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E-BUSINESS SUITE

An Oracle White Paper
December 2013

Oracle E-Business Suite and Oracle Fusion Middleware

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Introduction

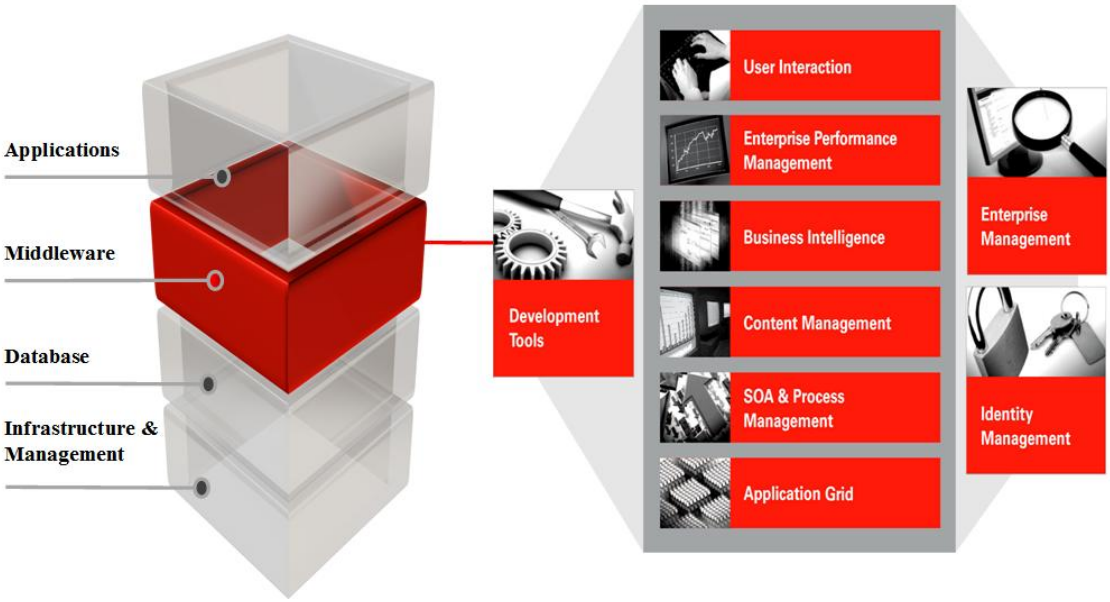
This white paper describes the benefits of deploying the Oracle E-Business Suite on a unified Oracle Fusion Middleware technology stack. Integration and certification of Oracle Fusion Middleware products with Oracle E-Business Suite help reduce the cost of implementation, ownership, management and change.

Following a brief overview of the value of using Oracle E-Business Suite with Oracle Fusion Middleware, this white paper discusses the benefits of the following integration options:

- Oracle Fusion Middleware as the E-Business Suite Application Server
- Integrating with other applications using Service-Oriented Architectures
- Extending the E-Business Suite with Oracle JDeveloper
- Delivering business insight with Oracle Business Intelligence
- Delivering better security with Oracle Identity Management
- Creating enterprise portals and composite applications with Oracle WebCenter
- Managing enterprise information with Oracle Content Management
- Managing your environment with Oracle Enterprise Management

Running Oracle E-Business Suite on a Complete Oracle Stack

Oracle's complete family of Oracle Fusion Middleware application infrastructure products — from the Java application server to SOA and enterprise portals — are certified and supported with Oracle E-Business Suite to speed implementation and lower the cost of management and change. Best-of-breed offerings and unique hot-pluggable capabilities provide a foundation for innovation and extend the business value of your existing investments.



Oracle provides best-practices guidelines and detailed documentation for using Fusion Middleware 11g products such as Oracle Access Manager, Oracle Internet Directory, WebCenter, SOA Suite, BPEL, and more with Oracle E-Business Suite Release 11i and 12.

The Oracle E-Business Suite Applications Technology Group performs in-depth certification testing to ensure that Oracle E-Business Suite and Oracle Fusion Middleware products will meet your enterprise requirements, including certification with highly-secure multi-segment network deployments (demilitarized zones), highly-available load-balanced configurations, disaster recovery and business continuity architectures, and other advanced architectures.

With these products and technologies, Oracle offers a complete stack of infrastructure, middleware, and applications to fulfill the broad requirements of enterprises regardless of size, industry, or geography.

Oracle Fusion Middleware

Oracle Fusion Middleware 11g is the #1 application infrastructure foundation. It enables enterprises to create and run agile and intelligent business applications and maximize IT efficiency by exploiting modern hardware and software architectures.

Whether your business focus is on products, services, people or government, middleware application infrastructure is a strategic imperative. This infrastructure is the key to maximizing the processes and applications that drive your business and enable you to innovate at the worker, team, department, or enterprise-level. Oracle Fusion Middleware 11g delivers a foundation for both business and IT innovation. This foundation empowers you to differentiate and succeed throughout dynamic and unpredictable market conditions, while maintaining efficiencies and controlling costs.

Oracle Fusion Middleware 11g is the only middleware available from any vendor that offers the following unique design principles:

- **Complete**—Work with a single, strategic partner for all middleware requirements
- **Integrated**—Certified integrations with Oracle Fusion Middleware, Oracle Database, and Oracle Applications provide confidence and reduce costs
- **Hot-Pluggable**—Enhance your existing infrastructure and applications with interoperability that goes beyond industry standards
- **Best-of-Breed**—Choose from best-of-breed offerings across every product line

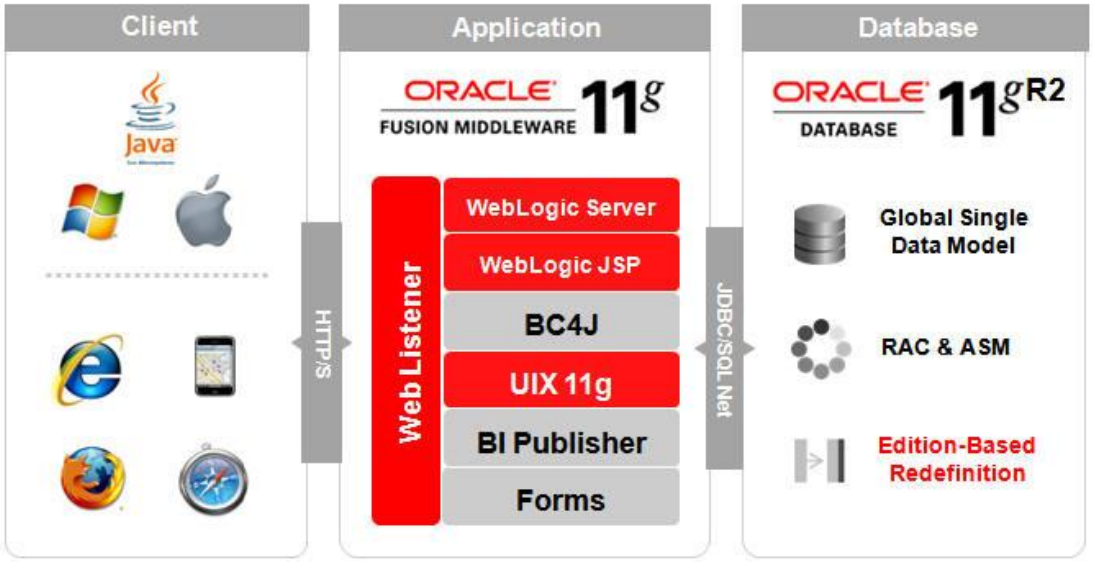
The results: Confidence in your ability to adapt and respond to change. Operational and strategic insight for better, more informed decisions. Agile and intelligent business applications and processes. Secure and rich connections with workers, teams and customers. Accelerated development and reduced IT costs. A foundation for both business and IT-driven efficiency and innovation.

Oracle Fusion Middleware is #1 across all the following functional areas:

- Industry-best performance: **Oracle WebLogic Suite 11g**
- Most complete, open and manageable enterprise portal framework: **Oracle WebCenter Suite 11g**
- Superior business agility: **Oracle SOA Suite 11g**
- Complete and Unified Business Process Management Solution: **Oracle BPM Suite 11g**
- **Oracle Identity Management 11g** for best-in-class products across security and compliance
- Most unified design and development: **Oracle JDeveloper 11g**
- Leading tools for creating rich enterprise applications

E-Business Suite and Oracle Fusion Middleware

Oracle E-Business Suite is built on Fusion Middleware. Oracle WebLogic Server 11g, the foundation of Oracle E-Business Suite Release 12, takes advantage of modern hardware and software architectures and delivers the highest performance, reliability, and agility at any scale.



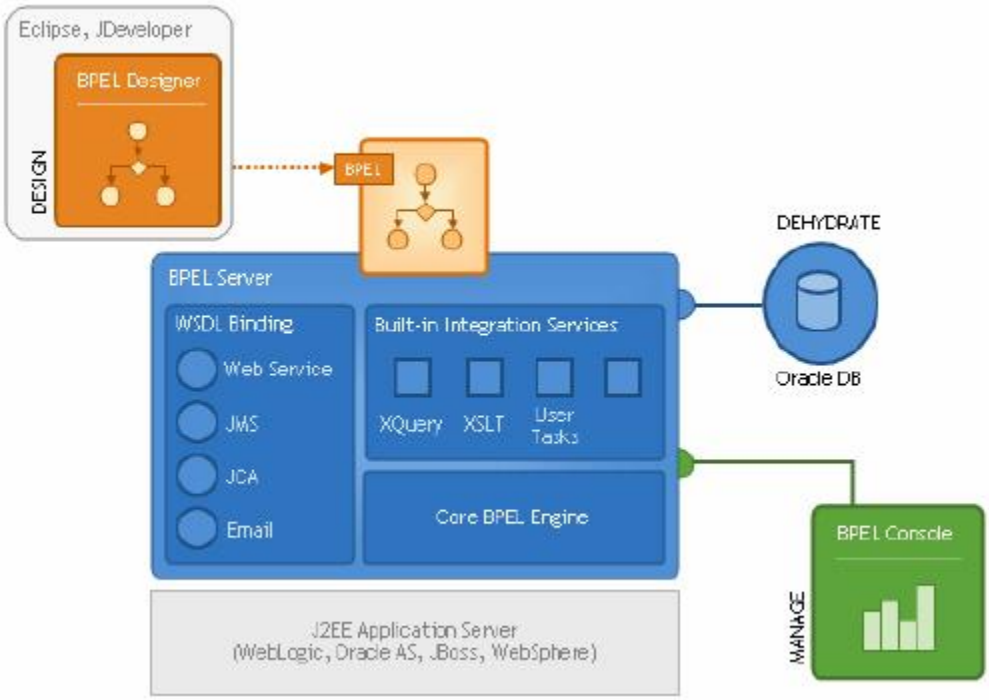
Oracle E-Business Suite users may also optionally extend the scope and power of their environment through external Fusion Middleware components by:

- Integrating with other applications using Service-Oriented Architectures
- Extending the E-Business Suite with Oracle JDeveloper
- Building mobile apps using the Oracle Mobile Platform
- Delivering business insight with Oracle Business Intelligence
- Delivering better security with Oracle Identity Management
- Creating enterprise portals and composite applications with Oracle WebCenter
- Managing enterprise information with Oracle Content Management
- Managing their environment with Oracle Enterprise Management

Service Oriented Architecture

Oracle Fusion Middleware Business Process Management, Data Integration and SOA capabilities provide a unified process platform for composing and managing adaptable and repeatable processes and scaling out services. Process modeling, simulation and standards-based execution accelerate the speed and accuracy of development, while Data Integration and SOA Governance provide information and service-level agreement clarity. Oracle SOA Suite 11g delivers a complete, integrated, best-of-breed technology foundation for building next generation business applications.

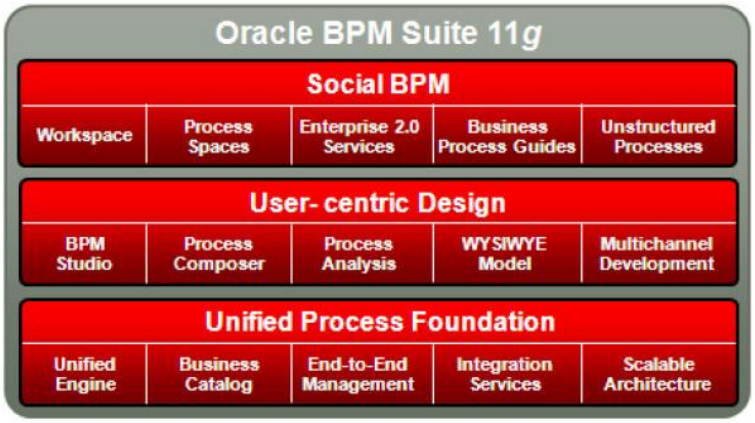
You can use Oracle Fusion Middleware to extend the reach of Oracle E-Business Suite and integrate it with your existing third-party applications. You can use SOA Suite to automate a Business Process that spans more than one line of business or packaged system. A Service-Oriented Architecture project can allow you to integrate systems and automate a business process that spans across Oracle E-Business Suite and other applications – and with lower upfront investment.



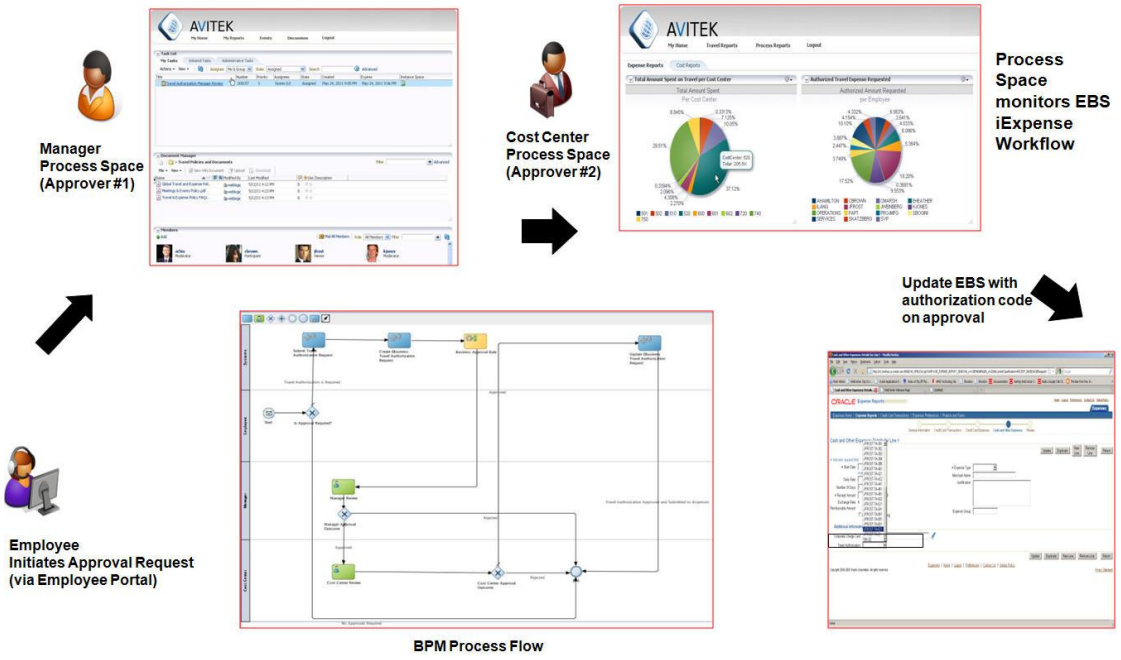
Oracle's SOA Suite provides the industry's only single suite solution to support **all** the different patterns and styles of integration that customers require. This eliminates the need for a customer to buy different SOA products from different vendors with the associated costs of maintenance and support.

Business Process Management

Oracle Business Process Management Suite 11g simplifies process management by delivering both process modeling tools and a process execution platform, providing a complete solution to facilitate collaboration between business stakeholders and IT practitioners. By using a process-oriented approach to building applications, Oracle BPM 11g allows customers to craft solutions using visual business processes – processes which business users can understand and change themselves. Process management is simplified via a process engine and pre-integration of process subsystems. User-centric design facilitates process modeling and interaction. Social BPM interaction simplifies and extends collaboration by providing new ways to communicate and simplify work.



You can use Oracle BPM 11g to easily build standards-based business processes that integrate with Oracle E-Business Suite applications. Consider the (actual) case of a global technology company with several thousands of employees that wanted to automate their travel authorization process which is currently highly manual, time and cost intensive. The automation will allow employees to submit travel authorization requests online and enable managers to analyze, review and approve/reject requests online. This automation is expected to improve the company's travel & expense management process and reduce operational costs. The solution will involve extending their backend travel and expense reimbursement system (EBS iExpenses) that does not support this specific requirement out-of-the-box.



Using Oracle Fusion Middleware to build these extensions makes modifications simple, quick to implement, and easy to maintain/upgrade. Oracle BPM 11g provides expanded tools (such as Process Spaces) for communication and collaboration among process teams. Process Spaces can be used to monitor E-Business Suite processes and provide tailored information via real time dashboards. Oracle's SOA and BPM Suites have pre-packaged integrations with Oracle E-Business Suite to substantially lower the cost of both building integrations with them and maintaining these across patch sets and upgrades of the applications

SOA-related integrations to Oracle E-Business Suite

Major options for SOA-related integrations for Oracle E-Business Suite include:

1. Custom integrations using the Oracle Applications Adapter
2. Prebuilt SOA integrations for E-Business Suite using BPEL Process Manager
3. Use Application Integration Architecture packs

Option 1. Custom integrations using the Oracle Applications Adapter

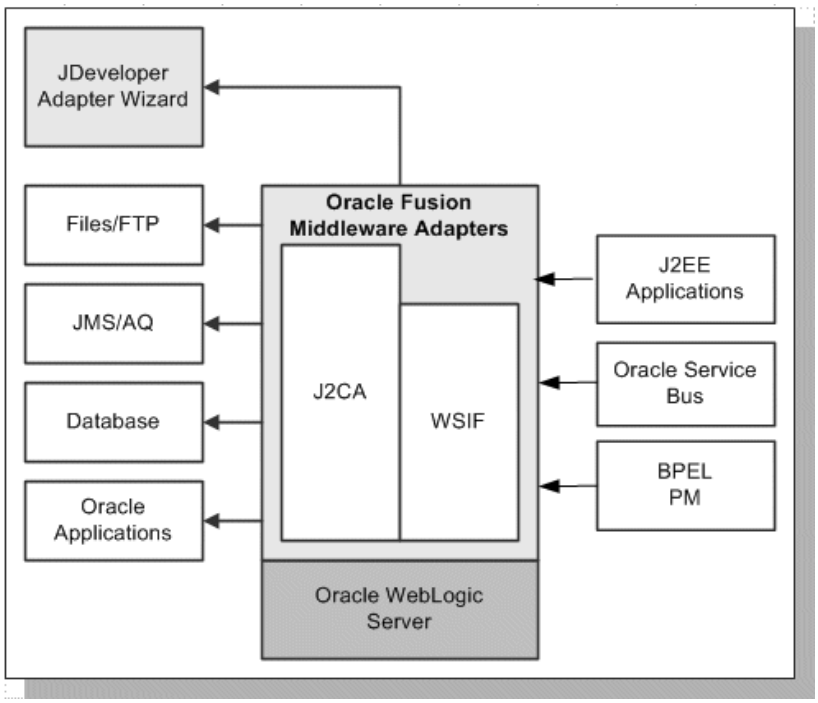
If you'd like to use SOA Suite to develop your own custom integrations with Oracle E-Business Suite Release 12, you can run the latest SOA Suite version: e.g. 10.1.3.5, 11.1.1.1, or higher.

This includes the use of the SOA Suite's SOA Adapter for E-Business Suite. This product is also referred to as the Oracle Fusion Middleware Adapter for Oracle Applications. Oracle Fusion Middleware Adapter for Oracle Applications provides comprehensive, bidirectional, multimodal, synchronous, and asynchronous connectivity to Oracle E-Business Suite. The Adapter supports all modules of Oracle Applications, including selecting custom integration interface types based on the version of Oracle E-Business Suite.

Oracle Fusion Middleware Adapter for Oracle Applications provides the following features:

- It leverages the Integration Repository to provide the information from the source of truth on integration.
- It supports the widest range of integration interface types. They are PL/SQL APIs, Business Events, Open Interface Tables, Concurrent Programs, XML Gateway Interfaces, e-Commerce Gateway Interface, and Interface Views.
- It generates adapter metadata as WSDL files with J2CA extensions.
- It works under the securely configured connection between Oracle Applications and Oracle Fusion Middleware using just the FND User name and password for authentication.
- It leverages and supports Oracle User Management function security to allow only authorized users to access and execute APIs that they are exposed as Web services to update Oracle Applications.
- It implicitly takes care of application context without bothering about the complexities of invoking the same explicitly.
- It supports multiple languages and multiple organization access control (MOAC) setups based on the concept of applications context.
- It uses a JDeveloper based design-time tool for dynamically browsing the Oracle Applications interface and configuring the adapter metadata. The design-time is wizard driven, user-friendly, and intuitive providing superior user experiences.

- It provides the global transaction control support implementing two-phase commit by leveraging the underlying JCA standards compliant framework.
- It supports multiple versions of Oracle Applications from the same instance of Adapter at design time.



OPTION 2. Using prebuilt E-Business Suite 12 BPEL business processes

Six E-Business Suite Release 12 product teams have developed their own prebuilt BPEL business processes:

1. Oracle Price Protection (DPP)
2. Complex Maintenance, Repair & Overhaul (CMRO/AHL)
3. Oracle Transportation Management (WMS, WSH, PO)
4. Supply Chain Trading Connector (CLN)
5. Advanced Supply Chain Planning (MSC)
6. Product Information Management (PIM/EGO)

These prebuilt BPEL processes have been certified with Oracle BPEL Process Manager 10g version 10.1.3.5 (in Oracle SOA Suite 10.1.3.5). These prebuilt BPEL processes are certified with Oracle E-Business Suite Release 12.1.1 and higher.

Option 3. Using Applications Integration Architecture

Oracle Application Integration Architecture (AIA) Foundation Pack enables you to simplify cross-application business process integrations with Oracle E-Business Suite using a standards-based, prebuilt integration solution. Designed to promote rapid deployment, re-usability, and configurability of business

processes, AIA Foundation Pack saves significant time, effort and cost. when building Service Oriented Architectures integrations with Oracle E-Business Suite.

AIA Foundation Pack is comprised of the following components proven by Oracle's own experience implementing SOA:

- **Reference Process Models** – documented, application independent process models that act as a blueprint for driving business process mappings from roles, tasks and activity levels down to the system level
- **Enterprise Business Objects and Services** – reusable, standards-based building blocks that form the basis for a common vocabulary across your applications
- **SOA Governance and Lifecycle Management Tools** – business process change control tools that help you manage, maintain and optimize your integration from design- to run-time
- **Predefined Reference Architecture and Methodology** - Oracle's documented approach to implementing a proven service-oriented architecture (SOA)

Reference Process Models

AIA Foundation Pack includes a set of Reference Process Models that combine the view of the business analyst with the view of the technical analyst, providing both a business and systems view of the process. These conceptual process models are based on best practice definitions and rationalized against Oracle applications like Oracle E-Business Suite, PeopleSoft, JD Edwards, and Siebel CRM as well as external authoritative and guiding sources for clarity and completeness.

AIA Reference Process Models are linked at the lowest level of decomposition to artifacts in Oracle's AIA Foundation Pack Business Service Repository (BSR) providing you with the capability to drill down through the various process levels and associate BSR artifacts at the integration layer.

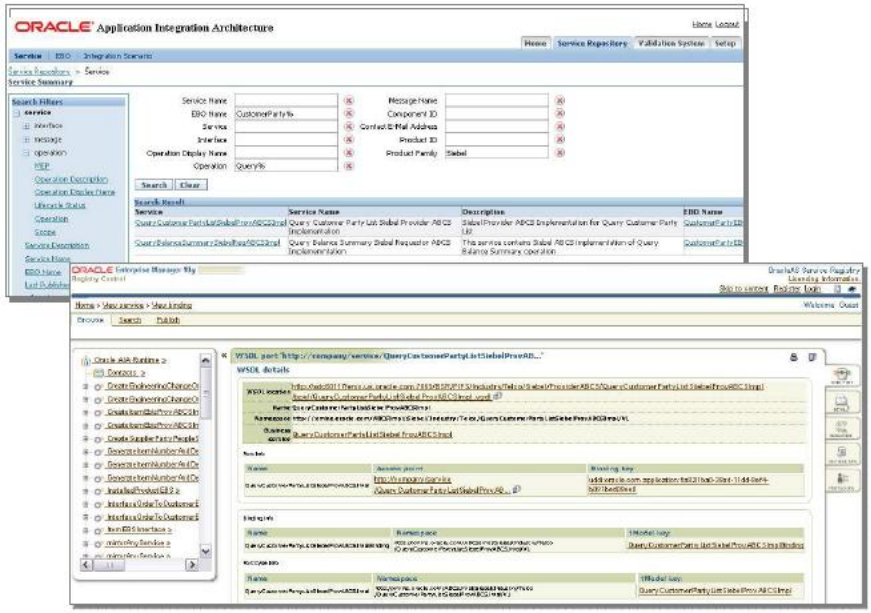
Enterprise Business Objects and Enterprise Business Services

One of the most common challenges in application interoperability is inconsistent business semantics among the different applications. AIA solves this challenge by providing standards-based Enterprise Business Objects (EBO) and Enterprise Business Services (EBS) that form the basis for a common vocabulary across all your Oracle and non-Oracle applications.

EBOs are definitions of business data such as Sales Order, Purchase Order, Item, Invoice, etc., rationalized across Oracle E-Business Suite and Oracle's entire application portfolio and industry standards.

SOA Governance and Lifecycle Management Tools

AIA Foundation Pack includes a set of tools to manage and govern your Oracle E-Business Suite integration lifecycle. The set of tools provided with AIA Foundation Pack speed up development cycles, and include a Business Service Repository (BSR) for SOA Governance; Composite Application Validation System (CAVS) for testing; and Common Error Handling Framework for reducing issue resolution times.



AIA Foundation Pack Error Handling Framework provides customers with a prebuilt solution for managing errors across the integration layer. Error Handling Framework provides the ability to route the error back to the correct application and to the right application user. This way, the exceptions can be resolved quickly with less downtime and IT can meet the stricter service level agreements that businesses need to compete in the global marketplace.

Reference Architecture

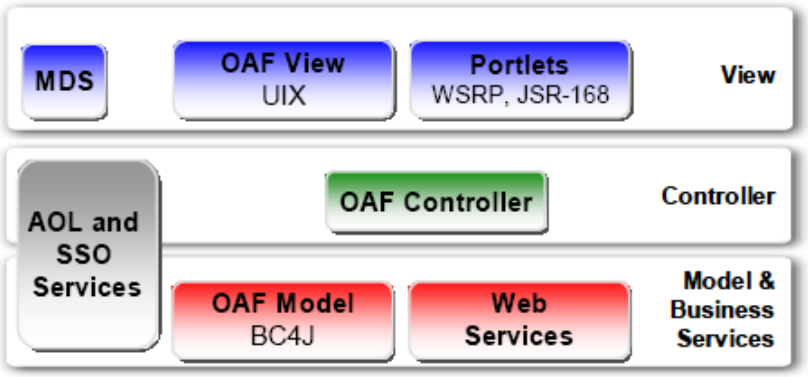
Oracle Application Integration Architecture Foundation Pack provides you with a reference architecture that consists of documented best practices, design patterns and templates to help you build an Oracle E-Business Suite integration via a service-oriented architecture.

AIA Foundation Pack Reference Architecture consists of the Concepts and Technologies Guide, Business Process Guide, Enterprise Object Library Guide and an Integration Developer's Guide. These guides outline the Application Integration Architecture methodology and provide guidance on extend enterprise business processes, Enterprise Business Objects and Enterprise Business Services with your integrations with Oracle E-Business Suite.

E-Business Suite Extensions with Oracle JDeveloper

Oracle JDeveloper is a free integrated development environment that simplifies the development of Java-based SOA applications and user interfaces. Customers, partners and system integrators can use JDeveloper to the same tools used by Oracle E-Business Suite developers develop extensions to Oracle E-Business Suite. Such extensions have traditionally used the same technology stack— Oracle Forms or Oracle Applications Framework (OAF)—upon which the E-Business Suite is built. This ensures that the extensions are fully compatible with the rest of the installed E-Business Suite products.

If you want to integrate your extensions tightly with the E-Business Suite, you can use the E-Business Suite Oracle Applications Framework (OAF) Release 12 technology stack, which includes the use of JDeveloper 10g and ADF BC.



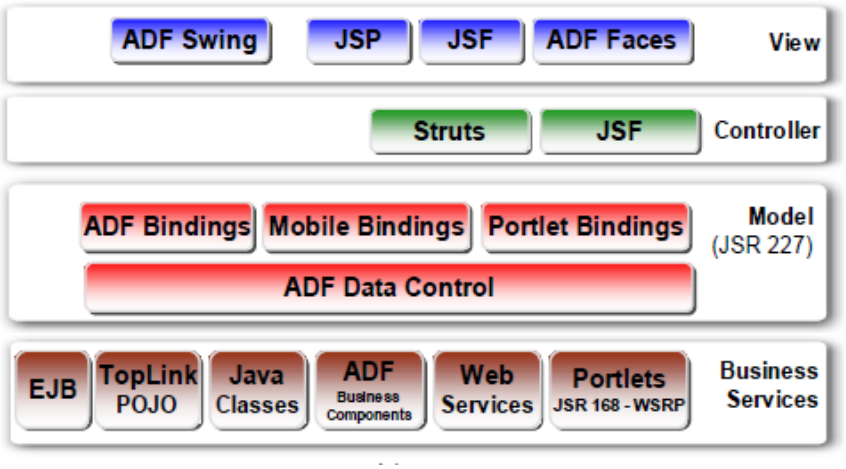
OAF Technology Stack for E-Business Suite R12

Oracle JDeveloper, together with OA Extension (an Oracle Applications design-time extension) makes up the integrated development environment for OA Framework. OA Extension provides features such as easy-to-use wizards, a hierarchy navigator, and a property sheet. These features enable developers to populate E-Business Suite metadata for declarative application business logic and user interfaces. JDeveloper offers a wealth of productivity tools such as the UML modeler, code coach, integrated debugger, local testing environment and documentation generator.

With the OA Extension software comes a wealth of documentation and learning aids including a Developer's Guide, Javadoc, Online Help, a Sample Library and a rich set of Tutorials. The JDeveloper OA Extension offers the following design time tools:

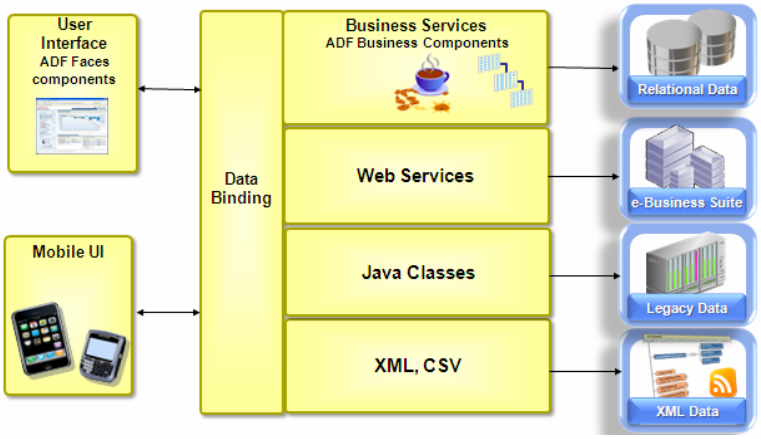
- UML tools to model and generate business logic.
- Guided user interface (and visual editors in a future release) to lay out client user interfaces.
- Code generation for Controller classes

It is possible to develop ADF applications that can be integrated with the E-Business Suite, taking advantage of the E-Business Suite's security model. For these extensions, developers can use Oracle ADF 11g with SOA based integration with E-Business Suite.



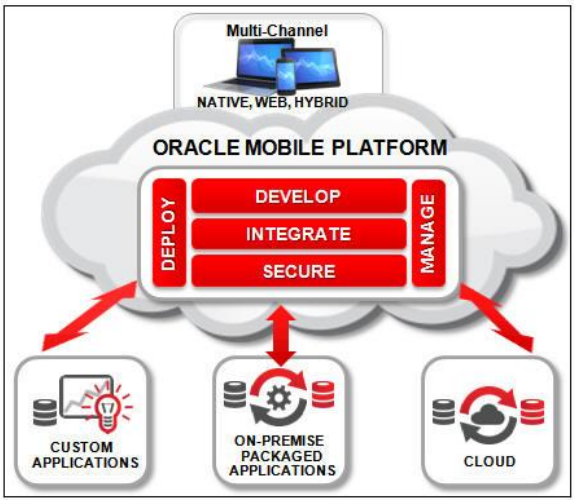
ADF is a comprehensive, model-view-controller technology stack that is oriented towards general-purpose application development. The ADF stack allows users to select among several choices of UI and business services technologies. The ADF stack is primarily comprised of ADF Faces (which is based on industry standard JSF technology), ADFm (m for model - the data control layer that implements JSR-227) and ADFbc (bc for business components – formerly BC4J). ADF design time is also integrated with Oracle JDeveloper.

Oracle ADF and Oracle JDeveloper 11g provide a productive development environment for building new applications. These tools comprise the development framework used for the Fusion generation of applications.



Building Mobile Apps using Oracle Mobile Platform

Oracle Mobile Platform leverages Oracle Fusion Middleware infrastructure to expose enterprise applications and data as web services and restful API's that allow easy integration between mobile apps and back-end systems. This means that the same platform that you use to develop and maintain your enterprise applications can now be extended to develop, integrate, secure, deploy, and manage your mobile applications.



This platform provides a robust, high performance and highly scalable architecture that can run both web and mobile apps, meeting the 24/7 requirements of mobile access with consistent management throughout the application lifecycle. Apps created with Oracle Mobile Platform integrate easily with each other as well as with third party applications based on Java and other industry-standard languages and protocols. This platform also protects API's to uphold corporate security and compliance policies, with comprehensive capabilities for mobile identity management and mobile application management.

Oracle Mobile Platform also supports a multi-channel, multi-device framework that allows you to build apps once and deploy them to iOS, Android and other platforms with web, native and hybrid delivery.

This whitepaper has additional details on how you can simplify enterprise mobility using the Oracle mobile platform.

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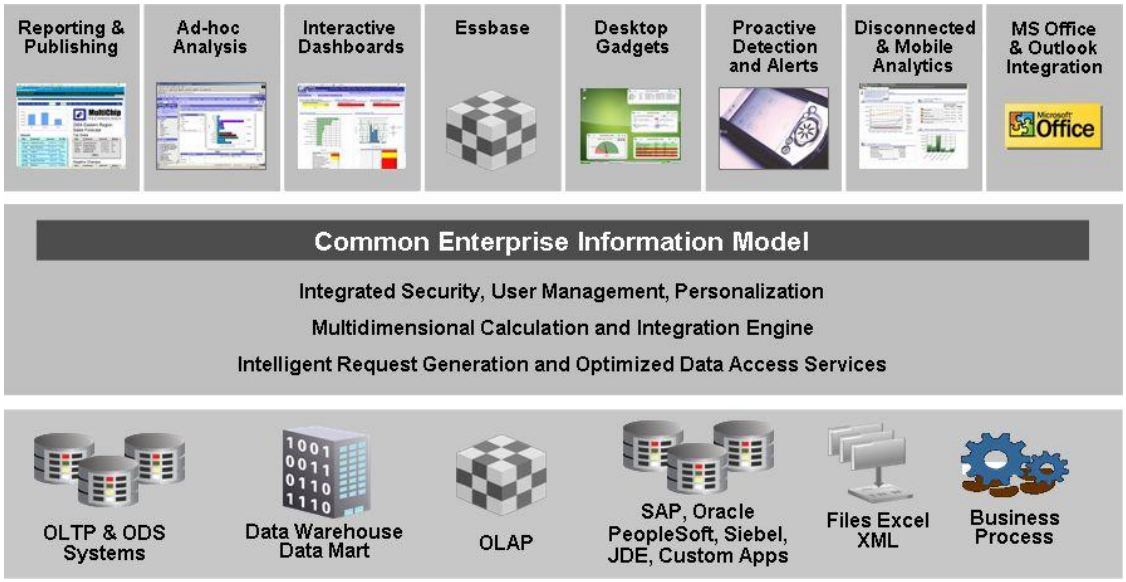
Pervasive Business Intelligence and Strategic Decision Support

Oracle's BI solution comprises a highly scalable BI Foundation that is hot pluggable with the Fusion Middleware stack. This integrated platform and Oracle's prepackaged Business Intelligence Applications allow all of your users to get a complete picture of their business. These tools provide role-based insight into operational performance, processes and customers.

The prepackaged BI Applications offer dashboards and reports that allow users to drill-down or across to the underlying transactional information in Oracle E-Business Suite and other Applications Unlimited products. These pre-built BI capabilities enhance the quality and accuracy of business analysis across multiple data sources, including Oracle E-Business Suite, and speed the delivery of information to those who need it. Pre-built business intelligence applications help enhance the quality and timeliness of business decisions—from the executive suite to individual lines of business such as manufacturing, sales and human resources.



Oracle Business Intelligence Suite

Oracle's Business Intelligence suite of products is the only one in the industry that provides users with a single solution for relational, R-OLAP, and M-OLAP analysis. This eliminates the need to license technologies from multiple vendors to solve your analytic needs, allowing you to consolidate purchasing and save money.

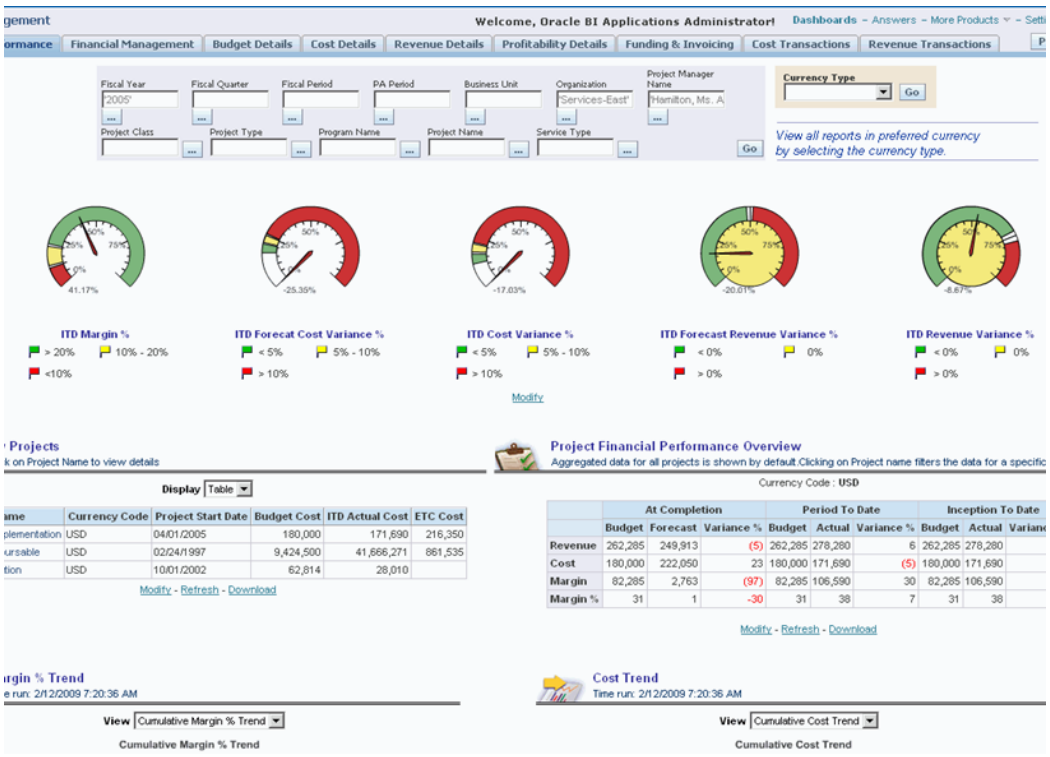
Oracle's Business Intelligence technology suite provides powerful self-service analysis and reporting capabilities to reduce or completely eliminate reporting clerks and analysts. The suite meets the needs of production reporting and publishing, delivering 'pixel perfect' reports. Powerful ad-hoc analysis can be performed via a fully web-enabled user interface. Intuitive dashboards and guided analytics lead executives from insight to action.

Oracle's Business Intelligence technology suite can provide consistency in the semantic definition of analytics across all your sources and targets with its Common Enterprise Information Model. Oracle's Business Intelligence technology suite scales better than competitor products, thereby server hardware requirements.

Using the new E-Business Suite Rich UI Container objects, developers can extend the functionality of existing OA Framework pages by embedding analytic content from OBIEE directly into E-Business Suite screens.

Oracle Business Intelligence Applications

Oracle Business Intelligence Applications are complete, prebuilt BI solutions that provide timely, fact-based insight into activities across the entire organization. They gather relevant data and aggregate it into the most appropriate metrics and formats for the business user. Data is pulled from multiple systems, eliminating siloed views and enabling cross-functional analysis. Everyone—from executives to front-line employees—gets complete and in-context insight that is personalized, relevant, and actionable. Built on an open foundation, Oracle Business Intelligence Applications enable flexibility, extensibility, and standardization, reducing risk and TCO.

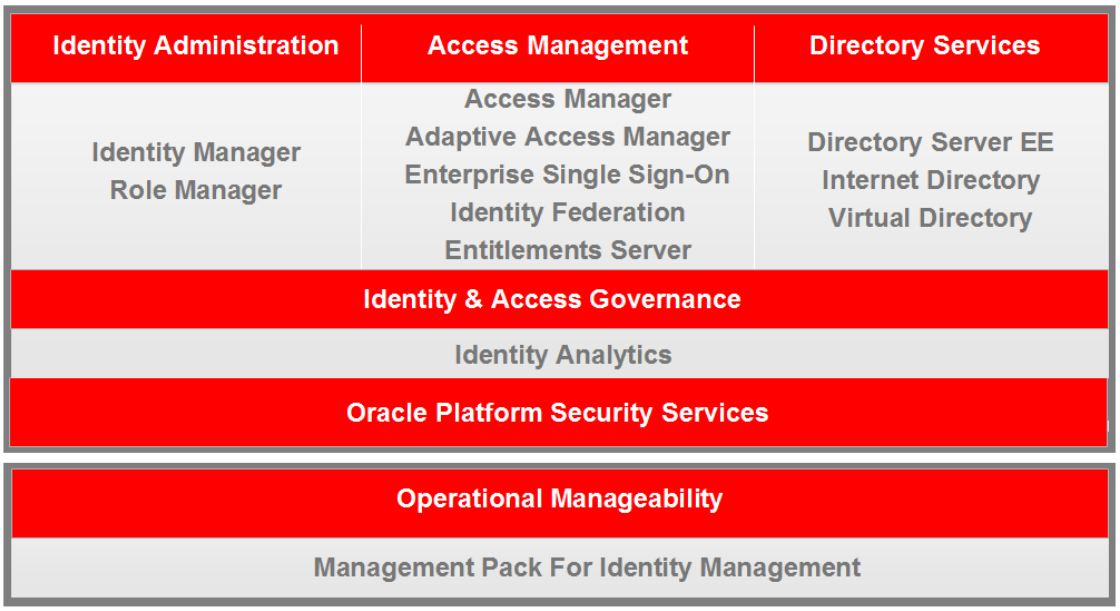


Oracle's BI Applications also reduce your costs by working against existing versions of Oracle E-Business Suite. We recognize that these difficult economic times make it challenging to justify major new E-Business Suite upgrades. As a result, we have made these applications work against all current versions of all of our major packaged solutions.

Oracle's Business Intelligence Applications offer packaged-analytics solutions that eliminate the need for customers to develop data warehouses, ETL logic from the sources, and best practice dashboards. Unlike older analytic solutions that worked only against one application source, were built on arcane and proprietary technology, and were very difficult to customize and extend if you wanted to add your own information sources, Oracle BI Applications are fully extensible and customizable, lowering the cost of implementation and maintenance for customers.

Application-Centric Identity Management

Significantly reducing the overhead costs of security and administration and protecting sensitive business information, Oracle Identity Management solutions automate user provisioning and de-provisioning and provide single sign-on capabilities for information security and user productivity. A unique, application-centric approach delivers vast improvements in the speed of compliance and e-discovery exercises, worker productivity and reduced business risk. Oracle Identity Management 11g is a fully integrated suite that provides the foundation for Oracle's Service-Oriented Security strategy.



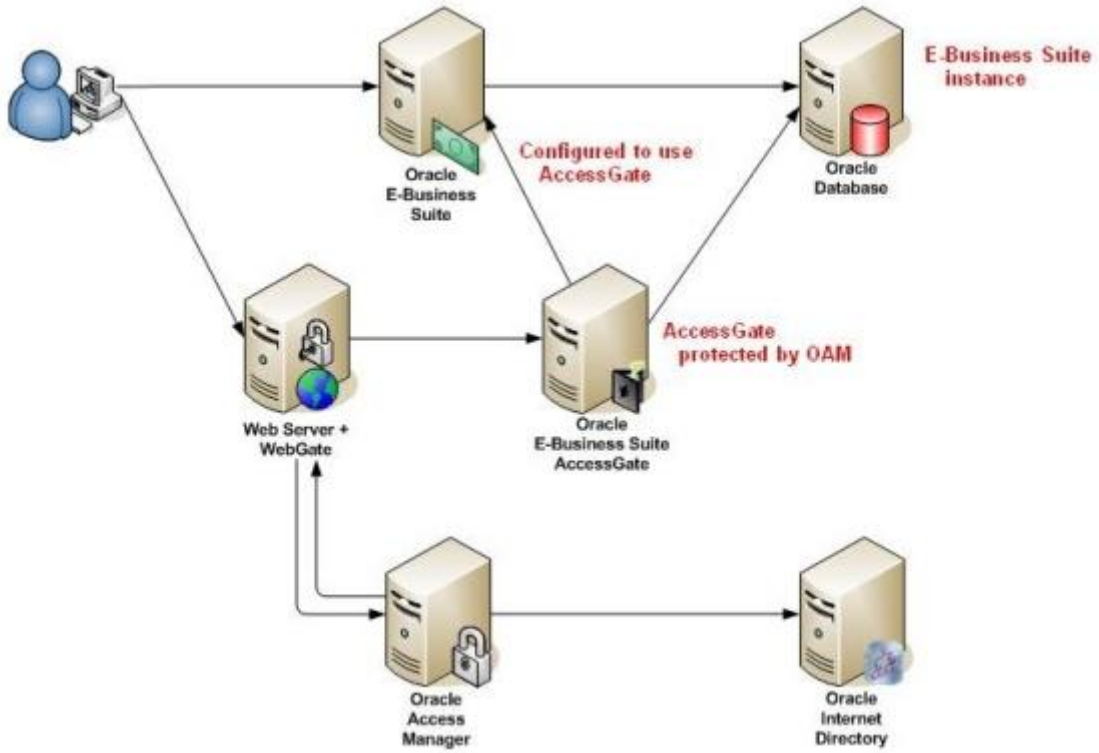
Oracle Identity Management can reduce the operational costs associated with provisioning user accounts in the many different enterprise applications and physical systems that users need access to automatically. This can reduce costs in several ways:

- It eliminates the cost of manually provisioning users each time a new application or system is added.
- It eliminates the cost of manually de-provisioning and re-provisioning users each time an employee changes roles or moves from one organization to another.
- It drastically lowers the cost of security auditing because you can easily find which users have access to what systems by looking at the single identity management system

Oracle's Identity Management has pre-packaged integrations with Oracle E-Business Suite to lower the cost of both deploying and maintaining these integrations across patch sets and upgrades of the applications.

Oracle Access Management can reduce costs associated with help desk staffing for password administration, including the cost of resetting usernames and passwords by providing users with single sign-on.

Oracle Access Manager provides a comprehensive set of authentication and authorization features, including support for single sign-on authentication, and integration with other identity management offerings, such as Oracle Identity Federation and Oracle Adaptive Access Manager.



Previously, Oracle E-Business Suite only supported single sign-on capabilities through Oracle Application Server Single Sign-On. While it was possible to integrate with Oracle Access Manager, this still required Oracle Single Sign-On Server as an intermediary, and did not allow access to the full feature set of Oracle Access Manager.

With Oracle E-Business Suite AccessGate, this is no longer the case. E-Business Suite AccessGate is a Java EE application that resides on a separate application server, and provides direct integration between E-Business Suite and Oracle Access Manager.

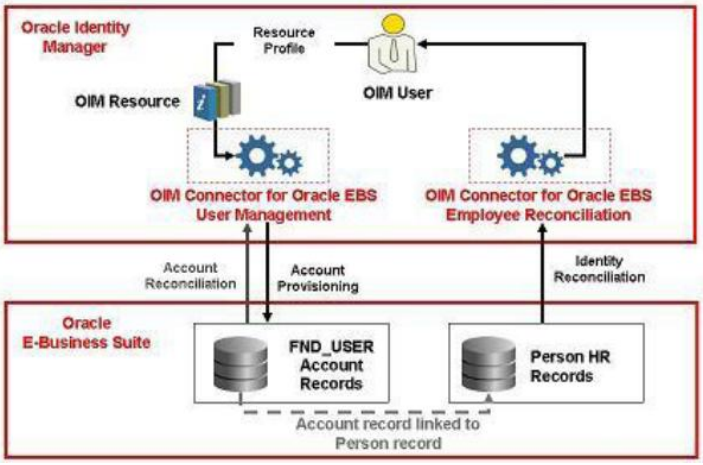
This direct integration also opens the door to the full set of authentication features in Oracle Access Manager:

- **Oracle Identity Manager** is an enterprise identity management system that automatically manages users' access privileges within enterprise IT resources. Oracle Identity Manager allows security administrators to manage user access privileges across all of a firm's resources, throughout the entire identity management lifecycle -- from initial creation of access privileges to dynamically adapting to

changes in business requirements.

Oracle Identity Manager offers Connector Packs for direct integration with Oracle E-Business Suite. EBS integrations are available in the form of two connectors:

- Oracle Identity Manager Connector for EBS Employee Reconciliation
- Oracle Identity Manager Connector for E-Business Suite User Management



- **Oracle Identity Manager Connector for EBS Employee Reconciliation** retrieves employee records from the E-Business Suite Human Resources store and creates identities from them in OIM using a process known as identity or trusted source reconciliation.

  EBS Employee Reconciliation Connector enables an E-Business Suite Human Resources store (represented by the PER_ALL_PEOPLE_F HR table) to function as an authoritative source of Oracle Identity Manager User identity data. This is achieved through the connector's identity (a.k.a. trusted source) reconciliation capabilities. Some of the key features of the connector include:

  - Ability to reconcile additional custom and standard attributes from EBS HR using a pluggable query approach so that customers can drive OIM provisioning, attestation, reporting and delegated administration capabilities using these attributes.
  - Detection of all major person lifecycle events including onboarding, job changes, transfers, terminations etc.
  - Support for future dated person & job changes. This feature allows currently effective changes to be immediately reconciled while future dated changes to be reconciled at a later date (when these changes become effective).

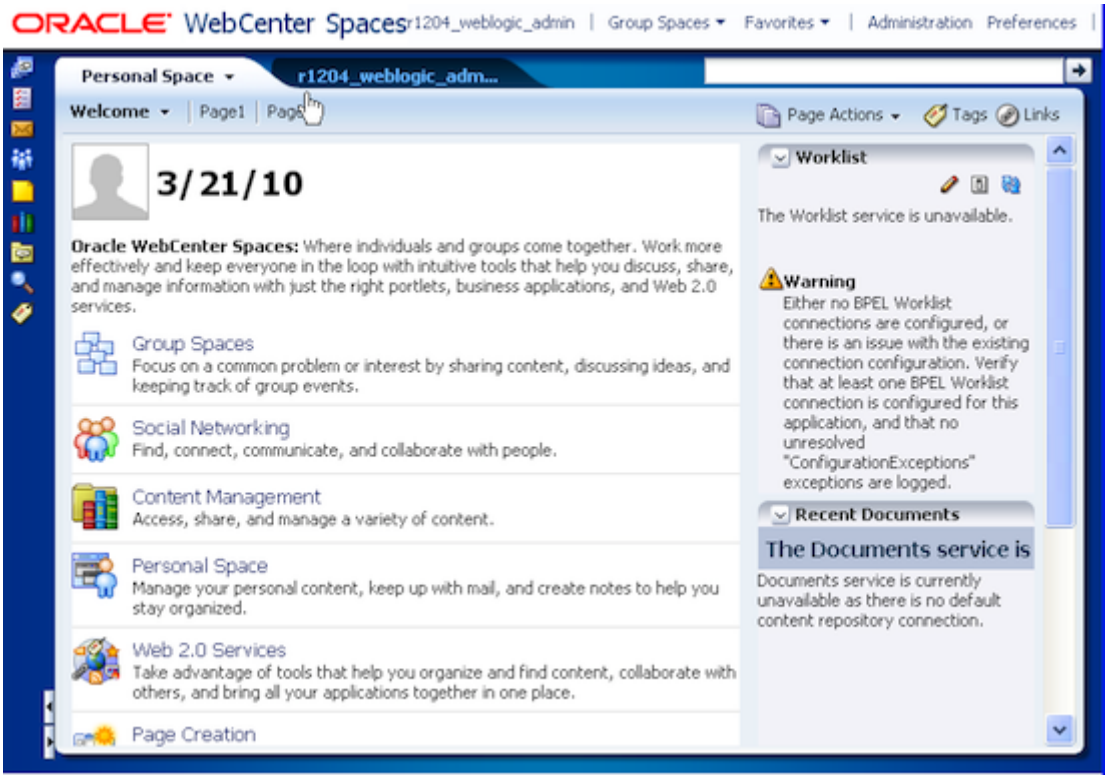
- **Oracle Identity Manager Connector for E-Business Suite User Management** provisions and reconciles E-Business Suite FND_USER accounts along with their UMX role & responsibility assignments. Additionally, it provides customers with the ability to manage HR Foundation person

and TCA Foundation person party records so that OIM can provision into EBS deployments that require theses person records to be managed along with their FND_USER security accounts. The provisioning and reconciliation actions can also be performed against an Oracle Single Sign-On-enabled E-Business Suite environment through the LDAP GUID provisioning feature of the connector. The connector also comes pre-configured to validate any role or responsibility grant for Segregation of Duties (SoD) violation by performing preventive simulation of that grant in Oracle Application Access Controls Governor (OAACG), Oracle's GRC product that provides E-Business Suite SoD policy management capabilities out-of-the-box.

- **Oracle Internet Directory** (OID) is an LDAP v3 compliant directory with meta-directory capabilities. It is built on the industry leading Oracle Database and is fully integrated into Oracle Fusion Middleware and Oracle Applications. Oracle Internet Directory is the only directory service that provides the capabilities to meet modern enterprise directory storage requirements as a general-purpose directory:

Enterprise Portals and Team Collaboration

Oracle's Fusion Middleware Enterprise 2.0 Portal and Content Management solutions create rich connections among your people, processes, information and applications for greater productivity and cost savings. Oracle offers a comprehensive strategy based on choice, innovation and information excellence, whether you're consolidating portals, embracing social networking technologies for improved productivity or "going green" with paper-based processes. Oracle WebCenter Suite 11g is a complete, open enterprise portal platform for creating enterprise portals, social and composite applications, and internet and extranet web sites.



Oracle's WebCenter Suite has pre-packaged integrations with Oracle E-Business Suite to substantially lower the cost of capturing and publishing information from these systems into your Enterprise Portal.

Oracle's WebCenter Suite can reduce costs by allowing you to offer a centrally hosted, shared services Portal Infrastructure that many different departments can share to build, maintain, and customize their own private departmental portals without proliferating hardware, network addresses, document repositories and file servers.

Oracle's WebCenter Suite can save your organization money because it is the only product suite in the industry that provides portal solutions to support **all** the different patterns and styles of Portals that customers typically require:

- Intranet Portals to provide a single point of access to your information systems and applications;
- Community oriented Portals for B2B and B2C interactions with your customers and suppliers;
- Extranet Portals for your .com site.

Unlike other point product solutions that provide only limited out-of-box functionality and/or have limited integration between the components of the product suite itself, Oracle's WebCenter Suite provides rich out-of-box functionality and pre-integrated software, significantly lowering the cost of implementation and maintenance for customers.

Oracle WebCenter delivers Oracle Composer for users and site administrators to personalize the behavior, look, and feel of the Portal to meet user requirements while insulating them from future upgrades. Oracle WebCenter provides an adaptable service model that follows what SOA has done for Enterprise Applications by enabling delivery of reusable, customizable, and personalizable Social Computing Services. Oracle WebCenter provides direct integration with Oracle's Enterprise Business Dictionary to provide prepackaged integration with Applications, Content and Rich Media, Business Processes, and Business Intelligence in a role-specific way to speed user awareness of these critical resources. This integrated set of Oracle WebCenter tools and services allows end-users and IT to build next-generation collaborative applications and portals.

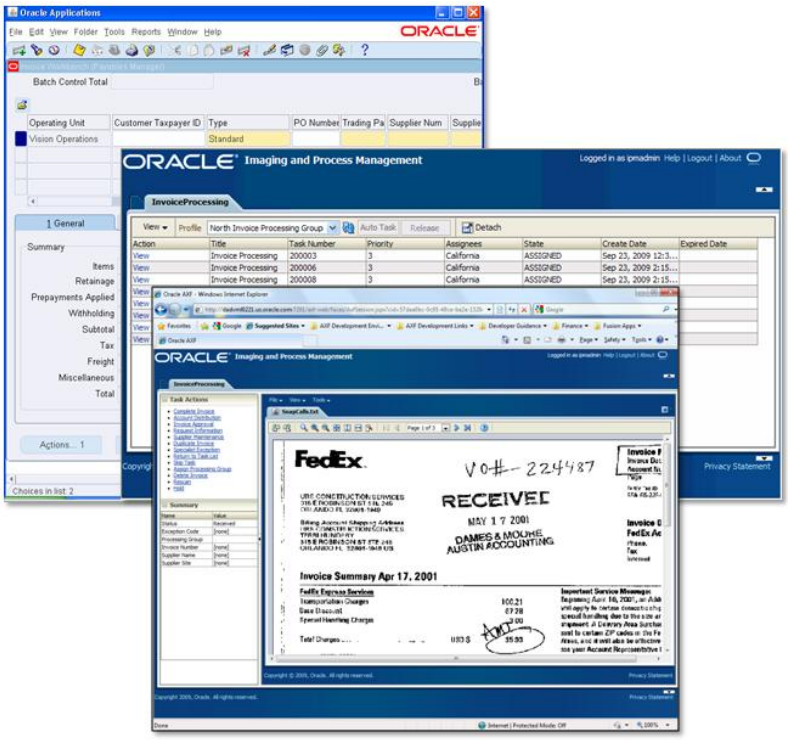
Enterprise Portals with links to Oracle E-Business Suite functions and bookmarks can save an organization significant amounts of money by eliminating the need to maintain and manage hundreds of private web sites, domain names, and departmental systems that are both costly to develop and maintain and make information hard to find. Oracle E-Business Suite Release 12 offers the following JSR-168 and WSRP 1.0-compliant portlets that can be embedded into enterprise portals built with Oracle WebCenter:

- Applications Navigator
- Applications Favorites
- Applications Worklist

Enterprise Content Management

Oracle E-Business Suite Financials

Financial processes are often distributed in nature, require many approvals, and generate very large document volumes that are difficult to effectively manage. As organizations seek to reduce costs and improve efficiency, paper-intensive processes such as Accounts Payable (AP) and Expense Management (T&E) are ideal places to start. Oracle's Fusion Middleware Content Management offerings include a productized Oracle E-Business Suite Adapter that integrates Oracle Imaging and Process Management (I/PM) with E-Business Suite Financials to optimize process automation by coupling document capture and imaging technology with advanced Oracle Fusion Middleware BPEL workflow and BAM process monitoring. As a result, financial departments are able to dramatically decrease costs and cycle times, while increasing process visibility and compliance-readiness.



An organization that has already deployed Oracle E-Business Suite Financials understands the benefits that can be achieved by automating key pain point aspects of procure-to-pay operations, from gaining early control of outstanding liability and expected cash flow requirements, to ensuring early payment discounts are realized. However, complete process optimization cannot be achieved as long as paper handling dictates the process, and systems like Oracle E-Business Suite Financials do not have efficient integration of electronic images within the context of their operations. The continued reliance on paper can have adverse impact on an Oracle E-Business Suite Financials customer's bottom line in a number of ways:

- **Storage and transportation costs**: Many filing cabinets or rooms are filled with archived paper invoices, purchase orders and expense reports, taking up real estate that could be used for more productive purposes. Money and time is wasted on inter-office shipping of paper invoices or receipts from regional offices to a central location, or even back and forth between people in the same building or campus.
- **Departmental productivity**: Significant time is lost while processing paper invoices or expense reports as they make their way along the approval chain. When process exceptions occur, such as the inability to enter data into the financial management system or a missing purchase order number, days can be lost while trying to get documents into the right person's hands so that they can correctly handle the processing exception, placing the ability to maximize vendor discounts at risk.
- **Compliance and audits:** It is often very time consuming to search for and locate archived paper invoices or expense reports once they have been filed away if the department is subject to a corporate audit. Organizations are often not able to exercise the necessary control over their financial documents, ensuring that they are being retained only for the required period of time before they can be destroyed.

Oracle Content Management solves these issues by complementing Oracle E-Business Suite Financials by providing document process automation and removing paper from the picture through the electronic capture of documents, which are converted into images and attached to BPEL-based workflows to be efficiently managed throughout their lifecycle. Financial departments are able to increase the speed of operations using document capture, imaging and workflow to automate some of the most time consuming and mundane tasks of procure-to-pay operations.

End-to-end Accounts Payable processing automation – from receipt to payment:

Only Oracle is able to offer E-Business Suite customers end-to-end process automation, where their financial, content management and workflow systems are all integrated as a solution from a single vendor. This means not only that you benefit from a solution where all the pieces have been designed to work together, but where it is also flexible and easily configurable to meet the needs of each customer – since no two organizations' procure-to-pay processes are exactly alike.

Integrated, flexible document capture meets all levels of automation:

Oracle E-Business Suite customers are able to increase the speed of operations using Oracle Document Capture, I/PM and BPEL workflow to automate some of the most time consuming and mundane tasks of procure-to-pay operations. When it comes to scanning and indexing documents that need to be managed through financial operations, a one size fits all approach doesn't work given the

wide variety of sizes, geographical reach and processing volume of organizations. Oracle offers a range of capture solutions where customers choose what level of automation they want to achieve. All documents can be scanned at a central location with Oracle Document Capture, and then routed to Accounts Payable clerks for processing by for example regional or priority classification. As a complementary solution Oracle Distributed Document Capture allows remote offices to scan their documents at the point of entry into the company or organization, thereby saving both time and money related to inter-office paper shipping.

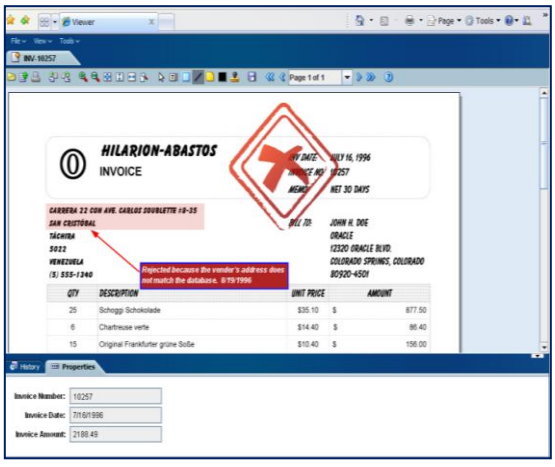
For the highest level of automation, customers can leverage optical character recognition (OCR) and intelligent document recognition (IDR) technology, provided by the Oracle Forms Recognition product, to extract and index all required data from images, thereby bypassing the need for the human key-from-image entry step later. The combination of Oracle Document Capture, Oracle Forms Recognition and Oracle I/PM from the Oracle Fusion Middleware family, in conjunction with Oracle E-Business Suite Financials, provides the highest possible degree of AP process automation.

Complete document lifecycle management – from capture through destruction:

Once invoices, purchase orders, expense receipts or other documents are captured and archived into I/PM the system takes over to manage the imaged content throughout its lifecycle. As an enterprise-class content repository, Oracle Content Management is able to hold billons of imaged documents, so no matter what customer's processing volumes are, or how many Oracle E-Business Suite modules they image-enable, Oracle Content Management can scale to meet those needs. It also helps customers to meet their corporate retention and security requirements, with the ability to attach policies to imaged content that dictates how long they should be kept and who has access to view them until they can be destroyed. Oracle's Universal Records Management product helps companies who have to meet regulatory compliance requirements with respect to their Oracle E-Business Suite Financials related documents.

Faster data entry and searches with direct access to documents from Oracle E-Business Suite:

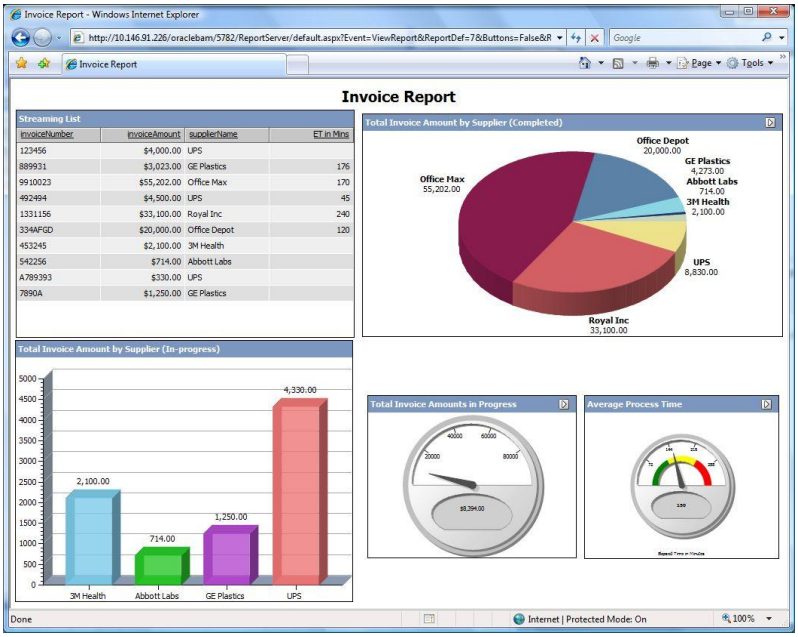
Oracle E-Business Suite customers can make better use of their departmental resources by greatly reducing the time they spend on tasks like data entry and searches, so that they can add more value to the bottom line. Oracle Content Management exposes imaged documents directly from the E-Business Suite interface to maintain a familiar user experience, while enhancing it with the ability to quickly call up imaged documents to speed up heads-down functions such as key-from-image invoice entry. The I/PM viewer provides image annotation and mark-up functionality with security settings and roles to ensure that items



such as redactions are only viewable by appropriate parties. All data entry is done via Oracle E-Business Suite Financials screens, enabling users to leverage business rules and validations provided by the ERP system.

Shorter Accounts Payable cycle times with exception handling workflows and real-time process visibility:

Oracle Content Management offers powerful sample BPEL workflows that augment, but do not duplicate, native E-Business Suite functionality, such as the automated routing of invoice images to AP processors for viewing, data entry and exception handling. Oracle Content Management's exception handling sample BPEL workflows help customers to save valuable cycle time in instances where for example invoice processing exceptions need to be managed. These sample BPEL workflows are fully customizable to map to an organization's specific processes. Real-time business monitoring capabilities are provided via customizable BAM dashboard views, offering visibility into in-flight processes to enable workloads to be monitored and process bottlenecks to be identified, thereby facilitating continuous process improvement.



Easy approvals from within and outside Oracle E-Business Suite Financials:

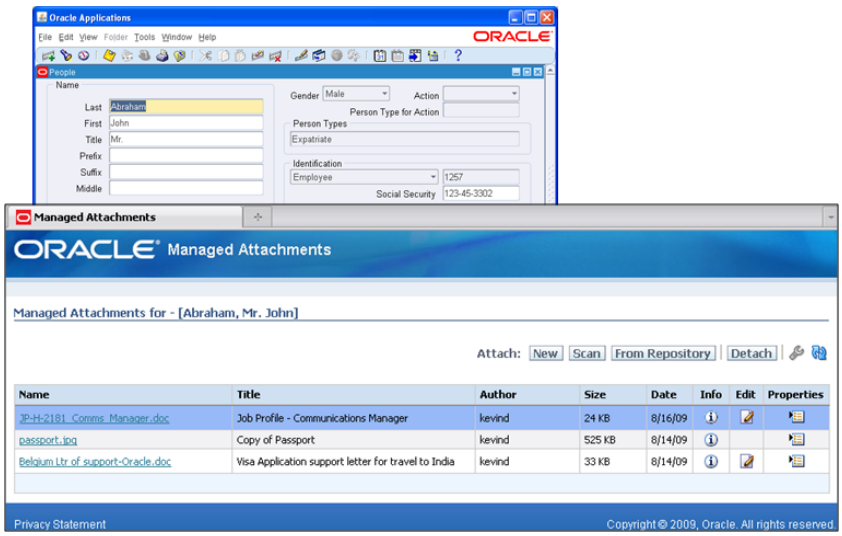
Once an invoice or expense report is ready to be approved, Oracle Content Management provides fast and easy access to imaged documents for review by both E-Business users and other non-ERP users. The Oracle Fusion Middleware BPEL Process Management system sends approval notification emails with an embedded URL that provides quick access to the corresponding document task view, which then allows image review and annotation, as well as task approval, rejection or request for more information actions (all configurable). With this ability to provide seamless access to all users involved in the approval chain, Oracle Content Management cuts down the time it takes before invoices, expense reports, or other AP items are ready for payment.

Oracle E-Business Suite Human Resources

Successful Human Resources (HR) management is dependent upon putting the right programs and procedures in place to maximize the effectiveness of employees. However, as long as HR initiatives remain paper-driven, inevitably too much time and cost is spent on managing paper, rather than people. Oracle's Fusion Middleware Content Management offerings include a productized Oracle E-Business Suite Adapter. Oracle Content Management enables the capture of documents associated with personnel records, storage in a secure, centralized document repository, and automatic routing to the right person for retrieval from within or outside of the E-Business Suite system. As a result, HR departments save time and money by eliminating delays and inefficiencies in document-driven processes, while strengthening compliance and controls.

Streamline your HR Processes with Capture, Image & Document Management, and Workflow:

Many HR processes are bogged down with paper. From recruiting and on-boarding, to performance appraisals and benefits processing, the time and effort spent on managing paper documents decreases departmental productivity while increasing costs. Ideally customer's E-Business Suite HR users should for example be able to quickly locate and access an electronic copy of an applicant's resume instead of hunting through a filing cabinet, or access online all of an employee's documentation attached to their E-Business Suite HR Person records, rather than having to access disparate systems to try to find the associated documents.



HR employee record attachments: Unstructured content such as Office documents, PDFs and scanned images, are integral to supporting the different HR processes. The Oracle E-Business Suite Adapter for Oracle Content Management offers a flexible, scalable and secure solution that allows employees to access and contribute content associated with Oracle E-Business Suite HR records. The adapter integrates Oracle Content Management with Oracle E-Business Suite, to provide an enterprise-class content management infrastructure for centralizing the management of all employee related

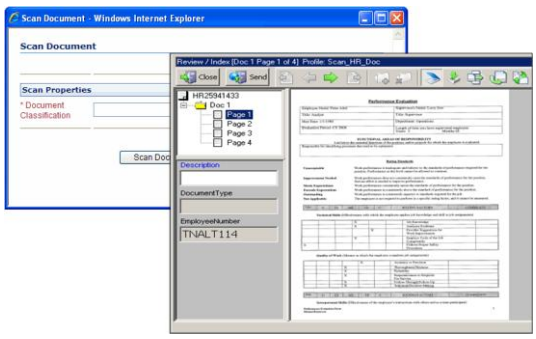
documents, and enabling the insertion of documents into workflows to drive process efficiency. With a full array of content management functionality provided by Oracle Content Management products, including search, security, workflow, metadata, revision control, content conversion and document capture capabilities, organizations can effectively and efficiently upload, scan, process, share and distribute electronic and originally paper-based HR documents via Oracle E-Business Suite, portals or other applications.

The Oracle E-Business Suite Adapter provides direct access to content attached to E-Business Suite entities, as well as associated content management services, through familiar E-Business Suite screens. Any HR related document can be checked into Oracle Content Management via Oracle E-Business Suite, at which time it is automatically converted to a web accessible format such as PDF/HTML for online viewing and printing without requiring the original application with which it was created. The document is also assigned a unique URL to make it easy to access and share via different application interfaces.

Role-based permissions ensure that content can be viewed or modified only by the intended parties. When content needs to be modified, the native document can be checked out and locked to maintain its integrity, and then checked in as a new revision once edits are completed. An automatic check out, open and edit in the native application feature available via the E-Business Suite interface further simplifies this process for the end user. Full revision tracking is available and provides access to all previous versions of content items. Built in content centric workflow manages document review and approval processes, including tracking comments and related revisions. Advanced content searching functionality uses both metadata and full text indexing to allow the retrieval of content stored in the repository.

Sensitive documents attached to Oracle E-Business Suite entities can be automatically sealed to a specific security context based on document type or other metadata via Oracle's Information Rights Management (IRM) solution, ensuring the security of these documents even if the E-Business Suite user downloads and distributes them via email or other means. For these sealed, sensitive documents E-Business Suite users will be required to authenticate to the IRM server before gaining their assigned rights, such as the ability to view, edit or print a document. To ensure IRM security is maintained, the web accessible rendition of a sealed document is automatically sealed as part of the conversion process.

Wide range of document capture capabilities: Oracle Content Management offers flexible capture services that let E-Business Suite customers choose from a range of options to best suit your HR processes. They can use Oracle Document Capture to scan and import paper or faxed documents, such as resumes or benefit forms at a central location, and route them to HR staff for processing.



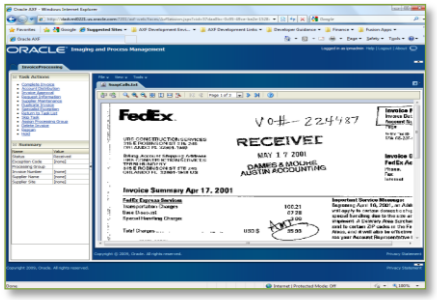
For those organizations that wish to have their Oracle E-Business Suite HR end users convert paper documents to digital format and link them directly to HR records as attachments, the Oracle E-

Business Suite Adapter for Oracle Content Management is integrated with web-based Oracle Distributed Document Capture for ad-hoc scanning and indexing of paper documents from wherever the user is located. The scanned content is attached to the user's current E-Business Suite record while being stored and managed in the centralized Oracle Content Management repository. In this way E-Business Suite user's ad-hoc scanning needs, such as attaching documents from performance appraisals conducted at remote offices, can be met. This integrated scanning invoked directly from within the Oracle E-Business Suite HR interface saves time and money related to inter-office shipping of paper documents.

Oracle Forms Recognition allows the automated extraction of information from scanned forms and documents to drive HR processes requiring a high degree of automation.

Achieve High ROI Today — Meet the Content Management Needs of Tomorrow

The Oracle E-Business Suite Adapter in conjunction with Oracle Content Management provides an enterprise-wide infrastructure that scales to meet the document management requirements of multiple departments, that is capable of storing millions of content items, and that forms part of an E-Business Suite customer's Oracle Fusion Middleware platform implementation and integration strategy.

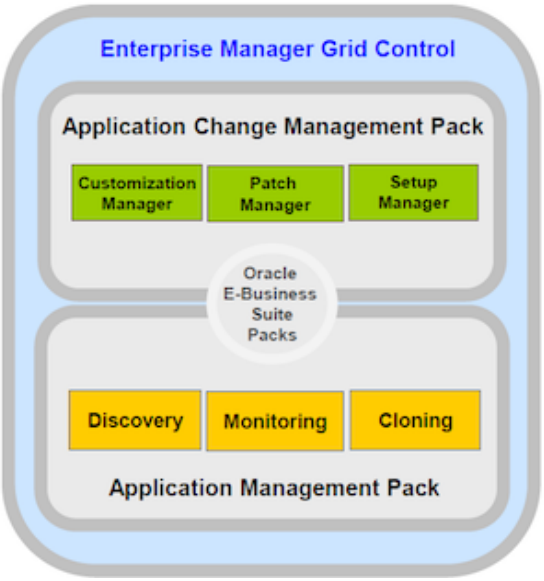


Oracle is uniquely positioned to provide E-Business Suite customers with an end-to-end business process automation solution, of which Oracle Content Management provides the key components of capture, image & document management, and workflow to augment the native automation already provided in Oracle E-Business Suite. Customers have the flexibility to further automate their systems using technologies such as Oracle Forms Recognition to achieve complete business process optimization – all on one unified platform, with the value of a single vendor solution from Oracle.

Oracle Content Management is the strategic platform for managing unstructured information in both Oracle Fusion Applications and Oracle Applications Unlimited. Leveraging this Oracle Fusion Middleware content management solution ensures your infrastructure is synchronized with the future of Oracle Applications. Additionally, the broader Oracle technology stack offers the flexibility to further enhance your applications, such as utilizing Oracle Identity Management for consolidated user authentication and authorization roles across applications, or the Oracle Database Secure Files feature that provides automated de-duplication of content at the database level, allowing you to achieve storage cost savings in an environment with explosive content growth.

The fusion of Oracle Content Management and Oracle E-Business Suite is achieved through a modular architecture with a minimal footprint on the E-Business Suite side, ensuring that ongoing maintenance and future system upgrades will not require high services costs, custom integration "updates", or jeopardize the ability to upgrade one system without impacting the other. By delivering the integration as a productized and supported solution based on the Oracle Fusion Middleware platform, "one-off" or "band-aid" integrations are eliminated, thereby minimizing application maintenance and support costs.

Enterprise Management

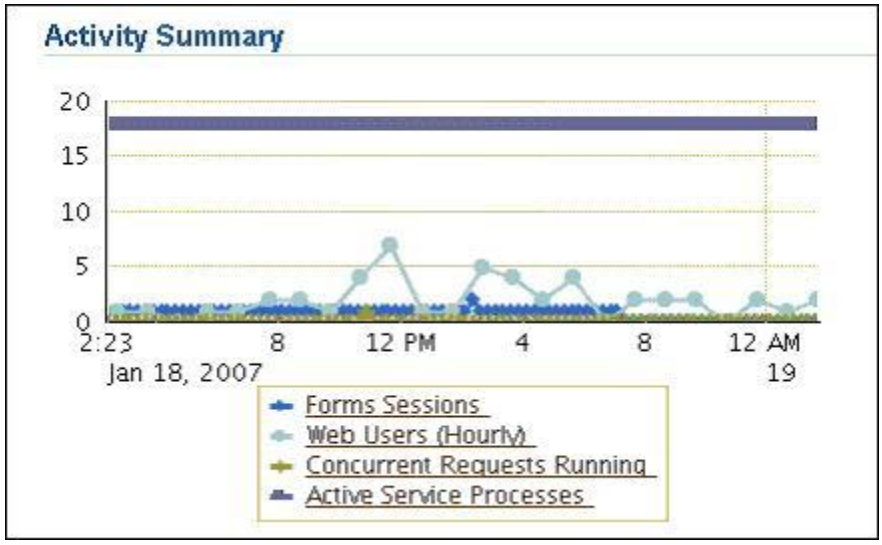


Oracle Enterprise Manager enables customers to reduce complexity and increase efficiency in their application environments through a unique application-to-disk approach to systems management. Oracle Enterprise Manager is the only solution in the marketplace with combined management capabilities spanning applications and supporting infrastructure for physical, virtual and private cloud computing environments.

Oracle Enterprise Manager provides a comprehensive, integrated management solution that helps businesses achieve high levels of performance and availability, and reduce the costs of managing applications and the infrastructure on which they run. Enterprise Manager provides the tools that help organizations achieve the required application performance and availability, improve management productivity, better utilize resources, and drive down operational costs.

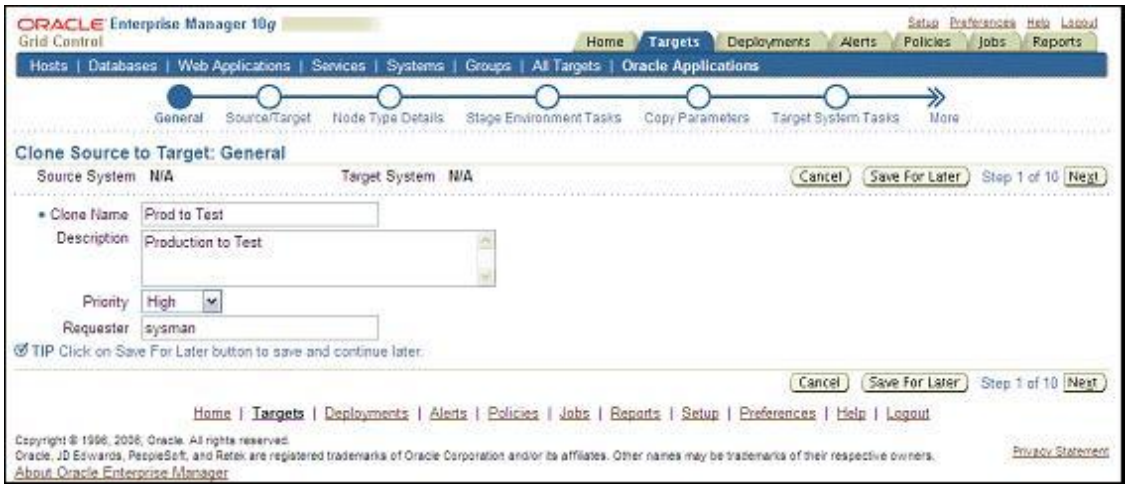
Application Management Pack (AMP) and Application Change Management Pack (ACMP) extend Oracle Enterprise Manager Grid Control 10g to monitor and manage Oracle E-Business Suite components and the changes the system undergoes.

- **Oracle Application Management Pack for Oracle E-Business Suite** is a set of management utilities that helps system administrators deploy, configure, monitor, and maintain E-Business Suite servers all from a single web-based console. Oracle Application Management Pack for E-Business Suite dramatically reduces the level of effort required to administer E-Business Suite servers while improving overall total cost of ownership.
- **Application Change Management Pack for Oracle E-Business Suite** provides features to monitor and manage Oracle E-Business Suite changes. Application Change Management Pack provides a centralized view to monitor and orchestrate changes (both functional and technical) across multiple Oracle E-Business Suite systems.



Application Management Pack for Oracle E-Business Suite Features

- **Advanced Discovery:** allows you to monitor and manage E-Business Suite systems running advanced topologies such as Real Application Clusters (RAC)
- **EBS Administration:** provides a user interface to start or stop E-Business Suite components individually or the E-Business Suite as a whole
- **Hot cloning** for Oracle E-Business Suite Release 12: Automates cloning of an Oracle E-Business Suite Release 12 system in hot mode, without shutting down the database.



- **RAC cloning** for Oracle E-Business Suite Release 12: Enables cloning of Oracle E-Business Suite Release 12 databases running Real Application Clusters to another RAC or single-node (non-RAC) environment.
- **Smart Clone:** Next Generation hot-cloning technology built on Enterprise Manager Grid Control. Smart Clone provides flexibility for administrators to incorporate their own custom database cloning

techniques into AMP's cloning routines. Smart Clone supports cloning of single or multi-node Oracle E-Business Suite 11.5.10 CU2 systems deployed on Real Application Clusters (RAC) and Shared APPL_TOP. Some of the key cloning scenarios supported include RAC to RAC, RAC to Non-RAC, and Scale Down (Multi-Node to Single Node).

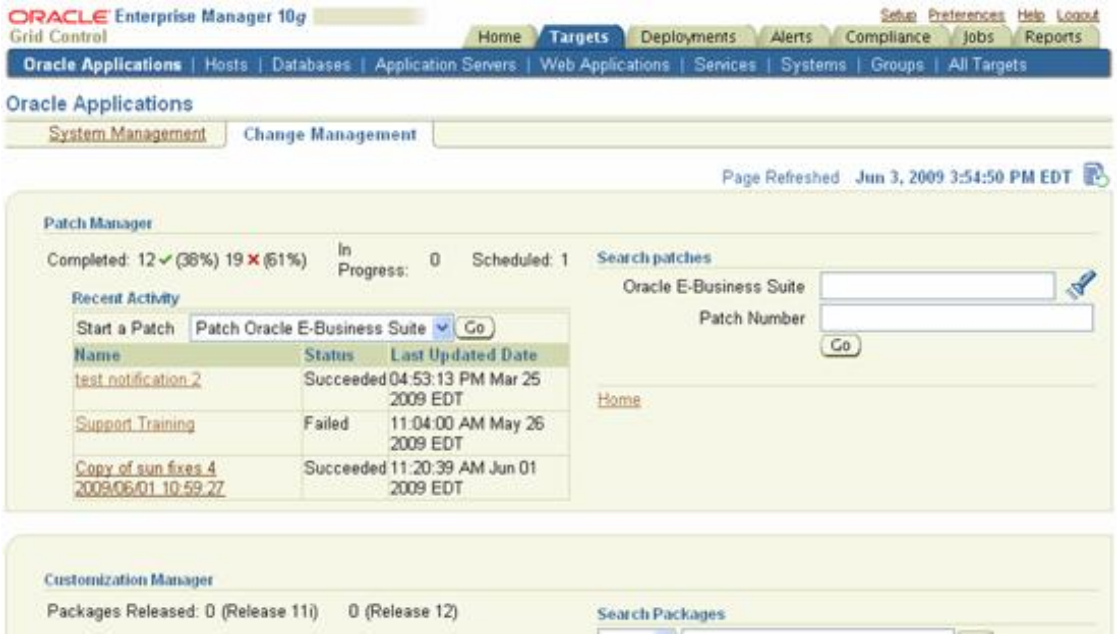
- **Concurrent Processing Dashboard:** Administrators now have the ability to monitor and manage Concurrent Managers and concurrent programs through Application Management Pack Release 3.1. The new dashboard displays the efficiency of Concurrent Managers in processing concurrent requests. Administrators can create a watch list of specific concurrent managers and specific concurrent programs.
- **End-to-End Tracing:** Administrators can analyze Oracle E-Business Suite's database load from Application Management Pack 3.1. Administrators can trace Application Web User Sessions down to Database Sessions. Top database sessions can also be traced back to individual application users.

Application Change Management Pack for Oracle E-Business Suite Features

The Application Change Management Pack is noteworthy because it provides new tools for automating updates to multiple E-Business Suite instances:

- **Customization Manager** automates the packaging of your customizations into AD-compliant packages that can be deployed across multiple E-Business Suite instances. Before packaging, the Customization Manager validates your customizations against Oracle's software coding best practices.

- **Patch Manager** integrates with My Oracle Support and automatically downloads and deploys different types of patches across multiple (single or multi-node) E-Business Suite instances.



- **Setup Manager** helps manage functional setups that need to be duplicated across multiple E-Business Suite instances.

- **Change Approval Framework:** Changes orchestrated through Application Change Management Pack can now be controlled through the new change approval framework in Release 3.1. Users can now be segregated as approvers across Oracle E-Business Suite systems and modules using Customization Manager, Patch Manager or Setup Manager. Built-in notification capabilities enable approvers and requestors to be informed about the status of relevant change requests. It also provides an implicit audit trail mechanism.
- **Integrated Custom Application Management:** An integrated custom applications management feature enables users to easily register new custom applications across multiple Oracle E-Business Suite systems. Administrators can track and validate existing custom applications using a common framework.
- **Prerequisite Patch Analysis:** Oracle E-Business Suite patches can now be analyzed for prerequisites prior to target system deployment. The analysis verifies whether the prerequisites are already available. If not, they can be added to the automated patch job.
- **Offline Transformation:** Users have the new ability to download Oracle E-Business Suite setup data to Microsoft Excel. Setup Data can be edited and new data can be entered via Excel worksheets. Data is validated within Microsoft Excel and in Setup Manager.
- **Built-in Intelligence:** Release 3.1 has additional enhancements, including:
  - Automated file driver metadata generation for new files and $Header handling
  - Customization Package impact analysis report
  - Advanced filtering options for setup migration
- **Improved Usability:** Release 3.1 contains usability and reporting enhancements to ensure better integration with third-party systems like source-control systems.

Conclusion

Oracle WebLogic Server, the foundation of Oracle E-Business Suite Release 12, takes advantage of modern hardware and software architectures and delivers the highest performance, reliability, and agility at any scale. E-Business Suite users may also optionally maximize the value of their technology investments in Fusion Middleware by:

- Integrating with other applications using Service-Oriented Architectures
- Extending the E-Business Suite with Oracle JDeveloper
- Delivering business insight with Oracle Business Intelligence
- Delivering better security with Oracle Identity Management
- Creating enterprise portals and composite applications with Oracle WebCenter
- Managing enterprise information with Oracle Content Management
- Managing your environment with Oracle Enterprise Management

With the combination of Oracle E-Business Suite and Oracle Fusion Middleware, Oracle offers you enterprise-class business applications, middleware, and a database management system from a single vendor, while still allowing you to choose the hardware and operating system that best suits your requirements.

As Oracle continues to strengthen its portfolio and leadership position in the enterprise software market, Oracle E-Business Suite is aligned with Oracle's Fusion Middleware strategy and is poised to inherit the benefits of Oracle's best-in-class technology stack.

E-Business Suite + Fusion Middleware Certifications

New certifications are released for Oracle E-Business Suite every month. Readers are strongly encouraged to monitor or subscribe to the official Oracle E-Business Suite Technology Stack blog (http://blogs.oracle.com/stevenChan) via email or RSS to stay current with the latest certification announcements.

The E-Business Suite certification list is available at:
https://blogs.oracle.com/stevenChan/resource/certifications.html

References

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- Getting Started with Oracle Application Management Pack for Oracle E-Business Suite, Release 3.1 (My Oracle Support Knowledge Document 982302.1)
- Using Oracle BPEL 10g with E-Business Suite Release 12.1.1 or higher (My Oracle Support Knowledge Document 755067.1)
- Oracle Fusion Middleware Adapter for Oracle Applications User's Guide 11g (11.1.1.1.0)
- Using Discoverer 11.1.1 with Oracle E-Business Suite Release 12 (My Oracle Support Knowledge Document 1074326.1)
- Using Discoverer 11.1.1 with Oracle E-Business Suite Release 11i (My Oracle Support Knowledge Document 1073963.1)
- Using Oracle Internet Directory 11gR1 Patchset 1 (11.1.1.2.0) and Oracle Single Sign-on with Oracle E-Business Suite (My Oracle Support Knowledge Document 876539.1)
- Installing Oracle Application Server 10g with Oracle E-Business Suite Release 11i (My Oracle Support Knowledge Document 233436.1)
- Integrating Oracle E-Business Suite Release 12 with 10gAS Oracle Internet Directory and Oracle Single Sign-On (My Oracle Support Knowledge Document 376811.1)
- Using WebCenter 11.1.1 with Oracle E-Business Suite Release 12 (My Oracle Support Knowledge Document 1074345.1)
- E-Business Suite Application Development Using Oracle Application Framework (OAF) and Application Development Framework (ADF) (My Oracle Support Knowledge Document 563047.1)
- Oracle Application Framework Documentation Resources, Release 12 (My Oracle Support Knowledge Document 391554.1)

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

ORACLE

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December 2013

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