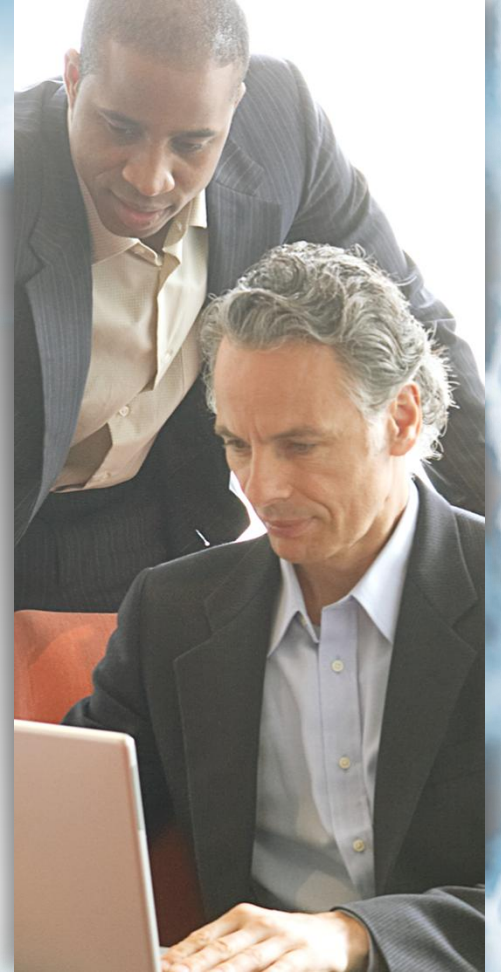
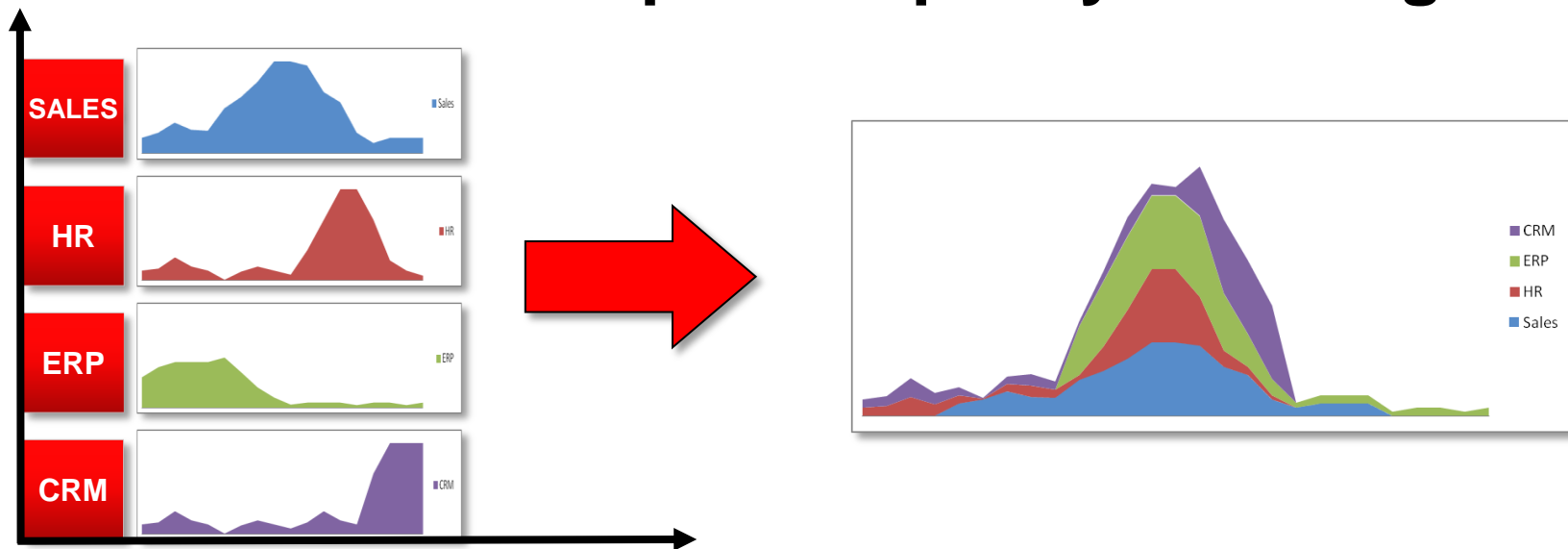


Adatbázis tesztkörnyezetek kialakítása



ORACLE

Workload Scale Up for Capacity Planning



- Enables capacity planning by scaling up workload replay
 - **Time-shifting:** Align workload peaks for maximum concurrency
 - **Workload folding:** Split single capture into multiple pieces and replay them concurrently
 - **Schema duplication:** Duplicate and replay workload in each schema concurrently

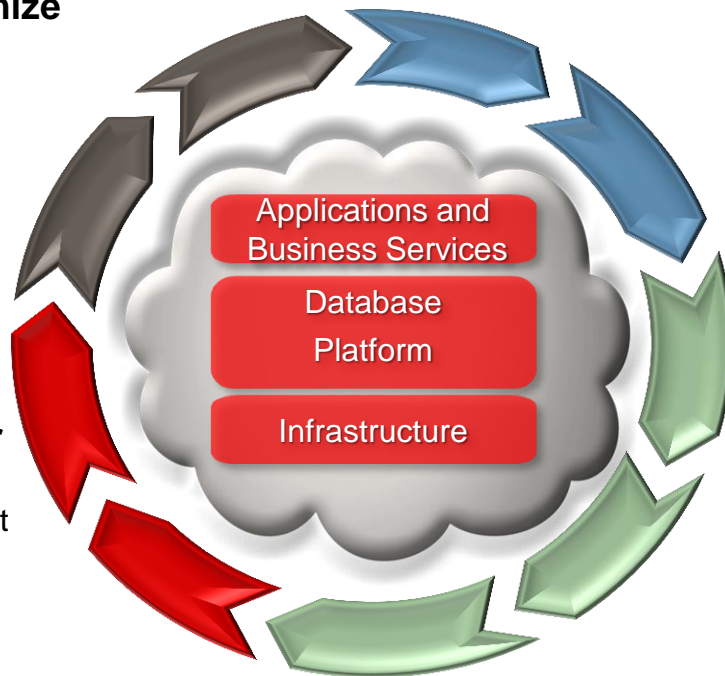
Deliver DBaaS via a Lifecycle Approach

4. Meter, Charge, Optimize

- Meter resource utilization
- Chargeback/Showback

3. Manage & Monitor

- Database monitoring
- Configuration management
- Full stack management



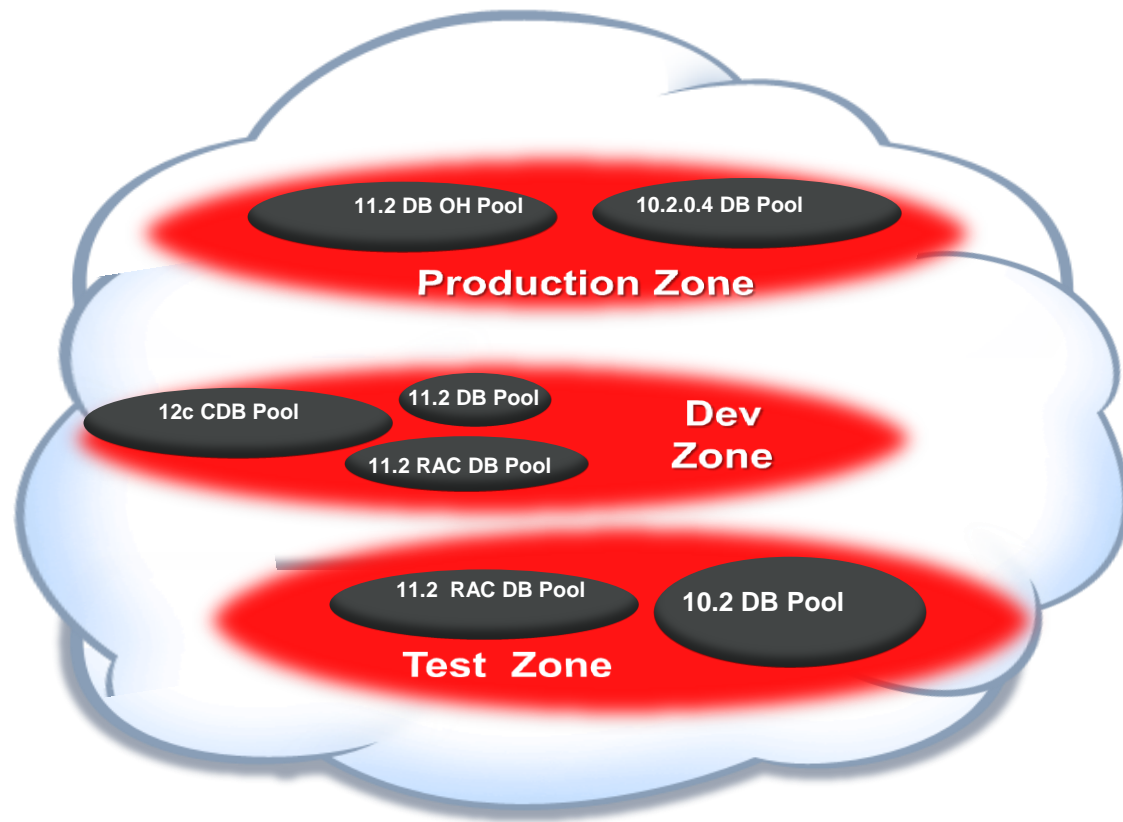
1. Plan & Setup the DB Cloud

- Capacity & consolidation planning
- Asset discovery
- Setup Resource Pools
- Setup Policies

2. Enable Self-Service

- Define Service Catalog
- Enable Service Governance
- Enable integration via APIs

Modeling DBaaS Resources



■ Database Resource Pool

A group of homogeneous clustered or non-clustered resources exhibiting common characteristics. Example:

- Pool of 11.2 Database Oracle Homes (for dedicated databases)
- Pool of 12c Container Databases (for PDBs)

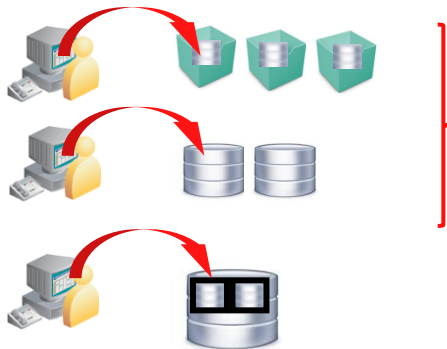
■ Zone

A logical grouping of cloud infrastructure resources based on QOS, functional, departmental or geographic boundaries. Example, Finance Zone, East Coast Zone

- Self-Service users provision into a Zone
- Zones can also be used to enforce access control and chargeback

Identifying Use Cases for Provisioning

1. User needs a new database service with or without seed data



User deploys a **dedicated database** inside a VM or on physical

Pros: Resource isolation, ideal for enterprise applications like ERP

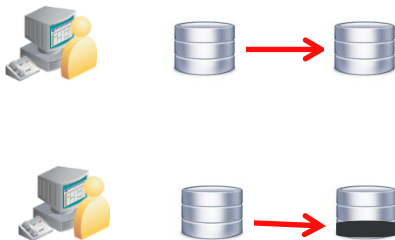
Cons: VM and database sprawl, administrative overheads, compliance challenges

User deploys a **database schema or a pluggable database**

Pros: High consolidation, minimal administrative and maintenance overhead

Cons: Limited isolation for schemas

2. User needs a clone of an existing database for testing



User makes a **full clone** of database

Pros: Ideal for load-testing with significant data updates

Cons: Time and space consuming

User makes a **thin-clone** (using 'Copy On Write') of database

Pros: Minimal additional space, instantaneous cloning, ideal for functional testing

Cons: Reduced benefits in case of significant data updates

Service Catalog Setup

Database Cloud Self Service Portal Setup

✓ Database Zones

✓ Request Settings

✓ Quotas

✓ Service Templates

ⓘ Chargeback

Service Templates

A service template is a standardized service definition that may be offered to self service database for the user. You must save an instance of the Create Oracle Database deployment creation of a service template. The Create Oracle Database procedure can be launched from Provisioning and Patching -> Database Provisioning

View  Create...  Edit  Delete

Service Name	Database Zones	Roles	Description
Small OLTP Database	0	1 CPU=1;Mem	
Medium OLTP Database	0	1 CPU=2;Mem	
Large OLTP Database	0	1 CPU=4;Mem	
Standard Data Warehousing Database	0	1 Standard da	
Small Single Instance Database 11.2.0.2	1	2 Version: 11.	

Middleware Cloud Self Service Portal Setup

✓ Middleware Pools

✓ Request Settings

✓ Quotas

✓ Service Templates

ⓘ Chargeback

Service Templates

A service template is a standardized service definition that may be offered to self service users. Invoking a service template is a service creation procedure, with appropriate values, prior to creation of a service template. The service creation procedure is located in the Patching -> Procedure Library

View  Create...  Edit  Delete

Service Template Name	Zones	Roles	Description
JavaSmall	1	1	Small sized Java service (Heap size of 2Gb)
LargeJava	1	1	Large sized Java service (Heap size 8Gb)
LoanerService1	1	3	Provides a LowHeap, Linux-x64, PS4 (10.3.5.
MediumJava	1	3	Medium sized Java service (Heap size 4Gb),

Infrastructure Cloud Self Service Setup

Page Refreshed Jul 6, 2012 7:46:01 PM UTC

✓ Machine Sizes




✓ Request Settings

✓ Roles

✓ Software Components

ⓘ Chargeback

Machine Sizes

View  Create...  Edit...  Delete

Name	Description	VCPUs
Small	Small sized machine	2
Medium	Medium sized machine	4
Large	Large sized machine	8

- Service Templates based on
 - Assemblies for Oracle VM environments
 - Deployment Procedure for Physical

Self-Service Provisioning

Oracle Enterprise Manager 12c

- Comprehensive support for consolidation
 - Dedicated databases, schema, pluggable
- Automated, intelligent placement
 - workload and configuration
- Complete self-service catalog
 - Governance, quotas, policies, showback
- Flexible cloning architecture
 - Full data cloning by leveraging backups
 - Instant database provisioning using “SnapClone”
- Integrated database lifecycle management
 - Monitoring, backup, patching
- API-driven (RESTful and command line)

The screenshot displays the Oracle Database Cloud Self Service Portal. The top navigation bar includes the Oracle logo, a 'Help' dropdown, a user profile for 'JDOE', and a 'Log Out' button. The page title is 'Database Cloud Self Service Portal', and it indicates the page was refreshed on 'Sep 25, 2011 5:33:57 PM PDT'. The interface is divided into several sections:

- Home** (selected), **Chargeback**, and **My Preferences** tabs.
- Notifications**: A section titled 'Databases Due to Expire in Next 7 Days 2'.
- Your Usage**: A section showing cumulative quota allowances with three progress bars:
 - Databases: 4**: A bar from 0 to 12, currently at 4.
 - Memory: 3.42 GB**: A bar from 0 to 50, currently at 3.42.
 - Storage: 1.72 GB**: A bar from 0 to 100, currently at 1.72.
- My Databases**: A table listing database instances with columns for Service Name, Type, Status, Zone Name, Start Date, and End Date.

Service Name	Type	Status	Zone Name	Start Date	End Date
D6353bac.adc2101112.us.oracle.com	Database Instance	Up	11202_SID6_LINUX32	9/22/2011	10/7/2011
D6479444.adc2101112.us.oracle.com	Database Instance	Up	11202_SID6_LINUX32	9/22/2011	10/7/2011
D6681ea5.adc2101112.us.oracle.com	Database Instance	Up	11202_SID6_LINUX32	9/14/2011	9/28/2011
D689d1af.sta00138.us.oracle.com	Database Instance	Up	11202_SID6_ZONE_64_BIT	9/13/2011	9/30/2011
- My Requests**: A table listing database requests with columns for Request Name, Status, Creation Date, Start Date, and End Date.

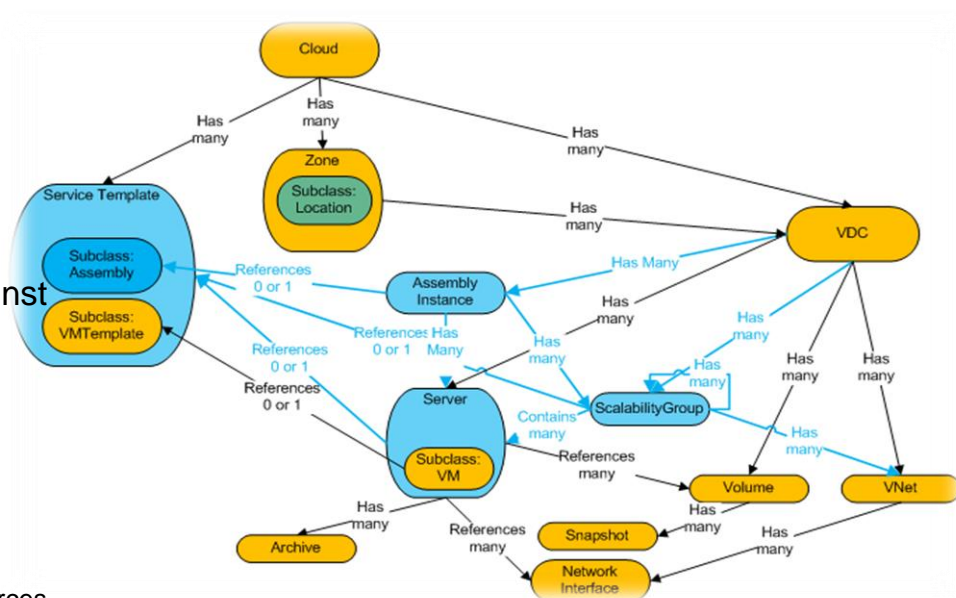
Request Name	Status	Creation Date	Start Date	End Date
JDOE - Tue Sep 13 18:21:36 PDT 2011	Success	9/13/2011	9/13/2011	9/30/2011
JDOE - Wed Sep 14 12:20:50 PDT 2011	Success	9/14/2011	9/14/2011	9/28/2011
JDOE - Thu Sep 22 15:07:27 PDT 2011	Success	9/22/2011	9/22/2011	10/7/2011
JDOE - Thu Sep 22 15:25:30 PDT 2011	Success	9/22/2011	9/22/2011	10/7/2011

Cloud API and CLI

- RESTful cloud APIs

- Support for multiple models: IaaS and PaaS
- Simple cloud resource model to program against
- Contributing to DMTF cloud CIMI and CAMP standards
- Includes Operations such as:
 - List published service templates
 - Deploy cloud services
 - Perform administrative tasks such as start/stop resources

- APIs can be wrapped with CLIs



BUSINESS & FINANCE SOFTWARE

Oracle, Red Hat Team on CAMP Cloud Standard

By Joab Jackson, IDG News Service

Aug 30, 2012 8:50 AM



Enterprise software rivals Red Hat and Oracle, along with a number of other software and online services providers, have collaborated on a standard that they hope will ease the use of PaaS (platform as a service) among customers.

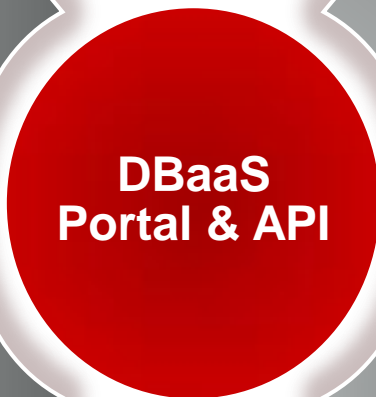
ORACLE

Self-Service Portal APIs

Comprehensive RESTFUL APIs for Integration and Orchestration

- List Zones
- List Service Templates
- List Service Instances

- Delete Service
- Extend reservation

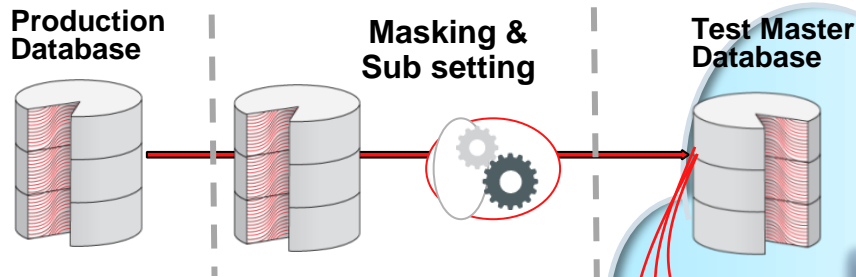


- Request DBs
- Request PDBs
- Request Schemas
- Track request progress

- Service Control (start/stop)
- Backup
- Restore
- Snapshot
- Get Chargeback info

DBaaS “Snap Clone”

Data Cloning in Minutes

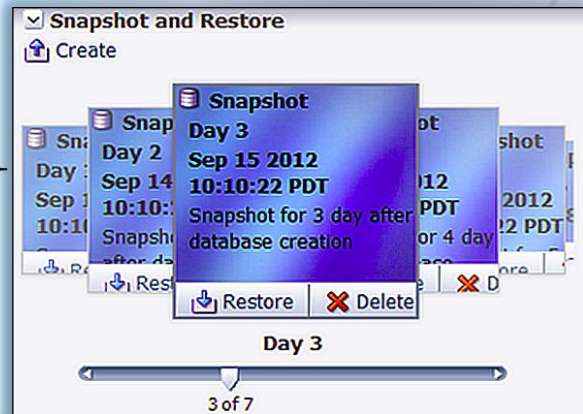


Features

- Leverage storage copy on-write technologies fast provisioning
- Initial support for NAS (Oracle ZFS Appliance and Netapp)
- Integrated lifecycle management
- “Time travel” capability to restore and access past data

Benefits

- Agile provisioning (~ 2 minutes to provision a 1 TB database)
- Over 90% storage savings
- Reduced administrative overhead from integrated lifecycle management



ORACLE

Intelligent, transparent Service Placement

Automatically find suitable target for placement:

- host for single instance database
- nodes for multi-instance RAC
- databases for schema

Current Load

Get current CPU usage and memory allocation (storage only for Schema as a Service)

Current Population

Get no. of database instances per Oracle home, or DB services per database

Placement Policy Constraints

Validate the constraints set on CPU, memory & number of instances/services

DB/schema Request

Best Match



Host1

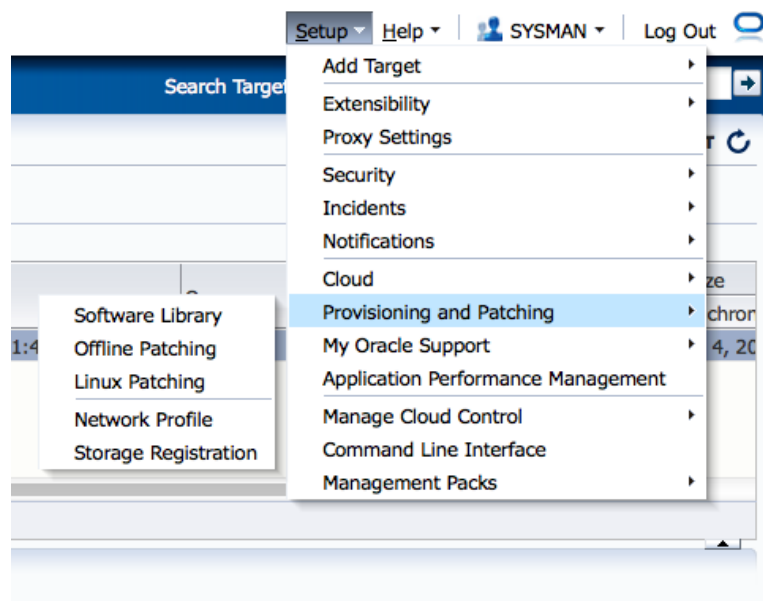


Host N

Database Pool

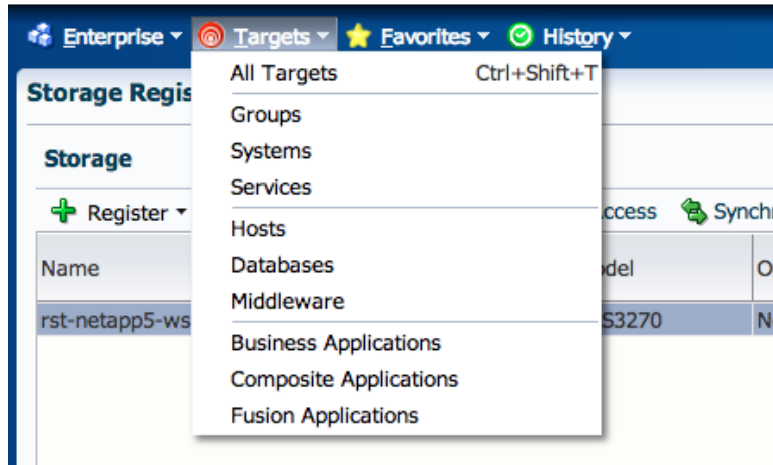
Connect ZFS SA and EM12c

Select “Setup” → “Provisioning and Patching” → “Storage Registration”.



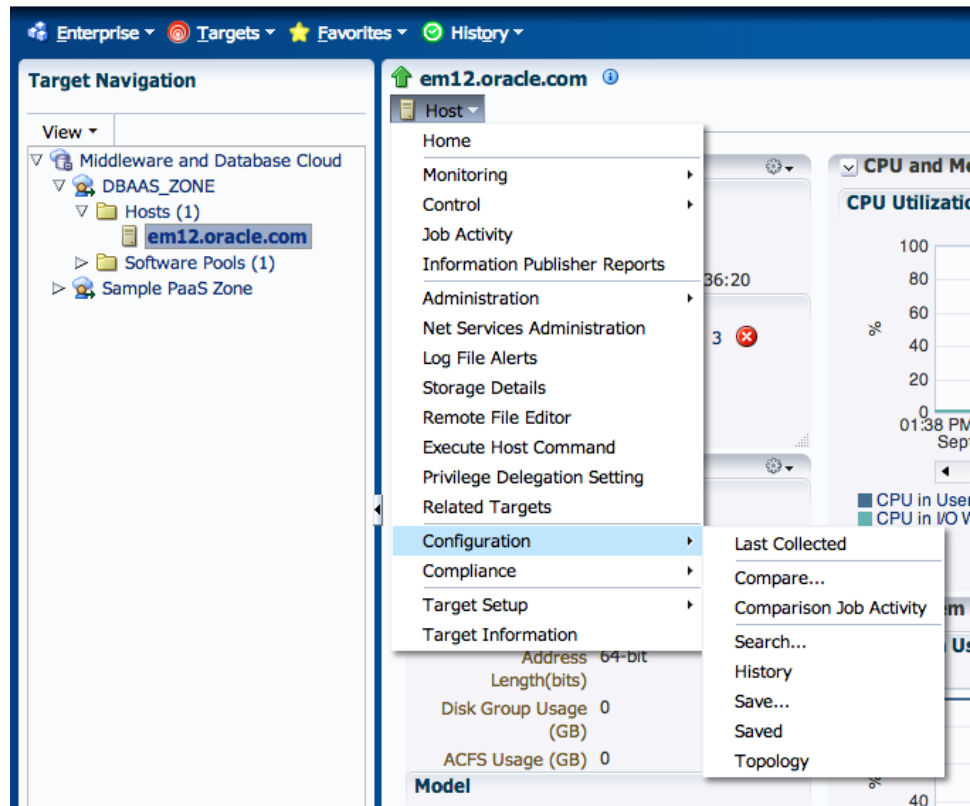
Refresh the Host and Database information in EM.

From the “Targets” Menu, select “Hosts”.



The screenshot shows the 'Hosts' page in the Oracle Enterprise Manager (EM) console. At the top, there is a search bar with the text 'Search' and a 'Go' button, followed by a link to 'Advanced Search'. Below the search bar are three buttons: 'Configure', 'Remove', and 'Add'. The main content is a table listing hosts. The table has columns for 'Select', 'Name', 'Status', 'Pending Activation', and 'Inc'. The first row is selected, showing 'em12.oracle.com' with a green up arrow in the 'Status' column. The other rows are 'ovmm.oracle.com', 'rst-em-smfv3-srv1.us.oracle.com', and 'rst-em-smfv3-srv2.us.oracle.com', all with green up arrows in the 'Status' column. The 'Pending Activation' column shows a '-' for all rows, and the 'Inc' column shows a '0' for all rows.

Select	Name	Status	Pending Activation	Inc
<input checked="" type="radio"/>	em12.oracle.com	↑	-	0
<input type="radio"/>	ovmm.oracle.com	↑	-	0
<input type="radio"/>	rst-em-smfv3-srv1.us.oracle.com	↑	-	0
<input type="radio"/>	rst-em-smfv3-srv2.us.oracle.com	↑	-	0



The same for database

ORACLE Enterprise Manager Cloud Control 12c

The screenshot shows the Oracle Enterprise Manager Cloud Control 12c interface. The 'Targets' tab is selected, and a dropdown menu is open, listing various target types: All Targets (with a keyboard shortcut Ctrl+Shift+T), Groups, Systems, Services, Hosts, Databases, Middleware, Business Applications, Composite Applications, and Fusion Applications. The 'Target Navigator' pane on the left shows a tree view with 'Middleware' expanded, containing 'DBAAS', 'Hosts', 'Software', and 'Sample'. Below the navigator is a search bar with the text 'Find Name' and a search button. At the bottom, there is a table with columns 'View', 'Add', 'Remove', and 'Configure'. The table contains a list of targets: 'cdb1', 'CSDB', 'emrep.oracle.com', and 'prod.oracle.com'.

View	Add	Remove	Configure
Name			
> cdb1			
CSDB			
emrep.oracle.com			
prod.oracle.com			

The screenshot shows the Oracle Enterprise Manager Cloud Control 12c interface for the 'CSDB' (Cloud Service Database) page. The 'Configuration' tab is selected, and a dropdown menu is open, listing various configuration options: Home, Monitoring, Diagnostics, Control, Job Activity, Information Publisher Reports, Logs, Provisioning, Configuration (highlighted), Compliance, Target Setup, and Target Information. The 'Configuration' dropdown menu is further expanded, showing options: Last Collected, Compare..., Comparison Job Activity, Search..., History, Save..., Saved, and Topology. The main content area shows 'ADDM Findings 0' and 'Incidents 0' with a minus sign, a red 'X' icon, and a yellow warning icon. Below this is a 'Compliance Summary' section with 'Compliance Standards' and a 'View Trends' link. The top navigation bar includes 'Enterprise', 'Targets', 'Favorites', and 'History'.

Create provisioning profile

The screenshot displays the 'Create Database Provisioning Profile : Reference Target' step in the Oracle Cloud console. At the top, a progress bar shows four steps: 'Reference Target' (active), 'Content Options', 'Profile', and 'Review'. Below the title, the 'Reference Target' section contains the following configuration:

- Name:** SNP00000.em12.oracle.com
- Type:** Database Instance
- Include:**
 - ☐ Database Oracle Home (OraDb11g_home2_3_em12)
 - ☒ Data Content
 - ☒ Structure and Data
 - ☒ Create
 - ☐ RMAN Backup
 - ☐ Database Template
 - ☒ Storage Snapshots
 - ☐ Use Existing RMAN Backup
 - ☐ Export Schema Objects
 - ☐ Structure Only
 - ☐ Database Template
 - ☐ Export Schema Definition

Credentials

In the Credentials Region, make the following changes:

For cloudnode1 target, select “Named Credentials” for Credential and “NC_HOST_NORMAL” for Credential Name.

For VSVPRDST target, select “Named Credentials” for Credential and “SYS_CREDS” for Credential Name.

Click Next.

Back Step 1 of 4 Next Cancel

Credentials

Target	Credential Type	Credential	Credential Name
em12.oracle.com	Database Home	Named Credentials	HOST-ORACLE
SNP00000.em12.oracle.com	Database	Named Credentials	SYS_CREDS

Overview of profile

Create Database Provisioning Profile : Profile

BackStep 3 of 4NextCancel

Profile Information

* Profile

Database Provisioning Profiles/11.2.0.3.0/linux_x64

Location

* Profile

DBaaS SNP SnapClone Profile

Name

Description

Database Reference Profile 04-06-2013 09:11 AM from SNP00000.em12.oracle.com

Profile Version

11.2.0.3.0

Vendor

Oracle

Notes

Host Name: em12.oracle.com
Database: SNP00000.em12.oracle.com
Data Content: Structure and Data
Data Content Mode: Database Snapshot

Schedule

☒ Start Immediately

☐ Later

(GMT-05:00) New York

Working Directory

* Path

/tmp

ORACLE

19 | Copyright © 2013, Oracle and/or its affiliates. All rights reserved. |

Sample database size

FUNCTIONALITY TEST

DB size 250GB

RedoLogs size: 5 groups, 2 members each, 2GB size each

StandbyLogs size: 6 groups, 1 member each, 2GB size

Comparison I.

Traditional Cloning for the above mentioned DB size:

Step	Result
Make an online backup/copy of the database	2:30 hrs
Move copied files to the new machine	6:24 hrs
Recover the copied database using the archive logs from original database	1:00 hr
Open the copied database with resetlogs.	5 mins
Run NewID utility to change DB name	15 mins

Comparison II.

Cloning with ZFSSA and EM12c for the above mentioned DB size:

Step	Result
Time to create Provisioning Profile	14 mins
Time to create self service template	1 min
Time to provision a Snap Cloned DB	33 mins
Time to de-commission the service	7 mins

Hardware and Software

ORACLE®

Engineered to Work Together

ORACLE®