

**ORACLE WHITEPAPER**

# ORACLE DATABASE LIFECYCLE MANAGEMENT PACK

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### KEY FEATURES

- Auto Discovery of hosts and databases
- Inventory tracking and reporting
- Database provisioning
- Schema and data change management
- End-to-end patch management
- Database upgrades and migrations
- Configuration management
- Compliance management
- Change Activity Planner

*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.*

The Database Lifecycle Management Pack is a comprehensive solution that helps database, system and application administrators automate the processes required to manage the Oracle Database Lifecycle. It eliminates manual and time consuming tasks related to discovery, initial provisioning, patching, configuration management, ongoing change management and disaster protection automation. In addition the Database Lifecycle Management pack provides compliance standards for reporting and management against Oracle recommendations and best practices.

### Introduction

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

- Discovery and Inventory tracking: the ability to discover assets and track them
- Initial provisioning, the ability to rollout databases in minutes
- Ongoing Change Management, End-to-end management of patches, upgrades, schema and data changes, plan and track change activities
- Configuration Management, track inventory, configuration drift and detailed configuration search
- Compliance Management, reporting and management against Oracle recommendations and best practices.
- Site level Disaster Protection Automation

### Automated Discovery of IT assets

The Database Lifecycle Management Pack eliminates the need to manually track IT assets including databases. It provides non-intrusive network scanning capabilities to discover 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.

### KEY BENEFITS

- Non-intrusive agentless discovery of Servers on the network
- Integrated workflow promoting discovered servers to managed
- 360 degree view of assets in data center
- Automation to provision, patch and upgrade Oracle Database, RAC and underlying infrastructure
- My Oracle Support integration providing patch recommendation, pre-deployment analysis, rollout and reporting
- Deployment procedures that minimize downtime and enforce segregation of duties
- Automation for database schema and data deployment across instances
- Impact analysis of application upgrade due to database customizations
- Configuration comparison and search
- Topology view for impact and root cause analysis
- Compliance Standards for Oracle best practices and industry compliance requirements and reporting

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.

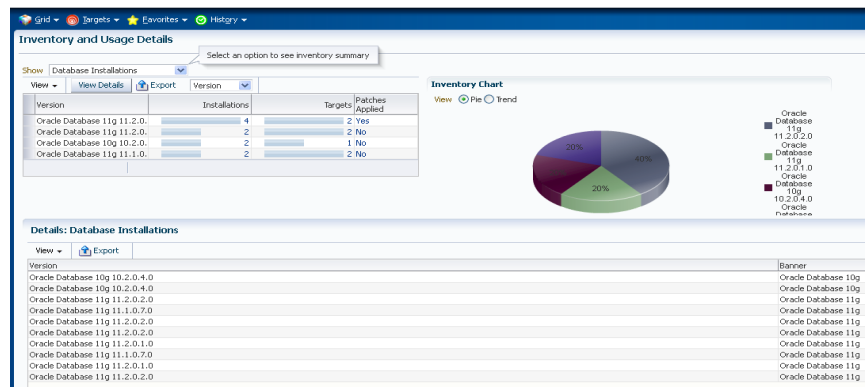


Figure 1. Inventory Details

### Agile Provisioning of Databases

Database Lifecycle Management Pack comes with out-of-box Deployment Procedures to provision 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.

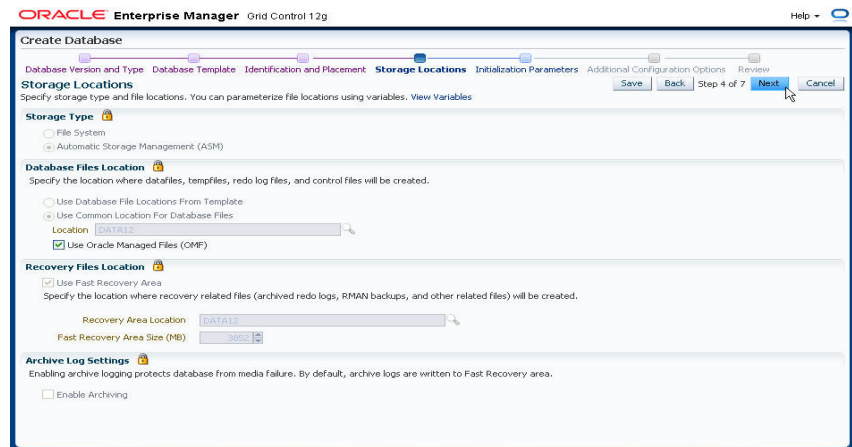


Figure 2. Oracle Database Deployment Procedure

### Automation through Ongoing Patch and Change Management

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 by using sophisticated techniques such as rolling patching for RAC and out-of-place patching.

**RELATED PRODUCTS**

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

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

Change Activity Planner (CAP) enables you to plan, manage, and monitor long running and complex operations that involve dependencies and coordination across teams and business owners as well as multiple processes. These operations can include rollout of security patches every quarter, building new servers to meet a business demand, migration or consolidation of data centers, and rolling out compliance standards across an environment.

Using CAP you can:

- Plan change activity, including setting start and end dates; and creating, assigning and tracking task status.
- Manage large numbers of tasks and targets, using automated task assignment and completion support.
- Use a dashboard where you can monitor your plans for potential delays and quickly evaluate overall plan status.
- Have task owners manage their own tasks using priority or schedule based view support on their own dashboards.

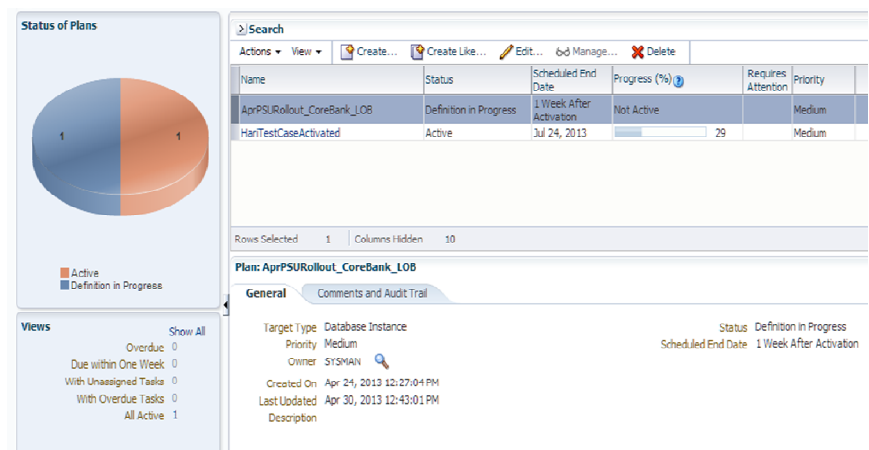


Figure 3. Manager View of Change Activity Status

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.

### Automated upgrade and migration to Oracle Database 12c Pluggable database

The Database Lifecycle Pack automates the process of upgrading existing databases to either 11g Release 2 or 12c Release 1. This can be done individually or en masse for single instance, RAC and RAC One deployments. Non container databases (CDBs) databases can also be automatically migrated to an Oracle Database 12c Pluggable database accelerating consolidation efforts.

### Standardization through continuous 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. These standards can be used out-of-box or extended to meet customer security or configuration best practice reporting requirements. Rules based analysis or real-time change detection can be applied to the Database or customer's environment. Integration with Change Management systems allows the identification and reporting of authorized and unauthorized changes.

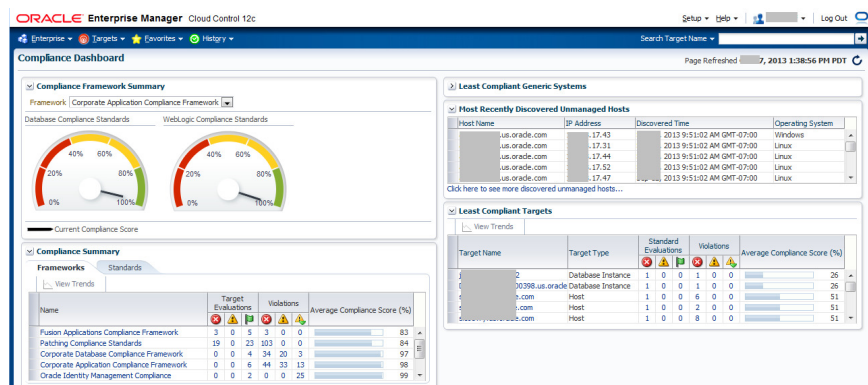


Figure 3. Compliance Dashboard

### Site level Disaster Protection thru Oracle Site Guard

Oracle Site Guard is a disaster recovery (DR) solution that enables administrators to automate complete site failover. Site Guard eliminates the need for specialized skill sets by relieving I.T. staff of the burden of manually executing complex failover operations, reducing the likelihood of human error that can lead to extended downtime and data loss. Failover operations execute quickly and reliably, reducing risk and increasing confidence that a DR plan will work when called upon. Site Guard can also be used to coordinate partial site failover or can be used to transition production between sites to facilitate planned maintenance. Site Guard orchestrates the coordinated failover of Oracle Fusion Middleware, Oracle Databases, and is extensible to include other data center components. Site Guard integrates with underlying replication mechanisms that synchronize primary and standby environments and protect mission critical data; Oracle Data Guard for Oracle data, and storage replication for file system data external to the Oracle Database.

### Contact Us

For more information about Oracle Database Lifecycle Management pack, visit [oracle.com](http://oracle.com) or call +1.800.ORACLE1 to speak to an Oracle representative.



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**Hardware and Software, Engineered to Work Together**

## ÜBER HUNKLER

Das Karlsruher Systemhaus HUNKLER wurde 1988 erster offizieller Partner von Oracle in Deutschland. Ein Team von rund 20 Mitarbeitern unterstützt Kunden aus Industrie, öffentlicher Verwaltung, Gesundheits- und Finanzwesen mit Beratung, Lösungsentwicklung und Managed Services.

Im Fokus von HUNKLER stehen leistungsfähige, wirtschaftliche Infrastrukturen für Oracle-datenbanken mit den Schwerpunkten Hochverfügbarkeit, Ausfallsicherheit und Zero Downtime Migration. Die integrierten Komplettlösungen der Produktfamilie Oracle Engineered Systems sowie der Datenbank-/Anwendungsbetrieb in der Oracle Cloud sind weitere Themenfelder, die das Unternehmen umfassend abdeckt.

**HUNKLER**  
GmbH & Co. KG

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