Oracle Enterprise Manager is Oracle’s on-premises management platform, providing a single pane of glass for management of Oracle environments, whether in customer data centers or in Oracle Cloud. Through deep integration into Oracle’s product stack, Enterprise Manager provides market-leading management and automation for Oracle engineered systems, databases, middleware, and hardware.

Enterprise Manager helps increase business agility using application-to-disk automation and maximizes service levels through intelligent management of the Oracle stack. It also enables customers to reduce costs through comprehensive lifecycle automation, combined hardware and software management, proactive monitoring and compliance control.

**Database as a Service (DBaaS)**

Oracle Cloud Management Pack for Oracle Database delivers capabilities spanning the entire Database Cloud lifecycle. Cloud administrators can identify pooled resources, configure role-based access, define service catalogs, and create 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 allows both administrators and consumers to understand the costs of the services delivered, and establish accountability for consumption of resources.

**Database Consolidation**

Enterprise Manager provides unmatched architectural options and supports multiple consolidation models for pooling database resources. Enterprise Manager offers...
KEY BENEFITS
• Reduce sprawl and improve utilization by consolidating on fewer servers
• Reduce DBA time by automating deployment of standard database configurations
• Reduce DBA time by automating cloning of large databases
• Single console to manage entire Cloud lifecycle – plan, setup, deliver, operate
• Govern resource consumption by setting quotas for individual users
• Reduced DBA time by automating software maintenance
• Forecast future resource needs by analyzing trending reports
• Compute chargeback based on performance and configuration metrics

administrators the ability to consolidate the 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.

Richer Service Catalogs
Enterprise Manager 13c enables broader service catalogs and self-service provisioning features that simplify deployment of a wide variety of database configurations, including high availability and disaster recovery. The role-based Service Catalog lists published service templates for standardized database configurations and versions, and is accessible via the out-of-box self service portal or can be orchestrated via RESTful APIs.

Developers, testers, DBAs, and other self service users can access the out-of-box Self-service portal or APIs to log on and request various services. The Cloud Management Pack also provides an administrative interface for DBAs to deliver one-off or special requests for services. These services include:

• 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 which are actually schemas hosted in one or more databases, 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.

Figure 2. Enterprise Manager 13c Service Catalog
Enterprise Manager 13c introduces an enhanced Service Catalog that enables users to have a consistent experience whether they are provisioning into Oracle Cloud or on-premise. The Service Catalog separates out Service Level attributes from the Template attributes and is backed by a rich set of APIs.
Data on Demand: Advanced Cloning Automation

Enterprise Manager provides complete cloning automation, including Snap Clone and database full cloning, which can support a wide range of activities for both DBAs and end-users, from performance testing to functional testing. Cloud administrators can manage the complete life cycle of the source data including capturing data on demand as well as refreshing the data and creating new revisions of the profile.

Cloning options include the following:

- Snap Clone leverages storage Copy-on-Write technology at the storage layer. Snap Clone supports both Oracle and a variety of non-Oracle storage platforms. Snap Clone empowers users such as Functional QA engineers to create ‘thin clones’ of the database in minutes without consuming additional space. They can also create private backups, and refresh data from the updated source. Snap Clone supports cloning of databases on file and on Oracle ASM with block storage.

- Database full clones using RMAN Backups or RMAN duplicate is ideal for intense testing operations associated with database upgrades and performance testing on Exadata.

All cloning services are easily integrated with data masking, and the ability to change configuration and software versions.

Cloud Fleet Maintenance – Scalable Patching and Updates

Fleet Maintenance allows administrators to patch and upgrade database software with minimal downtime. The subscription based model enables updates at scale across the entire cloud infrastructure, significantly reducing the time required for maintenance activities. An out-of-box dashboard enables administrators to track compliance across cloud environments in real time.

Complete Cloud Services and Framework

Planning and Setup

Enterprise Manager allows administrators to pool resources, standardize and automate deployment processes, publish established templates to service catalogs, setup role-based access and privileges, set quotas to govern resource consumption, establish policies for scale-up and scale-down and service retirement.

Self Service Portal

Enterprise Manager delivers an out-of-box self-service portal that allows developers, QA engineers, DBAs, and other self service users to log on and request database services. It also provides an administrative interface for DBAs to deliver one-off or special requests for services.

The self service portal enables users to perform lifecycle operations such as start/stop, status and health monitoring on the requested databases and services.
RESTful API and CLI Support for Programmatic Access

Enterprise Manager exposes RESTful APIs for operations that can be performed by a cloud self service user. Every operation supported in the self-service console is also available by RESTful APIs, enabling enterprises to integrate Enterprise Manager’s cloud capability with their custom home-grown portals or 3rd party orchestration tools.

The RESTful API enables integration to perform the following:

- Create DB Services
- List Deployed DBs, Service Templates
- Patch DBs
- Delete Instance DBs

EMCLIs provide a rich set of verbs for Cloud setup and facilitate access to administrator driven setup tasks such as:

- Zone, Pool and Quota Management
- Request Settings
- Software Library Setup
- Provisioning Profile and Service Template creation
- Setup Charge Plans

Performance and Availability Monitoring

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. The Cloud Administration Console and Request Dashboard provide 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.

Metering, Showback 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 or “Showback” 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 report using any metric captured through Enterprise Manager.

Chargeback has a rich set of out-of-box reports which help consumers understand how their charges relate to their consumption and also assist the IT department with budgeting and planning activities.

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.