ORACLE CLOUD MANAGEMENT PACK FOR MIDDLEWARE

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KEY FEATURES

- Self-service provisioning of JAVA EE applications and multi-tier middleware platforms
- On-demand delivery of resources
- Policy-based elasticity
- Resource specific Chargeback and metering
- Fine-grained access control and quota management
- Advanced capacity planning and analysis
- Application to Disk monitoring for the cloud environment
- APIs and CLI for programmatic access
- Deepest support for Oracle-based platforms
- Load Balancer configuration for high-availability and throughput
- Data source configuration for DBaaS instances

KEY BENEFITS

- Deliver full capability of the JAVA EE platform in a self-service model
- Create platform services tailored to your application architecture and standards
- Retain complete control over your Cloud environment - who, what and when
- Manage entire Cloud lifecycle from a single console
- Integrate with 3rd-party workflow engine
- Plan before you deploy, and optimize your capital expenditures
- Organize Cloud resources in a manner that best suits your organization
- Prevent over-consumption few individuals and create accountability
- Ensure Cloud availability and SLAs, and rapidly identify root cause for failures or latency
- Ensure optimal utilization of resources

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." These findings clearly demonstrate that without proper management capabilities, expected economic benefits of cloud computing will not be realized. 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 environment from applications to disk.

The Need for Platform as a Service (PaaS)

Modern enterprises face intense competitive pressures. Their customers have more options than ever. Enterprises must deliver new services and constantly innovate to stay ahead of the competition. However, enterprise IT is often the bottleneck. Provisioning infrastructure for new projects takes days and weeks, instead of hours. This severely limits enterprise agility. Users, such as Developers or QA Engineers, need rapid access to development platforms, without the overhead of being gated by IT Administrators.

Oracle Cloud Management Pack for Middleware enables enterprise IT to transform itself to an enabler instead of being a bottleneck. It offers all the capability necessary for deploying and managing middleware-centric Platform as a Service (PaaS) clouds within the enterprise. PaaS enables enterprise users to acquire resources and deploy JAVA EE applications quickly, while focusing on application development, instead of infrastructure administration. PaaS helps enterprises realize the promise of Cloud and achieve massive enterprise agility.

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- Enable elastic capacity for service instances based on policies
- Provision resources to maximize capacity utilization and to meet high-availability SLA
- Link DBaaS and Java PaaS for service end users

Self-service Provisioning of WebLogic Servers

Enterprise Manager enables IT to deliver WebLogic-based application deployment environments as Cloud services. Administrators can define different types of service (based on sizing or other configuration characteristics of the WebLogic runtime) to meet their enterprise standards.

Developers can use an out-of-box Self-service portal to request these services on-demand, and deploy applications to them, as well as manage the lifecycle of each of their service instances. The portal allows users to view the list of available service types, as well as application components available for deployment. Users can review their past and outstanding requests, resource quotas, current utilization as well as Chargeback information for the service instances they own.

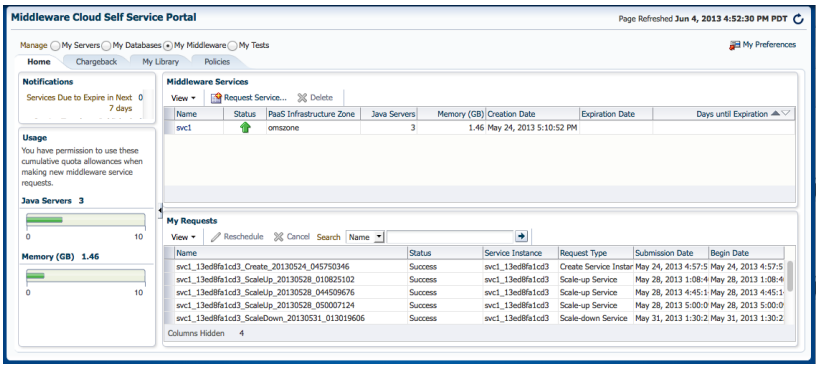

Figure 1: Out-of-box Cloud Self Service Portal

This Self-service portal also acts as the developer's view into the Cloud. It allows developers to monitor their services instances as well as the JAVA EE applications deployed to them. For higher performance and availability, they can provision services with a load balancer enabled. They can conveniently access database provisioned through DBaaS via data source configuration linking DBaaS and Java PaaS.

RELATED PRODUCTS

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

- Oracle Virtual Assembly Builder
- Oracle WebLogic Server
- Oracle HTTP Server
- Oracle Traffic Director
- Oracle Virtual Machine Manager
- Oracle Exalogic
- Oracle Virtual Compute Appliance

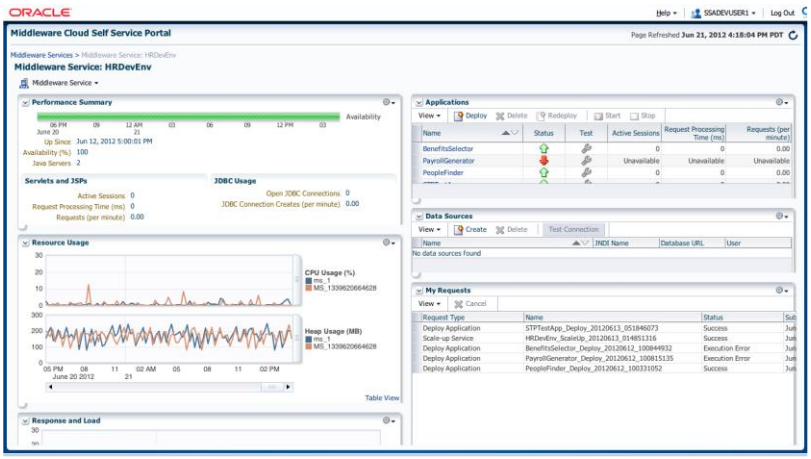

Figure 2: Service and Application Monitoring

Self-service Provisioning of Multi-tier Application Platforms

Enterprise Manager, in concert with Oracle Virtual Assembly Builder, also enables IT to package complex, enterprise platforms and applications into Assemblies and deliver them as Cloud services.

Oracle Virtual Assembly Builder makes it possible for administrators to quickly configure and provision entire multi-tier enterprise applications Cloud environments. It provides a framework for automatically:

- Capturing the configuration of existing software components and packaging them as self-contained software appliances
- Composing configurable blueprints of multi-tier application topologies called Assemblies

Using Enterprise Manager, administrators can make different flavors of Assemblies, each capturing enterprise best practices for deployment, available to developers, and enable rapid self-service provisioning of these platforms.

Developers can use the Self-service portal to request deployment of these Assemblies on-demand, manage the lifecycle of these instances, as well as monitor the various tiers. They can also request changes to resources (such as storage) underlying Assemblies as their needs grow.

Elastic Resource Provisioning

An important aspect of a Cloud is its ability to optimize the use of resources based on actual needs. Instead of over-provisioning or under-provisioning upfront, Enterprise Managers enables users to grow or shrink resources attached to an application in an elastic fashion.

For Java services, developers can dynamically scale up or down the number manager servers available within a WebLogic service via the Self-service portal. They have the choice of scaling a service one server at a time or in multiples at once.

For Assemblies, developers can define policies to automate resource allocation. Scheduled policies can be used to scale-up or down resources or start/stop platforms on a periodic basis. Performance polices allow metric-based resource scheduling. For example, a user may choose to shut down the platform if the CPU utilization falls below 5%, to save on unnecessary resource usage and costs. This elasticity also takes into account SLA requirements from service end users such as high-availability and IT requirements such as hardware resource utilization. When a load balancer is configured for the service instance, any elastic behavior will be seamlessly propagated to the load balancer.

Thus, Enterprise Manager enables optimization of resources in an auto-pilot mode.

Metering and Chargeback

A critical aspect of Cloud delivery is the ability to transparently apportion costs to cloud consumers based on their use of resources. Enterprise Manager provides tools for defining detailed charge plans spanning different metrics collected for physical and virtual resources. 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). Out-of-box, Enterprise Manager supports metering for all of the resources necessary for an Oracle-based PaaS cloud, including Hosts, VMs, Oracle Database instances and WebLogic Server instances. A hierarchy of Cost Centers can be created or imported from LDAP for cost allocation and reporting aggregation. 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 planning activities. With BI Publisher, the reports can be made available in a variety of formats such as PDF, HTML, Word, Excel or PowerPoint.

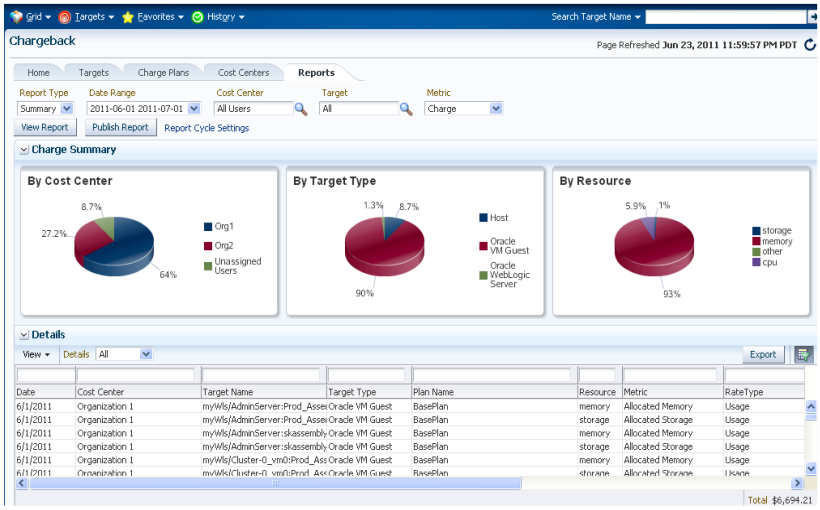

Figure 2: Enterprise Cloud Chargeback Reporting

Cloud Consolidation Planner

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 use Consolidation Planner capability to run different scenarios for redistributing workloads onto existing systems or new environments, and determine if this will result in SLA violations. Based on these scenarios, an administrator can select the best approach for establishing the infrastructure to support the Cloud.

Cloud Resource Management and Quota

Enterprise Manager enables Cloud administrators to pool resources for hosting the Cloud workloads. Alongside, administrators can establishes policies for granting users access to different pools of Cloud resources. To limit over-consumption of resources, Enterprise Manager allows administrators to establish and enforce resource quotas. A user cannot consume more resources than his or her assigned quota. The administrator may also define policies governing the scheduling of resource requests, as well as retirement of allocated resources. This ensures continuity within the cloud, and minimizes ghost workloads (i.e. workloads that consume resources without performing any meaningful work) and VM sprawl.

Cloud Administration and Monitoring

Once the Cloud is operational, administrators need to have visibility into the usage of the cloud. Enterprise Manager provides end-to-end monitoring and diagnostic capabilities for identifying bottlenecks in the cloud infrastructure and for taking remedial actions against such bottlenecks. Enterprise Manager provides a full solution for end-to-end application monitoring in the cloud. End User monitoring1 (real and synthetic), Business Transaction Management, Java and Database monitoring and Diagnostics2, and system monitoring agents are deployed

[1] Real User Monitoring is available through Real User Experience Insight (RUEI) which is sold separately.
[2] BTM (Business Transaction Management) and Java Diagnostics are available as part of the WebLogic Server Management Pack EE, which is pre-requisite to the Cloud Management pack for Middleware.

into the cloud infrastructure and provide complete performance and availability monitoring of the business application as well as the individual infrastructure and software components the application is deployed on. Enterprise Manager gives the application owner (the client using the cloud) visibility into the health of the deployed application and enable him/her to set SLAs to measure and alert on performance and availability issues.

Platform as a Service with Enterprise Manager

Enterprise Manager provides the most comprehensive solution for rolling out a middleware-centric Platform 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 IT can quickly deliver value to users, while retaining control of the environment, and managing sprawl. Oracle platforms ensure that you developer's can leverage Cloud without having to learn new non-standard technologies, ensuring continuity of skills for the enterprise.

Contact Us

For more information about Oracle Cloud Management Pack for Middleware, visit oracle.com or call +1.800.ORACLE1 to speak to an Oracle representative.

Oracle is committed to developing practices and products that help protect the environment

Hardware and Software, Engineered to Work Together