Managing Oracle Applications with Oracle Enterprise Manager 11g
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Executive Overview

The New Way

Traditionally, management of packaged Oracle Applications is dominated by monotonous tasks that are manually performed. This lack of automation leads to high operational costs that eat away precious budget for organizations, and application administrators spending countless late nights and weekends at the office trying to keep applications running smoothly. While administrators often attempt to automate various activities using countless custom scripts, these home grown tools are difficult and costly to maintain. Indeed, the power administrator of the IT world no longer has the time or resources to indulge in such labor-intensive tasks. There has to be a better way.

Today, a much better set of options are available. Combining the business driven IT management capabilities of Oracle Enterprise Manager with the best available Oracle Applications expertise in the industry, Oracle Application Management Suites deliver four comprehensive solutions that are designed specifically for managing Oracle’s E-Business Suite, Siebel, PeopleSoft and JD Edwards EnterpriseOne products. Using these suites, application administrators can manage these four Oracle Applications from a centralized console in a way that aligns to the ever-changing needs of IT’s customer – the business.

This white paper delves into the four Oracle Application Management Suites and examines the many capabilities that they offer for Oracle Applications. It is geared towards Oracle application managers and application administrators, with a goal to provide a clear understanding of the immense advantages and benefits the suites have to offer.

The Four Suites

Oracle Application Management Suites are available for Oracle E-Business Suite, Siebel, PeopleSoft, and JD Edwards EnterpriseOne. Each of these suites combine four sets of functional capabilities:

<table>
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<tr>
<th>ORACLE APPLICATION MANAGEMENT SUITE FOR:</th>
<th>USER EXPERIENCE MANAGEMENT (INCLUDING SERVICE LEVEL OBJECTIVES AND KPIs)</th>
<th>SYSTEM MONITORING AND DIAGNOSTICS</th>
<th>CONFIGURATION MANAGEMENT OF APPLICATION COMPONENTS</th>
<th>LIFECYCLE AUTOMATION</th>
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<tr>
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These capabilities are designed to complement, integrate, and extend the tools that are bundled with Oracle Applications. They go beyond what the bundled tools support in order to help application administrators be much more proactive in managing their applications through comprehensive monitoring of end user experience as well as application-specific components, troubleshoot problems more easily, and manage changes with less effort and much better control.

Of course, Oracle Enterprise Manager is a vast world of its own. Besides the four main suites, there are many other Enterprise Manager Management Packs available for Oracle targets including hardware/systems, operating systems, virtualization, database and middleware. For a broad insight into the Enterprise Manager Management Packs, please refer to the OTN Article “Overview of Oracle Enterprise Manager Management Packs”.

Common Capabilities of the Application Management Suites

Each Application Management Suite obviously contains features that are tailored to the specific technical management needs of the particular Oracle application it is used for. However, there are also certain common capabilities in all the four suites. The applications supported by the management suites were implemented with different technologies, but they present many similar management challenges. Consequently, the Application Management Suites provide common capabilities to address the common management challenges.

In addition, because many Oracle customers use more than one of these applications, the commonality of these management suites help these customers leverage training and management tool infrastructure across different application administrators, further lowering costs, enhancing collaboration and improving organizational agility.

We will now examine the common capabilities of the management suites, which are as follows:

User Experience Management

The most important success criterion for any application is whether it serves it’s users. As such, any application management approach should begin with an understanding of the user experience with the application under management. To address this need, each of the Application Management Suites includes powerful user experience management capabilities that work out-of-box with the Oracle applications. This includes both real user and synthetic user experiences.

The first step in managing user experience is defining service level objectives (SLOs). Service Level Objectives can be used to translate business objectives for the consumers of the IT services into concrete IT deliverables. These objectives may be formalized to form a service level agreement that serves as a "contract" between IT and business users, or be used solely as internal operating metrics within IT to drive operational excellence.
Using the management suites, application administrators can easily define service level agreements that include performance and availability objectives. Once the objectives are defined, the management suites automatically collect user experience data using both real user and synthetic monitoring techniques. The results can then be reported through the management suites’ service level dashboards.

Using information provided by the dashboard, IT and business users can work together to make business driven decisions, such as increasing capacity, making application design changes, or improving user training, in order to improve application service level. The following screenshot is an example of a service level report of a Siebel application. Here a Siebel service is shown with its status history, percentage availability up to the current time and a history of outages.

Service Level Report for a Siebel Service

To monitor real user activities, the Application Management Suites use passive Network Protocol Analysis (NPA) technology to gather data. The technology works by using dedicated 64-bit servers which are connected to the network via a Switch Port Analyzer (SPAN) port on network switches or network TAP devices to get a copy of all traffic between the end user and the application system. The advantage of this data collection approach is that it is 100% non-intrusive, requiring no change to the application and presenting no performance penalty.

The collected data enables detailed analysis of user experience and notifications when the application performance is poor, which enable administrators to start resolving problems before the end users start complaining. It can also be used to gain an understanding of user behaviors as they relate to business objectives. Administrators can define specific important user transactions to be monitored and set up KPIs for these transactions. Using a unique funnel-shaped graph, administrators can analyze whether important business objectives, such as converting eCommerce website visitors into paying customers. This is the powerful Real User Experience Insight (RUEI) capability that is included in the Suites.
The preceding screenshot gives an idea of a PeopleSoft user experience executive dashboard. Similar dashboards are available for all the other applications that the management suites cover. Each executive dashboard is fully customizable and provides high-level information about the entire application.

The Real User Experience Insight capability included in the Application Management Suites is designed for rapid deployment. Via the Application-specific Accelerators that are included, application modules are automatically discovered, network objects are translated into business functions specific to each application, and contextual analyses is provided for each user action by mapping to the correct application user interface artifacts using application-specific terminologies and application-specific data analysis cubes.

The following example shows activities from a Siebel user session with Siebel-specific terminologies such as screen, view and applet names.
Siebel Session Information in RUEI

The Real User Experience Insight capability in the case of the Application Management Suite for Siebel, is also integrated with specialized Siebel transaction diagnostics known as Siebel Application Response Management (SARM), and the drill-down integration allows deep diagnostics of user-specific or server/component performance issues. The SARM transaction diagnostics are explained later in this white paper, when we delve into application management specific features of each Application Management Suite.

In addition to providing insights on application usage and performance, the Application Management Suite for Siebel also monitors for errors and warnings that end users experience. These messages can help administrators better understand the actual difficulties that users run into, and help provide more responsive and accurate tech support. The insights on errors can also help administrators and application developers improve usability or end user training, as these messages may show signs that end users are confused about how to use the applications. This next screenshot shows an access error on a Siebel application, which may indicate a usability problem, an improper access control setup, or a potential security breach.
Complementing Application Management Suite’s real user monitoring is its synthetic user based monitoring capabilities. Synthetic Tests, which simulate user actions, can be set up and used to test the availability and performance of the applications, such as from branch office locations by using Oracle Enterprise Manager beacons (agents) on remote computers.

Whereas real user traffic is not guaranteed at all times of the day and from all locations, synthetic tests can always be run, irrespective of whether real users are available. By supporting both monitoring techniques, Application Management Suites provide the ideal solution for managing user experience.
System Monitoring and Diagnostics

In addition to monitoring user experience, the Application Management Suites also provide in-depth monitoring and diagnostics of the critical components that make up each of the application. The application and all its components are continuously monitored for availability as well as performance. Administrators can set thresholds on different metrics. As soon as these warning or critical thresholds are reached, alerts are automatically generated and the administrator are warned of the violation via notification dispatched through email. Corrective actions can be defined also. The alerting capabilities that Application Management Suites provide allow the applications to be monitored unattended, freeing up administrators to perform more critical activities. Notification methods could be defined to send email, trigger SNMP traps to forward alerts to third party management tools, or to kick off custom scripts. For example, if an application component crashes, a corrective action may be executed to attempt restarting the component. Notification may be defined according to a schedule, so that different administrators who are on duties at different times would get the alerts during their shifts.

To reduce the possibility of false alarms, the Application Management Suites use several tactics provided by Oracle Enterprise Manager to throttle the raising of alerts. First, alerts may be defined to go off only if a certain condition persists for a certain number of sampling interval. This approach prevents a singular rogue event such as a spike from triggering un-necessary alert. Second, notification rule may be defined to stop sending alert after a certain number of attempts so that administrators don’t get alerted over and over for a known condition.
The following screenshot shows how the thresholds for Metrics and corrective actions can be set for specialized targets in an application system. In this case, for a PeopleSoft Application Server Domain, metric critical thresholds were set for the number of processes queued for its various components.

**Metric Thresholds for a PeopleSoft Application Server Domain**

This next example shows the metrics alerts that are set for Oracle E-Business Suite Concurrent Manager. Appropriate Metrics can be correspondingly set in the case of other Oracle Applications, such as Siebel and JD Edwards EnterpriseOne, in addition to the PeopleSoft and E-Business Suite metric settings shown in these examples.

**Metric Thresholds for Concurrent Manager in Oracle E-Business Suite**
Application problems may occur at anytime, and they may occur when application administrators are not around to troubleshoot the problem immediately. To help overcome this challenge, the Application Management Suites provide administrators access to metric history. All collected application metrics are automatically persisted in the Oracle Enterprise Manager repository. Reports may be run against these metrics to show how the application behaved in the last 24 hours, last 7 days, last month, and so on. To ensure that the management suite does not keep too much outdated data, the detailed data is first rolled up to provide summary information, and then the information is eventually purged automatically from the repository. The following example shows charts depicting the history of several Oracle E-Business Suite metrics.

In addition to using the Application Management Suites’ built-in capabilities, administrators may use Oracle Enterprise Manager’s extensibility and integration framework to integrate the suites with third party tools. Using this functionality, critical alert information can be shared between Oracle Enterprise Manager and third party help desk or management system. As an example, an Oracle Enterprise Manager Alert can automatically generate a BMC Remedy Service Desk incident ticket. If the alert is cleared either manually or automatically in Oracle Enterprise Manager, this also closes the corresponding BMC Remedy incident. Pre-built connectors are available for management tools and helpdesk products from BMC, Microsoft, IBM, HP, CA, as well as Oracle’s own Siebel and PeopleSoft helpdesk products. For the complete list of management connectors and third party plug-ins, please visit the Oracle Enterprise Manager Extensions Exchange website for more details.

Configuration Management for Application Components

Managing system configurations across many application instances is an extremely important and time-consuming task that traditionally is very difficult for IT organizations to handle. The Application Management Suites’ configuration management capabilities automate key aspects of this challenging task. To begin, the application and the technology components that it relies on are automatically discovered, and the dependencies are mapped. The result is a full inventory of the application environment, and the configuration details including the hosts used by the application.
In the Oracle Enterprise Manager console, an application administration will be able to see the inventory of application components displayed in a full topological view. In the following example, the topology of a PeopleSoft system can be seen with the various components such as its domains, database server, web server, load balancer and firewall. The topology view provides an easy-to-understand guide to the impacts of configuration changes and drifts on business services. The failed component is highlighted in red as can be seen below. The red cross on the other component highlights critical alerts.

In addition to topology visualization, the configuration management capabilities included in the Application Management Suites, enable application administrators to easily compare configurations of different domains or components, and view a history of all their configuration changes.

The next example shows the comparison of two PeopleSoft domains. The property differences are clearly displayed. Using this capability, administrators can easily troubleshoot configuration inconsistencies that would cause one application instance to function properly while another is not.
Comparison of two PeopleSoft Application Server Domains

The next example below shows the Patch information captured for an Oracle E-Business Suite system, including the date each patch was applied. A full history of application configuration changes is available by clicking on the History button.
The next example displays the out-of-box configuration policy settings for a PeopleSoft Application Server domain.

**Configuration Policy Settings for a PeopleSoft Application Server Domain**

**Advanced Configuration and Change Management Capabilities**

The Application Management Suites also include advanced application level configuration management capabilities, allowing deep, fine-grained configuration comparison and remediation across the deployment life-cycle (from development through production), whereby application deployment and migration efforts can be reduced. Using a customer-configurable UI, configuration views can be customized so as to directly match your business setup and complex comparisons performed across different environments as can be seen in the following screenshots:
### Application Stack View across Lifecycle Environments

The advanced application configuration management capabilities include blueprint driven automated discovery that eliminates manual tracking, such blueprints are available from the Oracle Technology Network (OTN) for Oracle and third party products and are customizable. The other benefit is the automated configuration upload of your application stack to My Oracle Support, so as to reduce problem resolution times – service requests will be auto populated with the configuration info.

Comparisons can quickly be performed across different life cycle environments, with Gold standards/baselines, or even across Datacenters, with automated notification of configuration drifts. Changes can then be directly provisioned, or reverted to a prior working configuration. In this way new application environments can be built efficiently.

Application code and schema changes can also be promoted across deployment phases. Dictionary baselines can be captured with all schema objects for an application, and used in comparisons and then propagated across to different environments using generated SQL scripts.

The ability to analyze configuration changes after they are made takes much guesswork out of troubleshooting and fixing bad configurations. However, it is even more important to be able to prevent mistakes from being made in the first place. One way that the Application Management Suites can help manage configurations more proactively is through their Real-Time change detection capabilities and integration with change control tools. Real-Time change detection capabilities can be enabled via the Configuration Change Console (CCC).

This includes out-of-the-box compliance frameworks mapping to SOX, PCI and so on to understand how compliant your systems are against the framework. Unknown or unauthorized configuration changes are quickly discovered by reconciling detected changes with changes that are approved, via integration with change control systems. Discrepancies are reported so that administrators can take proactive steps to rectify them.
Application management often involves many important yet mundane and time consuming tasks. These tasks can be automated using Oracle Enterprise Manager Grid Control’s Job System, which is available as part of the Application Management Suites. Application administrators may define these tasks in the Job Library, as shown below.

Enterprise Manager Job Library

Oracle Enterprise Manager supports many job types. For example, one could use a multi-task job type to execute a process that involves many steps. These steps can be sequenced to start based on conditions such as whether the previous step is completed successfully. Error handling steps may be added to recover from exceptions as well.
Multi-Task Job

Once the job is defined, it may be scheduled to run immediately, at a later time, or repeatedly based on a schedule.

Job Scheduling

In addition, notification can be defined for the job whereby an email notification is sent out for conditions such as scheduled, running, suspended, succeeded, problem, and action required. This automated “lights out” monitoring frees up administrators from the need to monitor job execution manually, and still be totally aware about the execution of the job process.

Access Control and Email Notification Rules
Application Management Suites' Application-Specific Capabilities

In addition to the common capabilities discussed in the first part of this white paper, there are also specific application management features in the Application Management Suites tailored for each Oracle application. We now take a close look at these application-specific capabilities.

Management Capabilities for Oracle E-Business Suite

The Application Management Suite for Oracle E-Business Suite’s capabilities can be accessed through the Oracle Applications tab on Oracle Enterprise Manager Grid Control. Note that this tab is only visible if the suite has been installed and is enabled under user preferences. In addition, some of the capabilities of the suites can be accessed under the Services tab, the Systems tab, and the Reports tab.

Monitoring and Diagnostics

The performance page provides an aggregate summary of the load and performance of key E-Business Suite sub-systems. From there, an administrator can see concurrent requests, user sessions and workflow items displayed when Activity charts are selected. Selecting Application Server or Database from the View Charts drop down box displays more performance graphs related to those components. The management suite provides seamless integration with Oracle Applications Manager (OAM). The Forms links on this page lead directly into specific pages into Oracle Applications Manager to display further details about Forms session, demonstrating the easy integration between the centralized Oracle Enterprise Manager console and the OAM pages.
From the performance page, an administrator can drill down to the Concurrent Processing Dashboard, whereby more detailed information about Concurrent Processing, such as current activity, usage and alerts can be seen.

**Concurrent Processing Dashboard**

The administration page, seen below, allows administrators to analyze configuration settings of an Oracle E-Business Suite environment. The capabilities are implemented via Oracle Enterprise Manager’s configuration management function, and provide ways to take configuration snapshots, obtain a history of changes or even compare configuration across different Oracle E-Business Suite environments.
Cloning Automation

The Maintenance page, seen in the next screenshot, provides access to patching and cloning functions. Some of these capabilities are implemented in Oracle Enterprise Manager Grid Control, while others are provided in Oracle Applications Manager.
Cloning is a very important and frequent activity in managing Oracle E-Business Suite environments. The entire Application Home, Database Home and Application database need to be copied seamlessly from one environment to the other, such as from production to test, or test to multiple development environments, or from management approved user acceptance testing (UAT) or staging environments to production.

Oracle Application Management Suite for Oracle E-Business Suite allows automation of the entire Oracle E-Business Suite cloning process whereby the application can be cloned from a source to a target or to an image, and from an image to a target. Oracle E-Business Suite running on Oracle Real Application Clusters (RAC) database can also be cloned. For all certified RAC scenarios for Oracle E-Business Suite cloning, please refer to Note 783188.1 on My Oracle Support. This includes RAC to RAC and RAC to non-RAC cloning, so it is possible to clone from a Production RAC environment to a Development non-RAC environment as happens in real life situations.

The following screenshot gives an idea of the cloning capabilities for Oracle E-Business Suite, using the Oracle Enterprise Manager Application Management Suite.
The cloning dashboard seen in the example allows the Oracle E-Business Suite administrator to have an enterprise-wide view of the cloning jobs being processed.

It is also possible to obfuscate sensitive data when a production environment is cloned to a test or development environment. The data scrambling can be configured from within Oracle Applications Manager (OAM). After it is defined, the cloning steps in Application Management Suite for Oracle E-Business Suite’s cloning procedures follow the scrambling definition to obfuscate the data.

This data scrambling capability is built into Application Management Suite for Oracle E-Business Suite, and is designed specifically to work only for Oracle E-Business Suite. On the other hand, for general purpose data obfuscation, Oracle Enterprise Manager 11g Data Masking Pack is available as a separate license and can be used with Oracle E-Business Suite as well as other Oracle Applications.

The following example shows the automated steps in the cloning procedure. It is possible to customize the out-of-the-box procedures if required, changing the sequence of execution, or adding additional custom steps as per any custom clone process enforced by the IT department at the enterprise level.
### Change Management

Change Management features in the Application Management Suite for Oracle E-Business Suite automate many of the manual and laborious tasks such as patching, customization and setup migration.
for Oracle E-Business Suite. Many of these capabilities builds upon the existing standard patching tools for Oracle E-Business Suite, so customers can leverage their existing knowledge and skills of these tools, and at the same time new capabilities are offered to automate and streamline application changes across development, test and production environments – helping to increase the availability of applications. The change management capabilities are accessible from the change management tab of the Oracle Applications Home page, as can be seen in the next screenshot.

Oracle E-Business Suite Change Management

Setup Management

Through the Setup Manager, Application Management Suite for Oracle E-Business Suite automates the migration of setup data. Configuration data is first extracted from one or more source instances. This may include Application Object Library (AOL) data, the Chart of Accounts (CoA), the Organization Structure, and also the setup information from Payroll, Employees, Supply Chain Management (SCM), and Accounts Payable, etc.
The data is then loaded into target instances, using either serial or parallel loading. To ensure that the setup data is loaded in the right order, dependencies and hierarchies are enforced. Furthermore, by using reusable Setup migration projects that contains all the definitions for the setup data migration, multiple target Oracle E-Business Suite environments can be updated automatically and consistently. For further confirmation on proper data migration, after the extract from the source instance and loaded into the target instance, each instance can be compared with one another.

The Setup Manager uses reusable Projects that put all the different steps into one unit, and can be seen in the following screenshot which shows the creation of a complex project.

![Creation of Project in Setup Manager](image)

**Patch Management**

When patching Oracle E-Business Suite, administrators need to be aware of the many inter-dependencies involved, find the right patches, and apply them manually. However, with Application Management Suite for Oracle E-Business Suite, many of the manual tasks associated with patching can be automated, making patching much faster and more reliable than the traditional methods.

The Suite provides a central console for all patch activities for all Oracle E-Business Suite systems. From there, a patch job can be built. This can include Oracle patches and custom patches and can be set to run on multiple instances, with the ability to set AD patch options at the same time. The powerful capabilities of the customizable Deployment Procedures in Oracle Enterprise Manager Grid Control are used to implement patch automation. The procedures consist of a series of out-of-box automated steps to perform the patching, with the possibility of customizing each procedure by adding in extra steps. Patch jobs can be set to run immediately, or any time in the future, and can be run unattended. These patch jobs can be reused, thereby saving time when patching additional environments. After a patch job is executed, the information is logged in order to produce a patch report. The following screenshot shows the building of the patch job through a wizard.
Patch Job Definition

The Patch Manager Home Page shows all the completed, in-progress, scheduled patches and so on as can be seen in the following screenshot.

Patch Manager Home Page

Customization Management

Customization Manager in Application Management Suite for Oracle E-Business Suite enables administrators to deploy customizations more effectively. Using Customization Manager, E-Business Suite administrators can bundle customization files into an AD-compliant patch package, the same format that Oracle uses to ship Oracle E-Business Suite updates to customers. Over 200 different
types of E-Business Suite customization files can be incorporated into the patch package. Furthermore, Customization Manager integrates easily with the most popular source code version control packages, and the customization files can be checked out and be incorporated into the patch package automatically. Once the customization patch is created, the Patch Manager, which was described in an earlier section of this paper, can then be used to deploy the patches to the target Oracle E-Business Suite instances. In fact, both Oracle and custom patches can be applied in a single patch job, simplifying deployment of customizations that have dependencies with Oracle provided patches. The following screenshot shows how a package of custom files is built.
Management Capabilities for Siebel

Siebel CRM provides class leading applications for automating sales, services and marketing functions. It is often used by thousands of users concurrently, both within organizations by employees, and outside of the organizations by customers and partners. Because of the pre-dominant interactive mode of using these applications, application performance is paramount to Siebel CRM. The Application Management Suite for Siebel provides several Siebel-specific capabilities designed to help administrators maximize the performance and availability of their applications.

System Component Monitoring

Application Management Suite for Siebel offers full visibility into the Siebel Application Server and Server Components. Siebel 7.7 and above is supported by the tool. Siebel administrators may monitor Siebel-specific metrics such as Current Task Count by defining threshold-based alerts and notification rules in order to ensure that Server Component processes do not hit the MaxTasks limit. All the collected metrics are persisted automatically in the Oracle Enterprise Manager Grid Control repository. Administrators may run reports against these metrics, such as Average Time for SQL Fetch Operations, in order to analyze the performance trend of the application. This capability helps administrators make fact-based decisions to tune their Siebel applications.

Siebel Component Monitoring capabilities may be accessed via the Siebel sub-tab under Targets. The following page will be displayed when the tab is accessed, showing a list of all the Siebel Enterprises being managed by Application Management Suite for Siebel.

Siebel Enterprise List Page

To get further details about the health and performance of a specific Siebel Enterprise, click on its link on the Siebel Enterprise List Page. The following Siebel Enterprise Home Page will be displayed. This Enterprise Home Page provides a component-oriented overview of a Siebel Enterprise, showing a summary of Siebel Server Component health, Application Server status and key statistics, Gateway Server availability, aggregated Siebel Workflow health, alert status, and Extended Infrastructure component status, which can include all the IT infrastructure elements such as database and load balancers that support the Siebel Enterprise environment.
To get further detail about the health of a specific Siebel Application Server, click on its name on the server list to navigate to the Siebel Application Server Home Page. The page shows further information about a specific Siebel Application Server, including overall response time, alert summary, file system usage, and the health of its Server Components. Besides viewing health metrics, application administrator may also perform several administrative tasks such as starting/stopping the server or starting/stopping/pausing/resuming Siebel Server Components.
Additional detailed metrics about the Siebel Application Server is available in the All Metrics page, accessed by clicking on the All Metrics link at the bottom of the page. The All Metrics page can be seen in the next screenshot.

![All Metrics for Siebel Server](image)

**Workflow Monitoring**

In addition to monitoring the health of Siebel Workflow Components at the component level by examining the metrics that each instance of workflow component output, the Application Management Suite for Siebel monitors specific Siebel Workflow Process and Workflow Policy as well.

Alerts are raised and sent to the Siebel administrator if the execution of a specific Siebel workflow process errors out, if the processing of a specific workflow process or workflow policy falls behind. Siebel Workflow Monitoring can be accessed from the Siebel Enterprise Home Page by clicking on the Workflow link, which leads to the Workflow Home Page where the workflow processes can be monitored as seen in the next screenshot.
Siebel Workflow Monitoring Page

The page shows the aggregated number of Siebel Workflow Process instances and Siebel Workflow Policy instances that are completed, being executed, or waiting in queue. This information helps administrator monitor the overall status of workflow processing. Further details about specific Workflow Processes can be seen by clicking on the Workflow Processes tab. In addition to the aggregated metrics shown on this page, there are a number of additional Siebel Workflow-specific metrics that are available. Threshold based alerts may be defined for these metrics. The following screenshot shows the list of metrics available.
Business Metrics

In addition to monitoring Siebel from a system component perspective, the Application Management Suite for Siebel also helps administrators monitor the application from a business usage perspective. More than 50 Siebel business metrics are pre-instrumented to provide visibility in the processing of key Siebel applications. Examples include; the number of opportunities created, active, or closed in Sales / Order Management, the number of Service Requests opened, active or closed in Services / Self Service, the number of claims filed, active or processed in Insurance, and so on. These metrics can be seen on the Siebel Services Dashboard, and be used to help administrators understand the processing demand placed on various Siebel applications so that they can manage capacity utilization and performance proactively.

Siebel Services Dashboard with Usage and Business Indicators

The business metrics are collected as part of a Siebel Database Repository target. Out of the box, some metrics are promoted from this target to the service target. An application administrator can promote more metrics from the Siebel Database Repository to the service target so that they appear in the dashboard.

The metrics can be accessed from the home page of the Siebel Database Repository target, which is named "dbstore_siebel_<name>" in the list of all targets in Oracle Enterprise Manager’s central console.
## Siebel Event Log files provide detailed and critical information for carrying out general troubleshooting of a Siebel application. Dozens of these log files may be present in a small Siebel environment, and in a large environment, thousands of log files may exist. Consequently, finding the right log information to troubleshoot a problem can be a time-consuming exercise. The Log Analyzer is designed to provide a simpler way to find relevant log entries. By using search parameters such as User Id, time range,
server, component, process ID and task ID, a list of files that contain relevant log information may be found more easily.

**Event Log Search in a Siebel System**

**Transaction Diagnostics**

Siebel Application Response Management (SARM) is a framework for identifying performance problems in the Siebel application. Historically, Siebel administrators collected critical performance data using SARM, then manually collate the file to find the ones with the data to analyze, and then manually run SARM post processing tools from the command line to perform performance analysis.

With the Application Management Suite for Siebel, this laborious and manual approach of using the command line tool is no longer required. The management suite’s Siebel Transaction Diagnostics tool automatically helps locate and visualize data collected from SARM centrally from the Oracle Enterprise Manager Grid Control console, irrespective of the location of the SARM data or the server where the transaction requests occurred. In addition, the SARM data is presented graphically, as opposed to the textual display provided by the command line SARM utilities. This graphical approach makes it a lot easier to visualize trends when carrying out performance analysis. Because of these capabilities, performance analysis using SARM data becomes greatly streamlined and simplified.

As mentioned earlier, the Real User Experience Insight (RUEI) features of the Application Management Suite for Siebel, allow drill-down integration into Siebel Transaction Diagnostics. Besides this integration with RUEI, the Diagnostics can also be directly accessed via the Diagnostics tab on the Siebel Enterprise Home page in Oracle Enterprise Manager as seen in the following example. An application administrator can easily create a new diagnostic report from this page by clicking on the Create Report button, which is shown in the following screenshot.
Two types of diagnostic reports can be created – User Performance Report and Server Performance Report. User Performance Reports are used to troubleshoot transaction requests from a specific user id, while Server Performance Reports are used for carrying out general server and component based analysis of Siebel performance. The reports can be saved and shared with other team members so that they can use the same analysis to solve performance problems collaboratively.

To create a Server Performance Report, select Server Performance Report as the report type. Then specify the time range of the SARM data to retrieve, the name of the Siebel Server to retrieve data from, and give the report a name. Optionally, specify the specific Siebel Server Component, such as Siebel Workflow Process Manager, to run the report against to troubleshoot performance for a specific type of Siebel Server Component. In addition to specifying the report’s content, an application administrator may also configure the report to be run automatically and periodically. This capability enables administrators to create snapshots of Siebel application performance over time so that the results can be compared for on-going application performance management purpose. The following screenshot shows an example of Server Performance Report creation.
Server Performance Report Creation

Similarly, to create a User Performance Report, select User Performance Report as the report type. Then specify the time range of the SARM data to retrieve, the user ID, and give the report a name. There is no need to specify the Siebel Application Server name, as the tool will determine which Siebel Application Server to retrieve the SARM data automatically.

Once a Server Performance Report is generated, it may be accessed from the Siebel Transaction Diagnostic page. The report provides critical insights about transaction request processing. First, it provides an overview on the distribution of transaction request processing time. The various histogram bars group transaction requests by the speed in which they were completed, from the slowest to the fastest. This visualization helps administrators narrow down the requests to focus on, which are typically the slow transactions. Second, the tool also shows the distribution of CPU time. This helps administrators understand the distribution of CPU-bound processing requests. The next two charts show distribution of response and CPU time, helping administrators to understand which of the various Siebel facilities, grouped by area and sub-area, is taking the longest to respond and consuming the most CPU time. The bottom of the page shows further details about how the area / sub-area are invoked, providing information such as the number of invocations, average and total response time of processing the invocations, average and total CPU time, and average memory consumption. These statistics help administrators find hot spots in processing. Furthermore, these statistics can be compared against those from other Server Performance Report in order to identify performance trends and spot differences in execution.
Siebel SARM data collection configuration can be set directly from within Oracle Enterprise Manager Grid Control by clicking on the Diagnostic Configurations tab from the Siebel Enterprise Home Page. This page allows SARM to be enabled selectively against multiple components at once instead of requiring them to be enabled one at a time, making it a lot easier to set up and control the amount of SARM data generated. Once the setup is done, the new SARM settings can be enabled automatically in the Siebel application without requiring component or server restart.
Management Capabilities for PeopleSoft

The Application Management Suite for PeopleSoft provides several capabilities that are designed specifically for managing PeopleSoft applications.

Centralized Domain Administration

PeopleSoft provides a modular and flexible architecture for deploying its Financials, Human Capital Management, Supply Chain Management, and Customer Relationship Management applications. However, because of the modular architecture, PeopleSoft customers often end up with multiple PeopleSoft environments that they need to manage. The Application Management Suite for PeopleSoft enables centralized PeopleSoft Domain Administration. An application administrator can configure the PeopleSoft Domains, compare configurations, and also view a history of changes of multiple PeopleSoft environments from a centralized console.

PeopleSoft environments are modeled as a set of PeopleSoft targets, which include PS Application Database, PS Application Server Domain, PS PIA (Pure Internet Architecture) sites, PS Process Monitor, PS Process Scheduler Domain, PS Search Server Domain and PS Web Site. The following screenshot shows a list of PeopleSoft targets and their health status.
All PeopleSoft Targets in Enterprise Manager

This next screenshot shows the configuration of a PeopleSoft domain. This functionality is accessible from the Administration tab of the PeopleSoft Application Server Domain Home Page. Using this page, a PeopleSoft administrator may configure the settings of a PeopleSoft Application Server Domain. When the settings are saved, the history of the change is also saved so that a PeopleSoft administrator may review the change history later on.
Besides allowing PeopleSoft configurations to be made from right within Oracle Enterprise Manager Grid Control, the Application Management Suite for PeopleSoft also allows administrators to start and stop a domain. Other domain administration activities, such as purge/archive/preload the cache and clean IPC resources, may also be performed from the Administration tab. The task of starting a domain is illustrated in the following screenshot.
Log Management

The management suite also supports centralized log management. Log files from PeopleSoft targets can be searched and viewed from Oracle Enterprise Manager centrally, and also be exported to the client machine where the administrator logged on from. In addition, it is also possible to purge or archive individual logs or set up a scheduled job to do so. Log management is accessible from the Logs tab of the PeopleSoft Domains as well as PS PIA.

Log Management for PeopleSoft

The PeopleSoft Process Scheduler Domain allows the administrator to monitor the PeopleSoft application processes. Administrators can also easily create new PeopleSoft Process Scheduler Domains from Enterprise Manager as seen in the following screenshot.

Process Monitor

The Application Management Suite for PeopleSoft includes a powerful PeopleSoft Process Monitor that allows PeopleSoft administrators to fully control PeopleSoft batch processes from within the Enterprise Manager console, with the ability to start, stop and schedule the processes.

PeopleSoft administrators can start/stop and schedule PeopleSoft processes as well as monitor their status and receive alert notifications from within the same Oracle Enterprise Manager they use to manage and monitor the PeopleSoft application. This eliminates the need to log into the PeopleSoft application to check on the status of PeopleSoft processes.

The home page of the PeopleSoft Process Monitor can be seen in the next screenshot.
PeopleSoft Process Monitor Home page

Click on the Process Monitor button on this page to search for application processes with different run status (as seen in the drop box) and distribution status (posted, not posted, generated, processing etc).

PeopleSoft Process Monitor Search Results

The Schedule Process button enables scheduling of appropriate application process types, such as SQR processes, Cube Builder, Optimization Engine and so on as can be seen in the following screenshot.
Management Capabilities for JD Edwards EnterpriseOne

The Application Management Suite for JDE EnterpriseOne allows an application administrator to manage multiple JD Edwards EnterpriseOne deployments and provides a view of the entire domain topology, just as in the other Application Management Suites.

A typical JD Edwards EnterpriseOne environment is made up of one or more Java EE servers, one or more Enterprise Servers, the database and the EnterpriseOne Server Manager. The Java EE server is responsible for the presentation layer for the applications, whereas the Enterprise Server contains the business logic (business functions written in C) and batch processes. The Universal Batch Engine (UBE) executes the batch processes.

In this architecture, the Server Manager is used as the administration tool for JD Edwards EnterpriseOne. This is used for the deployment of new JD Edwards EnterpriseOne tools releases, management of EnterpriseOne .ini files, and viewing of application performance data. The Application Management Suite for JD Edwards EnterpriseOne is integrated with EnterpriseOne’s Server Manager. Metrics that are collected by Server Manager are transmitted into Oracle Enterprise Manager Grid Control where the Application Management Suite runs. Numerous JD Edwards EnterpriseOne metrics are provided out-of-box, such as JDENet Status, connections, connection pools, socket connections, user sessions – login time and idle time, java information such as java memory usage, run garbage collection, java thread information, JDBj db cache information, such as cache hit ratio, cache size (entries), and cache misses. Enterprise Server general metrics such as
uptime, network jobs, kernel jobs, zombie processes, security kernel users, process summary, batch summary and are also provided.

Using Enterprise Manager’s advanced monitoring and event management capabilities, the Application Management Suite for JD Edwards EnterpriseOne enables administrators to define threshold based alerts to monitor the application proactively, troubleshoot the application by looking at metrics history, and report on application utilization and performance by generating operational reports.

As in other management suites, service tests can be set up against JD Edwards EnterpriseOne applications in order to monitor the application from an end user perspective. The following screenshot shows an example of a Service Level Report.

Install Components for the Suites

To understand what to download or install to use the full functionality of the suites, we need to talk about the physical components that make up the suites. At the time of writing, these are:

- Oracle Enterprise Manager Grid Control (Base Install)
- Oracle Enterprise Manager Agent (installed on all target servers)
- Real User Experience Insight (Separate Install)
- Application Configuration Console (Separate Install)
- Configuration Change Console (Separate Install)
- Grid Control <Application> Plug-in

Basic application configuration capabilities as explained in this white paper are provided by the Grid Control <Application> Plug-in along with the Base Grid Control install. The Application Configuration Console is required for the advanced application configuration and change management capabilities. Optionally, if you want real-time change detection capabilities, then you can also install the Configuration Change Console.

The actual Grid Control Application Management functionality is implemented as an Application Plug-in, which for EBS, PeopleSoft and JD Edwards E1, come in the form of an Oracle Universal Installer (OUI) based package that needs to be installed on top of the base Grid Control. The specific Plug-in provides the Oracle EBS, PeopleSoft and JDE E1 management functionality.

As an exception, the Application Management functionality for Siebel is installed along with the Oracle Enterprise Manager base installation from 10g Release 4 (10.2.0.4.0) onwards, so a separate Plug-in does not need to be installed.

Enterprise Manager and Fusion

Using the Oracle Application Management Suites enables a path to get to the future with Oracle Fusion, which manifests in several ways. First, Oracle is modernizing Oracle Applications with Fusion Middleware technologies. As these technologies are introduced, the application management suites will evolve to cover these new components by leveraging Fusion Middleware management capabilities that are already current in Enterprise Manager.
Second, you may decide to uptake Fusion Middleware technologies on your own, implementing Oracle Application Integration Architecture (AIA) with Service Oriented Architecture (SOA), strengthening security with Oracle Identity Management (IdM), or enabling better business insights with Oracle Business Intelligence Enterprise Edition (OBIEE). In this case too, Enterprise Manager can help you manage these components together with your Oracle Applications as a single logical system, simplifying management, lowering costs, and mitigating risks.

Third, as Fusion Applications arrive, and you decide to uptake them, most likely by running them side-by-side with your existing Applications Unlimited apps instances, you may use Enterprise Manager to manage the whole environment, as all the Fusion Application management tools will be based on Enterprise Manager.

So, it is recommended to start centralizing the management of your Applications Unlimited apps today on Oracle Enterprise Manager to improve your operational efficiencies, achieve better service levels, and build the foundation to prepare for the arrival of Fusion technologies operationally.

Conclusion

The Oracle Applications Management Suites are designed to harness the power of Oracle Enterprise Manager's vast array of user experience management, system monitoring and diagnostics, configuration management, and lifecycle automation capabilities to provide application-specific management tools expertly adapted for the unique architectures and technologies of each Oracle application. Experience in the real world suggests that application administrators, application managers and power DBAs can realize the benefits of the new Oracle Enterprise Manager Application Management Suites almost immediately.

For a broad introduction to the DBA-centric concepts of using Oracle Enterprise Manager Grid Control, please read the White Paper: Advanced Uses of Oracle Enterprise Manager 11g. Also, to get a good idea of the numerous Enterprise Manager Management Packs, please read the OTN article “Overview of Oracle Enterprise Manager Management Packs”.

For more information, please visit Oracle Enterprise Manager Resource Center where there are customer videos, demos, whitepapers, and webcasts.