Oracle® Fusion Applications

Concepts Guide

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Preface

This guide provides an overview of the Oracle Fusion Applications architecture and describes the core infrastructure components of Oracle Fusion Applications, the Oracle Fusion Middleware components on which Oracle Fusion Applications is built, and Oracle Fusion Applications Administration.

Audience

This document is intended for anyone who is interested in an overview of the components and features that comprise Oracle Fusion Applications.

Documentation Accessibility

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Oracle customers have access to electronic support through My Oracle Support. For information, visit http://www.oracle.com/pls/topic/lookup?ctx=acc&id=info or visit http://www.oracle.com/pls/topic/lookup?ctx=acc&id=trs if you are hearing impaired.

Related Documents

For more information, see the following documents:

- *Oracle Fusion Applications Administrator and Implementor Roadmap*
- *Oracle Fusion Applications Administrator's Guide*
- *Oracle Fusion Applications Installation Guide*
- *Oracle Fusion Applications Enterprise Deployment Guide*
- *Oracle Fusion Middleware Concepts Guide*
- *Oracle Fusion Middleware Administrator's Guide*

Conventions

The following text conventions are used in this guide:

Convention	Meaning
boldface	Boldface type indicates graphical user interface elements associated with an action, or terms defined in text or the glossary.
italic	Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values.
`monospace`	Monospace type indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter.

What's New in This Guide for Release 11.1.2

For Release 11.1.2, nothing in this guide has changed from the previous release.

1

Introduction to Oracle Fusion Applications

The Oracle Fusion service-oriented platform and applications suite joins next-generation enterprise technologies, applications, and services, including Oracle Fusion Applications and Oracle Fusion Middleware, to change the dynamics in the applications marketplace and revolutionize business. This chapter provides an introduction to the architecture and components of Oracle Fusion Applications.

This chapter contains the following topics:

- What Is Oracle Fusion Applications?
- Oracle Fusion Applications Architecture Design
- Service-Oriented Architecture (SOA)

For more information about Oracle Fusion Applications development and administrative tasks, see the following:

- *Oracle Fusion Applications Developer's Guide*
- *Oracle Fusion Applications Administrator's Guide*

For more information about Oracle Fusion Middleware concepts, see the following:

- *Oracle Fusion Middleware Concepts*
- *Oracle Fusion Middleware Administrator's Guide*

For more information about Oracle Database, see *Oracle Database 2 Day DBA*.

1.1 What Is Oracle Fusion Applications?

Using the latest technology and incorporating the best practices gathered from Oracle's customers, Oracle Fusion Applications is a suite of 100% open standards-based business applications that provide a new standard for the way businesses innovate, work and adopt technology. Delivered as a complete suite of modular, service-enabled enterprise applications, Oracle Fusion Applications works with Oracle's Applications Unlimited portfolio to evolve business to a new level of performance. Whether it is one module, a product family, or the entire suite, Oracle provides businesses with their choice of all advancements pioneered by Oracle Fusion Applications, at a pace that matches individual business demands.

Oracle Fusion Applications can best be described as:

- Built on an open standards-based platform
- Based on best practices business processes
- Deployed through a selection of options

- Built with security as a priority

1.1.1 Standards-Based Architecture

Oracle Fusion Applications is standards-based, making it highly adaptable. This standards-based technology enables you to respond effectively to change with flexible, modular, user-driven business software that is powered by best-in-class business capabilities built on open standards. Its technology framework includes the following products:

- Oracle WebCenter provides design-time and runtime tools for building enterprise portals, transactional websites, and social networking sites.

- Oracle Business Intelligence 11*g* provides a full range of business intelligence capabilities that enable you to analyze, present, report, and deliver organizational data.

- Oracle Universal Content Management enables you to leverage document management, Web content management, digital asset management; and records retention functionality to build and complement your business applications.

- Oracle SOA Suite provides a complete set of service infrastructure components for designing, deploying, and managing SOA composite applications. Oracle SOA Suite enables services to be created, managed, and orchestrated into SOA composite applications.

- Oracle WebLogic Server is a scalable, enterprise-ready application server based on Java Enterprise Edition (Java EE).

- Oracle JDeveloper is an integrated development environment with end-to-end support for modeling, developing, debugging, optimizing, and deploying Java applications and web services.

- Oracle Enterprise Manager offers business-driven applications management, integrated application to disk management, integrated systems management, and support experience.

- Oracle Identity Management enables organizations to manage the end-to-end lifecycle of user identities and to secure access to enterprise resources and assets.

Using a standards-based architecture reduces the cost for integration and enables you to reuse systems and technologies. Standards-based architecture also increases the flexibility of the applications. You can fit the applications to your business by configuring not only the user interface, but also the business objects, the business processes, the business logic, and business intelligence.

The ease of managing Oracle Fusion Applications offers a low total cost of ownership that results in a faster return on investment by using tools for rapid setup and flexible deployment models, as well as providing protection for upgrades.

1.1.2 Best Practices Business Processes

Oracle Fusion Applications incorporates best practices business processes, including those from Oracle product lines, such as Oracle E-Business Suite, PeopleSoft, Oracle On Demand, JD Edwards, and Siebel to optimize the user experience and productivity.

The Oracle Fusion Applications user interface facilitates the customer-driven, intuitive design of the applications that result in large productivity gains. The user interface design of Oracle Fusion Applications is:

- Role-based, which enables pervasive delivery in multiple modes, devices, and channels

- Configurable and extensible, through JDeveloper during design time or the composer during runtime, which enhances productivity for individual users and groups of users

- Composite and contextual, providing integrated information in the context of process

- Social and collaborative, offering built-in user communities and workspace, Web 2.0 information distribution, and embedded social computing to improve collaborative work

Specific features of the user interface include:

- Role-based dashboards that you can configure to your business needs

- Unified worklists that provide lists of tasks from across the applications

- Guided Business Processes, which are organized sets of tasks that help you get your work done more efficiently

- Embedded analysis methods that provides the necessary information for completing a task

- Contextual help that provides conceptual and procedural reference information

- Oracle Fusion Applications Search, which provides a seamless search experience for easily locating and taking action on relevant data

- Tagging, which enables you to associate keywords with objects so they can be easily located

- Instant collaboration that provides the contact information for persons related to your tasks

1.1.3 Choice of Deployment Options

Oracle Fusion Applications is delivered as a suite, but can be adopted modularly. It can be adopted as a single suite, as product offerings (the highest level collection of functionality that you can license and implement), or as solutions sets that work with other Oracle Applications Unlimited product lines.

Oracle Fusion Applications is offered with the following deployment options:

- On premise, hosted by the enterprise

- Public cloud (available to the general public), hosted over the Internet by Oracle, software as a service (SaaS), or Oracle business partners offering business process outsourcing (BPO) solutions

- Private cloud (available internally behind a firewall), hosted as a SaaS or BPO offering

- Hybrid, an implementation of both on premise and cloud

1.1.4 Security

Oracle Fusion Applications security offers:

- Role-based access

- Segregation of duties

- Consistent and transparent function and data security

- Robust privacy protections

- Native identity management and access provisioning

- Enforcement across tools (all the tools use the same policies) and across the information lifecycle

- Integration with Oracle Fusion Governance, Risk, and Compliance

- An extensive reference implementation

- Standard tools to extend the footprint

For more information about security for Oracle Fusion Applications, see the *Oracle Fusion Applications Security Guide*.

1.2 Oracle Fusion Applications Architecture Design

Oracle Fusion Applications follows a modular, standards-based architecture. It is natively built on Oracle Fusion Middleware 11*g* components and uses Oracle Database. Figure 1–1 illustrates the architecture of Oracle Fusion Applications.

Figure 1–1   Oracle Fusion Applications Architecture
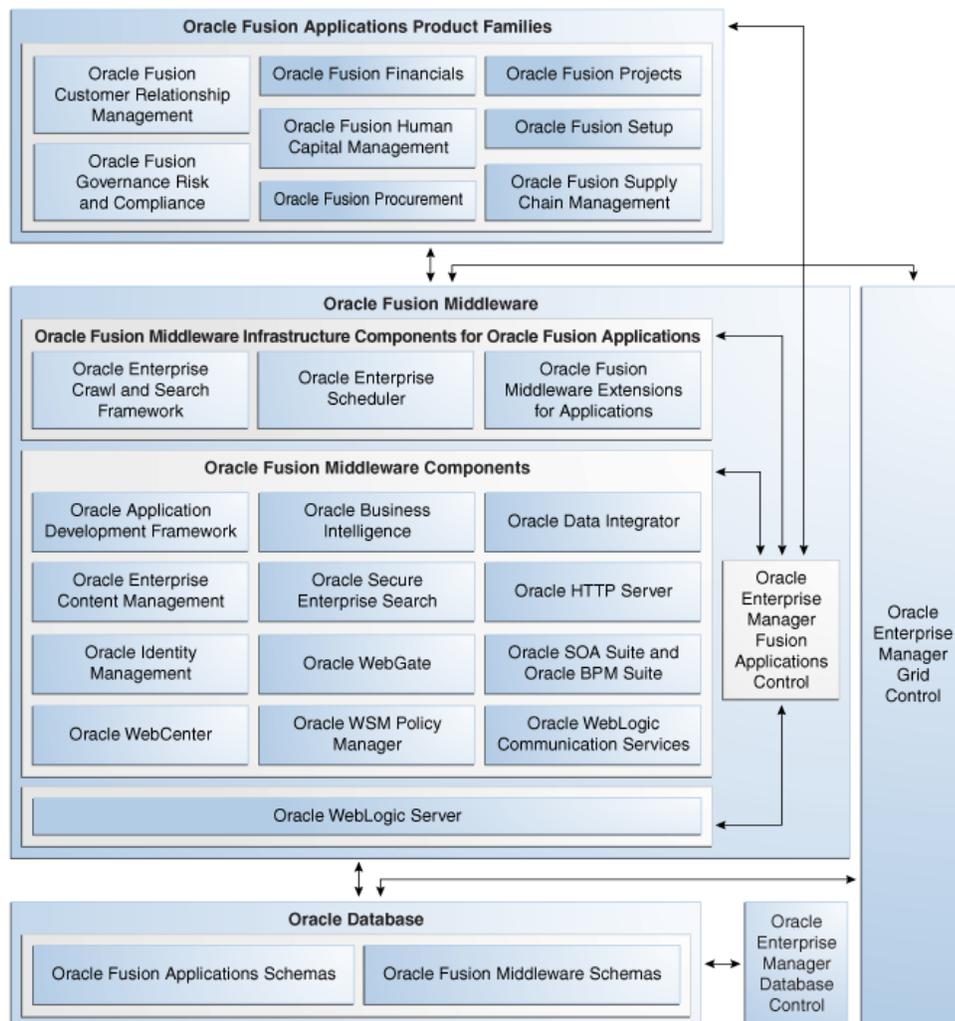
Oracle Fusion Applications includes the following product families, or collections of products that are associated with a functional area:

- Oracle Fusion Customer Relationship Management manages customers, contacts, and resources, including data quality configuration.

- Oracle Fusion Financials manages financial flows, including assets, ledgers, cash cycle, invoices and payments, accounts receivable, collections, and setup of subledger accounting and tax configuration.

- Oracle Fusion Governance, Risk, and Compliance integrates business intelligence, process management, and automated controls enforcement to enable sustainable risk and compliance management.

- Oracle Fusion Human Capital Management provides employee management for an organization.

- Oracle Fusion Procurement manages the procurement process including requisitions, purchase orders, and supplier negotiations.

- Oracle Fusion Project Portfolio Management manages projects, including how to plan, budget, forecast, collect costs, bill customers, and report performance.

- Oracle Fusion Supply Chain Management integrates and automates all key supply chain processes, from design, planning, and procurement to manufacturing and order fulfillment.

- Oracle Fusion Setup is a special product family for supporting the other product families.

  In addition to Oracle Fusion Functional Setup Manager for setting up functional data, this product family includes applications to assist application users:

  - The Oracle Fusion Home page provides a Welcome dashboard with a collection of portlets and task flows for answering common questions.

  - Oracle Fusion Applications Help delivers the content that users require in order to complete their tasks. You can optionally install a local version of Oracle Fusion Applications Help, enabling you to extend and customize the help.

Each *product family* is based on a common Oracle Fusion Applications data model and services. Product families contain one or more Java EE applications that are specific to Oracle Fusion Applications and deployed to Oracle WebLogic Server. An application can contain multiple products, and a product can also span multiple applications. A product typically has a one-to-one correspondence with an Enterprise Archive (EAR) file. For example, `EarSales.ear` is an application and Sales is a product.

1.2.1 Data Model and Business Logic Design

Oracle Fusion Applications uses a unified data model, which is a superset of E-Business Suite, PeopleSoft, JD Edwards, and Siebel entities and attributes. You can extend this data model while maintaining consistent semantics.

Logical data striping offers flexible enterprise structures for global organizations. Reference data sets enable business units to share reference data. Reference data is managed by sets. Transactional data is managed or striped by business units. You can assign sets of codes to each business unit. There is no need to duplicate reference data for each business unit.

Oracle Fusion Applications uses trees, a hierarchy model that offers flexible hierarchies for crossing line of business processes. It also defines line of business processes more

efficiently. The tree structure is in the data model and is used directly in the Java business logic and exposed through Oracle Business Intelligence.

Flexfields enable you to add custom attributes and define custom key structures in Oracle Fusion Applications.

A unified metadata dictionary, and a metadata store, accessible to all the tools, provide consistency for all the components in the technology stack and enable you to preserve changes across upgrades.

Unified concepts from existing and new applications support upgrades from other Applications Unlimited product lines to Oracle Fusion Applications.

1.2.2 Business Process Design

Oracle Fusion Applications uses a declarative business process design that leverages Oracle SOA Suite. The SOA features used include approval management flows, human workflows, Oracle Business Process Management Worklist (Oracle BPM Worklist), business rules, activity guides, and process configuration customization tools (Oracle SOA Composer). Integration, creating business processes, and human workflow is the same as it is done in SOA.

The business process design of Oracle Fusion Applications features:

- Declarative business process definition, which enables processes to be defined collaboratively between businesses and IT

- Unified business process execution through system, human, and document workflow in a single business process management foundation to optimize processes while ensuring upgradeability

- Unified process visibility and analytics with cross-organization monitoring, tracing, and variance analysis

- Flexible business process customization, which enables you to make in-flight changes to data models, rules, events, and processes

- Shared business metadata dictionary, which contains all the BPEL rules and processes,

During design time, two languages are used: Business Process Execution Language (BPEL) and Business Process Modelling Notation (BPMN), which share the same engine and metadata dictionary.

One SOA infrastructure is used per product family, but all worklists are available in one single location. For example, a worklist can include content from Oracle Fusion Customer Relationship Management and Oracle Fusion Financials.

All business processes are configurable using a rich set of tools (BPM Composer, Rules Editor, Routing Editor, and Profile Editor) that enable you to optimize the processes as you are using them.

1.2.3 Business Intelligence

Oracle Fusion Applications offers the following Oracle Business Intelligence capabilities:

- Operational analysis, what-if analysis, analytic dashboards that enable you to adapt analytics to changes in transactional and process systems

- Unified analytic definitions and calculations

- Role-based dashboards with consistent security and navigation

- Data mining-driven sales prediction, trending, and forecasting
- Reporting (pixel perfect reports designed for printing)

A common repository product design is used across all Oracle Business Intelligence products.

For more information, see Chapter 4, "Oracle Fusion Middleware Components".

1.2.4 Operational Management Design

The operational management design for Oracle Fusion Applications offers:

- Unified business services level management to achieve a comprehensive lifecycle management
- Single point of administration for applications and technology to achieve comprehensive lifecycle management
- Centralized management of users, privileges, and controls to simplify identity management and controls enforcement
- Flexible deployment options

Oracle Enterprise Manager manages the middleware and the database. It provides an application-centric view, which shows information according to the product you have deployed. It also enables you to drill down from the business process to the technology stack through a single dashboard.

Rather than managing users and roles in themselves, Oracle Fusion Applications externalizes both the users and the roles to reside in a Lightweight Directory Access Protocol (LDAP) system. This identity management model centralizes access and entitlements, and is embedded in Oracle Fusion Applications.

Oracle Fusion Governance, Risk, and Compliance manages separation of duty to ensure that the roles do not overlap.

1.3 Service-Oriented Architecture (SOA)

Service-oriented architecture (SOA) provides an enterprise architecture that supports building connected enterprise applications to provide solutions to business problems. SOA facilitates the development of enterprise applications as modular business web services that can be easily integrated and reused, creating a truly flexible, adaptable IT infrastructure.

SOA uses orchestration technology to assemble various services to provide comprehensive functionality. In Oracle Fusion Applications, many product applications provide their functionality in the form of web services. Oracle Business Process Management is used to assemble these web services to provide end-to-end functionality.

Oracle SOA Suite, a middleware component of Oracle Fusion Middleware, provides a complete set of service infrastructure components for designing, deploying, and managing SOA composite applications. It enables services to be created, managed, and orchestrated into SOA composite applications. Composites enable you to easily assemble multiple technology components into one SOA composite application.

For more information, see Section 4.6, "Oracle SOA Suite".

2

Key Concepts

This chapter contains the following topics:

- Key Oracle Fusion Middleware Concepts for Oracle Fusion Applications
- Oracle Fusion Applications Runtime Environment
- Oracle Database

2.1 Key Oracle Fusion Middleware Concepts for Oracle Fusion Applications

Oracle Fusion Applications uses both types of the components that Oracle Fusion Middleware provides, the Java component and the system component. A Java component is an Oracle Fusion Middleware component that is deployed as one or more Java EE applications and a set of resources. Java components are deployed to an Oracle WebLogic Server domain as part of a domain template. A system component is a manageable process that is not deployed as a Java application. Instead, a system component is managed by Oracle Process Manager and Notification Server.

For more information on the Oracle Fusion Middleware components, see *Oracle Fusion Middleware Concepts*.

2.2 Oracle Fusion Applications Runtime Environment

After installation, a typical Oracle Fusion Applications runtime environment, shown in Figure 1–1, contains the following:

- Oracle Fusion Applications product families.

  For information, see Section 1.2, "Oracle Fusion Applications Architecture Design".

- Oracle Fusion Middleware, comprising the following:

  - Oracle Fusion Middleware infrastructure components

    For information, see Chapter 3, "Oracle Fusion Middleware Components for Oracle Fusion Applications".

  - Oracle Fusion Middleware components

    For information, see Chapter 4, "Oracle Fusion Middleware Components".

  - Oracle WebLogic Server

    For information, see *Oracle Fusion Middleware Introduction to Oracle WebLogic Server*.

- Oracle Database.

For information, see Section 2.3, "Oracle Database".

- Oracle Enterprise Manager Fusion Applications Control (Fusion Applications Control).

  For more information, see the "Getting Started with Administering Oracle Fusion Applications" chapter in the *Oracle Fusion Applications Administrator's Guide*.

- Oracle Enterprise Manager Grid Control (Grid Control).

  For more information, see the "Oracle Enterprise Manager Grid Control" section in the *Oracle Fusion Applications Administrator's Guide*.

- Oracle Enterprise Manager Database Control (Database Control).

  For more information, see *Oracle Database 2 Day DBA*.

2.3 Oracle Database

Oracle Fusion Applications uses Oracle Database to store and retrieve all transactional and reference data and to store design-time data in repositories. After installation and configuration, the transactional database contains applications and middleware schemas, seed data, the tablespaces, and all other required packages. For more information, see *Oracle Database 2 Day DBA*.

3

Oracle Fusion Middleware Components for Oracle Fusion Applications

This chapter describes the common core framework and infrastructure components of Oracle Fusion Middleware as used by Oracle Fusion Applications.

This chapter contains the following topics:

- Oracle Fusion Middleware Extensions for Applications
- Oracle Enterprise Scheduler
- Oracle Enterprise Crawl and Search Framework (ECSF)
- Oracle Fusion Functional Setup Manager

3.1 Oracle Fusion Middleware Extensions for Applications

Oracle Fusion Middleware Extensions for Applications (Applications Core) is an Oracle Fusion Middleware extension that provides design-time and runtime infrastructure components to help standardize complex development patterns for Oracle Fusion Applications. These components simplify the development process of these patterns and provide a consistent user experience. Examples of these components include the page template (UI Shell), extensibility (Flexfields), hierarchical relationships (Trees), and attachments.

The UI Shell is a page template containing default information, such as a logo, menus and facets. The UI Shell design supports task-based and user-based navigation, and organizes screen usage effectively by collating tasks, providing dedicated spaces for primary-task supporting information, and maintaining general order and appropriate hierarchy among various elements on the screen.

Flexfields enable related attributes and user interface (UI) components to be dynamically created based on keys from the controlling data. There are three types of flexfields that enable implementers to configure application features without programming and are fully supported within Oracle Fusion Applications:

- Descriptive flexfields
- Extensible flexfields
- Key flexfields

Oracle Fusion Applications tree management enables data in applications to be organized into a hierarchical fashion, and enables you to create tree hierarchies based on specific data. The advantages of using tree hierarchies to develop applications include:

- *Reusable code* that results in a one-time-only implementation of many tree-management features, and can be used immediately by every type of application hierarchy.

- *Open metadata* that can be read by any application that needs to use tree-management hierarchies.

- *Tree structures* that capture the business rules to which the data must adhere.

- *ADF Business Components view objects* that are used as data sources, eliminating the need to build new types of data sources.

- *Hierarchical relationships between entities that are external to the entity itself*, that enables multiple hierarchical views to be implemented for the same set of entities. Each of these hierarchies can be used to implement a different business function.

- *Data flattening* that improves query performance against the hierarchical data, especially for hierarchical queries such as roll-up queries.

- *Business events* that can be consumed by any application requiring additional processing on specific tree operations.

- *Tree- and node-level access control* that eliminates the need for product teams to write their own access-control code.

- *Well-defined APIs available for metadata and data* that make it easy to write migration tools for existing hierarchies in Oracle E-Business Suite, PeopleSoft, and Siebel.

The Attachment component provides a declarative programming mechanism for adding attachments to the UI pages that you create for Oracle Fusion web applications. Once added to a UI page, the component gives users the ability to associate a URL, desktop file, repository file or folder, or text with a business object, such as an expense report, contract, or purchase order.

Applications Core creates simplified methods of implementing these complex requirements by providing robust metadata and comprehensive UI components and services. All of the Applications Core components have been integrated with the rest of the Oracle Fusion Middleware infrastructure so that they are available across every layer of the Oracle Fusion Applications platform.

3.2 Oracle Enterprise Scheduler

Oracle Enterprise Scheduler provides the ability to define, schedule, and run different types of jobs. You can run jobs on demand, or schedule them to run in the future.

Oracle Enterprise Scheduler provides scheduling services for the following purposes:

- To distribute job request processing across a grid of application servers

- To run Java, PL/SQL, spawned jobs, binary processes, and Oracle Business Intelligence Publisher reports

- To process multiple jobs concurrently

- To schedule job requests to run a single time in the future, on a recurring basis, or based on triggering events

- To run the same job in different languages

Oracle Enterprise Manager Fusion Applications Control (Fusion Applications Control) enables you to start and stop, monitor, configure, and manage Oracle Enterprise Scheduler services, components, and job requests.

The main Oracle Enterprise Scheduler page provides information for you to monitor activity and diagnose problems.

Oracle Enterprise Scheduler provides support for the following features:

- Workshifts enable you to configure windows of time during which jobs can run, such as running high CPU jobs only at night.

- Job dependencies and incompatibilities enable you to, for example, run import jobs before report jobs, or ensure that a payroll job does not run at the same time as a salary increase.

- Throttling and prioritization using work assignments enable you to, for example, ensure that no more than 70 Oracle Fusion Financials jobs should run concurrently. A newly submitted Oracle Fusion Customer Relationship Management job should not wait for 5,000 Oracle Fusion Financials jobs to execute.

Fusion Applications Control enables you to define, control, and manage Oracle Enterprise Scheduler job metadata, including job definitions, job sets (a collection of job requests), incompatibilities (job definitions that cannot run at the same time for a given application), and schedules governing the execution of job requests. It also provides you with the ability to create new jobs.

For more information, see the "Managing Oracle Enterprise Scheduler Service and Jobs" chapter in the *Oracle Fusion Applications Administrator's Guide* and the *Oracle Fusion Applications Developer's Guide for Oracle Enterprise Scheduler*.

3.3 Oracle Enterprise Crawl and Search Framework (ECSF)

ECSF is an Oracle Fusion Middleware search framework with a metadata-driven, declarative design time and runtime interface. It exposes application context information on business objects for full-text transactional search.

The integration of ECSF, Oracle Secure Enterprise Search (Oracle SES), and a source system, such as a relational database where the searchable information resides, forms Oracle Fusion Applications Search. Oracle Fusion Applications Search is the search platform that provides a seamless search experience to the Oracle Fusion Applications user for easily locating and taking action on relevant data.

Benefits of ECSF include:

- Transparent integration of applications with search engines, which minimizes development time and maximizes the user experience with search

- Code reuse, through use of a well-designed set of abstract classes, to reduce long design cycles

- Basic platform for developing a search mechanism, which helps new developers grasp the conceptual flow of work easily

- Centralized process and control mechanism, which enhances search functionality

- Wide range of optimizations that offer better control to leverage search results

Key ECSF features that are built on top of Oracle SES and enhance the Oracle Fusion Applications user experience when searching include:

- Basic search, which enables queries based on keyword and search category.

- Advanced search, which enables queries based on a keyword, a search category, and up to 100 attribute filters.

- Faceted navigation, which enables the filtering of search results based on attributes of the business objects. Users can navigate a search result set based on a set of predefined facets, or dimensions. This feature returns a list of facets and their associated set of available values with the search result. Users can select a value for each facet, which is then submitted with the search query in order to narrow down the result set.

- Actionable results, which are search results with action links associated with the searchable objects. From the search results users can either go straight to the page displaying the record they selected, or they can invoke a specific task on a search result.

- Saved searches, which enables saved search criteria for later use. Users can create new saved search entries, edit and delete existing saved search entries, and retrieve user-specified or public saved search entries.

- File attachments, which enable the crawling of attachments that are associated with Oracle Fusion Applications transactional objects or records.

- Crawling, or gathering information from, Oracle WebCenter tags, which supports crawling searchable objects that contain WebCenter tags.

- Crawling tree structures, which supports search functionality on source systems containing data that is organized in a tree structure (for example, Oracle Business Intelligence (BI) Catalog).

- Search support for external data sources, which enables querying against search groups that contain external data sources, which are non-ECSF related data sources, such as wiki pages and blogs, that are directly crawled by Oracle SES.

For more information, see the "Using Oracle Enterprise Crawl and Search Framework" part in the *Oracle Fusion Applications Developer's Guide* and the "Managing Search with Oracle Enterprise Crawl and Search Framework" section in the *Oracle Fusion Applications Administrator's Guide*.

3.4 Oracle Fusion Functional Setup Manager

Oracle Fusion Functional Setup Manager provides a single user interface for performing all tasks related to Oracle Fusion Applications setup after installation and helps you to easily move the setup data between instances to reduce implementation time.

Benefits of using Oracle Fusion Functional Setup Manager include:

- Minimizing time to deploy with predefined setup offerings, guided and sequential task lists, and the ability to set up once and import or export to many instances

- Enabling you to configure offerings to fit your business needs; you can create custom tasks and task lists to extend offerings

- Maximizing productivity by offering built-in analysis and reporting functionality

Oracle Fusion Functional Setup Manager offers:

- A single entry point to set up applications, which enables you to manage all aspects of functional setup in one interface

- A built in decision tree to fine tune your configuration

- Pre-packaged facilities to export and import setup data consistently and quickly

- Pre-seeded setup templates and guided task flows

- Built-in collaboration and reporting

- Full extensibility to create custom setup objects

- Rapid start with predefined configuration packages

- Capability to easily import offerings from one instance to another and easily distribute new offerings

- A user interface to review the topology hierarchy and configuration of your installation

Users of Oracle Fusion Functional Setup Manager include the application implementation manager, the functional user, and the application implementation consultants. The application implementation managers are the project managers who oversee the entire application implementation. They create the implementation projects, configure offerings, and assign users. The functional users are responsible for entering and verify the setup data for the functional area where they are the subject matter expert. They execute the setup tasks. The application implementation consultants are super users who assume the roles of both the application implementation manager and the functional user. They can perform any setup manager task or product specific setup task, and export and import setup data to move data across environments.

The basic steps for implementing an application using Oracle Fusion Functional Setup Manager include the following:

1. The implementation manager reviews and understands the offerings during the planning phase, then selects the offerings, options, and features to implement.

2. The implementation manager then creates an implementation project and assigns the setup tasks.

3. The functional user reviews and executes the assigned setup tasks, and validates the implementation.

4. The implementation manager deploys the implementation to the production environment by preparing the configuration package and exporting the setup data from the development instance, and importing it into the production instance.

5. The functional user maintains the environment with ongoing setup changes.

Offerings are the highest grouping of business functionality that can be implemented and stand on its own. It includes foundation functionality and configurable options and features to fine tune the business processes. An offering provides a comprehensive list of all setup tasks required to enable business functionality. It includes all transactional tasks, Java EE applications, and business objects. For example, Oracle Procurement is an offering.

Options are the next level grouping of business functionality that can be optionally implemented. They often represent functionality that can be licensed. Selections of options modify the setup task list and can affect the UIs. For example, Payables and Procurement Contracts are options for the Procurement offering.

Features are the lowest level grouping of business functionality that enables fine tuning of business functionality. Selections of features modify the setup task list and can affect the UIs.

An *implementation project* is a high-level container of all the setup tasks to enable business functionality. It defines the scope of what you want to implement and includes one or more offerings, task lists, or tasks. The scope sets the context of the task lists and for export and import.

A *task list* is a list of sequential setup tasks required to enable business functionality. It is dynamically generated and includes all the setup tasks you must implement, including any prerequisites.

The *configuration package* is used to deploy and move setup data across environments, such as from the development environment to the production environment. A configuration package is a ZIP file that contains the setup tasks and setup data for a given implementation. It is created based on an implementation project to identify the setup data and objects that were used to enter the setup data for the corresponding implementation.

For more information, see the *Oracle Fusion Applications Information Technology Management, Implement Applications Guide*.

4

Oracle Fusion Middleware Components

The applications for a product family are deployed to an Oracle WebLogic Server domain in the Oracle Fusion Middleware technology stack. This chapter describes the Oracle Fusion Middleware components that support that deployment.

This chapter contains the following topics:

- Oracle WebLogic Server
- Oracle WebLogic Communication Services
- Oracle Identity Management
- Oracle WebCenter
- Oracle Business Intelligence
- Oracle SOA Suite
- Oracle Application Development Framework
- Oracle JDeveloper
- Oracle HTTP Server
- Oracle HTTP Server WebGate
- Oracle Web Services Manager Policy Manager
- Oracle Enterprise Content Management Suite
- Oracle Data Integrator
- Oracle Secure Enterprise Search

4.1 Oracle WebLogic Server

Oracle WebLogic Server is an enterprise-ready Java application server that supports the deployment of many types of distributed applications in a robust, secure, highly available, and scalable environment. Oracle WebLogic Server is an ideal foundation for building and deploying enterprise Java EE applications based on service-oriented architecture (SOA).

For more information, see the "Oracle WebLogic Server" section in *Oracle Fusion Middleware Concepts* and *Oracle Fusion Middleware Introduction to Oracle WebLogic Server*.

4.2 Oracle WebLogic Communication Services

Oracle WebLogic Communication Services provides click-to-dial functionality for applications primarily through contextual actions. Contextual actions provide related

information and actions to users within the immediate context of the object instances upon which they act.

For more information, see the "Managing Oracle WebLogic Communication Services for Click-to-Dial Functionality" chapter in the *Oracle Fusion Applications Administrator's Guide*.

4.3 Oracle Identity Management

Oracle Identity Management is an enterprise identity management system that automatically manages user access privileges across all resources in an enterprise. It provides a shared infrastructure for all applications and management throughout the entire identity management lifecycle: from initial creation of access privileges to dynamically adapting to changes in enterprise business requirements. It also provides services and interfaces that facilitate third-party enterprise application development. These interfaces are useful for application developers who must incorporate identity management into applications.

Oracle Identity Management includes the following components:

- Oracle Access Manager provides an identity management and access control system that is shared by all your applications. The result is a centralized and automated Oracle Single Sign-on (SSO) solution for managing who has access to what information across your entire IT infrastructure.

  For more information, see the *Oracle Fusion Middleware Administrator's Guide for Oracle Access Manager with Oracle Security Token Service*.

- Oracle Authorization Policy Manager is a GUI tool for managing the authorization policy for applications based on Oracle Platform Security Services.

  For more information, see the *Oracle Fusion Middleware Oracle Authorization Policy Manager Administrator's Guide (Oracle Fusion Applications Edition)*.

- Oracle Identity Manager is a user provisioning and administration solution that automates the process of adding, updating, and deleting user accounts from applications and directories. It improves regulatory compliance by providing detailed reports that identify which users have access to which applications.

  For more information, see the *Oracle Fusion Middleware System Administrator's Guide for Oracle Identity Manager*.

- Oracle Internet Directory serves as the central user repository for Oracle Identity Management, simplifying user administration in the Oracle environment and providing a standards-based general purpose directory for the diverse enterprise.

  For more information, see the *Oracle Fusion Middleware Administrator's Guide for Oracle Internet Directory*.

- Oracle Virtual Directory is a Lightweight Directory Access Protocol (LDAP) service that provides a single, abstracted view of enterprise directory servers and databases from a variety of vendors. Oracle Virtual Directory can serve as a single source of facts in an environment with multiple data sources.

  For more information, see the *Oracle Fusion Middleware Administrator's Guide for Oracle Virtual Directory*.

For more information about Oracle Identity Management, see the *Oracle Identity Management Integration Guide*.

4.4 Oracle WebCenter

Oracle WebCenter contains an integrated set of components for building social applications, enterprise portals, collaborative communities or social sites, and composite applications. Built on a standards-based, service-oriented architecture, Oracle WebCenter combines dynamic user interface technologies with which to develop rich internet applications, the flexibility and power of an integrated, multichannel portal framework, and a set of horizontal Enterprise 2.0 capabilities delivered as services that provide content, collaboration, presence, and social networking capabilities.

Oracle WebCenter comprises four components:

- Oracle WebCenter Framework, an Oracle JDeveloper design time extension that enables you to embed portlets, Oracle Applications Development Framework (Oracle ADF) taskflows, content, and customizable components in your applications.

- Oracle WebCenter Services, a set of independently deployable collaboration services, that incorporates Web 2.0 components such as content, collaboration, and communication services. Oracle WebCenter Services includes task flows or portlets that can be embedded directly into Oracle ADF applications. In addition, you can use APIs to create custom UIs and to integrate some of these services into non-Oracle ADF applications.

- Oracle WebCenter Spaces, a closed source application built on Oracle WebCenter Framework and Oracle WebCenter Services that offers a configurable work environment that enables individuals and groups to work and collaborate more effectively.

- Oracle Composer, a tool that enables any application or portal to be customized or personalized after it has been deployed and is in use. Integrated with Oracle WebCenter Framework and Oracle WebCenter Services, it is used extensively inside WebCenter Spaces to enable you to customize and personalize group and personal spaces.

For more information, see the *Oracle Fusion Middleware Developer's Guide for Oracle WebCenter* and *Oracle Fusion Middleware Administrator's Guide for Oracle WebCenter*.

4.5 Oracle Business Intelligence

Oracle Business Intelligence (Oracle BI) offers a complete, integrated solution that generates and delivers analyses for Oracle Fusion Applications.

The Oracle Business Intelligence platform is an enterprise-class platform for all modes of analysis and information delivery, including dashboards, ad hoc analysis, online analytical processing (OLAP), predictive analytics, and enterprise reporting. You can access information through multiple channels, such as web-based user interfaces, industry standard portals, mobile devices, and the Microsoft Office Suite of applications. You can push information to users through notifications, or embed it within business process workflows. Oracle Business Intelligence simplifies systems deployment and management through integrated systems management capabilities.

Oracle Business Intelligence products integrated with Oracle Fusion Applications include:

- Oracle Business Intelligence Enterprise Edition is a comprehensive set of enterprise business intelligence tools and infrastructure that includes a scalable and efficient query and analysis server, an ad hoc query and analysis tool,

interactive dashboards, proactive intelligence and alerts, and an enterprise reporting engine.

For more information, see the *Oracle Fusion Middleware System Administrator's Guide for Oracle Business Intelligence Enterprise Edition*.

■ Oracle Business Intelligence Applications is a complete, prebuilt solutions that delivers intuitive, role-based intelligence throughout an organization. This solution enables organizations to gain more insight and greater value from a range of data sources and applications. After running the Oracle Fusion applications, you can configure Oracle Business Intelligence Applications to analyze the history and trends of transactional data.

Oracle Business Intelligence Applications reporting uses Oracle Business Analytics Warehouse, a unified data repository for all customer-centric data, used to support the analytical requirements of Oracle Business Intelligence Applications. Oracle Business Intelligence Applications supplies the warehouse database schema and the logic that extracts data from the Oracle Fusion Applications transactional database and loads it to the warehouse. Oracle Fusion Applications end users interact with the information in Oracle Business Analytics Warehouse using Oracle BI Enterprise Edition components (such as Answers and Dashboards).

For information about configuring Oracle Business Intelligence Applications, see the "Roadmap for Functional Configuration" chapter in the *Oracle Fusion Middleware Configuration Guide for Oracle Business Intelligence Applications*.

■ Oracle Transactional Business Intelligence is an ad hoc query and self-service analysis solution offered to all Oracle Fusion Applications customers. It uses Oracle BI Enterprise Edition to provide an easy-to-use interface for business users to perform current state analysis of their business applications. Constructed queries and reports are executed in real time against the transactional schema supported by a layer of view objects. Oracle Transactional Business Intelligence enables you to use object data sources in addition to SQL data sources. SQL for the object is coded by the developer, which improves performance and efficiency.

For more information about configuring Oracle Transactional Business Intelligence, see the *Oracle Fusion Applications Installation Guide*.

■ Oracle Essbase is an online analytical processing (OLAP) server that provides an environment for deploying prepackaged applications or developing custom analytic and enterprise performance management applications.

For more information, see the *Oracle Essbase Database Administrator's Guide* at http://download.oracle.com/docs/cd/E17236_01/nav/portal_3.htm.

■ Oracle Business Intelligence Publisher is an enterprise reporting solution for authoring, managing, and delivering reports from multiple data sources in multiple formats through multiple channels.

For more information, see the "Managing Report Delivery Servers" chapter of the *Oracle Fusion Applications Administrator's Guide*.

■ Oracle Real-Time Decisions is a platform that combines both rules and predictive analytics to apply real-time business intelligence at the point of contact to optimize every single interaction with your customers by infusing analytical decisions into each transaction at the point of interaction.

For more information, see the *Oracle Fusion Middleware Platform Developer's Guide for Oracle Real-Time Decisions*.

4.6 Oracle SOA Suite

Oracle SOA Suite is a single process platform for human-centric, system-centric, and document-centric business processes. It is also a complete and integrated process foundation that connects IT, business users, customers, and partners with the applications and processes that drive business. Oracle SOA Suite offers developers drag and drop composition and revision of business processes, resulting in reuse, faster application development, assembly, and solution delivery. The event delivery network of Oracle SOA Suite unifies business events and services in a single declarative environment.

Oracle SOA Suite is a comprehensive, hot-pluggable software suite for building, deploying, and managing a service-oriented architecture (SOA). The components of the suite benefit from common capabilities that include consistent tooling, a single deployment and management model, end-to-end security, and unified metadata management.

Oracle SOA Suite includes the following components:

- Oracle Business Rules makes processes and applications more flexible by enabling business analysts and non-developers to easily define and modify business logic without programming. By defining and maintaining business rules outside of the related process or application and using a separate, more intuitive web-based interface, Oracle Business Rules provides faster, easier rule modifications and reduces subsequent redeployment costs.

  For more information, see the *Oracle Fusion Middleware User's Guide for Oracle Business Rules*, the *Oracle Fusion Middleware Developer's Guide for Oracle SOA Suite*, and the *Oracle Fusion Middleware Language Reference Guide for Oracle Business Rules*.

- Oracle Business Activity Monitoring (Oracle BAM), an application built on an innovative, message-based, event-driven, and memory-resident architecture, is a complete solution for building interactive, real-time dashboards and proactive alerts for monitoring business processes and services.

  For more information, see the *Oracle Fusion Middleware User's Guide for Oracle Business Activity Monitoring*.

- Oracle B2B (Business to Business) enables an enterprise to define, configure, manage, and monitor the electronic exchange of information with its trading partners. It enables document management, transport and exchange management, partner management, reports and monitoring, and system management.

  For more information, see the *Oracle Fusion Middleware User's Guide for Oracle B2B*.

- Oracle BPEL Process Manager, a runtime environment for BPEL (Business Process Execution Language) processes, provides a comprehensive, standards-based, and easy-to-use solution for creating, deploying, and managing cross-application business processes with both automated and human workflow steps. It provides high-performance, reliable execution of service-oriented business processes defined with the BPEL standard.

  Oracle BPEL Process Manager includes a native BPEL engine that executes the processes. This approach not only permits reuse, but also enables visibility into in-flight business processes at the individual and aggregate level (the latter being provided by Oracle BAM), and lays the foundation for closed-loop business process management, process improvement, and compliance.

  For more information, see the "Getting Started with Oracle BPEL Process Manager" chapter in the *Oracle Fusion Middleware Developer's Guide for Oracle SOA Suite*.

■ Oracle User Messaging Service enables two-way communication between users and deployed applications. It supports both Java APIs and web services for integration. The channels supported include SMS, e-mail, instant messaging, and voice messages. Oracle User Messaging Service also supports intelligent messaging in which the final destination of a message is determined by a user's preferences.

For more information, see the "Oracle User Messaging Service" chapter in the *Oracle Fusion Middleware Developer's Guide for Oracle SOA Suite*.

■ Oracle Human Workflow is responsible for managing the lifecycle of human tasks, including creation, assignment, expiration, deadlines, and notifications, and presentation of tasks to users. It supports sophisticated, dynamic task routing that leverages declarative patterns and tight integration with business rules. The three main subcomponents of Oracle Human Workflow are Task Editor, Task Service Engine, and Worklist Application.

For more information see the "Getting Started with Human Workflow" chapter in the *Oracle Fusion Middleware Developer's Guide for Oracle SOA Suite*.

■ Oracle Mediator provides a lightweight framework to mediate between various components within a composite application. Mediation capabilities include selective routing, transformation, and validation capabilities, along with various message exchange patterns, such as synchronous, asynchronous, and event publishing or subscriptions. Besides mediation, Oracle Mediator converts data to facilitate communication between interfaces exposed by various components, which are connected to build a SOA composite application.

For more information, see the "Getting Started with Oracle Mediator" chapter in the *Oracle Fusion Middleware Developer's Guide for Oracle SOA Suite*.

■ Oracle Business Process Management Suite(Oracle BPM Suite) provides a unified BPM platform for managing processes around people, systems, and documents, and enables users across the enterprise to access and collaborate on tasks through simplified business process management.

Oracle BPM combines BPEL and Business Process Modeling Notation (BPMN) 2.0 and provides a unified process engine that controls the integration of enterprise systems and simplifies their implementation. It executes BPEL and BPMN processes in addition to implementing workflow rules and is integrated with Oracle SOA Suite and Oracle Business Intelligence Suite.

For more information, see the *Oracle Fusion Middleware Modeling and Implementation Guide for Oracle Business Process Management*.

■ Guided Business Processes help you to organize the activities in your process into milestones. They hide the complexity of the process and guide you through the relevant tasks. Guided Business Processes improve the user experience by providing a guided visual representation of a process flow and an encapsulated hierarchical view of the business process.

Guided Business Processes leverage Oracle SOA Suite, which provides a foundation for, and access to, reusable services. In addition, SOA and the process orchestration infrastructure acts as the controlling agent for the business process across multiple disparate systems.

Guided Business Processes use Oracle BPEL Process Manager to provide a comprehensive, standards-based, easy-to-use solution for creating, deploying, and managing composite application business processes with both automated and human workflow steps—all in a service-oriented architecture. Guided Business Processes also rely on Oracle BPEL Process Manager to coordinate tasks,

combining Oracle BPEL Process Manager, worklist applications, and human task flows to link disparate human tasks to a long-running process.

For more information, see the "Working with Guided Business Processes" chapter in the *Oracle Fusion Middleware Modeling and Implementation Guide for Oracle Business Process Management*.

4.7 Oracle Application Development Framework

Oracle ADF is an end-to-end Java EE framework that simplifies application development by providing ready-to-use infrastructure services and a visual and declarative development experience. It supports rapid application development based on readily available design patterns and metadata-driven and visual tools.

By minimizing the need to write code that implements the application's infrastructure, Oracle ADF simplifies Java EE development. This enables users to focus on the features of the actual application.

Oracle ADF is also focused on the development experience to provide a visual and declarative approach to Java EE development through the Oracle JDeveloper development tool. For more information, see Section 4.8, "Oracle JDeveloper".

Oracle ADF couples a service interface with the built-in business services to make it easy to develop flexible applications that expose data as services. This separation of business service implementation details is performed in Oracle ADF through metadata. Use of this metadata-driven architecture enables application developers to focus on the business logic and user experience, rather than on the details of how services are accessed.

Oracle ADF is based on the Model-View-Controller (MVC) design pattern. An MVC application is separated into 1) a model layer that handles interaction with data sources and runs the business logic, 2) a view layer that handles the application user interface, and 3) a controller that manages the application flow and acts as the interface between the model and the view layers. Oracle ADF further separates the model layer from the business services to enable service-oriented development of applications. The Oracle ADF architecture is based on four layers:

- The business service layer simplifies building business services by providing access to data from various sources and handling business logic. In Oracle Fusion Applications, the business service layer is implemented in ADF Business Components. ADF Business Components are prebuilt application objects that accelerate the delivery and maintenance of high-performance, highly functional, database-centric services and provide a ready-to-use implementation of Java EE design patterns and best practices. They provide the key components (entity object, view object, and application module) to simplify building database-centric business services.

  For more information, see the "Getting Started with Business Services" chapter in the *Oracle Fusion Applications Developer's Guide* and the "Getting Started with ADF Business Components" chapter in the *Oracle Fusion Middleware Fusion Developer's Guide for Oracle Application Development Framework*.

- The model layer connects the business services to the objects that use them in the other layers. In Oracle Fusion Applications, the ADF Model layer stores the implementation details of the business services in metadata to enable developers to exchange services without modifying the user interface, making the application extremely agile. Developers creating user interfaces need not be concerned with business service access details. Instead, they can focus on developing the application interface and interaction logic.

For more information, see the "Using Oracle ADF Model in a Fusion Web Application" chapter in the *Oracle Fusion Middleware Fusion Developer's Guide for Oracle Application Development Framework*.

■ The controller layer manages the applications flow and handles user input. You typically design your application flow by laying out pages and navigation rules on a diagram in Oracle JDeveloper. Using ADF Controller, you can break your application's flow into smaller, reusable task flows; include nonvisual components such as method calls in your flow; and create page fragment flows that run inside a region of a single containing page. This approach encourages maximum reusability for user interface fragments and simplified integration into portals and mashup applications.

For more information, see the "Getting Started with ADF Task Flows" chapter in the *Oracle Fusion Middleware Fusion Developer's Guide for Oracle Application Development Framework*.

■ The view layer provides the user interface of the application. The view layer for Oracle Fusion Applications is based on the ADF Faces rich client framework, which includes a set of over a 150 Ajax-enabled JavaServer Faces (JSF) components that let you build a richer user interface for your applications. Ajax is a combination of asynchronous JavaScript, dynamic HTML (DHTML), XML, and an XmlHttpRequest communication channel. This combination enables requests to be made to the server without fully rerendering the page. While Ajax enables client-like applications to use standard Internet technologies, JSF provides server-side control, which reduces the dependency on an abundance of JavaScript often found in typical Ajax applications.

For more information, see the "Getting Started with Your Web Interface" in the *Oracle Fusion Applications Developer's Guide* and the "Introduction to ADF Faces Rich Client" chapter in the *Oracle Fusion Middleware Web User Interface Developer's Guide for Oracle Application Development Framework*.

In addition to ADF Faces, Oracle ADF also supports the following view technologies:

■ Apache MyFaces Trinidad, the open source code donation from Oracle to the Apache Software Foundation. ADF Faces components are based on these Trinidad components.

■ Java Swing and ADF Swing. ADF Swing is the development environment for building Java Swing applications that use the ADF Model layer.

■ ADF Mobile, the standards-based framework for building mobile applications built on the component model of JSF.

For more information, see the *Oracle Fusion Middleware Mobile Browser Developer's Guide for Oracle Application Development Framework*.

■ ADF Desktop Integration provides tools and components to integrate Microsoft Excel workbooks with applications built using Oracle ADF. At runtime, Excel workbooks configured by the Oracle ADF Desktop Integration module can invoke Oracle ADF components to manage data retrieved from Oracle Fusion applications.

For more information, see the *Oracle Fusion Middleware Desktop Integration Developer's Guide for Oracle Application Development Framework*.

Oracle Fusion Applications uses ADF Security, a framework that provides a security implementation based on JAAS (Java Authentication and Authorization Service). The Oracle ADF implementation of JAAS is permission-based. JDeveloper supports

making permission grants to enable fine-grained security for Oracle ADF resources of Oracle Fusion Applications.

4.8 Oracle JDeveloper

Oracle JDeveloper is the integrated development environment (IDE) used for Oracle Fusion Applications. JDeveloper is used for building service-oriented applications using the latest industry standards for Java, XML, web services, SQL, and SCA. It supports the complete development lifecycle with integrated features for modeling, coding, debugging, testing, profiling, tuning, and deploying applications. User-friendly wizards are provided to simplify many common tasks such as connecting to IT systems.

For more information on how to use JDeveloper for Oracle Fusion Applications, see the *Oracle Fusion Applications Developer's Guide*.

For general information about JDeveloper, see the JDeveloper online help.

4.9 Oracle HTTP Server

Oracle HTTP Server is a web server based on the Apache HTTP Server infrastructure. It provides a web listener for applications and the framework for hosting static and dynamic pages and applications over the web. Oracle HTTP Server includes significant enhancements that facilitate load balancing, administration, and configuration. Features such as single sign-on, clustered deployment, and high availability enhance the operation of Oracle HTTP Server.

Oracle HTTP Server enables developers to program their site in a variety of languages and technologies, such as Perl, C, C++, PHP, and Oracle PL/SQL. It can also be a proxy server, both forward and reverse. A reverse proxy server enables content served by different servers to appear as if coming from one server.

For more information, see the *Oracle Fusion Middleware Administrator's Guide for Oracle HTTP Server*.

4.10 Oracle HTTP Server WebGate

Oracle HTTP Server WebGate is a web server plug-in that is shipped ready-to-use with Oracle Access Manager. Oracle HTTP Server WebGate intercepts HTTP requests from users for web resources and forwards them to the access server for authentication and authorization.

For more information, see the *Oracle Fusion Middleware Administrator's Guide for Oracle Access Manager with Oracle Security Token Service*.

4.11 Oracle Web Services Manager Policy Manager

Oracle Web Services Manager (Oracle WSM) provides a policy framework to manage and secure web services consistently across your organization. The framework includes the Oracle Web Services Manager Policy Manager (Oracle WSM Policy Manager) that enables you to centrally define policies. It reads and writes the policies, including predefined and custom policies, from the Oracle WSM Repository.

For more information, see the *Oracle Fusion Middleware Introducing WebLogic Web Services for Oracle WebLogic Server*.

4.12 Oracle Enterprise Content Management Suite

Oracle Enterprise Content Management Suite provides an integrated suite of products designed for managing content. It features the following components:

- Oracle Universal Content Management enables you to leverage document management, web content management, digital asset management, and records retention functionality to build and complement your business applications.

  For more information, see the *Oracle Fusion Middleware System Administrator's Guide for Oracle Content Server*.

- Oracle Inbound Refinery is a conversion server that manages file conversions for electronic assets such as documents, digital images, and video. It also provides thumbnail functionality for documents and images, story boarding for video, and the ability to extract and use EXIF data from digital images and XMP data from electronic files generated from programs such as Adobe Photoshop and Adobe Illustrator.

- Oracle Imaging and Process Management provides organizations with a scalable solution upon which to develop process-oriented imaging applications and image-enablement solutions for enterprise applications.

  > **Note:** Oracle Fusion Applications implements Oracle Imaging and Process Management in Advanced Queuing mode, which has implications for what administration features can be used. For example, you cannot use the Oracle Imaging and Process Management Work Manager for Oracle Fusion Applications.

  For more information, see the *Oracle Fusion Middleware Administrator's Guide for Oracle Imaging and Process Management*.

These components can be deployed as applications to an Oracle WebLogic Server domain.

4.13 Oracle Data Integrator

Oracle Data Integrator is a comprehensive data integration platform that covers all data integration requirements: from high-volume, high-performance batch loads, to event-driven, trickle-feed integration processes, to SOA-enabled data services.

Oracle Data Integrator extracts, loads, and transforms data for the product families.

For information, see the *Oracle Fusion Middleware Getting Started with Oracle Data Integrator* and *Oracle Fusion Middleware Developer's Guide for Oracle Data Integrator*.

4.14 Oracle Secure Enterprise Search

Oracle Secure Enterprise Search provides a familiar user interface to Internet search users and enables a high-quality, secure search across all enterprise information data sources—websites, file servers, content management systems, enterprise resource planning and customer relationship management systems, business intelligence systems, and databases.

Oracle Secure Enterprise Search is the search engine for Oracle Fusion Applications Search. It provides the fundamental search capability that includes indexing, querying, and some value-added functionality such as security.

For more information, see the "Managing Search with Oracle Enterprise Crawl and Search Framework" chapter in the *Oracle Fusion Applications Administrator's Guide*.

For general information on the search engine for Oracle Fusion Applications Search, see the *Oracle Secure Enterprise Search Administrator's Guide*.

5

Oracle Fusion Applications Administration and Operations

This chapter describes Oracle Fusion Applications administration.

This chapter contains the following topics:

- Enterprise Deployment
- Management
- Scalability
- High Availability
- Load Balancing
- Logging and Diagnostic Testing Frameworks
- Cloning
- Backup and Recovery
- Moving Oracle Fusion Applications
- Patching

5.1 Enterprise Deployment

An enterprise deployment is an Oracle best practice based on proven Oracle high-availability and security technologies and recommendations for Oracle Fusion Applications. The best practices span all Oracle products across the entire technology stack: Oracle Database, Oracle Applications, Oracle Fusion Middleware, Oracle Fusion Applications, Oracle Collaboration Suite, Oracle Enterprise Manager Fusion Middleware Control, and Oracle Enterprise Manager Fusion Applications Control, Oracle Enterprise Manager Grid Control, and Oracle Enterprise Manager Database Control.

For more information about enterprise deployment for Oracle Fusion Applications, see the *Oracle Fusion Applications Enterprise Deployment Guide*.

5.2 Management

Oracle provides several tools to manage Oracle Fusion Applications, the Oracle Fusion Middleware layer, and Oracle Database within your Oracle Fusion Applications environment. Use these tools to perform all management tasks.

You can manage your environment for Oracle Fusion Applications by using one of the following management tools:

- Oracle Enterprise Manager Fusion Applications Control to monitor and administer a product family and Oracle Fusion Middleware components within the Oracle Fusion Applications environment.

  For information, see Section 5.2.1, "Oracle Enterprise Manager Fusion Applications Control".

- Oracle WebLogic Server Administration Console to manage Oracle WebLogic Server in each domain and to view and manage policies of enterprise applications.

  For information, see Section 5.2.2, "Oracle WebLogic Server Administration Console".

- Oracle WebLogic Scripting Tool to manage the Oracle Fusion Middleware components.

  For information, see Section 5.2.3, "Oracle WebLogic Scripting Tool".

- Oracle Process Manager and Notification Server to manage the Oracle Fusion Middleware components.

  For information, see Section 5.2.4, "Oracle Process Manager and Notification Server".

- Authorization Policy Manager to manage application policies.

  For information, see the *Oracle Fusion Middleware Oracle Authorization Policy Manager Administrator's Guide (Oracle Fusion Applications Edition)*.

- Oracle Access Manager Administration Console to manage system configurations, including Oracle Access Manager server instances and data sources, access policies, agent profiles, and other security elements.

  For information, see the *Oracle Fusion Middleware Administrator's Guide for Oracle Access Manager with Oracle Security Token Service*.

- Oracle Identity Manager Administrative and User Console to enable users to access the organization's resources (through self-service) and enable administrators to manage the access (by creating users and roles, and defining authorization policies).

  For information, see the *Oracle Fusion Middleware Administrator's Guide for Oracle Directory Integration Platform*.

- Oracle Enterprise Manager Database Control to monitor and manage Oracle Database for Oracle Fusion Applications.

  For information, see *Oracle Database 2 Day DBA*.

- Oracle Enterprise Manager Grid Control to monitor multiple Oracle Fusion Middleware farms and Oracle WebLogic Server domains and to help you manage Oracle Fusion Middleware and Oracle WebLogic Server more effectively and efficiently.

  For information, see the "Oracle Enterprise Manager Grid Control" section in the *Oracle Fusion Applications Administrator's Guide*.

- Logging and Diagnostic Testing Framework to track the standard operations of Oracle Fusion Applications, to verify that your Oracle Fusion Applications are operating correctly, and to help diagnose and resolve problems with Oracle Fusion Applications.

  For more information, see Section 5.6, "Logging and Diagnostic Testing Frameworks".

5.2.1 Oracle Enterprise Manager Fusion Applications Control

Fusion Applications Control is a Web browser-based, graphic user interface that you can use to monitor a product family and its products. It also enables you to monitor and administer Oracle Fusion Applications and an Oracle Fusion Middleware farm. A farm is a collection of components managed by Fusion Applications Control. It can contain an Oracle WebLogic Server domain, one Administration Server, one or more Managed Servers, clusters, and the Oracle Fusion Middleware components that are installed, configured, and running in the domain.

Fusion Applications Control organizes a wide variety of performance data and administrative functions into distinct, Web-based home pages for the product family, products, Oracle Fusion Applications, farm, domain, servers, and Oracle Fusion Middleware components. The Fusion Applications Control home pages make it easy to locate the most important monitoring data and the most commonly used administrative functions for various targets—all from your Web browser.

Fusion Applications Control provides all the functionality available in Fusion Middleware Control and adds functionality specific to Oracle Fusion Applications.

You can use Fusion Applications Control to perform the following tasks:

- Start and stop Oracle WebLogic Server instances

- Deploy and monitor SOA Composite applications

- Modify Oracle BPEL Process Manager MBean properties

- Debug applications such as Oracle BPEL Process Manager applications

- Deploy Oracle ADF applications

- Configure and manage auditing

- Configure Secure Sockets Layer (SSL) for Java components and system components

- View most log files

- Configure most settings that determine information to be logged

- Change ports for some system components

- Manage Oracle HTTP Server

- Start and stop components and applications

For more information, see the "Getting Started with Administering Oracle Fusion Applications" chapter in the *Oracle Fusion Applications Administrator's Guide*.

5.2.2 Oracle WebLogic Server Administration Console

The Oracle WebLogic Server Administration Console is a Web browser-based, graphical user interface that you can use to manage an Oracle WebLogic Server domain. It is accessible from any supported Web browser with network access to the Administration Server.

You can use the Oracle WebLogic Server Administration Console to perform the following tasks in the Oracle Fusion Applications environment:

- Create, clone, and cluster Managed Servers

- Configure, start, and stop Oracle WebLogic Server

- Create data sources and connection pools

- Create JMS queues

- Configure advanced queuing

- Deploy Java EE applications

- Configure SSL for Oracle WebLogic Server

- Change passwords

- View and manage log files, for example:

  - *DOMAIN_HOME*/servers/server_name/logs/access.log

  - *DOMAIN_HOME*/servers/server_
    name/data/ldap/log/EmbeddedLDAP.log

  - *DOMAIN_HOME*/servers/server_
    name/data/ldap/log/EmbeddedLDAPAccess.log

- Change ports for Oracle WebLogic Server and Java components

For more information, see the "Getting Started Using Oracle WebLogic Server Administration Console" section in the *Oracle Fusion Middleware Administrator's Guide*.

5.2.3 Oracle WebLogic Scripting Tool

The Oracle WebLogic Scripting Tool is a command-line scripting environment that you can use to create, manage, and monitor Oracle WebLogic Server domains. It is based on the Java scripting interpreter, Jython. In addition to supporting standard Jython features such as local variables, conditional variables, and flow control statements, Oracle WebLogic Scripting Tool provides a set of scripting functions (commands) that are specific to Oracle WebLogic Server. You can extend the Oracle WebLogic Server scripting language to suit your needs by following the Jython language syntax.

You can use any of the following modes to invoke Oracle WebLogic Scripting Tool commands:

- Interactive mode, in which you enter a command and view the response at a command-line prompt

- Script mode, which invokes a sequence of Oracle WebLogic Scripting Tool commands without requiring your input

- Embedded mode, in which you instantiate the Oracle WebLogic Scripting Tool interpreter in your Java code and use it to run Oracle WebLogic Scripting Tool commands and scripts

Oracle WebLogic Scripting Tool uses the Oracle WebLogic Server Security Framework to prevent unauthorized users from modifying a domain or from viewing encrypted data.

For more information, see *Oracle Fusion Middleware Oracle WebLogic Scripting Tool*.

5.2.4 Oracle Process Manager and Notification Server

Oracle Process Manager and Notification Server manages and monitors Oracle HTTP Server and Oracle Business Intelligence for Oracle Fusion Applications.

For more information, see the "Getting Started Using Oracle Process Manager and Notification Server" section in the *Oracle Fusion Middleware Administrator's Guide*.

5.3 Scalability

Scalability indicates the ability of a system to easily handle growing amounts of work or be readily enlarged. For example, a scalable system can handle increasing numbers of requests without adversely affecting response time and throughput.

In Oracle Fusion Applications, you can scale up or scale out the topology. When you scale up the topology, you add new Managed Servers to existing systems that are already running one or more Managed Servers. When you scale out the topology, you add new Managed Servers to new systems.

Scaling out enables organizations to improve application performance, scalability, and availability on an incremental, as-needed basis by adding multiple replicated servers. You can also use a scale-out operation to move from a non-high availability deployment to a high availability deployment.

For more information, see the "Configuring High Availability and Scaling Out Oracle Fusion Applications" chapter in the *Oracle Fusion Applications Administrator's Guide*.

5.4 High Availability

High availability refers to the ability of users to access a system without loss of service. Deploying a highly available system maximizes the time when it is available.

Providing high availability for Oracle Fusion Applications involves configuring an Oracle WebLogic Server cluster for high availability of the middle tiers and configuring Oracle Real Applications Clusters (Oracle RAC) for high availability of Oracle Database. It also involves scaling out Oracle Fusion Applications and Oracle RAC database instances.

For more information about Oracle RAC for Oracle Fusion Applications, see the "Oracle RAC Database Configuration for Oracle Fusion Application Repositories" section in the *Oracle Fusion Applications Administrator's Guide*.

An Oracle WebLogic Server cluster consists of multiple Oracle WebLogic Server instances running simultaneously and working together to provide increased scalability and reliability. A cluster appears to clients to be a single Oracle WebLogic Server instance. The server instances that constitute a cluster can run on the same system, or be located on different systems. You can increase a cluster's capacity by adding additional server instances to the cluster on an existing system, or you can add systems to the cluster to host the incremental server instances. Each server instance in a cluster must run the same version of Oracle WebLogic Server.

Oracle Fusion Applications is always deployed in a cluster to provide for future performance and scalability requirements. Even in a single instance deployment, the Oracle Fusion Applications instance is part of a cluster with one member.

For information about high availability, see the "Oracle Fusion Middleware High Availability Framework" chapter in the *Oracle Fusion Middleware High Availability Guide*.

For an overview of high availability from a problem/solution perspective, see the "High Availability" section in *Oracle Fusion Middleware Concepts*.

5.5 Load Balancing

Load balancing is the even distribution of jobs and associated communications across the computing and networking resources in your environment. For load balancing to occur:

- There must be multiple copies of an object that can do a particular job.

- Information about the location and operational status of all objects must be available.

Oracle Fusion Applications deployments are front ended by a load balancer that can be configured to distribute incoming requests using various algorithms.

Oracle Fusion Applications also has built-in load balancing capabilities for interaction between components, for example, Web server to application server (using the `mod_weblogic` module in Oracle HTTP Server) or application server to database server (using Oracle WebLogic Server's multi pool data source). In production, you should use a hardware load balancer.

5.6 Logging and Diagnostic Testing Frameworks

Log files, incidents, and diagnostic tests all gather and store information about what happens when Oracle Fusion Applications operates. You can use this information to verify and monitor standard operations and to troubleshoot problems.

Log files contain information about both standard and problematic events. Log files can help you diagnose and address some problems yourself. For example, log messages that state that a service cannot be reached might indicate a hardware failure. If you discover a more complex issue, Oracle support personnel may use log files to trace the execution code paths of relevant requests, as part of diagnosing the problem. Log files are particularly helpful if your Oracle implementation contains custom code that needs debugging, especially when using a debugger is not feasible, such as on a production system. The tool for working with logs is Oracle Enterprise Manager Fusion Applications Control.

Incidents are collections of information about problematic system events. Oracle Fusion Applications leverages the Diagnostic Testing Framework for Oracle Fusion Middleware to collect diagnostic information into incidents. An incident contains information about the state of the system at the time the problem occurs. If certain particularly problematic error conditions occur, information is automatically gathered into incidents, in addition to the information that you can gather from viewing Oracle Fusion Applications log files. The information associated with an incident may also include detailed operational information collected by the QuickTrace (in-memory logging) feature for Oracle Fusion Applications.

QuickTrace enables you to continuously write a specified level of log detail to a continuously recycled area of memory, rather than writing it to a log file. If an incident occurs, the information logged in memory is dumped to a file associated with the incident. This is an automatic way of gathering operational information constantly, without a prohibitive performance hit, by saving it only when a problem is detected.

Diagnostic tests are executable files that are designed to exercise particular aspects of Oracle Fusion Applications, to determine whether they are operating correctly, and to help identify and resolve any problems. The Diagnostic Testing Framework for Oracle Fusion Applications enables you to execute diagnostic tests and collect the results into detailed diagnostic reports. Oracle provides diagnostics tests that are installed with Oracle Fusion Applications releases and patches. The Diagnostic Testing Framework provides two interfaces:

- The Diagnostic Dashboard application provides a graphical user interface that lets you register, execute, and monitor diagnostic tests for Oracle Fusion Applications. It also works with diagnostic test registration tags and purges diagnostic test results.

- The `diagctl` command-line interface lets you execute external diagnostic tests, view reports of the results, and register any special-purpose diagnostic tests that Oracle Support Services may provide to you.

For more information, see the "Managing Oracle Fusion Applications Log Files and Diagnostic Tests" and "Troubleshooting Oracle Fusion Applications Using Incidents, Logs, QuickTrace, and Diagnostic Tests" chapters in the *Oracle Fusion Applications Administrator's Guide*.

For more information, see the "Diagnosing Problems" chapter in the *Oracle Fusion Middleware Administrator's Guide*.

5.7 Cloning

Cloning is the process of copying an existing entity to a different location while preserving its state.

Some situations in which cloning Oracle Fusion Applications is useful are:

- Creating a Middleware home or an Oracle home that is a copy of a production, test, or development environment.

  Cloning enables you to create a new Middleware home or an Oracle home with all patches applied to it in a single step. This eliminates the need to install, configure and apply any patches to separate Oracle homes individually. You can clone the Middleware home and all of the Oracle homes within the Middleware home. You can clone a Middleware home that contains no Oracle homes.

  A Middleware home is a container for the Oracle WebLogic Server home and, optionally, one Oracle Common home and one or more Oracle homes. A Middleware home can reside on a local file system or on a remote shared disk that is accessible through Network File System (NFS).

  The Oracle home contains installed files necessary to host a specific component or software suite. An Oracle home resides within the directory structure of the Middleware home. Each Oracle home can be associated with multiple Oracle instances or Oracle WebLogic Server domains. There can be multiple Oracle homes within each Middleware home.

- Preparing a *gold* image of a patched home and deploying it to many hosts.

The cloned entity behaves the same as the source entity. For example, a cloned Oracle home can be uninstalled or patched using the installer. It can also be used as the source for another cloning operation.

For more information, see the *Oracle Fusion Middleware Administrator's Guide*.

5.8 Backup and Recovery

An Oracle Fusion Applications environment can consist of different Oracle Fusion Applications product families. It is built on Oracle Fusion Middleware, which contains Oracle WebLogic Server domains with Java components, such as Oracle SOA Suite, and system components such as Oracle HTTP Server and Oracle Web Cache, and a separate Oracle WebLogic Server domain with Identity Management components, such as Oracle Internet Directory and Oracle Virtual Directory.

The installations of an Oracle Fusion Applications environment are interdependent in that they contain configuration information, applications, and data that are kept synchronized. For example, when you perform a configuration change, you might

update configuration files in the installation. When you deploy an application, you might deploy it to all Managed Servers in a domain or cluster.

It is therefore important to consider your entire Oracle Fusion Applications environment when performing backup and recovery. You should back up your entire Oracle Fusion Applications environment as soon as you have installed and configured it, then periodically thereafter perform incremental backup operations. If a loss occurs, you can restore your environment to a consistent state using the backups.

For more information, see the "Backing Up and Recovering Oracle Fusion Applications" chapter in the *Oracle Fusion Applications Administrator's Guide*.

5.9 Moving Oracle Fusion Applications

Replicating an Oracle Fusion Applications environment requires moving Oracle Fusion Applications components from one environment to another. The task of moving Oracle Fusion Applications components from one environment to another is simplified by movement tools (scripts for moving binary and configuration information). These tools minimize the amount of work that would otherwise be required to reapply all the customization and configuration changes made in one environment to another.

In a full-movement scenario, the target environment does not exist. First, the source environment is created, configured, customized, and tested. Then, the target environment is created by moving all the components along with their configurations from the source environment.

With the completion of the full-movement tasks, the following artifacts are moved from the source environment to the target environment:

- Seed data (created with Oracle Fusion Middleware Repository Creation Utility (RCU) in the target environment)

- WebLogic Server domain configuration, stored in the file system

- System component configuration, stored in the file system

- Configuration and metadata stored in Oracle Metadata Services (MDS), such as Oracle Application Development Framework (Oracle ADF) connections, service-oriented architecture (SOA) composites, and so on

- Configuration and metadata stored in component-specific schemas outside of MDS

- Non-user layer customizations, such as Site and Enterprise Layer, in MDS

- Security artifacts created by the Oracle Fusion Applications Provisioning framework, such as application IDs, policies, and so on

- Functional setup data

For more information, see the "Moving Components for Oracle Fusion Applications Across Environments" chapter in the *Oracle Fusion Applications Administrator's Guide*.

5.10 Patching

The lifecycle of Oracle Fusion Applications begins with its installation and continues with ongoing patching and maintenance activities. The Oracle Fusion Applications patching framework provides the tools needed to support updates to Oracle Fusion Applications software between major releases.

This framework provides the following tools:

- Oracle Fusion Applications Patch Manager, for applying standard and one-off patches

- HomeChecker, for verifying the correctness of any Oracle Fusion Applications Oracle home directory

- AD Administration, for performing maintenance tasks to keep the Oracle Fusion Applications system running smoothly after its installation

- AD Controller, for determining the status of AD Administration or Oracle Fusion Applications AutoPatch workers and for controlling their actions

For more information, see the *Oracle Fusion Applications Patching Guide*.