Adatbázis tesztkörnyezetek kialakítása

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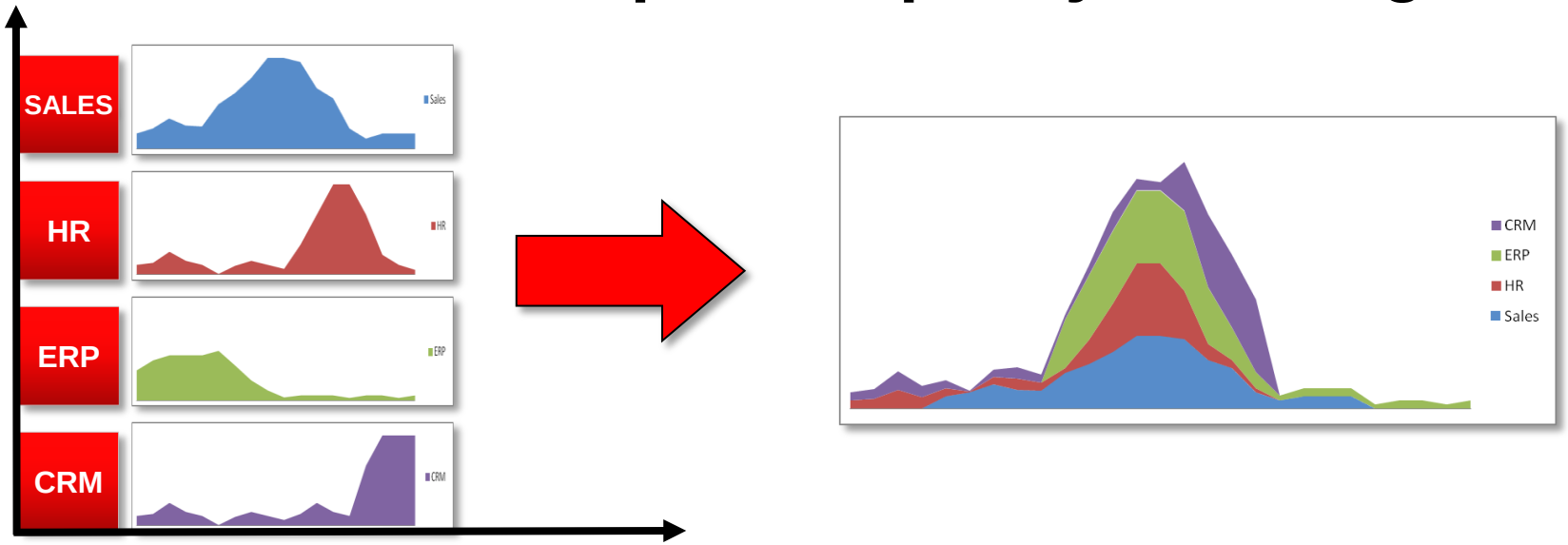
Workload Scale Up for Capacity Planning



- 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

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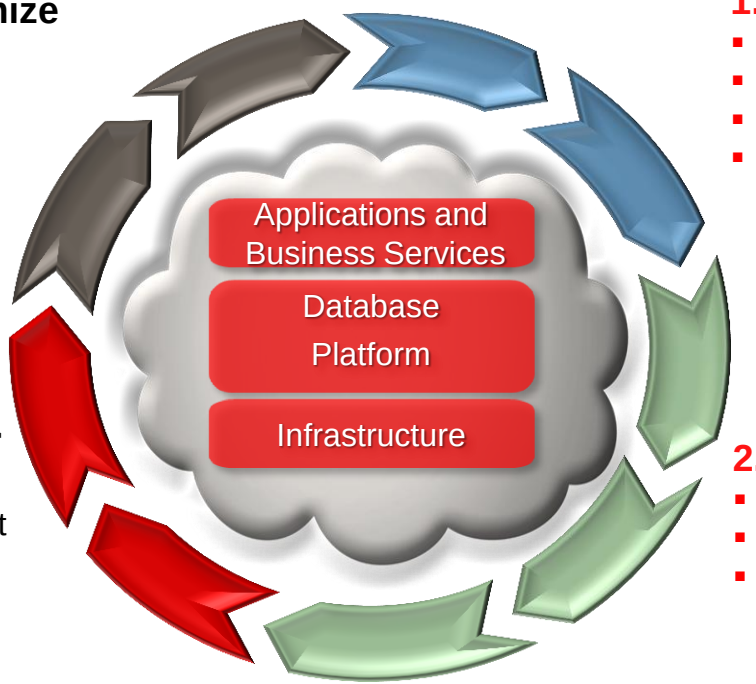
Deliver DBaaS via a Lifecycle Approach

4. Meter, Charge, Optimize
- Meter resource utilization
- Chargeback/Showback



1. Plan & Setup the DB Cloud
- Capacity & consolidation planning
- Asset discovery
- Setup Resource Pools
- Setup Policies

3. Manage & Monitor
- Database monitoring
- Configuration management
- Full stack management

2. Enable Self-Service
- Define Service Catalog
- Enable Service Governance
- Enable integration via APIs

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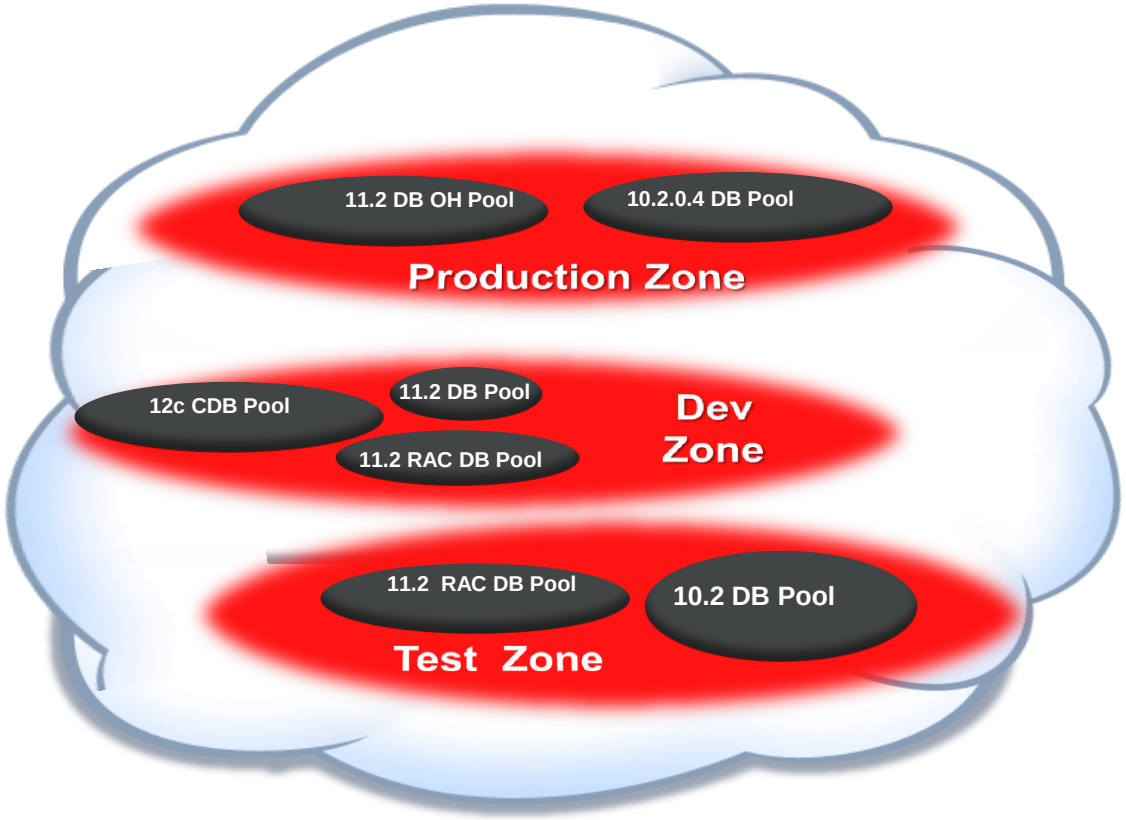
Modeling DBaaS Resources



- **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

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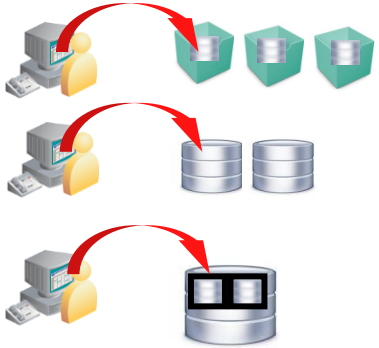
Identifying Use Cases for Provisioning

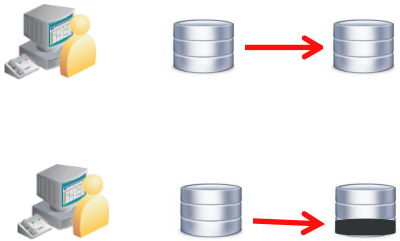
1. **User needs a new database service with or without seed data**



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

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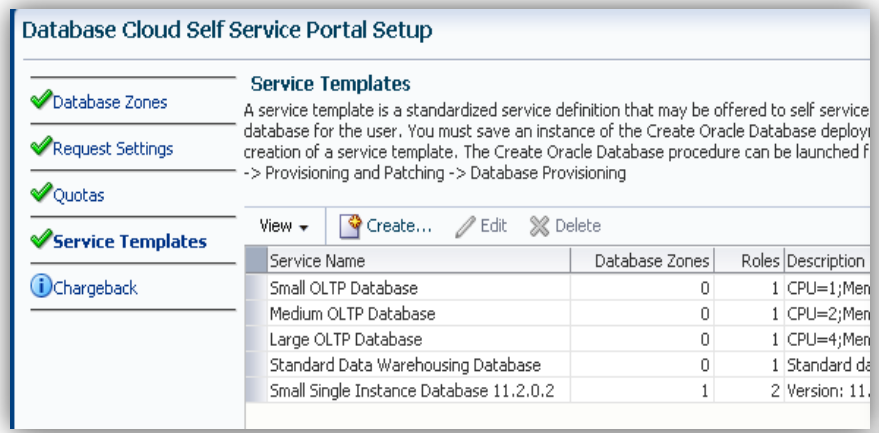
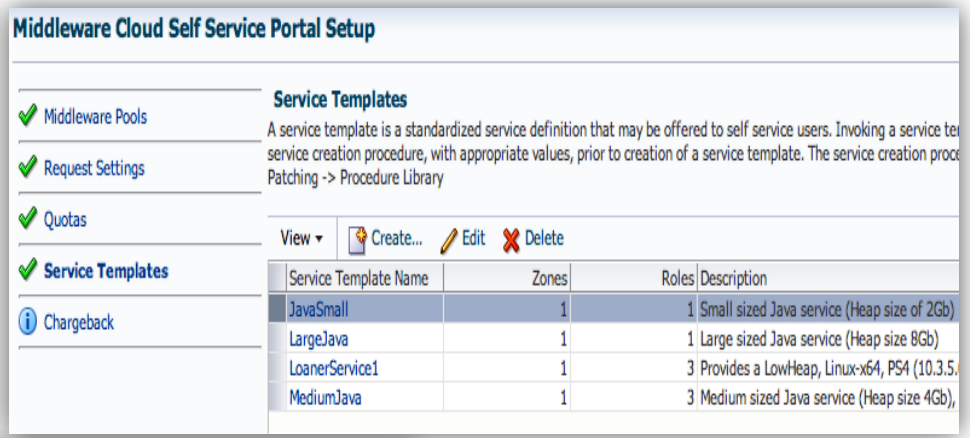
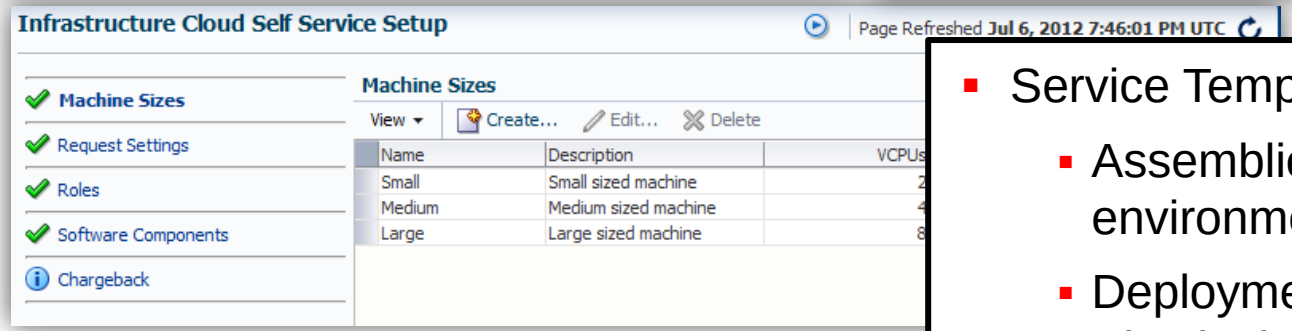
Service Catalog Setup







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

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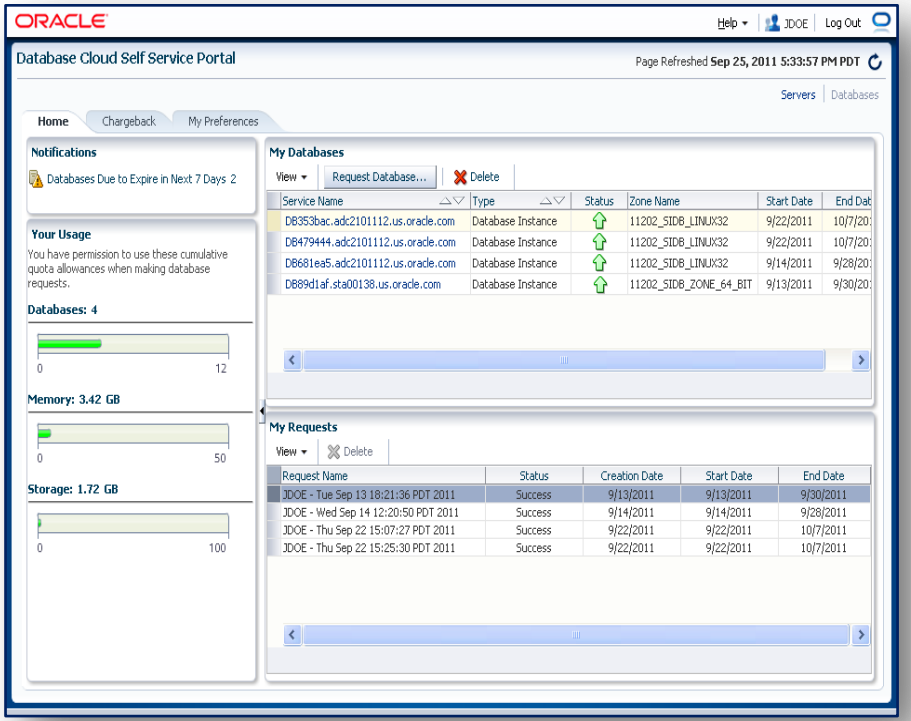
Self-Service Provisioning

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)



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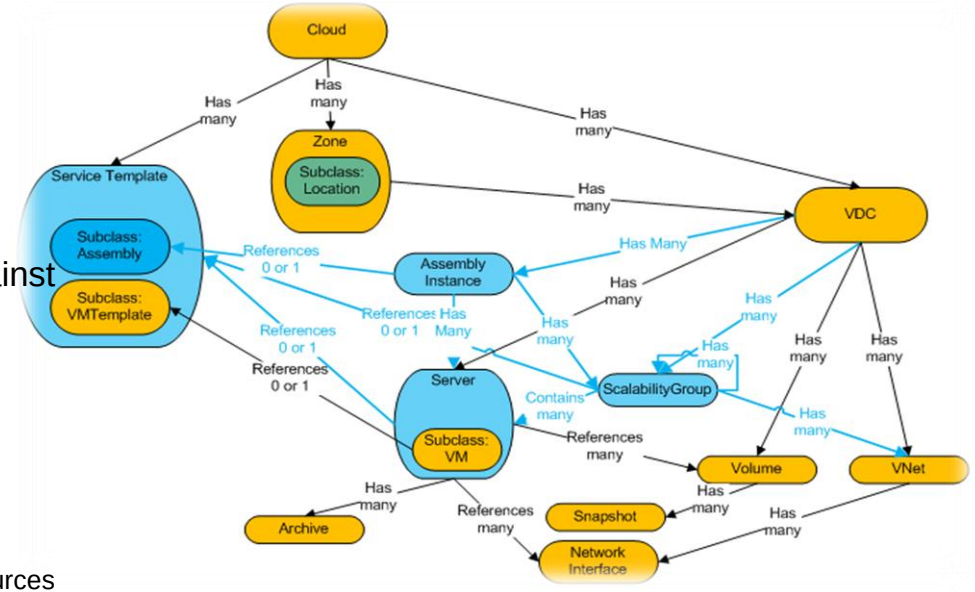
Cloud API and CLI

- 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.

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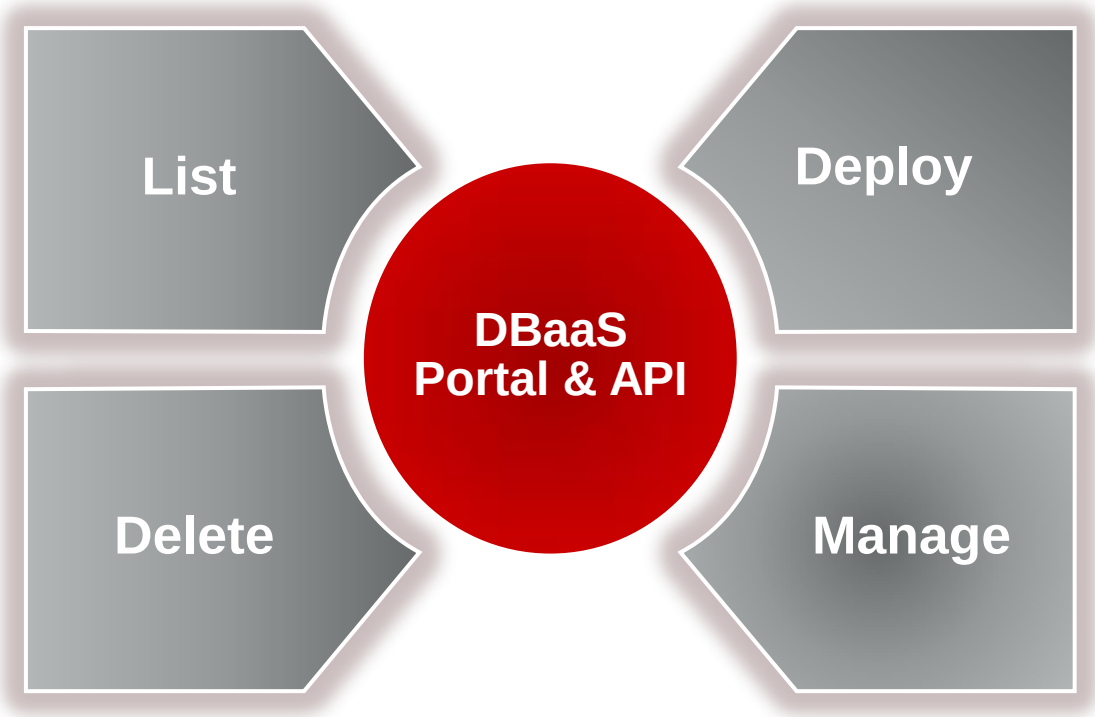
Self-Service Portal APIs

Comprehensive RESTFUL APIs for Integration and Orchestration

- List Zones
- List Service Templates
- List Service Instances



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

- Delete Service
- Extend reservation

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

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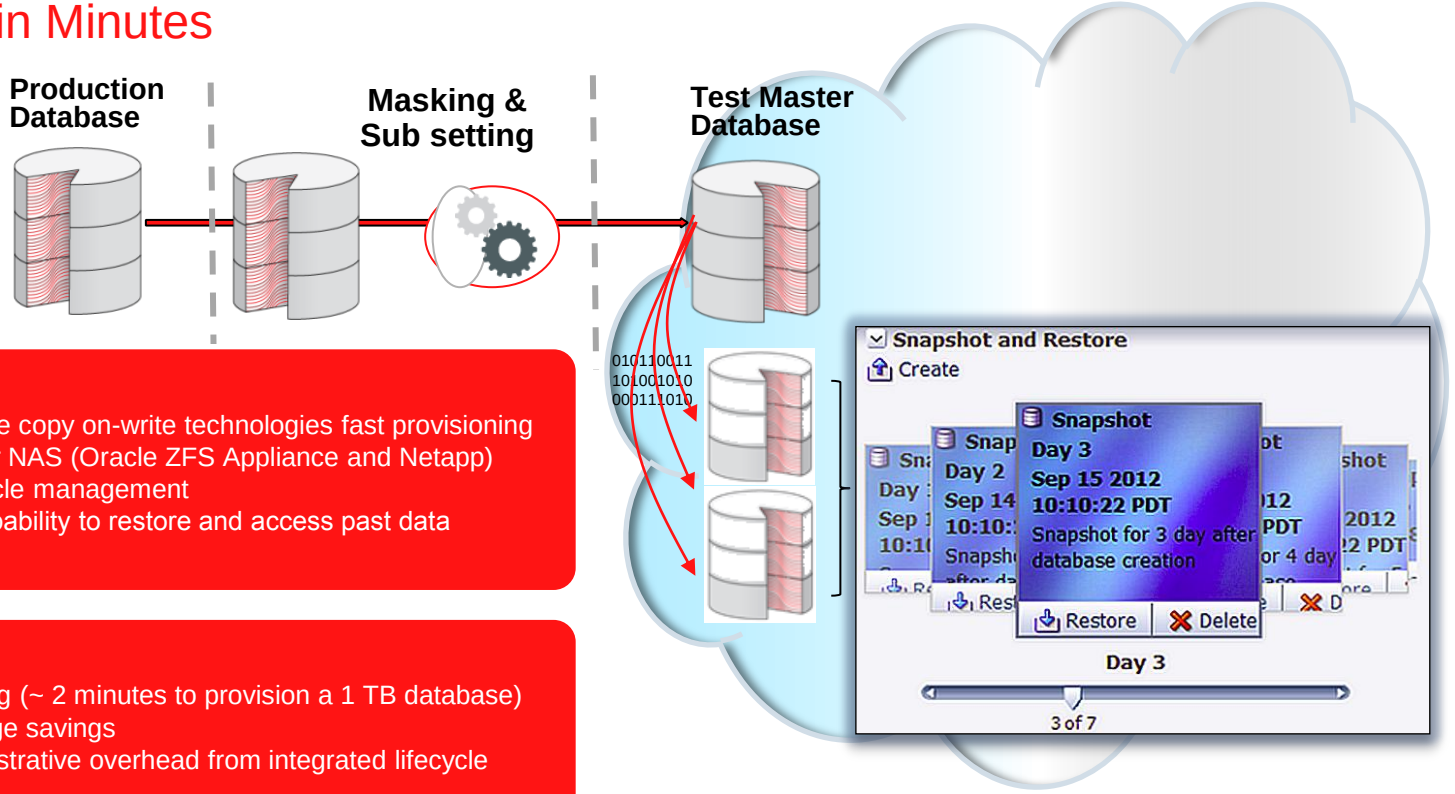
DBaaS “Snap Clone”

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

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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

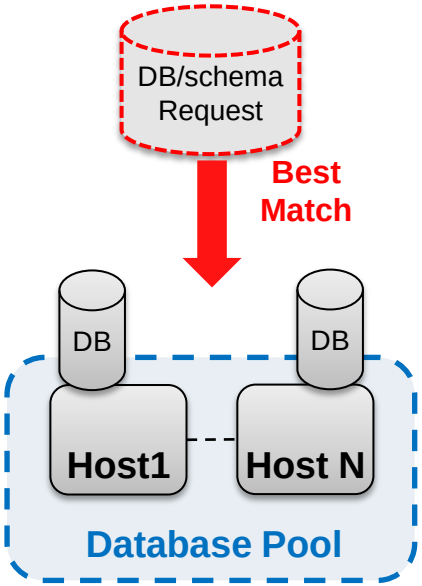
Current Population

Placement Policy Constraints

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

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

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



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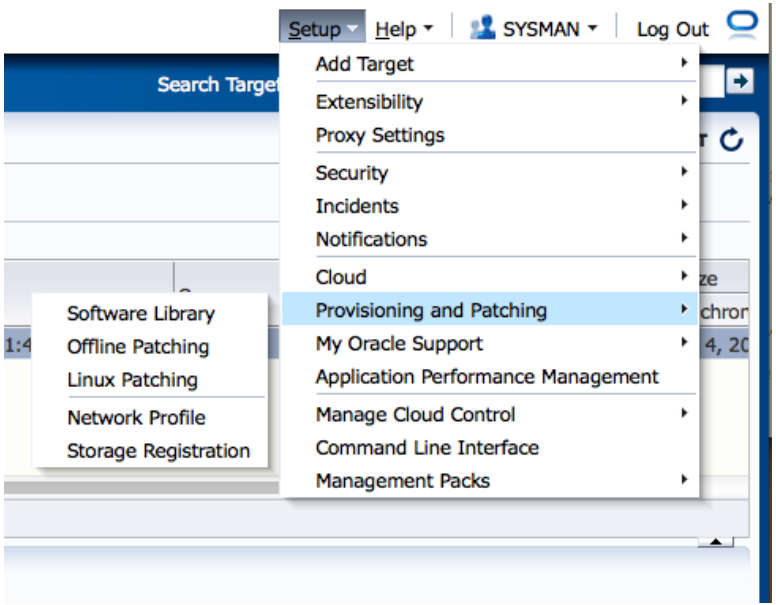
Connect ZFS SA and EM12c

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



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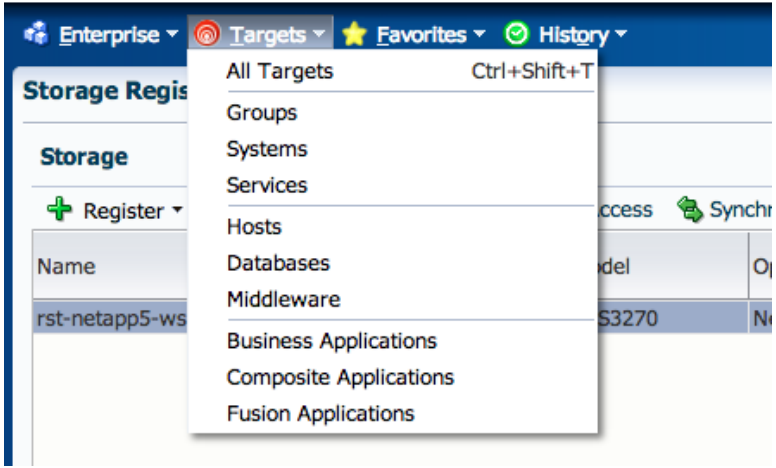
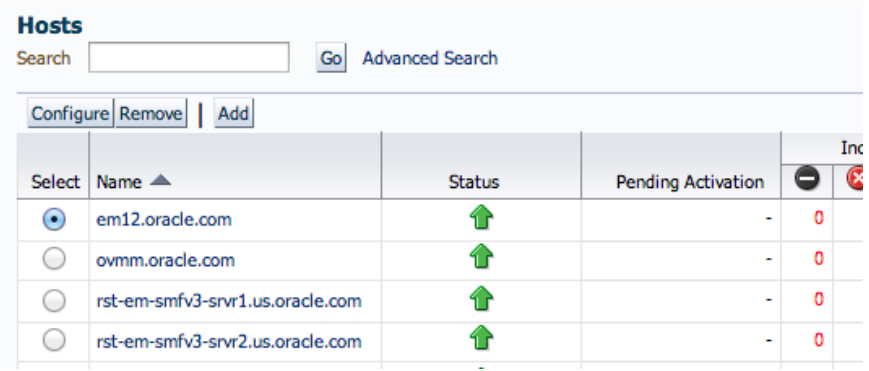
Refresh the Host and Database information in EM.

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





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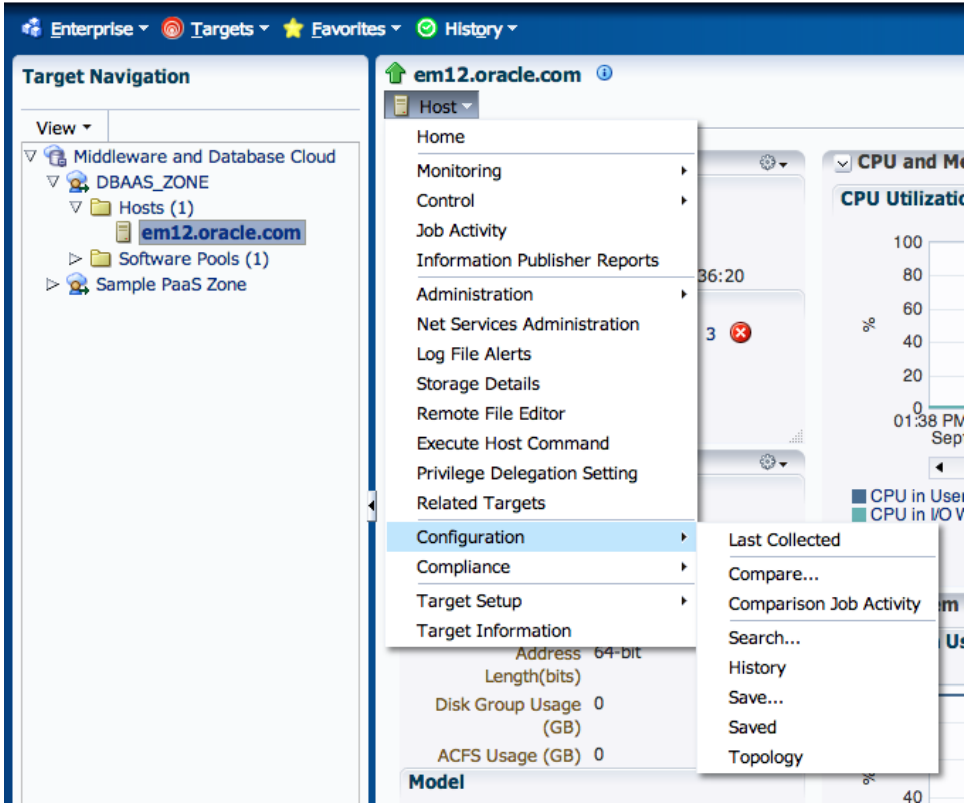

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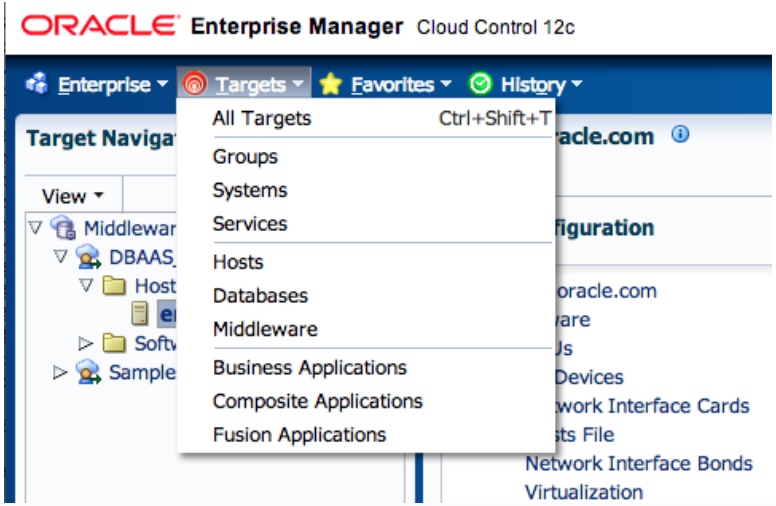
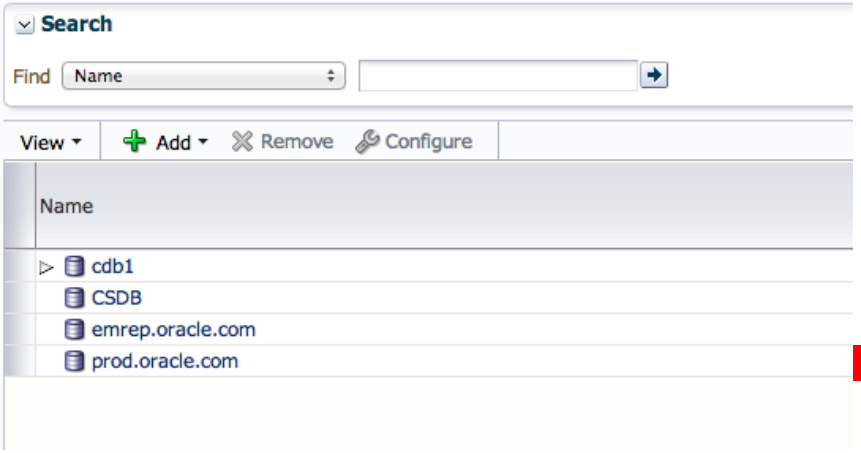
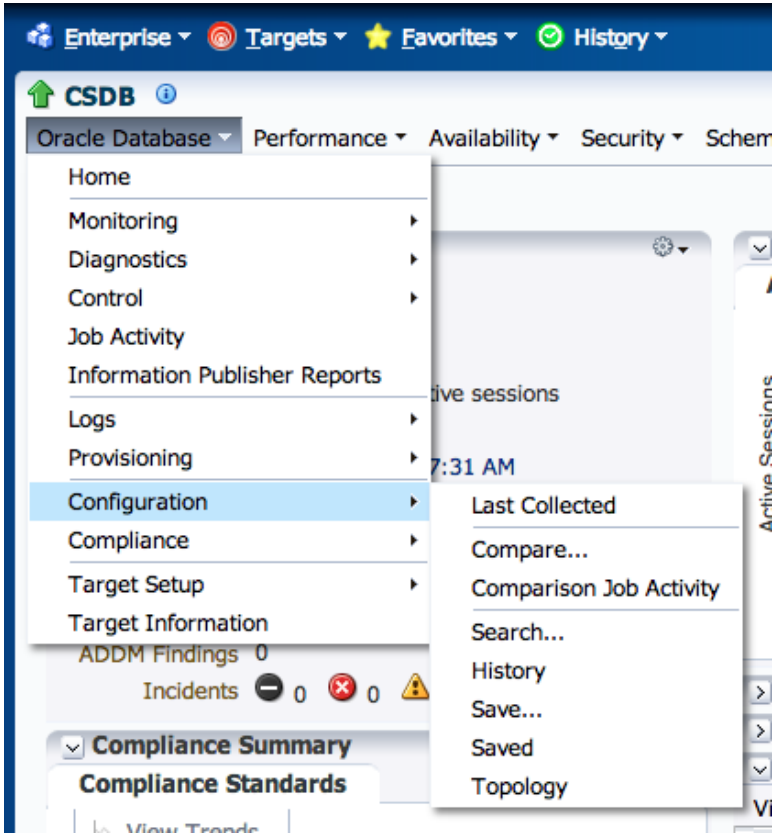
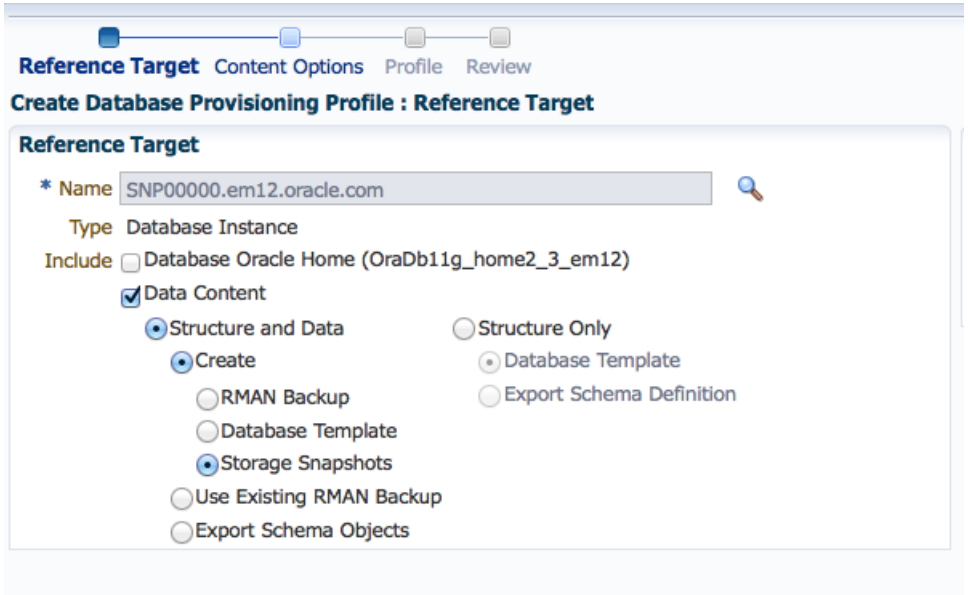
The same for database







Create provisioning profile



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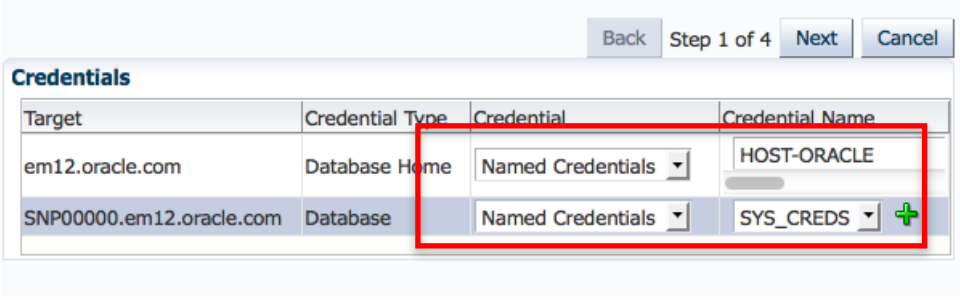
Credentials

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.



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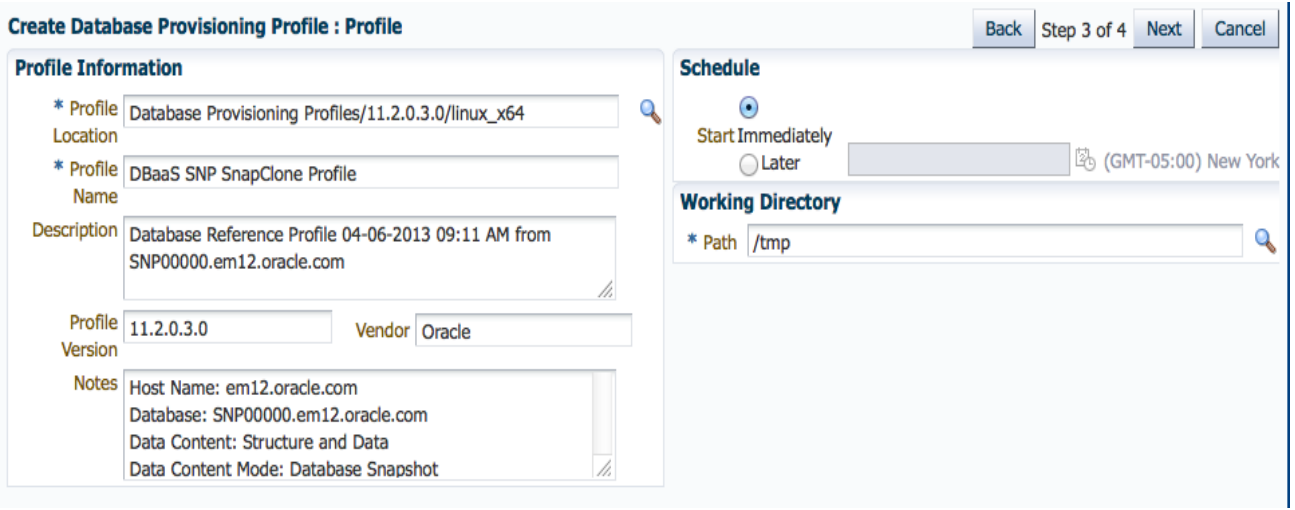
Overview of profile



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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

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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

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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

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