# cisco ORACLE

# Provisioning Oracle Fusion Applications on the Cisco Unified Computing System

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# Introduction

This document provides an overview of the Oracle Fusion Applications provisioning process on the Cisco Unified Computing System<sup>™</sup> (Cisco UCS<sup>™</sup>) platform. Provisioning is the act of installing, configuring, deploying, and removing Oracle Fusion Application components. Given the number of Oracle Fusion Middleware components, as well as the number of dependencies among Oracle Fusion Application products, the goal of the provisioning framework is to limit the need to install and configure these items manually.

The provisioning process mandates definition of the application topology, which includes selecting the Oracle Fusion Application you want to provision, the number of servers, the IP address and host name for each component, etc. At the end of the provisioning process, the system is operational, and an Oracle Fusion Application administrator will be able to log in to the application and begin the process of application functional configuration through the Oracle Fusion Functional Setup Manager application (beyond the scope of this document).

**Disclaimer:** Please note that the information provided here is based on a sample installation environment of Oracle Fusion Applications that was performed in a lab and is not a production-type environment. This document is for reference only and is not a replacement for the Oracle Fusion Applications Technology Documentation library (available for download at the <u>Oracle Software Delivery Cloud</u>), but must be used in conjunction with it.

# Background

# Cisco Unified Computing System Overview

Cisco Unified Computing System is the first truly unified data center platform that combines industry-standard, x86-architecture blade and rack servers with networking and storage access in a single system. The system uses a wire-once architecture with a self-aware, self-integrating, intelligent infrastructure that eliminates the time-consuming, manual, error-prone assembly of components into systems. Cisco UCS is built using the components illustrated in Figure 1.



#### Figure 1. Cisco Unified Computing System Architecture

# **Cisco UCS Fabric Interconnects**

Fabric interconnects provide a single point for connectivity and management for the entire system. Typically deployed as an active-active pair, the system's fabric interconnects integrate all components into a single, highly available management domain controlled by Cisco UCS Manager. The fabric interconnects manage all I/O efficiently and securely at a single point, resulting in deterministic I/O latency regardless of a server or virtual machine's topological location in the system.

Cisco UCS 6120XP 20-Port and 6140XP 40-Port Fabric Interconnects offer 20 or 40 fixed ports and one expansion module slot. These low-latency, line-rate interconnects provide all of the necessary downstream bandwidth to the solution's blade server chassis. They can connect upstream to standard Ethernet switches and storage systems. The fabric interconnects' cut-through architecture and jumbo frame capacity reduce latency and increase bandwidth to 10 Gigabit Ethernet-equipped storage systems such as EMC VNX storage systems. A fabric interconnect's capacity can be extended by populating its expansion module slot with one of four modules that increases 10 Gigabit Ethernet connectivity, connects to native Fibre Channel networks at up to 8 Gbps, or both.

Cisco UCS 6200 Series Fabric Interconnects support the system's 10-Gbps unified fabric with low-latency, lossless, cut-through switching that supports IP, storage, and management traffic using a single set of cables. The fabric interconnects offer virtual interfaces that terminate both physical and virtual connections equivalently,

establishing a virtualization-aware environment in which blades, rack servers, and virtual machines are interconnected using the same mechanisms. The Cisco UCS 6248UP 48-Port Fabric Interconnect is a on rack-unit (1RU) fabric interconnect that offers up to 48 universal ports that can support 10 Gigabit Ethernet, Fibre Channel over Ethernet (FCoE), or native Fibre Channel connectivity. The Cisco UCS 6296UP packs 96 universal ports into only 2RUs.

#### **Cisco Fabric Extenders**

The fabric extenders are zero-management, low-cost, low-power-consumption devices that distribute the system's connectivity and management planes to rack and blade chassis to scale the system without complexity. Designed never to lose a packet, Cisco<sup>®</sup> fabric extenders eliminate the need for top-of-rack (ToR) switches and blade-server-resident Ethernet and Fibre Channel switches and management modules, dramatically reducing infrastructure cost per server.

Cisco UCS Fabric Extenders bring the unified fabric and management planes into Cisco UCS 5108 Blade Server Chassis. Typically deployed in pairs, each device brings up to 80 Gbps of bandwidth to the blade server chassis, for a total of up to 160 Gbps across up to eight servers. Each half-width blade has access to up to 80 Gbps of bandwidth.

Cisco UCS 2104XP Fabric Extenders each bring up to 40 Gbps of throughput to the blade server chassis, for a total of up to 80 Gbps per chassis. A pair of these fabric extenders supplies 40 Gbps of network connectivity per half-width blade.

Cisco Nexus<sup>®</sup> 2232PP 10GE Fabric Extenders extend the unified fabric and management planes to racks for connecting rack servers to the system. Cisco Nexus fabric extenders provide a simple, low-cost alternative to ToR switching, supporting rack-at-a-time server deployment without adding a single management point to the system. Today, separate data and management cables connect servers to the fabric extenders within each rack, with both data and management planes carried over a single set of cables to the fabric interconnects. Cisco server innovations prepare Cisco UCS C-Series Rack-Mount Servers for future one-wire management in which both data and management planes are carried over a single cable with racks.

#### Cisco UCS Blade Chassis and Racks

Cisco UCS blade chassis and racks act as containers for the system components.

The Cisco UCS 5100 Series Blade Server Chassis features flexible bay configurations that can support up to eight half-width blades or up to four full-width blades in a compact 6RU form factor. The blade chassis is a highly simplified device that contrasts with traditional blade chassis, which host multiple switches and management modules. The chassis adds no points of management to the system, because it is logically part of the fabric interconnects. The Cisco UCS 5100 Series chassis hosts up to two fabric extenders, low-power-consumption devices that provide the chassis with the power budget and airflow needed to support multiple future generations blade servers and network connectivity options. The blade chassis can be configured with up to four N+1 and N+N 2500-watt (W) grid-redundant power supplies that are designed for 92 percent efficiency and to deliver high efficiency at low power draws.

Cisco UCS racks are standard 19-inch racks that are optimized to house both Cisco UCS blade chassis and rack servers in the same physical chassis, providing the excellent flexibility needed to expand a system using the server form factor most appropriate for the task.

#### **Cisco UCS Servers**

Delivering performance, versatility, and density in servers designed without compromise, Cisco UCS servers power every workload, including network infrastructure applications, virtualization, cloud computing, high-performance computing (HPC), high-frequency trading, big data, and mission-critical enterprise applications and database management systems. Powered by the latest Intel Xeon processors, Cisco UCS servers form the core of a flexible and efficient data center that meets diverse business needs with a balanced combination of performance, built-in capabilities, and cost effectiveness. Cisco UCS is platform neutral, with the capability to incorporate both rack and blade servers into a single unified system.

Cisco UCS C-Series Rack-Mount Servers provide a rack-server entry point to Cisco UCS. With world-recordsetting performance for two- and four-socket servers, the Cisco C-Series incorporates the capability to integrate as part of Cisco UCS and innovations such as Cisco Extended Memory Technology. Cisco UCS rack servers provide a wide range of I/O, memory, internal disk, and SSD capacity for ease of matching servers to workloads.

Cisco UCS B-Series Blade Servers provide a comprehensive line of two- and four-socket servers to deliver worldrecord-setting performance to a wide range of workloads. Cisco offers the first server anywhere with built-in programmable I/O capacity in which the number and type of I/O devices can be configured on demand to satisfy the needs of almost any operating system or hypervisor. Cisco innovations embodied in Cisco UCS blade servers include patented Cisco Extended Memory Technology, one of the reasons that Cisco has a history of leading the market with some of the greatest memory capacity among blade servers. Among the many vendors offering servers based on Intel Xeon processors, only Cisco unleashes their full power with a balance of memory and I/O capacity that does not hold the system back.

#### Cisco UCS Virtual Interface Cards

Cisco UCS virtual interface cards (VICs) provide up to 256 I/O interfaces that are configured on demand to meet operating system, hypervisor, and application needs. Available in PCIe, mezzanine, and modular LAN on motherboard (mLOM) form factors, Cisco VICs can be configured with any combination of Ethernet network interface cards (NICs) and Fibre Channel host bus adapters (HBAs), carrying I/O traffic securely and with individual quality-of-service (QoS) controls directly to the system's fabric interconnects. Cisco VICs support up to 80 Gbps of network connectivity, with hardware PortChannels maintaining traffic flow over a set of active-active links.

Acting as an adapter fabric extender, the cards connect fabric interconnect ports directly to operating systems and hypervisors. With Cisco Data Center Virtual Machine Fabric Extender (VM-FEX) technology, the cards connect fabric interconnect ports directly to individual virtual machines, offering exceptional visibility and control over virtual machine networking while eliminating up to two layers of switching that other solutions require.

#### Integrated and Embedded Management with Cisco Service Profiles

Traditional solution architectures involve the manual assembly of components, with management as an add-on afterthought. Management servers and networks must be assembled, configured, and maintained. Blade chassis contain multiple management systems that must be wired and configured and firmware that must be kept up-to-date. Individual element managers must be used to configure system components, including RAID controller settings and firmware, BIOS firmware and settings, firmware revisions, and settings for network components including NICs, HBAs, and blade-server-resident switches. Although some vendors claim that this scenario constitutes integrated management, if it requires a management server and manual configuration, the approach is not integrated.

Cisco UCS uses true integrated, centralized, embedded management. Cisco UCS Manager resides on the Cisco UCS 6100 Series Fabric Interconnects and operates with high availability when two fabric interconnects are used, as they are in Oracle Fusion Middleware 11g. Logically, every system component is aggregated into the system and managed as if it were part of the fabric interconnects. Physically, components are distributed among data center racks and blade server chassis. Cisco UCS Manager acts as an element manager that allows every component to be configured from a single pane. For organizations that want to integrate Cisco UCS with higher-level management tools, Cisco UCS Manager can export configuration information for use by ITIL processes (including configuration-management databases). It also offers a robust XML API to facilitate deep integration with broader systems management tools.

Cisco UCS Manager offers flexible, role-based management that helps organizations make more efficient use of their limited administrator resources by allowing administrators to focus on defining policies to provision computing infrastructure and network connectivity, automating the actual provisioning. Cisco UCS Manager uses Cisco service profiles to provision servers and their I/O properties.

The system and its resources are stateless, and Cisco service profiles contain all the information needed to fully define and provision a server (Figure 2), including RAID levels, BIOS settings, firmware revisions and settings, adapter identities and settings, VLAN and VSAN network settings, network QoS, and data center connectivity. Oracle Fusion Middleware 11g uses predefined, downloadable service profiles that provision each of the solution's server components, allowing the solution to be deployed rapidly and accurately in minutes, rather than the days and weeks required when all the data center subject-matter experts must use individual element managers to configure each component in their domains.



#### Figure 2. Cisco Service Profiles Provide Automatic, End-to-End Configuration of the Entire Hardware Stack

Cisco service profiles provide immense benefit to the solution. They reduce the time-consuming, error-prone, manual assembly of components to a policy-based click-of-the-mouse operation. They accelerate infrastructure scaling by allowing organizations to add incremental resources and put them to work more quickly and accurately. Servers can be pooled, and service profiles can be assigned to specific slots, so that any server inserted into the slot is provisioned and put to work automatically. Service profiles enable true workload portability so that if a server upgrade is required, an existing service profile can be applied to the upgraded server and put into service within minutes. Service profiles also reduce the number of spares that an organization needs to maintain, because a single spare can be put to any use rapidly simply by invoking the applicable service profile.

#### Virtualization-Optimized Computing Resources

Achieving the best price-to-performance ratio in a virtual desktop environment requires an efficient, scalable, virtualization-optimized infrastructure that is optimized for the unique workload requirements of virtualized environments. Oracle Fusion Middleware 11g is implemented using Cisco B-Series Blade Servers housed in Cisco

UCS 5108 Blade Server Chassis. Some of the blade servers used in the solution use Cisco Extended Memory Technology, which provides up to 384 GB of memory in a two-socket server. The servers use Cisco VICs, which accelerate I/O in virtualized environments while increasing visibility and control over virtual machine network traffic.

The blade chassis are 6RU devices that have removable partitions to allow them to contain up to eight half-width blade servers or up to four full-width blade servers. Every component except the midplane is customer replaceable. Efficient power supplies are configurable as nonredundant, N+1 redundant, or grid redundant; the chassis' eight fans are hot swappable, all cables enter from the rear of the chassis, and all blade servers are accessible from the front panel.

# Cisco UCS B250 M2 Extended Memory Blade Server

The Cisco UCS B250 M2 Extended Memory Blade Servers use the patented Cisco Extended Memory Technology. This Cisco technology provides more than twice as much industry-standard memory (384 GB) as traditional twosocket servers, increasing performance and capacity for demanding virtualization and large-data- set workloads. Alternatively, this technology offers a more cost-effective memory footprint for less-demanding workloads.

The Cisco UCS B250 M2 Extended Memory Blade Server increases performance and capacity for demanding virtualization and large-data-set workloads. The server is a full-width, two-socket blade server with substantial throughput and more than twice the memory capacity of other Intel Xeon 5600 series-based two-socket servers. It takes advantage of the most advanced Samsung 40 nm DDR3 ultra low power memory technology. A Cisco UCS 5108 Blade Server Chassis can house up to four Cisco UCS B250 M2 Extended Memory Blade Servers, with a maximum of 160 per Cisco Unified Computing System.

The Cisco UCS B250 M2 features Cisco's patented Extended Memory Technology. This Cisco technology provides more than twice as much energy-efficient, high performance memory (384 GB) as traditional two- socket servers, increasing performance and capacity for demanding virtualization and large-data-set workloads. Alternatively, this technology offers a more cost-effective memory footprint for less-demanding workloads through the use of industry-leading Samsung 40 nm DDR3 memory.

The Cisco UCS B250 M2 is designed to increase performance, energy efficiency, and flexibility for demanding virtualized and nonvirtualized applications. Based on Intel Xeon 5600 series processors, Cisco UCS B-Series Blade Servers adapt processor performance to application demands and intelligently scale energy use based on utilization.

Each Cisco UCS B250 M2 uses network adapters for consolidated access to the unified fabric. This design reduces the number of adapters, cables, and access-layer switches needed for LAN and SAN connectivity. This Cisco innovation can significantly reduce capital and operating expenses, including administrative overhead, power, and cooling costs. Network adapter choices include adapters optimized for virtualization, compatibility, and efficient, high-performance Ethernet.

# Cisco UCS B200 M2 Blade Server

The Cisco UCS B200 M2 Blade Server balances simplicity, performance, and density for production-level virtualization and other mainstream data center workloads. The server is a half-width, two-socket blade server with substantial throughput and scalability.

The Cisco UCS B200 M2 is designed to increase performance, energy efficiency, and flexibility for demanding virtualized and nonvirtualized applications. Based on Intel Xeon 5600 series processors, Cisco UCS B-Series

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# **Cisco Network Adapters**

Each Cisco UCS B-Series Blade Server uses Cisco network adapters for consolidated access to the unified fabric. The Cisco UCS B230 M1 can accommodate one mezzanine-format adapter. Oracle Fusion Middleware 11g uses the network adapters most appropriate for the customer's choice of hypervisor. Cisco UCS M81KR VICs are optimized for virtualization and provide up to 128 virtual devices, including any combination of NICs and HBAs.

Note: Cisco VICs were used for desktop virtualization with VMware vSphere and EMC storage.

#### Virtualized I/O and Cisco Unified Fabric

Virtualized environments are I/O intensive, and best practices for software such as the VMware vSphere hypervisor require the use of separate, redundant NICs and HBAs for functions including VMware vmconsole, vmkernel, and vMotion; virtual machine traffic; and storage access. In traditional server environments, this practice requires equipping each server with the appropriate number of interfaces and cabling each one to upstream Ethernet and Fibre Channel switches. At this point, the server is for all practical purposes dedicated to a single function for its entire lifecycle because of the time and complexity required to equip it to run different applications.

Cisco UCS is stateless down to the type and number of I/O devices installed in a server, allowing just-in-time provisioning of such fundamental characteristics as I/O interfaces. This capability accelerates virtual infrastructure deployment, supports true workload portability, and extends the lifecycle of servers because they can be repurposed simply by applying a different Cisco service profile. This virtualized I/O capability is enabled by the Cisco UCS M81KR VIC, which can be configured to provide up to 128 virtual devices per server. These are standard PCI devices that appear on the server's PCI bus. The actual number of available interfaces is determined by upstream switch resources. In the context of this solution, the card can support up to 58 virtual devices. A single Cisco VIC can thus support all of a hypervisor's I/O requirements with a single interface. It also can provide superior network throughput because it supports a separate I/O queue for each device.

Oracle Fusion Middleware 11g uses Cisco VN-Link technology to provide exceptional visibility and control over network links connected to hypervisors and virtual machines. Cisco VN-Link technology makes virtual links just as visible and manageable as physical links. Now network security, QoS, and network settings can be applied on a per-virtual-machine basis, and they remain constant regardless of virtual machine location. This capability overcomes the least-common-denominator security that is often applied in virtualized environments to facilitate virtual machine movement.

Unified fabric integrates the system's compute resources with a single network that supports all I/O in the system. This is one of the two keys to simplicity in the system: Cisco Unified Computing System integrates IP, storage, and management networks into a single I/O infrastructure.

# **Oracle Fusion Applications Overview**

Oracle Fusion Applications is Oracle's next-generation applications suite, built on a service-oriented platform. It brings together next-generation enterprise technologies, applications, and services, including Oracle Fusion Applications and Oracle Fusion Middleware. This section provides an introduction to the architecture, components, and concepts of Oracle Fusion Applications.

Oracle Fusion Applications products are built on the Oracle Fusion Middleware stack and use Oracle Database (Figure 3).



Figure 3. Oracle Fusion Applications Architecture

Control

#### Standards-Based Architecture

Oracle Fusion Applications is standards based, making it highly adaptable. This standards-based technology enables organizations to respond effectively to change with flexible, modular, user-focused 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 and runtime tools for building enterprise portals, transactional websites, and social networking sites.
- Oracle Business Intelligence provides a full range of business intelligence capabilities that enable customers to analyze, present, report, and implement contextual actions for organization data.
- Oracle Universal Content Management enables customers to use document management, web content management, digital asset management; and records retention functions to build and complement their business applications.
- Oracle Service Oriented Architecture (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 the modeling, development, debugging, optimization, and deployment of Java applications and web services.
- Oracle Enterprise Manager offers business-based 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.

Use of a standards-based architecture reduces the cost of integration and enables customers to reuse systems and technologies. Standards-based architecture also increases the flexibility of the applications. Customers can fit the applications to their business by configuring not only the user interface, but also the business objects, the business processes, the business logic, and the business intelligence, all using the single integrated Oracle JDeveloper tooling platform.

The ease of managing Oracle Fusion Applications offers a low total cost of ownership (TCO), resulting in a faster return on investment (ROI) through the use of tools for rapid setup and flexible deployment models and providing investment protection for upgrades.

#### **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-based, intuitive design of the applications, which results in large productivity gains. The user interface design of Oracle Fusion Applications is:

 Role based, enabling pervasive delivery in multiple modes, on multiple devices, and through multiple channels

- Configurable and extensible, through Oracle JDeveloper during design or the composer during runtime, enhancing productivity for individual users and groups of users
- Composite and contextual, providing integrated information in the context of processes
- 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, which can be configured to meet business needs
- · Unified work lists, which list tasks across the applications
- Guided business processes, which are organized sets of tasks that help users get their work done more efficiently
- Embedded analysis methods, which provide the necessary information for completing a task
- Contextual help, which provides conceptual and procedural reference information
- Oracle Fusion Applications Search, which provides a transparent search experience for easily locating and taking action on relevant data
- Tagging, which enables the association of keywords with objects so they can be easily located
- Instant collaboration, which provides the contact information for the people related to users' tasks

#### Choice of Deployment Options

Oracle Fusion Applications are delivered as a suite, but they can also be adopted gradually because of their modular architecture. In other words, you can adopt Oracle Fusion Applications as a single suite, as product offerings (the highest-level collection of functions that you can license and implement), or as solution sets that work with other Oracle Applications Unlimited product lines depending on the customer's readiness and adoption roadmap, thereby giving customers a choice.

Oracle Fusion Applications is offered with the following deployment options:

- On premises, hosted by the enterprise
- Oracle 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
- On Premise cloud (available internally behind a firewall), hosted as a SaaS or BPO offering
- Hybrid, as a cohesive integrated implementation both on premises and in the cloud

# Deployment Topology

Oracle Fusion Applications are deployed as a suite but can also be deployed gradually using a modular approach. Oracle has put together enterprise deployment reference architectures, and as an example Figure 4 shows the overall Oracle Fusion Customer Relationship Management (CRM) reference enterprise deployment topology, to which variations can be applied.



#### Figure 4. Oracle Fusion CRM Reference Enterprise Deployment Topology

In the topology in Figure 4, the primary node (also known as a host and shown as CRMHOST1 in the figure) is actively running the Oracle Fusion Applications instance. The secondary node (CRMHOST2) is the redundant (high-availability) node for the Oracle Fusion Applications instance. The primary node consists of an administration server and applications that have been deployed to managed servers. Managed servers can be grouped into clusters to provide scalability and high availability for applications. Together, the primary and secondary nodes form a domain.

As shown in Figure 4, the overall Oracle Fusion CRM reference enterprise deployment topology consists of several domains:

- Oracle Fusion CRM domain
- Oracle Fusion Common domain
- Oracle Fusion Financials domain
- Oracle Fusion Human Capital Management (HCM) domain
- Oracle Fusion Supply Chain Management (SCM) domain
- Oracle Fusion Incentive Compensation domain
- Oracle Fusion Business Intelligence domain

Figure 5 shows each domain in detail.

ĺ				CRM D	OMAIN					[				COMMON DOM	IAIN				IC D	OMAIN	
	Admin	OCapture	CSearch	PerfMgmt	CRMCmn	EM	ail	Sales	ODI	Admin	ES	S	Setup	HPage	UCM	SipState	HelpPi	ortal	Admin	IC	
	Server				CRM DO	MAIN					1			(	OMMON DOM	AIN				IC D	OMAIN
	Admin	Admin	OCaptur	e CSearch	PertMgmt	CRM	Cmn	EMail	Sales	ODI	Adm	nin	ESS	Setup	HPage	UCM	SipState	e HelpP	ortal	Admin	IC
1116	onsole	Server	Server 1	Server 1	Server 1	Serve	er 1	Server 1	Server 1	Server 1	Sen	ver	Server 1	Server 1	Server 1	Server 1	Server	1 Serve	er 1	Server	Server 1
	EM	Admin	Order	CRM	PERF	CR	M	EMail	SALES	ODI	Adn	nin	ESS	Setup	Home	UCM	OWLCS	5 He	p	Admin	IC Server
ШC	JRF	Conscie	Capture	bearch	Mgmx.	Lon	non				Com	NOH0	Global	Topology	Page	IBR	Scane	Por		Console	OWSM
	SOA	EM	Outlook								E	<u> </u>	Submit	Manager	OWSM			Cores	eaup	EM	
S	erver 2	JRF	JRF	JRF	JRF	JR	F	JRF	JRF	JRF	AP	M	JRF	JRF	JRF	JRF	JRF	GRCS	ietup	JRF	JRF
	SOA	SOA	ESS	Customer	Analytics		Marketi	ng C	ontract	DQ		- 1	SOA	Spaces	Collab	SES	Owles	RoleT	mpit	SOA	ESS
	JRF	Server 1	Server 1	Server 1	Server 1	- 1-	Server	1 5	erver 1	Server 1			Server 1	Server 1	Server 1	Server 1	Server	1		Server 1	Server 1
		SOA	ESS	Customer	Analytics		Marketi	ng C	ontract	DQ/11R			SOA	Spaces	JIVE	SES	OWLCS	5		SOA	ESS
	a desire	JRF	JRF	JRF	JRF		JRF		JRF		JR	F	JRF	JRF	JRF	JRF	JRF	JR	F	JRF	JRF
	Server		80	M DOMAIN	-	_	1		ICM DOMA	N	1		EIN	VOMAIN				BLDO	MAIN		
118	Admin	Admin	SOA	ESS	SCMCommon		100	dmin	Setup	CoreProc		A	tmin S	OA Fin	m	Admin S	erver	BI Ser	ver	System Cor	nponents
0	Console	Server	Server 1	Server 1	Server 1		S	ierver	Server 1	Server 1		Se	rver Se	ver 1 Serv	er 1	Admin Co	acte	WSM.PM	RTD		
	EM	Admin	SOA	ESS	Prod. Mgnt.			dmin	Coresetup	Core		A	tmin S	OA F	n	EM		Anahtica	ED	Clus	ter blier
		Console			Common		C	onsole	OWSM	Process		Co	nsole	Com	mon	Diac		ODIO	LCALC.		
		EM			SCM Common			EM					M	OW	SM	DIAC	<u> </u>	Obir	UNLU I	BIP	5
					Logistics			JRF	JRF	JAF		J	RF	RF JF	¥F.	FSN		Workspace	APS	SCHED	ULER
					COMPANY	-	A	nalytics	SOA	ESS		ES	S Ana	Ivtics Le	doer			DAC	ESS	ESSB	ASE
	JRF			l l	UWSM		S	erver 1	Server 1	Server 1		Serv	er 1 Ser	ver 1 Ser	ver 1			BIOM	08	BIJ	H
							A	nalytics	SOA	ESS		ES	S Ana	lytics Le	dger					BI Se	wer
		JRF	JRF	JRF	JRF			JRF	JRF	JRF		JR	F J	RF J	RF	JRF/J	PS	JRF/J	PS	OPN	IN
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																008		Catalogic	loring	HPU/G/	(GHE
																Server Pro	cessr			SAN/	NAS
																Informatica	Server			Catalog	APD/
CRM	HOST2																				GACHE
																			_	BIP	Essbase
		CRMHOST1 (9	8 GB 6 Con	e Westmere Ser	ver)															Juny	AND ONE ALL

#### Figure 5. Oracle Fusion CRM Applications Domain Details

# Solution Overview

The solution presented here demonstrates the steps required for provisioning the Oracle Fusion HCM application module on to the Cisco UCS platform in a lab environment to illustrate the readiness of the Cisco UCS platform for provisioning Oracle Fusion Applications (all Oracle Fusion Applications products are based on a common standards-based architecture and are deployed in the same way). Please see the <u>disclaimer</u> about the scope and use of this document and refer to the comprehensive Oracle Fusion Applications product documentation at <u>Oracle Software Delivery Cloud</u>.

As already noted, provisioning is the act of installing, configuring, deploying, and removing Oracle Fusion Applications components. Because Oracle Fusion Applications includes a number of Oracle Fusion Middleware components, and because there are multiple dependencies among Oracle Fusion Applications products, the provisioning framework's goal is to limit the need to install and configure these items manually.

Following are the main provisioning goals:

- Install the applications, database, and middleware components required to run Oracle Fusion Applications.
- Use a guided process to gather details about the new environment using an online interview flow. The details collected form the basis for a provisioning plan that you can apply when you are ready to perform the physical installation, configuration, and deployment of the application product offerings that will run in the environment.
- Configure the applications, database, and middleware components and deploy them in the environment.

#### Cisco Unified Computing System Setup and Configuration

The following are the main hardware and software components used for this setup.

- Hardware
  - 1 full-blade Cisco UCS B250 M2 Extended Memory Blade Server with 192 GB of RAM (UCS6)

- 1 half-blade Cisco UCS B200 M2 Blade Server with 48 GB of RAM (UCS3)
- Shared storage
- Software
  - Oracle Database 11g (Release 11.2.0.2)
  - Oracle Identity Management 11g (Release 11.1.1.5)
  - Oracle Fusion Applications 11g (deployed to WebLogic domains)
  - Oracle Linux 5.6 (64-bit) (Red hat compatible kernel)

Figure 6 illustrates the setup used for this document.





# **Oracle Fusion Applications Provisioning**

The Oracle Fusion Applications Media Pack is available for download from the <u>Oracle Software Delivery site</u>. The media pack is a set of zip files that includes the installation software for the Oracle Fusion Applications, Oracle Identity Management, etc. as well as the Oracle Fusion Applications Technology Documentation Library.

Oracle Fusion Applications installation consists of the following four steps:

- 1. Install and configure the Oracle Identity Management components for the Oracle Fusion Applications environment.
- 2. Install and configure the Oracle Fusion Applications database.
- 3. Create the provisioning plan using the interview process graphical tool called Provisioning Wizard.
- Provision the Applications environment using the Provisioning Wizard tool or the provisioning commandline interface (CLI).

The rest of this section contains detailed information regarding these steps.

# **Oracle Identity Management**

Oracle Identity Management is a core component and prerequisite for provisioning an Oracle Fusion Applications environment. It enables enterprises to manage the end-to-end lifecycle of user identities across all enterprise resources, both within and outside the firewall. An installation of Oracle Fusion Applications relies on Oracle Identity Management components to provide web single-sign-on (SSO) capability and to act as the policy, credential, and identity store.

The Oracle Identity Management components that must be present in an Oracle Fusion Applications environment are:

- Oracle Access Manager (OAM): Provides identity administration and security functions, including web SSO, user self-service and self-registration, policy management, and delegated administration
- Oracle Identity Manager (OIM): Coordinates the management activities and business processes for creating, modifying, and deleting user access rights
- Oracle Virtual Directory (OVD): A Lightweight Directory Access Protocol (LDAP)-enabled service that provides a virtualized abstraction of one or more enterprise data sources in a single directory view
- Oracle Internet Directory (OID): A general-purpose directory service that enables fast retrieval and centralized management of information about dispersed users and network resources

Refer to the Oracle Fusion Middleware Enterprise Deployment Guide for Oracle Identity Management (Oracle Fusion Applications Edition) document, which is part of the Oracle Fusion Applications Technology Documentation Library, and the latest Oracle Fusion Applications release notes, which can be downloaded from the <u>Oracle</u> <u>Support site</u>, to install and configure the following components specifically for use with Oracle Fusion Applications:

- Oracle Database (Release 11.2.0.2) for the policy store and identity store
- Oracle Internet Directory 11g (OID)
- Oracle Virtual Directory 11g (OVD)
- Oracle Identity Manager 11g (OIM)
- Oracle Access Manager 11g (OAM)

#### **Oracle Fusion Applications Database**

An installation of Oracle Database 11gR2 Enterprise Edition is required for storing the Oracle Fusion Applications transaction data. This database can be created using the database template that is shipped with the Oracle Fusion Applications software. The template contains the database structure and features, but is not seeded. It is generic for use across platforms.

For a small-scale, single-node database, use the Oracle Fusion Applications Provisioning Wizard and select the Install an Applications Transaction Database option to install a single-node instance of Oracle Database Enterprise Edition. Alternatively, you can install the database manually (interactively) if you are creating a production-scale, multiple-node database. Oracle Fusion Applications also supports Oracle Real Application Clusters (RAC). The Oracle Fusion Applications software provides a repository of installers, each called silently when needed to perform application-specific tasks during the provisioning of a new environment. The Oracle Fusion Applications provisioning installer (**faprov**) is part of this repository of installers, and its purpose is to create the Oracle Fusion Applications provisioning framework, which includes the following components:

- **Provisioning wizard:** A question-and-answer interview that guides you through the process of installing a database, creating or updating a provisioning plan, and provisioning or deinstalling an Oracle Fusion Applications environment
- **Provisioning CLI:** Interface used to start the wizard and run installation phases on the primary, secondary, and DMZ hosts (when present)
- **Provisioning-related files and utilities:** The Ant utilities, binary files, library files, templates, locations of saved provisioning plans and provisioning build scripts, and other provisioning utilities required for performing provisioning tasks

The high-level database provisioning requirements are:

- Oracle Database 11gR2 Enterprise Edition
- Provisioning framework and Provisioning wizard (described in the preceding paragraphs)
- Preseeded database shipped with Oracle Fusion Applications, containing the applications and middleware schemas, applications seed data, and PL/SQL packages

When you install the database software, you are asked a set of questions about the configuration of the application database. After you answer the questions, the installation wizard performs prerequisite validation checks and returns a list of the checks and status information and a summary of the actions to be performed. At the end of the interview process, the wizard generates and runs the database installer.

The Oracle Fusion Applications Repository Creation Utility (RCU) is a GUI- and CLI-based tool used to create and manage database schemas, seed data, and PL/SQL packages required by Oracle Fusion Applications. You need to run RCU after the relational database system (RDBMS) is installed and configured, and an empty database has been created. The main features of the RCU are:

- **Custom schemas and tablespaces:** The RCU provides the flexibility to create custom schemas and table spaces. Users can change the tablespace allocation so that components can share a single or multiple table spaces.
- Global and component-level prerequisites: At runtime, the RCU performs checks against both global
  and component-level prerequisites. If a prerequisite is not met, the RCU may post a warning and allow the
  procedure to continue (soft stop), or it will notify the user that a prerequisite must be met before the
  operation can continue (hard stop).

For this specific installation environment, the Oracle Fusion Applications Provisioning Wizard was used to install the database. Figures 7 though 10 provide sample screen images captured during the database installation using the provisioning wizard.

# Figure 7. Starting the Provisioning Wizard

	oracle@pt	ucs6:/u01/provhome/provisioning/bin	
<u>File</u> <u>E</u> dit	View Terminal T	<u>b</u> s <u>H</u> elp	
[oracle@p	tsucs6 bin]\$ ./p	ovisioningWizard.sh	<b>_</b>
			=
			<b>V</b>

#### Figure 8. Welcome Screen

*	Fus	ion Applications Provisioning Wizard - Step 1 of 8	×
We	lcome		
	Welcome	Welcome to Oracle Fusion Applications Provisioning	
	Installation Options Specify Security Updates Database Install Configuration Prerequisite Checks Summary Database Installation Progress Installation Complete	<ul> <li>This application will guide you through the process of setting up and provisioning an Oracle Fusion Applications environment. Check My Oracle Support to make sure you have the latest RUP (Release Update Pack) before proceeding.</li> <li>Before installing the Oracle Database for Oracle Fusion Applications, ensure that the Oracle Database installer and required patches. For more information about creating the repository, see Chapter 2 in the Oracle Database is available and has been seeded with required schema seed data. Schemas are created using the Oracle Fusion Applications Installation Guide.</li> <li>Before creating a provisioning plan, ensure that:</li> <li>The Oracle Database is available and has been seeded with required schema seed data. Schemas are created using the Oracle Fusion Applications Repository Creation Utility. For more information about this utility, see Chapter 3 in the Oracle Fusion Applications Installation Guide.</li> <li>Your Oracle Identity Management environment is available. For more information, see installation instructions in the Oracle Fusion Applications Edition).</li> <li>Before provisioning an application environment, ensure that you have created a provisioning plan, and you have created and populated the Oracle Fusion Applications installers repository with application, middleware, and database installers. For more information about the repository, see Chapter 2 in the Oracle Fusion Applications installers repository with application, and you have created and populated the Oracle Fusion Applications installers repository, see Chapter 2 in the Oracle Identity Management (Oracle Fusion Applications installers repository with application, middleware, and database installers. For more information about the repository, see Chapter 2 in the Oracle Fusion Applications Installers repository with application, middleware installers installers repository with applications installers repository in Applications installers repository with applications installers repository in Appli</li></ul>	
•			-
	Help	< <u>Back</u> <u>N</u> ext> <u>Finish</u> Cancel	

# Figure 9. Installing an Application Transaction Database

🛓 Fus	ion Applications Provisioning Wizard - Step 2 of 8
Installation Options	
Welcome           Install Database           Specify Security Updates           Database Install Configuration           Prerequisite Checks           Summary           Database Installation Progress           Installation Complete	Select one of the following options:         Install an Applications Transaction Database         Create a New Applications Environment Provisioning Plan         Update an Existing Provisioning Plan         Provisioning Plan:         Provision an Applications Environment         Provisioning Plan:         Browse         O Leinstall an Applications Environment         Provisioning Plan:         Browse
Help	< <u>Back</u> <u>Next</u> <u>Finish</u> Cancel

tabase Install Configura	tion		
Welcome Install Database	Perform full database installat Database Listener Port:	ion with basic configuration.	
Specify Security Updates Database Install Configuration	Installers Directory Location:	/u01/repository	Browse
Prerequisite Checks Summary	Oracle Base:	/u01/oracle/fusion	Br <u>o</u> wse
Database Installation Progress Installation Complete	Software Location:	/u01/oracle/fusion/product/11.2.0/dbhome_1	Browse
	OSDBA Group:	dba	PL CHZ
	Global Database Name: Administrative Password:	fusion	
	Confirm Password:	•••••	

#### Figure 10. Database Installation Configuration

To complete the database installation, you must use the Oracle Fusion Applications Repository Creation Utility (Applications RCU) to perform the following actions:

- Create Oracle Fusion Middleware schema and tablespace users and define the tables, views, and other artifacts that the schema user owns.
- Create empty tablespaces for Oracle Fusion Applications components and the schema owners. The owners do not own any tables or data initially.

Import default seed data values for the schema users using Oracle Data Pump files.

Creating the Provisioning Plan/Provisioning Response

Create the provisioning plan/provisioning response using the interview process graphical tool called Provisioning Wizard.

Oracle Fusion Applications are logically divided into groups of features known as product offerings. An offering is the highest-level collection of functions that you can choose to license and implement. The features are implemented by one or more products in at least one product line. For example, there are three product offerings associated with the Human Capital Management product family: Workforce Development, Workforce Deployment, and Compensation Management.

To provision your new environment, you must supply the provisioning engine with the details it needs to perform the physical installation, configuration, and deployment of the product offerings you want to install. This process is managed by the provisioning wizard, which presents an interview screen flow designed to gather the information necessary to perform the installation.

During the interview process, you choose product offerings and then supply details about credentials, application and middleware hosts, ports, and other details as required. This information is stored as a provisioning plan, which you save and apply when you are ready to perform the physical installation and deployment of your product offerings.

The provisioning plan can be created using the script provisioningwizard.sh available in \$PORVISIONING\_HOME/provisioning/bin.

For this specific installation environment, the Oracle Fusion Applications Provisioning Wizard was used to create a provisioning plan for the Oracle Fusion HCM product offering. Figures 11 through 25 show some sample screen images captured during the creation of the provisioning plan using the provisioning wizard.

1. Contraction of the second s	Fusion Applications Provisioning Wizard - Step 2 of 6
Installation Options	
Welcome         Create Plan         Specify Security Updates         Provisioning Configurations         Plan Description         Summary	Select one of the following options:         Install an Applications Transaction Database         © Create a New Applications Environment Provisioning Plan         Update an Existing Provisioning Plan         Provisioning Plan:         Browse         O Provision an Applications Environment         Provisioning Plan:         Browse         O beinstall an Applications Environment         Provisioning Plan         Browse
Help	< <u>Back</u> Next > Einish Cancel

Figure 11. Creation of a New Applications Environment Provisioning Plan

# Figure 12. Product Offering Selection

🛃 🛛 🛛 Fusion Applicatio	ns Provisioning Wizard -	Create Provisioning Plan	Step 4 of 19	_ <b> X</b>
Provisioning Configuratio	ns		FUSION APPLICATIONS	
<ul> <li>Welcome.</li> <li>Create Plan</li> <li>Specify Security Updates</li> <li>Provisioning Configuration</li> <li>Plan Description</li> <li>Installation Location</li> <li>System Port Allocation</li> <li>Database Configuration</li> <li>Schema Passwords</li> <li>ODI Password Configuration</li> <li>Schema Passwords</li> <li>ODI Password Configuration</li> <li>Domain Topology</li> <li>Web Tier Configuration</li> <li>Virtual Hosts Configuration</li> <li>Virtual Hosts Configuration</li> <li>Web Proxy Configuration</li> <li>Udentity Configuration</li> <li>Access and OPSS Configuration</li> <li>Summary</li> </ul>	Select one or more of the config Oracle Fusion Customer Rela Marketing Sales Oracle Fusion Financials Financials Oracle Fusion Procurement Oracle Fusion Procurement Oracle Fusion Human Capita Workforce Deployment Oracle Fusion Supply Chain Oracle Fusion Supply Chain Customer Data Hub Enterprise Contracts Fusion Accounting Hub Oracle Fusion Incentive Com Oracle Fusion Applications Topol S Admin Servers, 17 Application I Details	urations to provision. ationship Management ent I Management d Logistics Ipensation logy Summary Managed Servers, 14 Middleware Mana	aged Servers	
Help		< <u>B</u> ack	<u>N</u> ext > <u>Finish</u>	Cancel

# Figure 13. Installation Location (1)

🔮 🛛 🛔 Fusion Applicatio	ns Provisioning Wizard - Creat	e Provisioning Plan - Step 6 of 19	
Installation Location			
Y Welcome	Provide Node Manager credentials and O directories.	Pracle Fusion Applications installation and conf	iguration
Create Plan	Node Manager Credentials		
Specify Security Updates	User Name:	admin	
Provisioning Configurations	Password:	•••••	
Plan Description	Confirm Password:	•••••	
Installation Location	Installation and Configuration		
System Port Allocation	Installers Directory Location	(u01 (repository	Proven
Database Configuration	instances on cerery coconon.	Judifrepository	DLOARSE
Schema Passwords	Oracle Fusion Application Home:	/u01/appbase	Browse
ODI Password Configuration	Application Configuration Directory:	/u01/appbase/instance	Browse
Domain Topology	Enable Local Application Configuration		
Web Tier Configuration	Local Application Config Directory		
Virtual Hosts Configuration	costa Application comig on ectory.		Browse
Load Balancer Configuration	Webgate Library Location:	/u01/webgate_libs	Browse
Web Proxy Configuration			
Identity Configuration	Middleware Dependencies		-
Access and OPSS Configura			
IDM Database Configuration			
Summary			
		Hannah and Article	
Help Save		< <u>Back</u> Next > Ein	ish Cancel

# Figure 14. Installation Location (2)

🛓 🛛 🕹 Fusion Applicatio	ns Provisioning Wizard - Crea	te Provisioning Plan - Step 6 of 19	
Installation Location			ONS
V Welcome	Installation and Configuration		-
Create Plan	Installers Directory Location:	/u01/repository	Browse
Specify Security Updates	Oracle Fusion Application Home:	/u01/appbase	Browse
Plan Description	Application Configuration Directory:	/u01/appbase/instance	Browse
Installation Location	Enable Local Application Configurat	ion	
System Port Allocation	Local Application Config Directory		Browse
Database Configuration	Webgate Library Location:	/u01/webgate_libs	Browse
<ul> <li>Schema Passwords</li> </ul>			
ODI Password Configuration	Middleware Dependencies		
Comain Topology	Default IDM Configuration Using IDM	M Properties file	
Web Tier Configuration	IDM Properties file:	m_finalversion/scripts/idmDomainConfig.param	Browse
Virtual Hosts Configuration			
Load Balancer Configuration	Oracle Business Intelligence Reposito	bry Password	
Web Proxy Configuration	RPD Password:	•••••	
Identity Configuration	Confirm Password:	•••••	-
Access and OPSS Configura			
IDM Database Configuration			
Summary			
Help Save		< <u>Back</u> <u>Next</u> > <u>Einish</u>	Cancel



Figure 15. Directory Structure (figure taken from Oracle Fusion Applications Administration Guide)



atabase Configuration				
Welcome Create Plan Specify Security Updates Provisioning Configuration:	Choose the option f Single-instance Host Name: Port: Service Name:	that describes the Oracle Fusion A Database ptsucs6.mycompany.com 1521	pplications transact	ion database configuration.
System Port Allocation     Database Configuration     Schema Passwords	Real Application     Service Name:	Clusters Database fusion Host Name	Port	t Instance Name
ODI Password Configuration Domain Topology Web Tier Configuration Virtual Hosts Configuration Load Balancer Configuration Web Proxy Configuration Identity Configuration Access and OPSS Configura				Add Remove
Summary				



Fusion Application	ns Provisionin	g Wizard - Create Provisioning Pl	an - Step 11 of 19	_ 🗆 🗙
Domain Topology Configu	ration		FUSION APPLICATIONS	
Y Welcome	Select one of the	following domain topology options: all domains		
Specify Security Updates	Host Name:	ptsucs6.mycompany.com		•
Provisioning Configuration:	One host per	domain		
Installation Location		Application Domain	Host Name	
Surtan Dart Allegation		Common		~
System Port Allocation		Customer Relationship Management		Ŧ
Database Configuration		Financials		~
Ý Schema Passwords		Human Capital Management		-
ODI Password Configuration		Business Intelligence		Ψ.
Basic Topology				
Web Tier Configuration	O One host per	application and middleware component		
Virtual Hosts Configuration				
Load Balancer Configuration				
Web Proxy Configuration				
Identity Configuration				
Assess and ODEE Conference				
Access and Orss Configura		*		
IDM Database Configuration				
Summary		•		
	I			
Help Save		< <u>B</u> ac	:k <u>N</u> ext > <u>E</u> inish	Cancel



Fusion Application	s Provisioning N	Wizard - Create Provisionin	ng Plan - Step 12 of 19	_ <b>x</b>
Web Tier Configuration		L.C		
Welcome Create Plan Specify Security Updates Provisioning Configuration: Plan Description Installation Location System Port Allocation Database Configuration Schema Passwords ODI Password Configuration Basic Topology Web Tier Configuration Unitual Hosts Configuration Virtual Hosts Configuration Web Proxy Configuration Identity Configuration Access and OPSS Configuration IDM Database Configuration Access and OPSS Configuration Summary	Configure Oracle H Web Tier Install Web Tier in Host: Virtual Host Mode: Domain Name: HTTP Port: HTTPS (SSL) Port:	TTP Server, virtual host type. n DMZ ptsucs6.mycompany.com Name Based mycompany.com 10601 10602		
Help Save			< <u>B</u> ack Next > Einish	Cancel

# Figure 19. Virtual Hosts Configuration

Fusion Application	is Provisioning Wizard - Create	e Provisioning Plan - S	tep 13 of 19 📃 🗆 🗙
Virtual Hosts Configuratio	n		
Welcome Create Plan	Specify the configuration settings for the Name-based Virtual Host Configuration	e virtual hosts required by Orac n	le Fusion Applications.
Specify Security Updates	Einancials	fin-int mycompany.com	fin-ext mycomnany com
Provisioning Configuration	Common	fs-int mycomnany.com	fs-ext mycompany com
Plan Description	Customer Relationship Management	crm-int.mycompany.com	crm-ext.mycompany.com
T man bescription	Human Capital Management	hcm-int.mycompany.com	hcm-ext.mycompany.com
Installation Location	Business Intelligence	bi-int.mycompany.com	bi-ext.mycompany.com
O System Port Allocation			
O Database Configuration			
Schema Passwords			
ODI Password Configuration			
Basic Topology			
Web Tier Configuration			
🥥 Virtual Hosts Configuratio			
Load Balancer Configuration			
Web Proxy Configuration			
Identity Configuration			
Access and OPSS Configura			
U IDM Database Configuration			
Help Save	-	< <u>B</u> ack	ext > Einish Cancel

entity Management Confi	guration	
Welcome	Configure Oracle Fusion Application environment.	s to integrate with your existing Oracle Identity Management
Create Plan	Identity Management Configuration	1
Specify Security Updates	Super User Name:	weblogic_fa
Provisioning Configuration:	Enable Seeding of Security Data	
Plan Description	Create Administrators Group	
Installation Location	Create Monitors Group	
System Port Allocation	Create Operators Group	
Database Configuration	Identity Store Server Type:	Oracle Internet Directory
Schema Passwords	Identity Store Host:	ptsucs3.mycompany.com
ODI Password Configuration	Identity Store Port:	3060
Basic Topology	Identity Store Secure Port:	3061
Web Tier Configuration	Identity Store User DN:	cn=IDRWUser,cn=Users,dc=mycompany,dc=com
Virtual Hosts Configuration	Identity Store Password:	•••••
Load Balancer Configuration	Identity Store Read-Only User DN:	cn=IDROUser,cn=Users,dc=mycompany,dc=com
Web Proxy Configuration	Identity Store Read-Only Password:	•••••
Identity Configuration	Identity Store Enabled SSI	
Access and OPSS Configura		
IDM Database Configuration		
Summary 🗾		

# Figure 20. Oracle Identity Management Configuration (1)

ntity Management Configuration		
Welcome Identity Store Enab	ed SSL	
Create Plan Identity Store User Na	ne Attribute: uid	,
Specify Security Updates Identity Store User Bas	e DN: cn=Users,dc=mycompany,dc=com	
Provisioning Configuration: Identity Store Group B	ase DN: cn=Groups,dc=mycompany,dc=com	
Plan Description OIM Admin Server Hos	t: ptsucs3.mycompany.com	
Installation Location OIM Admin Server Por	7001	
System Port Allocation OIM Administrator Us	r Name: weblogic	
Database Configuration OIM Administrator Pas	sword:	
Schema Passwords OIM Managed Server H	ost: ptsucs3.mycompany.com	
ODI Password Configuration OIM Managed Server F	ort: 14000	
Basic Topology OIM Endpoint Host:	ptsucs3.mycompany.com	
Web Tier Configuration OIM Endpoint Port:	7777	
Virtual Hosts Configuration	led SSL	
Load Balancer Configuration IDM Keystore File:	/u01/app/oracle/product/fmw/idm/rootCA/keystor Bro	wse
Web Proxy Configuration IDM Keystore Passwor	d: ••••••	_
Access and OPSS Configura		
IDM Database Configuration		
Sum mary		

# Figure 21. Oracle Identity Management Configuration (2)

Welcome       Image: Configure Oracle Fusion Applications to integrate with your existing Oracle Identity Management environment.         Create Plan       Vacle Access Manager Configuration         Specify Security Updates       OAM Administrator User Name:       oam admin         Provisioning Configuration       OAM Administrator Password:       eeeeeeee         Provisioning Configuration       OAM AAA Server Host:       ptsucs3.mycom pany.com         Installation Location       OAM AAA Server Port:       5575         System Port Allocation       Access Server Identifier:       wds_oam1         Database Configuration       Enable Second Primary Oracle Access Manager       Second Access Server Identifier:       saa2         ODI Password Configuration       OAM Security Mode:       Simple       Simple         Basic Topology       OAM Simple Mode Passphrase:       eeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeee	ess and Policy Manage	ment Configuration	
Specify Security Updates       A       OAM Administrator User Name:       oam admin         Provisioning Configuration       OAM Administrator Password:       e	Welcome Create Plan	Configure Oracle Fusion Applications to environment. Oracle Access Manager Configuration	o integrate with your existing Oracle Identity Management
Provisioning ConfigurationOAM Administrator Password:•••••••Plan DescriptionVOAM AAA Server Host:ptsucs3.mycompany.comInstallation LocationVOAM AAA Server Port:5575System Port AllocationVAccess Server Identifier:wts_oam1Database ConfigurationVEnable Second Primary Oracle Access ManagerSchema PasswordsSecond Access Server Identifier:aaa2ODI Password ConfigurationOAM Security Mode:SimpleBasic TopologyOAM Simple Mode Passphrase:••••••Web Tier ConfigurationVirtual Hosts ConfigurationVebgate Password:•••••••Virtual Hosts ConfigurationConfirm Webgate Password:•••••••Web Proxy ConfigurationOPSS Policy Store Host:ptsucs3.mycompany.com	Specify Security Updates	OAM Administrator User Name:	oamadmin
Plan DescriptionAOAM AAA Server Host:ptsucs3.mycompany.comInstallation LocationAOAM AAA Server Port:5575System Port AllocationAccess Server Identifier:Wds_oam1Database ConfigurationIEnable Second Primary Oracle Access ManagerSchema PasswordsSecond Access Server Identifier:aaa2ODI Password ConfigurationOAM Security Mode:SimpleBasic TopologyAOAM Simple Mode Passphrase:InterventionWeb Tier ConfigurationVirtual Hosts ConfigurationConfirm Webgate Password:InterventionVirtual Hosts ConfigurationConfirm Webgate Password:InterventionWeb Proxy ConfigurationOPSS Policy Store Host:ptsucs3.mycompany.com	Provisioning Configuration:	OAM Administrator Password:	
Installation Location       ACCESS Server Identifier:       5575         System Port Allocation       Access Server Identifier:       wds_oam1         Database Configuration       Enable Second Primary Oracle Access Manager         Schema Passwords       Second Access Server Identifier:       aaa2         ODI Password Configuration       OAM Simple Mode Passphrase:       second Access Server Identifier:       aaa2         ODI Password Configuration       Virtual Hosts Configuration       Webgate Password:       second Access Server Identifier:       aaa2         Virtual Hosts Configuration       Vebgate Password:       second Access Server Identifier:       second Access Server Identifier:         Virtual Hosts Configuration       Vebgate Password:       second Access Server Identifier:       second Access Server Identifier:         Virtual Hosts Configuration       Vebgate Password:       second Access Server Identifier:       second Access Server Identifier:         Virtual Hosts Configuration       Vebgate Password:       second Access Server Identifier:       second Access Identifier:         Virtual Hosts Configuration       Vebgate Password:       second Access Identifier:       second Access Identifier:         Virtual Hosts Configuration       Vebgate Password:       second Access Identifier:       second Access Identifier:         Virtual Hosts Configuration       Vebgate Pa	Plan Description	OAM AAA Server Host:	ptsucs3.mycompany.com
System Port Allocation       Access Server Identifier:       Wds_oam1         Database Configuration       Enable Second Primary Oracle Access Manager         Schem a Passwords       Second Access Server Identifier:       saa2         ODI Password Configuration       OAM Security Mode:       Simple         Basic Topology       OAM Simple Mode Passphrase:       ooccess         Web Tier Configuration       Webgate Password:       ooccess         Virtual Hosts Configuration       Webgate Password:       ooccess         Virtual Hosts Configuration       Oracle Platform Security Services Configuration       oracle Platform Security Services Configuration         Web Proxy Configuration       OPSS Policy Store Host:       ptsucs3.mycompany.com	Installation Location	OAM AAA Server Port:	5575
2       Database Configuration       Image: Enable Second Primary Oracle Access Manager         3       Schema Passwords       Second Access Server Identifier:       saa2         4       ODI Password Configuration       OAM Security Mode:       Simple         5       Basic Topology       OAM Simple Mode Passphrase:       Image: Ima	System Port Allocation	Access Server Identifier:	wis_oam1
Schema Passwords       Second Access Server Identifier:       aaa2         ODI Password Configuration       OAM Security Mode:       Simple         Basic Topology       OAM Simple Mode Passphrase:	Database Configuration	Enable Second Primary Oracle Acces	s Manager
ODI Password Configuration       OAM Security Mode:       Simple         Basic Topology       OAM Simple Mode Passphrase:	Schema Passwords	Second Access Server Identifier:	aaa2
Basic Topology     OAM Simple Mode Passphrase:       Web Tier Configuration     Webgate Password:       Virtual Hosts Configuration     Confirm Webgate Password:       Load Balancer Configuration     Oracle Platform Security Services Configuration       Web Proxy Configuration     OPSS Policy Store Host:	ODI Password Configuration	OAM Security Mode:	Simple
Web Tier Configuration     Webgate Password:       Virtual Hosts Configuration     Confirm Webgate Password:       Load Balancer Configuration     Oracle Platform Security Services Configuration       Identity Configuration     OPSS Policy Store Host:	Basic Topology	OAM Simple Mode Passphrase:	•••••
Virtual Hosts Configuration       Confirm Webgate Password:         Load Balancer Configuration       Oracle Platform Security Services Configuration         Web Proxy Configuration       Oracle Platform Security Services Configuration         Identity Configuration       OPSS Policy Store Host:       ptsucs3.mycompany.com	Web Tier Configuration	Webgate Password:	
Load Balancer Configuration     Oracle Platform Security Services Configuration       Web Proxy Configuration     OPSS Policy Store Host:       Identity Configuration     OPSS Policy Store Host:	Virtual Hosts Configuration	Confirm Webgate Password:	•••••
Web Proxy Configuration         Oracle Platform Security Services Configuration           Identity Configuration         OPSS Policy Store Host:         ptsucs3.mycompany.com	Load Balancer Configuration		
Identity Configuration	Web Proxy Configuration	Oracle Platform Security Services Con	inguration
	Identity Configuration	Graat follow store host.	prouces.mycompany.com
	DM Database Configuration	-	
DM Database Configuration	Summary	•	

# Figure 22. Access and Policy Management Configuration (1)

access and Policy Manage	ment Configuration		
Welcome Create Plan Specify Security Updates Provisioning Configurations Plan Description Installation Location System Port Allocation Database Configuration Schema Passwords ODI Password Configuration Schema Passwords ODI Password Configuration Virtual Hosts Configuration Load Balancer Configuration Web Proxy Configuration Identity Configuration	Enable Second Primary Oracle Access I Second Access Server Identifier: OAM Security Mode: OAM Simple Mode Passphrase: Webgate Password: Confirm Webgate Password: Oracle Platform Security Services Confit OPSS Policy Store Host: OPSS Policy Store Port: OPSS Policy Store Secure Port: OPSS Policy Store Read-Write User Name: OPSS Policy Store Password: OPSS Policy Store Password: OPSS Policy Store JPS Root Node: Create OPSS Policy Store JPS Root Node OPSS Policy Store SSL Enabled	Anager baa2 Simple  guration ptsucs3.mycompany.com 3060 3061 cn=PolicyRWUser,cn=users,dc=mycompany,dc=com  cn=fa_jpsroot	
IDM Database Configuration Summary			

# **Figure 23.** Access and Policy Management Configuration (2)

OM Database Configurati	on		FUSIO	
Welcome	Choose the option that de	scribes the Oracle Identity Manag	gement database con	figuration.
Create Plan	<ul> <li>Single-instance Databa</li> </ul>	15e		
Specify Security Updates	Host Name:	ptsucs3.mycompany.com		
Provisioning Configurations	Port:	1521		
Plan Description	Service Name:	idpolicy.mycompany.com		
Installation Location				
System Port Allocation	Real Application Cluster	ers Database		
Database Configuration	Service Name:	idm db		
Schema Passwords		Host Name	Port	Instance Name
ODI Password Configuration				
Basic Topology				Add Remove
Web Tier Configuration				
Virtual Hosts Configuration	Specify the database sch Policy Manager	ema and password used to store	MDS data for Orac	le Web Services
Load Balancer Configuration	Schema Owner:	DEV_MDS		
Web Proxy Configuration	Schema Owner Password:			
Identity Configuration		L		
Access and OPSS Configura				
IDM Database Configuratic	-			
Summary				
33333				

# Figure 24. Oracle Identity Management (IDM) Database Configuration

Figure 25. Summary

Fusion Applications	Provisioning Wiza	ard - Create Provisioning P	lan - Step 19 of 19	_ <b>x</b>
Summary				DNS
Welcome Create Plan Specify Security Updates Provisioning Configuration: Plan Description Installation Location System Port Allocation Database Configuration Schem a Passwords ODI Password Configuration Massic Topology	Summary     Global Settings     Name: Fusion     Version: Ver J     Created By: or     Created Date:     Oracle Fu     Application     Service Na     Host: pts     Port: 152:	Application Provisioning Plan L.0 racle 2011-10-20 12:34:05 PDT nd configuration directories Directory Location: /u01/repository sion Application Home: /u01/applase on Configuration Directory: /u01/appl onment Specifications File: /u01/back .ibrary Location: /u01/webgate_libs Transaction Database ame: fusion ucs66.mycompany.com	e oase/instance ups/secondtry/idm_finalvers	ion/scripts,
Y web Her Configuration	•	• · · · · · · · · · · · · · · · · · · ·		•
Virtual Hosts Configuration Load Balancer Configuration Web Proxy Configuration	rovisioning Plan Name: rovi <u>s</u> ioning Summary:	provisioning.plan provisioning.summary		
Jdentity Configuration	Directory:	/u01/provhome/provisioning/bin		Browse
Access and OPSS Configura				
IDM Database Configuration				
🧅 Summary 🖵				
Help Save		< <u>B</u> a	ck Next > Einish	Cancel

#### Provision the Applications environment

Provision the Applications environment using the graphical Provisioning Wizard tool or the CLI. The choice of product offerings and the values specified during the interview process determine the installation, configuration, and deployment actions.

After the provisioning plan is generated, the next step is to provision the Applications environment on each host specified in the provisioning plan. Two tools are available to provision the Applications environment:

- You can use the provisioning CLI, which provides granular control over where and what is implemented on each particular host.
- You can use the same wizard that generated the provisioning plan to also provision the Applications environment. This option in the wizard asks additional questions (application root, and installation library location) and allows you to make last minute updates to the offering configuration prior to implementing the plan.

Provisioning provides scripts that read from the provisioning plan and take action for each provisioning phase (also known as targets). As each phase is run, its progress is tracked on a related screen in the provisioning wizard's user interface.

The major steps during provisioning the Applications environment are:

- **Preverify:** Checks to make sure that all prerequisites for an installation have been met
- Install: Installs middleware components (Oracle Secure Enterprise Search, WebLogic Server, ATG product family, and SOA) and installs applications and creates the applications Oracle home directory
- **Preconfigure:** Modifies the Oracle Application Development Framework (ADF) configuration file to use the database, based on Oracle Metadata Service (MDS) in the application's enterprise archive (EAR) files; also updates the connection's XML file in all application EAR files with endpoint information
- **Configure:** Creates and configures domains, managed servers, and clusters; applies templates; creates and configures data sources, queues, and topics; configures middleware (wiring); and deploys application product offerings to the appropriate domains
- **Configure Secondary:** Performs the configuration actions on the primary or secondary hosts, or both; if there are no primary or secondary hosts, or if there are only primary hosts, this phase runs but takes action only if it finds other hosts
- **Postconfigure:** Configures the node manager, deploys the SOA composite, establishes Oracle HTTP Server wiring, and sets up the postdeployment security configuration
- Startup: Starts the administration server and managed servers for each domain on the host on which you are running this phase
- Validate: Validates the deployment configuration

Figures 26 through 28 show sample screen images captured during the provisioning process.

<b>≗</b> Ins	Fus	sion Applications Provisioning Wizard - Step 2 of 15
y	Welcome Provision Environment	Select one of the following options:
T T	Plan Description	Create a New Applications Environment Provisioning Plan
A P P	Provisioning Configuration Summary Prerequisite Checks	O Update an Existing Provisioning Plan Provisioning Plan: Browse
	Installation Preconfigure Configure	Provision an Applications Environment     Provisioning Plan: //u01/provhome/provisioning/bin/provisioning.plan     Browse
	Configure Secondary Postconfigure Startup	O Deinstall an Applications Environment Provisioning Plan: Browse
I J J	Validation Installation Complete	
	Help	Charle Next > Clotch Concel

Figure 26. Provisioning an Applications Environment

#### Figure 27. Prerequisite Checks (1)







At this point, you are ready to test the Oracle Fusion Applications login process and access the applications.

# Accessing the Oracle Fusion Applications Environment

Access the Oracle Fusion Applications environment and test the installation by logging in to the URL <u>http://<host-name>:<port-num>/homePage</u> (Figure 29).

Figure 29. Login Page

<b>U</b>	Sign In - Mozilla Firefox	_ 0 X
Eile Edit View History Bookmarks Tools	łelp	
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Som Most Visited ▼ Enterprise Linux E Linux	Technology C 💽 Oracle University 💽 Feature: Faster Linu 🍺 OSS from Oracle	29
Sign In 4		•
ORACLE Fusion Applications		Help
	Sign In	
	Enter your single sign on user id and password.	
	User ID	-
	Barnword	
	Sign In	
	Eorgot Password	
	English	
	T, Crignan	
Done		•

After successful login, the Oracle Fusion Applications homepage appears (Figure 30).

#### Figure 30. Homepage

8	Welcome - Oracle Applications - Mozilla Firefox	_ 0 X
<u>File Edit View History Bookmarks</u> <u>T</u> ools	Help	
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Welcome - Oracle Applications		•
ORACLE Fusion Applications	Accessibility Personalization * Administration * * Sign Out we	blogic_fa 🔄 🛓
Home Navigator Recent Items Favorites Tags Welcome WebCenter Services	Watchlist 🗸 Group Spaces	_(0) 
Watchlist     2       ♥ Coals     2       ■ My goals at risk ()     3       ■ My high priority goals ()	Worklist: Notifications and Approvals     My Tasks     Initiated Tasks     Actions * View *        Search     Search     Search     State     Assigned	=
		2
	What's on your mind? Attach: Link P	Publish
Done		8

# Conclusion

Cisco and Oracle have joined forces to dramatically increase IT infrastructure reliability and agility while drastically reducing complexity. The results of this unique approach are innovative, cost-effective, and flexible infrastructure solutions that meet dynamic and evolving challenges.

Unlike others in the server industry, who chose to base their server technology on Intel processors, Cisco took the revolutionary approach of designing its system based on the network. By extending network technology to the server, Cisco UCS can offer customers higher levels of performance and the capability to host and deploy enterprise applications in the cloud. One example of these enterprise applications is the Oracle Fusion Applications suite.

Designed from the start using the latest technology advances and incorporating best practices gathered from thousands of customers, the Oracle Fusion Applications suite offers completely open, service-enabled enterprise applications. Built on a foundation of 100 percent standards-based middleware and using a SOA approach and a common data model, Oracle Fusion Applications products set a new standard for the way customers innovate, work, and adopt technology. Delivered as a complete suite of modular applications, Oracle Fusion Applications products work together with your existing application investments, helping you improve performance, lower IT costs, and get better results.

Using Cisco UCS, a platform with proven capability to enable the highest levels of performance for Oracle enterprise applications, in combination with the latest in Oracle technology and the capability to meet exacting

customer needs, the Cisco and Oracle solution enhances not only your use of Oracle Fusion Applications but also the competiveness of your business.

# For More Information

For more information about the Cisco and Oracle technologies discussed in this document, please refer to the following:

- Cisco Unified Computing System: <a href="http://www.cisco.com/go/ucs">http://www.cisco.com/go/ucs</a>
- Oracle Fusion Applications: <u>http://www.oracle.com/us/products/applications/fusion/index.html</u>
- Oracle Fusion Middleware 11g: <u>http://www.oracle.com/us/products/middleware/index.html</u>
- Oracle Database 11g: <u>http://www.oracle.com/us/products/database/index.html</u>
- Oracle Linux: <a href="http://www.oracle.com/us/technologies/linux/index.html">http://www.oracle.com/us/technologies/linux/index.html</a>
- Oracle solutions on Cisco UCS: <u>http://www.cisco.com/go/oracle</u>



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