ORACLE DATABASE LIFECYCLE MANAGEMENT PACK

ORACLE
ENTERPRISE MANAGER 13ᶜ

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.

ORACLE DATABASE LIFECYCLE MANAGEMENT PACK

KEY FEATURES

- Auto Discovery of hosts
- Inventory tracking and reporting
- Database provisioning and cloning
- Schema and data change management
- End-to-end patch management
- Upgrade planning and analysis
- Configuration management
- Compliance management

Introduction

The Database Lifecycle Management Pack covers the entire lifecycle of the databases, including:

- Discovery and Inventory tracking: the ability to discover assets, and track them

- Provisioning and cloning: the ability to rollout databases in minutes

- End-to-end management of patches and upgrades

- Configuration Management: track inventory, configuration drift and detailed configuration search

- Compliance Management, reporting and management of industry and regulatory compliance standards

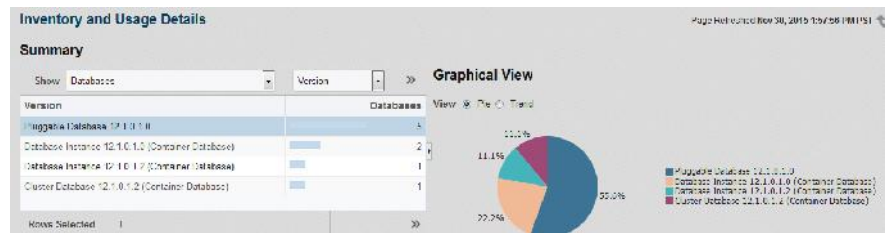- Change Management, schema and data changes

Figure 1. Inventory Details

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Automated Discovery of Assets

The Database Lifecycle Management Pack eliminates the need to manually track IT assets including databases. It provides non-intrusive out-of-box agentless capabilities to discover physical servers. Once servers have been discovered, they are easily promoted to a managed state automatically discovering all databases and other applications. This automated discovery simplifies the process of ensuring all your servers and software are managed along with assisting in IT infrastructure consolidation and optimization initiatives. This is particularly important given the dynamic nature of Oracle Pluggable Databases (PDBs) in Oracle Database 12c, for which Enterprise Manager maintains inventory and underlying Container Database (CDB) information.

This enables IT Executives to have a 360 degree view of their data center. Reports can be easily generated providing different views of the inventory information such as products, versions, lifecycle status, cost center, etc..

Agile Provisioning and Cloning of Databases

Database Lifecycle Management Pack comes with out-of-box Deployment Procedures to provision, clone and patch the Oracle Database (Single Instance, CDB, PDB and RAC Databases) including the underlying infrastructure. Enterprise Manager also supports the entire lifecycle of pluggable databases in Oracle Database 12c including migration, plugging and unplugging. Segregation of duties allows Designers to create provisioning and patching workflows while an operator can simply deploy the databases using those workflows. One can also provision a new database from a reference system or from a gold image. The gold image along with configuration details can be captured in Provisioning Profiles which can either be sourced from a reference system or downloaded from Oracle.

Provisioning on Virtualized Exadata

The Exadata plug-in has been enhanced to support complete lifecycle management of a virtualized environment. VM provisioning on Exadata provides an efficient and automated mass deployment mechanism of RAC Clusters. Administrators can now perform a variety of active management operations directly from the Exadata target homepage, including: Create / Delete RAC Databases including VMs; Extend existing clusters (Grid Infrastructure) including VMs; and Scale down cluster and/or de-provision the VM(s).

Patching and Upgrade Automation

Database Lifecycle Management Pack supports the entire Patch Management Lifecycle including, patch advisories, pre-deployment analysis, rollout and reporting. It is integrated with My Oracle Support to provide a synchronized view of available and recommended patches. These patches can then be analyzed for conflicts before deployment. One can then apply multiple patches to multiple databases in a single downtime window. The Deployment Procedures for patching are designed to enable maximum ease and minimum downtime. Enterprise Manager also provides downtime minimization techniques such as rolling patching for RAC and out-of-place patching.

Engineered Systems Patching

Complete patching automation for Exadata including patch recommendations, auto

Oracle Database Lifecycle Management Pack provides maximum benefits when used with the following packs:

- Oracle Diagnostics Pack
- Oracle Tuning Pack
- Oracle Data Masking Pack
- Cloud Management Pack for Oracle Database

patch download, scheduled application, granular status tracking, log monitoring and aggregation. Patches can be applied to all or a subset of components providing extreme flexibility.

Automating the application of the quarterly patches saves significant time and reduces errors by ensuring pre-requisite steps and procedures are followed properly, ensuring application of the component patches in the correct sequence.

Configuration and Compliance Management

The Database Lifecycle Pack combines existing capabilities from acquired technologies to provide industry's leading configuration compare, drift detection, search, topology and compliance. Administrators can define gold standards and baselines for configurations allowing them to standardize their environments against those definitions. Compare templates are utilized limiting the reporting of differences to only the Configuration Items of importance to the operations team. Configuration compares can be performed on a scheduled basis or manually invoked for a 1 to 1 or 1 to many compare.

The configuration Search capability leverages the deep configuration collection and the Enterprise Manager CMDB. Administrators can use the many out-of-box searches or build and save adhoc searches utilizing configuration items and relationships. Relationships are also viewable in the form of a topology. An Application topology can be viewed along with performing impact analysis prior to making changes or root cause analyses in the case of an issue.

Compliance Standards are provided to help customers meet the growing industry and regulatory compliance and reporting requirements, such as STIG. These Frameworks can be used out-of-box or extended to meet customer defined security requirements. Rules based analysis or real-time change detection can be applied to the Database or customer's environment. Integration with Change Management allows the identification and reporting of authorized and unauthorized changes.
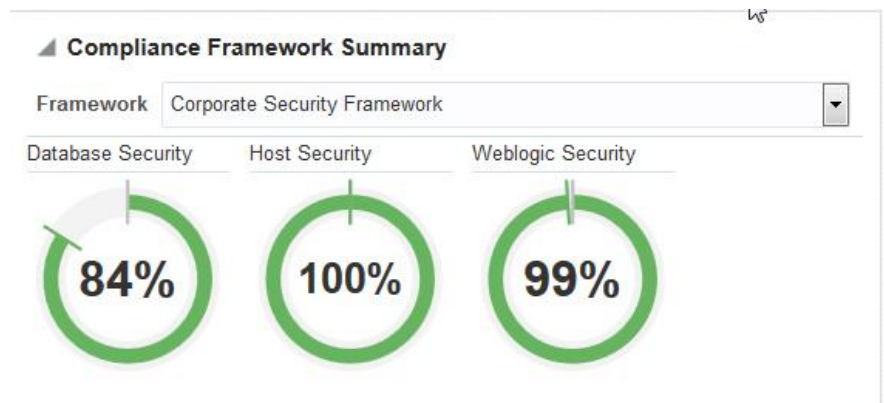

Figure 2. Compliance Dashboard

With Enterprise Manager 13, the power of the compliance and configuration management subsystems has been combined to enable drift and consistency management at cloud scale. Users can now define simple definitions consisting of a reference target and comparison template which can be applied dynamically to thousands of targets. Results are reported in the new Drift Dashboard which provides a summary and detailed results of drifted targets across the entire managed estate.
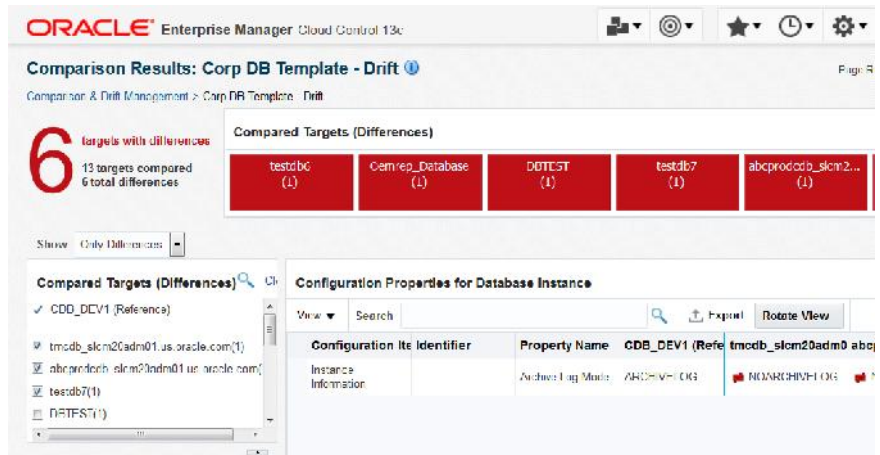
Figure 3. Comparison & Drift Management: Comparison Results

With Enterprise Manager 13, the ORAchk health check engine from Oracle Support has been integrated with the compliance framework. This includes support for engineered systems (Exadata, Exalogic, Exalytics, ZDLRA) as well as stand alone databases and hosts.

Users now have a single location in the compliance dashboard to view the current and historical standings of the managed targets against Oracle best practices and health checks.

Schema Change Management

The Database Lifecycle Management Pack provides complete automation for the schema deployment process by capturing the definitions of the application schema objects in the form of a gold definition called a dictionary baseline. When all development changes have been completed, DBAs can save them in these baselines and propagate the changes to any target database environment. These changes are validated against the target database to identify any discrepancies or conflicts, such as data type mismatches or duplicate objects. This allows DBAs to proactively correct them prior to apply the changes. When a new set of application changes need to be deployed, they can be easily rolled out using newer versions of these baselines.

Impact analysis of application upgrades on customizations can also be performed by automatically identifying schema changes specific to each customization. Conversely, if there are no changes affecting those modules, application managers can eliminate testing of large areas of the application, thereby speeding up the upgrade process.

Hybrid Cloud Management

Enterprise Manager now provides a single pane of glass for monitoring and managing both on-premise and Oracle Cloud (public cloud) deployments, all from the same management console. By deploying Management Agents onto the Oracle Cloud virtual hosts serving the Oracle Cloud services, you are able to manage Oracle Cloud targets just as you would any other targets. The communication between Management Agents and on-premise Oracle management service instances is secure from external interference. Support is provided for managing Database Cloud Services (DBCS) and Java Cloud Services (JCS) PaaS targets, as well as JVMD support for monitoring JVMs on your Oracle Cloud virtual hosts.

Figure 4. Oracle Hybrid Cloud Management