

Safe harbor statement

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ORACLE

Consolidate, Migrate and Analyse Databases with Confidence using Enterprise Manager

Akshay Sangaonkar

Enterprise Manager Product Management

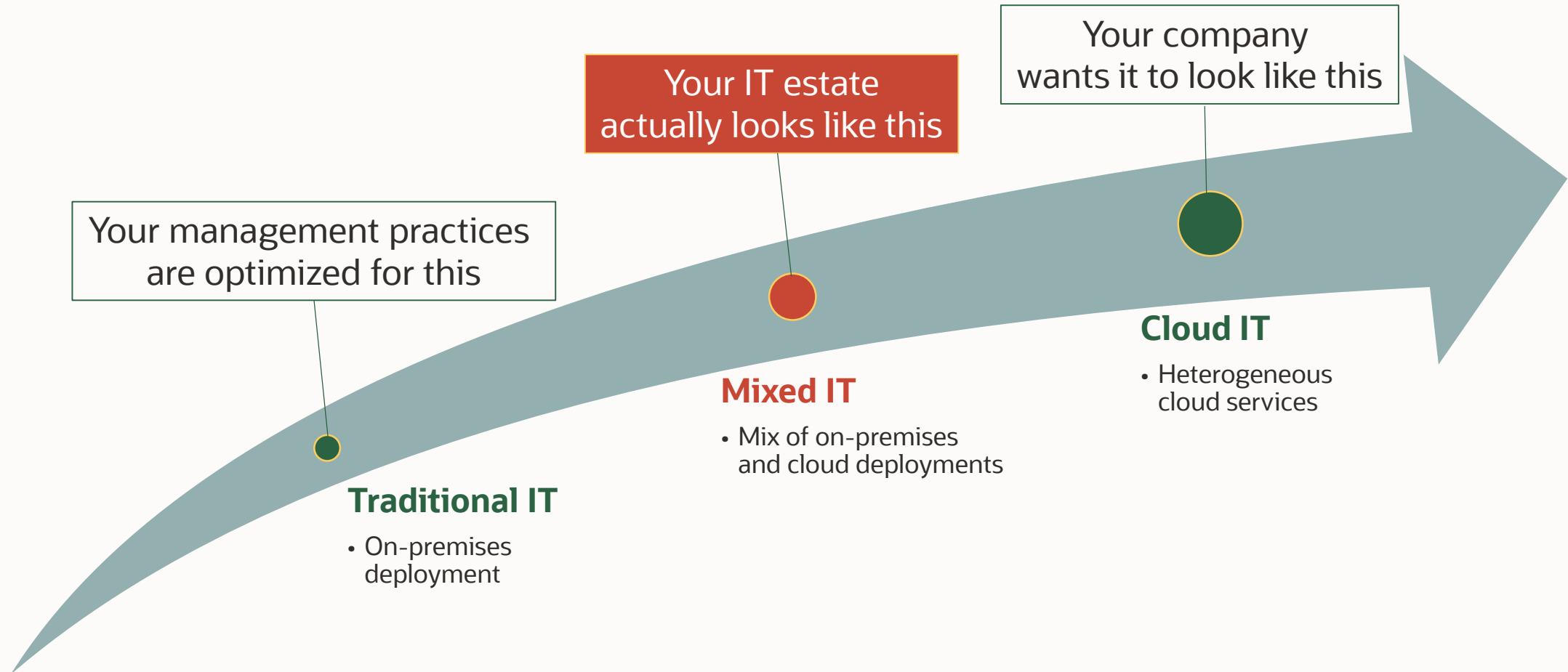
Agenda

- 1 Why Migrate to Oracle Cloud?
- 2 Enterprise Manager for Oracle Cloud
- 3 Enterprise Manager Migration Workbench
- 4 Demo
- 5 PDB Lifecycle Management and Hybrid PDBaaS

Why Migrate to Oracle Cloud?



Enterprise Cloud Journey Progressing Faster Than Your Systems Management Maturity



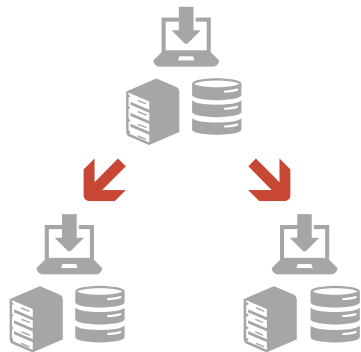
Enterprise Manager for Oracle Cloud



Enterprise Manager for Oracle Cloud

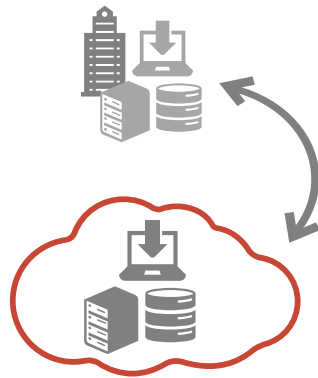
Single tool to Provision, Migrate, Monitor, Manage, Diagnose and Analyze

RAPID PROVISIONING



Quick Provisioning on Private or Public Cloud

MIGRATION TOOLS



Migrate DB workloads with zero re-tooling and zero downtime

CENTRALIZED MANAGEMENT



Easily upgrade and centrally Manage databases

CLOUD INTEGRATION



Integration with Object Store, Autonomous or non-Autonomous DBs

COMMON ARCHITECTURE, STANDARDS AND PRODUCTS

Migrate to Cloud using Enterprise Manager



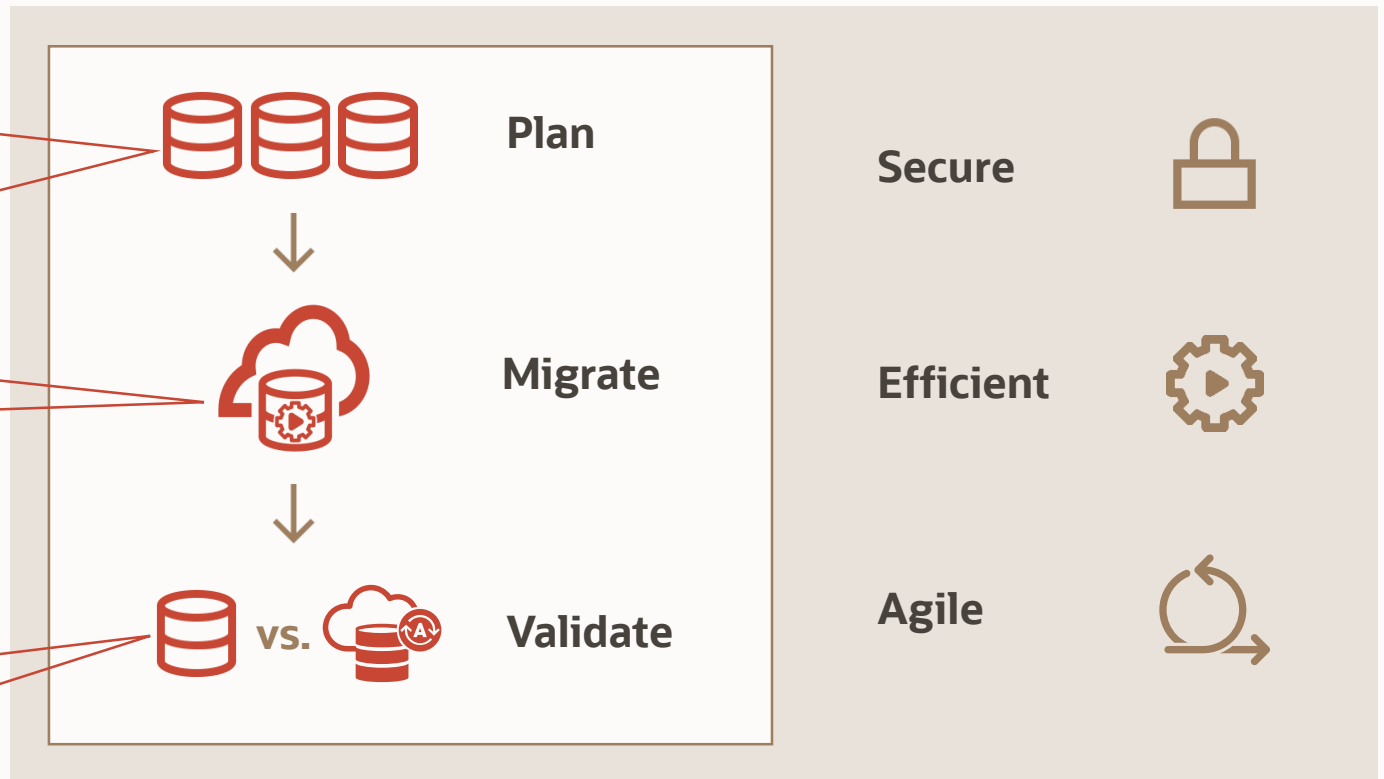
Today's Database Migration Needs

What databases can I consolidate?

What dependencies do I need to account for in my migration plans?

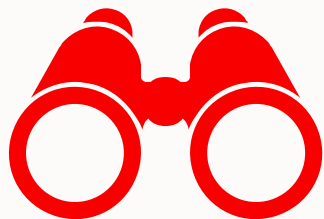
What mechanism should I use to perform the migration, and how do I use it?

How does my new environment compare against my old environment?



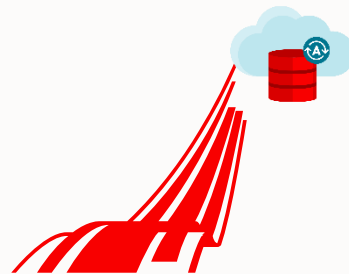
Migration using EM

PLAN



Consolidation
Estimation,
Dependency Analysis

MIGRATE



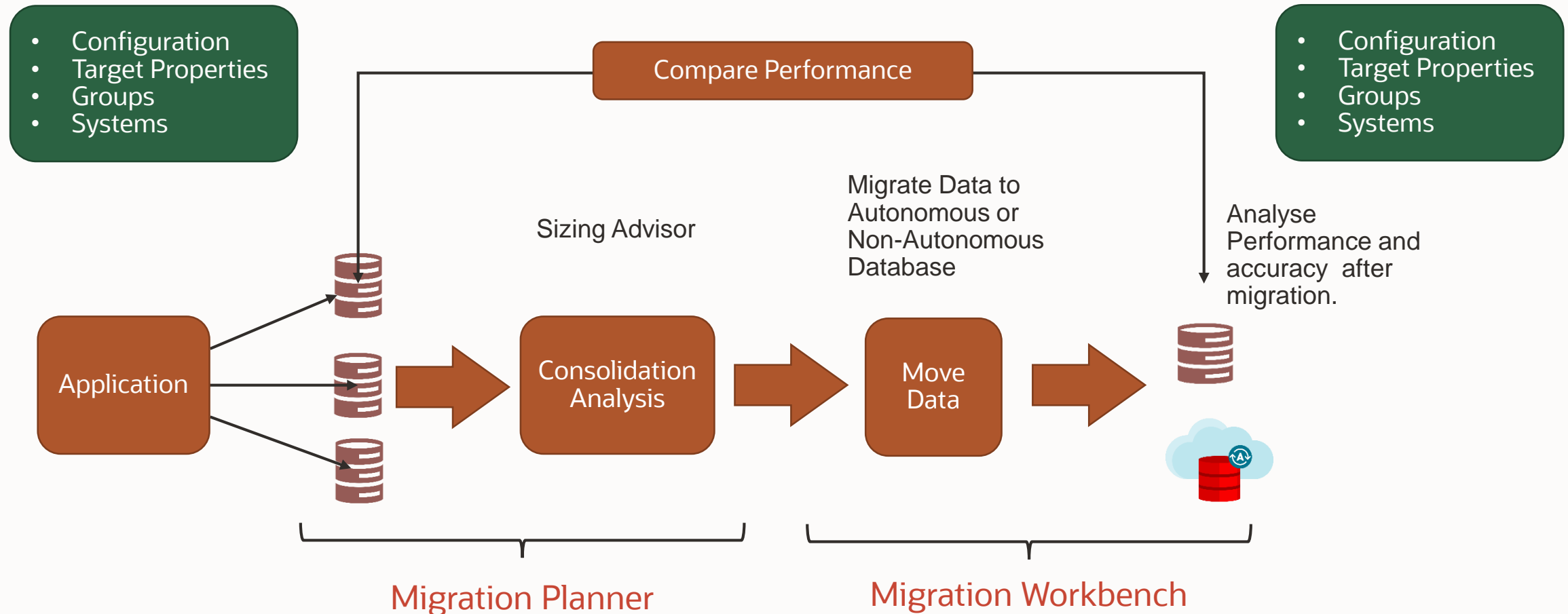
Datapump, RMAN, ADG,
TTS, Zero-Downtime

ANALYZE

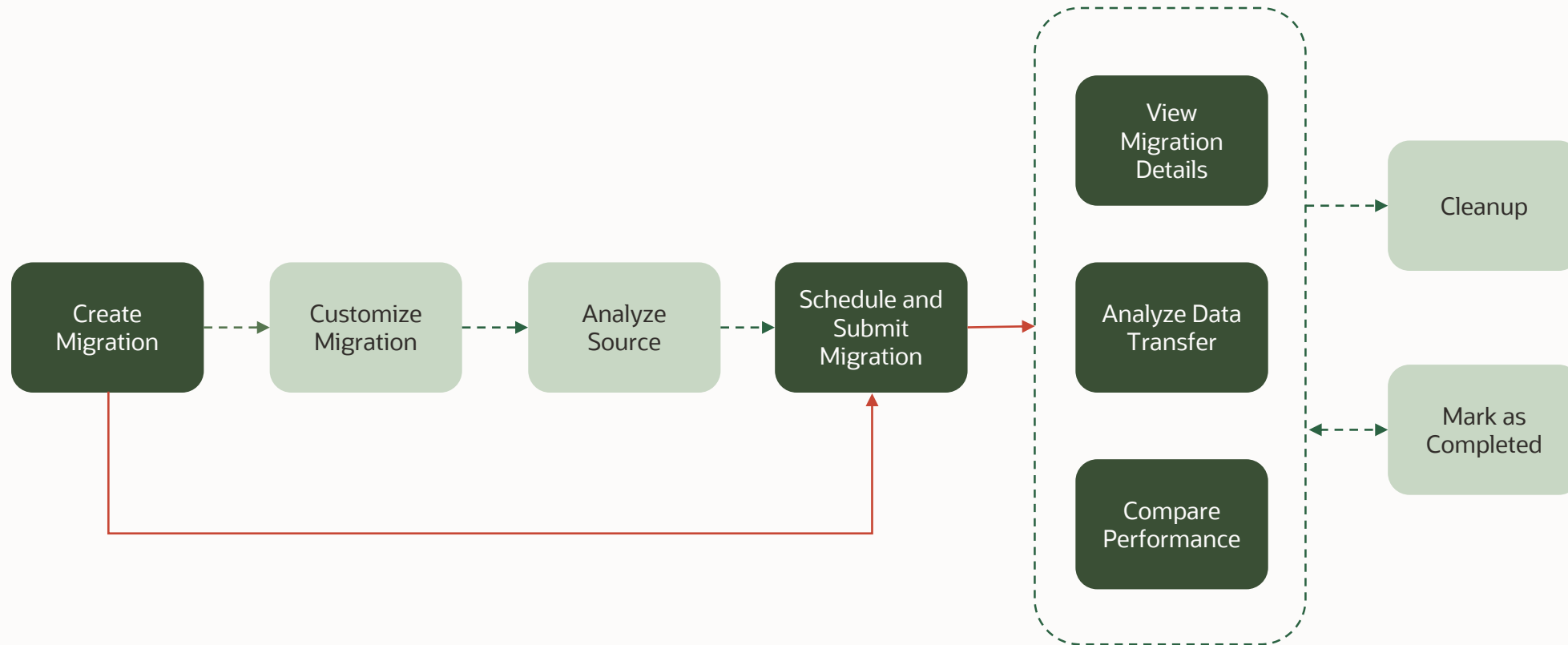


Schema Comparison,
Performance Comparison

Step-by-step migration process



Complete Migration Process with Database Migration Workbench



Enterprise Manager Migration Workbench

Consolidate, Migrate
and Analyse



Database Migration Workbench

Launchpad for Guided Migration

Plan

- Single workbench that integrates all needs for migration – sizing, performance comparison.
- Track migration in real-time
- Customizable migration workflows
- Pause, Rollback or Cancel the entire workflow.

The screenshot displays the 'Database Migration' dashboard. At the top, it shows 'Page Refreshed Sep 5, 2019 8:22:11 AM PDT'. Below this, a 'Migration Activities' section contains five summary cards: 'All in Last 7 Days' (4 Activities), 'In Progress' (0 Activities), 'Problems in Last 7 Days' (1 Problems), 'Scheduled in Next 7 Days' (1 Activities), and 'Completed in Last 7 Days' (2 Activities). A 'Create Migration' button is visible. Below the summary cards is a table with columns: Activity, Status, Source, Destination, Start, End, and Elapsed Time. The table lists four migration activities: 'Migrate CRMOnPremises2 to CRMADW' (Scheduled), 'Migrate CRMOnPremises1 to CRMADW' (Completed), 'Migrate HROnPremises to HRATPS' (Completed), and 'Migrate SalesOnPremises to Sales_OnCloud' (Failed). A context menu is open over the 'Failed' activity, showing options: Pause, Rollback, Cancel, View Details, View Analysis, and Compare Performance.

Activity	Status	Source	Destination	Start	End	Elapsed Time
Migrate CRMOnPremises2 to CRMADW	Scheduled	CRM_Onpremises	CRM_OnCloud	2019-09-06T21:01:34.786	—	—
Migrate CRMOnPremises1 to CRMADW	Completed	CRM_Onpremises	CRM_OnCloud	2019-09-06T21:01:34.786	—	0 s
Migrate HROnPremises to HRATPS	Completed	HR_Onpremises	HR_OnCloud	2019-09-06T21:01:34.786	—	0 s
Migrate SalesOnPremises to Sales_OnCloud	Failed	Sales_Onpremises	Sales_OnCloud	2019-09-06T21:01:34.786	—	0 s



Schema Advisor

Runs on existing schema and generates a summary of migration status including

- Objects that cannot migrate due to lockdowns or restrictions on certain data types.
- Oracle Database Options that do not apply on destination database
- Objects that will migrate with certain corrective actions
- List of automated corrective actions

Database Migration

[Migration Activities](#) > Schema Advisor Report

Schema Advisor Report : cdb.us.oracle.com_PDB1

ATPD SCHEMA MIGRATION REPORT FOR EXPUSER

```
ADB Advisor Version : 19.3
Instance Name      : cdb
Database Name      : CDB
Host Name          : slc09esm
Database Version   : 12.1.0.2.0
Pluggable Database : PDB1
Schemas Analyzed  : EXPUSER
Analyzing for      : Autonomous Transaction Processing (Dedicated)
Report date        : 05-DEC-2019 23:20
```

▶ ATPD OBJECTS NOT MIGRATED

▶ ATPD OBJECTS MIGRATED WITH CHANGES

▶ ATPD MIGRATION ADDITIONAL INFO

Database Migration landscape

Unified experience for all migration scenarios

Migrate

Database Migration

Create Migration Activity

Name Activity

Migrate SalesOnPremises Database to Autonomous Database Warehouse

Select Source Database Type



Select Destination Database Cloud Service Type



Autonomous Databases
Datapump



Exadata Cloud at Customer
Datapump, RMAN, nZDT



Exadata Cloud Service
Datapump, RMAN, nZDT



Databases running on VM and BM
Datapump, RMAN, nZDT, continuous refresh



Databases running on OCI Compute
Datapump, RMAN, nZDT, continuous refresh



Compute within own datacenter
Datapump, RMAN, nZDT, continuous refresh

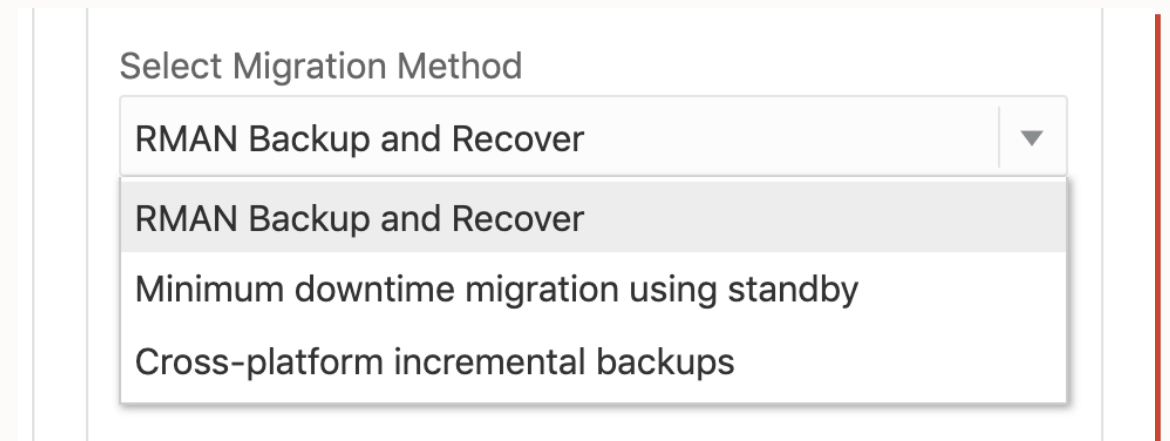
Migration Options for all configurations

Automatic recommendations for applicable migration methods

Migrate



- Single workbench integrating all migration methods.
- Automatic recommendations for suitable migration methods.



Database Migration Workbench

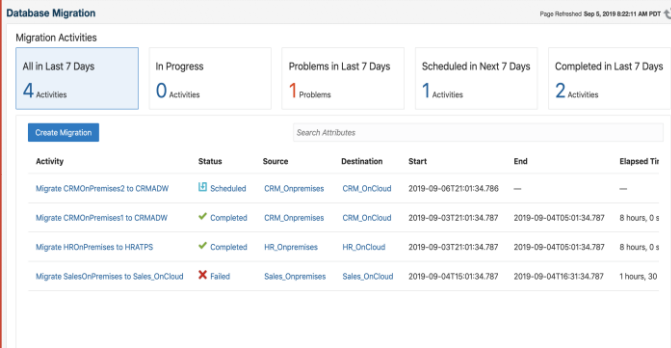
Choice of tools

Migrate

- Functionality available via
 - User Interface
 - Command Line Interface
 - Rest API
- Complete control of DevOps
- Integrate with Enterprise Automation Standards

ORACLE[®] 13^c
ENTERPRISE MANAGER

UI



The screenshot shows the 'Database Migration' interface with a summary of migration activities. It includes tabs for 'All in Last 7 Days' (4 Activities), 'In Progress' (0 Activities), 'Problems in Last 7 Days' (1 Problem), 'Scheduled in Next 7 Days' (1 Activity), and 'Completed in Last 7 Days' (2 Activities). Below the summary is a table of migration activities.

Activity	Status	Source	Destination	Start	End	Elapsed Ti
Migrate CRMOnPremises2 to CRMADW	Scheduled	CRM_Onpremises	CRM_OnCloud	2019-09-06T21:01:34.786	—	—
Migrate CRMOnPremises1 to CRMADW	Completed	CRM_Onpremises	CRM_OnCloud	2019-09-03T21:01:34.787	2019-09-04T05:01:34.787	8 hours, 0 s
Migrate HROnPremises to HRATPS	Completed	HR_Onpremises	HR_OnCloud	2019-09-03T21:01:34.787	2019-09-04T05:01:34.787	8 hours, 0 s
Migrate SalesOnPremises to Sales_OnCloud	Failed	Sales_Onpremises	Sales_OnCloud	2019-09-04T15:01:34.787	2019-09-04T16:31:34.787	1 hours, 30

CLI

```
emcli migrate_db
-file=<Mapping JSON file>
[-exec_mode=<Execution Mode>]
[-ignore_pre_req]

-exec_mode
➤ FULL : Fully automated migrations
➤ PRE_DOWNTIME : run all steps before
downtime
➤ DOWNTIME: run all steps requiring
downtime
```

Rest API

```
"PAYLOAD_BODY":{
  "emcliHostName":"blr2213239.idc.oracle.com",
  "emcliCmdPath":"/ade/bkrkrish_132pgv3/oracle/work/omsOracleHome/bin/emcli",
  "emStageDir":"/tmp",
  "scriptRunAsLamaCredName":"HostCredsBkr",
  "emcliLamaCredName":"EmcliCredsSysman",
  "dbId":"4149685324",
  "dbMeId":"71CE37408DA01D7998CB58B085A7E1AE",
  "dbfId":"006AFE43FF3832FA4045F1F34168F6701",
  "standbyDb":"true",
  "sqlComplName":"Demo Script",
  "sqlCompDirPath":"DemoSql/",
  "sqlScriptFileName":"POB1.sql",
  "dbCredsName":"NC_CDB_SYS",
  "dbHostCredsName":"NC_HOST_SHY",
  "ossCredName":"OssCred1",
  "ossUrl":"https://us2.storage.oraclecloud.com/v1/Storage-gse00011403",
  "ossContainerName":"BalaDemo",
  "dataSourceName":"Snapshot Standby DB backup 2",
  "backupTag":"Backup_Tag_2",
  "dataSourceDesc":"Testing for lift and shift workflow to be submitted from OMC",
```



Minimum Downtime Migration

Online Migration to Minimize Downtime of Source Database

Migrate

- Minimizes downtime of source Database
- Online Migration using **Oracle Data Guard Standby**
- Best practices for MAA
- Create a standby database on Oracle Cloud
- Only downtime required during switch-over from primary to standby
- Options to run manual or fully automated migration using **EMCLI**

```
emcli migrate_db
```

```
-file=<Mapping JSON file>
```

```
[-exec_mode=<Execution Mode>]
```

```
[-ignore_pre_req]
```

```
-exec_mode
```

- **FULL** : Fully automated migrations
- **PRE_DOWNTIME** : run all steps before downtime
- **DOWNTIME**: run all steps requiring downtime

Performance Comparison

Comparison using SQL Performance Analyzer

- Compare SQL performance before and after migration
- Based on historic transactional data analyze potential impact on application
- Comparison based on
 - Elapsed Time
 - CPU Time
 - User I/O Time
 - Buffer Gets
 - Physical I/O
 - Optimizer Cost
 - I/O Interconnect Bytes



Run SPA on source

Capture SQL
Tuning Set

Run trial before
migration

Migrate Database

Run trial after
migration

Compare SQL
Performance

Analysis and
Reporting



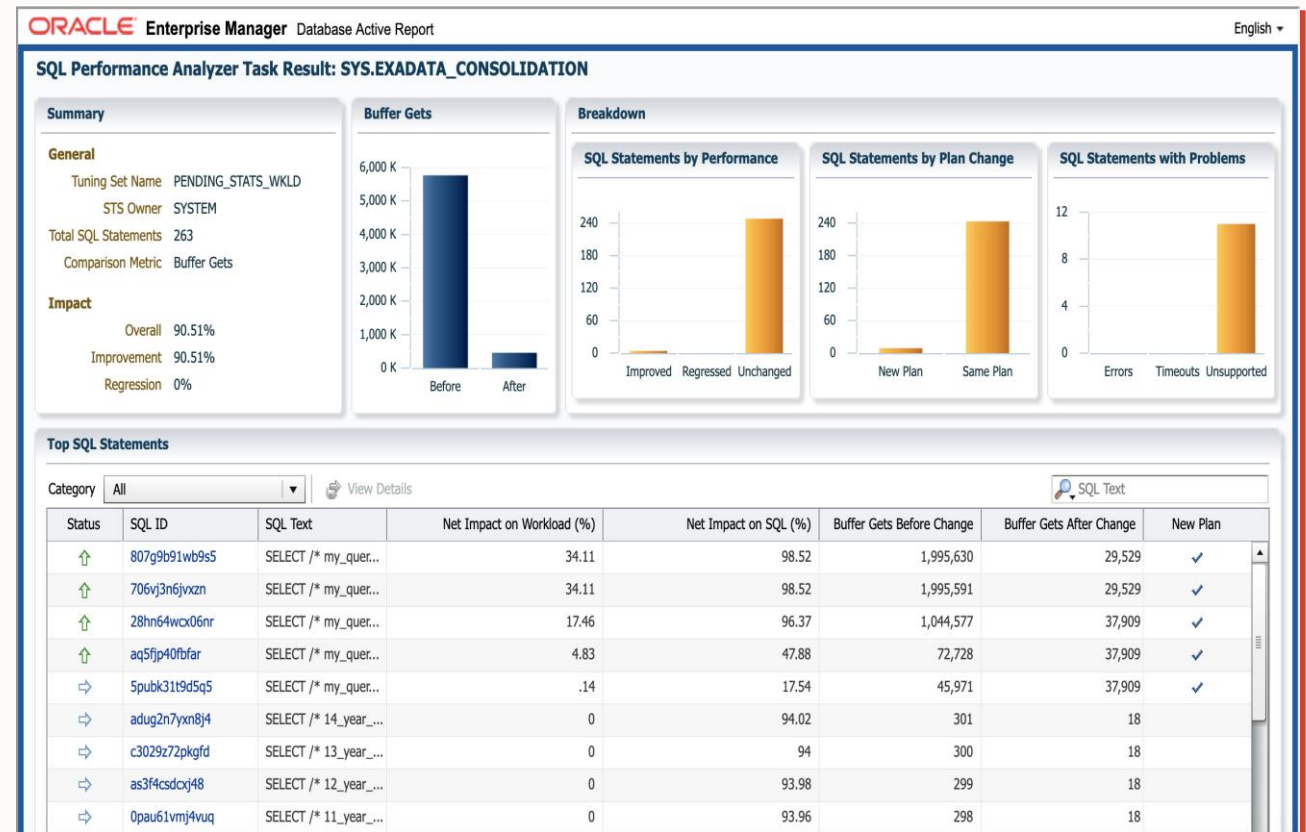
Analyze

Performance Comparison

Simple and flexible

Analyze

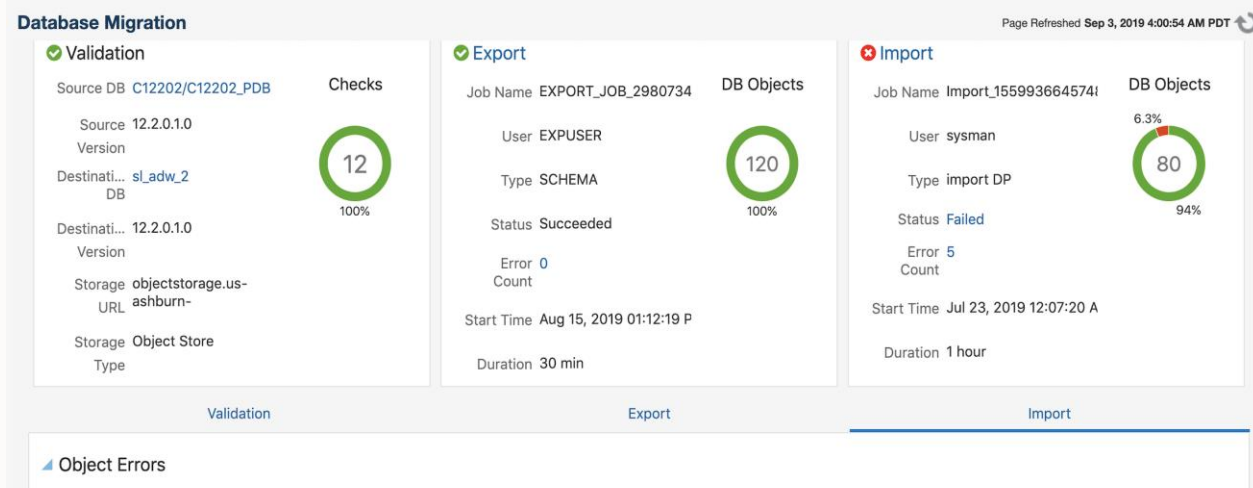
- DevOps
 - Out-of-Box Solution
 - No preparation required
 - Simple and automatic.
- Production
 - User need to enable STS before start of migration
 - This STS used to compare performance after migration
 - Accurate and flexible.



Analyze migration workflow

Identify and Remediate failures efficiently

Analyze



- Step-by-step analysis of migration
- Drill-down at the object level migration
- What objects succeeds or fail
- Deep insights and reasoning for failed objects

Object Errors

Schema

► SALES

► SALES

► SYSMAN

► -

Object Errors

Schema	Object Type	Object Name	Processed	Errors	Error Message
SALES	USER	NA	1	1	
	USER	EXPUSER	1	1	ORA-31684: Object type USER:"EXPUSER" already exists
SALES	CONSTRAINT	NA	2	2	
	CONSTRAINT	SYS_IOT_TOP_001	1	1	ORA-00001: unique constraint (SALES.SYS_IOT_TOP_001) violated
	CONSTRAINT	SYS_IOT_TOP_002	1	1	ORA-00001: unique constraint (SALES.SYS_IOT_TOP_002) violated

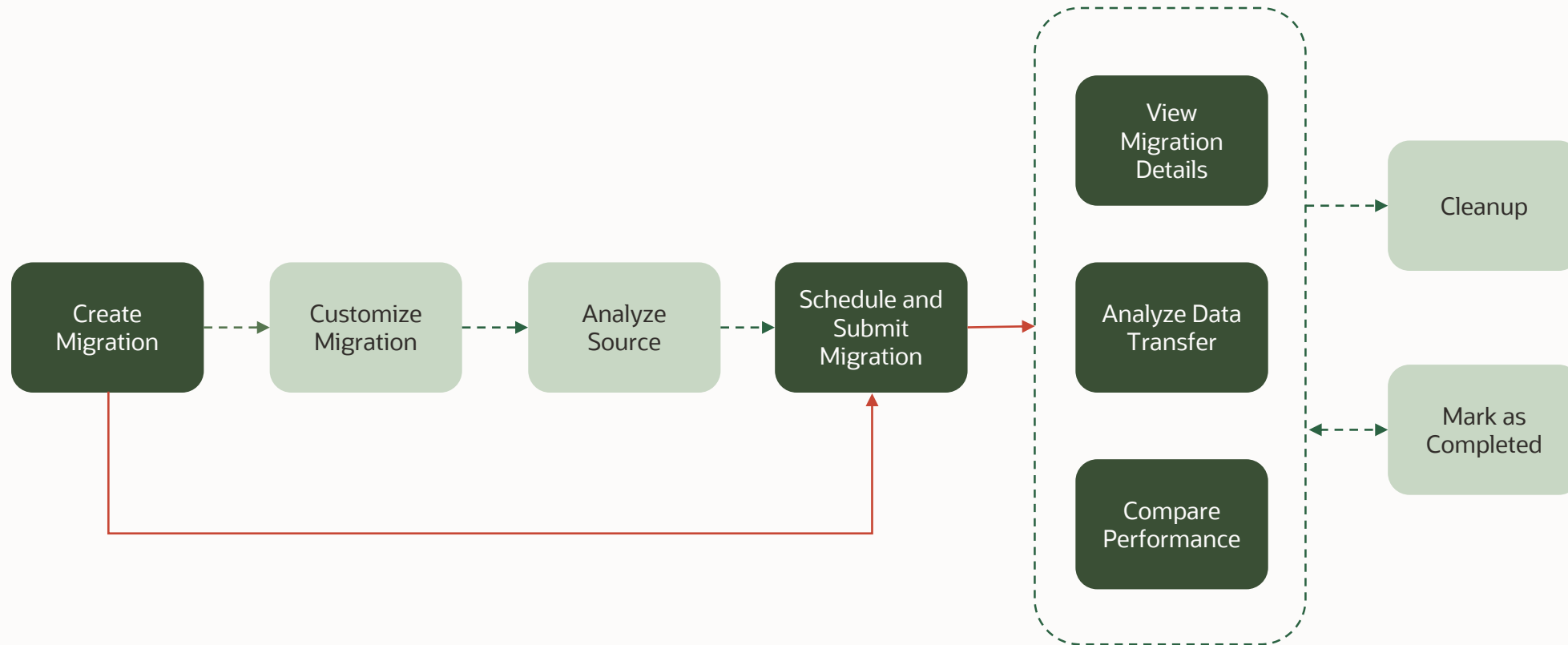


Demo

Migrate to Autonomous
Database using Enterprise
Manager



Complete Migration Process with Database Migration Workbench



Hybrid PDB as a Service

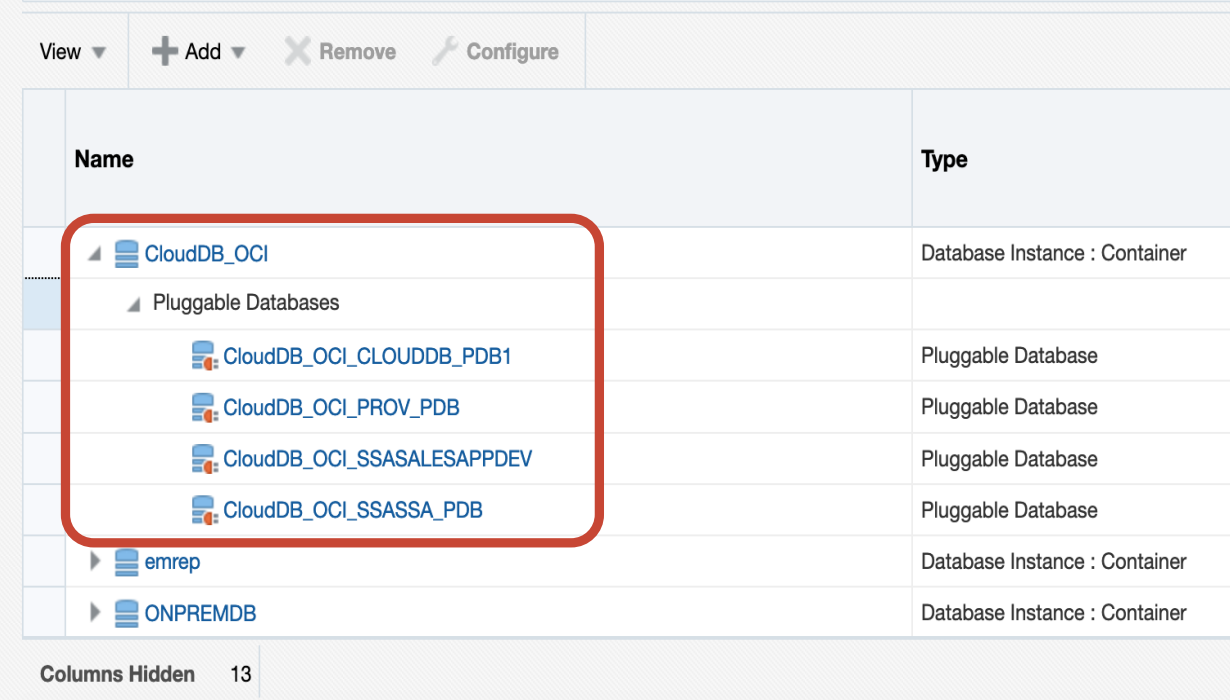
On-premises and OCI provisioning

Simple Unified User Experience

EM for Oracle Cloud (OCI) Database Cloud Service (DBCS)

Manage Databases running in OCI DBCS

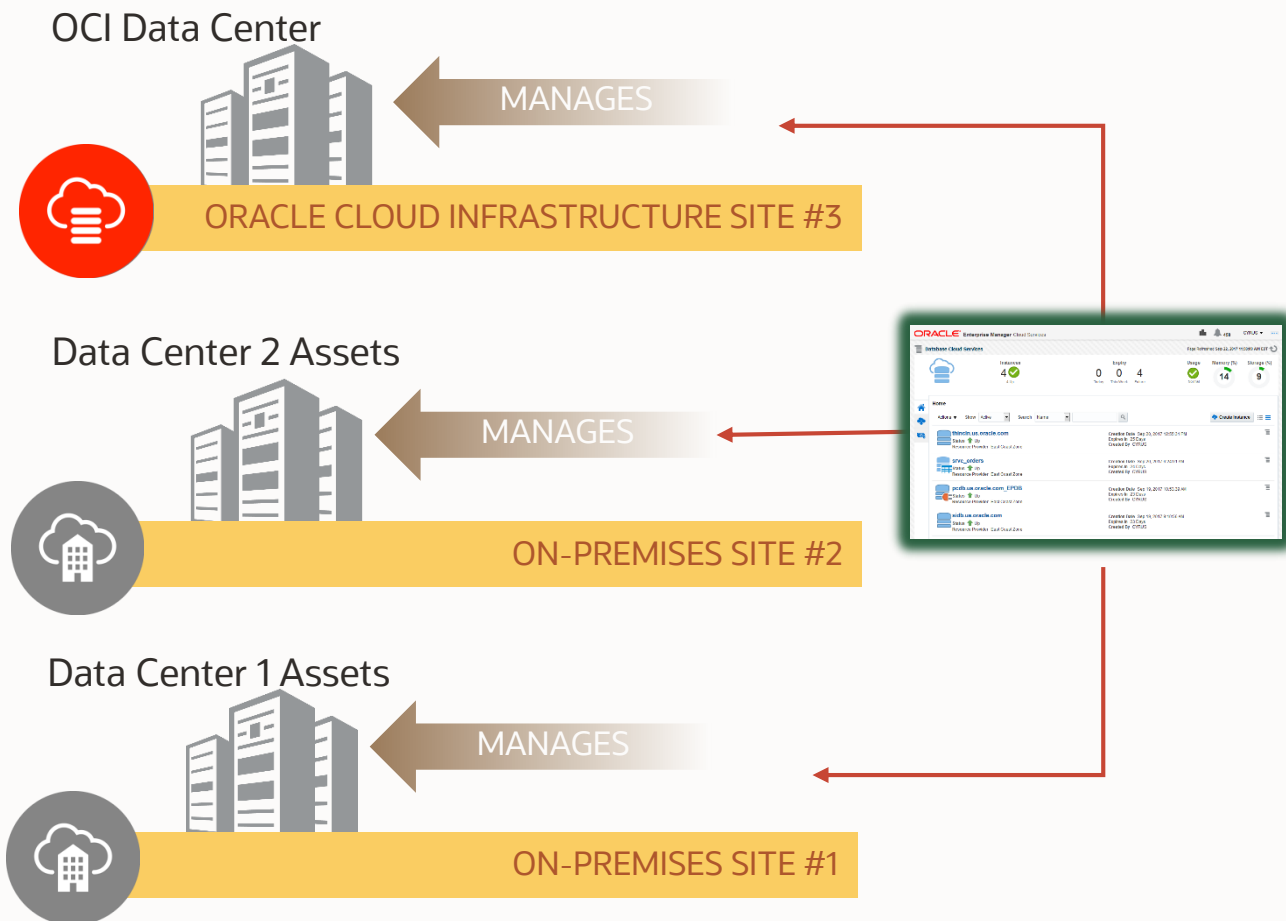
- On-premises EM or Marketplace EM
- Discover DBCS running on VM/BM
 - Deploy EM agent on host where OCI DB System is running
 - Discover CDB within DB System in EM
 - Requires OCI Connectivity
- Use DBLM and CMP features to manage pluggable databases.



View ▾ + Add ▾ ✕ Remove ⚙ Configure	
Name	Type
CloudDB_OCI	Database Instance : Container
Pluggable Databases	
CloudDB_OCI_CLOUDDB_PDB1	Pluggable Database
CloudDB_OCI_PROV_PDB	Pluggable Database
CloudDB_OCI_SSASALESAPPDEV	Pluggable Database
CloudDB_OCI_SSASSA_PDB	Pluggable Database
emrep	Database Instance : Container
ONPREMDB	Database Instance : Container
Columns Hidden 13	

OCI Database Discovered in EM

Self Service : Provision and Manage Database Assets



- Provision and manage **on-premises** assets with Enterprise Manager 13c
- Extended database management for **OCI-based** assets, with Enterprise Manager 13c Release Update 4 and above
- **Manage your entire Oracle Database fleet at scale, with less effort**
- **Same user experience, regardless of platform**

Self Service

Simple, Unified Provisioning for Onpremise and OCI Data Center

The screenshot shows the Oracle Enterprise Manager Cloud Control 13c interface. At the top, the 'Service Offerings' panel lists two options: 'Finance PDB on On-Prem' and 'Sales PDB on OCI DBCS'. The 'Sales PDB on OCI DBCS' option is selected. Below this, the 'Database Cloud Self Service Portal' is displayed. The 'Create Pluggable Database' section shows the 'Pluggable Database Configuration' with the following details: Service Template: Sales PDB on OCI DBCS, PDB Name: SalesAppDev, Database Service Name: SalesAppDev_Service, and Size: Small(CPU-1 cores, Memory-1 GB, Sessions-10 units, Storage-5 GB). The 'Pluggable Database Administrator Account' section shows Administrator Name: PDBADMIN, Password: [redacted], and Confirm Password: [redacted]. The 'Instance Details' section shows Request Name: SYSMAN - Wed Jun 10 2020 12:28:37 GMT and Zone: PaaS_PDB_Zone. The 'Properties' table has one row: Name: Optional, Value: [redacted]. The 'Instance Duration' section shows Start: Immediately, Duration: Indefinitely, and End Date: (UTC+00:00) Coordinated U. The 'Tablespaces' section shows Tablespace Name: [redacted].

Provisioning PDB on OCI DBCS on VM

The screenshot shows the Oracle Enterprise Manager Cloud Control 13c interface. At the top, the 'Service Offerings' panel lists two options: 'Finance PDB on On-Prem' and 'Sales PDB on OCI DBCS'. The 'Finance PDB on On-Prem' option is selected. Below this, the 'Database Cloud Self Service Portal' is displayed. The 'Create Pluggable Database' section shows the 'Pluggable Database Configuration' with the following details: Service Template: Finance PDB on On-Prem, PDB Name: FinanceDevPDB, Database Service Name: FinanceDevPDB_Service, and Size: Small(CPU-1 cores, Memory-1 GB, Sessions-10 units, Storage-5 GB). The 'Pluggable Database Administrator Account' section shows Administrator Name: PDBADMIN, Password: [redacted], and Confirm Password: [redacted]. The 'Instance Details' section shows Request Name: SYSMAN - Wed Jun 10 2020 14:00:33 GMT and Zone: OnPrem_PDB_Zone. The 'Properties' table has one row: Name: Optional, Value: [redacted]. The 'Instance Duration' section shows Start: Immediately, Duration: Indefinitely, and End Date: (UTC+00:00) Coordinated U. The 'Tablespaces' section shows Tablespace Name: pdb_tbs1.

Provisioning PDB in Onpremise Data Center

Migrating and Managing Databases in Hybrid Cloud : Summary

Migrating Databases

- IaaS Flavors
 - Provisioning
 - Gold image based provisioning
 - PDB (empty/with data) provisioning
 - Cloning/Migration
 - Database links based cloning
 - Backup and Recovery
 - Data pump export/import
 - Transportable Tablespaces (cross-platform)
 - Migrate non-CDB to PDB
- PaaS (Autonomous Database) GA in RU7
 - Migration Workbench
 - Data pump

Managing Databases in Cloud

- IaaS Flavors
 - Complete Database LCM (Provisioning, Patching, Config/Compliance)
- PaaS (DBCS on VM/BM)
 - Multitenant Management
 - Provision
 - Clone / Refreshable Clone
 - Unplug/Plug
 - Relocate
 - Delete
 - Unified Self Service Portal to manage PDB's in on-premises and OCI data center



The world of Hybrid Management

Björn Bolltoft

Product Management
Oracle Product Development

Agenda

- 1 Database Migration Planner
- 2 Manage Databases in Cloud
- 3 Enterprise Manager Chargeback & Metering

Database Migration and Consolidation: Considerations

What database migration/consolidation strategy to use?

Can workloads co-exist together for the chosen strategy, what conflicts exist?

Can the system handle peak workloads while maintaining performance?

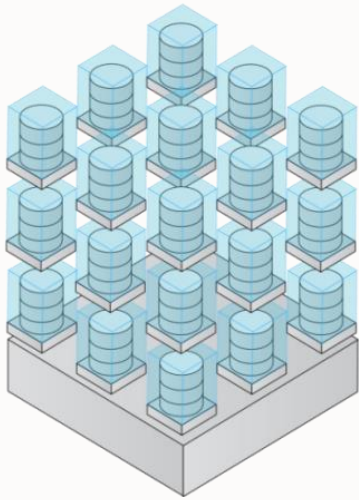
How to perform migration with reduced downtime?

How to test the chosen consolidation strategy to minimize risk?



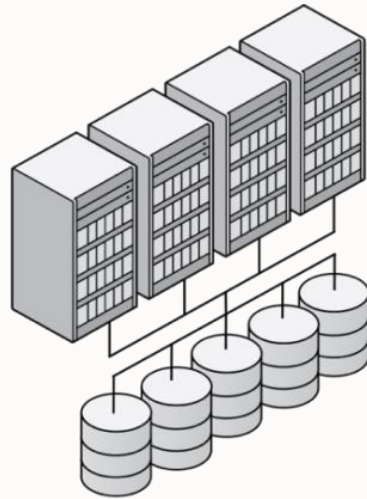
Consolidation Alternatives

Virtual Machines



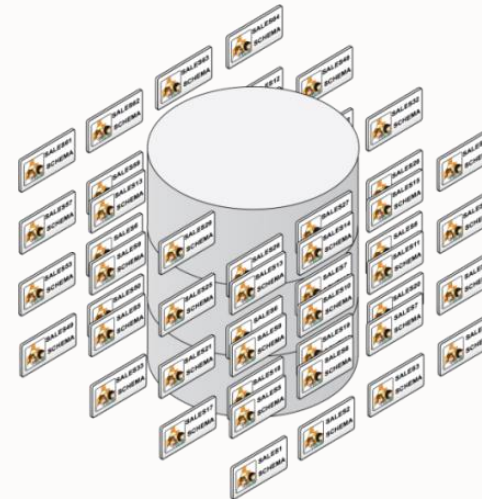
Share servers

Dedicated DBs



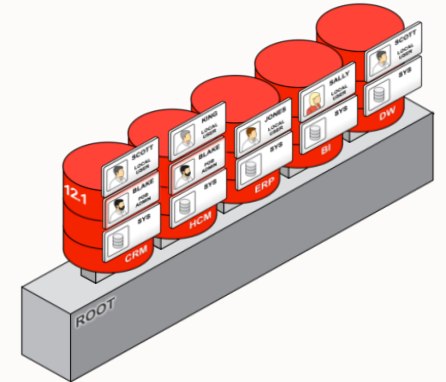
Share servers and OS

Dedicated Schema(s)



Share servers,
OS and database

Pluggable DBs

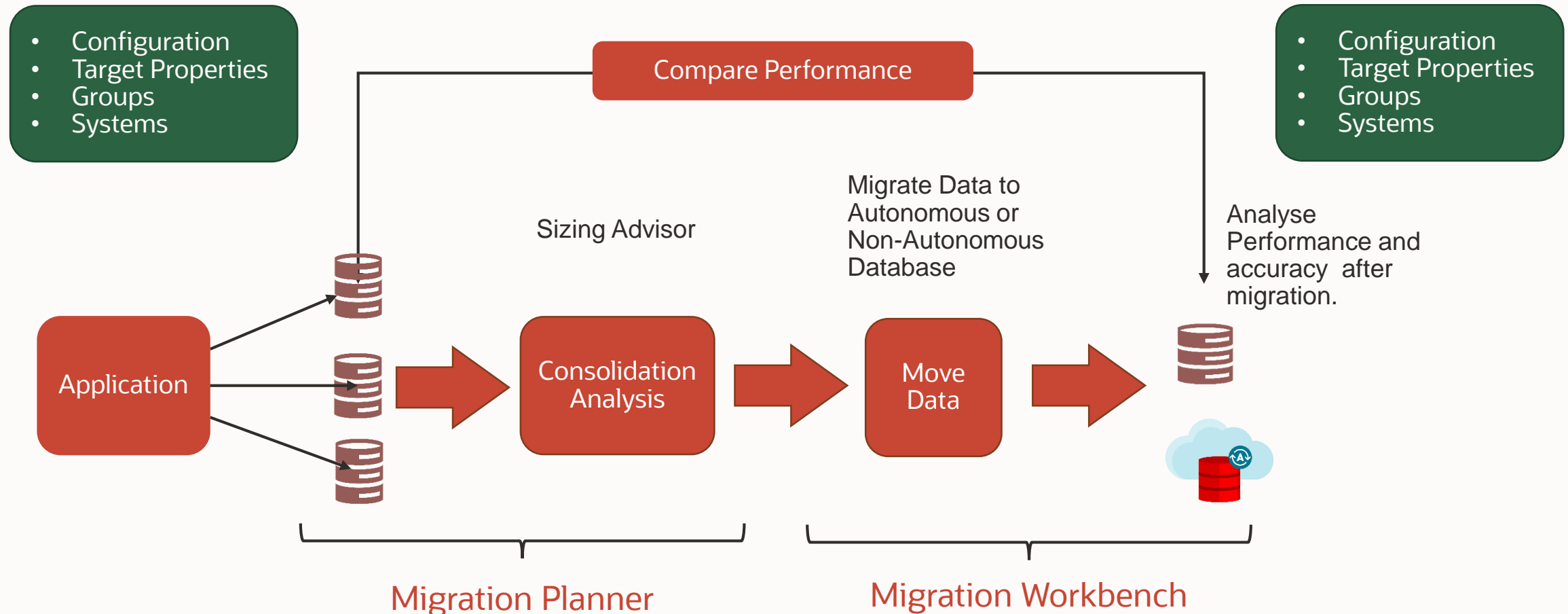


Share servers,
OS and database

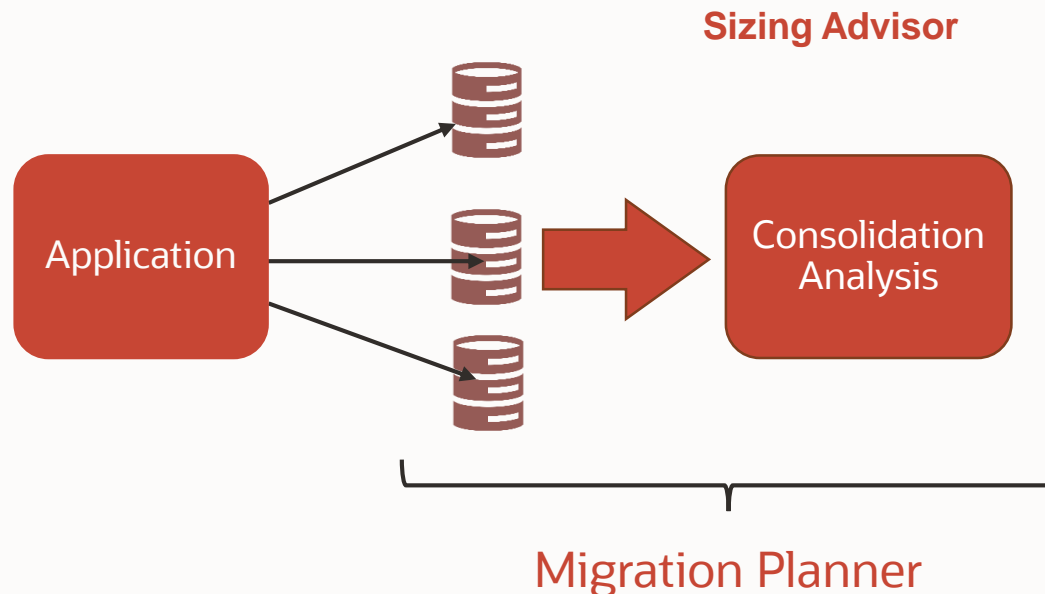
Increasing Consolidation

Migration Planner and Migration Workbench

Step-by-step migration process



Database Migration Planner



Comprehensive analytic solution for planning database migrations and consolidation

Provides a risk-free and accurate approach to consolidation by eliminating guess work, human errors

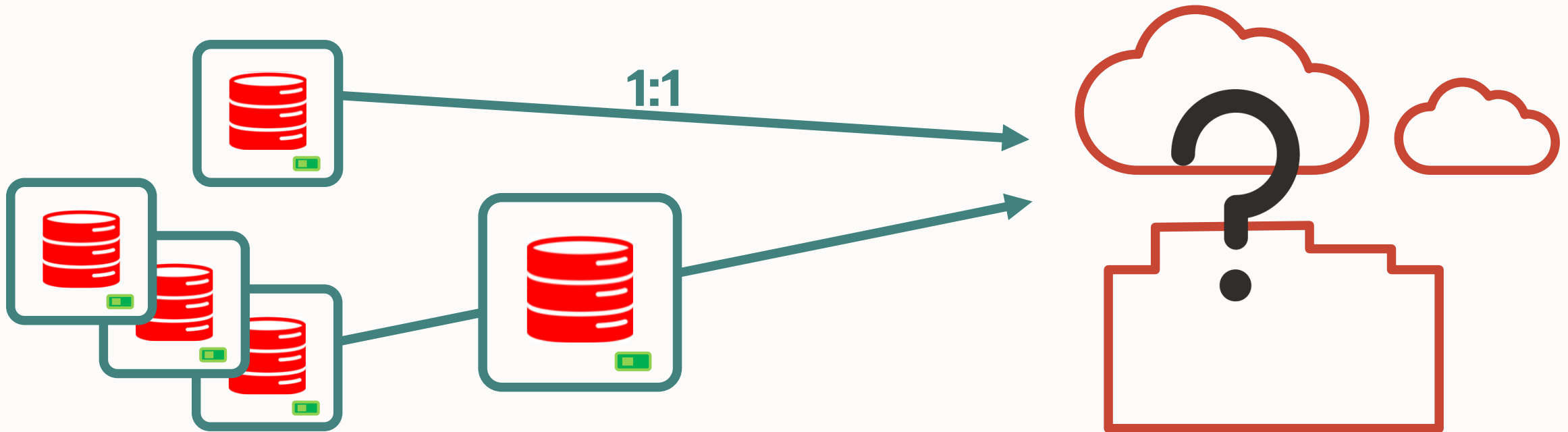
- Analysis based on historical workload (DB, Host metrics)
- Automation in all phases of consolidation from planning to deployment

Provides a flexible approach for various customer scenarios

- 10.2 DB versions and higher support
- Oracle Private Cloud, **Oracle Compute Cloud shapes (OC3-7, OC1M-OC5M)** or Exadata
- Support for workload capacity / cloud shape planning for single or consolidated databases

Analyze Cloud Capacity / Cloud Shape Required

The DB Migration Planner can be used when consolidating multiple databases or to analyze if one or multiple databases can be moved to the cloud and what cloud shape that is required to meet the required capacity



Database Consolidation Workbench

End-to-end Consolidation Solution

Plan

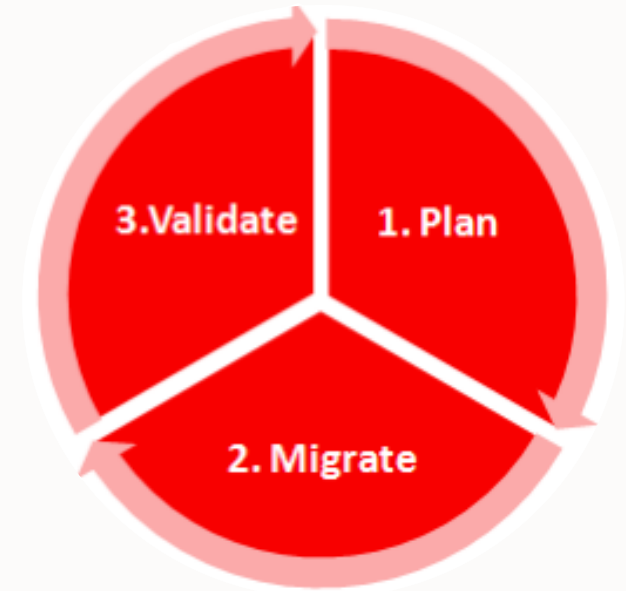
- Gives consolidation advice by identifying candidate databases for the designated consolidation platform using AWR data

Migrate

- Implements consolidation plan by migrating databases to new consolidation platform Migration Workbench

Validate

- Validates consolidation plan with Real Application Testing (SPA) by running test workloads on consolidated databases and concurrency tests with Database Replay



Database Migration Planner

Key Features and Planning Advice

1. Plan

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 Public Cloud consolidation

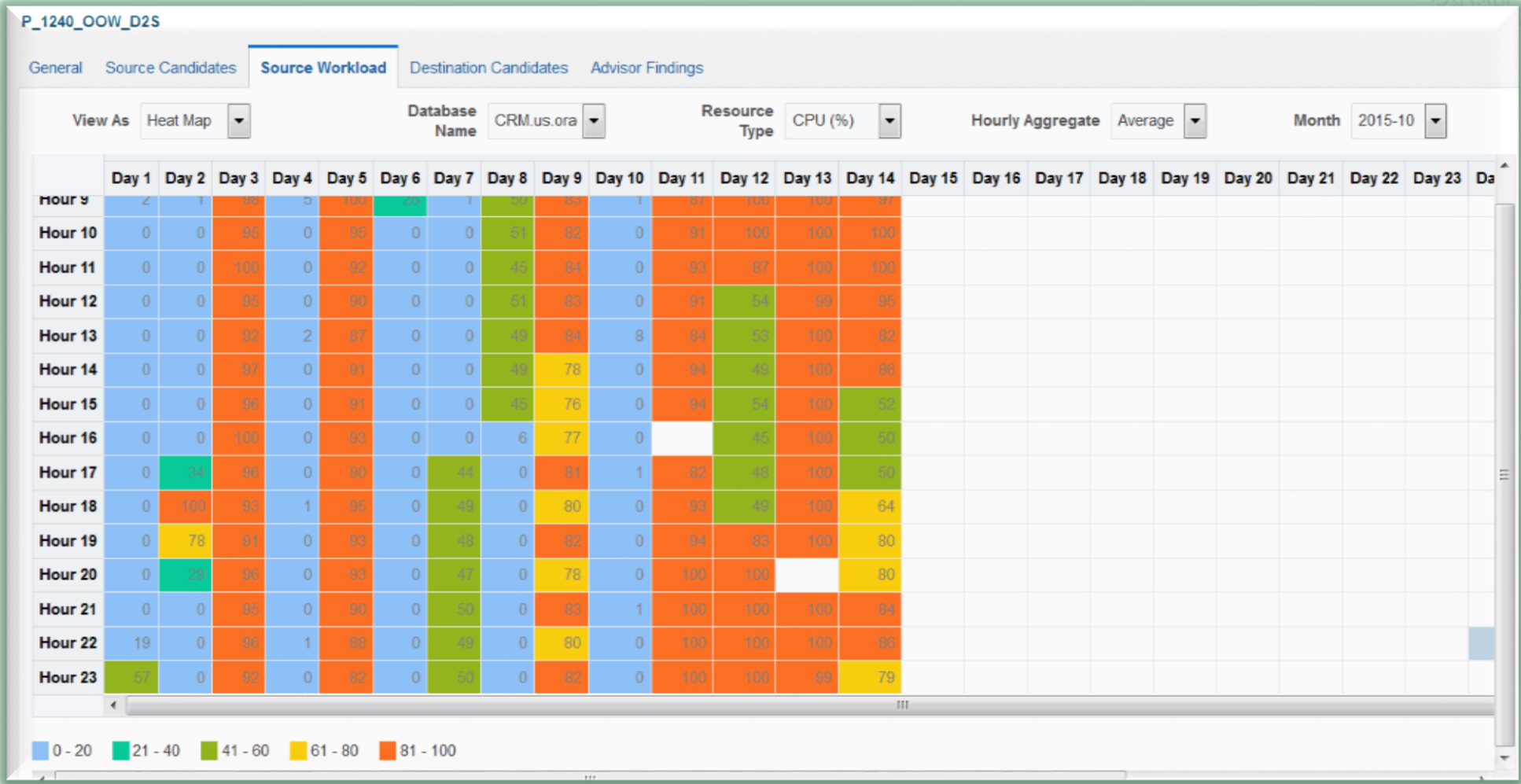
Consolidation optimization advice

- 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



Database Migration Planner Heatmap

1. Plan



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
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	

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

1. Plan

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
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 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#

1. Plan

Migration Planner – Screen Shot demo

ORACLE

Enterprise Manager Cloud Control 13c

Enterprise

Targets

Favorites

History

Setup

SYSMAN

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_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

1. Plan



Migration Planner – Screen Shot demo

1. Plan

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
OOV_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 (OOV_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 (⚠) 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	⚠	⚠											
Hour 1	23	22	22	22	22	22	22	19	23	25	25	25	41	33	33	32	⚠	⚠											
Hour 2	23	22	22	22	22	22	22	19	23	25	25	25	37	33	32	32	⚠	⚠											
Hour 3	23	22	22	22	22	22	22	19	23	25	25	25	37	33	32	32	⚠	⚠											
Hour 4	23	22	22	22	22	22	22	19	23	25	25	25	35	33	32	32	⚠	⚠											
Hour 5	23	22	22	22	22	22	22	19	23	25	25	25	35	33	32	32	⚠	⚠											
Hour 6	23	22	22	22	22	22	21	19	23	25	25	25	35	33	32	32	⚠												
Hour 7		22	22	22	22	22	19	19	23	25	25	25	35	32	32	32	⚠												
Hour 8	23	22	22	22	22	22	19	24	25	25	25	25	35	32	32	40	⚠												
Hour 9	23	22	22	22	22	22	19	23	25	25	25	25	35	32	32	37	⚠												

Migration Planner – Screen Shot demo

1. Plan

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
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 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

1. Plan

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 Start Date 5/31/2019 End 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

EnterpriseTargetsFavoritesHistorySetupSearchBellSYSMAN

Database Consolidation Workbench

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

ActionsViewCreate ProjectCreate ScenarioRe-run ScenarioImplement ScenarioReportDeleteDetach

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)

GeneralSourcesDestinationsRatioMappingStorageConfidenceViolationsExclusionsAdvisor Findings

ViewStart Date 5/31/2019End Date 11/18/2019Destination Mapping AutomaticConfiguration 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		

1. Plan



Migration Planner – Screen Shot demo

1. Plan

ORACLE Enterprise Manager Cloud Control 13c

Enterprise Targets Favorites History Setup

Database Consolidation Workbench

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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_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

1. Plan

ORACLE Enterprise Manager Cloud Control 13c

Enterprise Targets Favorites History Setup

Database Consolidation Workbench

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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
OWO_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 (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

1. Plan

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

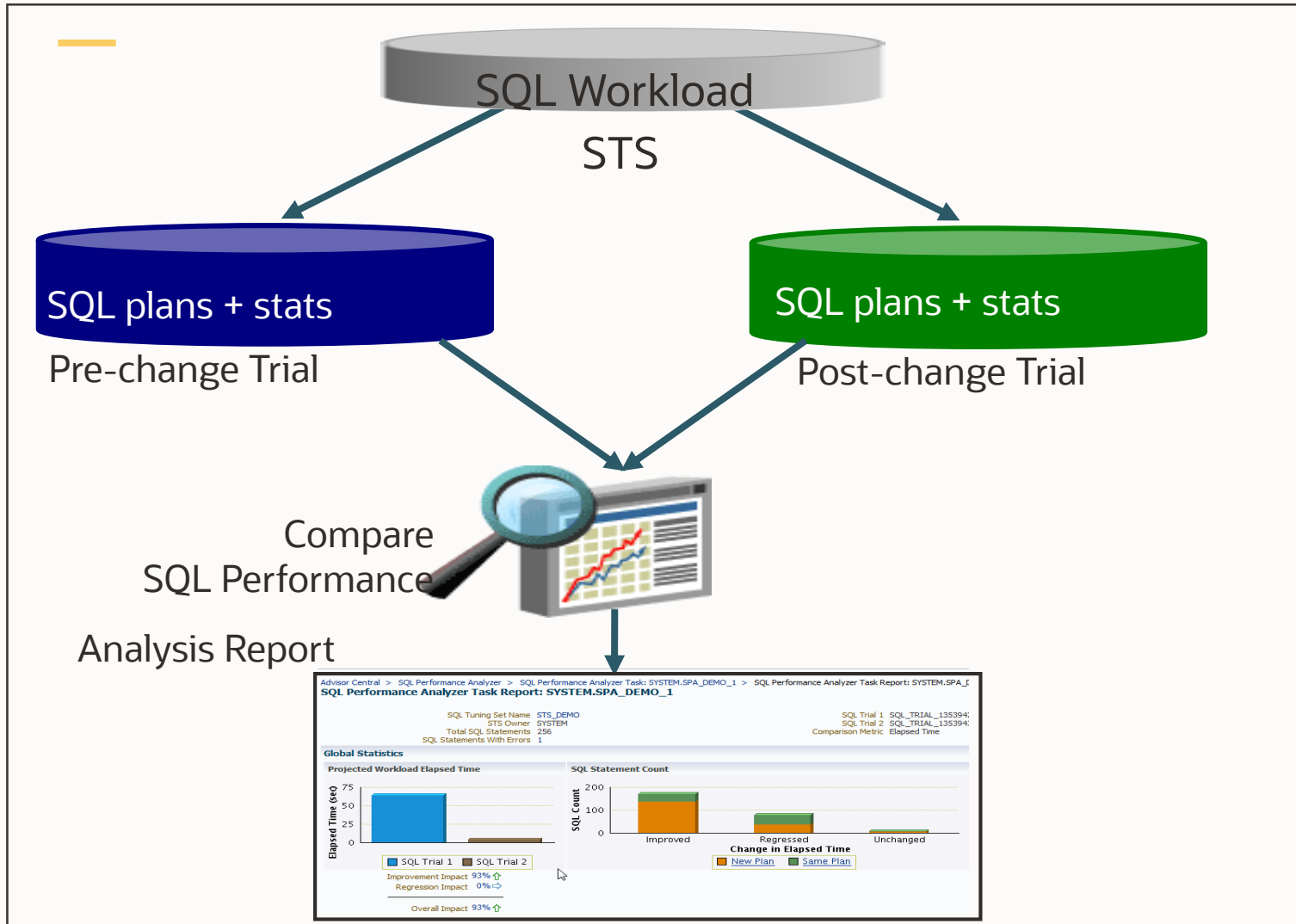
Total Data Points Evaluated 839 Data Points Meeting Requirements 839 Data Points Not Meeting Requirements 0 Confidence (%) 100

	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										

Database Migration Planner

Validating

3.Validate

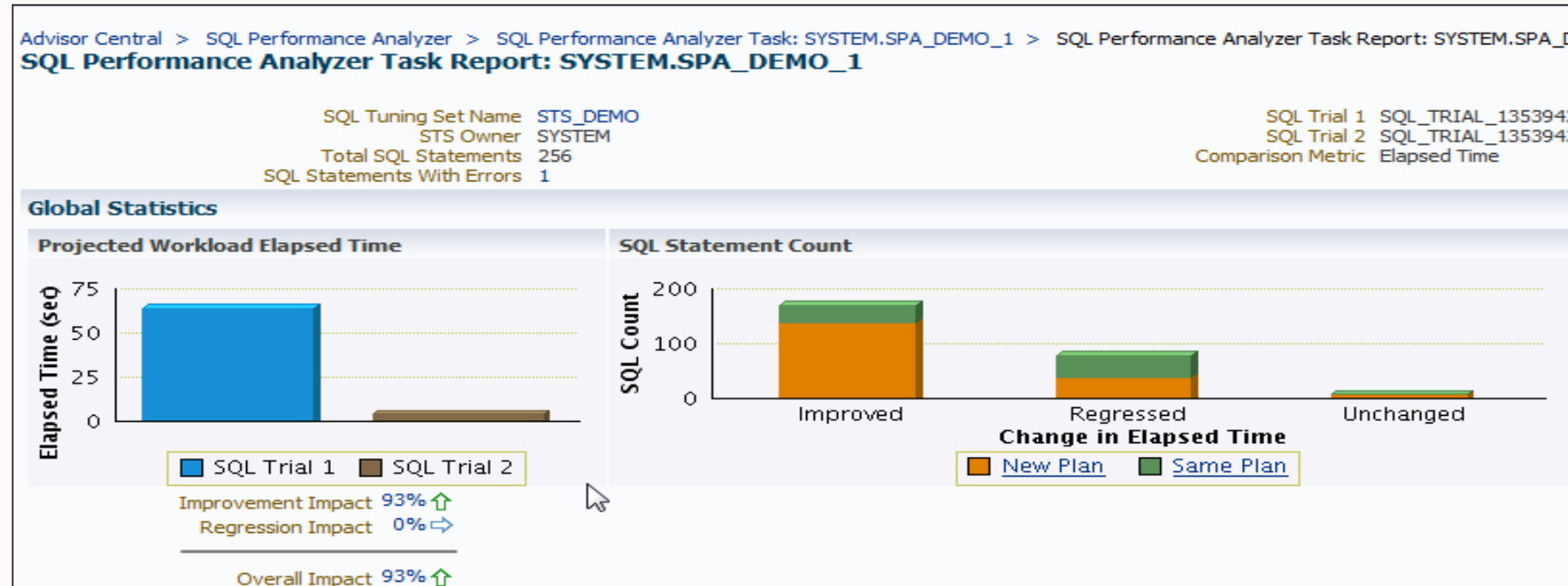


- Helps users predict the impact of system changes on SQL workload response time
- Analyzes performance differences
- Offers fine-grained performance analysis on individual SQL

Database Migration Planner

Validating

3.Validate

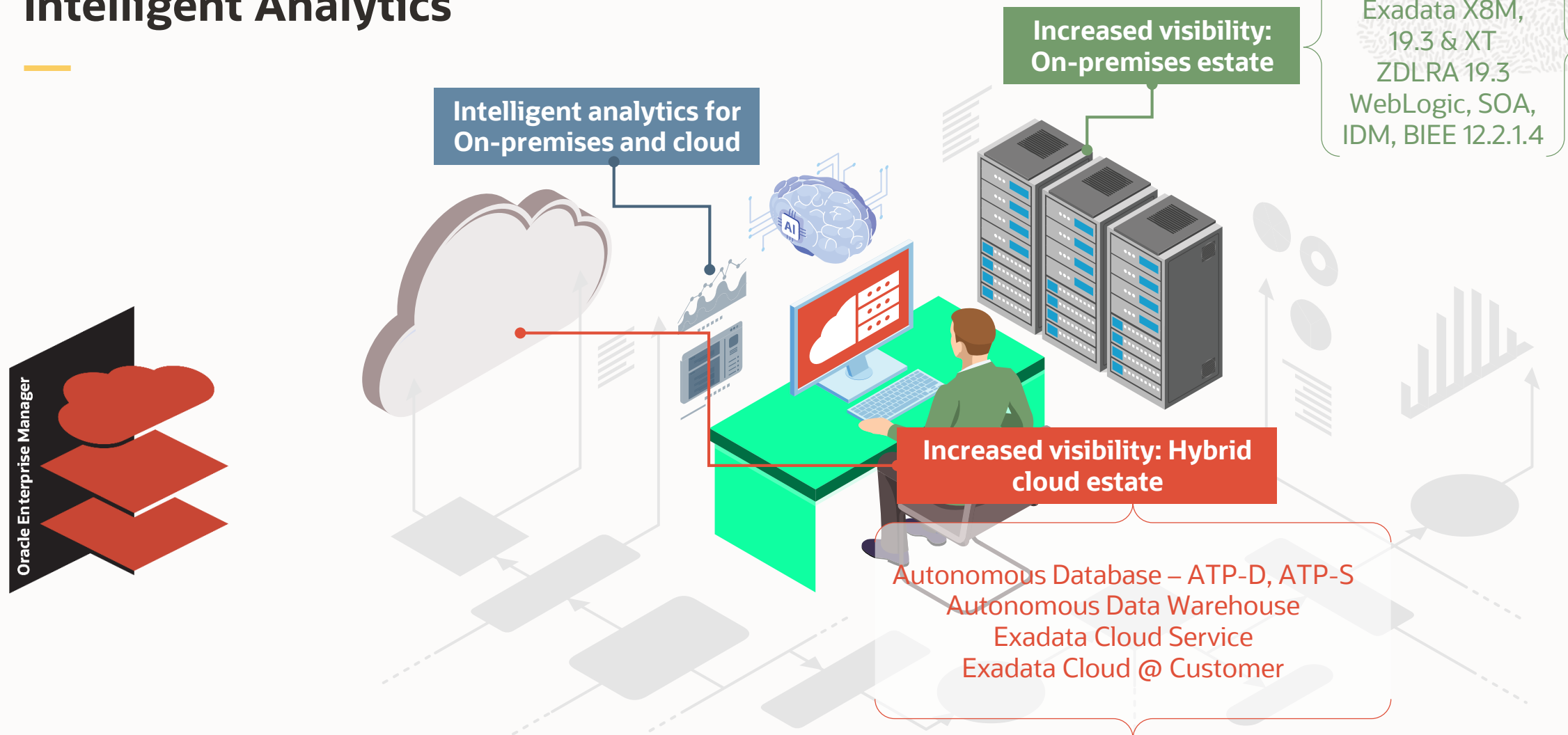


- Helps users predict the impact of system changes on SQL workload response time
- Analyzes performance differences

Agenda

- 1 Database Migration Planner
- 2 Manage Databases in Cloud
- 3 Enterprise Manager Chargeback & Metering

Increased Visibility and Intelligent Analytics



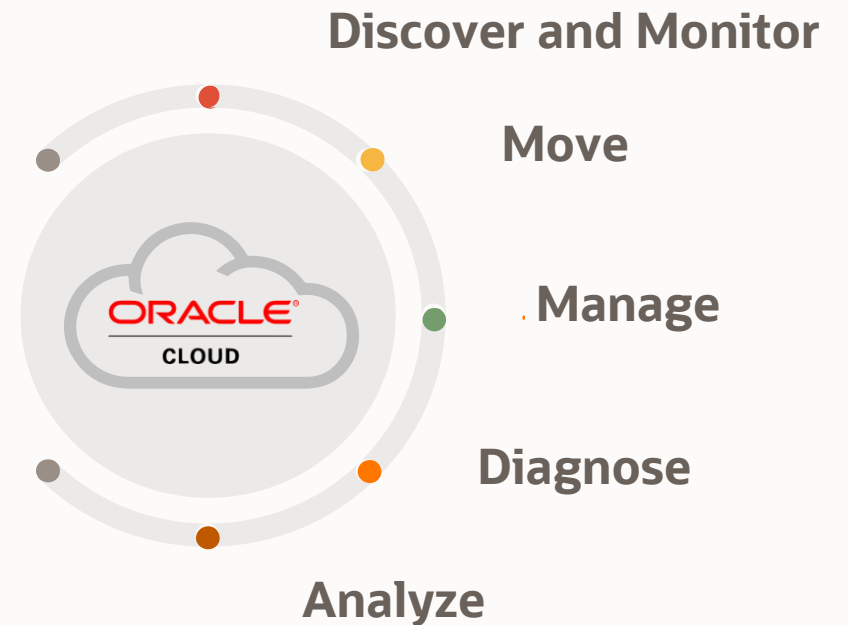
Seamless, Fleet-Wide Management of Autonomous and Cloud Databases

Adopt the cloud with confidence

- **New cloud-aware target types** for Autonomous and cloud DBs including Exadata Cloud
- **Enterprise-wide fleet dashboard** for finding “hot spots”

Optimize customer-managed components

- **Monitor** and **Respond** to performance and configuration related alerts
- **Manage** users, schema, roles, space, etc.
- **Diagnose and improve** application-level SQL logic
- **Lifecycle operations** like service instantiation, termination, scale-up/down etc., orchestrated via cloud-native APIs

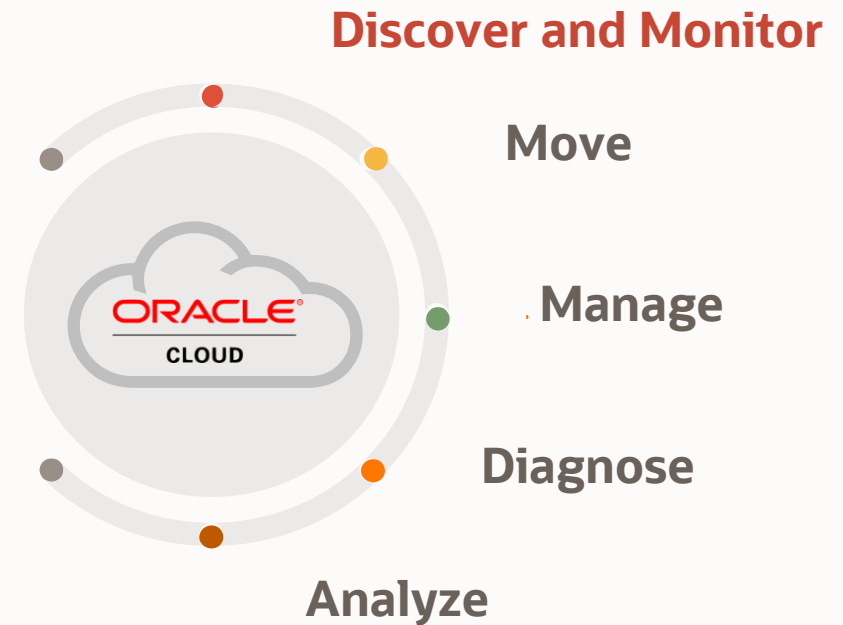


ADB Dedicated and Shared

Management with EM

Discovering Autonomous Databases

- Autonomous databases are treated as non-host targets and discovered manually using declarative process
- The EM agent that monitors the status, health, and performance of the ADB targets would run on a remote host (On-premises or OCI)
- Post discovery, EM agents start monitoring Autonomous DB and display a comprehensive set of metrics



- EM 13.3 PG supports ATP-D
- EM 13.4 RU4 adds support for ADB-S, ADW-D, ADB-D Cloud at Customer

Discover Autonomous Database targets

User Experience

- ADB admin creates the database from OCI console and downloads the credentials wallet
- Installs EM on OCI Marketplace or configure On-premises EM to talk to OCI
- Logs into EM user and does a manual discovery via UI or emcli
- User inputs ADB wallet file, ADB monitoring user credential (unlocks it if needed), ADB admin credentials for active management.
- All connections would be via TCP over VPN or Fast connect.
- ADB databases are discovered and ready to be monitored via EM

Discover Autonomous Database targets

User Experience

Autonomous Database > Autonomous Database Details

em-atp

DB Connection

Scale Up

AVAILABLE

Autonomous Database Info

General Information

Database Name: ematpd

Workload Type: Transac

Compartment: atpdpri

OCID: ...zbrasa

Created: Sat, 22 Jun 2019

CPU Core Count: 1

Storage (TB): 1

Database Version: 19.0.0

Lifecycle State: Availabl

Resources

Backups (8)

Create Manual Backup

Automatic Backup

Database Connection

DB CONNECTION

APPLICATION CONNECTION

You will need the client credentials and connection information to connect to your database. The client credentials include the wallet, which is required for all types of connections.

Download Client Credentials (Wallet)

To download your client credentials, click Download, and supply a password for the wallet.

Download

Connection Strings

Use the following connection strings or TNS names for your connections. See the documentation for details. Oracle recommends using TLS connections to connect to your Autonomous Database.

TNS Name	Connection String
ematpd_tp	...ME=EMATPD_tp.atp.oraclecloud.com)))
ematpd_medium	...MATPD_medium.atp.oraclecloud.com)))
ematpd_tpurgent	...TPD_tpurgent.atp.oraclecloud.com)))
ematpd_low	...E=EMATPD_low.atp.oraclecloud.com)))
ematpd_high	...=EMATPD_high.atp.oraclecloud.com)))
ematpd_tp_tls	...ME=EMATPD_tp.atp.oraclecloud.com)))
ematpd_medium_tls	...MATPD_medium.atp.oraclecloud.com)))
ematpd_tpurgent_tls	...TPD_tpurgent.atp.oraclecloud.com)))
ematpd_low_tls	...E=EMATPD_low.atp.oraclecloud.com)))
ematpd_high_tls	...=EMATPD_high.atp.oraclecloud.com)))

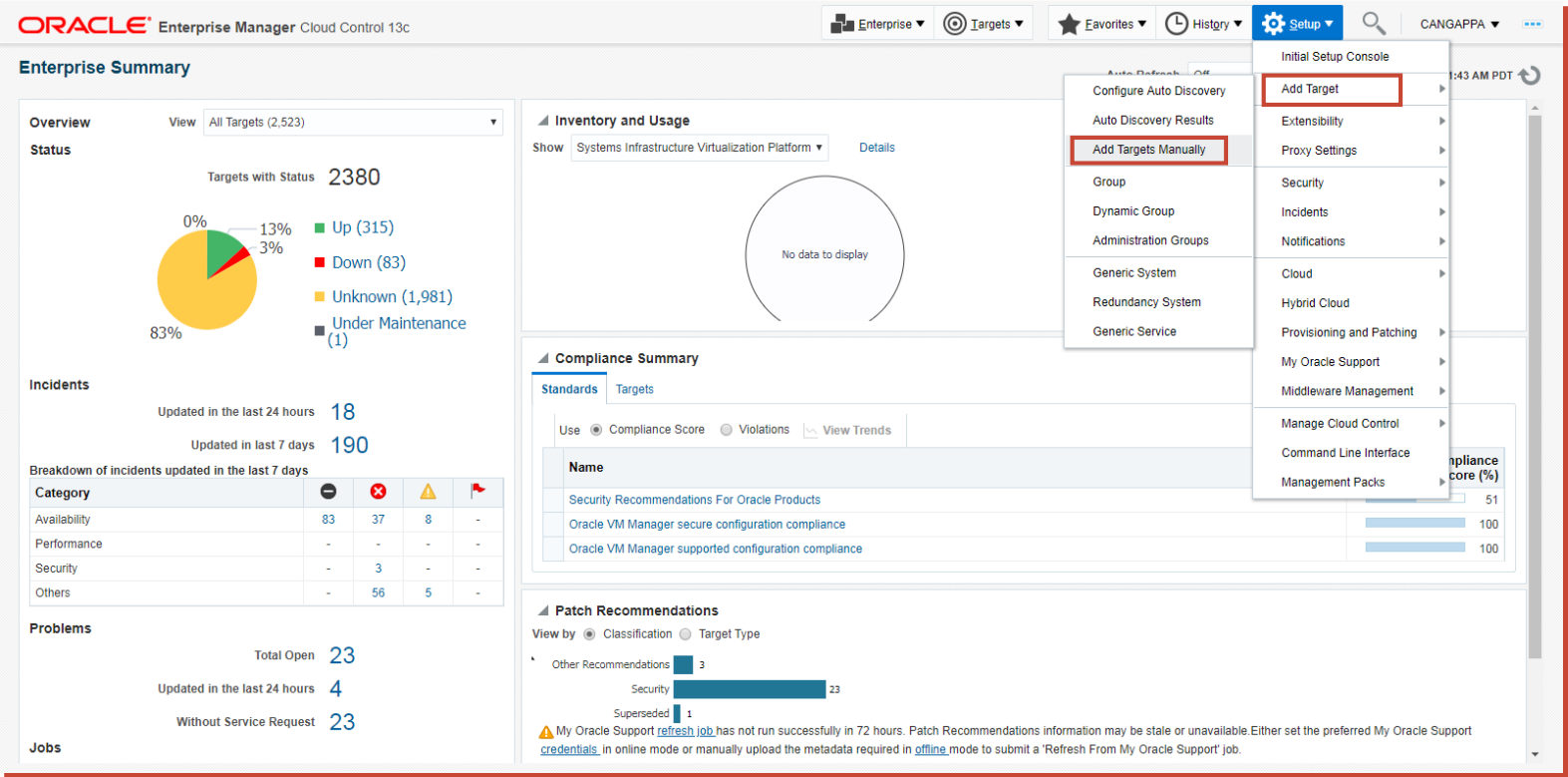
Showing 10 Item(s)

ADB Admin: Downloads the wallet from OCI console, unlocks and reset the password for adbsnmp user



Discover Autonomous Database targets

User Experience



ADB Admin: Logs into EM, does a manual discovery via UI or emcli



Discover Autonomous Database targets

User Experience

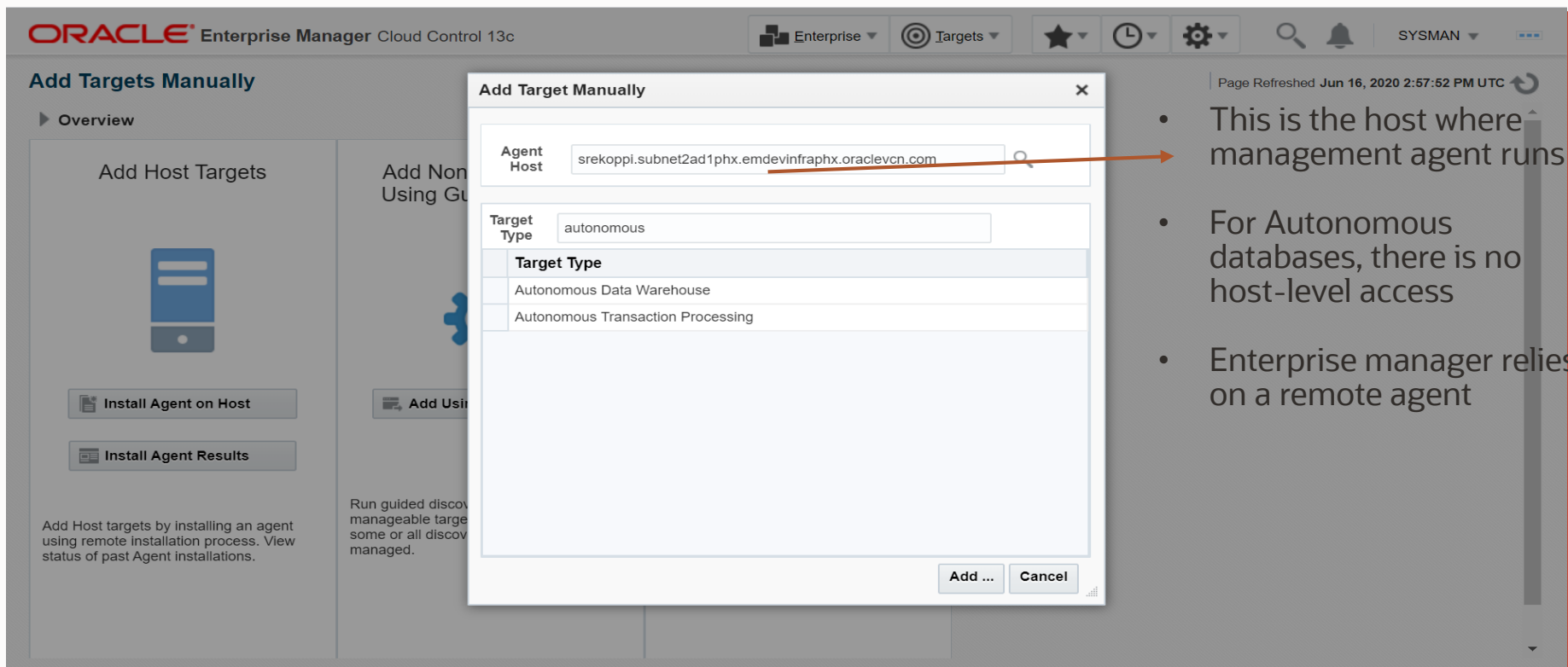
The screenshot displays the Oracle Enterprise Manager Cloud Control 13c interface. The top navigation bar includes the Oracle logo, 'Enterprise Manager Cloud Control 13c', and several menu items: Enterprise, Targets, Favorites, History, Setup, and a search icon. The main content area is titled 'Add Targets Manually' and includes a 'Page Refreshed Apr 1, 2019 10:03:21 AM PDT' timestamp. Below the title, there is an 'Overview' section with three columns:

- Add Host Targets:** Features an icon of a server rack. It includes buttons for 'Install Agent on Host' and 'Install Agent Results'. The description states: 'Add Host targets by installing an agent using remote installation process. View status of past Agent installations.'
- Add Non-Host Targets Using Guided Process:** This column is highlighted with a red border. It features an icon of two interlocking gears. It includes a button labeled 'Add Using Guided Process'. The description states: 'Run guided discovery on a host to find manageable targets. Choose to promote some or all discovered targets to become managed.'
- Add Non-Host Targets Using Declarative Process:** Features an icon of a document with a pencil. It includes a button labeled 'Add Target Declaratively'. The description states: 'Add targets by explicitly specifying monitoring properties.'

ADB Admin: Adds ATP-D as a non host target

Discover Autonomous Database targets

User Experience



ORACLE® Enterprise Manager Cloud Control 13c

Enterprise Targets

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Add Targets Manually

Overview

Add Host Targets

Add Non Host Targets Using Guided Discovery

Install Agent on Host

Install Agent Results

Add Host targets by installing an agent using remote installation process. View status of past Agent installations.

Run guided discovery to discover and add manageable targets. Some or all discovered targets can be managed.

Add Usi

Add Target Manually

Agent Host: srekoppl.subnet2ad1phx.emdevinfra.phx.oraclevcn.com

Target Type: autonomous

Target Type

- Autonomous Data Warehouse
- Autonomous Transaction Processing

Add ... Cancel

- This is the host where management agent runs
- For Autonomous databases, there is no host-level access
- Enterprise manager relies on a remote agent

ADB Admin: Adds ATP as a non host target

Discover Autonomous Database targets

REST and EMCLI

`https://<em_url>:<em_port>/em/websvcs/restful
/emws/oracle.sysman.db/v0/discovery/add_cloud
_db_target`

```
{  
  "target_name": "adw_rest",  
  "target_type": "oracle_cloud_atp",  
  "agent_host": "adbhost",  
  "credentials": "UserName:adbsnmp;password:<password>",  
  
  "zip_file_location": "/net/den01nrx/scratch/tekkrishn/atpd/htxadw/tenant1.tenant.zip",  
  
  "service_name": "adwp_low",  
  "wallet_password": "<password>",  
  "is_dedicated": "true"  
}
```

```
./emcli login -username=adbuser -  
password=<password>  
emcli add_cloud_db_target -  
credentials="UserName:adbsnmp;password:<password>" -  
agent_host="adbhost" -  
target_name="demo_emcli" -  
target_type="oracle_cloud_atp" -  
zip_file_location="/net/den01nrx/scratch/tekkrishn/atpd/htxadw/tenant1.tenant.zip" -  
service_name="adwp_low" -  
wallet_password="Welcome_123" -  
is_dedicated="true"
```

Discover Autonomous Database targets

User Experience

Databases

Performance ▾ Availability ▾ Security ▾ Schema ▾ Administration ▾

View ☐ Database Load Map ☒ Search List

Search

Find

Name ▾

View ▾

+ Add ▾

✕ Remove

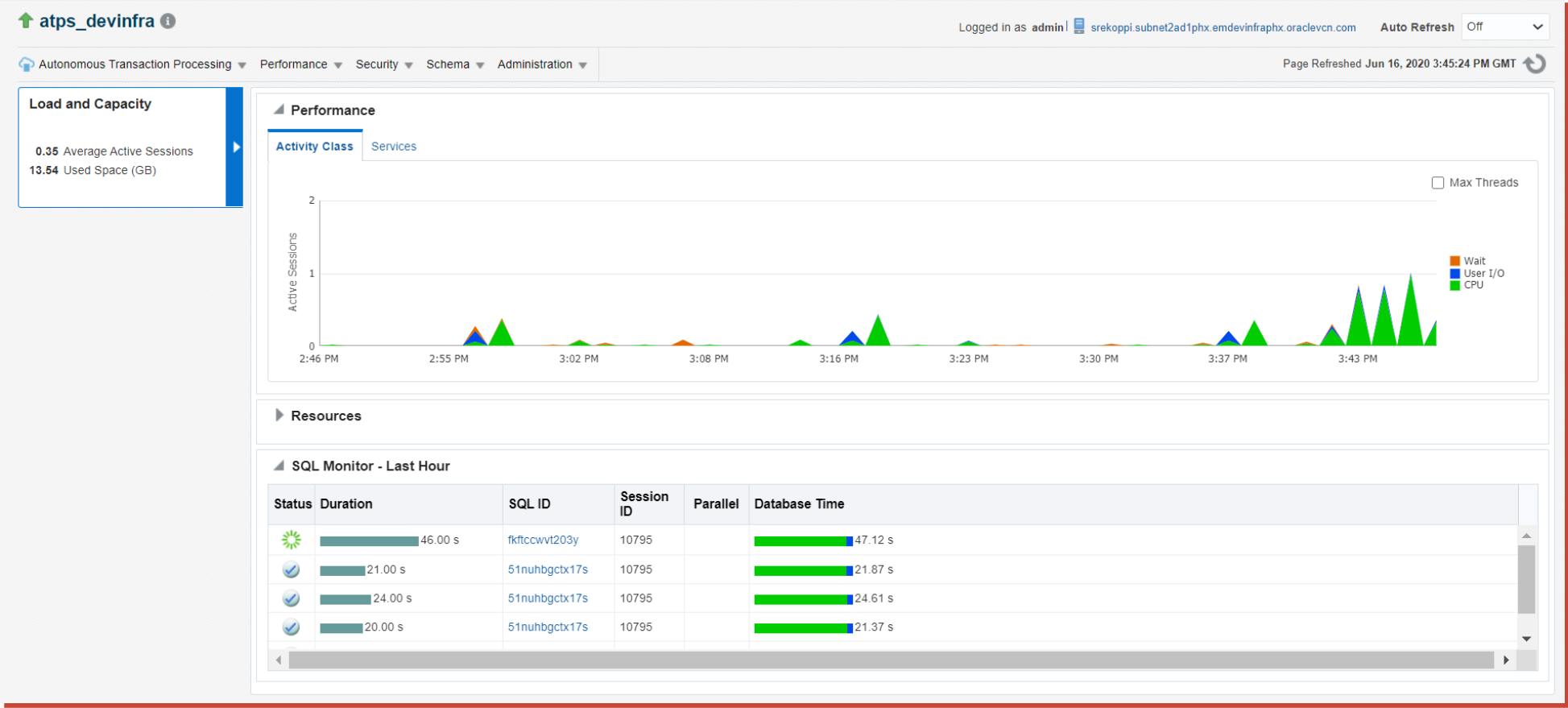
⚙ Configure

Name	Type	Status	Target Version	Incidents			Average Compliance Score	Member Status Summary			
adw_devinfra	Autonomous Data Warehouse		19.5.0.0.0	0	0	0	N/A	0	0	0	0
atps_devinfra	Autonomous Transaction Processing		19.5.0.0.0	0	0	0	N/A	0	0	0	0
ATPS_PE	Autonomous Transaction Processing			0	1	0	N/A	0	0	0	0
Oemrep_Database	Database Instance		12.1.0.2.0	0	0	0	N/A	0	0	0	0

ADB databases are discovered and ready to be monitored via EM



ADB Home Page in EM

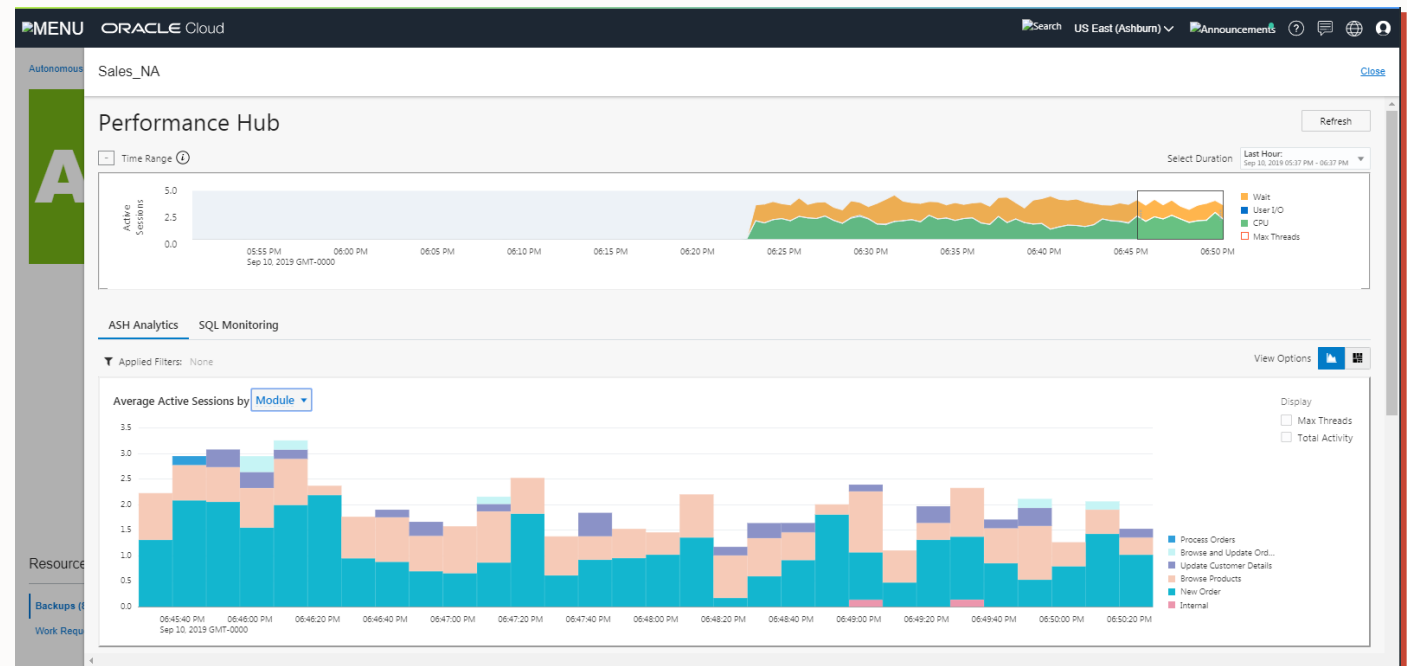


ADB Dedicated and Shared

Management In OCI Console

Performance Hub

- Integrated system-wide and session-specific views of database activity
 - ASH Analytics
 - Real-Time SQL Monitoring
 - SQL Details
 - Workload Profile
 - Blocking Sessions
 - Guided problem resolution
 - Analyze transient performance problems with the application that are short-lived



Agenda

- 1 Database Migration Planner
- 2 Manage Databases in Cloud
- 3 Enterprise Manager Chargeback & Metering

Why Use Metering and Chargeback?

- Increasing adoption of consolidation platforms such as Exadata
 - Need to meter the resources used by each application
 - Used to measure the business value of I.T. investments
- Cloud computing / self-service
 - Need to meter resources consumed by self-service cloud users
 - Chargeback allows cloud users to take control of their I.T. Costs

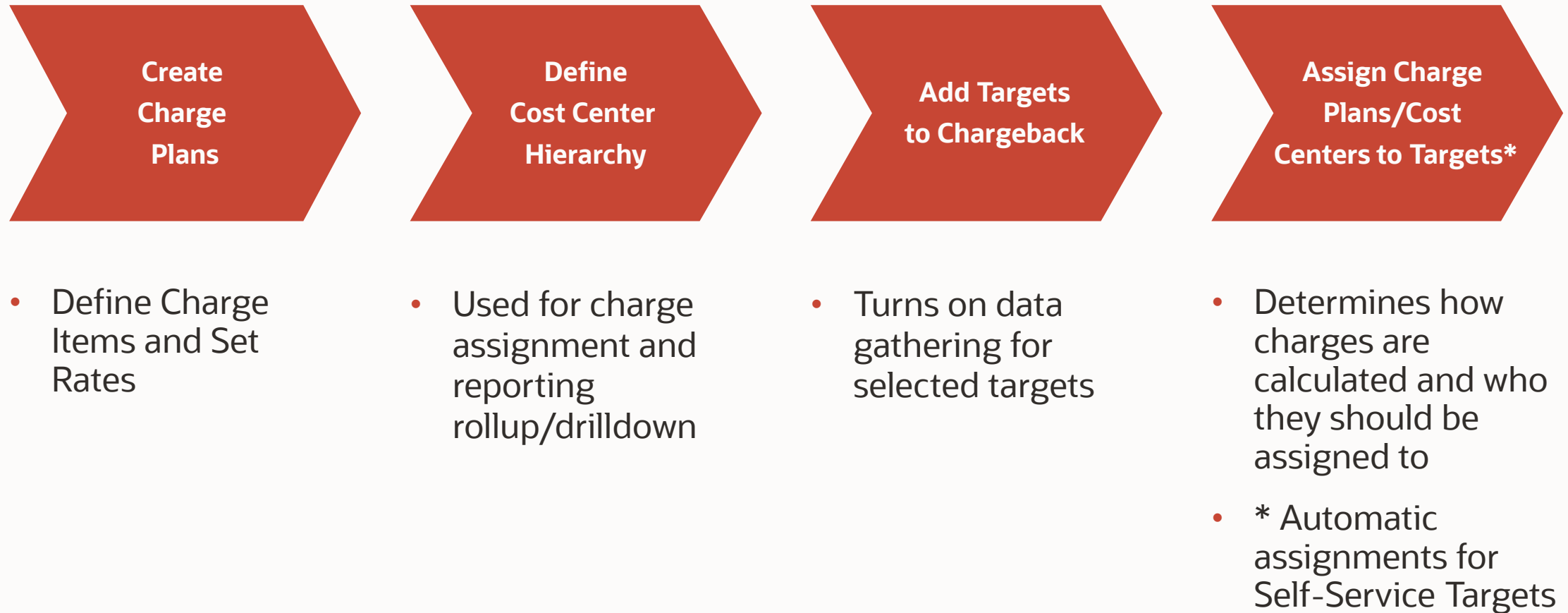


Enterprise Manager Chargeback

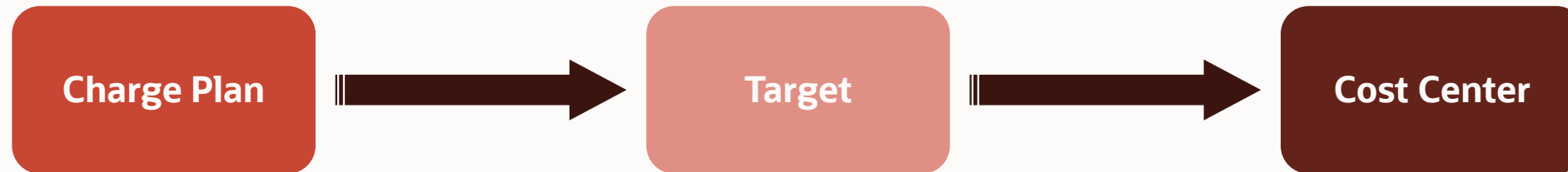


- An out-of-the-box, integrated solution for Metering and Chargeback of Enterprise Manager targets
- Based on target metric and configuration data collected by Enterprise Manager
- Provides I.T. providers and consumers with reports showing usage and charge information
- Open integration with external applications such as billing engines

Chargeback Setup



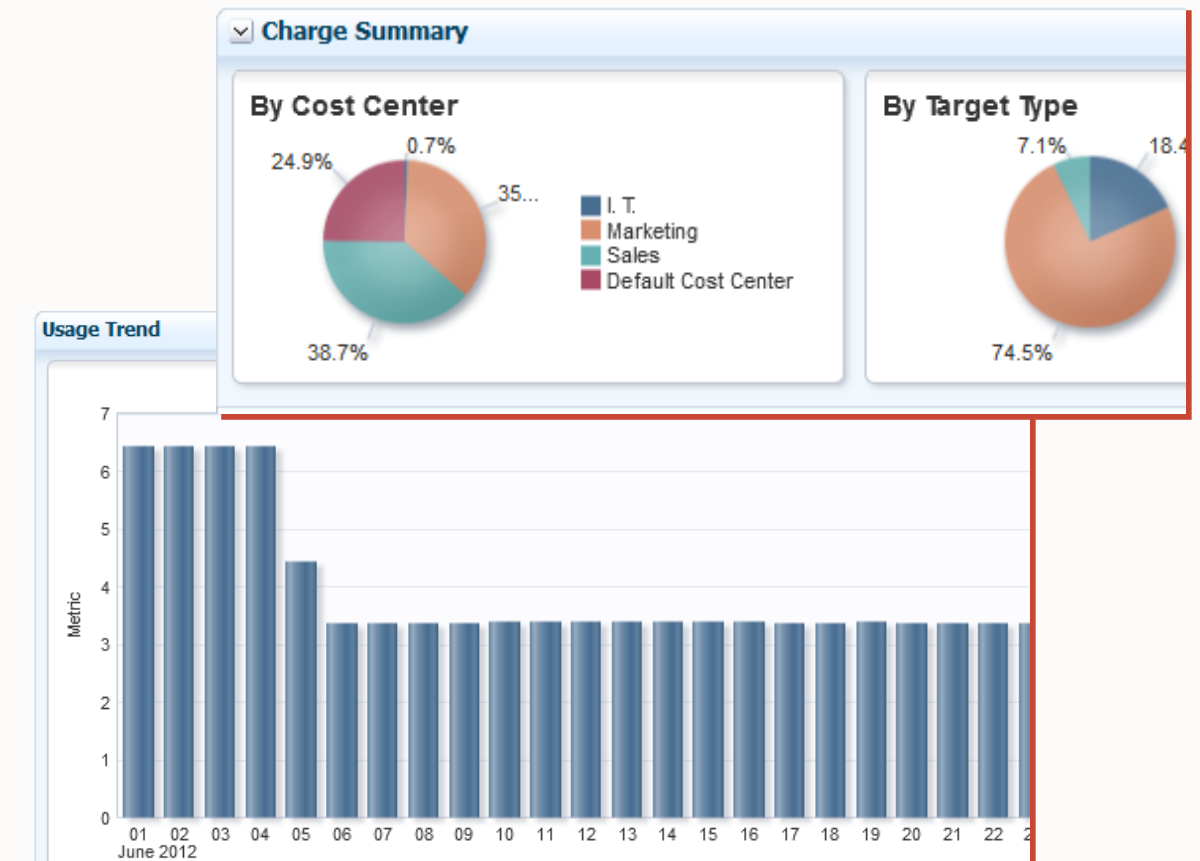
Target Charge Plan/Cost Center Assignment



- Charge Plan and Cost Center assignment determines:
 - Plan used in charge calculations
 - Cost Center the charge is allocated to
- Assignment to composite targets propagates to members
- Automatic assignment for self-service Oracle VM Zone and PaaS Infrastructure Zone targets
 - Charge Plan inherited from Zone
 - Cost Center set as Self-Service user

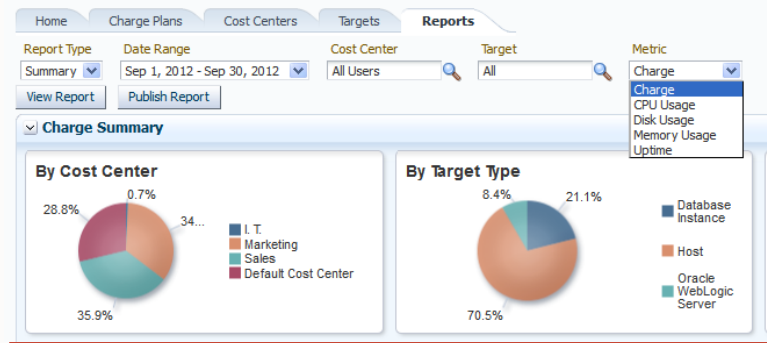
Chargeback Summary and Trending Reports

- Summary Reports
 - Show charge and resource utilization data summarized for specified period
 - Drill-down by Cost Center, Target Type, Resource
- Trending Reports
 - Show charge and utilization trend over specified period
 - Useful for I.T. resource planning

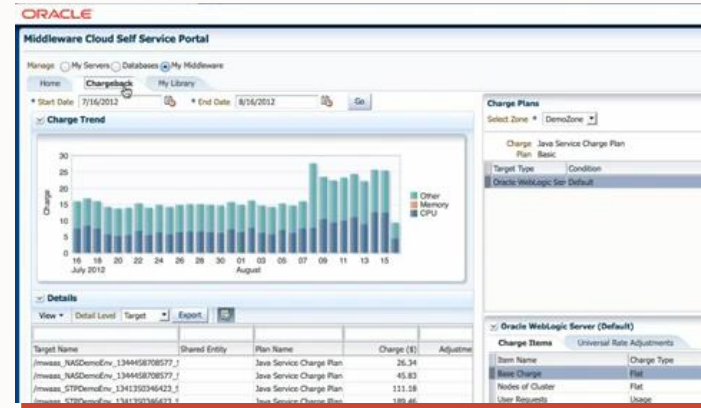


Chargeback Reporting Interfaces

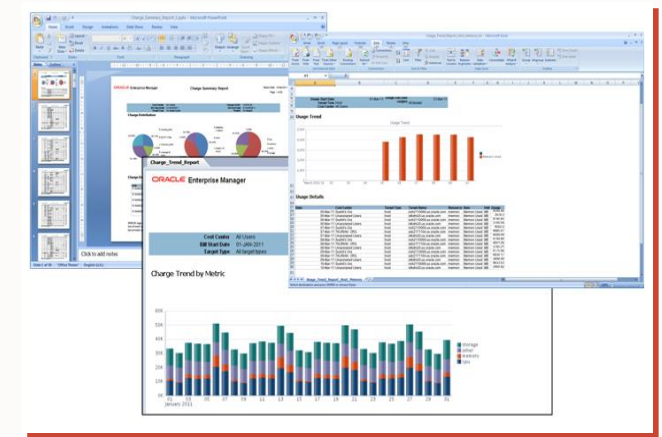
Chargeback Administrator



Self-Service Portal User



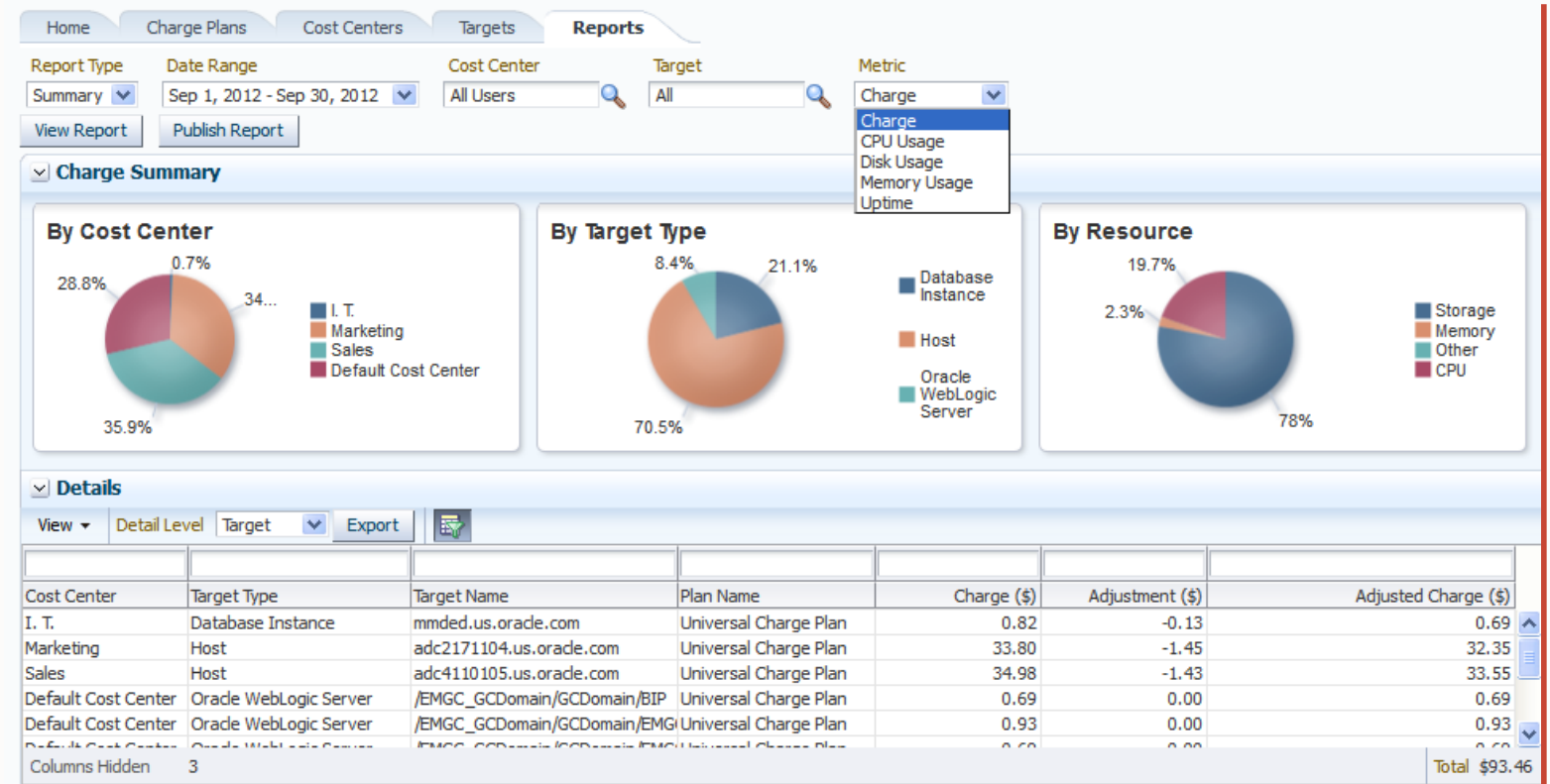
Line of Business User



- Charge reports are available from a variety of different interfaces
 - Chargeback Application
 - Self-Service Portal
 - BI Publisher

Chargeback Administrator Reports

- Summary and Trending reports for Usage and Charge
- Drilldowns
- Detail view with selectable detail levels
- Export data to Excel



Integrated Cloud

Applications & Platform Services



Thank you

