



ORACLE E-BUSINESS SUITE RELEASE CONTENT DOCUMENT

Applications Technology Releases 12.1 and 12.2 (inclusive of 12.0.2 - 12.0.7)

Prepared by ATG Documentation

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1. Disclaimer

This Release Content Document (RCD) describes product features that are proposed for the specified releases of the Oracle E-Business Suite. This document describes new or changed functionality only. Existing functionality from prior releases is not described. It is intended solely to help you assess the business benefits of upgrading to the specified release of the Oracle E-Business Suite.

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Due to the nature of the product architecture, it may not be possible to safely include all features described in this document without risking significant destabilization of the code.

2. Introduction

2.1. Purpose of Document

This Release Content Document (RCD) communicates information about new or changed functionality introduced in Oracle E-Business Suite Releases 12.1 and 12.2, and in subsequent Release Update Packs (RUPs) and off-cycle patches. For your convenience, it also includes new or changed functionality introduced in the RUPs for Release 12, including 12.0.2 through 12.0.7.

The features and enhancements described in this document are grouped by product, and then by the release in which they first became available, for example, “Release 12.1.1”. Features released in an off-cycle patch have a special designation – for example, a feature released after 12.1.1, but before 12.1.2, is designated as “Release 12.1.1+”.

3. Technology Stack

3.1. Release 12.2 Overview

The technology stack for Oracle E-Business Suite Release 12.2 takes advantage of Oracle and third-party technologies for the database and application tiers and Java.

Oracle E-Business Suite Release 12.2 is certified with the Oracle Enterprise Edition 11g Release 2 (11.2) database release. On the application tier, Oracle E-Business Suite Release 12.2 is certified with Oracle Fusion Middleware 11g Release 1 (11.1.1.7), as well as Java SE Development Kit (JDK) 7.0. On the client, Oracle E-Business Suite Release 12.2 is compatible with Version 6.0 and 7.0 of the Java Plug-in.

Note: For developing Web-based Oracle Application Framework applications, Oracle E-Business Suite Release 12.2 is certified with Oracle JDeveloper 10.1.3, which is the version required for the Oracle JDeveloper OA Extension. For more information about the technology components used by Oracle JDeveloper OA Extension, see section 4.1.6.4.

3.2. Release 12.2 Technology Components

Oracle E-Business Suite uses the following major technology components in Release 12.2. Information for Release 12.1.x is also provided for comparison purposes.

Oracle Technology	Most Recent Certified Version for 12.1.x (*)	Version Included in or Required by 12.2	Most Recent Certified Version for 12.2
Oracle Database 11g	11.2	11.2	11.2
Oracle Database 12c	12.1	N/A	Not certified
XDK for the Database Tier	Same as database version	Same as database version	Same as database version
Oracle Application Server (for Application Tier Forms and Reports)	10.1.2.3	10.1.2.3	10.1.2.3
Oracle Application Server / Oracle Fusion Middleware (for Application Tier Java Code and Oracle Application Framework)	10.1.3.5	11.1.1.6	11.1.1.7
Oracle Java Required Files (JRF)	N/A	11.1.1.6	11.1.1.7
XDK for the Application Tier	10.1.3.5	11.1.1.6	11.1.1.7

Oracle HTTP Server	10.1.3.5	11.1.1.6	11.1.1.7
Oracle WebLogic Server	N/A	Oracle WebLogic Server 10.3.6 in Oracle Fusion Middleware 11g Release 1 (11.1.1.6)	Oracle WebLogic Server 10.3.6 in Oracle Fusion Middleware 11g Release 1 (11.1.1.7)
JSP Compiler	OJSP 10.1.3.5	WebLogic JSP Compiler 11.1.1.6 (weblogic.appc)	WebLogic JSP Compiler 11.1.1.7 (weblogic.appc)
JSP Engine	OJSP 10.1.3.5 (based on JSP 2.0 specification)	WebLogic JSP Engine 11.1.1.6 (weblogic.appc)	WebLogic JSP Engine 11.1.1.7 (weblogic.appc)
Java Technology	Most Recent Certified Version for 12.1.x (*)	Version Included in or Required by 12.2	Most Recent Certified Version for 12.2
Java SE Development Kit – JDK (for Application Tier Java Code and Oracle Application Framework)	7.0	6.0	7.0
Java SE Development Kit – JDK (for Concurrent Processing Tier)	7.0	6.0	7.0
Native Java Plug-in (for Client side Java code running in the Browsers)	7.0	6.0	7.0
Technology Components Delivered in APPL_TOP	Most Recent Certified Version for 12.1.x (*)	Version Included in or Required by 12.2	Most Recent Certified Version for 12.2
Oracle JDeveloper runtime libraries	10.1.3	10.1.3	10.1.3
Oracle BI Beans	3.1.1.11	3.1.1.11	3.1.1.12
Oracle Thin JDBC Drivers (for Application Tier Java Code)	11.2	11.2	11.2
Externally Installed Oracle Technology	Most Recent Certified Version for 12.1.x(*)	Minimum Version Used by 12.2	Most Recent Certified Version for 12.2
Oracle Single Sign-On	11.1.1.0	N/A	N/A
Oracle Internet Directory	11.1.1.7.0	N/A	11.1.1.7.0
Oracle Access Manager	11.1.2.1	N/A	11.1.2.1

Oracle Business Intelligence Enterprise Edition	11.1.1.7	N/A	11.1.1.6
Oracle Discoverer	11.1.1.7	N/A	11.1.1.7
Oracle WebCenter Portal	11.1.1.8	N/A	11.1.1.8
Oracle Portal	11.1.1.6	N/A	11.1.1.6
Oracle BPEL Process Manager	11.1.1.7	N/A	11.1.1.7
Oracle Enterprise Manager	12.1.0.3	N/A	12.1.0.3

** The actual certification date for some of these technologies may not coincide completely with the release of Oracle E-Business Suite, especially on certain platforms. Before planning to upgrade your Oracle E-Business Suite instance to a new version of such technologies, please ensure that the technology is certified and available for your platform by reviewing the information available in the “Certify” system on “My Oracle Support”.*

3.3. Technology Configuration

3.3.1. Overview

This section lists new features in the tools provided to install and configure Oracle E-Business Suite and its technology stack. Enhancements for patching and cloning are described as well.

3.3.2. Release 12.0.2 (RUP2)

3.3.2.1. Technology Inventory Report

This new Technology Inventory Report delivers standardized accurate version information about the Oracle E-Business Suite technology stack. When an Oracle E-Business Suite administrator wants to obtain the version of technology that is installed, he will run this report as a command line utility. This is an administrative feature; there is no impact to customer implementation, business process, or user experience.

3.3.2.2. OC4J Load Balancing

This new feature leverages the native ability of Oracle Application Server 10g to load balance so that customers no longer need to purchase third-party hardware in order to support multiple application tiers. Please see My Oracle Support Document 380489.1 for more details. This is an administrative/technical configuration feature; there is no direct impact to customer implementation, business process, or user experience.

3.3.3. Release 12.0.6 (RUP6)

3.3.3.1. AutoConfig Performance Enhancements

Several features introduced in Release 12.1.1 were made available on the Release 12.0 line in Release 12.0.6. AutoConfig, a utility that automatically configures the technology components used in an Oracle E-Business Suite installation, has been enhanced to improve its performance. Other enhancements include an option to run in a Profiler mode, parallelization across different Oracle E-Business Suite nodes, database configuration reporting for the Check Config utility, support for Oracle Database 11g, and Access Control List support.

3.3.4. Release 12.1.1

This release provides several enhancements for AutoConfig, a utility that automatically configures the technology components used in an Oracle E-Business Suite installation.

3.3.4.1. AutoConfig Profiler

Release 12.1.1 AutoConfig contains an option to run in a *profile* mode. Running AutoConfig in this mode generates a performance report with timing details about each script instantiated and run by AutoConfig.

3.3.4.2. AutoConfig Parallelization across Nodes

In Release 12.1.1, AutoConfig can be run in parallel on different nodes of an Oracle E-Business Suite system. This reduces the overall time needed to run AutoConfig across all nodes of an Oracle E-Business Suite instance, helping to shorten patching downtime.

3.3.4.3. AutoConfig Service Control Dependency Management

Technology Stack Service Control Infrastructure is used by scripts that start and stop Oracle processes on the servers. Release 12.1.1 contains re-designed service and service group definitions in the AutoConfig context file to enable the same service to be in different service groups and ease the addition of new services. Additional support for dependencies between service groups is also implemented in Release 12.1.1.

3.3.4.4. AutoConfig Check Config Utility

The Technology Stack Check Config Utility (adchkcfg) in Release 12.1.1 has been enhanced to report on relevant file system and database changes prior to running AutoConfig. Enhancements to the adchkcfg utility also include providing a Release 12 look and feel to the resulting report document, and improving the Applications database profile differences report.

3.3.4.5. AutoConfig Support for Oracle Database 11g

In Release 12.1.1, AutoConfig has been enhanced to run on and configure an Oracle 11g database. This will help both new and upgrade customers who wish to use Oracle Database 11g with Oracle E-Business Suite Release 12.1.1.

3.3.4.6. Build Context XML Utility for Cross Platform Migration

In Release 12.1.1, the new adblxml AutoConfig utility can be used to create a new context file on the database tier. This utility facilitates and simplifies database upgrades and cross-platform migration.

3.3.4.7. AutoConfig Search Utility

The new AutoConfig Search Utility is run from the command line, and can be used to obtain detailed information about context variables and the templates that use them. The utility accepts all or part of a context variable name, and generates a report containing detailed information about matched context variables.

3.3.4.8. Technology Stack Inventory Validation Report

Release 12.1.1 includes a technology stack inventory validation utility for use with Oracle E-Business Suite Release 12.1 technology stack (similar to Oracle E-Business Suite Release 11i technology stack validation utility). This report allows administrators to review the versions of various installed technology components, patch sets and one-off patches.

3.3.4.9. Enhanced Support for Sharing Application Tier File System

This feature enables the sharing of the application tier file system among two or more Oracle E-Business Suite instances, for example PROD and PROD_BACKUP, or TEST and DEV. This ensures that such instances will always be on the same patch level, patching downtime will be reduced, and maintenance will be simplified. Only the application tier file system can be shared, not the database tier file system. Details can be found in Appendix B of My Oracle Support [Document 384248.1](#), "*Sharing the Application Tier File System in Oracle E-Business Suite Release 12.*"

3.3.4.10. Enhanced Support for Application Tier Load Balancing

This feature provides configuration support for major load balancing categories: DNS, OC4J Native, HTTP layer (hardware/software). Details are available in My Oracle Support [Document 380489.1](#), "*Using Load-Balancers with Oracle E-Business Suite Release 12.*"

3.3.4.11. Enhanced Support for DMZ Deployments

Release 12.1.1 enhances support for use of Oracle E-Business Suite in DMZs (De-Militarized Zones). Details are available in My Oracle Support [Document 380490.1](#), "*Oracle E-Business Suite R12 Configuration in a DMZ.*"

3.3.4.12. Network Traffic Encryption Capability

This feature provides AutoConfig support for securing the major communication routes with SSL. These are: from desktop browser to web server (HTTPS); from web server to JVM (AJP); from JVM and other Oracle E-Business Suite/technology processes to database (Advanced Security/encrypted SQL*Net). Additional details are available in

My Oracle Support [Document 376700.1](#), "Enabling SSL in Oracle Applications Release 12."

3.3.4.13. Advanced Configuration Wizards

These wizards comprise a series of command line utilities and Oracle Application Manager (OAM) pages that are designed to allow administrators to perform advanced configuration changes consistently and easily.

Examples of such advanced configurations include DNS load balancing, OC4J load balancing, HTTP load balancing, SSL setup on web server, SSL Accelerator setup, and enabling or disabling Forms Socket Mode. More details are published on My Oracle Support.

3.3.4.14. Oracle Connection Manager Technology Integration

Release 12.1.1 includes AutoConfig support for Oracle Connection Manager with Oracle E-Business Suite Release 12. Oracle Connection Manager is a lightweight, highly scalable program that works as a proxy server, forwarding connection requests to database servers or other proxy servers. Details are available in My Oracle Support [Document 558959.1](#), "Configuring Oracle Connection Manager With Oracle E-Business Suite Release 12."

3.3.4.15. Support for Integrated SOA Gateway

Release 12.1.1 supports the Integrated SOA Gateway (ISG), a standardized and interoperable Web service platform that is based on principles of service-oriented architecture (SOA). Details of installation and upgrade are available My Oracle Support [Document 556540.1](#), "Oracle E-Business Suite Integrated SOA Gateway Release Notes, Release 12.1.1."

3.3.5. Release 12.1.3

3.3.5.1. AutoConfig Performance Improvements

AutoConfig performance has been improved significantly by implementing the parallelization of jobs executed within a product top. Also the longest running scripts have been modified to significantly increase their execution performance.

3.3.5.2. AutoConfig Support for the 11g Scan Listener Feature

This feature allows customers to take advantage of the Oracle Database 11g Release 2 scan listener feature without manual modifications to the tns/dbc file.

3.3.5.3. Automated Deployment of Forms ear File

Previously whenever the forms ear file was patched in the 10.1.2 Oracle Home, customers had to redeploy it manually to the 10.1.3 Oracle Home. In Release 12.1.3,

this process has been automated assuring that customers will not experience Forms execution problems due to an obsolete Forms executable.

3.3.6. Release 12.2

3.3.6.1. Installation

The Release 12.2 installation process has been significantly enhanced compared to prior releases. These enhancements include the provision of application tier node services, the use of native Oracle Database and Oracle Fusion Middleware installation tools to install and configure these technology stack components, and support for integrating Oracle E-Business Suite with existing Oracle Database 11g Release 2 and Oracle Fusion Middleware 11g Release 1 homes. Additionally, Rapid Install now supports installing Oracle E-Business Suite into a Grid Infrastructure (Oracle RAC/ASM) environment.

3.3.6.2. Online Patching

One of the key features of Release 12.2 is the switch to online patching. This uses the Oracle Database 11g Release 11.2.0.2 feature of edition-based redefinition to reduce significantly the downtime traditionally needed for patching and related maintenance activities.

An edition is a private environment in which you can redefine database objects. With online patching, patches are applied to a separate edition while users are working with the original edition. Subsequently, the system is cut over to make the patch edition the new production edition. After the upgrade to Release 12.2, all future patches and maintenance packs will be applied online, requiring only a short cutover period to make the new functionality active.

3.3.6.3. Cloning

Release 12.2 simplifies and enhances the cloning process, for example when scaling systems up by increasing the number of nodes. Also, support is now provided for cloning the Fusion Middleware components of Oracle E-Business Suite.

3.3.6.4. Application Tier

A key change to the Oracle E-Business Suite technology stack is the adoption of the Oracle WebLogic Server component of Oracle Fusion Middleware, in association with the Oracle HTTP Server component. Corresponding changes have been made to the various application tier services.

Additionally, Oracle E-Business Suite Release 12.2 has a second file system for the application tier. The second file system facilitates the online patching functionality for Oracle E-Business Suite patches and follows the best practices recommendations of Oracle technologies for minimal patching disruption.

3.3.6.5. External Integrations

Release 12.2 includes enhancements to support integration with Oracle WebCenter Portal and Oracle BPEL Process Manager using the new technology stack components in the application tier.

Additionally, Oracle Application Framework now integrates with AutoVue Document Print Services. For more information, see section 4.1.6.2.

3.3.6.6. Diagnostics for Secure Configuration

Release 12.2 enhances the tests that are provided to help ensure an Oracle E-Business Suite system is secured appropriately. Successful execution of these tests verifies that various accounts, profiles, parameters and configuration settings are set up in accordance with Oracle's best practices recommendations for security.

3.3.6.7. WLS Datasource Connection Pool

The AOL/J connection pool implementation is replaced with an implementation of the WLS Datasource Connection Pool.

3.3.6.8. 64-bit Java Support

Oracle E-Business Suite now supports 64-bit implementations of Java, which can handle very large amounts of data better than 32-bit implementations.

3.4. Internationalization

3.4.1. Release 12.1.1

3.4.1.1. Hijrah and Thai Buddhist Calendar Support

This enhancement adds support for both Hijrah and Thai Buddhist calendars for all Oracle Forms-based products. The support is added as an output (display) format only. Internal date object representation will stay as for the Gregorian calendar. Users can choose a preferred calendar by setting a profile option. Concurrent processing and descriptive flexfields also support displaying dates in these calendars based on user preferences.

3.4.1.2. Multilingual Support/National Language Support (MLS/NLS) Enhancements in Concurrent Processing

The following enhancements are made in the areas of MLS/NLS:

- Enhance MLS functions to allow return of other NLS parameters (territory, numeric character, and locale) besides language.

- Enhance NLS options to be specified when defining Request Sets.
- Allow NLS options (language, territory, numeric characters) to be specified in the Oracle Application Framework UI.

3.4.2. Release 12.1.2

Oracle E-Business Suite Release 12.1.2 adds Lithuanian, Indonesian, and Ukrainian to the list of supported languages. Space and single quote number group separators are also supported in Oracle E-Business Suite Release 12.1.2. Users can also select their start day of the week through a profile option. The Gantt chart and inline date picker features support Thai and Hijrah calendars in Oracle E-Business Suite Release 12.1.2.

3.4.2.1. Lithuanian, Indonesian, and Ukrainian language support

The Lithuanian, Indonesian, and Ukrainian languages are now supported across Oracle E-Business Suite.

3.4.2.2. Space and single quote number group separator support

In addition to the decimal period (dot) and comma, Oracle E-Business Suite now supports the space and single quote characters as number group separators. Users can choose these new separators from the list of values in the Number Format field in the Preferences page.

3.4.2.3. First day of the week support

Users in countries where Sunday is not the first day of the week can now choose their preferred first day of the week. Date pickers will reflect this choice.

3.4.2.4. Gantt chart and inline (embedded) date pickers support Thai and Hijrah calendars

Thai and Hijrah calendar support has been enhanced. All known Thai and Hijrah calendar issues in Oracle Workflow notifications have been addressed, and Gantt charts in the user interface and in Oracle XML Publisher reports now support Hijrah and Thai calendars. In addition, inline (embedded) date pickers in the user interface now support Hijrah and Thai calendars.

3.4.3. Release 12.1.3

This release improves Oracle E-Business Suite Multi-Lingual Support (MLS). With the new Lightweight MLS feature, global customers can now enable new languages without applying the corresponding NLS patches. Oracle iSetup MLS is improved to allow moving language data across source and target systems with different installed sets of languages. Oracle Application Framework export functionality has better Unicode support. Also, the new rich UI capabilities in Oracle Application Framework have Bi-Directional language (Arabic and Hebrew) support.

3.4.3.1. iSetup MLS

Oracle iSetup MLS offers greater flexibility in Release 12.1.3 with the ability to move data across systems with different sets of installed languages. Customers can choose to move data of all configured languages from a source system to a target system at once, or they can choose to move data of one installed language or a subset of installed languages from the source to the target.

3.4.3.2. Lightweight MLS

The Lightweight MLS feature, new in Release 12.1.3, allows additional languages to be enabled without the need to apply the corresponding NLS patches. In previous releases, it was necessary to apply the relevant NLS patches before additional languages could be used.

Lightweight MLS enables Oracle E-Business Suite to run multiple languages in the same system, with the various languages being employed by different users as desired. Such a system can simultaneously support a mixture of languages with full translation (NLS patches applied) and languages without translation (Lightweight MLS, with no NLS patches applied).

The Lightweight MLS feature provides the capability to enter and maintain language data through an English user interface; for example, setup data or customer data such as item or item description. In addition, users can set up custom reports or templates and then generate language reports with the language data. You can also move to a full translation at any time by applying the NLS patch for the relevant language.

3.4.3.3. Improved MLS Export Functionality in Oracle Application Framework

Continuing on the theme of improving multilingual support (MLS) in Oracle E-Business Suite, Oracle Application Framework export functionality is improved to allow users to choose between UnicodeLittle or UTF-8 encoding for their exported files. They can also choose between a comma or tab as the delimiter value between the exported values.

This flexibility allows users to address limitation in older releases of Microsoft Excel with regard to lack of UTF-8 support or the mishandling of files containing comma-separated values in Unicode.

3.4.3.4. Oracle Application Framework Rich UI Bi-Directional Support

New rich UI components, released in 12.1.2, now support Bi-Directional languages such as Arabic and Hebrew.

3.4.3.5. Serbian Language Support

The Serbian language is supported across Oracle E-Business Suite. This language is made available for the Release 12.1 line on Release 12.1.3.

3.4.4. Release 12.2

3.4.4.1. Lightweight MLS Enhanced Support

The Lightweight MLS feature, introduced in Release 12.1.3, allows additional languages to be enabled without the need to apply the corresponding NLS patches. In Release 12.2, support is added to move a language already enabled in full NLS mode to lightweight mode.

3.4.4.2. Linguistic Sorting Support

Linguistic sorting, or the application of language-specific rules in sorting text strings, is supported in addition to binary sorting for the online UI.

3.4.4.3. Character Date International Calendar Support Enhancements

International calendar support in dates of type character is improved in Release 12.2. International calendar support in the character date routines FND_DATE and APP_DATE packages is enabled.

3.4.4.4. Expanded Number Spelling Support

Oracle E-Business Suite extends its support of number spelling (transcription of numbers into words) to all supported languages.

3.4.4.5. Support for All Territories in Oracle Database

With Release 12.2, Oracle E-Business Suite supports all territories supported in Oracle Database.

3.4.4.6. Serbian Language Support

The Serbian language is supported across Oracle E-Business Suite in Release 12.2.

3.4.4.7. Forms UI Export Functionality Enhancements

The Oracle Forms UI Export feature is enhanced to include Comma-Separated-Value (CSV) file format support and improved Unicode character set support capabilities.

3.4.4.8. Oracle Workflow E-mail Character Encoding Configuration

A workflow administrator can now optionally specify the character encoding to use for each language in workflow notifications. This feature lets you override both the character encoding specified by the notification recipient's NLS preferences and the database character encoding, if another character encoding is required to display the notification content correctly. Use the Administration tab in the Oracle Workflow administrator Web pages to configure your character encoding specifications.

3.4.4.9. Oracle Diagnostics Internationalization Enhancements

The Oracle Diagnostics product has been improved in several areas affecting internationalization capabilities, including string conversion to byte streams, end-user-visible strings, and the parsing of date strings.

3.4.4.10. Oracle Diagnostics Internationalization Tests

New diagnostic tests are provided to gather internationalization configuration information from an Oracle E-Business Suite instance to help troubleshoot issues.

3.4.4.11. Internationalization Library Version Display Support

This feature provides the ability to identify which version of internationalization library is being used at a site. With this enhancement, it is no longer necessary to check the version of each file individually. This feature is especially useful for Oracle Support.

4. Applications Technology

The key focus areas for Applications Technology in Release 12.2 of the Oracle E-Business Suite are:

- **Greater Business Insight:** Focus on end user productivity improvements and business insight.
- **Adaptive Business Processes:** A complete set of Web services housed in the Integration repository and out-of-the-box embedding of the relevant Fusion Middleware SOA components with the Oracle E-Business Suite will make Release 12.2 truly an agile application business platform and enable Application Integration Architecture (AIA).
- **Superior Ownership Experience:** Several major enhancements contribute to enhancing the ownership experience for the Oracle E-Business Suite customers.

4.1. Oracle Application Framework

For information about related internationalization features, see section 3.4.

4.1.1. Release 12.0.3 (RUP3)

4.1.1.1. Expose HGrid's Record Set Size for Administrator Personalization

HGrids now expose Record Set Size property at each individual node for administrator personalization. Administrators at the customer site can set different Record Set Size values at different HGrid nodes to show different number of records/rows per node. This ensures that even when Expand All option is used not all the rows are shown at the same time, improving user response time.

4.1.2. Release 12.0.6 (RUP6)

4.1.2.1. Record History

This feature, introduced in Release 12.1.1, was made available on the Release 12.0 line in Release 12.0.6. Record history is now available for Oracle Application Framework based pages. Record history allows a user to see data about a particular record, such as who created the record and when, and who most recently updated the record and when.

4.1.2.2. Flexfield Reference Fields

This feature, introduced in Release 12.1.1, was made available on the Release 12.0 line in Release 12.0.6. Reference fields are now available for Oracle Application Framework based applications. Reference fields are fields whose value is used to derive properties

of segments in a flexfield, A reference field in an Oracle Application Framework page is a web bean which is used for evaluating one or more properties of a flexfield, such as default segment value, value set, and context reference field for descriptive flexfields. Whenever the value in the reference web bean changes, the page is refreshed with changes to the corresponding flexfield properties.

4.1.3. Release 12.1.1

4.1.3.1. Record History

Record History is now available for Oracle Application Framework based pages. Record history allows a user to see data about a particular record, such as who created the record and when, and who most recently updated the record and when.

4.1.3.2. Bulk Uploads for Attachments

There are numerous cases where customers want to load many thousands of documents to the Oracle E-Business Suite database as attachments, all in one operation. Oracle Application Framework now provides an API and Web service for the Attachments feature to allow the bulk upload of files to create attachments to existing records.

4.1.3.3. Home Page Favorites Links Can Open in New Windows

End users can define “Favorites” on the Oracle E-Business Suite as links to websites outside the Oracle E-Business Suite. Users can now set up such URL links and specify that those links open in a new browser window, so that the original browser window remains showing the Oracle E-Business Suite session.

4.1.3.4. Support for Java BigDecimal Data Type

Support for the Java BigDecimal data type allows the Oracle E-Business Suite to handle very large and very small numbers. The Oracle Application Extension design time interface allows new web beans to be associated with the BigDecimal data type. The runtime Personalization UI allows customers to change items with the Number data type to use the BigDecimal data type.

4.1.3.5. Enhanced Search Region Personalization

Search (Query) regions have been enhanced to allow additional upgrade safe personalizations. Administrators can now personalize the Save Search button in search regions. Search mappings can now be personalized to add more search criteria fields that correspond with columns in search results tables. Further, personalization now provides support for personalizing additional attributes: HGrid, Query, and Text Input.

4.1.3.6. Application Tier Data Sorting

Oracle Application Framework now supports sorting of table data in the application tier instead of in the database in order to improve sort performance for certain cases. Oracle

Application Framework can now sort insertable and updateable tables, as well as tables with transient data. Products can enable this feature at design time by setting a property on the table. Customers can enable this feature at run time by setting a property using personalization.

4.1.3.7. Virus Scan Support for Attachments

This feature provides out-of-the-box support for Virus scan of OA Framework attachments. This feature addresses the document protection needs of customers. Currently only Symantec anti-virus software is supported.

4.1.3.8. Flexfield Reference Fields

Reference fields are now available for Oracle Application Framework based applications. Reference fields are fields whose value is used to derive properties of segments in a flexfield, A reference field in an Oracle Application Framework page is a web bean which is used for evaluating one or more properties of a flexfield, such as default segment value, value set, and context reference field for descriptive flexfields. Whenever the value in the reference web bean changes, the page is refreshed with changes to the corresponding flexfield properties.

This feature can be enabled at the customer site using Admin Personalization on existing flexfields.

4.1.3.9. Hijrah and Thai Buddhist Calendar Support

This enhancement adds support for both Hijrah and Thai Buddhist calendars for all OAF-based products. The support is added as an output (display) format only. Internal date object representation will stay as for the Gregorian calendar. Users can choose a preferred calendar by setting a profile option.

4.1.4. Release 12.1.2

The key focus for Oracle Application Framework in Release 12.1.2 is to enhance usability and enrich the overall user experience. Usability improvements in rich user interactivity have been accomplished through enhancements to core Oracle Application Framework components. The user experience is enriched through seamless integration with applications such as Oracle Business Intelligence Enterprise Edition (OBIEE), which provides greater insight into analytical information in-context from Oracle Application Framework-based applications. These enhancements are in large part enabled through the Oracle Application Framework Personalization user interface.

4.1.4.1. User Interface Enhancements

The usability enhancements in Oracle Application Framework include a redesigned home page, a new navigator and favorites pull-down menu in the global header area, look-ahead capability in lists of values, the ability to add, view, edit, and delete attachments inline, a new pop-up component and portlet generator.

The redesigned home page provides a new folder-like structure for the navigator and better spacing for the worklist and moves the Favorites to a pull-down menu in the global header area. The new home page is more compact and allows you to easily extend and add custom content to the home page.

The navigator menu appears as a pull-down link in every Oracle Application Framework page. This feature allows easy and rapid cross-application navigation. The Favorites pull-down offers a new ability to mark the current page as a Favorite page.

The look-ahead capability in lists of values allows you to select the field value from an inline window that appears after you enter a few characters (generally at least three). The inline window shows all matching results for the characters entered. This capability reduces the time needed to choose a value by reducing the need to open the list of values window.

The inline attachments capability enhances user interaction with the icons and buttons used to add or view attachments in Oracle Application Framework applications. A new hover-over interaction has been introduced on these icons and buttons, allowing users to add, edit, delete, and view attachments to a business entity on the same page as the base entity. This capability eliminates the need to navigate to the Add and View attachments pages.

The pop-up component in Oracle Application Framework allows applications to display content as a pop-up window on top of an Oracle Application Framework page. Detail drilldown interactions can be minimized by using this pop-up capability.

4.1.4.2. Oracle E-Business Suite Business Intelligence (OBIEE) Integration

Oracle Application Framework introduces a new component called the rich container, which can hold embedded OBIEE content. Users can configure the component to hold a particular OBIEE report that accepts specific parameters. The capability to add such content to an existing Oracle Application Framework page is made available through personalization.

4.1.4.3. Portlet Generator

Portlet Generator is a utility that statically converts a standalone Oracle Application Framework region into a portlet. These portlets can be embedded in Oracle or third party portal pages and Oracle WebCenter Portal pages. Portlet Generator complies with WSRP 1.0 standards.

Portlet Generator offers a search UI that is part of the Functional Administrator responsibility and lets you search for and register standalone regions as portlets. Administrators can turn on a profile option that enables portletize links on standalone regions embedded in pages. An administrator can browse through application pages and use the portletize links to register the regions as portlets.

4.1.4.4. REST Interface

REST (REpresentational State Transfer) is an architectural style for distributed hypermedia systems. REST is similar to SOAP-based (Simple Object Access Protocol) web services, but with much less payload per message. REST is architecturally tailored for frequent and lightweight handshakes between the browser and the application tier server.

The Oracle Application Framework RESTful service interface allows products to expose Application Module functionality (model) as services. These model services can then be consumed by any rich internet application. This capability allows you to build custom user interfaces in a technology of choice but still reusing existing code in your Oracle Application Framework application.

4.1.5. Release 12.1.3

4.1.5.1. User Interface Improvements

The user interface improvements add on to the capabilities that were first introduced in Release 12.1.2.

The Navigator and Favorites pull-down menus in Oracle Application Framework pages now provide icons to move to the first or last menu item. Further, they support mouse scrolling. The Navigator and Favorites pull-down menus are also now accessible to keyboard-only users by supporting easy scrolling using [Page Up] and [Page Down] keys. Support for rendering in BiDi languages has also been added.

The Look Ahead LOV has been enhanced to show a UI indicator if Look Ahead has been enabled on that particular field. The indicator takes the form of an angular downward-facing arrow at the end of the LOV input field. Support for standard accessibility mode and rendering in BiDi languages has also been added.

The Inline Attachment capability has now been extended to also support viewing, updating, and deleting attachments inline within the Attachment Table item and adding attachments inline within the Message Inline Attachment item. Support for rendering in BiDi languages has also been added.

The pop-up component now allows form submits done on the pop-up component to refresh the base page as well. With this capability, you can now build pop-ups that modify data on the base page. Flexfields can now be rendered within a pop-up. Support for standard and screen reader accessibility has also been added.

The Rich Content Container component has been enhanced to allow context-dependent, runtime parameters to be passed to the rich component. Support for embedding external URLs by specifying the content type as "Others" has also been added.

4.1.5.2. Opening Portlet Links in a New Window

Links within an Oracle E-Business Suite Oracle Application Framework portlet can now be opened in a new browser window. This feature allows the base portal or Oracle

WebCenter Portal page to be in context while drilldown links open content in a separate window. All Oracle E-Business Suite content will launch into a single window.

4.1.5.3. ADF Integration

It is now possible to link to Oracle Application Development Framework (ADF) Release 11g applications deployed on an Oracle Fusion Middleware Release 11g container from the Oracle E-Business Suite home page. Each ADF application will have an FND Function of type 'ADFX' defined for it. If such a function is granted to a user, then when the user logs in, the home page automatically builds a link to the external ADF application. Note that ADF applications do not support some Oracle E-Business Suite features such as flexfields.

For more information, see the *FAQ for Integration of Oracle E-Business Suite and Oracle Application Development Framework (ADF) Applications* (My Oracle Support Knowledge Document 1296491.1).

4.1.6. Release 12.2

4.1.6.1. Usability Improvements

The following usability improvements add on to the capabilities introduced in Release 12.1.3:

- The Home page now includes a tip at the top of the page displaying the number of open notifications for the user.
- The Navigator slide-out or pull-down menu that displays the responsibility list now includes a search input field that enhances the user's ability to locate a function quickly. After entering a minimum number of characters (currently set at 3), the list of functions that matches the input string displays in place of the responsibility list.
- A new processing indicator informs the user of ongoing processing for rich user interactions. The indicator appears when you hover over inline attachment Add/View and while popup content is being loaded. The indicator disappears once the content is fully loaded.
- Pop-up enabled items are now enhanced to display a more distinctive pop-up indicator as described in the table below:

Type of Pop-up	Base Component	Interaction Type	Indicator
Information Pop-up	Link, Text	Mouse over	Dotted underline
Information Pop-up	Link, Text	Click	Normal link
Information Pop-up	Button	Mouse over	Interaction type not recommended
Information Pop-up	Button	Click	Not required
Information Pop-up	Image	Mouse over	Visual indicator-based image
Information Pop-up	Image	Click	Not required
Dialog with transaction Pop-up	Link	Mouse over	Dotted underline

Type of Pop-up	Base Component	Interaction Type	Indicator
Dialog with transaction Pop-up	Link	Click	Normal link
Dialog with transaction Pop-up	Button	Mouse over	Interaction type not recommended
Dialog with transaction Pop-up	Button	Click	Not required
Dialog with transaction Pop-up	Image	Mouse over	Visual indicator-based image
Dialog with transaction Pop-up	Image	Click	Not required

- Classic tables now support sorting on layout-based columns through the exposure of the following properties on the supported layouts: Sort Allowed, SortBy ViewAttr, and Initial Sort Sequence. The supported layouts for sorting are message component layout, flow layout and hide/show.
- Expression Language (EL) support is enhanced to include more types and is now supported on more properties. These enhancements allow developers to perform more tasks declaratively without having to write additional code. Customers can also use EL in Personalizations to accomplish tasks declaratively.

4.1.6.2. AutoVue Integration

The OA Framework Attachments user interface now integrates with AutoVue Document Print Services to allow printing of File type attachments. AutoVue Document Print Services supports the printing of different file types used in an enterprise, from a single server where the Auto Document Print Services is configured. This support eliminates the overhead of having to install and configure additional software on various client and server machines to view and print all the possible file types used in the enterprise.

4.1.6.3. Personalization Improvements

New improvements have been introduced into OA Personalization Framework:

- An administrator can create a SQL-based read only view object through Personalizations and bind it to new items on a page. This feature lets administrators declaratively add new content from Oracle E-Business Suite tables to an existing page.
- More item types and layout region types are available to be created and added to a page through Personalizations. Additional layout types supported in this release include header, classic tables, advanced tables, and message component layout. Additional item types supported include submit button, reset button, and rich text editor. These additions give administrators greater control over laying out content.

- You can undo personalizations. The undo features allows administrators to revert the personalizations done in the current browser session if errors are encountered while personalizing the page.
- You can copy a personalization. This capability allows administrators to rapidly copy a personalization done at a specific level value, such as a responsibility, function, or organization, to other levels such as different responsibilities or different functions.

4.1.6.4. Enhanced Oracle JDeveloper OA Extension

The Oracle JDeveloper OA Extension for Release 12.2 includes the following technology components:

Technology Component	Version Included in Release 12.2 IDE
Oracle JDeveloper	10.1.3.5
Application server	OC4J 10.1.3.5
UIX	12.2.2.0
MDS	9.0.6
Oracle BI Beans	3.1.1.11
Portal	Oracle WebLogic Server WSRP 11g
JOC	10.1.3
XML Parser	11.1.0
JDBC	11g Release 2 (11.2.0.3.0) drivers
JDK	1.6.0_23
BC4J	10.1.3.5

Note: While the application server for Oracle E-Business Suite Release 12.2 has been upgraded to Oracle WebLogic Server in Oracle Fusion Middleware 11g, the Oracle JDeveloper OA Extension continues to leverage an embedded Oracle Containers for J2EE (OC4J) 10.1.3.5 server. Consequently, during development of customizations or extensions, developers will run pages on the OC4J server. However, the deployed pages will run on Oracle WebLogic Server.

4.1.6.5. iPad Certification

Oracle Application Framework applications are now certified to run on the iPad. Known caveats are documented.

4.1.6.6. Enhanced Key Flexfield End Date Validation

The end date validation for a key flexfield segment value or code combination now supports a custom end date defined on the flexfield, as well as with a system date.

4.1.6.7. Support for Copying Attachments

Attachments can now be copied from one business entity to another.

4.1.6.8. Support for File Upload Anti-Virus Scanning

The File Upload UI feature can now allow a virus scan to be performed before it uploads a file. The virus scan can be enabled at design time or by setting a profile option.

4.1.6.9. Preferences Page Integration with Delivery Manager

The Preferences page includes a new region to specify Delivery Manager e-mail server credentials. The Delivery Manager allows a user to burst concurrent processing reports via e-mail. The e-mail server credentials specified allow the Delivery Manager to e-mail these reports on behalf of the user.

4.1.6.10. Enhanced "About" Page

The Technology Component subtab of the "About" Page now includes the Internationalization Library version information as well as the database Edition Name in the current technology stack. The Patches subtab now lists details of only those patches that have completed their cutover phase in online patching.

4.1.6.11. Improved External Applications Integration

A new JSP has been introduced to act as an entry point JSP page when drilling down from a Microsoft Excel or Microsoft Word document to an Oracle Application Framework page.

4.1.6.12. Portlet Generator Changes

The Portlet Generator materialized view FWK_PORTLET_GEN_MV is now replaced with the standard table FWK_PORTLET_GEN. Similarly the "Refresh Portlet Generator Materialized Views" concurrent program (FWKPRTMV) is replaced with the "Refresh Portlet Generator Table" concurrent program (FWKPRTTB).

4.1.6.13. Disable Access Keys

Users can now disable access keys in all accessibility modes by setting a profile option or by updating the Preferences page.

4.1.6.14. New Rating Bar

Developers can now add a new rating bar item to any region on a page. The rating bar, which allows users to rate a product, service or entity, can be defined as updatable or read-only.

4.1.6.15. Modal Pop-Up

Developers can now define a pop-up component as a modal pop-up. When a modal pop-up renders, a user cannot interact with the base page until he or she closes the pop-up.

4.1.6.16. Long Text Attachment

Users can now add Long Text-type attachments containing text longer than 4000 bytes.

4.1.6.17. Improved Record History

Record History now shows user names rather than user IDs for the 'Last Updated By' and 'Created By' fields.

4.1.6.18. Message Rich Text Editor AntiSamy Support

The Message Rich Text Editor now performs an AntiSamy check of any new HTML content you create to help guard against the possibility of malicious code.

4.1.6.19. Improved Sorting Support for Composite Table Columns

Developers can now enable sorting of composite table columns whose leaf items are grouped under classic table-supported region layout styles such as message component layout, flow layout or hide/show.

4.1.6.20. Obsolescence of Validation Profiles

Oracle E-Business Suite has removed the ability to turn the following Validation profiles off and always runs as if the three Validation profiles are set to 'Error'.

- FND Validation Level (FND_VALIDATION_LEVEL)
- FND Function Validation Level (FND_FUNCTION_VALIDATION_LEVEL)
- Framework Validation Level (FRAMEWORK_VALIDATION_LEVEL)

4.1.6.21. Improved Classic and Advanced Table Accessibility Support

Developers can now specify a column in a classic or advanced table as a row header to support Screen Reader accessibility.

4.1.7. Release 12.2.3

4.1.7.1. New Skyros Skin

The new Skyros skin incorporates current UI visual design trends, such as flat rather than dimensional elements, reduced gradients, reduced borders, and white or light colors with splashes of color, into the Look-and-Feel. In addition, the new Look-and-Feel supports improved control bar icon support for classic and advanced tables.

4.1.7.2. Rich Table Interactions

Classic and advanced tables now also support rich interactions that allow an end user to scroll through a table if its width exceeds the browser's width, detach a table and work with it as a separate component with a wider width, and resize and reorder table columns that the end user can then save as a user personalization.

4.1.7.3. Dynamic Views

Previously OA Framework supported views only for tables under query regions. Now rich table interactions such as column resizing and reordering persist across sessions by means of user-level views that OA Framework supports for both classic and advanced tables in all pages.

4.1.8. Release 12.2.4

4.1.8.1. Dialog Pages as Modal Pop-Ups

By setting a profile option, you can now have dialog pages appear as modal pop-ups so users can view messages without having to navigate to a separate page.

4.1.8.2. Rich Table Interactions

Classic and advanced tables now also support rich interactions that allow an end user to Hide/Show columns that the user can then save as a user personalization. Users can also delete all user personalizations made via these rich features and reset the table back to its original definition.

4.1.8.3. Rich HGrid Interactions

HGrids now support rich interactions such as resizing, reordering and hiding/showing columns and horizontally scrolling across an HGrid. Users can also delete all user personalizations made via these rich features and reset the HGrid back to its original definition.

4.1.8.4. Time Support in Date Picker

Developers can now implement a Date Picker that allows a user to also specify a time when choosing a date.

4.1.8.5. New Menu Component

Developers can now add an intuitive and space-saving menu component to a link, image, or button item on a page. The menu appears as a pop-up when the user selects the menu-enabled item, providing a list of client-side actions that the user can perform on the item. The menu can be set to operate in one of two modes – where only a single menu option can be selected to fire a single action, or where multiple menu options can be selected to fire a series of sequential actions. The menu can also be defined to allow the user to reorder its menu options and have a specific action associated with the reordering.

4.1.8.6. New Spin Box Component

Developers can now add a spin box widget to a page, allowing a user to select a numeric value from a predefined range of values using a predefined incremental step size.

4.1.8.7. Gesture Support for Mobile Devices

OA Framework now provides gesture support to enhance user experiences on iOS devices running Mobile Safari and Android devices running Google Chrome. Supported gestures that make the UI more touch-friendly include: single tap, double tap, hold/press/press and hold, pan/drag, swipe/flick, spread, pinch, check mark/tick, and x-mark/cross.

4.1.8.8. Universal Global Header

A uniform global header is now available across supported mobile, tablet, and desktop devices. The new global header displays global links as icons and streamlines the former two-row header into a single row to provide more screen space for content display. As a result, this header encapsulates commonly used links and relevant menu items such as Home, Navigator, Favorites and Preferences with product-specific menu items.

4.1.8.9. Universal Global Header and Simplified Home Page

A new, simplified Home page is now available for use with Oracle E-Business Suite. The simplified Home page has an Announcements section and a grid of Favorites icons that end users can personalize to add and configure application quick launch icons. Administrators can enable the new Home page for end users by setting the profile option APPLICATIONS_HOME_PAGE to "Framework

Simplified Home Page". Administrators can also personalize the Announcements section by using the OA Framework administrator personalization UI.

4.1.8.10. Chrome Browser Certification

OA Framework is now certified against the Chrome Browser for desktops and Android tablets.

4.1.8.11. HTML5 Certification

You can now set a profile option to enable the uptake of the HTML5 standards doctype into generated HTML source. If you uptake the HTML5 standard doctype, all OA Framework-based pages can run in a browser's preferred standards mode rather than in quirks mode or compatibility mode.

4.1.8.12. Support for Hiding Columns in an Attachment Table

Developers can now programatically hide the "Category", "Last Updated By", "Last Updated", "Usage", "Update", "Delete", and "Print Attachment" columns in an Attachment table.

4.1.8.13. New Advanced Search Criteria

In the Advanced Search panel, in addition to being able to declaratively specify "AND" or "OR" searches and datatype-specific operators, such as "greater than", "is", "is not" or "less than" on individual fields, users can now specify the "is not (include blanks)" operator to also return null values from a search.

4.2. Oracle Application Object Library

For information about related internationalization features, see section 3.4.

4.2.1. Release 12.0.3 (RUP3)

4.2.1.1. Custom Directory Information Tree (DIT)

Support Realm configuration in OID for createBase, searchBase, and commonNameAttribute. CreateBase is where an OID user for EBIZ will be created. SearchBase is which OID node to start search with. CommonNameAttribute is what attribute to be used for 'cn' for example, cn=xxxx or uix=xxxx.

4.2.2. Release 12.1.1

4.2.2.1. Data Type Support Enhancements in the Generic Data Loader (FNDLOAD)

FNDLOAD is a generic seed data loader tool. Prior to Release 12.1.1, FNDLOAD supported CLOB data but not BLOB data in its LDT files. With Release 12.1.1, FNDLOAD supports BLOB data to better serve content-rich applications.

4.2.2.2. Data Type Support Enhancements in the XML Definition File (XDF)

The XDF (XML Definition File) is the next generation version of the current ODF (Object Definition File) utility, which development teams use to propagate object definitions to customer sites.

XDF currently does not support alters for nested tables; only create scenarios for nested tables are supported. In Release 12.1.1, XDF can capture the nested table information in the XDF file, read this information while propagating the table object, and alter the base table to include this nested table column.

In addition, the handling of two primary keys on a table has been changed. Per Oracle E-Business Suite standard, there cannot be two primary keys on a table both with the primary key type as 'D'. In prior releases, Oracle XDF would error out when applied on a table with two such primary keys. With Release 12.1.1, the Oracle XDF application will, depending on a specified parameter value, overwrite the old primary key and create a new one in the XDF file.

4.2.2.3. Integrated Business Events in Concurrent Processing

Concurrent Processing now allows for registration of business events to be fired at various stages of a request lifecycle. Concurrent Processing provides hooks to call other routines at various stages of a concurrent request's lifecycle.

4.2.2.4. Manager and Request Instance Affinity in Concurrent Processing

Concurrent requests and managers can now be directed to a specific database instance or node.

4.2.2.5. Startup Threshold for Managers in Concurrent Processing

Administrators can now set a threshold for the number of times the Internal Concurrent Manager will attempt to restart a concurrent manager after it fails to start.

4.2.3. Release 12.1.2

4.2.3.1. Oracle Access Manager Integration

Oracle E-Business Suite now supports integration with Oracle Access Manager (OAM) using Oracle E-Business Suite AccessGate. Integration of Oracle Access Manager with Oracle E-Business Suite provides an identity management and access control system

that can be shared by all applications across the enterprise, including those that are not part of Oracle E-Business Suite. Oracle Access Manager is currently certified for use with Oracle Fusion Middleware and some third-party products.

Oracle Access Manager may be used in place of Oracle Single Sign-On (OSSO) for those products that support it, or it may be used with OSSO to provide centralized authentication across all the products in the Oracle E-Business Suite technology stack. Customers can choose when to migrate to the next generation of Oracle Security products.

4.2.3.2. Oracle Application Object Library Java APIs

The Oracle Application Object Library Java APIs provide access to session management, external logging, messages (Message Dictionary), profiles, and lookups used by Oracle E-Business Suite from an external Java EE-based application, without requiring a local installation of the entire suite. These AOL Java APIs are certified with all releases of Oracle E-Business Suite, including Release 12.1.2.

4.2.3.3. DataSource for Oracle E-Business Suite (AppsDataSource)

AppsDataSource provides the ability to connect to an Oracle E-Business Suite database and access Oracle E-Business Suite transactional data from an external Java EE application, such as an Oracle Fusion MiddleWare (FMW) instance.

AppsDataSource supports X/Open XA, a standard for distributed transaction processing from The Open Group (<http://www.opengroup.org/>). Supporting the XA standard allows for using multiple resources, such as an Oracle database and Java Message Service (JMS), in transactions, as opposed to using only local resources.

4.2.3.4. JAAS for Oracle E-Business Suite

Oracle E-Business Suite now provides support for Java Authentication and Authorization Service (JAAS). This feature provides security compliance with JAAS standard specifications.

JAAS for Oracle E-Business Suite is a lightweight login module that is designed to deploy and run in any Java EE-compliant container. The login module is intended to be either a starting point for customization, or an integration point, used to connect the Oracle E-Business Suite with an external authentication service (for example, an enterprise Single Sign-on system).

Authentication (user login) is implemented using the AOL security system. Authorization (access control for specific functionality) uses Oracle User Management (UMX) roles to provide appropriate privileges.

4.2.3.5. Scheduling Charts User Interface Enhancements

Scheduling Charts are used to display various types of assignment data in a bar format together with the corresponding resources. These charts support dragging and dropping existing assignments from one resource to another and resizing the assignments time frame.

Enhancements in Release 12.1.2 make it easy to drag a task number from a pane into the Scheduling Chart to create a new Task for a resource as well as display a menu which can create Tasks (Foreground Bars) and Shifts (Background Bar) on the fly. Users will also be able to find a task bar based on a given search criteria. Simplifying the ability to create, assign, search and display new task assignments in a single form saves time and increases efficiency.

4.2.4. Release 12.1.3

4.2.4.1. Key Flexfield Cross-Validation Rules Report Enhancements

The Cross-Validation Rule Violation Report is enhanced to allow more flexible checking of key flexfield cross-validation rules. Previously, the user would select a given key flexfield structure, and the report checked for existing combinations that violated any of the cross-validation rules set up for that structure, for all the rules at once. Now users have the option to run this report for just one cross-validation rule at a time to test if the specific rule is set up correctly, by seeing which existing combinations violate the specific rule.

In addition, the Cross-Validation Rule Violation Report is enhanced to let users optionally distinguish between currently active (valid) combinations and combinations that have been end-dated and are therefore not active. Previously, the report already did not display combinations that violate a rule but have been disabled. Now the user can specify whether to include end-dated combinations in the report. (Note that 'disabled' and 'end-dated' are separate statuses.)

4.2.4.2. Flexfield Segment Name Validation

The flexfield segment setup forms for both key and descriptive flexfields are enhanced to provide field-level validation of the segment name fields so that the user receives immediate feedback on invalid segment names. While the various restrictions for segment names (such as no special characters, starting with a letter or number, and so on) have not changed, this enhancement makes it easier to set up flexfield segments correctly, particularly in installations that use a non-Western character set where it is easy to enter invalid characters as segment names.

4.2.4.3. Concurrent Processing Integration with Oracle Business Intelligence Publisher Delivery Manager

When submitting concurrent requests, users can now choose to have the request output delivered using BI Publisher's Delivery Manager. The output can be automatically emailed, faxed, sent to an IPP printer, or delivered using FTP or SFTP.

4.2.4.4. Oracle E-Business Suite Support for 11g Case Sensitive Database Passwords

With this release, the Oracle Application Object Library (AOL) is enhanced to support the Oracle Database 11g case-sensitive database passwords feature for database user authentication. In previous releases, Oracle E-Business Suite database passwords were not case-sensitive. Support for case-sensitive database passwords provides for more secure Oracle E-Business Suite schema passwords.

This feature is not enabled by default and its use is optional. To enable case-sensitive database passwords, the database administrator (DBA) must perform the appropriate setup steps.

4.2.4.5. FNDMENU Diagnostics Menu Security Enhancement

This enhancement removes the challenge for the APPS password when trying to access submenus under the Diagnostics menu. Access to the Diagnostics submenus is controlled by the 'Utilities: Diagnostics' profile option and standard E-Business Suite function security. When the user selects a menu item, Oracle Application Object Library checks whether the submenu items are granted to the current responsibility. If the 'Utilities: Diagnostics' profile option is set to No and the end user has not been granted the securing function for the menu item, an error message is displayed.

Additionally, this enhancement provides a read-only mode for the Examine menu, the Item Properties window, and the Forms Personalization form.

4.2.4.6. Database Connection Tagging

This feature provides users with an ability to tag database connections with module and context specific attributes. The feature offers several session attributes that allow applications to record the current user, code module and business action that a connection is being used for. Populating these attributes helps users track metrics required for Audit control, resource allocation, and problem diagnosis.

4.2.5. Release 12.2

4.2.5.1. Native Oracle Database 11g Release 2 Caching for Profiles

Profile caching now uses the native Oracle Database 11g Release 2 PL/SQL Function Result Cache feature for improved performance in fetching profile option values.

4.2.5.2. Uptake of AUTO Sampling Statistics Gathering Feature in Oracle Database 11g Release 1

The Oracle E-Business Suite FND_STATS package that gathers statistics for query optimization will by default use the improved DBMS_STATS.AUTO_SAMPLE_SIZE feature that was introduced in Oracle Database 11g Release 1. FND_STATS generates faster and more accurate statistics with AUTO_SAMPLE_SIZE.

4.2.5.3. Support for Copying Attachments in the Oracle Application Framework UI

The data model for attachments is updated to enable the enhancement for copying attachments in Oracle Application Framework (section 4.1.6.7).

4.2.5.4. Flexfield Value Set Security

Flexfield value set security enables role-based separation of duties for viewing, creating, or updating values in value sets used for key flexfields, descriptive flexfields, and report parameters. Value set security allows administrators to restrict users from viewing, creating, or updating values for specific value sets in the Values form. For example, you can set up value set security such that certain users can view or insert values for any value set used by the Accounting Flexfield but no other value sets, while other users can view and update values for value sets used for any flexfields in the Oracle Human Capital Management applications. You can also segregate access by Operating Unit as well as by role or responsibility.

4.2.5.5. Browser Cookie Scope

A browser session cookie contains sensitive data. For a more secure configuration, the cookie should be restricted to being sent only to those hosts required to meet operational and business needs. Oracle E-Business Suite Release 12.2 allows the system administrator to control which hosts the cookie is sent to.

There are three possible settings. With the 'host' setting, the cookie is scoped to the originating host (server). This offers the greatest level of security. The 'domain' setting is the default, and only allows the cookie to be sent to machines within the same domain as the Oracle E-Business Suite server. This offers a good level of security, without hampering functionality. Finally, the 'custom' setting is configurable by the system administrator, and allows the security level to be customized for specific site requirements.

4.2.5.6. Approved JSP Lists

This feature allows control over which JavaServer Pages (JSPs) are approved for access to an Oracle E-Business Suite product or product family. That is, it offers the capability to deny access to JSPs unless they have been explicitly added to a list of JSPs that are allowed access. The JSPs that are allowed access can be customized to suit the needs of a particular site and product mix. If you are not using a particular product or product family, you can edit the relevant .conf file to deny access.

A new profile option, 'Allow Unrestricted JSP Access' (FND_SEC_ALLOW_JSP_UNRESTRICTED_ACCESS), has been introduced to support this feature. The profile option can be set at Site or Server level to enable or disable JSP filtering.

4.2.5.7. Oracle Application Object Library REST Services

Release 12.2 introduces REpresentational State Transfer (REST) security services as a new integration option that provides more versatility than was previously possible. In

particular, REST services facilitate the development of customizable support for mobile applications.

The REST security services are provided by Oracle Application Object Library, and cater for login (authentication); session management; authorization; and logout. Their usage starts with authentication, in which the username and password are validated, encoded, and exchanged for an access token. This token is subsequently used to make authenticated requests to Oracle E-Business Suite web services. The other REST services are then invoked as applicable.

4.2.6. Release 12.2.3

4.2.6.1. Advanced Password Hashing

The Advanced Password Hashing feature expands the "-m" (migrate) option of the AFPASSWD utility, adding new advanced hash mode options and a new argument. This feature provides additional protections against brute forcing of hashes, in case the password hashes in the database are compromised. It uses SHA2 algorithms (sha256, sha384 and sha512) defined by NIST FIPS 180-4 along with the PBKDF2 derivation function as defined by NIST 800-132 to make calculating the hashes computationally more difficult.

- You can now specify any of the following additional advanced hash algorithms as the hash mode: SHA256, SHA384, or SHA512.
- You can also now specify the type of advanced hash migration to perform.
 - A full migration migrates all the records in the FND_USER table to hash mode.
 - A background migration migrates all the records in the FND_USER table to the selected advanced hash mode in the background as a concurrent program.
 - A partial migration allows users with an earlier encryption mode to co-exist with users creating new passwords with the selected advanced hash mode. Users on the earlier encryption mode can still log in, but subsequent password changes will switch these users to the selected advanced hash mode.

Note: Partial migration is used to change between advanced hash modes and should be done only after a full or background migration. If a partial migration is performed first, then a full migration cannot be run in the future.

4.2.7. Release 12.2.4

4.2.7.1. Recalculation of Dynamic Default Parameters in Standard Request Submission

Parameters used in Standard Request Submission can have default values that are generated dynamically, such as by SQL statements, from profile option values, or using the current date or time. Prior to Release 12.2.4, in the case of resubmitting or copying a request, the original parameter values are always re-used. In Release 12.2.4, a flag “Recalculate Default Parameters” can be set to determine if the parameter values should be recalculated upon resubmitting or copying a request.

4.2.7.2. Profile Option to Control Opening of Key Flexfield Window by Default

The profile option “Flexfields: Open Key Window On Default” controls whether a flexfield window will open when a user presses Tab to leave a concatenated key flexfield field. It will only open if at least one of the segments has a default value defined. When the user tabs from the concatenated flexfield the code automatically defaults defined values and opens the window to allow a user to make changes. If the profile option is set to No, then the flexfield window will not open for modifications, and assumes the user wants the defaulted values as part of the combination.

4.2.7.3. Setting Environment Values and Parameters on a Per-Service Basis

This feature provides a user interface to allow users to set values for any environment variable for any defined concurrent manager, as well as to allow users to set JVM parameters for any Java service. These values are read and used by the Service Manager when starting each service.

4.2.7.4. Approved Redirects

The Approved Redirect feature provides support for a whitelist of trusted authorities (such as hosts and domains) to which Oracle E-Business Suite is allowed to redirect web traffic. In addition, it prohibits redirects from Oracle E-Business Suite to authorities that are not explicitly approved. This configuration offers defense in depth against phishing attacks directed at Oracle E-Business Suite users.

Approved Redirect is not enabled by default in Oracle E-Business Suite Release 12.2.4, but can easily be activated through a profile option.

4.3. Oracle Applications Manager (OAM)

4.3.1. Release 12.1.3

4.3.1.1. Support for Timing Report per Application Module

The existing OAM Timing Report page provides the total elapsed time for each phase. This new enhancement provides the actual execution patching time taken for each application module, accounting for parallel runs. It provides the aggregate timing information for each phase within a product. As part of this enhancement users can navigate to the product license status screen from the Timing Report –Product Information page. This screen allows users to find out the aggregate time taken by products that are Installed, Shared, or Not Installed. A similar change has been implemented in AutoPatch code to provide timing report details for each product.

4.3.2. Release 12.2

4.3.2.1. Integration of Oracle Applications Manager and Oracle Enterprise Manager 11g Fusion Middleware Control

This enhancement extends the Oracle Enterprise Manager 11g Fusion Middleware Control console to discover Oracle E-Business Suite instances and to include a navigation link to the Oracle Applications Manager. Oracle Applications Manager itself is updated to work with Fusion Middleware Control.

4.4. Oracle Diagnostics Framework

For information about related internationalization features, see section 3.4.

4.4.1. Overview

Oracle E-Business Suite Diagnostics comprises a Diagnostics Framework and a repository of diagnostics tests. Oracle Diagnostics Framework provides the infrastructure to execute diagnostic tests either for troubleshooting or simply for sanity checking Oracle E-Business Suite. These diagnostic tests can be used for troubleshooting setups and business transactions, validating product configuration, data collection, periodic health checks, and other tasks.

4.4.2. Release 12.0.3 (RUP3)

4.4.2.1. Diagnostics Execution Engine and User Interface Enhancements

Diagnostics execution engine will be enhanced to support long running tests as well as tests that generate huge volume reports. The user interface will be enhanced to support long running test execution and monitoring.

4.4.3. Release 12.0.4 (RUP4)

4.4.3.1. New and Revised Diagnostic Tests

The products listed below have new and/or revised diagnostic tests delivered in this release. A list of delivered product tests with links to test details can be found in the E-Business Suite Diagnostics Test Catalog for 12.0.4 Release Update Pack (RUP4) (My Oracle Support Document 469721.1).

- Advanced Benefits (BEN)
- Advanced Product Catalog (EGO)
- Application Object Library (FND)
- Applications DBA (AD)
- Assets (FA)
- Balanced Scorecard (BSC)
- Bills of Material (BOM)
- Business Intelligence System (BIS)
- Cash Management (CE)
- Collections (IEX)
- CRM Technical Foundation (JTT)
- Customer Care (CSC)
- Document Management and Collaboration (DOM)
- E-Business Tax (ZX)
- Engineering (ENG)
- Enterprise Asset Management (EAM)
- Field Service (CSF)
- Financials Common Module (FUN)
- General Ledger (GL)
- Grants Accounting (GMS)
- Human Resources (PER)

- Install Base (CSI)
- Inventory Management (INV)
- iProcurement (ICX)
- Item Master (ITM)
- Marketing (AMS)
- Order Management (ONT)
- Partner Management (PV)
- Payables (AP)
- Payroll (PAY)
- Projects (PA)
- Public Sector Financials International (IGI)
- Purchasing (PO)
- Quoting (QOT)
- Receivables (AR)
- Release Management (RLM)
- Sales (ASN)
- Service (CS)
- Shipping (WSH)
- Spares Management (CSP)
- TeleSales (AST)
- Time and Labor (HXT)
- Trade Management (OZ)
- Trading Community Architecture (HZ)
- Work in Process (WIP)

For a complete list of diagnostic tests available for Oracle E-Business Suite R12, please refer to the E-Business Suite Diagnostics Test Catalog for R12 (My Oracle Support Document 421245.1).

4.4.4. Release 12.0.6 (RUP6)

4.4.4.1. Diagnostics Enhancements

Oracle E-Business Suite Diagnostics has been enhanced to offer a new user interface for managing and running your diagnostic tests. This new UI incorporates the User Management security model based on RBAC. In addition, the reporting engine is now integrated with Oracle XML Publisher.

4.4.5. Release 12.1.1

In Release 12.1.1, the Oracle Diagnostics Framework has been re-engineered to offer a highly performing diagnostics engine, user-friendly access and reporting, and an integrated application security model. To access the new Oracle Diagnostics Framework one needs Application Diagnostics responsibility and a diagnostic role. To access Oracle E-Business Suite diagnostic scripts use the new Oracle E-Business Suite Diagnostics roles to execute and configure the diagnostic tests.

4.4.5.1. Performance Enhancements

The Oracle Diagnostics Framework engine now supports execution of long running tests and large volume reports. Each request can be tracked through a unique request name.

4.4.5.2. Role Based Access Control Uptake

The Oracle E-Business Suite Diagnostics security model has been rewritten based on Role Based Access Control (RBAC). Due to external regulatory and auditing requirements some customers cannot assign both unrestricted execution and setup access to the same resource or user. A distinction is needed between 'Unrestricted execution access role' and 'Unrestricted setup access role'. With the use of RBAC, security can be driven at a more granular level. This change will allow them the ability to declare to which application ID and sensitivity level a user has access based on the user's assigned role.

By leveraging the RBAC model, roles can be granted to users through responsibilities. Roles can now be defined to consolidate responsibilities and other roles through role inheritance, as well as lower level permissions and data security policies. This is accomplished through a one-time setup, where all the permissions are assigned to the role.

Users can access Oracle E-Business Suite Diagnostics capability using the seeded responsibility called "*Application Diagnostics*". There are three seeded roles namely, Diagnostics Super User, Application Super User and Application End User. The assignment of these roles can be implemented through Oracle User Management (UMX). System administrators can use RBAC to define more granular roles to help restrict execution and setup access for their users. New roles will be administered using Oracle User Management.

4.4.5.3. Test Level Sensitivity

The Oracle Diagnostics Framework now has the ability to set sensitivity levels at a test level instead of group level. Groups are used to categorize tests based on some common functionality. Each group can now have tests with different sensitivity levels.

4.4.5.4. Oracle XML Publisher Integration

The Oracle Diagnostics Framework reporting engine is rewritten to integrate with the Oracle XML Publisher reporting engine. With this integration, users have the ability to select from four reporting styles: PDF, RTF, HTML, or EXCEL. In addition to these XML report formats, Users can write diagnostics tests that include tables and tree structures in the standard XML reports. In addition, Oracle Diagnostics provides its own built-in inline report format (default format). Note that only new tests written with the new reporting library can take advantage of Oracle Publisher. All tests written prior to the introduction of these formats are restricted to the HTML report format. Users will still have the ability to save the report and/or upload reports to Oracle Support.

4.4.5.5. UI Enhancements

The user interface is enhanced to support Oracle XML Publisher integration, browser look-and-feel compliance, RBAC uptake, and tracking of long running tests and large volume reports.

4.4.5.6. Customization Support

Oracle Diagnostic Framework now makes it possible for users with custom responsibilities to run diagnostic tests. Customers running applications that have been cloned from a seeded Oracle application or customers running localizations can create a custom role and grant that maps to an Oracle seeded application. Once this is done, the system will recognize mapping between custom/ localized applications and seeded applications. The responsibility LOV provided by the framework will start showing the responsibilities of the user associated with custom applications.

4.4.5.7. Role Based Access Control & Valid Applications

An application Super User will be able to execute any high or medium sensitivity test, if he or she has a valid responsibility either in the application under which the test is registered or in any of the application, which is configured as valid for the test. An application End User will be able to execute any medium sensitivity test, if he or she has a valid responsibility either in the application under which the test is registered or in any of the application, which is configured as valid for the test. Users with any diagnostic role can access low sensitivity tests registered under any application.

4.4.5.8. TestSet Scheduling

Oracle Diagnostic Framework now makes it possible for users to schedule test sets. Users can create test set using inputs values specific to them and schedule them. The framework will use the test input values stored as part of the test set xml file when executing the test. If there are no input values specified the framework would take the

pre-configured inputs stored in the database. If no input values are provided, the test will be skipped during execution.

4.4.5.9. Preference Profile Options

The Favorite Application profile option allows users to set a default application; once set the default application will show on the Diagnostics Test page. The Default Reporting Format profile option feature allows users to set a default report format; expected values are html, pdf, excel and rtf.

4.4.5.10. Performance Profile Options

The Collection Threshold profile option allows system administrators to set the number of reports nodes that must be kept in memory before being saved to the database. The SQL Block Size profile option allows system administrators to set the number of records that must be fetched from the database after a executing a query. This profile value is used while displaying tabular data. Fetching all the data and keeping it in memory will cause performance issues. The Worker Thread Count profile option allows system administrators to increase the number of concurrent threads used by the executing engine to execute a request.

4.4.6. Release 12.1.2

4.4.6.1. Recognition of XML file types

The Oracle Diagnostics Framework now supports XML file type diagnostics. XML file type diagnostic tests can be registered, scheduled, and executed as single tests or in a test set. Reports for these tests can then be created and downloaded. XML type diagnostics eliminate the need for you to schedule patching downtime, since XML type diagnostics patches can be applied in Hot Mode.

4.4.7. Release 12.1.3

4.4.7.1. In-Context Diagnostics

In-context Diagnostics uses the inline pop-up feature in Oracle Application Framework to enable a user to enter input for a diagnostic test, execute it, and view the result or report, all from the current product page, without navigating to the Diagnostics screens to run the test.

4.5. Oracle E-Business Suite Applications DBA

4.5.1. Release 12.0.2 (RUP2)

4.5.1.1. Change Base Language Script

Oracle E-Business Suite includes single-language tables that must be updated when changing an existing Installed language to be the Base language of the application system. The Change Base Language script, *adchgbase.pl*, is a new utility being delivered in RUP2 that will update these tables and corresponding seed data to the new base language. This utility is not required when installing a new language as the Base language.

Use Oracle License Manager to change an existing Installed language to be the Base language. Run the Perl script *adchgbase.pl*; this script will generate a patch driver, *u_ChangeBase.drv*, based on seed data in your environment. Apply the driver to your application system using Autopatch. Review log files for any issues.

4.5.2. Release 12.2

4.5.2.1. Online Patching

One of the key features of Release 12.2 is the switch to online patching. For more information, see section 3.3.6.2.

4.5.3. Release 12.2.4

4.5.3.1. Online Patching Log Analyzer

This new utility automatically analyzes adop log directories for errors and warnings, and displays a report designed to help the user identify any problems in an Online Patching cycle. The log analyzer can also be run manually.

4.5.3.2. New Online Patching Cleanup Mode

The adop patching utility supports a new value for the `cleanup_mode` parameter:

```
cleanup_mode=standard
```

This new mode is in addition to the existing cleanup modes:

```
cleanup_mode=quick
```

```
cleanup_mode=full
```


The behavior in standard mode is the same as for quick mode, with the additional action of dropping covered_objects. The purpose of standard mode, which is now the default, is to prevent the SYSTEM tablespace growing too large.

4.6. Oracle E-Business Suite Integrated SOA Gateway

4.6.1. Business Case

In an increasingly integrated, inter-dependent and heterogeneous applications world, service-oriented architecture (SOA) and Web services offer a number of business benefits. It offers consistent, robust, and maintainable points of integration that reduce both cost and risk in business operations and IT. Specifically, by consolidating business logic and consolidating points of integration, it lends itself favorably to comprehensive reliability and flexibility. However for the SOA promise to be delivered, it is a must that the underlying business services are well formed, consumed by applications in a consistent manner, and are governed suitably. Additionally from an Oracle point of view, there is a compelling need that the services delivered fit in with the Applications Integration Architecture (AIA). In order to accomplish these goals, in Release 12.1.1 Oracle E-Business Suite has developed a comprehensive SOA-based integration infrastructure in the form of a new product called Oracle E-Business Suite Integrated SOA Gateway that helps organizations to provide, consume and monitor web services for integrations in a heterogeneous ecosystem. Oracle E-Business Suite also delivers several well-formed business services that cater to AIA and more generic business needs.

4.6.2. Overview

The Oracle E-Business Suite Integrated SOA Gateway is a new product in Release 12.1.1 with several new components and enhancements to existing components like Integration Repository. Integrated SOA Gateway is a robust out-of-the-box service-oriented architecture (SOA) based integration infrastructure to provide and consume services.

- Integration Repository
- SOA Provider
- Service Invocation Framework
- SOA Monitor

4.6.3. Release 12.1.1

4.6.3.1. Integration Repository

Integration Repository is the central UI component for the SOA enablement of Oracle E-Business Suite in Release 12.1.1. Integration Repository is enhanced to provide the following features.

- Service Enablement UI

Integration Repository provides the UI for administrator's action to generate and deploy a Web service for a particular integration interface.

- Business Events in Integration Repository

Integration Repository in Release 12.1.1 includes the Business Events as the annotated and registered integration interfaces. Now the Business Events can be browsed in the Integration Repository and they can also be enabled for subscription for integration purposes from the Integration Repository UI itself.

- Composite Services

Integration Repository also supports Composite Services in Release 12.1.1. A composite service, also called business service, is atomic in nature, but orchestrates the invocation of Oracle E-Business Suite's out-of-the-box Web services in a discrete business process. Integration Developers may design composite services, which can be implemented by suitably combining multiple Oracle E-Business Suite out-of-the-box Web services.

- Business Service Objects

A business service object implements standard Service Interfaces that provides methods for accessing and operating on the business service object. Service Interfaces provide a set of standard guidelines and implementation instructions for developing services. The classes that implement these interfaces can be deployed as Web services in the Integration Repository.

4.6.3.2. SOA Provider

There are two primary activities that happen either at the design time or run-time that enable the SOA enablement of the Oracle E-Business Suite.

- In the deployment time the Service Generator exposes the integration interface from the Integration Repository as Web services while the Service Deployer deploys the Web service.
- At the run-time, the SOA Provider intercepts the SOAP Requests to Oracle E-Business Suite services while honoring the authentication and authorization security model and sends back an appropriate SOAP Response or Error Message.

4.6.3.3. Service Invocation Framework

Oracle E-Business Suite now provides the Service Invocation Framework (SIF). SIF from within Oracle E-Business Suite is enabled through Oracle Workflow Java Business Event System and is based on the Web Services Invocation Framework (WSIF) support from Oracle Application Server. WSIF is a simple Java API for invoking Web services, no matter how or where the services are provided.

With Oracle E-Business Suite SIF integration developers will be able to interact with abstract representations of Web services through their WSDL descriptions instead of working directly with the Simple Object Access Protocol (SOAP) APIs, which is the usual programming model regardless of how the Web service is implemented and accessed.

Oracle E-Business Suite SIF implements WSIF standards to allow stub-less or completely dynamic invocation of a Web service, based upon examination of the meta-data about the Web service at runtime.

4.6.3.4. SOA Monitor

As the SOA Provider executes the incoming SOAP Requests for the Oracle E-Business Suite services at the run-time, the SOA Monitor provides the capability to audit Web service's SOAP Request and the corresponding SOAP Response or Error Message. The SOA Monitor provides the information about Web service requested for, the SOAP Request and Response details, status of the Web service response, sender's details etc.

4.6.4. Release 12.1.2

4.6.4.1. Enhanced SOA Diagnostics

SOA diagnostics include a range of diagnostic tests that let you check the health of Oracle E-Business Suite Integrated SOA Gateway.

This feature provides the diagnostic capability for administrators, developers and business analysts to diagnose, isolate, and troubleshoot potential issues. The SOA diagnostics cover installation, deployment readiness, and integration operations.

4.6.4.2. Introducing Java APIs for Forms as an integration interface type

Oracle E-Business Suite Integrated SOA Gateway introduces a new integration interface type called 'Java APIs for Forms'. The Java APIs for Forms interface exposes the business logic contained within Oracle Forms without any amendments to the existing code base.

Java APIs for Forms are XML document-based integration interfaces that are wrapped in Java classes for executing business logic in Oracle Forms. This interface type is also catalogued in the Oracle Integration Repository, so these interfaces are natively service-enabled through Oracle E-Business Suite Integrated SOA Gateway.

4.6.4.3. Oracle E-Business Suite Integrated SOA Gateway Customization (Integration Repository Parser)

Oracle E-Business Suite Integrated SOA Gateway now supports custom integration interfaces, for almost all existing interface types which in turn can be deployed as custom Web services. This customization feature is enabled through the Integration Repository Parser.

The Integration Repository Parser is a design-time tool that creates a loader file for the Integration Repository, named with the file extension .ildt, by reading annotation documentation and source code in a source file. You can upload the custom ildt file to your Oracle E-Business Suite instance to view the complete set of both seeded and custom integration endpoints for that instance in the Integration Repository.

The service enablement for the custom integration interfaces would be handled similar to how Oracle seeded integration interfaces is supported.

4.6.5. Release 12.1.3

4.6.5.1. Uniform / Static XSD Schema File Nomenclature and Schema Structures

Previously, Oracle E-Business Suite Integrated SOA Gateway created the XSD schema file nomenclature and the schema structures differently when regenerating Web services on the same server than when generating the Web services on another server. Now, the product is enhanced to create a uniform, static XSD schema file nomenclature and schema structures so that they remain consistent across regeneration of services on the same server or generation of the services on another server. This feature helps ensure that the Web service clients, once created for the Web service, will not cause failures in executing the integration transaction.

4.6.5.2. Enhanced Logging / Auditing and Monitoring

The logging mechanism in Oracle E-Business Suite Integrated SOA Gateway is enhanced to provide inside-out visibility to administrators, developers, and business analysts about any runtime errors in integration flows and focus on targeted problem identification and resolution. The log granularity is increased, and a permanent monitoring feature is now available for better visibility into integration transactions at any time. Additionally, the optional audit feature provides a greater level of information about the integration transactions.

4.6.5.3. SAML Token Support

Oracle E-Business Suite Integrated SOA Gateway now supports SAML authentication. SAML is one of the authentication mechanisms for SOAP- based Web services as described in WS-Security.

4.6.6. Release 12.2

4.6.6.1. Oracle WebLogic Server 11g with Oracle SOA Suite 11g Integration

Oracle E-Business Suite Integrated SOA Gateway now uses Oracle SOA Suite 11g running on Oracle WebLogic Server 11g to provide greater capabilities and best-in-class SOA infrastructure for Oracle E-Business Suite. In this integration, Oracle SOA Suite provides the most current SOA technology such as Web services standards support, protocols, and binding, while Oracle E-Business Suite Integrated SOA Gateway provides the integration content, such as the integration interfaces, security model, and guidelines for best practices.

- **Service Provider** - In this release, Oracle E-Business Suite Integrated SOA Gateway continues to generate and deploy Oracle E-Business Suite Web services into Oracle SOA Suite. However, at run time the SOAP requests and responses from Web service clients and consumers will be executed by Oracle SOA Suite.
- **Service Invocation Framework** - Previously, the Service Invocation Framework (SIF) was based on the Web Services Invocation Framework (WSIF) provided in Oracle Application Server 10g. In Release 12.2, SIF leverages the JAX-WS (Java API for XML-based Web Services) Dispatch from Oracle WebLogic Server 11g.
- **Service Administration**
 - **Service Lifecycle Management** - In this release, integration repository administrators can perform the following additional service lifecycle tasks in the interface details page of the Oracle Integration Repository:
 - Retire an active deployed service to ensure that current running requests are completed while the service no longer accepts new requests.
 - Activate a retired service.
 - Reset a service by clearing up the associated service artifact and resetting the Web service status to its initial value ('Not Generated').
 - **Service Monitor** - The component known as SOA Monitor in earlier releases is now called the Service Monitor. The Service Monitor fetches data and statistics for each instance of a Web service request and response from the underlying Oracle SOA Suite infrastructure to let you monitor Oracle E-Business Suite Web services. You can use the Service Monitor user interface in Oracle E-Business Suite to view the runtime SOAP request and response data received and sent from Oracle SOA Suite.

- **Log Configuration** - The Log Configuration user interface is simplified to configure design-time and run-time logs and service auditing at interface level.

4.6.6.2. Asynchronous Web Service Support

Oracle E-Business Suite Integrated SOA Gateway now supports asynchronous request/response Web services. Unlike synchronous Web services, which return a response from the Provider immediately, asynchronous Web services may require a significant amount of time to process a request. However, the client that invoked the Oracle E-Business Suite Web service can continue with other processing in the meantime rather than wait for the response. Later, when the Web service request processing completes, Oracle E-Business Suite Integrated SOA Gateway sends the response back to the client that sent the request. The Service Provider in Oracle E-Business Suite Integrated SOA Gateway provides the infrastructure to support these asynchronous Web service transactions.

Additionally, the Oracle Integration Repository user interface now lets you specify interaction pattern options for a service before service generation. You can choose synchronous, asynchronous, or both synchronous and asynchronous interaction patterns from the Interaction Pattern table within the Web Service region.

4.6.6.3. Oracle E-Business Suite Integrated SOA Gateway Diagnostics and Designer Script

In this release, a new platform-independent script, `isgDesigner.xml`, is introduced to perform the following tasks:

- Diagnose setup issues on both Oracle E-Business Suite and Oracle SOA Suite instances.
- Perform design-time operations such as Generate, Deploy, Undeploy, Activate, Retire, and Reset activities.
- Upgrade Oracle E-Business Suite Integrated SOA Gateway services from Oracle E-Business Suite Release 12.1.X to Release 12.2.
- Perform post-clone steps, such as redeploying the services, on a Release 12.2 cloned environment.

4.6.6.4. Error and Exception Handling

This feature enhances error and exception handling for the services provided by Oracle E-Business Suite Integrated SOA Gateway. If errors occur during service design-time activities or service runtime execution from the service provider, error and fault messages will be thrown.

4.6.7. Release 12.2.3

4.6.7.1. Support for REST Services

Oracle E-Business Suite Integrated SOA Gateway now supports REST service enablement through the Integration Repository for PL/SQL APIs.

A REST service has a simplified development life cycle - Deploy and Undeploy. The administrator can deploy desired operations contained in the selected API with REST service operations, and undeploy the service if needed. REST services are deployed to an Oracle E-Business Suite managed server without any dependency on Oracle SOA Suite and can be used for user-driven applications, such as for mobile, tablet, or handheld devices.

In this release, REST services are supported with the synchronous interaction pattern only.

4.6.7.2. Security Services

Security services are a subtype of Java interfaces that can now be displayed through the Integration Repository. They are predefined, predeployed REST services from Oracle Application Object Library. Unlike other interface types, security services are pregranted to all users. There is no user action needed at design time.

At run time, security services help authenticate user credentials, initialize application sessions with context information, and authorize access privileges for authenticated users. They are mainly used for mobile applications.

4.6.8. Release 12.2.4

4.6.8.1. Support for Java APIs as REST Services

Java APIs whose methods use parameters of either simple data types, such as String, Int and so on, or serializable Java Beans, are called Java Bean Services. Such Java APIs can now be exposed as REST-based web services.

Similar to PL/SQL REST services, Java Bean Services have a simplified development life cycle - Deploy and Undeploy - and are implemented with the same security mechanism. Java Bean Services can be deployed as REST service operations with POST and GET HTTP methods.

Integration Repository annotation is also enhanced to support Java APIs as serviceable interfaces.

4.6.8.2. Annotation for Java Bean Services

To support generic Java APIs registered in the Integration Repository as REST services, annotation guidelines for Java APIs are now enhanced to include:

- Class-level annotation to mark Java APIs as a subtype of Java APIs called Java Bean Services
- Method-level annotation to explicitly identify suitable HTTP verbs (POST and GET) for Java methods
- Parameter-level annotation to mark path variables

The Integration Repository Parser is also enhanced to capture and validate the syntax of Java Bean Services annotation.

4.7. Oracle E-Business Suite Mobile Foundation

4.7.1. Overview

Oracle E-Business Suite Mobile Foundation provides components specific to Oracle E-Business Suite for use by mobile apps. Oracle E-Business Suite Mobile Foundation leverages and extends Oracle Mobile Application Framework technology.

4.7.2. Release 1.0

4.7.2.1. Mobile App Services

In its initial release, Oracle E-Business Suite Mobile Foundation provides the following services to support mobile apps:

- Security services
- Configuration service
- Attachment services
- Log upload service

4.7.2.2. Mobile Applications Manager User Interface

The Mobile Applications Manager user interface pages let administrators enable the mobile apps their enterprise will use and specify configuration parameters to determine how the apps connect to the Oracle E-Business Suite server.

4.7.2.3. User Login and Configuration Flow

Oracle E-Business Suite Mobile Foundation provides standard features for user configuration and login within the apps, including the following:

- Support for user login through the one-time configuration screen and standard login screen

- Support for one-time initial entry of the Server URL in the following format:
`http(s)://<hostname>:<port>/OA_HTML/config`

4.7.3. Release 2.0

4.7.3.1. Improved Login Flow

The login flow for users within the apps includes the following enhancements:

- Support for first time user login after initial configuration without reentering user credentials
- Support for one-time initial entry of the Server URL in the following format:
`http(s)://<hostname>:<port>`

4.7.3.2. Diagnostics Improvements

Users can now upload log files directly to the Oracle E-Business Suite server from the apps, instead of sending the log files through email.

4.7.4. Release 2.1

4.7.4.1. Improvements in Login and Configuration Flow

The login and configuration flow for users includes the following improvements:

- First time login no longer requires restart
- Support for mobile app access to Oracle E-Business Suite over the Internet through a DMZ configuration, without requiring a VPN connection

4.7.4.2. Ability to Change Server URL Without Reinstalling App

If the server URL through which an app accesses Oracle E-Business Suite changes, users can now enter the new server URL and initiate the reconfiguration process without needing to reinstall the app.

4.7.4.3. Diagnostics Improvements

The diagnostics capabilities for mobile apps include the following improvements:

- Enhanced login error messages for easier diagnostics
- Display of server URL and server configuration, including service version to identify the server patch level for the mobile app
- Ability to check for latest server-side configuration

- Ability to upload client log file with application bundle ID as the debug log module name for easy search and retrieval from the Oracle E-Business Suite logs page

4.7.4.4. Improvements in App Configuration and Management

The following features provide improved app configuration and management for administrators on the Oracle E-Business Suite server:

- Ability to enable and configure multiple apps using a script.
- Support for configuring a dedicated app server for a specific app by setting a particular web entry point as the service endpoint for that app. The app then uses the service endpoint to connect to Oracle E-Business Suite, in place of the common server URL that the end user enters during initial configuration of the app on the mobile device.

4.7.5. Release 3.0

4.7.5.1. Changes to Support Both iOS and Android with the Same Client Code

Oracle E-Business Suite apps are now available for Android devices as well as iOS devices. Enhancements in Oracle E-Business Suite Mobile Foundation allow the same client-side code to be used to make the apps available on either operating system.

4.7.5.2. Ability to Update Server URL from Connection Details Page

Users can now reconfigure an app to connect to a different Oracle E-Business Suite server URL by choosing the Change URL button in the Connection Details page. The app then displays the device's Settings screen, where the user can update the server URL.

4.7.5.3. Updates to Configuration UI

The following features provide enhanced app configuration for administrators on the Oracle E-Business Suite server:

- Ability to test configuration file from application search results page
- Configuration parameters are grouped as Connection Settings

Additionally, references to the connections.xml configuration file that was formerly used in earlier releases have been removed from the user interface.

4.8. Oracle E-Business Suite Secure Enterprise Search

4.8.1. Business Case

With the proliferation of enterprise information and the focus on security and governance, the enterprise search market has become a key area of focus for companies like Oracle.

Surveys have shown notable increases in overall information-related task time for workers in academic, corporate, government, and health-care enterprises. The overall portion of task time spent on information gathering increased on average by almost 1 hour per week. Hence the need for a complete and pervasive fast and accurate search experience across Oracle E-Business Suite is high. The key differentiators between enterprise search and consumer search are twofold:

- Focus on security: Users should only see search results that they have access to or in other words confidential information is restricted to those with permissions. Appropriate governance and audit mechanisms need to be inbuilt.
- Focus on search across multiple application modules.

4.8.2. Overview

Oracle E-Business Suite now provides a seamless integration between Oracle E-Business Suite data and Oracle Secure Enterprise Search (SES) engine so that users can search across multiple Oracle E-Business Suite modules seamlessly and in a secured fashion.

A Web-based tool, Search Modeler is provided to customers as an easy-to-use framework for application developers and enterprise data modelers to define searchable objects and to provide full text search capability to the application users.

Key Capabilities:

- Full-text search capability on Oracle E-Business Suite data to search structured and unstructured data. Attachments are examples of unstructured data.
- Common infrastructure for Oracle E-Business Suite to crawl and index data into the Oracle SES database.
- Search Modeler – a Web-based tool to create, modify and deploy searchable business objects including Oracle E-Business Suite and custom applications.
- Security – object level access and data level access control
- Search refinement – refine the search criteria through narrow or expand options and filtering options.

- Saved Search – Users can book mark and save the search for easy access and to eliminate any navigation.

4.8.3. Release 12.0.6 (RUP6)

4.8.3.1. Search Modeler

This feature, introduced in Release 12.1.1, was made available on the Release 12.0 line in Release 12.0.6. The Search Modeler is a lightweight browser-based design tool used to create, modify and deploy searchable business objects without the need for extensive programming skills or development tools. This tool is meant to help data modelers to rapidly create searchable business objects within Oracle E-Business Suite and custom modules.

4.8.4. Release 12.1.1

4.8.4.1. Search Modeler

The Search Modeler is a lightweight browser-based design tool used to create, modify and deploy searchable business objects without the need for extensive programming skills or development tools. This tool is meant to help data modelers to rapidly create searchable business objects within Oracle E-Business Suite and custom modules.

Search Modeler uses the Oracle Application Object Library (AOL) metadata extensively to reduce the time spent in designing searchable objects. It is capable of defaulting relationships between entities, and provides validation through diagnostics. The tool resides in a separate OC4J 10.1.3.3 home. It authenticates users against the connected Oracle E-Business Suite instance.

4.8.4.2. Out of Box Searchable Business Objects

Oracle delivers a limited number of searchable business objects along with the Oracle E-Business Suite applications. Customers are encouraged to use Search Modeler to create their own search solutions with the help of in-house application experts or partners.

The following objects are search-enabled by Oracle E-Business Suite for Release 12.1.1:

- Items
- Assets
- Service Requests, Case Management
- Integration Repository Classes and Objects
- Workflow Notifications

- Courses (Oracle Learning Management)
- Job Vacancies – Internal & External
- Candidates
- Procurement Contracts

4.8.5. Release 12.1.2

4.8.5.1. UI Improvements

Information workers need to access relevant information quickly in order to make decisions or complete transactions. Search results now include a relevance ranking to inform users how relevant the search result is to their search criteria. This feature lets users quickly access the most relevant information or transaction.

Oracle E-Business Suite Secure Enterprise Search allows users to display search results in two different styles for enhanced readability, instead of the previous concatenated display. The Classical style renders the search results in an Internet-style display. The Tabular style renders the search results in a table or spreadsheet-like format. Additionally, search results are now displayed with appropriate user-friendly captions to enhance the user experience.

Users also now have the capability to sort the search results displayed in the current page according to their needs.

4.8.5.2. Design Time Search Security Plug-ins

Oracle E-Business Suite has complex security needs in general, and several modules within the suite have specific additional security requirements. In order to seamlessly integrate Oracle Secure Enterprise Search with Oracle E-Business Suite, additional security plug-ins are now available. These security plug-ins allow users to search and navigate to transaction pages within Oracle Financials and Oracle Human Resources applications. The following security plug-ins are included in Oracle E-Business Suite Release 12.1.2:

- Organization based security for Oracle Financials modules
- Legal entity based security for specific modules such as Oracle General Ledger
- Business group based security for Oracle Human Resources modules
- Employee hierarchy based security for Oracle Human Resources modules

4.8.6. Release 12.1.3

4.8.6.1. Export Search Results to Excel

This functionality allows users to export search results to Microsoft Excel. The functionality will help users in several business functions such as reconciliation of accounts, invoices, and so on. Following are two potential usage examples:

- **Invoice aging:** Instead of generating aging reports to determine how long customer invoices have been outstanding, users can save time and resources by simply searching for invoices that belong to any customer or invoices within a specified date range and age bracket. Users can then click a button to export the search results to Microsoft Excel and use the resulting spreadsheet for offline activities such as reconciliation or following up with the customers on the invoices.
- **Procurement Contracts:** Buyers or the Procurement office staff can search all the contracts for a particular customer or for an item. They can list the contracts by status such as pending, fulfilled or partially filled and so on. Once they see the search results, they can export the details to excel spreadsheet for further processing.
- **Inventory Items:** Customers can search inventory items by part number, specification, lot number, location and so on. They can also search based on stock levels or any other indicator as needed. After they search the results, they can export to excel and use the data for reconciliation with physical inventory. Invoking Oracle Secure Enterprise Search User Interface from Oracle E-Business Suite

Oracle Secure Enterprise Search provides advanced user interface functionality beyond that which is available Oracle E-Business Suite within Oracle E-Business Suite. The Oracle Secure Enterprise Search user interface offers greater flexibility for customization and advanced features such as faceted search and clustering.

New functionality invokes the Oracle Secure Enterprise Search user interface from within Oracle E-Business Suite and allows seamless integration between the Oracle Secure Enterprise Search user interface and Oracle E-Business Suite.

4.9. Oracle Functional Testing Suite Advanced Pack for Oracle E-Business Suite

4.9.1. Overview

Oracle Functional Testing Suite Advanced Pack for Oracle E-Business Suite takes advantage of the Oracle Flow Builder module of the Oracle Functional Testing Suite for Oracle Applications that can help customers reduce the time and expertise needed to create and maintain automated test scripts for Oracle E-Business Suite Release 12.1.3.

Using Oracle Flow Builder, even non-technical testers can create working test scripts using pre-built components. Each component represents an atomic test operation such as “create an invoice batch” or “apply an invoice hold.” Testers can assemble pre-built components into test flows, and combine test flows with spreadsheet data to drive the testing of multiple data conditions without a need for recording scripts.

Oracle Flow Builder includes over 2,000 pre-built components and 200 pre-built flows designed by the Oracle E-Business Suite Quality Assurance team for their Oracle E-Business Suite testing across all product families. Customers can leverage the pre-built components and flows to jump-start their own test automation. The Oracle Flow Builder framework allows customers to add, modify and extend the pre-built components to address new functionality and customizations to Oracle E-Business Suite.

4.9.2. V1.0

4.9.2.1. Oracle E-Business Suite Pre-built Test Content for Oracle Flow Builder

Oracle Functional Testing Suite Advanced Pack for Oracle E-Business Suite provides the components for testing features of different products delivered as part of Oracle E-Business Suite to be used with Oracle Flow Builder. The components delivered in the Advanced Pack cover in-depth functionality of the products and flows, depicting end-to-end business processes. The following products are covered in Oracle Functional Testing Suite Advanced Pack for Oracle E-Business Suite:

- Oracle Asset Lifecycle Management
- Oracle Channel Revenue Management
- Oracle Discrete Manufacturing
- Oracle Lease and Finance Management
- Oracle Incentive Compensation
- Oracle Process Manufacturing
- Oracle Procurement
- Oracle Project Management
- Oracle Property Manager
- Oracle Service

4.10. Oracle iSetup

For information about related internationalization features, see section 3.4.

4.10.1. Overview

Oracle iSetup is a web-based tool that supports functional configuration data management for applications by enabling migration and monitoring of data throughout the application lifecycle.

4.10.2. Release 12.1.1

4.10.2.1. Oracle iSetup Migration Package Taxonomy

This enhancement enables classification of Oracle iSetup data migration selection sets based on criteria like implementation project or recommended foundation setups. The Oracle iSetup Migration Package taxonomy helps load the sequence for selection sets for an implementation project type.

4.10.2.2. Registering Service Bean APIs with Oracle iSetup

This enhancement allows registering of service bean APIs with Oracle iSetup through the iSetup Interface Repository screen. These registered service bean APIs can be used to create custom selection sets.

4.10.2.3. Reporting Preferences

Oracle iSetup generates reports on the functional configuration that might include additional detail not significant to a customer for their analysis or comparison. In Release 12.1.1, customer can define reporting preferences:

- To define additional criteria for comparison of Oracle iSetup reports. These additions will be appended to the pre-seeded criteria.
- To limit the standard reports to relevant information.

These customer preferences for reporting or comparison can be preserved for later reuse.

The Oracle iSetup Reporter User Interface now allows user to change Report Layout dynamically. Currently it supports Tabular & Hierarchical layouts.

The Oracle iSetup Downloadable Standard Reports feature now supports BR100 Styled format.

The Oracle iSetup Loader auto generates deployment detail reports based on “Load Preferences”. Deployment details capture record level details such as Inserted, Updated, Error and Warning.

4.10.3. Release 12.1.3

4.10.3.1. Oracle iSetup MLS

Oracle iSetup MLS offers greater flexibility in Release 12.1.3 with the ability to move data across systems with different sets of installed languages. Customers can choose to move data of all configured languages from a source system to a target system at once, or they can choose to move data of one installed language or a subset of installed languages from the source to the target.

4.10.4. Product Coverage for Oracle iSetup

- General Foundation (Oracle Application Object Library, or FND)
- HRMS
 - Organization Structure
 - Payroll Element
 - Australian Leave Liability
- Financials
 - General Ledger
 - Accounts Payable
 - Accounts Receivable
 - Fixed Assets
 - Cash Management
 - Credit Management
 - Public Sector Financials
- Discrete Mfg. and Distribution
 - Advanced Planning Systems
 - Bill Of Material
 - Costing
 - Engineering
 - Enterprise Asset Management
 - Inventory

- Order Management
- Purchase Orders
- Quality
- Pricing
- Shipping
- Work in Progress
- Warehouse Management
- Transfer Pricing Setups
- Projects Setup
- OA Personalizations
- XML Publisher
- Workflow Business Event System Objects
- Workflow Definitions
- Oracle Lease Management

4.11. Oracle Report Manager

4.11.1. Overview

Oracle Report Manager enables e-reporting for all reporting requirements in Oracle E-Business Suite. Oracle Report Manager provides a central secured report repository to store reports and supports display of reports in various formats like Excel, HTML and PDF.

4.11.2. Release 12.0.6 (RUP6)

4.11.2.1. Multiple Worksheet Support

This feature, introduced in Release 12.1.1, was made available on the Release 12.0 line in Release 12.0.6. You can use complex content sets with a combination of Page/Expand and Page/Total display types to publish reports. When viewing these reports, you can use the ALL option in the Expansion Value list in the Report Display page to view the entire report data at once in HTML or PDF, or to publish the report to

multiple worksheets in a Microsoft Excel workbook, instead of having to view the reports for each expanded value separately.

4.11.3. Release 12.1.1

In Release 12.1.1, Oracle Report Manager has been enhanced to support complex report publishing formats and display types. These features reduce the time needed to publish large reports with different expansion values.

4.11.3.1. Complex Content Set

You can now use any display type in a content set, including Row/Total (RT), Row/Expand (RE), Row/Both (RB), Column/Total (CT), and Page/Total (PT), as well as Page/Expand (PE). Oracle Report Manager now supports complex combinations of these display types for an account assignment in a content set definition.

With this feature, Oracle Report Manager now matches the support for publishing reports based on all display types formerly provided in the client version of Oracle Application Desktop Integrator (ADI).

4.11.3.2. Multiple Worksheet Support

You can use complex content sets with a combination of Page/Expand and Page/Total display types to publish reports. When viewing these reports, you can use the ALL option in the Expansion Value list in the Report Display page to view the entire report data at once in HTML or PDF, or to publish the report to multiple worksheets in a Microsoft Excel workbook, instead of having to view the reports for each expanded value separately.

This feature saves time for end users who are trying to view a consolidated report for all the expanded segments.

4.11.4. Release 12.1.2

4.11.4.1. Advanced Scheduling Options

When submitting a report, you can now choose a simple schedule such as, *as soon as possible, a specific date and time, or recurring intervals*; or you can choose a more advanced schedule such as *specific days of the week or specific dates in a month*. You can also choose a previously saved schedule.

4.11.5. Release 12.1.3

4.11.5.1. Repository Management Security

Additional security capabilities have been added to the Oracle Report Manager Repository to restrict individual user actions on folders and documents. A new user interface lets you define the users who have viewer and owner privileges for a folder or document. Users must have either viewer or owner privilege to view a secured folder or document. Only users with owner privileges can perform actions such as updating,

moving, archiving, deleting, or creating a menu item for a secured folder or document, or publishing reports or adding subfolders within a secured folder.

You can use Repository security for reports that do not use the user to value, flexfield segment, or custom security methods, as an alternative to creating menu items to control access to those reports. The Repository security feature can help reduce maintenance overhead when you need to secure large numbers of reports because you can publish multiple reports to the same secured folder, instead of having to creating individual menu items for each report.

4.11.6. Release 12.2

4.11.6.1. Microsoft Office Certification

Oracle Report Manager is now certified with the 32-bit and 64-bit releases of Microsoft Office 2010.

4.11.6.2. Report Manager Home Page

The new Report Manager Home page provides a single central location from which you can view your Oracle Report Manager concurrent requests, submit reports, and access Oracle Report Manager administration features. You can use this page to monitor your pending and completed Oracle Report Manager requests without having to search for these requests in the standard concurrent processing pages. You can also mark completed requests as favorites for quick access later.

4.11.6.3. Submitting Report Sets

The Report Set Submission page in Oracle Report Manager lets you define publishing options, submit the report set, and publish the completed requests. In this way you can submit and publish a report set in a single flow within the Oracle Report Manager Web pages, without having to go through the concurrent processing Web pages.

4.11.6.4. Report Delivery

In addition to storing your reports in the repository, you can now also deliver the reports to report consumers outside Oracle E-Business Suite. Oracle Report Manager supports the following types of report delivery:

- Upload reports to an FTP server.
- Save reports to the local file system of the Oracle E-Business Suite application tier.
- Send reports to Oracle E-Business Suite users through e-mail.

You can deliver reports as either HTML or PDF files.

4.11.6.5. Microsoft Excel Report Generation from Firefox

You can now generate Microsoft Excel report output while running Oracle Report Manager in the Firefox browser, as well as from Microsoft Internet Explorer.

4.11.6.6. Digital Signature Support

Some security options within Microsoft Excel allow files containing macros to be opened only if the files are digitally signed to identify them as coming from a trusted source. Administrators can now configure Oracle Report Manager to affix a digital signature to the Microsoft Excel report output that users create. Then, after a user initially identifies the Oracle Report Manager macros as coming from a trusted source, Microsoft Excel automatically allows the macros to run, even when the user has selected a high macro security level in Microsoft Excel.

4.11.6.7. Row and Column Headings in Microsoft Excel

A new profile option lets you choose to display row and column headings in the Microsoft Excel spreadsheet when users output a report to Microsoft Excel. Row and column headings let users easily select an entire row or column at once to perform actions such as editing, formatting, or copying the row or column.

4.11.7. Release 12.2.4

4.11.7.1. Oracle Menu Displayed as Ribbon in Microsoft Excel

If you use Microsoft Excel 2007 or higher to design a template using the Financial Report Template Editor, the Oracle menu is now displayed as a custom ribbon. You can use the buttons on this ribbon to access the additional Oracle features that extend the functionality of the spreadsheet.

4.12. Oracle User Management (UMX)

4.12.1. Overview – SOX Compliance RBAC Reports

Oracle E-Business Suite products use ATG security infrastructure, including function and data security, for their security needs. The security model is a very complex model comprising users, roles, grants, objects and instance sets.

“Who, What, Why, How” (W3H) system serves as an auditing and querying tool providing a 360-degree view of the Security system.

W3H system is broadly aimed at:

- Auditors of Oracle E-Business Suite.

- Oracle Support, who can use this tool for diagnosis
- System Administrators of Oracle E-Business Suite Installation
- Developers of the Oracle E-Business suite products who would like to query the Security system.

4.12.2. Release 12.1.1

4.12.2.1. Categorized Searching

Because multiple queries can be posted to the system, there is a need to simplify querying. W3H will provide a simple user interface where the queries will be categorized. Some possible categories are “User based queries” and “Role based queries.” Frequently asked queries can be prominently displayed.

4.12.2.2. 360 Degree View

The “360 degree” view aims to provide information in terms of “Who, What, Why and How” when a search is made. For example, if a user asks “WHAT role does user X have?” the system will also provide information about WHY that role was assigned to that user and HOW the role was assigned to that user.

4.12.2.3. Reports

W3H will allow information to be saved in various formats. The supported formats will be Microsoft Word document (DOC) and Adobe Acrobat PDF. Reports will be generated using XML Publisher.

Since the information required can be huge, running the query and preparing the report can take time and cause browser timeout. Therefore, W3H reports will be generated using Concurrent Programs.

4.12.2.4. Quick Find

Developers, and sometimes System administrators, can execute queries that might not require extensive output. For example “Does user SNELLEPA have access to System Administration Role?” W3H will provide a quick find feature in each query output so that the user can filter the output further. Please refer to the UI section for more information.

4.12.2.5. Snapshot

Auditors would like to know what happened in a specified period. For example “Did user SNELLEPA have access to SALARY object during Appraisal Time?” The system will allow the user to enter the date range for each type of query.

4.12.2.6. Print Role Hierarchy

In reports where the user queries for Roles, perusing a huge list of Roles can be a daunting task for a first time user of the system. In order to understand the output properly, it might be useful to have a report which depicts the Roles and the inheritance relationships in a tree-like structure.

This feature will be made available as an individual report, in which case a certain Role R1 will be given, as input and the output will be a tree like structure for R1 and all its children Roles. In this case the system will also prompt the user for certain parameters to be used as filter conditions like “Application Name”, only those Sub-Roles will be displayed which meet the filter condition.

This feature will also be available as an option in those queries where the output is Roles. Hence the system will depict all roles to be shown as Tree like structures.

4.12.3. Release 12.2.4

4.12.3.1. Proxy User Access Control

This feature extends the traditional proxy user capabilities of Oracle E-Business Suite to support a much finer level of granularity, enabling a greater degree of access control over management of delegations and authority. For example, a sales manager can delegate selected responsibilities to a sales representative.

All actions taken using this feature are subject to auditing, thereby providing a record of activities by the user acting as a proxy.

4.13. Oracle Web Applications Desktop Integrator

4.13.1. Overview

Oracle Web Applications Desktop Integrator is a framework that provides Oracle E-Business Suite integration with desktop applications like Microsoft Excel, Microsoft Word, and Microsoft Project. The metadata about the desktop integration is stored in the form of integrators. There are over 300 seeded integrators for Oracle E-Business Suite applications, covering Financials, Human Resources, Customer Relationship Management, Supply Chain Management, and other applications.

4.13.2. Release 12.1.2

4.13.2.1. Oracle E-Business Suite Desktop Integration Framework

Release 12.1.2 introduces a new component called the Oracle E-Business Suite Desktop Integration Framework. This framework consists of a design-time wizard-based user interface used to create and manage desktop integrator solutions. The framework

addresses customer demand for a user-friendly approach to create custom integrators that hides the complexity of the underlying Oracle E-Business Suite schema.

The Oracle E-Business Suite Desktop Integration Framework user interface lets you perform the following tasks:

- Create, update, and delete integrators.
- Search for and view definitions of existing Oracle seeded and custom integrators.
- Define function-based security rules to control runtime access to an integrator definition.
- Users can define metadata about the data downloaded to desktop applications and the interfaces to which the data will be uploaded within Oracle E-Business Suite.
- Define and manage user interface components to be displayed as a list of values at runtime in desktop applications.
- Search for and view details of Oracle seeded and custom component definitions.

Additionally, Oracle E-Business Suite Desktop Integration Framework uses the existing Oracle Web Applications Desktop Integrator user interface to let you define the parameter list and parameter metadata required for defining upload parameters, importers, and other integrator and document parameters. The framework also uses the existing user interface to let you define layouts and mappings for integrators from the Desktop Integration Manager.

4.13.3. Release 12.1.3

4.13.3.1. Digital Signature Support

Some security options within Microsoft Excel allow files containing macros to be opened only if the files are digitally signed to identify them as coming from a trusted source. Administrators can now configure Oracle Web Applications Desktop Integrator to affix a digital signature to the spreadsheets that users create. Then, after a user initially identifies the Oracle Web Applications Desktop Integrator macros as coming from a trusted source, Microsoft Excel automatically allows the macros to run, even when the user has selected a high macro security level in Microsoft Excel.

4.13.3.2. Oracle E-Business Suite Desktop Integration Framework Enhancements

In Release 12.1.3, the Oracle E-Business Suite Desktop Integration Framework user interface is enhanced to let you perform the following tasks:

- Define upload parameters to specify what rows are uploaded to interface tables, how the rows are pre-validated, and whether to invoke an import process.

- Define importer rules to specify how to move data from the interface tables to application base tables, including any validation rules to apply before importing data into application base tables.
- Test an integrator definition by creating a test document.
- View an integrator definition in read-only mode.
- Define a content that uses a Java program to obtain the data that the integrator downloads into the desktop document.

4.13.4. Release 12.2

4.13.4.1. Microsoft Office Certifications

Oracle Web Applications Desktop Integrator is now certified with the 32-bit and 64-bit releases of Microsoft Office 2010.

4.13.4.2. Usability Enhancements

In Release 12.2, the Oracle Web Applications Desktop Integrator user interface is enhanced to let you perform the following tasks:

- Display a corporate brand logo in a spreadsheet created using Oracle Web Applications Desktop Integrator.
- Use expand and collapse buttons to show and hide the Context, Headers, and Lines regions in a spreadsheet.

4.13.4.3. Switch Responsibility Option

To ensure that you perform an upload with the correct privileges for your Oracle E-Business Suite application, you can optionally specify the responsibility to use for the upload, using the Switch Responsibility option from the Oracle menu within a spreadsheet. For instance, if you perform multiple uploads during the same Microsoft Excel session, you can use this option to switch responsibilities as needed between uploads.

4.13.4.4. Commit Rows Parameter

A new upload parameter named Commit Rows lets you specify how you want to proceed if any invalid rows are encountered during the upload. You can configure an upload to commit only if all rows are valid, or to commit each valid row even if other rows are not valid.

4.13.4.5. Compressing Data for Upload

The size of the data that you can upload from a spreadsheet is determined by the available memory (RAM) on your PC. If you need to upload a large amount of data, you

can now compress the data before the upload, using WinZip or 7Zip. Compression increases the number of records that you can upload at once.

4.13.4.6. Oracle Web Applications Desktop Integrator Diagnostics

You can run diagnostics tests to review the module versions and profile values currently in use for Oracle Web Applications Desktop Integrator, and to review the metadata defined for a particular integrator.

4.13.5. Release 12.2.4

4.13.5.1. Oracle Menu Displayed as Ribbon in Microsoft Excel

If you use Microsoft Excel 2007 or higher to view an Oracle Web Applications Desktop Integrator spreadsheet, the Oracle menu is now displayed as a custom ribbon. You can use the buttons on this ribbon to access the additional Oracle Web Applications Desktop Integrator features that extend the functionality of the spreadsheet.

4.14. Oracle Workflow

For information about related internationalization features, see section 3.4.

4.14.1. Release 12.1.1

4.14.1.1. Worklist - Bulk Notification Response and Bulk Notification Close

The Bulk Notification Response and Bulk Notification Close feature enables mass response to Oracle Workflow notifications. Oracle Workflow now lets users respond to multiple notifications of the same type at once using a Respond button on the Worklist and Notification Search pages. Oracle Workflow also lets users close multiple FYI notifications at once using a Close button on the Worklist and Notification Search pages. These features enhance user productivity by letting users handle similar notifications in bulk, rather than having to navigate to the Notification Details page for each notification individually.

4.14.1.2. Hijrah/Thai Calendar Support

Oracle Workflow now displays dates in notifications according to the Hijrah calendar or Thai calendar, if users select one of those calendars in the NLS calendar preference.

4.14.2. Release 12.1.3

4.14.2.1. Notification Mailer - SMTP Authentication

The Oracle Workflow notification mailer now supports SMTP authentication, enabling you to use the notification mailer with SMTP servers that are configured to require SMTP authentication.

SMTP authentication requires the sender to authenticate by identifying itself to the mail server. After successful authentication, the mail server grants transmission of the sender's emails. SMTP authentication can be used to allow legitimate users to relay mail while denying relay service to unauthorized users, such as spammers. Oracle Workflow currently supports the PLAIN, LOGIN, and DIGST-MD5 authentication mechanisms. Administrators can enter the user name and password that the notification mailer should use for authentication in either the basic or advanced configuration pages for the mailer.

4.14.3. Release 12.2

4.14.3.1. E-mail Character Encoding Configuration

A workflow administrator can now optionally specify the character encoding to use for each language in workflow notifications. This feature lets you override both the character encoding specified by the notification recipient's NLS preferences and the database character encoding, if another character encoding is required to display the notification content correctly. Use the Administration tab in the Oracle Workflow administrator Web pages to configure your character encoding specifications.

4.14.3.2. Deferring Worklist Response Processing

To increase performance, a workflow administrator can optionally configure Oracle Workflow to defer the processing of notification responses submitted through the worklist. In this case, control is returned to a user immediately after the user submits a response, while the subsequent activities in the workflow are executed at a later time. You can choose to defer notification response processing for all item types or only for specified item types. Use the Administration tab in the Oracle Workflow administrator Web pages to configure the item types for which you want to defer response processing.

4.14.3.3. Oracle RAC Affinity for Workflows

In an Oracle Real Application Clusters (Oracle RAC) environment, you can optionally use workflow RAC affinity to increase scalability and performance for some high volume workflows. As part of the RAC configuration, you partition the workflow runtime tables by RAC instance ID, and create a Virtual Private Database (VPD) policy for those tables that allows access only to the records marked with the RAC instance ID that is specified in the current session context. When you complete the partitioning, Oracle Workflow enables a special type of background engine, called the Workflow Background Process for RAC, that you can use to process RAC-enabled workflows. The background engines that you run using the Workflow Background Process for RAC concurrent program each access only one partition, corresponding to one RAC instance

ID, within the workflow tables. Consequently other background engines run using this program can access other partitions at the same time. In this way, workflow RAC affinity helps avoid contention on the workflow tables, provides faster access to workflow runtime data, and increases throughput for the RAC-enabled workflow processes.

High volume batch processing workflows are usually good candidates to consider for RAC affinity, because they can often gain a significant performance increase by using this feature. To be eligible for RAC affinity, a workflow must either be launched and completed in the same session, or the workflow must be completed using only a background engine, without requiring any other intervention such as notifications requiring a response, a block activity resumed by a program, and so on.

4.14.3.4. Worklist Usability Enhancements

In Release 12.2, the Notification System and the Worklist UI pages include the following enhancements:

- In the Worklist region of the Oracle E-Business Suite home page, the Full List button displays in parentheses the number of open notifications in your worklist. If you switch to view another user's worklist, the Full List button shows the number of open notifications to which you have access in that user's worklist.
- Additionally, administrators can use the Sign-On:Notification profile option to display a tip message in the Oracle E-Business Suite home page that informs the user how many open notifications are in his or her worklist. This tip message always displays the number of open notifications in the user's own worklist, even if the user has switched to view another user's worklist.
- You can use the Workflow Status Monitor Diagram Size option in the Workflow Configuration page to select the display size for the status monitor diagram within the Administrator Monitor and the Self-Service Monitor. The sizes you can select are Small, Medium, or Large.
- You can now use the special message attribute #RELATED_HISTORY to include the action history of another notification within response-required notifications as well as within FYI notifications. Additionally, you can now include the action history of a related notification in a different work item.
- A user who receives a request for more information can now transfer that request to another user and include a comment to that user. Additionally, a workflow administrator managing notifications through the Notifications administrator page can now transfer a request for more information from the user who received the request to another user, or answer the request on behalf of the user who received the request.
- If a notification is reassigned, the sent date displayed in the notification for the new recipient now shows the date of the reassignment – that is, the date when this recipient first received the notification – rather than the date the notification

was sent to the original recipient. Similarly, the sent date displayed in a request for more information now shows the date when the request was made, rather than the sent date of the original notification.

- The Notification Details page now displays a brief status at the top of the page indicating if another user has delegated or transferred the notification to the current recipient, if another user has requested or provided more information, or if another user transferred a request for more information to the current recipient. Any comment provided by the other user is displayed as well.

4.14.3.5. Bulk Reset for DISABLED Notification Preference

A new concurrent program lets you reset the original notification preference value for users whose notification preference has been set to DISABLED because their e-mail notifications could not be delivered. With this program, you can easily reset the notification preference for multiple users at once.

4.14.3.6. Enhancement for Reassigning Notifications

Oracle Workflow now automatically prevents users from reassigning a notification to the process owner who initiated the workflow process, or to the role specified as the from role for the notification. This restriction applies for reassignment through the Worklist UI pages as well as through vacation rules.

4.14.3.7. Enhancement for Service Component Processing by Correlation ID

You can define dedicated service components, including notification mailers and PL/SQL and Java agent listeners, that process only messages matching a particular correlation ID. In previous releases, a message that matched the correlation ID of a dedicated mailer or dedicated listener could still be processed by a general mailer or listener if the general mailer or listener was the first to access the message. In Release 12.2, the service component processing is enhanced to ensure that general mailers do not process messages that are being handled by a dedicated mailer. Instead, only the appropriate dedicated mailer will process these messages, as long as the dedicated mailer has a status of Running, Stopped With Error, or System Deactivated. Similarly, general listeners for the WF_DEFERRED and WF_JAVA_DEFERRED agents also do not process messages that are being handled by a dedicated listener, but leave these messages to be processed by the dedicated listener.

Note: For all agents other than WF_DEFERRED and WF_JAVA_DEFERRED, a general agent listener or Java agent listener can process all messages on the agent. For these agents there is no change from previous releases.

4.14.4. Release 12.2.3

4.14.4.1. Worklist Header Icon

A worklist header icon is now displayed by default in all Oracle Application Framework-based pages. You can control the display of this icon through a profile option. The worklist header icon serves as an alternative to including a worklist region

in the Oracle E-Business Suite home page. The icon displays a count of the open notifications in the user's worklist. Users can select the icon to view a summary list of their most recent notifications. From the summary list, users can select a notification subject to view the notification details and respond, or navigate to the full worklist.

4.14.5. Release 12.2.4

4.14.5.1. Proxy User Access Control

The ability to grant Oracle Workflow worklist access to another user is now part of the overall proxy user access control feature for Oracle E-Business Suite that is provided through Oracle User Management. Use Oracle User Management to set up proxy user access, including worklist access. For more information, see section 4.12.3.1.

4.15. Oracle Mobile Approvals for Oracle E-Business Suite

4.15.1. Overview

Oracle Mobile Approvals for Oracle E-Business Suite lets you respond on-the-go to your pending approval requests. From your phone, anywhere and anytime, take quick action on approval requests for expenses, requisitions, purchase orders, recruitment vacancies and offers, and more.

- Quickly filter approval requests by sender or subject
- Review at a glance header and line item details, action history, and comments
- Approve or reject with or without comments, or request more information

Oracle Mobile Approvals for Oracle E-Business Suite is compatible with Oracle E-Business Suite 12.1.3 and 12.2.3 and above. To use this app, you must be a licensed user of any Oracle E-Business Suite product that uses workflow approvals, with mobile services configured on the server side by your administrator.

4.15.2. V. 1.0.0

4.15.2.1. Approval Request Handling

In its initial release, Oracle Mobile Approvals for Oracle E-Business Suite lets you take action on approval requests including expenses, requisitions, purchase orders, and recruitment vacancies and offers.

4.15.3. V. 1.1.0

4.15.3.1. Mobile Foundation Release 2.1 Updates

- Improvements to login and configuration flow
- Ability to change server URL without reinstalling the app
- Diagnostics improvements

4.15.4. V. 1.2.0

4.15.4.1. Android Support

In previous versions, Oracle Mobile Approvals for Oracle E-Business Suite was available only for iOS devices. Starting with version 1.2.0, the app is now available for Android devices as well.

4.15.4.2. Mobile Foundation Release 3.0 Updates

- Changes to support both iOS and Android with the same client code
- Ability to update server URL from Connection Details page

4.16. Oracle XML Gateway

4.16.1. Release 12.0.3 (RUP3)

4.16.1.1. Improved Error Notification from Oracle XML Gateway

Notify System Administrator and/or Transaction Administrator

For each transaction, users can configure a transaction administrator who will receive error notifications for the transaction (in addition to the system administrator). If required, a transaction administrator can act (reprocess/abort) on the error notification.

Auto re-process erred notification after notification time-out

If the system administrator has not taken explicit action on a notification (that is, abort or reprocess) after the notification timeout period, the Oracle XML Gateway engine will automatically re-process the corresponding erred transactions until it reaches the 'maximum retries' limit. The 'maximum retries' limit is a profile option that governs the number of times the engine will automatically re-process after the notification timeout period. Once the 'maximum retries' limit is exceeded, the erred transactions will not be re-processed until the system administrator and/or transaction administrator explicitly opts for re-processing.

If an error occurs while re-processing, a notification will be sent to the system administrator and/or transaction administrator.

4.16.2. Release 12.2

4.16.2.1. Oracle XML Gateway Inbound Processing in Java

Oracle XML Gateway has enhanced its inbound processing by allowing the Oracle XML Gateway execution engine to process inbound messages either in Java or in PL/SQL, based on the value specified in the ECX_IN_JAVA_PROCESSING profile option. Previously, all inbound messages were processed in PL/SQL only.

4.16.2.2. Enhanced Oracle XML Gateway Diagnostics

To provide more diagnostic capability and troubleshoot potential issues, Oracle XML Gateway diagnostics are enhanced to include the 'XML Gateway Health Check', which lets you check and validate the health of Oracle XML Gateway, and 'Get Document Details', which lets you display document details and perform root cause analysis on potential issues. This enhancement also includes modified parameters for existing diagnostics, including 'Basic OTA Diagnostic Test', 'Ping Destination Server', and 'Message Monitor'.