

Oracle On-Demand – A 360 Degree and a 365 Day View

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Abstract

Public sector organizations face unique challenges including an aging workforce, limited technical resources, the need to plan following specified budget cycles, and complex integration requirements with government-mandated systems. In addition, many public sector organizations including all federal agencies are required to evaluate and consider outsourcing options for their technical infrastructure. This presentation provides insights and “lessons learned” from one large government agency that migrated to Oracle On-Demand and how the Software as a Service (“SaaS”) model has helped address many of the requirements facing a public sector organization. The presentation provides details on what needs to be considered when selecting a hosting provider, implementing in a Shared Service Provider (SSP) model including the use of Oracle-proscribed CEMLI remediation strategies and BOLINF requirements, and sustaining a large system following this model.

Oracle On-Demand Model and Services

Oracle On-Demand for public sector represents a new method for delivery and management of software. Instead of the traditional and somewhat disparate processes of licensing software and software management services, the Oracle On-Demand model is offering “software as a service.” In this new paradigm software can be considered an “outsourced service.” Oracle On-Demand represents a comprehensive and complete set of managed application services for administering, managing, and maintaining the Oracle Applications, Oracle Fusion Middleware, and Oracle Database technology. Oracle On-Demand is offered in three flavors and includes:

On-Demand Option	Characteristics
@Oracle	<p>Oracle installs the application software on servers located in one of the secure data centers, and provides experts who manage the application, database, operating system, and hardware. The Oracle Austin, Texas Data Center is a world class, Tier IV facility, which maintains segregated operational support for federal and public sector clients.</p> <p>Purchase of Computer and Administration Services is also referred to as @Oracle. In the @Oracle model, Oracle provides the Oracle On-Demand server storage and backup infrastructure. The hardware is located and managed at an Oracle data center, e.g., Austin, Texas Tier IV center. Oracle is responsible for providing system administration and maintains environmental conditions required to operate the configuration. The customer is responsible for ensuring that the network and systems comply with the specifications that Oracle provides and that all components of the customer’s Oracle software</p>

On-Demand Option	Characteristics
	environment are accessible through VPN. Oracle is not responsible for network connections or for problems arising from or related to network connections, such as bandwidth issues, excessive latency, network outages, or for any other conditions caused by an Internet Service Provider or other network connection.
@Customer	<p>Administration Services is also referred to as @Customer. In the @Customer model, the customer provides the necessary data center infrastructure, networking, and hardware such as the Oracle On Demand server, storage, and backup equipment. All components must meet Oracle On Demand minimum requirements. The equipment physically resides at the location of the customer's choosing:</p> <ul style="list-style-type: none"> ➤ At the customer data center ➤ At the Hosting Service Provider (HSP) data center. <p>Customer or the Hosting Service Provider is responsible for all computer services e.g., procurement, support, and maintenance. It is the responsibility of the customer to maintain a contract and a relationship with the Hosting Service Provider (HSP). To provide Oracle E-Business Suite On Demand Services, Oracle On Demand has access to Oracle E-Business Suite applications, Oracle technology software such as database and application server, and Oracle On Demand Automation Platform installed on the computers at the customer's data center.</p>
@Partner	In the @Partner model, Oracle manages the software remotely, with the servers located at a third party data center, and the partner manages the hardware and any custom or third party applications at that location.

Advantages of Oracle On Demand Services to Public Sector Organizations

Throughout the federal government and public sector organizations, there is a movement toward outsourcing many of their IT functions, which allows them to focus on their mission critical tasks. The federal government, in particular, has strongly embraced shared service providers or hosting facilities to simplify the management and operation of their IT systems, and to save billions in taxpayer dollars. Issued in 2002, the President's Management Agenda (PMA) mandates that all Federal departments and agencies explore new ways to fulfill their mission with maximum effectiveness and efficiency. Linda Combs, Controller at the U.S. Office of Management and Budget, declared that federal agencies "must consider pursuing hosting and application management of shared services."

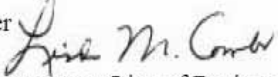
Figure 1 – Memo from Linda Combs at OMB for Evaluating Shared Services Providers



EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF MANAGEMENT AND BUDGET
WASHINGTON, D.C. 20503

December 16, 2005

MEMORANDUM FOR CHIEF FINANCIAL OFFICERS

FROM: Linda M. Combs, Controller 

SUBJECT: Update on the Financial Management Line of Business and the Financial Systems Integration Office

Achieving cost and quality improvements through the Financial Management Line of Business (FMLOB) is one of the President's top management priorities.

6. What specific actions are expected of Federal agencies?

As described above, a central goal of the FMLOB is that financial system investments will be at lower risk and lower cost as agencies leverage the economies offered by shared service solutions (i.e., COEs). To this end, OMB has instituted a policy that agencies seeking to modernize their financial system must either be designated a public COE or must migrate to a COE (public, private, or a combination of both). Although exceptions to this policy will be made in limited situations when an agency demonstrates compelling evidence of a best value and lower risk alternative, it is OMB's intent to avoid investments in "in-house" solutions wherever possible so that the shared service framework can fully achieve potential and anticipated returns.

There are a number of advantages to federal agencies and other public sector organizations for using the Oracle On Demand model. These include the following:

- **Allows Organization to Focus on Core Business Functions.** By outsourcing the IT and support services functions allows the agency or organization to focus on its core mission functions. For instance, the U.S. Social Security Administration recently migrated to Oracle On Demand running the E-Business Suite. This move will allow the agency to focus on administering Social Security benefits and less on maintaining costly and complex IT facilities to support the financial systems functions.
- **Streamlines IT and Systems Procurement Process.** Using Oracle On Demand services coupled with the Oracle E-Business Suite and Oracle Support Services is advantageous to the agency in that the procurement involves fewer parties. In essence, procuring software, software and hardware services and support from one vendor eliminates additional transactions. This is not to mention procurement of much of the hardware and hardware maintenance is eliminated altogether.
- **Avoids Risks Associated with Human Capital Retention.** A key risk for public sector organizations is attracting and retaining management and staff that have the skills to manage and oversee systems. In the federal government, there is the issue of an aging workforce, employees taking advantage of "early out" programs and personnel taking higher paying positions in the private sector. The On Demand model provides a mechanism for mitigating much of that risk.
- **Provides Predictable Annual Costs.** A key component of public sector organizations is the annual and out year budget formulation process. The Oracle On Demand model has the advantage of having predictable costs for services and this helps the agency provide more accurate cost estimates when preparing the requested budget.

- **Provides Standardized Framework for Development and Customization.** Public sector organizations inherently have very complex and numerous interfaces with legacy systems, not to mention stringent requirements for data retention. With these legacy systems and requirements, this leads to the need to design, develop and test extensions including interface and conversion routines and reports. Using the On Demand model, any and all development work must follow proscribed standards from Oracle. This
- **Meets Mandated Security Requirements.** Oracle On Demand Security Option includes high-security services for agencies and departments within the U.S. Government. Oracle's security services are fully compliant with a range of Federal legislative and executive mandates and directives relating to the hosting, access, management, operations, maintenance, control, protection, and integrity of Federal Agency information and software technology applications. Oracle On Demand delivers highly secure data repository and application services via the Federal enclave in its Tier IV Austin Data Center (ADC). Oracle On Demand's Federal Security Option is in full compliance with various Federal laws, directives, and standards associated with information security. **Appendix A includes examples of those directives.**

Federal Agency Background and Initiatives

The U.S. Government Printing Office ("GPO") is the Federal government's primary centralized resource for gathering cataloguing, producing, providing and preserving public information in all forms. GPO is responsible for the production and distribution of information products and services for all three branches of the Federal civilian government along with the Department of Defense.

Beginning in 2004, GPO is committed to following the tasks and initiatives outlined within the GPO Enterprise Program – Systems Implementation Plan. This plan is aimed at implementing COTS i.e., Oracle Applications that will allow the agency to (1) standardize and improve GPO business processes, (2) provide the core component of the target GPO enterprise architecture, (3) comply with JFMIP requirements, (4) provide the flexibility to meet mandated and/or external customers' future requirements, and (5) provide reliable systems that conform to current technologies.

The U.S. Government Printing Office ("GPO") began its initial efforts to replace legacy systems with the procurement and implementation of three Oracle Federal Financials modules i.e., General Ledger, Accounts Receivables and Fixed Assets in response to Y2K requirements. GPO implemented those three modules between 1998 and 2001. Despite the successful migration of the Oracle Applications, a majority of GPO's production hardware and software environment consisted of aging mainframe systems and applications that were developed over a 25 year period. The growing obsolescence of these legacy systems made them increasingly difficult to staff and support. The limited support hindered the ability to implement a number of necessary business processes required by the agency and government-wide mandates. The legacy platform also did not support the agency's critical disaster recovery requirements without significant up-front costs.

In 2004, GPO decided to standardize on the Oracle 11i Enterprise Suite of COTS products as its enterprise software solution of choice and overall technological foundation to replace its legacy systems. As part of GPO's overall strategy to ensure flexibility and consistent support, and to enable a cost-effective Disaster Recovery solution, GPO elected to procure services of from Oracle Corporation's shared services provider organization, Oracle On-Demand. Beginning in late 2004, GPO began migrating its' existing configured Oracle Applications and extensions to Oracle On-Demand.

The following diagram depicts the major Oracle initiatives at GPO since the initial licensing of the Oracle Applications.

Figure 2 – U.S. Government Printing Office – Oracle E-Business Footprint

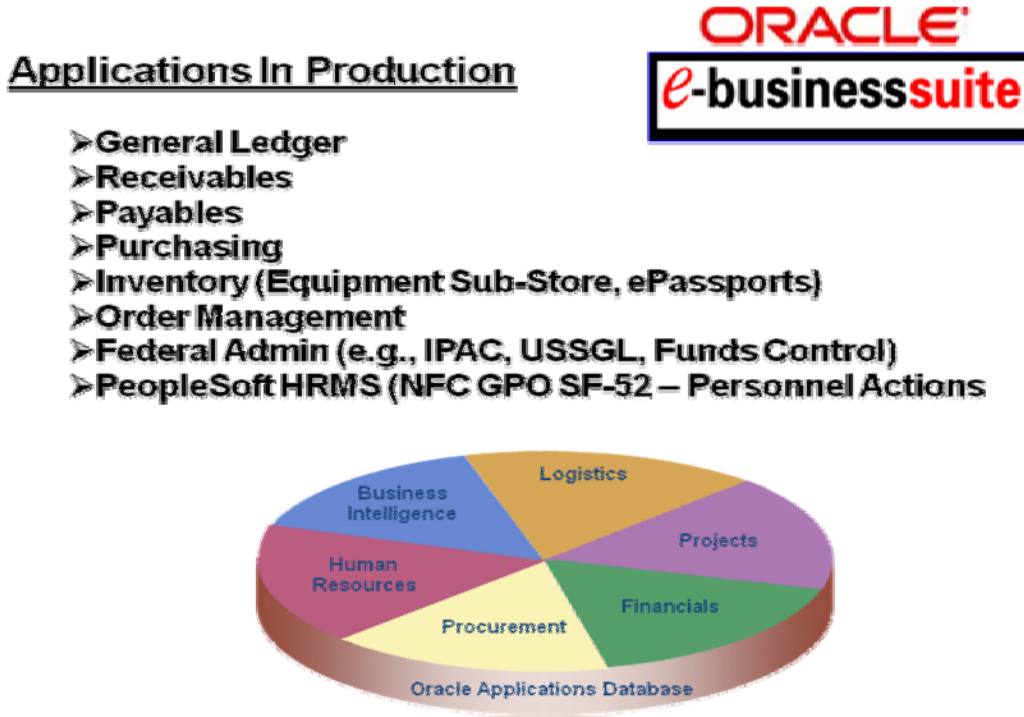
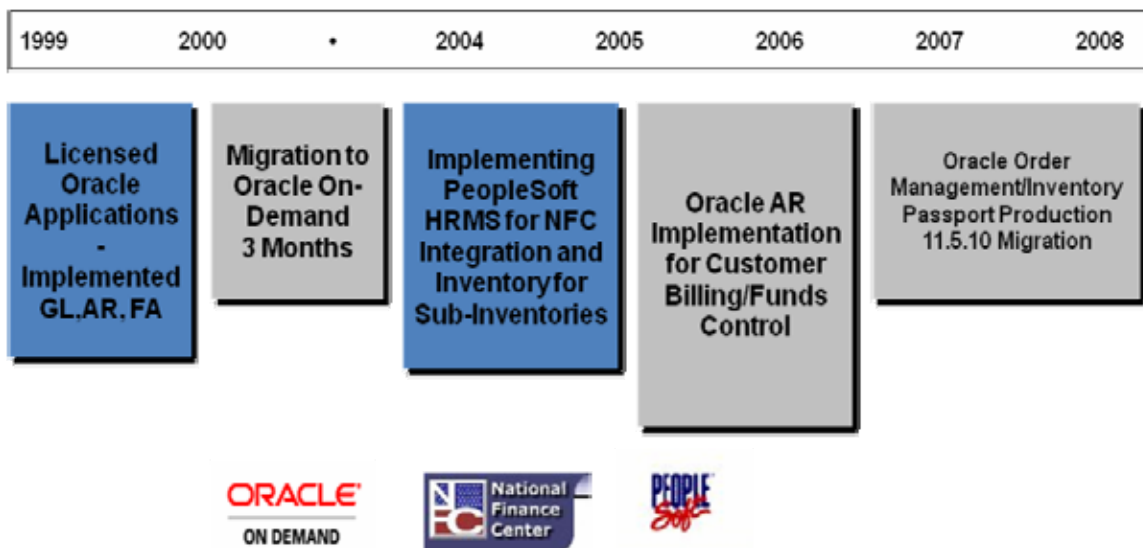


Figure 3 – U.S. Government Printing Office Oracle Initiatives Since Inception

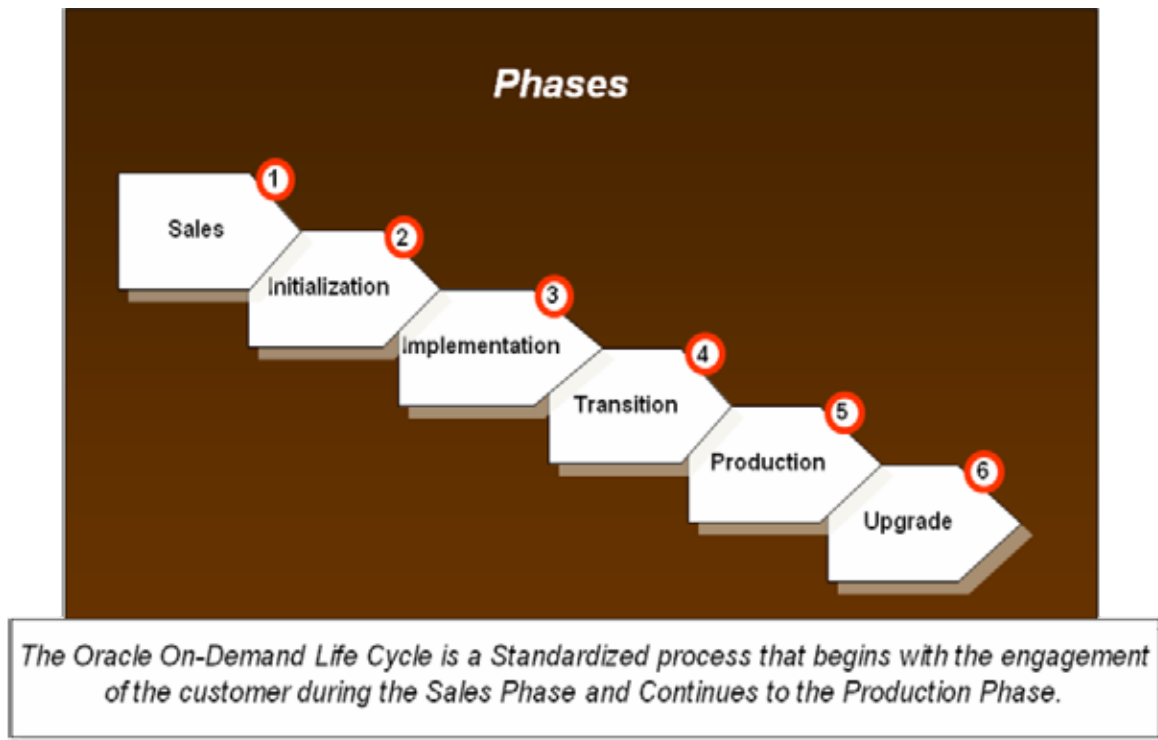


Oracle On Demand Life Cycle

The Oracle on Demand Life Cycle is a standardized process that begins with the engagement of a customer during the Sales Phase and continues through the Production phase. The purpose of the Life Cycle is to provide a framework with repeatable, scalable and predictable processes that enable the efficient and effective delivery of Oracle On Demand services. The Oracle On Demand Life Cycle provides a similar framework as the Oracle Applications Implementation Methodology (AIM) but has unique tasks for the customer, Oracle Implementor and Oracle On Demand that are unique when a full service hosting provider is engaged. The diagram provides the framework for the model.

Much like a standard Work Breakdown Structure (WBS), the Oracle On Demand Life Cycle is comprised of Phases, Activities, and Tasks. A single phase encompasses multiple activities and a single activity, multiple tasks. A phase can span across multiple organizations with the On Demand plan, whereas an activity is typically owned by a single organization but may also have tasks performed by other organizations but also have tasks performed by other organizations. An individual or group usually owns tasks.

Figure 4 – Oracle On Demand Life Cycle Phases



The following provides a high level overview of each phase, key activities and deliverables.

On Demand Phase	Description
Sales Phase	The Sales Phase is the first phase in the Life Cycle and begins when Oracle Sales engages with a customer and provides a value proposition of the Oracle software and On Demand services. As part of this phase a number of activities occur including (1) performing a high level requirements analysis, (2)

On Demand Phase	Description
	conducting a Return on Investment (ROI) analysis, (3) defining preliminary project scope, and (4) setting customer and On Demand expectations for the engagement.
Initialization	The second phase of the Life Cycle is the Initialization Phase and it commences immediately after all the applicable contracts are signed and written agreement to pay has been received. The primary focus of this phase is to prepare the infrastructure that will allow the customer to move into the Implementation Phase. As part of this phase a number of activities will occur including (1) conducting kick-off meetings for infrastructure and pre-implementation planning, (2) confirming hardware, procurement, installation, configuration, and backup requirements, (3) installing and configuring the network between Oracle On Demand and the customer site, and (4) installing Certified Configuration software (TEST environment).
Implementation	The Implementation Phase starts when the Oracle On Demand Implementor (OI) engaged by the customer begins to set up and configure the Oracle E-Business Suite TEST environment in accordance with the business requirements for that customer. During this phase, the Oracle On Demand Implementor follows the guidelines and requirements outlined in the @Oracle E-Business Suite On Demand Reference Guide. As part of this phase a number of activities will occur including (1) business requirements mapping and “gap” analysis, (2) CEMLI design and build, (3) business system testing, (4) production migration and (5) production assessment. Note: A more complete description of the CEMLI concept is described in the following section entitled “What are CEMLI’s?”
Transition	The Transition Phase refers to the customer’s transition from the Implementation phase to Production status. Oracle On Demand performs a Production Assessment that consists of reviewing and approving the Oracle On Demand Implementor (OI) implementation documentation and the pre-production Applications environment. As part of this phase, the key activities performed include (1) conducting a Production Assessment and (2) creating the Production (PROD) environment.
Production	The Production Phase begins once the customer has successfully completed the Transition Phase. At this point, Oracle On Demand is responsible for managing and maintaining the Oracle Applications environment and any modifications to the environment are handled through the change management process. The key activities in the Production Phase include (1) system monitoring by On Demand with proactive problem resolution and patching, and (2) regular and ongoing communication with Oracle On Demand via the Service Delivery Manager, Account Manager and OracleMetaLink.
Upgrade	The Upgrade Phase applies when Oracle Application point release updates e.g., 11.5.9 to 11.5.10 are required for the customer’s environment. The key activities for the Upgrade Phase include (1) migrating CEMLI’s, (2) testing the updated environment and (3) updating the Production (PROD) environment.

Implementor’s Roles and Responsibilities in an On Demand Environment

During numerous initiatives at the U.S. Government Printing Office, the Oracle Implementation has adapted to a different paradigm for deploying applications. At the prior federal agencies in which our team has implemented the Oracle E-Business Suite, the applications, hardware, operating system and technical infrastructure were all maintained at the customer site by federal

personnel or contractors. As a result, our team gained many lessons learned implementing within this environment. The following provides an overview of some of the tasks and specific nuances involved in implementing within the On Demand environment. Our focus will be only on the Implementation, Transition, Production and Upgrade phases.

On Demand Phase	Representative Oracle Implementator (OI) Activities	Nuances vs Traditional Implementation
Implementation	Design, develop and test customer-specific extensions, configurations and integrations.	Using the @Oracle model, all extensions and integrations must be designed, developed and tested following the Oracle On Demand E-Business Suite CEMLI standards. This includes Oracle On Demand conducting a review of the Oracle Implementor design and development documentation.
Implementation	Business System Testing	Using the @Oracle On Demand model, User Acceptance Testing scripts and results are reviewed by Oracle On Demand.
Implementation and Transition	Migrating Extensions and Requesting Patching	Using the @Oracle On Demand model, the Oracle Implementor submits Service Requests (SR's) to Oracle to request support for migrations and patching. Appendix B includes a sample Oracle Service Request Form.
Transition	Production Readiness Activities including Creation and Updating of Production (PROD) Environment.	Using the @Oracle On Demand model, Oracle performs a Production Assessment. Oracle performs tests that validate standards compliance in the areas of systems configuration, functionality, performance, and supportability. Each compliance area is covered in one of more tests. The results of the tests may indicate recommended or required actions. The Oracle Implementor will perform the tasks necessary to ensure compliance prior to moving into Production.
Production	Performing Standard Operations and Maintenance (O&M) Support	Using the @Oracle On Demand Model, Oracle will work with the customer and O&M Oracle contractor to plan for upcoming upgrades and "proactive" patching in order to ensure compliance with standards.

What are CEMLI's?

The term CEMLI (pronounced kem-lee) is used to describe any changes made to the standard Oracle E-Business Suite. The use of a standard nomenclature allows customers and implementors to treat changes to the software in a consistent manner. In addition, following these standards makes upgrades more seamless and support more effective. In an On Demand environment, Oracle Implementation partners must follow certain proscribed standards for all CEMLI's. The following provides a description of CEMLI's along with representative examples of each performed at the U.S. Government Printing Office.

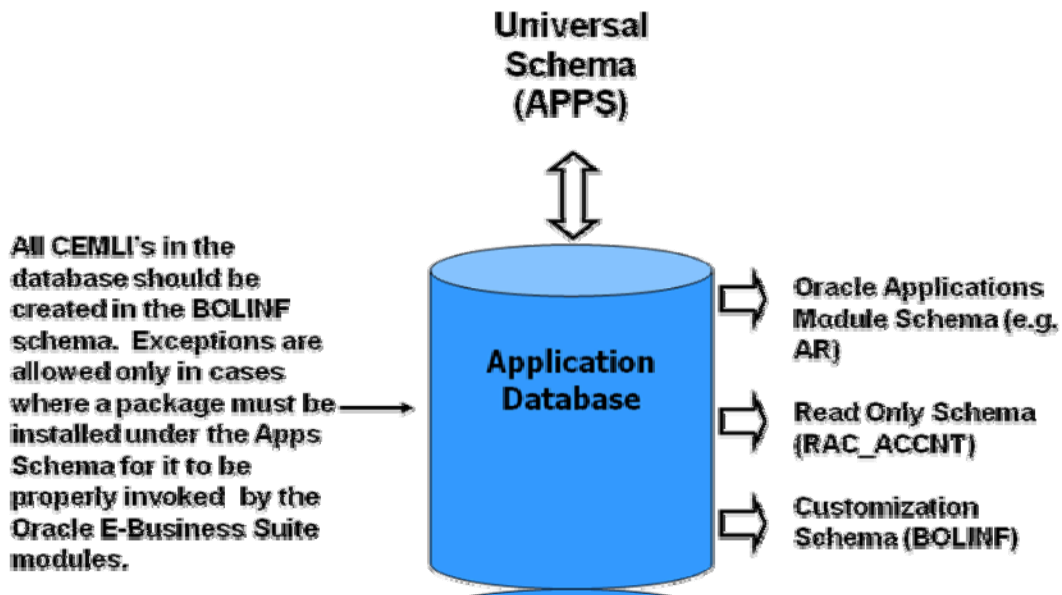
CEMLI Component	Description	Examples
Configurations	Configurations are defined as changes done to the functionality of the Oracle E-Business Suite. These changes are tailored to meet customer-specific requirements and are done using the user interfaces provided by the E-Business Suite	<ul style="list-style-type: none"> ➤ Profile Options ➤ Flexfields ➤ Concurrent Programs ➤ Request Sets ➤ Responsibilities ➤ Menus
Extensions	Extensions are new components that are developed for customers using the development features provided by Oracle with the E-Business Suite. Oracle On Demand has proscribed guidelines for creating these objects and are kept separate from standard E-Business Suite components. Note: A further description of the development standards i.e., BOLINF standards are discussed within the following section of the whitepaper.	<ul style="list-style-type: none"> ➤ Alerts ➤ Database Objects ➤ Database Triggers ➤ Forms ➤ Print Drivers ➤ Procedures, Functions and Packages (API's, PL/SQL Scripts, Procedures) ➤ Reports (using Oracle Reports, SQL*Plus Scripts) ➤ UNIX Shell Scripts ➤ Workflows
Modifications	Modifications, also known as "customizations in place" are changes made to standard Oracle E-Business Suite objects or code. If modifications are performed, it is very difficult to identify these changes to standard E-Business Suite objects. This approach is typically not recommended. As an Oracle Implementor, it is recommended that business process change to meet applications functionality be performed.	<ul style="list-style-type: none"> ➤ Modification to Oracle Standard Code.
Localizations	Localizations are defined as solutions for country-specific requirements such as statutory reporting and other business practices which are not in the standard E-Business Suite.	<ul style="list-style-type: none"> ➤ Specialized depreciation methods for a specific country. ➤ Document sequencing for documents.
Integrations	Integrations are components that allow customers to seamlessly transfer data	<ul style="list-style-type: none"> ➤ Inbound Interfaces ➤ Integration using Oracle

CEMLI Component	Description	Examples
	between the Oracle E-Business Suite and other Oracle or third party applications. These components are developed by the customers or Oracle Implementation Partners and follow the guidelines and standards required for creating extensions. Integrations take advantage of several standard interface programs and Application Programming Interfaces (API's) provided with the E-Business Suite to facilitate data transfer.	<ul style="list-style-type: none"> InterConnect/XML Gateway ➤ Non-Oracle Software Integration ➤ Outbound Interfaces ➤ Portal Integration ➤ Database Portlets ➤ Portlet Providers ➤ Web Portlets

BOLINF Standards

BOLINF is a special database schema provided with the Oracle E-Business Suite for Oracle On Demand customers. This schema should own all the custom database objects created by the customer. In addition, this schema has read permission on all standard Oracle E-Business Suite objects and read/write permission on all interface tables. Any custom code developed typically performs a DML into the standard Oracle tables. Any addition of this functionality requires prior Oracle On Demand approval. The Oracle Implementation Partner completes the necessary forms and logs it as a Technical Assistance Request (TAR) with Oracle On Demand and Oracle Support Services. Once approved, DML access on Standard Tables to the BOLINF standard is granted.

Figure 5 BOLINF Standards Schematic.



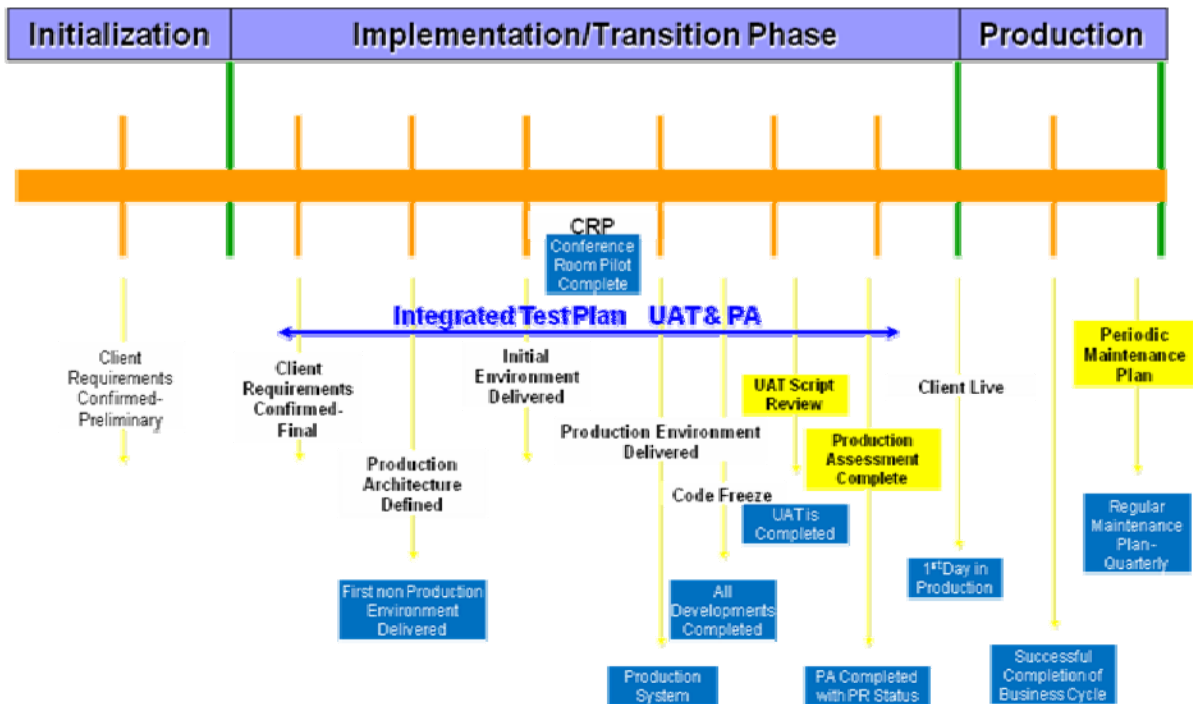
What is an Oracle On Demand Production Assessment?

To confirm that the customer implementation is ready for transition to production, Oracle On Demand will take the customer's environment through a Production Assessment (PA). The PA consists of a series of functional, configuration, supportability, and performance tests. Through this testing, Oracle may identify and fix key issues that may have a negative impact on the system during transition to production or on performance once in production. During the production assessment, a number of required actions and recommended actions may be identified. Oracle On Demand requires the completion of the Production Assessment, and the completion of all required actions that have been identified before a system may move into full production.

The primary purpose of conducting Production Assessments is to confirm that the customer's systems environments are compliant with the Oracle On Demand standards prior to commencing production operations (or "going live"). Standards compliance is the foundation of the Oracle operations strategy for delivering consistent service levels to On Demand customers. Consequently, the production assessment process is rigorously enforced for all On Demand customers.

The Production Assessment (PA) process begins at the Project Kick off meeting organized shortly following completing contracts. The importance of a successful PA is emphasized and an outline of the PA process includes the customer's agreement that production operations should only commence after On Demand designates the customer's project to be Production Ready (PR). The Service Delivery Manager SDM will communicate Production Ready (PR) status to the customer in writing through the Production Assessment Report. If the customer commences production operations prior to having a PR status, then On Demand service levels may not be achievable.

Figure 6 – Oracle On Demand Production Assessment (PA) Process

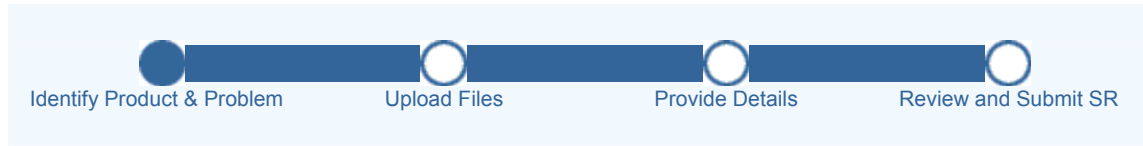


Appendix A – On Demand Security Compliance

Oracle On Demand's Federal Security Option is in full compliance with various federal laws, directives, and standards associated with information security including:

- **The Gramm-Leach-Bliley Act (GLBA)** – also known as the Financial Management Services Modernization Act of 1999 – provides limited privacy protections against the sale of private financial information.
- **The Federal Security Information Management Security Act (FISMA)** of 2002 reinforces computer and network security within the federal agencies, government contractors, and other affiliated parties by mandating yearly audits.
- **The Homeland Security Presidential Directive 12 (HSPD-12)** of 2004 enforces standardization of secure identification credentials for government employees and contractors. This standard covers both physical and logical access to government resources.
- **The U.S. DoD's Information Assurance and Certification and Accreditation Process (DIACAP)** provides guidance, instructions and timelines from the DoD IT Security Certification and Accreditation Process (DITSCAP) to DIACAP.
- The **U.S. National Institute of Standards and Technology (NIST)** standards for Certification and Accreditation (C&A).
- The **U.S. OMB-defined metrics** for ongoing security measurements.
- **Other mandates and requirements**, e.g., protection of Public and Sensitive But Unclassified (SBU) data, full disk encryption for support personnel systems, and network access control architecture.

Appendix B – Oracle Service Request Form



Identify the Product and Problem

TIP Requesting a product update? Go to **Patches & Updates** to download licensed products.

*Indicates required field

Contact Information

*Contact Me Via

*Phone Number

*I will enter the text of this SR in English

Service Requests in languages other than English may take longer to resolve.

Make this language preference the default for all my SRs.

Product Description

TIP Create an SR profile to save the product description information you have entered here for use in future SRs.

Entering data in this field will result in page refresh.

*Support Identifier

*SR Type

Make this form the default for all my SRs.

Use an SR Profile

*Product

Don't see your product? Click [Show All Products](#).

*Product Version

(Example: 11.5.9)

*Platform


*Database Version


(Example: 9.2.0.4)

Save as SR Profile Name

Enter profile name (Limit: 30 characters)

Problem Summary

 *Type of Problem

 **TIP** choosing 'Other technical issues' will slow SR resolution.If your problem is not issued here,check the product you selected above.

*Brief Problem Statement

(Limit 80 characters)

Error Message Number

(Example: ORA-600)

* Is this problem causing mission or business critical loss of service requiring immediate and continuous effort on your company's part to resolve?

Search Knowledge Base Option

Click this box to use the above information to search the knowledge base for a solution.The search will be performed once you click the Next button.

SR Type [Close](#)

There are two SR types to choose from, "Standard SR" and "Software Configuration Manager SR".

Standard SR

A standard SR will not be associated with a configuration and project. You will not have the benefits that come with filing your SR with a configuration and project.

Software Configuration Manager SR

A Software Configuration Manager SR allows you to associate this SR with a configuration and, optionally, a project. Filing your SR with a configuration gives you the ability to track SR's by configuration (and project) and many other benefits. [Learn more about Software Configuration Manager](#)

Help	(Drag from here)	Close
No Help Available		

Provide SR Details

Type of Problem **Other technical issues with this product**

Brief Problem Statement **Migration Request to Production**

Support Identifier **14055861** Platform **Linux x86**

Product **On Demand Work Requests** Platform Version **Linux x86**

Product Version **11.5.10** Database Version **9.2.0.6.0**

Problem Details

* Indicates required field

WARNING

You chose "Other technical issues with this product" from the Type of Problem list. This is a generic Service Request form which will require additional time to be routed appropriately. You may be able to expedite the resolution of your Service Request by doing the following:

1. Use the "Back" button to return to the first step in creating an SR.
2. Select an option from the Type of Problem list that more closely describes the problem.

* 1) Files to Upload

Please make note of and upload the following files after you create this Service Request. For more information about the types of files requested, click the links below.

- Application issues: Output from [Applications Collection Tool \(ACT\)](#)
- Database and application server issues: Output from [Remote Diagnostic Agent \(RDA\)](#)

I will upload:

* 2) Detailed Problem Statement

(Include when the problem started, error numbers, and messages) [Help](#)
[Expand](#)

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- * 3) Steps to Reproduce Problem
(Include navigation path, responsibility name, and user specific information) [Help](#)
[Expand](#)

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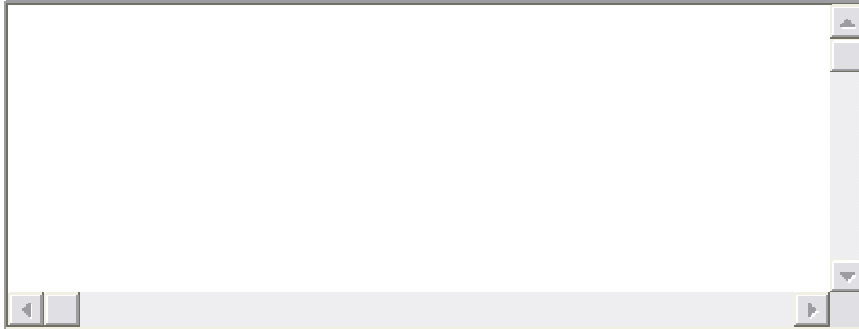
- * 4) Instance Name(s) and Type of System(s) Where Error Occurs
(Specify the SID and indicate if type of system is production, test, development, etc.)
[Help](#)
[Expand](#)

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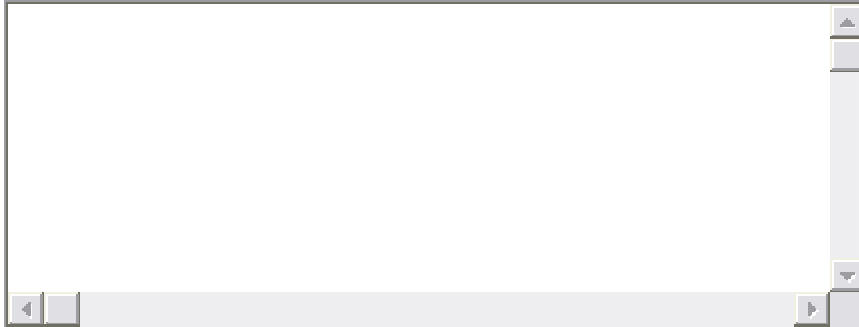
- * 5) Recent Changes to this Environment
(Example: installation, upgrade, patch hardware, etc.) [Help](#)
[Expand](#)

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- * 6) Workarounds Used [Help](#)
[Expand](#)

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- 7) How is this Issue Impacting Your Business
(Include critical events, dates, number of users affected, financial impact, etc.) [Help](#)
[Expand](#)

A large, empty rectangular text area with a light gray border. It has a vertical scrollbar on the right side and a horizontal scrollbar at the bottom, both currently collapsed. The area is intended for users to describe how the issue is impacting their business.

- * 8) Can you easily recover from, bypass or work around the problem?
- * 9) Does your system or application continue normally after the problem occurs?
- * 10) Are the standard features of the system or application still available; is the loss of service minor?