ITIL Best Practices with Oracle Enterprise Manager 10g and Oracle Siebel Help Desk

An Oracle White Paper
September 2009

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EXECUTIVE OVERVIEW

Reducing cost, while improving quality, customer satisfaction and aligning IT with the business are a few of the key issues facing senior business and IT managers today. By facilitating communications through standardized processes, the IT Infrastructure Library (ITIL) framework can help bridge the gap between IT and the business community. By focusing on the standardization and discipline that ITIL emphasizes, enterprises can reduce the ongoing cost of delivering IT services while improving the quality and consistency of service. Unfortunately, the lack of an integrated solution that supports the ITIL process lifecycle has been a major inhibitor in widespread adoption. IT managers are concerned about adopting point solutions for a single ITIL process that does not seamlessly integrate well with other processes. Oracle Enterprise Manager provides a rich, comprehensive support for ITIL and, with integration with Oracle Siebel HelpDesk, seamlessly supports ITIL processes.

ITIL is a set of guidelines that describes an integrated, process based, best practice framework for managing IT services that can be tailored to meet the unique business needs of IT organizations. It was developed in the late 1980's by the British government in response to the growing dependence on Information Technology. Over time, ITIL has evolved to become the de facto standard for service management.

The ITIL framework provides broad service management recommendations as well as common definitions and terminology. Adopting ITIL guidelines and architecture will enable organizations to ensure that IT processes are closely aligned to business processes and that IT delivers the correct and appropriate business solutions. Through such alignment, businesses can achieve significant benefits in areas such as risk management, change management, and service provisioning, resulting in improved execution and achievement of key business objectives.

By adopting the ITIL framework and implementing best practices, organizations can expect to reap the following benefits:

- Improved service levels and quality of service leading to increased customer satisfaction
- Closer alignment of IT services and processes with business requirements, expectations, and goals
- A closed loop change management lifecycle resulting in greater visibility into the impact of planned and unplanned changes
- A reduction in overall management and support costs leading to reduced IT total cost of ownership (TCO)

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- Improved service availability and performance, leading to increased business profitability

ITIL is about IT Service Management (ITSM). ITSM is a top-down, business driven approach to the management of IT that specifically addresses the strategic business value generated by the IT organization and the need to deliver a high quality IT service.

ITSM itself is divided into two main areas, Service Support and Service Delivery. *Service Support* is the practice of those disciplines that enable IT Services to be provided effectively. *Service Delivery* covers the management of the IT services themselves. This whitepaper will focus on the Service Support processes as well as Service Level Management- a *Service Delivery* process.

Service Support

Service Support is composed of the following disciplines and the Oracle solutions maps to these disciplines:

- Incident Management
- Problem Management
- Configuration Management
- Change Management
- Release Management

Successful implementation of the ITIL framework ultimately needs adaptable software-based tools to effectively manage and control procedure-level processes and functions. Oracle provides an integrated solution for managing and automating critical service support and service delivery functions. IT organizations can leverage many of the out-of-box capabilities to deploy ITIL best practices. The focus of this paper will be on how Oracle can help organizations achieve their goals in the five key ITIL Service Support processes: Incident Management, Problem Management, Configuration Management, Change and Release Management. It will also include Service Level Management- a *Service Delivery* process that is tightly integrated with the Service Support processes for a seamless ITIL solution.

The primary goal of the ITIL Incident Management process is to restore normal service operation as quickly as possible and to minimize the adverse impact on business operations, thus ensuring that the highest possible levels of service quality and availability are maintained.

Incident Management:

In ITIL terminology, an 'Incident' is defined as:

An event which is not part of the standard operation of a service and which causes, or may cause, an interruption to, or reduction in, the quality of that service.

The goal of Incident Management is to restore normal service operation as quickly as possible and minimize the adverse impact on business operations.

Oracle provides a number of out-of-box best practice capabilities to support the ITIL Incident Management process

Oracle Enterprise Manager proactively detects events that could lead to incidents by offering complete, end-to-end monitoring of business applications, from the real end-user experience of the application down through its underlying technology stack – applications, middleware, database, storage, servers. Datacenter infrastructure components such as routers, server load balancers and firewalls could also affect the availability of services and hence are similarly monitored in Enterprise Manager, giving a complete and integrated view of the entire health of the data center. Incidents detected by Enterprise Manager are raised as 'alerts' which can be visually monitored using the Enterprise Manager System Dashboard, and notifications for these can also be sent to the appropriate administrators. Enterprise Manager's notification system enables the mapping of the specific events or alerts (incidents) to specific administrators thus ensuring that the administrators with the appropriate skills are notified when such incidents are detected.

Events or alerts (incidents) that have a well-known solution can be automatically resolved via 'Corrective Actions'. Corrective Actions enable administrators to specify the corrective tasks that should be executed if the alert is detected (e.g. restart a process if it becomes unavailable). This eliminates the need for operator intervention and in effect an incident has been prevented before it impacts your end users.

If operator intervention is required to resolve an alert detected by Enterprise Manager, a Siebel HelpDesk incident ticket can be automatically (or manually) generated using the Oracle Management Connector, which interfaces between Enterprise Manager and Siebel HelpDesk. The generated incident ticket will contain critical details about the alert such as the software component that caused the incident, error message, time of incident, priority, etc. Initial classification of the ticket could also be done automatically based on attributes of the alert. For example, the type of component on which the alert was detected could be used as a basis for setting the classification of the ticket. Thus alerts detected on databases could result in tickets classified under the 'Database' area; alerts detected on the application server could result in tickets classified under the 'Application Server' area.
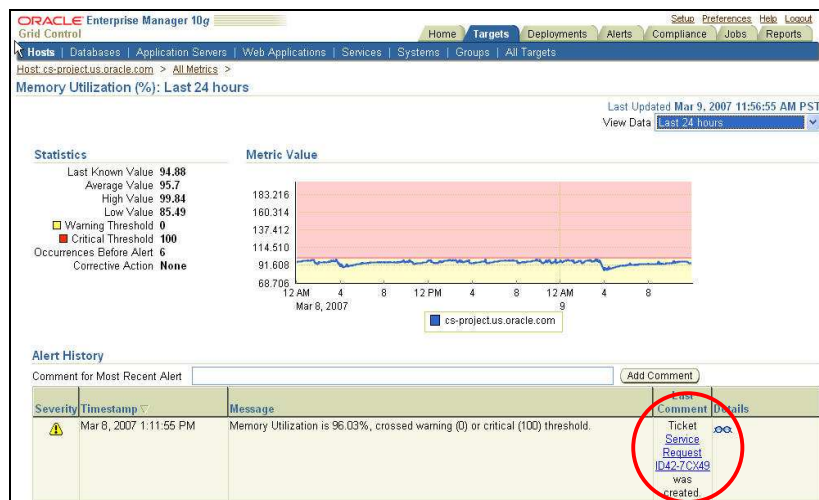
Figure 1: Enterprise Manager shows information about detected alerts (incidents) and tickets opened for them. You can click on the ticket ID to launch Siebel HelpDesk in context of the ticket.

Siebel HelpDesk also provides workflow features that ensure the appropriate Helpdesk analyst is assigned and notified of the incident ticket. If needed, further classification and prioritization of the incident ticket can also be performed. The helpdesk analyst can assess the impact and urgency of a particular incident and thereby recommend a priority level with a suitable resolve date/time and escalation date/time. In the meantime, Enterprise Manager will continue to monitor the component for which the incident ticket was created. A worsening condition could cause an Enterprise Manager alert of higher severity to be raised (e.g. from warning to critical) and this severity change will be automatically propagated to the help desk ticket via the connector.

If the specified escalation time for the incident ticket is passed, workflow can either increase the priority level or notify the incident owner's manager. A visual indicator shows at a glance whether the incident is active, closed, or has breached the associated Service Level Agreement (SLA).
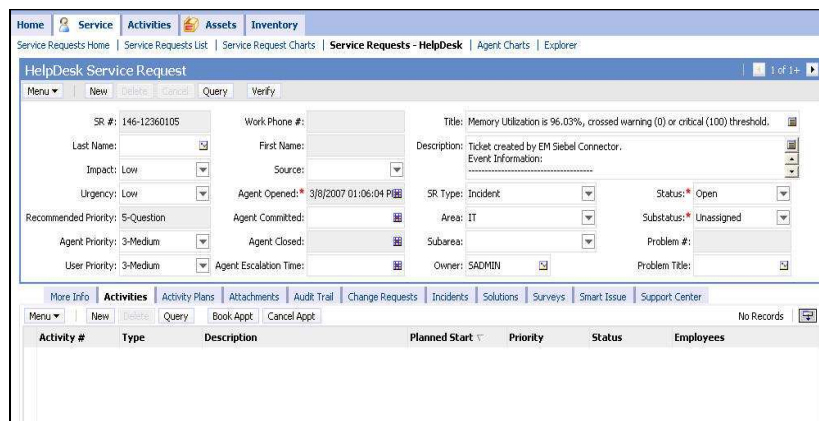
Figure 2: Siebel HelpDesk ticket based on Enterprise Manager detected alert (incident). Information about the alert is automatically passed to the ticket. The help desk analyst assigned to the Service Request or incident ticket can use the knowledge base to find known 'corrective actions' for the incident. If a solution is identified, a link back to Enterprise Manager is provided in the ticket, enabling the analyst to easily access Enterprise Manager's administration features to implement the solution (e.g. restart the database, add a data file, etc.)

Since Enterprise Manager's monitoring system continues to monitor the component associated with the incident ticket, once the solution has been implemented, Enterprise Manager's monitoring system will detect that the issue no longer exists (i.e. has been resolved). This could, in turn, alert the Service Desk automatically, and allow them to close the ticket with the users consent

Customers who have an existing non-Oracle help desk solution can leverage the Enterprise Manager Connector solution for an integrated IT service management solution. For example, the Oracle Management Connector for Remedy Service Desk enables IT organizations to proactively detect and respond to incidents to ensure high quality of service levels are maintained. The connector integrates proactive alert detection and resolution feature with Remedy's Service Desk capabilities to provide a seamless workflow for incident management and resolution – from the creation of tickets based on alerts to bi-directional console links for incident resolution to automatic ticket closure based on clearing of alerts.

## Problem Management:

The primary goal of the ITIL Problem Management process is to minimize the adverse impact of errors within the IT infrastructure and to prevent recurring incidents related to these errors.

The primary goal of the ITIL Problem Management process is to minimize the adverse impact of errors within the IT infrastructure and to prevent recurring incidents related to these errors.

In ITIL terminology, a Problem may be defined as:

*An unknown underlying cause of one or more incidents.*

The ITIL Problem Management process eliminates recurring incidents by categorizing the underlying root cause of the Problem and then initiating actions to improve or correct the situation. If a solution isn't readily identified, then a new Problem can be created within Siebel Helpdesk, automatically associating the new Problem with the incident. By associating the problem with the incident, a parent-child relationship is automatically established. When the problem record is closed, all the associated incidents are closed via a single button click.
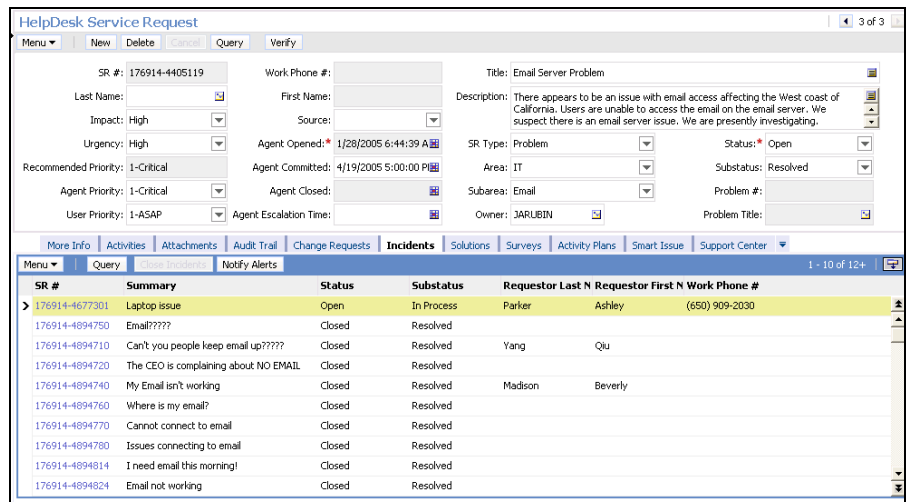
Figure 3: Associating multiple incidents to a single problem in Siebel HelpDesk

To assist with the identification of root cause of incidents, Enterprise Manager offers a wealth of diagnostic features. For example, say there have been performance-related incidents logged by end users and an administrator decides to start the diagnostic process by first checking if the database performance has changed during the time period reported by the end users.

Enterprise Manager works with the self-management features of the Oracle database in order to provide database diagnostics information. Using the database performance page within the Enterprise Manager Console, the administrator first focuses the historical view of performance to the relevant period of time. Looking at the database Active Sessions performance chart, the administrator notices that at that period of time, the database was bottlenecked on CPU and database sessions were waiting on CPU.
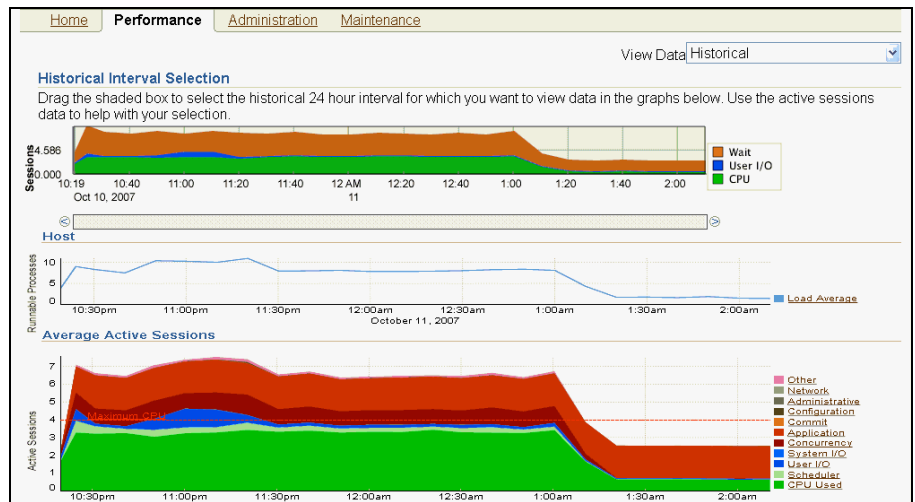
Figure 4: The database performance page in the Enterprise Manager Console can show historical views to enable focused investigation of database performance issues in a particular period in time.

Under the Active Sessions chart, the administrator can click on an ADDM task icon for that time period to access the diagnosis and recommendations provided by the Automatic Database Diagnostic Monitor (ADDM). ADDM is a component of the Oracle database that is responsible for diagnosing its own performance issues and providing possible solutions for them. The ADDM findings show that there were a number of SQL statements that were consuming significant database time.
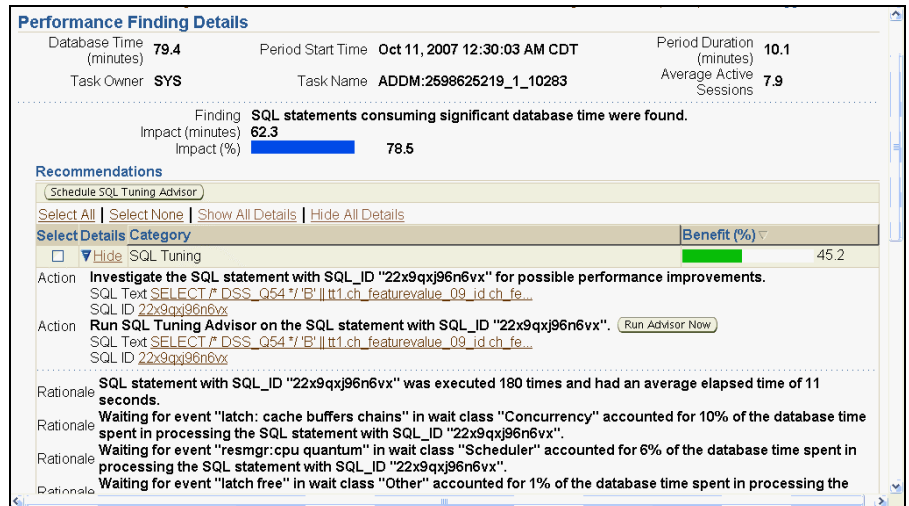
Figure 5: ADDM findings show analysis of performance issues and recommended solutions.

Among the recommendations made is to run the Enterprise Manager's SQL Tuning Advisor functionality. SQL Tuning Advisor provides information on

how administrators can tune SQL statements. In this example, one recommendation is to use a SQL profile to change and improve the SQL execution plan.

Figure 6: Enterprise Manager's SQL Tuning Advisor provides recommendations on tuning SQL statements.

As another example of Enterprise Manager's diagnostic capabilities, if a service is detected to be down, Enterprise Manager automatically performs root cause analysis by checking the status of key components of the underlying technology stack to identify probable causes of failure. This information is especially critical in complex applications where knowledge of the underlying application stack and its dependencies is not well understood by the administrator that is investigating the service failure.
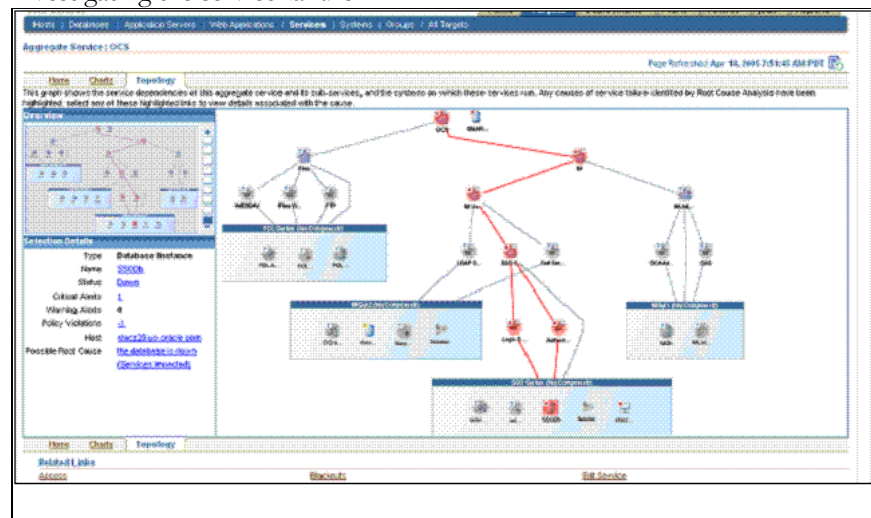
Figure 7: Enterprise Manager's topology viewer visually shows possible root causes of service failure.

Enterprise Manager's Configuration Management Database (CMDB) stores historical information about all incidents detected, as well as configuration information about the component and environment on which these incidents have occurred. Using Enterprise Manager's Information Publisher features with the CMDB, administrators can generate trend analysis reports identifying the most common incidents by time or by type, and correlate these with their configuration information enabling them to perform root cause analysis and take preventive measures for these incidents.

On the proactive side, Problem Management is also concerned with identifying and solving problems and known errors before incidents occur. Types of activity toward this goal are are, trend analysis, identifying recurring problems of a particular type and testing.

For testing and identifying problems prior to them occurring, Oracle Enterprise Manager offers the Application Testing Suite. Application Testing Suite is a comprehensive, integrated testing solution that ensures the quality, scalability and availability of your Web application and Web Services. This integrated, full lifecycle solution enables you to define and manage your application testing process, validate application functionality, and ensure that your applications will perform under load. With Application Testing Suite, you can deploy your Web applications and Web Services in less time while maximizing the efficiency of your testing team.

Application Testing Suite is comprised of the following tightly integrated products:

- Load Testing for Web Applications for scalability, performance and load testing.
- Functional Testing for Web Applications for automated functional and regression testing.
- Test Manager for Web Application for test process management, including test requirements management, test management, test execution and defect tracking.

Figure 8: Application Testing Suite creates realistic load testing scenarios that simulate end-user behavior

To understand the Real User Experience, Oracle Enterprise Manager offers Real User Experience Insight. Oracle Real User Experience Insight enables enterprises to maximize the value of their business-critical applications by delivering insight into real end-user experiences. It can help identify lost revenue from frustrated users, reduce support costs by lowering call center volumes, accelerate problem resolution of poorly performing applications, and help businesses adapt to changing needs by providing insight into business trends and user preferences. It integrates performance analysis and usage analysis into a single offering, enabling business and IT stakeholders to develop a shared understanding into their application users' experience.

Oracle Real User Experience Insight's non-intrusive monitoring capability is built using state-of-the-art Network Protocol Analysis (NPA) technology, which does not require any modification, changes, or instrumentation of the application. Its passive monitoring approach allows enterprises to deploy in production, without requiring costly test/QA environment validations.
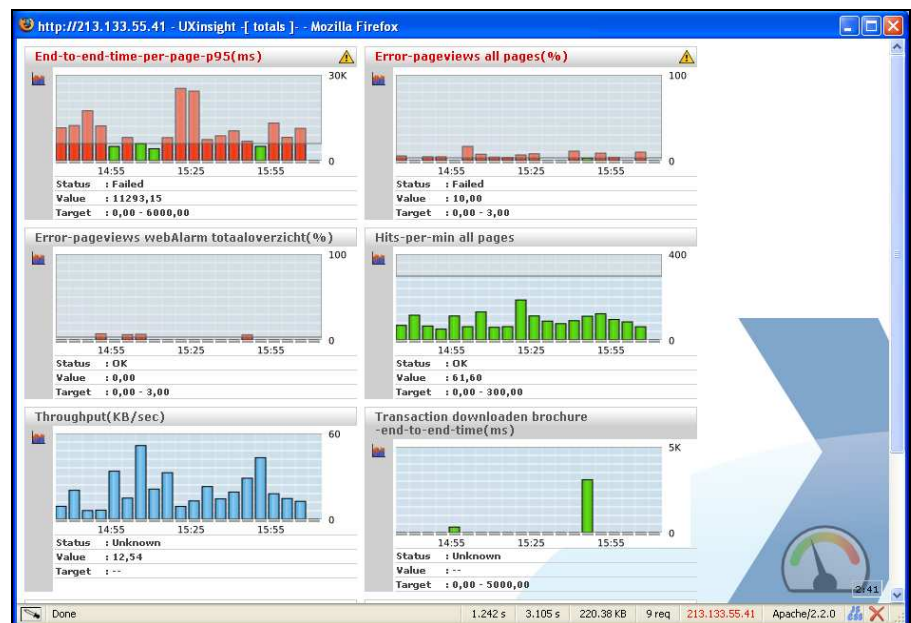
Figure 9: Real User Experience Key Performance Indicators, Monitoring and Alerting

Configuration Management

The primary goal of Configuration Management is to provide a logical model of the IT infrastructure or a service, by identifying, controlling, maintaining and verifying the versions of Configuration Items (CI's) in existence.

The primary goal of the ITIL Configuration Management process is to account for and verify the configuration records of all the components of the IT infrastructure, as well as provide accurate information to support all other key processes.

According to ITIL:

Configuration Management provides a logical model of the infrastructure or a service by identifying, controlling, maintaining and verifying the versions of Configuration Items (CI's) in existence and their relationships to each other.

Configuration Management consists of four main tasks:

- Configuration identification and discovery–the specification and discovery of all IT components and their inclusion in the CMDB
- Status Accounting and Control–the management and recording of the status of all current and historical data associated with a CI though the lifecycle- status of a CI from development, test, production, withdrawn etc.
- Verification and Reporting –involves audits and reports to ensure the information contained in the CMDB is accurate
- Support other ITIL processes like Problem, Change, Release and Service Level Management.

Oracle Enterprise Manager supports ITIL Configuration Management by:
- Auto discovery, relationship mapping, topology views
- Tracking configuration status and auditing configuration change
- Automatically updating CMDB on change
- Automatic Configuration verification and reporting of CI status
- Support Problem, Change and Release Management though a topology viewer, providing change history details and updated configuration information.

The Enterprise Manager Configuration Management solution manages configuration discovery, enforces configuration changes and automates IT processes. Using agent and agent less technologies, it discovers and collects detailed configuration information about all hardware and software resources in the enterprise, patches, the relationships and associations between them, topologies, systems and services, availability and performance metrics.

This information includes:

- Hardware (CPU, memory, storage, network etc)
- Operating system packages, patches and kernel parameter settings
- Relationships between CI's including 'runs on', 'depends on', 'connected to' etc.

- Oracle software installed including interim patches, patch sets and other configuration settings, components, DB parameters
- Systems, Service and Groups
- Topologies
- Metrics and Notifications
- Change History
- Third party software that include, among others, databases like SQL Server and DB2, storage like NetApp and EMC, networking solutions like Juniper and Cisco and middleware like BEA Weblogic and IBM WebSphere, IBM WebSphere MQ5.

The Enterprise Manager CMDB also collects configuration information for packaged applications. For example, for the Oracle eBusiness Suite, the CMDB collects over 100 configuration metrics and facilitates topological root cause analysis. For PeopleSoft, over 500 metrics, automation of configuration policy management and discovery of application relationships is collected.

The configuration is automatically collected at regular intervals and stored in the Enterprise Manager CMDB repository. Ad-hoc collections are also supported. Enterprise Manager provides the ability to not only take snapshots of CI's but also assign version numbers to the CI baseline and save it for managing configuration drift.


Figure 10: Server CI Details: Hardware, Operating System and Applications

Enterprise Manager also tracks configuration status changes to hardware and software installations and configurations. This is critical in problem management and root cause analysis because it makes it quick and easy for the administrator to view changes that have been made since the last time the machine was functioning appropriately. This feature is also critical in managing compliance. By capturing and storing all configuration changes, Enterprise Manager facilitates change analysis- who changed what, when, and to what value.
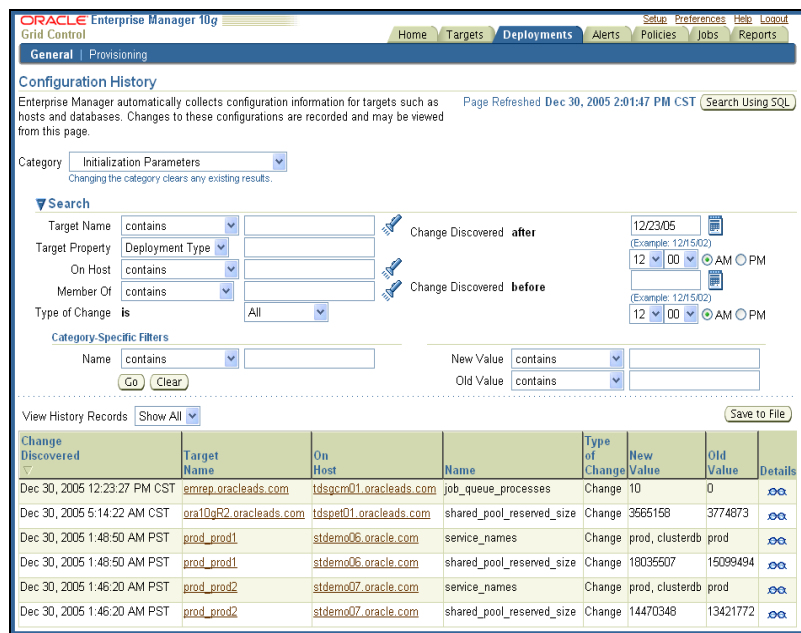
Figure 11: Detailed Configuration History is calculated and stored for all CI's

Tracking of CI lifecycle status from one state to other- *development, test, production, withdrawn* is also supported:
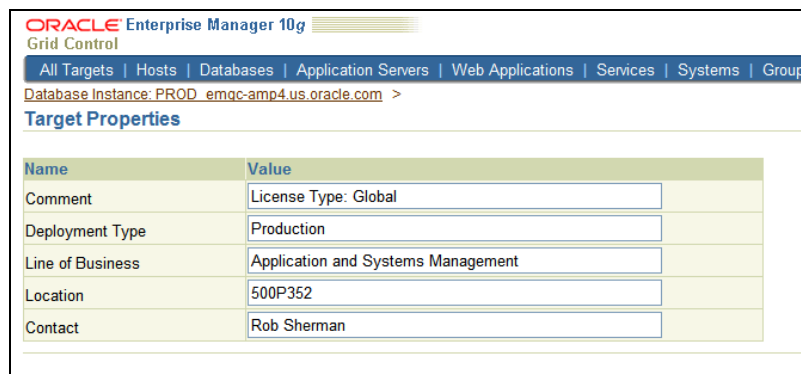
Figure 12: Configuration Target properties example

Enterprise Manager supports automated configuration verification by automatically comparing CI's enterprise-wide at great detail, allowing an administrator to quickly and easily pinpoint any potential differences. The comparison spans the entire stack from the hardware to the application. This helps to keep systems synchronized and reduces 'configuration drift'. It also simplifies investigations into why systems that are presumed to be identical may behave differently, for example the nodes in a RAC cluster. The ad hoc or scheduled comparison between selected multiple (1-n) targets and a 'gold' configuration can be made against a reference configuration, a saved configuration baseline or a live configuration.

Configuration comparison is extremely useful in change management. By comparing configuration baselines, before and after a change or patch is applied, one can verify that all configuration changes introduced as result of the patch were planned and expected.

Figure 13: Comparison of Oracle Database SGA parameters between two database instances

Enterprise Manager provides ready-to-use reports on hardware and software configurations and for compliance.
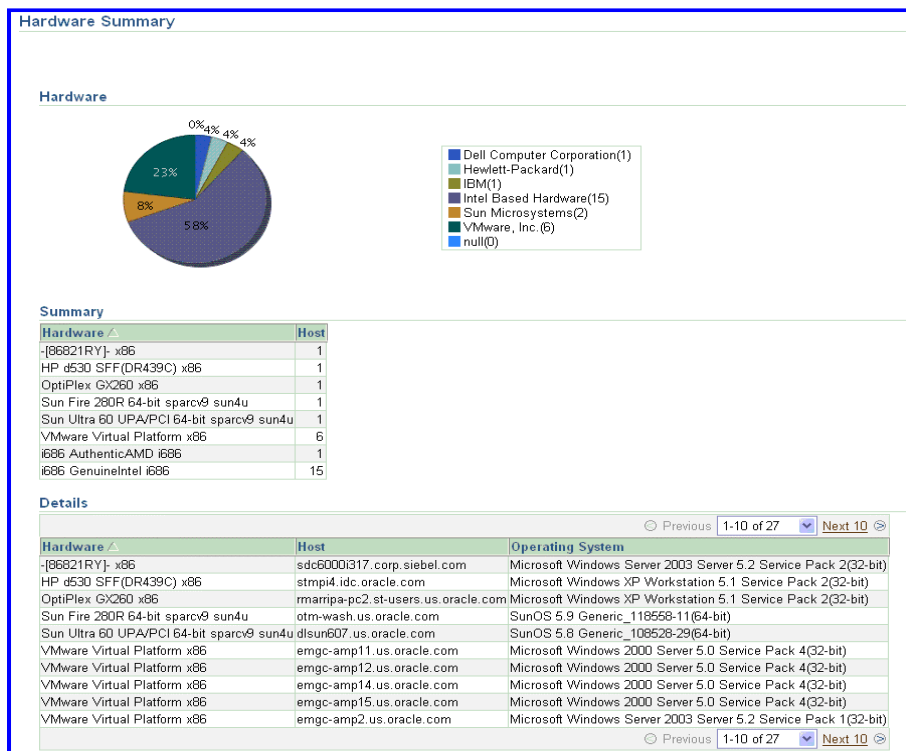
Figure 14: Hardware Summary Configuration Report

By capturing associations and relationships between configuration items, services and systems and displaying the topology in a chart allows for easy "what is affected, what is impacted" analysis the solution facilitates problem and change management processes.

Enterprises today also require a comprehensive solution for managing their application configurations and CIs for the infrastructure underlying their mission-critical applications. The Enterprise Manager Application Configuration Console provides IT infrastructure teams with an automated "gold master" approach to application infrastructure configuration management that enables smooth delivery and support of mission-critical business applications. Through use of the capabilities, IT infrastructure personnel can capture the current state of configuration settings for IT assets, monitor them for changes, and automate processes for provisioning changes as well as setting up new environments throughout the application lifecycle — from development, testing and through production.
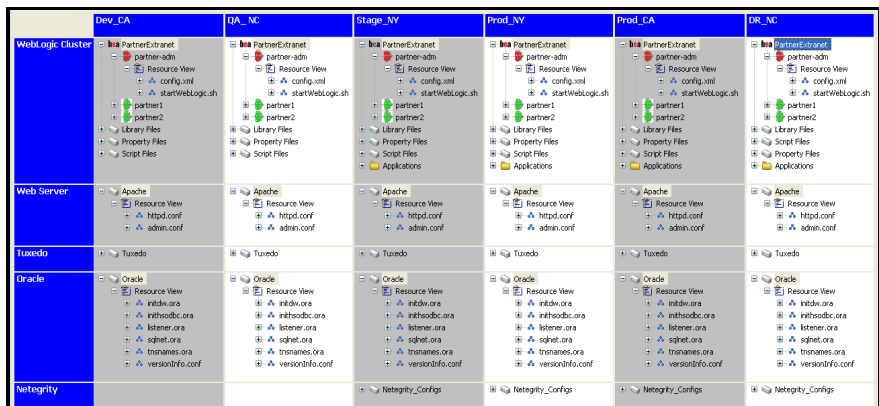
Figure 15: Managing Application Configurations across the deployment lifecycle

Enterprises today are implementing compliance frameworks that require real-time configuration change tracking such as Sarbanes-Oxley (SOX), Information Technology Infrastructure Library (ITIL), and Payment Card Industry (PCI) data security standards. A crucial consideration for these compliance frameworks is real-time configuration change detection and reporting. Oracle Enterprise Manager addresses this need through the centralized Configuration Change Console that includes out-of-the-box and user defined policies and controls. The Configuration Change Console is a policy-based system designed to help organizations and administrators support their IT configuration compliance goals and help deliver the level of service expected by their users. The console comes with a set of predefined frameworks created by industry experts to meet common compliance requirements. This enables IT departments to quickly and easily demonstrate compliance with government regulations and industry standards such as SOX, PCI, and ITIL.
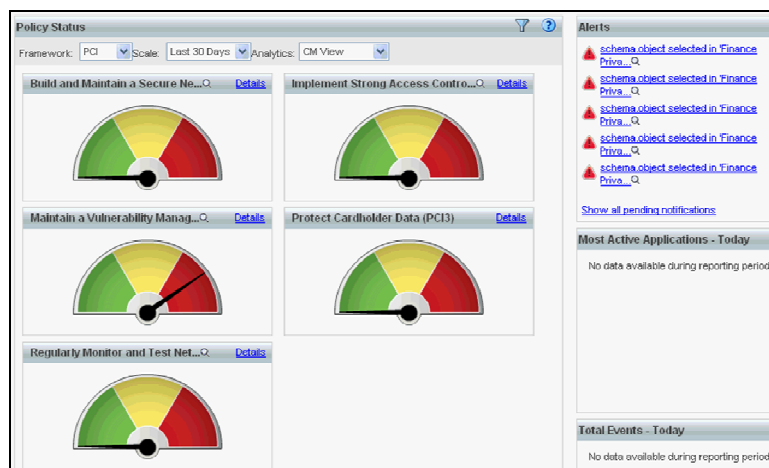
Figure 16: Dashboard for the real-time configuration change console

In summary, Enterprise Manager not only provides a rich, comprehensive Configuration Management Database that not only serves as a primary repository for CI information, but also supports other key ITIL processes including Incident Management, Problem Management, Change and Release Management

Change Management:

The goal of Change Management is to ensure that standardized methods and procedures are used for efficient and prompt handling of all changes to minimize the impact of change-related incidents and improve routine operations

Change Management is the discipline of ensuring that standardized methods and procedures are established for efficient and prompt handling of all changes to an organization's IT infrastructure in order to minimize the impact of change-related incidents upon service quality. This includes ensuring that there is a business reason behind each change, identifying the specific Configuration Items and IT Services affected by the change, planning the change, testing the change, and having a back out plan should the change result in an unexpected state of the Configuration Item.

In ITIL terminology, a Change may be defined as:

The addition, modification or removal of approved, supported or baselined hardware, network, software, application, environment, system, desktop build or associated documentation.

Oracle provides a comprehensive full change lifecycle management solution, leading to more effective resolution to incident, problem and known error management.

The Oracle Change Management enforces standard methods and procedures for efficient, prompt handling of all changes to an organization's IT infrastructure. It minimizes the impact of change-related incidents on service quality, and improves day-to-day operations.

Oracle Change Management:
- Provides visibility into IT infrastructure components and business services that may be impacted by planned changes
- Facilitates accurate classification of incoming change requests
- Tracks and automatically routes multi-level approvals for change requests
- Monitors and tracks the lifecycle of the change request
- Automates task assignment, escalation processes, notifications, and approvals for optimal workforce deployment
- Supports automated change impact analysis and change verification
- A rich library of out of the box standardized change implementation procedures
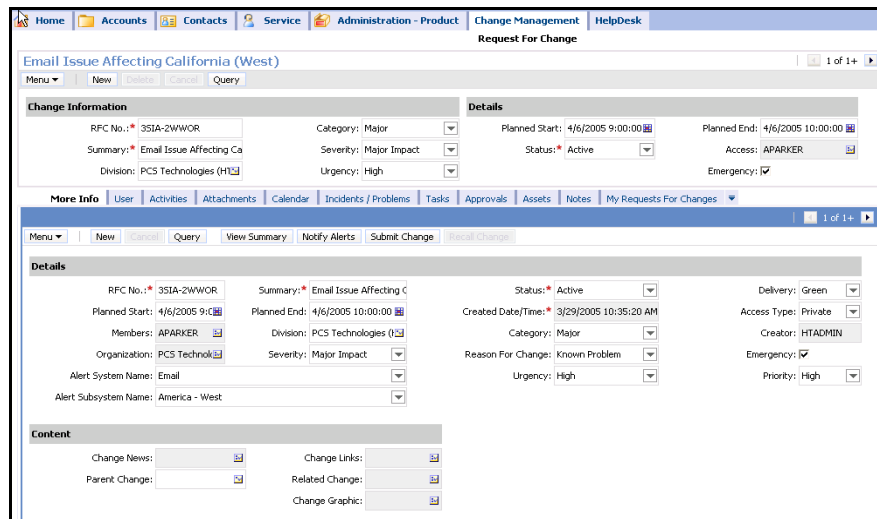
Figure 17: Request for Change (RFC) details

The Oracle Solution allow for the creation and classification of change request records. The change analysis process allows for identification of the items, impact the changes would have on existing objects, ability to schedule the action to occur at the appropriate time and providing a means to back out the change if necessary. Changes are prioritized and categorized based on the impact to business and risk assessment.

The Oracle Configuration Management solution facilitates change management analysis process by giving a comprehensive picture of the impact of IT changes to the organization's infrastructure. The solution not only discovers rich and detailed configuration information but also discovers the detailed associations and relationships between configuration items. Being able to query these relationships, such as parent/child is critical to understanding the impact of any planned changes. By capturing and storing detailed change history information, analysts can review all changes made to the affected CI over a period of time.

Siebel HelpDesk helps determine the availability of the required resources to implement the planned changes through integrated calendaring functionality. By identifying the impact of the change, on the IT infrastructure and staff, IT and business managers can work together to maintain a smooth change process that ensures efficient utilization of the IT staff and minimizes disruption to the business. The approval process is automated and approvals are sent to the appropriate personnel and can be tracked to avoid delays. Automatic assignment and escalation rules can be defined allowing for the routing of approvals and notifications to alternate personnel and geographies. The comprehensive collaboration environment allows management of the Change Advisory Board (CAB) process and change scheduling based on integration with project management tools. Analytics can be used in conjunction to scope the

effort required to implement the planned changes by reviewing similar changes performed in the past. Integration ensures that the HelpDesk can track the status of the change through the lifecycle.

Automated change verification process assures that no unplanned changes were inadvertently introduced during the change process.

The tightly integrated Oracle solution ensures that suggested remediation from the problem management analysis – SQL Tuning Advisor recommendation, application of a CPU patch etc. can be analyzed and approved during the change management process and then automatically implemented and deployed using standardized processes. At every step of the change process, the status of the affected CI's is automatically updated in the Oracle CMDB.

Release Management:

The goal of Release Management is to Plan, Design and implement procedures for the distribution and installation of software and to oversee the rollout process

Release Management is the management of all software configuration items within the organization. It is responsible for the management of software development, installation and support of an organization's software products.

In ITIL terminology, Release Management may be defined as:

The addition, modification or removal of approved, supported or baselined hardware, network, software, application, environment, system, desktop build or associated documentation.

Release Management procedures include the lifecycle management of the software Configuration Items and their distribution and implementation into a production environment. These include:

- Design and implement procedures for the distribution and installation of changes to IT systems

- Control the distribution and installation of changes to IT systems

The Oracle Enterprise Manager Release Management solution facilitates the planning, management and successful rollout of software, documentation and procedures, as well as the versioning of release components and packages for comprehensive control and traceability.

The first step in the release management process is to build and store and configure standard software components in a Definitive Software Library. Oracle Enterprise Manager provides the infrastructure for a centralized Definitive Software Library that facilitates the planning, management and successful rollout of the software. The Definitive Software Library (henceforward referred to as 'Software Library') that allows for the creation of an organization's 'gold image(s)' from reference installations.

The Software Library supports a hierarchy of software entities like components and images. The components serve as ingredients for the images and several components can be mixed and matched to form 'gold images'. Software Library can also store versioned scripts that can be reused across different images and their related operations. An Enterprise Manager Super Administrator may create and maintain these images, while administrators of individual managed entities can use them over and over again to deploy software to new destinations. Oracle provides out-of-box templates that can be associated with these images. Images can also be assigned custom tags and versions for ease of reference; this allows users to build up a stockpile of certified, reliable, and reusable software packages for redeployment completely independent from their original source locations. The figure below shows the taxonomy of different software entities in the Software Library. By providing an ITIL standard Software Library, the Oracle solution also supports creation of "gold images" for deploying any software-Oracle, third party or in-house applications in a consistent, unified manner. Data centers, as well as integrators can package their custom solution into repeatable solutions and roll them out for deployment.

| Components | Directives | Networks | Images | Suites | Assignments | Hardware | Cluster | Suite Instance | Administration |

Define and configure the set of software components that may be included in an image.

View Latest Version (Go) Advanced Search

(View) (Edit) (Activate) (Deactivate) (Delete) (Promote) (Demote) (Create Folder) (Create Component)

Select	Name	Type	Revision	Status	Maturity	Product name	Product version	Description
●	▼ Components							
○	▶ MyOracle Deployment							Oracle10g R2 for Online Bank
○	▶ Oracle Components							Oracle Components
○	▶ OracleSoftwareUpdates							
○	Adobe software	Generic Component	0.1	Ready	Untested			
○	AS Component	Oracle iAS Clone	0.2	Active	Production	Oracle Application Server J2EE and Web Cache	10.1.2.0.2	Nicole created this for demo purposes.
○	ASCloneComp1	Oracle iAS Clone	0.1	Active	Untested			
○	Database 10.2 component	Generic Component	0.1	Ready	Untested			Database patched with 10.2.0.2
○	DBClone4WMS	Oracle Database Clone	0.1	Active	Untested			
○	Disk Layout1	Linux Disk Layout	0.1	Ready	Beta			
○	Hardware Profile1	Hardware Profile	0.1	Ready	Untested			
○	Oracle Application Server J2EE and Web Cache	Oracle iAS Clone	0.5	Active	Production	Oracle Application Server	10.1.2.0.2	include Web Cache, HTTP Server, OC4J
○	Oracle DB 10.2	Generic Component	0.1	Ready	Untested	Database	10.2	This component represents Oracle DB 10.2

Figure 16: Software Library Components

The Enterprise Manager Release Management Software Library facilitates the creation of full, delta and package releases. An Oracle interim patch that fixes few files is an example of a delta release while a package release would include the operating system, database and application server into a single image. A complete database software installation is an example of a full release.

Another key requirement of the Release Management Process is to control the distribution and installation of the images in the Software Library to IT systems. Out of the box, repeatable processes that automate the entire distribution and installation including scheduling and planning, automatic verification, notification and communication, update of the CMDB to reflect

the latest CI status help in demonstrating successful rollout of software and related hardware through standardized processes. This ensures that the software being updated is traceable and only correct, authorized and tested versions are installed.

The Enterprise Manager Provisioning Pack ships out of the box Deployment Procedures that are repeatable processes that implement best practices for a change implementation. Deployment Procedures are comprised of a set of change implementation steps orchestrated by Enterprise Manager. Deployment Procedures can be extended and customized for customer needs. One can edit the deployment procedure to insert or delete a step or a phase or to enable or disable a step or a phase. The Deployment Procedure to patch a single instance database differs from the one to patch a RAC environment or an Application Server. Deployment Procedures can vary from one customer to another or a test installation to a production installation. Deployment Procedures take into consideration, the reality that environments are often different with each having complexities across different tiers with multiple dependencies. The situation is further compounded by existing operational practices. In a typical data center, Deployment Procedures can involve a design time activity (typically performed by a Lead Administrator) and a runtime activity (typically performed by the Operator). Typical Deployment Procedures can include patching procedures for the entire software stack or individual components. Provisioning procedures can include operating system provisioning, database and middleware provisioning and scale out, and packaged applications cloning.

One can edit the deployment procedure to insert or delete a step or a phase or to enable or disable a step or a phase.

In summary, Oracle Enterprise Manager provides a deep release management solution that governs the co-coordinated rollout of software within an enterprise. By centralizing the release process around the Software Library, it allows for adequate planning and control. As a downstream discipline of the Change Management Process, it can perform automated determination of impact and conflict with other software releases. It also orchestrates the release rollout process by sequencing the blackout, shutdown and startup of services. While rolling out the software, Enterprise Manager notifies interested parties of status changes, giving them the opportunity to take corrective action. Enterprise Manager has built-in capabilities to rollback and re-try a release operation in case the release process did not meet goals. After the software has been rolled out, Enterprise Manager ensures that the configuration changes to the CI's are updated in the CMDB.

Service Level Management:

The goal of Service Level Management is to maintain and improve IT service quality through a constant cycle of agreeing, monitoring and reporting to meet the customers' business objectives

Service Level Management (SLM) is the constant cyclic process in which customers and the IT service provider, together define, negotiate, agree, monitor, and report on levels of service. The Service Level Management process pivots around Service Level Agreements (SLA's) in which the goal is to

enable the continuous maintenance and improvement of IT service quality in order to meet the customers' business objectives. The process ensures that any adverse impact on service quality is kept to a minimum.

In ITIL terminology, Service Level Management may be defined as:

The process of planning, coordinating, drafting, agreeing, monitoring and reporting on SLA's, and the on-going review of service achievements to ensure that the required and cost-justifiable service quality is maintained and gradually improved.

Oracle Enterprise Manager provides several best approach capabilities to support the ITIL SLM process. Enterprise Manager's SLM methodology enables IT service providers to define SLA's based on business objectives, monitor service quality using a rich set of metrics, and report on actual service levels.

Before any service can be monitored, it must be accurately modeled and defined in the context of the consumer or customer of the service. Real world services are modeled and defined in Enterprise Manager from the end-user's perspective, where the services themselves are also mapped to IT resources. End-user tasks are modeled as 'service tests' for proactive 24X7 monitoring of services using Enterprise Manager's Service Level Management functionality. A service test represents end user business processes or actions that are used to evaluate the availability and performance of a service. Service tests are defined and replayed at regular intervals from remote agents (beacons) that are typically located at representative critical end-user locations. Using Enterprise Manager, service level goals can be defined and determined using either the availability of these service tests or of the critical system components of the service.
Key service indicators are monitored for availability, performance, usage, and service level compliance. A rich set of metrics are available for defining and measuring service levels, including performance metrics derived from service tests and transactions or system components, and usage metrics derived from monitoring the throughput activity of system components. In addition, Enterprise Manager provides the ability to define other core service level criteria including: the expected service level goal percentage, availability, and service days and hours.

Centralized reporting and viewing of service levels are provided from a real-time and historical perspective through the customizable Service Dashboard where SLA compliance can be monitored at intervals such as the last 24 hours, 7 days or 31 days. Drilldowns from the Service Dashboard provide insight into service level details. The Service Dashboard provides a 'one stop' management console for all critical services, and a consolidated view into their overall health and SLA status.

Figure 17: Service level compliance is monitored and displayed on the Services Dashboard

In addition to the various out-of-box service reports provided, Enterprise Manager's Information Publisher feature allows the customization of service reports. Both out-of-box and customizable reports provide flexible reporting options for executives and administrators.

Summary:

Outlined above were ITIL recommended processes and how the Oracle Enterprise Manager and Siebel HelpDesk can greatly improve the level of service they provide by IT operations, as well as increase resource efficiency and reduce the cost of IT operations. Equally important, adopting the ITIL framework will enable organizations to align IT and business goals and improve return on IT investment.

While ITIL provides basic guidelines on common sets of best practices, the actual implementation will vary based on the changing needs of the organization. Oracle Enterprise Manager and Siebel HelpDesk provide the necessary tools for IT organizations to implement ITIL best practices by providing out-of-box capabilities that can be adopted by any organization to implement a fully integrated ITIL solution.

Acknowledgements:

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ITIL Best Practices with Oracle Enterprise Manager 10^g and Oracle Siebel HelpDesk
September 2009
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