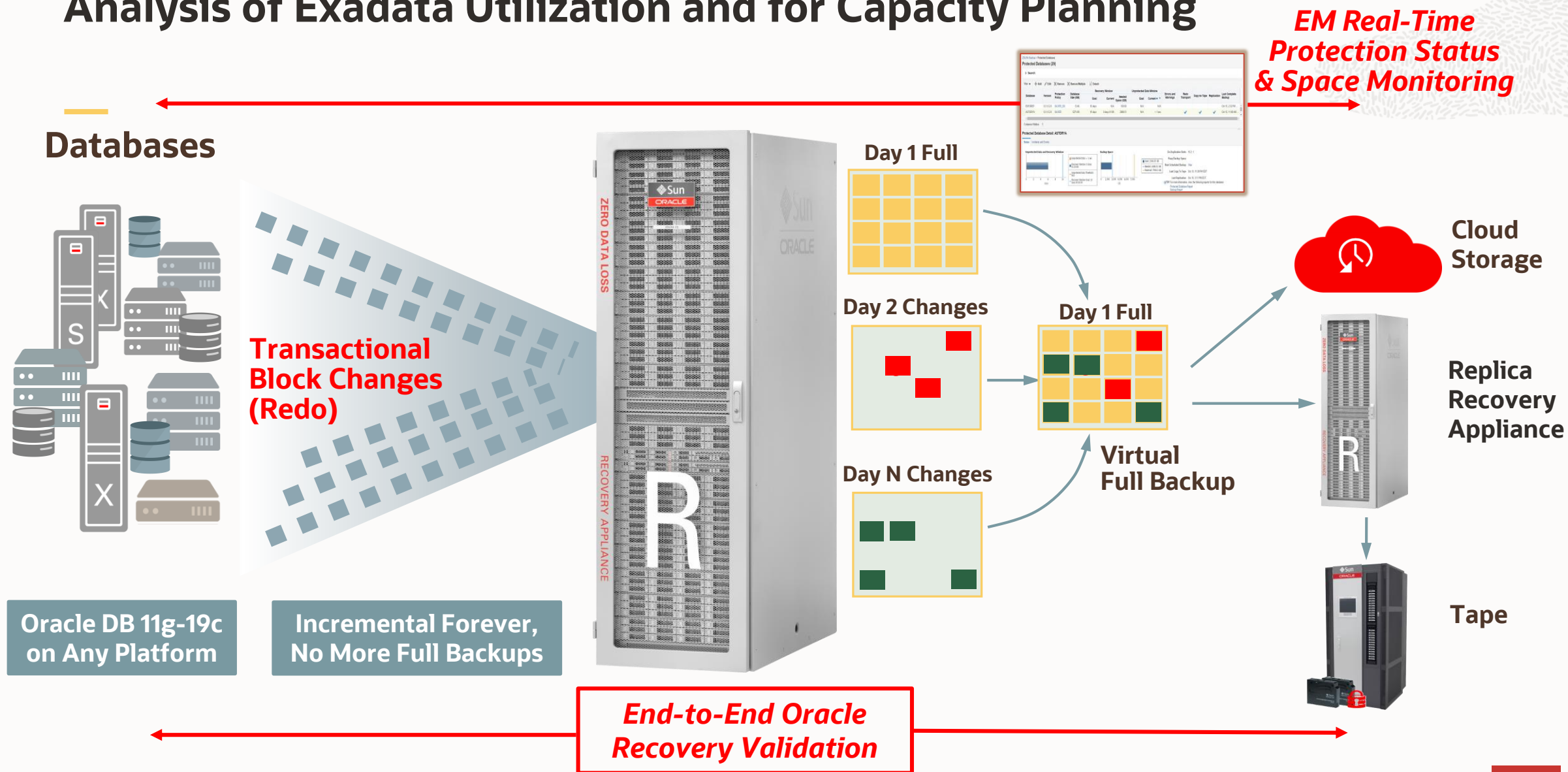
## ZDR Monitoring and Management

Management and configuration

Comprehensive Performance and space monitoring



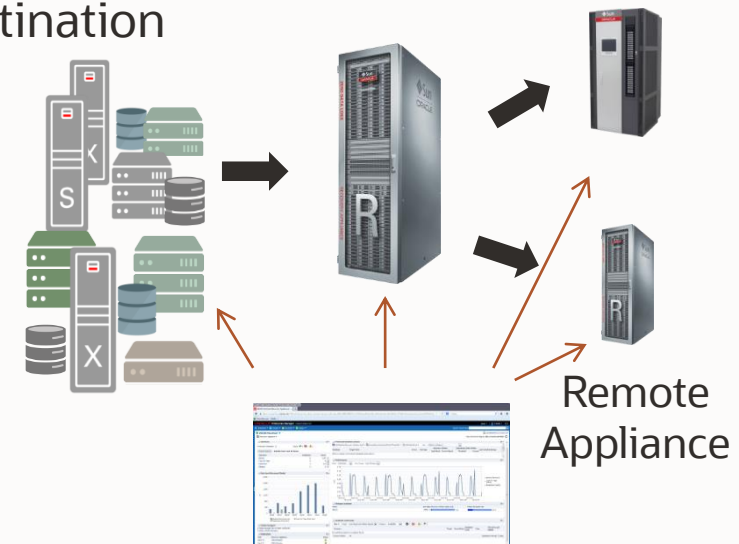
# Analysis of Exadata Utilization and for Capacity Planning



# EM Support for Recovery Appliance

- EM ZDLRA Plug-in provides comprehensive management for the Recovery Appliance
  - Configuration, management, and monitoring of Recovery Appliance functionality
  - Recovery Appliance hardware monitoring: Integration with existing Exadata Plug-in hardware monitoring
- EM DB Plug-in provides Recovery Appliance protected database management
  - Configuration of databases to send backups to the Recovery Appliance
  - Schedule backups using suggested-strategy
  - Database recovery from the Recovery Appliance

- Recovery Appliance Administrator monitors and manages all centralized backup activities
- Database Administrators schedule and manage individual database backup and recovery with the RA as the backup destination

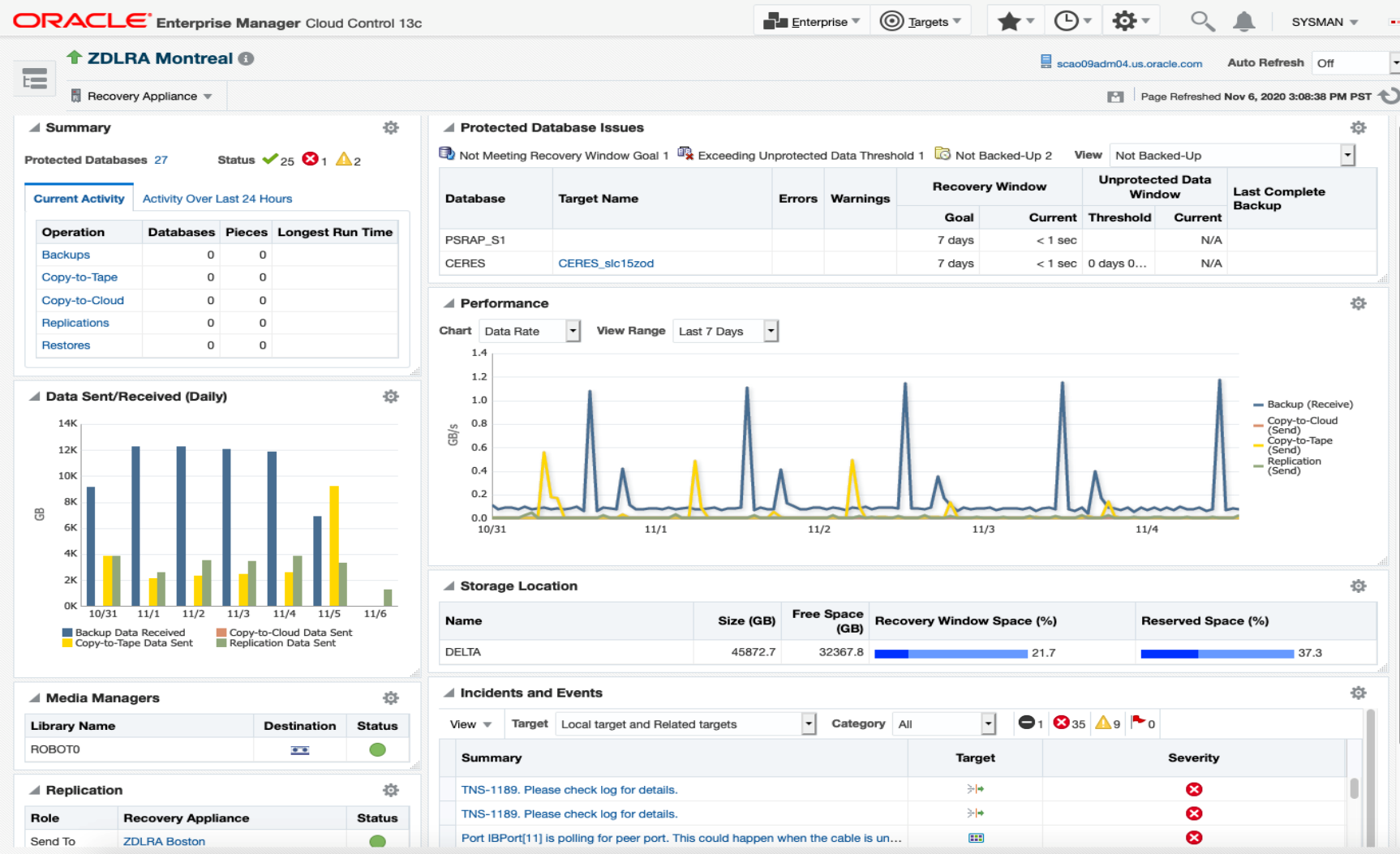


Enterprise Manager

# Recovery Appliance Monitoring: ZDLRA Administrator

- Full Access to the Recovery Appliance
  - Manage protection policies and protected databases
  - Configure replication and copy-to-media operations
- Access to all metrics for the Recovery Appliance
  - Performance Metrics
    - Data rates (backup, restore, copy-to-tape, replication)
    - Data received/sent (backup, copy-to-tape, replication)
  - Health: ZDLRA error conditions
  - Protected Database Statistics
    - Used/reserved/needed space
    - Recovery window and unprotected data window

# ZDLRA Home Page



# ZDLRA Database page

**ORACLE** Enterprise Manager Cloud Control 13c

Enterprise Targets Favorites History Setup

**ZDLRA Montreal** [scao09adm04.us.oracle.com](#)

Recovery Appliance

Page Refreshed Nov 5, 2020 4:59:42 PM PST

ZDLRA Montreal > Protected Databases

## Protected Databases (27)

Search

View + Add Edit Remove Remove Multiple

Database	Target Name	Target Type	Version	Protection Policy	Database Size (GB)	Recovery Window			Unprotected Data Window		Errors and Warnings	Redo Transport	Copy-to Cloud
						Goal	Current	Needed Space (GB)	Threshold	Current			
JUPITER	jupiter.us.oracle.com	Database Instance	19.3.0.0.0	TIN	2.57	7 days	13 days 07:57	3.90	0 days 00:00:30	< 1 sec		✓	
MARS	mars.us.oracle.com	Database Instance	18.3.0.0.0	TIN	2.92	7 days	13 days 07:58	4.45	0 days 00:00:30	< 1 sec		✓	
MIMAS	mimas.us.oracle.com	Database Instance	12.1.0.2.0	TIN	2.01	7 days	12 days 07:45	3.83	0 days 00:00:30	< 1 sec		✓	
PLUTO	pluto.us.oracle.com	Database Instance	18.3.0.0.0	TIN	4.42	7 days	8 days 19:51	6.46	0 days 00:00:30	< 1 sec		✓	
POODLE	poodle.us.oracle.com	Database Instance	18.3.0.0.0	NICKEL	2.01	3 days	4 days 02:28	1.15	1 day 00:00:00	< 1 sec		✓	
PSRAP_S1				OCCPOL	N/A	7 days	N/A	N/A	N/A	N/A			

Columns Hidden 2

### Protected Database Details: MARS

Protected Database Report Backup Report

Status Incidents and Events

De-Duplication Ratio 18.3 : 1

Keep Backup Space None

Next Scheduled Backup N/A

Last Copy To Tape Nov 5, 2020 4:27 PM PST

Last Copy To Cloud N/A

Last Replication Nov 5, 2020 3:05 PM PST

#### Unprotected Data and Recovery Window

Unprotected Data: < 1 sec  
Recovery Window: 13 days 07:58:03  
Unprotected Data Threshold: 0 days 00:00:30  
Recovery Window Goal: 7 days 00:00:00

#### Backup Space

Used: 7.75 GB  
Needed: 4.45 GB  
Reserved: 101.16 GB





ORACLE

# Enterprise Manager 13c & Oracle's Private Cloud Appliance

Excel with Engineered Systems

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**Sam K Tan**

Director, Business Development

Oracle Asia-Pacific and Japan



# Introduction to Oracle's Private Cloud Appliance

# Oracle Private Cloud Appliance

- Built for rapid and cost-effective private cloud deployment
- Prebuilt and ready to go with minimal setup
- Supports mix of Oracle and non-Oracle workloads
- Delivers low cost per VM
- Leverages same technologies and management as Oracle Cloud



**ORACLE®**  
Solaris

**ORACLE®**  
Linux

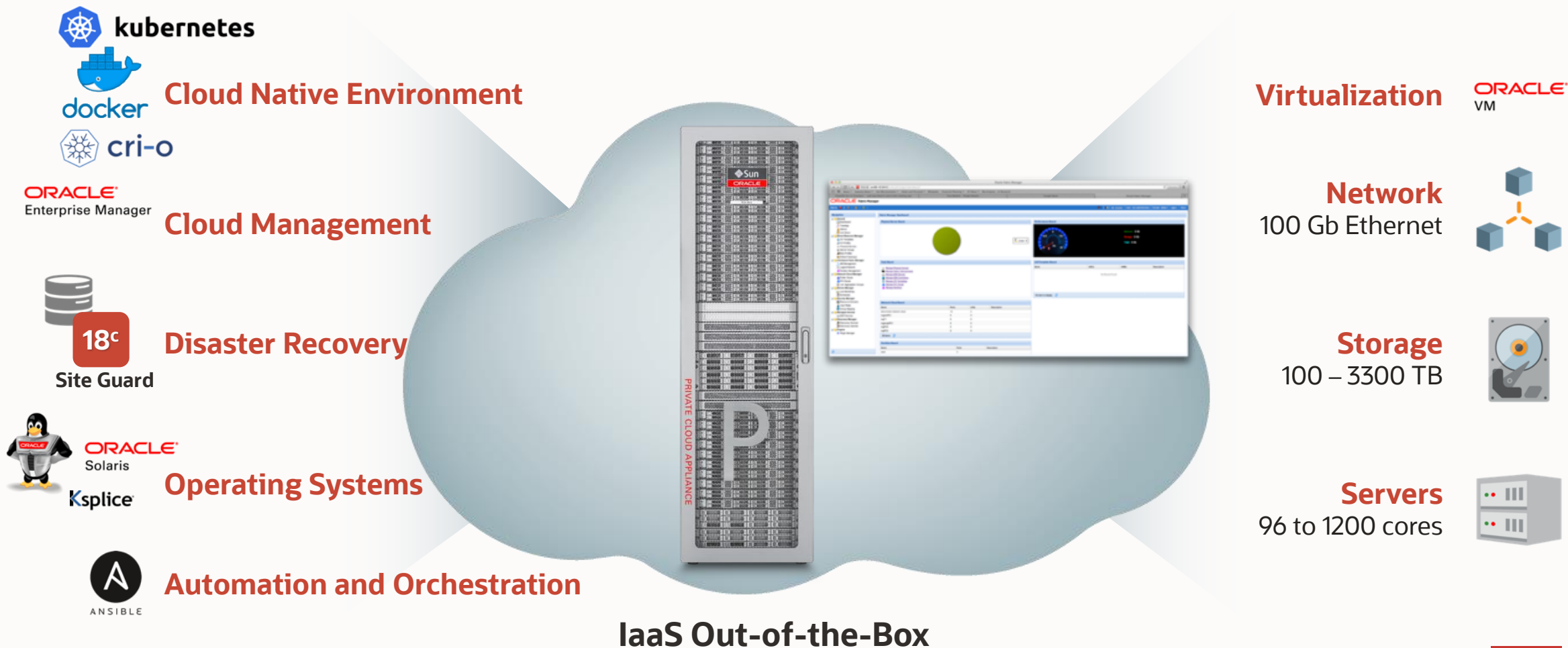
SUSE Linux

Red Hat  
Enterprise Linux

 **Microsoft**

# Private Cloud Infrastructure: **Secure, Virtualized, Fast, Scalable**

Full Infrastructure Stack - Engineered for Mission Critical Cloud Deployments





# Oracle Private Cloud Appliance

## IaaS out-of-the-box

### Application Portability

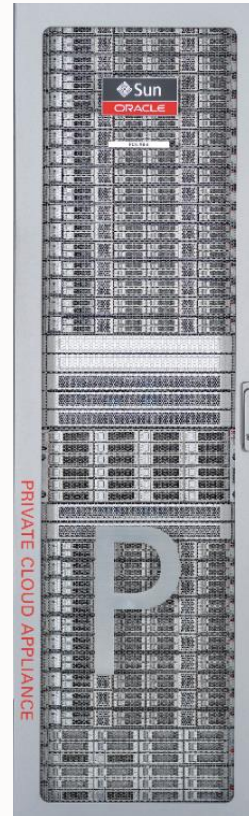
- Rapid deployment, scaling and management of containerized applications using Oracle Linux Cloud Native Environment
- Enables portability across any Kubernetes environment whether on-premises or on Oracle Cloud Infrastructure

### Automate and accelerate

- Rapid provisioning of applications and DB in minutes
- Ansible based Infrastructure Lifecycle management

### Intelligent and agile infrastructure

- Rapid scaling compute
- Software defined networking
- Rapid scaling, integrated Storage
- Run Linux, Windows, Solaris and container Workloads



### Zero-downtime appliance upgrades

- Platinum Services enabled
- Single Bundle Patching for all components
- Ksplice for Oracle Linux VMs

### Oracle Enterprise Manager

- Single pane management, monitoring
- Unified management
- IaaS portal with Metering and chargeback

### Flexible licensing

- “Trusted Partitions”, 30-50% lower TCO

### Business Continuity

- Built-In disaster recovery using EM Site Guard Plug-In

Less than **6 hours** from installation to production

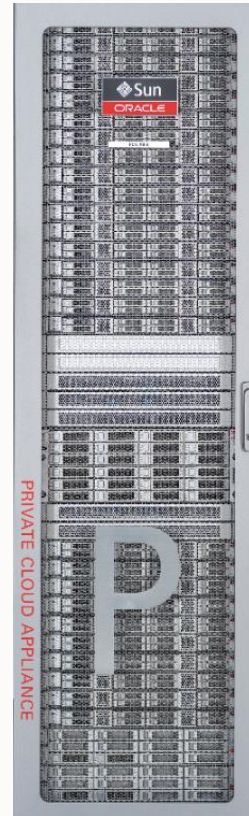


# Oracle Private Cloud Appliance X8-2 Specifications

Everything you need to get started - less than 6 hours from installation to production

## HARDWARE

- Redundant management servers (X8-2)
- Compute scales to 1200 cores and storage scales to 3.3PB
- Scalable storage architecture
  - ZS7-2 dual-controller system with 2TB DRAM
  - Scalable disk storage (280TB raw increments)
  - Scalable flash storage (150TB raw increments)
- State-of-the-art networking
  - 100Gb Ethernet internal fabric (2x per Compute Node)
  - 100/40/25/10Gb Ethernet data center connectivity



## SOFTWARE

### Virtualization

- Oracle VM 3.4.x Hypervisor & Manager

### Cloud Native

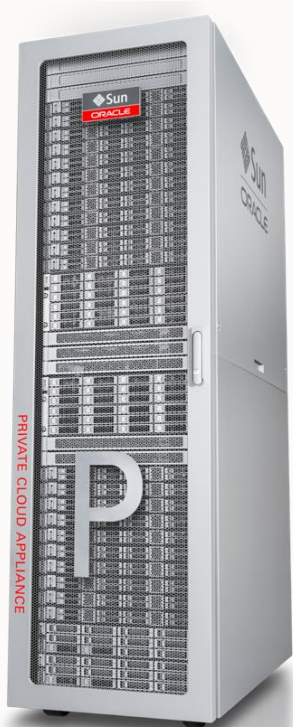
- Oracle Linux Cloud Native Environment

### Infrastructure Software

- Oracle Linux, and Solaris
- Oracle Enterprise Manager 13c, and
- Oracle SiteGuard for DR
- Oracle OpenStack
- Oracle SDN
- Oracle ZFS Storage Appliance Cloning
- Oracle ZFS Storage Appliance Replication
- Oracle ZFS Storage Appliance Encryption
- Oracle Java 8 Standard Edition (SE)

# Oracle Private Cloud Appliance Integrates Oracle Linux Cloud Native Environment

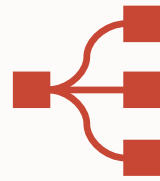
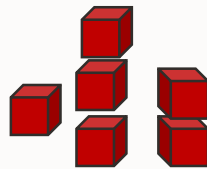
Container runtime for application development and Kubernetes for container orchestration provide application portability across containerized platforms



## Oracle Private Cloud Appliance Cloud Native Capabilities



Preconfigured  
VM/Container  
Infrastructure



Ansible/Terraform  
Provisioning



Kubernetes  
Orchestration &  
Management



Runtime



Oracle Enterprise  
Manager Cloud  
Observability &  
Analysis



**ORACLE**  
Private Cloud  
Appliance

**ORACLE**  
Private  
Cloud at Customer

**ORACLE**  
Cloud

# NASA deep space network powered by Oracle Private Cloud Appliance

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**\$4 Trillion**

in satellite assets managed and monitored with PCA

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**Zero Downtime**

For critical operations

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**6 Sites**

in Australia, Spain and US all managed by single Oracle Systems Manager

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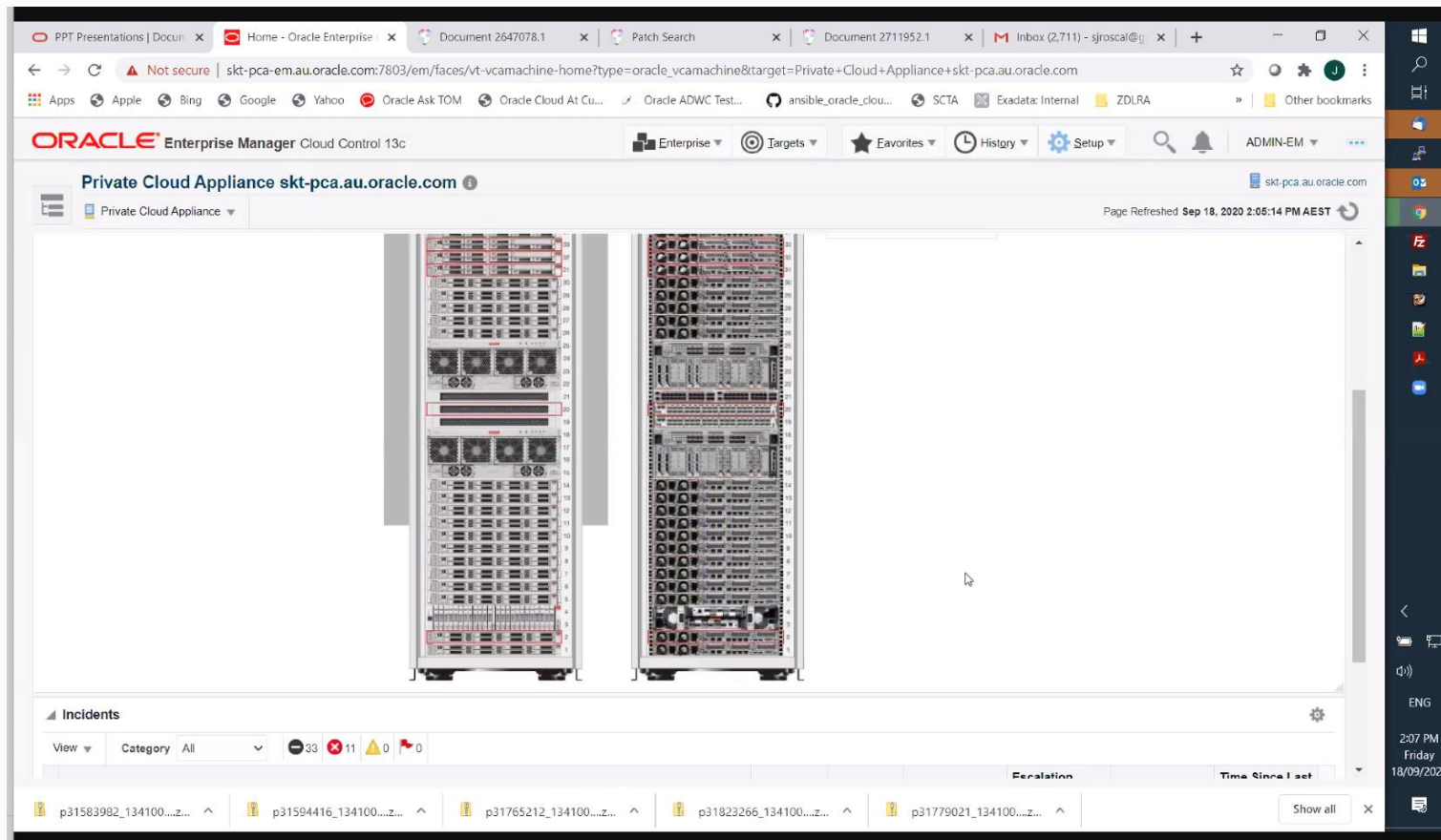


## Demo



# Enterprise Manager 13c with PCA

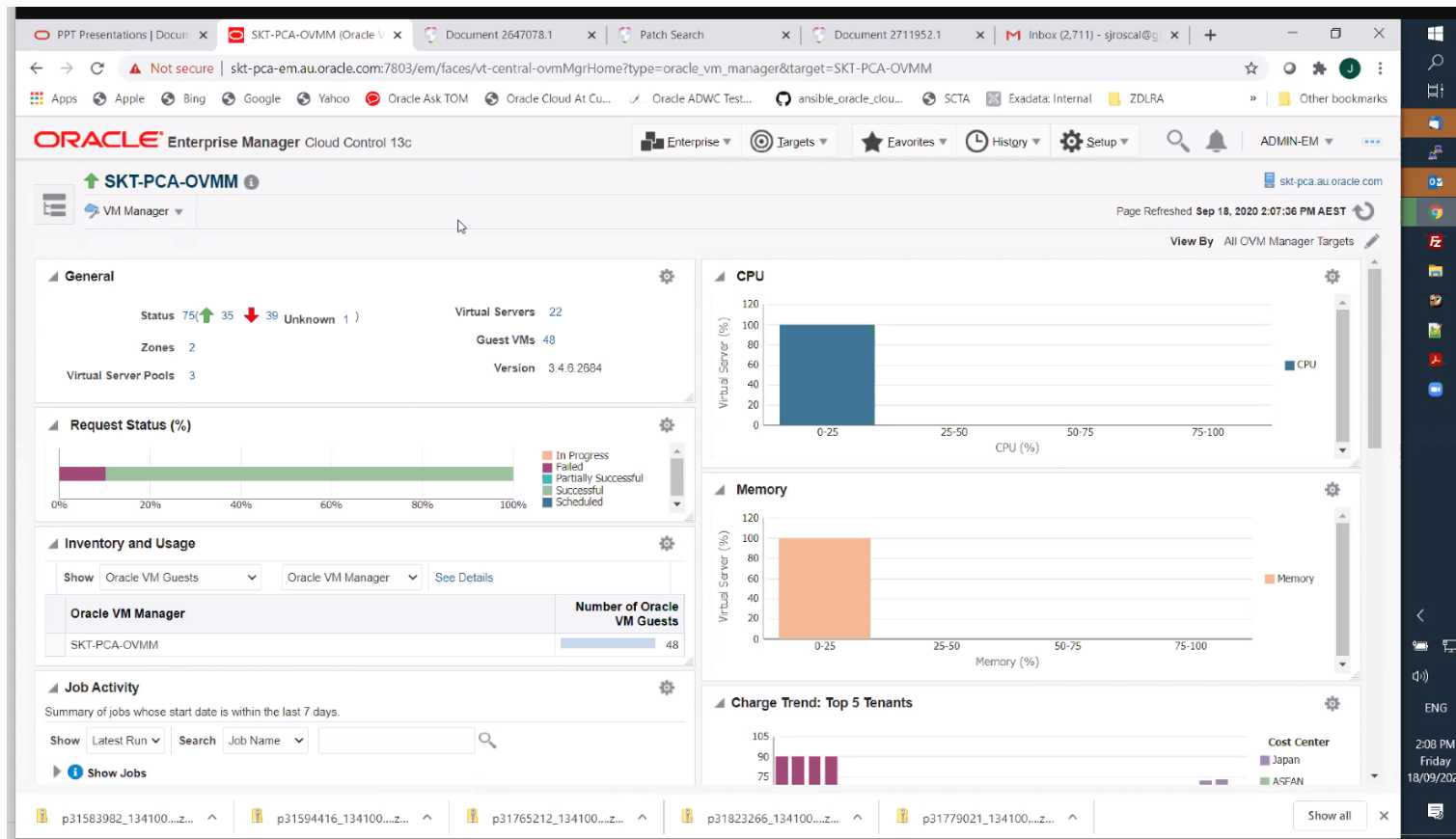
## Placeholder





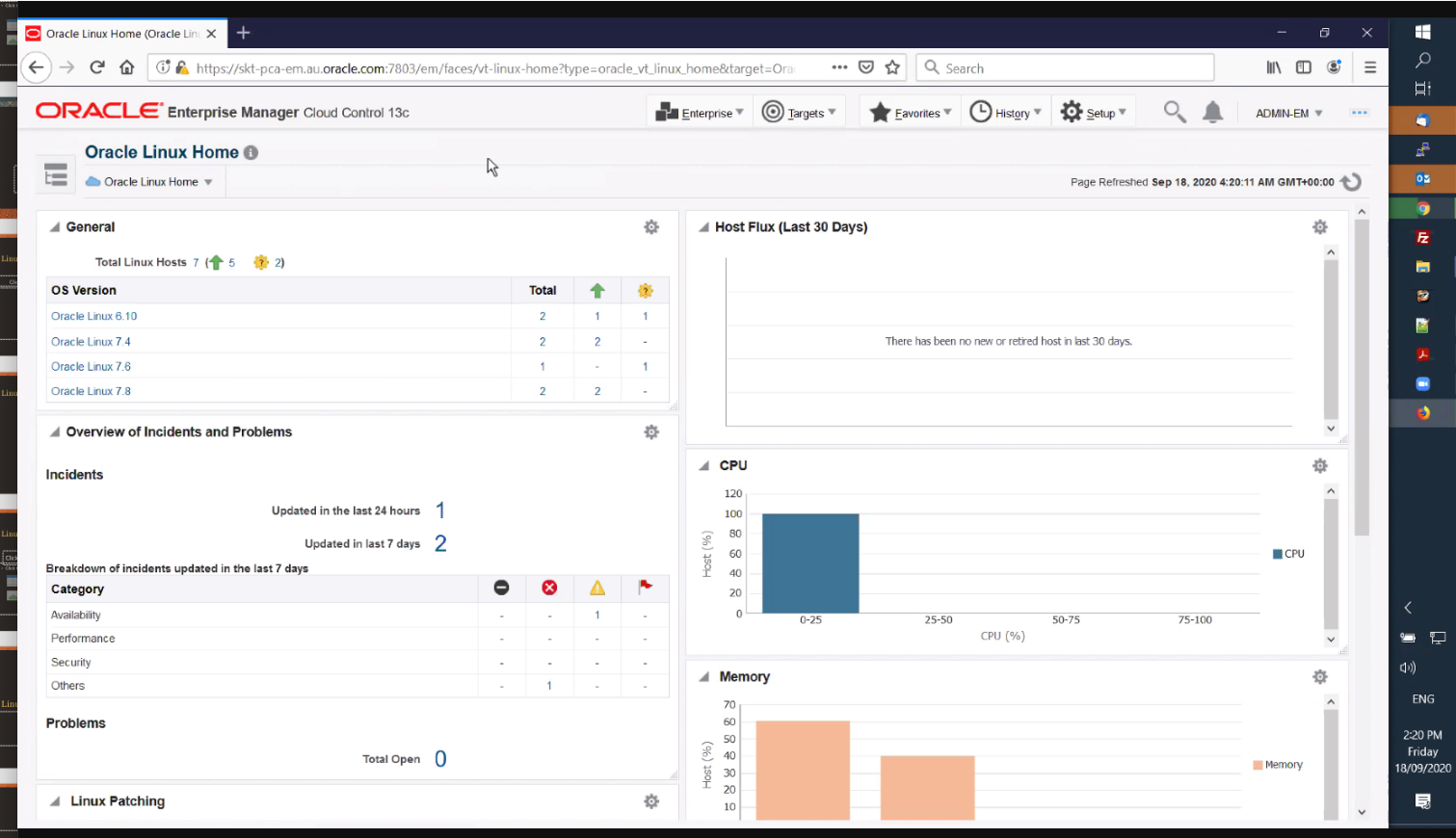
# Oracle VM Monitoring and Management

## Placeholder



# Oracle Linux Monitoring

## Placeholder



# Self-service / RBAC

## Placeholder

ORACLE

Enterprise Manager Cloud Services

Infrastructure - Oracle VM Cloud Services

Page Refreshed Sep 18, 2020 2:10:17 PM AEST

Notifications

Servers Due to Expire in Next 7 Days 0

Software Published in Last 7 Days 0

Usage

You have permission to use these cumulative quota allowances when making server and storage requests.

Servers: 4

CPUs: 8

Memory: 24 GB

Storage (GB) 220 GB

10 Last Requested Servers

Action View Request Servers...

Name	Size (GB)	CPU	Memory (GB)	Storage (GB)	Charge	Expiry Date	Tags	Creation Date
olcne1	2	2.00	15.00	17.52			JRSHIN	Sep 9, 2020 11:54:40 AM AEST
pca-demo-em-4.au.oracle.com	2	4.00	115.00	243...			JRSHIN	Apr 24, 2020 11:30:22 PM AEST
pca-demo-em-3.au.oracle.com	2	2.00	75.00	788.75			JRSHIN	Apr 24, 2020 11:25:56 PM AEST
snapclone_demo_vm_donotdelete	2	16.00	15.00	950.33			JRSHIN	Apr 24, 2020 11:16:38 AM AEST

10 Latest Requests

View Edit... Delete

Name	Type	Status	Servers	Submission Date	Start Date	End Date
DEMO-SSA - Wed Sep 09 11:47:47 AEST 2020	Template Deployment	Successful	1	Sep 9, 2020 11:50:20 AM AEST	Sep 9, 2020 11:5...	
DEMO-SSA - Thu Aug 06 15:39:05 AEST 2020	Update Guest VM	Successful	0	Aug 6, 2020 3:39:06 PM AEST	Aug 6, 2020 3:3...	
DEMO-SSA - Mon Apr 27 14:07:08 AEST 2020	Update Guest VM	Successful	0	Apr 27, 2020 2:07:14 PM AEST	Apr 27, 2020 2:0...	
DEMO-SSA - linux patching	Template Deployment	Successful	2	Apr 24, 2020 11:21:29 PM AEST	Apr 24, 2020 11:...	
DEMO-SSA - SnapClone Host	Template Deployment	Successful	1	Apr 24, 2020 11:12:08 AM AEST	Apr 24, 2020 11:...	
DEMO-SSA - Wed Aug 28 12:58:31 AEST 2019	Update Guest VM	Successful	0	Aug 28, 2019 12:58:54 PM AEST	Aug 28, 2019 12:...	

p31583982\_134100...z...

p31594416\_134100...z...

p31765212\_134100...z...

p31823266\_134100...z...

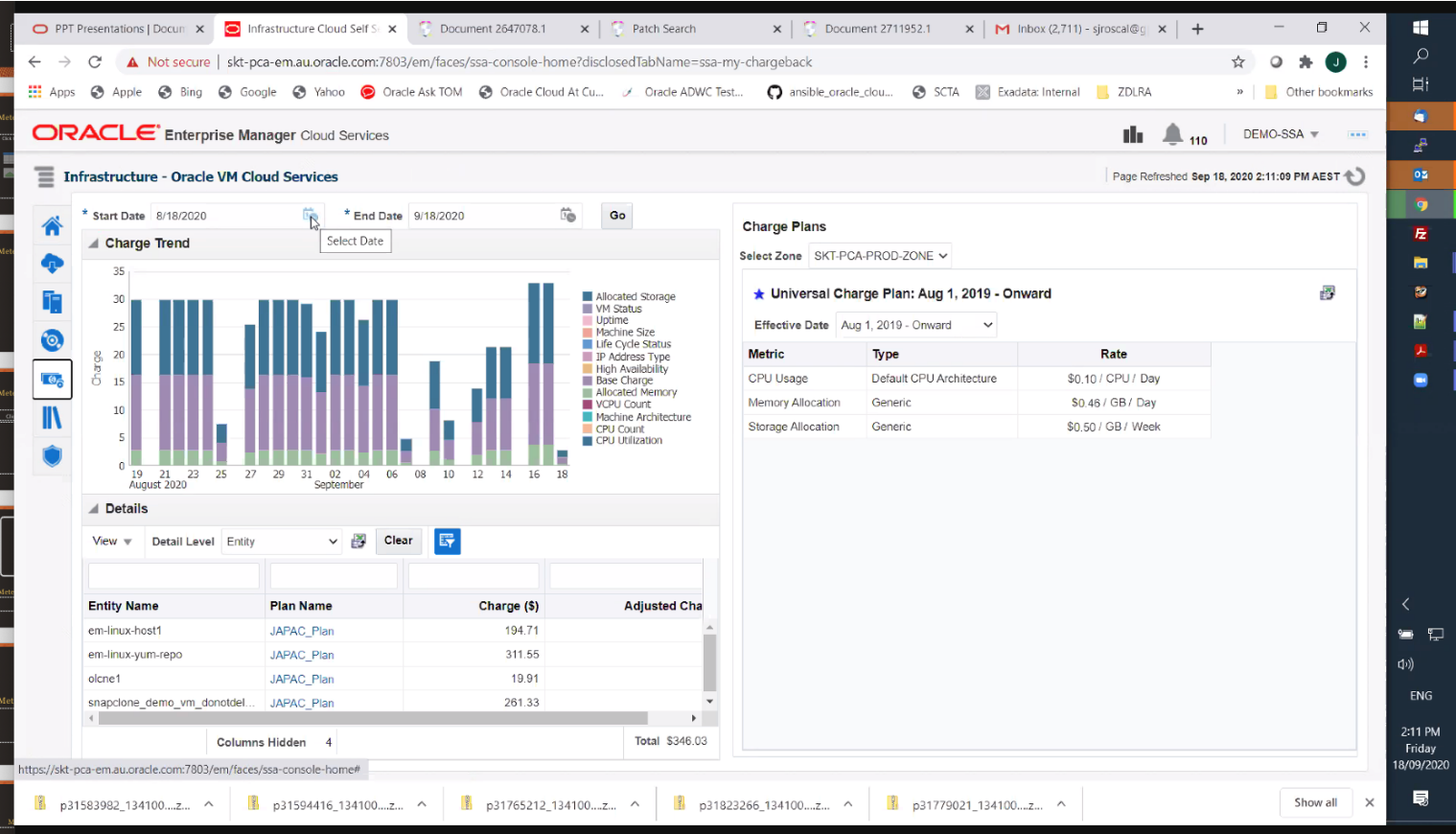
p31779021\_134100...z...

Show all



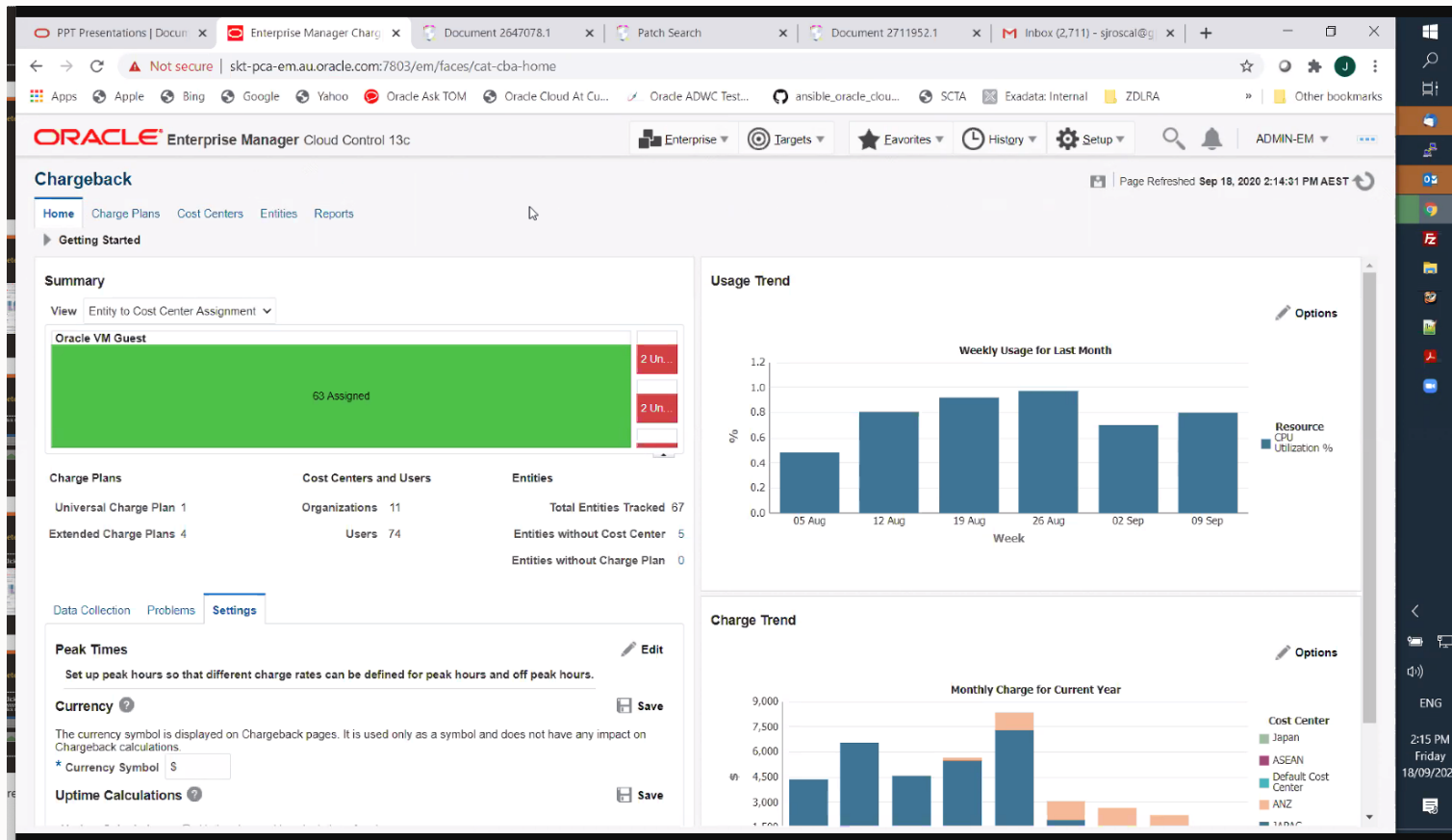
# Metering and Chargeback

## Placeholder



# Metering and Chargeback

## Placeholder





# Compliance and Configuration Management

## Placeholder

Compliance Dashboard - Oracle

https://skt-pca-em.au.oracle.com:7803/em/faces/core-gc-compliance-ccc-compliancedashboard

ORACLE Enterprise Manager Cloud Control 13c

EnterpriseTargetsFavoritesHistorySetupADMIN-EM

Compliance Dashboard

Auto Refresh OffPage Refreshed Sep 18, 2020 2:18:11 PM AEST

Compliance Framework Summary

Framework: PCI DSS (Version 2.0) - Example Only

Build and Maintain: 100%

Compliance Frameworks

- CIS for DB12c - NPP Certification
- Compliance-DEV-Team
- Compliance-PROD-Team
- Oracle 11.2g Database Security Technical Implementation Guide (STIG)
- Oracle 12c Database Center for Internet Security (CIS)
- Oracle 12c Database Security Technical Implementation Guide (STIG)
- Oracle Engineered Systems Compliance
- Oracle Generic Compliance Framework
- Oracle Identity Management Compliance
- PCI DSS (Version 2.0) - Example Only
- Security Technical Implementation Guide (STIG)
- Security Technical Implementation Guides (STIGs)
- Support Policy

Use: Support Policy

Name	Average Compliance Score (%)
Security Technical Implementation Guide(STIG Version 1.8) for Oracle Database (De...	2
Oracle 12c Database STIG - Version 1, Release 8 for Oracle Database	5
Oracle 12c Database STIG - Version 1, Release 3 for Oracle Database	6
Security Recommendations For Oracle Products	75
Secure Configuration for Host	75

Least Compliant Generic Systems

View Trends

Generic System Name	Standard Evaluations	Violations	Average Compliance Score (%)
PCA_SiteA	1 1 0	62 0 0	63
PCA_SiteB	1 1 0	62 0 0	63
PCA44_ITOps	0 1 9	19 0 0	97

Most Recently Discovered Unmanaged Hosts

Host Name	IP Address	Discovered Time	Operating System
No data to display.			

Click here to see more discovered unmanaged hosts...

Least Compliant Targets

The least compliant targets region is being decommissioned. Please use Compliance Summary region for least compliant target details.





ORACLE

# Oracle Enterprise Manager for Engineered Systems

Oracle Advanced Customer Services

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**Brian Chan**

Principal Advanced Support Engineer

# Program agenda

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- 1 ACS Service Overview
- 2 Expert Services
- 3 Managed Cloud Services
- 4 Summary

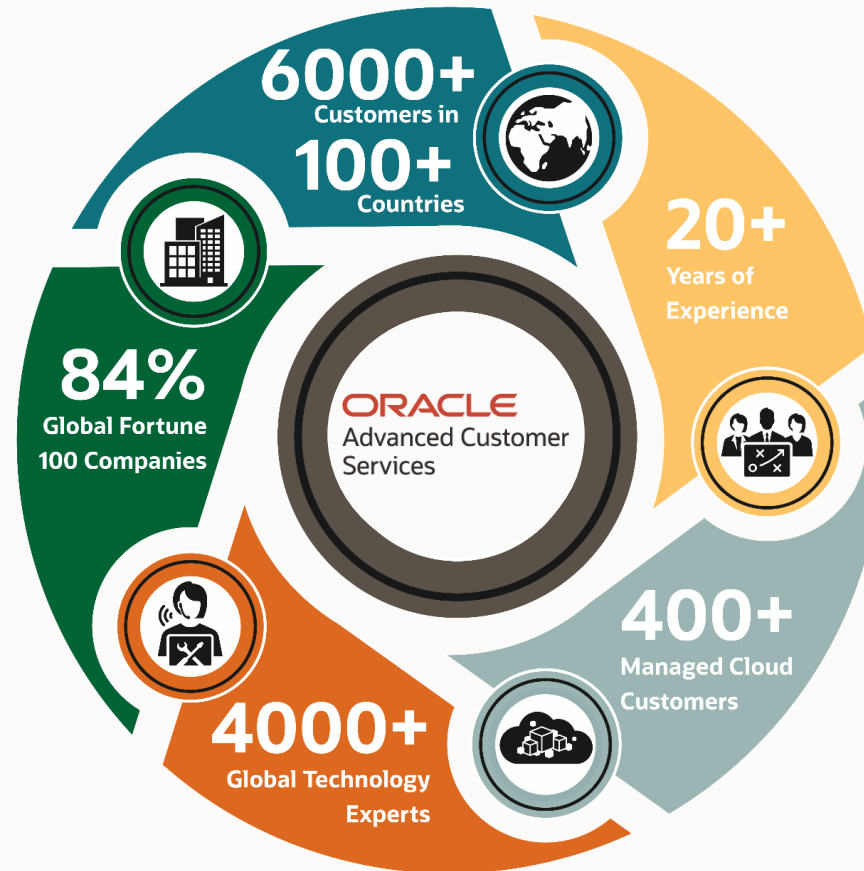
# Oracle Advanced Customer Services

Your trusted partner

**ORACLE®**

Advanced Customer  
Services

Who knows Oracle  
...better than  
Oracle?










*"Top notch Advanced Customer Services associates at all levels... Very experienced and knowledgeable, quickly resolved issues, good communication. Trusted partner to team up with..."*

Jason LaPierre, Enterprise  
Systems Manager



# Our Key Capabilities

**ORACLE®**  
Advanced Customer  
Services

Category	Capability	On Premise	OCI	SaaS
 <b>System Optimization</b>	<ul style="list-style-type: none"> <li>Installations</li> <li>Product optimization</li> <li>Supporting older versions</li> </ul>	✓	●	○
 <b>Expert Services</b>	<ul style="list-style-type: none"> <li>Advanced Support Engineers</li> <li>Technical Account Managers</li> </ul>	✓	✓	✓
 <b>Transition Services</b>	<ul style="list-style-type: none"> <li>Database Transition</li> <li>Systems Transition</li> <li>Packaged Application Transition</li> </ul>	✓	✓	○
 <b>Mission-Critical Services</b>	<ul style="list-style-type: none"> <li>Priority Support</li> <li>Solution Support Center</li> <li>Mission Critical Support for SaaS</li> </ul>	✓	✓	✓
 <b>Managed Platform</b>	<ul style="list-style-type: none"> <li>Monitoring and resolution (Database, OCI)</li> </ul>	✓	✓	○
 <b>Managed Applications and Help Desk</b>	<ul style="list-style-type: none"> <li>Applications Unlimited Management</li> <li>Functional Services (help desk, extension and integration support, regression testing, critical process management)</li> <li>Government/Federal</li> </ul>	✓	✓	✓
 <b>Security Services</b>	<ul style="list-style-type: none"> <li>Identity Management</li> <li>Vulnerability Assessments</li> <li>Database Security Support</li> </ul>	✓	✓	✓



# Expert Support

How we can help

**ORACLE®**

Advanced Customer  
Services

- **OEM Design and Installation**
  - Design highly available OEM solution customized to your environment
  - Install and deliver fully functional monitoring and management solution
- **OEM Service Enhancement**
  - Deployment reviews, uplift OEM in accordance to Oracle best practices
- **Management Packs Enablement**
  - Introduce OEM management packs to maximize return of investment
- **Engineering System Monitoring and Management**
  - Discover Engineered System such as Exadata, ZDLRA, PCA
  - Design monitoring strategy for Engineered Systems and associated targets
  - Uplift existing OEM deployment to meet certification requirements
  - Virtualized Exadata and PCA with efficient DevOps practices
- **Knowledge Transfer Workshop**
  - Upskill customer with latest features and industry knowledge

# Expert Support

Customer – One of the New Zealand largest financial services group

**ORACLE®**

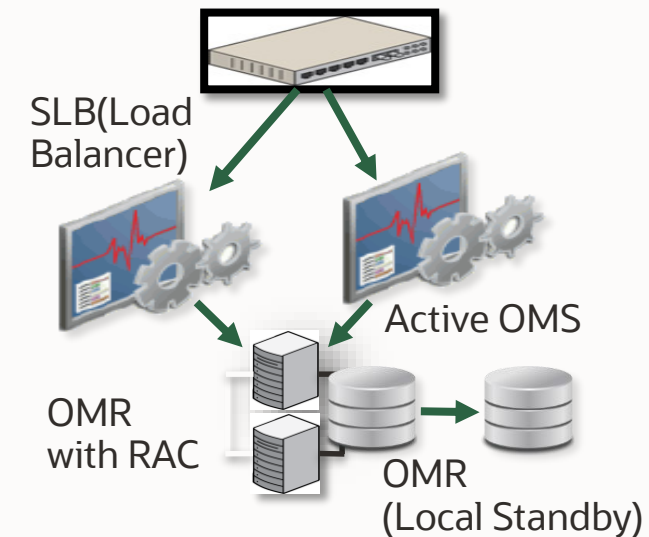
Advanced Customer  
Services

## Scope:

- Design new shared Oracle Database platform based on virtualized X8 Exadata hardware
- Architect highly available Oracle Enterprise Manager 13c solution to monitor and manage the new Oracle Database platform
- Deploy Oracle best practice for end to end solution
- Assist customer with database migration

## Customer Benefits:

- Consolidate database fleet onto virtualized Exadata platform
- Leverage ACS product expertise and industry-leading expertise
- Supporting and working with partnership at every stage of project



# Managed Cloud Services

## How we can help

**ORACLE®**

Advanced Customer  
Services

- Managed Services
  - Provide fully managed services for customer's on-premise Engineered Systems includes:
    - Change Management
    - Access Management
    - Configuration management
    - Release Management
    - Incident and Problem Management
    - Service Monitoring
    - Service Level and Availability Management
  - Experienced on-site and remote engineers deliver around the clock service
  - Apply bug fixes and regular security patches
- Governance
  - Dedicated Oracle ACS Account Manager as single point of contact
  - Provide access to OEM reports and dashboards for entire technology stacks
  - Governed by SLA to ensure highest level of service availability



# Managed Cloud Services

Customer – One of the four largest financial institutions in Australia

**ORACLE®**

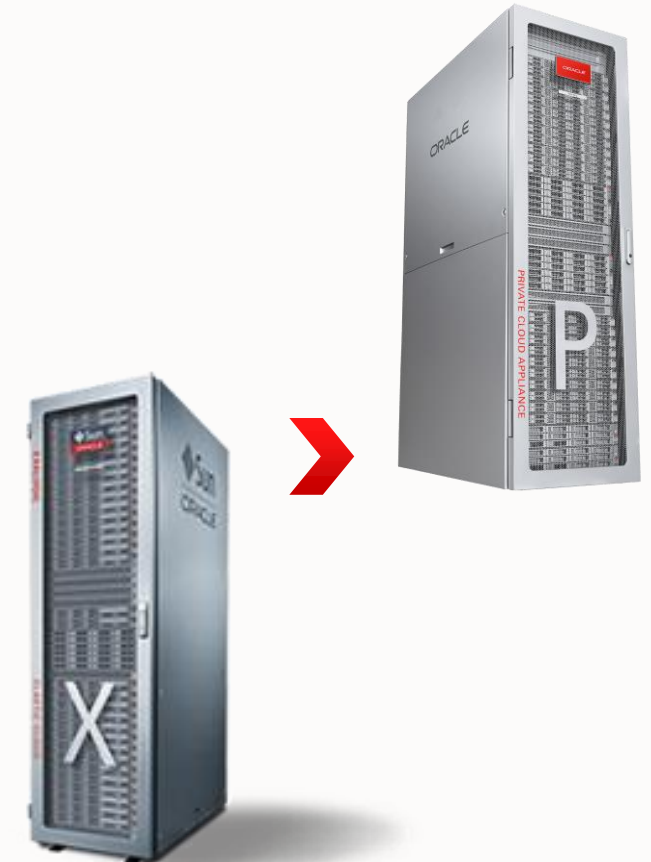
Advanced Customer  
Services

## Scope:

- Manage complex core banking environment deployed on Exalogic, Exadata, PCA and ZFS storage
- Comprehensive OEM monitoring setup for applications and hardware
- Integrate with external ticketing systems
- Use OEM capabilities to efficiently manage the BAU activities
- Migrate Exalogic workload to PCA

## Customer Benefits:

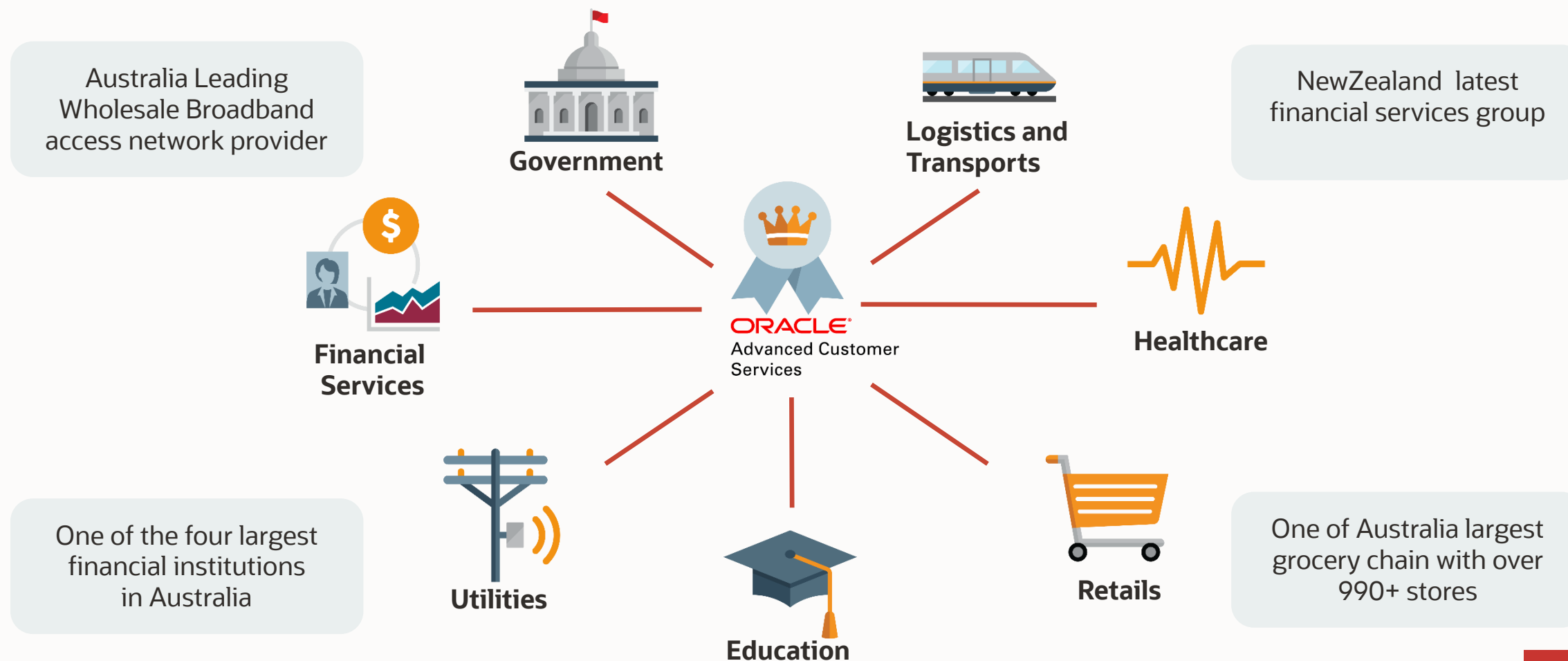
- ACS delivers highest level of management services to customer's critical business, successfully meet SLA over years of practice



# Customer Categories

**ORACLE®**

Advanced Customer Services





# Summary

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**ORACLE®**  
Advanced Customer  
Services



# Transform Tomorrow, Today

Supporting You Every Step of the Way

**ORACLE®**  
Advanced Customer  
Services

Find out more at:  
**[oracle.com/acs](https://oracle.com/acs)**

