



ORACLE CLOUD MANAGEMENT PACK FOR ORACLE DATABASE

THE INDUSTRY'S ONLY
COMPLETE SOLUTION FOR
DATABASE CLOUD MANAGEMENT.

KEY FEATURES

- Consolidation Planning
- Out-of-the-box Self Service Portal
- Enterprise Service Catalog
- Provisioning of Databases w/ Data Guard, Schemas, and Pluggable Databases
- Data Cloning – Snap Clone and Full Clones
- Resource Management
- Role-based Access and Quota Management
- Support for Virtual and Physical Infrastructure
- Metering and Chargeback
- RESTful API and CLI for Programmatic Access

KEY BENEFITS

- Reduce sprawl and improve utilization by consolidating on fewer servers
- Reduce DBA time by automating deployment of standard database and schema configurations
- Reduce DBA time by automating cloning of large databases
- Single console to manage entire Cloud lifecycle – plan, setup, deliver, operate
- Prevent resource hogging by setting quotas for individual users
- Forecast future resource needs by analyzing trending reports
- Compute chargeback based on performance and configuration metrics

Oracle Enterprise Manager is Oracle's integrated enterprise IT management product line, and provides the industry's first complete cloud lifecycle management solution. Oracle Enterprise Manager's Business-Driven IT Management capabilities allow you to quickly set up, manage and support enterprise clouds and traditional Oracle IT environments from applications to disk. Enterprise Manager allows customers to achieve best service levels for traditional and cloud applications through management from a business perspective including for Oracle Fusion Applications, provide maximum return on IT management investment through the best solutions for intelligent management of the Oracle stack and engineered systems and gain unmatched customer support experience through real-time integration of Oracle's knowledgebase with each customer environment.

Cloud Management

Enterprise Cloud presents new management challenges. The 2010 IOUG Survey on Cloud Computing states that a top benefit expected from private cloud adoption is “cost savings through standardization for operational efficiency.” The survey also states “In this survey, more than half of the “advanced” deployers (with more than 10 services) say their greatest challenge is adequately provisioning server capacity to meet the new demands of the cloud,...” Oracle Enterprise Manager is Oracle's premiere cloud management solution. It is the industry's first complete solution including self-service provisioning balanced against centralized, policy-based resource management, integrated chargeback and capacity planning and complete visibility of the physical and virtual environments from applications to disk.

Database as a Service (DBaaS)

Oracle Cloud Management Pack for Oracle Database delivers capabilities spanning the entire Database cloud lifecycle. It lets Cloud administrators identify pooled resources, configure role-based access, define the service catalog, and the related chargeback plans. It allows Cloud users to request database services, and consume them on-demand. It also allows for users to scale-up and down their platforms to adapt to changes in application traffic. Finally, it lets both parties to understand the costs of the service delivered, and establish accountability for consumption of resources.

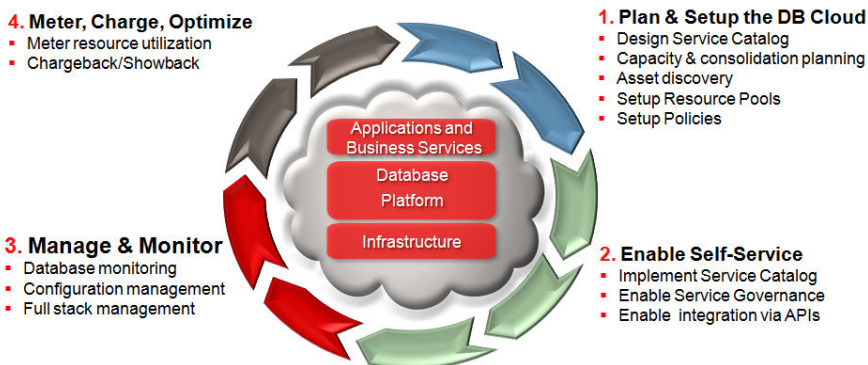


Figure 1. Enterprise Cloud Lifecycle Management

Planning and Setup

The corner stone of cloud computing is standardization of software and configuration. A database Service Catalog is a collection of standardized database service definitions that will help cloud users to rapidly provision databases, while it will ensure that IT can limit the amount of configuration and software pollution, and thus reduce administrative overhead associated with it.

To build a cloud, administrators must first understand what their existing resources are and their utilization. Enterprise Manager automatically discovers their infrastructure and its topology, and helps then understand the current workloads in the environment. Administrators can then use Consolidation Planner capability to run different scenarios for redistributing workloads onto existing systems or new environments (what if scenario), and determine if this will result in SLA violations. These scenarios can be tested either on Commercial Off-The-Shelf (COTS) hardware or engineered systems like Exadata.

RELATED PRODUCTS

Oracle Cloud Management Pack for Database delivers maximum benefits when used with the following Oracle products

- Oracle Diagnostics Pack
- Oracle Database Lifecycle Management Pack

The key benefit of cloud computing is to enable faster deployment of typical platforms by moving away from admin driven provisioning to end user driven. Enterprise Manager allows administrators to pool resources, standardize and automate deployment processes, publish established templates to service catalog, setup role-based access and privileges, set quotas to limit over-consumption, establish policies for scale-up and scale-down, and retirement, and enable metering and optional chargeback on consumed resources.

Enterprise Manager supports multiple consolidation models for pooling resources. One can choose to consolidate underlying infrastructure with server virtualization technologies or perform database level consolidation by implementing Real Application Clusters (RAC) or by hosting multiple application schemas within the same database, or make use of the Database 12c Multitenant option to consolidate workloads using pluggable databases.

Self Service Application for instant provisioning

Enterprise Manager ships with an out-of-box Self-service portal that allows developers, testers, DBAs, and other self service users to log on and request:

- New single instance (SI) and Real Application Clusters (RAC) databases using pre-defined golden standards. This is ideal for developers asking for standard databases with or without data.
- New single instance (SI) and Real Application Clusters (RAC) databases along with data guard standby databases either within the same datacenter or across different geographical regions. This is ideal for production and semi-production workloads that have high

availability requirements.

- Logical databases to work with, which, under the hood, are schemas hosted in one or more database, and provided as Schema-as-a-Service.
- Pluggable databases that are hosted in one or more Database 12c Multitenant container databases, provided as Pluggable Database as a Service.
- Database thin clones, using Enterprise Manager 12c **Snap Clone** feature that leverages storage Copy-on-Write (CoW) technology on Sun ZFS Storage Appliance and NetApp Storage Appliance (Hardware solution), or Solaris ZFS file system (Software solution) for storage agnostic support. The Snap Clone feature lets users of the database, such as Functional QA, to create multiple copies of the database in minutes without consuming additional space.
- Database full clones using RMAN Backups. This could be ideal for intense testing, such as, database upgrades and performance testing on Exadata.

Additionally, self service users can perform lifecycle operations like start/stop, status and health monitoring, etc on the requested databases and schemas. Provisioning can be done on both physical infrastructure using Deployment Procedures and on an Oracle VM virtualized server infrastructure using Virtual Assemblies and Virtual Templates. The portal provides access to a service catalog which lists various published service templates for standardized database configuration and versions. Users can review their past and outstanding requests, resource quotas, current utilization as well as Chargeback information for the databases and services they own. The portal also allows users to automatically backup their databases on a daily basis or take on demand backups. User can restore the database to any of these backups. The Self-service portal is the user's view into the Cloud, thus it is designed to be easy to use and yet useful. The portal is also backed by CLI and API that can be used to request and manage cloud resources in lieu of the user interface.

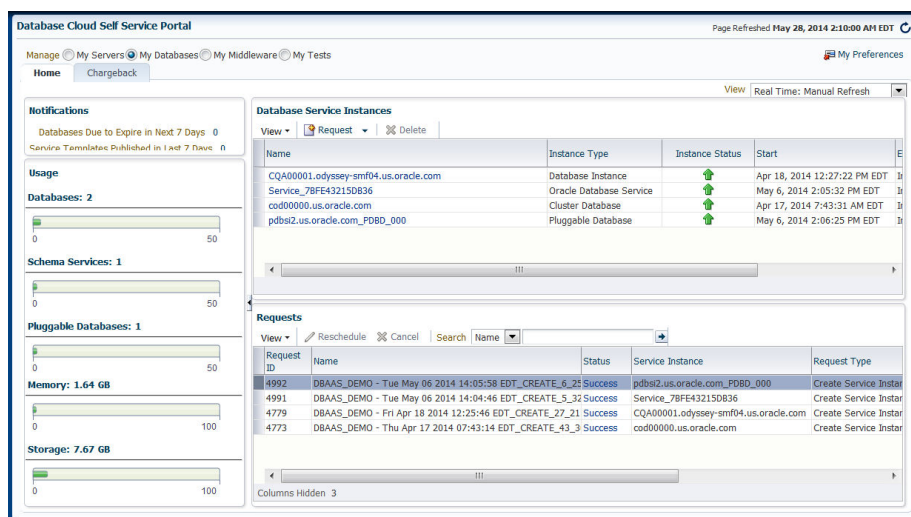


Figure 2. Enterprise Cloud Self Service Application

Metering and Chargeback

A critical aspect of Cloud delivery is the ability to establish usage cost for consuming cloud resources, and metering actual usage to deliver Chargeback reports. Enterprise Manager provides tools for defining detailed Chargeback plans spanning different metrics collected for each type of

resources as well as defining Cost Centers for grouping costs across multiple developers. Chargeback plans can use not only usage based costs, but also configuration-based costs (e.g. version of the platform) or fixed costs (e.g. flat-rate management fee). Its extensibility features allow users to meter and charge against any metric storage in Enterprise Manager 12c.

Chargeback has rich out of the box reports. Trending reports show how charge and resource consumption varies over time, while Summary reports show the breakdown of charges or usage by different dimensions such as Cost Center or Target Type. These reports help consumers in understanding how their charges relate to their consumption and also assist the IT department with budgeting and planning activities. With BI Publisher, the reports can be made available in a variety of formats such as PDF, HTML, Word, Excel or PowerPoint.

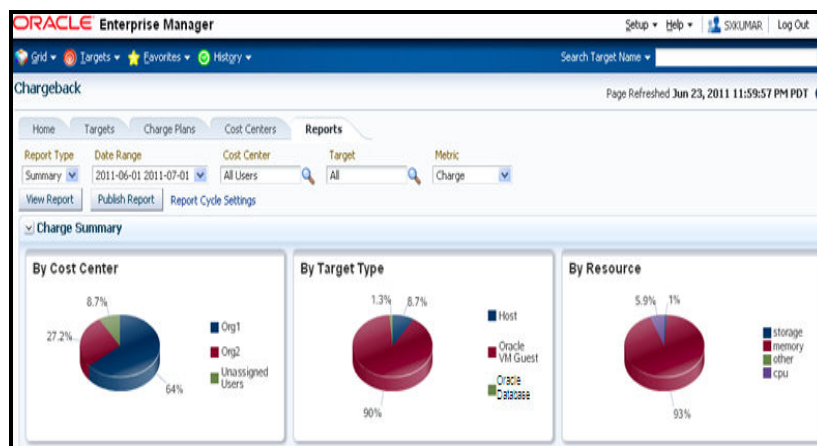


Figure 3. Enterprise Cloud Chargeback Application

Performance and Availability Monitoring

One of the top concerns IT managers have before moving business critical applications to cloud is performance and reliability of the application. Enterprise Manager provides a rich solution for monitoring the health of resources in the cloud. Incident console allows administrators to view, diagnose, and resolve incidents with the host, database or any other dependencies with the physical or virtual infrastructure. Cloud administration console provides insight into resource flux, request throughput, failure rates, and available resources. Trending reports show the variance in resource consumption and thus allows for capacity planning for future needs.

Oracle Database as a Service with Enterprise Manager

Enterprise Manager provides the most comprehensive solution for rolling out an Oracle-based Database as a Service Cloud for users in an enterprise. It offers the broadest and the most complete set of capabilities to build, deploy and manage the end-to-end lifecycle of the cloud, all from a single console. The pre-integrated solution ensures that you can leverage the Cloud without having to learn a heap of non-standard languages and technologies, ensuring continuity of skills for the enterprise.

Contact Us

For more information about Enterprise Manager 12c, visit oracle.com or call +1.800.ORACLE1 to speak to an Oracle representative.



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Hardware and Software, Engineered to Work Together